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March 2, 2002

#### Via Federal Express

Ms. Blanca S. Bayo, Director Division of the Commission Clerk and Administrative Services Florida Public Service Commission 2540 Shumard Oak Boulevard Tallahassee, FL 32399-0850

> Review of the Retail Rates of Florida Power & Light Company, Re: Docket No. 001148-EI

Dear Ms. Bayo:

On behalf of the South Florida Hospital and Healthcare Association ("SFHHA"), enclosed please find:

- an original and 15 copies of the Prepared Direct Testimony and Exhibits of Stephen J. (1)Baron; and (2)2471-02
- an original and 15 copies of the Public Version of the Prepared Direct Testimony and Exhibits of Lane Kollen. 02472 02(2)

Please acknowledge receipt and filing of the above by stamping the duplicate copy and returning same in the enclosed self-addressed stamped envelope to the undersigned.

Additionally, in a separate overnight package, we have served you with a Confidential version of Lane Kollen's Prepared Direct Testimony, a copy of which also is being served upon FPL.

Thank you for your assistance in connection with this matter.

Very truly yours,

Mark F. Sunsback

Mark F. Sundback Kenneth L. Wiseman Attorneys For the Hospitals

CAF CMP COM CTR ECR GCL OPC Enclosures MMS Counsel for Parties of Record cc: SEC OTH

THE WOODLANDS

#### **BEFORE THE**

### FLORIDA PUBLIC SERVICE COMMISSION

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Re: Review of the Retail Rates of Florida Power & Light Company Docket No. 001148-EI

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#### **DIRECT TESTIMONY**

### AND EXHIBITS

OF

LANE KOLLEN

### **ON BEHALF OF**

#### SOUTH FLORIDA HOSPITAL AND HEALTHCARE ASSOCIATION

J. KENNEDY AND ASSOCIATES, INC. ROSWELL, GEORGIA

February 2002

#### PUBLIC VERSION

DOCLMENT NUMBER-DATE 02471 MAR-48 FPSC-COMMISSION

WAS:92424.1

## **BEFORE THE**

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# FLORIDA PUBLIC SERVICE COMMISSION

Re:	<b>Review of the Retail Rates of</b>	)	Docket No. 001148-EI
	Florida Power & Light Company	)	

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### **BEFORE THE**

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## FLORIDA PUBLIC SERVICE COMMISSION

Re:	<b>Review of the Retail Rates of</b>	)	Docket No. 001148-EI
	Florida Power & Light Company	)	

## DIRECT TESTIMONY OF LANE KOLLEN

1		I. QUALIFICATIONS AND SUMMARY
2	Q.	Please state your name and business address.
3		
4	A.	My name is Lane Kollen. My business address is J. Kennedy and Associates, Inc.
5		("Kennedy and Associates"), 570 Colonial Park Drive, Suite 305, Roswell, Georgia
6		30075.
7		
8	Q.	What is your occupation and by whom are you employed?
9		
10	A.	I am a utility rate and planning consultant holding the position of Vice President and
11		Principal with the firm of Kennedy and Associates.
12		
13	Q.	Please describe your education and professional experience.
14		

A. I earned a Bachelor of Business Administration in Accounting degree from the
 University of Toledo. I also earned a Master of Business Administration degree from
 the University of Toledo. I am a Certified Public Accountant, with a practice license,
 and a Certified Management Accountant.

5

6 I have been an active participant in the utility industry for more than twenty years, both 7 as an employee and as a consultant. Since 1986, I have been a consultant with 8 Kennedy and Associates, providing services to state government agencies and large 9 consumers of utility services in the ratemaking, financial, tax, accounting, and 10 management areas. From 1983 to 1986, I was a consultant with Energy Management 11 Associates, providing services to investor and consumer owned utility companies. 12 From 1978 to 1983, I was employed by The Toledo Edison Company in a series of 13 positions encompassing accounting, tax, financial, and planning functions.

14

15 I have appeared as an expert witness on accounting, finance, ratemaking, and planning 16 issues before regulatory commissions and courts at the federal and state levels on more 17 than one hundred occasions. I have developed and presented papers at various industry 18 conferences on ratemaking, accounting, and tax issues. I have testified before the 19 Florida Public Service Commission in Docket Nos. 870220-EI (Florida Power Corp.), 20 8800355-EI (Florida Power & Light), 881602-EU and 890326-EU (City of 21 Tallahassee), 890319-EI (Florida Power & Light), 910840-PU (Generic Proceeding Re 22 SFAS 106), 910890-EI (Florida Power Corp.), and 920324-EI (Tampa Electric

1		Company). My qualifications and regulatory appearances are further detailed in my
2		Exh(LK-1)).
3		
4	Q.	On whose behalf are you testifying?
5		
6	A.	I am testifying on behalf of the South Florida Hospital and Healthcare Association
7		("SFHHA")
8		
9	Q.	What is the purpose of your testimony?
10		
11	A.	The purpose of my testimony is to address several revenue requirement issues,
12		including the revenue refund included by the Company in the test year relating to the
13		effects of the Rate Agreement in prior years; the special depreciation allowed pursuant
14		to the Commission's Order in Docket 990067-EI; further depreciation effects on the
15		Company's nuclear units of license renewals (life extensions) of 20 years; deferred
16		pension debit included by the Company in working capital; storm damage expense,
17		reserve, and funding; projected growth in operation and maintenance expense;
18		capitalization structure. I also discuss matters associated with FPL's capital additions.
19		
20	Q.	Please summarize your testimony.
21		
22	A.	I recommend that the Commission reduce the Company's revenue requirement by at
23		least \$475 million based upon the following adjustments.

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1	
2	Remove the revenue refund due to the effects of the 1999 Rate
3	Agreement. (\$34.086 million reduction).
4	Agreement. (\$54.000 million reduction).
5	Reduce depreciation expense to reflect Turkey Point 3 and 4 and St.
6	Lucie 1 and 2 20-year service life extensions. (\$77.485 million
7	reduction).
8	
9	Amortize the special nuclear and fossil depreciation allowed
10	pursuant to 1999 Rate Agreement over three years. (\$53.574 million
11	reduction).
12	
12	Remove the deferred pension debit included by the Company in
13	working capital. (\$62.873 million reduction).
15	
16	Eliminate increase in storm damage expense. (\$30.315 million
17	reduction)
18	,
19	Reflect rate of return based upon internal funding of storm damage
20	reserve treated as rate base reduction. (\$31.099 million reduction).
21	
22	Reduce projected growth in operation and maintenance expense,
23	excluding the proposed increase in storm damage expense from
24	9.2% to 4.6%. (\$47.432 million reduction).
25	
26	Adjust overall return for accumulated deferred income tax effects of
27	rate base adjustments. (\$34.140 million increase)
28	
29	Limit the common equity in the capitalization structure to 50%,
30	quantified on a traditional basis. (\$172.545 million reduction).
31	
32	
33	
34	

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1 2		II. REFUND DUE TO RATE AGREEMENT
3	Q.	Please describe how the Company has reflected its projection of the refund in the
4		2002 test year related to the 1999 Rate Agreement.
5		
6	А.	The Company has reflected a \$34.086 million projection of the refund for prior years
7		pursuant to the 1999 Rate Agreement as a permanent adjustment (reduction) to
8		existing and ongoing base rate tariff levels.
9		
10	Q.	Should the Commission make an adjustment to remove this refund amount from
11		test year operating income?
12		
13	A.	Yes. This refund amount does not reflect a permanent adjustment to existing and
14		ongoing base rate tariff levels. Test year operating income should reflect the existing
15		and ongoing base rate tariff levels without refunds related to prior periods. As such,
16		the projected \$34.086 million refund should be taken out of operating income on a pro
17		forma basis.
18		
19	Q.	Why is the refund not a permanent feature?
20		
21	A.	The arrangement under the 1999 Rate Agreement expires in the spring of 2002. Thus
22		the revenue-sharing threshold under which the refund will arise will not apply to
23		revenue levels once the 1999 Rate Agreement is no longer effective.

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2		III. DEPRECIATION AND AMORTIZATION
3	<u>Depr</u>	eciation on Turkey Point 3 & 4 and St. Lucie 1 & 2
4		
5	Q.	What service life is reflected currently in the depreciation rates for the Turkey
6		Point 3 and 4 and St. Lucie 1 and 2 nuclear units?
7		
8	A.	The depreciation rates most recently authorized by the Commission for these nuclear
9		units reflect service lives of 40 years. These service lives were based upon the 40-year
10		terms of the initial NRC operating licenses for the units.
11		
12	Q.	Have there been recent changes in the expected service lives of the nuclear units?
13		
14	A.	Yes. FPL has applied for 20 year operating license extensions for the two Turkey
15		Point units and the two St. Lucie units.
16		
17	Q.	Has the NRC ever refused to extend the operating license for any nuclear unit to
18		date?
19		
20	A.	No.

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2	Q.	Why should the Commission reflect the additional 20-year service lives of the
3		units for depreciation expense purposes in this proceeding?
4 5	A.	First, absent any reliable documentation to the contrary, the Company clearly plans to
6		operate these nuclear units for as long as it is physically and economically possible to
7		do so. In fact, the Company cited such economic benefits to ratepayers as the rationale
8		for applying for license extensions on the Turkey Point units. The Company stated in
9		its 2000 Annual Report to Shareholders the following:
10 11 12 13 14 15		To ensure that customers continue to receive the economic and environmental benefits provided by Turkey Point, FPL in 2000 submitted an application to the Nuclear Regulatory Commission to extend the plant's operating license an additional 20 years until 2033.
16		The Company has also prepared studies that demonstrate life extension is economic
17		and will provide benefits to ratepayers.
18		
19		If the Company did not believe that extending the units' lives through the license
20		renewal process was physically possible and economically viable, based upon the facts
21		currently known and knowable, then it would have been imprudent for it to incur the
22		significant costs to extend the operating licenses. Thus, the best evidence of the
23		service lives of these units is the Company's current intent to continue to operate them
24		for an additional 20 years beyond the initial license terms.
25		

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1		Second, the existing depreciation rates are excessive because they provide for rate
2		recovery of the capital costs of the units over 40 year service lives rather than the
3		expected 60-year service lives. The mismatch between service lives and recovery
4		creates intergenerational inequities among ratepayers. The existing depreciation rates
5		and the ratemaking process provide for current and future recovery of plant additions,
6		including those that may be necessary to assure the continued operation of the plants
7		throughout their initial 40 years service lives as well as the additional 20 years.
8		
9		Third, changing the depreciation rates will have a direct and immediate effect on the
10		rates otherwise charged to ratepayers as the result of this proceeding. If the
11		depreciation rates are changed subsequent to this proceeding, then the reduced expense
12		will redound to the benefit of FPL's parent company, FPL Group, unless and until base
13		rates are again reset. If the Commission waits until the Company files another
14		depreciation study, even assuming FPL reflects the service life extensions in that
15		depreciation study, it is unlikely ratepayers will receive a direct and immediate rate
16		reduction coinciding with the Commission's adoption of new depreciation rates.
17		
18	Q.	Is there another reason to act on this issue in this rate case?
19		
20	A.	Yes. If power prices are deregulated and the electric industry in Florida is restructured
21		without fixing this problem, FPL will experience a windfall – in essence, twenty years'
22		use of large generating units with effectively no capital investment left. This will
23		distort competition and means that ratepayers will have subsidized FPL unnecessarily.

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Q. Did the Georgia Public Service Commission recently approve a reduction in the
depreciation rates for Hatch 1 and 2 and Vogtle 1 and 2 based upon Georgia
Power Company's application to extend the operating licenses for the Hatch units
and its intent to do so for the Vogtle units?

7 A. Yes. In December 2001, that Commission approved significantly lower depreciation
8 rates for the Hatch 1 and 2 nuclear units reflecting 20-year operating life extensions.
9 The decision was based upon then pending Georgia Power Company applications
10 before the NRC for 20-year license renewals. In January 2002, the NRC approved the
11 applications for Hatch 1 and 2, thereby renewing their operating licenses for an
12 additional 20 years.

13

In addition, the Georgia Public Service Commission approved depreciation rates that reflected 10-year service life extensions for the Vogtle 1 and 2 nuclear units. That decision was based upon Georgia Power Company's stated intent to apply for 20-year license renewals on those units as soon as possible in accordance with the NRC's procedural schedule for such license renewals.

19

Q. Have you quantified the effect of extending the service lives by 20 years for
Turkey Point 3 and 4 and St. Lucie 1 and 2?

1	Α.	Yes. The effect is to reduce the Company's MFR revenue requirement by \$77.485
2		million. This quantification reflects a reduction in depreciation expense of \$83.000
3		million and a related reduction in accumulated depreciation for the test year of \$41.500
4		million, but excluding the offsetting deferred tax effect reflected in the overall return
5		applied to rate base.
6	<u>Amo</u>	rtization of Special Depreciation
7	Q.	Please describe the special depreciation authorized by the Commission in
8		conjunction with its approval of a Stipulation and Settlement in Docket No.
9		990067-EI.
10		
11	A.	FPL was authorized to record up to an additional \$100 million annually, over a three-
12		year period, in special depreciation to reduce its nuclear and/or fossil production plant
13		in service. The Company has recorded \$170.250 million in such special depreciation.
14		
15	Q.	How has the Company reflected the special depreciation in its filing in this
16		proceeding?
17		
18	A.	The Company has reflected this special depreciation as a reduction to rate base in this
19		proceeding, but has reflected no amortization of this amount in operating income.
20		
21	Q.	Should the Commission amortize the special depreciation amount to the benefit of
22		ratepayers in this proceeding?
23		

1	Α.	Yes. There is no valid reason for the Commission simply to perpetuate this temporary
2		overrecovery only as a rate base reduction, and with no amortization, going forward.
3		The Company was allowed to accumulate the special depreciation in lieu of rate
4		reductions for excess earnings during the effective period of the 1999 Rate Agreement.
5		The Company has reflected the full amount of this special depreciation as a rate base
6		reduction in its filing in this proceeding. As such, there is no dispute as to whether the
7		special depreciation is attributable to, and thus belongs to, the ratepayers. However,
8		the Company's filing provides for no return of this overrecovery to ratepayers.
9		The Commission ultimately will have to make a determination as to the disposition of
10		this overrecovery, preferably in this docket. Unless the Commission acts to amortize
11		this amount, then the special depreciation will result in an accumulated depreciation
12		reserve that exceeds the cost of the Company's existing plant and projected
13		dismantlement costs. Perhaps recognizing the inequities of a similar situation in a
14		previous docket, the Commission authorized the amortization of another special
15		depreciation amount over the remaining life of the underlying nuclear assets.
16		
17	Q.	What amortization period should the Commission utilize to return the special
18		depreciation to ratepayers?
19		
20	А.	A three-year amortization period would be appropriate. The special depreciation was
21		recovered from ratepayers over the three-year term of the 1999 Rate Agreement. It
22		should be returned over a comparable period. In this manner, it is more likely that the

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1		those ratepayers that paid the excess revenues for the special depreciation will be the
2		beneficiaries of the return of those revenues.
3		
4	Q.	Have you quantified the effect on the revenue requirement of a three-year
5		amortization of the special depreciation?
6		
7	A.	Yes. A three-year amortization would reduce the revenue requirement by \$53.574
8		million. The amortization expense would be negative \$56.750 million and rate base
9		would increase by \$28.375 million, assuming a uniform amortization throughout the
10		test year, and excluding the offsetting deferred tax effect reflected in the overall return
11		applied to rate base.
12 13		

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1		IV. DEFERRED PENSION DEBIT
2	Q.	Please describe the deferred pension debit included by the Company in its cash
3		working capital computation.
4		
5	А.	The Company has included a deferred pension debit in working capital. This asset
6		represents the cumulative effect of the Company's net pension income (negative
7		pension expense) since 1994 as detailed in its response to SFHHA Interrogatory #42,
8		which I have replicated as my Exh. (LK-2).
9		
10	Q.	Should the deferred pension debit be included in cash working capital as a
11		conceptual matter?
12		
13	А.	No. The inclusion of this asset in rate base would require ratepayers to pay a carrying
14		charge on an asset representing the cumulative effect of pension income amounts
15		recognized and retained by FPL during the years 1994-2001. The benefits of the
16		pension income during those years was not provided to ratepayers in the form of rate
17		reductions. Instead, the rates in effect during those years, but for the limited reductions
18		due to the 1999 Rate Agreement, reflected the recovery from ratepayers of positive
19		pension expense based upon the test year levels in Docket No. 830465-EI. Thus, the
20		elimination of the pension expense and the recognition of pension income were
21		"savings" benefits retained by the Company's shareholder, FPL Group. As such, any
22		carrying costs on the deferred pension debit amount accumulated through 2001,

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1		assuming there are any, should be attributed to FPL and its shareholder, and not to
2		ratepayers.
3		
4	Q.	To the extent that pension income actually is flowed through to ratepayers, is it
5		appropriate to reflect the related deferred pension debit in rate base?
6		
7	A.	Yes. In the test year, the Company has reflected pension income in operating income.
8		Thus, the average balance of the test year pension income should be reflected in rate
9		base.
10		
11	Q.	Have you quantified the effect of removing the deferred pension debit from rate
12		base?
13		
14	A.	Yes. The removal of the deferred pension debit from rate base for the 1994-2001
15		period results in a revenue requirement reduction of \$62.873 million, excluding the
16		offsetting deferred tax effect reflected in the overall return applied to rate base.
17		

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1		V. STORM DAMAGE EXPENSE, RESERVE, AND FUNDING
2	Q.	Please describe the Company's request for storm damage expense and funding
3		treatment.
4		
5	A.	The Company has requested an increase in storm damage expense from the currently
6		authorized level of \$20.3 million to \$50.3 million in conjunction with its request for an
7		increase in the reserve level from \$234 million to a target of \$500 million. The
8		Company has funded the storm damage reserve, which is managed by an FPL Group
9		affiliate. As such, the large amount of reserve balance has not been utilized to reduce
10		rate base in the Company's filing, unlike the Company's other reserve balances that are
11		not funded and instead are utilized to reduce rate base.
12		
13	Q.	If the storm damage reserve balance is not utilized to reduce rate base, then how
14		are ratepayers compensated for the use of their money?
15		
16	A.	Unfortunately, the Company's filing reflects no compensation to ratepayers for the use
1 <b>7</b>		of their money. There not only is no rate base reduction, there also is no reduction in
18		the requested \$50.3 million annual expense to reflect earnings on the trust fund the
19		Company has established.

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2	Q.	Under the traditional regulatory cost recovery model, are ratepayers
3		compensated for their money either through a return offset on trust fund
4		earnings or through a rate base reduction?
5		
6	A.	Yes. The failure to reflect an earnings offset of any sort to the requested accrual is
7		unlike the return (earnings) offset recognized in the quantifications of pension expense,
8		postretirement benefits other than pensions expense, and decommissioning expense, all
9		of which accumulate amounts in dedicated trust funds similar to the funded reserve
10		approach employed by FPL for storm damage expense. Other advances by ratepayers
11		not included in trust funds are reflected as rate base reductions, including accumulated
12		deferred income taxes.
13		
14	Q.	Should the Commission increase the storm damage expense amount?
15		
16	A.	No. First, increasing the storm damage expense will only exacerbate the disconnect
17		between expense accruals and actual costs. By virtue of the fact that there is already a
18		substantial storm reserve balance, the Company has been provided excessive storm
19		damage expense recovery in prior years. Expense accruals have exceeded actual costs.
20		
21		Second, the Commission should reject the Company's conclusory rationale that it is
22		necessary to prepay storm damage costs in anticipation of a possible catastrophic loss
23		exceeding the existing reserve level, and allow FPL to deprive ratepayers of time

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value of their substantial funds. In effect, this rationale is no different than if the Company had requested that ratepayers prepay the costs of the various generating plant repowerings in which it is engaged. While such prepayments may result in lower financing costs for FPL, they result in higher costs to ratepayers through current rates and intergenerational inequities.

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7 In fact, the inequity of the intergenerational affect is driven home by information FPL 8 produced in response to SFHHA in discovery. FPL's response to SFHHA 9 Interrogatory No. 123 shows that for FPL's Southeastern region, the number of years 10 between expected occurrences of hurricanes ranges from a low of 16 years for 11 hurricanes at the SSI 3 level to 250 years for hurricanes at the SSI 5 level. For FPL's western region, the number of years between expected occurrences of hurricanes 12 13 ranges from a low of 30 years for SSI 1 hurricanes to over 500 years for SSI 5 14 hurricanes. For FPL's Northeastern region, the number of years between expected 15 occurrences of hurricanes ranges from a low of 36 years for SSI 1 hurricanes to 500 16 years for SSI 5 hurricanes. FPL's interrogatory response providing this information is 17 reproduced as my Exh. (LK- 3). Thus, the information FPL provided shows an 18 expectation that if FPL's proposal is approved, today's ratepayers will be paying for 19 storm damages that may not be suffered for generations to come.

- 20
- Q. But what are the expected annual damages for hurricanes at each of the storm
  intensity levels (*i.e.*, SSI 1 through SSI 5)?
- 23

1	Α.	FPL has no analysis on that issue. See Exh (LK-4) (FPL Interrogatory Response
2		No. 124).
3	Q.	Are there other reasons why the requested increase in the storm fund should be
4		rejected?
5		
6	A.	Yes. The request for the additional \$30 million in storm fund amounts seems to ignore
7		federal and state funds available in the event of natural disasters and catastrophic
8		losses. Such funds would serve to reduce the costs associated with catastrophic losses.
9		
10		Additionally, there is no indication that the Company could not finance and
11		subsequently recover from ratepayers any costs related to a catastrophic loss above and
12		beyond existing reserve levels and government emergency assistance. To the contrary,
13		the Company does have plans in place to finance such costs if such a catastrophic loss
14		should occur. In addition, the Company historically has been able to recover its storm
15		damages costs from ratepayers, even if the reserve temporarily is depleted or negative.
16		
17		Further, the Company's request fails to incorporate earnings on the trust fund and is
18		overstated for that reason alone. The Commission should incorporate earnings on the
19		trust fund in order to determine the net accrual necessary. For example, if the
20		Commission believes that a \$40 million annual accrual is appropriate, then that amount
21		should be reduced for the earnings on the trust fund. At a 10% rate of return, applied
22		to the existing \$234 million balance, the net expense requirement would be only \$17
23		million (\$40 million less \$23 million).

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Q. Is the Company's approach to fund the storm damage reserve the most economic
from the perspective of the ratepayers?

5 A. No. First, the earnings of the trust fund apparently inure to the benefit of the 6 Company, not ratepayers. Although the earnings on the trust fund are added to the 7 trust fund balance, the existing and proposed expense accruals have not been reduced 8 for trust fund earnings.

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Second, the trust fund earnings historically have been significantly below the 10 11 Company's last authorized and requested rates of return. In other words, ratepayers 12 would be far better off if the Company utilized these prepayments to invest in plant and equipment by displacing other required financing and reflected the prepayments as 13 14 a reduction to rate base similar to the Company's other reserves. The trust fund has 15 averaged an after tax return of only 4.5% over the last 5 years compared to its last 16 authorized rate of return of 10.40% and its test year MFR rate of return in this 17 proceeding of 8.97%. The average return earned by the Company on the storm damage 18 trust fund over the last 5 years is detailed in the Company's response to SFHHA 19 Interrogatory # IV-38, a copy of which I have replicated as my Exh. (LK-5) along with my computations of the average return over the last 5 years. 20

2	Q.	What would be the impact if the trust fund had earned an after tax rate of return
3		comparable to that reflected in the MFR filing in this proceeding rather than the
4		4.5% it actually earned?
5		
6	A.	The trust fund balance would be in excess of \$300 million for the test year, compared
7		to the existing \$234 million balance cited by the Company in its testimony.
8		
9	Q.	What would the trust fund's balance be three years from now if that MFR-level
10		return continued along with the historic pattern of withdrawals?
11		
12	A.	Nearly \$400 million.
13		
14	Q.	What is your recommendation regarding the Company's funding of the storm
15		damage reserve?
16		
17	A.	I recommend that the Commission reflect the storm damage reserve as a rate base
18		reduction in the same manner as it reflects other reserve amounts representing
19		prepayments by ratepayers. This is the least cost financing option for ratepayers. If the
20		Company dissolves the trust fund, then presumably it could utilize the funds to
21		displace existing or future financing consistent with its overall rate of return
22		requirements.

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2	Q.	Should the Commission ensure that ratepayers are provided a return on their
3		money provided to the Company for storm damage expenses in advance of the
4		Company's payments for such expenses, regardless of the level of storm damage
5		expense authorized by the Commission in this proceeding?
6 7	A.	Yes. I recommend that the Commission reflect the return effects directly by utilizing
8		the reserve balance as a reduction to rate base. Alternatively, the Commission could
9		reflect the return as a reduction to the expense accrual that it otherwise finds to be
10		appropriate.
11		
12	Q.	Have you quantified the effect of your recommendations on storm damage
13		expense, reserve, and funding?
14		
15	A.	Yes. The effects of my recommendations are to reduce the revenue requirement by
16		\$61.414 million. The revenue requirement effect includes a reduction in storm damage
17		expense of \$30.000 million, the increase sought by the Company, and reflects a rate
18		base reduction for the Company's \$234 million reserve balance.
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1		VI. OPERATION AND MAINTENANCE EXPENSE
2	Q.	Please describe the increase in O&M expense sought by the Company in this
3		proceeding.
4		
5	A.	The Company's revenue requirement projection for 2002 includes an increase of
6		\$123.879 million (jurisdictional) in O&M expense for the test year over the MFR
7		estimate of \$1,021.911 million (jurisdictional) for 2001. The increase is \$30.000
8		million less once the Company's requested increase in storm damage expense is
9		removed. Nevertheless, the increase sought by the Company exceeds 12.12%
10		including the increase to storm damage expense and 9.19% excluding the increase to
11		storm damage expense.
12		
13	Q.	How does the Company's request compare to the actual growth in O&M expense
14		in prior years?
15		
16	A.	The Company's request is excessive compared to its actual experience. The following
17		table provides a history of the Company's O&M expenses and the annual percentage
18		increase or decrease.
19		

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	OWER & LIGHT FUEL O&M EXPI	
	<u>\$Million</u>	<u>% Change</u>
1995	1,138	na
1996	1,127	-0.99%
1997	1,132	0.44%
1998	1,163	2.74%
1999	1,089	-6.36%
2000	1,062	-2.48%
A	verage % Change	-1.33%

5 In addition to reducing its O&M expense in absolute dollars, the Company has reduced 6 its O&M expense on a cents per kWh basis for the last 11 consecutive years, a fact that 7 it cites in support of its claim that it is focused on controlling its costs and improving 8 its efficiencies.

9

2 3 4

10 Q. Historically, how does the Company's actual O&M expense compare to its budget
 11 amounts?

12

A. Historically, the Company's actual O&M expense has been less than its budget
amounts. In 2000, the Company's actual O&M expense was \$999 million compared to
budget (plan) of \$1,034 million. In 1999, the Company's actual O&M expense was
\$1,026 million compared to budget of \$1,072 million. In 1998, the Company's O&M
expense was \$1,088 million compared to budget of \$1,090 million. The Company
provided these comparisons in response to SFHHA Interrogatory # V-57, which I have
replicated as my Exh. (LK- 6).

1		
2	Q.	Did the Company revise its O&M expense downward in conjunction with its
3		revision downward of revenues?
4		
5	A.	No. Instead of a reduction in O&M compared to the Company's budget for 2002,
6		relied upon for its initial MFR filing, the Company claimed an increase in O&M of
7		\$22.640 million when it subsequently revised certain MFR schedules.
8		
9		Once again, the failure to reduce downward its O&M expense is a complete disconnect
10		from reality, not only based upon FPL's history, but also based upon business
11		requirements in the unregulated world. First, FPL is focused on reducing its O&M
12		expense per kWh, a statistic it cites in public forums as evidence of its excellent
13		management. If projected sales are reduced and O&M expense is not, then the
14		projected O&M expense per kWh will rise compared to the 11 prior years of
15		reductions.
16		
17		Second, FPL should not be held to a lower standard of cost control in response to
18		projected lower sales, but rather to a higher standard. It is only logical that if revenues
19		are lower for purposes of the rate filing compared to the Company's budget, then it
20		also should be required to reflect commensurate reductions in its O&M expense for
21		purposes of the rate filing compared to its budget.
22		

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1Q.Please respond to the claim by Company witness Mr. Shearman that the2Company will not be able to sustain its enviable historic reductions in O&M3expense into 2002 and 2003 due to "inflation, aging assets, customer growth, and4load growth.

5

6 There is not a shred of logical support for such an assertion. First, inflation currently is Α. 7 nearly nonexistent. Second, the Company's capital expenditures for new and 8 replacement plant approximate 15% of its asset base every year. This is evidence of 9 relatively new, and more likely, lower maintenance plant. Some of those capital 10 expenditures undoubtedly were incurred to reduce O&M expense and are reflected in 11 rate base. Ratepayers should be provided the full benefit of the related expense 12 reductions.

13

14 Third, customer growth and load growth obviously overlap quite a bit. As noted 15 earlier, to the extent that such growth is projected to be lower, as reflected in the 16 Company's revised revenue forecast, then O&M expense should have been reduced as 17 well, not increased. Finally, it should be noted that the Company voluntarily 18 determined to increase its reserve margin from the Commission's mandated 15% to 19 20% and to accelerate its scheduled capacity additions and repowerings. Thus, at least 20 to some extent, the related O&M expense also is discretionary. Presumably, the 21 Company should recover such discretionary increased costs through higher interchange 22 revenues, particularly given its projection of little or no growth in its customer base.

1	Finally, the FPL Group 2000 Annual Report to Shareholders directly rebuts the
2	substance of Mr. Shearman's arguments in favor of higher O&M expense growth. The
3	Company cites its ability actually to reduce O&M expense in the face of customer and
4	load growth and describes the addition of significant generation capacity (new plant
5	compared to the aging plant cited by Mr. Shearman). The relevant excerpt from that
6	Annual Report follows.
7 8 9 10 11	Since 1990, when the company was restructured, FPL has driven down costs while achieving continuous improvements in virtually every area of its operations. At the same time, it has taken steps to meet the sharply increasing energy demands of a service area that continues to grow at a rapid pace.
12 13 14 15 16	FPL's customer base grew by 2.5% in 2000 to more than 3.8 million. More new customers, 92,000, were added than in any year since 1990. In addition, energy usage per customer increased by nearly 2% over the previous year.
17 18 19 20 21 22	In 2000, FPL reduced its operations and maintenance costs per kilowatt-hour for the tenth consecutive year. Since 1990, O&M costs have declined 40% - from 1.82 cents per kilowatt-hour to 1.09 cents. During this time the company added more than 700,000 new customer accounts and increased its generating capacity by 24%.
23 24 25 26 27	FPL's cost reduction efforts have resulted in a more efficient and productive organization and enabled the company to hold down the price of its electricity to below the national average.
28 29 30 31	FPL continues to achieve major improvements in such critical success areas as plant performance, electric reliability, and customer service.
32	Thus, it appears that FPL does not share Mr. Shearman's views regarding its ability to
33	reduce O&M expense given the same factors cited in his testimony.
34	

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1	Q.	Did Mr. Shearman investigate whether FPL's efforts to reduce costs during 1999-
2		2001 caused costs to increase following 2001?
3		
4	A.	No. Apparently he made no effort to determine whether that had occurred. Of course,
5		during the 1999-2001 period, FPL might retain all of the savings resulting from
6		deferring costs. Mr. Shearman also did not investigate how FPL's profits may have
7		been increased during 1999-2001, due to such cost reductions. See my Exh(LK-
8		7).
9		
10		In contrast, FPL had no assurance that it would retain any cost savings following
11		March 31, 2002, and any costs that could be deferred into that period could help justify
12		higher rates.
13		
14	Q.	Are Mr. Shearman's comparisons meaningful?
15		
16	A.	Not really. He ignored many different variables between utilities that tend to affect
17		costs and thus he is unable to make apples to apples comparisons.
18		
19	Q.	Did his various exhibits take into account varying ages of generation fleets, which
20		would affect outage levels and O&M cost levels?
21		
22	A.	No. Exh (LK-8).
23		

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1	Q.	Did his various exhibits take into account the differences in types of generators,
2		since (for instance) different types of nuclear reactors have different maintenance
3		issues?
4		
5	A.	No. Exh (LK-9).
6		
7	Q.	What reasonably can be concluded regarding the Company's projected growth in
8		O&M expense given its historic O&M expense growth and its public statements
9		regarding controlling costs and improving efficiencies?
10		
11	A.	The Company's O&M expense projected for the test year is excessive. The
12		Commission should look to history as a guide to the reasonable and necessary level of
13		O&M expense and the Company's ability to control the actual level of expense
14		compared to the amounts reflected in its filing in this proceeding.
15		
16	Q.	What is your recommendation?
17		
18	A.	Absent more definitive data or a more conclusive showing of actual O&M levels, I
19		recommend that the Commission limit the growth in O&M expense for the test year to
20		at most half of the Company's projection, excluding the increase due to storm damage
21		expense. This recommendation reflects a 4.60% increase in O&M expense compared
22		to 2001, excluding the proposed increase in storm damage expense, still an
23		exceptionally high level compared to recent experience of negative growth.

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#### VII. CAPITALIZATION STRUCTURE 1 2 3 Q. Please describe the Company's proposed capitalization structure. 4 5 The Company has proposed the following capitalization structure computed on a A. financial statement basis, excluding accumulated deferred income taxes, which are 6 included in capitalization only as a ratemaking convention in lieu of subtraction from 7 8 rate base.

9

FLORIDA POWER & LIGHT COMPANY CAPITALIZATION STRUCTURE		
	<u>\$Million</u>	<u>%Capital</u>
Long Term Debt	2,809	32.7%
Short Term Debt	52	0.6%
Preferred Stock	227	2.6%
Common Equity	<u>5,505</u>	<u>64.1%</u>
Total	8,593	100.0%

10

11 Q. Is the level of common equity included in the Company's proposed capitalization
12 structure excessive?

13

A. Yes. It is excessive for an A rated utility coupled with the lower level of risk
experienced by FPL as a regulated utility compared to FPL Group and its unregulated
business activities. FPL's bond ratings and investor risk perceptions are strongly
influenced by FPL Group's extensive unregulated business activities. This higher level
of unregulated risk results in higher costs that should not burden FPL's ratepayers.

1	Q.	What has Standard and Poor's stated regarding the FPL Group unregulated
2		activities risk and the effect on FPL?
3		
4	A.	First, S&P rates utility debt on the basis of the parent company's consolidated
5		fundamentals, not solely on the utility company's business and financial risk. S&P
6		stated in a recent commentary posted on its website the following:
7 8 9 10 11 12		[U]tilities that merge with other companies and invest outside the traditional regulated businesses will be rated on the basis of the qualitative and quantitative fundamentals of their consolidated entities.
13		Second, prior to the downrating of FPL from AA- to A, S&P issued its rationale for the
14		its negative creditwatch and stated the following in the wake of the announcement of
15		the proposed FPL-Entergy merger.
16 17 18 19 20		The ratings on Florida Power & Light Co., the utility operating company of FPL Group Inc., are on CreditWatch with negative implications, reflecting FPL Group's announced merger with lower- rated Entergy Corp.
21 22 23 24 25		* * * * Despite the utility's stellar financials, the consolidated entity is challenged to improve consolidated credit-protection measures as the firm expands its portfolio of independent power projects.
26 27 28 29 30		Florida Power & Light's corporate credit rating is based on the financial and business risk profile analysis of the consolidated enterprise, derived by analyzing each individual core-operating unit. There are insufficient prescriptive regulatory measures to restrict cash flow from the utility to the parent.
31 32 33 34		Florida Power & Light's first mortgage bonds are rated the same as the firm's corporate credit rating.

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1	In reviewing FPL and its affiliates, Standard & Poor's noted FPL's "buoyant cash
2	flow" and "strong business profile" "tempered by the growing portfolio of higher-risk
3	nonregulated investments, principally in independent power projects"
4	Particularly, in reviewing the growth plans of the FPL Group, the report stated that
5	"Standard & Poor's views the business risk profile of independent power producers at
6	the high end of the risk spectrum" FPL Group's energy marketing and trading
7	operation was characterized as a "high-risk business segment."
8	
9	More recently, Standard and Poor's reiterated its concerns regarding the effect of the
10	unregulated business activities on the entire FPL Group "family" of companies, which
11	includes FPL.
12 13 14 15 16 17 18 19	The IPP financing strategy and the amount of risk mitigation undertaken will be important to sustaining current ratings for the entire FPL family Resolution of the CreditWatch listing is expected in the near future. Notably, FPL Group's commitment to expand its nonregulated businesses, including its portfolio of IPPs, will challenge the firm to strengthen consolidated credit-protection measures to maintain the existing ratings profile.
20	The Credit Watch listing was resolved in September 2001, and the effects of FPL's
21	nonutility spending were clear.
22 23 24 25 26 27	Credit quality for Florida Power & Light Co., the utility operating company of FPL Group Inc., reflects the unit's steady and reliable cash flow attributes, tempered by the parent's growing portfolio of higher-risk, nonregulated investments, principally in independent power projects.
28 29 30	Current ratings for FPL Group and its affiliates incorporate increasing business risk for the consolidated enterprise attributable to the growing nonregulated independent power producer (IPP)

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1 2 3 4 5 6 7 8 9 10 11 12 13		<ul> <li>portfolio, regulatory challenges in Florida, an aggressive financing plan, and declining credit protection measures</li> <li>Florida Power &amp; Light's credit profile reflects an above-average business position</li> <li>Parent FPL Group's portfolio of nonregulated electric power generation holdings is in several regions, The potential for an economic downturn and the possibility of additional capacity coming on line in some of the regions that FPL Group has targeted highlight some of Standard &amp; Poor's concerns about this high-risk business line.</li> </ul>
14		Similarly, Moody's also tied its concerns regarding the debt ratings for the FPL Group
15		companies, including FPL, to the risk associated with FPL Group's unregulated
16		business activities.
17 18 19 20 21 22 23 24 25 26		[G]rowth strategies implemented by FPL Energy, an unregulated subsidiary of FPL Group, also increase pressure on the consolidated company's credit profile. FPL Energy intends to finance and build 6,000 mw of unregulated merchant generation by 2003. While most of these projects will eventually be financed with non-recourse debt, FPL Group Capital provides interim financing. The parent company guarantees the debt issued by FPL Capital which in turn creates pressure for all the rated entities within the consolidated group.
27	Q.	What are the Standard and Poor's debt to total capitalization guidelines for an A
28		rating on utility debt?
29		
30	A.	Standard and Poor's guidelines for an A rating and a company business risk profile of
31		4 (FPL's rankings) range from 46% to 50% debt to total capitalization.
32		

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1	Q.	What is the average capitalization structure of the comparison group of A rated
2		utilities utilized by Company witness Dr. Avera to develop his return on equity
3		recommendation?
4		
5	A.	Dr. Avera computed the following average capitalization structure based upon his
6		comparison group as of September 30, 2001.

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RUCTURE ON GROUP
2.1%
42.5%
5.4%
<u>50.0%</u>
100.0%

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3		
4		Dr. Avera noted that the individual common equity ratios embodied in the average
5		ranged from a low of 42.9% to a high of 59.9%.
6		
7	Q.	What is Mr. Avera's opinion of credit-rating agencies, such as those quoted
8		above?
9		
10	A.	"[P]erhaps the most objective guide to a utility's overall investment is its bond rating"
11		assigned by "independent rating agencies." (Avera Direct, p. 47: 11-13).
12		

1	Q.	Is that similar to the opinion held by FPL's Mr. Dewhurst?
2		
3	A.	Yes. "Rating agencies, acting as independent risk assessors on behalf of investors
4		generally, are an important source of evidence" of investors' sentiments. Dewhurst
5		Direct Testimony, p. 19:18-22.
6	Q.	What do the rating agencies think will be the outcome of this proceeding?
7		
8	A.	"[T]he market is expecting a rate cut" according to Justin McCann of Standard &
9		Poor's (Miami Herald, February 24, 2002).
10		
11	Q.	Should ratepayers be required to subsidize FPL Group's nonregulated business
12		activities through a capitalization structure that reflects a "bulked-up" common
13		equity level so that FPL Group, on a consolidated basis, had adequate credit
14		protection?
15		
16	Α.	No. The unregulated business entities should provide the consolidated entity the
17		necessary credit protections. It is inappropriate for the ratepayers to subsidize the FPL
18		Group unregulated business activities through an excessive common equity level.
19		
20	Q.	Are there other factors that should be taken into account when assessing the
21		appropriate level of equity capitalization for FPL?
22	Α.	Yes. Approximately 45% of FPL's total jurisdictional revenues are recovered by
23		trackers, rather than through base rates.

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1		
2	Q.	Is there another factor warranting consideration?
3		
4	A.	Yes. The timing, and perhaps to a lesser extent the scope, of FPL's present ambitious
5		construction program are in part within FPL's control. FPL's determination to agree to
6		a 20% (in lieu of a 15%) reserve margin, and its desire to build its own generation
7		capacity, obviously influence its capital needs.
8		
9	Q.	What is your recommendation regarding the appropriate capitalization structure
10		for FPL as a regulated utility?
11		
12	А.	I recommend the Commission adopt a capitalization structure of no more than 50%
13		common equity and up to 50% debt, computed on a financial statement basis,
14		excluding accumulated deferred income taxes and other Commission ratemaking
15		adjustments. Once the determination is made regarding an appropriate financial
16		statement capitalization structure, the Commission should adjust that structure for its
17		various historic ratemaking adjustments, the largest of which is accumulated deferred
18		income taxes.
19		
20	Q.	Have you quantified the return effects of the accumulated deferred income tax
21		adjustments to capitalization and capitalization structure necessitated by your
22		rate base adjustments?
23		

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1	А.	Yes. The return effects of the prior rate base recommendations, excluding the effects
2		of any further modifications to the capitalization structure quantified below, results in
3		an increase to the revenue requirement of \$34.140 million
4		
5	Q.	Have you quantified the effect of your recommendation on the capitalization
6		structure for FPL?
7		
8	A.	Yes. This recommendation results in a reduction to the revenue requirement of
9		\$173.545 million. I have quantified this reduction to the revenue requirement as the
10		difference between the Company's proposed grossed up overall rate of return and that
11		corresponding to my recommendation (based upon the averages cited in Dr. Avera's
12		testimony) times the rate base adjusted for the effects of the other adjustments that I
13		have proposed. This adjustment is incremental to the previous adjustment for the
14		return effects of the accumulated deferred income taxes.
15		

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1		VIII. SANFORD REPOWERING
2	Q.	Please describe the Sanford Repowering Project (the "Sanford Project" or the
3		"project").
4		
5	A.	The Sanford Project involved inter alia converting two previously oil- and gas-fired
6		units, at the Sanford site, to gas fired combined cycle units.
7		
8	Q.	Did FPL originally project that the project would be in-service by 2002?
9		
10	A.	No. Originally FPL had scheduled the Sanford Project to be in-service after 2002.
11		
12	Q.	How did FPL evaluate the alternatives to repowering Sanford?
13		
14	A.	When we asked that question, FPL initially provided a generic description of criteria it
15		claims it evaluated in determining whether to repower Sanford. Subsequently, FPL
16		provided additional information.
17		
18	Q.	Did FPL compare the Sanford Repowering Project to a specific independent
19		entity's project?
20		
21	А.	No.

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1	Q.	Did FPL's review of the Sanford Repowering Project use the cost which will be
2		incurred to complete the project?
3		
4	A.	No.
5		
6	Q.	Did FPL conduct an RFP or open season to solicit bids in lieu of building its own
7		capacity?
8		
9	A.	No.
10		
11	Q.	Mr. Waters discusses the Sanford Project in the context of the 1998 Ten Year Site
12		Plan. What were the estimates of cost in 1998 for repowering Sanford Project?
13		
14	A.	FPL furnished a March 1998 "Summary of Alternatives" involving repowering
15		Sanford in 2002 or 2004. The analysis, stated in 1998 dollars, estimated that
16		repowering two units would cost \$441 million (including \$48 million for transmission
17		expansion).
18		
19		Moreover, the analysis showed that net per-KW costs would be reduced if re-powering
20		was completed in 2004 rather than 2002. (Exh. $(LK - 10)$ ).
21		

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1	Q.	Was this estimate consistent with for the project's ultimate cost?
2		
3	А.	No. Neither were subsequent estimates. According to FPL, the project in October
4		1998 was forecast to cost \$437 million; by August, 1999, that forecast had risen by
5		over \$100 million, to \$546 million (Exh. (LK-11)). This reflected at least in part
6		changing the identity of the two units to be repowered. Additionally, in October, 1998,
7		the power delivery department estimated related costs of about \$55 million (Exh
8		(LK-12)).
9		
10	Q.	Was \$546 million the ultimate cost of the Sanford Project?
11		
12	А.	Far from it. The project budget authorized by FPL (excluding financing) reached \$622
13		million by the summer of 2000 (Exh. (LK-13)).
14		
15	Q.	What is the most current forecast of the capital cost of the Project?
16		
17	Α.	According to Mr. Waters, it is now approximately \$697 million, or \$75 million above
18		the \$622 million authorized project budget and almost \$100 million above the August
19		1999 estimate. This includes at least \$76 million for transmission interconnection
20		work (id.).
21		

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1		
2	Q.	Has the Sanford Project been successful from the FPL perspective?
3		
4	A.	Evidently not. Even using FPL's "Sanford Repowering Success Criteria," which
5		reflects the \$622 million estimate, the project is \$75 million over budget. (Exh
6		LK-14)).
7		
8		

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1	Q.	Can you identify major causes of the cost overrun?
2	CON	FIDENTIAL INFORMATION FOLLOWS
3		
4		[Confidential Information Intentionally Omitted]
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Lane Kollen Page 43

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11	[Confidential Information Intentionally Omitted]
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27	END OF CONFIDENTIAL INFORMATION
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1		
2	Q.	Has FPL changed when it anticipated incurring charges in connection with
3		Sanford?
4		
5	A.	Yes. In a document dated May 9, 2001 (Exh. (LK-15)), FPL compared its
6		"current approved 5-year forecasts" of expenditures for the Sanford (and Fort Myers)
7		project(s) to its most up-to-date forecast. The comparison showed that the May 2001
8		forecast projects an increase in 2002 expenditures of \$15 million, over what the then-
9		current approved 5-year forecast had estimated, with reductions in expenditures shown
10		in pre- and post-2002 periods.
11		
12	Q.	Prior to the construction report described above, and following changes in its
13		original schedule, when did FPL project that the Sanford Project would be placed
14		in-service?
15		
16	A.	In 2002.
17		
18	Q.	What is the impact of FPL's post-September 11, 2001 estimates of consumption
19		upon the need for capacity?
20		
21	A.	FPL's "2002 Alt. Forecast," a post-September 11, 2001 projection, reflects a decrease
22		of about 3% in the projected 2005 total consumption by jurisdictional customers

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1		compared to the pre-September 11, 2002 FPL 2002 Budget Forecast (Exh LK-
2		16)).
3		IX. AFFILIATE RELATIONSHIPS
4		
5	Q.	Do you have concerns with FPL's interrelations with its affiliates?
6		
7	A.	Yes. FPL is engaged in numerous transactions with its affiliates, including those
8		involving millions of dollars but which are not subject to a written contract. See
9		Exh. (LK-17). Unfortunately, FPL has resisted providing responsive information.
10		Therefore, I reserve the opportunity to supplement this testimony when FPL has
11		furnished adequate data.
12		
13	Q.	Does this complete your direct testimony?
14		
15	A.	For now.

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## **BEFORE THE**

# FLORIDA PUBLIC SERVICE COMMISSION

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Re: Review of the Retail Rates of Florida Power & Light Company Docket No. 001148-EI

**EXHIBITS** 

OF

LANE KOLLEN

# **ON BEHALF OF**

# SOUTH FLORIDA HOSPITAL AND HEALTHCARE ASSOCIATION

J. KENNEDY AND ASSOCIATES, INC. ROSWELL, GEORGIA

February 2002

Docket No. 001148-EI L. Kollen Exhibit No. \_\_\_(LK-1) Resume and Expert Testimony Appearances Page 1 of 22

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# **RESUME OF LANE KOLLEN, VICE PRESIDENT**

## **EDUCATION**

University of Toledo, BBA Accounting

University of Toledo, MBA

## **PROFESSIONAL CERTIFICATIONS**

**Certified Public Accountant (CPA)** 

Certified Management Accountant (CMA)

## **PROFESSIONAL AFFILIATIONS**

American Institute of Certified Public Accountants

**Georgia Society of Certified Public Accountants** 

**Institute of Management Accountants** 

More than twenty-five years of utility industry experience in the financial, rate, tax, and planning areas. Specialization in revenue requirements analyses, taxes, evaluation of rate and financial impacts of traditional and nontraditional ratemaking, utility mergers/acquisition diversification. Expertise in proprietary and nonproprietary software systems used by utilities for budgeting, rate case support and strategic and financial planning.

J. KENNEDY AND ASSOCIATES, INC.

## **RESUME OF LANE KOLLEN, VICE PRESIDENT**

#### **EXPERIENCE**

## 1986 to

Present: J. Kennedy and Associates, Inc.: Vice President and Principal. Responsible for utility stranded cost analysis, revenue requirements analysis, cash flow projections and solvency, financial and cash effects of traditional and nontraditional ratemaking, and research, speaking and writing on the effects of tax law changes. Testimony before Connecticut, Florida, Georgia, Indiana, Louisiana, Kentucky, Maine, Minnesota, North Carolina, Ohio, Pennsylvania, Tennessee, Texas, and West Virginia state regulatory commissions and the Federal Energy Regulatory Commission.

#### 1983 to

### 1986: Energy Management Associates: Lead Consultant.

Consulting in the areas of strategic and financial planning, traditional and nontraditional ratemaking, rate case support and testimony, diversification and generation expansion planning. Directed consulting and software development projects utilizing PROSCREEN II and ACUMEN proprietary software products. Utilized ACUMEN detailed corporate simulation system, PROSCREEN II strategic planning system and other custom developed software to support utility rate case filings including test year revenue requirements, rate base, operating income and pro-forma adjustments. Also utilized these software products for revenue simulation, budget preparation and cost-of-service analyses.

# 1976 to

## 1983: The Toledo Edison Company: Planning Supervisor.

Responsible for financial planning activities including generation expansion planning, capital and expense budgeting, evaluation of tax law changes, rate case strategy and support and computerized financial modeling using proprietary and nonproprietary software products. Directed the modeling and evaluation of planning alternatives including:

Rate phase-ins. Construction project cancellations and write-offs. Construction project delays. Capacity swaps. Financing alternatives. Competitive pricing for off-system sales. Sale/leasebacks.

Docket No. 001148-EI L. Kollen Exhibit No. \_\_\_(LK-1) Resume and Expert Testimony Appearances Page 3 of 22

## **RESUME OF LANE KOLLEN, VICE PRESIDENT**

## **CLIENTS SERVED**

## **Industrial Companies and Groups**

Air Products and Chemicals, Inc. Airco Industrial Gases Alcan Aluminum Armco Advanced Materials Co. Armco Steel Bethlehem Steel **Connecticut Industrial Energy Consumers** ELCON Enron Gas Pipeline Company Florida Industrial Power Users Group General Electric Company **GPU Industrial Intervenors** Indiana Industrial Group Industrial Consumers for Fair Utility Rates - Indiana Industrial Energy Consumers - Ohio Kentucky Industrial Utility Consumers Kimberly-Clark

Lehigh Valley Power Committee Maryland Industrial Group Multiple Intervenors (New York) National Southwire North Carolina Industrial **Energy Consumers** Occidental Chemical Corporation Ohio Industrial Energy Consumers Ohio Manufacturers Association Philadelphia Area Industrial Energy Users Group **PSI Industrial Group** Smith Cogeneration Taconite Intervenors (Minnesota) West Penn Power Industrial Intervenors West Virginia Energy Users Group Westvaco Corporation

## Regulatory Commissions and Government Agencies

Georgia Public Service Commission Staff Kentucky Attorney General's Office, Division of Consumer Protection Louisiana Public Service Commission Staff Maine Office of Public Advocate New York State Energy Office Office of Public Utility Counsel (Texas)

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## **RESUME OF LANE KOLLEN, VICE PRESIDENT**

#### **Utilities**

Allegheny Power System Atlantic City Electric Company Carolina Power & Light Company Cleveland Electric Illuminating Company Delmarva Power & Light Company Duquesne Light Company General Public Utilities Georgia Power Company Middle South Services Nevada Power Company Niagara Mohawk Power Corporation Otter Tail Power Company Pacific Gas & Electric Company Public Service Electric & Gas Public Service of Oklahoma Rochester Gas and Electric Savannah Electric & Power Company Seminole Electric Cooperative Southern California Edison Talquin Electric Cooperative Tampa Electric Texas Utilities Toledo Edison Company

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Date	Case	Jurisdict.	Party	Utility	Subject
10/86	U-17282 Interim	LA	Louisiana Public Service Commission Staff	Gulf States Utilities	Cash revenue requirements financial solvency.
11/86	U-17282 Interim Rebuttal	LA	Louisiana Public Service Commission Staff	Gulf States Utilities	Cash revenue requirements financial solvency.
12/86	<del>9</del> 613	КY	Attorney General Div. of Consumer Protection	Big Rivers Electric Corp.	Revenue requirements accounting adjustments financial workout plan.
1/87	U-17282 Interim	LA 19th Judicial District Ct.	Louisiana Public Service Commission Staff	Gulf States Utilities	Cash revenue requirements, financial solvency.
3/87	General Order 236	WV	West Virgınia Energy Users' Group	Monongahela Power Co	Tax Reform Act of 1986.
4/87	U-17282 Prudence	LA	Louisıana Public Service Commission Staff	Gulf States Utilities	Prudence of River Bend 1, economic analyses, cancellation studies.
4/87	M-100 Sub 113	NC	North Carolina Industrial Energy Consumers	Duke Power Co.	Tax Reform Act of 1986.
5/87	86-524-E-	WV	West Virginia Energy Users' Group	Monongahela Power Co.	Revenue requirements. Tax Reform Act of 1986.
5/87	U-17282 Case In Chief	LA	Louisiana Public Service Commission Staff	Gulf States Utilites	Revenue requirements, River Bend 1 phase⊣n plan, financial solvency.
7/87	U-17282 Case In Chief Surrebutta	LA	Louisiana Public Service Commission Staff	Gulf States Utilities	Revenue requirements River Bend 1 phase⊣n plan, financial solvency.
7/87	U-17282 Prudence Surrebutta		Louisiana Public Service Commission Staff	Gulf States Utilities	Prudence of River Bend 1, economic analyses, cancellation studies.

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Date	Case	Jurisdict.	Party	Utility	Subject
7/87	86-524 E-SC Rebuttal	WV	West Virginia Energy Users' Group	Monongahela Power Co.	Revenue requirements, Tax Reform Act of 1986.
8/87	9885	KY	Attorney General Div. of Consumer Protection	Big Rivers Electric Corp.	Financial workout plan
8/87	E-015/GR- 87-223	MN	Taconite Intervenors	Minnesota Power & Light Co.	Revenue requirements, O&M expense, Tax Reform Act of 1986.
10/87	870220-EI	FL	Occidental Chemical Corp.	Florida Power Corp.	Revenue requirements, O&M expense, Tax Reform Act of 1986.
11/87	87-07-01	СТ	Connecticut Industrial Energy Consumers	Connecticut Light & Power Co.	Tax Reform Act of 1986
1/88	U-17282	LA 19th Judicial District Ct.	Louisiana Public Service Commission Staff	Gulf States Utilities	Revenue requirements, River Bend 1 phase-in plan, rate of retum.
2/88	9934	KY	Kentucky Industrial Utility Customers	Louisville Gas & Electric Co.	Economics of Trimble County completion.
2/88	10064	KY	Kentucky Industrial Utility Customers	Louisville Gas & Electnc Co	Revenue requirements, O&M expense, capital structure, excess deferred income taxes.
5/88	10217	KY	Alcan Aluminum National Southwire	Big Rivers Electric	Financial workout plan. Corp.
5/88	M-87017 -1C001	PA	GPU Industrial Intervenors	Metropolitan Edison Co.	Nonutility generator deferred cost recovery.
5/88	M-87017 -2C005	PA	GPU Industrial Intervenors	Pennsylvania Electric Co.	Nonutility generator deferred cost recovery.
6/88	U-17282	LA 19th Judicial District Ct.	Louisiana Public Service Commission Staff	Gulf States Utilities	Prudence of River Bend 1 economic analyses, cancellation studies, financial modeling.

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Date	Case	Jurisdict.	Party	Utility	Subject
7/88	M-87017- -1C001 Rebuttal	PA	GPU Industrial Intervenors	Metropolitan Edison Co.	Nonutility generator deferred cost recovery, SFAS No. 92
7/88	M-87017- -2C005 Rebuttal	PA	GPU Industrial Intervenors	Pennsylvania Electric Co.	Nonutility generator deferred cost recovery, SFAS No 92
9/88	88-05-25	СТ	Connecticut Industrial Energy Consumers	Connecticut Light & Power Co.	Excess deferred taxes, O&M expenses.
9/88	10064 Rehearing	KY	Kentucky Industrial Utility Customers	Louisville Gas & Electric Co	Premature retirements, interest expense.
10/88	88-170- EL-AIR	ОН	Ohio Industrial Energy Consumers	Cleveland Electric Illuminating Co.	Revenue requirements, phase-in, excess deferred taxes, O&M expenses, financial considerations, working capital.
10/88	88-171- EL-AIR	он	Ohio Industrial Energy Consumers	Toledo Edison Co.	Revenue requirements, phase-in, excess deferred taxes, O&M expenses, financial Considerations, working capital.
10/88	8800 355-EI	FL	Florida Industrial Power Users' Group	Florida Power & Light Co.	Tax Reform Act of 1986, tax expenses, O&M expenses, pension expense (SFAS No. 87)
10/88	3780-U	GA	Georgia Public Service Commission Staff	Atlanta Gas Light Co.	Pension expense (SFAS No. 87).
11/88	U-17282 Remand	LA	Louisiana Public Service Commission Staff	Gulf States Utilities	Rate base exclusion plan (SFAS No. 71)
12/88	U-17970	LA	Louisiana Public Service Commission Staff	AT&T Communications of South Central States	Pension expense (SFAS No. 87).
12/88	U-17949 Rebuttal	LA	Louisiana Public Service Commission Staff	South Central Bell	Compensated absences (SFAS No. 43), pension expense (SFAS No 87), Part 32, income tax normalization.

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Date	Case J	urisdict.	Party	Utility	Subject
2/89	U-17282 Phase II	LA	Louisiana Public Service Commission Staff	Gulf States Utilities	Revenue requirements, phase-in of River Bend 1, recovery of canceled plant.
6/89	881602-EU 890326-EU	FL	Talquın Electric Cooperative	Talquin/City of Tallahassee	Economic analyses, incremental cost-of-service, average customer rates.
7/89	U-17970	LA	Louisiana Public Service Commission Staff	AT&T Communications of South Central States	Pension expense (SFAS No. 87), compensated absences (SFAS No. 43), Part 32.
8/89	8555	ТХ	Occidental Chemical Corp.	Houston Lighting & Power Co.	Cancellation cost recovery, tax expense, revenue requirements.
8/89	3840-U	GA	Georgia Public Service Commission Staff	Georgia Power Co.	Promotional practices, advertising, economic development.
9/89	U-17282 Phase II Detailed	LA	Louisiana Public Service Commission Staff	Gulf States Utilities	Revenue requirements, detailed investigation.
10/89	8880	тх	Enron Gas Pipeline	Texas-New Mexico Power Co.	Deferred accounting treatment, sale/leaseback.
10/89	8928	тх	Enron Gas Pipeline	Texas-New Mexico Power Co.	Revenue requirements, imputed capital structure, cash working capital.
10/89	R-891364	PA	Philadelphia Area Industrial Energy Users Group	Philadelphia Electric Co.	Revenue requirements.
11/89 12/89	R-891364 Surrebuttal (2 Filings)	PA	Philadelphia Area Industrial Energy Users Group	Philadelphia Electric Co.	Revenue requirements, sale/leaseback.
1/90	U-17282 Phase II Detailed Rebuttal	LA	Louisiana Public Service Commission Staff	Gulf States Utilities	Revenue requirements , detailed investigation

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Date	Case	Jurisdict.	Party	Utility	Subject
1/90	U-17282 Phase III	LA	Louisiana Public Service Commission Staff	Gulf States Utilities	Phase-in of River Bend 1, deregulated asset plan.
3/90	890319-EI	FL	Fiorida Industrial Power Users Group	Florida Power & Light Co	O&M expenses, Tax Reform Act of 1986.
4/90	890319-El Rebuttal	FL	Florida Industrial Power Users Group	Florida Power & Light Co.	O&M expenses, Tax Reform Act of 1986.
4/90	U-17282	LA 19 <sup>th</sup> Judicial District Ct.	Louisiana Public Service Commission Staff	Gulf States Utilities	Fuel clause, gain on sale of utility assets.
9/90	90-158	KΥ	Kentucky Industrial Utility Customers	Louisville Gas & Electric Co	Revenue requirements, post-test year additions, forecasted test year.
12/90	U-17282 Phase IV	LA	Louisiana Public Service Commission Staff	Gulf States Utilities	Revenue requirements.
3/91	29327, et. al.	NY	Muttiple Intervenors	Niagara Mohawk Power Corp.	Incentive regulation
5/91	9945	ТХ	Office of Public Utility Counsel of Texas	El Paso Electric Co.	Financial modeling, economic analyses, prudence of Palo Verde 3.
9/91	P-910511 P-910512	PA	Allegheny Ludlum Corp , Armco Advanced Matenals Co., The West Penn Power Industrial Users' Group	West Penn Power Co	Recovery of CAAA costs, least cost financing
9/91	91-231 -E-NC	WV	West Virginia Energy Users Group	Monongahela Power Co.	Recovery of CAAA costs, least cost financing.
11/91	U-17282	LA	Louisıana Publ <del>ı</del> c Service Commission Staff	Gulf States Utilities	Asset impairment, deregulated asset plan, revenue require- ments.

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Date	Case Ju	risdict.	Party	Utility	Subject
12/91	91-410- El-AIR	ОН	Air Products and Chemicals, Inc., Armco Steel Co., General Electric Co., Industrial Energy Consumers	Cincinnati Gas & Electric Co.	Revenue requirements, phase⊣n plan.
12/91	10200	ТΧ	Office of Public Utility Counsel of Texas	Texas-New Mexico Power Co.	Financial integrity, strategic planning, declined business affiliations.
5/92	910890-EI	FL	Occidental Chemical Corp.	Florida Power Corp.	Revenue requirements, O&M expense, pension expense, OPEB expense, fossil dismantiing, nuclear decommissioning.
8/92	R-00922314	PA	GPU Industrial Intervenors	Metropolitan Edison Co	Incentive regulation, performance rewards, purchased power risk, OPEB expense.
9/92	92-043	KΥ	Kentucky Industnal Utility Consumers	Genenc Proceeding	OPEB expense
9/92	920324-EI	FL	Florida Industrial Power Users' Group	Tampa Electric Co.	OPEB expense
9/92	39348	IN	Indiana Industrial Group	Generic Proceeding	OPEB expense.
9/92	910840-PU	FL	Florida Industrial Power Users' Group	Genenc Proceeding	OPEB expense.
9/92	39314	IN	Industrial Consumers for Fair Utility Rates	Indiana Michigan Power Co	OPEB expense.
11/92	U-19904	LA	Louisiana Public Service Commission Staff	Gutf States Utilities/Entergy Corp	Merger
11/92	8649	MD	Westvaco Corp., Eastalco Aluminum Co.	Potomac Edison Co.	OPEB expense.
11/92	92-1715- AU-COI	ОН	Ohio Manufacturers Association	Genenc Proceeding	OPEB expense.

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Date	Case	Jurisdict.	Party	Utility	Subject
12/92	R-009223	78 PA	Armco Advanced Materials Co., The WPP Industnal Intervenors	West Penn Power Co.	Incentive regulation, performance rewards, purchased power risk, OPEB expense.
12/92 L	J-19949	LA	Louisiana Public Service Commission Staff	South Central Bell	Affiliate transactions, cost allocations, merger.
12/92	R-0092243	79 PA	Philadelphia Area Industnal Energy Users' Group	Philadelphia Electric Co.	OPEB expense.
1/93	8487	MD	Maryland Industnal Group	Batumore Gas & Electric Co., Bethlehern Steel Corp.	OPEB expense, deferred fuel, CWIP in rate base
1/93	39498	IN	PSI Industnal Group	PSI Energy, Inc.	Refunds due to over- collection of taxes on Marble Hill cancellation.
3/93	92-11-11	СТ	Connecticut Industrial Energy Consumers	Connecticut Light & Power Co.	OPEB expense
3/93	U-19904 (Surrebutt	LA al)	Louisiana Public Service Commission Staff	Gulf States Utilities/Entergy	Merger. Corp.
3/93	93-01 EL-EFC	ОН	Ohio Industnal Energy Consumers	Ohio Power Co.	Affiliate transactions, fuel.
3/93	EC92- 21000 ER92-806	FERC	Louisiana Public Service Commission Staff	Gulf States Utilities/Entergy	Merger. Corp.
4/93	92-1464- EL-AIR	ОН	Air Products Armco Steel Industrial Energy Consumers	Cincinnati Gas & Electric Co.	Revenue requirements, phase-in plan.
4/93	EC92- 21000 ER92-806 (Rebuttal)		Louisiana Public Service Commission Staff	Gulf States Utilities/Entergy	Merger. Corp

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Date	Case J	urisdict.	Party	Utility	Subject
9/93	93-113	KY	Kentucky Industrial Utility Customers	Kentucky Utilities	Fuel clause and coal contract refund.
9/93	92-490, 92-490A, 90-360-C	ĸy	Kentucky Industnal Utility Customers and Kentucky Attorney General	Big Rivers Electric Corp.	Disallowances and restitution for excessive fuel costs, illegal and improper payments, recovery of mine closure costs.
10/93	U-17735	LA	Louisiana Public Service Commission Staff	Cajun Electric Power Cooperative	Revenue requirements, debt restructuring agreement, River Bend cost recovery.
1 <i>1</i> 94	U-20647	LA	Louisiana Public Service Commission Staff	Gulf States Utilities Co	Audit and investigation into fuel clause costs.
4/94	U-20647 (Surrebuttal)	LA	Louisiana Public Service Commission Staff	Gulf States Utilities	Nuclear and fossil unit performance, fuel costs, fuel clause principles and guidelines.
5/94	U-20178	LA	Louisiana Public Service Commission Staff	Louisiana Power & Light Co	Planning and quantification issues of least cost integrated resource plan.
9/94	U-19904 Initial Post- Merger Earni Review	LA ngs	Louisiana Public Service Commission Staff	Gulf States Utilities Co.	River Bend phase-in plan, deregulated asset plan, capital structure, other revenue requirement issues.
9/94	U-17735	LA	Louisiana Public Service Commission Staff	Cajun Electric Power Cooperative	G&T cooperative ratemaking policies, exclusion of River Bend, other revenue requirement issues.
10/94	3905-U	GA	Georgia Public Service Commission Staff	Southern Bell Telephone Co	Incentive rate plan, earnings rev <del>iew</del>
10/94	5258-U	GA	Georgia Public Service Commission Staff	Southern Bell Telephone Co	Alternative regulation, cost allocation.

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Date	Case Jur	isdict.	Party	Utility	Subject
11/94	U-19904 Initial Post- Merger Earning Review (Rebuttal)	LA Is	Louisiana Public Service Commission Staff	Gulf States Utilities Co.	River Bend phase-in plan, deregulated asset plan, capital structure, other revenue requirement issues.
11/94	U-17735 (Rebuttal)	LA	Louisiana Public Service Commission Staff	Cajun Electric Power Cooperative	G&T cooperative ratemaking policy, exclusion of River Bend, other revenue requirement issues.
4/95	R-00943271	PA	PP&L Industrial Customer Alliance	Pennsylvania Power & Light Co.	Revenue requirements. Fossil dismantling, nuclear decommissioning.
6/95	3905-U	GA	Georgia Public Service Commission	Southem Bell Telephone Co.	Incentive regulation, affiliate transactions, revenue requirements, rate refund.
6/95	U-19904 (Direct)	LA	Louisiana Public Service Commission	Gulf States Utilities Co.	Gas, coal, nuclear fuel costs, contract prudence, base/fuel realignment.
10/95	95-02614	TN	Tennessee Office of the Attorney General Consumer Advocate	BellSouth Telecommunications, Inc.	Affiliate transactions.
10/95	U-21485 (Direct)	LA	Louisiana Public Service Commission	Gulf States Utilities Co.	Nuclear O&M, River Bend phase-in plan, base/fuel realignment, NOL and AltMin asset deferred taxes, other revenue requirement issues.
11/95	U-19904 (Surrebuttal)	LA	Louisiana Public Service Commission	Gulf States Utilities Co. Division	Gas, coal, nuclear fuel costs, contract prudence, base/fuel realignment.
11/95 12/95	U-21485 (Supplemental I U-21485 (Surrebuttal)	LA Direct)	Louisiana Public Service Commission	Gulf States Utilities Co.	Nuclear O&M, River Bend phase-in plan, base/fuel realignment, NOL and AltMin asset deferred taxes, other revenue requirement issues.

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Date	Case Ju	risdict.	Party	Utility	Subject
1/96	95-299- EL-AIR 95-300- EL-AIR	ОН	Industrial Energy Consumers	The Toledo Edison Co The Cleveland Electric Illuminating Co.	Competition, asset writeoffs and revaluation, O&M expense, other revenue requirement issues.
2/96	PUC No. 14967	ТΧ	Office of Public Utility Counsel	Central Power & Light	Nuclear decommissioning.
5/96	95-485-LCS	NM	City of Las Cruces	El Paso Electric Co.	Stranded cost recovery, municipalization.
7/96	8725	MD	The Maryland Industrial Group and Redland Genstar, Inc	Baltimore Gas & Electric Co., Potomac Electric Power Co. and Constellation Energy Corp.	Merger savings, tracking mechanism, eamings shanng plan, revenue requirement issues
9/96 11/96	U-22092 U-22092 (Surrebuttal)	LA	Louisiana Public Service Commission Staff	Entergy Gulf States, Inc.	River Bend phase-in plan, base/fuel realignment, NOL and AltMin asset deferred taxes, other revenue requirement issues, allocation of regulated/nonregulated costs.
10/96	96-327	KY	Kentucky Industrial Utility Customers, Inc.	Big Rivers Electric Corp.	Environmental surcharge recoverable costs.
2/97	R-00973877	PA	Philadelphia Area Industrial Energy Users Group	PECO Energy Co.	Stranded cost recovery, regulatory assets and liabilities, intangible transition charge, revenue requirements.
3/97	96-489	KY	Kentucky Industrial Utility Customers, Inc	Kentucky Power Co.	Environmental surcharge recoverable costs, system agreements, allowance inventory, junsdictional allocation
6/97	TO-97-397	МО	MCI Telecommunications Corp., Inc., MCImetro Access Transmission Services, Inc	Southwestern Bell Telephone Co.	Price cap regulation, revenue requirements, rate of retum.

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Date	Case Ju	risdict.	Party	Utility	Subject
6/97	R-00973953	PA	Philadelphia Area Industrial Energy Users Group	PECO Energy Co.	Restructuring, deregulation, stranded costs, regulatory assets, liabilities, nuclear and fossil decommissioning.
7/97	R-00973954	PA	PP&L Industnal Customer Alliance	Pennsylvania Power & Light Co.	Restructuring, deregulation, stranded costs, regulatory assets, liabilities, nuclear and fossil decommissioning.
7/97	U-22092	LA	Louisiana Public Service Commission Staff	Entergy Gulf States, Inc.	Depreciation rates and methodologies, River Bend phase-in plan.
8/97	97-300	KΥ	Kentucky Industrial Utility Customers, Inc.	Louisville Gas & Electric Co. and Kentucky Utilities Co.	Merger policy, cost savings, surcredit sharing mechanism, revenue requirements, rate of return.
8/97	R-00973954 (Surrebuttal)	PA	PP&L Industrial Customer Alliance	Pennsylvania Power & Light Co.	Restructuring, deregulation, stranded costs, regulatory assets, liabilities, nuclear and fossil decommissioning.
10/97	97-204	KY	Alcan Aluminum Corp. Southwire Co.	Big Rivers Electric Corp.	Restructuring, revenue requirements, reasonableness
10/97	R-974008	PA	Metropolitan Edison Industrial Users Group	Metropolitan Edison Co.	Restructuring, deregulation, stranded costs, regulatory assets, liabilities, nuclear and fossil decommissioning, revenue requirements.
10/97	R-974009	PA	Penelec Industrial Customer Alliance	Pennsylvania Electric Co.	Restructuring, deregulation, stranded costs, regulatory assets, liabilities, nuclear and fossil decommissioning, revenue requirements.
11/97	97-204 (Rebuttal)	KΥ	Alcan Aluminum Corp. Southwire Co	Big Rivers Electric Corp.	Restructuring, revenue requirements, reasonableness of rates, cost allocation.

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Date	Case Ju	irisdict.	Party	Utility	Subject
11/97	U-22491	LA	Louisiana Public Service Commission	Entergy Gulf States, Inc.	Allocation of regulated and nonregulated costs, other revenue requirement issues.
11/97	R-00973953 (Surrebuttal)	PA	Philadelphia Area Industnal Energy Users Group	PECO Energy Co.	Restructuring, deregulation, stranded costs, regulatory assets, liabilities, nuclear and fossil decommissioning
11/97	R-973981	PA	West Penn Power Industrial Intervenors	West Penn Power Co.	Restructuring, deregulation, stranded costs, regulatory assets, liabilities, fossil decommissioning, revenue requirements, secuntization.
11/97	R-974104	PA	Duquesne Industrial Intervenors	Duquesne Light Co.	Restructuring, deregulation, stranded costs, regulatory assets, liabilities, nuclear and fossil decommissioning, revenue requirements, securitization.
12/97	R-973981 (Surrebuttal)	PA	West Penn Power Industrial Intervenors	West Penn Power Co.	Restructuring, deregulation, stranded costs, regulatory assets, liabilities, fossil decommissioning, revenue requirements.
12/97	R-974104 (Surrebuttal)	PA	Duquesne Industrial Intervenors	Duquesne Light Co	Restructuring, deregulation, stranded costs, regulatory assets, liabilities, nuclear and fossil decommissioning, revenue requirements, securitization.
1/98	U-22491 (Surrebuttal)	LA	Louisiana Public Service Commission Staff	Entergy Gulf States, Inc.	Allocation of regulated and nonregulated costs, other revenue requirement issues.
2/98	8774	MD	Westvaco	Potomac Edison Co.	Merger of Duquesne, AE, customer safeguards, savings sharing.

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Date	Case .	Jurisdict.	Party	Utility	Subject
3/98	U-22092 (Aliocated Stranded Co	LA ost Issues)	Louisiana Public Service Commission Staff	Entergy Gulf States, Inc.	Restructuring, stranded costs, regulatory assets, secuntization, regulatory mitigation.
3/98	8390-U	GA	Georgia Natural Gas Group, Georgia Textile Manufacturers Assoc.	Atlanta Gas Light Co.	Restructuring, unbundling, stranded costs, incentive regulation, revenue requirements.
3/98	U-22092 (Allocated Stranded Co (Surrebuttal	•	Louisiana Public Service Commission Staff	Entergy Gulf States, Inc.	Restructuring, stranded costs, regulatory assets, secuntization, regulatory mitigation.
10/98	97-596	ME	Maine Office of the Public Advocate	Bangor Hydro- Electnc Co.	Restructuring, unbundling, stranded costs, T&D revenue requirements
10/98	935 <b>5-</b> U	GA	Georgia Public Service Commission Adversary Staff	Georgia Power Co.	Affiliate transactions.
10/98	U-17735	LA	Louisiana Public Service Commission Staff	Cajun Electric Power Cooperative	G&T cooperative ratemaking policy, other revenue requirement issues.
11/98	U-23327	LA	Louisiana Public Service Commission Staff	SWEPCO, CSW and AEP	Merger policy, savings sharing mechanism, affiliate transaction conditions.
12/98	U-23358 (Direct)	LA	Louisiana Public Service Commission Staff	Entergy Gulf States, Inc	Allocation of regulated and nonregulated costs, tax issues, and other revenue requirement issues.
12/98	98-577	ME	Maine Office of Public Advocate	Maine Public Service Co	Restructuring, unbundling, stranded cost, T&D revenue requirements.
1/99	98-10-07	СТ	Connecticut Industrial Energy Consumers	United Illuminating Co.	Stranded costs, investment tax credits, accumulated deferred income taxes, excess deferred income taxes.

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Date	Case Jur	risdict.	Party	Utility	Subject
3/99	U-23358 (Surrebuttal)	LA	Louisiana Public Service Commission Staff	Entergy Gulf States, Inc.	Allocation of regulated and nonregulated costs, tax issues, and other revenue requirement issues.
3/99	98-474	KY	Kentucky Industrial Utility Customers	Louisville Gas and Electric Co.	Revenue requirements, alternative forms of regulation.
3/99	98-426	KY	Kentucky Industrial Utility Customers	Kentucky Utilities Co.	Revenue requirements, alternative forms of regulation.
3/99	99-082	KY	Kentucky Industnal Utility Customers	Louisville Gas and Electric Co.	Revenue requirements.
3/99	99-083	KΥ	Kentucky Industrial Utility Customers	Kentucky Utilities Co.	Revenue requirements.
4/99	U-23358 (Supplemental Surrebuttal)	LA	Louisiana Public Service Commission Staff	Entergy Gulf States, Inc.	Allocation of regulated and nonregulated costs, tax issues, and other revenue requirement issues.
4/99	99-03-04	СТ	Connecticut Industrial Energy Consumers mechanisms	United Illuminating Co.	Regulatory assets and liabilities, stranded costs, recovery
4/99	99-02-05	СТ	Connecticut Industrial Utility Customers mechanisms.	Connecticut Light and Power Co.	Regulatory assets and liabilities stranded costs, recovery
5/99	98-426 99-082 (Additional Dire	KY ct)	Kentucky Industrial Utility Customers	Louisville Gas and Electric Co.	Revenue requirements.
5/99	98-474 99-083 (Additional Direct)	КY	Kentucky Industrial Utility Customers	Kentucky Utilities Co.	Revenue requirements
5/99	98-426 98-474 (Response to Amended Appl	KY ications)	Kentucky Industrial Utility Customers Kentucky Utilities Co.	Louisville Gas and Electric Co. and	Alternative regulation.

J. KENNEDY AND ASSOCIATES, INC.

Docket No. 001148-EI L. Kollen Exhibit No. (LK-1) Resume and Expert Testimony Appearances Page 19 of 22

## Expert Testimony Appearances of Lane Kollen As of January 2002

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Date	Case Ju	irisdict.	Party	Utility	Subject
6/99	97-596	ME	Maine Office of Public Advocate	Bangor Hydro- Electric Co.	Request for accounting order regarding electric industry restructuring costs.
6/99	U-23358	LA	Louisiana Public Public Service Comm. Staff	Entergy Gulf States, Inc.	Affiliate transactions, cost allocations.
7/99	99-03-35	СТ	Connecticut Industnal Energy Consumers	United Illuminating Co.	Stranded costs, regulatory assets, tax effects of asset divestiture.
7 <i>1</i> 99	U-23327	LA	Louisiana Public Service Commission Staff	Southwestern Electric Power Co., Central and South West Corp, and Amencan Electric Power Co.	Merger Settlement Stipulation
7/99	97-596 (Surrebuttal)	ME	Maine Office of Public Advocate	Bangor Hydro- Electric Co.	Restructunng, unbundling, stranded cost, T&D revenue requirements.
7/99	98-0452- E-GI	WVa	West Virginia Energy Users Group	Monongahela Power, Potomac Edison, Appalachian Power, Wheeling Power	Regulatory assets and liabilities.
8/99	98-577 (Surrebuttal)	ME	Maine Office of Public Advocate	Maine Public Service Co.	Restructunng, unbundling, stranded costs, T&D revenue requirements.
8/99	98-426 99-082 (Rebuttal)	KY	Kentucky Industrial Utility Customers	Kentucky Utilities Co.	Revenue requirements.
8/99	98-474 98-083 (Rebuttal)	KY	Kentucky Industrial Utility Customers Kentucky Utilities Co.	Louisville Gas and Electric Co. and	Alternative forms of regulation.
8/9 <del>9</del>	98-0452- E-Gl (Rebuttal)	WVa	West Virginia Energy Users Group	Monongahela Power, Potomac Edison, Appalachıan Power, Wheeling Power	Regulatory assets and liabilities.

Docket No. 001148-E1 L. Kollen Exhibit No. \_\_\_(LK-1) Resume and Expert Testimony Appearances Page 20 of 22

## Expert Testimony Appearances of Lane Kollen As of January 2002

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Date	Case .	Jurisdict.	Party	Utility	Subject
10/99	U-24182 (Direct)	LA	Louisiana Public Service Commission Staff	Entergy Gulf States, Inc.	Allocation of regulated and nonregulated costs, affiliate transactions, tax issues, and other revenue requirement issues.
11/99	21527	тх	Dallas-Ft.Worth Hospital Council and Coalition of Independent Colleges and Universities	TXU Electric	Restructuring, stranded costs, taxes, securitization.
11/99	U-23358 Surrebuttal Affiliate Transaction:	LA s Review	Louisiana Public Service Commission Staff	Entergy Gulf States, Inc.	Service company affiliate transaction costs.
04/00	99-1212-EL 99-1213-EL 99-1214-EL	-ATA	Greater Cleveland Growth Association	First Energy (Cleveland Electric Illuminating, Toledo Edison)	Histoncal review, stranded costs, regulatory assets, liabilities.
01/00	U-24182 (Surrebuttal)	LA )	Louisiana Public Service Commission Staff	Entergy Gutf States, Inc	Allocation of regulated and nonregulated costs, affiliate transactions, tax issues, and other revenue requirement issues.
05/00	U-24182 (Supplemen	LA ntal Direct)	Louisiana Public Service Commission Staff	Entergy Gulf States, Inc.	Affiliate expense proforma adjustments
05/00	A-110550F0	)147 PA	Philadelphia Area Industrial Energy Users Group	PECO Energy	Merger between PECO and Unicom.
07/00	22344	тх	The Dallas-Fort Worth Hospital Council and The Coalition of Independent Colleges and Universities	Statewide Generic Proceeding	Escalation of O&M expenses for unbundled T&D revenue requirements In projected test year.
08/00	U-24064	LA	Louisiana Public Service Commission Staff	CLECO	Affiliate transaction pricing ratemaking principles, subsidization of nonregulated affiliates, ratemaking adjustments.

J. KENNEDY AND ASSOCIATES, INC.

Docket No. 001148-EI L. Kollen Exhibit No. \_\_\_(LK-1) Resume and Expert Testimony Appearances Page 21 of 22

## Expert Testimony Appearances of Lane Kollen As of January 2002

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Date	Case Jurisdict.	Party	Utility	Subject
11/00	PUC 22350 TX SOAH 473-00-1015	The Dallas-Ft. Worth Hospital Council and The Coalition of Independent Colleges And Universities	TXU Electric Co.	Restructuring, T&D revenue requirements, mitigation, regulatory assets and liabilities.
10/00	R-00974104 PA (Affidavit)	Duquesne Industrial Intervenors	Duquesne Light Co.	Final accounting for stranded costs, including treatment of auction proceeds, taxes, capital costs, switchback costs, and excess pension funding.
11/00	P-00001837 R-00974008 P-00001838 R-00974009	Metropolitan Edison Industrial Users Group Penelec Industrial Customer Alliance	Metropolitan Edison Co. Pennsylvania Electric Co.	Final accounting for stranded costs, including treatment of auction proceeds, taxes, regulatory assets and liabilities, transaction costs
12/00	U-21453, LA U-20925, U-22092 (Surrebuttal)	Louisıana Public Service Commission Staff	SWEPCO	Stranded costs, regulatory assets.
01/01	U-24993 (Direct)	Louisiana Public Service Commission Staff	Entergy Gulf States, Inc.	Allocation of regulated and nonregulated costs, tax issues, and other revenue requirement issues.
01/01	U-21453, U-20925 and U-22092 (Subdocket B) (Surrebuttal)	Louisiana Public Service Commission Staff	Entergy Gulf States, Inc,.	Industry restructuring, business separation plan, organization structure, hold harmless conditions, financing
01/01	Case No. KY 2000-386	Kentucky Industnal Utility Customers, Inc.	Louisville Gas & Electric Co.	Recovery of environmental costs, surcharge mechanism.
01/01	Case No. KY 2000-439	Kentucky Industrial Utility Customers, Inc.	Kentucky Utilities Co.	Recovery ot environmental costs, surcharge mechanism.
02/01	A-110300F0095 PA A-110400F0040	Met-Ed Industnal Users Group Penelec Industnal Customer Alliance	GPU, Inc. FirstEnergy	Merger, savings, reliability.

J. KENNEDY AND ASSOCIATES, INC.

Docket No. 001148-EI L. Kollen Exhibit No. \_\_\_(LK-1) Resume and Expert Testimony Appearances Page 22 of 22

## Expert Testimony Appearances of Lane Kollen As of January 2002

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Date	Case .	lurisdict.	Party	Utility	Subject
03/01	P-00001860 P-00001861	PA	Met-Ed Industrial Users Group Penelec Industrial Customer Alliance	Metropolitan Edison Co. and Pennsylvania Electric Co.	Recovery of costs due to provider of last resort obligation.
04 <i>1</i> 01	U-21453, U-20925, U-22092 (Subdocket E Settlement T		Louisiana Public Public Service Comm Staff	Entergy Gulf States, Inc	Business separation plan: settlement agreement on overall plan structure
04 /01	U-21453, U-20925, U-22092 (Subdocket E Contested Is:		Louisiana Public Public Service Comm. Staff	Entergy Gulf States, Inc	Business separation plan: agreements, hold harmless conditions, separations methodology.
05 /01	U-21453, U-20925, U-22092 (Subdocket E Contested Is: Transmissior (Rebuttal)		Louisiana Public Public Service Comm. Staff	Entergy Gulf States, Inc.	Business separation plan. agreements, hold harmless conditions, Separations methodology
07/01	U-21453, U-20925, U-22092 (Subdocket B Transmission	LA 3) n and Distribution	Louisiana Public Public Service Comm Staff n Term Sheet	Entergy Gulf States, Inc.	Business separation plan: settlement agreement on T&D issues, agreements necessary to implement T&D separations, hold harmless conditions, separations methodology.
10/01	14000-U	GA	Georgia Public Service Commission Adversary Staff	Georgia Power Co.	Review requirements, Rate Plan, fuel clause recovery
11/01	14311-U	GA	Georgia Public Service Commission Adversary Staff	Atlanta Gas Light Co.	Revenue requirements.

J. KENNEDY AND ASSOCIATES, INC.

- Docket No. 001148-El L. Kollen Exhibit No.\_\_\_(LK-2) History of Account 186.190 - Prepaid Pension Asset Page 1 of 2

> Florida Power & Light Company Docket No. 001148-E1 SFHA Fourth Set Interrogatories Interrogatory No. 42 Page 1 of 1

Q.

Refer to MFR Schedule B-26 page 1 lines 15-27 regarding the adoption and changes in accounting for pension expense. Please provide a schedule detailing the history of the prepaid pension asset included in account 186.190, including any offsetting accumulated deferred income tax amounts by FERC account. For each year, commencing with 1993, cited as the year in which this change was implemented, through 2002, provide the beginning balance of the prepaid pension asset, increases or decreases for the year, and the ending balance. Reconcile the increases or decreases for the year in the ending balance.

**A.** 

See attached schedule.

#### South Florida Hospital Healthcare Interrogetory #42 History of Acct. 186.190 - Prepaid Pension Asset Years ending 1993 through 2002 (1)

						ing said and an	t strate	Let's atom, a		Service.
	1983	1994	1995	1996	1997	1998	1999	2000	2001	2002 (1)
Beginning balance	19,542	(329)	11,637	25,069	43,354	112,110	173,331	262,799	371,180	473,902
Pension expense	14,592	11,966	18,726	18,285	68,757	<sup>′9,626</sup>	89,469	106,381	101,895	109,798
Adjustments	(34,463) (2)		(5,294) (2)			( 8,405) (2)				
Ending balance	(329)	11,637	25,069	43,354	112,110	1 3, <b>331</b>	262,799	371,180	473,075	583,700
Deferred Tax Balances Accounts 282 and 263	127	(4,489)	(9,670)	(16,724)	(43,247)	(+6, <b>862)</b>	(101,375)	(143,162)	(182,468)	(225, 142)

#### Notes:

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- (1) Actual amounts for 1993 through 2001 and projected test year amounts for 2002.
- (2) These amounts relate to special retirement plans resulting from FPL's cost reduction programs.

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Docket No. 001148-EI L. Kollen Exhibit No. \_\_\_ (LK-3) Response to SFHA Interrogatory No. 123

Florida Power & Light Company Docket No. 001148-El SFHA Eighth Set of Interrogatories Interrogatory No. 123 Page 1 of 1

# Q. Re: Testimony and Exhibits of Steven E. Harris

With respect to hurricanes at levels SS 1 through SS 5, please state the probability of each occurring during the year. Please also state the number of years between expected occurrences at each hurricane level.

A.

Refer to Document SPH-1 Section 11, Reference 1. The following table of likelihood of landfall is provided:

# Table 2

Region	SSI 1	SSI 2	SSI 3	SSI 4	SSI 5
Western (Manatee through Collier)	3.3%	2.0%	2.1%	0 4%	negligible
Southeastern (Dade/Broward/Palm Beach)	4.8%	5.3%	6.3%	2.4%	0 4%
Northeastern (Martin and north)	2.8%	2.8%	1.6%	0.5%	0.2%

# ANNUAL PROBABILITY OF LANDFALLING STORMS

The recurrence interval for the storm landfall probabilities provided in Table 2 above is:

Annual Probability	Recurrence Interval (years)
0.2%	500
0.4%	250
0.5%	200
1.6%	63
2.0%	50
2.1%	48
2.4%	42
2.8%	36
3.3%	30
4.8%	21
6.3%	16

Docket No. 001148-EI L. Kollen Exhibit No. \_\_\_\_(LK-4) Response to SFHA Interrogatory No. 124

Florida Power & Light Company Docket No. 001148-E1 SFHA Eighth Set of Interrogatories Interrogatory No. 124 Page 1 of 1

# Q. <u>Re: Testimony and Exhibits of Steven E. Harris</u>

Separately for hurricane levels SS 1 through SS 5, please calculate exceedence probabilities in the form of Table 9-2.

<u>-</u>.

A.

These analyses were not performed as part of the study.

Docket No. 001148-EI
 L. Kollen Exhibit No. (LK-5)
 Storm Damage Fund Reserve - Actual and Projected

Florida Power & Light Company Docket No. 001148-E1 SFHA Fourth Set Interrogatories Interrogatory No. 38 Page 1 of 1

Q.

Please provide a 6 year history of the storm damage fund reserve, consisting of actual amounts for 1997-2001 and projected amounts for the 2002 test year. Separately show for each year the beginning balance of the reserve, expense accruals, write-offs (charges), and ending balance of the reserve. Provide the requested amounts on a jurisdictional basis.

A.

	(1)	(2)	(3)	(7)	(8)	(9)	
	Contributions		Storm Costs harged to	•	Mark-to- Market djustment	Ending	
Year	Expense	arning	Reserve	Balance	<u>(FAS_115)</u>	Balance	
Actual							
1996				221,244	1,333	222,577	
1997	20,300	10,840	1,117	251,267	1,177	252,445	
1998	20,300	12,459	27,554	256,472	2,116	258,588	
1999	20,300	9,451	67,824	218,399	(2,820)	215,579	
2000	20,300	9,075	17,566	230,208	(1,076)	229,132	
2001	20,300	11,388	27,208	234,687	640	235,328	1
	~ 5	16 1.43	1	I		t 1 6. r	
Projected	Ū.						
000(actual	)			230,208	(1,076)	229,132	
2001(a)	20,300	9,596	(b)	260,104	1,399	261,504	
2002	50,300	10,221	(b)	320,625	1,399	322,025	

(a) five months actual, seven months projected

(b) the number and costs of storms are too unpredictable to predict.

See MFR C-9 (account 924) for the jurisdictional factor applicable to the annual expense accrual. See MFR B-7 for the jurisdictional factor applicable to the reserve balance. Note- the storm and property damage reserve is a funded reserve which is excluded from rate base (see MFR B-4).

Docket No. 001148-EI L. Kollen Exhibit No. (LK-6) Operating Expenses - Budgeted and Actual

Florida Power & Light Company Docket No. 001148-EI SFHA Fifth Set of Interrogatories Interrogatory No. 57 Page 1 of 1

Q.

Please compare your operating budget by year established in advance for fiscal years 1998, 1999, 2000 and 2001 with the actual results of operations experienced during such respective periods.

A.

				(\$ in	millions)			
	19	98	19	99	20	00	2	001
Expenses:	Actual	Plan	Actual	Plan	<u>Actual</u>	<u>Plan</u>	<u>Actual</u>	<u>Plan</u>
Fuel and Purchased Power	\$ 2,175	\$ 2,244	\$ 2,232	\$ 2,191	\$ 2,511	\$ 2,253	\$	s <b>Allen</b> i
Base O&M	1,088	1,090	1,026	1,072	999	1,034		
Depreciation and Amortization	1,249	1,078	989	1,263	975	924		
Taxes	952	945	959	928	975	968		
Other, primarily interest	286	293	233	~ 246	256	255		
	\$ 5,750	\$ 5,650	\$ 5,439	\$ 5,700	\$ 5,716	\$ 5,434	\$	s <b>and</b>

(Actuals - Babka) (Plan - Beilhart)

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The information requested for 2001 is confidential and will be made available for inspection at FPL's General Offices at 9250 West Flager Street, Miami, Florida 33174 during normal business hours pursuant to a mutually satisfactory confidentiality agreement or protective order.

Docket No. 001148-El L. Kollen Exhibit No. (LK-7) Response to SFHA Interrogatory Nos. 98 & 99 Page 1 of 2

Florida Power & Light Company Docket No. 001148-EI SFHA Eighth Set of Interrogatories Interrogatory No. 98 Page 1 of 1

# Q. Re: Testimony and Exhibits of John G. Shearman

Please discuss and describe in detail and provide all documents related to, Mr. Shearman's investigation concerning whether, or the extent to which, FPL's efforts to reduce costs during the period 1999 - 2001, will cause or could cause costs in any category to increase for any period following 2001. If Mr. Shearman did not investigate that topic please so state.

А.

Mr. Shearman did not specifically investigate, or testify on this exact topic. However, FPL's track record of consistent year-on-year cost reductions began well in advance of the 1999-2001 time period referenced and therefore implies no history of such decision-making. Please see pages 22 through 23 of Mr. Shearman's testimony for a complete description of his opinions on FPL's future O&M expenses.

Docket No. 001148-El L. Kollen Exhibit No. \_\_\_ (LK-7) Response to SFHA Interrogatory Nos. 98 & 99 Page 2 of 2

Florida Power & Light Company Docket No. 001148-E1 SFHA Eighth Set of Interrogatories Interrogatory No. 99 Page 1 of 1

# Q. Re: Testimony and Exhibits of John G. Shearman

Please quantify in Mr. Shearman's opinion the amount of increase in net profits that FPL enjoyed during the period 1999- April 1, 2002 as a result of FPL's lower costs and efficiency enhancements. Please provide your workpapers and supporting documents and describe how you went about calculating the amount.

А.

FPL objects to this interrogatory as it seeks analyses that have not been performed, or data that have not been collected with the preparation of the FPL witnesses' testimony.

Docket No. 001148-EI L. Kollen Exhibit No. \_\_\_ (LK-8) Response to SFHA Interrogatory No. 100

Florida Power & Light Company Docket No. 001148-EI SFHA Eighth Set of Interrogatories Interrogatory No. 100 Page 1 of 1

# Q. Re: Testimony and Exhibits of John G. Shearman

With respect to Mr. Shearman's testimony and exhibits please compare the weighted average age of the FPL generation fleet with that of the various samples that are used for comparison purposes in Mr. Shearman's materials.

А.

FPL objects to this interrogatory as it seeks analyses that have not been performed, or data that have not been collected with the preparation of the FPL witnesses' testimony.

Docket No. 001148-EI L. Kollen Exhibit No. (LK-9) Response to SFHA Interrogatory No. 85

Florida Power & Light Company Docket No. 001148-E1 SFHA Eighth Set of Interrogatories Interrogatory No. 85 Page 1 of 1

# Q. Re: Testimony and Exhibits of John G. Shearman

With respect to Document JMS-3, please indicate the size of the sample (a) within the United States and (b) outside the United States. Please indicate the type(s) of reactor operated by FPL, and the proportion of reactors of that type in the sample population, broken out as between those in the United States and those outside of the United States. Please identify the other type(s) of reactors that are contained in the sample population and the relative percentages that each represents of the sample population. Please provide a comparable set of data for Documents JMS-4 and JMS-5. In the witness' opinion, what is the cause of the significant decrease in forced outage rates for the sample group from 1997 through 2000.

## А.

FPL objects to this interrogatory as it seeks analyses that have not been performed, or data that have not been collected, in connection with the preparation of the FPL witnesses' testimony.

#### COMMUNICAL OF CERTITION NEW PLANT ENTRY PRICE

-------Docket No. 001148-EI L. Kollen Exhibit No. \_\_\_ (LK-10) Sanford Comparisons Page 1 of 17

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•	1		1
	Alternatives:	RePower	3
		PFM Unit 182	Escalation
	L CONSTRUCTION (1900) 1997 1	24	P àcrimer
	Permit/Eng/Fsb (months) Construction Phase (months)	30	]
	Project Total (months)	54	1
,		(\$1,661)	
DE	Land Matonala	\$251,802	12
F	Labor & Equipment	\$75,450	
G	Total Direct Cost	\$355,574	4
			1
н	Construction Indirects	\$0	
1	Licensing	\$5,000	1
J K	Project Support Contingency	\$5,000 \$20,000	
ĥ	Total Indirect Cost	\$30,000	1
M	S/KW Net Summer	\$275	
M	SACW Net Winter	\$256	4
l °	Fuel Expension	\$6,000 \$23,000	
P	Transmission Expansion Reliroad & Cars	\$0	1
R	Total Other Cost	\$29,494	1
\$	Grand Total Cost	\$414,571	
T.	SACW Net Summer	\$296 \$275	
느	SAKW Not Winter		1
L	IL PLANT CHARACTERISTICS		4
Y		1,400	
W	Net 75F Capability (mw) Net 59F Capability (mw)	1.541	
X	Heat Rate burkwh 95F100% Load HHV	6,959	1
Y		6,815 6,990	
Translation of the second seco	Heat Rate btullowh 75F 75% Load HHV	7,630	
Ż		6,783	
		50%	
	A Equiv. Avel. % 3 Sched Outage (Wiziyi)	1.5	
	C Equiv Forced Outage	1.0%	
Γ		1	
	Total OLM (mm/yr)		-
	E (remove 6MM for existing feet cost		
	F for Repower only)	\$6	_
멷	G Capital Replace (Smm/yr)		-
	IV. SPENDING CURVES		4
-	H Year 6	<b>3</b> 0 <b>30</b>	ł
	y Year 5 U Year 4	\$1,658	
	X Year 3	\$2,902	1
	L Year 2	\$193,190 \$216,821	
	M Year 1 V. NOTES;	44 10,64 1	
T.	N		-
		New NSC Network Ges	1
	Fuel		1
	C Equipment	77 ↔*	
		6CT & 6HR8G	
1	PP Cooling 3G SCRs	intaka/Cischarge Ro	
	**	1	
-			

1 \$4MM Sale Price minut\$519k Site Demo and \$1 5MM Book Value(1996 \$\$)

2. \$150M5M to be assued in 1997 PO's

3 All other numbers have not been

escalated

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			IRP 199	8					Page 2 of 17	
	New Generation Alternatives		الأبقيل والمتحد							
ŀ	Ι		16		17		18		19	
	Altornatives:									
	<u>Alternatives:</u>	4	00 PC	•	400 PC		200 SC	500	CC - F++	
		~			14	<b>-</b>		~		
		Gr	eenfield		Martin	EX	st Site - "G"	G	reenfield	
	L. CONSTRUCTION (1000) 1998 \$									
	Permil/Eng/Fab (months)		36		30		9		24	
3	Construction Phase (months)		30		27		6		24	
EO/	Projectuolar (nonlita)		<u>_</u>		37.		15			
D	Land	\$	1,210	\$		\$		\$	1,200	
Е	Materials	- · · ·	226,000		224,000	\$		\$	120,000	
F	Labor & Equipment	\$	104,000	_	104,000	\$		\$	44,000	
G	Total Direct Cost	\$	331,210	\$	328,000	\$	48,402	5	165,200	
н	Construction Indirects	\$	•	\$	-	5	•	\$	-	
L	Licensing	\$	6,000	\$	5,500	S	400	\$	3,200	
J	Project Support	s	4,220	\$	3,616	\$	1,090	\$	2,700	
к	Contingency	\$	10,657	\$	8,799	\$	249	\$	6,844	
L	Total Indirect Cost	\$	20.877	\$		\$	1,739	\$	12,744	
M	S/KW Net Summer	\$	880	5		5	251	\$	374	
N	S/KW Net Winter	ŝ	873	s		s	218	\$	346	
0	Fuel Expansion	5		5		5	200	S	4,000	
P	Transmission Expansion	ľ		1		1		s	13,000	
a	Raimad & Cars	s	8,000	\$	8,000	5	.	ŝ	.0,000	
	Total Other Cost	15	8,000	1		_	200		17,000	
	Standby Dial (Cost						59.341	-		
		_		-						
		E					252			
빋	S/KW Net Winter	<b>↓</b> ⁵	896	1	880	15	219	\$	378	
	IL PLANT CHARACTERISTICS			╞		-	11.X.1			
	Net Som 25HCapabliny (mw)	420		Ļ			200			
V.			401		401	5	215		496	
	Net Win 59F Capability (mw)	-	402		402	_	230 34355		514	
	100al Rate-Dit/kw0 751=100%12001 +1+	N.	3509		-9-5C	_				
· ·	Heat Rate blu/kwh 75F 75%		9,600		9,600		10,801		6,816	
Z		+-	10,100	-	10,100	_	12.344		6,773	
1	Equiv. Avail. %		979		979		98%	1	96%	
	Sched Outage (wks/yr)		1.0		1.0		2.0		1.5	
1 <sup>cd</sup>	Equiv Forced Outage	╋	1.07	4	1.07	4	1.0%	<b></b>	1.0%	
	UI. OPERATION					-		-		
	D. TOLEN CAMI (MINVA)			_			0.51			
	Fixed (\$/kw - yt)		18.60		13.90		0.51	1	4.31	
	Variable (excl. fuel) (\$/mwh)	+	1.603	_	1.60	_	0.295	┣──	0 405	
G	3 Capital Replace (Smm/yr)	+-	3.0	억	3.0	쒸_	1.50	<b>∔</b>	2.30	
-	IV. SPENDING CURVES	+.		+		+		+		
H			F 1,440		<b>S</b> ·			S	•	
		- 1	7,20		\$ 6,72					
1			8,64	•			-	1	780	
K		1	61,93	- 1				15	1,365	
	- (	- I '	\$ 97,94	- 1	\$ 96.26		<b>17,620</b>		90,844	
M		_	\$ 182,52	_		_	32,722		101,956	
	V. NOTES:	1	\$ 360,08	4	\$ 353,91	5	<u>\$ 50,341</u>	15	194,944	1
N	N Net MW change (summer)		+400		+400		+200		+476	
		1	New NSC	2	New NSC		New NSC		New NSC	ł
	Equipment Available									1
					PC		1-CT - "G"		7F++*	l
0	O Equipment		PC							
	O Equipment		PC					20	T&2HRSG&1ST	
P	O Equipment P Cooling		Tower		Reservo		Existing	20	Tower	
P	O Equipment		_		Reservo yes - SC	R	no	2C		

Docket No. UUI 148-EI L. Kollen Exhibit No. \_\_\_ (LK-10) Sanford Comparisons Page 2 of 17

# SUMMARY OF GENERATION ALTERNATIVES COST AND COMPETITION TEAM

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# SUMMARY OF GENERATION ALTERNATIVES COST AND COMPETITION TEAM

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Docket No. UUI 148-EL L. Kollen Exhibit No. \_\_\_ (LK-10) Sanford Comparisons Page 3 of 17

**IRP 1998** 

				IRP_19	98		_		_	Гаў	6.7	OI 1/	_	
	New Generation Alternatives												_	
- Г		9		10		11		12		13		14		15
	Alternatives:	Repower		Repower	_	Repower	_	100 Ori	-	800 Orl	4	00 CFB		00 CFB
- 1'	Alleliterites.	nepower		lepone.		nepower						~~~		
1	1	PSN 3		PFM-1		PCU-S		Martin		Martin	G	reenfield		Martin
- I.	1. CONSTRUCTION (1000) 1998 \$					ł				1				
A	Permit/Eng/Fab (months)	24		30		30		30		30		33		30
	Construction Phase (months)	21		24		21		30		30		30	_	27
( <b>c</b> ; )	Enplace Inotal (monits)	5		<u>_</u>	)Ţ	31 31		- 0		50 _ 1		<u></u> }		77
D	Land	<u>s</u> .	\$	•	\$	•	\$	•	\$	•	\$	1,210	\$	
εİ	Materials	\$ 95,151	\$	100,735	\$	45,934	Ş	202,000	\$	400,000	\$	224,210	\$	224,210
F	Labor & Equipment	\$ 18,132	s	29,853	s	18,193	\$	106,000	\$	180,000	\$	95,586	\$	95,586
G	Total Direct Cost	\$ 113,283	\$	130,588	5	64,127	\$	308,000	\$	580,000	\$	321,006	S	319,796
н	Construction Indirects	\$ 2,973	s	3,265	s	1,603	\$		\$	•	5	-	\$	· ·
i	Licensing	\$ 3,000	s	3.000	s		2	8,500	s	8,500	2	5.000	s	5,500
.il	Project Support	\$ 5,830	s	4,000	s		s	3,548	ŝ	3.836	ŝ	4,100	s	3,608
ĸ	Contingency	\$ 13,759	l s	8,451	s		s	9,482	s	20,693	ŝ	10,244	s	8,512
${1}$	Total Indirect Cost	\$ 25,562	5	18,716	Īŝ		s	21,530	s	33,029	÷	20,344	5	17,620
			<u> </u>		-		÷		-					
	\$/KW Net Summer	\$ 503	S	541	S	· · · · ·	\$	824	\$	766	Ş	853	\$	844
N	\$/KW Net Winter	\$ 422	15	454	18		S	820	\$		\$	849	\$	839
0	Fuel Expansion	<b>\$</b> -	15	95, <b>000</b>	1	i -	S	16,000	\$	16,000	\$	•	\$	•
P	Transmission Expansion		1									1		1
Q	Railroad & Cars	\$ -	5	<u> </u>	1		5		5		\$	8,000	5	
R	Total Other Cost	<b>\$</b> -	5		1		\$		5		\$	8,000	1	
3	Sterrel tental Grant	5 588,845	5	244,304	HE	78, 154	5	K(15,55)0)	E	629,029	5	319(350)	5	1315,117
31	WAY ALL SUMMER	N		385		3	5			735	3	59751		1
_	\$/KW Net Winter	\$ 422			1	579	\$	860	1	782	\$	869	1	859
	1. PLANT CHARACTERISTICS		Ť		T				t	·		مجرعته كتنكم	Γ	
- 307	NOI SUM PERCENTION (III)	215		1110	1	- 1		C- : :: (1)(6)		······································			È	20. 1. 2000
v	Net Win 75F Capability (mw)	310		316		130	T	401	1-	802		401	T	401
	Net Win 59F Capability (mw)	329		329	1	135		402		804		402		402
	Flant Letter brukwin 752 HOSALoad Fitt				_	1.519		-9,5:51	H				1	
Y	Heat Rate btu/kwh 75F 75%	7,619		7,619	_	7,320	_	10.004	_	10,004		9,700	T	9,700
· ·		-	•	7,429		8,580		10,384	1	10.384		10,200		10,200
	Heat Rate btu/kwh 75F 50%	7,429	_		_	95%	_	97%		97%	┝	97%	_	97%
	Equiv. Avail. %	969		951	•				1		1	1.0	1	1.0
	Sched Outage (wks/yr)	1.3		1.6		1.6		1.0		1.0				1.0%
	Equiv Forced Outage	1.5	<u>×</u>	2.09	4	2.07	4-	1.07	4	1.0%	4	1.07	-	1.0%
7	III. OPERATION		-											1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.
	Frate Oabl (app/pr)				_	11.1			_		-			
	Fixed (\$/kw - yr)	5.3		5.5		9.9		10.6		6.8		15.40		10.70
-	Variable (excl. fuel) (\$/mwh)	0.58	_	0.620	-+	1.064	_	1.671	-	1.585	_	1.497	_	1.497
GG	a Capital Replace (\$mm/yr)	2.1	0	2.1	0	1.0	<u>  </u>	2.0	악	3.0	4	2.0	0	2 00
	IV. SPENDING CURVES				-		4		4		1		4	
H	Year 6	\$ -		<b>\$</b> -		\$ -	Í	\$-		<b>\$</b> -		1,397		\$ ·
l u	Year 5	<b>s</b> -		s -		s -		\$ 5,874	- 1	\$ 10,694		<b>5</b> 6,987		\$ 5,872
1.1	Year 4	\$ 2,63	8   1	<b>\$</b> 4,64	2	\$ 1,485	5	\$ 8,293	3	\$ 15,097		\$ 8,284		\$ 8,290
ļю	Year 3	\$ 17,35	6	\$ 30,53	8	\$ 9,769	9 {	\$ 61,850	2	\$ 112,59		\$ 60,08	3	\$ 61,829
lu	Year 2	\$ 59,14	8	\$ 104,07	з	\$ 33,294	4	\$ 93,984	۹ (	\$ 171,096	;   :	\$ 95,02	3	\$ 93,953
м	A Year 1	\$ 59,70	4	\$ 105,05	1	\$ 33,60	6	\$ 175,52	9	\$ 319,547	1	\$ 177,47	٥	\$ 175,471
	V. NOTES:	\$ 138,84	_	\$ 244,30		\$ 78,15	4	\$ 345,53	0	\$ 629.02	ī	\$ 349,35	0 [	\$ 345,416
N	Net MW change (summer)	+276	$\neg$	+276		+118	Τ	+400	T	+800	T	+400	T	+400
		From NSC	;	From NSC	:	From NSC		New NSC	; ]	New NSC	;	New NSC	; ]	New NSC
1		Incrementa		incrementz	. 1	Incremental	. 1							
	Equipment Available		-		-		1							
			ł	•F•		V84.3		N/A		N/A		1CFB	ļ	1CFB
1~			ام	2CT&2HRS	6		اه				ļ			
	Contine	Existing	~	Existing	-	Existing	-1	Reservo		Reservol	, I	Tower		Reservoir
	P Cooling	-		•				no	-	no		Yes - SNC	яÌ	yes - SNCR
		no e ac/	~	no \$\$;eq		no 33 1,50	2	\$ 3,00		\$ 3,00	۱.	\$ 1/3.50		•
ЦН	R BABRODXIUS Adder	\$ 2,50	~ 1	\$ \$;90	<u>, e</u>	1,50	~			- 0.00	~ 1			

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# SUMMARY OF GENERATION ALTERNATIVES COST AND COMPETITION TEAM

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Docket No. 001148-E1 L. Kollen Exhibit No. \_\_\_\_ (LK-10) Sanford Comparisons

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IRP 1998

					IHP 1998	-		_		_	- 5	_	
L.	New Generation Alternatives							_					. <u> </u>
			1		<u>1A</u>		2		3		<u>3A</u>		4
L L	Alternatives:	400 (	CC - ATS	400	CC - ATS	30	0 00 - 0 - 0 0	400	DCC - ATS	400	CC - ATS	30	DO CC - G
1							1						
		Gre	eenfield	G	reenfield	Gr	reenfield		Martin		Martin		Martin
-	I. CONSTRUCTION (1000) 1998 \$				1		1						
	Permit/Eng/Fab (months)		30		30		30		20		20		20
	Construction Phase (months)		22		22		22		19		19		19
	Prest total (nonlins) Sectors Start						<u>. 1</u> 2	-	-20		<u> </u>		
	and	S		\$	•	\$	1,298	\$	1	\$	-	\$	• [
	Materials	\$	125,000	\$	125,000	\$	88,747	\$		\$	123,000	\$	88,747
	abor & Equipment	<u>\$</u> 5	35,000 161,298	<u>s</u> 5		\$	25.253	\$		<u>s</u>	35,000	<u>\$</u>	25,253
-	Construction Indirects	_	101,290	<u>*</u>	161,298	\$	115,298	\$	158,000	\$	158,000	\$	114,000
	Licensing	\$ - \$	4,000	з 5	4.000	s s	4,000	5	3,200	\$ \$	2 200	\$ \$	2 2020
- 1	Project Support	č	3,476	s	3,476	\$	3,476	• \$	2,700	* 5	3,200 2,700	s s	3,200 2,700
	Contingency	s	8,439	s	8,439	s	6,139	s	6,556	• \$	6,556	5	4,560
_	Total Indirect Cost	ŝ	15,915	ŝ	15,915	Ś	13,615	S	12,456	5	12,456	\$	10,460
	S/KW Net Summer	\$	423	S	423	ŝ	416	s	407	ŝ	407	š	402
	S/KW Net Winter	\$	396	\$	396	ŝ	373	s	380	ŝ	380	s	360
	Fuel Expansion			-		-		s	12,000	s	12,000	S	10,000
	Transmission Expansion							Ē		•		•	
	Rallroad & Cars	s	-	\$		\$	-	5	.	\$		\$	.
R	Total Other Cost	\$	•	\$	•	\$	•	\$	12,000	\$	12,000	\$	10,000
5	SHIRIPHI COSI	S	17725KI	Ð	STRIZES	-5	28, 313)	3.	1874-156	5	132, 56	5	- MELNISH
45	NAW YOU SHOTTED	5	281	-5	761	,	313	5	.35	S		5	1. S. 1
U	\$/KW Net Winter	\$	396	\$	396	\$	373	\$	407	\$	407	\$	389
	IL PLANT CHARACTERISTICS												
	val sum as rear and have many server				1				-919.				::
	Net Win 75F Capability (mw)	•	430		430		332		430		430	1	332
	Net Win 59F Capability (mw)		448		448		346		448		448		346
	Heat Rate Diology 757 19065 Loculting			· • •			6,700			1			
1	Heat Rate btu/kwh 75F 75% Heat Rate btu/kwh 75F 50%		6,470 6,970		6,245		6,768 7,389		6,470		6,245		6,768
	Equiv. Avail. %		96%		<u>6,729</u> 96%		7,368 96%	+	6,970 96%	┣	<u>6,729</u> 96%	┼──	7,389
1 I	Sched Outage (wks/yr)		1.5		1.5		1.5	1	1.5	1	1.5	1	1.5
	Equiv Forced Outage		1.0%		1.0%		1.0%		1.0%		1.0%		1.0%
		<u> </u>				<b>+</b>		+		$\mathbf{t}$		1	
	דיוויייייייייייייייייייייייייייייייייי				داروانه		1.5/		- લોટોલ		-1.20	۲. ۲	
	Fixed (\$/kw - yt)		7.69		7.69		7.69		4.31	1	4.31	_	4 31
FF	Variable (excl. fuel) (\$/mwh)	<u> </u>	0.405		0 405		0.602		0.405	1	0.405		0.602
GG	Capital Replace (\$mm/yr)		2.30		2.30	2	2.30	2	2.30		2.30		2.30
	IV. SPENDING CURVES												
HH	Year 6	\$	-	5	-	\$	•	\$	-	\$		\$	
1	Year 5 🔔	S	709	\$	709	\$	516			\$		S S	
1 3	Year 4	IS.	1,418	S	1,418		1,031			•			_
KK	Year 3 Year 2	S S	30,126 56,708		30,126 56,708		21,915 41,252						
MM	1	s	88,252	5	88,252		64,199						
	V. NOTES:	15	177,213		177,213		128,913	_		-		_	
NN	Net MW change (summer)	┼┸─	+419	╞	+419	+-	+310		+419	ť	+419	+	+310
			iew NSC		New NSC		New NSC		New NSC		New NSC		New NSC
	ļ									1			
1	Equipment Available	2	003-2005	1	2006+	1	2000+		2003-2005		2006+		2000+
$ \infty$	Equipment	1	TS - "H"	Į	ATS - "H"		.G.		ATS - "H"		ATS - "H"		<b>.</b> G.
1		10	T& 1HRSO	i  10	CT & 1HRSC	3 10	CT & 1HRS	G   1	ICT & 1HRS(	3 1	ICT & 1HRS	<b>a</b>   1	ICT & IHRSG
	Cooling		Tower		Tower		Tower		Reservoir		Reservoir		Reservoir
	SCR's		no	.	no Decent	1.	no		no		no	_ا_	10 4-0 A BM
<b>H</b> A		15	3,500	5	Pageo	8	3,50		\$ 3,500	2	\$ 3,50	<u>بم</u>	8 4:24.86

# SUMMARY OF GENERATION ALTERNATIVES COST AND COMPETITION TEAM IRP 1998

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Docket No. 001148-E1 L. Kollen Exhibit No. \_\_\_ (LK-10) Sanford Comparisons

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		-			<u>RP 1998</u>	_				_	ge 5 of 17		
	New Generation Alternatives				r								
			5		<u>5</u> A		6		6A		7		8
	Alternatives:	800	CC - ATS	800	CC - ATS	80	0 CC - ATS   1	800	CC - ATS	Re	power	F	epower
									1	Hot	Wind Box		
		G	reenfield	G	reenfield		Martin		Martin	P	PTF-1		PRV 2
	I. CONSTRUCTION (1000) 1998 \$												
	Permit/Eng/Fab (months)		30		30		20		20		24		24
В	Construction Phase (months)		27		27		22		22		22		17
	Projectiolal (months)					1.5		2		. e.			
D	Land	S	2.596	S	2,596	S		5		5		S	
ε	Materials	s	241,250	s	241,250	s	1	• S		5		5	52,923
F	Labor & Equipment	\$	67,550	s	67,550	5		Տ		• s		5	· · ·
G	Total Direct Cost	\$	311,396	<u>-</u>	311,396	* \$		<u>*</u> 5		<u>ə</u> 5		<u>ə</u> 5	10,110
			511,390	<u> </u>	311,390	_		-		· · · ·			63,033
н	Construction Indirects	\$		Ş		\$		\$	1	\$		\$	2,043
	Licensing	S	4,000	\$	4,000	\$		\$		\$		\$	3,000
J	Project Support	S	4,418	\$	4,418	S		\$		\$	4,000	\$	5,788
ĸ	Contingency	\$	15,991	\$	15,991	\$		\$		\$	6,827	<u>\$</u>	8,125
L	Total Indirect Cost	\$	24,409	\$	24,409	\$	20,870	\$	20,870	\$	15,738	\$	18,956
M	\$/KW Net Summer	\$	401	\$	401	\$		\$	389	\$	683	\$	410
N	\$/KW Net Winter	\$	375	\$	375	\$	363	\$	363	\$	580	\$	363
0	Fuel Expansion					\$	16,000	\$	16,000	\$	1	\$	•
P	Transmission Expansion								1				
Q	Railroad & Cars	s	•	\$	•	\$	-	\$	-			\$	.
R	Total Cther Cost	\$	-	\$	•	\$	16,000	\$	16,000	\$		\$	· ·
als:	GENGLI CELL CELL CALL CALL	51	335,305	-5	5355805		311,570	50	5141.570		32 153	251	(PROVIDE NO
	MAN-MERSENDER	-	40)			5			હો હોય			-	
U	S/KW Net Winter	S	375		375	S		\$	381	\$	580	5	363
$\vdash$	II. PLANT CHARACTERISTICS	+ •		-	375	┞╸		. <b>.</b>	301	-		-	
	Nai Sum 95-Gapability (mw)		····· 3813										and the second second
×.			860 896		860		860		860		153		217 226
	Net Win 59F Capability (mw)				896		895		896		159	-	220 5/13:14
	LIGHT FRIGHTINKWID 7517 100% LOEUF 11				5.05		છે.કોઈછે	191			1.20		
Y	Heat Rate btu/kwh 75F 75%		6,470		6,245		•6,470		6,245		8,272		7,911
Z	Heat Rate btu/kwh 75F 50%	<u> </u>	6,970	_	6,729	_	6,970		6,729	<u> </u>	8,417	L	8,512
	Equiv. Avail. %		96%		96%		96%		95%	ł	95%	ł	96%
BE		1	1.5		1.5	- 1	1.5	İ.	1.5	1	1.6		1.3
	Equiv Forced Outage		1.0%	4	1.0%	-	1.0%		1.0%		2.0%		1.5%
	UL OPERATION	<u> </u>											
D	) TABLE AN OPPART OF A				1 7.11	ĽŻ					(2,211-	-	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1
EE	Fixed (\$/kw - yr)		5.15		5.15		3.82	l	3.82	1	9.58	4	6.82
FF	Variable (excl. fuel) (\$/mwh)	1	0.382	_	0.382	_	0.382		0.382	1	0.623	1_	0.819
G	a Capital Replace (\$mm/yr)		4.6	2	4.6	9	4.60		4.60		1.00	2	1.00
	IV. SPENDING CURVES									L_			
H	Year 6	\$	•	\$		T	<b>.</b> .	\$	•	T\$			
1	Year 5 🔔	\$	1,679	\$	1,679	1:	5 -	\$	•	\$	1,567	1	
11	Year 4	5	18,805	5	18.805	5   5	2,733	5	2,733	S	2,212		1,558
K	1	5	43,990	\$	43,990	)   s	4,783	\$			16,498		10,249
lu		s	119,882		119,882	2   1	\$ 157,510	5			25,070		34,927
м		\$	151,448				\$ 176,643	1	176,643	•	46,822		35.255
	V. NOTES:	5	335,805	-		_	\$ 341,670	_		_	92,169		61,989
N	Net MW change (summer)	1	+838	T	+838	$\uparrow$	+838	Ť	+838	Т	+135	T	+200
			New NSC		New NSC		New NSC	ļ	New NSC		From NSC		New NSC
				1		1				ic	cremental		
I	Equipment Available	1	2003-2005		2006+		2003-2005		2006+				
	DEquipment		ATS - "H"		ATS - "H"	1	ATS - "H"	1	ATS - "H"		V84.3	ļ	•F•
Ĩ			CT & 2HRS	داد	CT & 2HRS	ا ا	2CT & 2HRSG	12	CT & 2HRSO	al	1CT		ICT & IHRSG
	Cooling		Tower	- -	Tower	-I	Reservoir	1	Reservoir	1	Existing		Existing
		ļ	no		n0				no		nu		00
	R BBBOUSIESel Adder	5	7,00				no \$ 7,000	<u>ا</u> ا			t 11.11/1	rej.	98 4: <u>245</u> 94
60		1.	7,00			-1	- 7,000	<u> </u>	1,000		1,440	-	

#### I UL GENERATION ALTERNATIVES NEW PLANT ENTRY PRICE

December 1997 Docket No. 001148-EI L. Kollen Exhibit No. \_\_\_ (LK-10) Sanford Comparisons

		- 1	1	Sanford Compa
	Atternatives:	500 MW	RePower	Page 6 of 17
	<u>Citer Hattyest</u>	Combined Cycle	PFM Unit 182	
	I. CONSTRUCTION (1000) 1997 \$			
A	Permit/Eng/Fab (months)	24	24	
B	Construction Phase (months)	24	30	
С	Project Total (months)	48	54	
<u> </u>			(14.004)	
DE	Land Materials	\$1,200 \$120,000	(\$1,681) \$276,802	
-	Labor & Equipment	\$44,000	\$75,450	
_	Total Direct Cost	\$165,200	\$350,571	
н !	Construction Indirects	\$0 \$3,200	\$0 \$5,000	
	Project Support	\$2,700	\$5,000	
-	Contingency	\$6,844	\$20,000	
L	Total Indirect Cost	\$12,744	\$30,000	
1	S/KW Net Summer	\$374	\$269	
	\$/IOW Net Winter	\$359	\$258	
-	Fuel Expansion Transmission Expansion	\$4,000	\$6,000	
P		\$13,000 \$0	\$23,000 \$0	
_	Total Other Cost	\$17,000	\$29,000	
s	Grand Total Cost	\$194,944	\$409,571	+ \$482
Т	\$/KW Net Summer	\$410	7 \$290	-+ 482
U	\$/KW Net Winter	\$393	\$278	7
			(	(
Þ	I. PLANT CHARACTERISTICS Net Sum 95FCapability (mw);	476	1,413	1413.
1 -	Net 75F Capability (mw)	496	1,473	- 563
	Net 59F Capability (mw)	514	1,525	600
	Heat Rate btu/kwh 95F100% Load HHV	6,870	6,940	183
ľ	Heat Rate btu/kwh 75F100% Load HHV Heat Rate btu/kwh 59F100% Load HHV	6,816	6,885	
4	Heat Kane Kurkwa 591-100% Load HHY	6,773	6,840	
	Equiv. Avail. %	96%	96%	
	Sched Outage (wice/yr)	1.5	1.5	
Q	Equiv Forced Outage	1.0%	1.0%	
	III. OPERATION			
5	D Total D&M (mm/yr)	\$3.67	88	
	(remove 6MM for existing fleet cost		••	
	for Repower only			1
G	3 Capital Replace (\$mm/yr)	2.30		Į
1	I IV. SPENDING CURVES			
H		\$0	50	4
		\$0	\$0	
11		\$780	\$1,638	
K		\$1,365	\$2,867	
M		\$90,844 \$101,956	\$190,680 \$214,208	
	V. NOTES:	\$101,800		1-2003
N				1
1		New NSC	New NSC	
		tiatural Gas	Natural Ges	1
	AFUDC Adder O Equipment	7F++*	-7F ++*	
ľ	C C C C C C C C C C C C C C C C C C C	2CT & 2HRSG&1ST	OCT & CHROG	
P	P Cooling	Mech Draft	Intaka/Discharge	
]0	QSCR	no	no	
R	R			4

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# SUMMARY OF GENERATION ALTERNATIVES COST AND COMPETITION TEAM IRP 1997

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	New Generation Alternatives										
'								_	i i		13
$\square$	Alternatives:	Repower		Repower	Repower	F	Repower	R	epower	400 On	800 Or:
		HotWind Bo	x		-						
		PTF-1		PRV 2	PSN 3		PFM-1	F	CU-5	Martin	Martin
	1. CONSTRUCTION (1000) 1996 \$							-			
	Permit/Eng/Fab (months)	24		24	24		30		30	30	30
	Construction Phase (months)	22		17	21	-	24		21	30	30
80%	Project Total (months) 1541	461-5	3.5	02*/5410;? <b>2</b> 83	THEFA SECTION		#54X222	115.1	15132122	NC-8160 - 25	602.15
D	Land	5 -	+	<u>s</u> -	5 -	5		\$		<u>s</u> -	\$
	Matenals	\$ 58,73		\$ 52,923	\$ 95,151	\$	100,735	ŝ	45,934	\$ 202,000	s 400.000
F	Labor & Equipment	<u>\$</u> 17,69		\$ 10,110	S 18,132	\$		\$	18,193	\$ 106,000	\$ 180,000
G	Total Direct Cost	\$ 76,43			<b>\$</b> 113,283	S	130,588	\$	64,127	\$ 308,000	<b>\$</b> 580.000
н	Construction Indirects	\$ 1,91			\$ 2,973	\$	3,265	\$	1,603	<del>\$</del> -	\$-
	Licensing	\$ 3,00			\$ 3,000	\$	3,000	\$	4,000	\$ 8,500	\$ 8,500
	Project Support	\$ 4,00 \$ 6.82			\$ 5,830		4,000	s	4,000	\$ 3,548	\$ 3.836
	Contingency Total Indirect Cost	\$ 6.82 \$ 15.73		<u>\$ 8,125</u> \$ 18,956	\$ 13.759 \$ 25,562	5	<u> </u>	<u>s</u>	4.424	\$ 9.482 \$ 21.530	\$ 20.693 \$ 33.029
_	\$/KW Net Summer	\$ 68	_		\$ <u>503</u>	S	541	ŝ	662	\$ 824	\$ 766
1 1	S/KW Net Winter	\$ 58		\$ 363	\$ 422	s	454	s	579	S 820	\$ 762
	Fuel Expansion	\$ .		5 -	<u>s</u> .	\$	95,000	5	- 1	\$ 16,000	\$ 16,000
P	Transmission Expansion	•	- [	-	·	<b> </b>		•		¢ 10,000	•
Q	Railroad & Cars			s -	s.	\$	-	\$	-	s -	s -
	Total Other Cost	\$-		S -	\$ -	\$	95,000	\$	•		\$ 16,000
	Grandi Total Costant States The State										
	S/KW.NetSummer-S			5 410:							
U	\$/KW Net Winter	S 58	30	S 363	\$ 422	S	743	5	579	\$ 860	s 782
1	IL PLANT CHARACTERISTICS										
	II. PLANT CHARACTERISTICS Net Sum 95FCapability (mw)		35]	200	276	20	276	3224	118:	400	800
W	Net Sum 95FCapability (mw)	15	59	226	276 329		329		135	<u>*************************************</u>	804
W EX:	Net Sum 95F Capability (mw) ******** Net Win 59F Capability (mw) Heat Bate bturkwh:75F 100% Load, HH	11 8,30	5 <b>9</b> 382	226	329		329 339:7,379:		135 17:570		804
W X Y	Net Sum 95FCapability (mw) Net Win 59F Capability (mw) Heat Rate btu/kwh:75F100% Load,HH Heat Rate btu/kwh 75F 75%	19 8,30 8,21	59 582 72	226 2017:6151 7,911	329 <u>3551057,379</u> 7,619		329 3327,379: 7,619		135 17;570; 7,820	402 10,004	804 9,683 10,004
W Y Z	Net Sum 95FCapability (mw) Net Win 59F Capability (mw) Heat Rate btu/kwh:75F100% Load,HH Heat Rate btu/kwh 75F 75% Heat Rate btu/kwh 75F 50%	11 8.30 8,21 8 4	59 582 72 17	226 7,6151 7,911 8,512	329 <u>3.5.2057,379</u> , 7,619 7,429	1	329 2227,3793 7,619 7,429		135 1357;570; 7,820 8,580	402 10,004 10,384	804 \$25399,683 10,004 10,384
W Y Z AA	Net Sum 95FCapability (mw) Net Win 59F Capability (mw) Heat Bate btu/kwh:75F100%120ad;HHV Heat Rate btu/kwh 75F 75% Heat Rate btu/kwh 75F 50% Equiv. Avail. %	19 836 8,2 84 99	59 582 72 17 5%	226 7.915 7.911 8.512 96%	329 <u>355757,379</u> 7,619 7,429 96%	1	329 2027,3793 7,619 7,429 95%		135 135703 1,5703 7,820 8,580 95%	402 10,004 10,384 97%	804 \$25399,683 10,004 10,384 97%
W Y Z AA BB	Net Sum 95FCapability (mw) Net Win 59F Capability (mw) Heat Bate btu/kwh 75F 100% Load HHV Heat Bate btu/kwh 75F 75% Heat Bate btu/kwh 75F 50% Equiv. Avail. % Sched Outage (wks/yr)	15 8,30 8,27 8,4 95 1	59 72 17 5% .6	226 7,911 8,512 96% 1.3	329 7,619 7,429 96% 1.3		329 7,619 7,429 95% 1.6		135 7,570) 7,820 8,580 95% 1.6	402 10,004 10,384 97% 1.0	804 50,004 10,384 97% 1.0
W Y Z AA BB	Net Sum 95FCapability (mw) Net Win 59F Capability (mw) Heat Bate btu/kwh:75F100%120ad;HHV Heat Rate btu/kwh 75F 75% Heat Rate btu/kwh 75F 50% Equiv. Avail. %	15 8,30 8,27 8,4 95 1	59 582 72 17 5%	226 7.915 7.911 8.512 96%	329 <u>355757,379</u> 7,619 7,429 96%		329 2027,3793 7,619 7,429 95%		135 135703 1,5703 7,820 8,580 95%	402 10,004 10,384 97% 1.0	804 \$25399,683 10,004 10,384 97%
¥ X Y Z AA BB CC	Net Sum 95FCapability (mw) Net Win 59F Capability (mw) Heat Bate btu/kwh 75F 100% Load HHV Heat Bate btu/kwh 75F 75% Heat Bate btu/kwh 75F 50% Equiv. Avail. % Sched Outage (wks/yr) Equiv Forced Outage III. OPERATION	11 8,2 8,2 8,4 9 1 2.0	59 72 77 77 77 77 77 77 77 77 77	226 7,911 8.512 95% 1.3 1.5%	329 X7,619 7,619 7,429 96% 1.3 1.5%		329 7,619 7,429 95% 1.6 2.0%	3.57	135 7,570; 7,820 8,580 95% 1.6 2.0%	402 N=19,683 10,004 10,384 97% 1.0 1.0%	804 \$2599_683 10,004 10,384 97% 1.0 1.0%
V Y Z AA BB C D	Net Sum 95FCapability (mw) Net Win 59F Capability (mw) Heat Bate btu/kwh 75F 100% Load HHV Heat Bate btu/kwh 75F 75% Heat Bate btu/kwh 75F 50% Equiv. Avail. % Sched Outage (wks/yr) Equiv Forced Outage III. OPERATION Total:O&M(mm/yr)	11 8,3 8,2 8,4 9 9 1 2.(	59 582 72 77 5% .6 0%	226 7,911 8,512 95% 1.3 1.5%	329 *****7,379, 7,619 7,429 96% 1.3 1.5%		329 7,619 7,429 95% 1.6 2.0%	3.57	135 7,820 8,580 95% 1.6 2.0%	402 10,004 10,384 97% 1.0 1.0%	804 \$259.9.653 10,004 10,384 97% 1.0 1.0%
Y Z AA BB CC DD EE	Net Sum 95FCapability (mw) Net Win 59F Capability (mw) Heat Bate btu/kwh 75F 100% Load HHV Heat Bate btu/kwh 75F 75% Heat Bate btu/kwh 75F 50% Equiv. Avail. % Sched Outage (wks/yr) Equiv Forced Outage III. OPERATION Total O&M (mm/yr) Sector (S/kw - yr)	11 8,3 8,2 8,4 9 1 2.( 2.(	59 58⊻ 72 17 5% .6 0% 997 .58	226 7,911 8,512 96% 1.3 1.5%	329 7,619 7,429 96% 1.3 1.5%		329 7,619 7,429 95% 1.6 2.0%	3.57	135 7,820 8,580 95% 1.6 2.0%	402 10,004 10,384 97% 1.0 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0%	804 \$259.9.683 10,004 10,384 97% 1.0 1.0% 1.0% 1.0% 6.85
Y Y Z AA BB C D EE FF	Net Sum 95FCapability (mw) Net Win 59F Capability (mw) Heat Bate btu/kwh 75F 100% Load HHV Heat Bate btu/kwh 75F 75% Heat Bate btu/kwh 75F 50% Equiv. Avail. % Sched Outage (wks/yr) Equiv Forced Outage III. OPERATION Total O&M(mm/yr) Fixed (\$/kw - yr) Vanable (excl. fuel) (\$/mwh)	11 8,3 8,2 8,4 9 1 2.0 9 9 0.6	59 72 77 5% .6 0%	226 7,911 8,512 96% 1.3 1.5% 2.743 6.82 0.819	329 7,619 7,429 96% 1.3 1.5% 2,84 5.37 0 585		329 7,619 7,429 95% 1.6 2.0% 5.58 0.620		135 7,820 8,580 95% 1.6 2.0% 9.92 9.92 1.064	402 10,004 10,384 97% 1.0 1.0%	804 \$239.9.683 10,004 10,384 97% 1.0 1.0% 1.0% 1.0% 1.529 6.85 1.585
Y Y Z AA BB C D EE FF	Net Sum 95FCapability (mw) Net Win 59F Capability (mw) Heat Bate btu/kwh 75F 100% Load HHV Heat Bate btu/kwh 75F 75% Heat Bate btu/kwh 75F 50% Equiv. Avail. % Sched Outage (wks/yr) Equiv Forced Outage III. OPERATION Total O&M (mm/yr) Sector (S/kw - yr)	11 8,3 8,2 8,4 9 1 2.0 9 9 0.6	59 58⊻ 72 17 5% .6 0% 997 .58	226 7,911 8,512 96% 1.3 1.5%	329 7,619 7,429 96% 1.3 1.5% 2,84 5.37 0 585		329 7,619 7,429 95% 1.6 2.0%		135 7,820 8,580 95% 1.6 2.0%	402 10,004 10,384 97% 1.0 1.0%	804 \$239.9.683 10,004 10,384 97% 1.0 1.0% 1.0% 1.0% 1.529 6.85 1.585
Y Y Z AA BB C D EE FF	Net Sum 95FCapability (mw) Net Win 59F Capability (mw) Heat Bate btu/kwh 75F 100% Load HHV Heat Bate btu/kwh 75F 75% Heat Bate btu/kwh 75F 50% Equiv. Avail. % Sched Outage (wks/yr) Equiv Forced Outage III. OPERATION Jotal 28M (mm/yr) Fixed (\$/kw - yr) Vanable (excl. fuel) (\$/mwh) Capital Replace (\$mm/yr)	11 8,3 8,2 8,4 9 1 2.0 9 9 0.6	59 72 77 5% .6 0%	226 7,911 8,512 96% 1.3 1.5% 2.743 6.82 0.819	329 7,619 7,429 96% 1.3 1.5% 2,84 5.37 0 585		329 7,619 7,429 95% 1.6 2.0% 5.58 0.620		135 7,820 8,580 95% 1.6 2.0% 9.92 9.92 1.064	402 10,004 10,384 97% 1.0 1.0%	804 \$239.9.683 10,004 10,384 97% 1.0 1.0% 1.0% 1.0% 1.529 6.85 1.585
Y Y Z AA BB C D EE FF	Net Sum 95FCapability (mw) Met Win 59F Capability (mw) Heat Bate btu/kwh 75F 100% Load HHV Heat Bate btu/kwh 75F 75% Heat Bate btu/kwh 75F 50% Equiv. Avail. % Sched Outage (wks/yr) Equiv Forced Outage III. OPERATION Jotal X&Mgmm/yr) Fixed (\$/kw - yr) Vanable (excl. fuel) (\$/mwh) Capital Replace (\$mm/yr) IV. SPENDING CURVES	11 830 8,2 6 4 9 1 2.0 9 0.6 1	59 582 72 17 5% .6 0% 997 558 23 000	226 7,911 8,512 96% 1.3 1.5% 6.82 0.819 1.00	329 7,619 7,429 96% 1.3 1.5% 2,84 5.37 0 585		329 7,619 7,429 95% 1.6 2.0% 5.58 0.620		135 7,820 8,580 95% 1.6 2.0% 9.92 9.92 1.064	402 10,004 10,384 97% 1.0 1.0%	804 \$239.9.683 10,004 10,384 97% 1.0 1.0% 1.0% 1.0% 1.529 6.85 1.585
× XX Y Z A B C D H F G H =	Net Sum 95FCapability (mw) Net Win 59F Capability (mw) Heat Bate btu/kwh 75F 100% Load HHV Heat Bate btu/kwh 75F 75% Heat Bate btu/kwh 75F 50% Equiv. Avail. % Sched Outage (wks/yr) Equiv Forced Outage III. OPERATION Total X&M (mm/yr) Fixed (\$/kw - yr) Vanable (excl. fuel) (\$/mwh) Capital Replace (\$mm/yr) IV. SPENDING CURVES Year 6 Year 5	11 830 8,2 8 4 95 1 2.0 9 0.6 1	59 582 72 77 55% .6 0% 997 58 23 00 57	226 7,911 8,512 96% 1.3 1.5% 6.82 0.819 1.00	329 7,619 7,429 96% 1.3 1.5% 5.37 0 585 2 10 5.37 0 585 2 10 5.37 0 585 2 10	5	329 7,619 7,429 95% 1.6 2.0% 5.58 0.620 2.10	S S	135 7,820 8,580 95% 1.6 2.0% 9.92 1.064 1.00	402 10,004 10,384 97% 1.0 1.0% 1.0% 1.0% 1.0% 1.0% 5.874	804 \$299,683 10,004 10,384 97% 1.0 1.0% 5 5 10,694
× XX Y Z A B C D H F G H = 3	Net Sum 95FCapability (mw) Met Win 59F Capability (mw) Heat Bate btu/kwh 175F100% Load HHV Heat Bate btu/kwh 75F 75% Heat Bate btu/kwh 75F 50% Equiv. Avail. % Sched Outage (wks/yr) Equiv Forced Outage III. OPERATION Total X&Mgmm/yr) Fixed (\$/kw - yr) Vanable (excl. fuel) (\$/mwh) Capital Replace (\$mm/yr) IV. SPENDING CURVES Year 6 Year 5 Year 4	11 8 33 8,2 8 4 9 1 2.( 9 0.6 1 5 2,2	59 582 72 77 55% .6 0% 997 558 23 000 577 12	226 7,911 8,512 96% 1.3 1.5% 6.82 0.819 1.00 \$ \$ \$	329 7,619 7,619 7,429 96% 1.3 1.5% 5.37 0 585 2 10 \$ \$ \$ \$ 2,638		329 7,619 7,429 95% 1.6 2.0% 5.58 0.620 2.10	S S	135 7,820 8,580 95% 1.6 2.0% 9.92 1.064 1.00	402 10,004 10,384 97% 1.0 1.0% 1.0% 1.0% 1.0% 1.0% 5.874 \$ 5,874 \$ 8,293	804 \$399,683 10,004 10,384 97% 1.0 1.0% 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0
× × × × × × × × × × × × × × × × × × ×	Net Sum 95FCapability (mw) Net Win 59F Capability (mw) Heat Bate btu/kwh175F100% Load HHV Heat Bate btu/kwh 75F 75% Heat Bate btu/kwh 75F 50% Equiv. Avail. % Sched Outage (wks/yr) Equiv Forced Outage III. OPERATION Total X&M (mm/yr) Fixed (\$/kw - yr) Vanable (excl. fuel) (\$/mwh) Capital Replace (\$mm/yr) IV. SPENDING CURVES Year 6 Year 5 Year 4 Year 3	11 830 8,2 8 4 95 1 2.0 9 0.6 1 5 1,50 5 2,2 5 16,41	59 5821 72 77 55% .6 0% 997 558 23 000 577 12 98	226 7,911 8,512 96% 1.3 1.5% 6.82 0.819 1.00 \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	329 7,619 7,619 7,429 96% 1.3 1.5% 5.37 0 585 2 10 5.37 0 585 2 10 5.37 0 585 2 10 5.37 0 585 2 10 5.37 0 585 2 10 5.37 5.37 9.585 2 10 5.37 9.585 5 17,536 8 5 17,356		329 7,619 7,429 95% 1.6 2.0% 5.58 0.620 2.10 4,642 30,538	S S S S	135 7,820 8,580 95% 1.6 2.0% 9.92 1.064 1.00	402 10,004 10,384 97% 1.0 1.0% 1.0% 1.0% 1.0% 1.0% 5.5,874 5.8,74 5.8,293 5.61,850	804 \$399,683 10,004 10,384 97% 1.0 1.0% 5 5 5 10,694 5 15,097 5 112,596
×××××××××××××××××××××××××××××××××××××	Net Sum 95FCapability (mw) Met Win 59F Capability (mw) Heat Bate btu/kwh175F100% Load HHV Heat Bate btu/kwh 75F 75% Heat Bate btu/kwh 75F 50% Equiv. Avail. % Sched Outage (wks/yr) Equiv Forced Outage III. OPERATION Total X&M (mm/yr) Fixed (\$/kw - yr) Vanable (excl. fuel) (\$/mwh) Capital Replace (\$mm/yr) IV. SPENDING CURVES Year 6 Year 5 Year 4 Year 3 Year 2	11 8 33 8,2 8 4 9 1 2.( 9 0.6 1 5 2,2 5 16,4 5 25,0 1	59 582 1 72 77 55% .6 0% 997 558 23 000 577 12 98 70	226 7,911 8,512 96% 1.3 1.5% 6.82 0.819 1.00 \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	329 7,619 7,619 7,429 96% 1.3 1.5% 5.37 0 585 2 10 5.37 0 585 2 10 5.37 0 585 2 10 5.37 0 585 2 10 5.37 0 585 2 10 5.37 9,638 5 9,148		329 7,619 7,429 95% 1.6 2.0% 5.58 0.620 2.10 4,642 30,538 104,073	S S S S S	135 7,820 8,580 95% 1.6 2.0% 9.92 1.064 1.00 1.485 9,769 33,294	402 10,004 10,384 97% 1.0 1.0% 1.0% 1.0% 1.0% 5.5,874 5.8,293 5.61,850 5.93,984	804 \$399,683 10,004 10,384 97% 1.0 1.0% 5 5 5 10,694 5 15,097 5 10,694 5 15,097 5 112,596 5 171,096
× × × × × × × × × × × × × × × × × × ×	Net Sum 95FCapability (mw) Net Win 59F Capability (mw) Heat Bate btu/kwh 175F100% Load HHV Heat Bate btu/kwh 75F 75% Heat Bate btu/kwh 75F 50% Equiv. Avail. % Sched Outage (wks/yr) Equiv Forced Outage III. OPERATION Total X&M (mm/yr) Fixed (\$/kw - yr) Vanable (excl. fuel) (\$/mwh) Capital Replace (\$mm/yr) IV. SPENDING CURVES Year 6 Year 5 Year 4 Year 3 Year 2 Year 1	11 830 8,2 84 95 1 2.0 1 2.0 1 2.0 1 5 1,5 5 2,2 5 16,4 5 25,0 5 46,8 1 1 1 1 1 1 1 1 1 1 1 1 1	59 582 72 77 5% .6 0% 5% 58 23 00 57 12 98 70 22	226 7,911 8,512 96% 1.3 1.5% 6.82 0.819 1.00 \$ 5 1,558 \$ 10,249 \$ 34,927 \$ 35,255	329 37,619 7,619 7,429 96% 1.3 1.5% 5.37 0.585 2.10 5.37 0.585 2.10 5.37 0.585 2.10 5.37 0.585 2.10 5.37 0.585 5.37 5		329 7,619 7,429 95% 1.6 2.0% 5.58 0.620 2.10 4,642 30,538 104,073 105,051	S S S S S S S	135 7,820 8,580 95% 1.6 2.0% 9.92 1.064 1.00 1.485 9,769 33,294 33,606	402 10,004 10,384 97% 1.0 1.0% 1.0% 1.0% 1.0% 1.0% \$ 5,874 \$ 8,293 \$ 61,850 \$ 93,984 \$ 175,529	804 \$299,683 10,004 10,384 97% 1.0 1.0% 5 5 5 5 10,694 5 15,097 5 112,596 5 171,096 5 171,096 5 171,096 5 171,096
×XX × z A B C D H F G H = J K J M	Net Sum 95FCapability (mw) Net Win 59F Capability (mw) Heat Bate btu/kwh 175F100% Load;HHV Heat Bate btu/kwh 75F 75% Heat Bate btu/kwh 75F 50% Equiv. Avail. % Sched Outage (wks/yr) Equiv Forced Outage III. OPERATION Total:0&M:(mm/yr) Scheder (Scheder (Sch	11 830 8,2 84 95 1 2.0 1 2.0 1 2.0 1 2.0 1 2.0 1 2.0 1 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0	59 582 72 77 5% .6 0% 5% 58 23 00 57 12 98 70 22	226 7,911 8,512 96% 1.3 1.5% 6.82 0.819 1.00 \$ 5 1,558 \$ 10,249 \$ 34,927 \$ 35,255	329 37,619 7,619 7,429 96% 1.3 1.5% 5.37 0.585 2.10 5.37 0.585 2.10 5.37 0.585 2.10 5.37 0.585 2.10 5.37 0.585 5.37 5		329 7,619 7,429 95% 1.6 2.0% 5.58 0.620 2.10 4.642 30,538 104,073 105,051 244,304	S S S S S S S	135 7,820 8,580 95% 1.6 2.0% 9.92 1.064 1.00 1.485 9,769 33,294 33,606 78.154	402 10,004 10,384 97% 1.0 1.0% 1.0% 1.0% 1.0% 5.5,874 5.8,293 5.61,850 5.93,984	804 599,683 10,004 10,384 97% 1.0 1.0% 5 5 10,694 5 10,694 5 112,596 5 171,096 5 171,096 5 171,096 5 171,096 5 171,096 5 171,096 5 171,096 5 171,096 5 171,096 5 171,096 5 171,096 5 171,096 5 171,096 5 172,097 5 10,694 5 10,096 5 10,694 5 10,096 5 10,694 5 10,096 5 10,096 5 10,096 5 10,097 5 10,097 5 10,097 5 10,097 5 10,097 5 10,097 5 10,096 5 10,096 5 10,097 5 10,096 5 10,096 5 10,097 5 10,096 5 10,096 5 10,096 5 10,096 5 10,096 5 10,096 5 10,096 5 10,096 5 10,096 5 10,096 5 10,096 5 10,096 5 10,096 5 10,096 5 10,096 5 10,097 10,097
×XX × z A B C D H F G H = J K J M	Net Sum 95FCapability (mw) Net Win 59F Capability (mw) Heat Bate btu/kwh 175F100% Load HHV Heat Bate btu/kwh 75F 75% Heat Bate btu/kwh 75F 50% Equiv. Avail. % Sched Outage (wks/yr) Equiv Forced Outage III. OPERATION Total X&M (mm/yr) Fixed (\$/kw - yr) Vanable (excl. fuel) (\$/mwh) Capital Replace (\$mm/yr) IV. SPENDING CURVES Year 6 Year 5 Year 4 Year 3 Year 2 Year 1	11 830 8,2 84 95 1 2.0 1 2.0 1 2.0 1 5 1,5 5 2,2 5 16,4 5 25,0 5 46,8 1 1 1 1 1 1 1 1 1 1 1 1 1	59 582 17 72 17 5% .6 997 58 23 000 57 12 98 70 22 59 8 70 23 000 57 12 98 70 23 000 57 12 58 23 000 57 57 58 23 000 57 57 58 58 58 58 58 58 58 58 58 58	226 7,911 8,512 96% 1.3 1.5% 6.82 0.819 1.00 \$ 5 1,558 \$ 10,249 \$ 34,927 \$ 35,255 \$ 81.989	329 327,519 7,619 7,429 96% 1.3 1.5% 5.37 0.585 2.10 5.37 0.585 2.10 5.37 0.585 2.10 5.37 0.585 2.10 5.37 0.585 2.10 5.37 0.585 2.10 5.37 0.585 2.10 5.37 0.585 2.10 5.37 0.585 2.10 5.37 0.585 2.10 5.37 0.585 2.10 5.37 0.585 2.10 5.37 0.585 5.37 1.356 5.37 1.356 5.37 1.356 5.37 1.356 5.59,148 5.59,704 5.59,70		329 7,619 7,429 95% 1.6 2.0% 5.58 0.620 2.10 4,642 30,538 104,073 105,051	S S S S S S S S S S S S S S S S S S S	135 7,820 8,580 95% 1.6 2.0% 9.92 1.064 1.00 1.485 9,769 33,294 33,606	402 10,004 10,384 97% 1.0 1.0% 1.0% 1.0% 1.0% 1.0% 5.874 \$ 5,874 \$ 8,293 \$ 61,850 \$ 93,984 \$ 175,529 \$ 345,530	804 \$299,683 10,004 10,384 97% 1.0 1.0% 5 5 5 5 10,694 5 15,097 5 112,596 5 171,096 5 171,096 5 171,096 5 171,096
× X × z A B C D H F G H = J K J M Z Z	Net Sum 95FCapability (mw) Met Win 59F Capability (mw) Heat Bate btu/kwh 75F 75% Heat Bate btu/kwh 75F 75% Heat Bate btu/kwh 75F 50% Equiv. Avail. % Sched Outage (wks/yr) Equiv Forced Outage III. OPERATION Jotal:O&M:(mm/yr) State S	11 830 8,2 84 95 1 2.0 1 2.0 1 2.0 1 2.0 1 2.0 1 2.0 1 2.0 1 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0	59 582 72 77 5% .6 0% 997 57 57 12 98 70 22 59 69 C	226 7,911 8,512 96% 1.3 1.5% 2.74 6.82 0.819 1.00 \$ 5 1,558 \$ 10,249 \$ 34,927 \$ 35,255 \$ 81,989 +200 New NSC	329 37,619 7,619 7,429 96% 1.3 1.5% 5.37 0.585 2.10 5 2.638 5 17,356 5 2,638 5 17,356 5 59,148 5 59,704 5 138,845 +276 From NSC Incremental	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	329 7,619 7,429 95% 1.6 2.0% 5.58 0.620 2.10 4,642 30,538 104,073 105,051 244,304 +276 From NSC horemental	S S S S S S S S S S S S S S S S S S S	135 7,820 8,580 95% 1.6 2.0% 9.92 1.064 1.00 - 1.485 9,769 33,294 33,606 78,154 +118 rom NSC cremental	402 10,004 10,384 97% 1.0 1.0% 1.0% 10.62 1.671 2.00 \$ 5,874 \$ 8,293 \$ 61,850 \$ 93,984 \$ 175,529 \$ 345,530 +400	804 539.683 10,004 10,384 97% 1.0 1.0% 5 5 10,624 5 10,694 5 112,596 5 171,096 5 171,096 5 171,096 5 171,096 5 171,096 5 171,096 5 171,096 5 171,096 5 171,096 5 171,096 5 171,096 5 171,096 5 171,096 5 171,096 5 171,096 5 171,096 5 171,096 5 172,097 5 10,694 5 10,694 5 10,694 5 10,694 5 10,694 5 10,694 5 10,694 5 10,694 5 10,694 5 10,694 5 10,694 5 10,694 5 10,694 5 10,694 5 10,694 5 10,694 5 10,694 5 10,694 5 10,096 5 10,694 5 10,694 5 10,694 5 10,694 5 10,694 5 10,694 5 10,694 5 10,694 5 10,694 5 10,694 5 10,694 5 10,694 5 10,096 5 10,096 5 10,694 5 10,096 5 10,694 5 10,097 5 10,694 5 10,694 5 10,097 5 10,694 5 10,097 5 10,096 5 10,096 5 10,097 5 10,096 5 10,096 5 10,097 5 10,097 5 10,097 5 10,096 5 10,096 5 10,096 5 10,096 5 10,097 5 10,096 5 10,097 5 10,097 5 10,096 5 10,096 5 10,097 10,097 10
× X × z A B C D H F G H = J K J M Z Z	Net Sum 95FCapability (mw) Net Win 59F Capability (mw) Heat Bate btu/kwh 175F100% Load;HHV Heat Bate btu/kwh 75F 75% Heat Bate btu/kwh 75F 50% Equiv. Avail. % Sched Outage (wks/yr) Equiv Forced Outage III. OPERATION Total:0&M:(mm/yr) Scheder (Scheder (Sch	11 830 8,2 84 95 1 2.0 2.0 1 2.0 1 2.0 1 2.0 1 2.0 1 2.0 1 2.0 1 2.0 1 2.0 1 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0	59 582 72 77 5% .6 0% 997 57 57 12 98 70 22 59 69 C	226 7,911 8,512 96% 1.3 1.5% 2.74 6.82 0.819 1.00 \$ - \$ 1,558 \$ 10,249 \$ 34,927 \$ 35,255 \$ 81,969 +200 New NSC F	329 37,619 7,619 7,429 96% 1.3 1.5% 5,37 0,585 2,10 5 2,038 5,17,356 5,59,148 5,59,704 5,59	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	329 7,619 7,429 95% 1.6 2.0% 5.58 0.620 2.10 4.642 30,538 104.073 105,051 244.304 +276 From NSC horemental	S S S S S S S S S S S S S S S S S S	135 7,820 8,580 95% 1.6 2.0% 9.92 1.064 1.00 - 1.485 9,769 33,294 33,606 78,154 +118 rom NSC cremental V84.3	402 10,004 10,384 97% 1.0 1.0% 1.671 2.00% 1.671 2.00% 1.6755 1.6755 1.6755 1.6755 1.6755 1.6755 1.6755 1.67555 1.67555 1.4000 1.668 1.675556 1.4000 1.668 1.675556 1.4000 1.4000 1.688 1.4000 1.688 1.4000 1.688 1.4000 1.688 1.4000 1.688 1.4000 1.688 1.4000 1.688 1.4000 1.688 1.4000 1.688 1.67556 1.67556 1.67556 1.67556 1.67556 1.67556 1.67556 1.67556 1.67556 1.675567 1.4000 1.688 1.675567 1.4000 1.688 1.675567 1.4000 1.688 1.675567 1.4000 1.688 1.675567 1.4000 1.688 1.675567 1.4000 1.688 1.675567 1.4000 1.675567 1.4000 1.675567 1.675567 1.675567 1.675567 1.675567 1.6755777 1.6755777 1.675577777 1.6755777777 1.67557777777777777777777777777777777777	804 539.683 10,004 10,384 97% 1.0 1.0% 5 5 10,624 5 10,694 5 112,596 5 171,096 5 171,096 5 171,096 5 171,096 5 171,096 5 171,096 5 171,096 5 171,096 5 171,096 5 171,096 5 171,096 5 171,096 5 171,096 5 171,096 5 171,096 5 171,096 5 171,096 5 172,097 5 10,694 5 10,694 5 10,694 5 10,694 5 10,694 5 10,694 5 10,694 5 10,694 5 10,694 5 10,694 5 10,694 5 10,694 5 10,694 5 10,694 5 10,694 5 10,694 5 10,694 5 10,694 5 10,096 5 10,694 5 10,694 5 10,694 5 10,694 5 10,694 5 10,694 5 10,694 5 10,694 5 10,694 5 10,694 5 10,694 5 10,694 5 10,096 5 10,096 5 10,694 5 10,096 5 10,694 5 10,097 5 10,694 5 10,694 5 10,097 5 10,694 5 10,097 5 10,096 5 10,096 5 10,097 5 10,096 5 10,096 5 10,097 5 10,097 5 10,097 5 10,096 5 10,096 5 10,096 5 10,096 5 10,097 5 10,096 5 10,097 5 10,097 5 10,096 5 10,096 5 10,097 10,097 10
×××××××××××××××××××××××××××××××××××××	Net Sum 95FCapability (mw) Net Win 59F Capability (mw) Heat Bate btu/kwh 75F 75% Heat Bate btu/kwh 75F 75% Heat Bate btu/kwh 75F 50% Equiv. Avail. % Sched Outage (wks/yr) Equiv Forced Outage III. OPERATION Jotal O&M (mm/yr) Fixed (\$/kw - yr) Vanable (excl. fuel) (\$/mwh) Capital Replace (\$mm/yr) IV. SPENDING CURVES Year 6 Year 5 Year 4 Year 3 Year 2 Year 1 V. NOTES: Net MW change (summer) Equipment	11 83 8,2 8,2 8,2 8,4 9 1 2,0 1 2,0 1 2,0 1 2,0 1 2,0 1 2,0 2,0 2,0 2,0 2,0 2,0 2,0 2,0	59 382 72 77 5% .6 0% 5% .6 0% 5% 58 23 .000 57 12 98 70 22 59 69 C al	226 7,911 8,512 96% 1.3 1.5% 2.74 6.82 0.819 1.00 \$ - \$ 1,558 \$ 10,249 \$ 34,927 \$ 35,255 \$ 81,969 +200 New NSC F <sup>+</sup> 1CT & 1HRSC	329 327,619 7,619 7,429 96% 1.3 1.5% 52,84 5.37 0.585 2.10 5 2.638 \$ 17,356 \$ 2,638 \$ 17,356 \$ 59,148 \$ 59,704 \$ 138,845 +276 From NSC Incremental *F* 2CT&2HRSC	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	329 7,619 7,429 95% 1.6 2.0% 5.58 0.620 2.10 4.642 30,538 104.073 105,051 244.304 +276 From NSC horemental Fr	S S S S S S S S S S S S S S S S S S S	135 7,820 8,580 95% 1.6 2.0% 9.92 1.064 1.00 1.485 9,769 33,294 33,606 78,154 +118 rom NSC cremental V84.3 T & 1HRSG	402 10,004 10,384 97% 1.0 1.0% 1.671 2.00% 1.671 2.00% 1.575 1.575 1.575 1.575 1.575 1.575 1.575 1.575 1.575 1.575 1.575 1.575 1.575 1.575 1.575 1.75529 5.3455 1.75529 5.3455 1.75529 5.3455 1.75529 5.3455 1.75529 5.3455 1.75529 5.3455 1.75529 5.3455 1.75529 5.3455 1.75529 5.3455 1.75529 5.3455 1.75529 5.3455 1.75529 5.3455 1.75529 5.3455 1.75529 5.3455 1.75529 5.3455 1.75529 5.3455 1.75529 5.3455 1.75529 1.4000 1.4000 1.4000 1.4000 1.4000 1.4000 1.4000 1.4000 1.4000 1.4000 1.400	804 50004 10,004 10,384 97% 1.0 1.0% 5 5 5 10,629 6.83 1.585 3.00 5 5 10,694 5 112,596 5 112,596 5 112,596 5 112,596 5 112,596 5 112,596 5 112,596 5 112,596 5 10,694 5 12,596 5 12,597 5 12,596 5 12,596 5 12,596 5 12,596 5 12,596 5 12,596 5 12,596 5 12,596 5 12,597 5 12,596 5 12,597 5 12,596 5 12,596 5 12,597 5 12,596 5 12,596 5 12,596 5 12,597 12,596 5 12,596 12,596 12,596 12,596 12,596 12,596 12,596 12,596 12,597 12,596 12,596 12,597 12,596 12,596 12,597 12,596 12,596 12,597 12,596 12,597 12,596 12,596 12,597 12,596 12,596 12,597 12,596 12,596 12,596 12,596 12,597 12,596 12,596 12,597 12,596 12,596 12,596 12,597 12,596 12,5
	Net Sum 95FCapability (mw) ******** Net Win 59F Capability (mw) Heat Bate btu/kwh 75F 75% Heat Bate btu/kwh 75F 75% Heat Bate btu/kwh 75F 50% Equiv. Avail. % Sched Outage (wks/yr) Equiv Forced Outage III. OPERATION Jotal O&M (mm/yr) ************************************	11 83 8,2 8,2 8,4 9 1 2.0 1 2.0 1 2.0 1 2.0 1 2.0 1 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0	59 382 72 77 5% .6 0% 5% .6 0% 5% 58 23 .000 57 12 98 70 22 59 69 C al	226 7,911 8,512 96% 1.3 1.5% 6.82 0.819 1.00 \$ 5 5 5 5 8 10,249 \$ 34,927 \$ 35,255 \$ 81,969 +200 New NSC F <sup>*</sup> 1CT & 1HRSC Existing	329 327,619 7,619 7,429 96% 1.3 1.5% 5.37 0.585 2.10 5 2.638 5 17,356 5 59,148 5 59,704 5 59,704 5 59,704 5 138,845 +276 From NSC Incremental "F" 2CT&2HRSC Existing	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	329 7,619 7,429 95% 1.6 2.0% 5.58 0.620 2.10 4.642 30,538 104,073 105,051 244,304 +276 From NSC horemental Fr CT&2HRSG Existing	S S S S S S S S S S S S S S S S S S S	135 7,820 8,580 95% 1.6 2.0% 9.92 1.064 1.00 1.485 9,769 33,294 33,606 78.154 +118 rom NSC cremental V84.3 T & 1HRSC Existing	402 10,004 10,384 97% 1.0 1.0% 1.671 2.00% 5.874 5.874 5.874 5.8759 5.3984 5.33984 5.345530 +400 New NSC N/A Reservoir	804 5000 10,004 10,384 97% 1.0 1.0% 500 500 500 500 500 500 500 5
848 × n ≤ 80 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Net Sum 95FCapability (mw) Net Win 59F Capability (mw) Heat Bate btu/kwh 75F 75% Heat Bate btu/kwh 75F 75% Heat Bate btu/kwh 75F 50% Equiv. Avail. % Sched Outage (wks/yr) Equiv Forced Outage III. OPERATION Jotal O&M (mm/yr) Fixed (\$/kw - yr) Vanable (excl. fuel) (\$/mwh) Capital Replace (\$mm/yr) IV. SPENDING CURVES Year 6 Year 5 Year 4 Year 3 Year 2 Year 1 V. NOTES: Net MW change (summer) Equipment	11 83 8,2 8,2 8,2 8,4 9 1 2,0 1 2,0 1 2,0 1 2,0 1 2,0 1 2,0 2,0 2,0 2,0 2,0 2,0 2,0 2,0	59 582 72 77 5% .6 0% 997 58 23 000 57 12 98 70 22 59 69 C 11 C	226 7,911 8,512 96% 1.3 1.5% 2.74 6.82 0.819 1.00 \$ - \$ 1,558 \$ 10,249 \$ 34,927 \$ 35,255 \$ 81,969 +200 New NSC F <sup>+</sup> 1CT & 1HRSC	329 *****7,379, 7,619 7,429 96% 1.3 1.5% ************************************	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	329 7,619 7,429 95% 1.6 2.0% 5.58 0.620 2.10 4.642 30,538 104,073 105,051 244,304 +276 From NSC to remental FF CT&2HRSG Existing no	S S S S S S S S S S S S S S S S S S S	135 7,820 8,580 95% 1.6 2.0% 9.92 1.064 1.00 1.485 9,769 33,294 33,606 78,154 +118 rom NSC cremental V84.3 T & 1HRSG	402 10,004 10,384 97% 1.0 1.0% 1.671 2.00% 1.675 1.575 1.575 1.575 1.575 1.559 5.39344 5.33984 5.33984 5.3455 N/A New NSC N/A Reservoir no	804 \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$

60005019

# Repower Sanford

2002 and 2004

Docket No. 001148-EI

L. Kollen Exhibit No. \_\_\_ (LK-10 Sanford Comparisons Page 8 of 17

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		2002	2004
	Alternatives:	RePower	RePower
		PSN Units 384	PSN Units 3&4
	I. CONSTRUCTION (1000) 1998 \$		
A	Permit/Eng/Fab (months)	24	24
B	Construction Phase (months)	24	24
С	Project Total (months)	48	48
-	Land	\$0	<b>S</b> 0
-		\$279,521	\$279,521
F	Labor & Equipment	\$77,075	\$77,075
G	Total Direct Cost	\$356,596	\$356,596
	Construction Indirects	\$0	\$0
1	Licensing	\$5,000	\$5,000
	Project Support	\$5,000	\$5,000
	Contingency	\$25,000	\$25,000
_	Total Indirect Cost	\$35,000	\$35,000
	S/kW Net Summer	\$280	\$269
	\$/kW Net Winter	\$260	\$252
	Fuel Expansion	\$2,000	\$2,000
	Transmission Expansion	\$48,000	\$48,000
-	Railroad & Cars	\$0	\$0
	Total Other Cost	\$50,000	\$50,000
S	Grand Total Cost	\$441,596	\$441,596
Т	\$/KW Net Summer	\$315	\$303
U	S/KW Net Winter	\$293	\$284
	II. PLANT CHARACTERISTICS		
V	Net Sum 95FCapability (mw)	1,400	1,457
w	Net 75F Capability (mw)	1,506	1,555
	Net 59F Capability (mw)	1,541	1,623
X	Heat Rate btu/kwh 95F100% Load HHV	6,959	6,845
Y	Heat Rate btu/kwh 75F100% Load HHV	6,815	6,777
Y1	Heat Rate btu/kwh 75F 75% Load HHV	6,990	6,951
Y2	Heat Rate btu/kwh 75F 50% Load HH∨	7,630	7,587
z	Heat Rate btu/kwh 59F100% Load HHV	6,783	6,718
<b>A</b> A	Equiv. Avail. %	96%	96%
	Sched Outage (wks/yr)	15	1.5
	Equiv Forced Outage	1.0%	1.0%
DD	III. OPERATION Total Q&M (mm/yr)	\$8	\$8
	(remove 6MM for existing fleet cost		
- 1	for Repower only)		
	Capital Replace (\$mm/yr)	\$6	<b>\$</b> 6
	IV. SPENDING CURVES		
нн	Year 6	\$0	<b>\$</b> 0
11	Year 5	\$0	\$0
JJ .	Year 4	\$1,766	\$1,766
кк	Year 3	\$3,091	\$3,091
LL	Year 2	\$205,784	\$205,784
мм	Year 1	\$230,955	\$230,955
	V. NOTES:		
NN	· · · · <u>· · · · · · · · · · · · · · · </u>	1	
		New NSC	New NSC
	Fuel	Natural Gas	Natural Gas
	AFUDC Adder		
$\infty$	Equipment	"7F ++"	77F +++*
		6CT & 6HRSG	6CT & 6HRSG
PP	Cooling	Intake/Discharge	Intake/Discharge
••••			-
	SCR's	no	no

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## PRM PRELIMINARY

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Docket No. 001148-EI L. Kollen Exhibit No. \_\_\_ (LK-10) Sanford Comparisons Page 9 of 17

						-		L. Kolle
Ļ	New Generation Alternatives							Sanford
			20		21			Page 9 c
	Alternatives:	F	Repower		Repower			
		PFI	M Unit 1&2	Ρ	SN Unit 3&4			
	I. CONSTRUCTION (1000) 1998 \$							
	Permit/Eng/Fab (months)		22		24			
	Construction Phase (months)		25		24			
	Project Total (months)		-47	-	48			
	Land	\$	(681)	,	-			
	Matenais	5 5	291,802	\$	279,521			
_	Labor & Equipment Total Direct Cost	\$	85,450 376,571	\$	77.075 356,596			
	Construction Indirects	\$		\$				
		ŝ	5,000	s	5,000			
	Project Support	\$	5,000	s	5,000			
	Contingency	\$	-	s	25.000			
	Total Indirect Cost	\$	10.000	\$	35,000			
_	\$/KW Net Summer	\$	263	5	266			
	\$/KW Net Winter	\$	241	\$	244			
	Fuel Expansion	\$	6,000	\$	2,000			
	Transmission Expansion	\$	26,000	\$	48,000			
٥	Railroad & Cars	\$	-	\$	-			
R	Total Other Cost	\$	32,000	\$	50,000			re
7 <b>5</b> 9	Grand Total Cost	32	418,671	5	441,696			. –
5	SKW Net Summer	3	285	3	300			
υ	S/KW Net Winter	\$	261	\$	275		t	0
	II. PLANT CHARACTERISTICS					1	A	35°
	Net Sum 95FCapability (mw)	1. <del>1</del> 97		20	1,470			
	Net Win 75F Capability (mw)		1,535		1,535			
-	Net Win 59F Capability (mw)		1,605	F	1,605	f		
1	Heat Rate bturkwh 75F100% Load HHV	Same	ୁ କରୁ <b>ଅକ୍ଟୁ</b> 6,830	5-	6,795			
1	Heat Rate bluckwh 75F 50%		7,450		6,830 7,450		ິ.	745
	Eguiv. Avail. %	<del> </del>	96%	1	96%			
	Sched Outage (wks/yr)		1.5	1	1.5			
	Equiv Forced Outage		1.0%		1.0%			
		1						
DD	Total O&M (mm/yr)		- 14		5,172			
	Fixed (\$/kw - yr)	1	0.00		1.087			
	Vanable (excl. fuel) (\$/mwh)		-		0.370			
GG	Capital Replace (\$mm/yr)		0.00	2	12.67	]		
	IV. SPENDING CURVES							
НН	Year 6	S	•	\$	•			
11	Year 5	\$	5,450		-			
11	Year 4	\$	31,042		-			
KK		\$	227,471					
	Year 2	S.	116,227	1	122,620			
MM		<u> </u> \$	38,381	-	40,492	-		
MN	V. NOTES: Net MW change (summer)	\$	418,571 +953	\$	441,596 +953	-		
	Met WWW Change (Summer)	1	New NSC		New NSC			
1			remental O&N	.   .	ncremental O&M	ł		
		1		` "	2002			
00	Equipment		7F++"		7F++"			
		60	CT&6HRSG		6CT&6HRSG			
PP	Cooling		Exasting	1	Existing			
00	SCR's		no		no			
RR	Back-Up Fuel Adder	\$	-	5	-			
						-		

9/14/98 Bob Burgand

# 35° 1650 mw

6745 at 35°F.

Irp98r2

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#### PRM PRELIMINARY

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New Generation Alternatives 21 20 Alternatives: Repower Repower Simple Cycle Simple Cycle PFM 1 CT SC PSN 1CT SC I. CONSTRUCTION (1000) 1998 \$ Permit/Eng/Fab (months) А B Construction Phase (months) C. Project Total (months) D Land E Materials Labor & Equipment F G |Total Direct Cost \$ \$ \_ -Construction Indirects Н Licensing Т J Project Support K Contingency Total Indirect Cost L 15 \$ . \$/KW Net Summer \$ \$ Μ -. \$ N \$/KW Net Winter \$ Fuel Expansion 0 P Transmission Expansion Q Railroad & Cars R Total Other Cost S \$ . S-Grand Total Cost **3** 24 4 147 . \$ أنهزر T. VKW Net Summer-\$ 22 · • • . 3: U \$/KW Net Winter \$ S IL PLANT CHARACTERISTICS V Net Sum 95FCapability (mw) 149 149 Net Win 75F Capability (mw) 163 163 v W Net Win 59F Capability (mw) 172 172 \* Heat Rate blu/kwh 75F100% Load HHV 10,450 10,450 . 2 Heat Rate btu/kwh 75F 75% 11,280 11,280 Y Z Heat Rate btu/kwh 75F 50% 13,500 13,500 AA Equiv. Avail. % BB Sched Outage (wks/yr) CC Equiv Forced Outage III. OPERATION DD Total O&M (mm/yr) EE Fixed (\$/kw - yr) FF Vanable (excl. fuel) (\$/mwh) GG Capital Replace (\$mm/yr) IV. SPENDING CURVES HH Year 6 \$ -\$ H Year 5 \$ \$ Year 4 \$ \$ JJ ĸк Year 3 s s LL Year 2 £ s мм Year 1 \$ \$ V. NOTES: \$ . \$ ٠ NN Net MW change (summer) New NSC New NSC Equipment Available 2002 2002 00 Equipment 7F++\* 7F++" Simple Cycle Simple Cycle PP Cooling N/A N/A QQ SCR's no no RR Back-Up Fuel Adder s \$

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9/14/88 from Bob Burgard

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	New Generation Alternatives		
		20	21
-+	Alternatives:	Repower	Repower
		PFM Unit 1&2	PSN Unit 3&4
	I. CONSTRUCTION (1000) 1998 \$		
A	Permit/Eng/Fab (months)	22	24
	Construction Phase (months)	25	24
C,	Project Jotal (months) 4:35	and I have	48-5-5-
D	Land	<b>\$</b> (681)	5
Ε	Matenals	\$ 291,802	\$ 279,521
	Labor & Equipment	\$ 85 450	<u>\$</u> 77,075
	Total Direct Cost	\$ 376,571	
	Construction Indirects	S -	S -
1	Licensing	S 5,000	\$ 5 000
J	Project Support	S 5,000	\$ 5,000
K L	Contingency Total Indirect Cost	s - \$ 10,000	\$ 25.000 \$ 35.000
M	S/KW Net Summer	\$ 10.000 \$ 263	
N	S/KW Net Summer	\$ 263 \$ 241	\$ 266 \$ 244
	Fuel Expansion	5 6,000	
	Transmission Expansion	\$ 26,000	\$ 2.000 \$ 48.000
0	Railroad & Cars	s -	\$ -
R	Total Other Cost	\$ 32.000	\$ 50,000
St	Grand-Total Cost	SEC 418:571:	
	S/KW.Net:Summer	285:	15
U	S/KW Net Winter	S 261	<b>S</b> 275
	II. PLANT CHARACTERISTICS		
¥75	Nel Sum 95F Capability (mw) - 1	51:470	1470
۷	Net Win 75F Capability (mw)	1,535	1,535
W	Net Win 59F Capability (mw)	1,605	1,605
	Heat Rate btu/kwh 75E100% Load HHV		56,795
	Heat Rate btu/kwh 75F 75%	6.830	6,830
<u>Z</u>	Heat Rate btu/kwh 75F 50%	7,450	7.450
	Equiv Avail %	96%	96%
	Sched Outage (wks/yr) Eguiv Forced Outage	1.5 1 0%	1.5
00		10%	1.0%
nn)	TolalO8M (mm/y)	STREET, STREET	<b>21</b> 2252-6.1728
	Fixed (S/kw - yr)	0.00	1.087
	Vanable (excl. fuel) (\$/mwh)		0.370
	Capital Replace (Smm/yr)	0.00	
_	IV. SPENDING CURVES		
нн	Year 6	\$ -	s -
li	Year 5	\$ 5,450	S -
11	Year 4	\$ 31,042	
•KK	Year 3	S 227,471	
LL	Year 2	S 116,227	{
MM		\$ 38,381	\$ 40,492
NINT	V. NOTES: Net MW change (summer)	\$ 418.571	\$ 441 596
1413	isteringe (summer)	+953 New NSC	+953
		Incremental O&M	New NSC
	l Equipment Available	incremental U&M	incremental O&M
00	Equipment	7E++*	2002 7F++*
		6CT&6HRSG	6CT&6HRSG
PP	Cooling	Existing	Existing
	SCR's		
	Back-Up Fuel Adder	s	no S
		L	1

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	New Generation Alternatives		
ł	New Generation Alternatives	20	7.
_+			
	Alternatives:	Repower	Repower
		Simple Cycle	Simple Cycle
		PFM 1 CT SC	PSN 1CT SC
	I. CONSTRUCTION (1000) 1998 \$	.	
A	Permit/Eng/Fab (months)		
	Construction Phase (months)		
-CF	Project I otal (months)		State State
D	Lanc		
Е	Matenals		
F	Labor & Equipment		
G	Total Direct Cost	s -	5 -
h	Construction Indirects		
1	Licensing		
J	Project Support		
	Contingency		
L	Total Indirect Cost	s -	Ş
MI	\$/KW Net Summer	s -	\$-
N	\$/KW Net Winter	\$-	s -
0	Fuel Expansion		
	Transmission Expansion		
0	Railroad & Cars		
R	Total Other Cost	s -	s -
SA:	Grand-Total Cost	N. C. State	15.2.12 (State
	S/KW Net Summer 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	(SECONDE	STRE TEL
	\$/KW Net Winter	ş -	s -
	II. PLANT CHARACTERISTICS		
V.	NetiSum 95ECapability (mw)	149	2020311491
v	Net Win 75F Capability (mw)	163	163
w	Net Win 59F Capability (mw)	172	172
X	Heat Rate blu/kwhy5F100%Load HHV	10,450	Sec. \$ \$10,450;
Y	Heat Rate btu/kwh 75F 75%	11,280	11,280
Z	Heat Rate btu/kwh 75F 50%	13,500	13 500
AA	Equiv Avail. %		
BB	Sched Outage (wks/yr)		
	Equiv Forced Outage		
	III. OPERATION		
DD.	Total:O&M (mm/yr)		
	<b>-</b> · · ·		
	· · · · · · · · · · · · · · · · · · ·		
		S -	5 -
		\$ -	- Ş
	1	\$ -	S -
	1	S -	\$ -
		\$ -	S -
	·	\$- \$-	<u> </u>
<b>NEN</b>	Net MW change (summer)	-	
IND	The MAY Change (SUBRIEL)	New NSC	New NSC
	Equipment Available	2002	2002
00	Equipment	7E++*	7E++*
00	Equipment (	Simple Cycle	Simple Cycle
		N/A	N/A
	1	no no	no
	Daux-Up I bernouer	s	S
<u> </u>	1 <b></b>		1.

Page 1

MAY 1, 1998

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# SUMMARY OF GENERATION ALTERNATIVES COST AND COMPETITION TEAM

Docket No. 001148-EI L. Kollen Exhibit No. (LK-10)

Sanford Comparisons

		CUSTAN	IRP 1998			ord Comparisons 13 of 17
	New Generation Alternatives		INF 1990	······		
		16	19	20		
					21	
1	<u>Alternatives:</u>	200 SC	500 CC - F++	Repower	Repower	Repower
		Exist Site - "G"	Greenfiela	PFM Unit 1&2		PSN Unit 3&4
	1. CONSTRUCTION (1000) 1998 \$	Exist Sile - G	Greenileia		PSN Unit 3&4	PSN Unit 384
	Permil/Eng/Fab (months)	.e.	24	<b>2</b> 2	24	24
1 1	Construction Phase (months)	6	24	25	24	24 24
	Project Total (months)	STATE STATE		2. Jon 47		
E.YEI	Cocci i oto a di contro i secciona di contro d	**************************************	\$ 1,200	\$ (681)		E -
Ε	Materials	s 42.069	120,000	\$ 291,802	s 279 521	\$ 279 521
	Labor & Equipment	\$ 6 333	\$ 44.000	\$ 85,450	s 77.075	\$ 77 075
	Total Direct Cost	\$ 48 402	165.200	\$ 376,571	\$ 356.596	
н	Construction Indirects	\$ -		s -	5 - 1	S
1	Licensing	S 400	\$ 3,200	\$ 5 000	<b>s</b> 5,000	\$ 5,000
J	Project Support	\$ 1,090	2,700	\$ 5,000	S 5000	\$ 5,000
K	Contingency	<b>S</b> 249	§ 6.844	ş -	\$ 25 000	\$ 25,000
	Total Indirect Cost	<b>\$</b> 1739	12,744	\$ 10,000	\$ 35.000	\$ 35.000
			378	\$ 278	\$ 281	\$
			, 350	S 252	<b>S</b> 255	S
0	Fuel Expansion	<b>f</b> 200	\$ 4,000	<b>S</b> 6,000	\$ 2.000	\$ 2,000
Р	Transmission Expansion	By Otners	\$ 13,000	\$ 26, <b>00</b> 0	S 48,000	\$ 48,000
Q	Railroad & Cars	\$	s -	\$ -	- 2	S -
R	Total Other Cost	S 200	\$ 17,000	\$ 32,000	\$ 50,000	\$ 50,000
S	Grandi Total: Costore the state of the	e\$50;341;	SEF-022 194,944)	\$157418:574F	[Sympet441;596]	151312441:5963
初始	S/KWiNet/Summer		State: 4143		SPER 3174	and the second se
U	\$/KW Net Winter	1 212	\$ 383	\$ 273	S 288	S 285
	II. PLANT CHARACTERISTICS					
	Net Sum 95ECapability (mw)	209	C235 7 471	phone 1:393	NSA: 11393:	14076
V	Net Win 75F Capability (mw)	224	491	1,499	1,499	1,514
	Net Win 59F Capability (mw)	237	509	1,534	1.534	1,549
eX4	HeatiRate blu/kwhi/25F100% Load HHV a		<b>111</b> 5-802	<b>新新新新6:802</b> 3	14-16,802	6768
Y	Heat Rate btu/kwh 75F 75%	10.915	6.832	6,632	6.832	6,798
Z	Heat Rate btu/kwh 75F 50%	11,875	7,458	7,458	7.458	7,421
	Equiv Avail %	98%	96%	96%	96%	96%
	Sched Outage (wks/yr)	0.5	1.5	1.5	1.5	1.5
CC	Equiv Forced Outage	1 0%	1 0%	1.0%	1 0%	1.0%
	III. OPERATION					
	TotalO8M (mm/yr)		当日日本日24 <b>7</b> 0]		A COMPANY OF THE OWNER OF THE OWNER OF	Contraction of the Contract of
1	Fixed (S/kw - yr)	0.51	4.95	0 00		
FF	Vanable (excl_fuel) (\$/mwh)	0.295	0.598	•	0.370	0.374
66	Capital Replace (Smm/yr)	1.50	4 4 4	0.00	12 67	12.73
нн	IV. SPENDING CURVES Year 6	l	e		1 5	
	Year 5	\$- c	\$- e	\$ -		S -
LL I	Year 5 Year 4	s - s -	\$ - \$ 780	\$ 5,450	\$ -	\$ -
кк	Year 3	s -	\$ 780 \$ 1,365	\$ 31,042 \$ 227,471	\$ 38,499 \$ 239,984	1 1
L	Year 2	\$ 17,620	\$ 90,844		\$ 239,984 \$ 122,620	
мм	1	\$ 17,620	\$ 90,844 \$ 101,956	1	S 122,620 S 40,492	1 1
	V. NOTES:	\$ <u>50.341</u>	\$ 101,956 \$ 194,944			
NN	Net MW change (summer)	+209	+471	+953	+953	+967
		New NSC	New NSC	New NSC	New NSC	New NSC
				Incremental O&M	Incremental O&M	Incremental O&M
1	Equipment Available	{			2002	2004
່າວ	Equipment	1-CT - "G"	7F++*	7F++*	7F++*	7E+++*
		-	2CT&2HRSG&1ST		6CT&6HRSG	6CT&6HRSG
PP	Cooling	Existing	Tower	Existing	Existing	Existing
	SCR's		no	no	no	no
RR	Back-Up Fuel Adder	\$ 2,500	\$ 3,500		s	s
	gen alternatives		Page 4	<u> </u>		5/12/98 10:5

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5/12/98 10:52 AM

APRIL 9, 1999

Alternatives:

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Materials

Licensing

Labor & Equipment

Construction Indirects

Total Direct Cost

Project Support

Total Indirect Cost

Contingency

Permit/Eng/Fab (months)

Construction Phase (months)

New Generation Alternatives

I. CONSTRUCTION (1000) 1999 \$

## SUMMARY OF GENERATION ALTERNATIVES IRP 1999

1

1

20.344

1 497

1,397

6.987

8.384

60,088

95,023

177,470

349,350

+400

New NSC

1CFB

Tower

yes - SNCR

3,000

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L. Kollen Exhibit No.

(LK-10)

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Sanford Comparisons

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Greenfield

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1,200

120.000

44,000

165,200

3,200

2.700

6.844

12.744

Docket No. 001148-EI

15 17 14 16 18 400 CFB 400 CFB 400 PC 400 PC 150 SC - F Simple Cycle Greenfield Greenfield Martin Martin **Existing Site** 33 30 36 30 9 30 27 30 27 6 Projectional (monits) 1.210 \$ 1.210 \$ s \$ s 224,210 \$ 224,210 \$ 226,000 \$ 224,000 s \$ \$ 95,586 \$ 95.586 \$ 104,000 \$ 104,000 s \$ 321.006 \$ 319,796 \$ 331,210 \$ 328,000 < \$ 2 S 2 s \$ 6.000 S 5,500 ŝ 6,000 \$ 5,500 s \$ 4,100 \$ 3,608 S 4.220 S 3.616 \$ 10,244 S 8,512 S 10,657 8,799 \$ s \$

20,877 \$

17.915 \$

17.620

S

853 \$ 844 880 5 865 290 363 S/KW Net Summer \$ s S S 2 849 S 839 \$ 335 S/KW Net Winter 2 876 2 860 251 5 Fuel Expansion \$ Ş Ŝ S By Others 5 Transmission Expansion By Others By Others By Others By Others By Others By Others S 8.000 S 8,000 S 8.000 2 8 000 Railroad & Cars \$ 8.000 S 8,000 \$ 8.000 \$ 8.000 \$ R |Total Other Cost S s Sp Granduotal Costa 2020 127 137 139 349 3501 15 345 416 13 5360 087 15 53 59157 15 500 561 43 1501 15 12 57 541 177 544 59404-8733 59744-8644 SEA 900 Star 8851 SEA 2901 IS 363 TI S/KW.Net/Summer 869 859 896 \$ 880 251 5 335 U S/KW Net Winter S S \$ s II. PLANT CHARACTERISTICS V NeliSum 95F Capability (mw) 4002 4001 55524001 401 Net Win 75F Capability (mw) 401 401 401 163 510 55. 402 402 402 402 532 Net Win 59F Capability (mw) 172 6830 X HeatRatebu/kwhi75E100%10adHHV 9,500 | 54 - 9,500 | 10,450 6775 9,700 9,700 9.600 7.171 Heat Rate btu/kwh 75F 75% 9 600 11.280 7,718 Heat Rate btu/kwh 75F 50% 10,200 10,200 10,100 10,100 13,500 97% 97% 97% 97% 98% 96% AA Equiv, Avail. % 1.0 1.0 1.0 1.0 0.5 1.5 BB Sched Outage (wks/yr) 1.0% 1.0% 1.0% 1.0% 1.0% CC Equiv Forced Outage 1.0% III. OPERATION 10% Capacity Cap 0.18 4 59 DD I DEI O&M(mm/yp) 2:12:91 11:D3 EE Fixed (\$/kw - yr) 15 40 10 70 18 66 13 96 0.72 5.18

1 4 9 7

5,872

8,290

61,829

93,953

175.471

345,416

+400

New NSC

1CFB

Reservoir

yes - SNCR

3,000

\$

2.00

5

s

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\$

S

S

1 603

1,440 S

7,202

8.642

61,935

97,944

360,087

\$ 182,924

+400

New NSC

PC

Tower

yes - SCR

3,000

\$

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\$

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3 00

1.603

6,724

8,494

62,643

96,265

353,915 \$

179,789

+400

New NSC

PC

Reservoir

ves - SCR

3,000

\$

3 00

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0.59

0.00

+149

New NSC

2002

7F 7241

Simple Cycle

N/A

no

Included

ok.

3.500

E 14

6 - "

24

FF Variable (excl fuel) (\$/mwh)

IV. SPENDING CURVES

Year 6

Year 5

Year 4

Year 3

Year 2

Year 1

GG Capital Replace (\$mm/yr)

NOTES:

NN (Net MW change (summer)

Equipment Available

JO Equipment

PP Cooling

SCR's

QQ

0.50

3.32

+490

New NSC

7F 7241 Foggers

2CT&2HRSG&1ST

Tower

no

-

712

1,246

82,922

93,065

177,944

\$

S

s

\$

\$

\$

\$

\$

15,103

28.048

43,150

APRIL 9, 1999

# SUMMARY OF GENERATION ALTERNATIVES IRP 1999

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			IRP 1999		Page 15 of 17	
	New Generation Atternatives	T				
		20	214	21E 1	RS to	
	Alternatives:	Repower	Repower	Repower	400 CC - ATE	(
- {	Anternatives,		. ICE STIC			
		PFM Unit 1&2	PSN Unit 4	PSN Und 5	Ft Myers	Fr Myers
	I. CONSTRUCTION (1000) 1999 \$					
A	Permit/Eng/Fab (months)	5	10	10	22	22
в	Construction Phase (months)	28	2E	28	19	٠ç ,
(G)-	Projectsi otali(months)	Service Service		A		
D	Lanc	\$-			\$	£ . ·
-	Materiais	\$ 285,148	\$ 175.231	\$ 175,231	\$ 123 000	2 88 747
	Labor & Equipment	\$ 111,342			<u>\$ 35 CCC '</u>	
	Total Direct Cost	\$ 396.489			\$ 155,000	
	Construction Indirects	- 2	\$ ·		•	
	Licensing	\$ 5,282	\$ 2,605	\$ 2,605	•	S 3 600
	Project Support	\$ 5,865		\$ 3,079	•	s 2 700 j
_	Contingency	\$ 5.284	\$ 11.118 \$ 16,802	\$ 11,118 \$ 16.802	<u>5 65721</u> 5 128721	
	Total Indirect Cost	\$ 16,432				
	S/KW Net Summer	\$ 2B1	\$ 268 \$ 251		\$ 43~ j \$ 391	5 400   5 352
	S/KW Net Winter	\$ 259				
	Fuel Expansion	۰ ، <sup>ع</sup>	- 2	Ş -	By Others	By Liners
	Transmission Expansion	\$ 27,906	\$ 39,832	\$ 39,832	By Others	By Otners 5 -
	Railroad & Cars	s - \$ 27,906	\$ - \$ 39.832	s - \$ 39.832	-	
	Grand-Total:Cost		\$300,731; \$308;			the second second second second second second second second second second second second second second second s
	S/KW.Net/Summer	\$ 276				
<u> </u>	I. PLANT CHARACTERISTICS	270	250	250	3 390 1	
R.V.	NetSum95ECapability/(mv)	1470;	975	1433 STORE 975	6.972.9252729211	212
	Net Win 75F Capability (mw)	PAG WITT 1.530	1.017	1,017	410	336
	Net Win 59F Capability (mw)	1625 MW ? 1,595	1,038	1,038	429	355
	Heat Rate Dul/KWh75F100%1 oad HHVE					
	Heat Rate btu/kwh 75F 75%	7,171	7,203	7,203	6,599	7,010
z	Heat Rate btu/kwh 75F 50%	7,718	7,752	7,752	7,297	7,710
AA	Edury Avail %	96%	96%	95%	96%	95%
вв	Sched Outage (wks/yr)	1.5	1.5	1.5	15	1.5
CC	Equiv Forced Outage	1 0%	1.0%	1 0%	1 0%	1.0%
	111. OPERATION				1	
	TotalO8M(mm/yi)	5 9.55 F				
		1.25 A	6.21	2011 2.6.21	1989 Star	333764
<u> </u>	Fixed (\$/kw - yr)	3.40	6:21 3.08	3.08	3 87	4 89
G	Vanable (excl. fuel) (\$/mwh)	3.40 0.368	3.08 0.39	3.08 0.39	3 87 0 71	4 89 0 70
1	Vanable (excl. fuel) (\$/mwh) Capital Replace (\$mm/yr)	3.40	3.08	3.08	3 87	4 89
<u> </u>	Vanable (excl. fuel) (S/mwh) Capital Replace (Smm/yr) IV. SPENDING CURVES	3.40 0.368 9.20	3.08 0.39 6.33	3.08 0.39 6.33	3 87 0 71 3 51	4 89 0 70 2.59
нн	Vanable (excl. fuel) (\$/mwh) Capital Replace (\$mm/yr) IV. SPENDING CURVES Year 6	3.40 0.368 9.20 \$ -	3.08 0.39 6.33 \$ -	3.08 0.39 6.33	3 87 0 71 3 51	4 89 0 70 2.59 \$
п	Vanable (excl. fuel) (\$/mwh) Capital Replace (\$mm/yr) IV. SPENDING CURVES Year 6 Year 5	3.40 0.368 9.20 \$ - \$ 10,304	3.08 0.39 6.33 \$ - \$ 31,400	3.08 0.39 6.33 \$ - \$ 31,400	3 87 0 71 3 51 \$ - \$ -	4 89 0 70 2.59 \$ \$
il LL	Vanable (excl. fuel) (\$/mwh) Capital Replace (\$mm/yr) <u>IV. SPENDING CURVES</u> Year 6 Year 5 Year 4	3.40 0.368 9.20 \$ - \$ 10.304 \$ 148,505	3.08 0.39 6.33 \$ - \$ 31,400 \$ 119.450	3.08 0.39 6.33 \$ - \$ 31,400 \$ 119.450	3 87 0 71 3 51 \$ - \$ - \$ - \$ - \$ - \$ - \$ - \$ -	4 89 0 70 2.59 \$ . \$ . \$ . \$ . \$ . \$ .
KK JJ II	Vanable (excl. fuel) (S/mwh) Capital Replace (Smm/yr) IV. SPENDING CURVES Year 6 Year 5 Year 4 Year 3	3.40 0.368 9.20 \$ - \$ 10,304 \$ 148,505 \$ 138,864	3.08 0.39 6.33 5 - 5 31,400 5 119.450 5 91,714	3.08 0.39 6.33 5 - 5 31,400 5 119.450 5 91,714	3 87 0 71 3 51 \$ - \$ - \$ - \$ - \$ - \$ - \$ - \$ - \$ - \$ -	4 89 0 70 2.59 \$ - \$ - \$ - \$ - \$ - \$ - \$ - \$ - \$ - \$ -
ГТ КК Л	Vanable (excl. fuel) (S/mwh) Capital Replace (Smm/yr) IV. SPENDING CURVES Year 6 Year 5 Year 4 Year 3 Year 2	3.40 0.368 9.20 \$ 10,304 \$ 148,505 \$ 138,864 \$ 117,147	3.08 0.39 6.33 \$ - \$ 31,400 \$ 119.450 \$ 91,714 \$ 42.096	3.08 0.39 6.33 5 - 5 31,400 5 119.450 5 91,714 5 42,096	3 87 0 71 3 51 \$ - \$ - \$ - \$ - \$ - \$ - \$ - \$ - \$ - \$ -	4 89 0 70 2.59 \$ • \$ • \$ • \$ • \$ • \$ • \$ • \$ • \$ • \$ •
KK JJ II	Vanable (excl. fuel) (S/mwh) Capital Replace (Smm/yr) IV. SPENDING CURVES Year 6 Year 5 Year 4 Year 3 Year 2 Year 1	3.40 0.368 9.20 \$ 10.304 \$ 148,505 \$ 138,864 \$ 117,147 \$ 26,007	3.08 0.39 6.33 5 - 5 31,400 5 119.450 5 91,714 5 91,714 5 42.096 5 16,004	3.08 0.39 6.33 5 - 5 31,400 5 119.450 5 91,714 5 91,714 5 42,096 5 16,004	3 87 0 71 5 51 \$ - \$ 623 \$ 1,196 \$ 79,526 \$ 85,356	4 89 0 70 2.59 \$ - \$ - \$ - \$ - \$ - \$ - \$ - \$ - \$ - \$ -
MW KK JJ	Vanable (excl. fuel) (\$/mwh) Capital Replace (\$mm/yr) IV. SPENDING CURVES Year 6 Year 5 Year 4 Year 3 Year 2 Year 1 V. NOTES;	3.40 0.368 9.20 5 - 5 10.304 5 148,505 5 138,864 5 117,147 5 26,007 5 440,827	3.08 0.39 6.33 \$ 5 5 31,400 \$ 119.450 \$ 91,714 \$ 42.096 \$ 16,004 \$ 300,663	3.08 0.39 6.33 5 - \$ 31,400 \$ 119.450 \$ 91,714 \$ 42,096 \$ 16,004 \$ 300,653	3 87 0 71 3 51 5 - 5 - 5 - 5 - 5 - 5 - 5 - 5 - 5 - 5 -	4 89 0 70 2.59 \$ - \$ - \$ - \$ - \$ - \$ - \$ - \$ - \$ - \$ -
MW KK JJ	Vanable (excl. fuel) (S/mwh) Capital Replace (Smm/yr) IV. SPENDING CURVES Year 6 Year 5 Year 4 Year 3 Year 2 Year 1	3.40 0.368 9.20 \$ 10.304 \$ 148,505 \$ 138,864 \$ 117,147 \$ 26,007	3.08 0.39 6.33 5 - 5 31,400 5 119.450 5 91,714 5 91,714 5 42.096 5 16,004	3.08 0.39 6.33 5 - 5 31,400 5 119.450 5 91,714 5 91,714 5 42,096 5 16,004	3 87 0 71 5 51 \$ - \$ 623 \$ 1,196 \$ 79,526 \$ 85,356	4 89 0 70 2.59 \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$
MW KK JJ	Vanable (excl. fuel) (\$/mwh) Capital Replace (\$mm/yr) IV. SPENDING CURVES Year 6 Year 5 Year 4 Year 3 Year 2 Year 1 V. NOTES; Net MW change (summer)	3.40 0.368 9.20 5 - 5 10.304 5 148,505 5 138,864 5 117,147 5 26,007 5 440,827 +953	3.08 0.39 6.33 5 5 5 31,400 5 119.450 5 91,714 5 42.096 5 16,004 5 300,663 +607	3.08 0.39 6.33 5 - 5 31,400 5 119.450 5 91,714 5 42.096 5 16,004 5 300,653 +607	3 87 0 71 3 51 5 - 5 - 5 - 5 - 5 - 5 - 5 - 5 - 5 - 5 -	4 89 0 70 2.59 \$ \$ \$ 499 \$ 874 \$ 58,185 \$ 65,302 \$ 124,860 +312 New NSC
ии ММ ЛУ II	Vanable (excl. fuel) (\$/mwh) Capital Replace (\$mm/yr) <u>IV. SPENDING CURVES</u> Year 6 Year 5 Year 4 Year 3 Year 2 Year 1 <u>V. NOTES;</u> Net MW change (summer) Equipment Available	3.40 0.368 9.20 5 - 5 10.304 5 148,505 5 138,864 5 117,147 5 26,007 5 440,827 +953 New NSC	3.08 0.39 6.33 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	3.08 0.39 6.33 5 - 5 31,400 5 119.450 5 91,714 5 42,096 5 16,004 5 300,653 +607 New NSC	3 87 0 71 3 51 5 - 5 - 5 - 5 - 5 - 5 - 5 - 5 - 5 - 5 -	4 89 0 70 2.59 \$ \$ \$ 499 \$ 874 \$ 58,185 \$ 65,302 \$ 124,860 +312 New NSC 2000+
ии ММ ЛУ II	Vanable (excl. fuel) (\$/mwh) Capital Replace (\$mm/yr) IV. SPENDING CURVES Year 6 Year 5 Year 4 Year 3 Year 2 Year 1 V. NOTES; Net MW change (summer)	3.40 0.368 9.20 5 - 5 10,304 5 148,505 5 138,864 5 117,147 5 26,007 5 440,827 +953 New NSC 7F 7241 Foggers	3.08 0.39 6.33 \$ 5 5 5 119.450 \$ 91,714 \$ 42.096 \$ 16,004 \$ 300,663 +607 New NSC 7F 7241 Foggers	3.08 0.39 6.33 5 - 5 31,400 5 119.450 5 91,714 5 42,096 5 16,004 5 300,653 +607 New NSC 7F 7241 Foggers	3 87 0 71 5 51 5 - 5 - 5 - 5 - 5 - 5 - 5 - 5 - 5 - 5 -	4 89 0 70 2.59 \$ \$ \$ 499 \$ 874 \$ 58,185 \$ 65,302 \$ 124,860 +312 New NSC 2000+ "G"
A Z W F X F	Vanable (excl. fuel) (S/mwh) Capital Replace (Smm/yr) <u>IV. SPENDING CURVES</u> Year 6 Year 5 Year 4 Year 3 Year 2 Year 1 <u>V. NOTES;</u> Net MW change (summer) Equipment Available Equipment	3.40 0.368 9.20 5 5 10.304 5 148,505 5 138,864 5 117,147 5 26,007 5 440,827 +953 New NSC 7F 7241 Foggers 6CT&6HRSG	3.08 0.39 6.33 5 5 5 31,400 5 119.450 5 91,714 5 91,714 5 91,714 5 91,714 5 91,714 5 16,004 5 16,004 5 16,004 5 7F 7241 Foggers 4CT&4HRSG	3.08 0.39 6.33 5 5 5 119.450 5 91,714 5 91,714 5 91,714 5 91,714 5 91,714 5 16,004 5 16,004 5 16,004 5 7F 7241 Foggers 4CT&4HRSG	3 87 0 71 3 51 \$ \$ \$ 623 \$ 1,195 \$ 79,526 \$ 85,366 \$ 170,872 +394 New NSC 2003-2005 ATS - "H" 1CT & 1HRSG	4 89 0 70 2.59 \$ \$ \$ 499 \$ 874 \$ 58,185 \$ 65,302 \$ 124,860 +312 New NSC 2000+ "G" 1CT & 1HRSG
	Vanable (excl. fuel) (S/mwh) Capital Replace (Smm/yr) IV. SPENDING CURVES Year 6 Year 5 Year 4 Year 3 Year 2 Year 1 V. NOTES: Net MW change (summer) Equipment Available Equipment Cooling	3.40 0.368 9.20 5 5 10,304 5 148,505 5 138,864 5 117,147 5 26,007 5 440,827 +953 New NSC 7F 7241 Foggers 6CT&6HRSG Existing	3.08 0.39 6.33 5 5 5 31,400 5 19,450 5 91,714 5 42,096 5 16,004 5 300,663 +607 New NSC 7F 7241 Foggers 4CT&4HRSG Existing	3.08 0.39 6.33 5 - 5 31,400 5 119.450 5 91,714 5 42,096 5 16,004 5 300,653 +607 New NSC 7F 7241 Foggers 4CT&4HRSG Existing	3 87 0 71 5 51 5 5 5 623 5 1,195 5 79,526 5 79,526 5 79,526 5 170,872 +394 New NSC 2003-2005 ATS - "H" 1CT & 1HRSG Towers	4 89 0 70 2.59 \$ - \$ - \$ - \$ - \$ - \$ - \$ - \$ - \$ - \$ -
II JY KK LI MM	Vanable (excl. fuel) (S/mwh) Capital Replace (Smm/yr) <u>IV. SPENDING CURVES</u> Year 6 Year 5 Year 4 Year 3 Year 2 Year 1 <u>V. NOTES;</u> Net MW change (summer) Equipment Available Equipment	3.40 0.368 9.20 5 5 10.304 5 148,505 5 138,864 5 117,147 5 26,007 5 440,827 +953 New NSC 7F 7241 Foggers 6CT&6HRSG	3.08 0.39 6.33 5 5 5 31,400 5 119.450 5 91,714 5 91,714 5 91,714 5 91,714 5 91,714 5 16,004 5 16,004 5 16,004 5 7F 7241 Foggers 4CT&4HRSG	3.08 0.39 6.33 5 5 5 119.450 5 91,714 5 91,714 5 91,714 5 91,714 5 91,714 5 16,004 5 16,004 5 16,004 5 7F 7241 Foggers 4CT&4HRSG	3 87 0 71 3 51 \$ \$ \$ 623 \$ 1,195 \$ 79,526 \$ 85,356 \$ 170,872 +394 New NSC 2003-2005 ATS - "H" 1CT & 1HRSG	4 89 0 70 2.59 \$ - \$ - \$ - \$ - \$ - \$ - \$ - \$ - \$ - \$ -

new alternatives rev495 xls

APRIL 3, 2000

# SUMMARY OF GENERATION ALTERNATIVES IRP 2000

L. Kollen Exhibit No. \_\_\_\_(LK-1( Sanford Comparisons

							oro Compariso	113
ŀ	New Generation Alternatives	7	ε	ç-	1C	11 Page	16 of 17	• -
	Alternatives:	600 CC - G	600 CC - G	500 CC - F		150 SC - F	400 CF8	400 DFC
1	Alternatives.			7241		Simple Cycle		
		Greenfield	Existing Site	Greenfield		Existing Site	Greenfield ,	Ma-
1	I. CONSTRUCTION (1000) 2000 \$	Greenileic	Existing one	orcement	Existing oile			1• L
. 1	Permit/Eng/Fab (months)	24	2C	24	24	12	33 (	30
1	Construction Phase (months)	24	24	24	24	11	30	~-
	Project A otal (months)			151148	1		Min-63 MINE	
	Land	\$1,200	\$C	\$1,200	\$C	\$0	\$1,200 I	5
- 1	Matenais	\$245,218	\$242,548	\$135,000	\$130 500	\$38,313	\$257,000	\$257 000
_ 1	Labor & Equipment	\$51 403	\$47,667	\$41,017	\$32,817	SE 635	\$*17,462	S117 352
	Total Direct Cost	\$297.821	\$290,215	\$177,217	\$163,317	\$46.951	\$375,660	\$374,380
	Construction Indirects	\$C	\$C	\$0 j	SC	SC	\$0 1	SC
	Licensina	\$2 50C	\$2,000	\$2,500	\$2,000	<b>2</b> 600	\$6,000	\$5,500
- 1	Project Support	S20,500	\$19,900	\$12,628	\$12,028	\$2,777	\$4,100	\$3,600
	-	\$16 041	\$12 485	\$7,694	\$7.094	\$503	\$10,244	\$8,512
	Contingency	\$39,041	\$34,385	\$22,822	\$21,122	\$3.68C	\$20,344	\$17.621
	S/KW Net Summer	\$545	\$525	\$416	\$383	\$330	\$990	336\$
	S/KW Net Summer	\$485 \$485	\$468	\$378	\$349	\$295	\$985	\$980 \$975
	Fuel Expansion	By Fuels	By Fuels	By Fuels	By Fuels	By Fueis	<u>\$0  </u>	\$0
	Fuel Expansion Transmission Expansion	By Pwr Deliv	By Pwr Deliv	By Pwr Deliv	By Pwt Deliv	By Pwr Delny	By Pwt Delin	By Pwt Deliv
		so	SO	\$0	SC	Dyrn Den	\$5.00C	\$8,000
	Railroad & Cars	<u> </u>	<u> </u>	<u> </u>	<u>\$0</u>	\$0	<u>55.000</u>	\$8,000
	المستحصين الكائنة الكان فيند فيستنبص والمتنزج والمتعاوية ومعادي والمتعادي والمتعاد	\$336,862	\$324,600	\$200,039	\$184,439	\$50,831	\$404,004	\$400.000
	Grand Total Cost		\$524,000					
	S/KWATELSUMMER States and states and	1010	Contraction of the second			The second second second second second second second second second second second second second second second s	531:010	
<u>19</u> 2	SARWINETWINTER	2000-0400 - 200	2425468	<b>5378</b>	100 C C C C C C C C C C C C C C C C C C	2.22.52.20 E.E.E.	135.51:00512	
- 75	II. PLANT CHARACTERISTICS NetSum 95ECapability(mw)	ARCHINE OF CRIME SER	WHICH DY DIVING		WARDIN'S CHERMON.	525452	400	atom Photom
			663	512	512	165	401	401
	Net Win 75F Capability (mw)	663 694	694	529	529	172	402	402
uu j	Net Win 59F Capability (mw) geatBate bturkwhg5F100%10ad HHV			525			₹£9700	
	Heat Rate btu/kwh 75F 75%	6.964	6,964	6,964	6,964	11.390	9,800	9,800
	Heat Rate btu/kwh 75F 50%	7,464	7,464	7,464	7,464	13,720	10,300	10,300
	Equiv. Avail. %	96%	96%	96%	96%	98%	89%	89%
	Sched Outage (wks/yr)	1.5	1.5	1.5	1.5	0.5	4.0	4.0
	Equiv Forced Outage	1.0%	1.0%	1.0%	1.0%	1.0%	3.0%	3.0%
						10% Capacity Cap		
	TOIALO&Mammyrr)	2007/80 EEEE	F42635547	76-5-4 68 PE	20-0-3-244.00	072745	10:83172	8253
	Fixed (\$/kw - yr)		2,14	5.12	2 54	0.68	15 40	10.70
	,	59% / 41%					1 10 40	10.70
	1		26%/74%	59% / 41%	26%/74%	0% / 100%		74% / 26%
		1	26% / 74%	59% / 41% 0 55	26% / 74% 0 55	0% / 100%	80% / 20%	74% / 26%
	· · · · · · · · · · · · · · · · · · ·	0.99	26% / 74%	0 55	25% / 74% 0 55 33% / 67%	1		1
• . !		1	26% / 74%		0 55	0% / 100% 0 86	80% / 20% 1.50	74% / 26% 1.50
'		1	26% / 74%	0 55 33% / 67%	0 55 33% / 67%	0% / 100% 0 86 0% / 100%	80% / 20% 1.50 11% / 89%	74% / 26% 1.50 11% / 89%
HH	Year 6	1	26% / 74%	0 55 33% / 67%	0 55 33% / 67%	0% / 100% 0 86 0% / 100%	80% / 20% 1.50 11% / 89%	74% / 26% 1.50 11% / 89%
HH	Year 6 Year 5	0.99		0 55 33% / 67% 3 86	0 55 33% / 67% _ 3 86	0% / 100% 086 0% / 100% 000	80% / 20% <u>1.50</u> 11% / 89% <u>2.00</u>	74% / 26% 1.50 11% / 89% 2.00
		0.99	<b>S</b> C	0 55 33% / 67% 3 86 	0 55 33% / 67% 3 86 \$C	0% / 100% 0 86 0% / 100% 0 00 \$0	80% / 20% 1.50 11% / 89% 2.00 \$1,397	74% / 26% 1.50 11% / 89% 2.00 \$0
ŧ1	Year 5 Year 4	0.99 	SC SC	055 33%/67% 386 \$0 \$0	0 55 33% / 67% 3 86 \$C \$0	0% / 100% 0 85 0% / 100% 0 00 \$0 \$0 \$0	80% / 20% 1.50 11% / 89% 2.00 \$1,397 \$1,637	74% / 26% 1.50 11% / 89% 2.00 \$0 \$10,456
11 H	Year 5 Year 4	0.99 \$0 \$0 \$4,379	\$C \$0 \$4,220	0 55 33% / 67% 3 86 \$0 \$0 \$0 \$2,601	0 55 33% / 67% 3 86 \$C \$0 \$2,398	0% / 100% 0 86 0% / 100% 0 00 \$0 \$0 \$0 \$0 \$0	80% / 20% 1.50 11% / 89% 2.00 \$1,397 \$1,397 \$11,637 \$13,384	74% / 26% 1.50 11% / 89% 2.00 \$0 \$10,456 \$13,290
II JJ KK	Year 5 Year 4 Year 3 Year 2	0.99 \$0 \$C \$4,379 \$110,491	\$0 \$0 \$4,220 \$106,469	0 55 33% / 67% 3 86 \$0 \$0 \$2,601 \$65,613	0 55 33% / 67% 3 86 \$0 \$2,398 \$60,496	0% / 100% 0 86 0% / 100% 0 00 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$	80% / 20% 1.50 11% / 89% 2.00 \$1,397 \$1,397 \$11,637 \$13,384 \$70,088	74% / 26% 1.50 11% / 89% 2.00 \$0 \$10,456 \$13,290 \$71,829
KK JJ II	Year 5 Year 4 Year 3 Year 2	0.99 \$0 \$C \$4,379 \$110,491 \$181,906	\$C \$0 \$4,220 \$105,469 \$175,284	0 55 33% / 67% 3 86 \$0 \$0 \$2,601 \$65,613 \$108,021	0 55 33% / 67% 3 86 \$0 \$2,398 \$60,496 \$99,597	0% / 100% 086 0% / 100% 000 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$25,924	80% / 20% 1.50 11% / 89% 2.00 \$1.397 \$11,637 \$13,384 \$70,088 \$110,023	74% / 26% 1.50 11% / 89% 2.00 \$0 \$10,456 \$13,290 \$71,829 \$108,953
MM KK JJ	Year 5 Year 4 Year 3 Year 2 Year 1	0.99 \$0 \$C \$4,379 \$110,491 \$181,906	\$C \$0 \$4,220 \$105,469 \$175,284	0 55 33% / 67% 3 86 \$0 \$0 \$2,601 \$65,613 \$108,021	0 55 33% / 67% 3 86 \$0 \$2,398 \$60,496 \$99,597	0% / 100% 086 0% / 100% 000 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$25,924	80% / 20% 1.50 11% / 89% 2.00 \$1,397 \$11,637 \$13,384 \$70,088 \$110,023 \$197,471 +400	74% / 26% 1.50 11% / 89% 2.00 \$0 \$10,456 \$13,290 \$71,829 \$108,953
MM KK JJ	Year 5 Year 4 Year 3 Year 2 Year 1 V. NOTES:	0.99 \$0 \$0 \$4,379 \$110,491 \$181,906 \$40,087	\$0 \$0 \$4.220 \$106.469 \$175.284 \$38.627	055 33%/67% 386 \$0 \$0 \$2,601 \$65,613 \$108,021 \$23,805	0 55 33% / 67% 3 86 \$0 \$2,398 \$60,496 \$99,597 \$21 948	0% / 100% 086 0% / 100% 000 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$25,924 \$24,907	80% / 20% 1.50 11% / 89% 2.00 \$1,397 \$11,637 \$13,384 \$70,088 \$110,023 \$197,471	74% / 26% 1.50 11% / 89% 2.00 \$0 \$10,456 \$13,290 \$71,829 \$108,953 \$195,472
JJ KK MM NN	Year 5 Year 4 Year 3 Year 2 Year 1 V. NOTES:	0.99 \$0 \$0 \$4,375 \$110,491 \$181,906 \$40,087 +618	\$0 \$0 \$4.220 \$106.469 \$175.284 \$38.627 +618	0 55 33% / 67% 3 86 \$0 \$0 \$2,601 \$65,613 \$108,021 \$23,805 +481	0 55 33% / 67% 3 86 \$0 \$2,398 \$60,496 \$99,597 \$21 948 +481	0% / 100% 0 86 0% / 100% 0 00 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$25,924 \$24 907 +154 New NSC 30	80% / 20% 1.50 11% / 89% 2.00 \$1,397 \$11,637 \$13,384 \$70,088 \$110,023 \$197,471 +400	74% / 26% 1.50 11% / 89% 2.00 \$0 \$10,456 \$13,290 \$71,829 \$108,953 \$195,472 +400
II JJ KK MM	Year 5 Year 4 Year 3 Year 2 Year 1 <u>V. NOTES:</u> Net MW change (summer)	0.99 \$0 \$0 \$4,375 \$110,491 \$181,906 \$40,087 +618 New NSC 30 2000+	\$0 \$0 \$4.220 \$106,469 \$175,284 \$38.627 +618 New NSC 30 2000+	0 55 33% / 67% 3 66 \$0 \$2,601 \$65,613 \$108,021 \$23,805 +481 New NSC	0 55 33% / 67% 3 86 \$0 \$2,398 \$60,496 \$99,597 \$21 948 +481 New NSC	0% / 100% 0 86 0% / 100% 0 00 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$25,924 \$24,907 +154 New NSC 30 2002	80% / 20% 1.50 11% / 89% 2.00 \$1,397 \$11,637 \$13,384 \$70,088 \$110,023 \$197,471 +400 New NSC 30	74% / 26% 1.50 11% / 89% 2.00 \$0 \$10,456 \$13,290 \$71,829 \$108,953 \$195,472 +400 New NSC 30
II JJ KK MM	Year 5 Year 4 Year 3 Year 2 Year 1 <u>V. NOTES:</u> Net MW change (summer) Plant Life Years	0.99 \$0 \$0 \$4,375 \$110,491 \$181,906 \$40,087 +618 New NSC 30	\$0 \$0 \$4.220 \$106,469 \$175,284 \$38.627 +618 New NSC 30	0 55 33% / 67% 3 66 \$0 \$2,601 \$65,613 \$108,021 \$23,805 +481 New NSC	0 55 33% / 67% 3 86 \$0 \$2,398 \$60,496 \$99,597 \$21 948 +481 New NSC	0% / 100% 0 85 0% / 100% 0 00 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2 \$2	80% / 20% 1.50 11% / 89% 2.00 \$1,397 \$11,637 \$13,384 \$70,088 \$110,023 \$197,471 +400 New NSC	74% / 26% 1.50 11% / 89% 2.00 \$0 \$10,456 \$13,290 \$71,829 \$108,953 \$195,472 +400 New NSC
	Year 5 Year 4 Year 3 Year 2 Year 1 V. NOTES: Net MW change (summer) Plant Life Years Equipment Available Equipment	0.99 \$0 \$0 \$4,375 \$110,491 \$181,906 \$40,087 +618 New NSC 30 2000+	\$0 \$0 \$4.220 \$106,469 \$175,284 \$38.627 +618 New NSC 30 2000+	0 55 33% / 67% 3 86 \$0 \$0 \$2,601 \$65,613 \$108,021 \$23,805 +481 New NSC 30	0 55 33% / 67% 3 86 \$0 \$2.395 \$60.496 \$99.597 \$21 548 +451 New NSC 30 7F 7241 Foggers	0% / 100% 0 85 0% / 100% 0 00 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$25,924 \$24,907 +154 New NSC 30 2002 7F 7241	80% / 20% 1.50 11% / 89% 2.00 \$1,397 \$11,637 \$13,384 \$70,088 \$110,023 \$197,471 +400 New NSC 30 1CFB	74% / 26% 1.50 11% / 89% 2.00 \$0 \$10,456 \$13,290 \$71,829 \$108,953 \$195,472 +400 New NSC 30 1CFB
	Year 5 Year 4 Year 3 Year 2 Year 1 <u>V. NOTES:</u> Net MW change (summer) Plant Life Years Equipment Available	0.99 \$0 \$C \$4,379 \$110,491 \$181,906 \$40.087 +618 New NSC 30 2000+ *G*	\$0 \$0 \$4.220 \$106,469 \$175,284 \$38 627 +618 New NSC 30 2000+ "G"	0 55 33% / 67% 3 86 \$0 \$0 \$2,601 \$65,613 \$108,021 \$23,805 +481 New NSC 30 7F 7241 Foggers	0 55 33% / 67% 3 86 \$0 \$2.395 \$60.496 \$99.597 \$21 548 +451 New NSC 30 7F 7241 Foggers	0% / 100% 0 86 0% / 100% 0 00 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$25,924 \$24 907 +154 New NSC 30 2002 7F 7241	80% / 20% 1.50 11% / 89% 2.00 \$1,397 \$11,637 \$13,384 \$70,088 \$110,023 \$197,471 +400 New NSC 30 1CFB Tower	74% / 26% 1.50 11% / 89% 2.00 \$0 \$10,456 \$13,290 \$71,829 \$108,953 \$195,472 +400 New NSC 30 1CFB Reservoir
II JKK JM NN 8	Year 5 Year 4 Year 3 Year 2 Year 1 V. NOTES: Net MW change (summer) Plant Life Years Equipment Available Equipment	0.99 \$0 \$C \$4,375 \$110,491 \$181,906 \$40.087 +618 New NSC 30 2000+ *G* 2CT & 2HRSG	\$C \$0 \$4.220 \$106,469 \$175,284 \$38 627 +618 New NSC 30 2000+ "G" 2CT & 2HRSG	0 55 33% / 67% 3 86 \$0 \$0 \$2,601 \$65,613 \$108,021 \$23,805 +481 New NSC 30 7f 7241 Foggers 2CT&2HRSG&1ST	0 55 33% / 67% 3 86 \$0 \$2,395 \$60,496 \$99,597 \$21 548 +451 New NSC 30 7F 7241 Foggers 2CT&2HRSG&157	0% / 100% 0 85 0% / 100% 0 00 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$0 \$25,924 \$24,907 +154 New NSC 30 2002 7F 7241 Simple Cycle	80% / 20% 1.50 11% / 89% 2.00 \$1,397 \$11,637 \$13,384 \$70,088 \$110,023 \$197,471 +400 New NSC 30 1CFB	74% / 26% 1.50 11% / 89% 2.00 \$0 \$10,456 \$13,290 \$71,829 \$108,953 \$195,472 +400 New NSC 30 1CFB

APRIL 3, 2000

## SUMMARY OF GENERATION ALTERNATIVES IRP-2000

							Comparisons
1	New Generation Alternatives	14	15	16 -	17	Page 17	of 17
	Alternatives:	400 PC	400 PC	CC • F	100% Pet Coke	100% Pet Cone ;	Co Fire Gas
	Alternatives.		-0010	Repower	Fue! Switch	Fuel Switch	Dua Fuk
		Greenfield	Martin	400mw Unr	Riviera	Martin	Ntanates
		Greenneic	TAIGITH.		I CIVICIA	marun	ma atet
	I CONSTRUCTION (1000) 2000 \$		20	10	18	30	-
	Permit/Eng/Fab (months)	36	30 27	25	30	34	
В	Construction Phase (months)	30					
	Project i otal (months)	26 - 66 - C	57	SC SC	SC SC	SC :	
	Land	\$1,200	\$0 5757.400	30 S212,644	\$483.50C	\$557,500	\$2 000 L
E	Matenals	\$260,038	\$257,400				\$1.000 ···
	Labor & Equipment	\$126 585	\$126,300	\$68 14* \$280,785	\$483.500	included Abov. \$587,500	\$3.000
	Total Direct Cost	\$387,923	\$383,700	\$200.785 \$18,746	\$483.300 \$0	<u>\$007,500</u>	\$0.000 ·
н	Construction Indirects	\$C	\$0 55 500	\$12,746 \$2,626	\$6.00C	\$11,000	SC SC
1	Licensing	\$6 000	\$5,500	\$2.826 \$5.952	\$5,00C	S9.000	\$250
J	Project Support	\$4,220	\$3,601	\$5,952 \$0	\$10,000	\$35.377	1
	Contingency	\$10.657 \$20.877	\$8 799 \$17.900	\$30,524	\$21.000	\$55.377	\$114 \$364
	Total Indirect Cost				\$864	\$403 1	
	\$/KW Net Summer	\$1,022 \$1,017	\$1,004 \$999	\$319 \$300	\$858 \$858	5395	
	\$/KW Net Winter						
-	Fuel Expansion	\$0	\$0	By Fuels	SO CO	SC	By Fuels
P	Transmission Expansion	By Pwr Deirv	By Pwr Deliv	By Pwr Deliv	SO	SC CC	SC
	Railroad & Cars	\$8,000	\$8.000	\$0 \$C	Use Port	<u> </u>	SC
	Total Other Cost	\$8.000	\$8,000		\$C		
L	Grand Total Cost	\$416,800	\$409,600	\$311,309	\$504,500	\$642,877	\$3,364
	S/KWINetSummer	Transferrar and the second second	1024	States and the second second	ACCEPTION OF A CONTRACT OF A C	2403 H	
部建	STAMINELAUDIER	\$1:03/	\$1,019	のないのの	122115258	\$399	Mar South and Party
	II PLANT CHARACTERISTICS	THE REAL PROPERTY AND		AND TO THE REAL	Ander manager	594	CALIFORNIA STRAC
	NetSum95ECapability(mw)		4002-6				0000000000
	Net Win 75F Capability (mw)	401	401	1,017	586	1.608	
1 14/	Net Win 59F Capability (mw) HeatRatebt@xwh#5F100%1CadHHV	402	402	1,035	588	1.612	1-110700
1	Heat Rate btu/kwh255/00%20200111Vec.	9,950	9,950	7.203	10.054	9,600	10,707
1	-		9,950 10,500	7,752	10,054	10,100	10,867
	Heat Rate btu/kwh 75F 50%	10.500	10.500	96%	1 87%	94%	10.007
	Equiv Avail % Sched Outage (wks/yr)	4.0	4.0	1.5	5.0	2.0	
		1	30%	1.0%	3.0%	2.0%	
	Eaury Forced Outage	3.0%	30%	1.070	5.07	1 2.07	
		246 22	010158	621-55	A REAL TO A REAL PROPERTY AND A	157516/465712	A STATE OF A STATE
	Fixed (\$/kw - yr)	18.65	13.96	3.05	18.13	5 93	debar Contractor Labour
	% Manpower/ % Material, Equip	84% / 16%	80% / 20%	59%/41%	80% / 20%	70% / 30%	
FF	Vanabie (excl. fuel) (\$/mwh)	1.60	1.60	0.39	3.09	0.53	
	% Manpower/ % Material, Equip	11%/89%	11%/89%	35% / 65%	11% / 89%	11%/89%	
	Capital Replace (\$mm/yr)	3 00	3 00	6 33	2.00	6 00	
Ē	IV. SPENDING CURVES		1	1		+	
нн		\$1,440	\$0	\$44	\$0	\$2,572	\$0
11	Year 5	\$13,915	\$12 409	\$27,953	\$C	\$12 859	<b>S</b> 0
JJ	Year 4	\$13,642	\$13,494	\$159.042	\$25,225	\$15 429	\$0
· KK		\$71,935	\$72,643	\$57,265	\$90,810	\$110 575	\$0
14	Year 2	\$112,944	\$111,265	\$29 377	\$136.215	\$174,862	\$0
MM	1	\$202.924	\$199 789	\$7 617	\$252,250	S320 580	\$3.364
	V NOTES:		l		1		\$3,364
NN	Net MW change (summer)	+400	+400	+607	+C	+0	+0
		New NSC	New NSC	New NSC			
	Plant Life Years	30	30	30	30	30	
	Equipment Available		1	[			
00	Equipment	PC	PC	7F 7241 Foggers	2 CFB	4 Conv. Boilers	Existing
1		1	}	4CT&4HRSG		Leased Bk End	
PP	Cooling	Tower	Reservoir	Existing	Tower	Reservoir	Reservoir
	SCR's	yes - SCR	yes - SCR	no	yes - SNCR	yes - SCR	No
1	Back-Up Fuel Adder	\$3,000	\$3.000	\$0	\$C	\$0	<b>\$</b> 0
·							

# Ft Myers and Sanford Repowering Projects 5-YearForecast Differences ... October 1998 - August 1999

- .

# Ft Myers Repowering ... Power Generation

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	5-year Forecasts <u>October 1998</u>	5-year Forecasts <u>August 1999</u>	<u>Change</u>
1998	\$10 101,000	\$10,388,000	\$287,000
1999	\$147 905,000	\$149,015,000	\$1,110,000
2000	\$117.416,000	\$191,624,000	\$74,208,000
2001	\$118.434,000	\$49,151,000	(\$69,283,000)
2002	\$27,668,000	\$18,395,000	(\$9,273,000)
2003	\$0	\$5,501,000	\$5,501,000
Total Forecast	\$421,524,000	\$424,074,000	\$2,550,000

# Sanford Repowering ... Power Generation

	5-year Forecasts <u>October 1998</u>	5-year Forecast <del>s</del> <u>August 1999</u>	Change
1998	\$787,000	\$88,000	(\$699,000)
1999	\$62,384,000	\$55,805,000	(\$6,579,000)
2000	\$156,519,000	\$271,953,000	\$115,434,000
2001	\$91,181,000	\$144,395,000	\$53,214,000
2002	\$95,085,000	\$58,609,000	(\$36,476,000)
2003	\$31,451,000	\$15,217,000	(\$16,234,000)
Total Forecast	\$437,407,000	\$546,067,000	\$108,660,000

8 SA'S X 6 91. **FPL POWER GENERATION BUSINESS UNIT** SANFORD PLANT REPOWERING (FPL BUDGET ACTIVITY # 722) **1999 Five-Year Capital Forecast** October 29, 1998 TOTAL PROJECT ( BA-722 ) TOTAL JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC **POWER GENERATION BUSINESS UNIT** 1998 (Prior Year) \$787,345V \$5,000 \$42,039 \$311,090 \$429,216 \$62,383,976 5394,924 \$634,908 \$4,935,741 \$526,453 \$867,122 \$9,663,142 \$523,019 \$1,262,605 \$11,993,815 \$11,993,815 \$8,680,824 \$10,907,607 \$156,518,801 \$13,296,207 \$15,799,811 \$11,023,210 \$11,023,210 \$10,926,739 \$21,530,759 \$12,899,560 \$12,815,672 \$13,308,730 \$13,997,550 \$9,508,999 \$10,388,353 **\$91,181,096 √ \$7**,919,951 \$7,928,465 \$4,379,405 \$6,700,309 \$8,849,559 \$10,146,627 \$9,179,818 \$6,956,786 \$7,456,786 \$7.456.786 \$6,780,854 \$7,425,752 \$95,085,019 \$10,864,522 \$7.294.904 \$6,763,037 \$8,742,583 \$10,590,344 \$8,717,671 \$10,342,731 \$11,599,450 \$7,275,422 \$4,968,702 \$3,184,228 \$4,741,426 \$31,450,764 - \$3,181,536 \$1,925,804 \$1,484,199 \$1,413,582 \$1,383,062 \$1,149,950 \$1,163,582 \$16,115,980 \$1,211,023 \$1.211.023 \$1,211,023 \$0 2004(After) \$0 \$0 \$0 \$0 **\$**0 \$0 **S**0 \$0

\$0

\$0

**\$**0

\$0

Sub-Total PGBU \$437,407,000 v

#### **OTHER DEPTS ( Power Delivery )**

1999

2000

2001

2002

2003

1998 (Prior Year)	\$0									\$0	\$0	\$0	<sup>1,</sup> \$0
1999	\$3,500,000	\$22,000	\$22,000	\$22,000	\$22,000	\$22,000	\$22,000	\$22,000	\$22,000	\$22,000	\$1,522,000	\$892,000	\$888,000
2000	\$15,200,000	\$1,820,000	\$1,820,000	\$1,820,000	\$1,820,000	\$95,000	\$95,000	\$95,000	\$95,000	\$100,000	\$2,500,000	\$2,500,000	\$2,440,000
2001	\$36,153,000	\$3,335,000	\$3,335,000	\$3,335,000	\$3,335,000	\$3,335,000	\$2,063,000	\$1,792,000	\$6,900,000	\$0	\$600,000	\$7,523,000	\$600,000
2002	\$0	\$0	\$0	\$0	\$0	<b>\$</b> 0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2003	\$0	\$0	\$0	\$0	\$0	<b>\$</b> 0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2004(After)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	<b>\$</b> 0	<b>\$</b> 0

Sub-Total Other Depts \$54,853,000

TOTAL PROJECT COST \$492,260,000 (Excluding AFUDC)

Sanford Transmission Facilities Cost 10/29/98 Docket No. 001148-El L. Kollen Exhibit No.

**\$**0

# SANFORD REPOWERING PROJECT CURRENT RANGE OF ESTIMATES AT COMPLETION

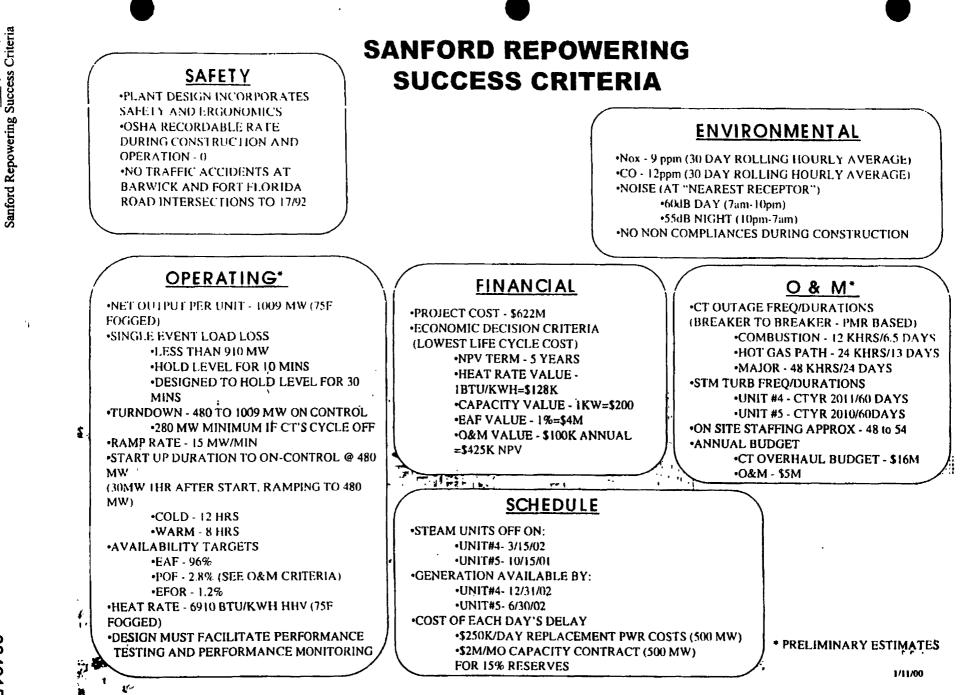
# B&V PCR#12 - July 28, 2000

	Project Cost Est W/O Project <u>Contingency</u>	FPL Current Budget ( "50/50 Estimate" )	B&V Max Performance <u>EstImate</u>	B&V Worst-Case <u>Estimate</u>
Awarded Cost To-date ( excl B&V performance incentive )	\$435,882,081	\$435,882,081	\$435,882,081	\$435,882,081
B&V Allocated & Trended Contingencies on Awarded Cost (details attached)	\$16,424,464	\$16,424,464	\$16,424,464	\$16,424,464
Un-Awarded Major Contracts (see "major commitments listing")	\$62,704,655	\$62,704,655	\$62,704,655	\$62,704,655
Un-Spent / Un-Awarded Balance-of-Project Estimate	\$15,157,321	\$15,157,321	\$15,157,321	\$15,157,321
Project Cost Estimate ( PCE ) for B&V Scope	\$530,168,521	\$530,168,521	\$530,168,521	\$530,168,521
FPL - Transmission Interconnections	\$75,383,000	\$75,383,000	\$75,383,000	\$75,383,000
FPL - Demolition & Abatement	\$8,000,000	\$8,000,000	\$8,000,000	\$8,000,000
FPL - B&V Performance Incentive	\$4,000,000	\$4,000,000	\$4,000,000	\$0
FPL - Maintenance Building / Geotech / Other	\$900,000	\$900,000	\$900,000	\$900,000
FPL - FGT Fuel Gas Equipment Reimbursement	<b>\$</b> 0	\$0	\$0	\$0
FPL - Schedule Revisions Pending Cost Impacts	\$0	\$0	\$0	\$0
FPL - Project Contingency	\$0	\$3,548,479	\$18,450,957	\$28,450,957
TOTAL PROJECT ESTIMATES	\$618,451,521	\$622,000,000	\$636,902,478	\$642,902,478
TOTAL CONTINGENCIES INCLUDED IN THE ESTIMATES ABOVE	\$18,424,484	\$19,972,943	\$34,875,421	\$44,875,421

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Docket No. 001148-EI L. Kollen Exhibit No.\_\_\_\_\_ Sanfard Renowering Succ

(LK-14)

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POWER GENERATION DIVISION CASHFLOW RECAP

MAY 7, 2001 FIVE-YEAR FORECAST vs CURRENT APPROVED PGD PLAN

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	2000 & PRIOR	<u>2001</u>	2002	2003 <u>&amp; AFTER</u>	TOTAL PGD		
MAY 7, 2001 FORECASTS			N. COM				
FORT MYERS REPOWERING	\$362,439,397	\$71,504,449	\$21,004,755	\$2,353,940	\$457,302,541		
~ SANFORD REPOWERING	\$316,993,939	\$165,103,849	\$63,468,767	\$15,737,515	\$561,304,070		
MARTIN SIMPLE CYCLE	\$77,679,471	\$21,395,007	\$1,320,048	\$0	\$100,394,526		
/ FORT MYERS SIMPLE CYCLE	\$2,239,641	\$32,469,339	\$78,378,858	\$19,393,317	\$132,481,355	,	
PROJECTS TOTAL EXPENDITURES		\$290,472,644	\$164,172,428	\$37,484,772			
CURRENT APPROVED 5-YEAR FOR	ECASTS				Danie Danier I.e.		
FORT MYERS REPOWERING		\$71,533,736	\$14,943,298	\$5,223,111	Demo Begins Jan 2003		
SANFORD REPOWERING		\$156,503,028	\$57,764,805	\$15,216,889	B&V Final Pmt of \$4m Payable in 2003		
MARTIN SIMPLE CYCLE		\$28,832,157	\$1,108,281	\$0			
FORT MYERS SIMPLE CYCLE		\$34,014,400	\$75,014,402	\$21,510,413*		4 40 ·	
PROJECTS TOTAL EXPENDITURES		\$290,883,319	\$148,830,786	\$41,950,413	* And	\$1,299 in 200	04
FORECAST DIFFERENCE TO APPR	OVED PLAN						
FORT MYERS REPOWERING		(\$29,287)	\$6,061,457	(\$2,869,171)	Demo Begins June 2002		
SANFORD REPOWERING		\$8,600,823	\$5,703,962	\$520,626	B&V Final Pmt of \$4m Payable Jan 1,2003		
MARTIN SIMPLE CYCLE		(\$7,437,150)	\$211,767	\$0			
FORT MYERS SIMPLE CYCLE		(\$1,545,061)	\$3,364,456	(\$2,117,096)	CTG Payments Complete on Shipment(2002)		
PROJECTS TOTAL EXPENDITURE	<u>s</u>	(\$410,675)	\$15,341,642	(\$4,465,641)			

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Docket No. 001148-EI L. Kollen Exhibit No. \_\_\_\_ (LK-15) Changes in Timing of Project Costs

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	January	February	March	April	Mav	2	t. Line					2	2002 Budget Forecast	ecast
SYSTEM BALES (mWh)					Ĩ	2	λm,	August	September	October	November	December	Total	
Residential	3,874,869	3,762,017	749,725,6	325,955,6	3.629.189		1 000 1							
Commercial	2.962,447	102,050,131	2.965.390				016,044,5	94'f07's	102,723,201	4,632,118	1,720,704	3,768,114	\$05,872.05	
Industrial	301,766	036,413	340.075		-	490'9/ N'C	607' <b>11</b> 1C'F	3,613,945	3,727,163	3,427,258	3,136,861	1,102,152	39.514.116	
Stroet & Ilighway	816,86		15.494			009"865	319'911	318,376	338,141	338.461	338,292	330,155	4.061.677	
Other	1,363		4 614		1	267,66	35,798	15,863	196'SE	36,025	36,087	36,182	201 974	
Railteada & Railways	606'9		6.920		(80)(C	5,670	[56'5	5,870	5,970	5,024	5.203	4,987	62.159	
TOTAL JURISDICTIONAL						914,0	116'9	6,946	6,953	6,938	6,962	6,969	83,261	
SALES	210,122,7	7,096,194	6,610,681	7,024,985	7.207 ARI	LL 0LY 8								
Retale	71 417	70 800				/ [ 4'470'0	6, Y03, 500	699'177'6	9,151,388	8,645,843	7,294,109	7.457,259	111,927,94	
			675'71	685"11	81,987	86,753	126,064	128,697	129,962	506.721	119 841	113 064		
	7,294,599	7,167,085	6,683,209	72,102,574	7,289,868	8,716,190	9,091,924	091,131,0	9,481.350	8 771 178	7411.465		A97'/07'1	
<b>CUSTOMERS</b>											766'612'1	211,400,1	91,916,600	
Residential	916.949.5	1.558 228	1 647 004											
Commercial	431.945	051 114		<b>700</b> ,176,0	1,557,774	3,559,842	1.161,433	909'195'1	3,368,566	009,172,6	912,185,E	1 501 959	7 44 040	
Industrial	15.275	196.51	114,402	906'ere	116,814	434,461	169,464	435,897	437,145	437,896	138.772	110.044	116 804	
Street & Hinghway	1 400			<b>1</b> (7)(1)	15,175	15,242	962,81	15,190	15,177	15,144	15131	271 91		
Other			110'2	2,516	125,5	2,528	112.5	763,5	2.544	7 449		1 <b>4</b> 1'CI	012,61	
Radinada A Baffaran		748	248	248	248	248	248	248	248	940		0907	2,530	
	7	[2	2	5	1	23	12			f i	742	248	248	
TOTAL JURISDICTIONAL							1	3	8	17		2	[2	
CUSTOMERS	105,999,1	£19'600' <del>}</del>	4,019,043	4,024,646	4,012,063	4.011.145	4014413	102 110 1						
Renale	-	-	-					MAC'/ IN'L	4,023,704	4.027,470	4,038,499	166'150'1	4,020,800	
	I	•	•	-	-	4	7	-	•	4	-	•	•	
I UI AL CUSTOMERS	016,999,6	4,009,616	4,019,046	4,024,649	4,012,066	4,011,349	4,014,417	4,017,508	4,023,708	4.027.474	4 018 tot	1 061 000	-	-
<b>USE PER CUSTOMER</b>									•			Acc'lon's	4,020,804	-
Residentia }	1.00	1 067		ġ										
Continencial	1519			166	1,020	66671	10+'1	1,460	1,468	(,13)	6(0)1	1 048	14 180	
Industrial	070 66	108°0	(	(21')	116'2	8,007	8,250	166,8	8,526	7.827	1 261	2001	001.61	
Street & Highway		( <b>1</b> 0) 77	067'77	22,265	22,360	812,11	22,222	22,290	22,280	22, 349	101.00		400'n4	
Other			14,134	14,134	14,134	14,134	14,134	14,134	14,134	PLI 71			H1'/07	
	HKC'/1	19,078	18,606	19,719	20,495	23,862	24,005	23.669	24.073	156.06	100.01	4C1.41	169,601	
EXTANIES TO BOOM AND	010'000	072,005	300,871	301,087	111105	301,580	101,797	101.987	ARC COF	103 001	184'07	20,107	251,446	
TOTAL JURISDICTIONAL									0091701	505'70C	269'706	600'101	140,028.0	Pag
USE PER CUSTOMER	1,806	1,770	1,645	1,745	1,797	121.2	1177	7 705						ge 1
Reals	24,529,040	23.630,162	24.176.168	100 170 15	130 BLT 11					74147	909'1	1,840	23,560	0
TOTAL LISE BEB CHARACTER				140'000'00	100,410,12	(1,000,15)	[ [ [ [ [ [ [ [ [ [ [ [ [ [ [ [ [ [ [ [	32,174,196	32,490,519	1,133,652	29,960,709	28,013,429	336,917,892	
	1,5/4	1.787	1,661	1,765	1,617	2,173	2,265	2,328	2,356	2,178	1.816	1 948		п 2
											•		000'07	.01

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Docket No. 001148-EI L. Kollen Exhibit No. (LK-16) Pre- and Post-September 11, 2001 Sales Estimates for 2002 and 2005 Page 1 of 4

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2005 MONTHLY FORECAST OF BILLED SALES, CUSTOMERS AND USE BY CLASS
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	January	February	March	April A	May	June	Lat.		·			20	2002 Budget Forecast	ocast
a ta tem sales (mWh)							ĺ.	Indav	September	October	November	December	Total	
<b>Residential</b>	4,534,342	172,518.8 \$	3.825,434	4,013,918	4 074 191									
Commercia)	3.232,639	1,255,765	3,293,143	1477 164			115,480,0	5,835,704		5,491,465	4,284,523	4,242,310	57 621 SB2	
Industrial	340,513					[44'/ I.B.C	1,949,330	3,960,190	4,032,804	3,695,584		1.594 010	art 105 FL	
Street & Highway	37,980				+11°0+r	140,743	340,875	340,689	340,958	167,046		ANA MAT		
Other				+C1'8C	107'36	38,280	38,126	170,80	38,450	38,494	38.516	119 81		
Railroads & Railways	1,021			107	10.0	5,624	5,904	5.822	5,921	4,986	5,163	4,949	978.13	
TOTAL JURISDICTIONAL						8 m/ '/	E C O' /	7,057	1,064	7,069	E <i>LL</i> 0'L	7,080	009'18	
BALES	8,156,850	8,058,501	7,508,988	7,481,411	620.989.7	9 541 MM	1 XU 100 Q							
Resalc	86C111	109 610						((2,101,01	10,328,522	9.578.389	8,118,603	8,327,632	105,609,877	
TDT+1 81150				/7011	120,724	124.392	130,763	966,661	134,662	112,015	124.541	116 744	1 463 634 1	
	8'768'  82	8,168,131	7,616,962	867,799,7	8,109,804	9,667,39,6	10,061,827	072 I 2E 01	10.463.181	ACA 017 0			+rr****	
CUSTOMERS											0+1'5+7'9	8,444,386	107,072,411	
Realdonial	1,749,897	3.750.581	101 745 1											
Commercial	467,310	468.043	469.081	1(C'/0/'r	(67'09/''f	1,761,154,L	3,763,769	3,765,755	1,770,567	239,UTT,E	3,783,668	3,795,965	1 748 140	
Industrial	112,21	15,219	066 51	114.31	000'1/t	161,274	(HS'UH	473,185	173,575	474,348	475,454	476.170	210 114	
Street & Highway	2.687	2.691	<b>969 C</b>		41701	15,219	15,220	15,220	15,221	15,222	15.224	807.81	10.21	
Other	248	940		90/7	E07.2	2,708	217.2	2,715	1.720	2.724	101 5		177'01	
Railmadı & Railways		1	ŧ.	17	248	248	248	248	348	248	248		01/7	
•	•	3	3	2	2	23	62	13	17	5	1	Ę	847	
TOTAL JURISDICTIONAL								:	3	3	7	62	67	
CUSTOMERS	4,235,382	4,244,804	4,254,462	4,256,071	4,250,091	4,251,563	4234.511	341 737 A	1 767 661					
Reak	4	-	*	•	•				+00'707'+	4,266,029	ENC.172.4	4,290,564	4,258,377	
TOTAL CUSTOMERS	206 266 2				•	•	•	•	•	•	•	•	•	
	081 (17)	4,244,808	4,254,466	4,256,075	4,250,095	4,251,567	4,254,519	4,257,150	4,262,558	4,266,033	146.772.4	4 790 SAE	1340.336.1	
USE PER CUSTOMER													190,007,5	÷
Residential	1,209	1,174	1.015	1 (14)	1.001									
Commercial	6,918	6,956	7.020	101.7	167 6		1,485	1,550	1,560	1,455	1,132	<del>1</del> 11	15.292	
[mdustria]	716,112	22,368	N8C.22	231.66	141 11	090'a	841.8	8.169	8,534	167.7	1241	245	61,722	
Street & Highway	14,134	14,134	14.114			235,22	165,11	22,384	22,401	22,389	22,000	276.55	268 592	
Other	274,71	18.940	18.471	10.501		14,134	FC1'F1	14,134	14,134	14,134	14,134	14.134	169.601	
Railroads & Railways	305,245	305,448	305.747	105.05	466,02 CL1 201	112,678	23,807	21,475	ET 0, ES	20,105	20,819	19,956	249.511	
TOTAL JURISDICTIONAL					7+1 'mmr	064,000	306,646	106,831	307,126	811,704	107,524	307,826	3,678,270	Es Pa
USE PER CUSTOMER	1.926	1 292	1 744										•	stin age
				7(9'1	088'1	2,245	1,134	2, 193	2,423	245	869,1	1.941	74 100	nat 2 (
	217,8UJ,172	21,407,472	266,099	29,081,770	30,181,124	283,790,10	32,690,757 3	690,940,06	13,665,451	11 000 661	11 134 744		Anal.	es of (
TOTAL USE PER CUSTOMER	1,952	1,924	064'1	678,1	1.906	<b>7</b> 11				(rn'ann'r.	9H/'CC1'1C	6 105'221'67	365,633,530	for 4
								474'7	((*'7	2,276	1.927	1,968	25,144	200

Docket No. 001148-EI L. Kollen Exhibit No. (LK-16) Pre- and Post-September 11, 2001 Sales Estimates for 2002 and 2005 Page 2 of 4

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#### J001 MONTHLY FORECAST OF BILLED SALES, CUSTOMERS AND USK BY CLASS

	January	February	March	Apnl	May	June	July	August	September	October	November	December	Total	
SYSTEM SALES (mWh)														
Rasidential	3,879,514	3,697,859	3,150,637	3,361,977	3,563,562	4,522,773	4,748,487	5,085,559	4,947,172	4,651,004	3,808,390	3,648,215	49,065,148	2.6%
Commercial	2,965,998	2,900,408	2,867,874	2,943,376	3,134,013	3,302,815	3,414,330	3,551,603	3,520,758	3,298,799	3,261,967	3,197,757	38,359,698	1.8%
Industrial	337,510	330,675	328,870	322,620	333,182	321,671	322,238	330,904	319,415	325,775	346,264	327,395	3,946,519	-3.7%
Street & Highway	35,361	34,786	34,324	33,781	34,987	33,926	34,064	35,051	33,970	34,674	36,938	35,031	416,892	-0.6%
Other	4,369	4,651	4,462	4,645	4,991	5,383	5,665	5,737	5.639	4,836	5,326	4,828	60,531	-10.1%
Railroade & Railways	6,917	6,795	6,692	6,578	6,804	6,586	6,605	6,788	6,568	6,697	7,126	6,747	80,903	-3.2%
TOTAL JURISDICTIONAL														
SALES	7,229,668	6,975,174	6,392,860	6.672,978	7,077,538	8,193,153	8,531,388	9,015,641	8,833,522	8,321,786	7.466.011	7,219,973	91,929,691	2.0%
Resale	73,587	70,890	72,529	77,589	\$1,987	86,753	126,064	128,697	129,962	127,335	119,843	112,054	1,207,289	21.9%
TOTAL SALES	7,303,255	7,046,064	6,465,388	6,750,567	7,159,525	8,279,906	8,657,451	9,144,338	8,963,484	8,449,120	7,585,854	7,332,027	93,136,980	1.2%
CUSTOMERS														
Residential	3,530,945	3,539,811	3,548,631	3,553,212	3,539,310	3,540,422	3,542,999	3,545,164	3,550,095	3,553,123	3,563,210	3,575,357	3,548,523	1.7%
Commercial	429,710	431,107	431,665	432,655	434,113	432,213	432,686	433,641	434,883	435,610	436,501	437,779	433,548	1 8%
Industria)	15,196	15,182	15,178	15,175	15,096	15,163	15,160	13,111	15,099	15,066	15,076	15,069	15,131	-2 1%
Street & Highway	2,499	2,504	2,511	2,516	2,521	2,528	2,533	2,537	2,544	2,549	2,553	2,560	2,530	3 3%
Other	248	248	248	248	248	248	248	248	248	248	248	248	248	-0.9%
Railroads & Railways	23	23	23	23	23	23	23	23	23	23	23	23	23	0.0%
TOTAL JURISDICTIONAL														l
CUSTOMERS	3,978,621	3,988,875	3,998,256	4,003,830	3,991,311	3,990,597	3,993,649	3,996,724	4,002,892	4,006,639	4,017,611	4,031,036	4,000,003	1.7%
Resale	3	3	3	3	3	4	4	4	4	4	4	4	4	19.4%
TOTAL CUSTOMERS	3,978,624	3,988,878	3,998,259	4,003,833	3,991,314	3,990,601	3,993,653	3,996,728	4,002,896	4,006,643	4,017,615	4,031,040	4,000,007	1.7%
USE PER CUSTOMER														
Residential	1,099	1,045	888	946	1,007	1.277	1,340	1,435	1,394	1,309	1,069	1,020	13,827	0 7%
Commercial	6,902	6,728	6,644	6,803	7,219	7,642	7,891	8,190	8,096	1,572	7,473	7,304	88,478	0.0%
Industrial	22,210	21,780	21,668	21,259	22,070	21,214	21,255	21,898	21,155	21,623	22,967	21,727	260,823	1.3%
Street & Highway	14,151	13,893	13,668	13,425	L3,878	13,419	13,449	13,813	13,351	13,604	14,467	13,684	164,799	-1 0%
Other	17,615	18,753	17,993	18,731	20,125	21,706	22,841	23,132	22,739	19,499	21,475	19,467	244,076	-6.6%
Railroads & Railways	300,740	295,444	290,957	286,000	295,829	286,332	287,172	295,145	285,548	291,165	309,825	293,368	3,517,525	-0.4%
TOTAL JURISDICTIONAL														
USE PER CUSTOMER	1,617	1,749	1,599	1,667	1,773	2,053	2,136	2,256	2,207	2,077	1,858	1,791	22,982	0.3%
Resale	24,529,040	23,630,162	24,176,168	25,863,091	27,329,067	21,688,185	31,515,943	32,174,196	32,490,519	31,833,652	29,960,709	28.013,429	336,917,892	2.1%
TOTAL USE PER CUSTOMER	1,836	1,766	1,617	1,686	1,794	2,075	2,168	2,288	2,239	2,109	1,888	1,819	23,284	0.5%

Docket No. 001148-EI L. Kollen Exhibit No. (LK-16) Pre- and Post-September 11, 2001 Sales Estimates for 2002 and 2005 Page 3 of 4

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Image: consist state in the consist					BILLED	1005 MONTHLY FURECAST OF BILLED SALES, CUSTOMERS AND USE BY CLASS	2005 MONTHLY FURECAST OF Sales, customens and use I	ST OP USE NY CLAS	5				200	2002 Alt Forecast	H
Matchall and MatchallMatchall and MatchallMatchall and MatchallMatchall and MatchallMatchall and MatchallMatchall and MatchallMatchall and MatchallMatchall and MatchallMatchall and MatchallMatchall 		January	February	March	April	May	June	July	Augud	September	October	November	December	Total	
Interfact         Total	STEM SALES (mWh)	()) <b>707</b> 1	1100144	11, 17, 17, 1	1 807 707	1111111		176 211 1	041 014 1	207 177 2		101 784	206 116 7	66 DU1 611	<b>7</b>
Min         Min <thmin< th="">         Min         <thmin< th=""></thmin<></thmin<>				000 F71 F	141'108'E		140'zen'r		1.0.011.0				900°117'5		
mature         yand         <						111.010			010.000.0			48/197616		(10'810'74 11'9'0'74	5
Mathem         Value         Value <t< td=""><td></td><td></td><td></td><td></td><td>100,110</td><td>101000</td><td>100,710</td><td>810,020</td><td>0.000</td><td>115,110</td><td>100,810</td><td>107'640</td><td>405'NFF</td><td>979'0/ 4't</td><td>5</td></t<>					100,110	101000	100,710	810,020	0.000	115,110	100,810	107'640	405'NFF	979'0/ 4't	5
At Almono         640         6		+00°/ f		1000	C41'0C	aco' <i>i</i> (	-/ -'DC	(KC'0)	r.c.) c	YCC, 8C	690' <i>1</i> C	50C'65	10416	0+10++	5
At Alimono         683         610         613	Q	161.4	4,587	4,402	4,605	76.9	5,159	5,638	5,705	5,599	4,804	5,292	4,800	090'09	XC.0-
LUINIBUICTIONLLUINIBUICTIONL214,010244,01244	troads & Railways	6,962	6,861	6,756	6,676	4,941	6,715	6,735	6,915	6,680	6,811	7,250	6.866	82,169	0.5%
4         10001         71001         71041         71	TAL JURISDICTIONAL														
Lit.130640079116,1713,741	LES	1 50,910,8	1,10,071,7	166,612,7	7,476,688	7,875,125	6,092,643	9,483,661	600'186'6	9,767,026	9,228,747	128,156,8	102,070 8	102,478.753	3.5%
LALIAS         130.14         737.41         737.11<	9 <b>1</b> 4	200,000	109,630	(76,701	116,327	120,724	124,392	130,763	966,661	134,662	560,561	124,543	116,754	1,462,534	1.2%
OHERS         111.14         1.75.601         1.79.46         1.77.70         1.71.70         1.71.10         1.71.00         1.70.00	TAL SALFS	8,200,386	159,676,7	116,556,5	10,192,1	7,995,850	\$60,712,9	9,614,424	10,116,406	9,901,687	287,060,9	8,446,394	8,193,147	103,144,287	345
matrix $1,17,46$ $1,73,46$ $1,73,46$ $1,73,46$ $1,73,46$ $1,73,46$ $1,73,16$	87.044 B C														
main         60.30         66.30         66.30         66.31         66.31         66.31         66.30         2000	idemust	3,717,464	1,726,073	119,4(7,6	3,734,946	0/1,711,1	£07,827,E	1,711,216	113,185	220,767,6	3,740,828	3,750,942	((1,(0)),(	602,2(1,E	ž -
ui1301130113011301130113011301130113011301130113011301130113011301k106myt2,412,412,412,412,412,412,412,412,412,412,412,41d A Ruiwyt2222,022,7032,7032,712,712,712,71d A Ruiwyt2222,112,112,112,112,112,112,112,112,11DMERS4,193444444444444DMERS4,1134,112,112,112,112,112,112,112,112,112,112,11DMERS4,114,1	nmercial	463,268	463,995	465,024	466,281	467.527	468,047	468,456	469,092	469.677	470,245	115.171	472,250	467,934	2.6%
Litherey         2,601         2,601         2,00         2,701         2,713         2,713         2,713         2,713         2,713         2,713         2,713         2,713         2,713         2,713         2,713         2,713         2,713         2,713         2,713         2,713         2,733         <	striat	15,085	15,087	13,089	15,089	15.067	11,0KB	15,088	880'S1	15,089	13,040	240.01	13,094	15,089	-0 J%
14         24<	et & flighway	2,687	2,691	2,696	2,700	£U7,2	1,708	2.712	2,715	2,770	2,724	1,717	2(1,1	2,710	2 0%
de Railwoy         21		248	248	248	248	248	248	248	248	248	248	248	248	248	<b>%0</b> 0
LURINDICTIONAL         4,18,176         4,204,116         4,217,601         4,219,364         4,217,341         4,217,342         4,235,713	rouch & Raiturys	23	13	53	2	2	67	62	23	11	а.	23	23	22	*00
DMERS         4,94,776         4,204,116         4,217,601         4,216,236         4,214,817         4,217,701         4,236,131         4,2	TAL JURISDICTIONAL														
4         4	TOMERS	4,198.776	4,208,116	4,217,691	4,219,286	856,612,4	4,214,817	(17,712,1	4,220,352	4,225,713	4,229,158	4,240,374	186,62,6	4,221,572	¥8.1
L CUSTOMER         4,192,70         4,204,120         4,217,40         4,217,40         4,210,35         4,213,451         4,214,811         4,210,351         4,223,11         4,233,11         4,233,11         4,233,161         4,233,11         4,233,11         4,233,11         4,233,11         4,234,161         1,431         1,416         1,731           attal         2,234         2,134         2,134         2,134         2,133         2,136	ile	•	•	-	•	*	-	4	•	•	4	•	-	4	<b>%0</b> 0
Ex CUSTOMER       1,210       1,151       941       1,020       1,071       1,411       1,431       1,410       1,132       1,140       1,133       1,140       1,130	IAL CUSTOMERS	4,198,780	4,208,120	4,217,695	4,219,290	4,213,362	4,214,821	4217,747	956,022,4	4,225,717	4.229,162	4,240,378	4,253,485	4,221,576	<b>%1</b> 1
mid     1,210     1,137     984     1,020     1,071     1,511     1,312     1,418     1,414       mid     22,313     22,016     31,93     4,00     7,024     7,026     7,771     6,011     6,120     7,176       Alighway     17,016     13,694     21,934     21,934     21,934     21,363     21,363       Alighway     17,318     14,477     17,749     11,932     21,463     11,373     11,363       A Highway     17,318     14,477     17,749     11,932     21,463     21,363     21,363       A Hulwys     301,706     291,304     13,953     30,493     21,063     21,363     21,363       L UNUSDICTIONAL     1,937     1,910     1,711     1,772     1,966     2,193     20,453     23,64       L UNUSDICTIONAL     1,937     1,910     1,712     1,903     2,193     20,453     23,641       L UNUSDICTIONAL     1,937     1,910     1,712     1,903     2,193     20,453     23,641       L UNUSDICTIONAL     1,937     2,904,770     2,0163     2,163     2,163     2,164     2,163       L UNUSDICTIONAL     1,937     1,930     1,931     3,004,670     3,018     2,197     2,197	PER CUSTOMER														
metal     6,920     6,453     6,404     7,074     7,429     7,771     8,031     8,136     7,703       ni     22,233     22,036     21,994     21,943     21,943     21,943     11,460     11,165     11,963     11,663       k Highway     17,313     14,010     13,579     13,579     13,573     13,169     13,573     13,156     13,513       d a Ruiway     302,706     291,904     291,716     291,914     20,049     21,606     22,734     13,150     13,513       d a Ruiway     302,706     291,914     290,477     30,176     291,974     292,812     30,063     296,199       L JUDUSDICTIONAL     1,927     1,800     1,771     1,869     2,160     2,133     300,662     296,199       L JUDUSDICTIONAL     1,927     1,870     1,714     1,772     21,401     1,773     30,662     2,160     2,163       L JUDUSDICTIONAL     1,927     1,870     1,109     1,772     1,869     2,164     2,163     2,161     2,163       L JUDUSDICTIONAL     1,927     1,870     1,109     1,772     1,860     7,131     2,163     3,161       L JUDUSDICTIONAL     1,931     1,870     1,109     1,713     1,800 <td>dential</td> <td>017'1</td> <td>1,157</td> <td>984</td> <td>1,020</td> <td>1.077</td> <td>(9(')</td> <td>164,1</td> <td>1,532</td> <td>1.468</td> <td>1.414</td> <td>1/11</td> <td>611.1</td> <td>14,965</td> <td>2 6%</td>	dential	017'1	1,157	984	1,020	1.077	(9(')	164,1	1,532	1.468	1.414	1/11	611.1	14,965	2 6%
ul 22,343 22,343 22,016 21,604 21,394 22,267 21,519 21,573 22,126 21,368 21,560 k Highway 1,311 14,016 11,407 11,497 11,497 11,409 11,105 11,311 dd Raulwys 302,708 291,904 291,513 20,493 21,608 22,734 21,300 22,513 295,119 dd Raulwys 302,708 291,904 291,513 200,662 290,479 266,119 2,162 EK CUSTIONAL 1,927 1,670 1,711 1,772 1,869 2,112 20,249 2,365 21,311 2,162 EK CUSTIONAL 1,921 1,670 1,711 1,772 1,869 2,112 22,49 2,365 21,311 2,162 2,161 1,712 1,809 1,310,01 1,712 1,809 2,113 21,490 69 31,565,451 31,004,653 1,516 1,516 1,712 1,869 2,113 22,49 2,365 21,311 2,162 24,91 31,004,653 1,506,451 1,931 1,931 1,931 1,931 2,904,170 30,181,124 11,077 22,49 2,365 31 3,1004,653 1,31004,6504,6504,6504,6504,6504,6504,6504,6	mercial	6,920	6,853	6,804	1,074	7,429	1.77.1	8,051	8,273	8.160	112,1	7.487	180.7	867.68	<b>%</b> 2 0
R Highway       13,401       13,579       13,408       13,932       13,467       13,479       13,497       13,409       13,509       13,501       13,501       13,501       13,501       13,501       13,501       13,501       13,501       13,501       13,501       13,501       13,501       13,501       13,501       13,511       14,601       13,511       23,731       19,371       19,371       19,371       19,371       19,371       29,341       20,373       29,311       21,601       23,151       23,611       24,611       1,101       27,734       29,311       21,611	strual	22,385	910,22	21,694	21.5	12,267	21,519	21,575	22,126	21,368	31,760	041.62	21,887	263,148	*C 0
ITJJB II.447 17.749 115.68 20,449 21,008 22,744 230,01 2401 2401 2401 2401 2401 2401 2401 24	ci & Highway	14.016	13,803	672,61	807.01	269,61	13,467	149.61	13,849		110,01	14,487	10/11	DC/ 100	5
L JURISDICTIONAL E.R. CUSTIOMER 1,927 1,870 1,711 1,772 1,869 2,157 2,249 2,365 2,311 2,182 27,813,772 26,993,332 29,081,770 30,181,124 31,097,882 32,690,737 31,349,069 31,665,451 31,000,653 L USE PER CUSTIOMER 1,953 1,69% 1,734 1,800 1,898 2,187 2,280 2,397 2,343 2,313 2,213	tt erode 10 Beileese	17,218 2017 COF	18,497 298,104	293.758	18,247	20,049	291,974	292,832	290,62	675,11	1/6,61	046,15	196,99	3,572,572	4.77 4.50
LUSE FEA CUSTOMER 1,917 1,870 1,711 1,772 1,869 2,137 2,249 2,365 1,311 2,162 2,162 1,1,015,653 1,1,001,653 1,1,015,653 1,1,001,653 1,1,015 1,1,015 1,1,01	TAL DESDICTIONAL				<b>.</b> I	•									
17,431,772       24,993,332       29,041,770       30,181,124       31,090,643       31,645,441       31,040,663       31,645,441       31,000,653         LUSE FER CUSTOMER       1.953       1,896       1,736       1,736       1,800       1,891       2,167       2,397       2,343       2,2113	LAL JUNUSPICTIONAL	1,927	1,870	117.1	ш'і	1,869	2,157	2,249	2,365	ווכנ	2,162	1,961	1,844	24,275	¥-1
LIES EPES 79E.5 001.5 181.2 198.1 008.1 627.1 648.1 E20.1	<b>4</b>	111,003,11	27,407,472	26,993,332	29,081,170	30,181,124	31,097.882	12,690,757	990,040,069	134,665,451	13,008,653	31,135,746	29,188,501	365,613,530	1 2%
Docket No. 001148-E1 L. Kollen Exhibit No. (LK-1 Pre- and Post-September 11, 20 Estimates for 2002 and 2005	TAL USE PER CUSTOMER	626,1	968'1	9(1,1	1,300	168'1	2,187	2,280	765.1	2,343	612.5	1,992	1,926	24,621	1 6%
												Docket I L. Kolle Pre- and Estimate	Vo. 001148 n Exhibit N Post-Sept s for 2002	-EI lo(LK- ember 11, 2 and 2005	16) 001 Sal

Florida Power & Light Company Docket No. 001148-EI OPC Third Request For Production of Documents Request No. 89 Page 1 of 1

# Q.

Please provide the agreement(s) between FPL and FPL FiberNet for the sale and purchase of FPL's fiber optic assets.

# A.

There is no written agreement of purchase and sale for the transfer of the assets in question. The assets were transferred on the basis of two independent appraisals and pursuant to a release from the utility's mortgage and deed of trust.