ORIGINAL

FLORIDA POWER CORPORATION

DOCKET NO. [redacted]-EQ

DIRECT TESTIMONY OF PAUL W. STALLCUP

ON BEHALF OF THE STAFF OF THE FLORIDA PUBLIC SERVICE COMMISSION

DIVISION OF AUDITING AND FINANCIAL ANALYSIS

FILED: SEPTEMBER 24, 1997

DIRECT TESTIMONY OF PAUL W. STALLCUP

Q. Would you please state your name and business address?

A. My name is Paul W. Stallcup. My business address is 2540 Shumard Oak Boulevard, Tallahassee, Florida, 32399.

Q. By whom and in what capacity are you employed?

A. I am employed by the Florida Public Service Commission as the Supervisor of the Forecast Section in the Division of Auditing and Financial Analysis.

Q. Would you please summarize your educational and professional experience?

A. Yes. I graduated from Florida State University in 1977 with a Bachelor of Science in Economics with minors in mathematics and statistics. I received my Master of Science in Economics from Florida State University in 1979 and, as a Ph.D. Candidate, completed the course work required for the degree and stood for and passed the doctoral examinations in macroeconomic theory, microeconomic theory, and econometrics in 1980.

In January 1981 I was employed by Florida Power and Light Company as a Load Forecast Analyst in its System Planning Department. In this capacity, I prepared short and long term forecasts of company sales, peak demand, and customer growth. In January 1983, I was employed by the Florida Public Service Commission as an Economic Analyst and in 1991 was promoted to my

present position of Supervisor of the Forecast Section in the Bureau of Revenue Requirements in the Division of Auditing and Financial Analysis.

Q. Would you please summarize your testimony?

A. Yes. My testimony presents the results of a risk analysis I performed on the proposed buy out of the last ten years of the contract between Florida Power Corporation (FPC) and Orlando Cogen Limited (OCL). This risk analysis views the proposed buy out as a potential investment opportunity being offered to FPC ratepayers and is evaluated on the basis of whether or not the investment will provide a reasonable return. I believe that my analysis is more comprehensive than that presented by FPC witness Schuster or by Office of Public Counsel (OPC) witness Larkin, and provides a better assessment of the financial risk the proposed buy out asks FPC ratepayers to assume. I describe how I performed my analysis and how it differs from those performed by Witnesses Schuster and Larkin. I also am sponsoring Exhibits PWS - 1 through PWS - 5 attached to my testimony.

Q. What do the results of your risk analysis show?

A. The results of my risk analysis show that, given current expectations about future fuel prices, inflation, and the financial market's current evaluation of risk, the proposed buy out contains a significant degree of risk which could financially harm ratepayers if the buy out is approved.

Q. Would you please provide an overview of how you performed your risk analysis?

A. Yes. I began my analysis by adopting the overall methodology offered by FPC witness Schuster in Exhibit 7 to his prefiled direct testimony. This methodology lists in columns (1) and (2) the forecasted values of the Capacity and Energy payments that ratepayers are currently obligated to pay under FPC's existing contract with OCL over the period from 1997 to 2023. Collectively, these columns are called the Contract Case since they contain the costs that ratepayers will incur under the existing contract.

Columns (4), (5), and (6) list the forecasted values of the Capacity, Energy, and Buy Out costs that ratepayers would pay if the proposed buy out is approved. Under this scenario, the Capacity and Energy costs from 1997 to 2013 are the same as those listed under the contract since the proposed buy out does not take effect until 2014. However, beginning in 2014 and extending to 2023, the Capacity and Energy costs reflect the forecasted costs associated with operating a gas fired combined cycle unit. This is the type of unit that FPC assumes will replace the power that would have been provided under the contract with OCL. Collectively, these columns are called the Replacement Case since they reflect the costs that ratepayers will be obligated to pay if the proposed buy out is approved and a replacement source of power is required.

Finally, the forecasted costs under the Replacement Case are subtracted from the forecasted costs under the Contract Case and a net present value (NPV) calculation is performed on these differences. If this NPV is positive,

the analysis shows that ratepayers are expected to be better off if the proposed buy out is approved. If the NPV is negative, the analysis shows that ratepayers are expected to be harmed if the proposed buy out is approved.

Q. What changes did you make to this methodology in order to perform your risk analysis?

A. I modified FPC's methodology in three ways. First, I replaced FPC's forecasted escalation rates for fuel prices and construction costs with escalation rates obtained from Data Resources Incorporated (DRI). Second, I changed the discount rate used to perform the NPV calculation in order to better reflect the risk the proposed buy out asks ratepayers to assume. And third, I performed a sensitivity analysis on the NPV calculation using DRI's base case, optimistic, and pessimistic forecasted escalation rates to arrive at a range of NPV values within which I could reasonably expect the ultimate NPV value to fall.

Q. Why do you believe it is appropriate to use DRI's forecasted escalation rates for fuel prices instead of those used by FPC?

A. There are three reasons why I believe it is more appropriate to use DRI's forecasted escalation rates instead of those used by FPC. First, I believe that FPC's long term natural gas price forecast (FPC's 9702 fuel forecast) may substantially underestimate the future market price of natural gas. As shown in my Exhibit 1, FPC's natural gas price forecast is much lower

than those submitted by other Florida utilities in their 1997 Ten Year Site Plans. While this forecast may be appropriate over the near term due to existing natural gas contracts, by the time the proposed buy out occurs in 2014, any existing gas contracts FPC currently has will have expired and they will have to be renegotiated at prevailing market prices. Using the gas price forecasts of the other utilities as a consensus forecast of what these market prices will be indicates that natural gas prices will be higher than those used by FPC. Furthermore, my Exhibit 1 also shows that DRI's 25 year natural gas price forecast released in August 1997 conforms closely to the natural gas price forecasts of the other utilities. From this I conclude that DRI's natural gas forecast provides a reasonable estimate of future gas prices.

Second, I believe that in order to justify the proposed buy out, FPC's analysis should be robust enough to stand up to the inclusion of reasonable forecast assumptions from reputable sources such as DRI. By using DRI's forecast assumptions in my risk analysis, I am able to measure the extent to which the cost effectiveness of the proposed buy out is dependent upon FPC's forecast assumptions.

Third, the fuel price forecasts used by FPC are basically ten year forecasts that have been extrapolated forward an additional 17 years. The DRI forecasts on the other hand are taken from DRI's long term 25 year forecast released in August 1997. These forecasts cover all but the last year of the proposed buy out and, in my opinion, represent a better basis for estimating NPV savings.

The DRI fuel price escalation rates used in my risk analysis are contained in my Exhibit 2.

Q. What is the impact on the NPV if DRI's forecasted fuel prices are used instead of those provided by FPC?

A. The NPV savings are reduced from $32.7 million to $19.9 million.

Q. Why do you believe it is appropriate to change the escalation rate used by FPC to estimate the cost of building a gas fired combined cycle unit in 2014?

A. The escalation rate used by FPC is not the correct price index to use for estimating power plant construction costs. The escalation rate used by FPC is derived from the GDP Fixed Investment, Durable Equipment price index from DRI. This price index is designed to measure price changes of goods that are durable in nature and that are used to equip existing business structures. These goods include office equipment and furnishings, automobiles, personal computers, and light machinery. A more appropriate escalator is the GDP Fixed Investment Public Utilities Structures price index. This price index is designed to measure changes in the cost of building electrical generation facilities, telecommunications facilities, and other types of public utility structures.

Additionally, the construction cost escalation rates used by FPC are taken from DRI's May 1997 ten year forecast and have been extrapolated forward an additional 17 years. The DRI forecasts used in my analysis are taken from DRI's long term 25 year forecast released in August 1997. These forecasts cover all but the last year of the proposed buy out and, in my opinion,

represent a better basis for estimating NPV savings.

The DRI fuel price escalation rates used in my risk analysis are contained in my Exhibit 3.

Q. What is the impact on the NPV savings resulting from using DRI's escalation rates which you feel are appropriate instead of those provided by FPC?

A. The NPV savings are reduced from $32.7 million to $28.0 million.

Q. What is the impact on NPV Savings when both the fuel forecast assumptions and construction escalation rates are changed?

A. The NPV savings are reduced from $32.7 million to $15.2 million.

Q. Would you please explain why it is appropriate to change the discount rate used by FPC to calculate the NPV savings to ratepayers?

A. Yes. The discount rate used by FPC is the company's current after tax marginal cost of capital of 8.81 percent. This is the appropriate discount rate to use when evaluating projects which are funded through the issuance of FPC debt and equity, and that represent the type of financial risk normally associated with FPC projects.

The proposed buy out, however, is neither being funded by the company nor is it necessarily comparable to normal FPC projects in terms of its

financial risk. Under FPC's proposal, ratepayers are being asked to fund the buy out and are being asked to assume all the financial risk associated with it. Furthermore, some elements of the buy out appear to be much riskier than others. For example, the projected Energy costs under the Replacement Case are determined largely by the future price of natural gas, and are much riskier than the Capacity costs under the Contract Case which are known with certainty. Therefore, a more appropriate discount rate structure to use is one that properly measures the risks ratepayers are being asked to assume and sets the discount rates accordingly.

Q. What type of discount rate structure is appropriate?

A. I believe risk adjusted discount rates (RADR) are the appropriate discount rates to use in evaluating the proposed buy out. This type of discount rate is frequently used in capital budgeting situations where different elements of a project have different levels of risk associated with them. This is very similar to the situation we have here.

Q. How are risk adjusted discount rates calculated?

A. Risk adjusted discount rates are calculated by recognizing that discount rates are composed of two components: a risk free rate and a risk premium. The risk free rate is simply the market's perception of the current time value of money when there is no risk associated with an investment. This rate is typically measured by the U.S. Treasury Bond rate since it is backed by the

Federal government and is viewed as being virtually risk free. The risk premium is the additional return investors require in order to accept the risk associated with a particular investment. The greater the perceived risk, the greater the risk premium investors will require to accept that risk.

For example, in June 1997, the average 30 Treasury Bond rate for the month was 6.77 percent and FPC's pre tax marginal cost of capital was 10.20 percent. The risk premium associated with FPC's after tax marginal cost of capital would be the difference between the risk free rate of 6.77 percent and the pre tax marginal cost of capital rate of 10.20 percent, or 3.43 percent This risk premium represents the investment community's evaluation of the return required to accept the risk associated with projects undertaken by FPC. Furthermore, if another project from another company is viewed as being twice as risky as a project undertaken by FPC, then the risk premium for that other project can be estimated as being twice that of FPC's risk premium, or 6.86 percent. When combined with the risk free rate of 6.77 percent, the estimated risk adjusted discount rate for the other project would be 13.63 percent.

Q. How did you apply the idea of risk adjusted discount rates to the analysis of the proposed buy out?

A. Risk adjusted discount rates can be applied by recognizing that the analysis presented in FPC witness Schuster's Exhibit 7 consists of five separate expenditure flows: the Capacity and Energy costs under the Contract Case (columns 1 and 2), and the Capacity, Energy, and Buy Out costs under the Replacement Case (columns 4, 5, and 6). The values in two of these columns

are known with certainty. These are the Capacity costs under the Contract Case and the Buy Out costs under the Replacement Case. Because there is no risk associated with these expenditure flows, the appropriate discount rate to use is the risk free rate as measured by the 30 year Treasury Bond rate.

Next, the Capacity costs under the Replacement Case (column 4) contain the estimated costs of FPC building and operating an electric generating plant (after including the Variable O&M costs recorded in the Energy cost in column 5). These costs were calculated by FPC by multiplying the estimated cost of building a 79.2 MW plant by a Fixed Charge Rate that incorporates the depreciation expense, taxes, and other expenses associated with operating a plant of this size, as well as a reasonable return on the investment required to build the plant. By assuming that the volatility, or risk, in this expenditure flow is typical of the kind of risk that the investment community associates with all FPC projects, we can then assign FPC's current pre tax marginal cost of capital, 10.2 percent, as the financial market's current assessment of the return required for this level of risk. From this, a risk premium can be associated with the expenditure flow contained in column 4 by subtracting the risk free rate from FPC's pre tax marginal cost of capital. This risk premium is the market's current evaluation of the additional return it requires in addition to the risk free rate to accept the riskiness, or volatility, in this expenditure flow.

Next, risk adjusted discount rates can be estimated for the remaining two columns, the Energy costs under the Contract Case (column 2) and the Energy costs under the Replacement Case (column 5) by comparing the riskiness or volatility in these expenditure flows to the riskiness of column 4, the

costs associated with building and operating a power plant. For example, if the expenditure flow in column 5, the Energy costs under the Replacement Case, are twice as risky as the expenditure flow in column 4, then the risk premium for column 5 would be twice as large as the risk premium measured in column 4. This risk premium, together with the risk free rate, would yield the risk adjusted discount rate for column 5.

As a final step, the risk adjusted discount rates are adjusted for the effect of the ratepayers' income taxes to yield the after tax risk adjusted discount rates. These discount rates reflect the return required to compensate ratepayers on an after tax basis for the risks they are being asked to assume.

With risk adjusted discount rates assigned to each of the five expenditure flows, each expenditure flow can be discounted by its own risk adjusted discount rate to yield its own NPV. The NPVs of columns 1 and 2 are added together to produce the NPV of the Contract Case, and the NPVs of columns 4, 5, and 6 are added together to form the NPV of the Replacement Case. The NPV of the Replacement Case is subtracted from the NPV of the Contract Case to yield the final NPV. If this final NPV is positive, the analysis shows that the buy out proposal more than adequately compensates ratepayers for the risks they are being asked to assume. If the final NPV is negative, the analysis shows that the buy out proposal does not adequately compensate ratepayers for the risk they are being asked to assume.

Q. How did you measure the riskiness, or volatility, in each of the five expenditure flows in order to calculate the risk adjusted discount rates?

A. The risk in each of the five expenditure flows was calculated by inserting DRI's base case, optimistic, and pessimistic 25 year forecast assumptions for fuel prices and construction cost escalation rates in the analysis performed by FPC. The variability in each expenditure flow was compared to its average value to express the variability in percentage terms. For example, if an expenditure flow varied by plus or minus $10, and its average value was $100, its volatility or riskiness would be ten percent. These calculations, along with the derivation of the risk adjusted discount rates for each of the five expenditure flows, are presented in my Exhibit 4.

Q. Would you please describe how you performed your sensitivity analysis?

A. Yes. My sensitivity analysis consisted of calculating three sets of expenditure flows like those shown in FPC witness Schuster's Exhibit 7. One set was based upon DRI's August 1997 base case 25 year forecast assumptions for fuel price and construction cost escalation rates. Another set was calculated using DRI's pessimistic version of the same forecast, and the third used DRI's optimistic version of the same forecast.

These three DRI forecast scenarios represent a reasonable range over which future fuel prices and escalation rates can be expected to vary. Similarly, the expenditure flows derived from these forecast scenarios provide a reasonable measure of the economic risk FPC's proposed buy out presents to its ratepayers attributable to the intrinsic uncertainty of future economic developments.

Q. Would you please explain how you combined the elements you have already described into a final risk analysis of FPC's proposed buy out?

A. Yes. Each of the three sets of expenditure flows calculated in the sensitivity analysis was discounted using the risk adjusted discount rate methodology I have described previously to yield a NPV. Each of these NPVs was then weighted according to the probabilities DRI assigns to each of its three forecast scenarios (base case = 50 percent, pessimistic = 25 percent, and optimistic = 25 percent) and added together to yield a final NPV value called the Expected NPV. From these results, we can obtain an estimate of the likelihood that the NPV of the proposed buy out will be negative.

Q: What do the results of your risk analysis show?

A. My Exhibit 5 presents the results of my risk analysis. This exhibit shows that the NPVs range from a low of negative $38.3 million under DRI's pessimistic forecast scenario, to a base case NPV of $12.5 million, and up to $49.9 million under DRI's optimistic scenario, with an overall Expected NPV of $9.2 million. From these results I conclude that there is approximately a 40 percent chance that ratepayers would be harmed if the proposed buy out is approved, and approximately a 60 percent chance that they would be better off if the proposed buy out is approved.

Q: Did you make any adjustments to this analysis to make it more applicable to the proposed buy out?

A: Yes. Under DRI's pessimistic scenario which gives rise to the negative $38.3 million NPV, natural gas prices are projected to grow much faster than coal prices. It seems reasonable to expect that if this scenario were to occur that FPC would consider generation alternatives to the natural gas fired combined cycle unit used in the analysis. For example, FPC might consider adding a coal gasifier to the combined cycle unit to provide fuel diversity. This would substantially increase the Capacity cost in exchange for the ability to utilize a less expensive fuel. However, it also seems reasonable to expect that if the generation market is deregulated by the year 2014, that FPC might be reluctant to increase its fixed investment in a more expensive plant because of the increased risk exposure such an investment would entail. On balance, it seems reasonable to expect that if natural gas prices escalate as described in DRI's pessimistic scenario, FPC could avoid the higher gas prices by building a more expensive plant, but that course of action is not certain.

To account for this uncertainty, I believe that it is appropriate to reduce the weight assigned to DRI's pessimistic case from a 25 percent probability to a 10 percent probability. This change reflects the likelihood that FPC would react to avoid higher natural gas prices without completely removing the probability that they would choose not to react.

Q: What do the results of your risk analysis show if you make this adjustment to the weight assigned to DRI's pessimistic scenario?

A: As shown in my Exhibit 5, this change increases the Expected NPV from

$9.2 million to $18.7 million, and reduces the chances of the NPV going negative from 40 percent to approximately 33 percent.

Q. How would you compare your risk analysis to that provided by FPC witness Schuster?

A. As I have stated earlier, I believe my risk analysis provides a more comprehensive evaluation of the risk of the proposed buy out. First, it includes the latest available long term forecasts for the key economic assumptions from which the final NPV values are derived. Second, it incorporates a discount rate structure that evaluates the risk that the proposed buy out asks ratepayers to assume at current market rates. Third, it employs a sensitivity analysis to measure the extent to which the final NPV can be influenced by varying economic conditions.

Q. How does your risk analysis differ from that presented by OPC witness Larkin?

A. Mr. Larkin's analysis is similar to mine in the sense that we both believe that the appropriate discount rate to use is the ratepayers' discount rate, not FPC's marginal cost of capital. However, he sets his discount rate within a range of 13 percent to 18 percent by noting that ratepayers typically carry some credit card debt or some other form of unsecured loan. Therefore, he believes the appropriate discount to use in evaluating the proposed buy out is the ratepayers' opportunity cost of using the $49.4 million to pay off

these types of debt.

Q. If both you and Mr. Larkin are measuring the discount rate from the ratepayers' perspective, why are the discount rates different?

A. As I stated previously, Mr. Larkin bases his estimate of the ratepayer discount rate on the ratepayers' opportunity costs, an approach that I believe has merit. The approach I have chosen to take evaluates the proposed buy out as a potential investment opportunity in much the same way that an investor might evaluate the profitability of a long term investment opportunity using capital budgeting evaluation techniques. Stated another way, Mr. Larkin sets his discount rate from the point of view that ratepayers are retail customers of the credit markets while I set mine from the point of view that ratepayers are investors in the credit markets.

Q: Did you perform any other risk analyses on the proposed buy out?

A: Yes. I also performed a risk analysis based upon the same adjusted DRI scenario I described previously but set the discount rate equal to 10.9 percent, mid-way between FPC's rate of 8.81 percent and OPC witness Larkin's rate of 13.0 percent. This discount rate was applied to each of the expenditure flows in the analysis.

Q: What did this analysis show?

A. My Exhibit 5 presents the results of this risk analysis as well. This exhibit shows that the NPVs range from a low of negative $8.1 million under DRI's pessimistic forecast scenario, to a base case NPV of negative $0.9 million, and up to $3.0 million under DRI's optimistic scenario, with an overall expected value of negative $0.5 million. From these results, I estimate that there is a 50 percent chance that proposed buy out would result in negative ratepayer saving, and a 50 percent chance that it would yield positive ratepayer savings.

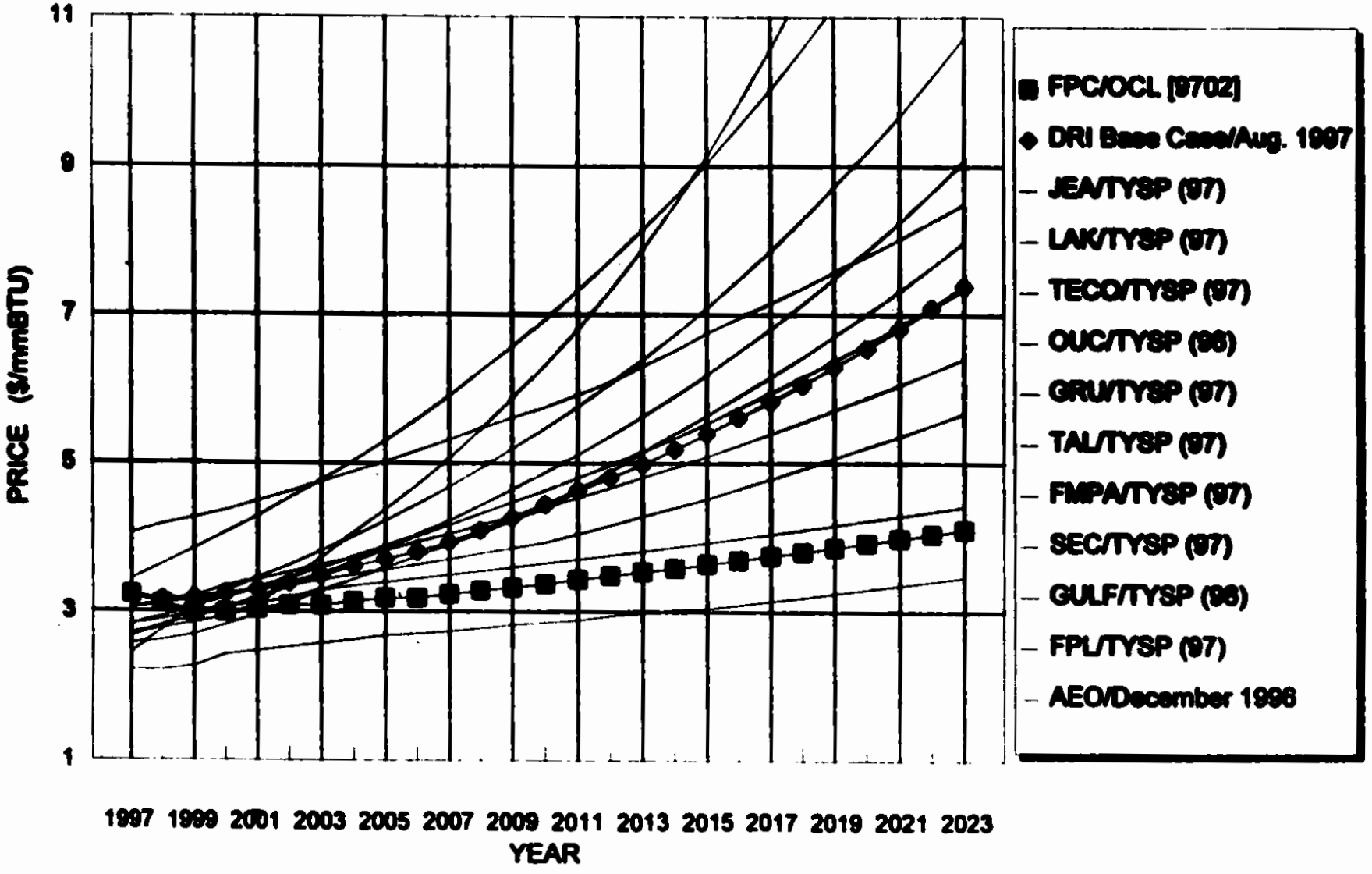
Q. In your opinion, how should the Commission interpret the results of your risk analyses?

A: I believe my risk analyses demonstrate that the proposed buy out contains a significant degree of risk which could financially harm ratepayers if the proposed buy out is approved. This risk should be balanced, however, against other factors introduced by Mr. Schuster and Mr. Larkin, but which are beyond the scope of my testimony. Their factors include the issue of intergenerational equity, the issue of reducing potentially strandable costs, and the general desire to help Florida's utilities and their ratepayers avoid the very high costs built into the latter years of contracts like this one.

Q. Does this conclude your testimony?

A. Yes, it does.

COMPARISON OF 26-YEAR NATURAL GAS FORECASTS



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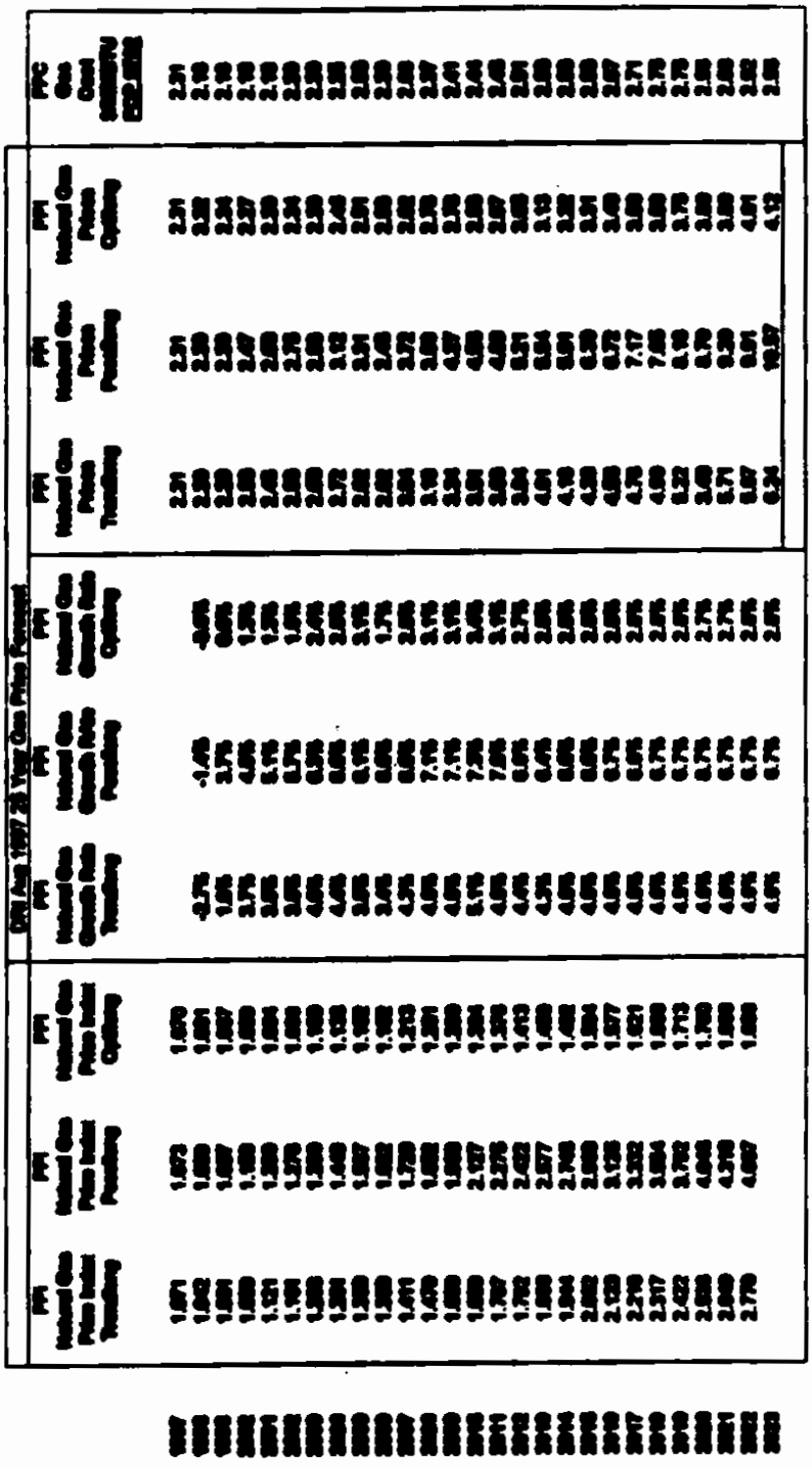

				DRI Aug 1997 25 Year Coal Prices					
	PPI Coal Price Index Trending	PPI Coal Price Index Peaking	PPI Coal Price Index [illegible]	PPI Coal Growth Rate Trending	PPI Coal Growth Rate Peaking	PPI Coal Growth Rate [illegible]	PPI Coal Prices Trending	PPI Coal Prices Peaking	PPI Coal Prices [illegible]	FPC CR1&2 Coal Cost [illegible]
1997	[illegible]	0.997	[illegible]				1.75	1.75	1.70	1.70
1998	[illegible]	[illegible]	[illegible]	[illegible]	-0.2%	-1.4%	[illegible]	1.75	[illegible]	[illegible]
1999	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-0.4%	[illegible]	1.73	[illegible]	1.71
2000	[illegible]	1.017	[illegible]	[illegible]	3.4%	0.1%	1.72	1.70	[illegible]	[illegible]
2001	[illegible]	[illegible]	[illegible]	1.2%	[illegible]	-0.4%	1.74	[illegible]	[illegible]	[illegible]
2002	1.017	[illegible]	[illegible]	[illegible]	[illegible]	1.4%	1.70	1.94	[illegible]	[illegible]
2003	[illegible]	1.140	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2004	[illegible]	[illegible]	[illegible]	[illegible]	3.7%	0.2%	[illegible]	2.10	1.70	[illegible]
2005	[illegible]	1.234	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2.17	[illegible]	[illegible]
2006	[illegible]	1.270	[illegible]	[illegible]	[illegible]	0.1%	[illegible]	[illegible]	1.70	[illegible]
2007	[illegible]	[illegible]	[illegible]	1.4%	3.4%	-0.1%	[illegible]	[illegible]	1.75	[illegible]
2008	1.127	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1.71	[illegible]
2009	[illegible]	[illegible]	0.974	[illegible]	4.1%	[illegible]	[illegible]	[illegible]	1.71	[illegible]
2010	1.177	[illegible]	[illegible]	2.3%	[illegible]	0.7%	[illegible]	[illegible]	[illegible]	[illegible]
2011	[illegible]	[illegible]	[illegible]	[illegible]	4.2%	0.7%	2.12	2.74	1.74	2.04
2012	[illegible]	[illegible]	[illegible]	[illegible]	4.4%	[illegible]	2.17	[illegible]	[illegible]	[illegible]
2013	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2.22	[illegible]	1.77	2.11
2014	[illegible]	1.770	1.014	[illegible]	[illegible]	[illegible]	[illegible]	3.12	[illegible]	2.14
2015	[illegible]	[illegible]	[illegible]	2.7%	[illegible]	1.1%	[illegible]	3.27	[illegible]	2.17
2016	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2.41	3.44	[illegible]	[illegible]
2017	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1.2%	2.47	[illegible]	[illegible]	[illegible]
2018	1.441	2.140	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2.27
2019	[illegible]	[illegible]	1.077	[illegible]	[illegible]	1.2%	[illegible]	3.97	[illegible]	[illegible]
2020	[illegible]	2.371	[illegible]	[illegible]	5.1%	1.2%	[illegible]	4.17	[illegible]	[illegible]
2021	[illegible]	[illegible]	1.103	[illegible]	[illegible]	1.2%	[illegible]	[illegible]	[illegible]	[illegible]
2022	1.614	[illegible]	1.118	[illegible]	5.1%	1.4%	[illegible]	[illegible]	1.97	2.41
2023				[illegible]	5.1%	1.4%	[illegible]	[illegible]	[illegible]	2.44

Exhibit PWS - 2 (Page 2 of 2)

	DRI Aug 97 Public Utilities Structures Price Index Growth Rates			PPC Inflation Rate Forecast	DRI Aug 97 Public Utilities Structures Price Index 25 Year Forecast		
	Trending	Pessimistic	Optimistic		Trending	Pessimistic	Optimistic
					1.137	1.137	1.137
1997	3.4%	3.9%	3.3%	-0.6%	1.176	1.177	1.176
1998	2.9%	3.9%	1.6%	-0.4%	1.203	1.216	1.197
1999	2.3%	3.7%	1.6%	0.4%	1.230	1.263	1.216
2000	2.4%	4.1%	1.2%	0.4%	1.263	1.316	1.230
2001	2.9%	4.3%	1.0%	0.5%	1.294	1.372	1.242
2002	2.9%	4.4%	1.0%	0.5%	1.326	1.432	1.254
2003	2.4%	4.3%	0.9%	0.5%	1.358	1.496	1.266
2004	2.4%	4.2%	0.9%	0.5%	1.391	1.560	1.277
2005	2.6%	4.3%	1.1%	0.5%	1.427	1.630	1.291
2006	2.7%	4.7%	1.3%	0.5%	1.466	1.702	1.308
2007	2.7%	4.7%	1.4%	0.5%	1.506	1.782	1.326
2008	2.7%	4.7%	1.4%	0.5%	1.548	1.866	1.344
2009	2.9%	4.7%	1.4%	0.5%	1.593	1.953	1.363
2010	2.9%	4.7%	1.2%	0.5%	1.633	2.046	1.380
2011	2.9%	4.8%	1.4%	0.5%	1.679	2.143	1.399
2012	2.9%	4.8%	1.9%	0.5%	1.727	2.241	1.422
2013	2.9%	4.8%	1.9%	0.5%	1.778	2.345	1.443
2014	2.9%	4.8%	1.4%	0.5%	1.828	2.454	1.463
2015	2.9%	4.8%	1.4%	0.5%	1.877	2.568	1.483
2016	2.9%	4.8%	1.5%	0.5%	1.929	2.688	1.505
2017	2.9%	4.8%	1.6%	0.5%	1.985	2.820	1.529
2018	2.9%	4.8%	1.6%	0.6%	2.043	2.957	1.554
2019	2.9%	4.9%	1.7%	0.6%	2.103	3.101	1.580
2020	2.9%	4.8%	1.5%	0.6%	2.164	3.254	1.603
2021	2.9%	4.8%	1.5%	0.6%	2.227	3.413	1.627
2022	3.0%	4.8%	1.7%	0.6%	2.293	3.577	1.654
2023	3.0%	4.8%	1.7%	0.6%			
Average:	2.7%	4.5%	1.5%	0.5%			

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Risk Adjusted Discount Rates
OCL Contract Buyout

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
		Continue Case			Replacement Case			
		($1000)			($1000)			
	Capacity	Energy	Total	Capacity	Energy	Cost	Total	Savings
St.Dev.	0	2,837	2,837	958	4,978	0	4,936	2,348
Mean	48,988	27,176	73,974	8,978	28,834	0	37,809	36,844
Risk	0.000	0.097	0.038	0.104	0.145	N/A	0.130	0.063
Relative Risk	0.000	0.000	0.348	1.000	1.391	0.000	1.250	0.604
Rel. Risk Prem.	0.00%	0.00%		3.33%	4.63%	0.00%		
RADR	6.77%	3.74%		3.33%	2.04%	6.77%		
After Tax RADR	5.00%	2.89%		2.63%	1.58%	5.00%		
Avg. Tax Rate:	26.39%							

Risk Premium Derivation:

	(1) FPC CCC	(2) TB Rate	(1) - (2) Risk Prem
Mar 87	11.99%	7.64%	4.32%
Apr 88	11.82%	8.97%	2.85%
Apr 89	11.92%	9.17%	2.75%
Jul 89	11.42%	8.82%	2.60%
Apr 92	11.28%	7.88%	3.40%
May 93	10.42%	6.67%	3.75%
Nov 94	10.42%	8.15%	2.27%
Nov 95	9.99%	6.28%	3.72%
Jun 97	10.28%	6.77%	3.43%
Values Used in RADR:		6.77%	3.26%

Income Tax Rate Assumption:

	GWH (3)	% of GWH	Tax Rate	Fd Tax Rat
Residential	16,491	54.22%	22%	11.69%
Commercial	8,949	29.69%	26%	6.89%
Industrial	4,224	14.79%	34%	5.03%
Total	29,663		Av. Tax Rat	26.39%

(1) - FPC's Ammended Response to Staff's Interrogatory 6
(2) - Moody Survey
(3) - FPC December 1996 Ten Year Site Plan

Exhibit PWS - 4 (Page 1 of 1)

Summary of Risk Analyses
On Proposed OCL Contract Buy Out

Risk Adjusted Discount Rate Method - Unadjusted DRI Scenario Probabilities

	NPV	Prob.	Wt'd NPV
DRI Pess. Case	(28,278)	25%	(9,570)
DRI Base Case	12,530	50%	6,265
DRI Opti. Case	49,929	25%	12,482
Expected NPV			$8,177
Approx.Probability of Negative NPV			40.3%

10.9 Percent Discount Rate - Unadjusted DRI Scenario Probabilities

	NPV	Prob.	Wt'd NPV
DRI Pess. Case	(8,083)	25%	(2,021)
DRI Base Case	(911)	50%	(455)
DRI Opti. Case	2,988	25%	747
Expected NPV			($1,729)
Approx.Probability of Negative NPV			70.9%

Risk Adjusted Discount Rate Method - Adjusted DRI Scenario Probabilities

	NPV	Prob.	Wt'd NPV
DRI Pess. Case	(28,278)	10.00%	(3,828)
DRI Base Case	12,530	60.00%	7,518
DRI Opti. Case	49,929	30.00%	14,979
Expected NPV			$18,668
Approx.Probability of Negative NPV			33.8%

10.9 Percent Discount Rate - Adjusted DRI Scenario Probabilities

	NPV	Prob.	Wt'd NPV
DRI Pess. Case	(8,083)	10.00%	(808)
DRI Base Case	(911)	60.00%	(546)
DRI Opti. Case	2,988	30.00%	896
Expected NPV			($458)
Approx.Probability of Negative NPV			51.1%

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In re: Petition for approval of early termination amendment to negotiated qualifying facility contract with Orlando Cogen Limited, Ltd., by Florida Power Corporation.	DOCKET NO. 961184-EQ FILED: SEPTEMBER 24, 1997

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that one true and correct copy of Staff's Direct Testimony of Paul W. Stallcup been furnished by U.S. Mail this 24th day of September, 1997, to the following:

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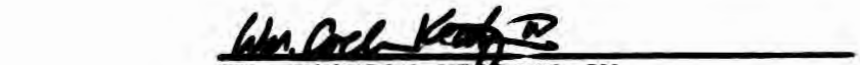

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