

Exhibit No.

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Witness: H. Edwin Overcast

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Case No.

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**Before the Public Service Commission
Of the State of Missouri**

Direct Testimony

of

H. Edwin Overcast

October 2007

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H. EDWIN OVERCAST
ON BEHALF OF
THE EMPIRE DISTRICT ELECTRIC COMPANY
BEFORE THE
MISSOURI PUBLIC SERVICE COMMISSION

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**DIRECT TESTIMONY
OF
H. EDWIN OVERCAST
ON BEHALF OF
THE EMPIRE DISTRICT ELECTRIC COMPANY
BEFORE THE
MISSOURI PUBLIC SERVICE COMMISSION**

1 **INTRODUCTION**

2 **Q. PLEASE STATE YOUR NAME AND BUSINESS AFFILIATION.**

3 A. H. Edwin Overcast, Director, R. J. Rudden, A Black & Veatch Company.

4 **Q. WHAT IS YOUR BUSINESS ADDRESS?**

5 A. My business address is P. O. Box 2946, McDonough, Georgia 30253.

6 **Q. PLEASE SUMMARIZE YOUR EDUCATIONAL AND PROFESSIONAL**
7 **EXPERIENCE.**

8 A. A detailed summary of my educational and professional experience is provided
9 in Schedule HEO-1 to this testimony. I have a B. A. degree in economics from
10 King College and a Ph.D. degree in economics from Virginia Polytechnic
11 Institute and State University. I have been employed in the energy industry for
12 over 33 years in various rate, regulatory and planning positions. In my various
13 positions, I have testified before state and federal regulatory bodies, Canadian
14 provincial regulatory bodies, state and federal legislative bodies and in various
15 courts. My testimony has addressed a variety of issues including cost
16 allocation, rate design, regulatory policy, open access and unbundling, bypass
17 economics, forecasting, gas supply planning, and a number of other issues. In
18 addition, I have been a lecturer in a number of energy industry sponsored

1 training programs including: the Edison Electric Institute Rate Fundamentals
2 Course and the Advanced Rate Course; the American Gas Association Rate
3 Course and the Advanced Rate School; and the Southern Gas Association
4 Intermediate Rate Course. Specifically, I have lectured on the principles of
5 electric cost of service for both retail and wholesale jurisdictions.

6 **Q. ON WHOSE BEHALF ARE YOU APPEARING?**

7 A. I am appearing on behalf of The Empire District Electric Company (“Empire”
8 or “the Company”).

9 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

10 A. This testimony explains how the proposed Fuel Adjustment Clause (FAC) is
11 reasonably designed to provide the electric utility a sufficient opportunity to
12 earn a fair return on equity, discusses the conceptual basis for approval of a
13 FAC and provides support for the recovery of all prudently incurred fuel and
14 purchased power expenses, including demand charges. In addition, my
15 testimony discusses the risks associated with the Empire capital program and
16 the need to allow a return higher than that of the proxy group to compensate for
17 the risks related to that capital program.

18 **Q. HOW IS THE TESTIMONY ORGANIZED?**

19 A. The testimony is organized in the following sections:

20 Introduction
21 Section 1- Basis for Approval of an FAC
22 Section 2- A Reasonable Opportunity to Earn the Allowed Return
23 Section 3- Symmetric and Asymmetric Risks
24 Section 4- Comparable Company Regulatory Models
25 Section 5- The Recovery of Prudently Incurred Costs as a Regulatory Standard
26 Section 6- Capital Program Risks and
27 Section 7- Conclusions

1 In addition, I am sponsoring a number of schedules contained in this testimony.

2 **Q. PLEASE SUMMARIZE YOUR TESTIMONY.**

3 A. This testimony demonstrates that in the absence of a FAC Empire does not have
4 a reasonable opportunity to earn its allowed return. Approval of the fuel clause
5 represents a reasonable plan to mitigate the risks associated with fuel cost
6 volatility that results from fuel price changes, weather, plant outages (both
7 planned and unplanned or forced outages) and a variety of other factors. Even
8 small changes in fuel and purchased power costs cause significant impacts on
9 the earned return. The testimony also points out that the standard for recovery
10 of expenses requires the recovery of all prudently incurred costs.

11 With respect to construction program risks, the testimony demonstrates that the
12 risks are substantial and that a combination of compensation and mitigation
13 represents the appropriate regulatory mechanism for addressing the risks. The
14 testimony recommends that the rate of return on equity be set at the high end of
15 what may be considered as a range of reasonable returns to compensate for the
16 risk. Further, the testimony recommends that for any changes in costs beyond
17 the control of management such as storm damage, tax changes, governmental
18 policy changes and others that the Company is allowed to defer these costs
19 subject to future recovery in order to permit the company a reasonable
20 opportunity to earn the allowed return.

21

22 **SECTION 1- BASIS FOR APPROVAL OF A FAC**

23 **Q. PLEASE DESCRIBE THE BASIS FOR APPROVAL OF A FAC?**

1 A. The FAC must be designed to provide a reasonable opportunity for the utility to
2 earn the allowed return authorized by the Commission. This principle was
3 specifically included in the Missouri statute authorizing the establishment of an
4 FAC. Further, one of the requirements of an FAC is that it provides a utility
5 with a sufficient opportunity to earn a fair return on equity.

6 **Q. WHAT STANDARDS SUPPORT A FAC AS A NECESSARY**
7 **CONDITION TO PERMIT A REASONABLE OPPORTUNITY TO**
8 **EARN THE ALLOWED RETURN?**

9 A. The Missouri Public Service Commission (the "Commission") has issued two
10 orders that discuss the standards that indicate a FAC is a reasonable regulatory
11 tool to permit the utility a reasonable opportunity to earn its allowed return. The
12 conditions discussed in the Commission orders include:

- 13 1. Costs to be tracked represent a significant portion of the revenue
14 requirement
- 15 2. The costs are volatile
- 16 3. The costs are beyond the control of the management of the utility.

17 These three conditions, albeit in slightly different form, seem to represent the
18 necessary conditions for Commission approval of a FAC.

19 **Q. DO THESE CONDITIONS REPRESENT A SET OF REASONABLE**
20 **MEASURES FOR EVALUATING THE STATUTORY STANDARD OF**
21 **PROVIDING A REASONABLE OPPORTUNITY TO EARN THE**
22 **ALLOWED RETURN?**

1 A. Actually, as applied to an FAC for fuel and purchased power cost recovery these
2 conditions seem to create no problem. However, in general, the first condition
3 focuses on the relation between total cost and total revenue requirement and not
4 the impact on earnings. It seems more appropriate to determine the potential
5 impact of cost changes on earnings rather than revenue requirement. This
6 conclusion is based on the following fundamental facts of regulation:

- 7 1. Rates are set for a prospective period.
- 8 2. Earned return in the rate effective period is the residual after all actual costs
9 are paid from actual revenues.

10 Thus, either a large variance in a small cost item or a small variance in a
11 significant cost item may produce a significant change in the opportunity to earn
12 the allowed return during the first twelve months the rates are effective (the Rate
13 Effective Period). Indeed, investors focus not on the allowed return or the actual
14 return for a prior period but on the expected earned return in the Rate Effective
15 Period. For this reason, it is appropriate to determine the relationship between the
16 variability in cost and the equity component of the return. This suggests that the
17 first standard should focus on the relationship between the magnitude of cost
18 changes and the dollars available for equity return, not the absolute cost dollars.

19 **Q. DOES THE EMPIRE FAC SATISFY THESE CONDITIONS AS WELL AS**
20 **YOUR OWN?**

21 A. Yes. For the proposed test year revenue requirement calculation, the cost of fuel
22 and purchased power equals 37.63 percent of the revenue requirement. More
23 importantly, the impact of even relatively small changes in fuel and purchased

1 power costs has a significant impact on the dollars available for return. Under the
2 proposed revenue requirement, Empire proposes a total equity return of about
3 \$43.5 million. The equity return dollars represent only 30.6 percent of the dollars
4 subject to FAC recovery. Given this relationship, even small changes in fuel and
5 purchased power costs have large impacts on the earned return. For example, a
6 five percent change in fuel costs of \$8.9 million represents over 20.5 percent of
7 the equity return dollars assuming normal weather. Fuel costs for Empire exhibit
8 substantial volatility, as discussed more fully below. The utility has no control
9 over the market prices for its fuels since it purchases both coal and natural gas in
10 competitive commodity markets and delivers the fuel using regulated
11 transportation options. Similarly, the purchased power market is a competitive
12 market as well. In competitive markets, prices respond to changes in supply and
13 demand creating volatility as a result of any number of variables including
14 weather, inventories, delivery constraints, fuel prices and plant availability.

15 **Q. PLEASE DISCUSS THE VOLATILITY OF FUEL AND PURCHASED**
16 **POWER COSTS.**

17 A. Volatility in actual fuel costs for the Rate Effective Period and beyond result from
18 a large number of factors. To fully understand the causes of volatility and the
19 potential impact on a reasonable opportunity to earn the allowed return, it is
20 necessary to understand the test year normalized and annualized fuel costs by
21 component. Schedule HEO-2 provides the components of fuel and purchased
22 power expense for the test year. Schedule HEO-3 shows the number of hours
23 during the test year when each fuel type or purchased power provides the

1 marginal service. In more than half the hours, additional load due to growth or
2 weather results in increased average fuel costs because higher than average cost
3 gas generation or purchased power must supply the load. This provides an
4 example of how fuel and purchased power costs vary between the test year and
5 the Rate Effective Period even assuming no change in the cost of inputs.

6 **Q. PLEASE PROVIDE A LIST OF OTHER FACTORS THAT IMPACT THE**
7 **VOLATILITY OF FUEL AND PURCHASED POWER EXPENSE.**

8 A. The list of factors that impact volatility includes but is not limited to the
9 following:

- 10 • Changes in input prices- coal, gas, purchased power
- 11 • Changes in the operation of must run capacity- windmills in particular
- 12 • Changes in maintenance schedules between the test year and the Rate
- 13 Effective Period
- 14 • Changes in fuel delivery constraints
- 15 • Changes in fuel characteristics, particularly coal
- 16 • Changes in plant forced outage rates for any of a number of reasons
- 17 • Changes in unit capacity ratings within the Rate Effective Period
- 18 • Changes in the timing of outages both the actual time of occurrence and
- 19 the duration
- 20 • Changes in SPP settlement price volatility
- 21 • Changes in environmental considerations
- 22 • Changes in the availability of water for hydro electric generation
- 23 • Changes in the pattern of weather even if the weather on an annual basis is
- 24 normal
- 25 • Changes in transmission costs under formula rates
- 26 • Non-recurring events such as flooding, low water levels, strikes, and other
- 27 events

28 The above list is not intended to be exhaustive, nevertheless, it provides many of
29 the factors that underlie fuel and purchased power cost volatility.

30 **Q. PLEASE DISCUSS THE NATURE OF FUEL PRICE VOLATILITY AND**
31 **ITS IMPACT ON EMPIRE.**

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- 1 A. Schedule HEO-4 provides a summary of fuel and purchased power cost and price
2 volatility over a historical period for Empire. Table 1 below illustrates the impact
3 of historic volatility on the proposed return in this proceeding.

Table 1

Historic Fuel Cost Changes and Earnings Impact

Total Fuel Costs	Change from Prior Year	Equity Return Dollars	Percent Impact
2000 \$95,426,265	0	\$43,500,000	0
2001 \$123,808,430	\$28,382,138	\$43,500,000	65.25%
2002 \$117,538,337	-\$6,270,093	\$43,500,000	-14.41%
2003 \$113,574,122	-\$4,004,215	\$43,500,000	-9.21%
2004 \$118,612,027	\$5,037,905	\$43,500,000	11.58%
2005 \$127,540,565	\$8,928,538	\$43,500,000	20.53%
2006 \$171,606,408	\$44,065,843	\$43,500,000	101.30%

- 4 The levels of historic volatility demonstrate that both the company and its
5 customers would benefit from an FAC. The Company would have a sufficient

1 opportunity to earn its allowed return and customers would pay no more than
2 actual costs for fuel and purchased power.

3 **Q. IS THERE OTHER EVIDENCE OF VOLATILITY IN FUEL AND**
4 **PURCHASED POWER COSTS?**

5 A. Yes. Schedule HEO-5 provides an example of the variability of monthly fuel
6 costs based on the normalized test year for the 2008 calendar year forecast for a
7 sample of the Company's generation. In addition the schedule shows the high and
8 low cost for the test year for each fuel type. Schedules HEO-6 and HEO-7
9 provide data from the Energy Information Administration on natural gas price and
10 coal price. With respect to natural gas price volatility, there is little dispute that
11 these prices exhibit volatility. That volatility is discussed at length in a recent
12 EIA publication entitled "**An Analysis of Price Volatility in Natural Gas**
13 **Markets**". As these three schedules show, both gas and coal markets exhibit
14 price volatility on an annual basis. More importantly, fuel and purchased power
15 costs exhibit intra-year volatility. To some extent, gas price volatility also
16 impacts purchased power price volatility where gas is the marginal fuel in the
17 market. Based on the data in Schedules HEO-6 and HEO-7, average coal prices
18 have increased by over 33 percent since 2003 and gas prices have exhibited even
19 more volatility over the same period. Table 2 illustrates the impact of fuel prices
20 on the Empire system.

Table 2

Dollars per MMBTU of Fuel Cost

Plant	2006	2005	2004	% Change
Coal- Iatan	\$0.793	\$0.786	\$0.726	9.23%
Coal- Asbury	1.402	1.322	1.179	18.91%
Coal- Riverton	1.458	1.391	1.309	11.38%
Natural Gas	7.276	7.280	4.451	63.47%
Oil	6.551	5.893	6.842	(4.25)%

1 Fuel price changes occur both up and down over historic periods even though the
2 general trend is upward. The combination of price trends and load variability
3 contribute to significant variability in the cost of fuel and purchased power in the
4 Rate Effective Period. Volatility in the Rate Effective Period also occurs due to
5 growth in sales due to weather, customer additions or economic activity for the
6 2008 estimate. .

7 **Q. IF YOU ASSUME NORMAL WEATHER OVER THE COURSE OF THE**
8 **YEAR (NORMAL HEATING AND COOLING DEGREE DAYS) BUT**
9 **ASSUME THAT THE WEATHER OCCURS IN A DIFFERENT PATTERN**
10 **THAN THE TEST YEAR, DOES THAT IMPACT ACTUAL FUEL**
11 **COSTS?**

12 **A.** Yes. Not surprisingly, differing patterns of weather impact fuel costs because of
13 factors such as scheduled maintenance and variability of fuel and purchased
14 power costs. In addition, weather variations affect the volume of sales for the

1 system even with normal weather. A simple example illustrates this conclusion.
2 Consider the electricity consumption of schools. If weather is hotter than normal
3 in July offset by cooler than normal September, schools will have lower electric
4 use than if the reverse- hot September and cool July- occurs.

5 **Q. DO WEATHER PATTERNS IMPACT FUEL AND PURCHASED POWER**
6 **PRICES?**

7 A. Yes. Different weather patterns influence the price of natural gas, particularly in
8 terms of the spot market prices. As we know, market prices serve to equate
9 supply and demand. Adverse weather conditions such as hurricanes in the Gulf of
10 Mexico cause wells to be shut in thereby reducing the supply of natural gas to the
11 market and raising spot market prices in the summer and potentially into the
12 winter due to the impact on storage fill. It might be noted that the expectation for
13 adverse weather in the Gulf of Mexico is higher in the late summer and early fall
14 than it is in the early summer.

15 **Q. PLEASE ILLUSTRATE THE WEATHER RELATED VARIABILITY OF**
16 **GAS PRICES.**

17 A. Schedule HEO-6 illustrates this phenomenon during the summer of 2005 when
18 September gas prices exceeded eleven dollars per Mcf as the result of hurricanes
19 in the Gulf.

20 **Q. IS IT POSSIBLE TO PROVIDE ANECDOTAL EVIDENCE OF THE KIND**
21 **OF EVENTS THAT MAY NOT BE SUBJECT TO MODELING BUT**
22 **IMPACT FUEL AND PURCHASED POWER COSTS?**

1 A. Yes. At my request the Company prepared Schedule HEO-8, which provides a
2 listing of events beyond their control that have impacted fuel and purchased
3 power costs but cannot be modeled. In a rate making context these would be non-
4 recurring events on an individual basis. Collectively, the events represent a
5 portion of the kinds of risk factors that occur on a regular basis that may have
6 serious adverse impacts on earnings but could not be directly modeled. As
7 discussed below, these events represent asymmetric risks for the utility because
8 these types of events raise costs without the existence of countervailing events
9 that lower the costs of fuel and purchased power. Since cost impacting events do
10 occur with some frequency, allowing the utility a reasonable opportunity to earn
11 its return requires some allowance for these events or the tracking of these costs
12 through an FAC. Inclusion of an FAC represents the least cost alternative for
13 customers.

14 **Q. DOES MANAGEMENT HAVE THE ABILITY TO CONTROL THE FUEL**
15 **AND PURCHASED POWER COSTS?**

16 A. No. In addition to illustrating the volatility of these costs, the above data
17 demonstrates that management has little control over the actual fuel and
18 purchased power costs. This conclusion is supported by the fact that both fuel
19 and purchased power markets are competitive. In competitive markets, customers
20 obtain resources only if they pay the market price. Further, both sales and costs
21 are subject to weather impacts that also impact both market prices for fuel and
22 purchased power as well as the recovery of the revenue requirements associated
23 with both the FAC related costs and the potential to earn the allowed return.

1 **Q. HOW DOES BEING A MEMBER OF THE SOUTHWEST POWER POOL**
2 **(“SPP”) IMPACT UNCERTAINTY OF FUEL AND PURCHASED POWER**
3 **COSTS?**

4 A. There are several ways that membership in SPP impacts the cost of fuel and
5 purchased power. First, members of SPP have received FERC approval of
6 formula transmission rates. Under formula rates, the cost of transmission changes
7 annually to reflect the cost changes occurring in the prior year. Even for SPP
8 members without a current formula rate, the FERC has shown a willingness to
9 adopt formula rates for transmission entities and others could obtain approval for
10 such rate treatment. Pursuant to Attachment H of the SPP tariff, formula rate
11 changes flow through automatically into the zonal charges under Schedule 9,
12 Network Integration Service. These charges impact the cost of purchased power
13 for Empire to the extent that the power flows from SPP. In addition, the SPP
14 Tariff provides for Energy Imbalance Service (Schedule 4) that is based on
15 Locational Imbalance Prices. Under Schedule 4, the locational imbalance prices
16 are calculated according to Attachment AE based on the average offer curve price
17 of the next increment of load every five minutes or twelve times per hour. Empire
18 has no control over the prices used for this service since these costs are bid into a
19 market. This service may produce either credits or payments as the result of the
20 difference between loads and resources. There is no practical method for
21 estimating these real time costs that must be included as part of the cost of service
22 provided by Empire. Other potential costs associated with SPP participation
23 include revenue neutrality uplift charges and over/under-scheduling charges.

1 These charges represent costs associated with fuel and purchased power that must
2 be recovered as part of the FAC to prevent unexpected and unreasonable cost
3 disallowances.

4 **Q. WHAT DO YOU CONCLUDE REGARDING THE STANDARDS FOR**
5 **APPROVAL OF THE PROPOSED FAC?**

6 A. There is ample evidence to demonstrate that the proposed FAC should be
7 approved. The cost of fuel and purchased power are significant relative to the
8 revenue requirement and changes in costs have potentially large impacts on
9 earnings. Fuel and purchased power prices are volatile. Finally the costs are, for
10 the most part, beyond the control of management.

11

12 **SECTION 2- A REASONABLE OPPORTUNITY TO EARN THE ALLOWED**
13 **RETURN**

14 **Q. PLEASE DISCUSS THE CONCEPT OF A REASONABLE**
15 **OPPORTUNITY TO EARN THE ALLOWED RETURN.**

16 A. As discussed above, the statute authorizing an FAC for Missouri's electric utilities
17 requires that the FAC be designed to provide the utility with a sufficient
18 opportunity to earn a fair return on equity. While there is no precise definition of
19 a sufficient opportunity, it does seem reasonable to conclude that in the absence of
20 an FAC the Company does not have a sufficient opportunity to earn its allowed
21 return.

1 **Q. DOES PERMITTING A SUFFICIENT OPPORTUNITY TO EARN THE**
2 **ALLOWED RETURN THROUGH AN FAC IMPLY A GURANTEE OF**
3 **EARNING THE ALLOWED RETURN?**

4 A. No. In the Rate Effective Period the FAC permits the utility to recover the actual
5 cost of fuel and purchased power. Dollar for dollar cost recovery of one
6 component of the revenue requirement does not mean that other costs or even the
7 revenue for the test year equals the revenue and costs of the Rate Effective Period.

8 The FAC is needed to avoid the impact of unrecovered fuel and purchased
9 power costs on earnings by causing the FAC to create no impact on earnings and,
10 therefore, permits the Company a sufficient opportunity to earn the allowed return
11 in the Rate Effective Period. Further, it is reasonable to assume that a historic test
12 year as the basis for revenue requirements biases the opportunity to earn the
13 allowed return toward a lower value because of expected inflation in costs. So a
14 portion of the bias against earning the allowed return remains.

15 **Q. DOES EMPIRE HAVE A SUFFICIENT OPPORTUNITY TO EARN THE**
16 **ALLOWED RETURN ABSENT AN FAC?**

17 A. No. The volatility of fuel and purchased power costs is such that under the
18 normalized estimate of these costs, which includes near maximum operation of
19 low cost, coal-fired baseload plants and term contract purchased power, it is
20 unreasonable to expect that Empire has the opportunity to earn the allowed return
21 with any significant probability. Although, it is possible that base fuel and
22 purchased power costs could be set at a level that is high enough to compensate
23 for the cost risks and provide Empire a sufficient opportunity to earn the allowed

1 return. In my view, however, this violates a corresponding principal that
2 customers have the right to just and reasonable rates. Further, it is reasonable to
3 assume that future fuel and purchased power prices are more likely to be higher as
4 compared to those estimated in the model. As a result, I conclude that fuel cost
5 recovery through an FAC represents the most reasonable alternative to meet both
6 the principles of just and reasonable rates and a reasonable opportunity to earn the
7 allowed return. Similarly, investment analysts have concluded that “the Stable
8 Outlook assumes EDE (Empire) receives a reasonable outcome in its planned rate
9 case with respect to a fuel adjustment clause, storm costs and Riverton capital
10 spending recovery.” (Fitch Ratings, April 2007)

11
12 **SECTION 3- SYMMETRIC AND ASYMMETRIC RISKS**

13 **Q. PLEASE DISCUSS THE CONCEPT OF SYMMETRIC AND**
14 **ASYMMETRIC RISKS AS THEY APPLY TO THE FUEL AND**
15 **PURCHASED POWER BASED FAC APPROVAL AND A REASONABLE**
16 **OPPORTUNITY TO EARN THE ALLOWED RETURN.**

17 A. Risks are symmetric if the mean value of the risk impact on earnings is zero and
18 outcomes are normally distributed around that mean value. The assumptions that
19 form the foundation for estimates of the required return on equity include the
20 concept of symmetric risks. Asymmetric risks occur when the expected value of
21 the risk impact causes either a positive or negative impact on the expected rate of
22 return. A simple example illustrates the concept of asymmetric risks. In adopting
23 the Interim Energy Charge (IEC) for Empire in previous years, the Commission

1 created an asymmetric risk for the Company. Under the IEC, if fuel costs were
2 less than the amount in the charge, the Company refunded the dollars to
3 customers. If costs were higher than the dollars in the IEC the Company absorbed
4 those costs and earned a lower return. Thus the Company faced two possible
5 outcomes from the IEC namely break even or lose money. This is the essence of
6 asymmetric risk and the Commission properly recognized that the IEC produced
7 inadequate results. Similarly, there are certain elements of the estimated test year
8 cost of fuel and purchased power that represent asymmetric risks as discussed
9 more fully below. The use of hedging to purchase fuels exhibits similar
10 asymmetric characteristics.

11 **Q. PLEASE DESCRIBE THE ASYMMETRIC EARNINGS RISKS THAT**
12 **RESULT FROM THE ESTIMATE OF TEST YEAR FUEL AND**
13 **PURCHASED POWER COSTS.**

14 A. There are several asymmetric risks that arise related to the test year cost of fuel
15 and purchased power. Schedule HEO- 9 Basic Unit Operation Data provides an
16 example of the asymmetric risk associated with the operation of base load units.
17 As that schedule illustrates, the four lowest cost thermal units on the system-
18 Iatan, Asbury 1, Riverton 7 and 8 already operate at least 90 percent and up to 94
19 percent of the available hours. Schedule HEO-9 calculates the operation as a
20 percent of hours available without taking into account the expected forced outage
21 rate. This implies that in actual operation these plants are running in nearly every
22 hour possible. Although it is possible that the units might actually operate a few
23 more hours, the probability that such operation occurs is much smaller than the

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1 probability that these units will operate fewer hours. If these units operate fewer
2 hours either for maintenance, forced outages or due to higher than normal levels
3 of wind energy, the cost of replacement power is at least \$5.35 per MWH higher
4 if Iatan is replaced by the Western Resource purchase and may easily be as much
5 as twice the cost of the MWH. For example, for every hour that Iatan does not
6 operate fuel costs increase by almost \$400 assuming the next most efficient units
7 meet the load. In reality, given the minimum load on the system, this cost could
8 easily be over \$3000 if the replacement power came from the State Line CC unit.
9 This means that every one percent change in the capacity factor for Iatan
10 increases fuel costs by about \$287,000 with no change in existing fuel costs. For
11 Asbury Unit 1, each one hour that it does not operate causes extra fuel costs in the
12 amount of almost \$7900 assuming the State Line CC unit meets the load. For
13 every one percent change in the capacity factor of Asbury Unit 1, fuel costs
14 increase by over \$694,000 with no change in existing fuel costs. This represents
15 over 1.6 percent of the proposed equity return. All of this analysis assumes that
16 all of the other test year items of expense and revenue equal the filed amounts
17 exactly. That is, there is no attrition due to the historic test year, the forecast of
18 normalized sales by rate schedule equals the actual Rate Effective Period sales
19 and all of the fuel and purchased power costs equal those contained in the test
20 year. This type of asymmetric risk requires mitigation and the fuel and purchased
21 power cost FAC represents the most appropriate and reasonable mitigation for
22 both Empire and its customers.

1 **Q. ARE THERE OTHER ASYMMETRIC RISKS THAT IMPACT THE**
2 **COST OF FUEL AND PURCHASED POWER?**

3 A. Yes. It turns out that given the current rate design for Empire, weather creates
4 asymmetric risk for the Company with or without a fuel and purchased power
5 FAC. The concept of asymmetric weather risk requires a full understanding of
6 the basic revenue requirements equation as well as the design of rates for the Rate
7 Effective Period. The important factual underpinnings for this conclusion relate
8 to the factors that influence fuel cost volatility. As noted above, both more
9 heating and cooling degree days (HDD and CDD respectively) increase both the
10 cost of fuel through higher gas prices and the volume of sales (including higher
11 revenue). The impact of higher HDD and CDD also impacts other costs in the
12 revenue requirements equation. These costs include higher O&M as the result of
13 more overtime, more maintenance expense and more outages. Anecdotal
14 evidence of these factors includes the effect of heat on distribution transformers,
15 unit deratings to meet cooling water discharge temperature limits and others.
16 Higher costs also mean longer lag times in customer payment and greater working
17 capital requirements. These expenses are on top of higher fuel and purchased
18 power costs. Without a fuel and purchased power FAC, the expected effect that
19 higher HDD and CDD produces higher earnings may not materialize at all. Even
20 if earnings do increase the values are small because the incremental costs are
21 high. That is, the higher revenues resulting from more sales may not produce
22 significantly greater earnings because of higher incremental costs. In the case of
23 Empire, Schedule HEO-10 illustrates the hourly marginal costs for a sample of

1 four days, two winter days and two summer days, within the test year under
2 normal weather conditions and under extreme weather both above and below
3 normal. The horizontal axis represents normal weather and the extreme and mild
4 lines illustrate the change in marginal costs resulting from weather impacts. In
5 this example, no attempt has been made to model the change in costs associated
6 with different gas prices despite the correlation with weather. As higher cost units
7 are dispatched to meet load, the probability that the higher running cost alone
8 exceeds the marginal energy charge increases. When the marginal running cost
9 exceeds the marginal revenue, revenues available to increase earnings is not
10 available and earnings decrease. Similarly, when lower HDD and CDD occur,
11 there is lower fuel cost overall but the marginal cost of fuel and other expenses
12 changes less than the drop in revenue from rates resulting in lower earnings.
13 Since the probability of lower earnings is certain when weather is less favorable
14 and may also be lower under more favorable conditions, the effect of weather risk
15 is asymmetric. That is, over time earnings losses from cooler summers and
16 warmer winters cannot be offset by weather that is warmer in the summer and
17 colder in the winter, the Company cannot expect a reasonable opportunity to earn
18 the allowed return absent a fuel and purchased power FAC to offset the changes
19 in fuel costs. Even an FAC does not eliminate the weather related asymmetry but
20 serves to mitigate a portion of the impact. The reason the FAC does not eliminate
21 all the asymmetric effect of weather is the extra operating costs above the test
22 year associated with high HDD and CDD is not recovered under the FAC. As

1 weather falls below normal the test year costs largely remain fixed and do not
2 offset the revenue losses from rates.

3 **Q. HOW DOES RISK IMPACT THE PROBABILITY THAT THE**
4 **COMPANY WILL EARN ITS ALLOWED RETURN ON AVERAGE?**

5 A. In theory, if weather risk impacts on earnings were normally distributed the
6 expectation of higher earnings with greater HDD and CDD would offset the lower
7 earnings from lower HDD and CDD so that on average the expected earnings
8 would equal the allowed return. Since this does not happen because of
9 asymmetric weather risk, the absence of the FAC does not provide a reasonable
10 opportunity to earn the allowed return.

11

12 **SECTION 4- COMPARABLE COMPANY REGULATORY MODELS**

13 **Q. WHAT IS THE PURPOSE OF DISCUSSING THE REGULATORY**
14 **MODELS OF COMPARABLE COMPANIES?**

15 A. This section illustrates that the cost of capital estimates based on the comparable
16 companies already includes not only a fuel clause for most of the companies but
17 other regulatory rules relative to the cost of capital such as future test years and
18 cost trackers for other costs beside fuel. As a result, the risk profile of Empire is
19 no different from that of the comparable companies in regard to the institution of
20 a fuel and purchased power FAC and is somewhat more risky in other aspects of
21 the regulatory model and in particular with reference to its capital program
22 requirements. Without a fuel clause, Empire is substantially more risky than the
23 comparable company group. Even with an FAC authorized to recover all fuel and

1 purchased power costs, Empire remains on average riskier than the group because
2 of other adjustments and its construction program.

3 **Q. WHAT COMPARABLE COMPANIES HAVE YOU ANALYZED?**

4 A. The comparable companies subject to analysis include all of the companies used
5 by Dr. Vander Weide to estimate the cost of capital. The extent that Empire faces
6 greater risks than these companies is a factor that the Commission should consider
7 when determining Empire's equity return in this case.

8 **Q. HOW HAVE YOU ANALYZED THESE COMPANIES?**

9 A. The analysis consisted of a variety of steps including reviewing some or all of the
10 following as necessary: tariffs, information provided by the companies on their
11 websites, analysts' reports, SEC filings, regulatory decisions and other materials
12 such as Regulatory Research Reports.

13 **Q. WHAT RATEMAKING ELEMENTS HAVE YOU REVIEWED**
14 **RELATIVE TO THESE COMPANIES?**

15 A. The items reviewed included whether the companies have fuel adjustment clauses
16 or the equivalent, whether they have other adjustment clauses to recover costs, the
17 type of test year used in rate cases and the availability of any programs that
18 provide incentives for earnings.

19 **Q. HOW MANY OF THE COMPARABLE COMPANIES HAVE FUEL**
20 **ADJUSTMENT CLAUSES OR THE EQUIVALENT?**

21 A. Based on a review of the companies and the jurisdictions in which they operate;
22 there is no company that operates without a fuel clause in some jurisdiction. With
23 the exception of Missouri, the states in which the comparable companies operate

1 without some form of FAC have either had a fuel and purchased power clause
2 eliminated because of legislation opening the market to competition or the utility
3 has agreed to the elimination of the clause. Most companies in open market states
4 retain some method for recovering the actual cost of service provided under the
5 supplier of last resort obligation. Some clauses are of recent vintage because of
6 the impact of market based power prices or other events. Some clauses have
7 unique statutory requirements concerning filing and approval. Some clauses are
8 automatic adjustment clauses and others require regulatory review. The important
9 point is that the comparable companies all have some earnings protection from the
10 volatility of fuel and purchased power costs.

11 **Q. HAVE YOU DEVELOPED A SCHEDULE THAT SUPPORTS YOUR**
12 **CONCLUSIONS RELATIVE TO FAC TYPE FUEL AND PURCHASED**
13 **POWER COST RECOVERY?**

14 A. Yes. Schedule HEO-11 provides the information relative to the type of fuel cost
15 recovery for each company in each jurisdiction. In addition, the schedule shows
16 that a number of companies have other adjustment type clauses that track other
17 costs under various regulatory mechanisms. Thirty two of the thirty-seven
18 companies have fuel clauses in every jurisdiction. Almost half of the companies
19 also have other types of cost adjustments that provide increased opportunity for
20 the utility to earn its allowed return. These other adjustment clauses permit
21 recovery of other costs such as uncollectible accounts expenses, transmission
22 expense trackers and in some cases full decoupling of revenues.

1 **Q. PLEASE DISCUSS THE SIGNIFICANCE OF THE TEST YEAR**
2 **RELATIVE TO THE OPPORTUNITY TO EARN THE ALLOWED**
3 **RETURN.**

4 A. The purpose of the test year is to provide a reasonable estimate of the costs the
5 utility will incur and the revenues the utility will receive during the Rate Effective
6 Period. The use of a historical test year, even with adjustments, does not provide
7 a realistic estimate of the costs or revenues during the Rate Effective Period. To
8 the extent that a bias exists from historical test periods, this bias has understated
9 both costs and revenues for many utilities and most certainly for those investing
10 in new rate base to meet load growth. As discussed above, the issue of load
11 growth or increased sales due to weather, impacts Empire in a unique way relative
12 to earnings risk because its marginal energy costs are dominated by higher cost
13 fuels relative to the average cost of fuel included in base rates. This means that
14 Empire has unique risks relative to the recovery of fixed cost revenue
15 requirements in the absence of a FAC mechanism to recover fuel and purchased
16 power costs. The implication for Empire is that the historic test year represents
17 more risk than that faced by other utilities in the comparable company set even
18 with the proposed FAC.

19 **Q. HOW MANY OF THE COMPANIES HAVE ALTERNATIVE TEST**
20 **YEARS THAT REPRESENT A PERIOD CLOSER TO THE RATE**
21 **EFFECTIVE PERIOD?**

22 A. The basis for the test year varies by different jurisdiction and by the types of
23 adjustments allowed to test year data. Schedule HEO-12 provides a summary of

1 test year information for the comparable companies. As that schedule illustrates,
2 the sample of comparable companies contains a variety of test years and
3 adjustments. There are a number of states that use partially or fully forecasted
4 test years as part of the regulatory process. Even where states use historic test
5 years, there are provisions designed to reduce or eliminate the inflation risk such
6 as inflation adjustments for operating and maintenance expenses, revenue
7 adjustments to permit earnings within a predetermined band and adjustments for
8 other expenses beyond the utilities control.

9 **Q. WHAT DO THESE VARIOUS ADJUSTMENTS AND REGULATORY**
10 **MODELS IMPLY REGARDING A REASONABLE OPPORTUNITY TO**
11 **EARN THE ALLOWED RETURN?**

12 A. In recognition of regulatory challenges facing utilities, regulators and legislators
13 use many tools in an attempt to satisfy the requirement to provide utilities with a
14 reasonable opportunity to earn the allowed return. Each combination of policies
15 and procedures is valued in the expectations of investors regarding the required
16 return. The ultimate test from the Wall Street point of view is, however, based on
17 the actual return achieved. In the absence of a FAC to recover fuel costs, Empire
18 would require much higher returns than those used as comparable companies to
19 compensate for the fuel cost risk alone. Even with the approval of a full cost
20 tracking FAC, Empire faces, on average, more risk than the group of comparable
21 companies. Schedule HEO-13 provides the actual earned return on equity for the
22 Company during the period 2001-2006. During this period, the Company has not
23 earned an equity return higher than 8.4 percent and has earned a return as low as

1 3.9 percent. These values represent returns below any reasonable estimate of the
2 cost of capital in that period as the average electric allowed return for those years
3 demonstrates. Since those average returns include most utilities with fuel and
4 other risk mitigation adjustments, Empire's returns should have been substantially
5 above the average. Further, the actual results represent the impact of the factors
6 discussed above such as the use of historic test years and the absence of fuel cost
7 recovery mechanisms among other things.

8

9 **SECTION 5- THE RECOVERY OF PRUDENTLY INCURRED COSTS AS A**
10 **REGULATORY STANDARD**

11 **Q. WHAT IS THE REGULATORY STANDARD FOR COST RECOVERY?**

12 A. The standard for cost recovery is that a utility is allowed to recover its prudently
13 incurred costs. Cost recovery includes both the return of and the return on the
14 book value of the assets as well as operating expenses and taxes.

15 **Q. HOW DOES THIS STANDARD APPLY TO THE FUEL AND**
16 **PURCHASED POWER FAC?**

17 A. This standard suggests that the FAC must be comprehensive to include all of the
18 prudently incurred costs associated with the fuel and purchased power segment of
19 the business. As a practical matter, this implies that 100% of the costs of fuel,
20 purchased power (including demand charges, energy charges and transmission
21 costs) and carrying charges (positive or negative related to over or under
22 recovered balances) at a minimum should flow through the FAC. There should be
23 periodic audits to determine if the costs are prudent. The standard for prudence

1 should be based on the facts reasonably known and knowable at the time the costs
2 were incurred. There should be no second guessing based on actual outcomes
3 after the decision since those factors do not influence prudence. All prudently
4 incurred costs should be recovered and imprudent costs refunded to customers
5 with interest.

6 **Q. DOES 100 PERCENT RECOVERY OF FUEL COSTS CREATE**
7 **INCENTIVES FOR THE COMPANY TO BE WASTEFUL OR**
8 **IMPRUDENT IN MANAGING FUEL AND PURCHASED POWER**
9 **EXPENSE?**

10 A. No. The full recovery of cost is a fundamental right of the utility under regulation
11 so long as the costs are prudently incurred. Further, courts have found it
12 appropriate to assume that utility management acts in good faith. The additional
13 aspects of the post recovery audit and refund obligation for imprudent expenses
14 serves to provide additional incentives for management to operate its system and
15 purchase power efficiently. Finally, there are market incentives for utilities to
16 manage cost. Since higher prices result in less consumption of electricity (all else
17 being equal), the utility faces loss of volumetric revenue to recover its fixed cost
18 and therefore earnings erosion. This is also an incentive to manage fuel and
19 purchased power costs efficiently and prudently.

20

21 **SECTION 6- CAPITAL PROGRAM RISKS**

22 **Q. PLEASE DESCRIBE THE EMPIRE CAPITAL PROGRAM.**

1 A. Empire has a significant capital program required to provide safe and reliable
2 service to its customers. Over the next three years (2008-2010) Empire expects to
3 spend over \$200 million to add new generating capacity, almost \$50 million on
4 retrofits to existing plants, over \$150 million for transmission and distribution
5 facilities to serve new and existing customers for a total of almost \$440 million in
6 new capital for its regulated operations. At the end of 2006, Empire had net plant
7 investment of just over one billion dollars. As such, the new investment in the
8 capital program will add over 40% to the existing plant investment. The capital
9 program represents a significant impact on the company and its customers.

10 **Q. HAVE THE COMMISSION AND VARIOUS PARTIES TO THE**
11 **REGULATORY PROCESS RECOGNIZED THE SIGNIFICANCE OF**
12 **THE CAPITAL PROGRAM.**

13 A. Yes. The Commission accepted the Stipulation and Agreement entered into by
14 the Company and other parties in Case No. EO- 2005-0263 (Stipulation). The
15 stated purpose for adopting the amortization provision of that agreement is to
16 permit Empire to maintain an investment grade for its debt financing related to its
17 cost of new capacity additions. Maintaining the investment grade requires that
18 Empire actually earn its allowed return in the Rate Effective Period since the
19 rating agencies look at actual financial performance not the allowed return. In
20 addition, the amortization agreement assumes for purposes of calculating the
21 dollars to be amortized that the cash flow from actual earnings supports the debt
22 coverages contained in the existing bond indentures.

23 **Q. HOW DOES EMPIRE INTEND TO FUND THIS CAPITAL PROGRAM?**

1 A. The capital program must be funded by both internally generated funds and by
2 external financing-both new equity issues and new debt issues. Internally
3 generated cash flows result from both depreciation expense and retained earnings.
4 Retained earnings are dependent on the actual earned return on equity resulting
5 from the effect of costs and revenues in the Rate Effective Period and the
6 dividend payout ratio. Retained earnings also play a role in maintaining the
7 appropriate capital structure. For the Company, the impact of retained earnings in
8 the capital plan is small for the years of 2008 and 2009 (the period encompassing
9 the Rate Effective Period) at under \$9 million dollars. The assumptions regarding
10 net income for this period rely heavily on assumptions such as constant short term
11 interest rates on investments, modest increases in the interest rates on short term
12 debt of 50 basis points, constant contributions in aid of construction from new
13 customers, no state or federal tax increases and limited increases in annual O&M
14 at 2.5% over 2008 budget levels. Changes in any of these variables could
15 adversely impact the construction program and the ability of the Company to
16 maintain its investment grade debt rating.

17 **Q. IS IT POSSIBLE TO DETERMINE THE LEVEL OF EQUITY RETURN**
18 **NECESSARY TO SUPPORT THE CAPITAL PROGRAM?**

19 A. It is impossible to know exactly the required return needed to support the capital
20 program and maintain an investment grade debt rating because of the risks
21 associated with the construction program. The risks for Empire are significant
22 despite the approval of the amortization provision of the Stipulation. This is
23 particularly so because in calculating the amortization amounts for rate case

1 purposes the formula uses the allowed return from the rate case. Despite the best
2 efforts of all parties, the proforma test year expenses and revenues may not
3 provide a reasonable opportunity for Empire to earn the allowed return in the Rate
4 Effective Period and in the subsequent period prior to the next rate case. In order
5 to fund the construction program and maintain an investment grade debt rating, it
6 will be the actual results in the Rate Effective Period and beyond that result in the
7 investment grade debt rating. Further, as noted above the Missouri regulatory
8 model biases the actual return below the authorized return given any reasonable
9 expectation of economic conditions and assuming the existence of a fully tracking
10 fuel adjustment clause. In addition to the bias that exists in the use of the historic
11 test year, there is also the asymmetric weather risk, the risk of unforeseen
12 additional capital expenditures from storm damages and so forth. These risks are
13 compounded by the limited financial reserve strength resulting from a history of
14 returns below the allowed return. Schedule HEO-13 provides a comparison of the
15 allowed returns and the actual earned returns over the last six years.

16 **Q. IF IT IS IMPOSSIBLE TO KNOW EXACTLY HOW MUCH EARNED**
17 **RETURN THE COMPANY NEEDS IN THE RATE EFFECTIVE PERIOD,**
18 **HOW DOES THE COMMISSION KNOW THE AMOUNT OF**
19 **ADDITIONAL RETURN OVER THE ESTIMATED RETURN TO GRANT**
20 **THE COMPANY?**

21 A. The Commission has available several proxies that provide insight in the
22 magnitude of the dollars of return at risk. The Commission has two tools for
23 addressing risk- compensation and mitigation. These tools may be used separately

1 or in conjunction with one another. Thus the Commission may choose to either
2 grant the Company additional return to compensate for those risks, provide
3 another means of mitigation through the ratemaking process or adopt some
4 combination of the two. With respect to any risk, the options for meeting the
5 standard of a return commensurate with the risk always include both additional
6 return and mitigation. As discussed above, commissions use regulatory models
7 that incorporate both tools as a means of providing a reasonable opportunity of
8 earning the allowed return. These models vary by jurisdiction and include the
9 Rate Stabilization and Equalization (RSE) in Alabama that adjusts rates quarterly
10 to fall within a dead band around the allowed ROE based on a forecast test year to
11 Wisconsin that uses a forecast test year and permits a current return on 50 percent
12 of construction work in progress.

13 **Q. PLEASE DISCUSS SOME OF THE PROXIES THAT ALLOW THE**
14 **COMMISSION TO MEASURE THE RISKS ASSOCIATED WITH A**
15 **REASONABLE OPPORTUNITY TO EARN THE ALLOWED RETURN IN**
16 **THE RATE EFFECTIVE PERIOD.**

17 A. The use of historical operation and maintenance expense contributes to the bias
18 because the payroll component will almost certainly increase as a result of
19 inflation less an adjustment for improved productivity. This conclusion is
20 consistent with the planning assumption of 2.5 percent escalation in O&M
21 expense each year in the Empire plan. Since the Rate Effective Period will begin
22 about nine months after the end of the historic test period, the impact of inflation
23 on test period costs is one measure of the potential risk that the Company will not

1 earn its allowed return. Further, it is reasonable to expect that these rates will
2 remain in effect until after Iatan 2 is in service. The rates approved in this case
3 will need to support the construction program for about two years. In addition,
4 the costs of materials and equipment for electric utilities are rising because of
5 increases in raw materials and other costs. This suggests that the cost of plant
6 estimates may be less than the actual cost. As discussed below, this is one of the
7 risk factors with a construction program.

8 **Q. PLEASE DISCUSS THE RISKS ASSOCIATED WITH A MAJOR**
9 **CONSTRUCTION PROGRAM.**

10 A. There are substantial risks associated with any construction program. Some risks
11 are specific to different types of construction and some risks are general risks
12 related to construction for any utility. The following list addresses the general
13 risks borne by a utility with a major construction program particularly involving
14 new generation facilities.

- 15 • Completion risk
- 16 • Rate base disallowance risk
- 17 • Construction cost risk
- 18 • Financing cost risk
- 19 • Project delay
- 20 • Ratings change risk
- 21 • Equity dilution risk
- 22 • Earnings quality risk (AFUDC is non-cash earnings)
- 23 • Capital structure risk from excess debt
- 24 • Counterparty risk
- 25 • Interdependent project risk
- 26 • Environmental risk
- 27 • Political risk
- 28 • Regulatory risk

29 Each of these risks represent additional risks that some of the comparable group
30 do not face at all because they no longer provide generation service. For those

1 comparable companies that have major construction programs some include
2 CWIP in rate base and others have pre-approval of their construction program as
3 part of regulatory review. Finally, most of the comparable companies are large
4 enough to be the primary owner of the capacity and therefore have more control
5 relative to the actual timing of the construction and cash outlays.

6 **Q. PLEASE DISCUSS THE VARIOUS RISKS NOTED ABOVE.**

7 A. Completion risk represents the risk that the construction of the plant fails to be
8 completed. This could occur for reasons related to cost over-runs, unforeseen
9 problems at the site, failure of the principal owner to obtain financing, etc.
10 Failure to complete strands Empire's investment to that point in the project and
11 absent regulatory approval of amortization represents a loss to shareholders.
12 Completion risk also arises relative to the failure of the plant to meet the
13 requirements for commercial operation. In either case absent Commission
14 approval, any plant not included in base rates represents a loss to shareholders
15 through the reduction in equity associated with the write off of investment.

16 Rate base disallowance risk results from two potential regulatory rulings.
17 First, there may be an issue of whether the plant is used and useful. This issue
18 seems to be addressed as to the signatories of the Stipulation thus limiting this risk
19 to parties not signatory to the Stipulation. The second issue relates to the
20 prudence of the capital cost for the plant. Expenditures not considered prudent
21 may be disallowed. In the case of this risk, although Empire participates in the
22 construction management for the plants and attempts to influence decisions and
23 assure prudence, as a minority owner they have little direct control over project

1 decisions. Further, Empire has given up its right to use that position as a response
2 thereby facing this risk by proxy based on the final decisions of the plants primary
3 owner. Rate base disallowance would reduce equity because it is borne by
4 shareholders.

5 Construction cost risk means that the ultimate plant cost is higher than the
6 estimated cost. This risk has a number of dimensions related to cash calls for
7 construction, additional financing, capital structure changes and little or no
8 flexibility as to timing of new issues. The net result is higher costs for the plant
9 and potentially for the cost of capital. The concern here is that the financial stress
10 will impact bond ratings and access to capital markets. This is of particular
11 concern to Empire because it has very little reserve strength to weather an adverse
12 cost change. Further, as noted above, current cost considerations almost certainly
13 will raise the cost for construction of the plant from the original budget levels.

14 Financing cost risk represents the impact of several factors on the cost of
15 capital. These include higher interest rates that other things being equal reduces
16 the coverage ratio, inadequate equity from retained earnings due to the inability to
17 earn the allowed return, inadequate authorized ROE to permit adequate coverages
18 even with the Stipulation amortization, share price dilution due to inadequate
19 returns and other potential adverse financial concerns. It should be noted that the
20 amortization provision relates to a historic period and does not apply
21 prospectively to the Rate Effective Period and thus may not adequately provide
22 cash flow to satisfy investment grade debt rating requirements. This is an
23 important risk because of the history of under earning from the Missouri

1 jurisdiction and the prospect for a fuel adjustment that may not recover all costs.
2 Even a one percent under recovery of fuel costs represents about \$1.4 million or
3 about 3.2 percent of jurisdictional earnings.

4 Project delay risk impacts both the cost of the project and the cash flows
5 required to support the project. There are two issues that create concern. First,
6 the accrual of AFUDC represents non-cash earnings and represents a lower
7 quality of earnings. Second, delay also likely means increased cost of
8 construction due to rising labor rates and material costs, thus increasing the
9 probability of issues related to construction cost risk.

10 Ratings change risk has two dimensions. First, rating agencies
11 periodically adjust their views related to treatment of financial risks. The
12 treatment of long term leases represents one such recent example. To the extent
13 that changes increase requirements for coverage or for capital structure the parties
14 have agreed to discuss ways to maintain the investment grade but have not agreed
15 to a method for adjusting cash flows absent a rate case filing that will delay the
16 required cash flow infusion. Second, Empire faces the risk that it cannot maintain
17 investment grade ratings even with the Stipulation because of its inability to
18 maintain its equity position through retained earnings and new equity issues.
19 Given the limited financial reserve strength, small changes in interest costs,
20 earned equity returns, plant cost increases or other capital requirements such as
21 storm damages may cause Empire to lose the investment grade bond rating
22 beyond its reasonable control.

1 Equity dilution risk arises for a number of reasons during major
2 construction programs. Obvious reasons include lower earnings quality, the need
3 for greater retained earnings to support equity in the capital structure and the sale
4 of new equity issues below the market because investors recognize the risk
5 associated with the construction program and demand higher earned returns on
6 the investment.

7 Earnings quality risk relates to the fact that AFUDC does not provide cash
8 flow to support construction expenditures and therefore must be financed as well.
9 At the extreme, it is possible that dividend payments may become return of
10 capital.

11 Capital structure risk from excess debt relates to the financial inflexibility
12 that results from high leverage. This may cause higher interest rates on debt
13 requiring more coverage. It may mean greater use of short term debt to manage
14 cash calls and the associated interest expense not included in the cost of service
15 and resulting in lower equity returns.

16 Counterparty risk arises because project completion relies on other
17 participants for funding and no one party has the financial strength to undertake
18 project completion in the case of a party default. The existence of counterparty
19 risk increases the probability of project delay and non-completion. There are any
20 number of cases where the failure of one party in a multi-party project has
21 jeopardized completion and caused delay until another party could be found to
22 fund the project.

1 Interdependent project risk is a unique element associated with generation
2 that is not within the existing system. This risk arises because other projects, in
3 particular new transmission, represent a critical element in the ability to use the
4 capacity. The cost of transmission represents additional capital outlay and faces
5 possible issues related to siting the facility and receiving construction approval.
6 There may also be delays in the completion of the needed transmission that cause
7 the plant to value to be reduced. This leads to the potential for disallowance in
8 rate base based on the concept of used and useful plant.

9 Environmental risks arise from the cost of compliance as rules change
10 including the possibility of carbon sequestering, costs for emission trading or
11 other costs that impact the projects capital cost prior to in service or delay the in
12 service date. In addition, environmental risks increase the probability of project
13 delay and the potential for interdependent project risks.

14 Political and regulatory risks impact many of the above risks including
15 rate base disallowance, project delay, financial risks and others.

16 **Q. HOW DO THESE RISKS RELATE TO THE COST OF COMMON**
17 **EQUITY?**

18 A. In terms of the estimated cost of equity for comparable companies, Empire faces
19 higher risk and thus requires additional risk compensation as part of this decision.
20 Indeed, some of the comparable companies no longer have the responsibility to
21 build additional generation.

1 **Q. HAVE OTHER REGULATORY AGENCIES RECOGNIZED THE**
2 **ADDITIONAL RISK ASSOCIATED WITH A MAJOR CONSTRUCTION**
3 **PROGRAM?**

4 A. Yes. For example, the FERC has adopted a policy position in Order No. 679 that
5 incentive ROEs represent a way to encourage new construction of transmission
6 facilities to relieve congestion and improve reliability. The Empire construction
7 program improves reliability and assures adequate capacity to meet customer load
8 growth. The incentive discussed by the FERC allows for the utility to receive an
9 ROE at the high end of what may be considered as a range of reasonable returns.
10 The Missouri Commission has also granted an incentive return for KCPL in Case
11 No. ER-2006-0314 recognizing the magnitude of risk associated with a
12 construction program.

13 **Q. HOW SHOULD THE COMMISSION DETERMINE THE ADDITIONAL**
14 **RETURN ASSOCIATED WITH THESE RISKS?**

15 A. The Commission need not determine a specific adjustment to the cost of capital in
16 order to recognize the construction program risks or for that matter any of the
17 other risks that Empire faces that distinguish it from the comparable companies
18 mentioned earlier. Rather, the Commission may recognize the risk by awarding
19 Empire its requested return of 11.6% which will likely be the upper end of the
20 recommended returns for the Company in this case. This represents a reasonable
21 means of compensating Empire for the construction program risks. In addition,
22 the Commission should consider a mitigation strategy designed to allow Empire
23 deferred accounting treatment and assure probable recovery for any unusual

1 expenses or changes in costs beyond the control of management occurring in the
2 Rate Effective Period. Such costs include storm damage, vegetation management
3 expense, changes in governmental policy and other items not included in test year
4 costs subject to review and audit prior to amortization.

5
6 **SECTION 7- CONCLUSIONS**

7 **Q. PLEASE SUMMARIZE YOUR CONCLUSIONS REGARDING THE**
8 **NECESSITY OF AN FAC.**

9 A. Empire requires an FAC because fuel price changes have significant earnings
10 impacts such that in the absence of a fuel and purchased power related FAC the
11 Company has no reasonable opportunity of earning its allowed return. Fuel prices
12 are market driven resulting in both volatility and the inability of management to
13 control those costs. The volatility of prices and the inability of management to
14 control costs provide additional support and justification for a fuel and purchased
15 power FAC. The testimony provides a number of fact based illustrations
16 supporting each of these considerations. The testimony demonstrates the panoply
17 of factors that impact the total fuel and purchased power costs including prices,
18 weather, customer demand, operating characteristics of the system, plant
19 maintenance, power market conditions, wind production and so forth. The most
20 cost effective option to benefit customers and permit the company a reasonable
21 opportunity to earn the allowed return is mitigation of the fuel cost risk through a
22 fuel and purchased power cost FAC. Indeed, most states and most companies use
23 this option to the long term benefit of all stakeholders.

1 **Q. WHAT HAVE YOU CONCLUDED WITH REGARD TO**
2 **CONSTRUCTION COST RISKS?**

3 A. The testimony concludes that the construction program represents substantial
4 risks for Empire. The long list of risks is particularly unique for the Company
5 because of its limited financial flexibility and the size of the overall undertaking.
6 As a result, the Commission should recognize the risks by allowing Empire both
7 compensation and mitigation combined to permit the Company to maintain its
8 investment grade debt rating. In recognition of the risk, the appropriate
9 compensation sets the allowed equity return at the upper end of Empire request,
10 which may be at what might be considered as a range of reasonable returns. The
11 appropriate mitigation permits Empire to have deferred accounting treatment and
12 assure probable recovery for any unusual expenses or changes in costs beyond the
13 control of management occurring in the Rate Effective Period.

LIST OF SCHEDULES

Schedule No.	Description
HEO-1	Summary of Qualifications
HEO-2	Components of Test Year Fuel and Purchased Power Costs
HEO-3	Hours Where Each Source Is at the Margin
HEO-4	Fuel and Purchased Power Price Volatility
HEO-5	Monthly Fuel Cost Volatility
HEO-6	EIA Gas Price Data
HEO-7	EIA Coal Price Data
HEO-8	Impact of Fuel Price Increases
HEO-9	Weather Impacts on Fuel Costs
HEO-10	Comparison of Normal Weather to Alternative Runs
HEO-11	Cost and Revenue Impacts of Alternative Weather
HEO-12	Base Case Assumptions
HEO-13	Maintenance Schedules for Test Year and Rate Effective Period
HEO-14	Heat Rate Curves
HEO-15	Listing of Events that Impact Fuel Costs
HEO-16	Basic Unit Operating Data
HEO-17	Hourly Marginal Costs under Differing Weather Conditions
HEO-18	Comparable Company Fuel Cost Recovery Mechanisms and other Adjustments
HEO-19	Comparable Company Test Periods
HEO-20	Historical Earned Returns for Empire