BEFORE THE
FLORIDA PUBLIC SERVICE COMMISSION

DOCKET NO. UNDOCKETED

In the Matter of

HEDGING AND PORTFOLIO
MANGEMENT WORKSHOP
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PROCEEDINGS: WORKSHOP

BEFORE: CHAIRMAN E. LEON JACOBS, JR.
COMMISSIONER J. TERRY DEASON
COMMISSIONER LILA A. JABER
COMMISSIONER BRAULIO L. BAEZ
COMMISSIONER MICHAEL A. PALECKI

DATE: Monday, May 14, 2001

TIME: Commenced at 1:30 p.m.
Concluded at 3:20 p.m.

PLACE: Betty Easley Conference Center
Room 148
4075 Esplanade Way
Tallahassee, Florida

REPORTED BY: KORETTA E. STANFORD, RPR
Official FPSC Reporter

IN ATTENDANCE:

BARRY HUDDLESTON and DOUGLAS LAWRENCE, Senior Director Strategy & Planning, Dynegy, Inc., 1000 Louisiana, Suite 5800, Houston, TX 77002-5050.

ROBERT ELIAS, FPSC Division of Legal Services.

CHERYL BULECZA-BANKS, Department of Competitive Services.

PROCEEDINGS

CHAIRMAN JACOBS: Good afternoon. I'd like to take this time to welcome you all this afternoon to a workshop that we hope will be very informative and absolutely very timely, given so much of the events that we've seen occur in the natural gas markets and other markets over the last few months.

We thought an opportunity to sit down just to have an understanding and a discussion more about how these markets operate and then to begin to explore how one might approach risk management. And that really is the goal here is to explore how one would approach it and what are the most reasonable measures that might be available to practitioners out there.

Today's presentation is intended as a general overview and kind of an insight into this whole issue. As you probably are aware, there are dockets coming in the fall which will deal with these issues much more squarely, and we had had interest from various parties to make presentations. Subject to the discretion of the prehearing officer in those dockets, I would suggest that those requests be made more formally within the context of the specific dockets.

And so, again, within discretion of the prehearing officers, we will anticipate allowing some more focus and detailed presentations from specific parties in the context of those dockets. Having said that, we welcome you today, and we

appreciate your attention to this issue, and we look forward to working with you in the coming months and in the next year or so on resolving what we understand to be some really important challenges as we take on this new brave world.

And with that, I would like to introduce our speaker for today. His name is Barry Huddleston. We're glad he could join us today. He is also a former employee of this great agency, the PSC. He has instructed in the Department of Economics at Florida State University. He has a Bachelor from Ohio State University, and a Masters of Science degree in Economics in Florida State. He also has extensive work toward a pHD in economics at Florida State. With that, Mr. Huddleston.

MS. BANKS: If I could just say one thing right now, for those CPAs who are in the audience, there is a sign-up sheet that's right in back of this table right here that you can sign up for CPAs.

MR. HUDDLESTON: Is this on? Well, I'm pleased to be back here. It's been quite a while. In fact, Joe just came up and reminded me that, oh, it was about 15 years ago, I guess, Joe and Roland were students of mine when I was still at Florida State; actually, probably longer than 15 years ago, but it has been quite some time.

What I'm going to do is sort of tee things up for Douglas Lawrence, who is the Senior Director in our Planning &

Strategy Group. Douglas is sort of the subject matter expert, I'm your overview guy, and to give you a little bit of an introduction to Dynegy, for those of you who may not know much about the company, Dynegy was established in 1984 as Natural Gas Clearinghouse, one of the first natural gas marketing companies.

We're currently headquartered in Houston, although we are now an Illinois corporation by virtue of having to comply with the Public Utility Holding Company Act, since we bought a utility last year. We're right now 54th on the Fortune 500 list. We're a member of the Standard & Poor's 500 and we have about 6,000 employees. And for those of you who can buy and sell stocks, we're DYN on the New York Stock Exchange.

As a profile of the company, we're in a lot of different businesses, transmission and distribution; we have, as I said, a utility in Illinois; we now are a global communications provider. We're primarily, though, focused on what I'd call the energy convergence business, the convergence of gas and power into an energy marketplace.

Our 2000 revenues were $29 billion. We've got about $16 billion in assets, $16 billion in market value. We own right now about 16,000 megawatts of generating capacity around the United States. We trade about 11 BCF per day in natural gas, 134 million megawatt hours sold as a marketing company, and a lot of liquids and propane sales as well.

I came with Dynegy in the Destec Energy merger. Having left the PSC here, I guess, it was early 1991 to join Destec Energy. And Destec merged four years ago with NGC Corporation and became Dynegy just shortly after that. But Dynegy's gone from a single employee partnership in 1984 to about 6,000 employees now and almost $30 billion in annual revenues.

We also serve about a million and a half retail customers throughout the United States, primarily through what we call alliances. We enter into a lot of strategic alliances with existing providers, both gas and power providers. In the southeast, as you can see, we've formed Southstar with Atlanta Gas Light & Piedmont, and do a lot of the gas marketing in the Atlanta area.

We also formed on with Nycor and All-Energy in the north. And we're currently expanding to Europe. We opened offices in London and Milan, Luzanne and Holland. Unfortunately, I didn't get any of those.

What we do is slightly different than many of the marketing companies that you've probably heard about. Dynegy is interested in taking physical positions and then trading around those physical positions. That's, essentially, how we manage our internal risk. So, in a lot of the areas where we are trying to become more active, we're out there attempting to construct and acquire generation.

So, most of our trading, as you can see, takes place in California and in the midwest where we have a lot of generating assets, the green dots on the chart. We also do a lot of activity in Ercot and a fair bit in PJM, although at the present time we still don't own any assets in that region. And I had to use this, because this was our ad in "The Wall Street Journal," and we like to get it out there. I'm not sure that it has any real meaning, though.

To get to the meat of the topic, I guess, basically, what Dynegy does and what we suspect most of the utilities under your jurisdiction here do is attempt to manage the volatility in the marketplace, through some kind of risk management mechanism or series of risk management mechanisms, you can hedge, you can use derivatives, you can do forward contracts or, like most of us individually, you can take out insurance.

Most of the utility risk managers around the country though have focused on the uncertainty associated with earnings and looked at price exposures as opposed to volumetric swings. And so, what we used to always call the market risk associated with losing and gaining customers, really haven't had the effect until we got into the deregulated environment where customers can now pick and choose their suppliers. And so, the utility managers in those areas are having to start to look at managing the volume, too.

Even so, there's still not very much activity, at least from looking at the other commodities markets. In the utility industry, there's not a lot of risk management that takes place. And in looking through the literature, I guess, there are really three reasons that I came across.

First, the pace of deregulation has slowed. And so, in the areas where you had the real push for deregulation and utility managers were looking for those mechanisms, that's now slowed down. They see a lower perceived movement toward deregulation.

The second one is where you end up with no incentives in place. And I remember from the textbook that we used in economics years ago, incentives matter. It's one of the fundamentals of economic thinking, and the incentives do matter. And if you don't have the incentive associated with any risk management scheme, if there's only a downside, then why engage in anything? And so, without the incentives, you end up not really moving toward any of the risk management tools.

And then, finally, once you end up with a movement toward either deregulation or, in many cases, just a movement forward in time, you end up with a more fundamental and economic framework, and you end up moving toward a risk management scheme. What we do, as a partner in all of that, is effectively focus on three aspects of what we call the

marketing and trade opportunities. The physical asset, where we're looking at asset delivery, customer relationships, and having firsthand customer and market knowledge within the territories.

The financial, where you end up with the exchanges; for example, the Nymex, entering into long and short positions, and looking at the settlement date. For example, in California you end up with a 45 or 60-day settlement date from the date of the transaction. And so, you end up with a long-term financial exposure that has to be managed there.

And then, in the risk management area, we're attempting to manage risk through a lot of different tools, and I'll mention just three of them in a little bit, and then let Douglas get more into detail, but we have the market-to-market, we value the risk, we have spot intramonth and long-term portfolios, and then we also get into weather derivatives and potentially emissions trading.

What we have developed internally is really a series of three linked areas. We have business-to-consumer, we have the business-to-business, and then we have a neutral energy exchange that we have partnered with a number of large providers, like Texas utilities, for example. And we've formed this trade spark, which is using -- it's called e-speed. It's a network that you can go in and do neutral arrangements with third parties. We also have Dynegy direct, which is for those

customers who want to do deals with Dynegy and go through an hourly and daily trading. And then, we have the retail alliances that I mentioned before.

As products, we offer weather derivatives and real-time trading. We also offer, as services, transmission -- we'll enter into long-term firm transmission arrangements and guaranteed deliveries and take the financial risk associated with those deliveries. We also engage in futures, call options, and the costless collar.

So, what are forward contracts? Basically, I had to put this little chart in there to get the economist in me, but you're buying a forward contract to agree to a price at some future period. You can also sell or agree to sell a forward contract so that you're going be delivering a future price in a future period. Then, you have options where you have the option to engage in some activity. Most option contracts have stripe prices, expiration dates, and then some premium associated with the right to call upon the operation in the future.

Here's a quick example for a call option. Rather than entering into a futures contract, you end up getting the right to call upon on a specific date. In this example, it's June gas that you've purchased on March 25th at $5.11 at an option price of 13 cents. So, in this scenario here the purchaser, you're not too far above market, you're just paying

the 13% premium, but you end up where the all-in cost doesn't exceed $5.24. So, at anytime in the future you can call upon that, and you've just paid the 13 cents for the right to do that.

The futures contract is a variation where you end up with a standard product that then can be traded in an exchange. And so, you have a specified lot; for example, a 25-megawatt lot that would be then traded amongst parties on a secondary basis so that you have primary contracts associated with the financial instrument, essentially.

In that same case, you have the March 25th -- yeah, you have the March 25th, $5.18 futures price, and you have a spot price on May 25th, in this example, of $5.72, so that you end up being, on a daily basis, being able to see the value of your futures contract and either liquidate or not liquidate on a daily basis through the exchanges. But in the end, you end up with the all-in cost of gas in this example of $5.11. You don't pay the 13% premium that you paid for the call option.

And then you have the costless collar, which don't ask me to explain. I actually, borrowed this slide from another presentation, and I'm not quite sure that I understand this one myself, so we'll let Douglas explain that. And that's the segue to Douglas. Douglas is our Senior Director in Strategy & Planning within Dynegy marketing and trade.

MR. LAWRENCE: Thank you, Barry. I'm trying to get

rid of a cold, so if you can't hear me, holler. Appreciate the time to speak in front of you. This is kind of a difficult topic to talk with, given the wide range of backgrounds anybody might have in the room here.

One thing I'd like to ask: If there's anything I say that you flat out don't understand, whether you didn't hear it, it didn't make sense, the term doesn't make sense, holler. I'm here to answer any questions ya'll may have. I'm here for ya'll and your time. Also, if I say something you disagree with, either I stated it wrong or you might just have a different view of the world, again, that's what I'm here for. So please, speak up, and I'll try to get on the same page there.

What I want to walk through, basically, is hedging in general, then discuss some of what we call the enterprise risk, how do you identify the risks that are out there. Depending on what company you are, what industry you're in, there's a whole -- just a large amount. And what I try to do is line them up in very specific bullet points that you can kind of apply them, whether you're a generator, whether you're developing widgets in the economic standpoint, whether you're Cisco, Intel, Microsoft, et cetera, walk through a couple of the commodity risks specific to this industry and then kind of walk through a couple examples.

First of all, does anybody have an idea what a hedging

program should be used for? Because the simple question I get all day long is how do I know if my hedge was a good hedge or a bad hedge? Any comments, ideas? Come on, somebody's got to be awake back there.

Basically, the intent of a hedge is not to make money. Whenever you hear somebody say, "I made a heck of a lot of money on the hedge I executed," that's great, maybe you did. That's called a speculative trade.

A hedge is nothing more than to reduce price volatility. And you have to look at both sides of the equation, your costs and your revenues. In certain parts of the country currently you hear a lot of people talking about hedging their price exposure. That's fine. If you don't hedge the revenue side, you haven't locked in and you haven't lowered the volatility of your earnings. I don't care what your product is and I don't care what market you're trading in, you have to look at both the revenue side and the cost side.

As Barry talked about, to lock in the revenue side, within some certainty, that's why weather derivatives exist currently, that is now how you hedge your volumetric risk; not price risk, just the question of what is the absolute load I'm going to send to my retail customers at some fixed and/or floating price for some time bucket. That's the revenue stream.

The cost side comes into what field you're going to use, what's the price you're going to have to buy power at if a unit

goes down, what insurance payments do you have to insure an asset that might fall off-line. Example, with a Crystal Rivers down here in Florida, if it drops off-line FPC has a pretty hard boat to fill, walking down that path.

Key component of executing a hedge is identifying what the risk is. If you don't even know what risk you're hedging, again, I'd kind of question what kind of hedge program do you have, it's nothing more than a spec trade. Of course, that's what we do for a living. Other people don't necessarily have incentive for that.

What you see on the screen there, I call it enterprise risk. A lot of different terms. I kind of break it up into three different buckets. You have the market or commodity risk, financial risk, and then business or asset risk.

From the market or commodity risk you have fixed price, which is what, basically by default, utilities basically are at risk for. They are selling at fixed price. If they are buying floating, like what happened in California, it becomes very costly. You have a basis risk, which means you have a financial product that's liquidly traded I can use to hedge, but it may not be the same physical location that I actually have to buy or sell the product at. The Henry Hub, versus Florida zone two, zone three, et cetera.

Index risk, you could be buying fixed and you're selling at a floating price, you don't know what that price is, that's

a risk. And then you end up having liquidity issues that the market may be very liquid today, and I enter into a hedge in a transaction knowing I may be able to roll out of it, and do other activity.

Well, if all of a sudden liquidity disappears, which is one of the worst things that can happen to a company like us, and it happened -- I'll show you some graphs later -- back in '9 -- I think it was '98 and '99, when Federated and a couple of the other power companies in the midwest went under, the worst thing that happens is liquidity dries up, then you have people like us, three or four of us, standing around hitting each other in the head. It's not very much fun, because you can't trade. Nymex is very liquid. I go to buy Intel, I can buy an unlimited amount -- I can't buy that much, but an unlimited amount of shares, theoretically, without the price moving too far.

The financial risk deals with any company, I don't care where you're located. Now, Florida, you might be wondering the foreign exchange risk. I put that up there, probably because you do business with Mississippi. And I'm from there, kind of to a degree, so I can say that, didn't want to offend anybody.

Credit risk, which is a very key component, and that's the issue you've seen out in California. And I'm not hammering California, but credit risk is a viable business risk you'd have to insure against.

Any company, whether it's a utility or whether it's Cisco or whether it's some other company, General Motors, they have a fiduciary responsibility to insure their shareholders against credit risk. And so, you have to look at ways to insure against that risk and not just the market risk.

Then, the business and asset risk. Ya'll are probably a lot better versed than I am, but you have the transmission transportation, whether it's gas, whether it's power, whether it's a coal train coming in, you have operational risk if an asset falls off-line or a production unit goes off-line; legal and regulatory risk and then also weather, which is basically revenue and demand risk.

Now, this slide is somewhat outdated, but the intent is looking at power, and this is looking at the supply risk or the reserve margin, each region across the country, looking at it from a NERC perspective, some are a little bit long supply and some are a little bit short. And sitting in this room everybody kind of understands and agrees with that.

That has a dramatic impact on how prices and the markets themselves react. It has a more significant impact that is power-specific. When you think of the implications on gas, there's a lot of talk about nuc units being built, which is a fantastic idea. They still don't know what to do with the waste product after you generate. Until that's determined, I don't see many nuc units coming online.

Coal is very nice and exciting, but it depends on what your view of the market is, and they still have emissions issues. So, the low cost of coal today may not be there five years from now if they continue with the regulatory environment.

Now, the fun begins. Again, if I say anything that doesn't make sense, holler.

AUDIENCE: What are those numbers?

MR. LAWRENCE: Those numbers? I believe, everybody can get a shot back at that. What you're looking at is in 1999, that's the reserve margin, basically, defined as the expected peak, or instantaneous peak versus the amount of supply, name plate generation capacity available.

AUDIENCE: I just don't remember is that 7 or 9%?

MR. LAWRENCE: That was a snapshot in time, yes, taken from RDI, and that was a database about 18 months old at the time we had it.

AUDIENCE: I just don't remember any numbers that low.

AUDIENCE: I think, Roland, that's the firm plus and unfirm.

MR. LAWRENCE: You can look at some specific pockets in California, and they're 30% excess generation. You look at it as an aggregate for the given area, the given NERC region. And if you look at everything rolled in, that was the estimate

RDI had from the reported documents that are out there. That's not necessarily our view of the world, but that is often publicly-held documents that have been reported.

COMMISSIONER PALECKI: How do you explain the 39% for the New York area for 2002?

MR. LAWRENCE: That's a good question. I was going to come back to that one. It's not very high. Actually, that's pretty close to what's going to be in there. Now, you get into in-city, that's a whole different picture, and that's what everybody's reading about today.

In-city New York, there's going to be problems. Outside of New York City and in New York, in general, there is about a 39% reserve margin. Location's key, like any real estate. People are building all over the board. Like in Texas, they're all over the board, not many in the northern part of Ercot near Dallas.

There is a congestion automatically, about $6 to $7 right now, people are pricing up to go to from the southern part of Texas to get up to the Dallas/Fort Worth area. Up in the NPC city of New York in-city, very expensive, it's worth a lot of money; outside, you can get it from a lot of different areas. So, the reserve margin in aggregate for the region is about 39%.

AUDIENCE: (Comment.)

MR. LAWRENCE: What do you consider nonfirm? That's

a good question. And if you record them as nonfirm, what's the likelihood that Florida Power Corp.'s going to take 500 megawatts and just all of a sudden say boom, you signed a contract, I'm blocking you out, because I can get up into Georgia and sell it to Southern Company. I mean, I understand what you're saying and this is, again, just taking the data available from RDI, and there is a distinct difference. We've tried to discuss that in all the regions across the U.S., what is nonfirm and what -- because that's nothing more than an hourly option, 15-minute option. What is that worth in utilities if they're willing to actually exercise that? That's a good question.

MR. HUDDLESTON: Yeah, one thing. In a lot of the other areas of the country, the interruptible load isn't really considered demand. It's actually a supply resource. So, you end up, for example, in Ercot, the calculation there is that you end up showing it on both sides, basically, or potentially on the supply side, but not on the demand side. So in the marketplace, as I see it in the future, where you've got the ability to interrupt economically, and you have customers who are willing to do that who are willing to bid into, for example, the ancillary services market, we end up with in Ercot having somewhere between 3 and 4,000 megawatts available to provide the spinning reserves. And they're bidding in economically to have themselves interrupted on 15-minute basis.

So, I think, you end up with some different numbers when you start to look at it as a marketplace.

MR. LAWRENCE: The volatility, one comment on that is by default that is the most misused word in trading, period. I don't care who you're talking and how experienced the traders are, because I misuse it every day. Volatility is nothing more than another term used to describe an expected deviation around an underlying mean in statistical terms. That's all it is.

It's taking standard deviation or variance, assuming Black Scholes math, which is a normality of the distribution coming up with a number percentage, but also takes into account timed expiration. But you start trading volatility and a lot of traders, theoretically, buy it low and sell it high and think they made money and they really didn't, because the underlying assumptions going into that math changes over time.

What you have is a gen stack, again, a snapshot in time from what was available from the RDI power dat, looking at the various units that are out there in demand for the FRCC. And it's kind of interesting that they have two "S" hooks. What I call the "S" hook is if you're kind of flatlined in the middle part of the stack at around 10,000, going up to around 35,000, a lot of the regions across the U.S., that's pretty flat line. Actually, this one appears from the snapshot we had on prices that have kind of two humps there. You have extremely low volatility when you have a lot of units around

the same generation cost trying to dispatch and shadow price each other.

I can generate it at 25 bucks. I'm going to sell it for 25 and a penny. I know somebody down the road's at 25 and a nickel. The prices don't move too much. What happens is when you get into the low load time frame where you have assets that can't go off-line, a call unit can't ramp down very far, it's actually going to start going in at a loss and get hit zero price or negative and basically in order to stay on-line so they can ramp up the next day, because if they ramp down it may not come back up tomorrow, may not come back the balance of the week.

Also, on the high end of the stack when you have the loss of load probability, a lot of people call it there's a trading term, but we won't go into that one today. The idea is there's a fear you're about to run out of generation, what is the price you would pay? And I don't think they've ever tested that in the market. Although we've hit four-digit and five-digit pricing, there is no comment or no price I've come across from anybody out there of what would I receive as payment from HL&P Reliant, who owns my AC unit, who shut it down when it's 110 degrees outside, 100 humidity in Houston. You know, I might can take a phone call from the wife and kids saying, "The house is kind of warm, dad, what can we do about it?" That's very expensive. So, you have a lot of high

volatility that occurs in those time buckets.

Now, when you look at supply and demand and you try to apply that to market, there's different times of the day, different times of the season, et cetera, that that volatility takes into account.

What I was able to pull down on the next slide was some actual hourly pricing from the last week or two upping PJM. You can see the spikes, the -- I guess, the color varies, the mauve color, I'm not sure what it is, that's the off-peek hours. Basically, 11:00 and 12:00 at night and 1:00 through 6:00 in the morning. The white background is the on-peak, the 16-hour peak time frame. You can see all of those days, except for one which went into a weekend, spiked up to about 85 bucks.

The volatility on the off-peak time frame, you can see, actually goes to zero in one of those days and then runs back up to the mid 30s again. That's extremely volatile from an absolute price. It doesn't spike to four or five digits. When you go from 30 bucks down to zero and then back up to 30 bucks, that's a pretty good price move.

Now, this is just a kind of a breakdown of the fuel risk that exists out there between Florida versus the rest of the U.S.; 23% gas, give or take, about 36% coal, 20% oil. The rest of the U.S. and aggregates around 53% coal. The thought process over the next five to ten years, if 95% plus of the new generation is going to be gas-fired, those pie charts are going

to change dramatically, which brings into question the integrity of the gas grid that's out there.

I won't talk about that today, but it has implications when you're looking at you own an asset, and you have to hedge your fuel, you have to hedge your power, you have to hedge your revenue streams, there's a lot of issues you have to think about.

Now, this is a graph I have to include, just because I'm a simple trader. I like graphs. The math doesn't do that much for me. That's an example of a $3.25 expected price for gas. Relatively low volatility of 35%, which again, assumes some timed expiration. You can see, if you go to say, hey, what's the chance of hitting five bucks, it's very slim. It's not going to move out there very far. It's pretty tight distribution right there around the main.

When you increase the volatility, you can see now the chance of hitting five bucks actually exists out there, same number simulation, same graph. All we did is change the volatility of the distribution, flattens it out and moves the price, which means it's just going to jump all over the board. So that's, in essence, what volatility means.

Now, is there any day traders, ex-day traders in here? Uh, huh, got one. I used to be one, too. Now my kids aren't going to college, but that's all right. If you look at the chart that's up there, that's the volatility of natural

gas. The green line is actually Yahoo. The white line is the Nasdaq Composite, and then I've categorized three regions across the country; west, which I used El Paso, San Juan, midwest was Appalachian Columbian Gas, Techco, and then east was Transco Zone 6, and I'm New York.

And what I looked at was the spot cash prices that were realized, the index prices, for that time frame and then did a rolling 20-day period. And the reason for doing that, it's doing a log-to-log of the return, standard deviation and all that math.

The reason I did a rolling 20-day period is to kind of see how the volatility moved through a month and through season. You can see it spikes up in the winter, as you would expect, but if you look at the last part of '00 going into '01 the volatility not only rocked up extremely high for gas, it started to increase on the length that it's staying there which, again, indicates the fundamental market itself has shifted. It doesn't have a spike or two in the winter. It's spiked, but now it's staying up there and it's a lot longer in duration than had been historically. And Yahoo, I didn't show the price chart, but that was a pretty volatile stock.

Now, if you look at power, significantly different. It makes Yahoo and the Nasdaq look almost flatlined. You can see in '98 and '99 extremely high price spikes. Those are the bald spikes. That's where a lot of companies went bankrupt.

They were taking a very small premium for credit risks and assumed volatility. And you can be making money all day long, netting those premiums by selling options, but all of a sudden when they get struck, one day can put you bankrupt, and that's what happened.

You can see also the fundamental market there this summer, the volatility didn't spike quite as high, but it's a little bit longer, a little bit longer in duration because of all the unknown. And again, that just shows power as volatile as the Nasdaq or Yahoo, I kind of put that for comparison. The power itself is a lot more volatile.

Now, I'm not going to run through these directly, but this is each one of the three regions broken out, so you can see instead of all power or all gas, it shows the two commodities and the Nasdaq on top.

Now, the one I will concentrate on PJM east, the red line. You have the Nasdaq and Yahoo, you have gas, and you have the power. That red line that's on top of both those, that's the volatility, the spark spread between gas and power, and I'll come back to that in a minute.

The idea when you have a gas-fired asset, I'll use that for simplicity sake, you theoretically have fuel exposure on gas, you're short gas, and you're long power. So, you have power exposure, revenue exposure, but that, by definition, takes into account the underlying movements of two markets.

It's not just the power market, it's not just the gas market, it's two markets together.

The way those markets move together, that's why the red line itself is more volatile than either one of the commodities themselves. A lot of people ignore that and still do. Does that make sense?

CHAIRMAN JACOBS: Quick question.

MR. LAWRENCE: Yes.

CHAIRMAN JACOBS: We saw some -- I believe, it was during one of the midcourse correction dockets. We saw the natural gas lines, and they didn't seem to be that volatile during the last summer they got -- then the fall and winter is when it appears they got more volatile.

MR. LAWRENCE: Right.

CHAIRMAN JACOBS: Your data seems to indicate they started earlier than that.

MR. LAWRENCE: Let's go back to the gas one.

Again, keeping in mind volatility's the most misused term out there. You do have the winter spikes you see coming in around December of '98, the pink and red line, that's basically your west and your east gas, then the same thing going into -- starting in November of '99 and Jan/Feb of '00, 2000. Then, what's happened is that actually the west, that blue line -- let me show the west specific. It started blowing out almost a year ago --

CHAIRMAN JACOBS: Okay, I see.

MR. LAWRENCE: -- which is the purple line. It started back in the summer Q2, Q3. It started around June of '00. That's the pink line, that's power and gas, and that's kind of dwarfed, because those are so volatile. Basically, starting around September you can see the lines break out for the west which are red, then they just ran through the roof in the winter, and they've been there ever since.

CHAIRMAN JACOBS: I see.

MR. LAWRENCE: So, yes, it is more volatile in the winter, but this past, the Q3, people were worried about this winter coming up, the prices started moving around quite a bit, that's without any major hurricanes hitting.

Now, kind of running off what Barry had hit on briefly, to insure the predictable cash flow, you've got various risk exposures you need to worry about as a utility. You have power, fuel, revenue stream, et cetera.

The easiest way to execute those, if I go and -- we don't do this as a company, either -- if I go and try to get some sexy, exotic derivative out there and go execute it, chances are I'm not going to know what I'm doing. Because by the time you take it apart, repackage it back together and get a price, a dollar I'd pay to buy or sell that, chances are it's so convoluted, we have no idea what we're getting into.

The key component is you have to identify each

individual risk bucket that you deal with. That was the enterprise risk you handle, whether it's fuel, whether it's power, whether it's revenue, which is weather-related, et cetera, tear them apart individually, then determine how they're related back and forth, then you determine what your portfolio risk is.

A lot of companies I've seen, and a lot of customers we deal with, thought they were just -- they were opened to the gazoo, they were about to go bankrupt; I mean, they had a lot of risks they were dealing with, yes they did. When you put it together in a portfolio, they're pretty well self-insured and self-hedged and had very little risk they were actually dealing with, but they were churning and burning paper all day long trying to hedge that exposure that, theoretically, didn't exist, but the fuels manager thought he was wide open, the power guy thought he was wide open, the guy doing coal and emissions had their own book going, and the corporate entity, overall enterprise risk, wasn't keeping in control of the overall position of the company. And at the end of the day, they were pretty well self-insured and self-hedged.

The analysis I go through here talks about a single security analysis; i.e., power and gas widget, you name it. The graph there looks -- that was a snapshot back from March 2000 and looked at April of '00 out for 12 months. The blue line on the bottom is what the actual futures contracts were trading

at, the individual 12 monthly contracts at Henry Hub. The red line indicates what the actual average of the monthly cash prices were.

So, by default, if I was short gas and I had to buy gas, would it have been more beneficial to lock in that blue line on the bottom than pay the red line up top? Well, from a financial perspective 20/20, yes, I don't think anybody in here would say no. With the intent of executing that hedge and locking in that blue line, would that have been a good trade or a bad trade if I did it today, 30 minutes later, I get all my deal sheets together, okay, I've got a fixed price for gas for the next 12 months. If it's to say that you thought gas prices were going up and you want to lock in a low price today, that's a spec trade, that's not a hedge. See the difference?

Yes, it was a great trade, it was a great hedge, but I hedged it not because I thought the price was going up. I hedged it mainly to hedge my cost. I wanted to know what my cost was going to be, and so you're going through the decrease in your earnings over time.

That's the example of this one here. Those two graphs, the average cost for each of those time periods, is $4.16. One, the curb is in backwardation, which means it's going down over time; the other, contango, which means it's just it's a positive slope going up from day one to day x. The average price on each one of those is 4.16. If a floated in

the market and bought it every day in either one of those markets, I would have paid on average $4.16.

Now, back on Barry's example that he had up there, I won't spend much time, because he already went through it once. The idea of this is for case A, basically, the price ran up; you locked in a price, the price went up, you theoretically had a good hedge or a good trade. Case B, the price ran down. You're thinking, well, jeez, I could have bought the spot at $4.50, instead of locking in $5.11 back in March. Again, Case B is not a bad trade. You wanted to lock in your $5.11 cost. That's why you executed the hedge. Yes, you lost 61 cents, because the actual average price went down to $4.50 in the spot market, but you're guaranteed to pay $5.11.

So, you have to define what is the reason I'm executing the hedge? What's the reason I'm getting into the trade? Is it because I'm going to arb the market and, I think, the market's going up or going down? That's not a hedge.

Now, the other example Barry talked about is you, basically, get a call option to lock in a cap or a maximum price. Basically, the costless collar, in order to do that previous example, you have to pay 13 cents. That's a premium you have to pay out of pocket cash flow today.

Some companies are not willing to pay that insurance premium, and so in order to offset that they can sell a put into the market. And, basically, by selling the put, you're

locking in a floor on how far you can take advantage when the market goes down; which, in this example, if you have the $5.11 call, you could take the 13-cent premium, go through the market and find out you can get a $4.37 floor.

So, you flowed in the market from 4.37 to 5.11, you pay no more than 5.11, but you have to pay at a minimum 4.37. Does that make sense? That's the costless collar. It doesn't cost you any cash today. You receive premium for selling the put and you pay the premium out for buying the collar.

AUDIENCE: Is that done in two separate transactions?

MR. LAWRENCE: Two separate transactions. Sometimes, you can do it with the same counterparty or the same person that's out there. Sometimes people are willing to pay, instead of 13 cents, some are willing to pay, what, 6 1/2 cents, so volumetrically now you don't have a perfect collar, because you've locked in your total 5.11 up top, but you only sold half the amount on the put side. Now, I'll come back to some more general comments on hedging.

Let me run through the multiple security analysis, I call them the spread options. If you're converting Deutsch mark to yen, different interest rate tenors, that's a spread option. You've got two underlying commodities, two underlying markets you deal with. For a generation asset I'm going to concentrate mainly on the fuel component and the power component. I kind of alluded to that earlier.

Basically, you have the two different markets, and you have the fuel component, if it's gas, is the Henry Hub with some basis. So not to get into the details, that you actually have two different markets you play with, you have a Henry Hub market plus your basis market to get your physical locational specific price. That's a whole 'nother commodity you've got to roll up in there, but let's just assume we're looking at fuel, say, at the hub and you've got a generator sitting there for the power side.

The heat rate, we basically look at, and then I'll go back to talk about one of the graphs I had earlier. The heat rate, basically, is the efficiency of the plant which indicates if you're going to run for -- yes.

AUDIENCE: Could we go back one step if we could. The gentleman over there made a comment there was actually two separate transactions. But if you're actually long fuel, let's say a particular costless collar that you were looking at, you're actually getting three transactions; you're dealing with the transaction for the commodity itself, together with the financial instruments that are being laid in on top of it; is that not correct?

MR. LAWRENCE: Yes. What the costless collar does is basically locks in the price band that you're going to buy at.

AUDIENCE: And that's true for the slides that you showed on putting a hedge on, come up with the price of $5.11,

you're actually involved in the commodity acquisition as well as the financial instruments and taken together to produce the $5.11.

MR. LAWRENCE: That's a good point. You can blend the exchange for physical. You can take a financial product and convert it to a physical very easily. If you're looking at actual number of transactions executed, yes, you'd actually have three; one, you're buying the physical gas, and then you're financially locking in the range at which you're going to buy at. So, just three physical transactions on paper. A lot of times you can do all that with one counterparty or you've already locked in the gas and all you're doing is flipping out of whatever price scheme you have and locking in a collar.

This is an example of the heat rate. I think, we all pretty much know this one, I believe, on the front end. The example here is gas at 481.5. 10 heat rate gives you $48.15 power. Same thing on the generation margin. You take that 48.15. If the price is trading at 53 bucks, you have x dollars in profits you make for that one megawatt, you generate $4.85. Then, you end up having the spread between the two.

Now, I went through that pretty quickly on the heat rate and the sparks rate, because it's pretty simple math. You've got the math to go from your gas price to get to a power price. You know what the power market is, you've got some

margin in between.

If I'm sitting here today trying to dispatch, say, this hour and I'm trying to dispatch from 3:00 -- from 3:00 to 4:00, 4:00 to 5:00, I pretty much know if I'm on how many megawatts I'm going to burn and how much gas I need. If I'm doing a budget and I'm planning for next summer, how many hours do you think any given asset's going to run?

I mean, I have mathematical equations, I've got simulation models, I don't care how you slice and dice it, you come up with some adjusted amount of megawatts you think you're going to generate. That's where the difficulty and the fun begins, because when you're sitting here today right now for the next hour, it's pretty plain Jane, it's an 01 type trade; in the money I'm going to get dispatched or I'm not.

If I'm sitting here looking out -- and this was done about six months ago, but the general concept holds -- if I'm looking at May, June, July, August and Sep. of '01 and '02, that graph indicates I've got 100 megawatt capacity generating assets sitting there. So, at any given point and time I could ramp the thing up, contrary to what a lot of people thought we could do, gas-fired, state-of-the-art, as we can build them now, we run them up, within five minutes, boom, you're full board.

If I want to hedge my physical exposure on power, I am long 100 megawatts of capacity. If I would generate,

theoretically, given the gas or the fuel, my variable O&M, my emissions, and everything else, at 50 bucks and the market's at $100, what size block am I going to sell on the forward market? Am I going to sell 100 megawatt block to lock in all the 100% of the capacity of that asset? Now, there is no right or wrong answer to that. We have the view of the world, and that's what I'm explaining here. And I can argue three to four different views, if I need to.

The point being, if you oversell the amount of power you think you're actually going to need for that specific asset, you have overhedged, and now you have not just a hedge, you have plus a spec trade on.

Conversely, on the gas side, it's the exact same thing. You have less than 100% of the time that assets are going to be in the money. I don't care if it's 50 bucks in the money today. What are the chances you're going to run every on-peak hour when that May contract comes up to play or July contract? Slim to none. You might run full board for three days, and then shut down the rest of the month. That's kind of the way things work, that's the way they've always worked, that's the way they're going to continue to work, because demand/supply fundamentals don't change that much, just the pricing scheme.

That would indicate that if I thought I was going to burn all 16 hours, all on-peak days, all on-peak hours for

June, for example, I might have to go out and buy 39 -- 35 contracts that should be on-peak block instead of megawatts, it should be contracts at the hub. But I'd have go out and buy 35 contracts of natural gas.

However, once we look at what is the probability of the number of hours or days it's expected to run, you've got a significantly different picture. Again, because you're not looking at just the gas 01 on/off, it's an option. And by default, you have a probability or some statistical significance of how often you think that thing's going to run. It's not going to run every day, just because it's in the money today.

Does that make sense? That's where the difficulty of the hedging program comes into play. It makes very common sense for me to go out and hedge my exposure from a physical commodities side. I'm going to forward sell power and I'm going to buy gas, and I've locked in the spread that exists. I've done that from the physical commodity perspective as well as locking in some market value, and I'm theoretically hedged on that asset. You throw in the problem of well, now I've got a revenue and I'm actually selling at a fixed price, with a sum certain band, but I've got a volumetric risk, that's where the weather derivatives come into play.

Now, just because we've got a sexy and exotic and fantastic hedging program for Company A, the other company may

not hedge a thing and may make more money than you. That doesn't mean your hedging program was wrong, because the next year they may not make any money at all. They've got very volatile earnings. So, it goes back again to the definition of hedging.

If I had locked in on that previous gas line at the first of the meeting, if I locked in at that blue line and I was paying and the price dropped to $1.70, I'd look like an idiot, compared to the rest of my counterparties out there who didn't do anything, they're just floating in the breeze and they're paying $1.70, and I locked in three bucks. I'm at a disadvantage competitively. Again, does that mean it was a bad hedge? Not if you go back to why you executed the hedge in the first place.

That's it. Pretty simple some days. Is there any questions? I went through a lot of that pretty quickly, and I didn't notice anybody fall off and nod off too quick so...

MS. BANKS: In hedging, aren't you basically having to determine what kind of price you will accept as reasonable in order to get to the point where you're going to --

MR. LAWRENCE: I mean, yes. Right now -- and I'll put it in something some people may be looking at -- if you're looking at refinancing your house, what's a good rate for a 30-year conventional loan right now? Anybody have an idea what they'd lock at?

AUDIENCE: 6 1/2.

MR. LAWRENCE: 6 1/2? Why not 6? Why not 5 3/4? I mean, Greenspan's going to lower the rate again. So yes, going back to your question, you have to decide as a company, as an individual, as an entity, what am I hedging and what price level do I like? It may end up meaning you may lock in three or four different price levels and you have a weighted average of your hedge. You don't just lock and load and execute all 100 contracts for one given month just because you got lifted. You have to lock into and properly define what you're doing. And each individual, each company, has a different idea of what that right price is. And no, we're not always right.

CHAIRMAN JACOBS: But it would -- the alternative on the other end is totally going with spot.

MR. LAWRENCE: Exactly. And that is, by definition, a decision not to hedge is a hedging decision. If I decide I'm going to do nothing, I'm going to float and buy daily, buy hourly, that is a risk management decision whether you want to agree to it or not. You decided, you fell through the risk, you said, "Hey, I'm going to go and float." What is your incentive to hedge right now? I may not have any incentive. If I put on a good hedge and I locked in three bucks and it saved me from buying at seven bucks, I theoretically made four bucks on my gas calls. So what? Where does that go right now?

What's the incentive for a shareholder of a given

utility to keep that money as part of my stock price? Right now it goes back to the rate base, et cetera, et cetera. Reliant right now is trying to pass through a fuel increase, because they're paying more than they thought they budgeted, and so now we're going to have to pay more for power because of their fuel adjustment clause. That's pretty standard. So, it depends on why you get into the hedge and what the incentives are, but going into the dailies, by definition, is a decision to do nothing, so it is a risk management policy.

COMMISSIONER JABER: Something I haven't heard you talk about is how companies hedge for business and asset risk, in particular regulatory.

MR. LAWRENCE: When you figure that one out, give me a holler. There is no hedge against regulatory or legal risk that I know of. I mean, California's a prime example; not to hit California again, I won't say anything on record that will get me in trouble, Barry, don't worry.

But at the end of the day, it goes back to locational marginal pricing is a concept. PJM uses it, up in the northeast they use it. I do a deal today that I think looks good, and then tomorrow they're going to tell me whether I made money or not. That's not an open competitive market. If I go to buy a car, I know what price I'm paying today, I know what I'm going to borrow, I know what I'm paying down cash. I don't come back a week later and the dealer says, "Oh, by the way,

you're 5,000 under, you owe me another 5." So, the legal and regulatory "S" effect, there's not much you can do to hedge that.

MR. HUDDLESTON: Actually, though, there are strategies.

MR. LAWRENCE: There are strategies, yes.

MR. HUDDLESTON: Yeah, I wouldn't call them hedging strategies, but just as an example, not to pick on California, but to pick on Nevada, we entered into asset sale agreements where we were buying assets from Nevada Power, and started the process for regulatory approval and the legislature passed a bill and the governor signed the bill that declared a moratorium on the sale.

Well, that's not generally something that you contemplate as you're moving into a purchase, but if you know that that kind of exposure's out there, then clearly you're not going be willing to pony up as much money up front. You effectively reduce the value of the assets, because you are uncertain of the regulatory climate for the future. So, I think, you end up potentially dimming your outlook compared to areas where they have a more stable regulatory environment.

COMMISSIONER JABER: Or where they've clearly deregulated?

MR. HUDDLESTON: Well, it isn't so much the deregulation, because you always have the -- assuming that

there is FERC oversight, you always have the FERC oversight for the market-based rate authority. And so, it's nothing -- nothing in the U.S. is yet deregulated, per se. You still end up filing your wholesale tariffs at the FERC and still end up having to defend your ability to sell at market-based rates. But theoretically speaking, if you have that certainty and then you know that next month something's not going to change and next year something else isn't going to change, then sure, that stability is important for future investment.

And if you look at, you know, just the utility industry is a very small part of the U.S. economy, although in California it seems to have taken on a pretty important part, but the investment opportunities are all over the board. And the dollars that you're trying to attract, if for some reason it doesn't look like you have a stable environment, then the dollars don't come into the utility industry, the dollars go into some other industry or some other part of the world or the U.S.

MR. ELIAS: With the situation out west and with the price of fuels, in particular, natural gas being so much higher than we've seen in a lot of years, I'm looking for something of a perspective from somebody who's got experience broader than just Florida. Are you aware -- have you seen any particularly innovative programs that address some of these price issues, vis-a-vis customers that have been implemented by state

commissions or have been proposed anyplace around the country, something that we could look to as maybe an idea that's worthy of further study?

MR. LAWRENCE: Not really. There's some bilateral transactions that have been done. For example, us with other counterparties helping to manage their fuel exposure, but from actual commissions, utility, whether it's been state or federal, I haven't seen anything out there yet, no. And the problem being for the comment earlier, they're floating in the dailies and buying spot, because there's no incentive to do anything else.

MR. HUDDLESTON: I think, you do end up sort of focusing more on what not to do as opposed to being able to point to somebody whose done a particularly good job. You know, for example, California you certainly don't want to mandate that everything has to be purchased on the spot market and not let them enter into any long-term arrangements.

But I think, a portfolio, and if you go to any of the management literature, the portfolio management, PJM is probably a pretty good example of a market that's been relatively competitive at the wholesale level for many, many years, based upon the pool that's been in existence there for 40 plus years.

And if you look at that, even before they went to the PJM ISO, that you just look at the utility participating,

utilities participating, the 10 owners, you can look and see that they were entering into, even in the pool context, something in the neighbored of 70% of their transactions were bilateral and long term and self-dispatched.

And so, even in a market that was that mature, the utilities were making the decisions based upon how best to manage their portfolios. And, I think, that's basically the bottom line, you don't put all your eggs in any basket.

MR. ELIAS: And I'm thinking that there may be a subset of customers out there, commercial and/or industrial, that would be willing to pay a premium for price certainty.

MR. HUDDLESTON: Well, that's certainly the case. You look at self-generation options, for example. My former company was a subsidiary of Dow Chemical, and Dow Chemical's been in the self-generation business for over 100 years, and it was primarily the case, Dow wanted to be self-sufficient.

And you look at the gulf coast units, for example, of the Dow Chemical plants there, they've got almost 2000 megawatts of generating capacity and on a regular basis we're entering into interruptible contracts with the utilities getting low-priced power and then if, for some reason, there was an economic incentive they would essentially self-interrupt and generate inside the fence. And so, they managed their prices by having redundant capacity.

MR. LAWRENCE: Yes.

AUDIENCE: (Question/Comment).

MR. LAWRENCE: In general, you have to follow the chain all the way through as you already threw out there. You have to look at -- ignore the customer base for the moment. And I don't mean that in a bad sense, anybody hollers at me. If I have an asset sitting there, and I want to generate my least cost and I want to sell at the highest revenue, by default you just want to make as much money as you can for the asset.

Walking through your risk tolerance as a company, because each company is different, we assume risk all day long, and that's what we enjoy and we do for a living. Others, they look at it and they profit in a hurry. You need to identify how do you define making the most money for that asset, is that buying in the hourly, buying in the daily, buying in the spot or is it saying I'm going to hedge 80% of my expected fuel band and I'm going to buy the rest when the month comes up, when the day comes up? Which is right for you as an individual, which is right for you as a company, which is right for you as a given utility commission or service commission is not -- they're all going to be different, they all should be different.

It goes back to the example, I can lock in a $3.00 price or I can buy spot and average $5.00. The $3.00 price you locked in looks like a good price for the trade, but if that

doesn't go through, all the way through the chain down through the customer base and they don't benefit from that, where does the benefit go, where is the incentive?

So, you need to make sure everything is tied from trying to minimize your cost or stabilize your cost, maximize the revenues from the company, but you also have to take into account the ratepayers have to get what they think is a good price for a minimal rate, and there's no easy answer for that.

AUDIENCE: As a follow-up, it seems that if you do incur regulated companies to hedge that there has to be some in the sense that some of the fuel will be above what those spot prices would have been below.

MR. LAWRENCE: Exactly. It would look like a bad trade. I mean, you can't have your cake and eat it, too. We've been dealing with this for years. We've got counterparties coming to us and saying I want to pay no more than x on my fuel and I want to guarantee a fixed price for my customers. Oh, and by the way, if the market goes south and there's some benefit there, I want to share in that also. So, we take all the risk and we make no money. That is not how, you know, the United States market works, that I'm aware of, except -- well, never mind, I won't say that, Barry. So, you have to take that into account. And again, the idea to hedge, if you're trying to decrease the volatility of the rate the customer's paying, decrease the volatility associated with the

cash from your earnings as a company, that's a reason, then, to hedge. Yes, you might be paying above spot price for fuel, you might be selling below spot price for power, that doesn't mean it was a bad hedge. But if the next five years the customer has locked in a certain rate, they'll know what it is.

AUDIENCE: (Comment.)

MR. LAWRENCE: That was on the list I submitted earlier. I don't have a per trade fee. The reason being we do so many trades, after January they work for free for us, because we max out the amount of rates we pay them. I know Nymex there's pretty much a defined fee, like, a 1/2 penny, give or take, don't quote me on that, but it's a very minimal transaction, especially if you're only going to execute -- you're not churning and burning all day long or all week long. If you're going to decide what the hedge is, and you can get it done and trade very few throughout the year, transaction costs are very minimal.

The biggest cost is how you're going to manage the hedge, who's going to look at it to make sure it was a good hedge and the proper hedge and it's not doing Monday morning quarterback; hey, this hedge is the most worthless strategy we executed. That's not the intent. The intent is to look at what didn't work, what were the assumptions we had, why were they necessarily not correct and modify that going forward.

And to roll out of the hedge and re-execute a

different hedge is not necessarily a spec trade. It's just getting a better view of the world and a better definition of what your strategy is.

AUDIENCE: In the long term, generally speaking, an electric utility hedging on a fuel, is the goal more to reduce price volatility or reduce fuel costs in the long run?

MR. LAWRENCE: If you're executing a hedge to reduce fuel costs, again, that's probably the wrong reason to enter the hedge.

AUDIENCE: It's to reduce price volatility.

MR. LAWRENCE: It should to be to reduce price volatility, and by default, reduces -- if I have an idea what my generation cost is going to be, now I'm only worrying about one market at the moment, a power market. If I had locked in a range in my power market, now I kind of have an idea of the band that my revenue's going to be, given some volumetric take of the customers. So again, if you execute the hedge to minimize your cost, that's the wrong reason to execute a hedge. That's a spec trade, in my mind. Now, you can get three Phds and argue differently, but in simple terms the hedge is to reduce volatility whether it be price or earnings.

AUDIENCE: I guess, the basic question about launching off of that is that if there's zero hedging going on, and as you say, that's a decision about how you're going to manage the risk, say you're not going to have any hedge

whatsoever --

MR. LAWRENCE: Right.

AUDIENCE: -- how do you use an incentive for the utility when you may or may not fully recover what's being handled via ratepayers for all related costs, how do you reduce utility or do you reduce the program for utilities to start to engage in the corporate level, how do you determine what that corporate level is?

MR. LAWRENCE: That's kind of what I was going to ask you, but that's all right. I'm Joe Blow, the consumer. My rate's from Reliant jacked around quite a bit the last couple, three years, because of gas, because of power, all those; Ercot, as you saw, was pretty healthy reserve margin-wise, the fuel cost is a lot higher than they were forecasted to be, because it was roughly at the hub of what it traded four or five bucks for.

If I have a customer or another counterparty utility and they call it Huddleston Marketing arm, comes in and guarantees for five years my rate can be within a certain range. I can go back and say, historically, I took so many kilowatt hours and megawatts, however big your house is or business is, for that time frame, I can back into what my cost is going to be in any given year.

That's price certainty for me. How close do I want that band to be? Do I want a fixed price guarantee and he

offers it to me? I'm done. I'll do it for you. Each of the individual customers in your rate base have a different view, what they're willing to pay for that price certainty.

Some may not care, some may say I want 65 cents or whatever the number is, and I want it for the next 10 years, I don't care what happens to commodities. There's going to be somebody who will step up and give him that for the right premium.

So, the incentives -- I'm not about to step up and try to discuss what might be the right incentives, because you've got to look at the customer base as a regulatory environment and how do you define the incentives?

AUDIENCE: Having received a share of gains and losses --

MR. LAWRENCE: In the utilities side? I, personally have not, no, I don't know, Barry, if you've seen any. Most of what I've seen has been in the bilateral markets outside of that.

MR. HUDDLESTON: I think, that's right. I mean, in most of the territories that I've seen, there still isn't a very good recognition that there's a benefit potentially to hedging. You end up -- I mean, California is clearly the most current example. You end up with arguments that lead up to the case where you had the fixed price, fixed retail price, and so a fixed revenue recovery and no ability to hedge against the

volatility in the spot price, and that ultimately led to PG&E's bankruptcy.

Well, you know, the arguments that led up to those decisions were clearly intelligent and, you know, they had -- I'm not sure, probably three years worth of hearings where everybody came in and made their points, and you end up on the consumer side; for example, saying, well, just as Douglas described, I not only want a fixed price, but I also want my rates to go down when things good happen, and I don't want them to go up when things bad happen. And that isn't an approach that is going to lead to the long-term financial health, but on the other hand, that's the decision that most of the regions have made so far.

MR. LAWRENCE: And to counter that in Nymex, when you're talking not equities, but you're talking futures contract for, say, in May, trade in June, it's a zero sum game. For every penny or dollar that is made, somebody is on the other side of that trade losing money and they settle out at reserve at the end when the contract expires. That's a purely open market, zero sum. Whatever is made is lost by somebody else. It's not I continue to make and when I go to lose money, whatever they cap me at I'm done. Nymex doesn't have a bond group that steps in and floats you a loan at zero interest rate, so...

MS. BANKS: I think, some of the difficulties from a

regulatory perspective has been did the price that the utility decided to lock in on, you know, in hindsight you can say, oh yeah, that looked great or yeah, that didn't look great.

So, it may have been reasonable at the time that $3.00 seemed great and the market went to $5.50, oh, you did a great job, but how does the regulator determine that if they locked in at $3.00 and it went into $1.64, how we had done or had some experience in the gas markets before, how do they reconcile that?

Because from the customer's perspective, when he gets his bill and he knows that out in the marketplace the gas was going for $1.64, he's wondering why he's paying $3.00 for. Those are some of the -- I see the difficulties from a regulatory perspective that sometimes would be very difficult to explain to a customer, "Well, maybe next month it'll be better."

MR. LAWRENCE: And it goes back to Barry's comment. The previous example, they'd be benefited by having a fixed rate that didn't go up, because they locked in the price, but then they're also going to complain, because they couldn't benefit when the prices went south. No open market, that I'm aware of, works and I don't find that as an efficient market, in my mind. They have to understand if you want price certainty and rate certainty, you may be buying or having a rate above spot prices. By default it's going to happen.

MS. BANKS: And so, from a perspective, is it, you know, we would be looking at well, if they would have locked into a long-term, five-year fixed contract with the producer at one level, I mean, that's -- to me, you're making a decision that's what you're going to do --

MR. LAWRENCE: Exactly.

MS. BANKS: -- as opposed to buying any other form of hedging.

MR. LAWRENCE: That's what we've run into, and I've had a lot of counterparties over the years come to us and say, "Hey, I want a guaranteed price that gives me 20% savings over what I'm currently paying," that's fine. If we look at all your customer base, I don't care if you're gas, power, combination thereof and we cut them a deal for 20% savings. And then they come back and say, "Oh, and by the way, if it looks like you're making too much money because the price is really cratering and the market is backwardated, I want some of that back," no; we're taking the price risk, not you.

I'm talking to counterparty, not ya'll out here. Don't be looking at me funny and jumping over the table. The idea being a hedge, you have to decide before you execute the hedge why do you do it, and what is the benchmark to determine if we made sense? If the benchmark is cost, am I at above or below or at spot prices? Then, you time back into a cost perspective, was it a good trade or bad trade? And that, by

default, is not a hedge, that's a spec trade. So, it's education on why did you enter the transaction in the first place? And you are right. Customers -- personally, everything that I talked about today when Reliant gets in front of me and says that they locked in gas, and it cost me money, no. You know, the price of the hub is $1.50, I want my $1.50 price. I'm not paying you three bucks because you locked it in. That's just the customer mentality, so...

MR. HUDDLESTON: It's important, too, Cheryl, regulators have been doing that very thing for years, for example. In any period, when you determine that you're going to site a power plant, you've locked in the fundamentals associated with the technology for the next 30, 40 years, and so you've made that long-term commitment. Then, to go in and second-guess the fuel decision seems to me to be a little counterintuitive.

Once you've made a decision based upon full information, then you just go for it. It's -- you know, sure, maybe I bought a car a couple of years ago and a month after I bought it the dealership had a huge sale and, boy, I'm kicking myself because I bought, you know, I paid too much. But on the other hand when you made the decision, it was the right decision.

MS. BANKS: And from a regulatory perspective, it's very difficult to determine was that really the right decision?

I mean, you have to pick that price that you really -- that you're willing to walk into. This is where, I think, would be a reasonable price to pay. And our job is to say, well, was that really a reasonable price that you locked into? And I guess, it's just a series of questions of what were your assumptions behind why you picked $4.22, you know? I guess, it just comes down to a basic of a lot of questions of support for why you picked that rather than something else.

MR. HUDDLESTON: Well, I think, nowadays anyway, most of the markets are becoming visible enough and competitive enough that there should be sufficient information; for example, in this proceeding in Nevada that I've been in over the last couple of months, you can go in -- well, we had signed a two-year power purchase agreement for the transition between the time we bought the plants and would then be freed up from the selling to directly back to the utility.

And then the price comparison you can go out and you can find in the marketplace the long-term sale arrangements that others are willing to make for that full period and do an economic evaluation of the contract. And with fuel today being as liquid as it is, there's enough information, I would think, that you could do a pretty full evaluation at anytime you get the filings.

MR. LAWRENCE: What I hear you keep coming back to is you're forecaster of the world. I can't tell you what gas is

going to be for July, as much as we play in market, there's no idea. We have a range from anywhere from $3.70 up to 5 bucks, or whatever you wanted to lock it. So, when you look at -- when you decide to execute the trade, it's a very liquid market, and I know what the marks are going to be; there's a basis market and location, you deliver the gas price, you know what the power price is going to be, but do you know where it's going to be 12 months from now? Is that a good or a bad trade? And you start to second-guess from what was realized in the stock price versus what you locked in, then you're questioning the forecast of why did you hedge? So, I mean, there's not an easy answer.

Yes?

AUDIENCE: (Question.)

MR. LAWRENCE: Well, let me explain the graph a little bit more. There's another slide I didn't actually have in here, and there's a movie I can show what does the prompt contract for prompt 12. There was a snapshot in March of 2000, looking at April of 2000 for the next 12 months out, and that was a snapshot close of business for whatever the date in March was, compared to what was the average cash price or spot price realized for April, May, June, July, August, Sep., through the next 12 months. So, it wasn't showing what do the futures contracts do over time, that was just straight.

And then, it showed what are the actual cash prices,

if you had to go buy on the spot, that was the difference on that slide. But if you look at contracts, we've had some contracts go up near ten bucks, and then go back down and, I don't know, could be anywhere from 4.20 to 4.30. Last summer we were averaging, I think, the prompt 12 contracts out were in the 3.25 range. That was at the hub. Each location in the west was already having issues, not as big as they are now. They were already showing up at issues.

AUDIENCE: (Comment.)

MR. LAWRENCE: Well, again look back at the last three winters, in '97, '98, and '99, you had around $1.70, so you had abnormally warm winters across the country, masked the actual demand growth, and then we had an average winter, theoretically, a little bit harsher, a little bit colder than average but right around an average winter from '00 going into '01; well, low and behold, the demand actually raised quickly, and then the prices took well to catch up.

So, if you're sitting here in '00, is 3 1/4 actually high or is it actually low? Yeah, everybody's talking about all this new generation coming on-line, but the last three winters have been $1.70 going off the board at the hub. Why am I going to pay double that today? And a lot of people didn't.

AUDIENCE: (Comment.)

MR. LAWRENCE: I can't tell you what the current contracts go off the board at, and that's just 10 days away, 15

days out at the most. We have our hands on a lot of different pieces of the pie, knowing what the storage is doing -- we have our own storage model. And still, I mean, the price could jack 20, 30 cents a day for no reason, whatsoever.

AUDIENCE: (Comment.)

MR. LAWRENCE: The reason I showed Yahoo, let me run that one, and then a simple stock trading strategy. I could have bought in at Yahoo at 20. And I never bought into Yahoo, and I'm not going from experience, just a hypothetical example before you start snickering over there. You could have bought Yahoo at 20 and it ran up to 100. You get out, should you have gotten out at 25 or do you buy more? So the price is really running up. Hell, this thing's going to the moon, I'm buying and buying and buying; low and behold, three weeks later, it's back down below 20. I mean, in essence, that's how quickly -- it was a little bit longer than that. When it started going, it started going south. You've got the mentality of getting whipsawed.

The market's coming to me. Well, that may be true. You may be bankrupt before it gets back to where you started from, but the market's always right, whether you believe it or not. And so, yeah, you have an issue of you've got the mentality, jeez, I just got my head handed to me, I'd better lock something in today. Are you locking it in because you're afraid the price is going to run up farther? If so, that's a

spec trade. Or are you going to lock it in because you don't want to necessarily worry about price volatility anymore; you just want to get out of the market and you're done? And the budget, looking over the next 24 months, while sustained commodity cost about price level.

Now, 12 months down the road, you say, jeez, that was a pretty ignorant decision I made, but you've got to remember why you made it the first place, you didn't want to get whipsawed anymore. A lot of times, we have traders who just get out of the market all together for 30 minutes or an hour a day, because they're just on the wrong side of the trade and they get emotionally involved and, again, there's a difference between spec trading and hedging.

AUDIENCE: (Comment.)

MR. LAWRENCE: That sounds very simple, but how do you pick 20 and 80%? That's where the sophistication comes in. I agree 100% of what you're saying, and that's exactly what I would recommend. You don't do it all and you don't do none for the same reason. If you're wrong, you're dead wrong. And you're getting shellacked and you have a competitive disadvantage. You get out of the utility industry, and I'm an industrial-producing. If 50% of the cost of my product is gas or commodity cost, whether it's gas-power combination and I lock in a price that's 50% higher than my competitors, I'm never going to need a fee, so I'm going bankrupt, and it

doesn't take long to do that. That's happened out west all day long.

So, but if they only locked in 50%, they're not necessarily disadvantaged anymore. That's where the difficulty comes in. What percent do I want to buy spot? What percent do I want to lock in today? And that decision could change in any given week. I mean, you may look at I did a hedge and all of a sudden it's 50 million in the money. Do I want to monetize part of that while a lot my hedging won't make it again? That's, again, a hedging decision. Now, you're kind of blowing the line between a trading organization.

MS. BANKS: When you were talking about that percentage, was it on base load or was it on total requirements?

MR. LAWRENCE: In aggregate. Because you get even more complicated, you can lock in the base load pretty easily if you've got a coal unit, you don't know how much coal you're going to burn. Load factor's probably not going to change much, unless you have it forced off-line or you're on an oil strike. A gas turbine that's a combined cycle, 69, 7,200 heat rate, it's going to run, you know when it's going to run, it's going to get there. How do you handle the four or five hours in the day? The peaking units may run 30 hours a year. By default, you're looking at buying the hourly or spot.

MR. HUDDLESTON: I think, it's interesting to note in

California right now the best long-term contracts they have are the ones with their qualifying facilities. And having gone through all of those value of deferral proceedings here, you know how much flack those kinds of contracts get, and those are the ones that are now most in the money, not that they're being paid anyway, but those are the ones that are best rates, anyway.

AUDIENCE: (Question.)

MR. HUDDLESTON: Actually, I'm not sure. I know there's been so much going on in California where they're now suing actually to get out of the contracts, because they want to sell at market. They don't want to be restricted to taking the contract price. And theoretically speaking, since most of them haven't been paid since last fall, there probably is a breach of contract. And so, a lot of that stuff's going to be litigated out, but...

MS. BANKS: If a utility was going to start implementing a very basic hedging program and begin to, be it, at 25% or 50% or whatever, how would you recommend this utility go about it? I mean, there's various ways, as far as hiring personnel off the street to be able to do this or contracting it out with services from another entity.

MR. LAWRENCE: It depends on what the utility wants to -- I would first comment, I won't say anything about Dynegy, because that's an open floor for that comment. When you enter

into a hedge, it's like you're entering into a stock trade. If you don't watch that stock, you can be bankrupt and lose the whole portfolio, if you don't manage it.

So, no matter what you decide to do, if you staff up the trading floor or you staff up the risk management arm, by default you need to have some minimal competency in-house to know that what is going on from a hedge perspective, what you're paying for, whether you contract it out to us, Enron, PG&E, Duke -- sorry, PG&E won't do much of that anymore -- some counterparty out there or some unknown entity, or you do it yourself, you still need the same core competency.

How do you truly define the hedging strategy you're going to implement? How do you educate management and the board? And then how do you manage that from a portfolio risk perspective? Because you have to roll it all up underneath your enterprise risk and see what falls out. I would say each utility, I mean, they each have their own business vision, each have their own strategy and how they want to approach the markets, and there's not one cookie-cutter answer that handles all of that.

MR. HUDDLESTON: From a personnel perspective, though, I'll share with you what a friend of mine told me, that there's really only a thousand marketers out there. They just change jobs so quickly, everybody thinks there's a million. And so, there's a lot of -- especially within Houston where you

end up with a half a dozen companies all within about four blocks and they just sort of rotate between them.

AUDIENCE: (Comment.)

MR. LAWRENCE: That's what it boils down to. Then, you get into the issues if they make a lot of money from the windfall trade they put on as a hedge, where does the money go? What's the incentive for them to actually get that sophisticated? I mean, it can be done, and there are some utilities trying to do that now with their current rate structures that are out there and the markets that are deregulating up in the midwest.

AUDIENCE: Speaking in terms of forward contract, what's wrong with the strategy if the forward contract, indeed, pennies on the dollar to have somewhat like that collar that you showed, one where the price goes up, the price goes down, you can always win the larger amount by exercising the contract that's in the money and just foregoing the pennies on the dollar for one that's not in the money?

MR. LAWRENCE: Well, the costless collar again, all it does instead of you getting long and short at a fixed price, you have a range. You have the same issue, what if that range is three or four bucks out of market, either above or below, you have a similar concept to deal with, because the collar --

AUDIENCE: I'm thinking in terms of a rather wide range.

MR. LAWRENCE: Well, then, yeah. I mean, a buck 50 versus six bucks. I mean, if it's that wide, that's pretty much where your spot price is probably going to be over the next, you know, 12, 24 months. But if you get the range wide enough, it starts to debate the issue why am I going to enter the hedge in the first place?

AUDIENCE: Again, it's pennies on the dollar. It seems like you couldn't reduce, unless it goes totally wild.

MR. LAWRENCE: You can lock it in, yes, you can lock in a wide range, but then the question is why do you want to do that in the first place? It's only pennies on the dollar, but it's still money you're spending. I mean, you can lock in a wide enough range, but it doesn't give you much benefit, it doesn't reduce the price volatility, it doesn't reduce the earnings volatility. If the range is so wide, you're not locking in anything. And you can get something that's so far out of market in a wide enough range that you'd hardly pay any premium on either side for it.

AUDIENCE: Does the premium increase?

MR. LAWRENCE: The premium for an option is defined, it's a function of the underlying price, your strike price, timed expiration, and expected movement of that underlying commodity. So, if it's at the money, it has no in-the-money value; in other words, it's not where I can exercise, because I'm not making money, but it still has a premium attached to

it. It still has that theoretical value based on time and expected price movement.

The farther you get out of the money; i.e., if it's trading at five bucks and I'm going to buy the right to sell it to you at a buck, because you think it's going below a dollar, that has very little premium attached to it. If you do the same thing on the other side and go to nine bucks, I have the right to sell it to you at nine at my discretion, that has four dollars value. I mean, go down the path and the premiums change. And you've got a call on the put, so it's kind of the reverse signs of --

MR. HUDDLESTON: And Douglas, wouldn't it be the case if you had the very wide range, then effectively you've paid for the ability to have that very wide range and yet you're still exposed to all of the volatility and the spot prices in between, because you wouldn't exercise on either side. And so, you haven't really gained yourself anything.

MR. LAWRENCE: No. I mean, it's like you said, minimal cost to do that, but you're not flatlining your cash flow, your price risk or anything else that you initially plan on doing.

AUDIENCE: On volume volatility to the natural gas --

MR. LAWRENCE: Volume volatility, what do you mean by that, just to make sure I understand?

AUDIENCE: Well, that's a term I've heard frequently

and it's separated from price. So, I would always -- it's hard for me to imagine volume and price being separated, like the price of --

MR. LAWRENCE: Not knowing where that's coming from, I'll answer in two ways. If you're talking about a volumetric volatility and you're looking at pure technical trading, there's a lot of programs out there, some are precanned in textbooks, some are published on Wall Street and all that, that says when volume increases by X amount or decreases by X amount, it's a good time to buy or sell, depending on where that price range sits based on historic moving type average, et cetera.

So, you look at the volumetric, and if the volume, all of a sudden, exponentially increases, there's a lot of people out there buying and/or selling; look at what the price is doing, and there's trading, technical trading tools, that will tell you, you should be buying or selling into that market. So, when I think of volumetric or volume volatility for natural gas, that's kind of what I think of.

AUDIENCE: So you're still churning it with --

MR. LAWRENCE: The churning, the number of trades being done, the number of participants out there. Now, the volumetric risk that you experience as a utility would be weather-related, not price-related, so you separate those two. It's an abnormally cool summer, like it was in Chicago, where

the high hit 70 something at best, the prices didn't get much above 65, 70 bucks in the summer at all, because the demand wasn't there, and it was a fairly healthy transmission grid. Conversely, the previous summers, extremely hot across the board, a lot of units fell off-line, and just because there's demand, the power still couldn't get there, but it was a volumetric exposure, not necessarily price. And the price was a result of that --

AUDIENCE: (Comment.)

MR. LAWRENCE: To a degree, yes.

AUDIENCE: Because, I think, of it more as volume-forward contracts where the utility has a right to buy at an unspecified price some specific volume at a later date. What is that?

MR. LAWRENCE: That would be -- that's the volumetric risk we're talking about. Not the volumetric on the volume of trades, but the end use customer burn, because you're buying unlimited swing rights based on what the weather temperature patterns are. It's not price-specific, and it's just strictly whatever my customers take, you have to fill that obligation, I'm taking load forecasting risk, and I have to decide what is the weather going to be and how do I hedge that? That's the reason weather derivatives exist out there now.

AUDIENCE: Is there still price attached to my obligation beyond that?

MR. LAWRENCE: Is there a premium above and beyond some basic fixed block? Yes, because I'm not just selling you 10,000 a day, I'm selling you 10,000 a day that could go to five and it could go up to 25, so you're buying some embedded swing rights, as they call them. Same thing on power. It just gives you the ability as the end use customer to turn down the amount of volume taken or turn up the amount of volume taken.

AUDIENCE: So, it's associated with minimum matching --

MR. LAWRENCE: Type scenarios. But, you know, the customers -- it's all basically weather-dependent, because I don't get any pricing signals on whether I'm going to turn my AC unit on or off. 35 bucks a summer doesn't do it for me, so... 35 bucks a minute might, but...

Yes?

AUDIENCE: What do you look for in terms of adversity or price risk?

MR. LAWRENCE: We love trading plutonium. We started up a -- just kidding. Some utilities actually are in fairly good shape and some are fairly in a risky position. Being long 90% coal seems like a good opportunity. What happens when one or two of your coal units fall off-line? I mean, you're at the wind of the market, whatever it is. Now, you can hedge that with insurance products, et cetera. But a nice mix of base load and intermediate, I mean, the standard utility profile is

nice to have. If the base load is made up of coal and/or supplemental with high-efficient gas units, it's kind of a moot point. The coal market has been a lot more volatile in the last 12 months or last six months, as well as the emissions associated with it, but the absolute delivered price on the BTU equivalent is still significantly below gas.

MR. HUDDLESTON: And you need to look at the customer's side, too, and look at the types of customers that you have. If you've got a very high load factor industrial base, for example, like in the midwest, that would be a whole different mix than a high-peaking residential kind of load. And so, there really isn't a perfect division, but I think if you look at the resource planning process over the years, then utilities have kind of fit in the categories, and it's a portfolio management based upon, unfortunately in some respects, regulatory response, but primarily responding to the kind of customers that you have and the load factor.

AUDIENCE: (Comment.) How would a firm hedge, say, electricity contracts in the market?

MR. LAWRENCE: Very difficult when you can only hedge half the equation. I mean, A squared plus B squared equals C squared all the time. But if you can only hedge one piece of A and B is going to be flopping around and you locked in at C, that equation kind of falls apart, so we find ourselves at risk. I mean, some regions, like you indicated, are a little

bit more liquid. They have a little bit more diversity, as far as the products you can buy and sell. But when it comes down to it, if I wanted to lock and load 2 or 3,000 megawatt blocks for next summer, the market would disappear in a hurry, probably wouldn't have any bid offers out there, so liquidity in the depth is still questionable, to some degree.

AUDIENCE: (Question.)

MR. LAWRENCE: Well-stated. We have trouble beating natural gas and power markets or coal markets. And if we think we can spec trade mother nature, I don't know of any company that's going to do it on a regular basis. A lot of the market makers that are doing that are not doing it -- some are, but most of them are not doing it just from a pure speculative trade.

You know, you've got a bunch of traders that got together and had a few martinis one night and said, "Jeez, let's go out and start trading this product and see what happens." There is a customer base, the volumetric risk you're all aware of is needed, not just in the utility industry, but you hear people talking about wet bikes, you hear them talking about snow shops, Enron, Coke, we've even gotten heavily involved in pursuing customers after small volume. But by default, we're at risk with Illinova's acquisition, we have 4,000 megawatt peak. That may or may not get there, which defines how much we can do from a forward perspective on

getting in and out of monthly contracts. So, the weather derivatives, if you're getting into it and trying to spec them, the reason being they have a high tolerance for risk, and they enjoy that activity. We enter into them mainly just because we enjoy it from a hedging perspective.

Now, we will step out on occasion and take a position with the thought of rolling it, you know, laying it off on somebody else, because it matches the profile we think they have and we may get hung out if that party doesn't actually show up in the market. That's usually taken into account when we execute in the trade in the first place. I mean, the forward curb doesn't change, it's based on history. And history normally doesn't get rewritten, so...

Well, if that's it, I appreciate your time.

(Workshop concluded at 3:20 p.m.)

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STATE OF FLORIDA)
: CERTIFICATE OF REPORTER
COUNTY OF LEON)

I, KORETTA E. STANFORD, RPR, Official Commission Reporter, do hereby certify that the Undocketed Workshop was heard by the Public Service Commission at the time and place herein stated.

IT IS FURTHER CERTIFIED that I stenographically reported the said proceedings; that the same has been transcribed under my direct supervision; and that this transcript constitutes a true transcription of my notes of said proceedings.

DATED THIS Monday, June 4, 2001.

Koretta E. Stanford

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