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June 3, 2009

VIA HAND DELIVERY

Jane Faurot, RPR
Official FPSC Reporter
Clerk's Office
Florida Public Service Commission
4075 Esplanade Way
Tallahassee, Florida

Re:	Docket No. 070231-EI	Petition for Approval of 2007 Revisions to Underground Residential and Commercial Distribution Tariff, by Florida Power & Light Company
	Docket No. 080244-EI	Petition for Approval of Underground Conversion Tariff Revisions, by Florida Power & Light Company

Dear Ms. Faurot:

Pursuant to the order issued earlier today in the above-referenced dockets, please see attached Composite Exhibit 3 and Late-Filed Exhibits Nos. 30 and 31.

Please let me know if you need any additional information.

Sincerely,

Rhonda Dulgar

Rhonda Dulgar
Secretary to Schef Wright

DOCUMENT NUMBER-DATE
05543 JUN-3 09
FPSC-COMMISSION CLERK

COMPOSITE EXHIBIT NO. 3

DOCKET NOS. 080244-EI - In Re: Petition for Approval of Underground Conversion Tariff Revisions.

070231-EI - In Re: Petition for Approval of 2007 Revisions to Underground Residential and Commercial Distribution Tariff, by Florida Power & Light Company

WITNESSES: LLOYD D. SHANK, JR. &
PETER J. RANT, P.E.

DESCRIPTION: DEPOSITION TRANSCRIPT & EXHIBITS

DOCUMENT:

TRANSCRIPT OF LLOYD D. SHANK'S
MAY 8, 2009 DEPOSITION

AND

TRANSCRIPT & EXHIBITS OF PETER J. RANT'S
MAY 7, 2009 DEPOSITION

DOCUMENT NUMBER-DATE
05543 JUN-3 09
FPSC-COMMISSION CLERK

PROFFERED BY: FLORIDA POWER & LIGHT COMPANY AND
THE MUNICIPAL UNDERGROUND UTILITIES
CONSORTIUM

Certified Copy

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In re: Petition for Approval of Underground Conversion Tariff Revisions.	Docket No. 080244-EI
In re: Petition for Approval of 2007 revisions to underground residential and commercial distribution tariff, by Florida Power & Light Company.	Docket No. 070231-EI Filed April 30, 2009

TELEPHONIC DEPOSITION OF

LLOYD D. SHANK, JR.

TAKEN ON BEHALF OF FLORIDA POWER AND LIGHT

May 8, 2009
9:08 a.m.

700 Universe Boulevard
Juno Beach, Florida 33408

COLLEEN M. GRUFF-BROWN, RPR

DOCUMENT NUMBER-DATE
05543 JUN-3 09
FPSC-COMMISSION CLERK

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In re: Petition for Approval of Underground Conversion Tariff Revisions. — Docket No. 080244-EI

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In re: Petition for Approval of 2007 revisions to underground residential and commercial distribution tariff, by Florida Power & Light Company. — Docket No. 070231-EI, Filed April 30, 2009

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TELEPHONIC DEPOSITION OF

LLOYD D. SHANK, JR.

TAKEN ON BEHALF OF FLORIDA POWER AND LIGHT

Friday, May 8, 2009

9:08 a.m. - 10:25 a.m.

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Docket Nos. 080244-EI & 070231-EI
MUUC/FPL Depo Transcripts/Exhibits
Lloyd D. Shank, Jr. & Peter J. Rant
Composite Exhibit 3 Page 4 of 177

INDEX OF EXAMINATION

WITNESS:

Lloyd D. Shank, JR.

	Page
DIRECT EXAMINATION	
By Mr. Butler	4

\- - -

INDEX TO EXHIBITS

Exhibit	Description	Page

(None marked.)

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Deposition of Lloyd D. Shank, Jr.

Friday, May 8, 2009

LLOYD D. SHANK, JR., having been first duly sworn was examined and testified as follows:

DIRECT EXAMINATION

BY MR. BUTLER:

Q Good morning, Mr. Shank.

A Good morning.

Q Have you had your deposition taken before?

A Yes, sir.

Q So you're familiar with the process?

A Yes.

Q Okay. I will be asking you questions and looking for you to provide answers to them. If you have any confusion or need any clarification about my questions or you can't hear them clearly, please ask me to repeat it or to clarify it. If you don't say anything about not being able to hear it or being confused by the question, we will assume for the purpose of the record that you heard and understood the question.

Is that okay?

A Yes, sir.

Q All right. Well then, let me get started here.

You have filed testimony on behalf of the

Municipal Underground Utility Consortium and other cities in Docket Nos. 070231 and 080244 before the Florida Public Service Commission, correct?

A Yes, sir.

Q And have you filed testimony before the Florida Public Service Commission before?

A Not directly. I have been associated with testimony filings, but no. Not that I've issued sworn testimony.

Q Okay. You haven't been a witness, a sworn witness before the PSC before?

A No.

Q Okay. Have you testified before any other public service commission, state public service commission?

A No.

Q Okay. You have at the back of your testimony an exhibit that identifies your experience.

A Yes, sir.

Q I wanted to ask you some questions about the utilities that you were involved with.

A Okay.

Q Starting with the City of Washington, North Carolina.

A Okay.

Q Sir, how large is the City of Washington,

~~Docket Nos. 080244-EI & 070231-EI~~
MUUC/FPL Depo Transcripts/Exhibits
Lloyd D. Shank, Jr. & Peter J. Rant
Composite Exhibit 3 Page 7 of 177

population, do you know?

A I know I won't be exactly correct, but as I recall it's about 14,000, I think we had 18,000 electric customers and actually customer wise there were about half outside the city.

Q Okay. I note in your -- well, I don't note that, let me ask you the question.

Do you know approximately how many miles of total distribution lines there are in the system in the City of Washington?

A Well over 100, it goes quite far outside the city.

Q So there's 100 pole line miles total?

A Yes, well over. I don't recall exactly what it is now.

Q Do you know how many of those are overhead line miles versus underground line miles?

A We're talking about 1972 to 1975 so I would answer the question in reference to that period.

Q Okay. Just for clarification, it says in your Exhibit 1975 to 1980.

A You're correct. I'm sorry, yes.

Q Not very different, but just to be clear.

Okay. 1975 to 1980 obviously is the time period involved.

A Yes. And at that time we were building new -- first of all the question was outside the city limits, how many miles were overhead and how many miles were underground and I would say there are only probably four miles underground versus almost 100 overhead.

Q Okay. And how about inside the city?

A Inside the city there were probably 10 to 15 miles, maybe more of underground. In other words it was, the percentage was much higher.

Q And how about, roughly, how much was overhead within the city?

A I would say at the time about three fourths.

Q Okay. So if we're using those numbers, then we'd be looking at maybe 30 to 45 miles of overhead?

A Inside the city?

Q Yeah. You told me it was about 10 to 15 miles underground and if three fourths was overhead I was just figuring that would probably mean something like 30 to 45 miles would be overhead to get to the three quarters ratio.

A Yes.

Q Is that about right?

A Yes.

Q Okay. At that time when you were at the City of Washington do you know if the city attempted to track separately the reliability for the overhead and underground

distribution systems?

A No. It was much later in my career that I started tracking reliability. When I got to the City of High Point I started tracking reliability.

Q So at that point -- are you saying for the City of Washington that reliability wasn't tracked at all regardless of the --

A Only by experience, not, not as you would be familiar in the State of Florida with the reliability statistics.

Q So there wasn't kind of a statistical collection of formal data and evaluation of it for reliability?

A Not at that time, no.

Q Okay.

A However I do have opinions about that.

Q And what are your opinions?

A Well, at the time the underground was, it was young in the utility experience with underground and they were using something called high molecular weight polyethylene cable and unjacketed cable. And while overhead outages, this was eastern North Carolina and had almost as high a lightening incident rate as in Florida and while the overhead lines had many, many more outages, there were outages associated with the underground from cable treeing effect.

Q And what do you mean by cable treeing?

A The insulation material that was used had a molecular structure so that it would break down electrically and if you looked at it under a microscope it would look like a tree.

Q And do you have any opinion on sort of the relative percentages of total number of outages that were due to the overhead system versus the underground system at that time in North Carolina, Washington?

A I couldn't give you percentage wise, but I would say that I experienced, in four or five years I've seen a half a dozen underground outages versus 100s and 100s of overhead outages.

Q Did you keep any cost data at the City of Washington on the sort of overall costs of responding to the overhead outages versus the underground outages?

A No.

Q And did you do any evaluation of any sort of the, either the outage frequency or outage costs on a pole line mile basis, some sort of unitizing basis?

A It was later in my career before I did that.

Q Okay. Did you have any hurricanes that affected, impacted the City of Washington system while you were there?

A Not in the City of Washington system while I was

there. I had a, we called it a tornado, the weather service didn't, but we did have several wind storms and we had ice storms.

Q Okay. After you left the City of Washington you worked at the City of High Point, North Carolina for 20 years from 1980 to 2000?

A Yes.

Q Okay. And in that time period roughly how large a city was High Point?

A It grew from 100-megawatt system to a 227-megawatt system while I was there. The City of High Point at the time was a population of 70 some thousand.

Q Okay. And do you know approximately how many miles of distribution system lines that you had in High Point at that time?

A Well over 200.

Q You say well over 200, would that be some sort of upper bound 250, 300 miles?

A I wouldn't want to put it -- the system grew dramatically while I was there and for example we didn't, we didn't have any substations outside the city limits when I got there and we built three while I was there, so.

Q But by the time you left there did you have any sense of how large the distribution system was in terms of pole line miles or some other measure?

A Not, no. Not really that I can recall except to say it was well over 200 miles.

Q And of the total miles of distribution system, how many were overhead miles and how many underground miles, either in miles or percentages?

A Percentages it was probably 50/50. Because all new subdivisions from when I got there in 1980 to when I left in 2000, all new subdivisions were underground.

Q Okay.

A There were quite a few. As well as we had installed major underground feeders even.

Q Did you track the reliability of your distribution system at High Point during the time that you were employed there?

A Yes, we did.

Q And how did you do that?

A We used the industry recognized statisticals like SAIFI and so forth determining the momentary, the long-term outages, the outage statistics as well as we listed the reasons for our outages.

Q And you mentioned SAIFI, that's an acronym S-A-I-F-I; is that right?

A There's two, there's SAIFI, S-A-I-F-I and CAIFI, C-A-I-F-I -- or CAIVI, C-A-I-V-I, and those are just several, but what they are is statistics listing the average

link of outages and the average, the numbers of outages, the numbers of outages per customers, the weeks of outages per customer.

Q Did you at High Point track those reliability statistics separately for overhead and underground systems or facilities?

A Not in the beginning.

Q I'm sorry, I didn't hear the last part of your answer.

A Not in the beginning of my career there, but we did start keeping track of it toward the end of my career there.

Q Do you recall anything about what the statistics showed toward the end of your career when you were tracking them separately?

A I can't give you the exact statistics, but the, similar to a lot of places in Florida, High Point had a lot of rear lot line construction. The style of construction back in the '50s and '60s before underground became popular was to put the overhead lines along the rear lot line. And in fact there were some subdivisions that dated back to the 1920s that had rear lot line overhead construction. So the outage statistics on overhead were just horrendous.

Similar to Washington, North Carolina, High Point used a different type of underground cable so it didn't

experience nearly the rate of underground failures, but still exhibited some underground tree failures. They were using something called crosslink polyethylene line insulation and while the cable lasted longer, it still exhibited some of those failures.

Q Okay. Did, did the City of High Point by the time you left move to the installation of any different types of underground cable that were expected to be less susceptible to these treeing failure problems?

A Yes. In many different ways. And not just, the, changing the type of material, but changing the practices of using the material.

What we learned was basically, and the whole industry was just like this, is that we learned that we were installing and treeing the cable incorrectly. We were learning that you couldn't use unjacketed mutual conductors because of mutual corrosion. We learned that you could not allow moisture near the cable, we learned that the amount of insulation, insulation has a volts per mil quality, in other words you take the total mil thickness of the cable and divide that into the voltage, that gives you volts per mil and for the larger conductors we exhibited no failures and for the smaller conductors we had failures and it was because we realized the volts per mil so you either had to add insulation or actually make a larger cable.

We learned the problems used with polyethylene and cable. Polyethylene like a paper bag stretches and it melts easily so it's much, much more susceptible to temperature.

So we went to actually cable partially made out of clay rather than polyethylene because the clay was an inert material, high insulation strength, high thermal property.

Florida has experienced a lot of cable failure where they came back and realized that they had to inject the cable with either, replace the cable or inject it with a higher insulation material to fill all the voids to prevent these cable trees that I'm talking about and we experienced the same kinds of things there in High Point.

We learned that we had to apply lightening arresters in the underground system and additional lightening arresters in the overhead system to protect the underground. We learned that we could not just pull it willy-nilly, that we had to calculate the pulling tension on the wire and not exceed certain pulling tension especially when pulling it around corners.

There's a lot of things that the industry has learned to make a credible increase in the reliability of underground cable.

Q Did you while you were at High Point develop any reliability statistics on the reliability of sort of newer vintage underground cable installations where these types of

improvements had been undertaken comparing --

A Well, with newer vintage we didn't have any failures.

Q And by newer vintage, how new would you consider newer vintage?

A For instance the cable we installed in the 1980s until I left in 2000 hadn't failed, still hadn't failed.

MR. WRIGHT: Can I ask the witness to restate that, I did not understand what he said.

THE WITNESS: Well, in other words --

MR. WRIGHT: I'm just asking you to restate the words, Lloyd.

THE WITNESS: Okay. The cable we installed in the 1980s when I first got to High Point, underground cable as we learned the technology changes, we had no problems whatsoever in 20 plus years of experience with the cables.

Q (By Mr. Butler) So basically the problems to the extent you were seeing it was with cable that was older than 1980, had been installed before 1980?

A Yes.

Q Okay. Did you attempt to track the costs of maintaining, operating and maintaining the overhead and underground distribution facilities separately at High Point?

A No.

Q In the description of your experience at High Point, toward the end of it you state that the system experienced a hurricane and a tornado during the time that you were working at High Point?

A Actually during the time I was working at High Point, there were, we experienced two hurricanes and one tornado.

Q What were the hurricanes, do you recall the names of them?

A No. There was one major hurricane that came through Charleston, South Carolina and came up through Charlotte, in fact both of the, the hurricanes that we experienced came that way and it was, what we saw was really weird that we experienced, High Point was directly over 200 miles inland from the coast and we never thought we'd experience a hurricane.

Q Do you recall what the maximum wind speeds were in the, that hurricane that you experienced?

A They were probably 70, 80 miles an hour.

Q So by the point they got to you 200 miles inland, they were kind of down at the minimal strength hurricanes?

A Yes.

Q And what about the tornado that you mentioned in your exhibit?

A What about it.
Q When did that occur, do you recall roughly?
A Roughly in the mid '90s.
Q And what sort of damage do you recall it doing?
A Well, that was definitely a tornado. I happened to be at the church with my wife in a special education session and the lights went out and we walked outside into a tornado. We didn't know what we were doing then. It was one of these several miles wide that it cleared -- not several miles wide, several miles long, but it was probably 100s of feet wide.
Q And what sort of damage did you, did the electrical system experience from it?
A Well, every pole in that stretch was down. When, I think we had like 108 circuits and I think we probably had 20 that were still on after the tornado went through.
Q Did it affect any of the underground facilities?
A No.
Q Did it pass over any of the areas that were served with underground?
A Yes.
Q All right. Let me ask you about your time at the City of Leesburg which was 2000 to 2005.
A Yes.
Q And in that time period about how big was the City

of Leesburg in terms of population?

A Leesburg was about 18,000, but we had, we had lines outside the city limits so that we had approximately 24,000 electric customers.

Q The exhibit to your testimony says 21,000, but your recollection is more like 24,000 customers?

A Yeah. I think it was more like 24,000.

Q Okay. And did Leesburg own its own generation?

A No.

Q What sort of annual or peak megawatt load in that time period was there for the city of Leesburg?

A A hundred megawatt.

Q Okay. Do you recall approximately how many miles of distribution system existed in Leesburg or was served by Leesburg?

A It was in the neighborhood of 100.

Q And do you have a recollection on the split of that between overhead and underground?

A Leesburg was quite heavily underground, that was well over 50 percent.

Q Did you maintain reliability statistics on the distribution system in Leesburg?

A Yes, we did.

Q And how did you do that, how did you measure reliability?

A As I answered before, with nationally recognized statistics.

Q The same sort of statistics such as SAIFI and CAIVI?

A Yes.

Q Did you also use the measure SAIDI, S-A-I-D-I?

A Yes.

Q And did you track the reliability using those statistics for the overhead and underground systems or portions of the systems separately?

A We didn't track the statistics separately, but we did track the numbers separately. In other words we kept track of the number of underground outages. In other words we were specific in tracking the cause of every different type of outage.

Q But you didn't use that information to develop separate statistics about the reliability indices for underground versus overhead?

A No.

Q Did you track the costs of operating and maintaining underground facilities separately from overhead facilities?

A We did some statistical work on that so that we would know, but we didn't keep a running tabulation of the overhead maintenance versus the underground maintenance,

but, because we were heavily involved in underground and were recommending actually that the city establish a long-term development goal of an underground system, that was one of the factors that we wanted to know so, and we were fortunate enough to have an accounting system that we could pull it out.

Q Describe the statistical analysis you performed then.

A As far as underground, operating and maintenance versus overhead operating and maintenance.

Q That's right.

A We looked at a time period to pull out all the trouble calls that we had done on overhead and all the trouble calls that we had done on underground so we were able to get actual labor hours and even match the dollar cost. Because we had a system that when, we had a work order system that every hour was posted to an account, we could easily pull out the hours spent on the various accounts.

Q And do you recall the results of your statistical analysis?

A Not exactly. I recall the essence.

Q Okay. Tell me what you do recall.

A Okay. The essence was that overhead was far more expensive to maintain than underground. And of course in

Leesburg we had some underground outages, but not nearly to the extent that we had previous in our career and also it was with that older style conductor, similar to what other facilities used in the '70s and '80s.

Q And how did you know that, did you track statistics on the nature of the cable or the installation date of the cable when you were --

A In a small system I instructed our linemen to bring in a sample of the failed cable every time they had a failure so we could see it and we could analyze it.

Q Okay. Did your evaluation of the costs for operating and maintaining the underground and overhead system also look at capital costs that were recorded for sort of keeping the systems operating, or did you focus specifically on O&M expenses?

A Well, actually when we were looking at our underground plan we looked at both separately. Because at the time we were spending, and I know this is not untypical to most utilities, but we were fortunate enough to have a tremendous amount of growth and for several years running while I was in Leesburg, out of over 20,000 customers we were growing at between three and 600 customers a year all new underground subdivisions.

The percentage of underground versus overhead was growing, was rising dramatically and the overhead system was

an old system. We did long-range planning and long-range planning included replacing the old infrastructure and that's when we came to realize that it was probably just about as cost effective to look at rebuilding it underground.

And so therefore we developed the cost associated with replacing the existing overhead system versus the cost associated with replacing it underground. And the, of course capital costs for underground was more expensive, but not that much more expensive. And when you deducted the cost differences in operating and maintenance because operating and maintenance of overhead was dramatically greater, then it became almost a wash. And then when you looked at the value to the community of all these outages, it, it's easy to say that systems should be underground, this system in particular.

Q Do you still have, Mr. Shank, a copy of the cost effectiveness evaluation that you're just describing?

A Well, I was able to, you know, when, in your career when you're proud of certain things you do you tend to keep copies and I was able to find a copy of the agenda and the background material of the conversion plan. It does not, as far as I can see, it has some numbers but it, it, I don't see that it has those numbers of the overhead versus underground.

I can tell you as I recall and remember, Leesburg is a pretty small town so you don't have a real, real dramatic large feeders, not in the numbers, we did have some, for example one of the first projects we did perform is from downtown Leesburg out to the mall was six miles and there was, Highway 441 was being widened and it was being widened in the current right-of-way and there was not going to be room for any overhead poles and we either had the decision of acquiring private easements for the overhead lines or go ahead and go underground and we went ahead and went underground. So we did build a major feeder conduit system in the six miles and if you ride through there today, it's just a terrific example of what a small community can do.

But in any case, I do recall that the base cost for a mile of overhead was a $140,000 and for underground it was like $180,000.

Q So the base cost, you're talking about the cost to install it?

A Yes.

Q Okay. Now, the document you just described, your counsel sent me a package of documents that, the cover of it is an agenda memorandum for meeting date of May 13, 2002.

A Yes.

Q Is that the document that you just are referring

Docket Nos. 080244-EI & 070231-EI
MUUC/FPL Depo Transcripts/Exhibits
Lloyd D. Shank, Jr. & Peter J. Rant
Composite Exhibit 3 Page 25 of 177

to?

A Yes.

Q Okay. Do you know what the status is of implementing the underground conversion plan that is described in this memorandum?

A No. Not particularly. I do know that the, that project out, that six miles out to the mall was completed and Highway 441 was one of the major projects that the state had through town there and was widening the whole thing all the way through town and our plan was to continue that underground, in other words as far as we had developed a 20-year schedule I believe for converting the whole city to underground and Highway 441 influenced, because the state mandated that you had to do something with the overhead lines, that that was going to take priority.

Now, I can't say exactly how the state has progressed with Highway 441. In addition unfortunately in the last few years funds have gotten very tight from the cost of power and reduction in the economy so I'm sure that they haven't proceeded at the same rate that we were proceeding.

Q Okay. Do you know approximately the average age of the overhead system facilities in Leesburg when you were there?

A No.

Q Okay. Do you know the approximate average age of the underground facilities in Leesburg while you were working there?

A It would be tough to -- all this underground had been installed between, I mean, there was some old underground from the '70s, but to say the approximate age, that would be tough.

Q Okay.

A You know, the median age of it.

Q Well, let me ask you a different way.

Do you have any opinion on the, or comparing the average or median age of the overhead versus the underground, in other words was the overhead significantly older on average than the underground or vice versa?

A Well, yes.

Q Which one, I gave you two alternatives, was the overhead considerably older than the underground or the other way around?

A Okay. I thought you said do I have a way of, or do I have an opinion about which is older and the answer is yes.

Q And the opinion is?

A The opinion is yes, the overhead is older and, because the overhead systems got their start at the turn of the century. In High Point the electric system started in

1898 I believe and Leesburg, the electric system got its start in about 1914 to 1917, something like that.

And of course it was overhead technology up until the middle '60s to early '70s.

Q Would you agree that in general it is more expensive, you have more O&M costs associated with operating and maintaining older equipment than you do younger equipment of the same type?

A Repeat the question.

Q Would you agree that generally one would expect to have higher O&M expenses for operating and maintaining older equipment than younger equipment of the same type.

A Of the same type, yes.

Q Okay. Do you know if in Leesburg at this point whether all new facilities that are being installed are being installed as underground facilities?

A I'm sure not all new facilities are being installed as underground facilities. Quite frankly at this time from my discussions with folks in Leesburg there's not much going on period.

Q Uh-huh. I'd like you to look, do you happen to have a copy available to you of this agenda memorandum and the accompanying materials?

A Yes.

Q If you would look in it, it's not consecutively

page numbered so this is a little bit of a challenge, but there is a Section 8 -- I'm sorry, Section 7, Roman numeral 7, Appendix 1 is proposed ordinance revisions.

A Yes.

Q Do you see that?

A I see, I'm looking at the table of contents, just a second. I'll try to get back to that.

Q Okay.

A Yes. Okay.

Q It looks to me like that Section A in -- well, first of all this shows some proposed revisions to ordinances.

Am I correct in understanding that at the time you were presenting this memorandum there already was a Section 19 dash 91 on installation of electrical distribution systems in the city's code of ordinances, but you were proposing amendments to that section?

A I believe that's correct.

Q And that's what it looks like, would you agree, you were proposing to amend an existing ordinance rather than a whole new ordinance here?

A Yes.

Q Okay. And the first amendment as it's shown here would be to add this new Section A saying all new construction within the city limits shall be served with

underground utility service, correct?

A Yes.

Q Okay. And then you go down through the, you know, renumbered sections, what's now Subsection D there is an addition saying that the city shall also reimburse the cost of standard underground services in certain designated areas within the city limits.

Do you see that?

A Yes.

Q I mean, it's looking like, you tell me, I had a little trouble following what was going on here, but it looks like that the city would be building new underground and reimbursing for certain, developers for certain underground service within the city limit, but that there was a distinction that if it was outside the city limits that those same rules would not apply.

Is that a correct reading of the amendments that were proposed?

A I can't tell you, I have not studied this in years and it's been so long, you know, with not, without reading everything and pulling out the context I would hesitate to answer the question.

Q Well, do you know, just putting aside the ordinance whether the, whether Leesburg distinguished between within the city limits and outside of it so if you

were inside you got the underground utility service, but outside you would either just get overhead or you'd have to pay a differential, do you know if there was a distinction of that sort?

A I can't recall it at this time.

Q Were those proposed amendments to the ordinance adopted?

A The underground plan was adopted, I don't recall if the specific ordinances were adopted in this form.

Q Do you remember whether if a, you know, a customer of Leesburg wanted to have underground service installed, did the City of Leesburg utility charge a sort of contribution in aid of construction or other additional charge for having the service underground rather than overhead?

A Well, there were charges when I first got there and we did not want to tell customers if would be free inasmuch as they could have, the customer could have us do anything they wanted to and it would be free. So we said that if the customer was willing to accept the services as we proposed the services, in other words that we could minimize our costs, that we would not charge them.

Q So in other words if the customers accepted whichever you chose, be it overhead or underground.

A No.

Q No. I'm not understanding your answer then.

A It would be underground, but for example deciding the service point on the pole or the transformer and the size of the transformer. There are a lot of technology things that go with establishing electric service for a customer and typically it's a trade off between what the customer has to pay for in his construction or the utility has to pay for and so we were willing to serve the customer underground as long as it was to our standards of service.

Q And was that true regardless of whether the customer was inside or outside the city limits?

A As I recall, yes.

Q I'm sorry?

A Yes. We could not differentiate between inside and outside.

Q Okay. Do you have an opinion, Mr. Shank, on the appropriate charges for FPL to use in its underground -- I'm sorry, in its URD tariff or the appropriate contribution in aid of construction for the underground conversions, in FPL's underground conversion tariff that are at issue on this docket, what those values should be?

A I don't have a direct opinion about the quantity, I do have an opinion about the tiers and, and I think the whole tier system would be very unfair.

This is going to take me a little while to

explain.

The, in most utility systems whether they're small or large investor-owned utilities, except for rural systems and I am aware of actually several rural cooperatives that have all gone underground, however albeit the cost, most rural systems have not, seem to put their feeders and laterals underground.

In areas that are congested, underground is far, is more preferable, it is more preferable by the customers and the lines to the customers whether they're houses or individual businesses are underground per se, it is very rare and in fact when you consider the cost of installing weather head, overhead and making arrangements for overhead as far as your electrician's cost, it's much cheaper to go underground for the individual premises.

So for most customers, we're in an area where 50 to 60 percent of the electrical distribution system is now underground. If we will look at the possibility of underground distribution systems, 100-percent underground distribution, and we look at the benefits of the underground versus the overhead, then the, the underground far outweighs the overhead, then each and every underground that's there has, yields these dollar value benefits.

So to tell a certain size or congestion of customer class that you're big enough to fit in another

class you don't fit, well in the end if we get to a 100-percent underground they're all going to matter.

So in my opinion the tier system just isn't fair. And it doesn't give credit where credit's due. Already if you look at the outage statistics today, and that's the majority of the cost of overhead versus underground, the outage statistics would be twice as bad if we had not gone underground. So there's already value in what's already underground that your tutility is not getting credit for.

Q Have you discussed your views on the tiering system with Mr. Rant? Hello?

MR. WRIGHT: Mr. Shank, did you hear Mr. Butler's last question.

THE WITNESS: Maybe I didn't.

MR. WRIGHT: Okay.

MR. BUTLER: Have you discussed your views on FPL's tiering proposal with Mr. Rant.

THE WITNESS: You faded away there, have I discussed my views with.

MR. BUTLER: Mr. Rant, your views on the tiering system with Mr. Rant.

THE WITNESS: No.

MR. BUTLER: Okay.

Q (By Mr. Butler) Did you have any involvement in preparing the underground/overhead cost differential study

that Mr. Rant is sponsoring as a document, as an exhibit to his testimony?

A No.

Q Okay. Have you reviewed that study?

A Yes, I've looked at it.

Q Did you rely on results in that study in preparing your testimony?

A No.

Q Okay.

MR. BUTLER: Sheff, I think we may be pretty close to finished with our questioning. Let me propose a short break here, 10-minute break and I will confer with our folks and then we'll wrap it up.

MR. WRIGHT: Okay. You said 10 minutes so we'll come back at 10:20, John?

MR. BUTLER: I think that's good.

MR. WRIGHT: Sounds good to me.

(Off the record.)

Q (By Mr. Butler) Just a couple of additional questions and then I think I'm done.

Can you turn to Page 7 of your testimony, please.

A Okay.

Q You state starting on Line 4 down through Line 14 your opinion about long-term costs of operating and maintaining underground versus overhead facilities?

A Yes.

Q You say starting on Line 9 accordingly I believe that the long-term cost to utilities and to customers including FPL and its general body of customers will be reduced through the installation of underground facilities.

Do you have any sort of cost data that specifically supports that conclusion or that belief for FPL?

A I believe the support is not based on a direct cost study because quite frankly the costs are just more hypothesis because the costs aren't there yet. And let me explain.

The current O&M costs that FPL indicates for underground, so much are overhead, are based on historical costs. FPL like the majority of utilities is still paying for lessons learned in developing underground.

For example, FPL is paying a huge cost today in the, what's called a cable cure process to try to install a tree process in its old cable. And that's included in O&M costs and that's past. That's not future. O&M should be developed on and modeled on the current standard of care in the underground utility industry.

That's why I don't agree with FPL when they attribute such high future O&M costs to underground versus overhead.

Q But as I think you said at the beginning of your answer, you don't have sort of long-term O&M cost information for the newer equipment because of course being new, it hasn't been in place long enough for there to be long-term cost data on it; is that right?

A Well, quite frankly if we developed long-term cost data based on our experience with the new standard there wouldn't be any failures and then we wouldn't have any numbers.

Q Well, we don't have yet long-term experience on the new equipment, would you agree?

A Well, it's getting to be long term. Inasmuch as the definition of long term, it's getting to be 20 years old and it's been pretty reliable.

Q Do you have any cost data on, you know, the costs for FPL's system or any other electric system?

A No.

Q All right.

MR. BUTLER: I think that's a pretty good succinct way to end my questions.

Thank you, Mr. Shank.

THE WITNESS: It's been a pleasure.

MR. WRIGHT: Lisa, do you have questions.

MS. BENNETT: No.

MR. WRIGHT: Marlene?

MS. STERN: No, I don't have any questions.

MR. WRIGHT: I'm just going to check my notes, I did, I think I have -- I don't have any questions on redirect.

So we're done. We will read and sign.

MR. BUTLER: Okay. And no exhibits so I think this one is pretty clean and straightforward and Sheff, you'll get back to Ken or me today with whatever you have as an addendum or a bilateral addendum to facilitate getting this information confidentially from the late file Exhibit 2 from yesterday.

MR. WRIGHT: I sure will, John.

MR. BUTLER: Thank you.

Thank you, Mr. Shank, and to all the rest of you we'll talk soon.

(Deposition concluded at 10:25 a.m.)

(Reading and signing of the deposition by the witness has been reserved.)

C E R T I F I C A T E

STATE OF FLORIDA

COUNTY OF PALM BEACH

I hereby certify that I have read the foregoing deposition by me given, and that the statements contained herein are true and correct to the best of my knowledge and belief, with the exception of any corrections or notations made on the errata sheet, if one was executed.

Dated this ___ day of _____, 2009.

_____

LLOYD D. SHANK, JR.

ERRATA SHEET

IN RE: Petition for Approval CR: Colleen M. Gruff-Brown

DEPOSITION OF: LLOYD D. SHANK, JR.

TAKEN: Friday, May 8, 2009

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PAGE	LINE	CHANGE	REASON

Please forward the original signed errata sheet to this office so that copies may be distributed to all parties.

Under penalty of perjury, I declare that I have read my deposition and that it is true and correct subject to any changes in form or substance entered here.

Date: _____ SIGNATURE OF DEPONENT: _____

REPORTER'S DEPOSITION CERTIFICATE

STATE OF FLORIDA)
COUNTY OF PALM BEACH)

I, COLLEEN M. GRUFF, Registered Professional Reporter, certify that I was authorized to and did stenographically report the deposition of LLOYD D. SHANK, JR.; that a review of the transcript was requested; and that the transcript is a true and complete record of my stenographic notes.

I further certify that I am not a relative, employee, attorney, or counsel of any of the parties, nor am I a relative or employee of any of the parties' attorney or counsel connected with the action, nor am I financially interested in the action.

DATED this 11th day of May, 2009.

/s/ Colleen M. Gruff-Brown

Colleen M. Gruff-Brown, RPR

May 14, 2009
Power Services, Inc.
Lloyd D. Shank, Jr.
1616 East Millbrook Road
Suite 210
Raleigh, NC 27609
RE: Petition for Approval

Please take notice that on Friday, May 8, 2009, you gave your deposition in the above-referred matter. At that time you did not waive signature. It is now necessary that you sign your deposition.

Enclosed please find a courtesy condensed transcript with errata sheet.

If you do not read and sign the deposition within a reasonable time (i.e., thirty (30) days unless otherwise directed) the original, which has already been forwarded to the ordering attorney, may be filed with the Clerk of the Court. If you wish to waive your signature, sign your name in the blank at the bottom of this page and return it to us at 515 North Flagler Drive, Suite P-200, West Palm Beach, Florida 33410.

Very truly yours,

Colleen M. Gruff-Brown, RPR
Esquire Deposition Services

I do hereby waive my signature:
.....
LLOYD D. SHANK, JR.

cc: Via transcript John Butler, Esq.
Ralph Jaeger, Esq.

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In re: Petition for Approval of Underground Conversion Tariff Revisions. Docket No. 080244-EI

In re: Petition for Approval of 2007 revisions to underground residential and commercial distribution tariff, by Florida Power & Light Company. Docket No. 070231-EI Filed April 30, 2009

TELEPHONIC DEPOSITION OF

PETER J. RANT, P.E.

TAKEN ON BEHALF OF FLORIDA POWER AND LIGHT

Thursday, May 7, 2009

1:04 p.m. - 5:30 p.m.

700 Universe Boulevard
Juno Beach, Florida 33408

COLLEEN M. GRUFF-BROWN, RPR

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INDEX OF EXAMINATION

WITNESS:

Peter J. Rant, P.E.

	Page
DIRECT EXAMINATION	
By Mr. Butler	4
CROSS-EXAMINATION	
By Mr. Jaeger	115
By Mr. Wright	120

- - -

INDEX TO EXHIBITS

Exhibit	Description	Page
1	Table I-8	30

(Original Exhibit No. 1 has been attached to the original transcript.)

Deposition of Peter J. Rant, P.E.

Thursday, May 7, 2009

MR. BUTLER: Let's go on the record and, Shannon, could you please swear in the witness.

PETER J. RANT, P.E., having been first duly sworn was examined and testified as follows:

MR. BUTLER: Thank you, Shannon.

DIRECT EXAMINATION

BY MR. BUTLER:

Q All right. Good afternoon, Mr. Rant.

A Good afternoon.

Q My name is John Butler, I'm an attorney for Florida Power and Light and I will be asking you some questions about the testimony that you have prefiled in Dockets 070231 and 080244 before the Florida Public Service Commission.

Have you had your deposition taken before?

A I have.

Q Okay. You're familiar then I take it with the general process of the depositions?

A Yes.

Q Okay. I'd ask that you, if there is anything in any of the questions that I ask you that you find confusing, you don't understand the question, don't hear it, ask me to

either repeat or to clarify it which I'll be happy to try to do and if we don't hear from you that you have a need for repetition or clarification of the question, we will assume that you heard and understood it correctly.

Is that understood?

A Yes, it is.

Q And if you find at any point that you need to take a break, please let me know, I'll be happy to accommodate you, but I would ask please, if at all possible, answer any pending question before you take a break, but otherwise whenever you want to take one just let me know and we'll accommodate it.

A Sure.

Q All right. Thank you.

Let me get started here by asking you about some materials that were sent to me by your counsel, Mr. Wright, and I want to kind of understand what I have here.

Do you have a copy of the materials that Mr. Wright had e-mailed to me as documents that you have reviewed or relied upon in connection with your testimony?

A I believe I do, but if there's, because there were some specific documents that have recently been transmitted I would like to ask, to clarify to make sure I have those documents.

Q I'm going to be going through them so if it turns

out there's one you don't have, we'll deal with that.

A Okay.

Q At the time.

First of all, and what I'm starting with are some materials that were sent a day or so ago to me by e-mail that I understand you may have reviewed or relied upon.

The first one I have in the order I have them is a document that has the title Peroxide versus Sulfur Cured Molded Rubber Cable Accessories.

Do you have that?

MR. JAEGER: John, what we got was five different batches, one of five, two of five and so is there any way you could do it by the batch number because we have them split up that way.

MR. BUTLER: I don't have them split up that way.

MR. WRIGHT: And unfortunately I don't either, so I think going along the line that John was doing by citing the citing, that will work out.

THE WITNESS: Can you repeat the title and I'll make sure I have the correct document.

MR. BUTLER: It's Peroxide versus Sulfur Cured Molded Rubber Cable Accessories.

THE WITNESS: I have that document.

MR. BUTLER: Okay.

Q (By Mr. Butler) Would you explain, please, how you used this document if at all in preparing your testimony or preparing for your testimony?

A This particular document was part of a general research that I did relative to specific technologies. I did not rely on this specific document for this deposition or for my testimony.

Q Okay. What is your understanding of the conclusions of this particular document?

A This document speaks to specific formulation of materials relative to all the rubber cable accessories and it is a document that's put out by the manufacturer that describes specific properties.

Beyond that I didn't, I didn't spend a great deal of time reviewing this document. Like I said, I didn't use it as part of my work, it was in my file so I provided it, but I didn't use it.

Q All right. The next document I want to ask you about has the title Twenty Thousand Mile Electric Utility Overhead Distribution Reliability Survey by a company called Exacter, E-x-a-c-t-e-r, Inc.

Do you have a copy of that?

A I'm looking.

I recall seeing it, but I haven't found it yet.

Okay. I've located the document.

Q All right. The same question here, how did you rely upon this document in preparing your testimony?

A Again, this is not a document that I relied upon. It was part of my general research. Specifically what I was looking for was general information relative to system reliability.

Q What's your understanding of the conclusions of this document regarding system reliability?

A This is a particular company, Exacter is involved in developing the liability model. I reviewed the paper quickly and again, didn't rely on specific information from the paper.

Q You didn't rely on the reliability modeling that Exacter performs or offers as any part of your testimony?

A That is correct.

Q Okay. The next one I have is a document entitled A Practical Method for Cable Failure Rate Modeling and it looks like, that it is by Yujia Zhou and Richard Brown.

Do you have a copy of that?

A I do have a copy.

Q How did you use this document in preparing your testimony?

A I reviewed this document relative to the, how certain work is being done on cable failure rates and this particular document presents a methodology, a statistical

methodology of reviewing or looking at cable failure rates.

Q Did you use that statistical methodology in preparing your testimony?

A I, I didn't reference this specifically as an exhibit, however upon reviewing this paper I did note that there are some items identified within the paper that indicate in particular that different types of cable have a failure rate identified as, and specifically in this document there's a table number one which indicates significant tests on conductor size, voltage levels and concentric neutrals and it indicated significantly varying failure rates on a per year per mile basis depending on some characteristics of cable.

Q I see that. That's on, unfortunately it doesn't look like, at least my copy doesn't have page numbers on it, but I see the page number you're referring to.

A It's on the third page.

Q That's right. The third page.

A Specifically though I did not tie any numbers that are present in this paper to my overall analysis. However taken with the body of research that I did with other documents, there is an indication that certain ISO cable installation and technologies in cable that have changed over the years have significantly improved the longevity and

reliability of underground cable.

Q Do you know anything about the utilities or the geographic locations of the facilities that are, these failure rates that are summarized in table one?

A I don't believe so because I don't think it was presented within the paper.

Q All right. Do you know how many different utilities data this represents?

A I do not.

Q Okay. Do you know whether any of the data is for utilities in Florida?

A I do not.

Q Other than table one, is there anything else, specific information in here that played a role or influenced your decisions with respect to your testimony?

A In terms of specific information that's within this paper, no.

Q All right. The next document that I have is one entitled Advancement in 200 Amp Injection Elbows, there's a subject for you, by Glen Bertini, Norm Keitges and Don Songras.

Do you see that, or do you have a copy of that?

A I do.

Q How did you use this document in preparing your testimony?

A I didn't specifically use this document other than as general material that I've reviewed.

Q Are there any conclusions reached in this document that influenced your, that influenced the evaluations and your testimony?

A No.

Q Okay. Next document I have is, looks like a power point presentation by Dow Wire and Cable entitled Enhanced Reliability and Lifecycle Costs of Underground Distribution Networks.

Do you have a copy of that?

A I do.

Q Okay. It looks like that this was given in New Delhi, India; is that right?

A From the title on the front it appears that it was.

Q Did you attend that conference?

A I did not.

Q How did you use this document in preparing your testimony?

A This document was a part of general information that I was seeking relative to specific technologies and indications of other work that had been done related to a variety of different characteristics, in particular characteristics of different types of cable.

I had some previous knowledge of and have had for some time within the context of my work, knowledge of different technologies that have been developed over the years for cables, in particular for underground cables which cause a variety of different, or have caused a variety of different failure modes.

In particular the technology that's currently in use incorporates some 30 to 40 years of very directed research and development by the manufacturers and utilities to improve the overall reliability of those systems.

Initially when those systems came into being in the '60s and '70s particularly, there were technologies that, in terms of the cable insulation, the manufacturer, manufacturing process, the quality control which yielded higher than expected failure rates in a shorter duration where prior to what the original projected or anticipated lifecycle cable would be for those cables, this paper presents a number of these different characteristics and again, was a part of a general body of information that I was seeking which contained information relative to different types of construction of materials.

Much of this presentation appears to summarize work that has been done by a variety of different people as indicated in some of the footnotes and general remarks on the presentation and again, that was a part of a general

body of information I was seeking to clarify some particular terminology and make sure I had reviewed more recent information.

Q If you'll look on the first page in this document, it lists three authors and I'm not going to try their names, at least the first one is a little challenging, but do you know any of these individuals?

A I do not.

Q Have you reviewed any of the sources listed for the data that appears in this document?

A The sources appear somewhere in the file that I provided, I don't have specific knowledge that I have, although over the last 10 or 15 years I've actually reviewed a lot of material relative to this so it is entirely possible, although I didn't seek to identify and review all of the sources behind this material.

Q Do you know anyone who attended this conference?

A I do not.

Q So presumably you haven't spoken to anybody about their attendance at the conference?

A At that particular conference, no.

Q Okay. The next document I have is just a single page and it, it's entitled Table I dash 8, Escalation Rate Detail.

Do you have that document?

A Would you read the title of that again.

Q Sure. It's Table I dash 8, Escalation Rate Detail.

MR. WRIGHT: Peter, if it will help you that's the printout of an Excel spreadsheet. It's not, it's not tables with the borders.

THE WITNESS: Oh. Yes -- well, I believe this is the correct one.

Q (By Mr. Butler) It should be one page, it's got Outage Restoration Reduction, Major Event as the top row and then it's got columns, labor escalator, metals escalator, CPI escalator, et cetera.

A Yes.

Q Do you have that?

A I do.

Q It looks like on here that in the -- well, first of all am I correct over at the far right side there is a series of escalation rates that look like they were generated from using information on this table; is that right?

A That's correct.

Q And those escalation rates are the ones that appear in Table I dash 8 in the MUUC study that is the basis for the quantification and your testimony of the underground/overhead cost differential?

A That is correct.

Q Okay. So this is laying out kind of how you developed those escalation rates, the detail in developing them; is that right?

A Yes, it is.

Q Okay. So the first column is labor escalator, you have 5.5 percent labor escalator there for, the same number appears for all of the different categories of cost types that appear on those columns, correct?

A Correct.

Q Where did you get the 5.5 percent as the labor escalator?

A That was a number that was derived when we did the initial study which was in 2006. The specific reference escapes me, but I believe that was a common escalator or escalation rate that was occurring at the time.

Q But you don't know today whether that or what the source of that data was?

A Let me look again, if I can reference the study because I wanted to go back and look at it.

I don't specifically recall the source for that. Some of this material is indicated or developed within the context of the study, although I just looked to see in the appendix and didn't see that specific cite, so. It is developed over some industry source.

Q Okay. Do you consider that rate representative today? I'm asking you that because I think you mention in describing it that you developed it at the time of the original MUUC study in 2006.

A We did develop it at that time. That specific rate probably does not apply in, as we sit here in 2009. That rate is a rate that will fluctuate over time from year to year and we believe that this represents reasonable rates that would be expected over a long period of time such as the lifecycles that we're dealing with, but at any given year that rate is going to be different depending on the economic condition.

Q If you were to offer a figure as an appropriate rate specifically for the year 2009, what would that be?

A I wouldn't offer one up without referencing specific material so I wouldn't care to speculate.

Q Okay. Let me ask you about the next column which is metals escalator.

A Yes.

Q Does this, is this an escalator that applies only to metals or is this something that is used for materials generally in the escalation rates that are calculated here?

A This was specific to -- well, let me look back at the study.

I believe that particular escalator applies specifically to metals that would be encountered in electric utility construction such as aluminum, steel and copper and, you know, I don't believe that that number includes other materials.

Q Okay. Well, one of the reasons I was asking is when you look down at say something like vegetation management, O&M costs, it's 60 percent labor and 40 percent metals and it strikes me as unusual that all of the activity involved in doing vegetation management would be either people working or metals.

MR. WRIGHT: John, I did not hear a question in that. Did you mean to ask him does he agree with your observation?

MR. BUTLER: Fair enough, Sheff.

Let me ask you, Mr. Rant.

Is it correct that in evaluating the escalation rate for vegetation management, you assume that all of the costs associated with vegetation management are either one, associated with labor or two, associated with metals of the sort that are common in the utility industry.

THE WITNESS: It is what we have presented in our study.

Q (By Mr. Butler) Can you elaborate on that a

little bit, I mean, how is it, I'm focusing particularly on the metals part of that, it just strikes me that my expectation would be that there would be other types of materials besides metals involved in doing vegetation management and I'll just ask if you agree or disagree with that.

A You're asking whether I agree or disagree that there are other types of materials involved.

Q Involved in vegetation management besides metals.

A I would agree.

Q Okay. Where did you get the metals escalator of 10.3 percent?

A This was an escalator that was developed from a series of different cables and analysis over a period of time leading up to the time that we did the MUUC study. I didn't personally prepare that analysis, I was a part of developing the study, but the study presents a number of different tables and graphs which indicate general trends relative to those, I guess escalation that was being seen for the variety of categories, and this number is derived from that material which was taken from a number of sources, a number of industry sources specifically tied to actual values that were occurring in the economy at the time.

Q Can you point to me in your exhibits where, where those source documents or sources tables, whatever for the

metals escalator appear?

A I would refer overall to Appendix I which indicates the appendix titled PPI Indices, Present Value Analysis and there are a variety of graphs that are in the, that are presented in the back. Without specifically looking at each one of those, included in that are the various categories that are covered within this analysis.

Q I'm there, I'm looking at Page 144 out of 158 in your Exhibit PJR 2.

Do you have that available to you?

A Give me just a minute.

What was the page number?

Q It's 144 out of 158.

A Okay. That's labeled Table I-1.

Q Yeah. I was just getting into the I tables, speaking of the first one.

Now, you're looking at, which table in here would be the source of the metals escalator figure that appears on the document we've been describing, or discussing?

A Table I-5, I-6 and I-7.

Q Okay. And how was the data used on here to derive at the 10.3 percent as the metals escalator?

A I know that the data was, that the numbers that were used to prepare these graphs were prepared over a period of time. I don't have the specific table in front of

me right now that was used to develop that. But they were, what was, what went into that number was actual escalation rates that were being seen in metals over a period of time at the time we completed the study.

Q You didn't do the calculation of the metals escalator rate; is that correct?

A That is correct.

Q Okay. Have you reviewed the calculation of the metals escalator rate?

A I know that I had seen that calculation at the time we prepared the report, although, which was some time ago. Just prior to this deposition I have not reviewed it.

Q So sitting here today you're not in a position to independently vouch for the calculation that resulted in 10.3 percent out of these tables that you just referred to, I-5, I-6 and I-7; is that correct?

A I wouldn't phrase it that way. The study, I'm presenting the study as a part of my testimony so I have relied upon the numbers that we presented within the study so I would say that I fully support the number.

However sitting here today I, I do not have that particular analysis in front of me. I'm utilizing the number within my analysis so, you know, obviously I'm confident that the number is a reasonable number based on my

experience, but if you're asking about specific items within the source material, I can't address those today.

Q Do you know the name of the person or persons who prepared that calculation?

A There are several people within our team that had worked on this particular report and I do know who that is, yes.

Q Who is it?

A Mr. R.L. Willoughby. And also in the process of preparing this study there was a gentleman here who worked on these analyses, Mr. Bill Watson. Mr. Watson is no longer employed here.

Q Okay. Do you consider 10.3 percent to be a representative metals escalator rate for the year 2009?

A I, I have not compared that escalation rate with any current numbers and as I had mentioned earlier, virtually all of these rates will change from year to year so this would be a representative rate, specifically it's a representative rate as well for the numbers that we used to prepare the study which, all of which were at a specific point in time.

Q Do you think it's higher than current metals escalation rates for this year?

A I haven't looked at the escalation rates for this year.

Q Okay. Let me ask you about the next number, the CPI escalator.

Where did you get that figure of 2.3 percent?

A I'll speak to this, again, since I didn't prepare that specific part of the analysis, but I believe that that was the CPI at this specific time in which we prepared the 2006 analysis.

Q But you don't know exactly where the figure came from?

A I don't have the source material in front of me so without having that source material in front of me, no.

Q Mr. Rant, you were aware, were you not, in preparing for this deposition that you would be asked to have available to you all of the materials that you reviewed or relied upon in conjunction with the formation of your opinions, testimony and exhibits?

A Yes.

Q Okay. Let me ask you about the others.

The next three columns are the same three, or subjects, labor and material, or metals and CPI, but they're percentage figures and I am correct that these percentage figures represent an assessment of what percent for each of these different types of costs that are listed in the columns on the left-hand side of the document, would vary relative to these three different measures of escalation,

labor, metal and CPI; is that correct?

A I think I understand what you're asking but can, at the risk of me doing it can you repeat that because I want to be clear what you're asking.

Q Okay. Maybe it's best just to use an example.

The first one, outage restoration major events, it has 40 percent for labor, 60 percent for metals and zero percent for CPIs, correct?

A Correct.

Q Am I correct that that's someone's assessment of or conclusion that 40 percent of the escalation for this outage restoration reduction major events category is related to labor, 60 percent of it is related to metals and zero percent is related to CPI, general CPI?

A That's correct.

Q Okay.

A And, and you mentioned that the someone --

Q Well, that was going to be my question, who made that evaluation?

A I'm sorry?

Q That was going to be my next question, who made that evaluation as to these percentages that show up as to what portion of each of these categories of events were, you know, related to these three different measures of escalation.

A Okay. Again, taken as part of the body of the report the report is prepared by my firm, Power Services and the two individuals I've already mentioned were involved in preparing this particular analysis and developed those numbers.

Q Do you know how Mr. Willoughby and Mr. Watson concluded that 40 percent of outage restoration major events was related to labor and 60 percent of it to materials and zero percent to CPI?

A I know in general they utilized their particular experience. Specifically I can't answer, you know, for each of those individuals. I know that they used their experience to develop these numbers.

Q Did you ever discuss these percentages with them, how they derived them?

A I was a part of the discussion of the overall analysis. Any particular number, as a part of the overall team we discussed all of the numbers that went into the analysis, but as far as a particular number or specific number, no.

Q Just using that top line as an example, am I correct that the figure at the far right, the escalation rate of 8.4 percent, that is a weighted average taking 40 percent times 5.5 percent and then 60 percent times 10.3 percent and the total of those two would be the 8.4

percent?

A Essentially, yes.

Q Okay. Let me ask you, we'll leave this shortly, but a couple of these are of interest to me, the cost of UG, underground locates, see down at the bottom, whereas a lot of these other activities that involve utility personnel doing work have some significant amounts of, you know, labor as a percentage of the escalation component, there's zero percent labor if I'm reading this correctly for the cost of underground locates, is that right, it's 100 percent CPI related?

A That's, I mean, that's what we show in our analysis. That, that is, we used 100 percent of the CPI escalator as the escalation rate for cost of underground locates.

Q But wouldn't underground locates involve utility personnel doing the locating just like outage restoration reduction would involve utility personnel doing the outage restoration?

A It would.

Q Wouldn't it be appropriate for there to be a significant percentage of labor as the escalation rate affecting escalation of the cost of the underground locates?

A It could. Let me clarify though the cost of

underground locates, underground locates can be done by a variety of people to include utility staff or it can be subcontracted. I don't know exactly how FPL does underground locates, exactly who does that work.

I do believe that the CPI was chosen as a relative representative escalation number, but it certainly, you know, there is some, I would, you know, this is what our analysis shows as far as what Power Services felt was a reasonable number, but it certainly could be, it could be broken out separately, as any of the numbers could.

Q Well, it's true that utilities can use subcontractors to do the outage restoration as well, isn't it?

A Sure.

Q Is it your understanding that FPL does use subcontractors to perform outage restoration work?

A Yes. Virtually all utilities do.

Q Did you have any discussions with Mr. Willoughby or Mr. Watson about why it would be appropriate to have 40 percent for major events and 80 percent for nonmajor events as the labor escalation component for outage restoration work, but then zero percent labor for the cost of underground locates?

A I didn't ask that question. Specifically that way, no.

Q Did you ask anything of a similar nature about the difference between those two categories of activities and the percentages that were assigned to them for the escalation components?

A I'm, please clarify which categories.

Q I'm taking as one pair of categories outage restoration work, major and nonmajor events, and then the other category being the cost of underground locates down nearer to the bottom.

A Okay.

Q Did you have any discussion about the difference in the percentage of labor escalation that was assumed for those two categories?

A I don't think specifically, although it's part of every discussion we had in the course of preparing this particular report.

However, you know, I do know in general the overall philosophy that was supplied, for example taking the major events and nonmajor events, specifically major events often times involves significant levels of damage to the system which would require a substantial amount of material and so consequently the major events category is weighted towards material as opposed to labor, although certainly those numbers are going to vary by every, each and every specific event is going to have different, probably

different characteristics depending on the level of damage, the type of damage, the location, even to the extent of the number of crews that have to be employed to do the restoration so this was taken as an average.

The outage restoration for nonmajor events is clearly weighted toward labor and this, I do know as a part of my general discussions specifically with Mr. Willoughby who has actually been in, often times through his career in an operations role at various utilities, that for nonmajor events this refers to many system conditions which occur throughout the course of any given year and in some cases the type of work that's done is something as simple as going out to reset a piece of equipment, to move a switch or do something of this nature, perform switching operations and so it's weighted much less toward material because the level of destruction or damage to the system is typically less in these types of events, however crews still have to be dispatched.

So relative to those breakdowns we have had discussions about how those events occur and from my own firsthand knowledge being around various electric systems and Mr. Willoughby's knowledge of operations, those numbers are derived based on that experience.

Q What is Mr. Willoughby's background?

A He, he has an extensive background, I know that,

you know, in the time that I have known him he has been a city manager, he has been involved with making decisions for electric systems and systems operation, I don't know specifically all of the jobs he's held in his career. I know that he initially began his career as a lineman and has worked in many aspects of electric utility operations and engineering and in the time that I've known him in recent years in consulting for a variety of different utilities that have electric systems.

So he has an extensive background, electric utility designs, operations, management, budgeting, all, you know, virtually all of the things that go into operating an electric system so, and I know he has a career that spans over 40 years, so.

Specifically other than that though, you know, you'd have to ask him about other specifics.

Q Do you know what background if any he has in, or research on or evaluation of escalation rates for different commodities and services in the U.S. economy?

A I don't.

Q One of, one other question I want to ask you about this and we'll move on to the other documents is the last item on here is litigation and it has a rate assumed, assumed escalation rate of 10 percent a year and that is not derived, it doesn't look like from the same process of, you

know, taking a weighted average of these labor, metals and CPI escalators, it's just stated as a single figure; is that correct?

A That's correct.

Q How was that 10-percent annual escalation rate for litigation costs developed?

A That, that number was a number that was put forth by the team that was developing this particular table. I mentioned Mr. Willoughby, Mr. Watson, there has been some specific experience relative to that number by our firm.

Other than, I believe that was derived from our experience, but I don't, I don't have the specific, you know, any specific source document for it.

Q Tell you what, since we have talked so much about that, I'm not going to be generally marking these documents as exhibits to keep from bulking up the transcript, but I would like to mark this table as an exhibit. I just, we'll call it Exhibit 1 and I'll give a copy here to the Court Reporter.

(Whereupon, Exhibit No. 1 was marked for identification.)

Q (By Mr. Butler) Mr. Rant, what is your firm's experience with litigation that would be relevant to evaluating the appropriate escalation rate for litigation costs?

A Our firm has, does do expert witness testimony and has been involved with investigation of various types of I guess utility-related accidents such as contact accidents. It is an area that some members of our firm have been involved in and so, you know, in terms of the precise numbers, I don't know the precise numbers, but we've been involved in that particular field and have, you know, some background and experience in, I guess in a combination of investigation and then subsequent actions that are taken after an accident occurs.

Q How would that experience put you in a position to estimate the escalation rate for litigation costs?

A The, specifically, I mean, the, there are members of our firm who have been involved in that particular field for some number of years and I'm sure have seen and been associated with or have seen what, you know, what those numbers are.

Q Those numbers being escalation rates for litigation costs?

A Those numbers being costs associated with cases that have been litigated.

Q But do you know if anyone in your firm has done an evaluation over time looking at how the costs for litigation and the damage amounts paid for litigation changed over time?

A I'm not, can you rephrase the question because I want to make sure what you're asking.

Q Do you know if anyone in your firm has been involved in evaluating the changes in litigation costs including damages paid for litigation over time that would allow you to reach conclusions about an escalation rate and those costs.

MR. WRIGHT: I'm going to object to the form.

If you could be more specific about what he provides, conducted in an evaluation, that might help avoid any --

MR. BUTLER: I mean evaluation broadly, has there been any sort of, you know, analysis prepared, any sort of, you know, compilation of data over a period of years and comparing the data costs averaging in one year to costs averaged in another year, that sort of thing, those are at least examples of, you know, evaluations that I would have in mind.

THE WITNESS: We presented a number in this study. Other than the number in this study, I'm not personally familiar with any specific studies that were done.

MR. BUTLER: Okay.

Q (By Mr. Butler) I'm going to turn now away from this Exhibit 1 back to going through the documents that had been provided, Mr. Rant, and the next one I have just in

order is entitled Relieve the Pressure, Switch with Confidence and this is by Elastimold.

Do you have a copy of that document?

A I will endeavor to find it.

I do have that document.

Q Okay. Did you rely upon this document in preparing your testimony?

A Specifically, no.

Q Are there any conclusions or information in here generally that informed your testimony?

A This was that part of the general body of my research relative to specific equipment and technologies that are being employed currently. But I didn't rely on any, any conclusion from this particular paper.

Q Okay. All right.

The next one I have is a paper from Electrical World entitled EPR Insulation Cuts Treeing and Cable Failures.

A Okay. I have that.

Q Did you rely on this in preparing your testimony?

A Specifically, no. Again, it forms a part of the general body of research that I did relative to particular equipment.

Q I notice this has a date on it of January 1983.

Do you see that?

A I see that.

Q Okay. So the insulation, EPR insulation it's describing as cutting treeing and cable failures, this is a discussion of technology improvements in 1983; is that right?

A That's correct. It's a discussion of the technology that was being developed at that time.

Q Okay. The next document I have is a paper entitled Enhancing Reliability of Power Transmission and Distribution Networks with Underground Cables.

A I have that document.

Q Okay. Did you rely on this in preparing your testimony?

A Not specifically, although it was a part of the general body of research that I did relative to technologies as they are employed relative to overhead and underground electric distribution.

Q Okay. The next paper I have is one entitled EPR Based URD Insulation, a Question of Confidence.

A I have that document.

Q Did you rely on this in preparing your testimony?

A Again, this was part of the general body of research that I did. There are, I will go ahead and

indicate that there are a number of documents that specifically discuss EPR insulated cable. Since I believe the majority of cable that FPL has installed is either crosslinked or XLPE crosslinked polyethylene or tree retardant crosslinked polyethylene, I didn't rely on the EPR based information other than as a technology that is a part of what utilities are using, and I do believe that there may be some on FPL's system, but I don't believe it's a large quantity.

Q And this document is from September/October 1988, correct?

A It is.

Q Okay. Next one I have is Inservice Performance of EPR Cables Installed in the Memphis Light, Gas and Water Electrical Distribution System.

Do you have that document?

A I have two documents, one is a presentation and the other one is a paper that appears to be associated with the presentation.

Q The one I'm looking at is a three-page document -- I see what you're referring to, there's like a power point presentation that's oriented landscape instead of portrait is the longer document you're referring to, and then there's a three-page more in the portrait form and more like a paper.

A That's correct.

Q Okay. Do these two documents form a pair? If they are I'll just ask you about them both at the same time.

A I took them to form a pair, although I don't, I don't specifically know that they were prepared at the same time. They are, or at least each indicates an author, Philip Cox so I'm assuming that the presentation was associated with the paper.

Q Okay. Just asking about them together did you rely on either one of them in preparing your testimony?

A I would say to the extent that these, again, these are part of my general body of research, but one of the things that is presented here is some historical information relative to various situations that have occurred or various technologies and developments and their effects as seen by this particular utility over time on the underground system, and so I did use the material as part of my general historical research and background relative to development of cable technologies and underground technologies relative to how they function and operate or how they have functioned in the past versus how they're functioning today.

Q Okay. Do you know what the source of any of the data that appears in these papers on failure rates for different types of underground cable would be?

A The only indication I have is the indications that

are made within the context of the paper.

Q Have you ever spoken about either the paper or the power point presentation with Mr. Cox?

A I have not.

Q All right. The next one I have is a paper entitled The Estimated Impact of Weather on Daily Electric Utility Operations.

A I have that document.

Q Okay. Did you rely on this paper in preparing your testimony?

A Again, this is a paper which forms the general body of information or research that I looked at relative to this testimony, I didn't cite the paper specifically.

Q Did you use any of the data out of the paper in your testimony?

A Not in the numerical analysis, although the paper does point out that there are, I mean, draws some conclusions relative to weather events and weather phenomenon resulting in electric outages and, you know, other than the general information that's located in the paper I didn't cite it specifically.

Q I'm looking on Page 2 of that, that's at least one of the places you're referring to where it's got different types of storms, different dates and total customer outages and costs associated with it.

A Yes.

Q Do you know whether the paper provides any information on the breakdown of either the outages or the costs between customers served with overhead and customers served with underground equipment?

A I don't believe it does.

Q Okay. Next paper I've got is one entitled Experiments on Cable Aging Assessment and Fault Detection using Modern Techniques.

A Okay. I've got the paper.

Q Did you rely on this paper in preparing your testimony?

A Again, it forms the general body of information that I looked at, this paper didn't address the specific types of installations of facilities that I was looking at so I did not rely on this paper.

Q Okay. I have a, the next document is an article entitled Houston Paying a Heavy Cost for Power Outages, Rotting Food, Damaged Infrastructure and Lost Business Rack Up Quite a Bill.

Do you see that?

A I do.

Q Did you rely on this article in preparing your testimony?

A Again, this is part of my general body of

research. We did address costs associated with outages within the context of our study. This article is subsequent to that, it is in fact a media article so it provides some general information, but I didn't rely specifically on any of the, of the information within the article other than just an understanding of the fact that there is a cost associated with electric outages to the general public.

Q Okay. Next document is one entitled PSO Electric Reliability Enhancement Plan.

A Yes.

Q Did you rely on this document in preparing your testimony?

A It forms, again, a part of the general body of research I did. There are a number of things within the article that, or within the particular paper that I took note of, although we didn't rely on these specifically, some of the actions taken for reliability enhancement such as -- well, let's see.

One of the key components referenced here is distribution tree trimming and we know that FPL has adopted a specific tree trimming policy. I did read this with regard to what are, was being done with this utility, but I didn't rely on those numbers.

Q What is, what is PSO.

A It, it's, it is a utility, but again, I didn't, I

was just looking at this in the general body of research. I'm not even sure if they have the name of the utility indicated in here.

Q And you don't know it independently?

A No. That's something I didn't know.

Q Okay. Next article is entitled Proven Insulation Technology for Enhancing Distribution Cable Life and Improve Reliability.

A Sir, can you repeat that.

Q Proven Insulation Technology for Enhancing Distribution Cable Life and Improve Reliability, not terribly grammatical, but that's what it says.

A It's probably grammatical for the authors.

I have the document.

Q Okay. Did you rely on this document in preparing your testimony?

A Again, I would say that that is a part of the general body of research I did and which, specifically with regard to past experience relative to cable technologies there are some indications in here of failure modes, types of occurrence and particular types of cable and what some of those things are and some of the background and history.

I didn't rely on any specific numbers or references from this, but I, again, I took it in the context of all of the various other research I did as a part of the

general body of research and specifically what I saw in this paper relative to the other materials that I saw were the same types of indications of premature failure of early crosslink polyethylene cables, and then some specific indications of technologies that were developed in response, and procedures that were developed in response to those problems to improve overall, overall performance of the cable.

Q Do you know what the source of any of the information on the failure rates statistics is?

A I only, obviously the paper is provided with a series of references and the authors are indicated. I did not review, individually review each one of those references, no.

Q Did you discuss the article with the authors?

A I did not.

Q Okay.

MR. BUTLER: Sheff, off the record.

(Off the record.)

Q (By Mr. Butler) Next article is entitled Long Life XLPE Insulated Power Cable.

Do you have a copy of that?

A I do.

Q Okay. Did you rely, or did you rely upon this article in preparing your testimony?

A I'll make the same statement that this is a part of the general body of research that I did and that there are conclusions within the context of the paper that I relied upon.

Q And what were those conclusions?

A This particular paper addresses development of XLPE insulated power cable.

Q Uh-huh.

A And, I'll go ahead and refer to the conclusions in this paper, and the statement is made achieving a long life using XLPE compounds is not difficult, however it requires attention to details that may on the surface appear to bring little immediate benefit. The purpose of this paper is to outline some of the most common practices that help industry and electric utilities obtain a cost effective XLPE insulated cable with long reliable service life and the most critical element in the whole process is the awareness of quality issues and its ultimate value in utilities.

There are some technical materials developed in here and the paper does speak, particularly in the introduction to the fact that cables that were supposed to have much longer service lives, 30 years were failing after only 10 to 15 years and that this paper is in fact a response, again, in the context of many of the other materials that I've reviewed that those problems were

recognized and that the industry has been working to address those and in the general body of all of the materials I've looked at, the conclusion is that the industry has been active in developing these technologies so that cable service lives based on the newer technologies are significantly longer and correspondingly the maintenance costs associated with those cables are cheaper, or let's say less costly.

Q If you look on the first page you'll notice that one of the authors for this is a man named Ramachandran and would you agree that his name has showed up on two or three of the papers involving Dow Chemical as on author or as the sponsor of conferences, that sort of thing?

A I would agree that Dow Chemical who develops a lot of the materials associated with electric power cables has been, or has had a significant number of materials as well as particular authors associated with materials relative to power cable.

And I did not do a take off of the specific names on all the various papers, but it's very common for the same industry experts to be associated with the various papers that are presented and often times those individuals are sponsored by and/or employed by the producers of those materials.

Q Dow Chemical is a producer of XLPE cable?

A They are a producer of materials, a variety of materials that are used for power cables. I would not speak as to what they are producing today exactly, but I would say that they have been a significant player of production of power cables, a variety of types.

Q All right. The next paper I want you to look at is entitled Technical Trends and Medium Voltage URD Cable, Materials and Design.

Do you see that?

A Can you repeat that title.

Q Technical Trends in Medium Voltage URD Cable, Materials and Design.

MR. WRIGHT: John, I'm going to mention that I believe this document is in fact Exhibit PJR 5 in the book of exhibits that Mr. Rant has supplied.

MR. BUTLER: Okay.

THE WITNESS: I have that document.

MR. WRIGHT: Am I correct, Mr. Rant, that that's the same document as PJR 5.

THE WITNESS: Let me confirm it, but I believe that it is.

It is.

MR. BUTLER: Okay. That's fine. I won't ask you about it, for now at least anyway. I know why that's in the package.

All right.

Q (By Mr. Butler) The next one and I, believe it or not we're getting down, I think we have three more of these.

Next document is entitled Reliability Evaluation of Underground Distribution Networks using Representative Networks.

Do you see that?

A I'm looking. I think I have the same problem that the others have, I group these in folders and I don't have the titles on the folders.

Can you repeat the title.

Q Okay. It is Reliability Evaluation of Underground Distribution Networks using Representative Networks.

A I have the document.

Q Okay. Did you rely on this in preparing your testimony?

A This was a part of my general body of research. I did not rely on this paper specifically.

Q Okay. The next to last of these articles is an article entitled, I'm not sure how you pronounce this, UtilX, paren, R, end paren, Corporation Selected by Florida Power and Light Company for Multi-Year Cable. It's a Reuters news brief.

A I have that document.

Q Did you rely on this document in preparing your

testimony?

A Again, it was part of the general body of research. I took note of this particular document relative to the specific technology that's employed. The technology that is employed is a technology that is used to mitigate the effects of certain failure modes on crosslink polyethylene cable. It introduces an additional cost to the maintenance of that cable and that, that becomes a part of the overall O&M costs that are reported relative to underground cable.

It is a technology that is typically employed on older vintage cable for the purpose of extending its life and other than taking general note of that and the fact that it is being employed at FPL, I didn't rely on this particular article for any specific numbers other than making a note of the fact that it is a technology that is a part of the maintenance, current maintenance practices being employed at FPL.

Q Okay. The last one I have in this set is entitled Southwire Sureseal, Self-Sealing, 600-Volt Underground Cable.

Do you have that document?

A I'm sure I do. If I can find it.

Okay. I have that document.

Q Did you rely on this in preparing your

testimony?

A Again, this forms the general body of, of part of the research that I did. This is a secondary voltage cable, the technology that is employed for that can be employed such that it reduces problems associated or improves reliability and reduces costs associated with certain types of secondary cable. It's a technology that is employed by, within the industry and I was at this particular conference where it was presented.

Q Okay. Do you see the role of 600-volt secondary cable as significant in the current discussion on the underground versus overhead distribution costs at FPL is, or that's the subject of these dockets?

A Yes. And specifically all of the components of the electric system form, you know, a part of the electric distribution system forms the complete, I guess form the complete basis for the development of all the costs associated with, particularly with operations and maintenance.

This particular cable we did not derive any cost numbers or try to break that out, but taken as a part of the overall current state of technology I did take into account all of the system components and various technologies associated with those components relative to the long-term operations and maintenance cost conclusions that I've

drawn.

Q Does FPL use 600-volt underground cable in its system?

A I'm sorry?

Q Does FPL use 600-volt underground cable in its distribution system.

A Yes, it does.

Q Okay. Where, where is that, what part of the distribution system would that be used for?

A Six hundred volt cable is a general class of insulation of cable that is used for what are termed secondary voltages within the electric distribution system, that would be electric, what we would call secondaries and services. These would be lines that are run to facilities that are served at voltages less than 600 volts.

So any houses, businesses, any customers served by FPL that are served with underground services would be employing 600-volt cable. I do not know -- well, so yes, 600-volt cable is a part of the, of FPL's distribution system and virtually all utilities in the United States that have underground cable services are going to employ some type of 600-volt insulation cable.

Q Okay. Mr. Rant, I want to turn to a different topic here.

First of all I have reviewed all of the documents,

that I know that I received from you, Sheff, as additional materials that Mr. Rant had relied upon.

Are there any others, Mr. Rant, that you have there that I have not discussed with you that we need to discuss that provided a basis for your testimony?

A We haven't discussed all of the materials that I have because I have a substantial number of materials that are associated with particular FPL filings, interrogatories so we haven't discussed those. I have those materials and, but other than --

Q Let me rephrase it.

Are there any materials that you did not receive from FPL other than the ones that we have discussed here going through this list of documents that you relied upon in preparing your testimony.

A To my knowledge, no.

Q Okay.

MR. WRIGHT: John, just so the record's clear, your specific request which we handled informally as you know asked for documents that Mr. Rant reviewed or relied upon and that's how you came to get the substantial package of materials that you got and he's explained the degree to which he relied on or did not rely on each of the documents you've asked him about.

MR. BUTLER: Okay. I agree.

Q (By Mr. Butler) Let me ask you to turn to your, the document that was filed on April 23, notice of filing supplemental Exhibit PJR 13.

A Okay.

Q Do you have a copy of that?

A I do.

Q Okay. Now, this was filed shortly after the main volume of your testimony and exhibits and it adds an exhibit to the total package; is that right?

A Yes.

Q And the purpose of this supplemental exhibit is what?

A In my testimony, I specifically identified a methodology for the URD adjustment and this exhibit provides the associated numerical I guess backup to that methodology.

Q Just so I, I'm orienting the same way that you are, can you point me in your testimony the page reference to where you are describing the URD methodology that the supplemental Exhibit PJR 13 is documenting?

MR. WRIGHT: To expedite this I believe it's on Pages 32 and 33 if Mr. Rant can confirm that. Or deny it, if you wish.

MR. BUTLER: I see. FPL's charges for new underground insulation and on Line 18 and 19 you have a

sentence, I will furnish a supplemental exhibit showing the correct values as soon as practicable.

THE WITNESS: That's correct.

Q (By Mr. Butler) And this is the supplemental Exhibit PJR 13, what you provided, that is following up on that statement?

A Yes.

Q Okay. Now, if you would please, let's walk through this and just, we are not at FPL entirely sure what we're looking at here so I want to get you to explain what you have shown on Exhibit PJR 13 so let's start with Page 1 and tell me what Page 1 represents, please.

A Page 1 references, and I don't have the exact page number, but it refers to Section 10.3, the underground distribution facilities for residential subdivision developments section within the FPL tariff which has, in which FPL has identified an applicant contribution relative to URD or residential developments and this particular page shows FPL's proposed applicant contribution taken from one of the exhibits with Mr. Koch's testimony and then it shows the MUUC proposed applicant contribution based on the methodology that we have presented.

Q Okay. And this, I see that Exhibit TRK 1, Page 195 of 196 appears to have as the applicant contribution the same figures as what you're showing as the FPL proposed

applicant contribution; is that right?

A Let me refer to that exhibit.

Do you have a specific page number for that exhibit.

Q Yes. It's page 195 of 196, it's almost at the end of it.

A That's correct. And this is, as I understand it this is the December revision of that particular table prepared by FPL.

Q Right. Okay.

Now, the MUUC proposed applicant contributions, are those figures, sort of the development of those figures set forth on other pages here in PJR 13? Let's just take an example so we can be talking about one of them.

A Specifically Page 2 of 4 of Exhibit PJR 13.

Q Yes.

A Shows a similar breakdown as the development that was presented by FPL which begins with the cost differential, again, as presented within Mr. Koch's exhibits and each of the categories as far as operational costs per lot are derived and this URD adjustment breakdown shows how our services, how we developed the, and applied the relative operational cost differential to the numbers that are presented on Page 1 of the exhibit.

So following across categories presented for --

well, there are three different levels that correspond to what is in FPL's tariff. The low density, and without getting into the definition, there's no question about the definitions of these particular types of developments within the tariff, low density, high density and feeder pedestal and within those various categories there is a breakdown of lot density and there is a tiered approach as proposed by FPL and we have applied numbers, percentages to those, to that tiered approach and that those percentages are carried through and compared against the cost differential per lot and show a corresponding reduction.

Q Okay. And then -- well, help me here if you can.

I'm looking to see if I can, or to correlate figures from Page 2 back to Page 1, just, if we can pick as an example say the, the -- well, we'll pick the high density, the 1.1 subdivisions with 300 or more total service laterals, that would be sort of what you were referring to as the GAF equivalent, the tier one, correct?

A Correct.

Q Okay. And your proposal is that this, that category would end up getting charged a URD charge of $90.34, correct?

A Correct.

Q Okay. Now, where on Page 2 does that appear?

A On Page 2 under the heading of high density on the

tier one line one line on the extreme right-hand column underneath the heading of cost differential.

Q Okay. The 90.34.

A Right.

Q Okay. Now, for the middle tier, tier two, you are, I think if I understand correctly --

MR. WRIGHT: Excuse me --

MS. STERN: We're having trouble following your exhibit.

Are you working off the original Exhibit PJR 13 or the revised one that we got today.

MR. WRIGHT: Twenty minutes before the depo.

MR. BUTLER: I'm working off of the original, I'm sorry.

MS. STERN: Okay. Thank you.

THE WITNESS: When we started the reference was made to the document that was received earlier so we were looking at the original.

MR. BUTLER: Yes. And that's what I was referring to, but I didn't, I actually hadn't realized I had the revised PJR 13. I knew we had a revised PJR 3, so the PJR 13.

THE WITNESS: It would probably simplify things if I just indicated what the change is, what the relative change is. It is a small change so I can offer that

explanation if you'd like me to.

MR. BUTLER: That's fine. Please. And we'll work off of this revised one. I didn't realize that we had the revised one. I know we did for the other, I didn't notice that we did for the PJR 13.

Okay. Go ahead.

THE WITNESS: Are we going to the revised one?

Q (By Mr. Butler) Well, you were going to explain I think the difference, right, between the original PJR 13 and the revised one?

A Sure. I think it would be helpful if I just clarified that.

Q Yes. Please.

A In the context of reviewing materials, we discovered a misprint in, in one of my exhibits, specifically it referred to the litigation adjustment in Table C-1 and what was presented in the original exhibit that I provided was an annual number as opposed to the 30-year number and so it caused a small error, a small, relatively small number, but we felt that it was important to make sure that that was an accurate number so we revised that which caused the percentage litigation to go from .03 percent to .87 percent adjustment and we reflected that adjustment in the other exhibits to include PJR 13.

It was, again, a small adjustment, but we wanted

to make sure that all of the exhibits were consistent and that all of the material presented as the cost type tied back to the same numbers.

Q All right. And just, I'm focusing on just that same entry we had been focusing on, what had been a charge of $90.34 in your proposal is now down to a proposed charge of $89.03, right?

A I've got the original now, I need to pull out the revised.

The $90 and, the $90.34 number is now reflected in the revised exhibit as $89.03.

Q Okay. I'll work off of the revised one then for the remainder of the questions.

Thanks, staff, for pointing out the difference.

What I wanted to focus on now, Mr. Rant, is on Page 2, the middle tier in tier two.

A Yes.

Q You have I believe a formula or a pair of formulas set out there at the bottom of the page which you propose to use to adjust the storm restoration costs differential that would apply for people in the second tier on a sliding scale instead of a single point basis; is that right?

A That's correct.

Q Okay. Would you explain, please, the formula that you've presented and how it works.

A Basically the formula takes the, I guess you have -- the endpoints are defined by the lot density numbers or basically the endpoints are the tier one GAF equivalent number for the baseline number and FPL has defined sort of the midpoint and the baseline number and the GAF equivalent number as based on a percentage.

And so what this number aims to do is provide a, as you put it, a smooth transition or sliding scale between the bottom end of the scale being tier three and the top end of the scale being tier one such that a, for example a development with 105 -- well, we'll look at a high density, a development with 105 lots would have a relative sliding scale versus say a development with 295 lots so that you didn't have a large, I guess someone paying significantly more based on where they, where they were.

This addresses the breakpoint issue. If you're close to a breakpoint, then you might be, you might end up being charged significantly more as opposed to being across the breakpoint. Seeks to prevent particular applicants from being penalized for being close to a breakpoint.

Q So let's just look at the high density, we've been kind of focusing on that earlier, what you would be doing is, does the NU that appears in the formula refer to the number of lots in the project under consideration?

A It does.

Q Okay. So if you had, and this, for the high density the mid band runs from 100 lots to just short of 300, 299, correct?

A Correct.

Q Okay. So if you had sort of the midpoint of 200 lots there, you'd use 200 divided by 100 so that would be, you know, two minus one would be one squared so in this instance the math is pretty easy, so it'd be one times $28.04 divided by four, you would subtract that so you would subtract one quarter of 28.04 from 28.04 and add that amount to the, sort of the URD charge that applies to tier one, the 89.03, correct?

A I think so. If I follow your explanation.

Q I just --

A You need to arrive at the, essentially when you hit the breakpoint numbers is to arrive at the breakpoint numbers and provide a sliding scale between them.

Q Uh-huh. Okay.

Now, is the, on the subsequent pages of this Exhibit PJR 13 there are a pair of curves, first one is entitled CIAC distribution low density and the second one is entitled CIAC distribution high density.

Are those curves essentially plotting the results of these formulas that appear on Page 2?

A They are.

Q Okay.

A It was just an easy way to graphically present this sliding scale.

Q So you have some sort of concave down curve connecting the endpoints instead of a linear straight line connecting the endpoints basically, right?

A Correct.

Q And what is your reason for thinking that that is a better representation of the, sort of the cost changes between those endpoints than just a straight line between the two?

A Well, I think it gives sort of, weights it, weights things more toward the endpoints so, you know, it certainly, you know, a linear representation could be done, it just weights it a little bit differently.

Q Your curves have the result that essentially everybody except maybe right at the endpoint gets more of a storm restoration credit than they would if you had a straight line, right?

A It does. I mean, I guess if you were preparing a straight line point to point it does have that effect although it's, it's not a huge effect.

Q What in your mind is -- well, first of all how do you develop, how did you choose these particular formulas?

A Well, we looked at, we looked at how, you know,

basically the difference between the two endpoints and we looked at the midpoint and what we were trying to do is fit a curve between the two endpoints and the midpoint so the rest of it is kind of algebra.

It does have I would say, you know, one of the things I would point out is it doesn't have the effect in all cases of, what we propose does not have the, the effect in all cases of reducing the cost, as an example I would point out that for subdivisions with 300 or more total service laterals under the section 1.1 of the summary sheet, the FPL proposed applicant contribution is zero and we've actually proposed, and I'll get confused between the revised numbers and the --

Q It's 89.03.

A The $89.30.

Q But that's actually for the, but that's not where this formula applies, right, that's the --

A The formula is derived, remember, from the endpoints and the midpoint, therefore that is essentially a part of the formula. While the formula doesn't apply at the, at that point, that forms the endpoint of, and in the methodology that we've employed and this really seeks to provide a distribution, a more representative distribution of what the applicant contribution should be spread between the different areas.

Q But how did you derive, where did you get these formulas, did you just make it up or are they representing some particular family of curves that you think are appropriate for some reason and if the latter, what's the reason?

A Well, like I said, we developed it to, you know, basically to provide greater benefit as you get closer to the endpoints and to approximately fit the relative levels that were proposed, you know, in terms of tiers by FPL, but it was a curve that we developed.

Q And what --

A I didn't go to an outside source, it was something that we developed to fit what we thought would be a representative distribution of the costs between those breakpoints as a part of our overall analysis. And again, it was how we applied the percentages, the percentages that were developed as part of the benefits of undergrounding, but we applied those percentages to, to fit them within the context of the FPL tariff.

Q Let me ask you a question that occurred to me before and I passed over it, a comment that you just made made me want to come back to it.

As you note for the high density, the 1.1 category, tier three which is really shown as 1.11 here, you have a higher applicant contribution than FPL, and I think

it's the case that that's the only instance where that appears.

Can you explain to me what it is in your development of the URD adjustments led to the result of having a higher value in that one instance?

A Sure. In reviewing the various exhibits, for example in Mr. Koch's testimony FPL has done a, you know, a significant amount of analysis to develop the particular costs associated with, particularly the operational cost differential and drilling down through those numbers it looked like the numbers were well derived, well thought out.

Where we differed was in how the percentages applied. And specifically we know that there are certain benefits and, you know, while we pair our services, the MUUC disagreed on certain numbers in terms of benefits with FPL, we do know there are certain benefits derived. It, it certainly strikes us that a development with 300 or 301, really with 300 lots would incur a cost of zero and one with 299 according to the original FPL proposal would incur the $203.19 per lot.

It just doesn't, it doesn't make sense within the context of each of those individuals, you know, of those developers, let's say those applicants that there is that much difference between 299 and 300 and so I would say that was the reasoning behind developing the formula, but it was

also the reasoning behind trying to provide an appropriate allocation of those costs between the various size subdivisions. We don't believe that there is an elimination of costs just because you have 300 lots any more than we believe that there is an, incurring a great deal of cost just because you have 299 lots.

So the intent is to provide obviously an adjustment that would be fair to all of the applicants and fair to all of FPL's rate payers. So we felt that that allocation was not representative of the true, of the true breakdown of what it should be.

So I guess that's a lengthy explanation, but hopefully it explains the methodology so those costs are more evenly spread.

Q So am I right then that FPL ended up in tier three using 100 percent of its calculated storm restoration costs, am I hearing you correctly to say that you would have used for the 300 and greater lot size category, tier three, you use something less than 100 percent and that's why you end up seeing sort of a smaller reduction and therefore a small positive contribution noted?

A There's really a fundamental difference in how we derived the costs. We applied a percentage to the cost differential. And, and the way that FPL's proposed costs are developed is almost independent of that differential so

it was a complete difference in methodology.

Beyond that I don't know if, I'm not sure I'm clear on exactly what you're asking.

Q Okay. I'm not sure I am either.

Let me go back to your formulas and ask you something a little bit more concrete.

A Sure.

Q For the high density formula you have the factor of 28.04 divided by four and then the corresponding factor in the low density is 112.64 divided by 1.83.

Where did those numbers come from?

A Well, I mean, basically fits the curve, but if you're asking about the 28.04 and the 112.64.

Q Uh-huh.

A If you look at the endpoints and take the difference between the endpoints, you're going to find that the differential I think is going to be, correspond to those numbers.

Q So in other words just looking at the high density case you've got in tier three a baseline storm restoration cost differential of 701 and in that, in tier three, I mean tier one is 35.05 so that difference is 28.04, right?

A I'm sorry, you were saying between --

Q I'm looking on Page 2.

A Okay.

Q Of revised PJR 13, the column --

A The far right-hand column?

Q No. I really wasn't looking at that, I was looking actually at, although I guess you could look there, I was looking at the storm costs.

A Yeah. What ended up happening is the net effect, the difference is the same because the high storm cost is the same so it's the same, but it is really the difference of a breakpoint between the total differential between tier three and tier one.

Q Okay.

A It provides a range.

Q Right. Okay. I see where you got that.

And then just looking at it, it's easier for me to look at the numbers in the storm column, I see can that it would also be 112.64 up here on the low density so I understand what you are saying about driving that.

Now, what about the 1.83 and the 4, what are the significance of those denominators?

A They make the math work essentially.

Q Make it work to what end, I mean, what was the intended result?

A Again, the intended result was a reasonable sliding scale transmission between the endpoints such that specific applicants within that range who don't fall exactly

on the tier one, tier two or tier three numbers would pay an appropriate level of costs based on the size of the development. So that's what that intends to do.

I really can't offer any more of an explanation than that. It is a mathematical derivation intended to provide a reasonable distribution of costs.

Q Nothing else you can say as to why 4 as opposed to, you know, whatever, 2 or 5 or 3 or 5 is the right number to use as the denominator, just it makes the math work?

A Well, I mean, you know, it wasn't only a question of making the math work, it was a question of finding a curve that would fit that range and appropriately allocate the costs. So what we put in the formula and what we put in the number is, we feel appropriately allocates those costs.

Q But how did you measure appropriate, I mean, as we talked about at the very beginning you could easily enough do a straight line between the two endpoints and that would, certainly the math would work, it would fit, you would end up with values at each point from the endpoint, one endpoint on over to the other endpoint and you've not done that and I guess you've not done it because you think what you have here is more appropriate. I'm trying to understand what you mean by more appropriate.

MR. WRIGHT: Can I try to pose a clarifying

question, John, and I promise, I'm really not trying to coach the witness.

MR. BUTLER: That's fine.

MR. WRIGHT: Peter, the formula tracts a parabolic square termed curve, perhaps if you answered the question why do you believe that using a squared term curve is better than a straight line, you know, first order formula, that might answer Mr. Butler's question.

THE WITNESS: Well, actually I was, I was thinking in terms of how to phrase this because obviously we're talking about something pretty obscure when you talk about the math.

What, I mean what this effectively does is it does, you think in terms of the curve itself, it changes the slope of the line if you look at any given point, it changes the slope of the line.

So what it does is it causes the credit to be higher at the upper end of the scale and lower at the lower end of the scale so it, it's, I would say the rate of change that, of that scale, and I'm having a little trouble, maybe it's my, the engineer in me, I'm having a little trouble beyond that explaining I guess the mathematical aspect of it, but I do think it allocates the costs such that people with, you know,

the larger subdivisions get more credit so, you know, and that's, I have to leave my answer at that because I really don't know a better way to answer it.

Q (By Mr. Butler) And why do you think it is appropriate for the larger subdivisions within tier two -- this only applies to tier two, correct?

A That's correct.

Q Why do you think it is appropriate for the larger subdivisions to get a higher percentage of the credit?

A Well, in the same manner that FPL derived the tiers, there are benefits associated -- it's like kind of like any other, like most other examples there is a, I'm searching for the word, order of magnitude benefit to, certainly from the standpoint of storm costs there's an order of magnitude benefit. So a larger area that is underground reduces the resources associated with restoration.

So in the case of a storm benefit, larger areas, larger, more meticulous areas as identified in FPL's filings provides more benefit to FPL and so this is just a way, a methodology to allocate those costs, again, so that if you're a tier two applicant near the breakpoint you only pay your fair share.

Q Do you have any empirical data on storm restoration costs incurred as a function of number of lots

of project size in this tier two range that would make your curves more appropriate than another set of curves?

A Well, really depends on the overall allocation that you're, that you're looking at. We were seeking to fit numbers within the context of FPL's proposed tariff that were appropriate.

So if you're saying, if I think you're asking the question do you have empirical data in a subdivision that has, you know, we'll take a low density, a subdivision that has, you know -- well, we'll go the high density, easier numbers, a subdivision that has 200 lots and how that differs from a subdivision that has 205 lots no, I don't. We derive the numbers at the, at the tiers as defined by FPL and then apply what we believe is an appropriate curve.

Certainly others could propose other curves, but it does provide a reasonable sliding scale and we are talking about extremely small differences between say a 205 lot or 208 lot or 210 lot so the differences are so small. I think that these are reasonable allocations of costs so I mean, you know, I don't think there is a huge difference between, you know, changing one of the, one of the denominators by a small amount isn't going to have a large effect on these numbers so we think it's an appropriate number.

Q Okay.

MR. BUTLER: Let's do this. We've been going for a couple of hours here, let's take a short break and then I think I'm pretty much done with PJR 13. I want to ask you a question about your revised PJR 3 and then I have some questions on sort of the main body of your testimony and exhibits.

THE WITNESS: Okay.

MR. BUTLER: Let's come back at 3:25.

MR. WRIGHT: Okay. Are we going to stay connected to the phone system or are we going to hang up.

MR. BUTLER: Let's just stay connected if that's okay with everybody.

(Off the record.)

Q (By Mr. Butler) Mr. Rant, go back on the record here and I would like to ask you a series of questions about your C tables from the, there's really three versions of these that I have, or at least some of them -- there's one in PJR 2, there are the revised ones in PJR 3 with your original testimony, and then there is the revision to table C-1 that you had filed today.

And let me ask you first of all --

A To be clear, what are we looking at specifically right now.

Q What I'm calling the C tables. PJR 3 is a series of some, although not all of the C tables. There are, you

know, the Appendix C to the MUUC study had C tables. The first one is on Page 89 of 158 in PJR 2. And then filed today is this revision to Table C-1.

A I'm sorry, when you refer to PJR 2, you're referring to the table out of the original study.

Q Yeah. That's what I'm saying, there's three, I have three Table C-1s.

A That's correct.

Q I have the one from the original study, your updated one that was filed with your testimony which is Page 1 in PJR 3, and then the one that was filed today which is revised May 7, 2009.

I guess it would be a revision to Page 1 of 8 in PJR 3.

A Right. And this is the same, I had offered up a clarification earlier, or explanation, an overall explanation which I would be happy to provide again if we want to get on the same page.

Q Yeah. I think if I understand correctly, let me see if I can do this, the only difference between the revised PJR 3 C-1 and the original PJR 3 C-1 is this correction for the litigation cost so you're showing 30 years of them versus one year of them; is that right?

A And obviously there's a significant difference between the original number we had and the number we have

now which, and reutilized FPL's numbers for.

Q Right. You're talking about the litigation costs.

A Right.

Q Yeah. I understand.

And you had the calculation you had done that we'll probably talk about in a moment, but in the, for the original, the original new study version, the original PJR 3 version you had derived a figure, but then you only include in Table C-1 one year of it instead of the full 30-year study period, right?

A That's correct. That was just an inadvertent error when we printed the table.

Q I figured that something like that had happened.

And that's the only difference, am I correct, between this revised Table C-1 that was filed today and the one that is Page 1 of 8 in PJR 3?

A Correct. And the number in the corresponding percentage.

Q Right.

A Okay.

Q Okay. Let's then, except when we get to litigation then let's work off of PJR 3 which was filed with your testimony, I want to ask you some questions about that.

A Okay.

Q The first thing I want to ask you about just

overall to confirm something I believe is true, you are looking at differences here in O&M costs that affect the operation of, or operation and maintenance of underground distribution systems versus overhead distribution systems, you haven't tried to capture here any difference in capital costs for those two types of systems; is that right?

A Well, I mean, other than the -- that's basically correct.

Q Okay. I mean, just on this form, the form, the numbers it's comparing and showing, these all relate to O&M expenses; is that correct?

A Correct.

Q Okay. All right.

Let's, and the way this is structured as I understand it is Table C-1 is kind of a, a roll up, a summary table within the tables that follow being the detail on the particular line items that are on Table C-1, right?

A Can you repeat that, but clearly, you were garbled a little for a minute.

Q The tables following C-1, C-2, et cetera, those are detail on the line items that show up as kind of a summary or roll up level on Table C-1; is that right?

A That's correct.

Q Okay. So I'm going to be going through mainly focusing on these tables, C-2 and following and asking you

some questions about the details that you show there.

A Oh. Okay. Yes. Go ahead, I'm sorry. I was thinking about the question you asked earlier about the relative difference between the tables, but I realized we were talking about my exhibit PJR 3 and the revised that was submitted so yes, go ahead.

Q All right. Table C-2 is showing the, your calculation of the nonmajor event outage restoration costs and the differential or specifically the differential between those two for overhead and underground systems, correct?

A Yes.

Q Okay. And it starts with a series of five years of costs, 2001 through 2005 at the top, correct?

A Yes.

Q Where did you get these dollar amounts?

A Those came specifically from FPL numbers and --

Q And do you have, is it from FPL's testimony, is it from discovery responses that we've provided to you or something, I need you to tell me what the source of those are.

A They were numbers that were derived in here, there's two key sources for most of these numbers, and they are a combination of specific discovery and FPL's FERK Form 1 so I have to go back and look into the background

material, but those were the key sources where those came from and I think we included some, copy of the, some of the source material in the body of the report.

Q So sitting here today you can't tell me where you got these numbers?

A I can. I have to look back at the report.

Q Well, do so.

I'm sorry, I don't want to be argumentative here, but I want to be sure coming out of the deposition we know where you got these figures and somewhere within FPL discovery and FERK Form 1 isn't going to be specific enough.

A I thought you were asking a general question, I'm sorry.

Q No. I'm really trying to bore down here on getting to where specifically these numbers come from so we can understand and confirm ourselves and decide whether we think they were appropriately used.

A Okay.

(Reviewing.)

If you will bear with me I'm looking in our document for the specific source because the material is there, I just need to make sure I cite the specific source.

Q Okay.

A (Reviewing.)

Okay. On this particular table, I'm sorry to take so long, I had to flip through a lot of pages, let's see, make sure I have the right sheet, specifically in response to, in Exhibit PJR 2, Page 104, this is from interrogatories to FPL from the MUUC and we asked specifically for outage data and the, and the -- I'm sorry, not outage data, but outages and restoration. And on Page 108 restoration costs are derived at the bottom of the page by year so you'll see the restoration costs there correspond to the costs identified in the first section of the table.

Q Okay. Good.

And then what you have done is total those and average it over the five years to get a five-year average of 95.5 million, right?

A Correct.

Q Okay. Now, the next thing here that appears is you end up developing for overhead and then separately for underground the number of interruptions per mile of each type of distribution service, correct?

A Correct.

Q Taking a total number of overhead interruption for 2004 divided it by the overhead miles, done the same thing for underground, 2004 interruptions by the underground miles and come up with these figures of 86.95 overhead interruptions per mile and 12.03 underground interruptions

per mile, correct?

A Correct.

Q Okay. Where did you get the 2004 overhead and underground interruption information?

A Bear with me. I'm trying to find it. It's within the report here, but I'm trying to find the specific location.

(Reviewing.)

MR. BUTLER: Sheff?

MR. WRIGHT: Yes, John.

MR. BUTLER: I'm a little concerned that this is going to make the deposition take forever and I'm honestly a little bit surprised that there's so much trouble in nailing down specific sources.

THE WITNESS: I'm trying to get you a specific page.

MR. BUTLER: I understand, but --

THE WITNESS: I will tell you that that particular number came from, in looking at the outage data provided by FPL and I'm looking for the specific page, I just haven't found the specific page.

MR. JAEGER: If you'll look at Page 111 of 158 that may be --

THE WITNESS: Okay.

MR. JAEGER: In PJR 2.

THE WITNESS: That is the page I was looking for and thank you, because that does provide the response.

MR. WRIGHT: Thank you, Ralph.

MR. BUTLER: That was helpful, Ralph, thank you very much.

THE WITNESS: I appreciate that.

The numbers in here are derived from, as I mentioned before, those responses. Unfortunately, you know, we did prepare this report some time ago so I know where the numbers came from, I just have to find them within the context of the report so I apologize for the amount of time that it took.

Q (By Mr. Butler) Did you get information on years other than 2004 through your discovery?

A In this particular instance I don't believe that we did.

Q Okay. I mean, is that why you used 2004 data is really what I'm, to cut to the chase.

A This references the 2005 review which provided that data.

Q Right.

A And obviously there was a lot of discovery and a lot of information, but this particular answer I don't believe that we did, but it could be buried within the

context of some of the other information. This was the best data we had available at the time we prepared the analysis.

Q You didn't have data for other than 2004?

A Well, in this instance I don't think that we did.

Q I was trying to understand if you had the five-year average for the costs and you used a particular year of interruptions, I was wondering why you didn't use a multi-year average for that figure.

A I'm sure we would have used the average if we had the number.

Q All right.

A I don't recall seeing the other numbers, so.

Q Now, in doing this analysis the way that you performed it was you basically allocate the costs of the total restoration work, the overhead or underground in proportion to the number of interruptions of each type.

A Yes.

Q Would you agree that that is essentially assuming that the interruptions on average all cost the same amount per interruption to restore?

A On an average basis, yeah. Yes, it does.

Q So in other words if there were differences in the average restoration cost incurred to restore overhead or

underground, that wouldn't end up getting reflected in this evaluation, correct?

A That's correct.

Q Okay. Do you know whether it is more expensive to restore underground equipment per outage than it is, or for interruption than it is to restore overhead or vice versa?

A Depends on the cause of the interruption and the type of outage. And to some extent it depends on the vintage of the equipment.

It can be, it can be more expensive depending on what the damage is and, you know, there's a variety of components that could go into that outage restoration number. The components might be, as an example in the case of underground construction if you have a direct buried cable that you have to go dig up versus a cable that's in conduit that you can pull out and pull back in without a great deal of excavation as an example.

So there's a lot of things that affect the cost. To give an overhead example say if have a pole sitting right next to the side of the road versus a pole that's sitting in a rear lot line area behind a house that's surrounded by a lot of vegetation or a marshy, swampy area, it could easily, for any given outage it could easily be more expensive either way so it would depend largely on the construction standards and how they're applied.

Q Do you have any statistics available to you for FPL or otherwise on sort of overall averages whether underground interruptions are more expensive to restore than overhead or vice versa?

A I have seen numbers and I don't have one in front of me this instant, but I have seen numbers which do indicate that underground is, has been traditionally more expensive to restore largely due to longer outage duration and that would obviously incur additional labor and so on average, underground systems tend to have fewer total outages, the outages tend to be longer in duration so consequently the cost for an individual underground outage does tend to be higher than an individual outage for overhead if you take the, if you take those average numbers.

Q Okay.

A And it's obviously due to a lot of different factors.

Q You've reviewed FPL's analysis of the operational cost differential that Mr. Koch has attached to his testimony, haven't you?

A I have.

Q And would you agree, not asking you to agree whether the figures are representative or not, but that FPL's analysis does capture by virtue of the cost, it

evaluates a differential in nonmajor event restoration costs between underground and overhead systems?

A I mean, it does capture that cost. Can you refer to a specific part of the, of the testimony because I want to make sure we're talking about the same numbers.

Q I'm not sure I'm going to be able to do that very readily, but I'm really talking just conceptually the categories of costs that would be, what would be associated with restoring overhead and underground systems, that those categories of costs are included in the amounts that Mr. Koch's evaluation compares for overhead and underground systems.

A Yes. I would agree that those categories of costs are captured. I do think that they're, exactly how they're captured and what costs are captured and which categories is where we probably differ particularly with regard to O&M costs.

Q Right.

A And the, one of the things that comes out or at least what we think is different in the numbers that we developed and the numbers that Mr. Koch has developed is on the, on the cost, the maintenance costs. Those costs are derived from historical numbers and one of the things that we're talking about here is what the CIAC charges are as associated with new equipment that is being installed.

And so fundamentally we think that the new equipment is more reliable, is going to last longer, is going to be, is going to have fewer problems and so consequently the O&M costs are going to be lower going forward.

We think that the startup O&M costs are going to capture numbers associated with older technology equipment and cable that, and installation practices that FPL along with most other utilities has, has derived a great deal of institutional knowledge in terms of application such that the O&M costs going forward will be lower.

So I agree those numbers are in there, I also, you know, basically am saying I don't believe that the numbers are representative for new installations going forward.

Q Okay. Let me ask you to turn to Table C-4.

A Uh-huh.

Q Page 4 of 8 in PJR 3.

Okay. Now, here what you have done is you've taken an estimate of the annual tree trimming costs that FPL provided and it was reflected in this order you cite here, the $71.9 million?

A Yes.

Q And then you've divided that by the miles of overhead line to come up with an annual cost per overhead line mile, right?

A That's correct.
Q And then that average, you've just multiplied it by 30 as the number of years in the analysis period, correct?
A Correct.
Q Okay. Your analysis doesn't reflect the fact that for any one particular facility the, you know, tree trimming costs aren't going to be incurred on an average basis every year, but rather are going to be incurred episodically or periodically when the end of a cycle comes; is that correct?
A You know, I would say in the way this analysis was developed that would be correct, although I think that those numbers will not, they'll be reflective of the total.
Q Okay. Would you agree for, if you're looking at what you're assuming for a new facility being installed, overhead facility that would be the counterpart to the new underground facility being installed, you wouldn't expect to see the trimming costs to be incurred for that new facility until at or very near the end of the, whatever cycle, be it a lateral or a feeder cycle that would apply, correct?
A Well, the costs are going to be incurred on a cyclical basis for any given individual facility.
Q Right. And the first --
A The overall system average and so we're talking

about an average number versus, versus an individual facility so, you know, it's kind of, a little bit of apples and oranges.

Q I understand. I'm just trying to understand what you do have in your, in your analysis.

Okay. Now, you include in your tables a Table C-5 for tree trimming based on a three-year cycle, but am I correct you don't use the number that you derive as the CIAC credit here in Table C-1 or otherwise in your recommendation on the level of CIAC credits?

A That's correct. At the time we did the original analysis the determination was still not made relative to which cycle FPL would be using. In our original analysis we used the higher, more conservative number while, depending on your perspective. However in the current analysis of the revised updated analysis we are in fact using the three and six-year cycle number because that is in fact what FPL has adopted so we're reflecting that change from the original analysis done in the original MUUC report.

In fact that was one of the things I was thinking about earlier is that was one of the other things that is different is that we are applying the appropriate level as opposed to the higher level because that, in fact that determination has in fact been made.

Q Right. Okay.

All right. Let me ask you about Table C-7 and I've skipped over C-6, there isn't a C-6 in PJR 3 and is that because you didn't make any changes to C-6?

A Let me go back and make sure I know what C-6 is.

Q This is really -- help you out, it's Page 94 of 158 in PJR 2.

A Yeah. I'm looking at it right now, I want to make sure I understand what we've got listed here.

Q It appears to be a calculation comparable to what you have on C-7 for these accounts, 583 and 593 on overhead and 584 and 594 on underground, but using FPL data instead of data for other utilities; is that right?

A That is absolutely correct. I wanted to make sure because it is clearly labeled O&M expenses FPL and that in fact used FPL numbers and that is one of the fundamental differences that I referred to earlier in speaking about the issue of what we believe the difference should be using current technology for new applicants.

Q So what you're proposing is to not use this information on FPL's system and instead substitute as the differential for O&M expenses the data that appears on Table C-7 for other utilities because in your view those utilities I guess that have had recent underground conversion you think is more representative for FPL and the FPL data, correct?

A That's correct. And I guess to clarify that we had to analyze and look at what would be appropriate numbers -- we don't question the fact that FPL has collected significant data and that FPL's data is reflected in what FPL has presented.

We do think that the combination of the way that data is derived and collected and the specific technologies associated with that data provide a cost for new applicants which is representative of what the costs have been historically for facilities that were already installed and paid for by, in the case of conversion would have been paid for by other applicants and we think those costs are not representative using current technology.

Q And so what you propose to do instead which is reflected on Table C-7 is to substitute data that you have collected regarding other utilities that's recorded in these same two, or same two sets of FERK accounts, right?

A That's correct.

Q Okay. So let's talk about C-7.

What are the utilities whose data appears here, it looks like -- first of all am I right there are two utilities that you use data from?

A That's correct.

Q Okay. And who are those two utilities?

A The specific utilities, and I anticipated this

question would come up, I believe I could provide that information subject to a provision or signing of a confidentiality agreement relative to any specific numbers within those utilities.

Q But isn't this off of FERK Form 1 data, I mean it's public information, isn't it?

A Well, actually I think some of this information -- well, I think these are FERK Form 1s, yes.

MR. BUTLER: I mean, Sheff, are you directing him not to answer the question without confidential protection for the name of the utilities that the FERK Form 1 data came from.

THE WITNESS: I'm not sure that they're from FERK Form 1 so let me be clear, I'm not sure that's the source of the data.

I do, they obviously reference particular accounts, but I'm not sure about the source of the data, so.

MR. BUTLER: Where did you get the data then.

THE WITNESS: We got them from those two utilities and again, you know, I would, you know, propose that if we want to provide that, I want to make sure that we are not going to violate any confidentiality that those utilities would require.

MR. BUTLER: Sheff, is that your instruction to

the witness is to not answer without making arrangements for confidential classification of the information.

MR. WRIGHT: Well, I need to probe a little bit, John.

Peter, I would say that if this is, if this data is from FERK Form 1 that had been filed by the two utilities in question, then it's probably not confidential information within the scope of Florida's confidential protective action.

I mean, if this is something that someone could otherwise find in the public domain and it is FERK Form 1 information on a report that has been filed with the FCRC, then I don't think it's going to satisfy the confidentiality requirements for protection.

So I, you know, if that is the case then I think you can answer the question. If there's something else, if this is not, I mean, if this is not data off of FERK Form 1 then I think you should first explain, you know, what it is.

THE WITNESS: Yeah. I'm not trying to hide anything.

MR. WRIGHT: Let me pose another question.

What is the, what is the organizational nature of the utilities involved, can you tell us, I think you

can tell us without violating confidentiality whether these are investor-owned utilities, cooperative utilities or municipal utilities.

THE WITNESS: That's why, one reason why I was considering the source of the information because these are, I'm trying to think, I think they're, they are, they are cooperative utilities so they have different reporting requirements.

MR. BUTLER: Can you tell me where they're located.

THE WITNESS: Well, I mean, they're in the southeast. They're in the southeast United States.

MR. BUTLER: Well, Sheff --

THE WITNESS: They're, let me say this, they're in the southeast, they're not in Florida.

I do want to answer the questions obviously, but I want to be careful about not, you know, and I will tell you that this data, there was another member of the project team that was responsible for getting this data. I'm not, I didn't personally collect this data, I do know that one of the members of our project team did, I'm not sure which one and so I would, you know, I would have to go back and, you know, talk amongst the project team and say who got the data, you know, can we produce this, you know, that's just the question that

locations where it has been installed on the FPL system than these utilities.

And that, I'm giving you a typical explanation, obviously I don't have the numbers in front of me, but I do know that just from general trends there are a lot of new subdivisions, new underground areas on cooperative utilities throughout the southeast where development has extended into these areas I would say within the last 15 to 20 years and so as a result of that development, they have a significant amount of newer vintage equipment.

And so I think that some of the, particularly with regard to their O&M numbers versus underground, they're going to have O&M numbers that are more reflective of a higher quantity of newer vintage equipment and one of our, one of our indications through our work is that we believe that with newer equipment and newer vintage materials O&M numbers are going to be lower because the materials and the technology is simply better so we're trying to achieve a number that is reflective for FPL's customers that are doing those conversions and installations now with the current technology so that would be, you know, what my view of that would be so, you know.

Q What percentage of the underground conversions or underground new facilities for these utilities have been installed within the last say five years, do you know?

A I don't know the exact numbers.

Q Do you know a range?

A I can't give you a range right now, I don't have the exact numbers in front of me, so.

Q If the utilities have a high percentage of their equipment quite new, underground equipment is quite new, wouldn't you be concerned that there really isn't any information in their cost structure on how much that equipment will cost to maintain as it gets old because it isn't old yet?

A Well, yeah. I mean yes, that would be a certain, I mean that is something that certainly needs to be considered when you consider the overall analysis.

That's part of the reason why I spent time going out and looking at, looking at various types of for example cable and other types of equipment that are being installed relative to what currently is being projected with regard to life span. It is entirely possible, I'm not, you know, you know, the numbers will, will develop going into the future.

One thing about predictions they're, you know, predictions are predictions so all of the technology being employed is addressing specific problems that have occurred on the underground system. As those systems age they will experience additional maintenance expenses. Based on all of the problems and the testing that's been done to date and a

comes to mind.

Literally I didn't think about this information until just before the call this morning so that's why I, you know, was not able to contact either of the utilities prior to the deposition because I actually had considered that that was one item that might be, might come up. I just didn't have the time get it done.

MR. WRIGHT: Let me propose this. I would propose that we take a five-minute break.

MR. BUTLER: That's probably a good idea, let you talk to your witness.

MR. WRIGHT: I'm going to ask you to try to contact the member of the project team who gathered this information and ask that person if they can contact the utilities and determine whether they have a, whether they would claim confidentiality of revealing their identity.

THE WITNESS: I will do that.

MR. WRIGHT: And if they do we'll take it from there. And if they don't, then we will have solved the problem.

MR. BUTLER: That's fine.

So we'll take a five-minute break, 4:15 try to come back?

MR. WRIGHT: Sounds good. Thanks.

(Off the record.)

Q (By Mr. Butler) Mr. Rant.

A Yes.

Q Before the break you were going to confirm whether you could provide the names of the two utilities whose cost information is summarized on Table C-7 in PJR 3 and from our off-the-record conversations I gather that you've not been able to confirm yet that you can release the information so at this point you're not prepared to tell me on a sort of public, nonconfidential basis the names of the utilities; is that correct?

A That's correct.

Q Okay.

A I guess just to be clear though we're not trying to conceal any information certainly. I will, I'll share with you that the, you know, the request was made that I get in touch with the project team member or members who obtained the information.

I can tell you that the, that information was obtained by Gregg Boot and I contacted him during the break and I actually caught him between other things, his schedule is pretty tight especially for the next several days, and so he indicated to me that he would attempt to get a hold of these utilities. He also said that he expected that it

would probably take several days to get a call back so, you know, we might get lucky, we might not, but he is going to endeavor to make those contacts so that we can confirm and respond.

Q Well, several days will be a problem so let's see how quickly we can get that done. And what I'd like to do is to identify --

A I'll get it done as quickly as I can, but I wanted to state that because I want to be realistic. It is possible that we might not get a hold of people until Monday and that's obviously a concern and I wanted to be fair and up front with that.

Q Okay. Thank you.

I'd like to identify a late filed Exhibit 2 that will be entitled identity of utilities whose cost information is reflected on Table C-7.

MR. BUTLER: And, Sheff, I mean if it turns out that that can be provided nonconfidentially, then obviously it will just be provided. That way you can circulate it as quickly as possible.

If it can't, then we'll have to do, treat that as a confidential exhibit.

MR. WRIGHT: Okay.

Q (By Mr. Butler) Let me ask you this to see how much good we can do on this issue if any today, Mr. Rant,

can you tell me anything about the characteristics of these companies, like say how many customers they have approximately?

A That's not, I mean, quite frankly I didn't come prepared with that information. It might be more helpful to give you -- well, to be honest with you I don't have the number in front of me.

Q So sitting here today you don't know.

A Yeah. I mean, I don't have, I mean I know that they're fairly typical utilities, but you know, and they have a mix of overhead and underground lines and they have underground subdivisions and similar construction techniques as a lot of utilities have, but beyond that I really, I would be speculating because I don't have those numbers in front of me.

Q Do you know how many miles of overhead and how many miles of underground each of them has approximately?

A Sitting here today, no.

Q Okay. Now, they are characterized as having recent underground conversion and I'm trying to understand what you intend that to mean because obviously, you know, FPL has quite a few recent underground conversions as well, but this must mean something different than just that some of the underground is recently converted.

What, what is distinctive about the

characteristics of these utilities that make them appropriate ones to choose in your mind?

A I'm trying to -- yeah. As I said they have a mix of overhead and underground lines. They use similar, for example on overhead lines they use wood pole construction, with underground lines they use similar types of equipment.

Beyond that it would be hard for me to, you know, to go further. You know, every utility that I know of in the southeast have some practices that are virtually identical and some practices that vary a little bit, but there are some significant commonalities. Beyond that general statement which I know is not going to satisfy you, it would be hard for me to characterize right now.

Q What in your mind makes cost figures from them more representative for doing this overhead/underground operational cost differential calculation for FPL than FPL's figures, what is the characteristic about these two utilities that makes them a better choice for that?

A Well, here is, I could offer this explanation.

In particular in general I did, I have indicated to you that these are cooperative utilities, cooperative utilities have, you know, as compared to FPL have experienced growth in recent years which has, particularly with regard to underground installations, FPL has probably more older vintage underground cable just by virtue of the

significant body of knowledge amongst a lot of utilities, the newer vintage equipment and technology incorporated into how it's been installed and operated and maintained is projected to last significantly longer and overall require less dollars in terms of maintenance because of fewer problems.

So there is a certain content or element of what we prepared that is predictive in nature that yes, you know, you have to look at the whole body of knowledge.

Q But you haven't, to the best of your knowledge your team didn't adjust the figures that are shown here from just what's actually recorded in these accounts for the two utilities in question, correct?

A That's correct.

Q Now, one thing, speaking of adjustments it says the overhead, it says it excludes tree trimming.

How do you know that it excludes tree trimming talking about you, Peter Rant?

A Well, I mean, when the data was collected, I know that when it was put in here specifically that was something that was intended to be taken out of these numbers. So I take it that the project team member that put this table together removed that number.

Q Did you ever confirm that he or she did remove it?

A Specifically?
Q Yeah.
A Well, I trust the other members of my team.
Q But you didn't confirm it, you didn't look to see that their calculation properly removed tree trimming costs?
A It didn't occur to me because it was indicated as not having that number in it.
Q So you haven't actually reviewed the detail of how people put these costs together, you got a figure from your team and then you used it in your table?
A I work as part of a project team. As any project team we all had a variety of responsibility in preparing the report. I have absolute confidence if the number is presented without tree trimming it's the number without tree trimming.
Q Do you know who would have made that calculation?
A I indicated earlier that the data when I checked during the break, that that specific data was gathered by Gregg Boot.
Q Okay.
(Whereupon, Mr. Rubin left the conference room.)
Q (By Mr. Butler) Do you know the average age approximately of the overhead equipment that was in, that's

reflected in the two utilities's data for Table C-7?

A No.

Q Okay. You don't know whether that's extremely aged equipment that might be experiencing especially high O&M costs?

A No, I don't. I don't know the answer to that. I don't suspect that, but I don't know the answer.

Q Okay. Let me ask you to turn to Table C-9. And this is a calculation of revenue losses, this is the nonmajor event, this would be just sort of year in, year out the expectation of revenue losses that result from customers being out of power for periods of time, right?

A Yes.

Q Okay. And it looks like what you've done is you've taken a number of customers without power for an average duration first in minutes and then I guess converted that to hours and then I assume you multiplied those two together and then have some average kilowatt hours per hour used for the system to derive a total number of kilowatt hours that were sort of not, not sold because the customers were out of power in that period, right?

A That's right.

Q Okay. Now, did you take into account at all in this data what I'll call a rebound effect, in other words if somebody's power is off for 20 minutes, when it comes back

on that their air conditioners will have to work for a while harder than they had in order to make up for the heat gain in the house during that outage period?

A No, we didn't.

Q Okay. Or similarly that the pool pump will stay on 20 minutes longer at the end of the day because it was off during that time period?

A No. These are strictly based on average numbers.

Q Well, they're averages, but they're not averages adjusted for any sort of rebound; is that right?

A That's right. We didn't, you know, you can see that, we hadn't presented any adjustment factor and so there is no adjustment factor on there.

Q Okay. Do you have any opinion on how substantial that adjustment factor should be, or would be?

A I haven't calculated a number. Certainly there's probably some effect. I don't believe it is a large effect, but I haven't calculated the number.

Q And where did you get the data on the customers without power, duration hours, average kilowatt hours, total?

A That came from the same series of discovery that we talked about before. I'd have to go back to a specific page, but it came from that discovery.

Q Okay. To divide this up between overhead and underground you have developed overhead factors and -- well, you've developed an overhead factor, right, and that overhead factor is .878, correct?

A Correct.

Q How did you derive .878?

A I believe that's derived from the outage numbers, but I have to go back and look, but it's tied back to the outage numbers.

Q But you would agree there's nothing on Table C-9 that would suggest how you did that, where you got the .878, is there?

A No, there isn't.

Q What you did is you took the, I guess the five-year average of these sort of unadjusted average kilowatt hour losses and then you applied this overhead factor to conclude that 33, 337 million out of 384 million I think, is that right -- no. It's 33 million out of 38 million were a, were attributed to overhead outages, right, and the remainder I guess would be obviously underground outages, right?

A Right. And, and that number ties back to customers, I know it ties back to customers, so. But that's correct.

Q Okay. And then you multiplied that by something

that is identified here as either PC minus fuel or PC dash fuel, what is that?

A I know that it's an adjustment for the fuel component.

Q It's a charge of some sort, right, I mean you're developing 33 million kilowatt hours times a charge of .045 dollars per kilowatt hour I assume, and then get $1,519,000?

A Correct.

Q But do you know what the, how did you develop the .045 dollars per kilowatt hour, what's in that and not in that?

A That's the, that's the cost and that is with the fuel deducted out because the fuel charge is a pass through.

Q And do you know where you got that data?

A I mean, it came from, I know that it came from FPL's rates and again I, you know, I, I know that it came from FPL's rates. I know that it's in this report. I do apologize because this, this being, it's been about three years since we prepared the initial report, but that is the rate that's in there and I'm not sure where within our exhibit that appears, but that is FPL's, that's directly from FPL's rates. That's an average charge.

Q I understand the challenge about going back in

time, but just in fairness I will point out that this is PJR 3 I'm asking you about, not PJR 2 and it says that it's Updated Power Services Analysis, so we're talking about something that you updated not very long ago, didn't you?

A Well, let me be clear.

We updated the, the overall Table C-1 to reflect specific items that changed. We did not update, if you notice in this analysis, these numbers are numbers going, that were used in the 2006 study.

Q If you didn't specifically update, you didn't really go back and pay it much attention apparently.

A Go back and update that, just to be clear, we did not want to, some of these numbers are derived from specific discovery and you'll agree that we, we didn't want to go back through the process of discovery relative to updating specific numbers that were not, you know, it would have been a significant effort to go back and get those numbers by us and by FPL.

We think that the numbers within the context of the year in which they were done are representative so you're correct, I didn't go back and revisit specific numbers that did not have to be I guess rerun, in other words if nothing changed relative to this analysis.

Q Okay. Now, what you end up with ultimately is you take your $1,520,000, you divided by the line miles and get

a dollar per mile of average lost revenues because of outages by your calculation, right?

A Correct.

Q It's $37 per mile and then you multiply that by 30 to get your 30-year total of $1,109.

A Correct.

Q Well, let me ask you this.

There doesn't seem to be anything on here that shows a differential that's sort of the total lost revenues by your calculation for overhead, but by this logic there would be somewhere, roughly 12 percent instead of 87 or 88 percent of the total lost revenues would end up being underground, right, you'd have some lost revenues for underground outages as well?

A That's correct. And I do think it's factored into, I think that the overhead factor accounts for that.

Q No. The overhead is how much is overhead, but the underground would exist as well. Wouldn't a differential between the two be the difference between the lost revenues associated with overhead compared with the lost revenues associated with underground so in other words you stopped this one step short of the calculation?

A No, I don't think we stopped short of the calculation. Again, I think we accounted for it within the calculation.

Q Where, show me where. It looks to me your calculation simply identifies how much lost revenues that there are overhead because you're taking the total lost revenues from the system for the year and attributing 87.8 percent of it to the overhead and just sort of by, you know, simple math the remainder would be attributed to underground, but there's nowhere here that the underground is shown as a reduction of this total to get a difference between the two.

MR. WRIGHT: I'm going to object to the form.

THE WITNESS: Yeah.

MR. WRIGHT: Peter, you can answer if you want, but I'm objecting to the form.

MR. BUTLER: Do you agree with the assessment that I just made, Mr. Rant, and if you don't please explain why.

THE WITNESS: Well, I don't because I believe we have accounted for it.

Additionally you do have, you do have the other problematic part of doing any analysis relative to overhead and underground revenue loss is you look at causes of outages and where they are and you have underground areas that are served from overhead areas.

So for example if you have revenue lost due, on underground lines that are in fact revenue losses that

may be caused by overhead lines. So, because of the nature of the way the system is built so it's somewhat difficult to do the analysis.

Having said that the factors that we've applied we feel are representative and do account for those differences. And the factor is tied back to the outage causes and number of customers so again, I do believe that we've accounted for an appropriate number so I disagree with your assertion.

MR. BUTLER: Okay.

Q (By Mr. Butler) Then tell me how you came up with the factor, you just made an assertion yourself that seems at odds with your earlier statement that you don't know how the .878 was derived, how was that derived, the .878 factor?

A I know we looked at the outage causes, let's see.

MR. WRIGHT: I can speed the answer to that one up if you'd like.

MR. BUTLER: No. I would like to see if the witness knows.

MR. WRIGHT: In fact he's already answered that question in response to an earlier line of questioning.

MR. BUTLER: Sheff, I'd appreciate it if you'd stop coaching the witness.

MR. WRIGHT: I was not coaching the witness, John.

THE WITNESS: I am referring back to and, and the number has been derived from discovery specific to FPL and I'm referring back to Page 111 of 158 in PJR 2 in which specific outage cases and interruptions were identified.

Additionally that, that those can be allocated and I believe if we add the numbers they'll come up, but those are basically allocated to specific interruptions and customer interruptions that are tied back to the overhead system so you know, that's where it comes from, but again, you know, it's, it's difficult to go back through here, but that's where the numbers come from, FPL's numbers.

Q (By Mr. Butler) If, you pointed to Page 111 and you'd agree those are customer interruptions, that's not, that wouldn't be giving you inside into the duration of those interruptions, correct?

A That's correct.

Q So it couldn't be calculated just from Page 111. Would you agree?

A That's right.

Q Do you know what other information in the discovery was the basis for the calculation? And if you

don't, that's fine, just say that you don't and I will move on.

A I will make this easy, I'm going to say I don't right now.

Q Okay. One other question I wanted to ask you that I had forgotten when you were going through the tables on the tree trimming expenses, Mr. Rant, would you agree that the analysis of operational cost differentials that FPL has performed does include with it a calculation that is reflective of tree trimming costs, the difference in tree trimming costs between overhead and underground facilities?

A You're asking whether or not FPL has accounted for --

Q For tree trimming, for the difference in tree trimming costs associated with overhead versus underground facilities.

A I'd agree with that.

Q Okay. In your professional experience, Mr. Rant, have you, have you had any involvement during your career in doing utility cost accounting?

A As an accountant?

Q Yeah.

A I'm an engineer. I have worked on a variety of different projects related to utility cost accounting and cost estimation, but you know, if you're asking me have I

worked as an accountant for a utility no, I haven't.

Q Okay. Do you have any information beyond what we've already discussed and what appears in your testimony relative to the issue of reduced operational costs for new generation underground equipment as opposed to older generation underground equipment?

A Can you clarify what you mean by operational costs.

Q Well, as that term is being used in this docket.

I'm just trying to understand, you've got obviously some comments in your testimony, you have some specifics in what we've discussed in the schedules, I just want to know if there's anything else that you're aware of that you would intend to refer to at hearing as evidence of differences, specific quantification of differences in operational costs for operating new generation underground distribution equipment as opposed to older generation.

A I'm not sure I understand completely what you're asking, I mean, I've indicated that there are certain aspects of new generation equipment which have incorporated, you know, technology that makes certain operations of newer equipment more efficient. There are a lot of different components to those costs. So, you know, it would be, I guess I'm not really sure how to answer your question. If you're asking am I going to present something differently

that I haven't already presented, no.

Q Well, what I'm really trying to get at is this.

One of the things that's obviously a challenge for us and I think it's a challenge for you, is that if it's correct that the new underground equipment is more efficient, requires less maintenance, how to quantify that, what are the operational costs for newer generation equipment, how different are those from the operational costs for older generation equipment and I'm really trying to ask about the quantification.

Do you have information other than what's reflected in for example Table C-7 that we discussed at some length that you contend shows a quantification of that, sort of the effects of looking at operational costs for newer generation underground equipment as opposed to older generation?

A I don't have additional information that I haven't already presented.

Q Okay.

A I mean that's, I presented the information that I've presented and I think it stands on its own. You know, very specifically you have, you have, I talked about for example placing cable in conduit. There are a lot of other aspects to include the ways in which for example FPL is employing technology today which does, which will have a

positive effect on operational costs.

For example locating facilities, and this is going to apply to both overhead and underground, locating facilities on the front lot line versus the rear lot line has a significant benefit. So for example in the case of a conversion project, FPL will move facilities that are on the rear lot line to the front lot line as part of the current operating practice.

Well, clearly a crew moving down the street trying to contend with any problem that comes up is going to have a much easer time. Application of things like faulty circuit indicators so that literally, you know, one guy in a truck can identify locations for outages and trouble shoot systems is a significant cost savings. These are all practices that are continuing to evolve and FPL is incorporating those practices within, you know, at least the, in the context of the things that I've seen, is incorporating those practices into the newer construction.

So, you know, if you have for example one guy in a truck versus three guys trying to find a problem with lots of different equipment, it's going to save a lot of money and I think that those costs are continuing, will continue to evolve in a positive way.

Q Okay.

MR. BUTLER: Sheff?

MR. WRIGHT: Yes, John.

MR. BUTLER: I need to confer with my expert, I think I'm just about and may be done, but let me take five minutes and do that and then I will finish up.

MR. WRIGHT: That's great, John. Take the time you need.

I will have a few questions on cross, but only a few.

(Off the record.)

MR. BUTLER: Sheff, and Mr. Rant, I think really the only thing that I have that I'd like to ask as some additional information on our late filed Exhibit 2 is can you, would it be possible to include on there confidentially or not as it needs to be, but beyond the names of the utilities the number of customers that they have, the total expenses that they have for these overhead and underground accounts that you've shown here, the number of miles of, you know, underground and overhead facilities, that I assume is what was used to develop the expense per mile here and if there is any information on the vintaging of the overhead and underground equipment, how new any of it is that you have, we'd like to see that.

The last one I'm suspecting you may or may not have, I'm thinking the first of those additional

categories of information ought to be available.

THE WITNESS: Is that the whole list.

MR. BUTLER: Yes.

THE WITNESS: Can I recap that.

MR. BUTLER: Sure.

THE WITNESS: What you would like to get as soon as we can get it would be, if possible the name of the utilities, the number of customers, the total expenses and I'm, are you referring I guess to the total O&M expenses.

MR. BUTLER: Yeah. The total expense in these two sets of accounts that you've listed here, you know, the 583, 593 on the one hand and the 584 and 594 on the other hand.

THE WITNESS: Okay. And underground and overhead facilities miles if we can get that, basically what the breakdown is.

MR. BUTLER: Right.

THE WITNESS: Then also if we can get it the vintage, the relative vintage of those facilities, how old, how new.

MR. BUTLER: That's right.

THE WITNESS: And, you know, I mean I certainly will endeavor to get that information.

MR. BUTLER: Yeah. And like I say, I think that

the total expenses in those account categories and the facilities miles you must have because it looks like that's what you would have to develop those costs per mile that show up on here. The other I'm not as sure whether you'll have, or be able to get.

THE WITNESS: Yeah. And again, I'm going to have to go, I'm going to have to dig somewhat. I do not have that information specifically in my file or I would have provided it and, but if it can be produced we will produce it.

MR. BUTLER: Okay.

With that I have no further questions.

Thank you.

MR. JAEGER: Sheff, this is Ralph. I have about four questions or so, do you want me to ask mine before you.

MR. WRIGHT: Please do. Have at it.

MR. JAEGER: I just wanted to make sure.

CROSS-EXAMINATION

BY MR. JAEGER:

Q Good afternoon. I just got four questions.

First of all are the values presented in the revised Table C-1 nominal or net present value?

A Well, they, they are -- well, they're present value to the extent that we assumed the, if you can see in

the analysis that we did, obviously since we are multiplying them out, we're essentially assuming that the escalation of discount rates are the same.

Q On Page 9 Line 15 of your testimony, could you turn there.

A You said page --

Q I said Page 9 Line 15. I just wanted you to get on your testimony on Page 9.

Are you there?

A Line 15. Can you, beginning with --

Q There should be a credit of 115,000, that's the number I'm wanting you to look at.

Are the values presented in your testimony, specifically the $115,160 per pole line mile nominal or net present value?

A Oh, I mean, those numbers are derived in the same manner as the numbers on Table C-1 so again, assuming the escalation discount rates are the same, the number I would point out -- well, I would point out that the revised analysis is not reflected in the number $115,161, that the revised analysis that we just submitted to correct that error in the litigation changes the number to $122,189.

Q So that would be corrected in that revised prefiled testimony that you're going to file tomorrow?

MR. WRIGHT: Yeah. This is Sheff Wright, just to

clarify.

You're absolutely right, Ralph, and we discussed, you and I discussed earlier today there are six other corresponding changes that drive off the change in the litigation cost number that we need to correct from C-1, we decided to wait just in case anything else came out in the deposition this afternoon to file the revised testimony tomorrow.

It will be filed and I've got a way to shade the new numbers, I will also explain, we will also explain in the cover information exactly where and what the changes are, it will be easily identifiable.

MR. JAEGER: Well, what relationship is there between either the 122 or 115, whatever it's going to be, presented in your testimony in Exhibit PJR dash 13.

MR. WRIGHT: I'm sorry, Ralph, I lost track there, would you simply repeat the question.

Q (By Mr. Jaeger) We don't see how that number was used in the exhibit.

What is the relationship between that number, the 115 or whatever, if it changes to 122, presented in your testimony and Exhibit PJR 13.

A It sounds like really what you're wanting to know is how the percentages are applied in PJR 13, is that what you're asking?

Q Just one minute.

Where is that dollar credit per line mile?

A Oh, really PJR 13 addresses the URD analysis and this, this difference is reflected in the, I guess in the percentage analysis so it's, I could see where it might not be clear how that flows through, but what we did in the PJR 13 is we reduced -- in fact let me see if I can get the specific explanation.

Sorry, I'm looking for a specific piece of paper here.

Q Can you get that in a late file, can you explain that in a late file?

A I can if you'd like. I think I've got the explanation incorporated, I just have to lay hands on it, but I can do that. There are certain adjustments for the URD that have to be accounted for, so.

Q Okay.

MR. JAEGER: I'm going to let Connie name the exhibit because she was handing it to me, is the --

MS. KUMMER: Is the relationship of the number shown on Line 15 on Page 9 to the calculations and the charges shown on the revised PJR 13.

THE WITNESS: The relationship between the number on Line 15 which is now the 122,000 number.

MS. KUMMER: Right. To the calculations provided

in the revised PJR 13. We're just trying to find where that number flows through.

THE WITNESS: Yeah. And it, unfortunately I think I've got myself caught up in the fact that I've got this revised number and I want to make sure that I use the correct numbers to flow through.

MS. KUMMER: So a late file might be easier.

THE WITNESS: It probably would be. It does flow through and the way it flows through is in the, in the percentages that are applied on the, on the nonstorm number.

Particularly, I mean specifically the percentage if you were to look at the, at the backup sheet, not the, not the summary table that's reflective of the FPL tariff sheet, but the backup sheet which shows the calculation, the first number under nonstorm is 11.49 percent of the cost differential number which is, the way that flows through is we adjusted that number for the, obviously to take out the components that aren't a part of that. So it doesn't include the storm and it doesn't include, the vegetation number for example percentage wise from Table C-1 is reduced by 50 percent and that corresponds to FPL's methodology of adjustment for vegetation as an example because it's a different, it doesn't incorporate all the other vegetation

issues.

MS. KUMMER: I'm, I'm sorry, it's just late and my brain isn't working like we would like for it to.

THE WITNESS: I'm probably suffering from the same thing.

MS. KUMMER: So let's leave this as late filed Exhibit 3 and let you explain it more completely showing us the calculations. I think that will be easier for all of us.

THE WITNESS: Sure.

MS. KUMMER: Thank you.

MR. JAEGER: That's all we had, Sheff.

MR. WRIGHT: Okay. Thanks.

CROSS-EXAMINATION

BY MR. WRIGHT:

Q This I think is just clarifying the, a clarification on something I just misheard much earlier, but somewhere along the line, Mr. Rant, Mr. Butler was asking you a question about the insulation factors in the, I think the very first document that we've looked at which was the Excel spreadsheet that's now been marked as, as Exhibit 1 and then he was also asking you to discuss that relative to I think Table I-4 in your exhibits which is Page 147 of 158 of your Exhibit PJR 2 so if you could look at those two -- it's not, I'm sorry, I confused myself.

It's not the Excel spreadsheet, it's just Table I-4 of the, of your exhibits, PJR 2 which is at 147 of 158. If you could turn to that I just want to ask you a question.

A I'm not -- well, I think --

Q Do you have your big exhibit book?

A I do.

Q Okay. If you'll get into Exhibit PJR 2 which is the 2006 study.

A Right.

Q And then turn to what is identified as Page 147 of 158 in the header.

A Okay.

Q You there?

A Yes.

Q Okay. You and Mr. Butler I believe were having a discussion about the CPI and the PPI and my question is simply is the PPI shown here used in any way in that Excel spreadsheet or was -- answer that question. The producer probably sent that.

A The, this is the spreadsheet --

Q The one that's been marked as Deposition Exhibit 1 the header of which says Table I-8 escalation rate details.

MR. BUTLER: Sheff, while he's looking for that I will represent to you I did not ask Mr. Rant about Table I-4.

We had a discussion on the metals escalators and I think he had referenced Tables I-5, I-6 and I-7 for it.

MR. WRIGHT: Okay. Maybe we can short circuit this.

I thought somewhere you were asking him about PPI and he answered in terms of CPI and I, and I wanted to make sure there was no ambiguity there.

THE WITNESS: I'm not sure that that, the question I recall was relative to using CPI I think.

MR. WRIGHT: Okay.

Q (By Mr. Wright) Let's, then I don't think, I don't think there's any ambiguity. Like I said, I probably misheard something and just wanted to make sure that there was not an ambiguity.

A I mean, that's what I recall. I mean, I recall that that was the question relative to CPI.

Q Okay. With regard to the Excel spreadsheet, Table I-8 escalation rate detail, Mr. Butler asked you some questions as to why you didn't use the heavier weight of labor or other factors in calculating particular, the weighted escalation rates for the different cost categories and I have a simple question for you.

Do you believe that the numbers represented in the analyses in your exhibits are reasonable, reasonably

accurate and appropriate as of today?

A I mean, yes. Because again, because we were looking at this analysis over the course of the entire lifecycle of the, of the installation so yes.

Q I want to ask you a couple of questions about what is essentially PJR 13, if you could look at that.

MR. BUTLER: Are you looking at the revised one or the original one.

MR. WRIGHT: I'll try to get to the revised one and like all of us I'm sure I have too many pieces of paper here and I'm having a little trouble, but I know that I have it, it's just a matter of getting to it.

It was in plain sight, but I now have it.

Q (By Mr. Wright) If you could look at the last two pages, Pages 3 of 4 and 4 of 4 of revised Exhibit PJR 13.

A Okay.

Q At one point I believe that Mr. Butler asked you a question to the effect that isn't it true that, that for every lot size an applicant would get more of the storm restoration cost credit than using a straight line curve and I think you said yes.

Do you recall that exchange?

A Yes, I do.

Q Okay. Is that an accurate interpretation of these graphs?

A Looking at these graphs I think that, I do see one thing on here that I think may not be right or misleading, the label indicates this is URD credit, this is in fact URD charge. So I'm just looking at this from that standpoint so can you repeat the question as far as specifically which number is higher or lower because I'm a little confused right now.

Q Well, you know, and I'm trying to resolve the confusion without leading you so did you just say that the access labeled URD credit is wrong or is that right?

A I think it's wrong. I think it's supposed to be charge, URD charge.

Q Okay. And if given the answer would it, would your answer to Mr. Butler's question earlier today change?

A I'd have to recall what I was asked. I believe -- well, I was asked does this reflect, does this graph reflect a higher charge -- I'm sorry, a higher credit than if it were a straight line.

Q That's what my notes indicate and now I'm asking you does the fact that you believe or realize that the access is mislabeled change that answer?

A This, yes, it does. Because I know that when I looked at this I was thinking in terms of credit, but in terms of charge a straight line between the endpoints would be below the curve. So in fact I think I may have answered

that question incorrectly, this would result in actually a higher charge for the customer as opposed to a straight line in the context of the tier two customers. I think I've got that right, it's a little confusing because of all the double negatives.

Q Yeah. And I'm going to apologize in advance for that, but I'm going to ask you would it clarify things if based on your previous answer you were to provide further revised URD tables for Pages 3 and 4 of 4 that have the access properly labeled?

A It would definitely clarify it, it would clarify it for me because I know when I looked at it it confused me, it was something that tripped me up.

Q We're going to endeavor to do that.

I have one more question on this line.

You and Mr. Butler had a series of, a conversation there for a few minutes about the fact that you used a curve instead of a straight line and my simple question to you at this moment is would a straight line determination of the tier two charges between the tier one and tier two values be acceptable to you?

A I think it would be. I mean, what we presented was, obviously what I, you know, what I felt was a reasonable representation or distribution of those charges.

Obviously what we are seeking is a sliding scale

and so, that is representative. I think a straight line would be acceptable, but again, actually that probably looks like it would result in lower charges.

MR. WRIGHT: That's all I have. Thank you.

And we will get the other labeled access exhibit filed tomorrow morning.

MR. BUTLER: All right. Before we all sign off while I have counsel for every one available here, I'd like to explore the possibility of having some additional time for FPL to file its rebuttal testimony.

I mean, we really have been kind of put behind the eight ball by the fact that there have been these revisions to the testimony and the fact that, you know, one of the calculations we consider pretty important, the one that appears on C-7, we're going to have some additional delay getting information on the utilities whose information appears on there.

We'd like to have some additional time. I don't know, looking at the schedule we've got our prehearing conference on the 18th, is that right, Ralph? I guess that the, at the least we would like to have until the end of next week instead of I think currently the due date is the middle of next week.

MR. JAEGER: Due date is the 14th, that's the, Thursday of next week. We pushed it back from the 11th

to the 13th and then to the 14th so right now it's the 14th.

MR. WRIGHT: John, we have no objection.

MR. JAEGER: Is there any way you could tell us in advance what exhibits you're going to have.

MR. BUTLER: I'm sorry?

MR. JAEGER: Is there any way to know in advance what kind of exhibits you might have to the rebuttal testimony.

MR. BUTLER: We may, yeah. That's something we probably can do. You're interested in the information for the prehearing order.

MR. JAEGER: I want a draft prehearing order and of course the prehearing officer would like to have it more than the day of.

MR. BUTLER: All right.

MR. JAEGER: And I'd like to have it to everybody actually by midday on Friday.

MR. BUTLER: With the sort of caveat that I don't think we can 100 percent commit that it will be the full list of exhibits, but we can certainly endeavor to get you that before actually the testimony is filed.

MR. JAEGER: You can add, if you know by that Monday of the prehearing --

MR. BUTLER: Yeah. We just have to add it. We

can certainly try to get that for you.

MR. JAEGER: Okay. I guess the 15th with these changes the staff won't object to that and we'll still shoot for the prehearing statements next Monday.

MR. BUTLER: Okay. And, Marlene, do you have any objections to that.

MS. STERN: No, I don't have any objection.

MR. BUTLER: Okay. Thank you.

MR. JAEGER: Are we done then?

MR. BUTLER: I think that's all that we have.

MR. JAEGER: And our Court Reporter, we've got your Court Reporter's number and if we decide we want this deposition or Shank's deposition we'll let the Reporter know.

And neither Erik nor I will be here tomorrow, but Lisa Bennett will be sitting in for us.

MR. WRIGHT: So we'll read and sign and then we'll turn it around promptly when we get the deposition.

MR. BUTLER: Okay. Thank you every one and that I believe concludes the deposition.

We do want to order it and if we can get it as quickly as we can, perhaps a rough draft by Tuesday.

(Deposition concluded at 5:30 p.m.)

(Reading and signing of the deposition by the witness has been reserved.)

C E R T I F I C A T E

STATE OF FLORIDA

COUNTY OF PALM BEACH

I hereby certify that I have read the foregoing deposition by me given, and that the statements contained herein are true and correct to the best of my knowledge and belief, with the exception of any corrections or notations made on the errata sheet, if one was executed.

Dated this ___ day of _____, 2009.

_____

PETER J. RANT, P.E.

ERRATA SHEET

IN RE: Petition for Approval CR: Colleen M. Gruff-Brown
DEPOSITION OF: PETER J. RANT, P.E.
TAKEN: Thursday, May 7, 2009

Do Not Write On Transcript - Enter Changes Here

PAGE	LINE	CHANGE	REASON

Please forward the original signed errata sheet to this office so that copies may be distributed to all parties.

Under penalty of perjury, I declare that I have read my deposition and that it is true and correct subject to any changes in form or substance entered here.

Date: _____ SIGNATURE OF DEPONENT: _____

REPORTER'S DEPOSITION CERTIFICATE

STATE OF FLORIDA)
COUNTY OF PALM BEACH)

I, COLLEEN M. GRUFF, Registered Professional Reporter, certify that I was authorized to and did stenographically report the deposition of PETER J. RANT, P.E.; that a review of the transcript was requested; and that the transcript is a true and complete record of my stenographic notes.

I further certify that I am not a relative, employee, attorney, or counsel of any of the parties, nor am I a relative or employee of any of the parties' attorney or counsel connected with the action, nor am I financially interested in the action.

DATED this 11th day of May, 2009.

Colleen M. Gruff-Brown, RPR

May 14, 2009

Power Services, Inc.
Peter J. Rant, P.E.
1616 East Millbrook Road
Suite 210
Raleigh, NC 27609

RE: Petition for Approval

Please take notice that on Thursday, May 7, 2009, you gave your deposition in the above-referred matter. At that time you did not waive signature. It is now necessary that you sign your deposition.

Enclosed please find a courtesy condensed transcript with errata sheet.

If you do not read and sign the deposition within a reasonable time (i.e., thirty (30) days unless otherwise directed) the original, which has already been forwarded to the ordering attorney, may be filed with the Clerk of the Court. If you wish to waive your signature, sign your name in the blank at the bottom of this page and return it to us at 515 North Flagler Drive, Suite P-200, West Palm Beach, Florida 33410.

Very truly yours,

Colleen M. Gruff-Brown, RPR
Esquire Deposition Services

I do hereby waive my signature:

.....
PETER J. RANT, P.E.

cc: Via transcript John Butler, Esq.
Ralph Jaeger, Esq.

Table I-8 Escalation Rate Detail

	Labor Escalator	Metals Escalator	CPI Escalator	% Labor	%Metals	%CPI	Escalation Rate
Outage Restoration Reduction -- Major Events	5.5%	10.3%	2.3%	40%	60%	0%	8.40%
Outage Restoration Reduction -- Non-major events	5.5%	10.3%	2.3%	80%	20%	0%	6.45%
Reduced Revenue Loss -- Major Events	5.5%	10.3%	2.3%	0%	0%	100%	2.30%
Reduced Revenue Loss -- Non-major events	5.5%	10.3%	2.3%	0%	0%	100%	2.30%
Reduced O&M Costs -- Vegetation management	5.5%	10.3%	2.3%	60%	40%	0%	7.60%
Reduced O&M Costs -- Other O&M	5.5%	10.3%	2.3%	80%	20%	0%	6.45%
Cost of UG Locates	5.5%	10.3%	2.3%	0%	0%	100%	2.30%
Loss of Pole Attachment Revenue	5.5%	10.3%	2.3%	0%	0%	100%	2.30%
Litigation 1/							10.00%

1/ Litigation cost is assumed to increase by 10% per year

DEPOSITION EXHIBIT NO. 1
PETER J. RANT, P.E.
MAY 7, 2009

LATE-FILED DEPOSITION EXHIBIT NO. 2
PETER J. RANT, P.E.
REQUESTED BY FPL
May 22, 2009

Utility Data Used to Support PowerServices O&M Cost Analysis (2006 MUUC Report, Table C-7) and Other Requested Information

Name of Utility	A&N Electric Cooperative
Location of Utility	Onley, Va
Number of Customers	34,920 (end of 2008)

			Cost Per Mile	Differential
Overhead Line Miles		890		
Underground Line Miles		355		
O&M Costs (Excluding tree trimming, storm restoration, & UG Locates)				
Overhead	583	$133,472		
	593	$840,859		
	Subtotal	$974,331	$1,095	
Underground	584	$71,811		
	594	$121,766		
	Subtotal	$193,577	$545	$549

Relative Vintage — Precise age data is not available at this time. However, the utility is in a coastal environment subject to conditions similar to those found on the FPL system.

Note: A&N data used in the 2006 MUUC Study was originally obtained by telephone from the Engineering Department. The updated values shown above are audited values verified with the A&N Accounting Department from 2005 year end reports.

Name of Utility	Brunswick EMC
Location of Utility	Shallotte, NC
Number of Customers	78,111 (end of 2008)

			Cost Per Mile	Differential
Overhead Line Miles		2987		
Underground Line Miles		2689		
O&M Costs (Excluding tree trimming, storm restoration, & UG Locates)				
Overhead	583	$969,586		
	593	$884,592		
	Subtotal	$1,854,178	$621	
Underground	584	$726,169		
	594	$305,983		
	Subtotal	$1,032,152	$384	$237

Relative Vintage — Precise age data is not available at this time. However, the utility is in a coastal environment subject to conditions similar to those found on the FPL system.

Note: BEMC data used in the 2006 MUUC Study was originally obtained by telephone survey. The updated values shown above are audited values verified with the BEMC Accounting Department from 2005 year end reports.

A&N Differential	$549
BEMC Differential	$237
Average Differential	$393

General Notes:
1. All of the values shown above exclude tree trimming, storm restoration, and UG Locates.
2. All values are from 2005 except the number of customers as noted above.

LATE-FILED DEPOSITION EXHIBIT NO. 3
PETER J. RANT, P.E.
REQUESTED BY COMMISSION STAFF
MAY 12, 2009

Explanation of PowerServices Proposed URD Changes

PowerServices computed the non-storm O&M cost savings versus overhead lines amount to be $122,189.00 per Pole-Line-Mile (PLM) for underground conversion projects. This is the difference between PowerServices' total estimated cost differential and the estimated restoration cost savings associated with major storm events ($319,979.88 - $197,791.32 = $122,188.56.) This would represent a reduction of the otherwise applicable CIAC of 14.63% for conversion projects. The development of this value is based upon the updated computation of percentage adjustments in PowerServices Table C-1. The most direct way to explain this is to show the percentages side by side.

Base Conversion Cost Differential				$835,314.00
Conversion Benefit Adjustments to CIAC	Complete Conversion Analysis		Non-Storm Analysis	
Outage Restoration Reduction - Non-Major Events - Major events	5.6% 23.68%	$46,775.42 $197,791.32	5.6% -	$46,775.42 -
Reduced Revenue Losses - Non Major Events - Major Events	0.13% 2.45%	$1,109.25 $20,443.99	0.13% 2.45%	$1,109.25 $20,443.99
Reduced O&M Costs - Vegetation Management - Other O&M	6.28% 1.19%	$52,470.00 $9,960.00	6.28% 1.19%	$52,470.00 $9,960.00
Cost of UG Locates	-0.78%	($6,540.00)	-0.78%	($6,540.00)
Loss of Pole Attachment Revenue	-1.11%	($9,300.00)	-1.11%	($9,300.00)
Reduced Accident Litigation & Award Program	0.87%	$7,269.90	0.87%	$7,269.90
Fixed Adjustments	38.31%	$319,979.88	14.63%	$122,188.56

For the non-storm conversion analysis, the major storm event percentage is taken out yielding a percentage adjustment of 14.63% of the otherwise applicable CIAC.

LATE-FILED DEPOSITION EXHIBIT NO. 3
PETER J. RANT, P.E.
REQUESTED BY COMMISSION STAFF
MAY 12, 2009
PAGE 2 OF 2

In order to calculate the URD charges within each size of subdivision, the starting point is the FPL cost differential as listed in the table provided in FPL's tariff. The percentage credits developed are multiplied times this cost differential and these amounts are subtracted from the differential for each size and density development as defined in FPL's tariff. For the non-storm component of the calculation, the 14.63% is further adjusted from the conversion adjustment by reducing the vegetation management (VM) percentage by 50% as proposed by FPL. The 6.28% VM number thus becomes 3.14%, so the non-storm percentage becomes 14.63% less 3.14%, which is 11.49% of the FPL cost differential. The storm operational adjustment is based on the FPL proposed 25% for GAF equivalent projects, adjusted for Tier 2 and Tier 3 according to the PowerServices proposed formulas for Tier 2 and the FPL baseline percentage for Tier 3 (which is 20 percent of the GAF equivalent amount).

LATE FILED EXHIBIT NO. 30

DOCKET NOS. 080244-EI - In Re: Petition for Approval of Underground Conversion Tariff Revisions.

070231-EI - In Re: Petition for Approval of 2007 Revisions to Underground Residential and Commercial Distribution Tariff, by Florida Power & Light Company

WITNESS: THOMAS R. KOCH

DESCRIPTION: DEPOSITION TRANSCRIPT & EXHIBITS

DOCUMENT:

TRANSCRIPT & EXHIBITS OF THOMAS R. KOCH'S MAY 27, 2009 DEPOSITION

PROFFERED BY: THE MUNICIPAL UNDERGROUND UTILITIES CONSORTIUM

DOCUMENT NUMBER-DATE
05543 JUN-3 8
FPSC-COMMISSION CLERK

BEFORE THE
FLORIDA PUBLIC SERVICE COMMISSION

In re: Petition for Approval of Underground Conversion Tariff Revisions. — DOCKET NO. 080244-EI

In re: Petition for approval of 2007 revisions to underground residential and commercial distribution tariff, by Florida Power & Light Company. — DOCKET NO. 070231-EI

DEPOSITION OF:	THOMAS R. KOCH
TAKEN AT THE INSTANCE OF:	The Intervenor MUUC
DATE:	May 27, 2009
TIME:	Commenced at 10:06 a.m. Concluded at 3:48 p.m.
LOCATION:	225 South Adams Street Tallahassee, Florida
REPORTED BY:	MARY ALLEN NEEL, RPR, FPR Notary Public, State of Florida at Large

ACCURATE STENOTYPE REPORTERS, INC.
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TALLAHASSEE, FLORIDA 32308
(850)878-2221

DOCUMENT NUMBER-DATE
05543 JUN-3 8
FPSC-COMMISSION CLERK

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INDEX

WITNESS	PAGE
THOMAS R. KOCH	
Direct Examination by Mr. Wright	4
Cross-Examination by Mr. Sayler	138
Redirect Examination by Mr. Wright	142
Cross-Examination by Mr. Rubin	143
EXHIBITS	
1 Excerpt from 2005 Depreciation Study	53
2 CRC-1, pages 54 and 474	55
3 Excerpts from 2005 Depreciation Study	62
CERTIFICATE OF REPORTER	145
READ AND SIGN LETTER	146
ERRATA SHEET	147

STIPULATIONS

The following deposition was taken on oral examination, pursuant to notice, for purposes of discovery, for use as evidence, and for such other uses and purposes as may be permitted by the applicable and governing rules. Reading and signing of the deposition transcript by the witness is not waived.

* * *

Thereupon,

THOMAS R. KOCH

the witness herein, having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. WRIGHT:

Q. Good morning, Mr. Koch. I'm Schef Wright, and I represent the Municipal Underground Utilities Consortium and three other cities in these consolidated proceedings. You and I have known each other for a while. I'm going to be asking you some questions this morning and probably into the afternoon, and I would like to just discuss ground rules first.

I will attempt to ask coherent, meaningful questions that you are capable of answering. If you are confused or don't understand a question, please just say so, and I'll try to rephrase it in a way that will be

meaningful for both of us. Is that okay with you?

A. That's fine.

Q. Thanks. And particularly in the context of a telephonic deposition such as this one, it's extremely important that you give audible answers rather than nodding or shaking your head or shrugging or anything like that, so if you could please give an audible answer, that would be great. Thank you.

A. Sure.

Q. I understand you've been with Florida Power & Light Company for something like 24 years now; is that correct?

A. That's right.

Q. Have you ever worked for any other utility besides FPL in your professional career?

A. No, I haven't.

Q. Have you worked in any other job related to the electric power industry in your professional career?

A. No, I haven't.

Q. I understand from your testimony that your current position is Manager of DSM Cost, Performance and Strategy; is that correct?

A. That's correct.

Q. When did you assume that position?

A. It was February of this year.

Q. Thank you. And before that, do I have it right that you were Manager of Financial Forecasting?

A. That's right.

Q. I seem to recall that you were assigned to that position sometime in the summer of 2008. Is that about right?

A. No, it was actually in 2007.

Q. Okay. Am I right that it was in the summertime?

A. It was September 2007.

Q. Okay. Thank you. And before that, you held the position of manager of either Underground Conversions or the Underground Department; is that accurate?

A. Yes. It was Manager of the Underground Department.

Q. Okay. And from an earlier conversation, do I recall correctly that you held that position from sometime in 2006 until September of 2007?

A. That's right, from March of '06.

Q. Thank you.

A. To September of '07.

Q. Your testimony also indicates that you previously held positions as Manager of the Environmental Department - Distribution, and Manager of

Development and Planning; is that accurate?

A. Yes.

Q. What were the approximate dates that you held those positions?

A. For the Environmental Department, it was from April '05 until March of '06, and for the Development and Planning, it was from March of '98 to April of '05.

Q. In an effort to streamline things, I'll ask this question: In your experience with FPL before March of 1998, did your work responsibilities have anything to do with undergrounding?

A. No, they didn't.

Q. Did your work experience as Manager of Development and Planning have anything to do with underground distribution?

A. Not specifically.

Q. That leads me to ask the question, did it have anything generally to do with underground distribution, and if so, what?

A. Well, it was in the Distribution Department, and a lot of the work had to do with acquisitions of underground facilities or work of that nature, but it wasn't specifically for underground. It was for distribution systems in general. It could have been underground or overhead. That's what I meant to say.

Q. When you say it had to do with acquisitions of underground and overhead facilities, what does that mean?

A. We were approached on a number of occasions about acquiring facilities that were owned by others, owned and operated by others, and my group performed the analyses on those.

Q. And these others would be entities such as perhaps small municipal utility systems?

A. Sure, or particular retail customers who owned their own distribution facilities.

Q. Did you in fact acquire distribution facilities?

A. No, we did not.

Q. In your capacity as Manager of the Environmental Department - Distribution, what, if any, work did you do on underground distribution -- or related to, I should say, underground distribution facilities?

A. There wasn't anything specific to underground facilities in that position.

Q. Could you please summarize what you did as Manager of the Underground Department?

A. Yes. That group was formed as part of the Storm Secure effort, and it was focused mostly on

conversion projects, underground conversion projects, and specifically was looking at setting up the policies and procedures around doing conversions, because it was becoming more of an issue than it had been in the past. There had been very few in the past, but there was obviously, as you're well aware, a lot of interest at that time going forward, and so we wanted to make sure that we got a good set of policies and procedures in place, as well as I was part of the rulemaking process that went on at the same time.

Q. You mentioned that your responsibilities were part of FPL's Storm Secure initiative. Is that accurate so far?

A. Yes.

Q. Did you have any involvement in drafting what I would characterize as the pro-undergrounding parts of the Storm Secure document?

MR. BUTLER: I'll object to the characterization, but I suspect Mr. Koch knows what you're referring to.

MR. WRIGHT: I don't understand your objection, John. Is it just that I haven't specifically identified the FPL Storm Secure Plan document specifically enough?

MR. BUTLER: Well, if Mr. Koch knows what

you're referring to, you can confirm that with him. I'm really objecting to the sort of summary of it as pro-underground, aspects of that as sort of pro-underground. I'm just objecting to the characterization.

MR. WRIGHT: Okay. Thank you.

BY MR. WRIGHT:

Q. Mr. Koch, you know the document I am asking about; yes?

A. I'm not certain. I was going to actually ask for clarification.

Q. FPL published a document, I believe it was on January 31st, although it might have been the 30th, 2006, called the FPL Storm Secure Plan. I believe it was 10 or 11 pages long.

A. Okay. That predated my involvement in this by a couple of months.

Q. Well, you mentioned that your responsibilities included -- I think the phrase you used was that your responsibilities as Manager of the Underground Department related to FPL's Storm Secure initiative and focused on underground conversions. Is that accurate?

A. That's true.

Q. Can I understand that to mean it focused on underground conversions as a component of FPL's Storm

Secure Plan?

A. That's correct.

Q. Okay. Did you ever review the Storm Secure Plan document?

A. I'm not certain if I did or did not review the particular document that you're referring to.

Q. Okay. As Manager of DSM Cost, Performance and Strategy, do you have anything to do with undergrounding other than being pulled into this proceeding?

A. No, I don't.

Q. Okay. As Manager of Financial Forecasting, did you have anything to do with undergrounding other than being pulled into various aspects of the undergrounding dockets and proceedings?

A. No. You correctly characterized it.

Q. Okay. I understand from your testimony you have a bachelor's degree in music; correct?

A. That's right. That's right.

Q. And you also have a Master of Business Administration?

A. Uh-huh.

Q. And a master's degree in computer and information systems technology or something like that?

A. Yes, basically computer systems, but not quite as intensive on the programming side.

Q. What, if any, engineering courses did you take in your academic career?

A. I haven't taken any specific engineering courses.

Q. And would I be safe to conclude from that you've never worked as an engineer?

A. That's correct.

Q. Do you have any experience working directly with electric distribution equipment?

A. Do you mean field experience?

Q. Yes.

A. In terms of installing or operating?

Q. Yes.

A. No.

Q. And that would be correct, neither with regard to underground nor with regard to overhead; correct?

A. Correct. Yes, that's correct. The noise in the background makes it a little difficult to hear you right now.

MR. WRIGHT: Off the record.

(Discussion off the record and short recess.)

BY MR. WRIGHT:

Q. Would I be correct to infer from your previous answers, Mr. Koch, that you haven't had any direct experience maintaining either overhead or underground

distribution facilities?

A. As far as hands-on experience, I would say that's true. In some of the other things that I just described, of course, we evaluated the costs and operational characteristics for running things in terms of coming up with our cost estimates.

Q. Let's pursue that for a minute. I'll probably have more questions on it later. You just stated that you evaluated the costs and operational characteristics of facilities. Did you do any specific analyses other than the analyses that are shown in your exhibits to your testimony?

A. Could you ask that again? I'm not too certain.

Q. You made the statement in your previous response that you evaluated the costs and operational characteristics in coming up with the values for the O&M cost differential. Is that an accurate characterization of your previous response?

A. Not for coming up with the O&M costs for the operational differential. I was referring to previous work that we had done, for example, when we were looking at acquiring facilities. And in those cases, as we were putting together our costs for what we thought would be the costs for owning and operating those facilities, we

obviously did estimates, and there was discussion of exactly how we would operate the facilities and the nature of the facilities, the equipment, et cetera. But it did not play a role in the computations we're talking about here in this testimony.

Q. Okay. Well, sticking with your work in the context of those contemplated acquisitions, how did you evaluate the costs and operational characteristics of the facilities you were considering acquiring?

A. I worked with our engineering folks. I mean, we obviously looked at whatever the people who were thinking of selling to us, what they had, and then I worked with our folks on the operations side and the engineering side to come up with how we thought we might operate it similarly or differently and what the implications might be from a cost perspective, as well as, you know, manpower and that kind of stuff.

Q. Would it be accurate to say you were working with a group of FPL employees on these projects?

A. Yes.

Q. Did you come up with the actual cost estimates for operating and maintaining the facilities that FPL was contemplating acquiring?

A. Yes.

Q. And do you recall how you did that?

A. For the most part, it would be a question of -- on the operations side, let's say, it would be a question of how much did we think we were going to need to do to maintain the facilities in terms of construction man-hours, and then we would have costs obviously related to that, and then costs for materials that might be associated, et cetera.

Q. And who came up with those kinds of estimates?

A. The estimates for -- I mean, for the pieces that would have to do with the man-hours involved, mostly that would have been the engineering folks. For the costs associated with actually performing that type of work once we knew how much work we thought it would be, that would have been myself and my folks, and also involving the accounting department systems.

Q. Okay. Did I understand correctly your previous response to be that you did not consider or review the work you did back then on the acquisitions in preparing your testimony for this docket, these dockets?

A. That's correct. It's part of my background, obviously, but it wasn't specifically how these calculations were performed.

Q. In evaluating costs for the facilities you were contemplating acquiring, it was on -- would I be correct that it was an evaluation for the specific

facilities that FPL was considering acquiring in any potential transaction?

A. If I understood correctly, was it related to those specific facilities, the answer is yes.

Q. So in that context, you didn't do -- there was no reason for you to do a comparison of the facilities you were considering acquiring versus some other facilities, like overhead versus underground; is that accurate?

A. That's correct. Because there would be both overhead and underground facilities, and so it was the costs associated with each, but we wouldn't have been netting it as a differential. It would have been basically the sum total of the two.

Q. Okay. During that time, did you work with the specific distribution plant accounts involving the facilities that would go into those accounts?

A. Most of that -- it wasn't a matter of evaluations of saying which point accounts, FERC accounts would these particular costs be pointed to. That wasn't really the nature of the evaluation. The nature was coming up with the costs. Obviously, if you ultimately consummated the transaction, then you would have to book those costs into the appropriate accounts as you incurred them.

Q. Right. But I do understand correctly that that never happened; is that true?

A. That's correct.

Q. Okay. The answer to this is probably obvious, but I'm going to ask it anyway. Have you ever designed either overhead or underground electric distribution systems?

A. I have not designed them, but I have seen designs, but I have not personally designed them.

Q. How much of your MBA training involved accounting, if any?

A. Well, I mean, you obviously had to take accounting courses, and I think I had three classes, I believe, specifically related to accounting, and then, of course, kind of closely tied, a couple of classes in finance as well.

Q. Are you familiar with the distribution plant accounts within the FERC Uniform System of Accounts?

A. Yes.

Q. Are you also familiar with the distribution, operating and maintenance costs in the 580 and 590 series of FERC USOA?

A. Yes.

Q. What, if any, specific experience have you had with working with those accounts?

A. Well, of course, that was used as the basis for the differential calculations, and in the past, a couple of jobs ago, we also would do comparisons of ourselves versus other utilities relative to the levels of cost in the various accounts.

Q. What other utilities did you compare FPL to?

A. Basically any IOUs of, say, half a million customers or above.

Q. Did those comparisons produce any studies or analyses?

A. They -- well, the answer to that is yes. I'm not certain -- I mean, they were some time ago for me.

Q. And when you say some time ago, what does that mean? When was this being done?

A. That would have been in, let's say, the late '90s and early 2000 time frame.

Q. When you were doing those comparisons, were you comparing FPL values per account to other utilities' values for the corresponding accounts?

A. Yes, that would basically be a reasonable comparison. I would say that in a lot of cases, you would aggregate the accounts, because there's lots of differences between how different companies book things to given accounts.

Q. In the course of those analyses, did you do

any comparison of overhead to underground costs, either plant or O&M, as between FPL and other utilities?

A. That information obviously was included, but nothing was done as a differential cost comparison per se.

Q. So would I be correct that you didn't look at whether FPL's overhead versus underground costs were greater than or less than the corresponding values for other utilities? Is that accurate?

A. That is true.

Q. Okay. Other than the recognition that this work is part of your background, did you consider any of these analyses in preparing your testimony in this case?

A. No, I didn't.

Q. In your career with FPL, have you done budgeting for projected electric distribution O&M costs?

A. Yes, I have done budgeting, not on the aggregate level, you know, across all of distribution costs.

Q. What exactly did you do in terms of budgeting with regard to electric distribution O&M costs?

A. It would be budgeting in terms of the different departments that I was managing, those costs related to what was within that group.

Q. So by that, are you talking about the costs

for the group that you were managing?

A. Yes, that's what I'm saying.

Q. And that would be personnel costs, office costs, vehicle costs, support costs, things like that?

A. Uh-huh, capital costs, things like that.

Q. But not the costs for, say, operating and maintaining line transformers or poles or conduit; is that accurate?

A. That's correct. I didn't budget for that.

Q. Okay. I just want to ask you some basic factual questions about FPL. Am I correct that FPL's current distribution system consists of roughly 61 or 62 percent overhead and 38 or 39 percent underground lines?

MR. BUTLER: I'm sorry. Do you want to refer him to where you're getting those figures?

THE WITNESS: Give me a second and I can answer that question. I haven't done that actual calculation, but if you'll give me a moment, I could do that.

BY MR. WRIGHT:

Q. Sure. It's sort of a top of the head question at this point, but I think the answer is in both TRK-2 and TRK-4.

A. I have the answer. Roughly 60 percent

overhead.

Q. And are you getting that from maybe page 8 of 17 of TRK-4?

A. Well, I actually pulled it off of TRK-2, but it would be --

Q. Probably the same numbers?

A. Yes.

Q. Okay. Thank you. And I'll go ahead and direct you to page 36 of TRK-1.

A. Hold on a second. Okay. I'm here.

Q. Okay. That information appears to show me that something in the vicinity 63 percent of FPL's customers are served from underground facilities. Is that accurate?

A. Say the number again.

Q. I said 63 percent, which was an eyeball, but --

A. Yes, I would say that's accurate. I think this represents the services, when they say how are they served.

Q. Thank you for clarifying that. You answered my next question. And the follow-up question is, do you have any more current information than this? This is as of 12/31/2007. Do you have anything more current?

A. I do not.

Q. All right. Before I go on, I want to ask a follow-up question about something you said a minute ago. In describing your comparisons of FPL's accounting values to other utilities, I think you made a statement to the effect that utilities book costs in a lot of different ways. Is that approximately what you said?

MR. BUTLER: I'm sorry. You said different utilities book costs in different ways?

MR. WRIGHT: That was the intent of my question, John. Thank you.

A. Yes, that's my understanding.

Q. Would that be true with respect to O&M accounts?

A. Yes.

Q. And also true with respect to plant accounts?

A. Yes.

Q. In the work we were discussing a short while ago, did you have occasion to analyze or compare how FPL books, records in accounts, its costs as compared to how other utilities do it?

A. I didn't make specific analyses of that.

Q. Did you do any analyses along those lines in connection with your work associated with these dockets?

A. No, I didn't.

Q. This is kind of a holdover question from

Mr. McEvoy's deposition last week, but I just want to ask you, do you have any idea what percentage of FPL's distribution lines in miles is located in storm surge zones?

A. No, I don't.

Q. Same question. Any idea what percentage of FPL's customers are located in storm surge zones?

A. No, I don't.

Q. Do you have any knowledge regarding the frequency of outages of underground distribution facilities that are caused by flooding from hurricane and tropical storm events?

A. No, I don't.

Q. Same question, flooding from non-major storm events, non-major weather events?

A. No, I don't.

Q. You sat in on Mr. McEvoy's deposition last week, did you not?

A. I sat in on most of it, yes.

Q. Do you recall that we discussed briefly an EEI, that is, Edison Electric Institute, reliability study?

A. You would have to refresh my memory.

Q. I will do my best. Your attorneys in advance of the deposition furnished to me a document that

Mr. McEvoy reviewed, an Edison Electric Institute summary report I believe published in 2008 with 2007 data of reliability indexes and index values for a large population of utilities. Do you know what I'm talking about?

A. Is it a report that includes just the indices, like SAIDI and CAIDI and that sort of stuff, for a number of utilities? Is that what it is?

Q. Yes, and it's about 125 pages long, as I recall.

A. Okay. I haven't reviewed that document. And I'm clarifying that I don't have it here either.

Q. Okay. Well, the more relevant thing is that you haven't reviewed it, so that's fine.

Are you aware, or do you know -- I should say it this way. Do you know whether EEI evaluates outages as to whether they're overhead or underground?

A. No, I don't know.

Q. Do you know whether FPL classifies outages according to whether they are associated with events on underground versus overhead facilities?

A. I know we classify outages in terms of their cause. I'm not certain if we classify them on overhead and underground.

Q. With regard to the classification by cause --

and I apologize. This may be redundant, but I'll try it anyway. With regard to the classification by cause, do you know whether there are distinctions made as to outages caused on underground facilities versus overhead facilities for the same cause, say, vegetation or animal or whatever?

A. I don't know the answer to that.

Q. Are you familiar with a one-page -- actually, it was a two-page document that included a table and some narrative that FPL submitted in support of its GAF waiver in Docket 060150? Basically, it showed a range of estimated cost savings for different scenarios for avoided storm restoration costs. Are you familiar with the document I'm talking about?

A. Hold on a second. I vaguely remember it.

Q. I can tell you one place I know you can find it, and that is, the table to which I am referring is reproduced as Exhibit PJR-7 to Mr. Rant's testimony in this case.

A. Okay. Hold on a second.

Q. Sure.

A. PJR -- okay. Yes. That's what I thought you were referring to, and, yes, I am familiar with this document.

Q. Okay. Did you participate in preparing it?

A. Yes, I did.

Q. What did you do in helping to prepare that document?

A. I prepared the document. I mean, for the most part, I did it.

Q. Good. And do I understand that document correctly to show that FPL's estimates of avoided storm restoration cost savings from undergrounding ranged from approximately 20 percent of the otherwise applicable CIAC to approximately 41 percent of the otherwise applicable CIAC, depending on assumptions?

A. Yes, that's correct.

Q. Do you have in your mind an approximate percentage of new distribution facilities on FPL's system that are installed underground versus overhead?

A. Of new distribution facilities?

Q. Yes.

A. I think if you look at either one of TRK-3 or 4 -- I just happen to have 4 here as I'm looking at it.

Q. Well, I'm looking at page 8 of TRK-4.

A. And page 8 is exactly where I was going. I think that -- I mean, I haven't actually done the math here, but basically the change which you see over time for one versus the other would I think be the appropriate way to do that, and I would expect, just

sort of eyeballing it -- rather than eyeballing it, let me do it. Bear with me a minute.

Okay. It looks like over this time period, about 40 percent of the facilities installed in line mile were overhead and 60 percent roughly were underground.

Q. Do you have any knowledge as to more recent experience? Do you think the underground percentage is going up, say, in 2008 and 2009?

A. I don't know the answer to that.

Q. All right. You mentioned in connection with your earlier work that you did spend some time working with municipalities who were interested in undergrounding; is that accurate?

A. When I was in the Underground Department? Is that your question?

Q. I'm trying to think which position it was. Yes.

A. Yes.

Q. My question for you is, have you ever in your experience encountered a city that wanted to convert existing underground to overhead facilities?

A. No, I'm not aware of that. That doesn't mean it hasn't occurred, but I'm not aware of that. That wasn't the function of that organization. It was

converting in the other direction.

Q. I understand.

Have you done any analyses of the number of faults, electrical faults that have occurred on FPL's overhead and underground distribution system?

A. I have not personally done that type of analysis.

Q. Have you reviewed any such documents in connection with your work in these dockets?

A. No, I haven't.

Q. In the next few questions, I just want to ask you what you know about certain of FPL's overhead installation practices.

A. Okay.

Q. Let me back up and ask a couple of other background questions first. What, if anything, have you done in terms of surveying or viewing FPL's distribution facilities in the field?

MR. BUTLER: Viewing?

MR. WRIGHT: Viewing, looking at, riding the lines.

MR. BUTLER: When he comes to work? What are you referring to? Do you mean for a particular work purpose? Can you define your question a little bit more succinctly or completely?

MR. WRIGHT: Well, I'll ask that question.

BY MR. WRIGHT:

Q. In terms of your work responsibilities, what, if anything, have you done in terms of viewing, inspecting, surveying FPL distribution facilities in the field?

A. Well, in terms of the underground conversion work, I've gone out into the field and looked at the facilities that were to be converted, as well as the underground facilities that were being installed as part of that conversion.

Q. Would that be the Jupiter Island project?

A. Jupiter Island, would, yes, be an example of that.

Q. Okay. Others?

A. Well, that would probably be the best example, would be Jupiter Island.

Q. Well, being involved in the same business you are in to some degree, I ride down the street and I look at lines. So in a more general sense, when you're on your way to work, do you look at the lines? When you're riding around on other business, or even personally, do you look at lines and see what you can about the facilities that are out there?

A. I certainly have looked at them from time to

time.

Q. Are you familiar with what I would call rear lot construction as compared to front lot construction of distribution facilities?

A. In terms of familiar, I mean, I understand the difference between the two.

Q. Okay. My understanding of rear lot facilities, based on my experience actually growing up in Miami and having my houses served from them, is that you have lines running down what I would call the center or the spine of a block, and then service laterals are tapped off those lines to serve the houses in an overhead configuration. Is that how you understand things?

A. Yes. In a rear lot situation, that's generally the case.

Q. Would I be correct that such rear lot lines are generally what would be called laterals or lateral feeders or secondary feeders?

MR. BUTLER: I think you're mixing terms there, Schef. As I understand it, lateral feeder to me doesn't make any sense. I think of lateral and feeder as being distinct from each other, at least the way that we characterize it in the FPL system.

MR. WRIGHT: Thank you.

BY MR. WRIGHT:

Q. To make this easy, Mr. Koch, is your understanding what Mr. Butler just articulated with regard to the term "lateral feeder"?

A. Yes. I agree with John.

Q. So would I be correct that the lines running down the middle of a block as we were just discussing would generally be characterized as laterals?

A. I would say for the most part, yes, they would be laterals.

Q. When FPL replaces rear lot overhead facilities, does it replace those laterals with hardened facilities, if you know?

MR. BUTLER: I'm sorry, Schef. You're talking about replacing overhead for overhead?

MR. WRIGHT: Correct. Yes, I'm talking about replacing overhead for overhead.

A. Well, I would think that whatever we would be replacing if we were replacing it today would be utilizing the current standard, which incorporates the effects of the hardening -- what's the word I'm looking for here? Of hardening.

Q. Maybe the standards set forth in FPL's storm hardening plan? Does that help?

A. Well, it would be the standards set forth in FPL's standards that are also described in the hardening plan.

Q. My understanding of the storm hardening plan is that it targets certain facilities for hardening, and also that it adopts hardening as the standard of construction for new facilities. Is that accurate?

A. Yes. I'm not certain if maybe I'm drawing an unnecessary distinction between what would be, quote, unquote, the plan, and what are the standards which we use to build to. In essence, our standards we use to build to incorporate the effects of the hardening engineering. And then, of course, we have incrementally specific hardening projects that are targeted, say, at hardening a given feeder or something like that that serves a critical customer or something of that nature, which is kind of a separate -- it isn't a just general replacement or maintenance activity or what have you. It's something where we're rebuilding the facilities to withstand extreme wind load.

Q. I understand that to be part of FPL's storm hardening plan. What I'm trying to understand is, in a replacement context for rear lot facilities, do you know whether FPL installs hardened facilities or whether it installs facilities that meet the other lesser standards

for FPL's overhead distribution facilities?

A. I believe all that we install today meets the current hardening standards.

Q. In a rear lot installation, are the facilities vulnerable to vegetation contact?

A. Facilities are vulnerable to vegetation contact regardless of where they are, depending upon the vegetation that's associated with . . .

Q. Well, will you agree that rear lot facilities are more vulnerable to vegetation contact than front lot facilities typically?

A. I wouldn't know that to be true.

Q. Do you have an opinion as to whether it's untrue, or you just don't know?

A. I don't know.

Q. Are you familiar with the term "tree wire"?

A. Yes.

Q. What does that mean to you?

A. I'm not certain I know what it means. I think it's either a jacketed wire or it's a stronger wire. I don't know. It may be both. I'm not certain which exactly it is. I've heard the term, but I don't have direct experience with it.

Q. Do you know whether FPL's standards for overhead conductor are for tree wire or jacketed or

stronger conductor, as you just mentioned in your previous response?

A. I do not know. I don't know the answer to that. I don't think that we include tree wire in our standards, but I don't know that for sure. I mean, there may be specific locations where we utilize it, but again, I'm just not that familiar with it.

Q. Have you reviewed any FPL analyses or reports regarding overhead facilities -- let me say it this way, regarding outages on overhead facilities by cause of outage?

A. Specifically on overhead facilities?

Q. Correct. That's my question, yes.

A. No, I don't think so.

Q. Have you reviewed or are you aware of FPL reports that show the causes of outages for underground facilities specifically?

A. No, I don't think so.

Q. I think the answer to the next question follows from the previous two, but I will ask you, are you aware of or have you seen or reviewed any FPL analyses that compare the outages by cause for overhead to underground?

A. No.

Q. That compare the frequency of outages on

overhead distribution systems to those on underground distribution systems?

A. The frequency?

Q. That's my question at this point, yes.

A. I don't recall if I've seen a specific analysis of that.

Q. The previous few questions related to FPL analyses or FPL studies, and the next question I just want to ask is, have you reviewed any other general industry studies on those topics, i.e., outages by cause for overhead versus underground and a comparison of those?

A. I don't remember reviewing studies that spoke about overhead versus underground by cause.

Q. This question may seem similar to the last few, but I will ask it anyway. Have you reviewed or seen any analyses of the performance of underground facilities on FPL's system?

MR. BUTLER: Performance in what regard?

MR. WRIGHT: Well, let's say the reliability performance.

A. Are you asking sort of an indicator of reliability performance specifically for underground?

Q. Yes.

A. I have -- I haven't seen that, I don't think.

Q. Okay. Do you know whether FPL -- well, let me ask it this way. Have you seen any FPL studies of the reliability indexes, CAIDI, SAIDI, or SAIFI, for underground and overhead facilities, for underground facilities versus overhead facilities?

A. No. I've only seen them in the aggregate.

Q. The same question with regard to the reliability statistic called L-Bar?

A. Yes. I've only seen that in the aggregate as well.

Q. As a general proposition, will you agree that new facilities will perform better than 20-year-old facilities, distribution facilities?

A. I wouldn't have any basis for that. I don't agree, because I don't know.

Q. Do you know anything about recent improvements in overhead electric conductor wire?

A. No, not really. I mean, I think you're asking me from an engineering point of view on that, and I don't have that expertise.

Q. If I were to ask you could you name an improvement in overhead conductor technology that has come into use in the last 10 years, could you do that?

A. No. That's not to say there isn't any. I just don't know.

Q. That is certainly a fair answer, Mr. Koch.

Is it generally true that FPL's new hardened overhead facilities cost more than non-hardened overhead facilities?

A. From an installation standpoint?

Q. Yes.

A. I would assume that would be correct from an installation standpoint.

Q. Do you have any knowledge about hardened versus non-hardened facilities from an operations and maintenance perspective?

A. In what regard?

Q. Do you know whether it costs more or less to maintain and operate hardened facilities as compared to non-hardened facilities?

A. I don't know specifically. I would assume that it would be somewhat less, due to the fact that they're hardened.

Q. Have you seen any analyses of differential O&M costs of hardened overhead versus non-hardened overhead on FPL's system?

A. No, I haven't.

Q. In the event that overhead facilities did have to be replaced for whatever reason, would it follow that replacing hardened overhead facilities with new hardened

overhead facilities would cost more than replacing non-hardened overhead facilities with non-hardened overhead facilities? I'm sorry.

A. I get the gist.

Q. I was sure you would, and I appreciate it. Thank you.

A. If the capital costs or the installation costs, material and labor, for installing hardened facilities were higher than non-hardened initially, I would think that the replacement activities would also be higher.

Q. I just asked you some questions about overhead facilities. I just want to ask you a couple of similar questions about underground. Have you done or reviewed any cost analyses of underground facilities by technology type, for example, operating and maintenance costs of what's called cross-linked polyethylene or XLPE versus tree-retardant cross-linked polyethylene or TR-XLPE conductor?

A. No, I haven't.

Q. And so you wouldn't have done any similar analysis of a cable and conduit installation versus a direct burial underground installation; correct?

A. That's correct.

Q. Have you done any studies of operating and

maintenance costs for either overhead or underground facilities by vintage or age of those facilities?

A. No. I'm not aware that any of those exist.

Q. Okay. Have you had occasion to review Florida Power & Light Company's depreciation studies with regard to distribution facilities?

A. Well, I have the depreciation study here with me, at least the most recent version of it, and I've scanned it over. I don't know how extensive that constitutes as far as a review.

Q. Okay. And would that be - go ahead, please.

A. And I know that you sent some document this morning also that I believe might have been taken from that.

Q. Right. We'll come to those in a bit. Just to be clear, I think those are from FPL's 2005 distribution study.

Would I be correct that what you've got with you are the three volumes of witness Richard Clark's exhibits in the rate case?

A. That's correct.

MR. WRIGHT: Excuse me. Let's go off the record.

(Discussion off the record and short recess.)

BY MR. WRIGHT:

Q. Okay. Mr. Koch, you mentioned, I think, in a previous response that you had, I think, scanned through or skimmed through the 2009 FPL depreciation study?

A. Yes. Given that it's, I don't know, four inches thick or whatever, I think skimming might be a more appropriate term.

Q. That's fine. What, if anything, did you pay particular attention to in that document?

A. I was -- well, one of the things I was looking at was the lives, equipment lives. I was looking for that information.

Q. Were you also looking for depreciation rate information?

A. No, I wasn't.

Q. Okay. Do you have any knowledge as to what the relationship of a depreciation rate is to the estimated life of the facility, or the asset, I should say?

A. Well, I'll sort of express this in what I would call layman's terms.

Q. Okay.

A. Basically, for the assets which we have on the books today, we're basically looking at what is the appropriate time to depreciate them over the remainder of their useful life, which obviously will vary

depending upon when the asset was installed initially and particularly what we have in service. Now, exactly the mechanics of how all of these rates are calculated, you know, I can't really speak to in any level of detail.

Q. Do you know the difference between a whole life depreciation rate and a remaining life depreciation rate?

A. No, I do not, other than it's not a lot different in most cases.

Q. Would you agree that a higher depreciation rate implies a shorter service life for any given asset?

A. I would say a higher depreciation life would say that there is a higher -- excuse me, a shorter remaining life as recorded on the books. It doesn't per se mean the facilities are out of service.

Q. In your answer, I think you said a higher depreciation life. Did you mean to say a higher depreciation rate?

A. Excuse me. I meant rate, yes.

Q. Okay. Do you understand how applying these depreciation rates translates into charges to FPL's customers, not underground applicants, but generically?

A. It would be part of expenses.

Q. Well, if you've got an asset that, let's just

say in a hypothetical example, cost a million dollars, and if you're applying a depreciation rate for ratemaking purposes of 5 percent, that means that customers get charged at 5 percent of a million or $50,000 a year for the depreciation expense associated with that asset; isn't that right?

A. I believe so.

Q. Okay. I would like to ask you to look at a document that we e-mailed to your attorneys and that they in turn, I believe, e-mailed on to you. This is the one from FPL's 2005 depreciation study. It's a two-page document that says "Florida Power & Light Company Depreciation Study." If you skip on down, it says "Balances as of December 31, 2005," and then there's a date stamp that says "Filed on March 17, 2005." Do you have that document?

A. I do. Without my glasses, it's hard to read it.

Q. We're in the same boat, Mr. Koch. I have on my glasses too.

I want to ask you a couple of questions about the subcategory identified as "Distribution Plant - Amortizable," which is about two-thirds of the way down the second page. There is a line -- the first line there is -- well, the first line and the second line are

actually the same, and the second line is the sum of the first line, which is identified as "367.9 UG Conduct and Dev Cable injection - 10 year." Do you know what that refers to?

A. No, I don't.

Q. Are you familiar with what is called cable injection technology?

A. I'm familiar with what the concept of it is, not per se exactly how it occurs. I believe basically we inject the cable to fill in voids that may have developed over time at the -- I don't know if this is the right terminology, but as gaps form in the insulation.

Q. There's a plant balance value shown there of $65,779,476, I think, or it might be 478. Do you know what that -- 476. Do you know what that refers to?

A. I mean, I assume that's the balance of these facilities in plant-in-service. When I say balance, I mean cost balance.

Q. So would it be your understanding that this amount would represent how much FPL has invested in its cable injection programs to reinforce the insulation of underground cable conductor?

A. Yes. I don't know if that's the case or if it's the value of the cable that has been injected and

has been transferred into this bucket, in other words, the balance associated with that has been transferred into this bucket.

Q. Okay. So you don't know -- for that underground conductor that has been injected, you don't know whether that shows up in one of the 367.6 or .7 subaccounts or the 367.9 subaccount?

A. Could you ask me that again.

Q. Yes. I'll try to break it up a little bit. Your previous response said you didn't know if that was the cost of the injection or if that was the value of conductor. Is that accurate so far?

A. Yes. I would think it more likely that it's the value of the conductor because of the dollar amount.

Q. Okay. Well, I was looking slightly up the page from that row, and there are two rows headed 367.6 and 367.7, which are similarly underground conductors and device, subdivided into duct system installations and direct burial system installations.

A. Uh-huh.

Q. And what you're saying is you don't know whether the 367.9 pot of $65.8 million is conductor or injection. Is that an accurate characterization of what you said?

A. That's correct. In other words, I'm saying

that I don't think that is per se the cost of injecting those cables. I think these cables are injected, and that was the balance that was associated with the cables, which may have been incremented somehow. I'm not certain. And then it was placed in a separate point account.

Q. Just to be clear, do you know whether it's the value of the conductor or the cost of the injection activity?

A. I don't know that, but here would be one of the reasons I would suspect it's the value of the conductor. It's because I'm looking at the next column that says adjusted reserve balance, which is basically the accumulated balance of depreciation, and you can see that's -- I don't know. Let's call it 31 million-ish.

Q. Right.

A. And so basically what we're looking at there is that this 65 million has kind of been half depreciated, and so it would seem unlikely to me that basically, given how high that reserve balance is, that this would just be the cost for injecting, the capitalized cost for injecting versus being the cost of the cable that was injected.

Q. Do you know how much FPL has spent on cable injection?

A. No, I do not.

Q. Do you know whether for -- do you know anything about newer vintage underground cable? For example, do you know about newer underground cable being what is called strand-filled?

A. No. I remember it being mentioned in one of the depositions, but I couldn't replay what it actually means.

Q. Well, leaving out the word "technical nuance" there, do you know whether cable injection can be done on newer, say, less than five-year-old underground cable conductor?

A. I don't know if it can or would be done for cable of that vintage.

Q. All right. You previously answered that you don't know how much FPL has spent on cable injection. That's correct so far; right?

A. That's correct.

Q. Okay. So do you know how much cable injection costs relative to the initial installed cost of underground cable that is injected?

A. No, I don't.

Q. Do you know how much FPL has spent on underground cable replacement?

A. No.

Q. Can you tell us how, if at all, cable injection costs are reflected in FPL's O&M costs for underground facilities?

A. No, because I'm not certain if they're capitalized or expensed.

Q. And that seems to answer my next question, but I will ask it anyway. Can you tell us how, if at all, the cable injection costs are reflected in the capital expenditure items in your analyses?

A. No, I can't.

Q. Do you know anything about FPL's continuing cable injection expenditures?

A. No, I don't.

Q. Do you know anything about the failure rates of cable that has been injected?

A. No.

Q. In preparing your testimony and exhibits, did you attempt to examine what the average age of underground facilities that were being injected was?

A. No, I didn't.

Q. Do you know whether FPL has that information?

A. I don't know.

Q. Would you agree that it's most likely that the vast majority of FPL's cable injection expenditures are on conductor that is more than 20 years old?

A. I really wouldn't know one way or the other.

Q. Are you aware of any cable injection expenditures on underground conductor that's less than 10 years old?

A. I don't know the answer to that either.

Q. Do you know whether FPL has a projected date in time in the future for terminating its cable injection program?

A. No, I don't.

Q. I think implicitly you have answered this question when I asked you about L-Bar statistics, but let me ask the question this way. Do you know whether FPL records the information as to the time of an outage for underground facilities between the time of the outage and the time service is restored?

A. For underground?

Q. Yes. This question is for underground, and the next question is overhead. Go ahead.

A. I'm sorry. We were talking over each other. I didn't hear you.

Q. I apologize. I was trying to clarify, and I inadvertently spoke over you. The question is, does FPL keep track of the time of outage, from outage to restoration, associated with underground outages and overhead outages on its system?

A. I mean, obviously, we keep track of the time of outage from beginning to end, but I'm not certain how that is, you know, classified or broken down, if it's grouped in the manner that you're asking about.

Q. So you don't know whether FPL has information regarding the relative restoration times for overhead outages versus underground outages; is that true?

A. I don't know. I would suspect we do, but I don't know.

Q. Since you don't know, would it be correct that you did not attempt to find out that information in preparing your testimony in this case?

A. That's correct.

Q. Do you know whether FPL has data regarding the cost to repair each underground outage and each overhead outage?

MR. BUTLER: You mean like an average outage cost to repair, Schef?

MR. WRIGHT: Well, I was really trying to ask do they have the repair cost for each specific event, and then I was going to ask the average question next.

A. I would say -- well, I don't know the answer, whether we have the specific outage cost associated with each particular event, which would be largely a function

of how costs were captured and charged, et cetera, so I'm not certain if we have that information. But I didn't -- that wasn't information that was necessary for preparing the analysis, so I didn't search for that.

Q. I'll ask the other question. Do you know about the average cost of repair and restoration for underground versus overhead outages?

A. No, I don't know that answer.

Q. Okay. Did you attempt to obtain such information in preparing your testimony in this case, these cases?

A. No, I didn't, because that information was embedded within the cost that we have in the aggregate for overhead and underground, so I didn't try to tease out that particular specific item.

Q. If I use the terms XLPE and TR-XLPE referring to two different types of underground conductor, will you understand what I'm talking about?

A. No, not really.

Q. Okay. Do you know whether FPL has a position as to whether it costs less, more, or the same to maintain XLPE as compared to TR-XLPE conductor?

A. No, I don't know.

Q. Do you know whether FPL has data that supports the cost of placing all cable and conduit versus direct

burying the underground cable?

A. No, I don't know.

Q. Do you know whether FPL has data regarding the operating and maintenance costs of cable in conduit systems versus direct burial?

A. I don't know if we do.

Q. Okay. I'm looking at your Exhibit TRK-4.

A. Just a moment.

Q. Thank you. Sure?

A. Should I set aside the depreciation documents?

Q. This is just a quick question on TRK-4 following along your previous answer, so I would say don't set aside the depreciation documents just yet.

A. Okay. I was just trying to make some space.

Q. I understand.

A. I'm there, Schef.

Q. I'm just trying to make sure I understand your previous answer. The first block of information shown on TRK-4, page 8 of 17, which we were looking at a while ago, shows underground CIAC related O&M in Accounts 580, 584, 588, and 590, 94, 95, and 98; correct?

A. Yes.

Q. And I just want to make sure that I understand your previous answer as saying that you don't know as to any differences of maintaining cable in conduit

installations versus direct burial installations within those accounts. Is that accurate?

A. Yes, that's what I was saying.

Q. Would it follow from the last couple of answers that you're not aware of any information or data that shows whether it is more or less expensive to replace a failed conductor in a conduit setting rather than replacing a failed conductor in a direct burial setting?

A. That's true. I would suspect, however, that it really depends on what replacing would mean, if you're just pulling the cable out, or not even pulling it out and using, say, a spare conduit to pull another cable, I would suspect that the cost would be different than having to actually dig up the cable, which could happen in either scenario.

Q. Do you know whether the typical repair or replacement activity with a cable in conduit system is to simply replace the cable that has been identified as being defective?

A. I don't know. I think that would be situation dependent.

Q. Do you know whether it's generally true that repairs of cable in conduit do not require digging up the conduit?

A. I don't know the answer to that.

MR. WRIGHT: All right. I don't have any more questions regarding the two-page document that we discussed a little bit from the 2005 depreciation study, but I am going to ask the court reporter to mark this as Exhibit 1 to this deposition. I'm handing her a copy of it.

MR. BUTLER: Schef, let's just be sure that we know which is Exhibit 1. This is the one that the first page is Depreciation Study, Transmission, Distribution, General Plant, Volume 6 of 6, filed March 17, 2005?

MR. WRIGHT: Correct.

MR. BUTLER: Okay. Thank you.

MR. WRIGHT: Thank you.

(Deposition Exhibit Number 1 was marked for identification.)

BY MR. WRIGHT:

Q. We sent you another two-page document that is two pages copied from Mr. Clark's exhibits. One is CRC-1, page 54 of 720, and the other page is CRC-1, page 474. Do you have that document, Mr. Koch?

A. Yes, I do.

Q. When you said that you skimmed through the document, was this the kind of information you were

looking for?

A. Well, these are depreciation rates, so I'm not certain what this means here.

Q. Okay. Well, do you recall looking at these?

A. I don't recall looking at this particular page, or pages. Excuse me.

Q. Well, let's look at what I think is the first page of what you've got, which is the copy of page 54 of 720.

A. Yes, I've got that.

Q. Okay. This appears to me to show existing depreciation rates in the column sort of in the middle of the page and then proposed depreciation rates in the right-hand bank of columns. Is that how you understand this?

A. Yes.

Q. If I just look down at either the whole -- do you understand WL to mean whole life?

A. I think it's whole life, and then the RL is remaining life.

Q. Thank you. That was my interpretation too, but I wanted to make sure we were on the same page.

If I look at the existing rates and the proposed rates, let's say for Accounts 364, 5, 6, and 7, it appears to me that the rates for the overhead

accounts, 364 and 365, are going up, and the rates for the underground accounts, 366 and 367, are going down. Is that how you read that?

A. Are you saying between the existing and the proposed?

Q. That is correct. That's what I'm saying it looks like to me, and I'm asking if you interpret it the same way.

A. Hold on one second. I'm sort of scanning through them.

Q. Thanks.

A. I would say that in general that looks to be the case. There are a couple of exceptions here and there, or they appear to be kind of flat from one to the other.

MR. WRIGHT: Okay. I'm going to ask the reporter to mark this as Deposition Exhibit 2.

(Deposition Exhibit Number 2 was marked for identification.)

BY MR. WRIGHT:

Q. When did you review the depreciation study, to the extent that you did?

A. I got it on Friday.

Q. Okay.

A. I think it was Friday. Maybe it was Saturday.

Q. Do I understand part of your rebuttal testimony to make the assertion that you disagree with Mr. Rant and Mr. Shank that new underground installations will have lower O&M costs than new overhead installations?

MR. BUTLER: Could you point to a reference, Schef, please?

MR. WRIGHT: No, I can't find a specific reference, but let me just ask the question a different way.

BY MR. WRIGHT:

Q. Mr. McEvoy made that assertion in his testimony. Do you recall that, Mr. Koch?

A. I'm sorry. Could you repeat it?

Q. Let me just ask you, do you believe that new underground installations will have lower O&M costs, higher O&M costs, or the same O&M costs as new overhead installations? Do you have an opinion on that question?

A. Well, I guess what I would say as far as -- you're talking overhead here?

Q. I'm talking new underground versus new overhead.

A. Okay. So the differential?

Q. Correct.

A. Okay. What I would say is that, you know,

obviously, both technologies have changed over time. We don't really have any empirical evidence on which we could rely to say that newer technologies are going to be meaningfully cheaper to operate and maintain than the existing technologies are. Obviously, that's what our hope would be, is that that would be the case, and obviously, we install things we believe provide the best balance of reliability and operating costs.

But by the same token, you really have to have sufficient experience to really understand whether that is going to be the case. So that would be, I guess, sort of the gist of -- I think that responds to your question.

Q. Let me see if I can crystallize it for myself. Is it your position then that you don't have any basis to say that new underground is going to cost less to maintain than new overhead?

A. I don't have any basis to say either at this point in time, that that would be the case. I mean, inherently, that's why we relied upon this data which we actually had available rather than hypothesizing or speculating on what the outcome would be.

Q. Did you attempt to find and review any industry studies or analyses regarding the costs to operate and maintain new underground as compared to new

overhead technology?

A. No, I didn't, because for the purpose of the study, I was relying on FPL's data, because at the end of the day, that's what FPL's customers are going to end up having to support through their rates.

Q. Will you agree that in an underground conversion installation, the facilities that go in are by definition new?

A. Yes.

Q. And similarly, I'm sure you'll agree that the underground facilities that are installed under FPL's URD tariffs are by definition new; correct?

A. Yes.

MR. BUTLER: Schef?

MR. WRIGHT: Yes, John.

MR. BUTLER: While you're contemplating the next move, what do you think about a lunch break? What would make sense for a time for that?

MR. WRIGHT: I would be fine with taking a lunch break now.

(Recess from 12:02 to 12:53 p.m.)

BY MR. WRIGHT:

Q. I just have a few more questions for you about depreciation, Mr. Koch, before we move on to other subjects. My first question is, do you have any

knowledge about where cable injection costs are reflected in the 2009 depreciation study?

A. No, I don't.

Q. Other than a general belief that they're somewhere in FPL's distribution plant accounts, do you have any idea where they might be in FPL's distribution plant accounts?

A. I would assume they would be in the same place that they were in the study you sent the documents on, 360 -- hold on a second. 367.9, if we're talking about the same thing.

Q. That is what we're talking about, and just to cut to the chase, the problem I had is that I could not find any reference to 367.9 in the 2009 study. Did you find anything like that?

A. No. We were actually just going through to look for that. Just a moment.

Q. Sure.

A. No, we don't see a reference to that either.

Q. Okay. In an earlier response, you mentioned that you were looking at facility lives. Let me just ask you a question following along that. Do FPL's depreciation studies show underground facilities lasting longer than in the past?

A. Based on -- are you talking about the 2009

study or --

Q. Yes.

A. I'm not certain what you're referring to.

MR. BUTLER: Schef, are you referring to Exhibit 2 and the comparison of the existing data to the proposed data from the 2005 to 2009 study?

MR. WRIGHT: When you said Exhibit 2, did you mean Deposition Exhibit 2?

MR. BUTLER: Yes.

MR. WRIGHT: No, actually, I wasn't. I was asking more generally about the depreciation study.

MR. BUTLER: Do you have a reference to anything?

MR. WRIGHT: I will in a minute.

MR. BUTLER: Okay.

BY MR. WRIGHT:

Q. You have the whole three-volume set of the depreciation study; correct, Mr. Koch?

A. That is correct.

Q. I was kind of making a cursory look for the same kind of thing, and I got to page 585 of the study, which is in Volume 3 of 3. It's also denominated V-115.

A. I'm there.

Q. That addresses Account or Subaccount 366.6, underground conduit duct system, and it says that it

recommends increasing the currently authorized 48-year service life to a 70-year service life. Is that how you read that?

A. Yes, that's correct, in the recommendation. And I think for the other account sort of relative to this, there's a similar kind of structure, you know, a page like this for them.

Q. Yes. For example, the next one I see is on page 593, which is the corresponding descriptive page for Account 366.7. Is that --

A. Yes, that would be correct. And what I would say is that generally my observation was -- because these were the pages that I took a look at, and my observation was that in general, the lives for both underground and distribution -- excuse me, underground and overhead for distribution were either held the same or increased as a result of this study.

Q. Okay. Thanks.

If I could ask you to look at the -- I believe it is a nine-page document that I e-mailed in PDF form over the lunch break. I just want to ask you a couple of questions about that. I'm going to ask the court reporter to mark this as Deposition Exhibit 3. This is also an excerpt from Florida Power & Light's Depreciation Study, Transmission, Distribution, General

Plant, Estimated Balances as of December 31, 2005, Volume 6 of 6. Do you have that document with you now?

A. Yes, I do.

Schef, actually, there was one other comment I wanted to make about it. The other observation I saw was that between like types of facilities, overhead versus underground, the lives looked relatively similar.

I have the document you're referring to.

Q. Thank you. I would like to ask you to -- off the record.

(Discussion off the record.)

(Deposition Exhibit Number 3 was marked for identification.)

BY MR. WRIGHT:

Q. Mr. Koch, I just want to ask you a handful of questions regarding what is the fourth page in this excerpt. It is actually numbered page 1, and at the top of the sheet it says "Distribution Plant - Description."

A. Okay.

Q. I don't intend to ask you about the first paragraph, which appears to describe the status of FPL's distribution system as of 2005. But I would like to ask you to take a minute or two, or however long you want, to review the second paragraph, and it is with regard to that second paragraph that I have a few questions.

MR. BUTLER: Schef, while he's reading that, did you say the fourth page?

THE WITNESS: I forgot that there was a blank page.

MR. BUTLER: Oh, there was a blank page?

THE WITNESS: I threw away the blank page.

MR. WRIGHT: That is indeed why it's the fourth page in my version here.

THE WITNESS: I've got it. Okay. That's quite a mouthful.

MR. WRIGHT: I agree.

THE WITNESS: I guess I'm as ready as I can be for your question.

BY MR. WRIGHT:

Q. Good. Does the text you just read indicate that FPL experienced a significant increase in its distribution plant investment over the preceding 15 years?

A. Yes.

Q. Would you interpret this to indicate that there's greater investment in new distribution plant leading up to this study?

A. I would assume that this was basically driven by the growth we were experiencing in customers, so it grew in the plant balance, if that was what you were

asking.

Q. No. I was really just asking, do you think this means that there's a significant increase in new distribution plant on FPL's system?

A. Well, I guess I could agree with that. I'm not totally certain what you're asking, though. I think the answer would be yes.

Q. Well, I read the third sentence of that paragraph that says, "The large influx of new, higher cost dollars in the distribution plant accounts that has occurred over the past 15 years far outweighs the number of retirements." I read the first part of that as just indicating that there's a lot of new distribution investment. So far so good?

A. Yes, I would agree with that.

Q. And do you read the material in this paragraph as indicating a lower than expected number of retirements over the period?

A. I'm not certain if it's lower than expected. It certainly would appear that the facilities are not -- it's not cycling out at the pace that it's cycling in. Let me put it to you that way.

Q. I was kind of wrestling with the first part of the last sentence, where it refers to the first impact of these changes in retirement units on the dispersion

patterns, particularly the phrase "changes in retirement units." Can you help me understand what they're talking about there?

A. I think a retirement unit just refers to a particular -- let's call it device or type of device, is what that terminology means. I'm not certain what the dispersion pattern means, however.

Q. Just following up on that response, is a retirement unit the retirement of a specific individual piece of equipment, or is it something more generic than that, like all the retirements for 25 KVA transformers or something like that?

A. No. A retirement unit would be like a 25 KVA transformer. That's the terminology. Property unit and retirement unit I believe are synonymous, and that's the terminology there.

Q. So it would refer to the single unit itself; right?

A. Yes.

Q. Okay. Thank you.

Does this paragraph -- again, I'm trying to understand what it says. Does this paragraph appear to indicate that older in-service facilities are not being replaced as frequently as had been expected?

A. I don't know that it's as had been expected.

Clearly, facilities are still functioning and in the field performing in service, performing a useful function as opposed to maybe -- well, I would be speculating as to maybe we thought they would be retiring quicker, or they would be coming out of service quicker, I should say, hence being retired off the books.

I don't know. I guess I can't really clarify it any more than that.

Q. All right. I'm still wrestling with the phraseology of this where it says "the full impact of these retirement units on the dispersion patterns," and it goes on to say "may not be seen for many years to come and may result in changes in retirement patterns and lives."

MR. BUTLER: I'm sorry, Schef. I'm going to object. I don't think Mr. Koch is very familiar with this, and I'm going to ask him not to speculate. If he knows what it means, that's fine, but it's not sounding like he does so far. I think you're both kind of wrestling with the depreciationese.

MR. WRIGHT: I think that's an okay objection to the question, and I'll ask the witness to answer the question if he can, with the standard

understanding that if he doesn't know how to respond further to my question, he can say that.

MR. BUTLER: Fair enough.

A. I don't know.

MR. WRIGHT: We did get that marked as Exhibit 3; correct?

MR. BUTLER: That's what I have it as.

BY MR. WRIGHT:

Q. Okay. Mr. Koch, I would like to ask you some questions about the calculation of the O&M costs and capital expenditure values in your direct testimony. And I believe I understand that you've got essentially the same page, I think, as page 2 of TRK-4 and a similar page in TRK-2. Is that accurate?

A. Yes.

Q. I think it's page 2 of TRK-2.

A. Yes, that's correct.

Q. I'll tell you what. The numbers are actually substantially different, so why don't we cover that first. Just looking at page 2 of TRK-2 and comparing it to page 2 of TRK-4, I see that line 1 on each table, underground O&M, is, you know, 30 percent less or so for the new installations than for the old installations. Can you tell me what's going on there?

A. Could you specify the line? I mean, I'm sure

I know the answer, but are you saying --

Q. Hold on. I'm sorry. I apologize. I had inadvertently grabbed a page with the stack in the middle, and I was looking at page 2 of the study on TRK-4, the year 2025, and comparing that to 2008 on TRK-2. So now I'm looking at the right numbers again, and they'll match. I apologize for the confusion.

MR. BUTLER: You would be wanting to compare page 2 of TRK-2 to page 1 of TRK-4.

MR. WRIGHT: That was my wholly inadvertent mistake because of the way I grasped the pages between them.

BY MR. WRIGHT:

Q. Let's just look at page 1 of 17 of TRK-4.

A. Okay.

Q. Let's start with line 1 under the operating and maintenance heading, underground.

A. Uh-huh.

Q. Those values are taken from an average -- from average values over the period 2003 to 2007 as reflected on page 8 of TRK-4. Is that accurate?

A. Allow me to flip to page 8.

Q. Okay.

A. Yes, that's correct.

Q. Okay. I want to ask you about how you

escalated the values going across the row from 2008 to 2009 and so on. What escalation factor did you apply there?

A. It's CPI, and you can see that escalation on page -- you can see the factors on page 3, and it's sort of midway down the page where it says rates, and you'll see CPI, consumer price index, and then -- and that was the rates that were used.

Q. Thanks. And that was the only rate that was used to escalate that row of numbers; correct?

A. That's correct.

Q. And similarly, that was also the only rate that was used to escalate the values in line 2, overhead O&M; correct?

A. That's correct.

Q. And the same answer for line 3?

A. Yep.

Q. Four?

A. Yep.

Q. Five?

A. Yep.

Q. And we understand the litigation differential is not applicable in the confidential value, so I think we're good there.

Okay. Let's move on down the page to the

capital expenditures row, first for underground?

MR. BUTLER: I'm sorry. Are we back to page 1 now, Schef?

MR. WRIGHT: Yes.

BY MR. WRIGHT:

Q. The first value that's shown there for 2008 in row 1 is $3,215 per line mile; correct?

A. That's correct.

Q. And that number seems to me to come from page 13 of TRK-4; correct?

A. That's right.

Q. And similarly, the value in row 2 right under that also comes from the same page?

A. That's right.

Q. Okay. The first question is, there is an escalation factor there. What did you use to escalate those values?

A. Okay. If you refer back again to page 3, right below where we were looking at CPI, you have the PUPFI rate, and that's the rate that's being used to escalate.

Q. What is the source for the PUPFI rate, Mr. Koch?

A. That was provided by Global Insight. Let me see if I have a reference. I mean, I got it from our

finance department, but basically that was provided by an outside source, which was Global Insight. They do, I think, pretty much all of our forecasts of this nature.

Q. Just in terms of understanding the process that you followed in this step of the analysis, did you call or e-mail the finance department and say, "I need an appropriate escalation factor for this kind of cost," and then they sent you back the PUPFI?

A. They actually have it online in our intranet.

Q. So you didn't even have to call anybody; is that true?

A. That's correct. They have out there the rates that people should use for escalating when they're performing analyses.

Q. Did you consider using any other indexes other than the CPI or other than the PUPFI index in preparing your tables?

A. No, I didn't.

Q. So would it be fair to conclude that you didn't consider using any of the producer price index series published by the United States government?

A. That's correct, because this is the one that's more -- particularly since CPI would have been related to capital for the most part, PUPFI is more applicable to utility capital projects.

Q. Did you consider using any Handy-Whitman indexes?

A. No.

Q. Can you just explain to us how you calculated the capital expenditures per pole-line mile that are reflected in pages 1 and 2 of TRK-4?

A. Are you asking sort of just in general how it was calculated or --

Q. Well, generally or specifically. I think I understand what you did, looking back at pages 12 and 13 of TRK-4, but if you could explain how you did that, I would appreciate it.

A. Okay. Basically, the -- let's call th em line items 2 through 16. Basically, that block represents the information that we have on our FERC Form 1, split between the underground and overhead.

The adjustment information which appears on the balance of page 12, that information came from our accounting system, and basically, that was removing costs that were not associated with facilities in regards to the underground rule or -- let's see. In the case of the capital portion related to our pole program, it was removing that piece as well, since we substituted a forecast for historical costs in the case of the pole. So basically, those adjustments were netted out, and

you're left with the remainder which you see on page 13, lines 36 through 50.

And then with the pole-line miles figure that you see in the block below kind of the solid black line, just basically doing the division of the total for each year and then averaging the results of those annual divisions, which comes out of the 3,215 and the 2,257 you see on lines 62 and 63 in kind of the black box that we were talking about earlier.

Q. You mentioned that you substituted a forecast for historical for poles. Can you explain exactly what you did there?

A. I got the information from -- I think that might actually be a schedule here. If you flip to page -- no, skip back one page. If you look at page 11 --

Q. I'm there. Thank you.

A. And on page 11, basically what we have here is poles broken into three buckets, low density laterals, high density laterals, and feeders, since basically any of these types of facilities in a conversion project could be in there, in the mix. And we came up with the number in the top couple of lines here, basically computing the number of poles per line mile.

And then in the next sort of block of text,

the first column that's labeled "Strength," basically this had to do with the proportion of the poles that were there that we had to take remedial action on, either by reinforcing or replacing them.

And then the quantity that you see -- for example, on line 161, you see a number of 35, which is the number of feeder poles per line mile. And basically multiplying what is in column D times that number gives you the number that you would have to do a remediation measure on.

You see capital and O&M associated with it, and, of course, we're specifically talking about the capital piece. That's in column G.

And then what appears in column I is the multiplication of the cost for doing a single pole in column G times the number of poles in column E gives you that figure. So basically we did it for those three configurations, the feeder and low density and high density laterals, and then came up with the weighted average of these results on the bottom, the bottom few lines, 81 through 85, and basically taking the figures from above and then just doing a mix based upon how we find our system in general. And that resulted in $2,091 per pole-line mile for the capital piece, which is column I, line 185, so that was the figure that was

used.

Q. Okay. And then that was projected and escalated forward?

A. Using the PUPFI escalation rate.

Q. Okay. Do I understand correctly that this was the only item in your analysis in TRK-4 that used projected numbers? It's the only number in the capital expenditure column; correct?

A. In capital, that's correct.

Q. And is it also correct that in O&M you used projected for both vegetation management and the pole inspection and the remediation line items?

A. That's right.

Q. Okay.

A. And again, in both of these cases, it's because we had the change in these two programs as a result of Storm Secure, and so the historical numbers would not have reflected what our new programs were. They're substantively different from the others, so that's why we used that instead of historic information.

Q. Okay. Before we move on too far, I would like to ask you to look at Exhibit TRK-1, page 90 of 196.

A. Okay. Page 90. Okay.

Q. Okay. If I read down about -- the 12th and 13th lines down on that table appear to indicate to me

that FPL uses a Handy-Whitman index in computing something with regard to the URD differential. Can you explain to me what it's used for there?

A. Well, I'm not familiar with this page, first of all, in detail, but let me take a quick look.

MR. JAEGER: Schef, what page are you on again? We missed that.

MR. WRIGHT: Page 90 of 196 of Exhibit TRK-1, part of Mr. Koch's direct testimony exhibits.

MR. JAEGER: Okay. Sorry.

MR. WRIGHT: That's okay.

A. Okay. I can see the Handy-Whitman index, but I'm not certain what it's actually being applied to on this table, but I'm assuming -- well, I won't speculate on what's being done here.

Q. Well, would you agree that it's reasonable to conclude that it's being used for something in these calculations?

A. That is possible. You know, this document, which represents sort of a massive spreadsheet prepared by our engineering group, there may be vestiges of things which are used or not used in there which may be in there because there was a rule requirement or may be in there because they were calculations that we employed at one time or another. So I'm not certain if it's

actually being used or not. I mean, it's certainly possible that it's being used.

And again, the CPI is down here too. Likewise, I'm not totally certain what that's being used for either on this schedule.

Q. All right. If I could ask you to look two pages earlier in the document at page 88.

A. Okay.

Q. This appears to show that there were a number of cost factors in computing the underground labor cost as applying an actual outright increased labor rate from 2007 to 2008. Is that how I read that?

A. Could you say that again?

Q. This page, if you look in number 1 of each of the -- what appear to be the assumption specifications below the numeric information, it says in each case, "Increased labor rate, 89.82 to 97.48."

A. Yes, I see that.

Q. So to me, that indicates that in preparing its underground labor costs in the URD -- or actually, this is the UCD. Well, I don't know which it was, URD and UCD filings. FPL utilized for 2008 an increased labor rate of -- well, the rate it appears they used in 2008 was $97.48 per person-hour. Is that how you understand this?

A. I believe so.

Q. Okay. And then in the high density and low density, there was actually a decrease in construction man-hours in low density and an increase in construction man-hours in high density. Is that how I read that?

A. I see it in the high density, yes. That's how I would interpret that.

Q. And just to be clear, you didn't attempt to account for this kind of an increase in your analyses back in TRK-2 and TRK-4, did you?

A. Well, implicitly, any sort of labor as well as material, up, down, or level, is accounted for through this. Hello?

MR. WRIGHT: Off the record.

(Discussion off the record.)

BY MR. WRIGHT:

Q. Back on.

A. What I was saying is that any sort of changes in labor or material rates, et cetera, up, down, or level, would be accounted for through the period of time that's used in the average.

Q. Okay.

A. And then, of course, with the application of the inflation rate, either CPI or PUPFI, then there would be a continued kind of growth that would proceed

through the entire study period.

Q. I'm just checking notes here. As we all know, the way these things go, sometimes questions get answered, and I'm trying to cover what has already been answered without asking the same question twice, so bear with me.

MR. BUTLER: And we applaud that effort.

BY MR. WRIGHT:

Q. Okay. I would like to ask you some questions about your rebuttal testimony now, Mr. Koch.

A. Okay.

Q. I am going to have some more questions, but I want to walk through your adjustments to Mr. Rant's analyses that begin -- or the discussion of which begins on page 9 and then goes, I think, all the way over to page 17. No, even further than that, really to page 18. It also in there refers to Exhibit TRK-5.

A. Okay.

Q. Let's start with the first subject which is covered beginning at line 4 on page 9.

A. Okay.

Q. There you -- as I understand your testimony, you assert that Mr. Rant did not do the analysis right because he merely used a nominal 30-year value. Is that a fair characterization?

A. That's correct.

Q. You make the statement that in his deposition, witness Rant explained that he felt there was no need to perform the NPV calculations. Can you tell me where in his deposition he said that?

A. I don't have a copy of his deposition in front of me.

MR. BUTLER: Schef, just so you know, this was prepared in advance of our having access to the transcript of his deposition, so it would be fair to say that this is based on Mr. Koch's participating orally in the deposition or listening in at the time that it was being taken.

MR. WRIGHT: Okay. That's kind of what I thought, but I appreciate the clarification.

BY MR. WRIGHT:

Q. Did you review the MUUC study when it was originally furnished to FPL and the Commission back in 2006?

A. Yes, I did.

Q. I would like to ask you to look at two tables in particular in the study, Table C-1. And if you want to refer to Mr. Rant's exhibit volume, that is page 89 of Exhibit PJR-2.

A. I have that.

Q. And the other sheet I wanted to ask you to look at is denominated Table I-8, and that's page 151 of Exhibit PJR-2.

A. I have that page as well.

Q. Okay. Do you understand what Table I-8 purports to show?

A. Yes, I do.

Q. Please explain it in your own words.

A. What I-8 is doing is taking the annual figure, multiplying it, and then there's a -- I do not know how the discounted escalation multiplier was computed, but somehow it will be the combination of the escalation rate and the discount rate columns which precede it over a period of 30 years, and that figure -- for example, I'll just pick one randomly here. The second line, 24.34, would be multiplied times the 1,559 for the outage restoration reduction, non-major events, to come up with the 37,946.

Q. So was it your understanding that this particular table, I-8, shows that using the assumptions made by the Power Services Team that prepared the study, this has the effect of escalating each individual rate by the indicated escalation rate and then discounting it back at the stated discount rate?

A. That's my belief, though I didn't -- you know,

I didn't compute this factor that is used for doing that, but that would be what I understand it to be.

Q. Okay. And as of 2006, the analysis showed that if you did it -- when the Power Services folks did it that way, they came up with a total dollar value of some $429,000 as compared to the bottom line value of $422,000 in Table C-1. Is that your understanding?

A. That's correct. I see those figures, but what I would say is that is kind of, in my opinion, a contrived outcome, because the escalation rates that are applied here seem designed to basically pump up the values that, you know, increase the relative cost of overhead and reduce the ones that are kind of more the relative cost of underground, in essence, widening the gap, and those kinds of puts and takes throughout here, when you compare it to Table C-1, regardless of if the, you know, kind of bottom line sum came out correctly, which is largely driven by the different escalation rates being applied kind of selectively to particular line items.

So you kind of get there by default, but this isn't actually what was recommended in either the current study or the last study. It was to rely upon Table C-1, not rely upon Table I-8. In fact, I-8 wasn't even -- if I recall correctly, I-8 was not part of the

original testimony. Maybe I'm wrong about that. I mean I-8 as far as the actual current filed testimony. That was the old study. We had Table C-1 in the current study. We did not have Table I-8, I don't think, until later in depo, if I'm correct.

MR. WRIGHT: Off the record.

(Discussion off the record.)

BY MR. WRIGHT:

Q. Mr. Koch, during the off-the-record discussion just now, your attorney and I had a discussion, and I think we both agree that it might be helpful if you explain further what you were trying to say and what your understanding of Table I-8 was and is.

A. Okay. Table I-8 -- you want me to start with the calculation again, sort of at the beginning of what my explanation was?

Table I-8 is taking the annual figures which are calculated in the other kind of C tables and then applying a composite multiplier comprised of the related escalation rate and discount rate to come up with a 30-year discounted present value. Contrasting to Table C-1, which are the nominal values, in essence, your multiplier times 30, this one does the calculations of the figures using -- as if they occur every single year, and using the escalation rates, growing them and then

discounting them back. I assume that that's what his factor does, though I haven't actually computed this particular factor, but it appears to do that.

And with regard to your second question, which I think had to do with isn't the bottom line number here of 429,000 relatively akin to the 422,000 shown on Table C-1, the 429 being on I-8, what I was saying was that that's an outcome of the fact that the escalation rates appear to be driven more in terms of resulting in high escalation rates for overhead related expenses or costs, and lower escalation rates, things that would be unfavorable to the cost of undergrounding, and that none of the individual numbers in any given line item are the same. They're up and down, and it kind of looks like it's working towards the bottom line total as opposed to being kind of discrete and somewhat impartial as far as the individual elements.

And I was saying the basis of what is described in the study as far as its conclusion in the old study in 2006 was predicated on Table C-1, not on Table I-8.

Q. Well, would you agree that one interpretation of Table C-1 is that it reflects an implicit assumption that the overall escalation rate is equal to the overall discount rate for the cost elements shown?

A. I would say that would be a true statement only in the sense that there's any supporting documentation, which, of course, FPL doesn't have that, nor does apparently this study have either, something that says that the escalation rate is 8.37, the same as the discount rate. In fact, it has a whole slew of escalation rates, none of which are 8.37.

Q. Well, leaving aside your assertion that the escalation rates reflected in Table I-8 are contrived, using your word, I think you would agree that just arithemtically, the overall weighted average escalation rate reflected in Table I-8 is just a little bit greater than the discount rate of 8.37 percent; correct?

A. I think that's probably true, given the fact that this 429 is slightly higher than the nominal value of 422. I would assume then the escalation rate is in fact -- let me make sure I get the math right here. Yes, it would be higher. The escalation rate would be higher than the discount rate of 8.37 by some fairly small margin.

Q. Okay. Let's continue on the line of discussing the escalation rates and turn to page 10.

MR. BUTLER: Page 10 of the testimony?

MR. WRIGHT: Yes, page 10 of Mr. Koch's rebuttal testimony.

MR. BUTLER: Okay.

BY MR. WRIGHT:

Q. Is it fair to say that your statement reflected at lines 9 through 12 is, as Mr. Butler characterized a previous response, based upon your recollection of having participated aurally and orally in the deposition on May 7?

A. That's correct.

Q. So as you sit here today, can you point to any specific question and answer in Mr. Rant's deposition that supports this statement, or is the basis of the statement just your recollection from the depo?

A. I'm sorry. Could you please ask that again? I was distracted.

Q. Yes. Is it true that as you sit here today, you can't point to any specific question and answer in Mr. Rant's deposition that provides a basis for your statement at lines 9 through 12 on page 10 of your rebuttal testimony?

A. No. I haven't tried yet to do that, since I only had a partial -- I've only seen briefly a partial transcript of it. Obviously, I could point to that at a later point, but at the moment I don't have the transcript to go off of.

Q. Thank you. Let's talk a little bit about your

critique of his assumed escalation rates for labor and metals. We'll leave aside the discussion about weightings for the time being if that's okay with you.

A. Okay.

Q. You assert that an assumed labor rate of 5.5 percent is very high. Is that a fair characterization of your testimony there?

A. What I'm saying is that the labor rate itself of 5 1/2 percent was the second highest of the rates which were ascribed, which were used for the weighting process.

Q. Well, you do assert that that rate is very high, in your opinion; correct?

A. Well, I believe that the 5 1/2 percent as far as a long-term escalation rate for labor is high in and of itself. But really, that is not what this statement was meaning. This statement was more referring to how the components, which I know were not weighted, but were mixed and matched to come up with the composite escalation rate for each one of the elements.

Q. Do you have any knowledge about what labor costs for utilities were doing in the time frame 2001 to 2006?

A. I don't have something right at hand for a labor restoration rate. But I think the kind of key

issue here is that what we're looking at for this is a 30-year projected period, not what might have happened for a couple of recent years, and you're trying to come up with a rate that's going to accurately represent -- granted, sometimes it's going to be high, and sometimes it's going to be low. There's normal variation. But you're trying to come up with a long-term rate that's going to be reasonable as far as projecting as costs increase. And even if one component may be high, another component could be used to offset. I mean, FPL, as well as every other company, takes actions all the time to try to balance out things that might be, you know, higher cost at a given point with reductions in cost elsewhere.

Q. In preparing your rebuttal testimony, did you make any analysis of utility labor costs over any period or subperiod between 2001 and 2009?

A. No, I didn't. But again, that really wasn't what I was saying here in my rebuttal testimony.

Q. Same question. Did you make any analysis of either metals or materials costs over any period or subperiod between 2001 and 2009?

A. No, I didn't. You know, any sort of material related types of costs would be -- my projection is reflected in the escalation rates, the PUPFI, for

example.

Q. I apologize in advance for dragging you back to a depreciation study related question, but I'm going to do it. If you could look at Deposition Exhibit Number 3, please.

A. I've got it.

Q. And if you would look at what is, counting the blank page, the seventh page there, the page numbered 24 at the bottom, and at the header, it says "Account 365.0 - Overhead Conductors and Devices."

Did you find that?

A. Yes, I did. I'm sorry. You may not have heard me. I said I have it.

Q. You're correct. I didn't hear you. That's why I wasn't saying anything.

Okay. I just want to ask you to just go ahead and read out loud into the record the first paragraph of the description of what's in Account 365.0.

A. Okay. "The assets in this account consist mainly of aluminum primary and secondary conductor, copper conductor, duplex, triplex, quadraplex cable, disconnect, and load interrupter switches, controllers, and related equipment."

Q. Thank you. Do you have any general knowledge of what happened to metals costs in the world metals

markets last year, Mr. Koch?

A. Not specifically.

Q. Okay. Turn over to page 11 of your rebuttal testimony.

A. I'm clearing a zone. Okay. Page 11.

Q. Around the middle of that page, beginning at line 7, there's a sentence that reads, "To see the total effect of these unreasonable escalation rates in isolation, I have calculated the effect of substituting the more reasonable FPL assumptions regarding escalation rates, then adjusting," et cetera. Are you with me there?

A. Yes.

Q. Okay. And by that, did you mean to say that it is your opinion that FPL's assumptions of CPI and PUPFI are more reasonable than those in the Power Services study?

A. Yes.

Q. Did you do any comparison of Mr. Rant's assumed rates and your assumed rates to indexes for more detailed cost components like labor and metals?

A. Well, the CPI and PUPFI encompass more than just a raw material such as metal or the labor that would be associated with doing any sort of work. So by nature, they're more comprehensive and inclusive of the

activities that actually go on in conducting the operations and maintenance and what have you of a utility system as opposed to a particular item. I mean, not everything is made of metal on the materials side. And metal, of course, is a volatile element in and of itself, and you don't want to overstate things, either up or down, by taking kind of a subset of basically a raw commodity as opposed to all of the other basket of stuff that's going to be affecting your costs on a projected basis.

Q. I understand your explanation, but my question was, did you do any comparison of your indexes and Mr. Rant's indexes against any other indexes of labor, metals, and materials costs?

A. No, I did not.

Q. Okay. To your knowledge, do costs for different materials escalate at the same rate?

A. I don't believe so.

Q. Do costs for different types of labor all escalate at the same rate?

A. No, I don't believe so either.

Q. In financial analysis, is it common to use different rates for different cost components in projecting future costs?

A. What type of cost components are you referring

to?

Q. Well, my question was really more general, but let me just ask you. If you were projecting the cost of metals, like aluminum and copper conductor, for example, would it be reasonable to use a metals index?

A. I'm not certain if it would reasonable to use a metals index. I mean, metals might be a component of whatever would be used, because, of course, these are not just raw materials. They're manufactured. Conductors are actually manufactured. They're shipped, they're warehoused, and then they're ultimate installed, so you kind of have multiple different factors that would be involved, you know, in getting the wire in the air.

Q. So we've got materials, we've got labor to make them, labor to ship them, and presumably some energy to make them and get them where they're going. Is that fair?

A. Sure.

Q. Okay.

A. And did you say ultimately install them too?

Q. I meant to. I thought I did. I think I said get them in the air, following your words, I think, or install them, something like that.

Okay. The next line of questions, I want to

ask you to walk through the adjustments that you made that ultimately result usually at the end of each of your subsections in a restated dollar value, because I need to understand what you did there. For example, at the bottom of page 9, you have a sentence that begins, "Correcting for the failure to incorporate NPV-based calculations results in a substantial reduction of $18,600, or 15 percent from the updated MUUC study's reported total value of $122,200 to 103,600 per pole-line mile."

MR. BUTLER: Schef?

MR. WRIGHT: Yes, John?

MR. BUTLER: I'm sorry. Before you go any further, Mr. Koch wanted to take a very brief break before you go into a question.

MR. WRIGHT: Of course. I think this is a good, logical place to take a break. I've got 2:01. Let's come back at 2:10, because I will use this opportunity for a break also.

(Short recess.)

BY MR. WRIGHT:

Q. Mr. Koch, when we agreed to take a break, I was starting to ask you if you could please explain first what the adjustment on the NPV requirements subject matter is. It works out -- per your testimony,

it works out to a reduction of $18,600 off Mr. Rant's updated MUUC study value. And I'm trying to -- I think I see where that shows up in TRK-5, but if you could walk me through how you did that, and then also where it shows up in the numeric exhibits that back up your verbal testimony, I would appreciate it.

A. Okay. If you look at TRK-5, page 2 of 2 --

Q. Got it.

A. And the first column represents the values from Table C-1 in PJR -- hold on a second.

Q. I think it's 3.

A. From Mr. Rant's testimony. At any rate, those values should have come from Table C-1.

Q. Just to be clear, we're talking about an updated C-1, which I have as page 1 of Exhibit PJR-3.

A. Okay. Great. That's what I was looking for. Thank you for pointing me there.

Q. Well, I'm not sure.

A. Yes, they come from the updated, revised May 7th, which is TRK-8.

Q. Right. Okay.

A. So at any rate, I took each one of those values. Those are, of course, the 30-year nominal values. And then what I did was, I went to the schedules and found the -- these numbers could, of

course, also be found on TRK -- it's a replication of Table I-8A, which is TRK-6. You see each one of the single year values there.

Q. Right.

A. So I basically took those, and I ran them forward for 30 years at the escalation rates on Table I-8A from -- I don't remember the revised version of that, but in my TRK-6, and discounted them back at the discount rate that was there. And this is basically the result of those calculations. They're discounted back at the 8.37 rate on that table. So I came up with a 100 -- the bottom line, 104,000 versus 122, and that's basically the source of that first comparison that we saw back in my testimony.

Q. Okay. And then -- I'm sorry. Please continue if you want to.

A. Okay. The second step is basically, if you look in column E, again on TRK-5, page 2 of 2, I've done that exact same exercise that I did in column B, except this time I used FPL's escalation rate in lieu of the escalation rates that were in Mr. Rant's testimony, so that's what comes up with the 46,998. And basically, the difference between the 46,000 in column E and column A is what you see as the 75 grand, or 62 percent. So that's what those two calculations represent.

Q. Okay. And just so I'm clear, in TRK-5, are those two numbers additive so that --

A. No, they would not be additive. The 18, in essence, would be a subset of the 75.

Q. Oh, okay.

A. So both of those variance comparisons are done to column A.

Q. All right. And just so I'm clear, in this -- and I think your testimony says this. Well, maybe not.

Am I correct that the escalation rate that you used before discounting in columns -- to get to column E in TRK-5, page 2, was FPL's CPI projections?

A. Yes.

Q. And CPI only; correct?

A. CPI only, because these are just O&M costs.

Q. Okay. Thank you.

A. And then that result I reported on lines 12 and 13 of page 11 of my testimony, the 47,000 comparison.

Q. All right.

A. That's the sum of kind of a couple pieces of information on page 2 of TRK-5 and where they're found in the testimony.

Q. Okay. Can we continue to the next component?

A. You want to go to page 1, or -- there's no

more components on that page. Do you want to go to the outage restoration on page 11, or how would you like to proceed?

Q. Yes. My ambiguous reference was to the next component of the individual cost component adjustments, in this case, the outage restoration for non-major events, starting at line 17 on page 11.

A. Okay. Great. Actually, for this particular element, there's kind of a simpler way to think about that than actually how I described it in my testimony.

Wait a minute. Excuse me. I'm on the wrong element here. This is non-major events, outage restoration. I was getting ahead of myself. I apologize.

In this particular case, on page -- the numbers we just went over, I computed those so we sort of see those particular elements of the NPV and the escalation rates in isolation. Okay?

Q. Yes.

A. Now as I go kind of to the individual components -- and I think this is the nature of one of your questions. Each time we look at an individual component, it will encompass those two things, plus if there's anything specific about that particular component in addition to those items.

Q. Well, let's go ahead and jump down to the $24,800 reduction in this particular line item, the outage restoration, non-major events, and maybe you can explain what you just said in the concrete terms of this element.

A. Right. So the first component of this is that -- comprised in this adjustment was the difference in the escalation rate from the MUUC study of 6.45 and using the CPI escalation rate, so that was encompassed in this equation. Okay? And then -- excuse me. Let me pull up this particular table. I'm going to go back to Table C -- this is in Table C-2. Non-major events, yes. This refer to Mr. Rant's testimony, labeled C-2.

Q. I'm at Table C-2, page 2 of 8, PJR-3. Is that where you are?

A. That is correct. Okay?

Q. Yes.

A. So at any rate, that's the first component of the element. I'm just refreshing my memory here.

Okay. In this particular data element, basically the two adjustments I made were for -- were the same previous two that we talked about. One was for the escalation rate, and the other was for not doing the present value calculation. Those were the only two quantifications I made to this particular data element.

Q. So am I correct that you -- what number did you start with? Did you start with the $95,500 shown on -- go ahead.

A. If you look in column A, I started with the C-1 number of 46,775, which is on line TRK -- line 2, whatever. And then I made two adjustments to that figure. One was for present valuing the annual figure, and the other was for the escalation rate of 6.45 versus CPI, which can be somewhere in the neighborhood of two-ish percent on a 30-year basis. So that's basically the two adjustments made to that particular line item, which is the reason why this number is the same on page 1 and page 2, the exact same number, because there was no extra adjustment that was readily quantifiable out of it.

Q. You may not have done it in this order, but I think it works out the same way algebraically. You re-escalated using the CPI instead of the 6.45 percent that Mr. Rand had used, and then you discounted using FPL's discount rate; correct?

A. That's correct.

Q. Now, in this particular table, were you using 8.37 or 8.35, or do you remember?

A. It's 8.35.

Q. That's the tax-adjusted; right?

A. The difference between the 8.37 mathematically and the 8.35 is virtually nil.

Q. I'm with you. I just wanted to make sure I knew what it was.

A. Now, one of the things that I did mention, which I didn't try to -- everything in here was not possible to quantify, so there are going to be some things that weren't really readily quantifiable. One of the things that wasn't quantified in this number was the fact that that's an implicit assumption in the way Table C-2 is calculated in Mr. Rant's testimony that assumes that the costs for repairing overhead and the costs for repairing underground are in fact identical, you now, on a per unit basis, if you will.

So that particular element, I don't know what the exact answer to that would be, but we know that there's likely a difference between the two, but it isn't incorporated into the numbers here, because I had no way to quantify it, which actually is one of the challenges about of kind of building the bottom-up approach, is the fact that you can't get all the various assumptions kind of triangulated. You have the potential for introducing -- you incorporate kind of unknowns into that equation which you aren't able to factor out.

This particular element for FPL, of course, is embedded in our costs. We didn't tease it out individually, so there wasn't kind of a point of saying, "Oh, here's what FPL's number might be, and here's what the MUUC study's number might be."

Are we good with that particular item?

Q. Yes. Thank you. Let's move on to reduced revenue losses for non-major events.

A. This is the one where I actually got a little ahead of myself. I was on the wrong page of my testimony. But this one, actually, there's a different way to kind of go about it. I did point out some concerns with the methodology that was employed by Mr. Rant in doing it, but there's actually quite a simple -- there's a much simpler approach which gets you sort of to the same answer.

Basically, I went and took a look at FPL's base energy revenues for 2008, and it was about $2.7 billion you're talking about there. And I divided that by the number of hours that you have in a year, 8,760. You're basically looking at about $308,000 an hour then in terms of revenue that is brought in for base energy, which would be the peaks that would actually get shifted or avoided.

The average outage last year, as we reported

to the PSC, was about 67 minutes. That's slightly higher than an hour. So if you adjusted for that kind of 10 percent differential, you're looking at about $347,000 of lost base revenues in the aggregate. That includes related to overhead and related to underground.

Now, if I would take the assumption here, which is the overhead factor from Mr. Rant's study of 8.78, I would assume that 88 percent is overhead and the remaining 12 percent is underground. Netting the two basically puts you at about $260,000 a year of potential lost revenue and translates into about 5 1/2 bucks a pole-line mile. So it's essentially de minimis.

If you then factor in that when there's an outage, there's going to be what I termed rebound. It's actually composed of two effects. There's what's called snap-back in the terminology of -- typical utility terminology. Some people call it pay-back.

But basically, that's what I described here in my testimony, is that the pool pump was running and the power went out. The pool pump timer doesn't know that it's not running any more. When the power comes back on, the pool pump timer starts as if no time has passed, and it will run the extra 10 minutes or what have you that it was out for. So you will gain back all of that energy. The kWh that you would have had used in one

period, it will be gained back in another period.

Similarly, the air conditioner has to deal with a little warmer house. The water heater, if it happened to be coincident, you have that as well. You know, that snap-back, which is, you know, in all of our DSM programs and what have you, a longstanding type of thing, is on the order of 60 percent.

And then there's also a peak which goes to the -- you know, what's kind of termed rebound, and that's done by our economists. We use it in our sales forecasts. It's basically the -- I was rambling on so long, I lost my -- but it basically accounts for the price elasticity of demand, is what I was trying to say. And there's a 20-ish plus percent issue there.

So those two elements comprise basically sales which, yes, hypothetically were lost at a given moment in time, but will be made up over either the short term or the long term. And accounting for those elements, you're basically looking at something that's under a buck a pole-line mile. So it becomes virtually a de minimis element as far as the calculation is concerned, regardless of any other things that would be associated with this particular calculation.

Q. Okay. I would like to ask you a couple of questions about what you've said so far.

A. Sure.

Q. Either implicitly or explicitly, what did you assume the duration of the outages involved here was? Was it essentially 67 minutes?

A. Sixty-seven minutes is the average annual duration of outage that FPL customers experienced last year.

Q. And is that what you used in here?

A. That's what I -- when I actually wrote my testimony, I kind of followed the pattern that had been outlined by Mr. Rant in the calculation and went that route.

But then as I was preparing for my depo, it occurred to me that there was a heck of a lot simpler way of thinking about it, which is what I just described verbally, as opposed to kind of picking up these pieces and multiplying them together and what have you, and figuring out, well, why is this base energy rate here 4.5 cents too high, et cetera, et cetera, et cetera. It's a lot easier to kind of go down this route and just say, "Well, how much time are people out a year, and how much revenue is that, and what's the effect of rebound and snap-back?" I mean, that's a lot simpler type of an equation as opposed to this methodology, which uses basically the building blocks of those elements to try

to get there.

Q. I just want to make sure I understand what dollar value you started with. I think you said base energy revenues of 2.7 billion, approximately, in 2008.

A. That's correct.

Q. And do I understand that means that we're talking about the -- just the non-fuel energy charge revenues, or what?

A. It would be -- it's the base energy charge that you would see on a customer's bill, minus, in the case of a residential, the customer charge, because, of course, you're going to pay the customer charge regardless. That's not an energy piece. And in the case of a demand level customer, it does not include the kW component of the charge either, because the kW is obviously not going to be -- it's unlikely to be affected by that, because you set that based upon your maximum demand in a given billing period.

So those particular portions of the costs are not -- excuse me, of the revenues are not part of this, because they wouldn't be subject to a potential non-billing, hence a loss of revenue.

Q. Okay. I would understand that you have netted out fuel revenues. What about the other clause revenues like storm cost recovery?

A. The storm cost recovery is not in there.

Q. Okay. And in applying your snap-back ratio, does that assume that each of the outages experienced was a 67-minute outage as opposed to making some assumption about there being, you know, five ten-minute outages and three five-minute outages?

A. No, it does not assume that every outage is 67 minutes. It's just a percentage applied to the energy sales that would be otherwise lost.

Q. Do you believe that the snap-back ratio is the same for a five-minute outage as for a 60-minute outage?

A. I don't really have an idea of exactly what the dispersion might be around that 60 percent, but on average, that's a representative figure, and that's based upon -- to my knowledge, that's based upon, you know, measurement and verification of end-use data from our DSM programs.

Q. Aren't the outages in the DSM programs typically somewhere between 15 and 30 minutes for your load control programs?

A. I believe that's correct for load control.

Q. What other of your DSM programs would have load actually disconnected and then snapping back?

A. Let's see. I'm trying to think. You would have that -- I mean, you obviously have it for multiple

load control programs, not just the residential version.

Q. Right.

A. And you would have rebound, not necessarily snap-back, but rebound associated with the other -- you know, the smaller definition of rebound associated with the other energy related types of programs, I would think.

Q. And that rebound, as I understood your earlier comments, is essentially -- do I understand your earlier comments to indicate that that rebound is essentially the price elasticity response of customers?

A. Yes.

Q. Can you tell me what value is used for price elasticity of demand in this context?

A. I can. Just a moment.

For residential, you're looking at about 24 percent.

Q. Okay. Do you happen to have the number for commercial?

A. I do. It's 17 percent.

Q. Thank you. In 2008, you all had some excitement in the month of February, didn't you, a fire in a substation or something with some prolonged outages?

A. When?

Q. I believe it was February of 2008.

A. I'm not certain about the date. I'm not certain either about the event you're referring to. Is it the -- oh, okay. Well, I'll take your word for it that it was February of 2008.

Q. Do you remember the event I'm talking about? There was some extended investigation and ongoing reports to the PSC about it. They kept showing up on the internal affairs agenda. Do you know what I'm talking about?

A. Well, I know the event you're talking about. I'm not overly familiar with it.

Q. So you're not familiar with the actual outages experienced by the FPL customers during that event?

A. I don't have any quantification of that. No, I don't --

Q. Okay. So if we could just get down to the bottom line, then, your last sentence on the top section of page 13 says that making the adjustments that you advocate brings the cumulative net reduction to about $25,900 per pole-line mile.

A. Yes. You would find that on TRK-1, column E.

Q. TRK-5?

A. TRK-5. Sorry about that.

Q. That's okay.

A. Column E, line 4, which is sort of the column -- yes, columns E through G are sort of just kind of a running total.

Q. A running cumulative total as you go down each item; correct?

A. That's correct.

Q. Okay. Let's move on to reduced revenue losses from major events.

A. Okay.

Q. Let me just ask you first, in this context, by major events, do we mean named storms?

A. Yes.

Q. Okay.

A. I should say that's my understanding of what it means.

Q. Okay. Good.

MR. BUTLER: Schef, while we're on it, I wanted to point out that that was a term that was used in Mr. Rant's testimony, and we were just trying to follow that.

MR. WRIGHT: Okay. Thank you.

A. Basically -- do you want me to continue?

Q. Yes, please.

A. Okay. Basically, the gist of this particular point is not so much the calculation, which I did not

examine in any detail. It's the bottom line that making this as an adjustment or applying this as an adjustment to CIAC, otherwise applicable CIAC for customers wouldn't be appropriate, because it's not something that's actually going to be avoided by the general body of customers, as opposed to other things which could be benefits from undergrounding. This particular one would not, so therefore, it wouldn't be appropriate to be adjusting CIAC for this element.

Q. Well, let me ask you this. As we sit here today, if FPL were to avoid large scale outages, by hypothesis, if you avoid a large scale outage, you're going to have more base rate revenue. Will you agree with that?

A. In that time period, yes.

Q. Okay. As we sit here today under the stipulation and settlement agreement that FPL and several consumer parties, including one of my clients, entered into in 2005, isn't it true that that revenue would either flow to FPL or to FPL's customers, depending on where it fell against the revenue sharing formula?

MR. BUTLER: I'm going to ask the witness to answer only to the extent he's familiar with the revenue sharing formula.

A. Okay. I will say tentatively yes.

Q. Okay. Leaving aside the settlement agreement, assume the same scenario, you avoid a future outage, and there are -- essentially, by definition or by hypothesis, by avoiding the outage, revenues are preserved. If those revenues and sales then show up in a test year in a future rate case, doesn't that have the effect of benefiting customers by lowering rates by virtue of the higher billing determinants?

A. Well, if FPL did that, that would be true, but FPL doesn't include the effects of hurricanes in a test year, to my knowledge.

Q. I'm just curious. Do you know one way or the other?

A. Are you asking me if I'm 100 percent certain?

Q. Yes.

A. I would call it 99-point-something.

Q. Okay. Are you telling me that FPL does not include any averaged long-term component for the revenue impacts, for the sales impacts of storms in its test year projections?

A. I don't believe they do, or we do.

Q. Don't you all assume some average weather conditions in making your sales projections?

A. I wouldn't say that average weather conditions

include a hurricane. It's normal weather conditions.

Q. Okay. Let's move on to vegetation management.

A. Okay. In vegetation management, this particular one is a periodic type of expense, so we have -- every three years, we're maintenancing feeders, and every six years, we're maintenancing laterals, a three- and six-year cycle. That was incorporated. So basically, the expenditures do not happen year after year after year at a given location. They happen on a periodic basis.

The calculation here for vegetation management incorporated the previously mentioned escalation assumptions, FPL's escalation assumptions versus the assumption that was in the MUUC study, and it also incorporated the periodic nature of the spending. So those are the two adjustments that were made here for vegetation management resulting in the figures you see.

Q. I'm looking at TRK -- well, maybe I'm looking at the wrong page. TRK-5, page 1 of 2.

A. Line 6.

Q. Right. So your adjustment is $38,167; correct?

A. That's right.

Q. And that's the result of two effects, one, the change in the escalation rate; and two, the change to

put it on a three- and six-year cycle only?

A. Right, and then, of course, you know, running that forward and then present valuing it back as a result.

Q. All right. Other O&M costs. I'm on page 15 now.

A. Okay. Other O&M costs is a more unique animal. In Mr. Rant's study, he used, in lieu of FPL's data -- in the updated study, I should say, in lieu of FPL's data, data from two co-ops.

What am I allowed to say? Some of this is confidential, so I --

Q. No, none of it is confidential, as things turned out.

A. Oh, I'm okay? Sorry. Anyway, he used two co-ops. I'm looking for where my page is that came the other day with that data on it.

Okay. I've got it. One of them actually I misnamed here, because I took it from the deposition, and I guess it was misidentified, and it's not actually Jones-Onslow. It's Brunswick, I think, Brunswick Utilities.

At any rate, that data was substituted for FPL's data, which, back in the previous 2006 study where both calculations were made, the calculation for FPL

came out with underground more expensive. This version on Table C-7 in PJR-3, page 6 of 8, came out to have overhead more expensive than the new revised version of this data, which I assume, since the company was misidentified, all of the numbers have changed. So I'm not certain which relates to which on the original C-7, but it looks like it's a slightly higher differential in favor of -- with overhead being more costly in this particular new late-filed exhibit, Deposition Exhibit Number 2.

At any rate, I guess the gist of the issue here is that I have used FPL's data in lieu of these companies, which I didn't find a compelling reason for using their historic information in lieu of FPL's historic information. And sort of looking at these companies, the one guy is about -- I don't know. His spending is on the order of half a percent to 1 1/2 percent of FPL's. His line miles is under 2 percent of FPL's. And this other guy here is about 8 percent in line miles and on the order of 3 percent maybe in terms of the spending.

So it's difficult, from my view, to see how this would be a relevant substitute for FPL's. Basically, what you're looking at here is FPL's data versus the population that was on Table C-7, which I

assume would have to be now updated to reflect the new values from the late-filed deposition exhibit.

Let's see what the actual number comes out to be. It looks like it becomes -- instead of what was reported as $332 per line mile more expensive, it's now -- on this late-filed version, it looks like $393 more expensive for overhead based on these smaller companies.

Q. Okay.

A. That was the basis of that number.

Q. All right.

A. For the underground locates, those values are embedded within FPL's costs, so we didn't attempt to pull them out in our analysis. And really, the only adjustment you see here is basically for -- excuse me. The only adjustment you see here is -- let me make sure. Is for -- there's two. One is for the adjustment -- it's the same, actually, as it is on TRK-5, page 2, which is basically nothing more than for NPV and for the escalation rate. The escalation rate has a very slight adjustment.

Q. Right. So on this one, you used the CPI instead of the value that Mr. Rant had used, and then you discounted it by the 8.35 instead of the 8.37. Is that accurate?

A. Well, I actually discounted it, and then, yes,

I used the 8.35 instead of the 8.37. But again, my starting basis is Table C-1, which is not a discounted value, from Mr. Rant's testimony.

Q. Well, hang on. I'm just trying to understand what you did. Did you start with the 332 and then escalate that using the CPI and then discount it back using 8.35 percent as your discount rate?

A. Just a second. Let me make sure I --

Q. Or did you do something else?

A. The number that -- yes, I started with the 332, that's correct. And basically -- let me make sure that's the right line. No, locates is a 218 number.

Q. I'm sorry. I was looking at the wrong page.

A. TRK-6, that number -- that's from you all's study, which is $218, which I didn't work up a competing figure. But if you take that to 218, and instead of using the 2.30 escalation rate, use CPI, they're very, very close.

Q. Okay. I understand that.

A. Okay. Regarding the pole attachment revenue -- let me just refresh my memory here. I think there's no schedule for the pole attachment revenue computation in Mr. Rant's testimony. There's a value, but there's no supporting schedule that says where that came from. So basically, again, we're looking here similarly at the

value that FPL had for the pole attachment revenue from our study, because I was unaware of what the source of the information was for Mr. Rant's study. And again, ours comes from the books and records. It doesn't result in a humongous difference. It's $2,000.

Q. Did you use a figure of $310 per pole-line mile and then multiply that out times CPI and discount it back?

A. No. I used the figure from FPL that you can find on TRK -- wait. One of our binders has the same color cover. But you can find that on TRK -- let's just say 4, for example, page -- TRK-4, page 10, up in the top there. And the number is 515. Actually, I guess we could have seen it on page 1, now that I think about it. I made it a little more difficult than it had to be.

But in essence, it's 515. So I just used that value, because, again, I had no basis for a different figure because there's no -- you know, there's really nothing to say from the supporting schedules from Mr. Rant's testimony.

Q. So you used 515, escalated it using your CPI escalators, and then discounted it 8.35 percent?

A. That's correct.

Q. Okay.

A. As far as line 10, reduced accidents and

awards, I did not create a competing figure due to the confidentiality issue, but it really reflected the same thing we just described for the pole attachments and the underground locates. I just used FPL's escalation rate and FPL's -- well, the discount rate was identical pretty much for having that number.

And I did make note in the testimony that the source of the information that Mr. Rant used for his testimony is that particular MFR, and that MFR line item includes more than just the costs associated with this particular element that we're talking about with the distribution differential, operational cost differential. So it's a subset figure, but I did not make that adjustment here on these schedules due to confidentiality.

Q. Okay. I would just like to pursue your last comment. Without asking you to talk about the numbers, you did just make the statement that there are other -- I would interpret it as being that there are other events that cause FPL to incur damages and injury compensation type costs that are reflected in the MFR value. Is that an accurate characterization so far?

A. Yes.

Q. Can you just please tell us what -- you know, give us as many examples as you can of what the other

items are, please.

A. I can't actually speak to what those other items are that are in there, because I'm not familiar with the particular cases and what have you. I am familiar, however, with what it is kind of associated with this stuff.

Q. So you know what it is with respect to overhead and underground related contact incidents, but you don't know about the rest of it. Is that fair?

A. That's a fair statement, yes.

Q. In terms of the total of overhead and underground contact related incidents, can you tell us what the percentage of overhead is?

A. I don't know that number right off the top of my head. It's certainly more with overhead than it is with underground.

Q. Okay. If you could bear with me just a minute, I've got to find a page.

Have you reviewed the numeric data presented in Tables G-1, 2, and 3 of the original MUUC study, which are now pages 138, 139, and 140 of PJR-2? They represent historical numbers of injuries and fatalities by year, 1990 through 2006.

A. I see the data here. I'm not familiar with kind of the source of that and what have you.

MR. BUTLER: Schef?

MR. WRIGHT: Yes, John.

MR. BUTLER: Let me break in and say I am -- you probably notice I joined on by telephone here. I'm going to be stepping out of the deposition. I'll leave it on mute. And any objections that need to be made, I look to Ken Rubin to make those.

MR. WRIGHT: Okay. Travel safely.

MR. BUTLER: Thank you.

BY MR. WRIGHT:

Q. Okay. Let's look at TRK-1, page 1.

A. Yes.

Q. Continuing on down to line 13, you proposed a net capital adjustment of just under $15,000 net present value; is that accurate?

MR. RUBIN: Schef, did you mean to say TRK-5, page 1?

MR. WRIGHT: I sure did.

MR. RUBIN: I thought you said TRK-1. I apologize.

MR. WRIGHT: I sure may have. I might have said TRK-1, page 5.

A. Yes, that's correct, in answer to your question.

Q. Thanks. And what's the property taxes and

insurance value, Mr. Koch?

A. Basically, this is the property taxes and insurance associated with the capital investment, the net capital investment, actually, I should say.

Q. Okay. And would I be correct to understand that the value that's shown there, the $1,877, is the present value? Looking at TRK-4, page 1 of 17 and 2 of 17, is that the present value of the row headed "Property Taxes and Insurance" that starts at $18 in 2008 and escalates to $409 in 2037, all discounted back at 8.35 percent?

A. Yes, it is.

Q. All right. And then I guess essentially, finally, on page 1 of TRK-5, your analysis asserts that Mr. Rant understated the pole inspection and remediation costs leading to the higher adjusted value by some $4,500?

A. This is the capital related components associated with the -- the capital expenditures, excuse me, associated with the pole inspection and remediation. We covered that calculation earlier.

Q. Okay. If you all will just bear with me, we'll stay on the record. I'm just going back over other parts of the rebuttal testimony to find a few more questions that I believe I have there.

I would like to ask you to look at page 4 of your testimony. Here and elsewhere, you use some fairly critical adjectives to describe Mr. Rant's testimony, including incorrect, ill-conceived, unreasonable, unsupported, selectively abandoned, without justification, et cetera. Am I correct to understand that it is your opinion that these are appropriate characterizations of his testimony?

A. Well, yes.

Q. Okay. I would like to ask you to look at page 5, lines 19 and 20. You make the statement that Mr. Rant's and Mr. Shank's assertions regarding newer underground facilities undermine their own position. Can you explain what you meant by that, please?

A. Let me read the paragraph.

Q. Sure.

A. Yes. I think it continues on past that point in terms of the explanation of that particular statement. First of all, the information that has been contained here that we've been provided as part of the -- excuse me, that Mr. Rant and Mr. Shank had relied upon when they talked about it is all historical data as well, and so it doesn't really provide any basis for saying that inherent bias has been introduced. Most of our facilities -- and we have this in one of our

deposition items. We had given an age of facilities. I think it had been requested that we do it sort of by decade or something of that nature.

Q. Right.

A. And if you look at that, you'll see that the overhead facilities in fact are significantly older than the underground facilities are, which turns the equation around. Particularly Mr. Shank in his deposition said that basically 1980 was a reasonable threshold point for when newer technologies were installed. If I remember correctly, he had about 25, 26 percent of underground facilities were installed prior to that point, with about 70-plus percent of the overhead facilities that had been of that earlier vintage.

There are a number of points in the testimony that speak to -- and I think we had explored some of this today, that speak to the underground having had a number of improvements. Of course, I think this is in reference to like the 1980 vintage, but underground having a number of improvements. But there isn't really any discussion of any improvements on the overhead side which might reduce operational costs as well.

Let's see here. Okay. And then I just sort of point out kind of a couple of intuitive items. Number one is that certain causes of costs being

expended for various facilities aren't really necessarily a result of the age. They're more a result of circumstances, being kind of in the wrong place at the wrong time. If a tree falls on something or uproots something, it doesn't necessarily have to do with the age. It could have been installed yesterday, or it could have been installed 50 years ago. You know, the cost is generated by the event, not by per se the age of the facilities.

And I think we discussed earlier that basically, though we hope that the facilities we install, which are kind of meeting the balance of the reliability and operational costs, will in fact be cheaper over time to operate and maintain, it isn't known instantly afterwards if kind of the initial quality is going to be the same as the quality over their life span. So there's really nothing to rely upon, nor has there been anything presented to the contrary that would basically demonstrate that operational costs in fact are -- should be reasonably expected to be different than what has been experienced on a historic basis.

Q. I just want to follow up with a couple of questions on what you just said. I know, at least from engineers telling me, that trees have indeed fallen on

transformers. Do you have any idea how many times that has occurred?

A. No, I do not.

Q. Do you have any information about how many dig-ins per year or over the last five years FPL has suffered to its buried underground system?

A. No, I do not.

Q. Do you have any information as to dig-in damage to cable and conduit as compared to direct burial?

A. No, but I wouldn't expect that there's any reason to say that the construction technique would have any resulting difference as a result of that.

Q. I think we covered this much, much earlier in the deposition, but in your answer just now, you mentioned the possibility of overhead improvements, and I just want to ask you, can you tell us any specific overhead technological improvements that you would assert would cause new overhead technology, new overhead installations to have lower O&M costs?

A. Well, I would point to hardening activities as being one such example.

Q. Anything else?

A. I'm not -- as we talked earlier, I'm not an engineer to be able to answer that sort of thing.

In essence, I guess what I'm saying there is that -- thinking about it a little further here, in essence, what I'm saying is that the resulting operations and maintenance cost isn't only a function of the materials that are utilized. It's also a function of the way that their system is engineered and things are installed.

Q. Okay. I would like to talk about the treatment of the Tier 2 group of underground conversions and URD projects --

A. Okay.

Q. -- in your proposal, in FPL's proposal, actually, in its tariffs that are currently in place.

For conversions, do I understand correctly that the same credit percentage would apply to a conversion project of 1.01 miles as would apply to a conversion project of 2.99 miles?

A. For the ASRC, you're saying?

Q. Yes.

A. Yes, or 1.1 -- did you say 1.1?

Q. I said 1.01.

A. Okay. Yes. I'm sorry. I misheard you.

Q. Won't you agree that it makes common sense that a project of, say, 1.1 miles is a lot more like a project of .95 miles than it is like a project of

2.95 miles?

A. Well, I think the fundamental difference here is basically kind of a lack of data, basically being able to describe the distance from zero to 3 miles. You know, we don't have much data for the interim. We know what we find is a reasonable figure for 3 miles, and we don't know, okay, let's have discrete values or some sort of stair-stepping or something like that as we migrate down to the person that's the single lot, which probably has virtually no value from a storm restoration standpoint.

So what we did was, we picked a certain point to have kind of a floor, if you will, that seemed reasonable and was not a huge credit, but accommodated something that basically said, okay, there should be something here, though we can't necessarily quantify what that is, so let's sort of pick a middle rung that can be done, you know, to kind of reasonably accommodate that there is going to be some incremental value. But a person could -- you know, an applicant could basically, you know, fall kind of within a continuum, but we are not able to describe either discrete steps nor what that continuum exactly would look like.

And then also involved in the thinking of this was the actual practicality of administering this, given

the fact that these calculations are done within our work management system, which does not have, you know, the ability to, in essence, program in formulas or something of that nature which would create an infinite number of discrete values, coupled with, you know, the transparency of a customer being able to see on tariffed values like URD, you know, what do those values actually represent.

So it's kind of multiple prongs, or multiple things have to be balanced in order to come up with what the most appropriate solution is and the fairest solution for applying these ASRC costs.

Q. Now, you mentioned the floor. The floor really is the one- or two-lot customer, and they're an applicant, and they get 5 percent; right?

A. Yes.

Q. Okay. And then if you're in a conversion context, if you're at or above one mile, you get 10 percent of the otherwise applicable CIAC, and if you're at or above three, you get 25 percent; is that accurate?

A. Yes.

Q. Surely it is true that in a conversion context, you're going to know probably down to the foot what the length of the conversion is. Isn't that true?

A. Yes, you'll know with a good deal of precision.

Q. And are you saying that you just don't consider it practical to put number of feet or number of miles, like 2.7 miles or 2.9 miles, into a formula and run a calculation as to what the credit would come out to be?

A. What I would say, we have basically an entire kind of territory here in which you have to make sure that customers are all treated equally if this is a job done in Lake City or a job done in Miami, and you have to make sure that basically all of these things are implemented correctly.

And one of the key ways of doing that, that we ensure that is, we use a work management system, which is a table-driven -- by its nature, just to let you know, it's a table-driven type of system, and there are a certain number of spots in any given table that can be selected from, and it's not something where you can create kind free-form algebra within it as far as computations. That would require actual vendor changes. It's not something -- I mean, the structure of us and other parties who use this same system, it requires the vendor to actually change it. It isn't something that FPL just houses, and it's not something just sitting on

-- a small application sitting on a server or something of that nature.

So it's a fairly -- what might appear intuitively rather straightforward is actually a very complicated task to make sure everybody else has to be able to apply it consistently for customers so you don't get somebody who gets an advantage vis-a-vis somebody else in the exact same situation. So there's a lot of complications associated with that, aside from the fact, like I say, there isn't really the ability, other than academically, to kind of describe what might be that arc or those stair steps or anything of that nature.

Q. When FPL calculates a proposed CIAC for a conversion project, aren't those calculations job-specific?

A. The calculations are job-specific, but they still utilize the same sets of tables and what have you for anything. You know, a reel of wire of a certain size is this, it costs this to install, it costs this to purchase, et cetera, et cetera. I mean, that type of stuff is standardized, so you basically select quantities that are going to match up to what you need as you engineer the specific job.

So the engineering work associated with it is customized, for lack of a better term, or specific to a

given job, but the components that are then used and applied as you inventory that job and you cost it out, those are not specific to that given job.

Q. And for a conversion project, a customer actually has to pay for an engineering estimate for the work; correct?

A. That's correct, for a binding estimate, not for a ballpark.

Q. But to actually get the job done, the customer or applicant has to pay for it?

A. Yes, and then that's netted against the ultimate cost if they proceed with the job.

Q. Right. I appreciate the explanation you gave me on your concerns about practicality, but I am going to ask you a question I tried to ask earlier, and that is, do you agree that it makes common sense that a conversion job of, say, an integrated group of city blocks that winds up with 2.9 miles of converted facilities is a whole lot more like a 3.0-mile job than it is like a 1.05-mile job? Do you agree with that?

A. Yes, I would agree with that.

Q. And the next question is, I understand your concerns about practicality, but as a representative of the applicants, I have to ask you, don't you think it's fair that the 2.9-mile job get treated like it's a

2.9-mile job instead of like it's a 1.5-mile job?

A. I think that the practical issue aside that we've already covered, describing these kind of -- whatever these intervals would be, whether they be infinite or whether they be kind of more granular or whatever, doesn't in fact kind of improve the likelihood of a more precise result at the end of the exercise.

Q. Well, I'm not asking specifically about a precise result, but you already agreed that a 2.9-mile job is a lot more like a 3.0-mile job than it is like a 1.5-mile job. Wouldn't it be more fair to treat it a lot more like a 3.0-mile job than like a 1.5-mile job?

A. From a practical standpoint, there has to be some point where you say, "Here's where the line is."

Q. Well, I understand that, and I think I understand your position is that practicality should control. But is it your position then that practicality trumps fairness? Is that what it comes down to?

A. Well, actually, for the reasons I described before, I think it is fair, because it ensures that you don't have inconsistent treatment of customers. It creates uniformity as opposed to not, so I think it is fair by that measurement.

Q. What about fairness as between the 2.9-mile job customer or applicant and the 1.1-mile job customer

or applicant?

A. There is going to be -- in any one of these things that is described differently from how FPL kind of set it out, there's going to be people who with a different version would be winners or losers versus the version that FPL has out there today in a tariff.

Q. And isn't it correspondingly true that there are winners and losers using FPL's approach as compared to that advocated by Mr. Rant, whether linear or curvilinear?

A. Either way, there will be people on either side; that's correct.

Q. Okay. Do you have a personal opinion as to the possibility of using some form of sliding scale to address this issue for jobs between 1 and 3 miles?

A. I'm not certain -- different that what I'm expressing right now?

Q. Yes. My question is, are you really just supporting the company's position here? I mean, do you have a personal philosophical problem with using a sliding scale to address customers in the range between 1 and 3 miles?

MR. RUBIN: Let me just object to the form of the question, Schef.

MR. WRIGHT: Okay. It's a fair objection, but

you can answer it if you can answer it, Mr. Koch.

A. Actually, I forgot what the question was before the objection. I apologize.

Q. Do you have a personal philosophical objection to the concept of using a sliding scale to treat customers, you know, at different points on a continuum differently?

A. I'm comfortable with the position that FPL has out there in its tariff.

Q. Okay. I think that we are very nearly done.

At the bottom of page 20, you indicate that Mr. Rant's concept of case-by-case operational cost differential calculations -- sorry. I lost my train of thought. You criticize Mr. Rant's suggestion that case-by-case operational cost differential calculations are appropriate; correct?

A. I disagree with that.

Q. I am sure that you are probably as familiar as I am with Rule 25-6.115, Florida Administrative Code. Is that fair guess, Mr. Koch?

MR. RUBIN: I'm going to object to the form of that question, Schef.

BY MR. WRIGHT:

Q. Okay. Mr. Koch, are you familiar with Rule 25-6.115, F.A.C., conversion of existing overhead

investor-owned distribution facilities?

A. Yes.

Q. Okay. I will aver to you that section (10) of that rule reads as follows: An applicant requesting construction of underground distribution facilities under this rule may challenge the utility's cost estimates pursuant to Rule 25-22.032, F.A.C. Does that sound like a provision you're familiar with?

A. Yes. I'm not familiar necessarily with the provision for the challenge, but, yes, I'm familiar with the provision that you're describing.

Q. You're welcome to look it up, but 25-22.032 is simply the procedural rule regarding customer complaints.

A. Okay.

Q. Now, will you agree that this rule allows a customer who disagrees with your CIAC calculation to challenge it before the Commission?

A. Yes.

Q. So would it be fair to say that your objection to the case-by-case calculations is more along the lines of an objection to FPL having to do it right out of the box, but not attempting to negate the rights granted by the rule?

A. Well, let me rephrase that. I think my answer

is yes, but let me rephrase what I think I heard you say.

Q. Okay.

A. Are you saying that -- if you're saying that there's nothing in -- that I don't agree with this approach, but that doesn't mean that I'm saying that a customer does not have the right to challenge it in front of the Commission, then, yes, I agree with that statement. Was that a correct restatement of what you said?

Q. It's sure close enough.

A. Okay.

Q. Bear with me just a moment.

I just have a few more questions. This one follows -- this first question follows up on your critique of Mr. Rant's using the two co-ops, Brunswick EMC and A&N Co-op, in his O&M cost calculations.

Wouldn't you expect that FPL would have significant advantages in terms of being able to procure appropriate goods and services for underground installations and O&M costs as compared to two small co-ops just because FPL is one of the ten biggest utilities in the country?

A. I would expect that as far as procurement is concerned that FPL would be able to do well for any type

of equipment from a purchasing power standpoint.

Q. Okay. These questions follow up on not going into any confidential dollar information, but they do follow up on the contact incidents or accidents. Do you know whether the dollars in the MFR include costs incurred for events, accidents involving FPL employees and contract employees?

A. I'm not really aware, other than, you know, the things we've talked about, what might also be incorporated in that.

Q. Okay. Do you know how FPL compares in terms of its contact accident events to other utilities, either in total or per mile of facilities?

A. I do not.

Q. In its planning analyses -- and we'll talk about distribution specifically here. Does FPL consider the economic costs to its customers in terms of outages in making its distribution plant investment decisions?

A. Could you ask me that question again?

Q. Sure. In FPL's distribution planning activities, does FPL consider the economic costs to its customers of potential outages in the analysis, or does FPL just consider the cost of installing and maintaining whatever the facilities in question are?

A. When you talk about the economic costs to our

customers, are you talking about the cost of lost business or some other type of externality type of cost? Is that what you're referring to?

Q. I think I'm referring to the type of cost you described, and I guess my question is, do you consider them externality costs in the sense of being external to FPL's decision calculus?

A. Yes, I believe as far as like the mathematical calculation, yes, it would be external to FPL's decision, because it's not relevant to FPL's cost of doing business. Obviously, though, as I mentioned before, we try to make decisions to maximize reliability as much as possible.

MR. WRIGHT: Okay. That is all the questions that I have. And I think Marlene has left us, so if staff has questions, fire away.

MR. JAEGER: Eric Sayler is going to have some questions, because I have to go do a briefing for Commissioner Skop.

MR. SAYLER: Is everybody ready?

MR. WRIGHT: I am.

CROSS-EXAMINATION

BY MR. SAYLER:

Q. Hi, Mr. Koch. My name is Erik Sayler, attorney for the Public Service Commission. We have a

few questions which we asked of your co-witness, whose name escapes me right at the moment -- McEvoy -- and so I'll ask the questions again.

The questions are divided into each different docket. The first set of questions are going to pertain to 070231. The next will be 080244. And within the 070231-EI, there are two different tariffs at issue. And if at any time you don't understand my questions, just please let me know, and I'll try to rephrase it.

A. Okay.

Q. Thank you. The first question is, how many new residential subdivisions have been provided underground service under the tariffs approved in Docket No. 070231-EI between the effective date -- excuse me, effective between October 9, 2007, and November 12, 2008?

A. I have information on this. We still need to verify it, but I can give you have the information here. In answer to your question, that was 24 projects in that time period.

Q. All right.

A. Subject to check. I mean, I can answer these questions, but again, all of them will be subject to check.

Q. All right. Second question, how many new

residential subdivisions have been provided underground service under that same tariff effective November 13, 2008, to date?

A. That would be 13 projects.

Q. All right. Thank you.

A. A total of 37 in all, and about -- let's call it 1,300 to 1,400 lots.

Q. Okay. Thank you. Are there any pending requests for new residential subdivision underground installations under this docket and the tariffs there?

A. Yes, there are, though I don't have information where they are in the process. But there's 44 projects, about 19 -- let's call it 1,950 lots, and the total of the aggregate CIAC is about 800,000. And actually, I should have mentioned for the previous two batches, the total aggregate is about 700,000.

Q. Okay. So let me just clarify. You said there are approximately 44 pending projects that cover approximately 1,950 lots?

A. That's right.

Q. And the total aggregate for the -- we'll call it 44 pending projects. The CIAC to be paid by the customer applicant is approximately 800,000; is that correct?

A. That's correct.

Q. And approximately 700,000 were paid on the completed projects, the 37 that were between October 9, 2007, to date; is that correct?

A. That's right.

Q. All right. That is it for Docket 070231. One moment.

For Docket No. 080244-EI, how many underground conversions were performed by FP&L pursuant to this tariff since the effective date of November 13, 2008?

A. There are four projects that have paid CIAC, two in January and two in April, and the aggregate amount of that is 3.1 million.

Q. All right.

A. And you're going to ask me the pending next?

Q. Yes.

A. There are seven pending. And when I say pending, these are people we've provided a binding cost estimate to that have not yet paid CIAC, and that number about $3 million in the aggregate.

Q. All right. Backing up a moment to 070231, when you said there were 44 projects, those are projects that having binding cost estimates as well; correct?

A. In the URD, they don't get a binding cost estimate. They've been given an estimate, but we haven't proceeded with them yet.

MR. SAYLER: Okay. Thank you. That is it for the questions that we have with regard to these two dockets. I did have a couple other kind of procedural questions related to the hearing itself which I'll ask and check with you guys whenever it's appropriate.

MR. WRIGHT: Okay. Before Ken does any redirect, I would like to ask a couple of follow-ups on staff's questions. Is that okay, Ken?

MR. RUBIN: Yes, that's fine.

REDIRECT EXAMINATION

BY MR. WRIGHT:

Q. Mr. Koch, I was struck by the relatively small number of new lots in the underground subdivisions since October 2007. It sounded like you said there had been something like 1,400 lots, 1,300, 1,400 lots come in underground in the last year and a half or so. Is that accurate?

A. That's correct.

Q. If you know, how many new subdivisions has FPL provided service to using overhead facilities during that time?

A. I don't know the answer to that question.

Q. Okay. Am I correct that just in terms

process, customers under the URD tariff don't pay for a binding cost estimate?

A. That's correct. They get it based on the tariff charges, which are all spelled out.

Q. And finally, can you tell us the four projects that have paid -- the four projects that have actually paid their CIAC, the two in January and two in April you mentioned?

A. Yes. I'm not certain what will be the most obvious description here, but I'll just tell you the customers' names. Okay?

Q. Sure. That's fine.

A. In January -- well, you'll be familiar with this. Jupiter Island Phase E as in echo, and Sunny Isles, a phase there for them.

Q. Okay.

A. And then April is Phase Charlie for Jupiter Island, and then Golden Beach, a phase for Golden Beach.

MR. WRIGHT: Thank you. That's all the follow-ups that I had.

MR. RUBIN: This is Ken Rubin. I have just a couple of questions.

CROSS-EXAMINATION

BY MR. RUBIN:

Q. Mr. Koch, in preparing your cost differential

analyses, did you include depreciation expenses?

A. No, I did not.

Q. And secondly, we talked earlier about a document Mr. Wright was asking you about, TRK-1, page 90 of 196, and specifically the reference is to the Handy-Whitman index. Do you know why that information or why that reference to the Handy-Whitman index is included on the document that's identified as TRK-1, page 90 of 196?

A. Yes. Well, subsequent to that question, I was provided the information that that's merely used as a benchmark type of comparison for the information that's contained on that page. It wasn't actually used in calculating any of the values in the URD tariff.

MR. RUBIN: Okay. Thank you. I have no other questions.

MR. WRIGHT: Okay. I think we can go off the record unless, Erik, you feel the need to have this further discussion on procedural matters on the record.

MR. SAYLER: No. I think we can go off the record.

(Proceedings concluded at 3:48 p.m.)

CERTIFICATE OF REPORTER

STATE OF FLORIDA:

COUNTY OF LEON:

I, MARY ALLEN NEEL, Registered Professional Reporter, do hereby certify that the foregoing proceedings were taken before me at the time and place therein designated; that a review of the transcript was requested; that my shorthand notes were thereafter translated under my supervision; and that the foregoing pages numbered 1 through 144 are a true and correct record of the aforesaid proceedings.

I FURTHER CERTIFY that I am not a relative, employee, attorney or counsel of any of the parties, nor relative or employee of such attorney or counsel, or financially interested in the foregoing action.

DATED THIS 2nd day of June, 2009.

MARY ALLEN NEEL, RPR, FPR
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June 2, 2009

JOHN T. BUTLER, ESQUIRE
Florida Power & Light Company
700 Universe Boulevard
Juno Beach, Florida 33408-0420

Dear Mr. Butler:

Re: Dockets No. 080244-EI and 070231-EI

Enclosed is your copy of the deposition of THOMAS R. KOCH taken in the above matter on May 27, 2009.

Since reading and signing was not waived, please make arrangements with the witness to read your copy of the transcript and make any corrections on the errata sheet on the following page.

Please forward the completed errata sheet to Robert Scheffel Wright for attachment to the original transcript and a copy to counsel for the Commission staff. You should also attach a copy to your transcript.

Thank you for your cooperation in this matter.

Sincerely,

Mary A. Neel

cc: Robert Scheffel Wright, Esq.
Ralph Jaeger, Esq.

ERRATA SHEET

Under penalties of perjury, I have read the foregoing transcript of my deposition, pages 1 through 145, and hereby subscribe to same, including any corrections and/or amendments listed below.

_____ _____
DATE THOMAS R. KOCH

PAGE/LINE	ERROR OR AMENDMENT	REASON FOR CHANGE

Reporter: Mary A. Neel - Date of Deposition: 05/27/09
Dockets No. 080244-EI and 070231-EI

Florida Power & Light Company

DEPRECIATION

STUDY

Transmission

Distribution

General Plant

Net Salvage for T, D & G Functions

(Balances as of December 31, 2005)

Volume 6 of 6

FILED ON
MAR 17 2005

02643 MAR 17 05

Docket Nos. 080244-EI & 070231-EI
(MUUC) Depo Transcript &
Exhibits of Thomas R. Koch
Exhibit ____ Page 148 of 160

EXHIBIT 1
Witness Koch
Date 5-27-09
Reporter: Mary A. Neel

SCHEDULE I

FLORIDA POWER & LIGHT COMPANY
SCHEDULE OF ESTIMATED DEPRECIATION ACCRUALS
Using Estimated December 31, 2005 Balances

Account Number	Account Description	Adjusted Plant Balance	Adjusted Reserve Balance	Reserve Ratio	** APPROVED IN DOCKET 971660-EI ** (Order No: PSC-98-0073-FOF-EI)							** RECOMMENDED RATES **						Change In Annual Accrual
					Reserve Ratio When Approved	Average Life Service Life	Average Life Remaining Life	Net Salvage	Depreciation Rates Whole Life	Depreciation Rates Remaining Life	Estimated Annual Accrual	Average Life Service Life	Average Life Remaining Life	Net Salvage	Depreciation Rates Whole Life	Depreciation Rates Remaining Life	Estimated Annual Accrual	
		(a)	(b)	(c)=b/a	(d)	(e)	(f)	(g)	(h)	(i)	(j) = (a) X (i)	(k)	(l)	(m)	(n)	(o)	(p) = (m) X (o)	(q) = (p) - (j)
	Transmission Plant																	
350.2	Easements	$133,820,710	$39,945,874	29.85%	18.1%	60.0	36.0	0.0%	2.0%	2.2%	$2,946,256	50.0	31.0	0.0%	2.0%	2.3%	$3,080,178	$133,920
352.0	Structures & Improvements	63,855,062	16,898,143	26.62%	26.3%	47.0	35.0	-5.0%	2.3%	2.2%	1,404,811	47.0	34.0	-10.0%	2.3%	2.5%	1,590,376	191,565
353.0	Station Equipment	800,488,356	199,360,558	24.91%	24.6%	40.0	30.0	10.0%	2.3%	2.2%	17,610,744	38.0	25.0	5.0%	2.6%	2.8%	22,413,674	4,802,930
353.1	Station Equipment - Step-Up Transformers	159,393,191	35,879,379	22.38%	24.8%	40.0	30.0	10.0%	2.3%	2.2%	3,506,648	35.0	24.0	5.0%	2.7%	3.0%	4,781,793	1,275,145
354.0	Towers & Fixtures	161,980,893	71,287,078	44.01%	27.7%	45.0	33.0	-15.0%	2.6%	2.0%	4,211,736	45.0	28.0	-15.0%	2.6%	2.5%	4,049,747	(161,989)
355.0	Poles & Fixtures	512,628,785	233,648,572	45.58%	45.7%	40.0	28.0	-45.0%	3.6%	3.5%	17,940,957	41.0	29.0	-50.0%	3.7%	3.8%	18,453,566	512,609
356.0	Overhead Conductors & Devices	453,318,237	190,533,106	42.03%	40.6%	37.0	26.0	-30.0%	3.5%	3.4%	15,412,820	44.0	32.0	-40.0%	3.3%	3.2%	14,505,184	(908,636)
357.0	Underground Conduit	42,757,815	21,989,673	51.43%	50.3%	46.0	27.0	0.0%	2.2%	1.8%	769,641	46.0	27.0	0.0%	2.2%	1.8%	769,641	0
358.0	Underground Conductors & Devices	49,896,948	28,784,796	57.70%	63.4%	33.0	18.3	0.0%	2.8%	2.0%	997,740	35.0	18.4	0.0%	2.9%	2.6%	1,297,062	299,322
359.0	Roads & Trails	74,088,516	22,346,985	30.16%	17.7%	60.0	40.0	0.0%	2.0%	2.1%	1,555,817	50.0	33.0	0.0%	2.0%	2.1%	1,555,817	0
	Total Transmission Plant	$2,452,295,403	$854,575,064	34.85%	32.5%	40.3	29.7	-12.7%	2.6%	2.7%	$66,357,170	40.3	27.3	-16.8%	2.9%	3.0%	$72,504,075	$6,146,856
	Distribution Plant - Depreciable																	
361.0	Structures & Improvements	$118,409,993	$29,782,533	25.15%	27.5%	45.0	35.0	-5.0%	2.3%	2.2%	$2,605,020	45.0	34.0	-15.0%	2.9%	2.8%	$3,078,660	$473,640
362.0	Station Equipment	1,079,562,187	331,066,004	30.67%	28.7%	38.0	28.0	-10.0%	2.9%	2.9%	31,307,013	38.0	28.0	-10.0%	2.9%	2.8%	30,227,461	(1,079,552)
364.0	Poles, Towers & Fixtures	778,864,952	342,251,101	43.97%	39.1%	30.0	21.0	-35.0%	4.5%	4.0%	33,810,606	34.0	23.0	-40.0%	4.1%	4.0%	29,147,395	(4,372,110)
365.0	Overhead Conductors & Devices	972,871,528	521,436,995	53.61%	44.5%	33.0	23.0	-50.0%	4.5%	4.6%	44,742,890	35.0	23.0	-50.0%	4.3%	4.2%	40,852,294	(3,890,596)
366.6	Underground Conduit,Duct System	977,490,387	214,256,451	21.92%	23.5%	48.0	37.0	0.0%	2.1%	2.1%	20,527,298	48.0	36.0	-10.0%	2.3%	2.3%	22,482,278	1,954,981
366.7	Underground Conduit,Direct Buried	41,065,721	13,529,194	32.93%	30.8%	38.0	26.0	0.0%	2.8%	2.7%	1,109,314	41.0	29.0	0.0%	2.4%	2.3%	944,972	(164,342)
367.6	Underground Conductors & Devices,Duct System	1,018,852,299	244,948,551	24.05%	24.0%	34.0	28.0	0.0%	2.9%	2.9%	29,540,917	38.0	30.0	-5.0%	2.8%	2.7%	27,503,812	(2,037,105)
367.7	Underground Conductors & Devices,Direct Buried	411,102,164	220,404,021	53.61%	56.4%	29.0	15.6	0.0%	3.4%	2.8%	11,510,861	34.0	19.0	0.0%	2.9%	2.4%	9,866,452	(1,644,409)
368.0	Line Transformers	1,546,811,828	816,799,000	40.00%	36.4%	31.0	22.0	-25.0%	4.0%	4.0%	61,872,473	31.0	20.0	-35.0%	4.4%	4.8%	74,246,868	12,374,495
369.1	Services, Overhead	159,158,025	81,407,843	54.58%	50.4%	39.0	26.0	-60.0%	4.4%	4.2%	6,684,637	36.0	23.0	-60.0%	4.4%	4.8%	9,851,269	590,632
369.7	Services, Underground	548,585,882	191,405,426	34.89%	29.9%	34.0	26.0	-10.0%	3.2%	3.1%	17,006,182	34.0	24.0	-10.0%	3.2%	3.1%	17,006,182	0
370.0	Meters	424,466,359	196,446,090	46.28%	44.8%	39.0	17.8	0.0%	3.3%	3.1%	13,158,457	34.0	21.0	-30.0%	3.8%	4.0%	16,978,654	3,820,197
371.0	Installations on Customer's Premises	75,018,108	45,602,128	60.65%	52.3%	15.0	10.0	-20.0%	8.0%	6.7%	5,026,079	15.0	8.7	-15.0%	7.2%	6.2%	4,650,999	(375,080)
373.0	Street Lighting & Signal Systems	320,836,147	196,311,951	61.23%	43.6%	20.0	13.9	-35.0%	8.8%	6.6%	21,181,986	20.0	12.1	-35.0%	6.8%	6.1%	19,558,805	(1,623,181)
	Distribution Plant - Depreciable	$8,412,923,590	$3,247,489,298	38.60%	35.2%	33.1	23.1	-19.3%	3.6%	3.6%	$299,352,815	34.7	24.0	-24.0%	3.6%	3.8%	$303,405,895	$4,053,280
	Distribution Plant - Amortizable																	
367.9	UG Conduct & Dev.,Cable Injection - 10 year	$85,779,476	$30,641,707	N/A	N/A	10.0	10.0	0.0%	10.0%	10.0%	$8,577,948	10.0	10.0	0.0%	10.0%	10.0%	$8,577,948	$0
	Distribution Plant - Amortizable	$85,779,476	$30,641,707	N/A	N/A	10.0	10.0	0.0%	10.0%	10.0%	$8,577,948	10.0	10.0	0.0%	10.0%	10.0%	$8,577,948	$0
	Total Distribution Plant	$8,498,703,066	$3,278,131,005	38.57%	36.2%	32.1	22.9	-18.5%	3.7%	3.8%	$305,930,763	33.6	23.1	-24.2%	3.7%	3.7%	$300,983,843	$4,053,280
	General Plant - Depreciable																	
390.0	Structures & Improvements	$371,471,514	$126,934,000	34.17%	17.1%	40.0	30.0	0.0%	2.5%	2.8%	$10,401,202	38.0	24.0	0.0%	2.6%	2.7%	$10,029,731	($371,471)
392.0	Aircraft - Rotary Wing	6,500,000	470,156	5.93%	44.5%	7.0	2.5	50.0%	7.1%	2.2%	187,000	7.0	5.9	50.0%	7.1%	7.5%	537,500	450,500
392.0	Aircraft - Fixed Wing (Jet)	42,937,037	8,712,267	20.29%	21.3%	10.0	6.0	50.0%	6.0%	4.8%	2,060,978	7.0	3.8	50.0%	7.1%	7.8%	3,349,089	1,288,111
392.1	Transportation - Automobiles	1,818,841	494,869	30.55%	46.4%	7.0	5.4	10.0%	12.9%	8.1%	131,207	8.0	4.1	10.0%	11.3%	14.5%	234,877	103,670
392.2	Transportation - Light Trucks	20,274,131	8,148,511	40.16%	35.8%	8.0	5.1	15.0%	10.6%	9.7%	1,966,591	9.0	3.8	15.0%	9.4%	11.8%	2,392,347	425,756
392.3	Transportation - Heavy Trucks	145,490,292	57,437,440	39.48%	41.4%	11.0	5.7	20.0%	7.3%	6.8%	9,890,820	11.0	4.3	10.0%	8.2%	11.7%	17,017,884	7,127,064
392.4	Transportation - Tractor-Trailers	612,917	207,098	33.78%	22.5%	11.0	5.7	20.0%	7.3%	10.1%	61,905	11.0	5.4	15.0%	7.7%	9.6%	58,827	(3,078)
392.5	Transportation - Trailers	12,950,836	2,736,344	21.13%	40.5%	18.0	11.5	30.0%	3.9%	2.6%	336,724	18.0	9.6	30.0%	3.9%	5.1%	660,498	323,774
396.1	Power Operated Equipment (Transportation)	3,322,301	857,858	25.82%	59.0%	10.0	8.1	20.0%	8.0%	3.4%	112,958	9.0	5.1	20.0%	8.9%	10.6%	352,164	239,206
396.8	Other Power Operated Equipment	23,053	14,779	64.11%	12.9%	10.0	5.8	20.0%	5.0%	11.6%	2,674	9.0	3.3	20.0%	3.9%	4.8%	1,107	(1,567)
397.8	Communications Equipment - Fiber Optics	7,862,228	2,407,766	30.62%	27.6%	20.0	17.8	5.0%	4.8%	3.8%	295,765	10.0	7.0	5.0%	9.6%	9.2%	723,375	424,560
	General Plant - Depreciable	$615,624,252	$708,419,170	33.88%	29.7%	18.9	12.5	-18.9%	4.3%	4.1%	$25,450,624	17.8	8.6	16.4%	4.7%	5.8%	$35,456,549	$10,005,925

Docket Nos. 080244-EI & 070231-EI
(MUUC) Depo Transcript &
Exhibits of Thomas R. Koch
Exhibit ____ Page 149 of 160

Florida Power & Light Company

Table 6. Comparison of Existing and Proposed Depreciation Parameters and Rates

		Existing Estimate				Proposed Estimate			
	Account	Survivor Curve	Salvage	WL Rate	RL Rate	Survivor Curve	Salvage	WL Rate	RL Rate
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
350.2	Easements	50 - S4	0	2.00%	2.30%	50 - S4	0	2.00%	2.31%
352	Structures & Improvements	47 - S4	-10	2.30%	2.50%	60 - R3	-15	1.92%	1.82%
353	Station Equipment	36 - R1.5	5	2.60%	2.80%	38 - R1.5	-10	2.89%	3.17%
353.1	Station Equipment - Step-Up Transformers	35 - S3	5	2.70%	3.00%	33 - R2	0	3.03%	3.41%
354	Towers & Fixtures	45 - R5	-15	2.60%	2.50%	40 - R5	-15	2.87%	3.58%
355	Poles & Fixtures	41 - R2	-50	3.70%	3.60%	44 - R2	-50	3.40%	3.21%
356	Overhead Conductors & Devices	44 - R1.5	-45	3.30%	3.20%	47 - R1.5	-50	3.19%	3.04%
357	Underground Conduit	46 - S3	0	2.20%	1.70%	60 - R4	0	1.67%	1.15%
358	Underground Conductors & Devices	35 - S3	0	2.90%	2.50%	60 - L3	-10	1.84%	1.11%
359	Roads & Trails	50 - SQ	0	2.00%	2.10%	50 - SQ	-10	2.20%	2.48%
361	Structures & Improvements	45 - L3	-15	2.60%	2.60%	60 - R3	-15	1.92%	1.76%
362	Station Equipment	38 - R1.5	-10	2.90%	2.80%	41 - R1.5	-10	2.68%	2.48%
364	Poles, Towers & Fixtures	34 - R1.5	-40	4.10%	4.00%	37 - R2	-125	6.08%	7.35%
365	Overhead Conductors & Devices	35 - S0.5	-50	4.30%	4.20%	40 - S0	-100	5.00%	4.97%
366.6	Underground Conduit, Duct System	48 - S3	-10	2.30%	2.30%	70 - S1.5	-5	1.50%	1.34%
366.7	Underground Conduit, Direct Buried	41 - S3	0	2.40%	2.30%	50 - R4	0	2.00%	1.80%
367.6	Underground Conductors & Devices, DS	38 - S0	-5	2.80%	2.70%	38 - S0	-5	2.76%	2.68%
367.7	Underground Conductors & Devices, DB	34 - R2.5	0	2.90%	2.30%	35 - R2	0	2.86%	1.88%
368	Line Transformers	31 - L2	-35	4.40%	4.80%	32 - L1.5	-25	3.91%	3.59%
369.1	Services, Overhead	36 - R1.5	-60	4.40%	4.60%	48 - R1	-125	4.68%	4.69%
369.7	Services, Underground	34 - R2	-10	3.20%	3.10%	34 - R2	-10	3.23%	3.00%
370	Meters	34 - S2	-30	3.80%	4.00%	36 - R2.5	-55	4.31%	5.05%
370.1	Meters - AMI					20 - R2.5	-55	7.75%	7.97%
371	Installations on Customer's Premises	15 - L1	-15	7.70%	5.90%	30 - L0	-25	4.16%	1.41%
373	Street Lighting & Signal Systems	20 - S-.5	-35	6.80%	5.90%	30 - R0.5	-20	4.00%	2.26%
390	Structures & Improvements	38 - S1	0	2.60%	2.70%	50 - R1.5	-10	2.20%	1.91%
392.01	Aircraft - Fixed Wing (Jet)	7 - SQ	50	7.10%	7.80%	7 - SQ	50	3.60%	0.00%
392.02	Aircraft - Rotary Wing	7 - SQ	50	7.10%	7.50%	7 - SQ	50	7.14%	4.50%
392.1	Automobiles	8 - L3	10	11.30%	14.50%	6 - L2	15	14.17%	12.18%
392.2	Light Trucks	9 - S3	15	9.40%	11.80%	9 - L3	15	9.44%	6.37%
392.3	Heavy Trucks	11 - S3	10	8.20%	11.70%	12 - S3	15	7.08%	2.47%
392.4	Tractor Trailers	11 - S2	15	7.70%	9.50%	9 - L2.5	0	11.11%	11.87%
392.9	Trailers	18 - L2	30	3.90%	5.10%	20 - L1	15	4.25%	3.01%
396.1	Power Operated Equipment	9 - L0	20	8.90%	10.60%	10 - L0.5	20	8.00%	2.92%
396.8	Other Power Operated Equipment	9 - S1	20	8.90%	4.80%	9 - L0.5	20	8.89%	0.00%
397.8	Communication Equipment - Fiber Optics	10 - L0	5	9.50%	9.20%	10 - L0	0	10.00%	4.39%

Docket Nos. 080677-EI & 070231-EI
(MUUC) Depo Transcript &
Exhibits of Thomas R. Koch
Exhibit ____ Page 150 of 160
Docket No. 080677-EI
Depreciation Study
Exhibit CRC-1, Page 54 of 720

EXHIBIT 2
Witness Koch
Date 5-27-09
Reporter: Mary A. Neel

Florida Power & Light Company

Table 17. Summary of Service Life and Net Salvage Estimates and Calculated Whole Life Annual and Accrued Depreciation Related to Original Cost of Transmission, Distribution and General Plant at December 31, 2009

		Estimated Survivor Curve	Net Salvage Percent	Original Cost	Annual Accrual Amount	Annual Accrual Rate	Calculated Accrued Depreciation
		(1)	(2)	(3)	(4)	(5)	(6)
TRANSMISSION, DISTRIBUTION AND GENERAL PLANT							
	Transmission Plant						
350.2	Easements	50 - S4	0	175,571,160	3,511,423	2.00	59,366,363
352	Structures & Improvements	60 - R3	(15)	85,889,291	1,649,504	1.92	20,066,346
353	Station Equipment	38 - R1.5	(10)	1,011,113,785	29,251,522	2.89	296,303,272
353.1	Station Equipment - Step-Up Transformers	33 - R2	0	197,711,163	5,990,648	3.03	55,683,344
354	Towers & Fixtures	40 - R5	(15)	168,243,833	4,837,010	2.87	86,595,842
355	Poles & Fixtures	44 - R2	(50)	740,416,858	25,211,194	3.40	266,786,798
356	Overhead Conductors & Devices	47 - R1.5	(50)	548,383,891	17,520,865	3.19	193,768,907
357	Underground Conduit	60 - R4	0	54,394,725	908,392	1.67	17,324,753
358	Underground Conductors & Devices	60 - L3	(10)	58,584,827	1,076,203	1.84	19,923,969
359	Roads & Trails	50 - SQ	(10)	82,226,489	1,808,983	2.20	32,499,754
	Total Transmission Plant			**3,122,536,023**	**91,765,744**		**1,048,319,348**
	Distribution Plant						
361	Structures & Improvements	60 - R3	(15)	181,432,252	3,484,406	1.92	33,421,283
362	Station Equipment	41 - R1.5	(10)	1,399,018,981	37,549,669	2.68	366,233,692
364	Poles, Towers & Fixtures	37 - R2	(125)	878,114,186	53,345,437	6.08	595,380,002
365	Overhead Conductors & Devices	40 - S0	(100)	1,155,296,902	57,764,845	5.00	617,569,805
366.6	Underground Conduit, Duct System	70 - S1.5	(5)	1,293,088,609	19,415,725	1.50	212,746,072
366.7	Underground Conduit, Direct Buried	50 - R4	0	76,179,331	1,523,587	2.00	15,280,640
367.6	Underground Conductors & Devices, DS	38 - S0	(5)	1,344,075,779	37,116,653	2.76	297,342,009
367.7	Underground Conductors & Devices, DB	35 - R2	0	427,212,466	12,218,277	2.86	191,805,879
368	Line Transformers	32 - L1.5	(25)	1,810,216,247	70,824,711	3.91	669,742,129
369.1	Services, Overhead	48 - R1	(125)	180,627,855	8,453,384	4.68	95,615,905
369.7	Services, Underground	34 - R2	(10)	609,994,306	19,727,216	3.23	223,657,469
370	Meters	36 - R2.5	(55)	225,844,517	9,731,640	4.31	105,587,061
370.1	Meters - AMI	20 - R2.5	(55)	30,378,322	2,354,320	7.75	1,916,579
371	Installations on Customer's Premises	30 - L0	(25)	63,873,263	2,658,725	4.16	19,690,905
373	Street Lighting & Signal Systems	30 - R0.5	(20)	375,203,879	14,992,540	4.00	113,405,426
	Total Distribution Plant			**10,050,556,894**	**351,161,135**		**3,559,394,856**

Florida Power & Light Company

DEPRECIATION

STUDY

Transmission

Distribution

General Plant

Net Salvage for T, D & G Functions

Average Age of Retirements

(Estimated Balances as of December 31, 2005)

Volume 6 of 6

Docket Nos. 080244-EI & 070231-EI
(MUUC) Depo Transcript &
Exhibits of Thomas R. Koch
Exhibit ____ Page 152 of 160

EXHIBIT 3
Witness Koch
Date 5-27-09
Reporter: Mary A. Neel

FILED ON
JUN 30 2005

Distribution

Table of Contents

For

DISTRIBUTION PLANT

	Page
Introduction	1 - 2
Account Narratives and Supporting Data :	
Account 361 - Structures & Improvements	3 - 10
Account 362 - Station Equipment	11 - 16
Account 364 - Poles, Towers & Fixtures	17 - 23
Account 365 - Overhead Conductors & Devices	24 - 30
Account 366.6 - Underground Conduit, Duct System	31 - 37
Account 366.7 - Underground Conduit, Direct Buried	38 - 42
Account 367.6 - UG Conductors & Devices,Duct System	43 - 49
Account 367.7 - UG Conductors & Dev., Direct Buried	50 - 55
Account 368 - Line Transformers	56 - 62
Account 369.1 - Services, Overhead	63 - 69
Account 369.7 - Services, Underground	70 - 75
Account 370 - Meters	76 - 82
Account 370.1 - AMR Meters	83 - 83
Account 370.2 - Amortization of Short-Term Meters	83 - 83
Account 371 - Installations on Customers Premises	84 - 89
Account 373 - Street Lighting & Signal Systems	90 - 96

DISTRIBUTION PLANT - DESCRIPTION

Florida Power & Light Company's (the Company) Distribution system supplies service in all or part of 35 counties in the State of Florida, including most of the territory along the east and lower west coasts of Florida. The Company's service territory, which covers approximately 27,650 square miles with a population of approximately 7.7 million, is served by 463 distribution substations. The Distribution system is also comprised of approximately 65,271 miles of various voltages of overhead and underground conductor less than 69 Kv. As of December, 2003 the Company supplied power to approximately 4.1 million customers.

Over the past 15 years, the Company's total investment in Distribution facilities has increased significantly (almost 130%). This increase directly affects the data analysis of the accompanying Distribution Plant section of the depreciation study. The large influx of new, higher cost, dollars in the distribution plant accounts that has occurred over the past 15 years, far outweighs the number of retirements posted during the same period. These relatively high additions and minor retirements have an impact on both the lives and dispersion patterns affecting this and previous studies, in some cases resulting in an insufficient retirement ratio to ascertain retirement patterns. In addition, some consolidation of retirement units was made during the 1993-1995 period. The full impact of these changes in retirement units on the dispersion patterns may not be seen for many years to come and may result in changes in retirement patterns and lives in future studies.

DEPRECIATION STUDY METHODOLOGY

Treatment of Clause-Related Items

As in previous studies, all clause-related costs such as the investment and reserve associated with the Load Management System (LMS) and Accelerated Oil-Backout have been excluded from the calculation of the depreciation rates. LMS equipment, since it has its own unique life established by the FPSC, has been removed from the life and salvage analysis. In the case of equipment subject to the Oil-Backout clause, the life of the related Oil-Backout equipment is relevant to the overall determination of the dispersion pattern and life of the assets within the accounts, but is not relevant to the computation of the reserve position and depreciation rates.

Treatment of Hurricane Retirements

The retirements associated with Hurricane Andrew were not considered to be a normal occurrence in the preparation of the depreciation studies. In 2004, the Company's service area was struck by three major storms - Hurricanes Charley, Frances, and Jeanne (as of the date of this study, the hurricane retirements have not been processed). The possibility of a major hurricane hitting the service area of the Company remains unpredictable. Since no discernable pattern can be determined for these occurrences, their influence on the life and salvage analysis process for the affected accounts was eliminated.

ACCOUNT 361.0 - STRUCTURES & IMPROVEMENTS

This account was analyzed using actuarial techniques. The percent surviving for each interval on the actuarial table was computer plotted against various Iowa-type survivor curves and visually compared. Plotting the actuarial data against the Iowa-type curves indicated a reasonable fit to an L3.0-45 curve through age-interval 28.5. This curve and average service life was approved by Staff in the 1997 depreciation rate represcription and is consistent with the curve type in the previous four depreciation studies.

Like its equivalent account in the Transmission function, Account 352.0, the majority of this account consists of clearing, fill and grade, and other site preparation costs and therefore does not typically experience many retirements. Although analysis of this account seems to indicate that the average service life may be increasing since the earlier studies, the Company recommends that the life remain as approved, until more retirement experience is gained (over 97% of the original placements are still in service). The continued use of this dispersion pattern and average service life, applied to estimated year-end 2005 balances (updated by including projected additions and retirements for the 2004 - 2005 period), results in a 34 year average remaining life.

The net salvage being recommended is negative 15% which reflects an increasing trend in removal costs and a decreasing trend in gross salvage (30% removal cost, 15% salvage) is recommended.

ACCOUNT 365.0 - OVERHEAD CONDUCTORS & DEVICES

The assets in this account consist mainly of aluminum primary and secondary conductor, copper conductor, duplex, triplex, and quadraplex cable, disconnect and load interrupter switches, controllers, and related equipment.

Account 365.0 was analyzed using actuarial analysis techniques. The percent surviving for each interval on the actuarial table was computer plotted against various Iowa-type survivor curves and visually compared.

Analyses of the activity for this account in prior studies, has tended to show average service lives in the upper range, or longer than, other Florida electric utilities. The Company is more inclined to accept this as fact since this study, and prior studies, have indicated a gradual lengthening of the service life for this account. Analysis performed in this study indicates a 35 year average service life. Plotting the actuarial data against the Iowa-type curves resulted in a reasonable fit to an S0.5-35 curve through age-interval 44.5. The use of this dispersion pattern and average service life, applied to estimated year-end 2005 balances (updated by including projected additions and retirements for the 2004 - 2005 period), results in a 23 year average remaining life.

The Company proposes to keep the negative 50 percent net salvage (80% removal cost, 30% salvage) established in the 1997 study.

ACCOUNT 367.6 - UNDERGROUND CONDUCTORS & DEVICES, DUCT SYSTEM

FERC Account 367 - Underground Conductors & Devices was first subdivided into separate subaccounts, 367.6 for Duct System and 367.7 for Direct Buried, for the depreciation study filed in 1987. The current study, like studies since 1987, analyzed each subaccount separately using actuarial analysis techniques.

The assets in this account consist mainly of aluminum and copper cable, submarine cable, various switches and grounding systems.

The percent surviving for each interval on the actuarial table was computer plotted against various Iowa-type survivor curves and visually compared. Plotting the actuarial data against the Iowa-type curves resulted in a reasonable fit to an S0.0-38 curve throughout all age-intervals. Although this dispersion pattern is in the same family that prior studies have indicated, the Symmetrical (S) curves, the account appears to have experienced a slight flattening of the retirement frequency pattern and lengthening of the average service life (by 3 years). The use of this dispersion pattern and average service life, applied to estimated year-end 2005 balances (updated by including projected additions and retirements for the 2004 - 2005 period), results in a 30 year average remaining life.

Salvage analysis has indicated a slight change in net salvage from the current zero percent to negative 5% (20% removal cost, 15% salvage) now being recommended.

ACCOUNT 367.7 - UNDERGROUND CONDUCTORS & DEVICES, DIRECT BURIED

FERC Account 367 - Underground Conductors & Devices was first subdivided into separate subaccounts, 367.6 for Duct System and 367.7 for Direct Buried, for the depreciation study filed in 1987. The current study, like prior studies, analyzed the subaccount using actuarial analysis techniques.

The assets in this account consist mainly of aluminum and copper cable and various switches.

The percent surviving for each interval on the actuarial table was computer plotted against various Iowa-type survivor curves and visually compared. Although the dispersion pattern has remained in the same family as prior studies have indicated, the Right-modal (R) curves, the account (like Account 367.6) has experienced a slight flattening of the retirement frequency pattern (R3.0 to R2.5) and lengthening of the average service life (29 to 34 years). Plotting the actuarial data against the Iowa-type curves resulted in a reasonable fit to an R2.5-34 curve, through age-interval 30.5.

As was indicated in the summary for Account 366.7 - Direct Buried Underground Conduit, direct burial of conduit and conductors tends to result in a shorter average service life than when placed in duct. This shorter life, in relation to duct buried, is primarily due to the equipment's environment, that is, the chemical and subterranean elements that it is subjected to. The use of this dispersion pattern and average service life, applied to estimated year-end 2005 balances (updated by including projected additions and retirements for the 2004 - 2005 period), results in a 19.0 year average remaining life.

Since underground conductor is normally abandoned in place, no change in net salvage from the current zero percent (0% removal cost, 0% salvage) is recommended.

LATE FILED EXHIBIT NO. 31

DOCKET NOS. 080244-EI - In Re: Petition for Approval of Underground Conversion Tariff Revisions.

070231-EI - In Re: Petition for Approval of 2007 Revisions to Underground Residential and Commercial Distribution Tariff, by Florida Power & Light Company

WITNESS: JOHN J. McEVOY

DESCRIPTION: DEPOSITION TRANSCRIPT & EXHIBITS

DOCUMENT:

TRANSCRIPT & EXHIBITS OF JOHN J. McEVOY'S MAY 21, 2009 DEPOSITION

PROFFERED BY: THE MUNICIPAL UNDERGROUND UTILITIES CONSORTIUM

DOCUMENT NUMBER-DATE
05543 JUN-3 8
FPSC-COMMISSION CLERK

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In re: Petition for Approval of Underground Conversion Tariff Revisions. DOCKET NO. 080244-EI

In re: Petition for approval of 2007 revisions to underground residential and commercial distribution tariff by Florida Power & Light Company,

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TELEPHONIC DEPOSITION OF: JOHN J. McEVOY

TAKEN AT INSTANCE OF: Municipal Underground Utilities Consortium

DATE: Thursday, May 21, 2009

TIME: Commenced at 1:05 p.m.
Concluded at 4:23 p.m.

LOCATION: 225 South Adams Street
Suite 200
Tallahassee, Florida

REPORTED BY: LORI DEZELL
Registered Professional Reporter

ACCURATE STENOTYPE REPORTERS, INC.
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TALLAHASSEE, FLORIDA 32308 (850)878-2221

DOCUMENT NUMBER-DATE
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FPSC-COMMISSION CLERK

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LLOYD SHANK
BRENDAN HADDER
CONNIE KUMMER
ELISABETH DRAPER
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INDEX

WITNESS	PAGE
JOHN J. MCEVOY	
Direct Examination by Mr. Wright	6
Cross-Examination by Mr. Jaeger	105
Cross-Examination by Mr. Butler	107
Redirect Examination by Mr. Wright	108

INDEX OF EXHIBITS
(Exhibits attached hereto.)

NO.	DESCRIPTION	PAGE
1	Document titled Storm Secure: FPL's Five-Point Plan To Build a Stronger Grid For The Future dated January 30, 2006	53
2	Edison Electric Institute 2007 Reliability Survey Report, October 2008	96
	CERTIFICATE OF OATH	110
	CERTIFICATE OF REPORTER	111
	ERRATA SHEET	112
	READING & SIGNING LETTER	113

STIPULATIONS

The following deposition of JOHN J. MCEVOY was taken on oral examination, pursuant to notice, for purposes of discovery, and for use as evidence, and for other uses and purposes as may be permitted by the applicable and governing rules. Reading and signing is not waived.

* * *

MR. WRIGHT: Ms. Heathman, would you go ahead and administer the oath to Mr. McEvoy?

THE NOTARY PUBLIC: Yes, I will.

MR. WRIGHT: Thank you.

* * *

Thereupon,

JOHN J. MCEVOY

was called as a witness, having been first duly sworn, was examined and testified as follows:

THE WITNESS: I do.

THE NOTARY PUBLIC: Thank you.

MR. WRIGHT: And do you have a form of the certificate of oath, Ms. Heathman?

THE NOTARY PUBLIC: Yes. We have a fax machine here.

MR. WRIGHT: Wonderful. Thank you.

MR. BUTLER: Thank you, Gail.

THE NOTARY PUBLIC: You're welcome.

MR. BUTLER: Schef, do you want to identify -- everybody identify themselves on the record?

MR. WRIGHT: Sure. My name is Robert Scheffel Wright. I'm with the law firm Young van Assenderp, and I represent the Municipal Underground Utility Consortium and three other city municipal parties in this docket. As I said, with me in the room is Lori -- --

MR. BUTLER: John Butler, Florida Power & Light Company. I'm managing attorney at Florida Power & Light Company and will be representing Mr. McEvoy as a witness on behalf of FPL today. .

With me here in the conference room where I'm sitting is Ken Rubin and Ilan Kaufer, K-A-U-F-E-R, and they're both attorneys with FPL as well.

MR. WRIGHT: Thanks.

MS. STERN: This is Marlene Stern representing the City of South Daytona.

MR. WRIGHT: Do we have anyone from the Public Service Commission staff on the line?

MR. SAYLER: Schef, this is Erik Sayler. Ralph Jaeger will also be here. He's running a little bit late.

We also have Brendan Hadder, Connie Kummer,

Elisabeth Draper and Phillip Ellis.

MR. WRIGHT: Great.

MR. SHANK: This is Lloyd Shank with Power Services, Incorporated.

MR. RANT: This is Peter Rant with Power Services, Incorporated.

DIRECT EXAMINATION

BY MR. WRIGHT:

Q Okay. Just a couple of preliminaries. Good afternoon, Mr. McEvoy. I will endeavor to ask understandable and audible questions. If at any time you don't understand a question that I've asked or you haven't heard it clearly, please just ask and I will restate it or -- or just state it over again. Is that okay?

A Yes, sir.

Q And have you had your deposition taken before?

A Yes, I have.

Q Okay. Particularly in the telephonic deposition context, it is important that you give audible, verbal answers as opposed to shrugs and nods or shakes of the head. So if you could endeavor to do that, that would be great too.

A Okay.

Q Thank you. Okay. And with that, I think I'm

ready to begin asking substantive questions.

Mr. McEvoy, have you ever worked for another utility in your professional career besides Florida Power & Light?

A No, I have not.

Q Have you worked for any other -- any other entity, company, consulting firm or anything like that in your working career other than working for FPL?

A Yes, I have.

Q For whom or for what entity or entities?

A I worked for a corporation called Flight Way. It was a Cessna dealership out of Dayton, Ohio. I was their chief pilot as well as FAA examiner. This was prior to my employment with FPL.

Q Okay. Any others? I mean, you know, any other, say, after -- after college?

A No.

Q Okay. Now I would like to ask you a series of questions about your work experience with FPL. On page 1 of your testimony, your prefiled written testimony, that is, you make the statement that you served in a variety of positions in distribution, operations, and then you go on to name three, including engineering technician, industrial engineering analyst, and superintendent meter test center.

My first question is, during the first 22 years of your career with FPL, did you hold other positions besides the three that you named in your prefiled written testimony?

A Yes.

Q Can you -- can you tell us what those were, please.

A My first position with FPL was actually I was an associate engineer in the substation transmission section for my first six months with the company.

Q Okay. And what -- what position did you hold, hold next after that?

A Basically a new engineer. I believe the title was associate engineer.

MR. BUTLER: Sorry, Schef, are you asking what the next position was or are you asking what that position --

MR. WRIGHT: I meant to ask what the next position he held after the associate engineer position was.

THE WITNESS: That was when I went into industrial engineering.

BY MR. WRIGHT:

Q Was industrial engineering a department or a job title or some other unit?

A Job title. We actually had a department called management services.

Q Was engineering technician a position you held in industrial engineering?

A No, that was the -- a position I held -- well, I guess that was what I held in substation engineering. So after that I started -- that was the first position I had with the company.

Q Okay. I'm -- I'm sorry, I'm having a little difficulty comprehending your career path here. Your first -- you previously told us your first position was associate engineer in substation and transmission. Did you mean to just tell us that that was really the engineering technician position?

A Yes, I did. Sorry to mislead you.

Q Okay. That's okay. Thanks. And then -- then in your prefiled testimony you state that you were an industrial engineering analyst. Was that the next position you held after your first position?

A That is correct.

Q Okay. Did you hold any other positions between your tenure as industrial engineering analyst and the time you became superintendent of the meter test center?

A No, I did not.

Q Okay. And do I understand correctly that those three positions then take us through the first 22 years of your 35 years with FPL?

A That is correct.

Q Okay. And before I go on, did you serve the entire last 13 years of your tenure with FPL as manager of product support?

A Yes, I have.

Q Okay. And there were no other positions you held during -- during your time with FPL?

A No, sir.

Q As -- as job titles, correct?

A Correct.

Q Okay. When you held the position of engineering technician, where did you go to work every day? And I'm not looking for the exact street address, but did you go to an office, did you go to a transmission operation center, or where -- where did you go to work?

A I went to work at the LeJeune-Flagler building, we called it. It was then the general office for Florida Power & Light.

Q And you held that position for about six months; is that correct?

A Yes, sir.

Q And was -- was the majority of your time while you held that position spent working at the LeJeune-Flagler building?

A As my permanent office I probably spent 60 percent of the time in the office and 40 percent in the field.

Q Okay. And during that time, what did you do the 40 percent of the time you spent in the field?

A I was responsible for adding feeder locations in various substations around our service territory. My field time would be spent in going out to the substations, looking at the substations, meeting with crews, talking about what would be necessary to add a feeder position to that substation.

Q Thank you. When you held the position of industrial engineering analyst, where did you go to work every day?

A Actually we started out in an office building that was in Coral Gables. After the first couple of years we moved over to the new general office building which is the current general office building.

Q And when you say the current general office building, you mean the office at 9250 West Flagler Street?

A Yes, I do.

Q How long did you hold the position of industrial engineering analyst?

A I was in that department for approximately eight years.

Q Thank you. In that position, how much time did you spend in the field versus time in the office or time in a laboratory or other enclosed setting?

A That was also probably about 60 in the office and 40 in the field.

Q And as to the 40 percent of the time approximately that you spent in the field, how did you spend that time? What did you do?

A Various job functions. The most time consuming one was performing time studies on fieldworkers in order to try to develop standards to complete certain jobs.

Q Can you give us some examples of other activities you did with your fieldwork while in that position?

A It was mostly the time -- the other time was spent interviewing folks on what the jobs they did entailed so we could flowchart the various responsibilities. Working with the managers both in service centers as well as in district offices to determine what their current staffing was, what their

staffing needs were. The end result of all of these studies was to staff both district offices as well as service centers.

Q Thank you. And what -- what did you do with the six -- in the 60 percent or so of the time you spent in the office?

A It was spent compiling all the data I gathered in the field and formulating and finalizing reports so that we could present to our management as well as the field management what our results were and set staffing levels, and put together information that they would subsequently use to report different matrices back to management such as efficiency on standard and those kinds of industrial engineering matrices.

Q Thank you. What sorts of tasks were the workers doing with respect to which you did the time studies?

A It was everything from meter reading, line crews, answering telephones in the district office, collection calls, telephone representatives, clerical positions in service centers. Just about every position you could think of in a service center as well as a district office.

Q Thank you. When you were the superintendent of the meter test center, where did you go to work every

day?

A Went to work initially in the Miami division meter shop, which was out on the Palmetto Expressway, and I believe it was about 44th, Northwest 44th Street.

Q Thank you. And you said -- can you describe the meter shop for us? What -- what all went on there? How big was it?

A As I recall, I think our staffing level was somewhere around 50 employees. We had about five supervisors. The remaining 45 were bargaining unit employees. It encompassed everything from warehousing, receiving, purchasing, testing, issuing meters as well as a field staff that was responsible for any metering field tests that were needed.

Q In that response you -- I understood you to say you worked with all aspects of acquiring and processing meters and also testing meters. Did you work on any other components of distribution facilities besides meters in that position?

A We also tested CTs and PTs.

Q And a CT is a current transformer?

A Yes, I'm sorry, current transformer and power transformer.

Q Thank you.

A We tested the metering transformers, not the

distribution transformers.

Q Right. You said the metering transformers. So these are not the 25 to 100 kva cannister type transformers that we see hanging on the poles; is that correct?

A That's correct.

Q There's something else associated just with the metering, correct?

A Meter accuracy transformer.

Q Thank you. Did you -- did you spend any appreciable amount of time in the field while you were superintendent of the meter test center?

A Only from the standpoint of when I first became superintendent, we had five meter shops running various divisions, and part of my responsibility was consolidate them into one meter shop which we now have. So going out to the various division meter shops, as well as going out and observing and training metering folks on how do the various field tests and different installations on the larger installations. But the majority of the time was spent in the office.

Q Thank you. Did you actually install meters during your time there?

A Only when we had a strike about 30 years ago.

Q Okay. Thank you. When you held the position

of manager of product support with FPL, where did you go to work every day?

A At our physical distribution center located in Riviera Beach.

Q Did you say physical distribution center?

A Yes. We called it the PDC, physical distribution center.

Q Thank you. Can you -- can you -- well, you did describe for us some of what you did in that position. But let me first ask you the same question that I've asked with respect to your other positions. In that position, how much time did you spend, you know, in the distribution center versus time in the field?

A I would say 90 percent of my time was in various offices and 10 percent in the field.

Q And what did you do in the 10 percent of the field time?

A Everything from observing installations of new equipment regarding any pilot studies we were doing to introduce equipment, going out and observing various local conditions that had experienced some sort of equipment failure or some sort of outage that had occurred and trying to help us to make determinations on why equipment failed. Working with the crews in terms of training on new equipment, observing their different

practices that they did when they were either installing equipment, repairing equipment, troubleshooting equipment. Anything having to do with the distribution equipment. My responsibility included the -- all of the distribution equipment.

Q And can you -- can you -- well, I'm trying to figure out how to ask the next line of questions artfully. In terms of a stream of electric power coming from the power plant and eventually making its way to customer meters, do you consider that the distribution equipment starts at the substation?

A Yes, it actually starts at the breaker.

Q Okay. And when you say the breaker, do you mean the -- the circuit -- I'm sorry?

A The regulator, to be more precise, I guess.

Q And is that the point at which the power from the transmission system enters the substation?

A It's the point at which it exits the substation.

Q Exits the substation. So did you work on substations?

A As I -- what I had mentioned was my first job was adding feeder positions. But that -- other than, you know, during my -- my last job as the manager of construction standards, no, that was not part of it.

Q Okay. Considering both your time in your engineering technician position and also your time working in the physical distribution center, did you have a significant number of circuits that exited from the substations with underground conductors, that is underground coming out of the substation?

A The product support responsibility I had was support for any problems as well as equipment concerns for all of FPL's substation, whether they departed underground or overhead to the substation.

Q Thank you. I was simply -- I was really just trying to ask a more basic question as to in your experience how many of FPL's circuits or those with which you're familiar, circuits exiting a substation actually exit underground?

A I don't think I can even guess. I don't have that answer.

Q Is it a large percentage?

A I would -- my guess would be yes, it would be in the 40 to 50 percent range, but I've got to tell you that's a real wild guess.

Q Okay. And so you had at least product support and other responsibilities from the -- from the regulator or the breaker in the substation all the way down to the meter, correct?

A Yes, sir.

Q Now, was that for the whole company or was that for a region, that field system?

A Systemwide.

Q I'm sorry?

A Systemwide. The whole company.

Q Thank you. Do you know how many of FPL's circuits are underground or were as of your latest state of knowledge, were underground from the exit point from the substation all the way to customers?

A From my recollection it was in the neighborhood of about 10 percent of the feeders. Roughly 300, 290 something, 300 feeders.

Q Thank you. I'll just try to trek through the order in which you discuss your work as manager of product support in your -- in your testimony. You stated first, and this is the bottom of page 1 of your testimony, that you were responsible for FPL's distribution construction standards. What -- what did that entail?

A I had a group of engineers that worked directly for me as well as vary -- in other departments of the company. And my responsibility was to, on a periodic basis, assign these engineers based on their job responsibilities various sections of our

construction standards to be updated and make sure that they adhere to the National Electric Safety Code.

My responsibility was to start that whole process, review current standards, update them to reflect any changes as well as any changes necessary to the national electric code -- National Electric Safety Code, and then other substandards.

Q So would I be correct to understand that you gave the assignments to engineers who then designed the standards and gave them back to you and then you had the responsibility for publishing them in the distribution construction standards document?

A For approving or publishing them, yes.

Q What was your role in approving them? Did you compare the proposed standards to the NESC or -- or exactly what was your role in making that approval?

A Typically the various engineers would rework a current page in the construction standard. It would go through our graphing section and they would update that standard based on the engineer's input. That new standard would come to me through a PDF file with the new entries red-lined on it. I would review that standard and then either approve or make changes or disapprove.

Q Did you do this sort of work when FPL would

adopt new technologies? Would there be a -- would the distribution construction standards be developed for the installation and use of new tech-- newer technologies?

A That is correct.

Q Was there anyone upstream within the company who -- who made a what I might call a higher level approval of the standards above you?

A No, there was not.

Q Okay. When you said you were responsible for FPL's distribution engineering reference manual, can you describe your work with regard to that document?

A Very similar to the work with the construction standards. The distribution engineering reference manual, which we call the DERM, is a series of books that goes to the theory and the philosophy on why we design and build the distribution system the way we do. And it was the same kind of process to where various engineers would be assigned different sections of that publication based on their work responsibilities. They would go through and either update or identify that that particular section was current and then it would go through myself for approval.

Q You go on to say that you're responsible for customer metering. What was your responsibility with respect to customer metering?

A I had one engineer that worked for me who was the metering engineer and his responsibilities were to write specifications for meters, to do product evaluation, to do factory audits, to develop standards for customers' metering. And as with the other product engineers, those changes would go through me and I would have final approval on them.

Q And when you -- you state in your testimony that you had responsibility for distribution overhead and underground equipment and equipment standards. What was your work associated with that responsibility?

A Being the manager, again the individual product engineers were the individuals that worked along with myself with the field folks, the manufacturers, belonged to the various industry organizations and had responsibility for their products we'd like to say from birth to death. And I was involved again with any major changes as far as the authorization of it. The product engineers pretty much handled a lot of the day-to-day stuff. I would get involved in special circumstances.

Q Can you give me an example of such a special circumstance?

A If we were either in the process of introducing a new piece of equipment, I would be involved in the factory review and audit as well as the

new specifications that a product engineer would write for that piece of equipment. I would participate and lead the audit of the factories through our -- to our audit process that we use at the factory. That would be our new piece of equipment. We had a process to go through for that.

If there was a -- some piece of equipment that we were experiencing other than just a random failure and we were perhaps looking at some sort of systemwide problem with a particular piece of equipment, I would get involved with setting up the laboratory tests, going through what was necessary in order to make a determination if, in fact, that product was in a wear-out mode or if there was some other environmental installation type mode condition that was causing the equipment to fail.

Q And when you would do a test like that, would you gather -- gather together samples of the failed equipment and test those?

A Yes, we do.

Q Would you also test -- test non-failed equipment?

A Yes. Typically like if we were having problems with a certain manufacturer arrester, we would try to get the failed arrester as well as the other two

phases which had not failed yet.

Q If you can recall, how much -- how much of your work was on failed underground components versus failed overhead components?

A I would say probably about 60 percent overhead and 40 percent underground.

Q What were some of the overhead components that you tested having failed?

A It ranged everything from as I just mentioned before, lightning arresters to insulators, pole failures, capacitor bank failures, cutouts, disconnect switches, wires, anything you can think of that's up on a pole.

Q Okay. Same question with respect to underground distribution equipment components.

A It would be the cable, the padmounted disconnect switches, a little bit of the padmounted transformers, although I wasn't necessarily responsible for the transformers, the elbows, any of the secondary connections, the splice boxes, the sweetheart connectors that we use, the splice techniques that we use on cable, paper -- lead cable uniqueness. Again, everything connected with the underground.

Q Did you test new technologies before they went into the field?

A Yes, we did. We had a -- we had a test lab that we used for that, but in most cases we relied very heavily on the manufacturer's testing and/or independent laboratory testing.

Q Did you have any -- your attorneys have represented to me that you reviewed Mr. Rant's testimony and exhibits before -- before preparing your testimony. I -- do you recall that the MUUC asked some data requests to FPL last fall? I think we asked in September and FPL responded on -- on October the 10th. Do you recall having any involvement in those answers?

A No, I do not.

Q Okay. Among those answers, there is one that indicates that from 1980 to 1989 FPL's standard underground cable technology included paper and lead cable, XLPE and polyethylene having -- having discontinued barycentric neutral apparently as of 1980. And then the answer goes on to say that beginning in 1990, FPL used the same as in the previous period plus what -- what is called TRXLPE, and I'm sure you know that that is tree retardant cross linked polyethylene. My question for you is, you were involved in testing the TRXLPE technology as it was going into service in FPL?

A That would have been before my time.

Q In your -- in your subsequent product support

work you said you tested failures. Did you have failures with the TRXLPE?

A Yes, we did.

Q Are did you also have failures with earlier technologies such as XLPE?

A Yes, sir.

Q Do you have any recollection as to the relevant proportion of failures of the TRXLPE versus XLPE?

MR. BUTLER: Schef?

MR. WRIGHT: Yes, John.

MR. BUTLER: You said relative proportion of failures. You mean that he saw in his position as receiving these for testing purposes?

MR. WRIGHT: Yes.

THE WITNESS: No, I don't really have any recollection. I mean, generally speaking, older products, be they cable or anything else, we generally see more of those than we do the newer ones.

BY MR. WRIGHT:

Q I do want to ask you the same question. Do you have any recollection of the relative proportions of failure testing that you did on polyethylene cable and on PILC cable conductor?

A No, I do not.

Q Are you familiar with a cable technology that is sometimes called EPR?

A I know EPR but I'm not intimately familiar with it, no.

Q Did you have occasion to test that when you were in your product support position with FPL?

A I do not recollect if I did.

Q Thank you. Did you have failures with underground switchgear that you tested in your work for FPL in product support?

A Yes.

Q What types of switches were those that you recall having tested for failure?

A Padmounted disconnect switches, S&C, both live current and dead current, as well as G&W, other manufacturers.

Q It's my understanding that FPL has at least to some degree approved the use of S&C vista submersible switchgear. Did you have -- do you understand that to be the case?

A At the time I left there were a couple of pilot installations.

Q Did you test those before they went in or did --

A We acceptance tested those.

THE COURT REPORTER: I'm sorry?

Q The court reporter asked what you said, and I think you said that you acceptance tested them; is that accurate?

A Yes, it is.

Q What did those acceptance tests involve?

A It involved ensuring that the functionality of the switch performed as the manufacturer indicated that it would.

Q Near the top of page 2 you make the statement that you performed factory quality audits for overhead and underground equipment. What did that entail?

A I, as well as my engineers, developed what we call the ISO 9001, which is the International Quality Standards for Manufacturing. We put together what we called ISO 9001 light, meaning that about 30 various portions of the manufacturing process that a factory would have to go through in order to get ISO 9001 approved, the majority of the factors we deal with consider themselves world class and they were the international market. And prior to selling them anything overseas, you almost had to have ISO qualifications.

So we developed a ten-point plan based on

those international standards and we would perform factory audits which would entail looking at the process all the way from how do they ensure incoming raw materials with up to their internal specifications, all the way to the end, how did they ensure when they packaged something that would be received in the same condition that it was packaged.

Q And did your -- did the folks who worked for you actually go to the factories and observe the processes involved?

A Yes, they did. And I would accompany them, I would say, probably about 40, 40 or 50 percent of the time.

Q You go on to state that you evaluated overhead and underground equipment performance, and you've already talked about testing failed equipment and testing -- the example you gave was arresters that had not failed along with the arresters that failed. What all did you do in evaluating overhead and underground equipment performance?

A We would, based on the reports that would come back indicating what equipment was responsible for feeder outages, we would endeavor to try to run down every piece of equipment that was involved in the feeder outage to try to determine what type equipment it was,

what caused the outage. And based on that information, we would subsequently evaluate whether or not our population was in a -- or that particular manufacturer's population was in a wear-out mode. Further upstream from that we would evaluate based on the number of pieces of equipment we had in service what failure rate were we observing and were we at the point again to where we were having a product problem or was this just normal modes in the system.

Q So did you have access to data as to the number of pieces of a particular equipment component you had in service and then you would also then get data as to the numbers of those that failed?

A Yes.

Q Did that -- did that sort of information result in any kind of publication?

A For a while we published what we called a product report card which would track various product performance.

Q You said for a while. How long and -- and -- well, how long?

A If I remember correctly it was probably three years, maybe four years.

Q Do I understand correctly that you discontinued that activity?

A It was still going when I left. I don't know what's going on now.

Q Oh, okay. Did you review any data on the failure rates of underground and overhead components from -- from your product report card activity in formulating your testimony in this docket?

A No, I did not.

Q So can you, as you sit here today, can you tell us what the -- what the failure rate for -- for underground conductor is as a percentage of all the underground conductor that's out there?

A No, I really don't recollect. Most -- most of the equipment, whether it was underground or overhead, unless you could classify it by age of equipment, typically would have very low failure rates, meaning in the 10th of percent, and the worst that you would see is in the 2 to 3 percent range. But I don't recall specifically the cable failure rate.

Q Okay. Same question with regard to other components, transformers, disconnect switches, et cetera.

A Again, we were more concerned that I guess the philosophy we used was if -- if you expected a piece of equipment to last 30 years, then -- then you would expect -- if everything had been installed on a straight

line, that any time you have less than a 2 to 3 percent failure rate, that you were within your expectations. However, we did, you know, somewhat inject that based on the fact that not all of our equipment has been put in in an equal time span for outage 30, 40 years of life.

Q I want to follow up on a couple of things you said. You said the equipment and its 34 years of life. Is that your blanket value for all distribution components, underground and overhead?

A It's been my experience that most manufacturers will say their equipment should last anywhere from 20 to 40 years.

Q And how does that relate to -- oh, perhaps you said 30 to 40. I heard you -- I heard you to say 34. Did I mishear you, Mr. McEvoy?

A Yes, you did. I said 30 or 40.

Q Okay. Thank you.

And is it your recollection that -- that that's pretty much the same for underground and overhead?

A The only caveat I would put there is -- and I believe I may have said this later on in my testimony -- is that typically speaking, underground equipment is more complex than overhead equipment to do the same functions such as a disconnect switch. And generally

speaking, the more components you have on a piece of equipment, the more components you have that are subject to failure. So you typically have higher failure rates in the more complex equipment than you do in the noncomplex equipment such as an insulator. An insulator does not have a moving part so failure rates you would not expect to be as high as an automatic throw-over switch you have which has many parts, mechanical and electronic.

Q Would higher failure rates translate to shorter life?

A Typically yes.

Q Have you ever had anything to do with preparing a depreciation study for FPL's distribution plant items?

A No, I have not.

Q Do you happen to know what the depreciation rate published by FPL for its overhead equipment is versus its underground equipment?

A No, I do not.

Q You understand the concept of a depreciation rate?

A Conceptually, yes.

Q But you understand it to be the estimated -- basically one over the estimated life of the component

in years?

A I don't feel comfortable going down that road.

Q Okay. To follow up on an answer with regard to one of your earlier positions, you said you did spend time observing line crews and interviewing them. Was that -- was that with overhead installation crews, underground installation crews and -- well, answer that question first.

A Yes, it was.

Q Okay. Similarly, overhead maintenance crews and underground maintenance crews?

A Yes, sir.

Q Okay. Now, did you actually do the work?

A No, I did not.

Q And you didn't -- you didn't manage the installation or maintenance crews, did you?

A No.

Q If you can recall, how -- with respect to your work with line crews, how much time did you spend with overhead line crews and how much did you spend with underground line crews?

A That goes back about 30 years. I don't recall the exact time frame but I know it would have been equal because we had to set work standards on both of those crews. However long it would take to find and set in

motion work standards. I'd have to say six months perhaps. What we would do is we would go to various service centers around the whole ssytem to ensure that we didn't pick up something that was unique in one service center versus another service center.

Q You know, I don't know whether you and I have met, but I think we might have met in 2005 or 2006 in connection with the storm dockets. That leads me to ask you what your -- what was your work in your managing of the distribution overhead storm forensic team?

A I was the manager of that team.

Q And what did your -- what did that function involve in terms of what you did?

A It involved everything from -- well, from start to finish, putting the team together, developing the process, the different records that the team kept, going out in the field performing observations, determining the routing of the various teams, analyzing and working with the data after it came back, and then involved heavily with the effort with the FEMA group to put together their final report.

Q Did you work with Ms. Geisha Williams during the course of that assignment?

A Not directly. She of course was the vice president and well above my position. But yes, I mean,

I had contact with her but I wouldn't say I worked directly with her.

Q So did you help her prepare for her testimony in the storm cost proceedings?

A I was involved in a little bit of that, yes.

Q Was there a corresponding distribution underground storm forensic team?

A No, there was not.

Q There was a document that FPL prepared back in 2006 that has been reproduced in Mr. Rant's testimony as I believe his Exhibit PJR-7. What it is is a -- yeah, that's right. What it is is the analysis that FPL submitted to the Public Service Commission regarding FPL's proposed governmental adjustment factor credit and storm restoration costs. I assume you've at least seen that document in looking over Mr. Rant's testimony; is that accurate?

A Yes, I've seen it. I don't profess to have any knowledge of it though.

Q You were involved in preparing it; is that true?

A I was not. And yes, we have met.

Q Good. With respect to the positions that you -- that we've been talking about for almost an hour now, what, if any, of that experience did you call on in

forming the opinions articulated in your testimony?

A All of them.

Q In your work in product testing and product support, did you do any cost analyses with regard to operation and maintenance costs for overhead facilities?

A No. We were more concerned with the performance of the product.

Q When you say more concerned with the performance of the product, would that mean you were more concerned with identifying the cause of the failure of products?

A Well, if we were working on a failed product, yes. If you were talking about new products, in reference to the new product we would be concerned with making sure that, one, there was a need at FPL for such a new product; and, two, that that new product would fit into our system as well as it would perform as the manufacturer claimed it would.

Q And would I be correct to understand from your earlier answers that you also -- you actually tested it to make sure that it -- that it lived up to the manufacturer's representations?

A In -- in most cases. I wouldn't say that 100 percent but in most cases we did.

Q Just a follow-up in trying to close a loop

here. Did you do any operation and maintenance cost analyses of overhead equipment in your work at FPL?

A No.

Q Did you do any operation and maintenance cost analyses of -- related to unground distribution equipment in your work at FPL?

A No.

Q I just want to follow up on something you said a short while ago, and that is that more complex underground equipment would likely be more subject to failure. And my question for you is, would it also be true that more complex overhead equipment would be more subject to failure as opposed to less complex equipment?

A Yes.

Q When you were answering a few questions earlier -- and I think this was with regard to your work evaluating overhead and underground equipment performance -- you were talking about failure rates. And you made -- made a reference, as I recall your answer, to possibly doing an analysis by age of the component. Do you recall our little discussion on that?

A Yes, I do.

Q Did you do analyses by age of components?

A We would -- as part of the information on product failures, we would throw together a radio chart

and try to determine what the root causes were, and then further try to analyze what would be some of the causes of those root causes. And I know in many occasions we would try to look at the age of equipment and see if there was a correlation between a failure rate and the age. We did that on again numerous pieces of equipment and I don't remember the specifics of any one because we did it on so many.

Q Do you recall doing an age-to-failure analysis of tree retardant cross link polyethylene underground conductors?

A Not specifically, no.

Q Same question, the prior technology cross linked polyethylene?

A Not specifically, no.

Q Same question, underground switchgear generically?

A No.

Q Same question, overhead conductor?

A No.

Q Same question, overhead transformers?

A Nope.

Q Overhead surge arresters?

A No. I know we did those but I don't remember the specific results.

Q All right. Thank you. I'm going to ask you some questions later about a document that Mr. Rubin furnished to me yesterday. I'm still about to wrap up on your background.

On page 2 of your testimony you said that you were involved with various committees of several industry associations, including ANSI and the EEI. And the question I just want to ask you is what, if any -- for now, what, if any, involvement did you have with regard to the publications of the electric -- Edison Electric Institute's reliability survey reports?

A I didn't have any participation in that.

Q Okay. Do you have any similar -- did you have any work activity along those lines? You know, failure analyses with regard to your work for ANSI or the Association of Edison Illuminating Companies?

A No, not specifically. We had some reporting mechanism with them but I didn't have any specific involvement with pulling together the results of those reports.

Q It's not clear from your testimony, Mr. McEvoy, are you a professional engineer?

A No, I am not.

Q Just got a couple of basic questions to make sure I -- that we're on the same page regarding some --

some facts about FPL's system. Would I be correct to believe that the total underground mileage on FPL's system is right now just a little less than 40 percent of its total distribution lines?

A I'm not aware of that number.

Q Okay. You're just -- you don't know either way; is that accurate?

A Right. I -- I would assume that we have more overhead than underground but I don't know either way.

Q All right. Do you know how many of FPL's customers are served by underground services?

A Not specifically, no.

Q Just to close a couple of loops -- and I apologize these next couple of questions will probably sound redundant -- but am I correct that you did not install overhead equipment other than meters?

A I have not installed them in service. I have installed them under laboratory conditions but not -- not to serve a customer.

Q Okay. Same question with regard to underground?

A That's correct.

Q Have you worked in the field on maintaining overhead equipment?

A No, I have not.

Q Same question with regard to underground equipment.

A No, I have not.

Q And again this is an inference, this next question is an inference from your other answers, but would I be correct that you have never managed an underground construction project in the field?

A That is correct.

Q Same question with regard to an overhead construction project.

A That is correct.

Q Thank you. Have you designed underground systems for installation in the field?

A I have again administered the standards for that design, but specifically designed one, no.

Q And same question for overhead facilities.

A No.

Q Just one or two or maybe three questions regarding your testimony around the bottom of page 3 where you make the statement that underground systems are typically more susceptible to failure following events with flooding and/or storm surge issues. What, if any, specific experience do you have regarding -- regarding failures of underground facilities on FPL's system after flooding?

A After, I forget the name of the hurricane, but after some of the wetter hurricanes that we had, get involved with evaluating, for instance, on the padmounted gear what was the process that was necessary in order to determine whether or not this equipment could be placed back in service, what needed to be done, was there water intrusion in the cables, evaluating if there had been any leakage of any transformer oil. That -- that would be pretty much it.

Q And was that -- was your work that you just described with regard to the padmounted gear water intrusion and transformer oil leakage, was that more with regard to checking equipment before it was restored to service or was it more with regard to actual experience failures?

A It was I guess more concerned with developing the standards necessary or the processes necessary to check the equipment and to recondition it back in service and to make some personal observations as part of developing those standards.

Q Do you recall any -- any of the personal observations to which you just referred?

A I don't remember the name of the storm but I know in our eastern division I was involved with some field activity there as well as back during Hurricane

Andrew was involved with a lot of the flooding that we had in the south Dade area.

Q I can -- I can well appreciate that asking you to reach back to 1992 is a far reach. I think you and I must be very close to the same age. But -- but I would like to ask you if you remember anything specific about your work with underground facilities after Andrew.

A No. It was more again in determining which facility had, in fact, been flooded, and back then I was not involved with the standard of bringing them back up to service. But it was more involved with observing the damage that had been done and reporting back what was the equipment that was going to be necessary to restore service.

Q Again this is an inferential question but I just want to the record to be clear. In the forensic analysis you were involved with, that was only with regard to overhead facilities, correct?

A That is correct.

Q And I infer from that that you haven't done any forensic analysis on failures of underground equipment in association with -- with named storms?

A No, I have not.

Q On page 3 of your testimony, you make the statement that your experience does not support

Mr. Rant's and Mr. Shank's general claims that -- that over -- underground facilities are superior and perform better than overhead facilities.

My question for you is, what exactly in your experience -- let me -- I'm sorry. I'm going to pass on that for just a minute. Does your personal experience support the opposite, that overhead is superior to underground?

MR. BUTLER: Schef?

MR. WRIGHT: Yes.

MR. BUTLER: Let me note that in paraphrasing what Mr. McEvoy had testified to, you left out the word "far." His testimony is that his experience doesn't support general claims that underground facilities are far superior to overhead facilities. I just want to clarify that.

MR. WRIGHT: Fair enough, John.

THE WITNESS: Okay. Where are we?

BY MR. WRIGHT:

Q And with that understanding, you know, I would ask you -- well, let me ask you this. Does your experience support a general claim that underground facilities are superior to overhead facilities but not far superior to overhead facilities?

A No, my experience does not indicate that.

Q Does your experience support a general assertion that overhead facilities are superior to underground facilities?

A No, it doesn't. And I guess before I go deeper than that, you need to define what does superior mean.

Q Well, what did you mean when you used that term at line 10, page 3 of your testimony?

A I meant in terms of performance and cost, life cycle cost.

Q Okay. Have you done any life cycle performance analyses, say long-term performance analyses of underground versus overhead equipment?

A No, no, I have not.

Q Have you done any life cycle cost analyses of the performance of operating -- of underground and overhead equipment?

A No, I have not.

Q Toward the bottom of that page you make the assertion that overhead facilities that have been damaged or have failed generally required less time to repair than underground facilities. What's the frame of reference for that statement?

A As I recall, one of the indices that is used for reliability is LBar, and LBar basically is a formula

that looks at the minutes of interruptions divided by the total number of outages. And those numbers as I recollect generally indicate that the LBar for underground is higher than the LBar for overhead.

Q And in your experience with the LBar calculations, are they done on a utility systemwide basis?

A As far as I know, yes.

Q Have you had occasion to do or review any study that evaluated an LBar for -- for systems that are installed with cable in conduit as opposed to direct buried cable?

A No, I have not.

Q Would you agree as a general proposition that cable and conduit is easier to repair than direct buried cable?

A I'm not sure about the repair. Generally speaking it's easier to replace. That's usually why we had it in conduit so that you could replace it. As far as repairing it, even if it was in conduit, would still be a very tough job.

Q And if you know, is it FPL's standard practice upon locating a fault in a piece of cable that is in conduit simply to pull out the defective run and replace it with the new one?

A That depends if -- that depends on how -- how severe the fault was and was the conduit reusable. It also depends on was there a spare conduit available. If there was a spare conduit available, they would use it to pull a new cable.

Q If you know, is that the more typical practice?

A I do not know.

Q Okay. Does FPL have any underground transmission line to your knowledge?

A I -- yes, we do. I don't know any specifics about it but I know we have some.

Q Okay. So you don't know the type of the conductor technology or anything else?

A No, I do not.

Q Do you have any knowledge or work experience with any problems with the underground transmission line?

A I really have no knowledge of their performance.

Q Thank you. I would like to ask you a few questions about your question and answer that comprise page 4 of your testimony which regards Mr. Shanks' assertion that in the real world, underground is sometimes a standard and definitely preferred. And you

stated you don't agree with that, and I just want to ask you a few questions about that.

Are you familiar with -- with the status of undergrounding in the state of California?

A No, I am not.

Q Are you familiar with the status of undergrounding in Maryland?

A No.

Q All right. Are you aware that there are a number of municipal utilities in Florida and elsewhere that -- that are embarking on underground conversion projects?

MR. BUTLER: I'd object --

THE WITNESS: No, I have very little knowledge of municipal utilities' practices.

MR. BUTLER: Schef, did you hear my objection?

MR. WRIGHT: I didn't, John. Please go ahead and restate it for the record.

MR. BUTLER: I said I object to the form of the question, assuming facts not in evidence.

MR. WRIGHT: Right. Okay.

BY MR. WRIGHT:

Q Well, I'll re-ask the question. I think he answered the question but I will re-ask, but I'll re-ask. Do you know whether there are any municipal

utilities in Florida that are embarking on large scale undergrounding projects?

A No, I do not.

Q Do you know whether Florida Power & Light uses a piece of equipment called faulted circuit indicators for its underground installations?

A We used to use a lot of those, yes.

Q When you say you used to use them, does that mean that you no longer do?

A Not -- not to the extent that I believe they're being used now at the normal open half point section on a loop but we used to use them like on every transformer.

Q Can the FCIs improve a technician's or a fieldworker's ability to locate and isolate a fault on an underground system?

A They would have to if you have nothing under that, yes.

Q I'm sorry, I missed the first couple words of your answer so I didn't get the whole import of it. Would you repeat your answer?

A That advice would aid in the location of a fault if you had no other method to try to find the location of a fault.

Q And what other methods are available?

A Typically, as I recall, we're using the loop sectionalizer tool which will aid you in locating what section of cable has failed in the loop.

Q And are new underground installations typically installed using that -- that type of looping installation technology?

A The loop sectionalizer is actually a tool that is used to locate a fault.

Q Okay. What does it look like?

A It's about as big as a lawnmower and it injects a signal into the cable to enable you to tell where the fault has been.

Q Separate question. Is it true that -- that in the majority of FPL's new underground installations, the underground conductor is, in fact, looped?

A That is the standard that was used when I left, yes.

Q Thank you.

I apologize for jumping around a little bit but sometimes your answers lead to questions and then I need to come back and wrap up previous lines. We were talking earlier about flooding and storm surge. Do you have any -- any idea what percentage of FPL's distribution lines are located in storm surge zones?

A No, I do not.

Q Okay. And you wouldn't have any idea with regard to the proportion of either underground or overhead distribution lines located in storm surge zones; is that correct?

A That is correct.

Q And same question, you don't know what percentage of FPL's actual -- actual customers' meters are located in storm zones, do you? Storm surge zones.

A No, I do not.

Q Okay. Do you have an idea of what percentage of FPL's new distribution facilities, say, for substations, developments and larger projects are installed underground as opposed to overhead?

A No, I do not.

Q Would you agree that the vast majority of FPL's new customers prefer underground for their service?

A I have no idea what they prefer.

Q Would you agree that Florida Power & Light Company itself would prefer that all new distribution facilities be installed underground?

A No, I have no knowledge of that.

Q Did you have any involvement with the development of FPL's storm secure plan?

A Only from the standpoint of the forensic

effort.

Q Have you reviewed that document?

A I -- I haven't really reviewed it. I have looked at it and again I know the forensic portion of it.

MR. BUTLER: Schef, when you're referring to the storm secure plan, can you identify it a little bit more?

MR. WRIGHT: Yes, I can. And I'm going to go ahead and hand the court reporter a copy to be marked as a deposition exhibit. It is a document consisting of ten numbered -- well, nine numbered pages and there's no page number on page 1. It has the FPL logo in the upper left and it says, Storm Secure: FPL's Five-Point Plan To Build a Stronger Grid For The Future dated January 30, 2006. And if you would mark that as Exhibit 1 to the deposition.

(Exhibit No. 1 was marked for identification.)

BY MR. WRIGHT:

Q Before we go on, what -- can you just summarize for us what your work with regard to the -- to the forensic aspect of storm secure was?

A In terms of developing the storm secure plan?

Q I asked you whether you were involved in the plan and you said only to the extent that it was

involved with the forensic effort. And I'm just trying to understand what that was.

A As a result of the forensic effort, KEMA was employed to do an analysis of the data gathered and the result of that analysis I believe was used in formulating portions of the storm secure plan.

Q And what was your -- your role personally in all of that?

A My role was working with KEMA to help produce that report to ensure it was accurate.

MR. BUTLER: I'm sorry, John, when you say "that report," what report are you referring to?

THE WITNESS: It's the -- I don't know the exact title but basically it was the KEMA report that was produced after the storm season of 2005. I'm sure it's been given to many folks.

MR. BUTLER: Okay. Thank you.

BY MR. WRIGHT:

Q Is it your recollection or understanding that the storm secure plan specifically is intended to promote undergrounding among the other elements of the plan?

A Vaguely I remember that in large municipal or in large urban areas where you could perhaps install some undergrounding, that there was some credits given.

But other than that, I'm very vague on it.

Q Okay.

MR. BUTLER: Schef, he has a copy of the plan available to him, I believe. Is that correct, John?

THE WITNESS: Yes, I do.

MR. BUTLER: So if you have questions on specific provisions of it, it would be much better if you would ask him about those specific provisions.

MR. WRIGHT: Thank you. I shall do so.

BY MR. WRIGHT:

Q If you would look at page 3 of the plan.

A Okay. Is that the one that, Schef, you had sent an email on with an attachment?

Q Correct, yeah. It's the PDF of the document I sent. It is a PDF of the same document I got three-and-a-half years ago.

A Just to be sure I got it, is it page 3 of 122 pages?

Q No, sorry. That's an Edison Electric Institute Report, is the long version. The storm secure plan version I sent this morning to the attorneys, not having your email address, and it's just FPL's storm secure plan. It's ten pages long.

A Oh, okay. I've got the right one now. Thank you.

Q Okay. Good.

A Is that page entitled elements of the plan?

Q That is the only major heading on that page, correct.

A I think we're at the same spot then.

Q Good deal. Under arabic number 4 toward the bottom it refers to FPL's intent to promote undergrounding. Would you agree that that's what that says?

A Yes, sir.

Q And will you also agree that item B under No. 4 articulates FPL's policy of aggressively encouraging local ordinance and legislation requiring developers to provide underground electrical service for all new subdivisions, developments and projects?

A That's what it says.

Q Thank you. Before we go on, I need to ask you a follow-up question about the loop sectionalizer tool. Is that used when a fault has occurred to locate the fault?

A That is my understanding. The tool hardware was never under my responsibility area so therefore the use of it I'm really not that knowledgeable of. But

it's my understanding and recollection of, yes, it was a tool used to locate a fault.

Q On page 5 you talk about the fact that visual inspections of underground facilities are not possible. What -- to your knowledge, what, if any, inspections of underground facilities, distribution facilities, that is, does FPL do?

A Well, I guess in hindsight I probably should have been a little specific there -- a little more specific. The part of the underground system that you cannot see is the part that's underground which is generally the cable. Other than that, all of the paramount equipment is subject to inspection as outlined in the National Electric Safety Code based on the experience of the utility. And I'm not familiar with the exact matrices that FPL uses, but I do know that there is an inspection program for padmount inspection equipment or padmount equipment.

Q And the next sentence there you go on to talk about locating an underground fault requiring special equipment and training. Are we talking about the loop sectionalizer tool there?

A Yes, sir.

Q Are there other -- are there other tools that can be used to -- to locate faults in underground cable?

A Yes, there are from the older technology, but again that's never been an area that I've had responsibility for so I don't feel comfortable speaking to it.

Q Is it true that FPL's standard for new underground installation is cable and conduit?

A Yes, sir. Again, back when I was working with them, yes.

Q I understand. Thank you.

Continuing, we're still on page 5, you make the statement that underground lines might also require a separate crew with heavy equipment to dig up a line and a specialized crew to repair the fault. First, as a general proposition, would that generally apply in the case of a fault of direct-buried cable where the heavy equipment to dig it up would be required?

A True. And, yeah, any time you have to go in and splice the cable rather than replace it, you would certainly need equipment to dig it up.

Q Have you ever done any analysis or are you familiar with any analysis done by others in FPL of the numbers of underground cable faults on FPL's system?

A No, I have not.

Q And are you aware of any -- any studies along those lines by others within FPL?

A No, I am not.

Q Or done by outside personnel for FPL?

A No, not specifically.

Q Okay. Do you know in an environment where there is a high water table, i.e., for these purposes where the water level is above the level of conduit, does the conduit typically fill with water?

A I don't know specifically whether it does or not. My suspicion would be that over time, yes, it will.

Q Did you ever have occasion to do any evaluation of underground cable and conduit in situations where it was filled with water?

A Again, going back to other than the work that I did with Hurricane Andrew and what had gotten into some of the cables as well as the conduits then.

MR. BUTLER: Schef, can I ask you about how much more time you have? We've been going about an hour and 45 minutes. If you're close to done we'll press on. If not, I think it would be appropriate to take a break.

MR. WRIGHT: Thank you for that reminder. I would say I'm not close to done. But I don't have hours and hours more either. But I think taking a break is a good idea. I have 2:44 on my watch.

Can we come back at 2:55?

MR. BUTLER: Okey-dokey.

MR. WRIGHT: Thanks.

(Break taken.)

BY MR. WRIGHT:

Q I wanted to ask you a couple of follow-up questions on underground outages versus overhead outages. I'm trying to understand an earlier answer, Mr. McEvoy, regarding FPL's use of FCIs. Were you saying that they don't use FCIs as much as they used to?

A That is correct. It's my understanding that we used to use FCIs on the quarter point and on the normally opened. And since the loop sectionalizer tool was introduced, the use of FCIs has been curtailed significantly because of the effectiveness and the quicker time to find the fault with the loop sectionalizer tool.

Q So it is correct that using the loop sectionalizer tool enables you to find the fault more quickly than either with the FCIs, correct?

A Correct.

Q And with a looped system, is it generally possible to separate the faulted section so that power is restored to the rest of the folks on that circuit quickly?

A Yes, it is. That's the purpose of the loop system.

Q When you would have an outage on an overhead line, isn't it true that the trouble -- troubleshooter, the line crew, would actually have to ride the lines to locate the fault?

A It would depend on the configuration of that line with the use of automatic feeder sectionalizer switches that FPL is using on a lot of its feeders. That becomes pretty well instantly isolated because these switches talk to each other and they manage to close in both of the customers in the noneffective section in less than a minute.

Q When you say close in most of the customers, what's the typical distance between sectionalizing switches?

A There are two separate schemes. There's either a three switch scheme or a five -- and again it goes back to when I was there -- there either is a three switch scheme which meant that you had these switches that could normally open feeder type point, and then you have switches halfway down the feeder in terms of load, or you had two switches on the feeder and one switch in the normally open point. So depending on what configuration they are used, these switches have the

ability to communicate with each other, they do several things. They identify where the fault is, they share that the adjacent feeders have enough capacity in them to pick up the fault, and then they automatically reconfigure the feeders so that customers are brought online usually within 30 seconds but for sure less than a minute.

Q So you made reference to a switch halfway down the line in terms of load, correct?

A Yes.

Q Let's just -- let me just try to envision a line where you've got two end points, and we will call those A and B, and then this halfway point C. Does that make sense to you, to think about it that way?

A Okay. I visualize that you have lines coming out from substations and typically -- and I'm talking backbone feeder lines come out from substations and they typically -- that feeder will end with a feeder high point to another feeder in the system.

Q Right. And that's the point that's kind of halfway down, down the line in terms of load?

A No. What I'm speaking of is each feeder from -- if it exits to the substation always to where it is connected to, it normally opens feeder high point.

Q Right.

A If you look at halfway down that feeder in terms of load is where you would put a switch.

Q Thank you.

A So those two feeders connected to each other, each feeder would have a switch halfway down and then of course you would have the switch at the high point and that's a three switch configuration.

Q Thank you. I think I have that.

When a fault occurs on the feeder in the example we were discussing, is the result that some segment winds up out of power until it's fixed and that would be a segment that's between either the end points and -- and the switch that's halfway down each segment between the substation and the feeder type?

A Yes, that is correct. The intelligence in the switches would determine where that fault occurred and then would make the decisions necessary to open and close switches so that the least amount of customers would be without power.

Q Right. And what would a typical length in feet or in -- let's say in feet be between the substation and the -- that switch that's halfway between the substation and the feeder tie?

A Most of these switches are installed on a 23 kv system. And as I recall, a typical length of the 23

kv feeder is 3 to 5 miles, so half of that about. Again, that's assuming that you've got, you know, an equally balanced load through the whole feeder. It could be very close to the substation, could be very close to the tie line.

Q Right. So half of that being one-and-a-half to two-and-a-half miles?

A Again, that's a generality, but yes.

Q Okay. And would it then be the case that once the automatic switching had -- had done what it's supposed to do minimizing the outages to other customers, someone would then have to go out and ride the identified faulted section to find the problem and fix it?

A Under current technology, yes.

Q Thank you.

Have you ever had occasion to do an analysis of the length of -- your own self, the overhead outages versus underground outages?

A I'm sorry, not.

MR. BUTLER: I'm sorry, what do you mean by the length, Schef, the distance or the time?

MR. WRIGHT: I did mean the time, John. Is that how you understood the question, Mr. McEvoy?

THE WITNESS: After thinking, yeah. I thought

that's what you meant, yes.

BY MR. WRIGHT:

Q Okay. Mr. McEvoy, will you agree that current state-of-the-art underground technology is better than -- than the technology prior to the TRXLPE was brought into service?

A Can you ask that in a different way?

Q I'm not sure. Will you -- well, I'm not sure I can but --

A Okay. Then maybe just restate it.

Q Yeah. Would you agree that current state-of-the-art underground technology using TRXLPE cable and conduit is more reliable than -- than the technology utilizing pre-TRXLPE conductor not in conduit?

A If the technology is referring directly to the cable, is the new cable more reliable than the old cable, so far it has been, yes.

Q Okay. And -- and would you agree that the cable and conduit installations are more reliable than direct buried cable installations?

A I don't know that they're more reliable but they're easier to repair.

Q Okay.

A Many utilities still use direct buried. In

fact, most of the industry meetings I went to, FPL was one of the few utilities that did use cable and conduit.

Q Continuing with a couple more questions at least about your testimony on page 5. You've talked about difficult terrain, coral rock and water intrusions, as examples, can increase -- significantly increase the cost of underground maintenance and repairs. My question for you is, is this more a concern with direct buried cable than with cable in conduit installations?

A Not to be evasive, but yes and no. When you have coral rock especially, even though you take great pains to surround it with packing material that is much more favorable to the conduit than the coral rock is, over time with the rain seasons, the water table going up and down, you do have some shift of the sands as well as the -- as well as the conduit. So you still have a very unfavorable environment. And I wouldn't have any percentage of it, but I know that it does happen that spare conduit that you put in the ground occasionally will be crushed and you will not be able to use it.

But generally speaking, the coral rock is not a favorable environment for undergrounding whether it's in direct buried or whether it's in cable and conduit. And as far as repair goes, trying to dig through that

coral rock, I don't know if you've ever done that, but that's tough stuff.

Q Well, just as an aside, in fact I have. I was born and raised in Miami and I used to try to plant gardens and it was not easy.

A No, my first experience with that was trying to put a mailbox into a house I bought.

Q Right. When you did product testing on failed equipment, what, if anything, did you study about failure modes of underground conductor?

A There were quite a few studies on that. And the most prevalent failure mode that we had on our underground conductor was called water treeing.

Q Right.

A Hello?

Q That was somewhere else, but I understood you to say water treeing and I actually know what that is.

A Great.

Q Thank you. Did you also do analyses of failure modes of overhead conductor?

A I actually did some of that.

Q You just answered a couple of minutes ago, you asked me about meetings that you attended. During what time frame were those meetings?

A I was a member of EEI for approximately the

last 20 years, AEIC for about the last 15 years, various ANSI committees. I've been on and off, depending on the different job functions I have, or what's important to the company at the time.

Q And am I correct that EEI is an organization of investor-owned utilities?

A Yes, sir.

Q And am I also correct that the association of Edison Illuminating Companies is also an organization of investor-owned utilities?

A Yes, it is.

Q ANSI, the American National Standards Institute, has representatives from several different industries, does it not?

A Exactly correct. It has KEMA, which is the manufacturers industry, as well as really there can be some -- it's open to any interested parties.

Q Yeah. In your -- in your work in product support, did you -- did you do analyses of failure modes on conduit itself?

A Yes, we did.

Q What do you remember about those studies?

A I was afraid you were going to ask me that. I don't remember much. We -- the studies that I -- I guess the biggest outcome of those studies that we had

was -- I don't remember the time frame exactly. I think it was about ten years ago -- was when we made the switch from solid PVC conduit to foam filled conduit. And we did that after doing extensive testing ensuring that the crush strength of the foam filled conduit was of equal value as the non-foam filled. And the big deal there was the foam filled was -- by the way, if you look at the water industry -- is quite a bit less expensive than the normal PVC. And that helps us quite a bit as we move forward to make the decision to put the spare conduit in there.

Q And would I be correct to infer from that response that at least as of the time you left FPL, they had pretty much adopted the foam filled conduit as their standard technology for conduit?

A Yes, sir.

Q Thank you. With regard to life cycle cost, I want to ask you a couple of questions. Are you familiar with a technique or a technology for shoring up failing underground cable that is sometimes called cable cure?

A No, not cable cure.

Q Are you familiar with technologies for -- for injecting some material into -- into underground lines to try to shore them up and prevent failures?

A Yes.

Q And what would you -- what would you call those technologies?

A We call them cable injections.

Q Oh, okay. FPL does use the cable injection technology, correct?

A Yes, we do.

Q Do you know how FPL treats the cost of that cable injection specifically? Do you know if FPL treats it as a maintenance expense or a capitalized item?

A I do not know that answer.

Q Do you know whether FPL uses the cable injection technology more with respect to older underground conductor as compared to newer?

A Yes. Typically the older underground conductor, we do not do it on feeder cable. We did do it on the loop cable. We tried it on a feeder and it wasn't as successful. All of our new cable, I don't have the exact time frame, but the current cable that we purchased is actually prefilled. It's called pre-core filled cable where rather than having just bare strands on the interior, you actually have the cable already injected sort of when you put it in. So that helps retard the water intrusion.

Q And is it -- is the pre-core -- you used the phrase pre-core filled, correct?

A Yes, sir.

Q Okay. Is that pre-core filled cable typically like a -- is that like a species of TRXLPE so that there's pre-core filled T XLPE?

A That's correct.

Q And would there also be pre-core filled EPR?

A Not EPR that I'm aware of. There could be but I'm not aware of that.

Q Okay. So would I be correct to believe that FPL's standard for new underground conductor is pre-core filled TRXLPE?

A Yes, sir.

Q Just to continue with perhaps one or two more questions about cable injection, would I be correct to believe that the majority of the -- in the field cable injection is done with respect to XLPE and earlier technologies?

A I'm not sure about that.

Q Have you had -- had occasion to study whether it was used more with XLPE as compared to TRXLPE?

A No, I have not.

Q Have you done any analysis or evaluation regarding the use of cable injection by age of facilities?

A No, I have not.

Q On page 6 of your testimony you make the statement that -- that Florida and particularly south Florida can be a harsh environment for underground equipment. Will you agree that there are conditions in Florida that are also harsh environments for overhead equipment?

A Yes. Similar -- similar type of conditions, environmental conditions. I think that the -- what I was referring to there specifically is the padmounted equipment. We already talked about the coral rock with the cable, but padmounted equipment sitting on the ground is really subjected to a lot of the, I guess the heating and the cooling in a very moist environment.

The overhead equipment is higher up in the air and you tend to get more purification of it because you're higher up in the air. More than you get in overhead equipment has to do with using contaminants, either soft contaminants close to the shoreline or perhaps you have some other contaminants in the industry such as a concrete plant.

But what we have found particularly with the padmounted equipment, you just have a lot of problems with the moisture that during the day may not get enough heating on it to where it completely evaporates or dries out and therefore when the next night comes in, it would

get the moisture coming back in with the due points meeting the temperature and you start to get more and more and more moisture that doesn't have an opportunity to properly dry out and drain.

Q Continuing on on page 6 there, you make the statement that, "However, this newer" -- and you're referring to underground equipment -- "this newer underground equipment has not been in service long enough to prove the claims that it -- that it should perform better than older underground. Is that a fair characterization of that testimony?

A Yes, sir.

Q Have you done any in-service testing or analysis of new underground technology say in your last five to ten years at FPL?

A The analysis of the technology, would like an audit program be part of that?

Q Well, I'm not sure. I mean, my concept of in-service testing would be actually go out and test the facilities in the field or possibly retrieve something that had not failed and do a test on that to see how it was performing. Have you done anything like that?

A Yeah, well, FPL has quite an extensive, for instance, a vault inspection program as well as a padmount precurian (phonetic) inspection program. And

the vault inspection programs have to do with checking switchgear. We have different programs that are involved with checking the automatic throw-over switches, some of the padmount sectionalizing switches that we have.

So yes, we have gone out and kind of looked at how this equipment is operating and usually it's a part of their pilot when we introduce a new piece of equipment we will put that equipment in service, make sure that it has a good load on it. I had wanted to make sure they went through the thunderstorm lightening season but sometimes management wanted them in service sooner than that. But we would try to make sure it's gone through some really harsh environment. We pull that equipment back and then take a look at it and see how it had performed throughout its years.

Q And to the extent that you recall, what is your recollection of that failure rates or observed problems with such equipment that you pulled back?

A It's a mixed rate. Some of the equipment, in fact I would have to say probably about 75, 80 percent of the equipment seems to live up to what the manufacturers' claims were. But, you know, it never ceases to amaze me that at Florida Power & Light, at least when I was there, we were not trying to be part of

the leading edge technology. We would like to make sure that when we put something in there, it's going to last at least as long as the manufacturer said it would and we try to hold them to that by saying, hey, if you think it's going to last for 30 years, why don't you give us a 30-year warranty, in which case they didn't respond positively to that.

But it ceases to amaze me that we would put a piece of equipment in that had been tried at other utilities that are, in fact, in service at other utilities, and due to our environment being so unique down there, that we would have problems that did not crop up before.

Q When you make the statement this newer equipment has not been in service long enough to prove these claims, my question for you is, what would be long enough?

A Well, that's -- it depends on the life of the equipment. If a manufacturer indicates that whatever new product they have is going to last -- you know, every piece of equipment that's in the ground or up in the air now was new at one time and the manufacturer did indicate that it was going to last X amount of years. And experience has taught us that it's just not a reliable indication because there are too many variables

out there that can affect -- variables not only from the environment that we live in but variables from the electrical system in terms of what kind of characteristics, what kind of bites you get, what is the different stuff that can happen to the equipment.

So it's hard to nail down what would be long enough. But before I'd be willing to say that a manufacturer indicates this piece of equipment is going to last 25 years, I'd like to see it in service at least 15 to 20 years.

Q Would I be correct to believe that FPL has not switched technologies, gone from one technology to a newer technology without believing that the newer technology would perform better and/or cost less than the technology it was replacing?

A Yes, those two reasons and also safety would be involved in that decision.

Q Okay. We were talking about newer equipment and how long is long enough and I asked you about failure rates and you said 75 to 80 percent of it performed up to the manufacturer's representations as best you can tell -- could tell. My question for you is, did you do comparable analyses of overhead equipment and, if so, what results did you observe?

A It was the same for both technologies. We

didn't really -- when we pilot something we didn't pilot because it was overhead or underground. We just looked at it as a piece of equipment that was supposed to perform a function. And try to remember, when we pull these things out to retest them, generally speaking they had only been in service a year or two at the very most because we were trying to make a decision did we want to replicate or make this new piece of equipment now the standard rather than just a limited introduction while we were doing the pilot.

Q We have spent some time talking about the newer underground technology and we've agreed that the current standard -- you've testified that the current standard is -- is TR -- TRXLPE pre-core filled and foam-filled conduit. Am I good so far?

A Yes, you are. You understand what foam-filled conduit is? That question made me believe maybe it's not clear.

Q I would appreciate your explaining it to me. I have a concept that my guess is it's not nearly as good as your understanding of it, so help me out.

A Okay. When we're talking about foam filled it's just the walls of the conduit. If you look at the core of PVC, I don't have the exact measurements but say it's a tenth of an inch thick, what foam core is rather

than that tenth of an inch thick wall being entirely PVC, an interior of that wall is foam-core filled. So you have PVC on the outside of the wall and PVC on the inside of the wall but nothing -- you know, the diameter of the inside of the conduit as well as the outside of the conduit is the same as non-foam core filled.

Q Thank you. And I did not conceive it that way and I appreciate the clarification.

The question I want to go on and ask you is, you know, over the last 20 years, what, if any, corresponding improvements in overhead technology are you aware of?

A Oh, wow. The AFS switches that I recently -- you know, that I talked about earlier, we have new cutout switches that we're using for sit springs. One of the concerns we had was on high load usage primarily on capacitor banks that we were having trouble with the cutout switches falling out. We introduced that as part of the hardening project. We used it in a whole lot more concrete poles and specifically we're using spun concrete poles.

We've increased the insulator size to where it's a higher insulation. We use nothing but 23 kv insulators even if it's on a 13 kv system. I can't think of any more. But yeah, there are a lot of

examples. Those technologies are moving forward.

Q Okay. Are you -- did I understand you're using spun concrete poles for distribution only?

A No. Spun concrete poles is just actually the standard for transmission but distribution we introduce them, gosh it was right after -- it was part of the storm secure effort so that would have been a good two or three years ago.

Q I apologize. That question was not asked as artfully as I would have wished. I understand that spun concrete poles have been in FPL's standard for new transmission for some time. I've actually been involved in a couple of transmission line siting cases.

The question I was trying to ask is, are you installing new distribution facilities using spun concrete poles, i.e. where it's only distribution lines on the spun concrete poles?

A Yes, we use them depending on the loading requirement for that specific installation.

Q Okay. Any idea of, you know, in your most recent experience, any idea of the percentage of such new poles that are going in, of new distribution poles that are going in in spun concrete?

A As I recollect, probably since we introduced them and since we went to the storm secure plan, you're

probably talking about 20 percent of them are now either -- either square concrete or spun concrete. I'm not sure the exact percentage breakdown there. And let me just clarify when I said load before, I was not talking about electrical load. I was talking about more wind load subject to the National Electric Safety Code extreme wind design standard.

Q Okay. Thank you. In terms of overhead conductor, say, in the last 20 years, has there been any comparable improvement in the conductor like there was with the jump from XLPE to TRXLPE for underground?

A Not in 20 years. We -- I believe it's longer than 20 years ago we switched to the movement of coil with the wraparound aluminum, and that has proved to be very effective for that. Really, the only kind of problems you have with overhead bare wire conductor is if something hits it. In and of itself it's going to hang up there almost forever because there's nothing -- again it goes back to that concept of no moving parts and there's no warehouse load for overhead conductors.

So the only thing that you're going to have a conductor failure on is if you have some sort of mechanical impact on that conductor which over time weakens it to where you might have a failure.

Q Following along our conversation about poles,

would I correctly infer from what you said that -- you said about 20 percent of new distribution poles are being installed using either spun concrete or square concrete. Is that an accurate recollection on my part?

A Yeah, that's my recollection.

Q Okay. So -- so can I correctly infer from that that you're still using wood poles for something like 80 percent of the new poles?

A Yes, sir. That -- that's data that I would think could be rapidly changing because we were really ramping up on our storm secure effort when I left.

Q Are new generation wood poles susceptible to woodpecker damage?

A We have found that since we switched over to the CCA poles, they're not as susceptible as the creosote poles were. But yes, you can still have woodpecker damage.

Q Are wood poles still susceptible to rot of various causes?

A Well, I'll tell you. When we switched to CCA, I don't know if you know how that treatment is evaluated, but the CCA treatment has been evaluated for at least 30 to 40 years. They go around -- the wood industry goes around the country and drives stakes into the ground and then -- with different treatments of that

particular wood and then they pull those stakes up. I'm not sure every one year, every five years, but they pull them up on some sort of time frame and they evaluate the amount of deterioration that has occurred. And for the CCA stakes, they're finding even after 30 or 40 years, 45 years, they're finding -- and that's as long as the study's been going -- that they're finding very little deterioration in terms of pole conditions like that.

And at least from the data that I had observed from our pole inspection program, we're finding that very, very few of our CCAs have experienced any kind of deterioration. And in the few cases that I noticed that they had deterioration, we would do a root cause analysis and it usually came back to there was either improper treatment of that pole or there was a problem with the batch from a specific manufacturer.

So yes, I mean, eventually they're probably going to show some deterioration, but gosh, it's going to be a long time.

Q Do you have any knowledge regarding projected life cycle costs for wood and concrete poles on FPL systems?

A No, I did not.

Q Again toward the bottom of page 6 of your testimony, on line 20, there's a sentence that laps over

on to the top of page 7, which reads, "In my opinion, the statement that the operation, maintenance and capital costs for underground facilities will be less than the corresponding costs for overhead facilities does not correspond with operating experience and can only be based on an unproven hope that newer technological equipment will work flawlessly."

And my -- my question for you is this. What operating experience do you have that -- that supports your statement in your testimony here?

A As far as operating the system, I don't have any experience. The experience I'm looking at there is looking at the information that was put together as I believe part of Don Koch's testimony that indicated our -- our experience based on actual data represents that those costs are somewhat equal.

Q Well, is it your -- I do understand correctly you have reviewed Mr. Koch's testimony and exhibits, yes?

A Yes, I have.

Q Is it your understanding that the cost values that he has used are the average cost values for all of FPL's overhead and all of FPL's underground systems respectively?

A I'm not sure I'd get to that length, but that

would be my -- I guess that would be my guess, yes.

Q I have a quick follow-up question on CCA poles. How long has FPL been using CCA poles?

A Somewhere between 25 -- I'd say 27, 28 years.

Q Okay. In the -- in the forensics analysis of the failures in -- in -- particularly in the '05 storms, I have a recollection that FPL took the position that new poles and old poles failed more or less proportionally. Is that your recollection?

A I believe it was. I believe it was the finding of the KEMA study.

Q That's how I remember it. Thank you for confirming that.

A And that was due primarily to the highest cause of pole failures was they were exposed to wind higher than their design capacity.

MR. BUTLER: Schef?

MR. WRIGHT: Yes, John.

MR. BUTLER: Your reference to pole failures, did you mean your question to refer to in sort of named storm conditions or --

MR. WRIGHT: I did, yeah. I was -- I apologize for being slightly -- slightly cryptic. But no, I went on -- when I said the forensic analysis, I meant with respect to -- I think I even

said with respect to the 2005 storms and I did mean the named hurricanes and tropical storms that impacted your service area in 2005.

MR. BUTLER: Okay. Thanks for the clarification.

MR. WRIGHT: Sure.

THE WITNESS: My answer was in relation to named storms.

BY MR. WRIGHT:

Q Correct, and that is how I understood it. And just a couple of more things that occur to me on CCA poles. You said you've been using -- FPL, that is, has been using them for 20 or 25 years?

A Twenty-five to 30 years.

Q Twenty-five to 30?

A I don't remember exactly but it seems to me 27, 28 is a good number.

Q And is it based on -- based on that experience that you believe they're going to last a good bit longer than older technology poles?

A Yes. I expect them to last longer than creosote poles.

Q Am I correct that FPL has been using TRXLPE and underground installations for coming on 20 years?

A That sounds about right.

Q We've talked some about failure rates in the course of our conversation this afternoon. Is it your belief that the failure rates for the TRXLPE stayed down in that tenth's of a percent range that you talked about earlier?

A I don't know that for a fact.

Q Okay. Do you know whether FPL ever used a conductor that I understand is called high molecular weight polyethylene, or HMWPE conductor?

A I'm not familiar with that.

Q So you don't recall whether FPL ever used that technology?

A No, I do not know that.

Q Thanks. Does FPL use the EPR conductor technology?

A I don't know. I do not know the answer to that.

Q I am led to believe that there was an older technology that is sometimes described as un-jacketed neutral or un-jacketed shield wire conductor. Did FPL -- does that make sense to you, first?

A I've heard of such technology, yes.

Q Do you know whether FPL used that in your experience?

A No, I'm not familiar with it.

Q Do you recall ever doing any -- any failure tests or any other -- any other type of evaluation of such conductor when you were at FPL?

A No, I have not.

Q A couple of more questions about your testimony on page 7. Between lines 13 and 17 you assert that FPL's new hardening standards, including some examples, should result in future lower life cycle costs for overhead construction. Have you done -- have you done any analyses of life cycle costs with respect to the newer technology?

A No, I have not.

Q Have you seen any?

A I'm sorry, would you --

Q Have you seen, have you reviewed any such studies?

A No, I have not.

Q Do you know what the assumed depreciation life is for new overhead distribution facilities?

A No, I do not.

MR. BUTLER: I'm sorry, Schef, do you mean -- assumed by whom?

MR. WRIGHT: Excuse me. I'll restate the question.

BY MR. WRIGHT:

Q Are you -- are you familiar with the depreciation life that is assigned to new overhead distribution facilities when they are rolled into FPL's depreciation studies that it periodically files with the Florida Public Service Commission?

MR. BUTLER: I'm going to object to the form of that question as assuming facts not in evidence. Honestly, Schef, I'm not sure that it's done that way, if there is an assumption specifically about technology. There may be. If that's what you want to point him to.

MR. WRIGHT: No, I'm not either. This is discovery. I was trying to learn what he knows about how the -- the expected life --

MR. BUTLER: But your question assumes that it's done by making specific assumptions for individual technologies. My impression for vast property type subs is it tends to be done more statistically. I don't know. I'm just -- unless you do, that's the objection.

BY MR. WRIGHT:

Q All right. Well, I'll ask the question. Do you know what depreciation life is assumed for overhead facilities in FPL's depreciation study?

A No, I do not.

Q Do you know whether any differentiation is made between new, old, middle aged distribution components in FPL's depreciation studies?

A No, I do not.

Q Do you believe that the operation and maintenance costs for new underground facilities using FPL's standard as we have discussed are the same as those of facilities that -- that use what is now obsolete technology?

MR. BUTLER: Objection. Characterization.

BY MR. WRIGHT:

Q Well, will you agree that XL -- Mr. McEvoy, will you agree that XLPE technology is no longer in use for new installations by FPL?

A I don't know that for sure but that's my belief.

Q Okay. Would you agree that that technology then is obsolete at least in terms of new installations?

A I would agree with that.

Q Okay. Having clarified that, will you agree -- would you agree that the O&M costs for new underground facilities built to FPL's current standards are the same as those of facilities constructed using the older XLPE conductor?

A I guess I would agree that, you know, the concept that as any system agency, overhead and underground, that you're going to have higher operating and maintenance costs with it. So generally speaking, that's a philosophical type of approach I'd take to it.

Q If you were to start today with some XLPE direct buried installation versus some new TRXLPE and foam filled cable and conduit installation, would you expect the operation and maintenance cost of the new TRXLPE and foam filled conduit to have lower operating and maintenance costs than the XLPE direct buried?

A That would be my hope but I don't have any data until we have it in service data.

Q Would you agree that it is FPL's expectation that that would be the case?

A I would think that FPL's expectations are that we're doing current technologies the best that we can and the best described as the longest life cycle cost for every piece of equipment that we put in the ground, whether -- or that we put up in the air. And that would be my belief, that that's what we're striving to do and that's what we do.

Q Thank you. I think we're entering the home stretch in that I just want to ask you a few -- a few questions about some documents that your attorneys

furnished to me. One of these documents consists of six pages, notwithstanding that they are six pages, the heading on the first page is Appendix, and then the FPL logo, Annual Distribution Reliability Report 2008.

Now, the six numbered pages are, in fact, numbered pages 38 through 43. Do you have that document with you, Mr. McEvoy?

A Let me see if I can pull that up. I don't have a hard copy but I might have an electronic copy. What was the title of the document?

Q Annual -- FPL Annual Distribution Reliability Report 2008.

A No, I do not have a copy of that.

MR. WRIGHT: John and Ken, can you -- can you see about sending Mr. McEvoy an electronic copy of that and I can ask other questions in the meantime? But --

MR. BUTLER: John?

THE WITNESS: Yes.

MR. BUTLER: Do you have -- did you get the copy of the Edison Electric Institute 2007 Reliability Survey Report?

THE WITNESS: Yes, I have a copy of that.

MR. BUTLER: Okay. Well, this -- you should have gotten it because you asked for the materials

and we had sent them to you since you're out of town, and it was at the same time. It was the same email.

THE WITNESS: Okay. Is this the final pages of that or is this a separate attachment?

MR. BUTLER: No, no, it's a separate attachment.

THE WITNESS: All right. Is it PDF or Excel?

MR. BUTLER: PDF.

THE WITNESS: I'm pulling a file named 2007 EI Reliability Report 10/31/08. Does that sound familiar?

MR. WRIGHT: That does sound familiar and I do want to ask you some questions about that.

MR. BUTLER: There's one that you should have that's a PDF file FPL 2007 FPSC Reliability Report.PDF.

THE WITNESS: Okay. Let me search through some e-mails here. Sorry about that. I have a PDF file that's just a string of numbers. Would that be it?

MR. BUTLER: No, no. Schef indicated the first page is really like a cover page with some statistics on it that says Annual Distribution Reliability Report 2008 with the FPL logo up on the

upper left corner.

MR. WRIGHT: Just so you all know, we're going off the record until we get this document issue sorted out.

(Off the record.)

MR. WRIGHT: Okay. Back on the record.

THE WITNESS: Sorry guys.

MR. WRIGHT: That's okay. Thank you.

BY MR. WRIGHT:

Q If I could, first I'd like to ask you some questions about -- the last general questions, you'll be glad to know -- about the pages numbered 41 and 42 which are described as FPL's 3 percent feeder list actual and 3 percent feeder list adjusted. Are you -- have you found those pages, Mr. McEvoy?

A Yeah. Yes, I have.

Q Do I understand correctly that these are -- these are lists of the 3 percent of the feeders, primary feeders on FPL's system that had the most -- most trouble over the time period in question?

A I do not know the answer to that question.

Q Okay. If I can just ask you to scan down the -- the list of the feeders that they give, substation origin and primary circuit number. Do you know whether any of those feeders are -- are all

underground from substation to end user points?

A No, I do not.

Q Have you seen this document before?

A I have not seen it before today when I pulled it up, no.

Q Excuse me for just a minute. I have misplaced a piece of paper but I'll be with you in a minute. Here we go.

I just wanted to ask you about the LBar. When I look at the front sheet numbered 38 of this document, there is an LBar value given at what appears to be 1999 outage minute -- minutes per outage. Is that your understanding of what that statistic shows, Mr. McEvoy?

A Yes, it is.

Q Is there anywhere in this document that we can find the comparable values for underground versus overhead?

A I'm kind of paging through the document as we talk. I don't see anything in there that does that.

Q Okay. Have you ever seen the FPL LBar statistic for underground versus overhead?

A Yes, I have. I believe it's in the reliability filing.

Q And when you say the reliability filing, what would that be?

A I'm not intimately familiar with it but it's my understanding that on an annual basis, like the other investor-owned utilities, that FPL is required to file reliability results from the prior year.

Q Did you have any involvement in preparing those documents?

A No, I did not.

Q Okay. I'm going to have a few more wrap-up questions at the end but now I'd like to ask you some questions about the EEI 2007 reliability survey report. Have you seen this document before today, Mr. McEvoy?

A Yes, I believe I was sent a copy yesterday or the day before. I forget which. But I have seen it before today.

Q Have you had occasion to review earlier editions of the EEI's reliability survey report in your career?

A I'm sorry, yes. I used to look at this as it came through from the EEI over the years.

Q Okay. Thank you.

MR. WRIGHT: I'm going to ask the court reporter to mark -- I have two copies here. One for me and one for her and both copies are full color copies as you sent the document to me. I'm going to ask her to mark that as Exhibit 2 to this

deposition.

(Exhibit No. 2 was marked for identification.).

BY MR. WRIGHT:

Q If I could ask you to either turn or scroll, depending on the version of the document you have, to page 72.

A Okay.

Q It appears to me that -- are you at page 72, Mr. McEvoy?

A Yes, sir.

Q Great. It appears to me that pages 72 through 74 are the first part of a table that covers company interruption data, and this particular data is number of customer interruptions, all interruptions. And then the second part of the table seems to be pages 75 through 77. Is that an accurate understanding of what these table are?

A Yeah. It looks like they have the information for all interruptions as well as excluding major events or SAIFI, CAIDI, SAIDI and --

Q Right. If I could, let's just stick with pages 72 through 77. It looks to me like there's just so much data there they couldn't fit it all on one page, and so what we got is three pages which is the first

half of this table and the second set, pages 75 through 77, is the second part of that table. And the good indication of that is that at the top of page 75 it says Company Outage Data, Interruption Data 1 Continued. Are we -- are we on the same pages here?

A Yes, we are.

Q Okay. Do you -- do you know how the outage causes -- the interruption causes -- well, let me back up. I interpret this table as showing by utility, where the utilities are listed down the left side of the table, and by interruption cause where the interruption causes are listed across the right -- across the top of the table. Is that how you understand this?

A You're saying interruption causes? The table I'm looking at has indices such as SAIFI, CAIDI and SAIDI.

Q I'm sorry, if you would look at -- oh, you know what? I think maybe you're looking at PDF page 72 and I was hoping to ask you to please look at the numbered page 72 of the report. If you look in the lower right-hand corner of the document it says page 72.

A You're absolutely correct. I was in the wrong spot.

Q Well, or I was, no problem. But basically am I correct to understand that the column headings on

these tables indicate interruption causes?

A Yes.

Q Okay. Do you -- do you know how the definitions of these interruption causes were -- do you know what -- for example, do you know what a vegetation caused outage is?

A I don't know for sure but my suspicion would be that the EEI has a very rigorous definition of each one of these that they would hope that the reporting companies would follow. But I have not been involved in that effort nor have I seen it.

Q So you don't know where I could find those definitions?

A I would suspect it would be somewhere in the EEI stuff.

Q Okay. Thank you.

I want to ask you a question and we'll see if you can answer it. Would you have an estimate of what percentage of the vegetation-related interruptions were -- occurred on overhead facilities as compared to underground facility?

A I would have no idea.

Q To make our lives easier, would you have any idea about any of the identifying causes other than the two particular categories that are directly identified

to overhead and underground equipment?

A No, I would not.

Q Are you familiar with wildlife -- with interruptions on overhead facilities that are caused by wildlife events like birds and squirrels?

A I am.

Q Pardon?

A Yes, I am.

Q And are you familiar with wildlife caused interruption events on underground facilities?

A Yes, I am.

Q What -- what would be an example of that?

A Oh, we get live things here, we get lizards in there, you can even get a squirrel in there occasionally. You have snakes. You have all kinds of critters get in there.

Q Okay. Would you have any idea of the relative percentages of the wildlife caused interruptions for overhead versus underground?

A No, I would not. But I know that, you know, throughout the years we've had quite an extensive effort for both underground and overhead equipment to put in what we call wildlife guards on equipment. You know, based on our experience of what we've seen in the past, we have tried to develop techniques to discourage the

wildlife to get into our equipment.

Q Okay. Do you know -- do you know -- and you can answer this specific question -- do you know which utility in this table is FPL?

A No, I do not.

Q Okay. We're kind of down to the wrap-up questions and then I'm going to want to take a short break and make sure that I don't have any more. But here's one. Much earlier you said you thought that roughly 10 percent of FPL's primary feeder circuits were underground from substation to end user. Do you have any knowledge about the reliability of those circuits as compared to either all overhead or hybrid part underground, part overhead circuits?

A No, I do not.

Q Do you happen to know -- changing subjects again, as I mentioned these are kind of wrap-up questions -- do you know what the average time required to return service on FPL's system in a looped underground system is?

A No, I do not.

Q Same question, average time to return, restore service for an outage on the overhead system.

A No, I do not.

Q Is FPL's current standard for underground

transformers what are called dead-front gear?

A Well, transformers -- for the most part, yes, but then transformers are less susceptible or less usage in the dead-front because you've got to make connections going out to the service cable. So the concept of having an elbow to plug into a transformer is not really a good concept. You still have a lot of exposed electrical parts. The concept of live gear versus dead gear is more applicable to switch cabinet.

Q Okay. And is -- is FPL's standard for switch cabinets dead front switchgear?

A Yes, it is.

Q Do you know when that became the standard?

A No, not specifically.

Q Okay.

MR. WRIGHT: John, I just need probably five minutes. I've got to -- I've got some questions I've got to go back over and make sure I asked them all, bottom line. Give me --

MR. BUTLER: Why don't we start back at 4:15.

MR. WRIGHT: That's exactly what I was going to suggest. Thank you.

(Break taken.)

BY MR. WRIGHT:

Q Okay. Well I just have like a couple more

real technical kind of engineering questions keying off of the last exchange about wildlife protections. Do you -- do you cover -- is there a technology for covering the connections to keep the wildlife from making contact with them?

A That is the primary reason why you want to dead front equipment versus live front equipment is to try to have the least amount of open bar in any switch or padmount device that you can have.

Q Okay. And is that a -- are you -- is that technology unique to underground -- is there anything comparable on overhead facilities to --

A Yes. We have all kind of animal guards for overhead equipment especially where -- whenever you're pulling off a device from a main feeder, be it a new section or be it you're coming down to a cutout switch or you're going to a transformer, any time the spacing on the framing would allow enough room -- as you're aware, as long as any wildlife just stays on a phase and does not ground itself, you're okay. That's why you see the birds sitting up there all the time.

Q Right.

A The problems you run into is when either you have the spacing too close or close enough that for somebody -- the clearer to get from phase to phase or

phase to ground. So you do it through spacing, for instance. We developed five or six years ago special what we call laboratory bird framing where we were having some endangered species or we were having some large bird kills on some of our facilities and we simply expanded the spacing between the phases in order to not allow them to have enough room to contact both phases. And at the same time, we have squirrel guards, we have guards that go on not so much insulators but more on our -- mainly our cutoff switches are the big ones that get in trouble with this.

Q As a -- as a percentage of facilities out there, what percentage have this kind of equipment -- of the overhead facilities have this kind of equipment on them?

A Oh, I have no idea.

Q Okay. I missed a word in your response about the spacing of the conductors. You said something about -- I don't know, was it treeing or freeing or something having to do with the spacing of the conductors, and I just missed the word.

A It may have been when I was speaking of framing weakness.

Q Framing. That would be the word. Thank you.

A Okay, I'm sorry.

Q No, don't be.

A The National Electric Safety Code sets out standards for minimum spacing between conductors as well as ground.

Q Right.

A And minimum is not always good enough. In fact, we're using more than the minimum. And a lot of the reasons for that is again because of the environment we live, we have some unique animals that have large wing spans or ability to jump further than others.

So we found over time that we've got to increase that spacing as well as come up with other shielding devices that if they do jump from a conductor towards a nongrounded or towards a grounded device, we have a shield there that would keep them from doing that. You've probably seen more on transmission than on distribution, but those spike things on the top of the poles to try to discourage the birds from landing on top of our poles.

Q Thank you. Yeah, I understand and appreciate the explanation. I really had just missed the word. That was the deal. But thank you very much.

MR. WRIGHT: I have no further questions. Does staff or South Daytona have any questions for Mr. McEvoy?

MR. JAEGER: Staff may have some questions.

MS. STERN: South Daytona does not.

MR. WRIGHT: Thank you.

MR. JAEGER: Should I go ahead then?

MR. BUTLER: Yes.

CROSS-EXAMINATION

BY MR. JAEGER:

Q This is Ralph Jaeger. I'm senior attorney for the Public Service Commission and I was not here at the beginning of the -- I just want to make sure you have my name there.

And staff has developed a few questions which we think are primarily for Mr. Koch but we wanted to ask Mr. McEvoy those questions and see if he would have any information on that.

The first deals with the new underground facilities in zero -- sub 0231. And do you know how new residential subdivisions have been provided underground service under the tariffs approved in that docket effective between October 9th, 2007 and November 12th, 2008?

A No, I do not.

MR. BUTLER: Ralph, any questions of that sort, you know, they're going to be to Mr. Koch.

MR. JAEGER: Okay.

BY MR. JAEGER:

Q Just sort of to maybe get a heads up that Mr. Koch can be prepared to have that, and so what we want to know is how many -- do you know how many new residential subdivisions have been provided underground service under those tariffs?

A No, I do not.

Q And are there any pending requests for new residential subdivision underground installations?

A I have no idea.

Q And so again, Mr. Koch would provide -- he would be the one to provide us the CIAs paid by the customer applicant?

A Yes.

Q And conversions of facilities same thing, how many underground conversions were performed since this was -- became effective November 13th, 2008? Would that -- you don't -- that would be Mr. Koch?

A I have no idea, no.

MR. JAEGER: Okay. And we'd like to -- okay. Well, we'll ask those questions of Mr. Koch next week then. Thank you.

THE WITNESS: Okay.

MR. BUTLER: Ralph, we'll try to get that information so Mr. Koch can provide it. I'm not

sure that's something Mr. Koch has right now off the top of his head or had as part of preparing his testimony, but we'll try to go ahead and get the information for you.

MR. JAEGER: That was sort of the reason we were just going ahead and asking it here and then maybe you could -- I don't know if we need to get a late-filed exhibit or maybe he can answer some of those and wouldn't have as many late-filed exhibits.

MR. BUTLER: Okay. Do you have any other questions, Ralph?

MR. JAEGER: That's all staff had.

MR. BUTLER: Okay. All right. Well, I have just one brief follow-up for Mr. McEvoy if there are -- and I thought I heard, Marlene, you don't have any questions, correct?

MR. MARTIN: That's correct.

MR. BUTLER: Thank you.

CROSS-EXAMINATION

BY MR. BUTLER:

Q Mr. McEvoy, you were asked some questions about the statistic referred to as LBar, and I'd like to ask you about the numerator in that statistic, the minutes of interruption. Does that measure the time

until customers are restored to service or the time until all of the facilities that would have initially caused the interruption have been fully repaired?

A That represents the minutes that the last customer was connected after that particular problem that you had in the outage. And as a matter of clarification, specifically in the underground system, in the loop system, because that design does allow you to return the customers to service prior to having the six defaulted sections, you can have a faulted section out there in a loop system and have all the customers and in service for really an undefined time. The only consequence you have is if you happen to have a fault in another section of that loop then your ability to restore service is going to be severely retarded.

MR. BUTLER: Okay. Thank you, Mr. McEvoy. That's all the questions that I have, Schef.

MR. WRIGHT: Can I just follow-up on that question?

REDIRECT EXAMINATION

BY MR. WRIGHT:

Q Would I understand then that in the example you just gave, Mr. McEvoy, that you could actually have the fault in existence for a long time but customers would remain in service. Would those minutes that

those -- that the fault remained faulted, would those count in the minutes in the LBar calculation?

A No, they would not.

Q Okay.

A The fault calculation does not have anything to do with when you have completely repaired the problem. It has to do with when the last customer for that particular outage was returned to service.

Q It's when the last customer is returned to service; is that right?

A That's correct.

Q Thank you very much.

A It has nothing to do with the repair of the facilities.

MR. WRIGHT: Okay. Thanks. Thank you very much.

MR. BUTLER: He does not waive reading or signing so I'll make arrangements to get a copy of the transcript.

(Deposition concluded.)

* * *

CERTIFICATE OF REPORTER

STATE OF FLORIDA)
COUNTY OF LEON)

I, LORI DEZELL, Registered Professional Reporter, certify that the foregoing proceedings were taken before me at the time and place therein designated; that my shorthand notes were thereafter translated under my supervision; and the foregoing pages numbered 1 through 110 are a true and correct record of the aforesaid proceedings.

I further certify that I am not a relative, employee, attorney or counsel of any of the parties, nor am I a relative or employee of any of the parties' attorney or counsel connected with the action, nor am I financially interested in the action.

DATED this 27th day of MAY, 2009.

_____

LORI DEZELL, RPR, CCR
Notary Public
2894-A Remington Green Lane
Tallahassee, Florida 32308
1-800-934-9090
850-878-2221

ERRATA SHEET

I have read the transcript of my deposition, pages 1 through 111, and hereby subscribe to same, including any corrections and/or amendments listed below.

_____ _____

DATE (JOHN J. McEVOY)

(Petition for Approval of Underground Conversion)

Page/Line	Correction or Amendment	Reason for Change

Reporter: Lori Dezell 5/21/09

ACCURATE STENOTYPE REPORTERS, INC.
2894-A Remington Green Lane
Tallahassee, Florida 32308
(850) 878-2221

May 27, 2009

JOHN T. BUTLER, ESQUIRE
FLORIDA POWER & LIGHT COMPANY
700 Universe Boulevard
Juno Beach, Florida 33408

Re: Petition for Approval of Underground Conversion Tariff Revisions, etc.

Dear Mr. Butler:

Enclosed please find your copy of the deposition of JOHN J. McEVOY taken on 5/21/09, in the above-styled case.

As the witness did not waive reading and signing, I am also attaching the errata sheet as the last page of the transcript and request that your office make the necessary arrangements with the witness to read your copy of the deposition, noting any corrections on the errata sheet, then dating and signing the errata sheet.

Please forward the original signed and dated errata sheet to John Butler. If the errata sheet or a request for an extension is not received within 45 days, counsel may assume that the signature has been waived.

Thank you for your cooperation in this matter.

Sincerely yours,

Lori Dezell, RPR, CCR

Enclosures (Errata Sheet and transcript.)

cc: John Butler, Esquire



STORM SECURE: FPL'S FIVE-POINT PLAN TO BUILD A STRONGER GRID FOR THE FUTURE

January 30, 2006

The purpose of this paper is two-fold: to explain the steps that FPL proposes to take to substantially increase the resistance of its distribution, transmission and substation network to severe weather impacts; and to identify areas where assistance will be required, either from the Florida Public Service Commission (FPSC) or from state and local government bodies and communities.

BACKGROUND

Two extraordinary hurricane seasons have made it clear that significant changes are required in the way that Florida utilities design, construct and operate their electrical systems. This is particularly true for FPL, whose service area has experienced the direct hit of five hurricanes as well as the impact of two others in 2004 and 2005. Standards that have worked well and provided customers with reliable service in the past will need to be enhanced going forward. Florida generally, and South Florida in particular, are much more heavily and densely populated than they were at the time of Hurricane Andrew; customers' expectations have changed; and there is good evidence that we are in a more active part of a multi-decade hurricane cycle and can expect more frequent events. Even if 2004 and 2005 were aberrations, as long-term statistics suggest, we must be prepared for further, significant storm activity in the years ahead.

The issue is not whether changes should be made, but what those changes should be. Although no electrical system can be rendered fully resistant to hurricane impacts under the current state of technology and economics, this paper outlines changes that FPL proposes to make to benefit our customers and the communities we serve. Our approach to new construction, system upgrades and maintenance will provide significant improvements in our system's resiliency to storms and our restoration time after a storm passes. In addition, it will ensure that a critical mass of providers of basic services that are essential to the health and safety of our communities will have a reliable supply of electricity as promptly as possible after a hurricane strike. In developing these proposals, some of which will require FPSC approval, we have kept in mind the following essential points:

EXHIBIT 1
Witness McEvoy
Date 5-21-08
Reporter: Lori Dezell

1. FPL's distribution, transmission and substation systems, as validated by KEMA's independent analysis, meet or exceed all required safety standards set forth by the National Electrical Safety Code (NESC) and performed as designed and expected during recent hurricanes. However, given the severe nature of the 2004 and 2005 hurricane seasons and, as the FPSC has recognized, the fact that meteorological experts have determined that this is likely part of a long term cycle of increased hurricane activity, we are proposing many changes to the current standards for our distribution system.

2. Significant changes to the resiliency of our system will take many years of sustained effort to achieve. Unfortunately, our system is so large and geographically diverse that it cannot be changed overnight, and all parts of our extensive service territory are susceptible to hurricane impacts. Therefore, we must be intelligent in the development of our programs and focus early efforts on those parts of the system where we can have the greatest impact for a given level of effort, whether this be by geography or by element of the network.

3. Substantial improvements to our system's resiliency will have cost implications (for example, converting the entire grid to underground could double our customers' rates). We know that would be unacceptable to most customers. That is why we must focus on spending resources efficiently and wisely.

4. We must avoid focusing excessively on any one aspect of the problem. Electrical systems are exposed to a variety of different failure modes under the stress of hurricane conditions and typically each specific failure mode only accounts for a relatively small proportion of the total problem. For example, FPL and every other utility experiences pole failures during hurricane conditions. However, even if FPL had experienced zero pole failures during the 2004 and 2005 storm seasons, we would still have experienced millions of customer outages.

We have used these points as guidelines in assisting us to formulate the initiatives that follow and in their refinement in the coming months.

BASIS OF OUR PROPOSALS

We have developed our proposals based in part on the extensive analyses that we have conducted either directly ourselves, or with the aid of external resources such as KEMA, on the evidence of seven hurricane events that our system has experienced in the last two seasons: Charley, Frances, Jeanne, Dennis, Katrina, Rita and Wilma, [1] and also taking into consideration customer and governmental expectations that have been expressed in the wake of this past storm

[1] FPL Hurricane Assessment prepared by Davies Consulting, Inc. (February 18, 2005); FPL Transmission and Substation – 2004 Storm Season Report (2005); FPL Hurricane Assessment (January 25, 2005); FPL Infrastructure Resilience Team Report on 2004 Hurricanes (2005); FPL Vegetation Management Study (2005); FPL Wilma Engineering Analysis prepared by KEMA (January 12, 2006).

season. We are happy to provide further background to the Commission and its Staff. However, we note that we have not by any means completed our analysis and we expect to learn more as we continue to probe the evidence. In addition, while our proposals have been subjected to a preliminary and general economic assessment, we are not yet at the point where we can specify exactly what each element of the program will cost. Accordingly, we expect to refine our proposed program over time, both by adding elements as we develop new ideas and by adjusting the timing, level or focus of current elements. FPL is committed to the approach and initiatives set forth in this paper, subject to FPSC review and approval where needed.

ELEMENTS OF THE PLAN

1. Complete **post-hurricane repairs and targeted facility upgrades** to rehabilitate and strengthen the electrical infrastructure in order to prepare for the 2006 hurricane season.

2. Modify our existing **pole inspection, treatment and replacement** program to include a systematic ten-year inspection and treatment cycle for all distribution wood poles, including those poles owned by other utilities, in order to proactively address any identified pole deficiencies (consistent with recent FPSC staff recommendations) and work with other utilities to address joint use issues pertaining to loading.

3. **Harden the electrical infrastructure** by (a) adopting NESC extreme wind velocity zone criteria as the standard for all new distribution construction and system upgrades (up to 150 mph in certain areas) using construction methods such as undergrounding, stronger poles (including concrete poles where appropriate), shorter spans, guying, etc., (b) upgrading existing overhead main lines (feeders) initially targeting those serving top critical infrastructure facilities and major thoroughfares within the first five years, with the objective of applying NESC extreme wind-loading criteria where feasible and practical, and (c) replacing targeted components of remaining transmission and substation facilities constructed under legacy standards -- all as part of a comprehensive, detailed ten-year hardening plan for distribution, transmission and substation infrastructure.

4. Promote **undergrounding** by (a) investing 25% of the cost of local-government sponsored overhead-to-underground conversion projects otherwise borne by the requesting locality, (b) aggressively encouraging local ordinances and legislation requiring developers to provide underground electrical service for all new subdivisions, developments and projects, and (c) facilitating local undergrounding projects by allowing underground conduit and cable, and associated above-ground transformers and switch cabinets to be placed in road rights-of-way under specific standards and agreements.

5. Enhance **vegetation management initiatives** by (a) accelerating main line (feeder) clearing to complete 75% of each year's planned line clearing work before the peak

hurricane season, (b) completing line clearing for circuits serving top critical infrastructure facilities (CIFs) prior to hurricane season 2006 and prior to every hurricane season thereafter, (c) ensuring a 3-year line clearing cycle for all main lines (feeders), (d) aggressively promoting our "Right Tree – Right Place" program to educate communities and improve shared responsibility with customers regarding the placement, removal, species and type of trees in proximity to power lines, and (e) supporting legislation that would regulate and enforce the species, type, placement and removal of trees and vegetation in proximity to electric facilities, and enhance utility rights of access to property to clear lines through local code enforcement assistance.

We are confident that these initiatives will ultimately result in fewer outages during severe weather events. When outages do occur, service will be restored faster, particularly to critical infrastructure facilities and to main thoroughfares where businesses that provide basic necessities such as gas stations and grocery stores are located. Our plan clearly demonstrates that just as Florida's weather is changing, so are we.

INITIATIVES

I. Post-Hurricane Repairs and Targeted Facility Upgrades to Prepare FPL's System for the 2006 Hurricane Season

Our restoration process has two components – the initial restoration phase, when all customers affected by storm-related outages are restored; and the recovery phase, when facilities affected by hurricane are restored to pre-storm condition. As a result of the 2005 hurricane season, a comprehensive field assessment of all distribution, transmission and substation facilities was initiated. Follow-up work to our system is ongoing to repair and restore distribution, transmission and substation facilities that were damaged and left weakened during the 2005 hurricane season, and to replace facilities where necessary. Additionally, certain near-term work is being performed to strengthen targeted facilities prior to the onset of the 2006 hurricane season. Our action plan includes the following:

- Distribution Follow-Up Work on Poles
  - Replace damaged poles, including those braced during restoration
  - Straighten leaning poles
  - Remove pole stubs
- Other Distribution Follow-Up Work
  - Replace damaged lightning arrestors
  - Replace or repair capacitor banks
  - Replace or repair switches
  - Address various other components of electrical infrastructure damaged during last year's hurricane season
- Distribution Facility Strengthening

  - Replace conductor along targeted main lines (feeders) serving critical infrastructure facilities (*e.g.*, Port Everglades)
  - Complete Thermovision inspections and follow-up repairs to identified 500 main lines (feeders) to proactively address potential causes of interruptions
- Transmission Line Follow-Up Work and Targeted Facility Strengthening
  - Rebuild seven miles of the Conservation-Corbett 500kV transmission line that experienced structural damage
  - Inspect all 500kV lines within the impacted area of Hurricane Wilma and make hurricane-related repairs as identified
  - Relocate the wood pole line off the berm of Lake Okeechobee and rebuild with concrete poles
  - Replace existing ceramic post insulators with better performing polymer post insulators on facilities with the highest customer impacts
- Substation Facility Strengthening
  - Accelerate replacement of silicon carbide arrestors to better performing arrestors on transformers with the highest customer impact
  - Harden selected equipment assemblies at 500 kV substations and bus connections at 15 substations

As we complete our follow-up work on facilities during this recovery phase, it should be noted that we are also often replacing identified facilities with ones that meet current, higher standards than those in place at the time of initial installation, which will improve the overall robustness of FPL's system.

The above initiatives help to address the immediate operating viability and reliability of our infrastructure prior to the onset of the 2006 hurricane season. The initiatives that follow are more comprehensive in nature and address the longer-term strength and resiliency of our electrical system.

II. Pole Inspection, Treatment and Replacement

FPL's distribution poles are currently designed to meet NESC standards, and most poles are designed 50% stronger than NESC minimum requirements. FPL's distribution poles are inspected as part of a three-pronged approach: (1) a Thermovision program that visually inspects all main line (feeder) poles; (2) a targeted wood-pole inspect and treat program; and (3) pole inspections that are done as part of daily work activities. FPL's transmission poles have been designed to meet extreme wind-loading criteria at the time of construction, and are currently inspected, treated and replaced as necessary on a 3, 4 or 8-year cycle, depending on material and customer count.

The failure rate of FPL's distribution poles during the 2004 and 2005 hurricanes was low. With respect to Hurricane Wilma, KEMA determined that of the distribution poles that experienced hurricane force winds, the distribution pole failure rate (1.46% of the total population of distribution poles that were exposed to hurricane-force winds) was consistent with

the failure rate that would have otherwise been expected for a hurricane of that storm's size and strength. KEMA concluded that wind was the predominant root cause of pole breakage. Notwithstanding the low distribution pole failure rate, given the expectation that Florida is experiencing a heightened cycle of increased hurricane activity, FPL is taking the following action:

- Modify the existing pole inspection and treatment program to establish a systematic inspection and treatment cycle of ten (10) years for all distribution wood poles, including those poles carrying FPL facilities that are owned by other utilities (consistent with recent FPSC staff recommendations)
- Prioritize inspection of creosote-treated wood poles (the oldest type of pole within distribution system) by the onset of the 2006 hurricane season
- Replace as necessary those poles identified as having deficiencies
- Report findings to the FPSC of such inspections, treatment and replacement on an annual basis
- Work with other utilities (*e.g.*, telephone, cable) to address joint use issues pertaining to loading and their own inspection programs

III. Hardening the Electrical Infrastructure

New Construction

All of FPL's distribution facilities meet or exceed NESC standards. However, given the severe nature of the 2004 and 2005 hurricane seasons and, as the FPSC has recognized, the fact that meteorological experts have determined that Florida is in a long-term cycle of increased hurricane activity. FPL proposes to take the following action:

- Adopt the NESC extreme wind-loading criteria as the standard for all new distribution construction (up to 150 mph in certain areas). This standard will be applied as specified by established NESC extreme wind velocity zones (*see* Exhibit A), and may be achieved using construction methods such as undergrounding, stronger poles (including concrete poles where appropriate), shorter spans, guying, etc.

Changes in new construction standards for transmission and substation facilities are not indicated or recommended.[2] That said, we are taking proactive action as follows:

[2] FPL's transmission and substation facilities are designed in accordance with NESC extreme wind loading criteria applicable at the time of design. During the 2004 and 2005 hurricanes, the transmission lines built to the current standard of concrete poles and polymer insulators performed well. During Hurricane Wilma, a total of 345 transmission line sections were interrupted; of these 65% had no damage. (Note that countermeasures to address the 35% of transmission line sections that were damaged are included in the "Hardening the Electrical Infrastructure" section of this paper). The most probable cause of the interruption of those undamaged transmission lines was wind-blown debris including trees, branches and vegetative material from outside FPL's easements and rights-of-way, which likely self-cleared the impacted facilities. In total, these 345 line sections disrupted service to 241 substations, of which only 8 had damage requiring repairs prior to restoring service.

- Enhance our current standards for substation fences and control house roofs where appropriate (Note: Although this damage did not cause any outages, substation roof and fence damage was found at 26 locations after Hurricane Wilma.)

System Upgrades

System upgrades are generally described as projects aimed at substantially changing the current state of existing facilities, through programs such as system expansion, relocations and major maintenance/rebuild projects. FPL intends to take the following action with respect to system upgrades:

- Apply NESC extreme wind velocity zone criteria in those instances when main lines (feeders) have to be relocated along road rights-of-way or are being substantially upgraded due to increased electrical demand

Long-Term Hardening of Targeted Facilities

In addition to new construction and system upgrades, a targeted, long-term approach to systematically increasing the strength and resiliency of existing electrical infrastructure that serves critical infrastructure facilities (CIFs) and major thoroughfares is necessary. To accomplish this, long-term retrofit projects will be undertaken with the sole purpose of hardening identified facilities. The following proactive hardening plans are being initiated:

- Develop a comprehensive, detailed ten-year hardening plan for distribution infrastructure based on additional independent and internal analyses, including recommendations for infrastructure hardening developed with assistance from KEMA
- Upgrade existing overhead main lines (feeders), initially targeting those serving top critical infrastructure facilities and major thoroughfares (with gas stations, grocery stores, etc.) within the first five years, with the objective of applying NESC extreme wind-loading criteria where feasible and practical
- Initiate a long-term plan to replace remaining transmission line ceramic post insulators, single-pole unguyed wood transmission structures, and substation transformer surge arresters constructed under legacy standards

This will be the first time that any electric utility operating in the United States has adopted the NESC extreme wind-loading criteria for distribution facilities. This will, undoubtedly, have profound long-term benefits to all our customers and the communities we serve.

IV. Undergrounding

Currently 37% of FPL's distribution infrastructure is underground. FPL's current policy is to install underground facilities in high density areas where multiple power lines are required to serve customers, or where local ordinances require underground construction for new residential subdivisions. Pursuant to FPSC rule, FPL's customers pay the differential cost between overhead and underground pursuant to existing tariff. There are specific applications under which underground service is less desirable than overhead service for reasons of site engineering or due to extended outages after storm surge or flooding. However, analysis from the 2004 hurricanes and Hurricane Katrina which impacted FPL's service area indicated that underground facilities incurred fewer main line (feeder) interruptions during each hurricane. In addition, we recognize that many communities have expressed an interest in pursuing conversion from overhead to underground. Therefore, FPL intends to take the following actions:

- Promote the conversion of electric distribution facilities from overhead to underground by offering to invest 25% of the cost of local government-sponsored conversion projects otherwise borne by the requesting locality, with the FPSC recognizing such investment as new plant in service
  - All property located within any area designated by the locality for conversion would be required to convert from overhead to underground service in order to ensure that the potential benefits to the new underground area's robustness are not compromised by interceding overhead facilities that are exposed to causes of overhead outages
- Aggressively enhance existing efforts with local governments to strongly encourage ordinances requiring developers to provide underground electrical service for all new subdivisions, developments and projects
- Support legislation that would require developers throughout the state to provide underground electrical service for all new subdivisions, developments and projects
- Support and assist efforts of communities to obtain funding assistance from federal and state agencies to defray costs of underground conversion projects
- Facilitate local undergrounding projects by allowing underground conduit and cable, and associated above-ground transformers and switch cabinets to be placed in road rights-of-way under specific standards and agreements

V. Vegetation Management

Evidence and analysis from the 2004 and 2005 hurricane seasons shows that trees and vegetation interfering, damaging or breaking poles, lines and other facilities were the greatest cause of hurricane-related outages. FPL's current line clearing practice is to clear distribution lines on a 3-year average cycle (an average of 4,600 feeder miles annually). Our line clearing practices, which include directional pruning methods, meet ANSI A-300 and NESC tree trimming standards and follow the guidelines recommended by both the International Society of Arboriculture and the National Arborist Association.

That said, vegetation management is an area that FPL cannot unilaterally control. Our forensic team's analysis of tree-related distribution feeder and lateral outages from Hurricanes Katrina and Wilma in 2005 concluded that 81% of tree-related outages were not preventable by FPL; that is, no trimming standard or work performed by FPL would have prevented these outages from occurring. These outages were caused by damage to FPL facilities from trees located off rights-of-way or outside of FPL's property or its easements which toppled into FPL's poles, lines and other facilities, or by limbs breaking off from trees and vegetative material located outside of FPL's trim zone. In addition, FPL's transmission system had 22 trees located outside of FPL's transmission rights-of-way that impacted facilities. As previously indicated, no damage was observed on the vast majority of transmission line sections interrupted by Hurricane Wilma, indicating that these facilities were impacted by flying debris, including tree branches and other vegetative material from outside FPL's easements and rights-of-way, that likely self-cleared from the impacted lines. For its part, to mitigate the prospect of outages caused by trees and vegetation interfering with, damaging or breaking electrical facilities, FPL is taking the following action:

- Accelerate main line (feeder) clearing to complete 75% of each year's planned line clearing work before the peak hurricane season
- Complete line clearing for circuits serving top critical infrastructure facilities (CIFs) prior to hurricane season 2006 and prior to every hurricane season thereafter
- Ensure a 3-year line clearing cycle for all main lines (feeders)
- Aggressively promote "Right Tree – Right Place" program to heighten community education and shared responsibility between FPL, communities and customers for tree species, type, location and proximity to power lines
- Support legislation that would regulate and enforce the species, type, placement and removal of trees and vegetation in proximity to electric facilities, and also enhance utility rights of access to property to clear lines through local code enforcement assistance

CONCLUSION

We have all experienced firsthand the significant impact of recent hurricanes in our state. No utility has had to respond to as many direct hits by hurricanes in recent years as FPL. We recognize that if the recent cycle of increased hurricanes activity is the new storm paradigm for our state, FPL's service area and its customers will undoubtedly be impacted. Without fundamental and significant changes in the way we prepare for storms and harden our infrastructure to prevent outages, we believe that the level of disruptions to our electrical system may well continue into the future. That is unacceptable to FPL, as it is unacceptable to our customers.

However, it is a reality that, regardless of the initiatives that we set forth above, when hurricanes and severe weather events impact our state, outages will occur. It is our intention, however, to take the steps necessary to mitigate such impact. The tactical and strategic initiatives

we have outlined not only address the resiliency of our system to future severe weather events, but also provide for an increased level of day-to-day reliability for our customers. In addition to the initiatives outlined above, FPL intends to make further refinements to this action plan based on additional input and analyses, and will include such refinements as part of our 10-year hardening plan. We expect this plan to provide a clear roadmap to improving the long-term resiliency of our electric infrastructure, and will submit it to you later this year. Furthermore, we will include localized hardening plans that we will share with respective community leaders and local emergency managers.

EDISON ELECTRIC INSTITUTE 2007 RELIABILITY SURVEY REPORT

October 2008

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EXHIBIT 2
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Date 5/1/09
Reporter: Lori Dezell

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2007 RELIABILITY SURVEY REPORT
October 2008

Table of Content

Page

2007 EEI Reliability Survey Results ---- 1
2007 EEI Reliability Survey (Overall System) Data ---- 2
IEEE Standard Definition for Reliability Statistics ---- 2
2007 EEI Reliability Survey (Distribution System) Data ---- 3
2007 EEI Reliability Survey (Transmission System) Data ---- 3
SAIFI Survey Data
2007 SAIFI Overall System Quartile Results (For All Interruptions) ---- 4
2007 SAIFI Distribution System Quartile Results (For All Interruptions) ---- 5
2007 SAIFI Transmission System Quartile Results (For All Interruptions) ---- 6
2007 SAIFI Overall System Quartile Results (Excluding Major Events) ---- 7
2007 SAIFI Distribution System Quartile Results (Excluding Major Events) ---- 8
2007 SAIFI Transmission System Quartile Results (Excluding Major Events) ---- 9
CAIDI Survey Data
2007 CAIDI Overall System Quartile Results (For All Interruptions) ---- 10
2007 CAIDI Distribution System Quartile Results (For All Interruptions) ---- 11
2007 CAIDI Transmission System Quartile Results (For All Interruptions) ---- 12
2007 CAIDI Overall System Quartile Results (Excluding Major Events) ---- 13
2007 CAIDI Distribution System Quartile Results (Excluding Major Events) ---- 14
2007 CAIDI Transmission System Quartile Results (Excluding Major Events) ---- 15
SAIDI Survey Data
2007 SAIDI Overall System Quartile Results (For All Interruptions) ---- 16
2007 SAIDI Distribution System Quartile Results (For All Interruptions) ---- 17
2007 SAIDI Transmission System Quartile Results (For All Interruptions) ---- 18
2007 SAIDI Overall System Quartile Results (Excluding Major Events) ---- 19
2007 SAIDI Distribution System Quartile Results (Excluding Major Events) ---- 20
2007 SAIDI Transmission System Quartile Results (Excluding Major Events) ---- 21
ASAI Survey Data
2007 ASAI Overall System Quartile Results (For All Interruptions) ---- 22
2007 ASAI Distribution System Quartile Results (For All Interruptions) ---- 23
2007 ASAI Transmission System Quartile Results (For All Interruptions) ---- 24
2007 ASAI Overall System Quartile Results (Excluding Major Events) ---- 25
2007 ASAI Distribution System Quartile Results (Excluding Major Events) ---- 26
2007 ASAI Transmission System Quartile Results (Excluding Major Events) ---- 27
MAIFI Survey Data
2007 MAIFI Overall System Quartile Results (For All Interruptions) ---- 28
2007 MAIFI Distribution System Quartile Results (For All Interruptions) ---- 29
2007 MAIFI Transmission System Quartile Results (For All Interruptions) ---- 30
2007 MAIFI Overall System Quartile Results (Excluding Major Events) ---- 31
2007 MAIFI Distribution System Quartile Results (Excluding Major Events) ---- 32
2007 MAIFI Transmission System Quartile Results (Excluding Major Events) ---- 33

NERC Regional Reliability Councils Map ---- 34

Reliability Indices by NERC Regions
2007 SAIFI Overall System Quartile Results (For All Interruptions) ----35
2007 SAIFI Overall System Quartile Results (Excluding Major Events) ----36
2007 CAIDI Overall System Quartile Results (For All Interruptions) ----37
2007 CAIDI Overall System Quartile Results (Excluding Major Events) ----38
2007 SAIDI Overall System Quartile Results (For All Interruptions) ----39
2007 SAIDI Overall System Quartile Results (Excluding Major Events) ----40
Reliability Indices Information
2006 Distribution Reliability (Overall System) Survey Results ----41
2006 Distribution Reliability (Distribution System) Survey Results ----41
2006 Distribution Reliability (Transmission System) Survey Results ----42
States Requiring Reliability Statistics Reporting ----42
Use of IEEE 1366 Explained For Companies ----43
2007 Reliability Survey Comments ----47
Additional Reliability Indices Tracking and Reporting ----48
Customer Outage Experiences ----50
Utility Data Collection Information ----50
Graphical Summarizations, Respondents Data & Survey Questions ----53
Interruption Data 1 Survey Data
USA Percentage of Outage Causes for All Interruptions ----54
USA Total Outage Numbers for All Interruptions ----55
USA Total Outage Minutes for All Interruptions ----56
USA Percentage of Outage Causes Excluding Major Events ----57
USA Total Number Outage Numbers Excluding Major Events ----58
USA Total Outage Minutes Excluding Major Events ----59
Interruption Data 2 Survey Data
USA Percentage of Outage Causes By Classification (All Interruptions) ----60
USA Total Number of Outages (All Interruptions) by Classification ----61
USA Total Minutes of Outages (All Interruption) by Classification ----62
USA Percentage of Outage Causes By Classification (Excluding Major Events) ----63
USA Total Numbers of Interruptions (Excluding Major Events) by Classification ----64
USA Total Minutes of Interruptions (Excluding Major Events) by Classification ----65
Company Data
Company Data for Reliability Indices (Overall System) ----66
Company Data for Reliability Indices (Distribution System) ----68
Company Data for Reliability Indices (Transmission System) ----70
Company Outage Data (Interruption Data 1) ----72
Company Outage Minutes (Interruption Data 1) ----78
Company Outage Data (Interruption Data 1) w/o Major Events ----84
Company Outage Minutes (Interruption Data 1) w/o Major Events ----90
Company Outage Data (Interruption Data 2) By Classification ----96
Company Outage Minutes (Interruption Data 2) By Classification ----99
Company Outage Data (Interruption Data 2) w/o MEs by Classification ----102
Company Outage Minutes (Interruption Data 2) w/o MEs by Classification ----105
Company Linear Circuit Mile & Customer Data ----108
2007 EEI Reliability Survey Questions
Reliability Council Tab ----111
Indices Tab ----112
Major Event Tab ----113
Utility Parameters Tab ----114
Interruption Data 1 Tab ----115
Interruption Data 2 Tab ----116
Survey Comments Tab ----117

2007 EEI Reliability Survey Report

The 2007 EEI Distribution Reliability Survey collected data from (71) utility companies whom serve approximately 68 million electric utility customers. No changes were made to the survey web-site or the reliability survey format this year. The only editorial changes that were made in this year's report were the elimination of the "Days Excluded" column from the Survey Comments chart and the addition of the Additional Indices Tracked and Reported Chart. Overall, the format for the 2007 survey and the report are the same as last year. Participants were asked to report data for their overall system, the distribution system and the transmission system and results were depicted in both graphical and tabular formats.

The EEI Reliability Survey is a confidential survey that is available only EEI members and participating utilities. All participants must agree to the non-disclosure agreement before being allowed to participate in the survey. Each year EEI receives numerous requests from EEI members, non-EEI members, regulatory agencies, academic institutions, etc. for copies of the Reliability Report or access to the data contained in the report. The confidentiality agreement exists because EEI members have stated that they want the data, contained in the report, to remain anonymous and confidential.

A Distribution Reliability Survey Task Force will not convene in 2009. EEI will review survey comments to determine if any changes to the survey are needed.

Questions regarding this report should be addressed to:

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NOTE: Several years ago EEI stopped calculating a so called national average for the reliability indices and instead the survey results were formatted into 1st, 2nd, 3rd, and 4th quartiles. The reasoning for the change was that statistically the number that was being calculated as a "national average" has no real value. The averaged number was not calculated using the actual values but was calculated using the reported values.

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2007 RELIABILITY SURVEY (OVERALL SYSTEM) DATA:

The following chart contains the 2007 Distribution Reliability Survey Results; the table depicts the ranges for the four quartiles. The data used to compile this chart is illustrated graphically on subsequent charts contained in this report.

2007 RELIABILITY INDICES WITH MAJOR EVENTS INCLUDED					
	1st	2nd	3rd	4th	Responses
SAIFI	<1.11	1.11 – 1.44	1.45 – 1.79	≥1.80	66
CAIDI	<100	100 - 144	145 - 181	≥182	66
SAIDI	<115	115 - 210	211 - 325	≥326	66
ASAI	>99.979	99.979 - 99.961	99.960 - 99.938	< 95.938	66
MAIFI	<1.70	1.70 – 3.94	3.95 – 5.50	>5.50	16
2007 RELIABILITY INDICES WITH MAJOR EVENTS EXCLUDED					
	1st	2nd	3rd	4th	Responses
SAIFI	<0.98	0.98 - 1.17	1.18 - 1.48	≥1.49	67
CAIDI	<82	82 - 104	105 - 131	≥132	67
SAIDI	<90	90 – 126	127 - 175	≥176	67
ASAI	>99.984	99.984 – 99.977	99.976 – 99.967	< 99.967	67
MAIFI	<1.55	1.55 - 3.95	3.96 – 5.50	> 5.50	16

IEEE STANDARD DEFINITION FOR RELIABILITY STATISTICS:

The following definitions are the standard IEEE definitions for the five reliability indices

System Average Interruption Frequency Index

$$SAIFI = \frac{\text{Total Number of Customers Interrupted}}{\text{Total Number of Customers Served}}$$

Customer Average Interruption Duration Index

$$CAIDI = \frac{\text{Sum of All Customer Interruption Durations}}{\text{Total Number of Customer Interruptions}}$$

System Average Interruption Duration Index

$$SAIDI = \frac{\text{Sum of All Customer Interruption Durations}}{\text{Total Number of Customer Served}}$$

Average Service Availability Index

$$ASAI = \frac{\text{Customer Hours Service Availability}}{\text{Customer Hours Service Demand}}$$

$$ASAI = \frac{8760 - SAIDI}{8760}$$

(24 Hours/day x 365 Days/Year = 8,760 Hours/Year)
(NOTE: SAIDI is in Hours or SAIDI(minutes)/60)

Momentary Average Interruption Frequency Index

$$MAIFI = \frac{\text{Total Number of Customer Momentary Interruptions}}{\text{Total Number of Customers Served}}$$

2007 DISTRIBUTION SYSTEM RELIABILITY SURVEY DATA:

The following chart contains the 2007 Distribution System Reliability Survey Results; the table depicts the ranges for the four quartiles. The data used to compile this chart is illustrated graphically on subsequent charts contained in this report.

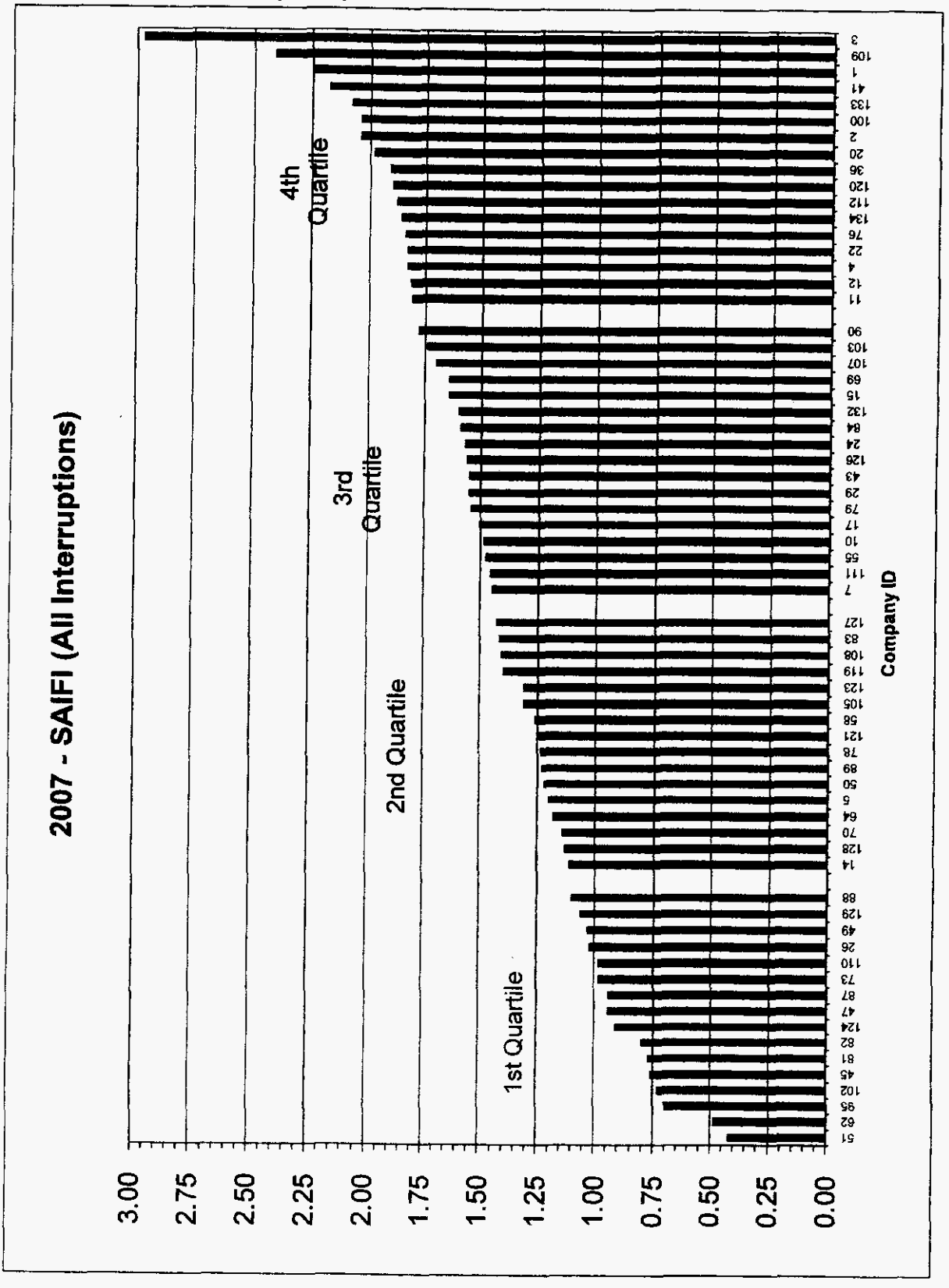
2007 DISTRIBUTION SYSTEM RELIABILITY INDICES WITH MAJOR EVENTS INCLUDED					
	1st	2nd	3rd	4th	Responses
SAIFI	<0.94	0.94 – 1.19	1.20 – 1.53	≥1.54	62
CAIDI	<105	105 - 151	152 - 189	≥190	62
SAIDI	<110	110 - 182	183 - 295	≥296	63
ASAI	>99.979	99.979 - 99.966	99.965 - 99.945	< 95.945	63
MAIFI	<1.30	1.30 – 2.55	2.56 – 4.05	>4.05	10
2007 DISTRIBUTION SYSTEM RELIABILITY INDICES WITH MAJOR EVENTS EXCLUDED					
	1st	2nd	3rd	4th	Responses
SAIFI	<0.82	0.82 - 1.03	1.04 - 1.30	≥1.31	65
CAIDI	<87	87 - 104	105 - 139	≥140	64
SAIDI	<80	80 – 110	111 - 167	≥168	65
ASAI	>99.985	99.985 – 99.979	99.978 – 99.967	< 99.967	65
MAIFI	<1.00	1.00 – 1.95	1.96 – 5.10	> 5.10	11

2007 TRANSMISSION SYSTEM RELIABILITY SURVEY DATA:

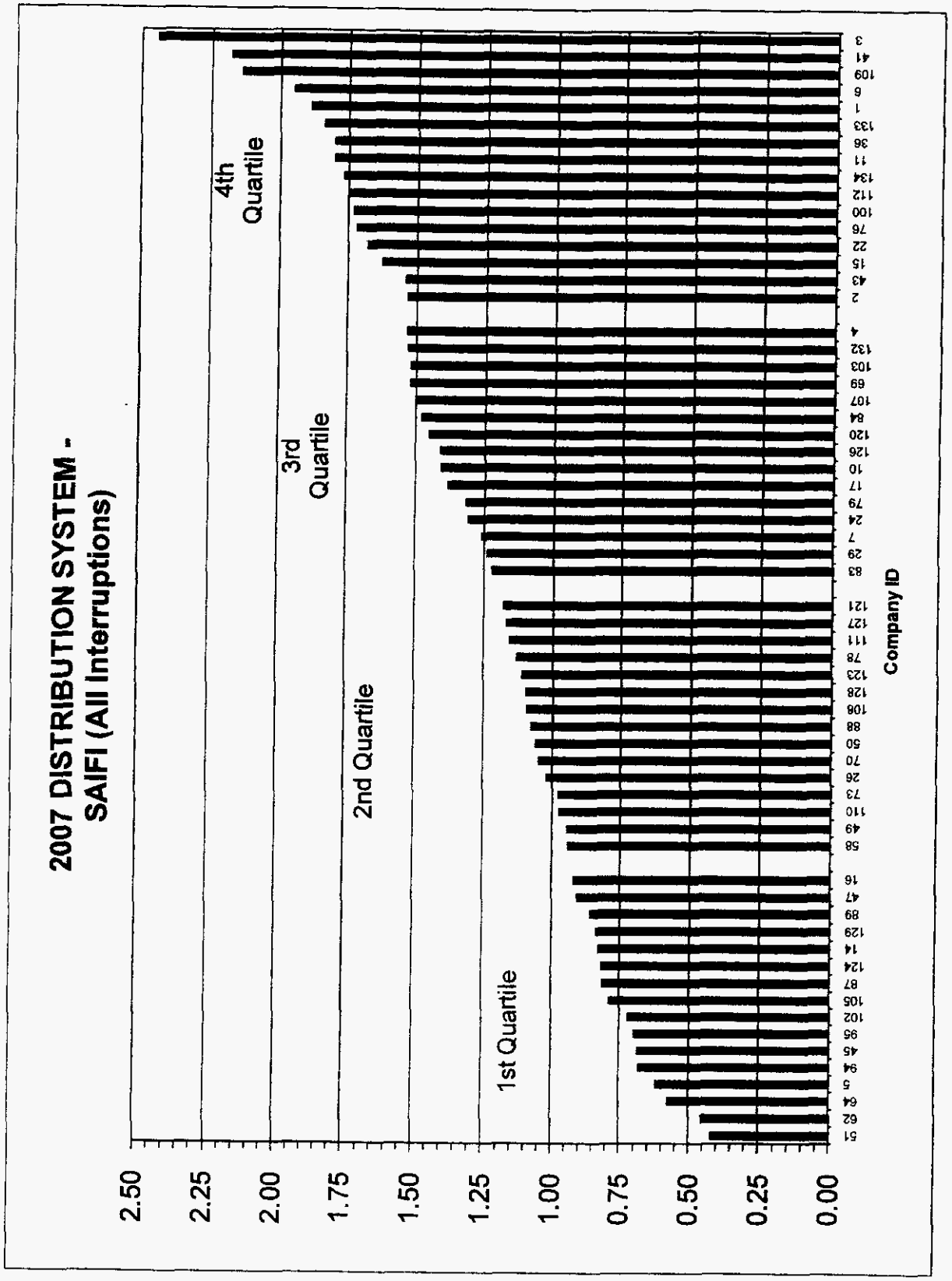
The following chart contains the 2007 Transmission System Reliability Survey Results; the table depicts the ranges for the four quartiles. The data used to compile this chart is illustrated graphically on subsequent charts contained in this report.

2007 TRANSMISSION SYSTEM RELIABILITY INDICES WITH MAJOR EVENTS INCLUDED					
	1st	2nd	3rd	4th	Responses
SAIFI	<0.07	0.07 – 0.13	0.14 – 0.27	≥0.28	53
CAIDI	<57	57 - 104	105 - 157	≥158	54
SAIDI	<3.0	3.0 – 11.90	11.91 – 31.0	≥31.1	54
ASAI	>99.999	99.989 - 99.998	99.997 - 99.994	< 95.994	54
MAIFI	<0.10	0.10 – 0.19	0.20 – 0.35	>0.35	5
2007 TRANSMISSION SYSTEM RELIABILITY INDICES WITH MAJOR EVENTS EXCLUDED					
	1st	2nd	3rd	4th	Responses
SAIFI	<0.06	0.06 – 0.12	0.13 – 0.22	≥0.23	53
CAIDI	<50	50 - 68	69 - 116	≥117	56
SAIDI	<3.0	3.0 – 7.80	7.81 – 22.0	≥22.1	54
ASAI	>99.9995	99.9994 – 99.9985	99.9984 – 99.9960	< 99.9960	56
MAIFI	<0.10	0.10 – 0.17	0.18 – 0.35	> 0.35	6

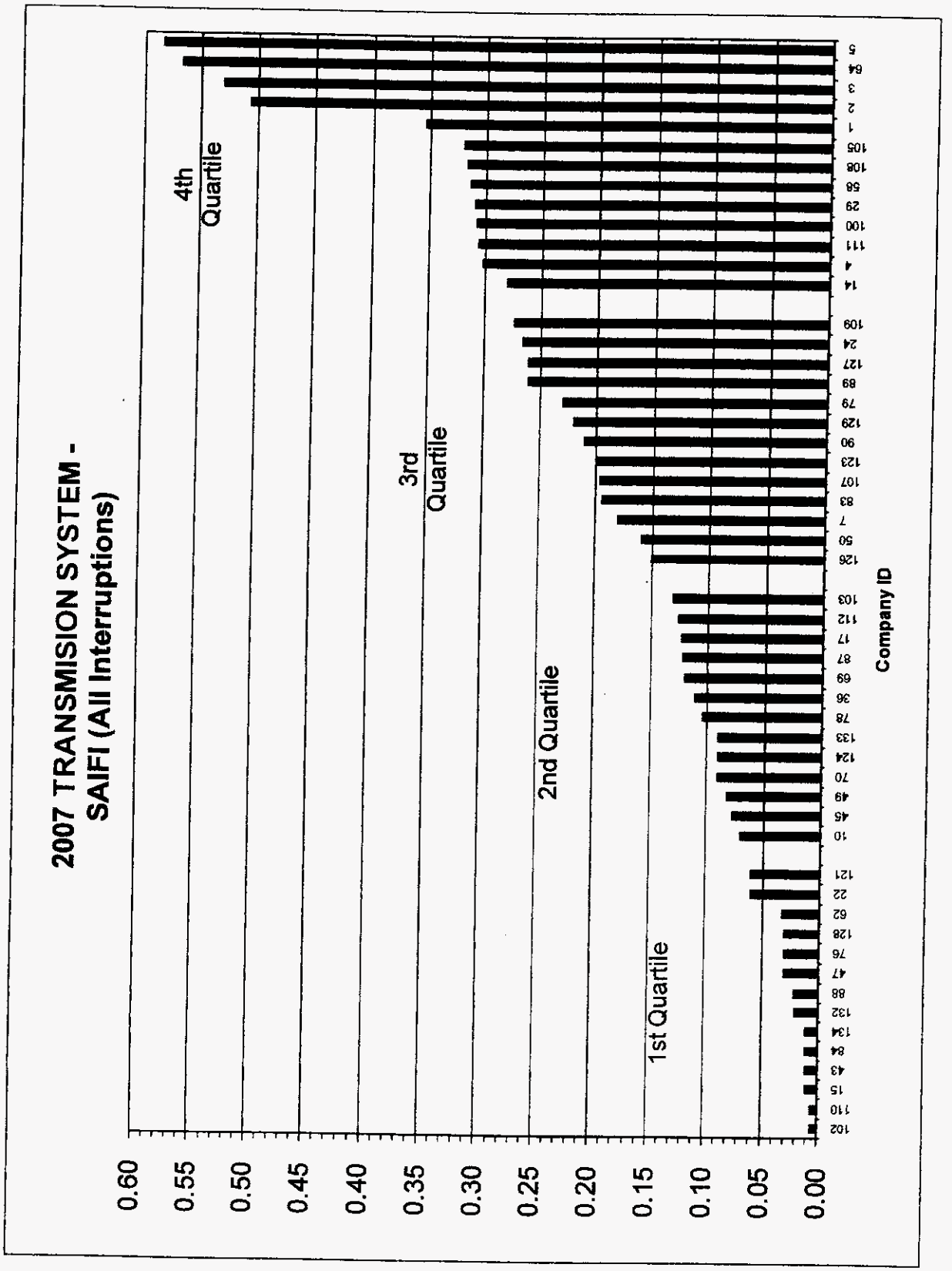
2007 SAIFI (For All Interruptions):



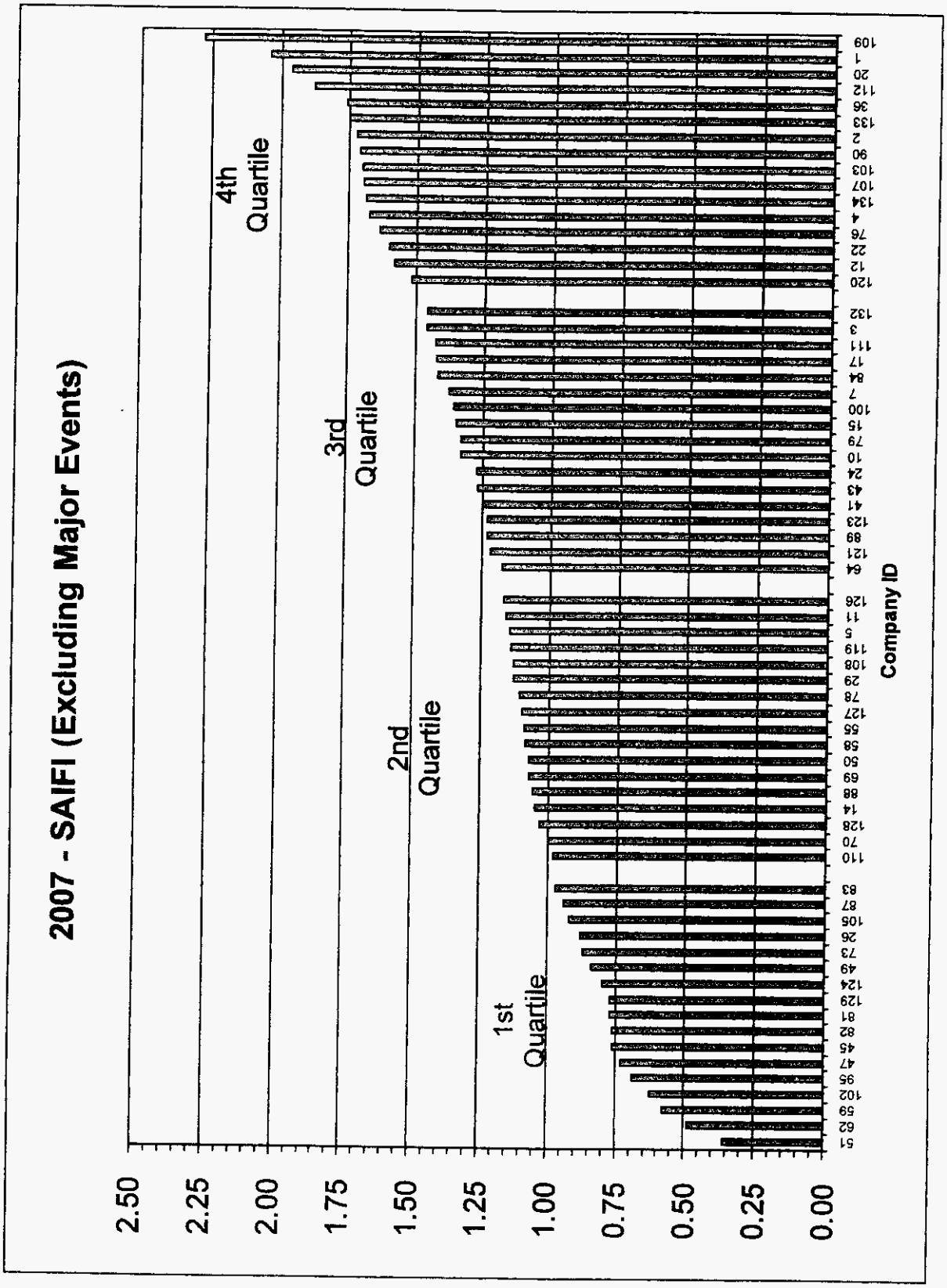
2007 DISTRIBUTION SYSTEM - SAIFI (For All Interruptions):



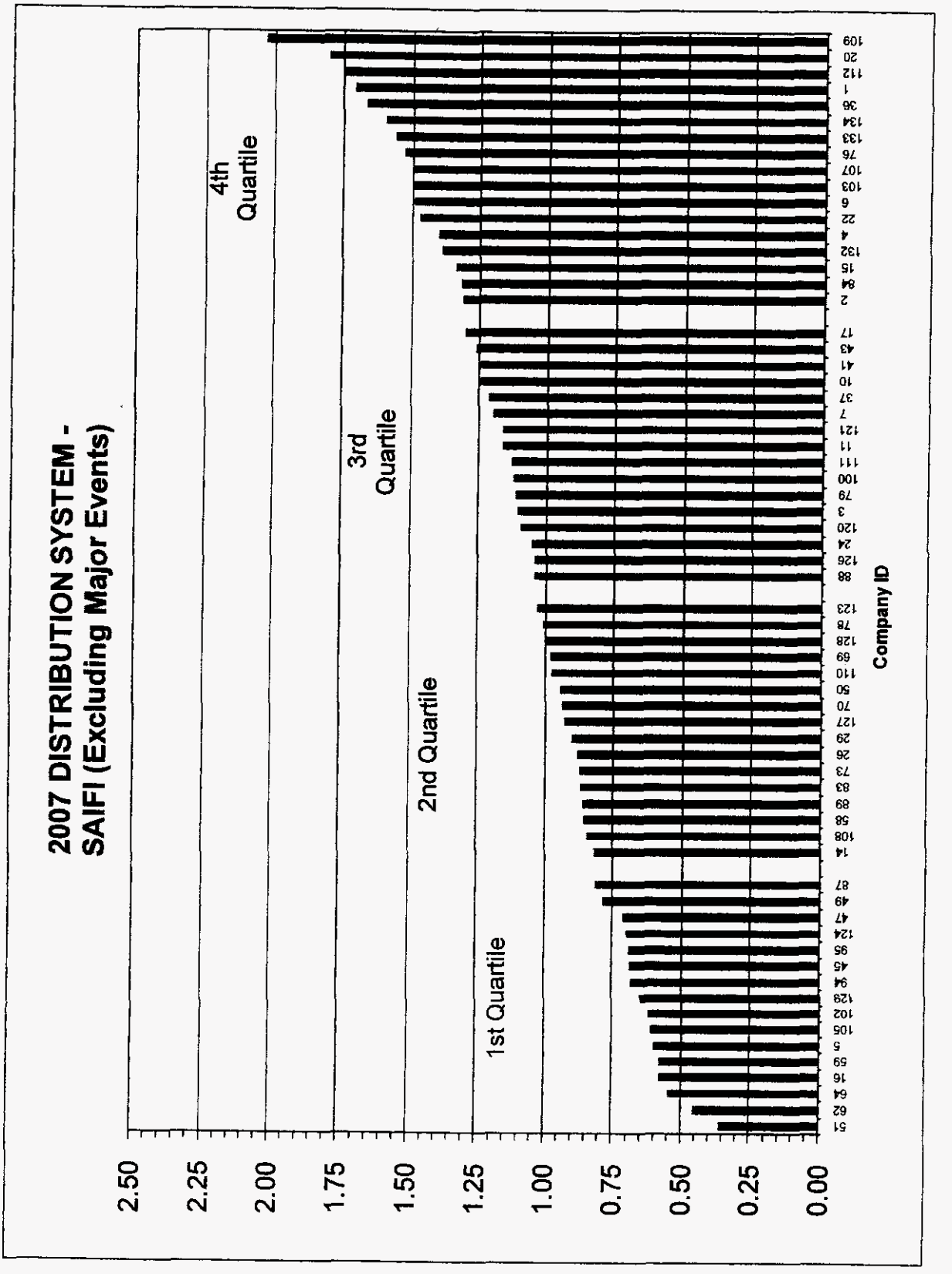
2007 TRANSMISSION SYSTEM - SAIFI (For All Interruptions):



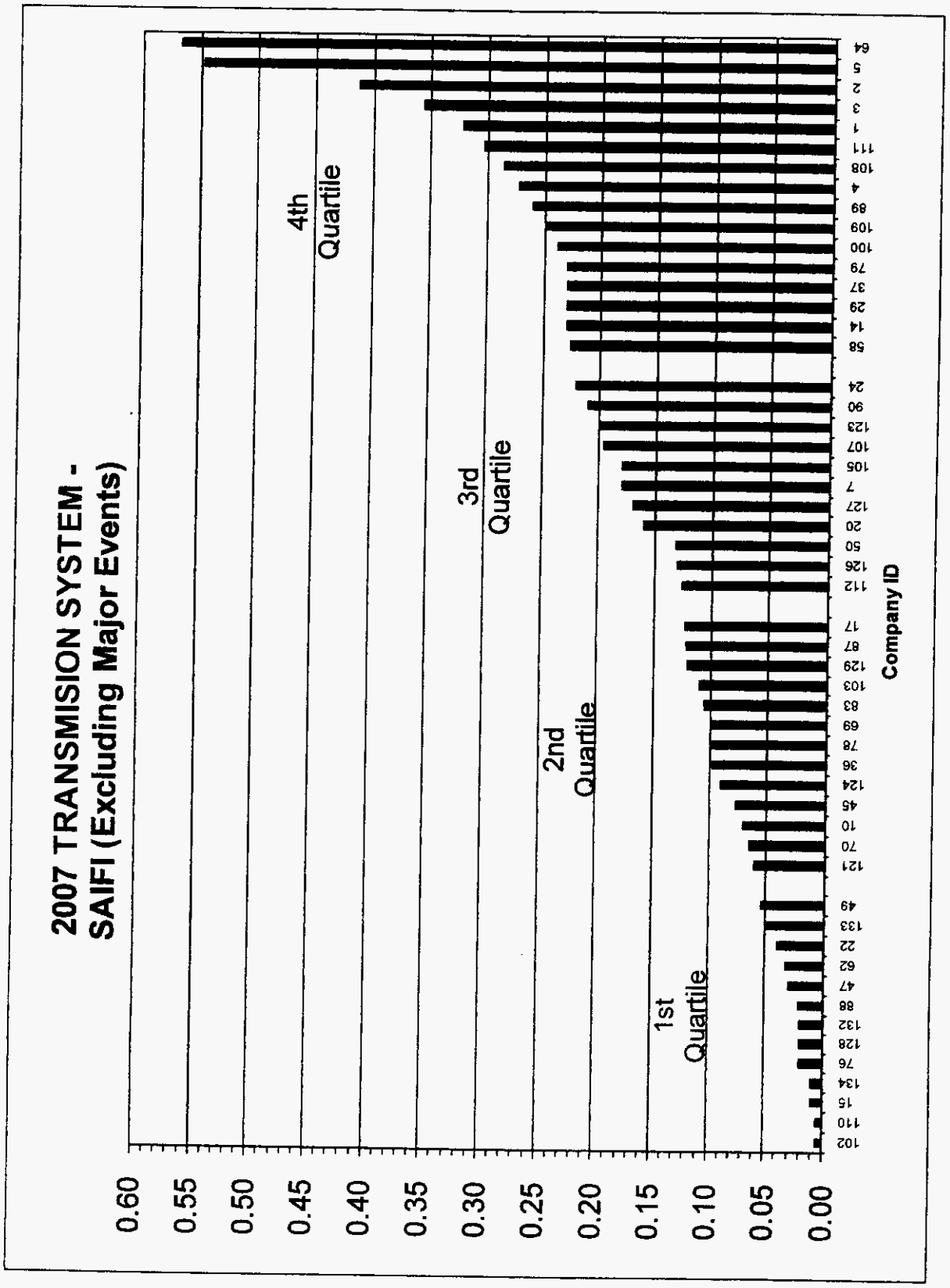
2007 SAIFI (Excluding Major Events):



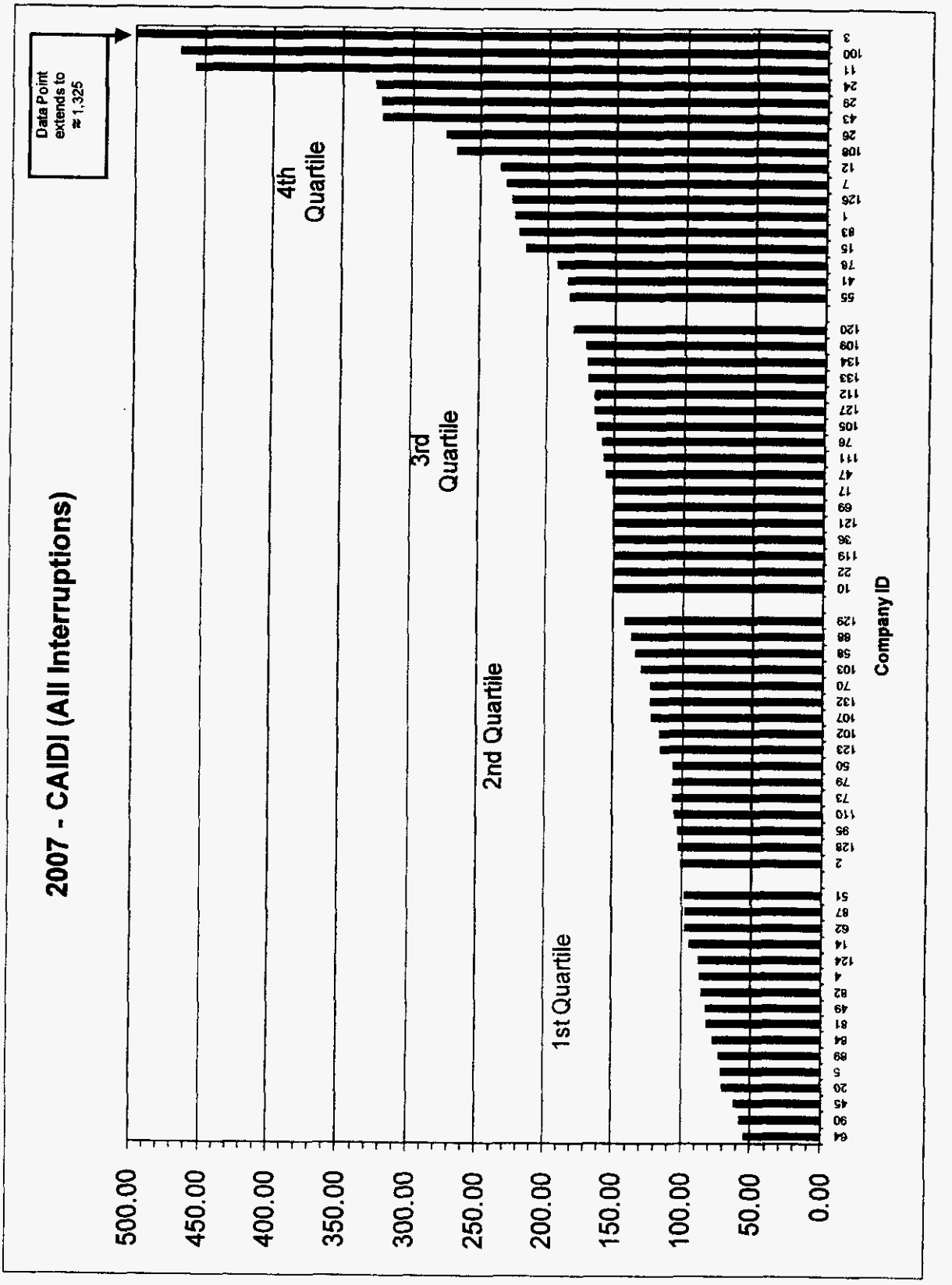
2007 DISTRIBUTION SYSTEM - SAIFI (Excluding Major Events):



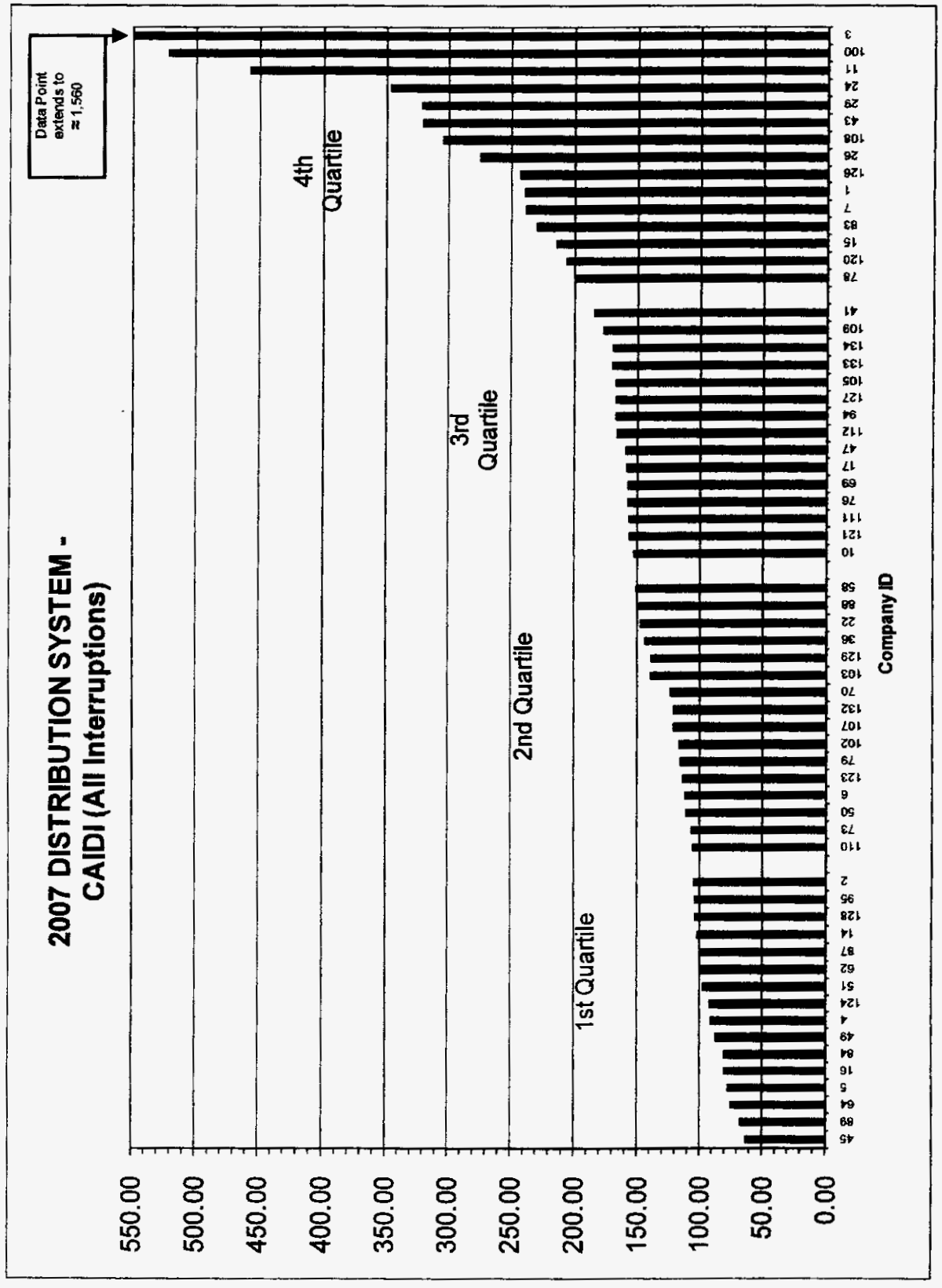
2007 TRANSMISSION SYSTEM - SAIFI (Excluding Major Events):



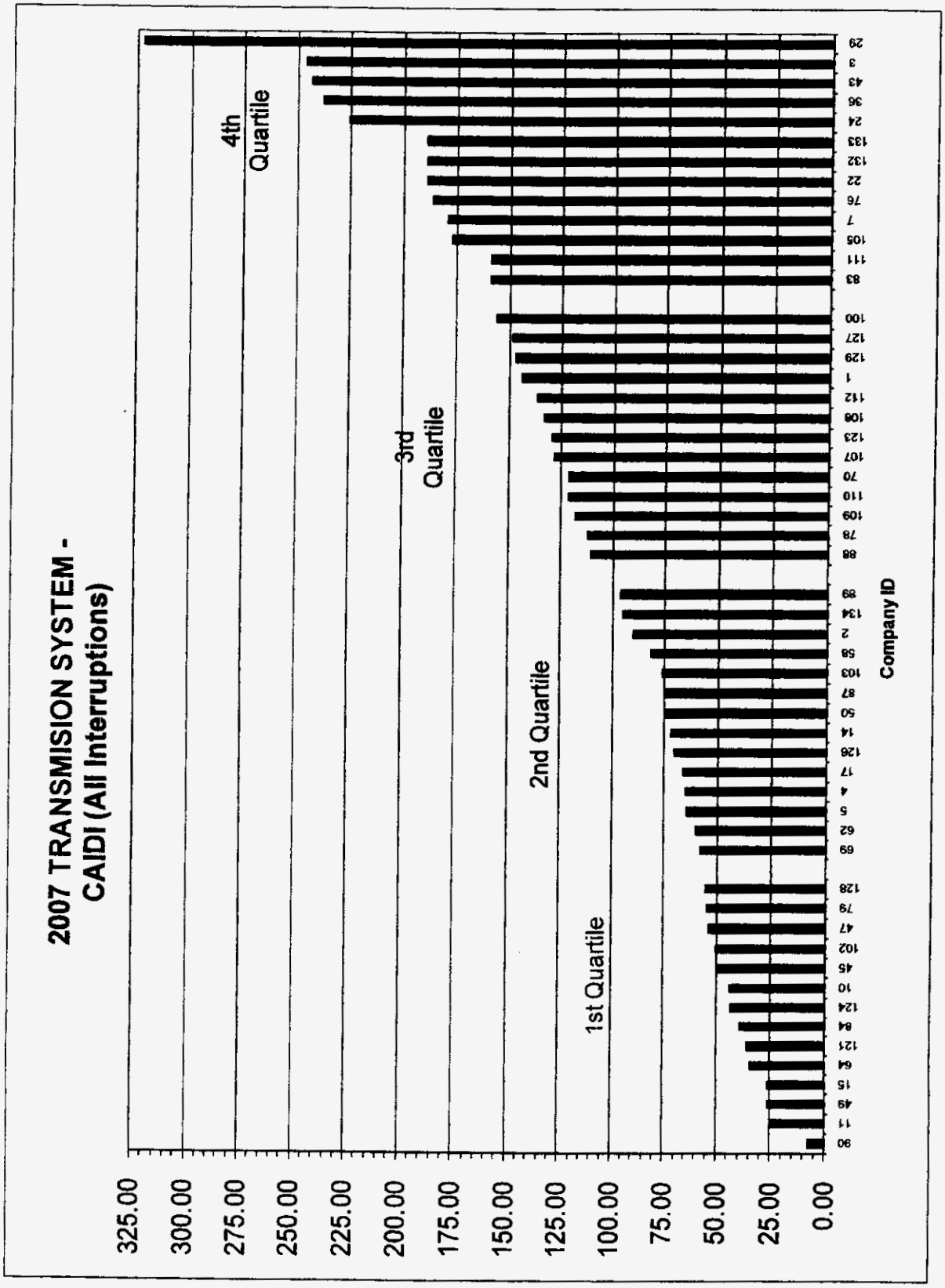
2005 CAIDI (For All Interruptions):



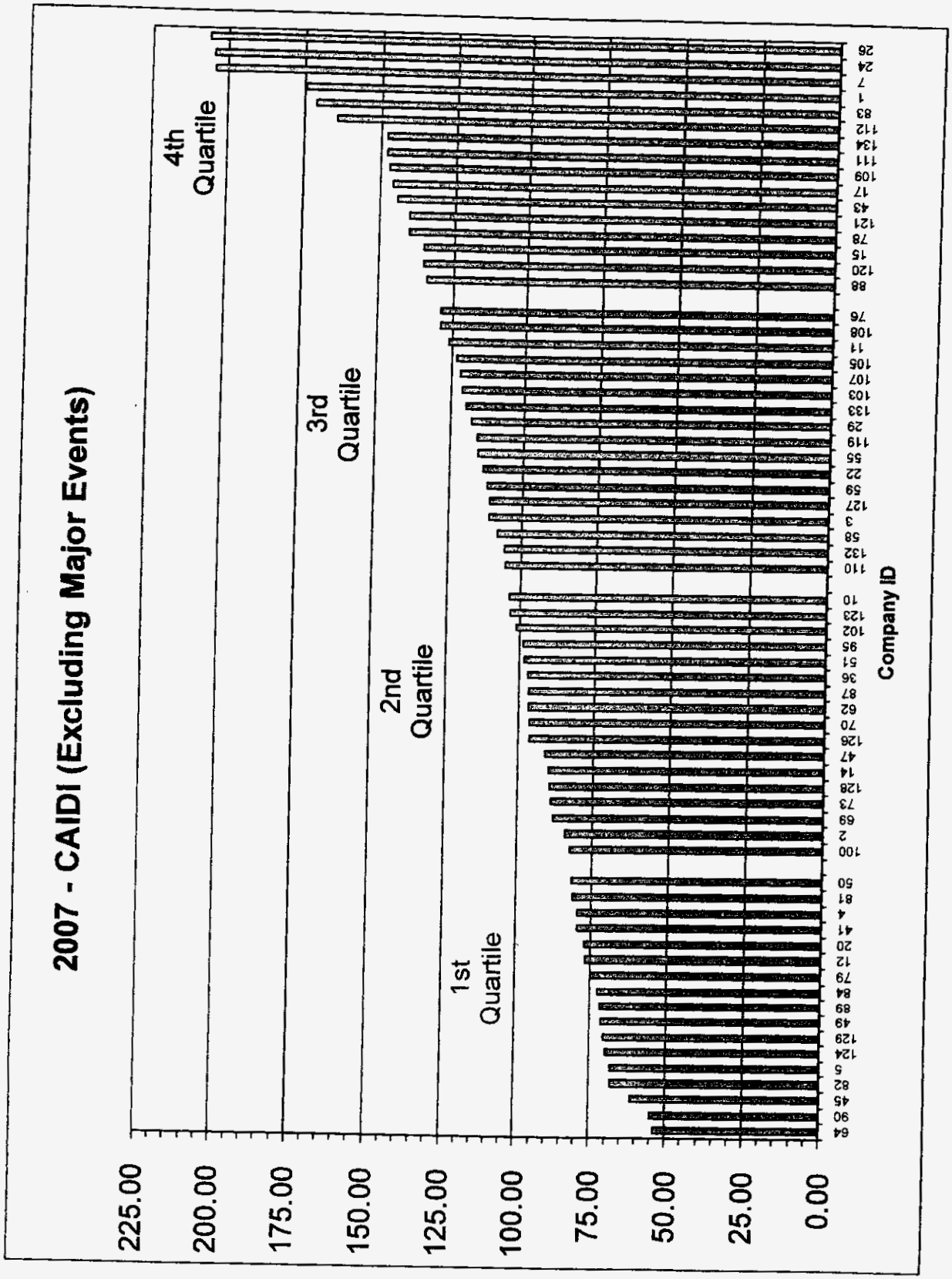
2007 DISTRIBUTION SYSTEM - CAIDI (For All Interruptions):



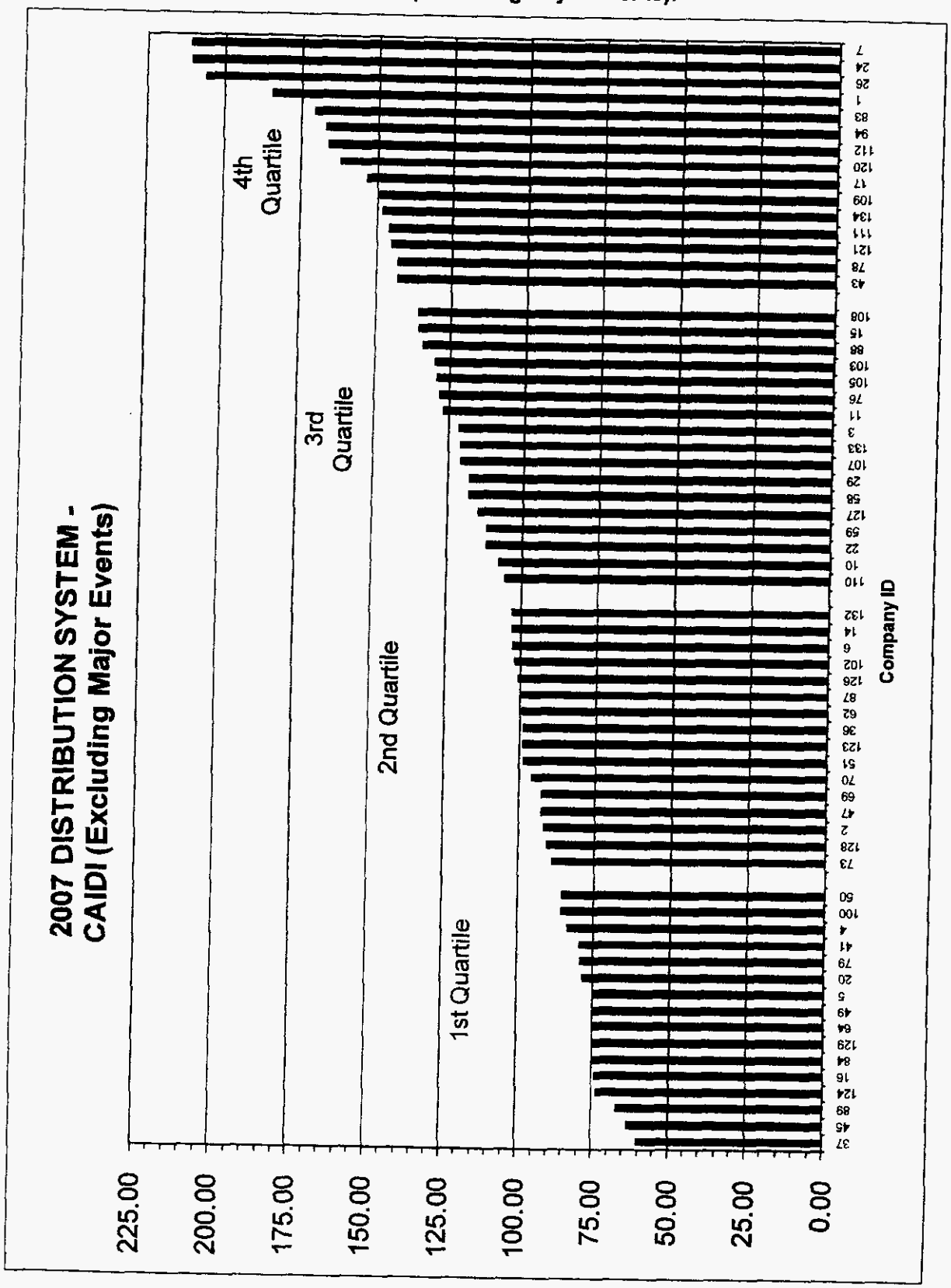
2007 TRANSMISSION SYSTEM - CAIDI (For All Interruptions):



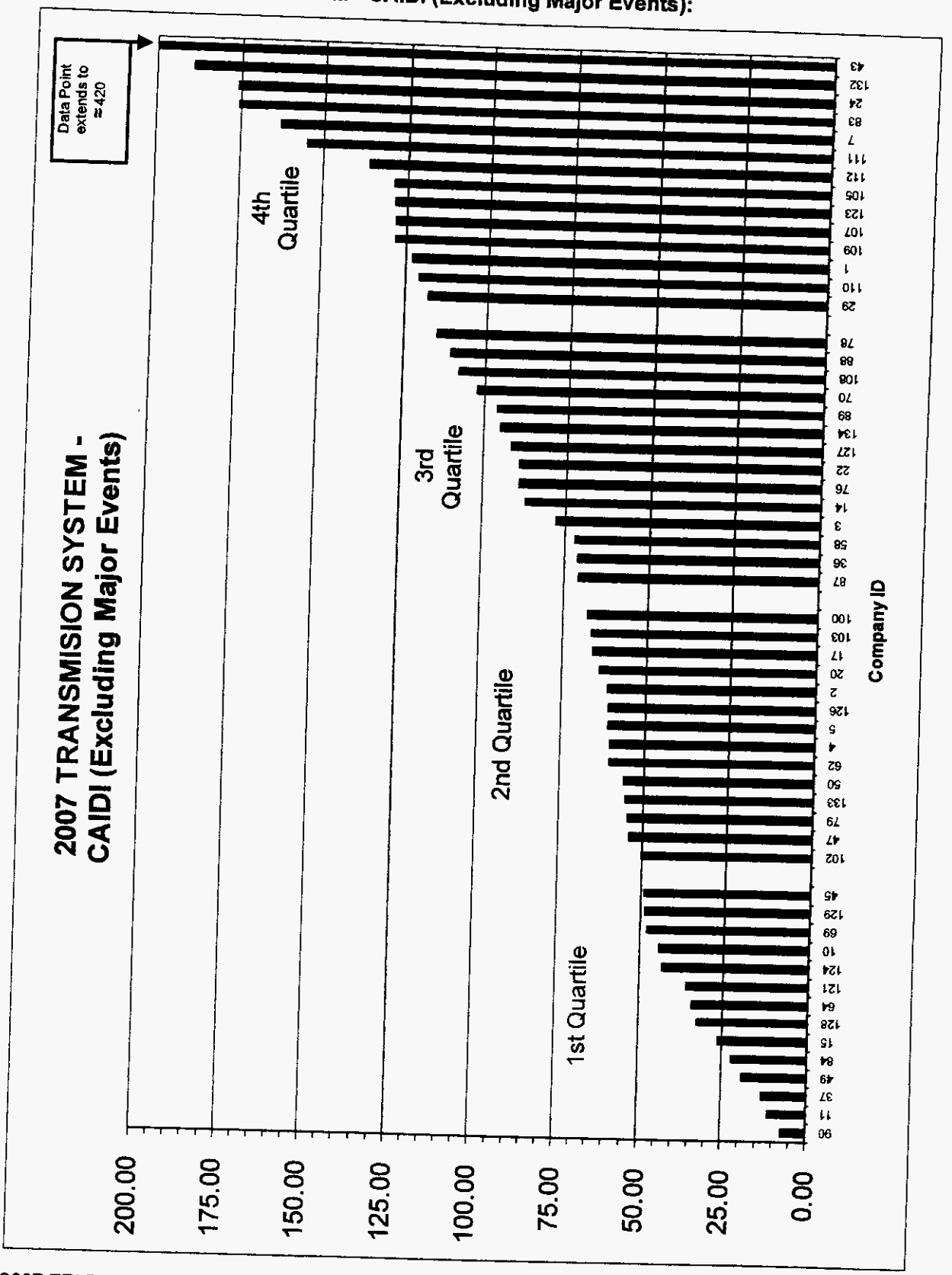
2007 CAIDI (Excluding Major Events):



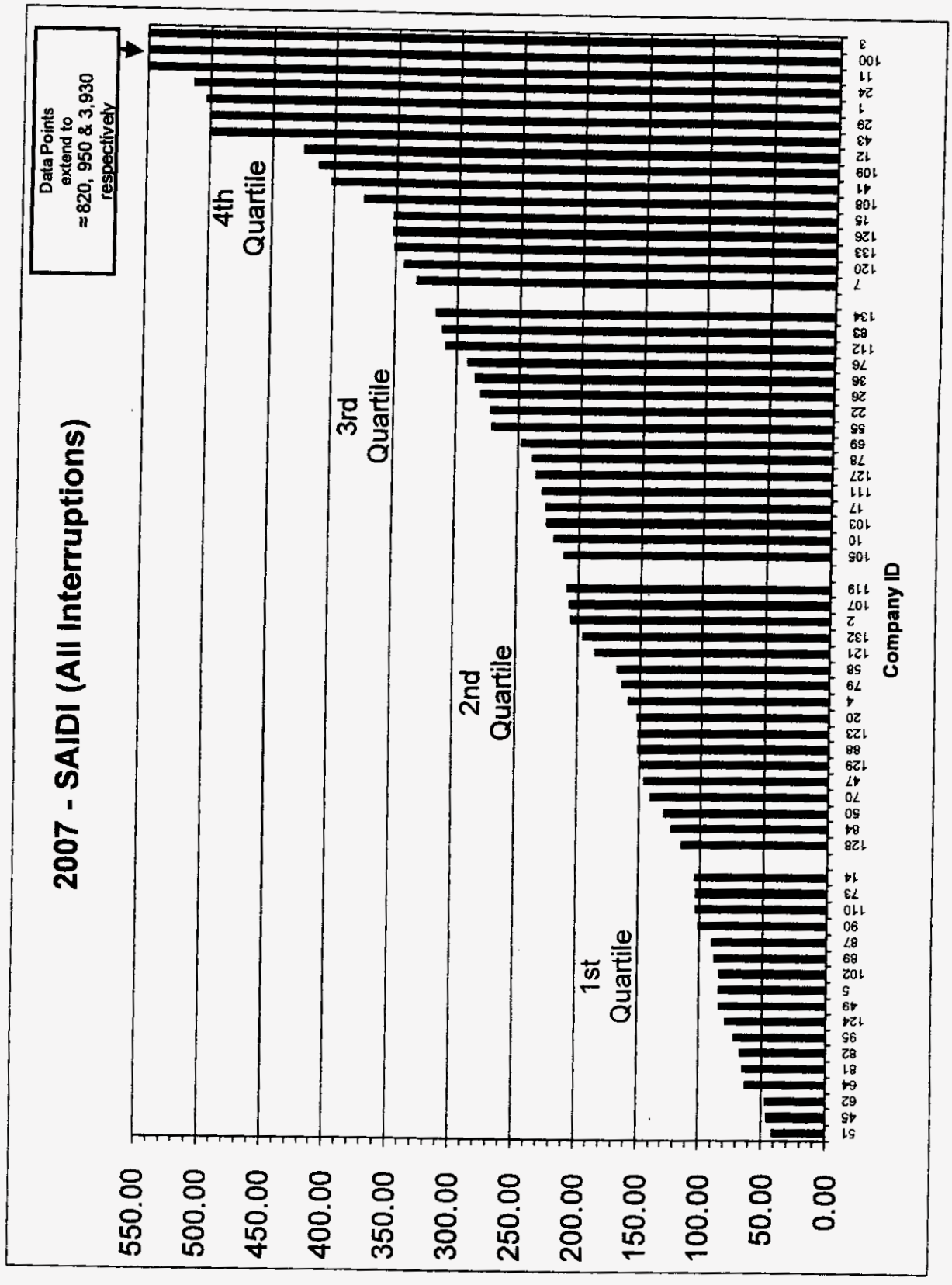
2007 DISTRIBUTION SYSTEM - CAIDI (Excluding Major Events):



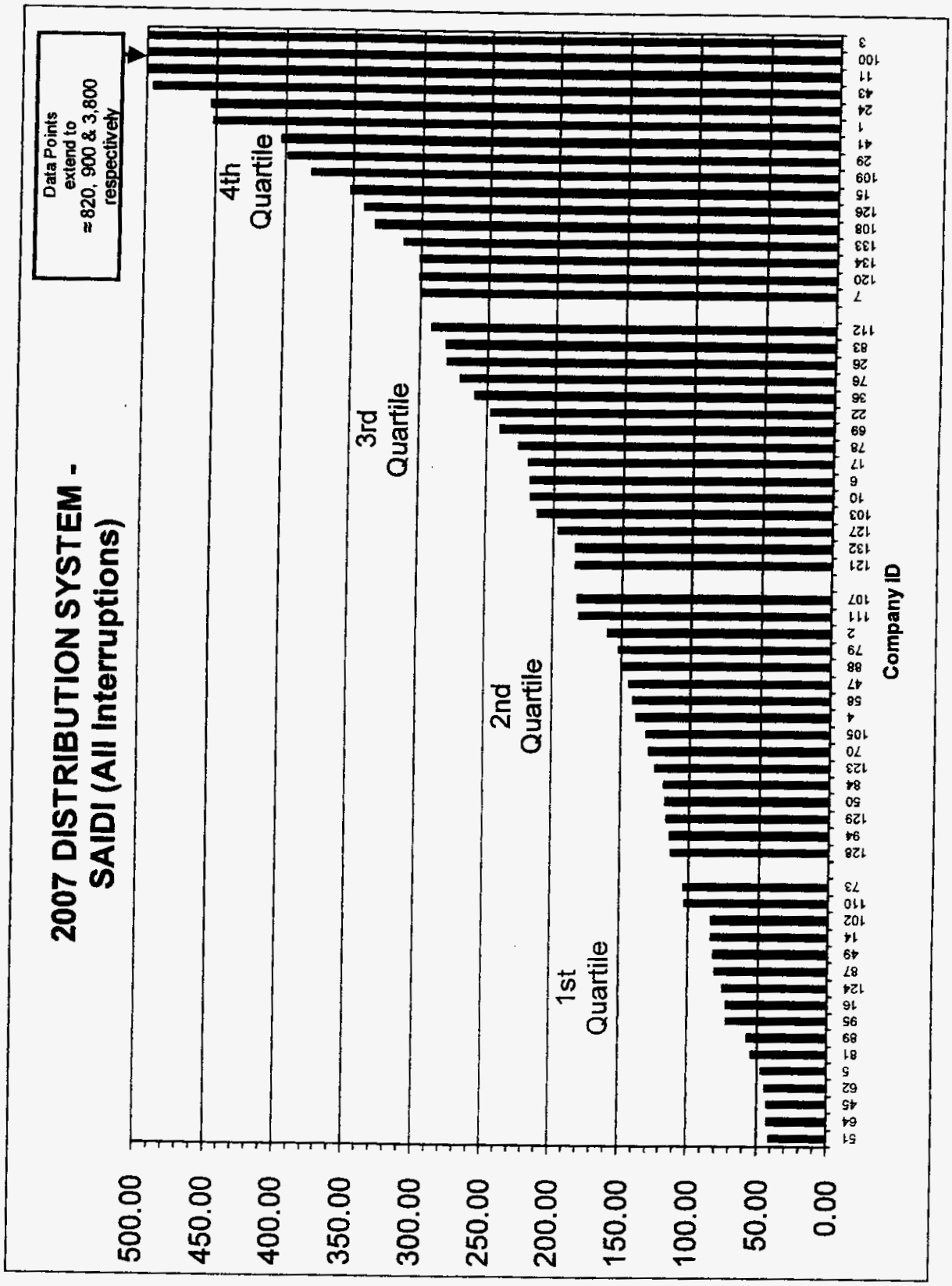
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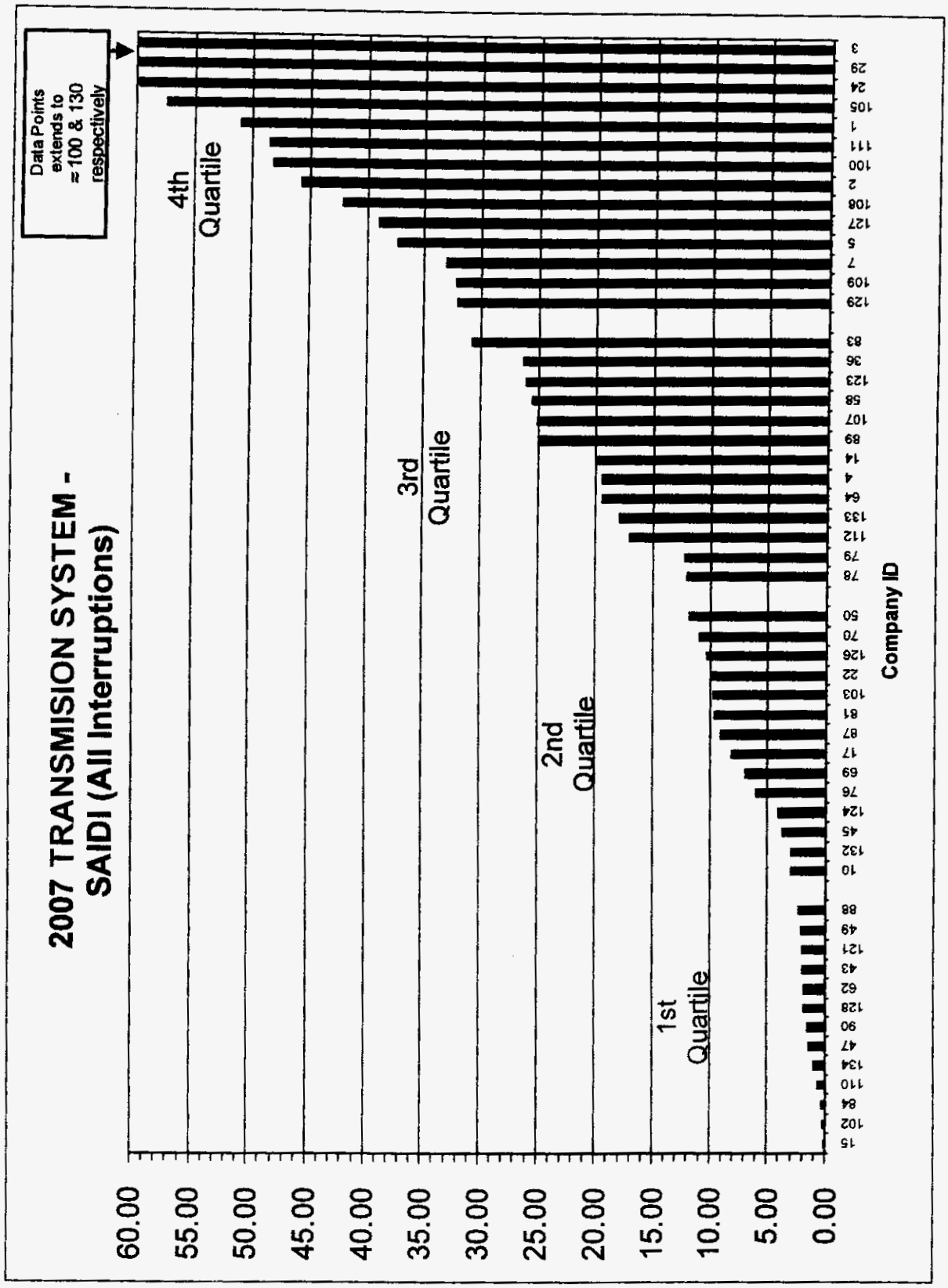
2007 SAIDI (For All Interruptions):



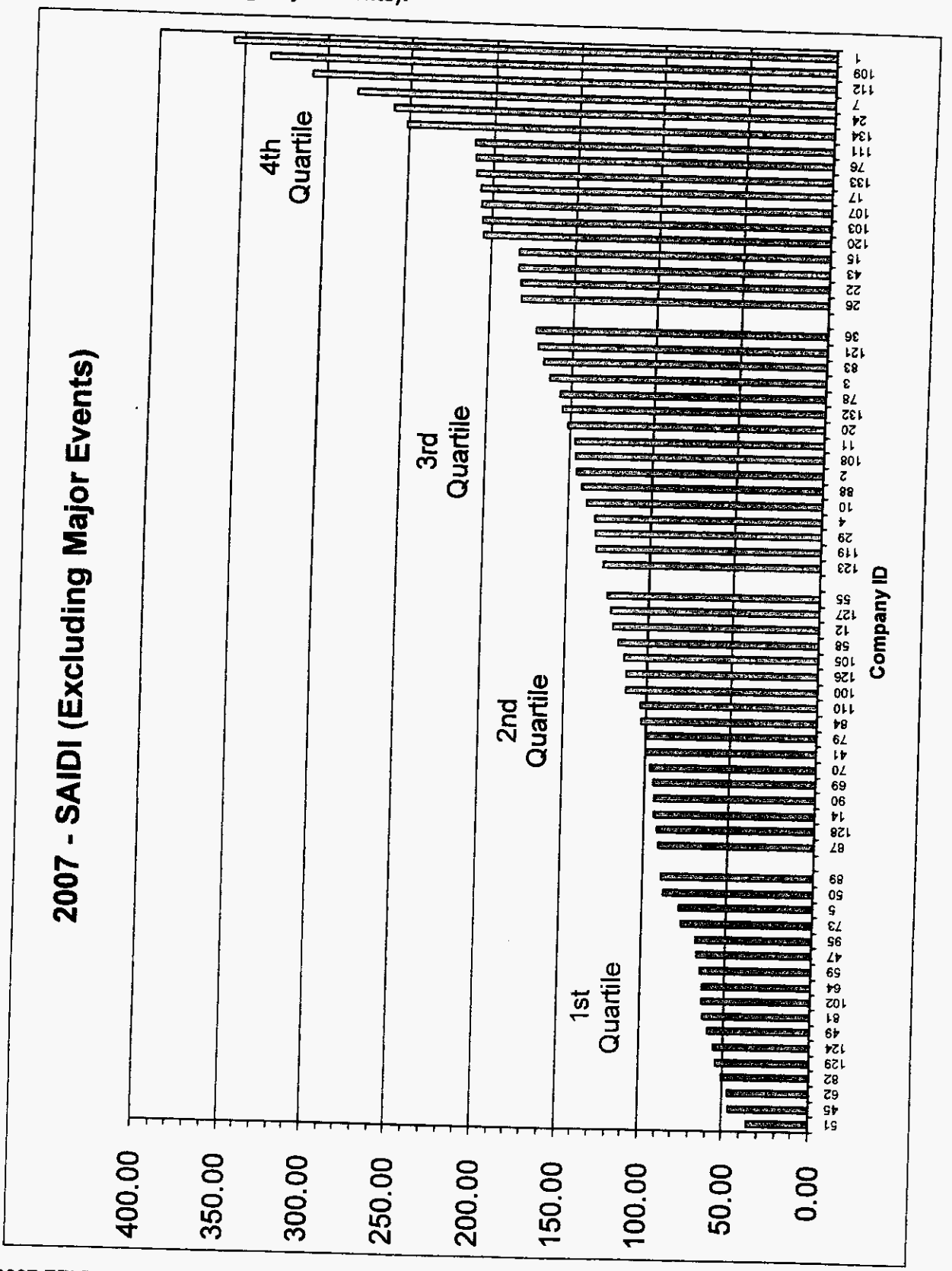
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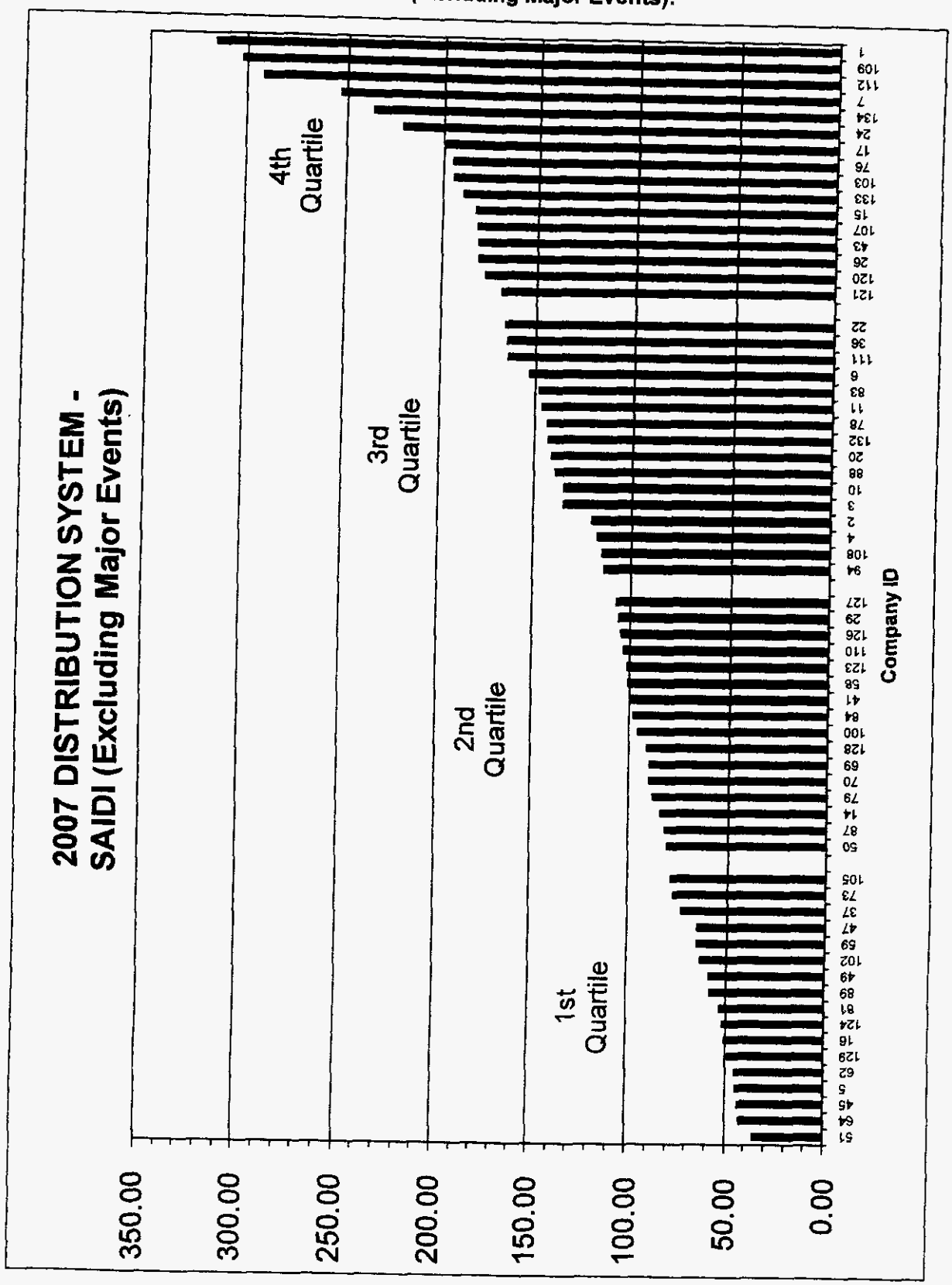
2007 TRANSMISSION SYSTEM - SAIFI (For All Interruptions):



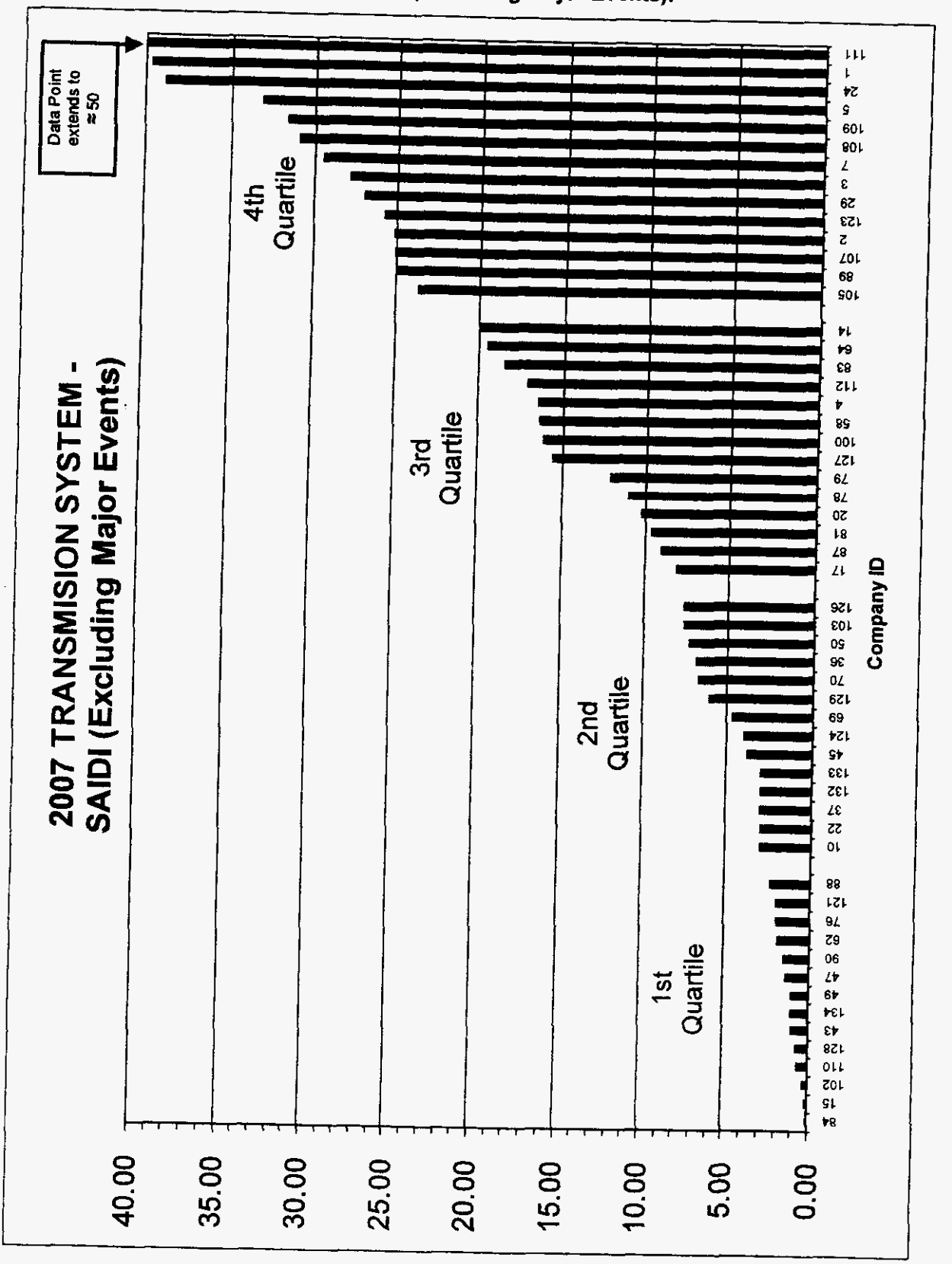
2007 SAIDI (Excluding Major Events):



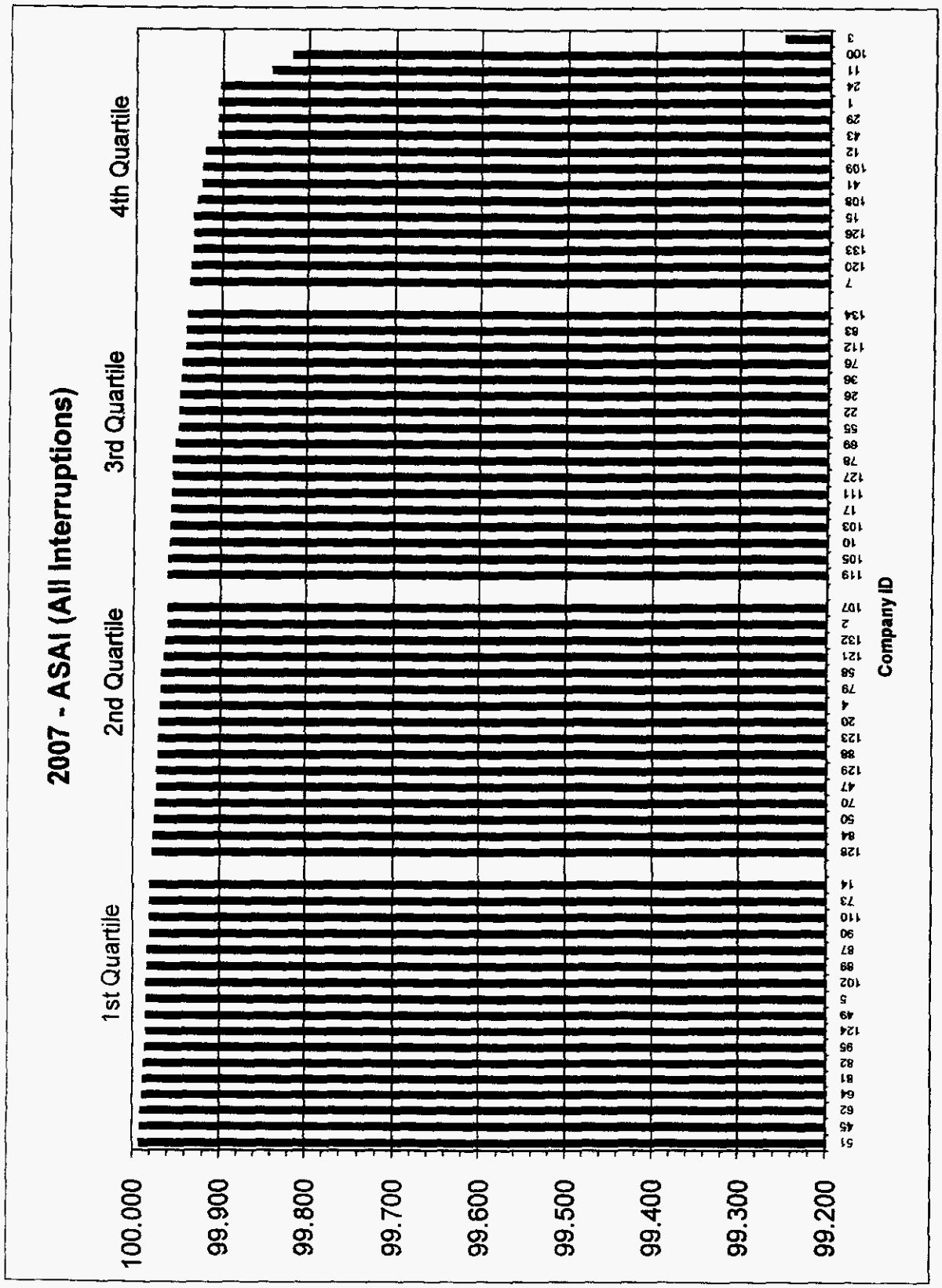
2007 DISTRIBUTION SYSTEM - SAIDI (Excluding Major Events):



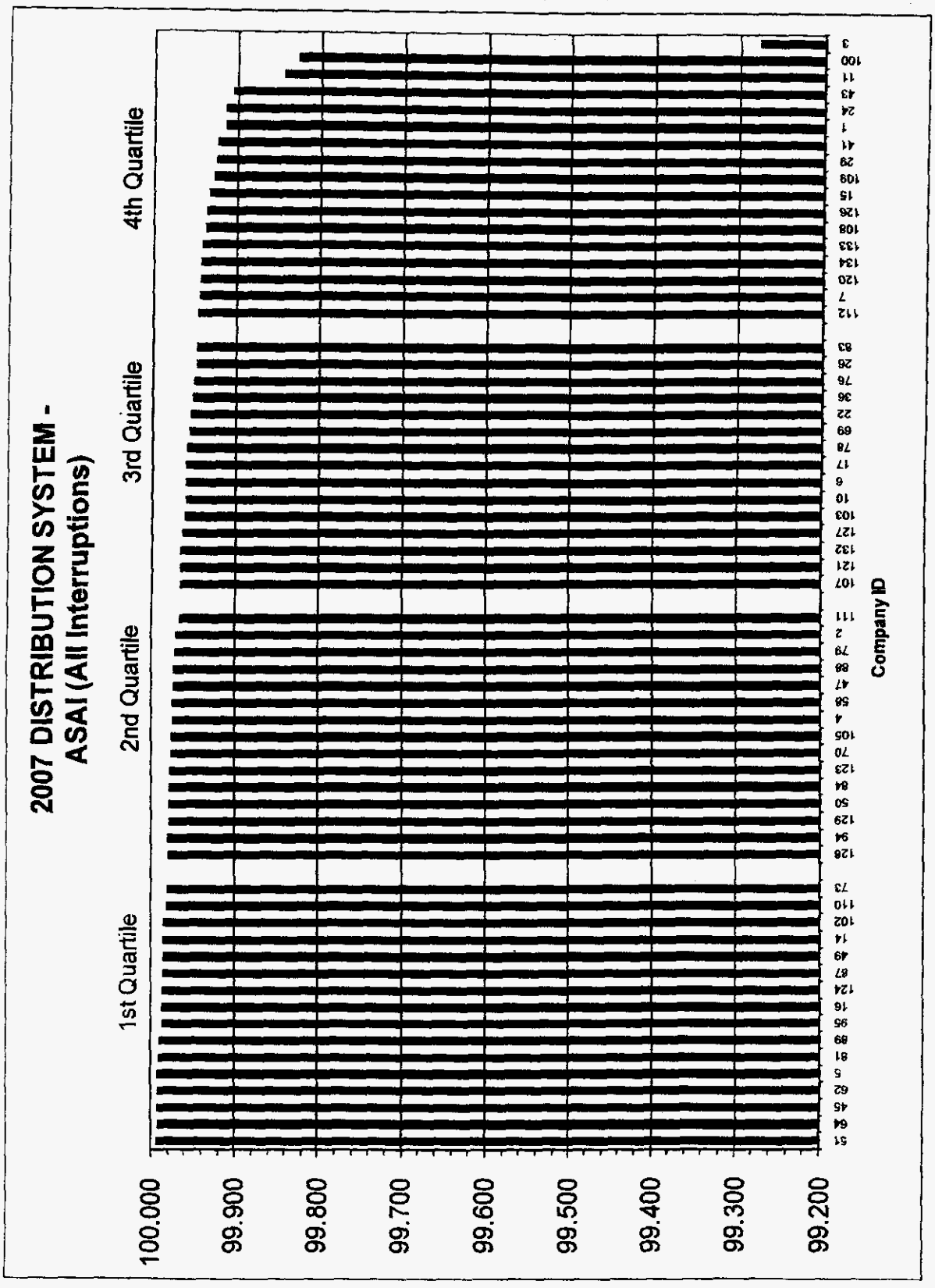
2007 TRANSMISSION SYSTEM - SAIDI (Excluding Major Events):



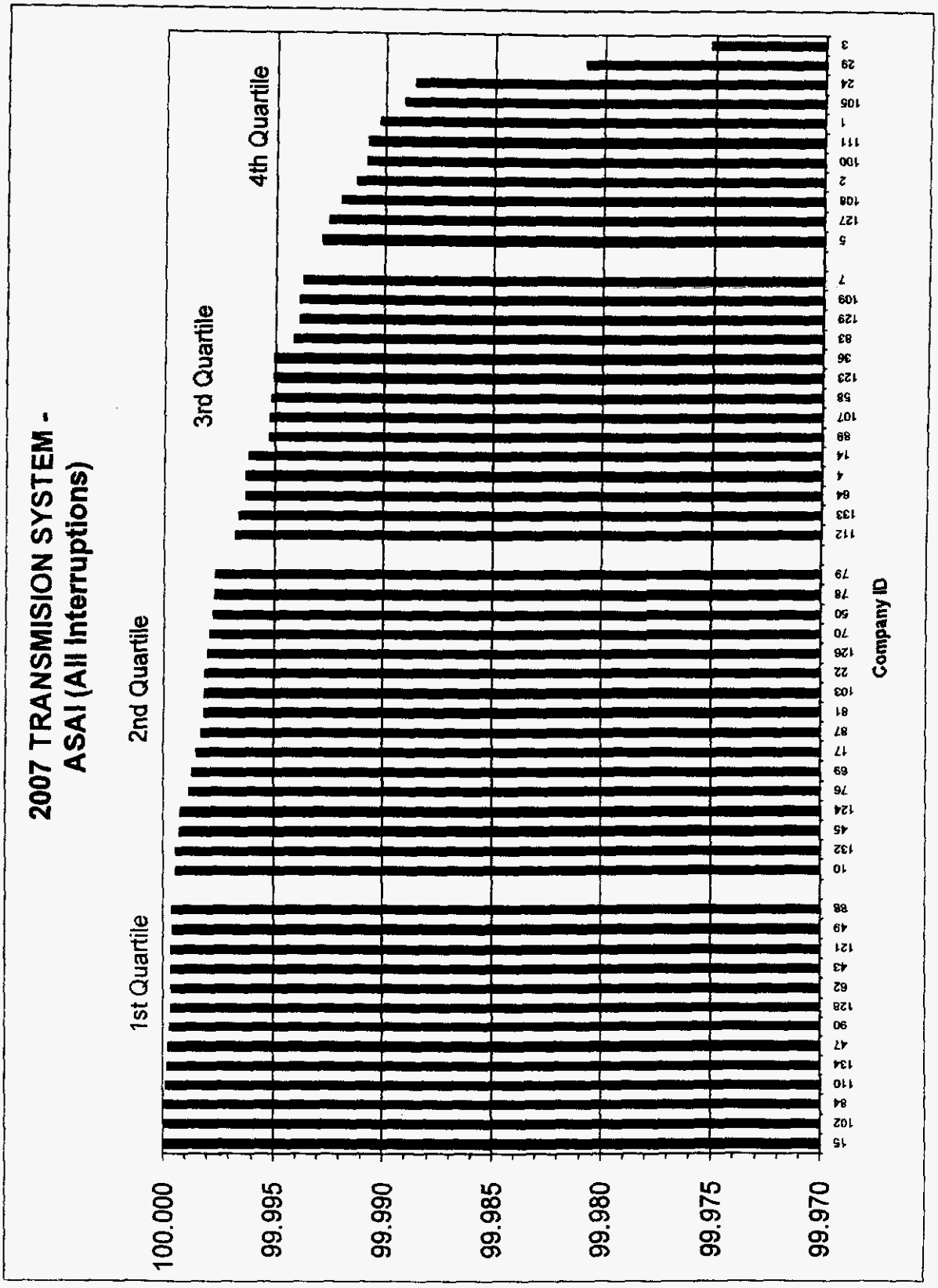
2007 ASAI (For All Interruptions):



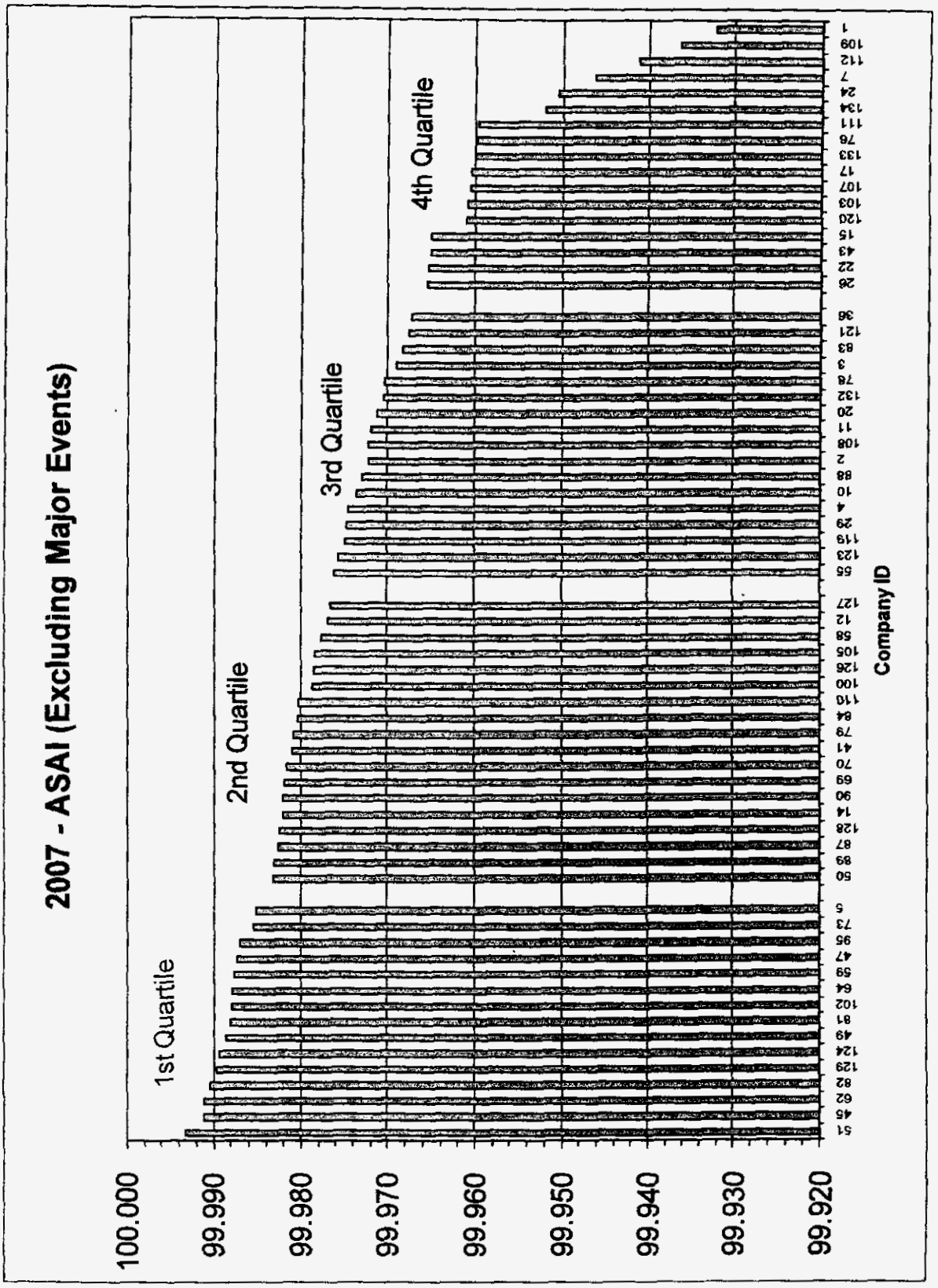
2007 DISTRIBUTION SYSTEM - ASAI (For All Interruptions):



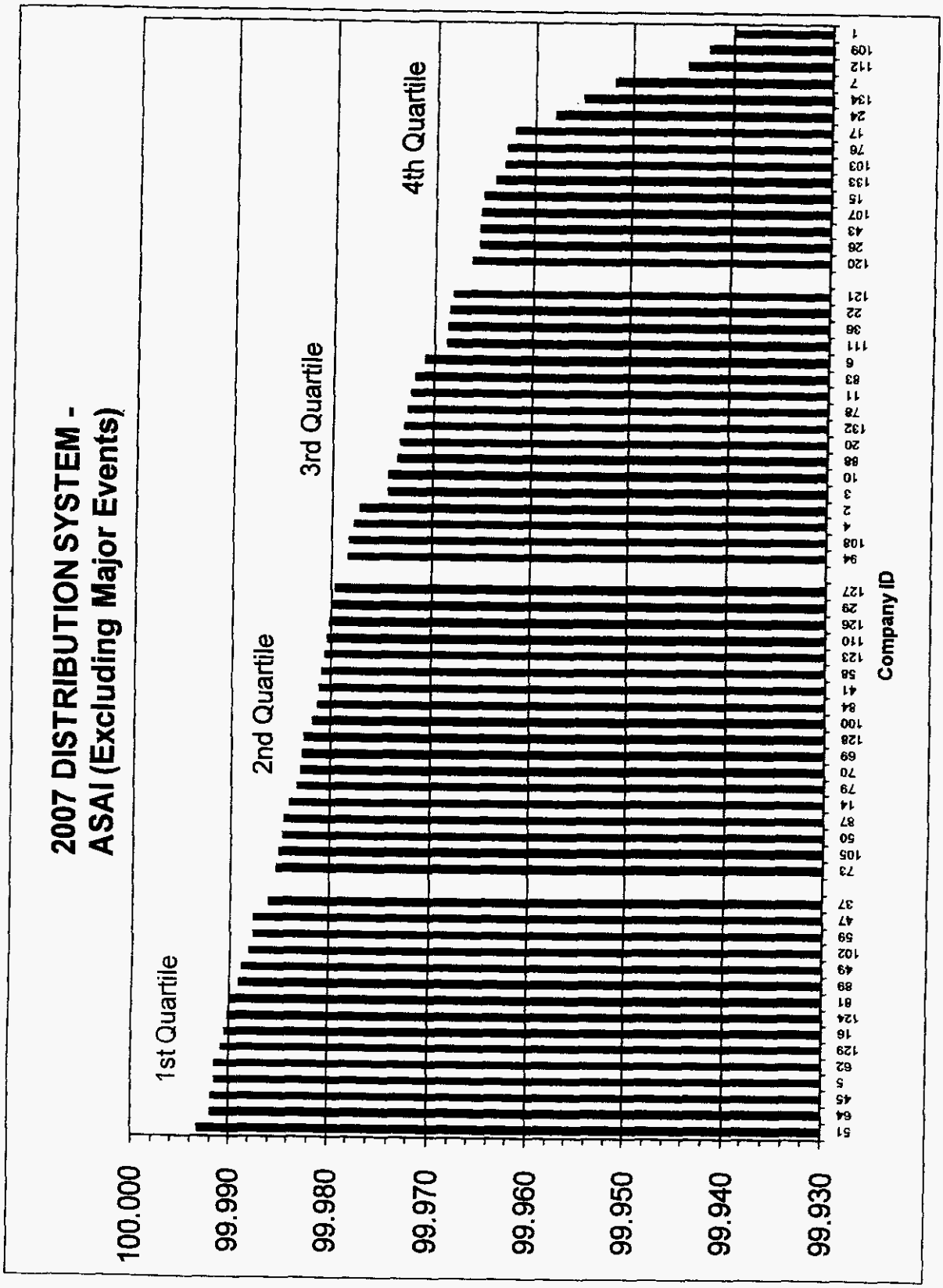
2007 TRANSMISSION SYSTEM - ASAI (For All Interruptions):



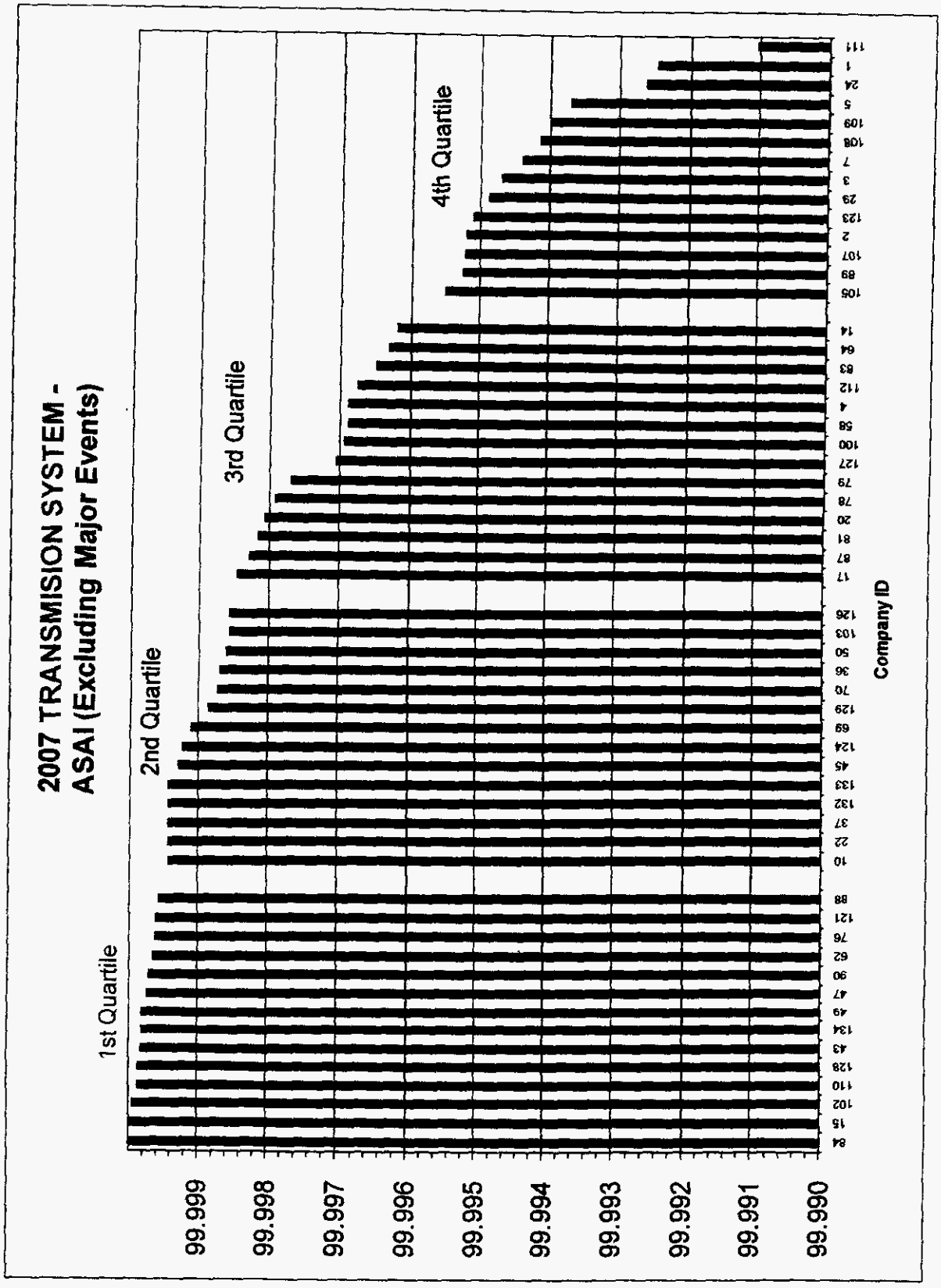
2007 ASAI (Excluding Major Events):



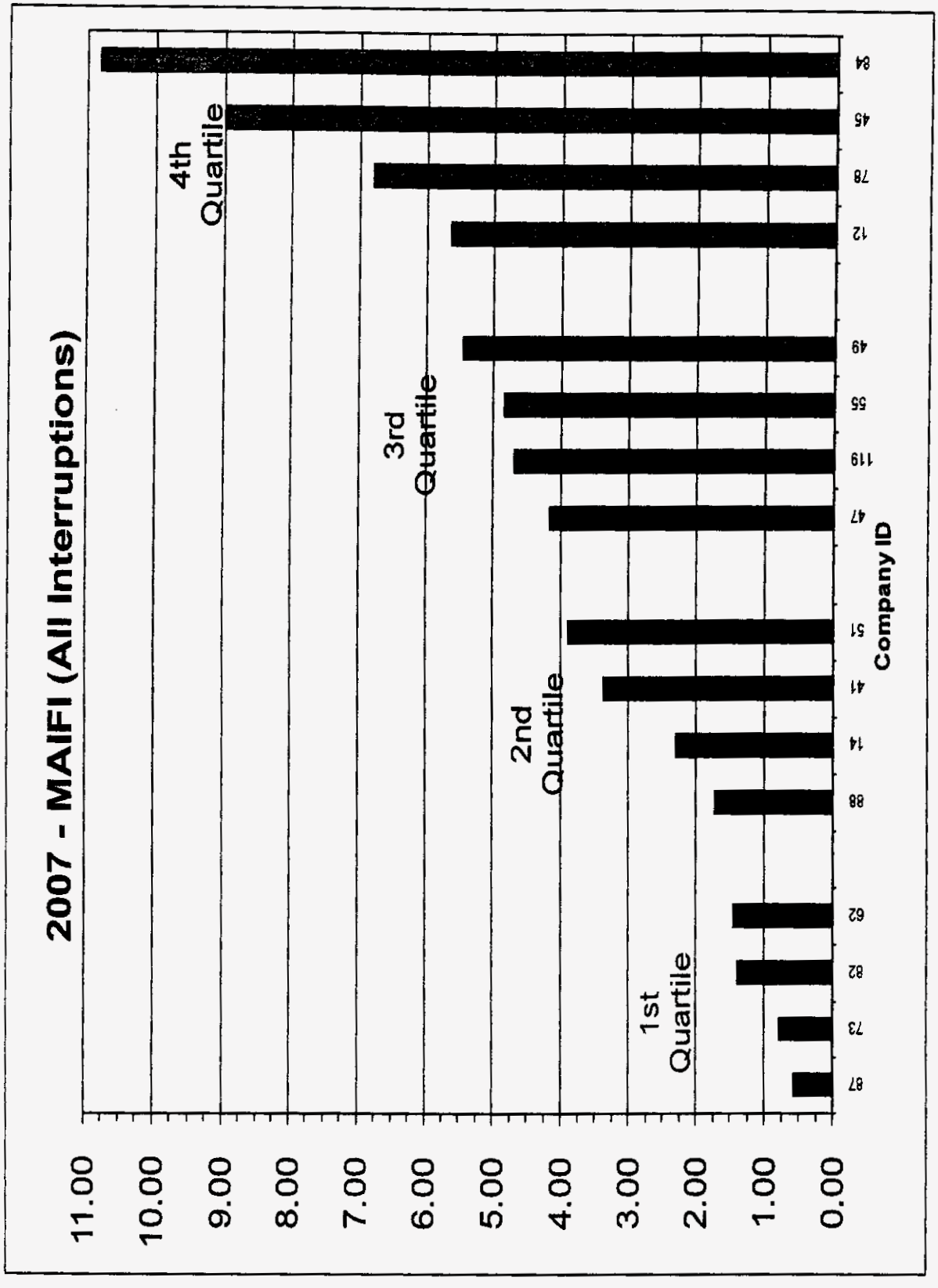
2007 DISTRIBUTION SYSTEM - ASAI (Excluding Major Events):



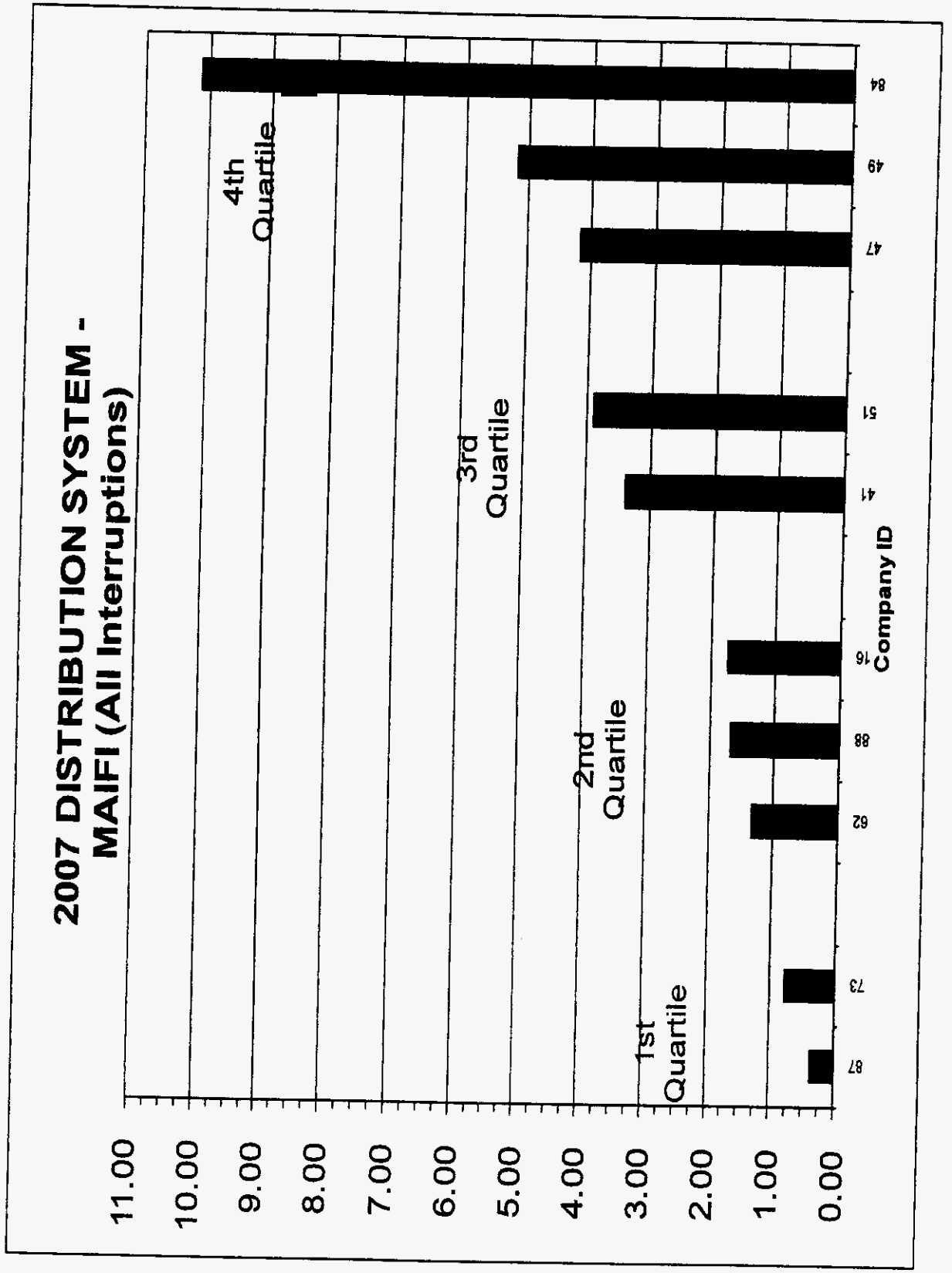
2007 TRANSMISSION SYSTEM - ASAI (Excluding Major Events):



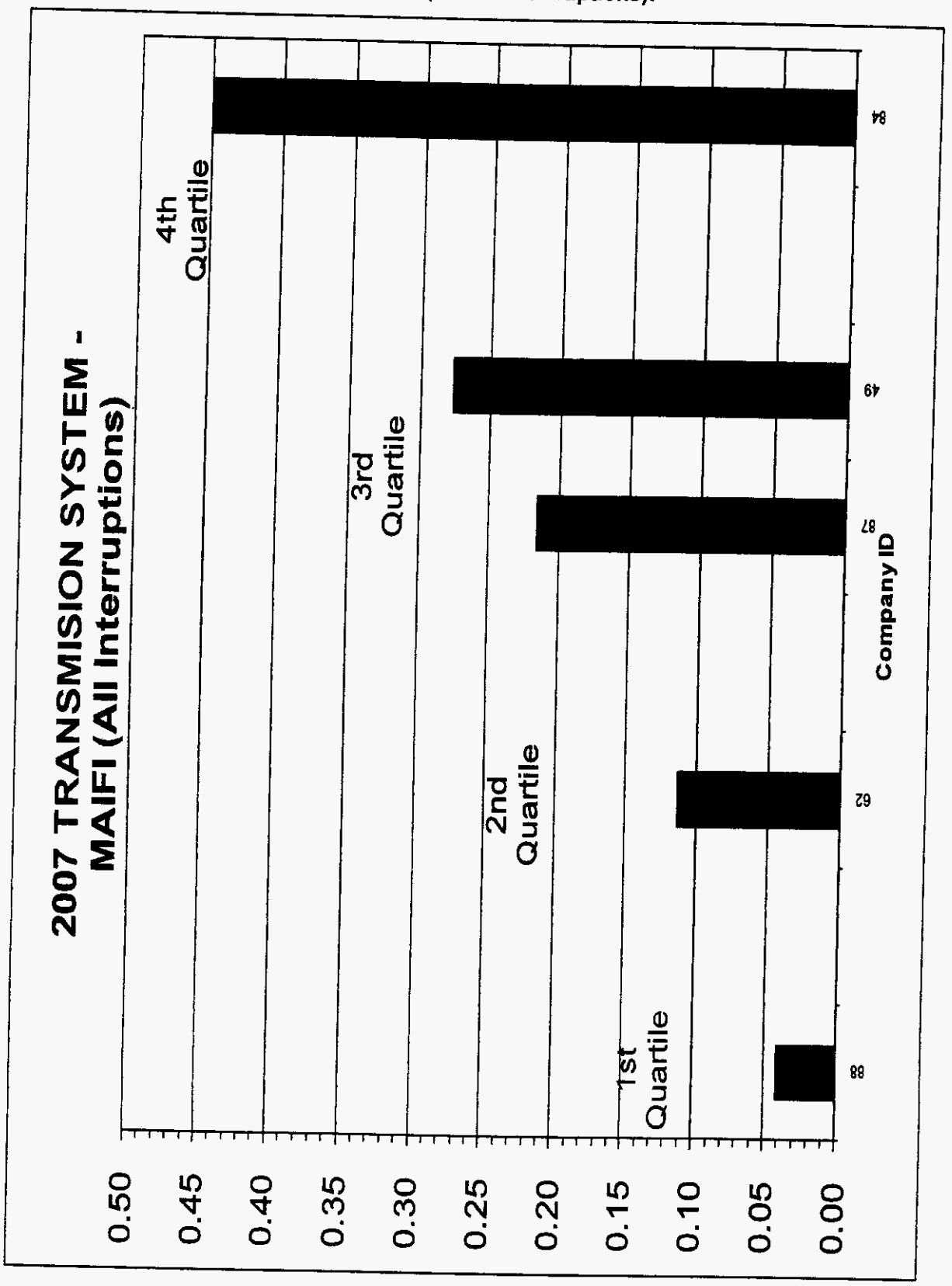
2007 MAIFI (For All Interruptions):



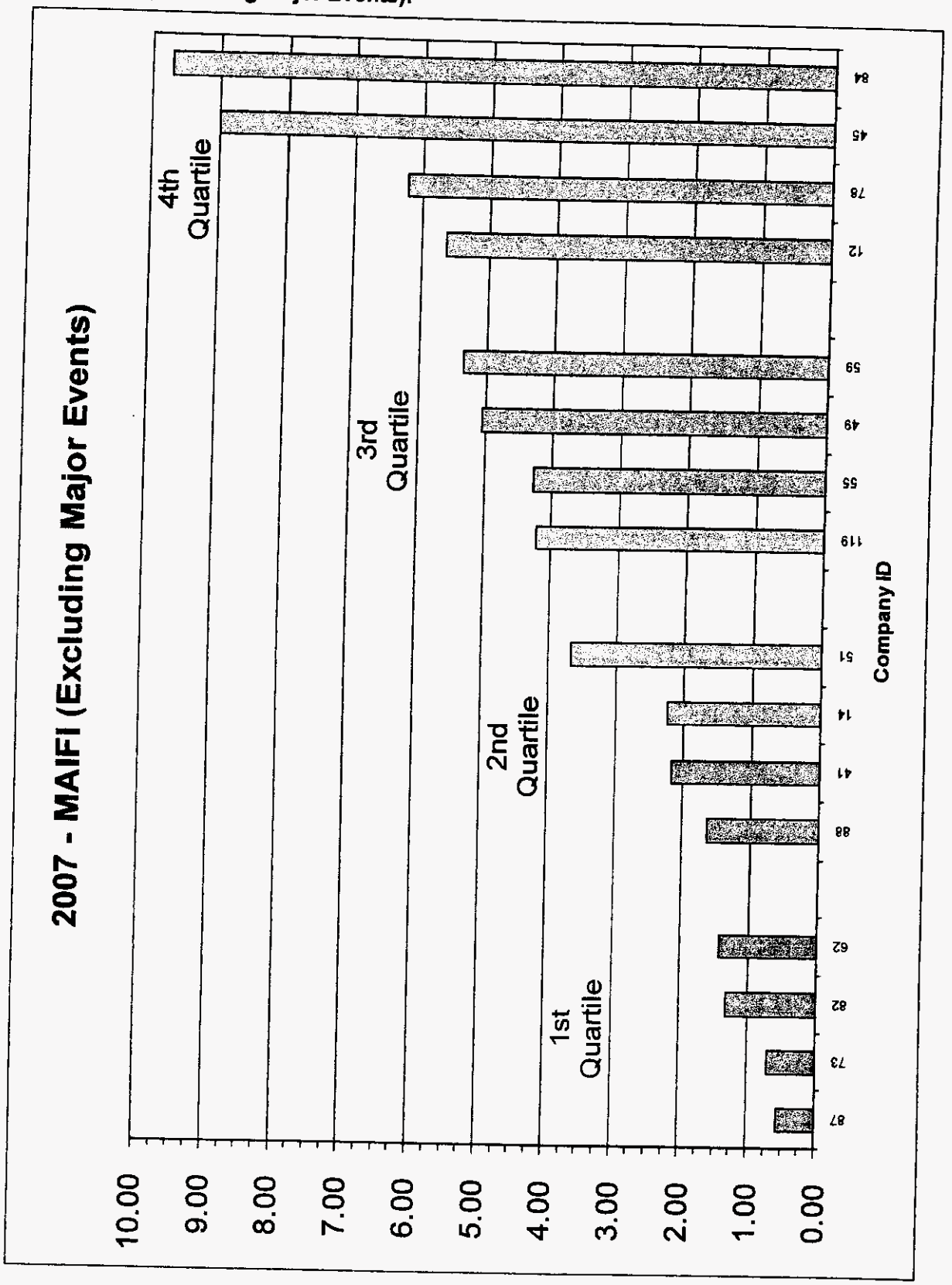
2007 DISTRIBUTION SYSTEM - MAIFI (For All Interruptions):



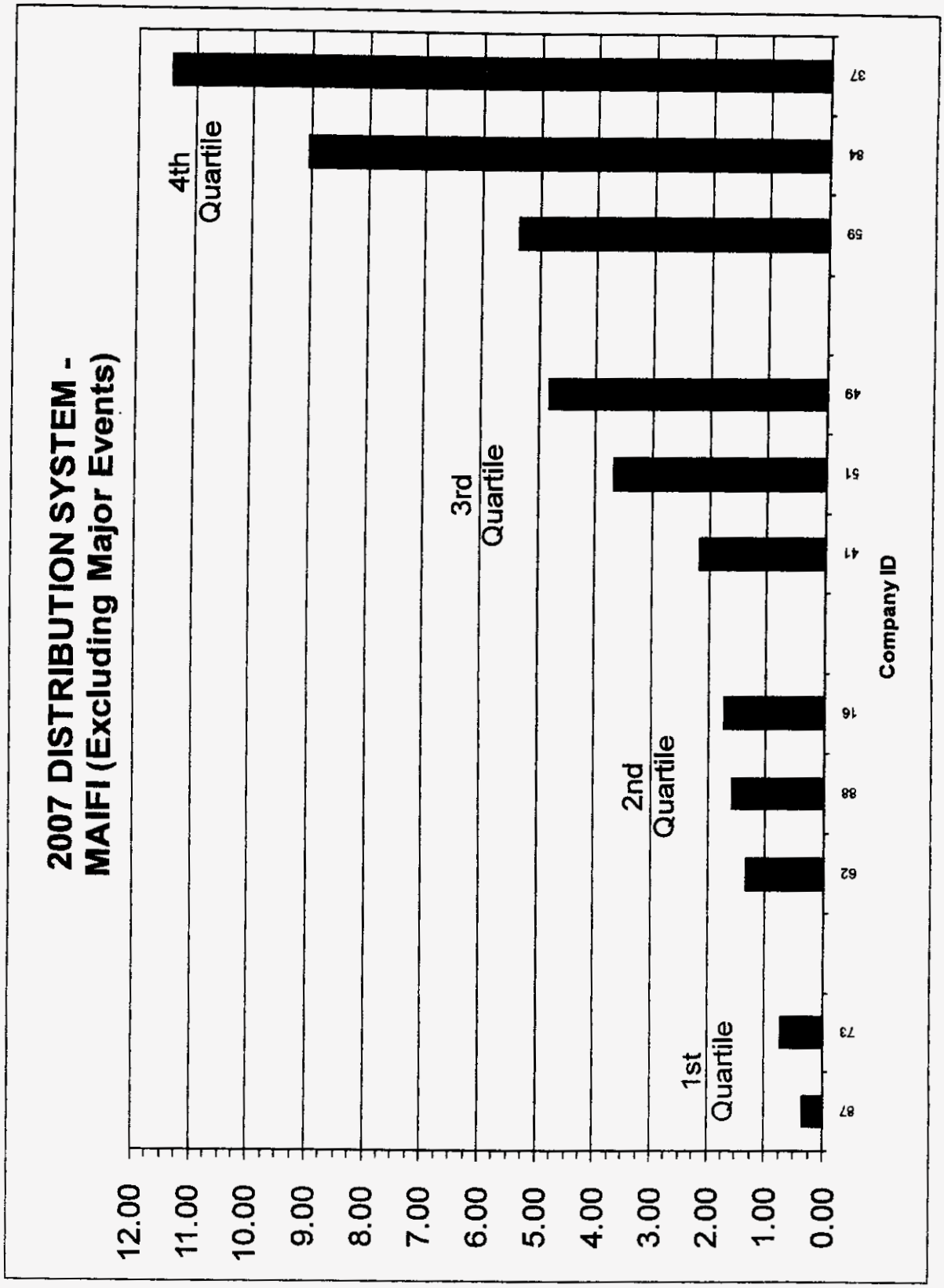
2007 TRANSMISSION SYSTEM - MAIFI (For All Interruptions):



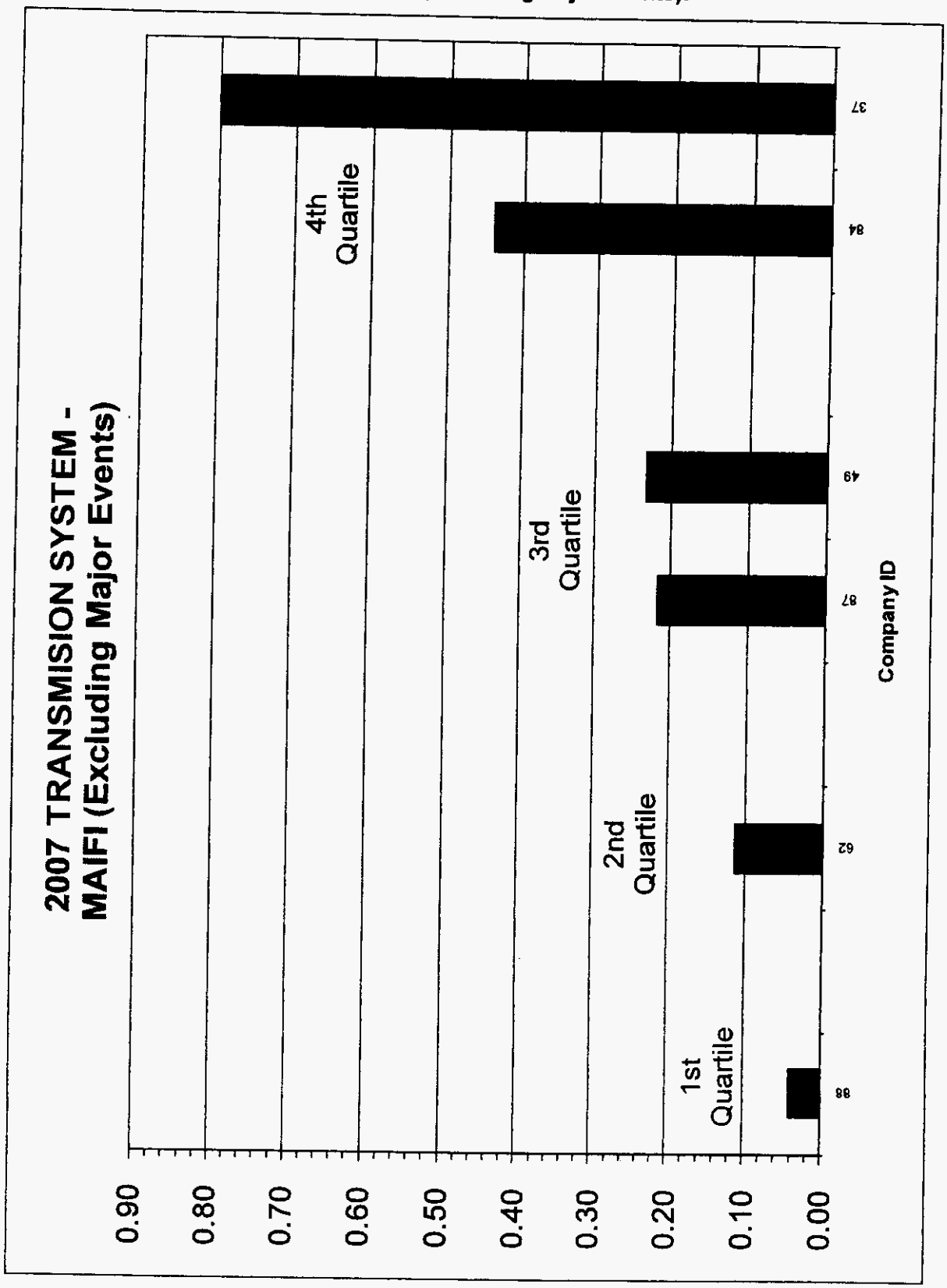
2007 MAIFI (Excluding Major Events):



2007 DISTRIBUTION SYSTEM - MAIFI (Excluding Major Events):



2007 TRANSMISSION SYSTEM - MAIFI (Excluding Major Events):



North American Electric Reliability Corporation
Regional Reliability Councils

FRCC -
Florida Reliability Coordinating Council

MRO -
Midwest Reliability Organization

NPCC -
Northeast Power Coordinating Council

RFC -
Reliability First Corporation

SERC -
SERC Reliability Corporation

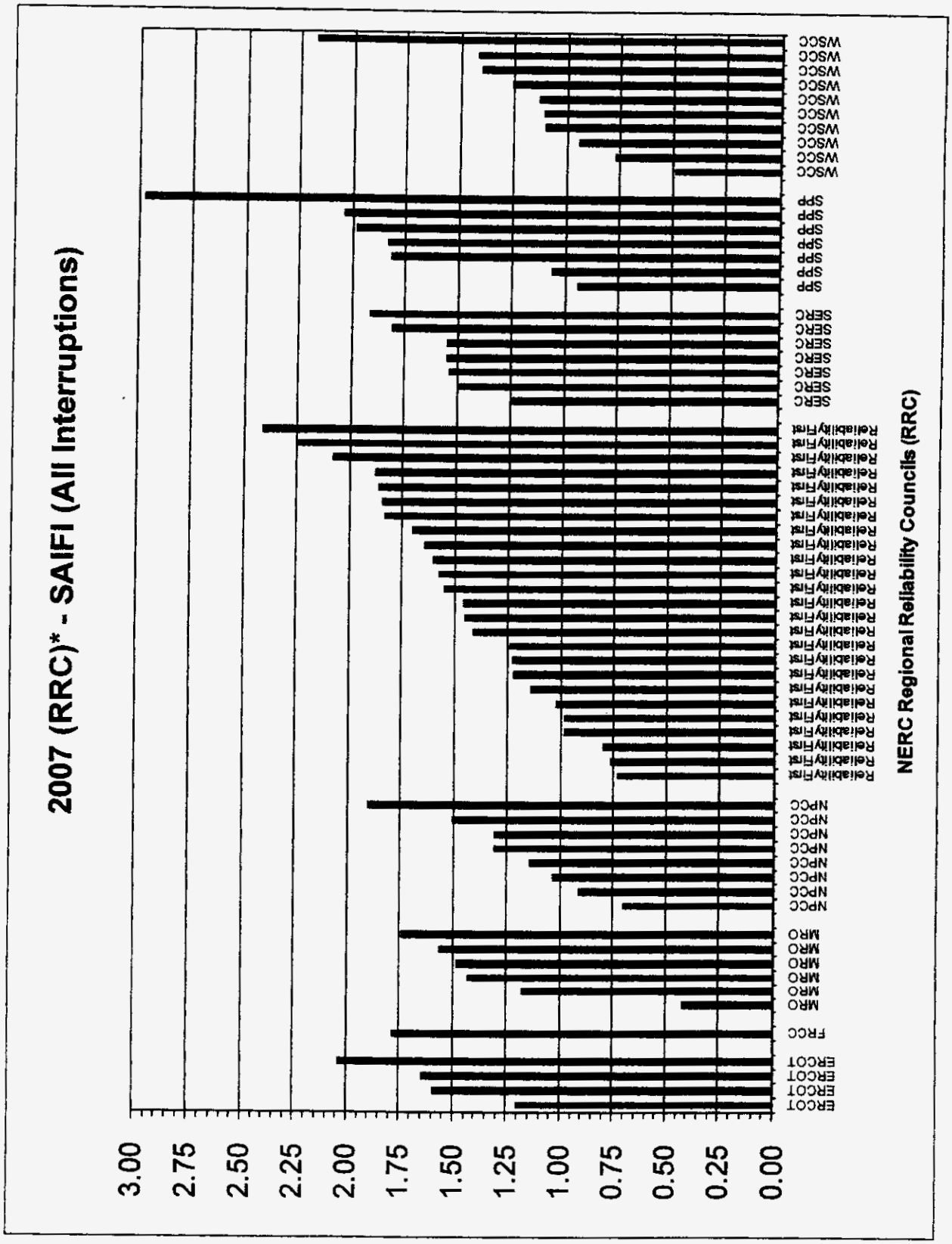
SPP -
Southwest Power Pool, Inc.

ERCOT -
Electric Reliability Council of Texas

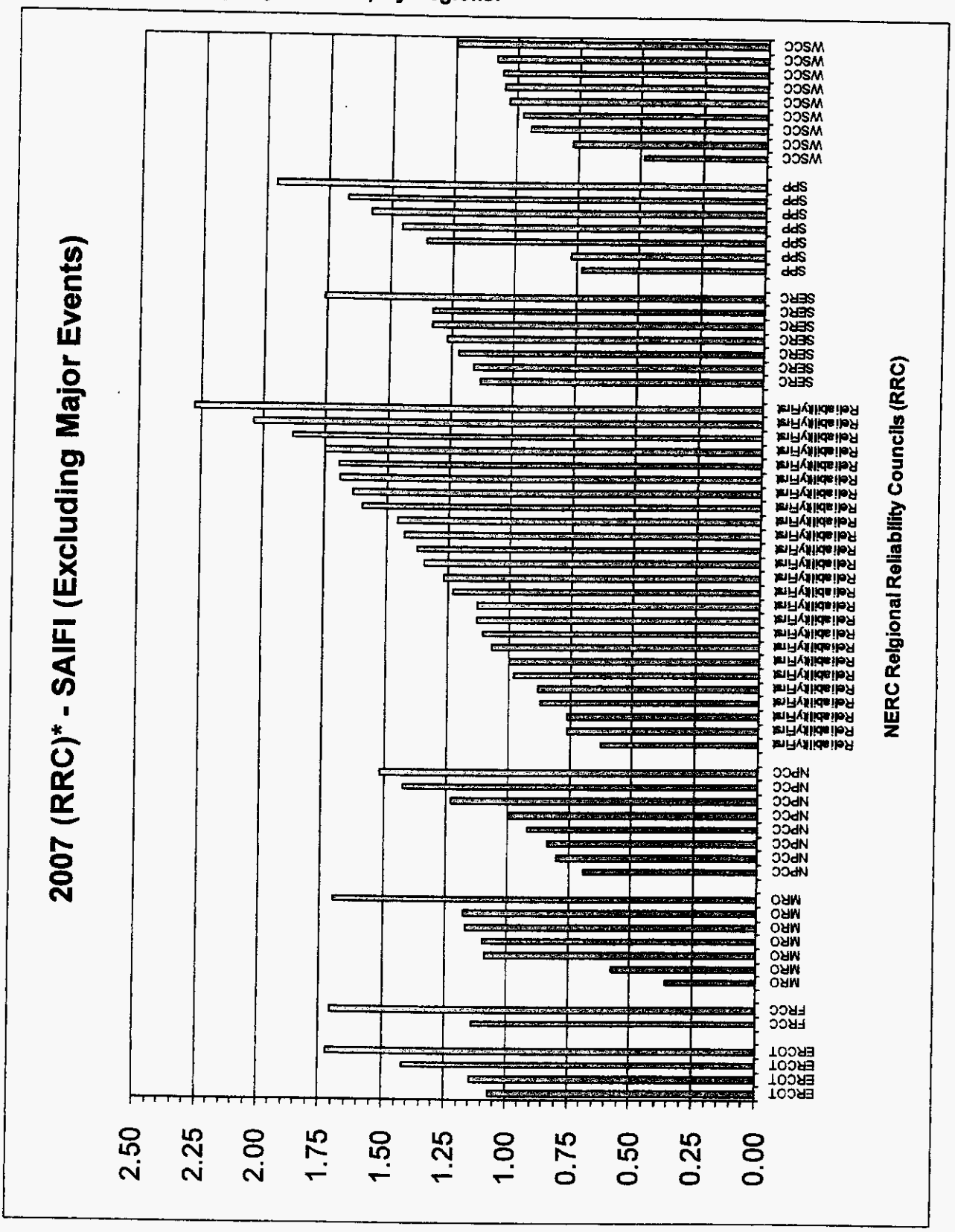
WECC -
Western Electricity Coordinating

Docket Nos. 080244-EI & 070231-EI
(MUUC) Depo Transcript &
Exhibits of John J. McEvoy
Exhibit ____ Page 162 of 246

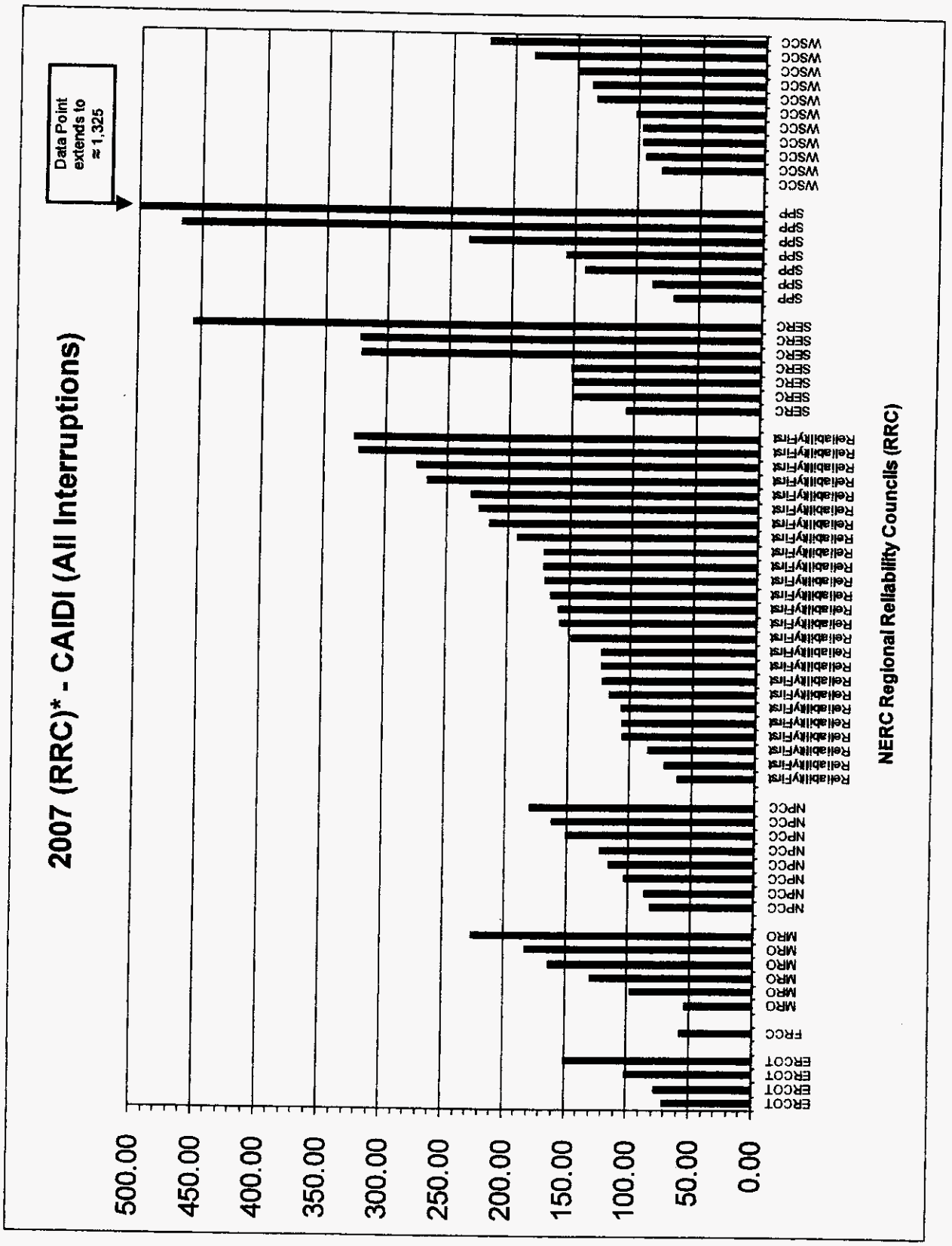
2007 SAIFI (All Interruptions) By Regions:



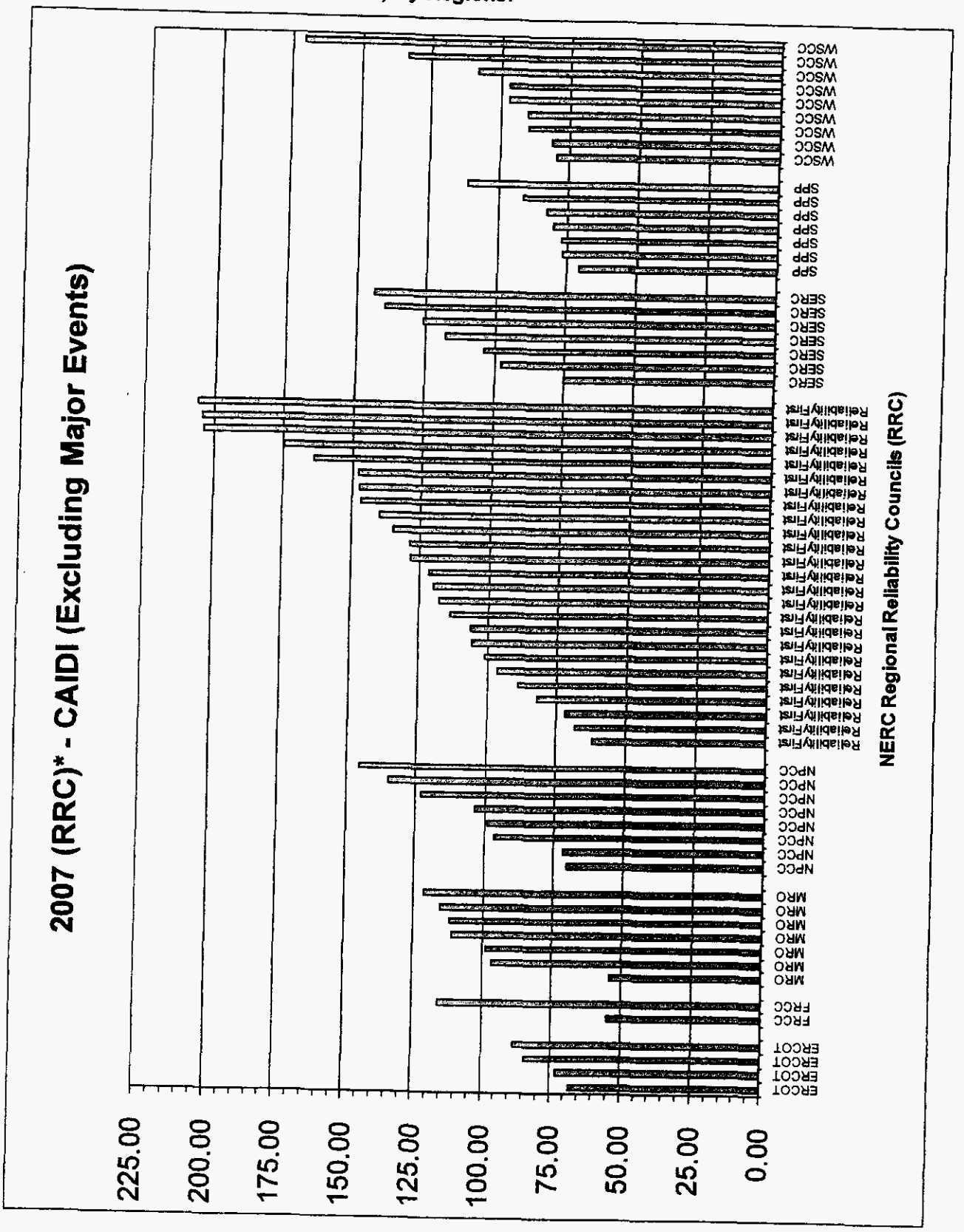
2007 SAIFI (Excluding Major Events) By Regions:



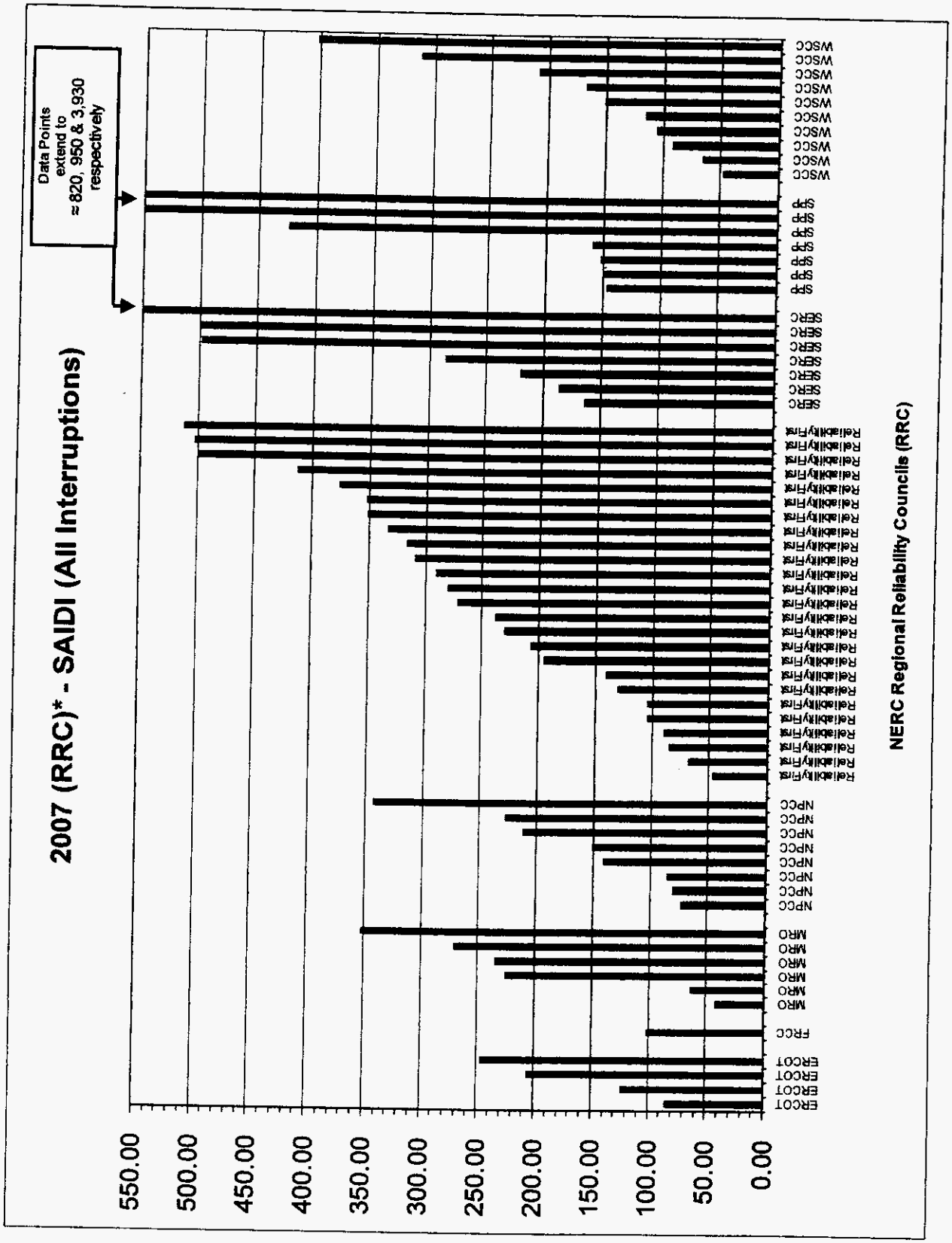
2007 CAIDI (All Interruptions) By Regions:



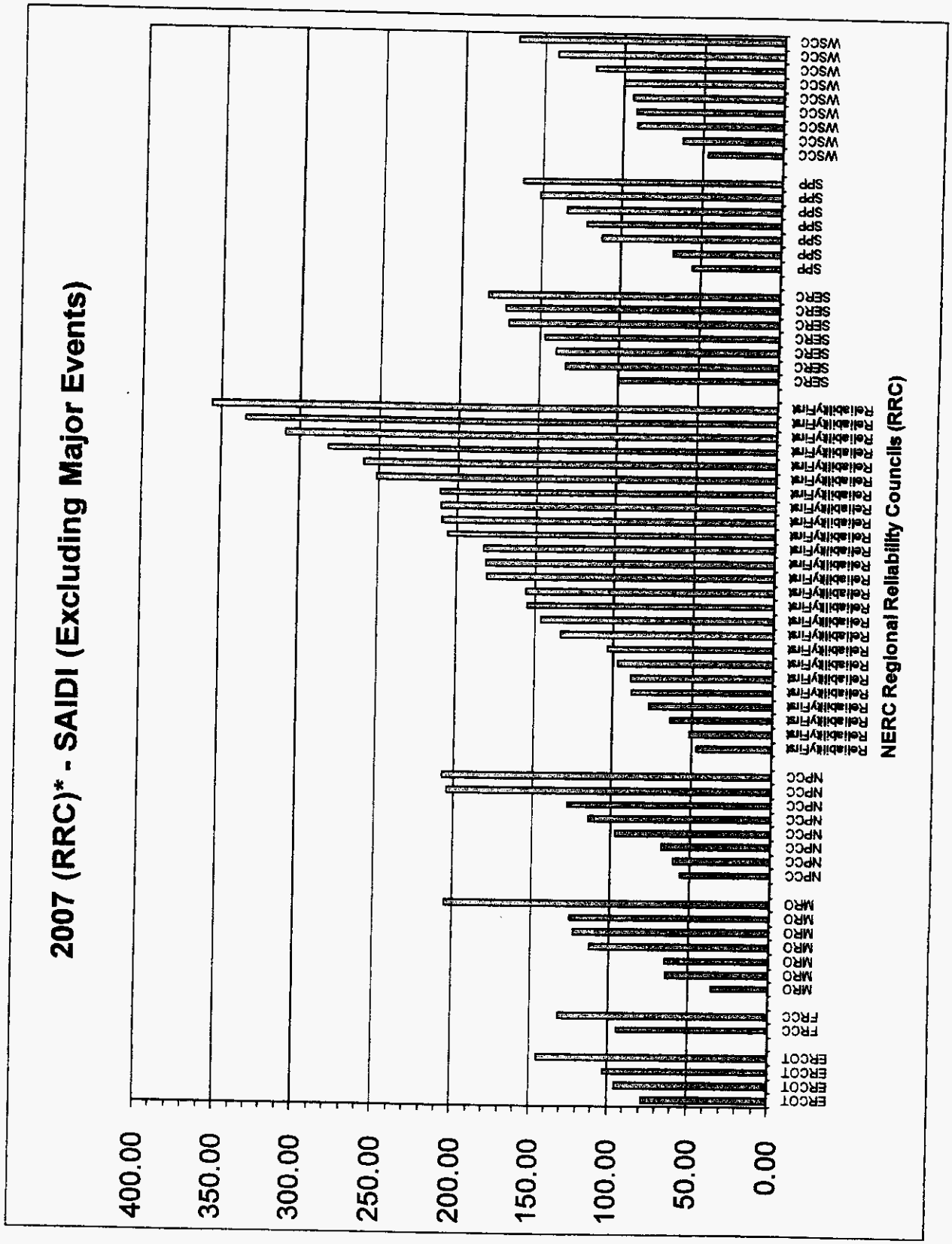
2007 CAIDI (Excluding Major Events) By Regions:



2007 SAIDI (All Interruptions) By Regions:



2007 SAIDI (Excluding Major Events) By Regions:



2006 DISTRIBUTION RELIBILITY SURVEY RESULTS:

The following are the final results as recorded in the 2006 Distribution Reliability.

2006 RELIABILITY INDICES WITH MAJOR EVENTS INCLUDED					
	1st	2nd	3rd	4th	Responses
SAIFI	<1.14	1.14 – 1.51	1.52 – 1.93	≥1.94	66
CAIDI	<105	105 - 139	140 - 224	≥225	65
SAIDI	<127	127 - 214	215 - 464	≥465	66
ASAI	>99.9758	99.9758 - 99.9615	99.9614 – 99.9210	< 98.9209	66
MAIFI	<1.62	1.62 – 3.10	3.11 – 6.09	>6.10	16
2007 RELIABILITY INDICES WITH MAJOR EVENTS EXCLUDED					
	1st	2nd	3rd	4th	Responses
SAIFI	<1.04	1.04 – 1.23	1.24 – 1.50	≥1.51	66
CAIDI	<86	86 - 104	105 - 144	≥145	65
SAIDI	<90	90 – 127	128 - 179	≥180	66
ASAI	>99.9826	99.9826 – 99.9752	99.9751 – 99.9657	< 99.9657	66
MAIFI	<1.55	1.55 - 1.96	1.97 – 4.20	> 4.21	14

2006 DISTRIBUTION SYSTEM RELIABILITY SURVEY DATA:

The following chart contains the 2006 Distribution System Reliability Survey Results.

2006 DISTRIBUTION SYSTEM RELIABILITY INDICES WITH MAJOR EVENTS INCLUDED					
	1st	2nd	3rd	4th	Responses
SAIFI	<0.98	0.98 – 1.39	1.40 – 1.91	≥1.92	62
CAIDI	<105	105 - 145	146 - 234	≥235	61
SAIDI	<117	117 - 200	201 - 475	≥476	62
ASAI	>99.9776	99.9776 - 99.9620	99.9619 - 99.9094	< 95.9094	62
MAIFI	<1.34	1.25 – 2.70	2.71 – 3.96	>3.97	10
2006 DISTRIBUTION SYSTEM RELIABILITY INDICES WITH MAJOR EVENTS EXCLUDED					
	1st	2nd	3rd	4th	Responses
SAIFI	<0.90	0.90 - 1.11	1.12 – 1.35	≥1.36	66
CAIDI	<88	88 - 113	114 - 150	≥151	63
SAIDI	<86	86 – 115	116 - 162	≥163	64
ASAI	>99.9837	99.9837 – 99.9779	99.9778 – 99.9692	< 99.9691	64
MAIFI	<1.25	1.25 – 2.50	2.51 – 3.94	> 3.95	11

2006 TRANSMISSION SYSTEM RELIABILITY SURVEY DATA:

The following chart contains the 2006 Transmission System Reliability Survey Results.

2006 TRANSMISSION SYSTEM RELIABILITY INDICES WITH MAJOR EVENTS INCLUDED					
	1st	2nd	3rd	4th	Responses
SAIFI	<0.10	0.10 – 0.17	0.18 – 0.29	≥0.30	56
CAIDI	<62	62 - 89	90 – 144.0	≥144.1	55
SAIDI	<8.0	8.0 – 16.9	17.0 – 31.9	≥32.0	56
ASAI	>99.9983	99.9983 - 99.9967	99.9966 - 99.9940	< 95.9939	56
MAIFI	<0.09	0.09 – 0.36	0.37 – 0.98	>0.35	6
2006 TRANSMISSION SYSTEM RELIABILITY INDICES WITH MAJOR EVENTS EXCLUDED					
	1st	2nd	3rd	4th	Responses
SAIFI	<0.08	0.08 – 0.15	0.16 – 0.25	≥0.26	58
CAIDI	<55	55 - 74	75 - 102	≥114.1	57
SAIDI	<5.7	5.7 – 11.5	11.6 – 22.9	≥23.0	57
ASAI	>99.9989	99.9989 – 99.9978	99.9977 – 99.9957	< 99.9957	57
MAIFI	<0.09	0.09 – 0.26	0.27 – 0.72	> 0.73	7

STATES REQUIRING RELIABILITY STATISTICS REPORTING:

For 2007 the operating companies indicated that they were required to report reliability statistics in 35 states. Those states are listed below.

Alabama	Iowa	Minnesota	Ohio
Arkansas	Illinois	Mississippi	Oklahoma
California	Indiana	Missouri	Pennsylvania
Colorado	Kansas	Nevada	Rhode Island
Connecticut	Kentucky	New Hampshire	Texas
District of Columbia	Louisiana	New Jersey	Virginia
Delaware	Maryland	New York	Washington
Florida	Massachusetts	North Carolina	Wisconsin
Hawaii	Michigan	North Dakota	

IEEE 1366:

The chart on the following pages lists the comments posted by the responders on their use of the IEEE 1366 Standard and the associated definitions contained within. In addition, the following chart indicates whether or not the respondent is required by an associated PUC to report reliability data.

ID #	PUC Report	Use 1366	Use of 1366 Explained
1	Y	Y	
2	Y	Y	
3	Y	Y	
4	Y	Y	
5	Y	Y	
6	N	N	Named Storms (hurricanes, tropical storms, etc) Torndoes Winter Storms (ice & snow) Scheduled Outages Customer Trouble 5% of Companies Customers Out Transmission Outages
7	N	N	10% or more of the customers interrupted by state or operating region, in some cases for more than 24 hours and in one case subject to PUC approval for the event.
10	Y	Y	
11	Y	Y	
12	N	N	Loss of 10% of a region's customers for 12 hours or longer.
14	Y	Y	
15	Y	Y	We also use (for regulatory reporting requirements): Major storms, weather-related events during which more than 100,000 customers experience a sustained interruption of electric service and restoration of electric service to these customers takes more th
16	Y	Y	
17	N	N	A major even is a period of adverse weather during which service interruptions affect at least 10% of the customers in an operating area and/or result in at least a single customer being out of power for more than 24 hours.
20	N	N	The Louisiana Public Service Commission sets a major event as having more than 10% of customers in a region without power with at least one customer without power for more than 24 hours. We do calculate IEEE 2.5 Beta data.
22	Y	Y	
24	N	N	Internally - Major event is more than 100,000 custs interrupted. For MPSC, major Event is more than 10% of custs interrupted(180,000 custs)
26	N	N	A major event is 110,000 or more customers out which is about 5% of total customers served. For this survey, IEEE 1366-2003 was used.
29	Y	Y	
36	N	N	10% of customers affected; storm + restoration > 24 hours. IEEE 1366-2003 is reported for external benchmarking studies.
37	N	N	Storm named by the National Hurricane Center, a tornado recorded by the National Weather Service, a planned load management event, an electric generation or transmission disturbance, a fire event causing activation of the county emergency operation center

ID #	PUC Report	Use 1366	Use of 1366 Explained
43	Y	Y	
45	N	N	Greater than 10% of customer base Service cannot be restored in 48 hrs Mutual Assistance Required
47	Y	Y	
49	N	N	As Period of adverse, weather which interrupts 10% or more of the customers served in an operating area or results in customers being without power for 24 hour or longer.
50	N	N	Severe storm restoration periods exceeding 24 hours in duration.
51	Y	Y	
55	Y	Y	
58	Y	Y	
59	N	N	When 10% or more circuits in multiple substation towns have sustained outages or 10% of a region's substation circuits has a sustained outage at the same time. Major Events are not recorded due to lack of manpower.
62	N	N	Major Event A Major Event is defined as a catastrophic event that causes extensive damage to the electrical system or loss of electrical service to a large percentage of customers1. Typically these events should include those situations where there is a
64	Y	Y	
69	N	N	Cost to exceed $500k and be approved by executive committee
70	N	N	More than 10% of customers served affected by operating division, or state. One area allows for storm related outages where some outages are for more than 24 hours.
73	Y	Y	
76	Y	Y	
78	N	N	Per Pennsylvania PUC, exclude events in which 10% or more of the system customer base is interrupted. Also, during a major events, animal and vehicle outages are NOT excluded. In our response to this survey our metrics are calculated on this basis.
79	Y	Y	
81	N	N	Customer outages deliberately imposed to maintain system integrity. Widespread outages of force majeure conditions where the utility does not have adequate manpower or material resources to be able to respond. All scheduled outages.
82	N	N	NJ Administrative Code
83	Y	Y	
84	Y	Y	

ID #	PUC Report	Use 1366	Use of 1366 Explained
87	N	N	A Major Event is defined as a catastrophic event that causes extensive damage to the electrical system or loss of electrical service to a large percentage of customers1. Typically these events should include those situations where there is a loss of elec
88	N	N	Events caused by earthquake, fire or storms of sufficient intensity to give rise to a state of emergency being declared by the government
89	Y	Y	
90	N	N	The company is allowed to exclude the following: Any planned service interruptions, any planned load management events, storms named by the Nataional Hurricane Center (major event), any tornado recorded by the National Weather service (major event), ice o
94	N	N	A major event is defined under Title 52 of the PA Code §57.192. The UGI Utilities, Inc. Electric Division has never experienced a major event meeting the PUC criteria. If a major event did occur, outage data from the event would be excluded from the ind
95	N	N	A major event day is declared when the number of restoration steps exceeds the 98.5 percentile of all days in the most recent four years. All interruptions that occur on the qualifying day are considered major events even if the interruption extends into
100	Y	Y	
102	Y	Y	
103	N	N	Extensive mechanical damage to the electric system, outages involving more than 10% of customers served by a District, and more than 1% of customers served not restored within 24 hours.
105	Y	Y	We use IEEE 1366 for internal reporting. Regulatory requirements vary by jurisdiction.
107	Y	Y	
108	Y	Y	
109	Y	Y	
110	Y	Y	
111	Y	Y	
112	Y	Y	
119	Y	Y	
120	N	N	An uncontrollable event (e.g. windstorm, earthquake) that causes an outage resulting in >= 70,000 customer hours lost or in customer hours lost >= 1% of annual customer hours lost for the distribution system. Excludes controllable causes such as equipmen
121	Y	Y	

ID #	PUC Report	Use 1366	Use of 1366 Explained
123	N	N	We use IEEE 1366 for internal reporting. Regulatory requirements vary by jurisdiction.
124	Y	Y	We use IEEE 1366 for internal reporting. Regulatory requirements vary by jurisdiction.
126	Y	Y	All answers for this survey are based on IEEE 1366-2003. We also use a storm normalization process that is based on number of jobs per day.
127	Y	Y	All answers for this survey are based on IEEE 1366-2003. We also use a storm normalization process that is based on number of jobs per day.
128	Y	Y	All answers for this survey are based on IEEE 1366-2003. However, we also use a storm normalization process that is based on number of outage jobs per day.
129	Y	Y	All answers for this survey are based on IEEE 1366-2003. However, we also use a storm normalization process that is based on number of outage jobs per day.
132	Y	Y	
133	Y	Y	
134	Y	Y	

2007 SURVEY COMMENTS:

The chart on the following pages lists the survey comments submitted by the participants of the EEI 2007 Reliability Survey.

7	Planned outages are excluded from statistics. Will we know the participating companies even if individual results are 'blind'?
15	Nice to see that the information is being collected much earlier than in previous years. Last July, I requested that EEI replace ??? as ??? benchmark survey contact person with me. That change, apparently, has still not happened: ??? Retired.
17	In the Interruption Data 2 section, there is no way for us to major event normalize the number of customers who experienced a specific number of outages. The percentage of customers provided who experienced X # of outages in 2007 include all events.
20	Our database does not capture details on Transmission only Distribution outages.
45	Please remove one of the "the the" below on the interruption 2 page. If you answered Yes to above question, please list the total duration (in minutes) of the interruptions caused by each facility and the number of minutes of interruption:
69	It would be nice to have a save button on each page along with the save and continue button.
70	For the following question in Interruption Data 2: What percentage of customers has seen the following number of major event-normalized interruptions last year? Our current System Reliability program does not allow us to obtain these values Pertaining to
78	We do not log weather conditions as "causes", but rather as "contributing factors". Thus, a blown transformer during a lightning storm would be logged in our database as caused by equipment failure with lightning as a contributing factor.
88	The origination facility of an outage is not known in some cases, for example if the outage cause is unknown or not specifically recorded.
94	We do not have the outage management systems needed to support outage reporting that distinguishes overhead and underground interruptions or determines number of interruptions to individual customers.
95	Equipment OH Conductor and OH Equipment are combined into one category (Equipment - OH Equipment). Equipment UG Conductor and UG Equipment are combined into one category (Equipment - UG Equipment).

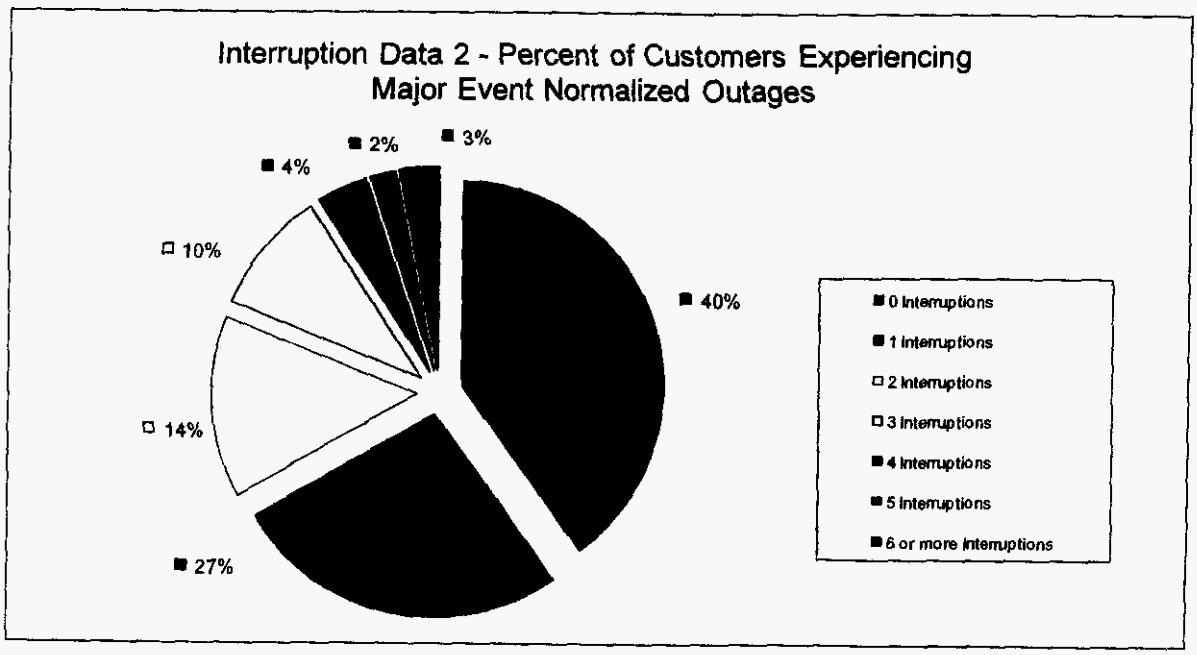
ADDITIONAL INDICES TRACKED AND REPROTED TO PUCs BY PARTICIPANTS:

ID #	Tracked Indices	Additional Indices TRACKED by the Company	Reported Indices	Additional Indices REPORTED to PUC
6	Y	We calculate according to MAIFIe	Y	Distribution - ASAI, MAIFIe Transmission - SAIFI MVA, SAIDI MVA
10	Y	CEMI3	Y	CAIFI, Customers Exceeding Reliability Targets for Frequency and Duration (as specified by the State)
11	Y	CEMI3	N	
12	Y	ASAI	N	
14	Y	SAIFI (Clear Weather), FO/HMY	N	
15	Y	CEMI3, CEMI7	Y	SAIFI, SAIDI, CAIDI calculated using definitions equivalent to IEEE Std. 1366-1998.
17	Y	The number of substation breaker momentary interruptions and lockouts.	Y	Only the number of substation breaker momentary interruptions - no MAIFI calculations are required by the PSC.
22	Y	CEMI, CELID,ASAI	Y	CEMI, CELID
24	Y	1. % of custs restored within 8 hours - normal conditions 2. % of custs restored within 60 hours - catastrophic conditions 3. % of custs restored within 36 hours - all conditions 4. % of customers with 5 or more interruptions in a 12 mo. period	Y	1. % of custs restored within 8 hours - normal conditions 2. % of custs restored within 60 hours - catastrophic conditions 3. % of custs restored within 36 hours - all conditions 4. % of customers with 5 or more interruptions in a 12 mo. period
26	Y	Exc storms: Restore service <=8 hours (60 hours for storm only) to >=90% of customers interrupted. Inc storms: a) Restore service <=36 hours to >=90% of customers interrupted, b) <5 same circuit repetitive outages per year on >5% of circuits.	Y	Exc storms: Restore service <=8 hours (60 hours for storm only) to >=90% of customers interrupted. Inc storms: a) Restore service <=36 hours to >=90% of customers interrupted, b) <5 same circuit repetitive outages per year on >5% of circuits.
36	Y	% Customers restored in 2 hours	N	
43	Y	CEMI3	Y	CAIFI, Customers Exceeding Reliability Targets for Frequency and Duration (as specified by the State)
47	Y	CEMI	N	
49	Y	Storm CAIDI, Multiple Customer Outages Indice	N	
50	Y	CEMI(5)	N	N/A

ID #	Tracked Indices	Additional Indices TRACKED by the Company	Reported Indices	Additional Indices REPORTED to PUC
59	Y	ASAI = .9999 ASIFI = .4696 ASIDI = 61.4260 MAIFIE = 4.7798	N	
69	Y	No-Weather SAIDI, SAIFI, CAIDI	Y	Yearly Service Quality Report (SQR) by Feeder
70	N		Y	MAIFI(E) for one commission. Currently based on breaker operations only.
73	Y	CEMI4 CEDI4	N	
76	Y	CELID, CEMI, ASAI	Y	CELID, CEMI
78	Y	Customers interrupted more than 3 times YTD.	N	
79	Y	CEMI(4), CELID(3)	N	
81	Y	ASAI	N	
82	Y	CEMI	N	
90	Y	L-Bar, MAIFIe, CEMI5	Y	L-Bar, MAIFIe, CEMI5
95	Y	ASAI.	N	
100	Y	CEMI-9, CEMI-11	N	
102	Y	CEMI, CELID (starting in 2009)	N	
103	Y	ASAI	N	
107	Y	ASAI	N	
111	Y	ASAO	N	
120	Y	CEMI-4 (% customers experiencing >= 4 interruptions) CELID-6 (% customers experiencing longest interruption >= 6 hours)	N	
121	Y	CEMI3	Y	CAIFI, Customers Exceeding Reliability Targets for Frequency and Duration (as specified by the State)
126	Y	DEMI & DELI, Devices experiencing multiple and long interruptions.	Y	CEMI & CELI, Customers experiencing multiple and long interruptions.
127	N		Y	We are required to track individual feeder SAIDI, SAIFI, and CAIDI.
128	Y	DEMI & DELI, Devices experiencing multiple and long interruptions.	Y	CEMI and CELI, Customers experiencing multiple and ling interruptions.
129	N		Y	We are required to track individual circuit SAIDI and SAIFI.
132	Y	CELID, CEMI, ASAI	N	
133	Y	CELID, CEMI, ASAI	Y	CEMI and CELID
134	Y	CELID, CEMI, ASAI	N	

CUSTOMER OUTAGE EXPERIENCES:

The following graphic and the chart on the following page illustrates the percentage of customers who experienced multiple major event normalized interruptions.



What percentages of customers have seen the following number of major event-normalized interruptions in 2003? The averages for the 30 operating companies provided data for this question are:

Year	Number of interruptions						
	0	1	2	3	4	5	6 ≤
2007	40.0	26.6	14.5	9.8	4.0	2.0	3.1
2006	41.3	26.2	14.1	8.6	4.6	2.5	3.7
2005	41.2	31.8	13.8	6.7	3.4	1.7	1.6
2004	51.0	27.6	11.8	5.0	2.5	1.2	0.9
2003	52.5	24.2	11.5	5.9	2.7	2.6	N/A
2002	36.5	36.8	14.1	6.8	3.2	2.6	N/A
2001	42.1	30.7	12.7	7.2	3.9	3.4	N/A

[redacted]

UTILITY DATA COLLECTION INFORMATION:

The following charts on the following pages provide summarized information on how the survey responders collected data that is contained within this survey.

Identify the percentage of your customers whose outages are capable of being reported through an automated meter reading system (i.e., AMR).

Year	0-33%	34-66%	67-100%	None
2007	14	4	10	43
2006	22	0	8	40
2005	19	0	8	48
2004	34	0	9	32
2003	23	2	6	N/A
2002	19	2	4	N/A
2001	20	1	3	N/A

Identify the percentage of customers served from substations with SCADA.

Year	0-33%	34-66%	67-100%	None
2007	15	13	38	5
2006	14	15	35	6
2005	16	16	39	9
2004	12	19	37	7
2003	9	18	35	N/A
2002	11	20	28	N/A
2001	5	19	14	N/A

Identify the percentage of customers served from circuits utilizing automated switching to restore portions of the feeder either automatically (locally controlled) or remotely (through dispatcher control, e.g. radio to/from dispatcher console).

Year	0-33%	34-66%	67-100%	None
2007	40	10	13	8
2006	40	9	11	10
2005	39	15	12	9
2004	49	10	7	9
2003	43	11	5	N/A
2002	40	9	4	N/A
2001	32	2	3	N/A

At my utility, outage data is collected using an automated outage management system supported by a fully connected circuit model.

Year	Yes	No	Total
2007	57	13	70
2006	58	12	70
2005	55	20	75
2004	51	24	75
2003	34	34	68
2002	30	33	63
2001	13	29	42

Percentage of Linear Circuit Miles by Category (Customers/Mile)
NOTE: IEEE 1366 Definitions used for the 2004 Survey.

Year	Rural (<= 50)	Suburban (51 to 149)	Urban (>=151)
2007	44	31	25
2006	47	30	23
2005	40	30	30
2004	36	33	31

Year	Rural (<= 25)	Suburban (25 to 250)	Urban (250+)
2003	43	11	5
2002	40	9	4
2001	32	2	3

Does your company do partial restoration (i.e., step restoration) within your outage management system to stop the accumulation of customer minutes to customers restored through switching?

Year	Yes	No
2007	67	1
2006	68	2
2005	73	2
2004	75	0
2003	63	2
2002	61	3
2001	39	3

Lowest Level that Outage Data is Collected.
This Data was Collected prior to 2004 but is not included in the Report.

Year	None	Breaker	Recloser	Switch	Fuse	Dist Xfmr	Meter	Total
2007	1	0	2	0	2	28	38	71
2006	0	0	2	0	1	28	39	70
2005	1	0	3	0	1	22	48	75
2004	0	0	2	0	2	23	48	75

Linear Circuit Miles of Overhead and Underground Distribution on the Respondents Systems.
NOTE: Question not ask in survey prior to 2004 Survey

Year	Overhead	Underground
2007	1,331,146	492,918
2006	1,300,305	494,342
2005	1,205,848	493,949
2004	1,269,534	516,375

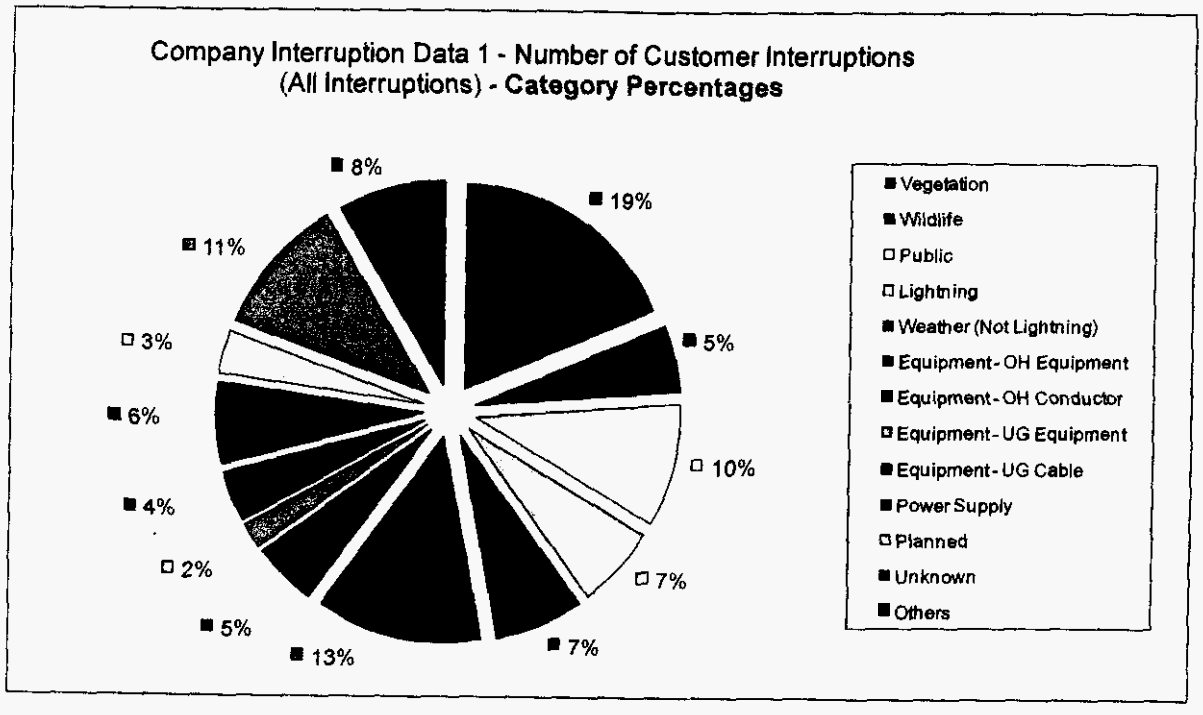
Linear Circuit Miles for each of these Distribution Voltage Classes on the Respondents Systems.
NOTE: Question not ask in survey prior to 2004 Survey

Year	5 kV	15 kV	25 kV	35 kV
2007	184,547	1,079,353	172,660	75,130
2006	96,659	1,114,348	169,830	59,607
2005	149,231	1,071,967	178,516	58,826
2004	144,289	911,649	121,987	78,020

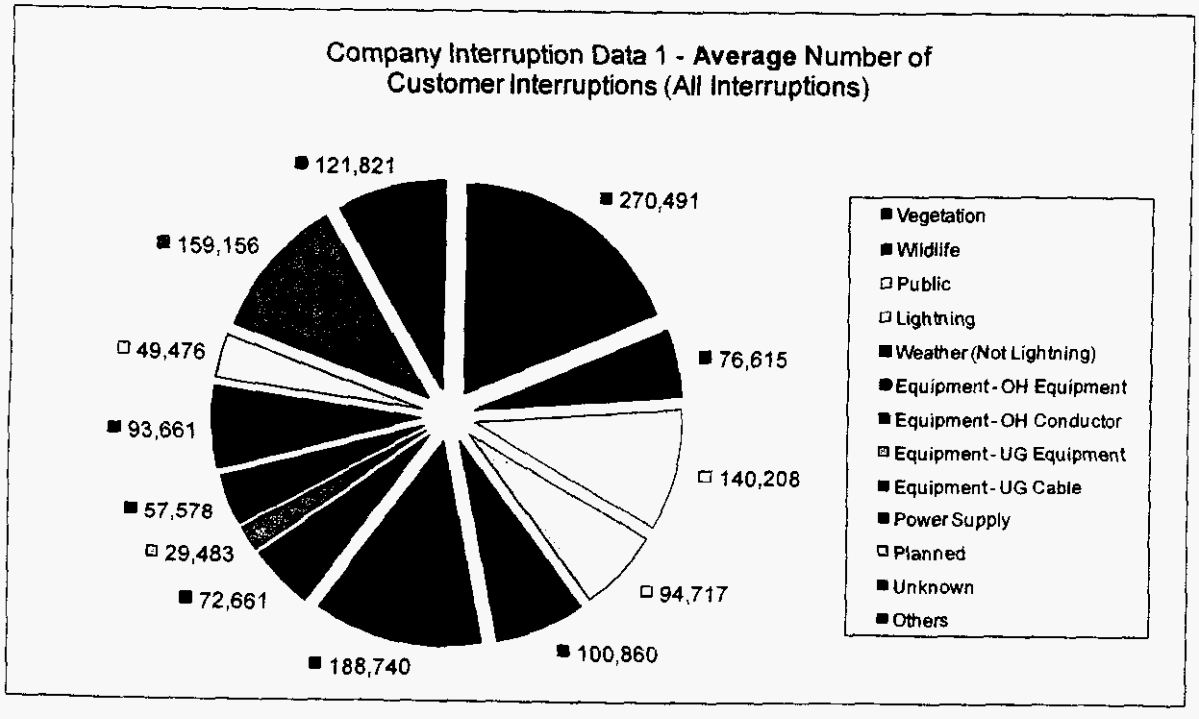
GRAPHICAL SUMMARIZATIONS, RESPONDENTS DATA & SURVEY QUESTIONS:

Pages 24 through 66 contain the data submitted for each respondent that participated in the survey. The various tables containing all the data submitted in the Indices, Utility Info (Items F-J), Interruption Data 1, and Interruption Data 2 Tabs of the survey.

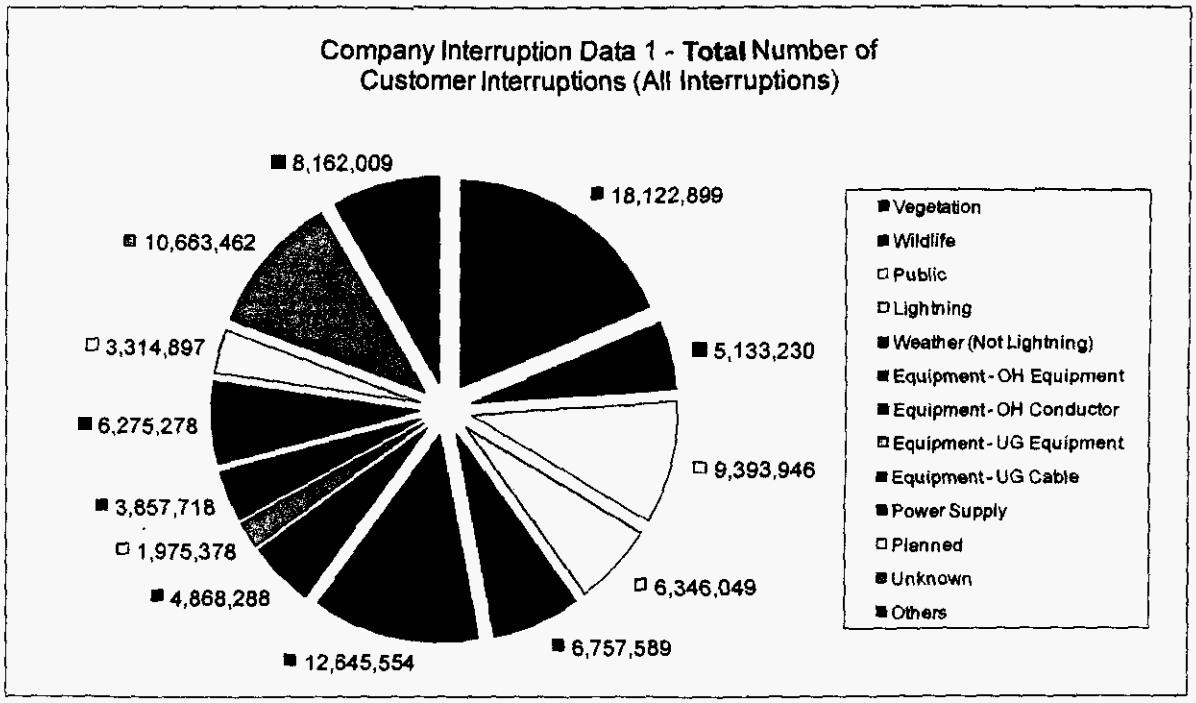
USA Average % of Outage Causes for All Interruption



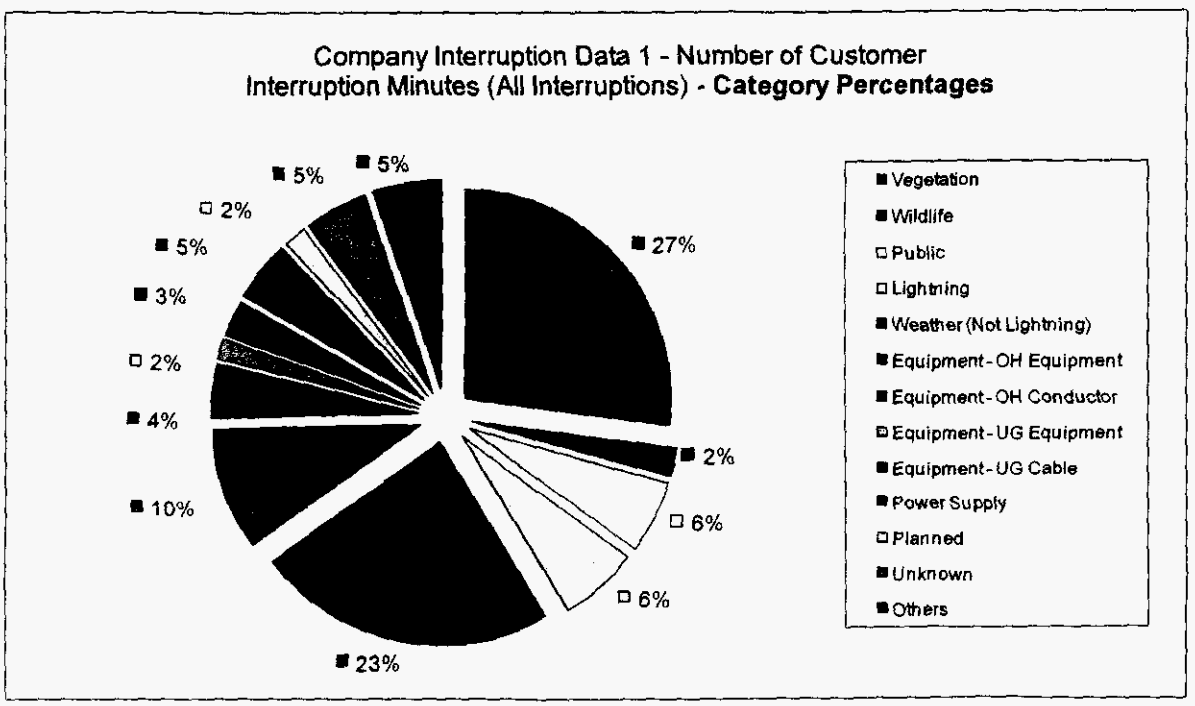
USA Average Number of Outage Causes for All Interruption



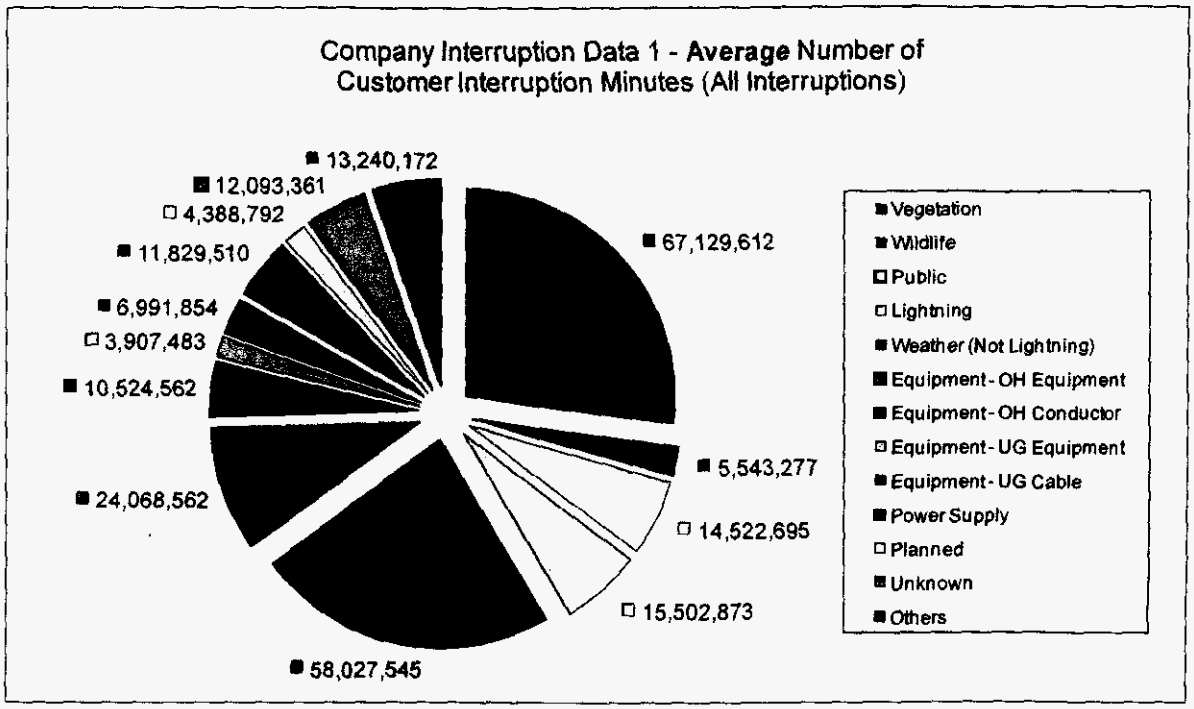
USA Total Number of Outage Causes for All Interruption



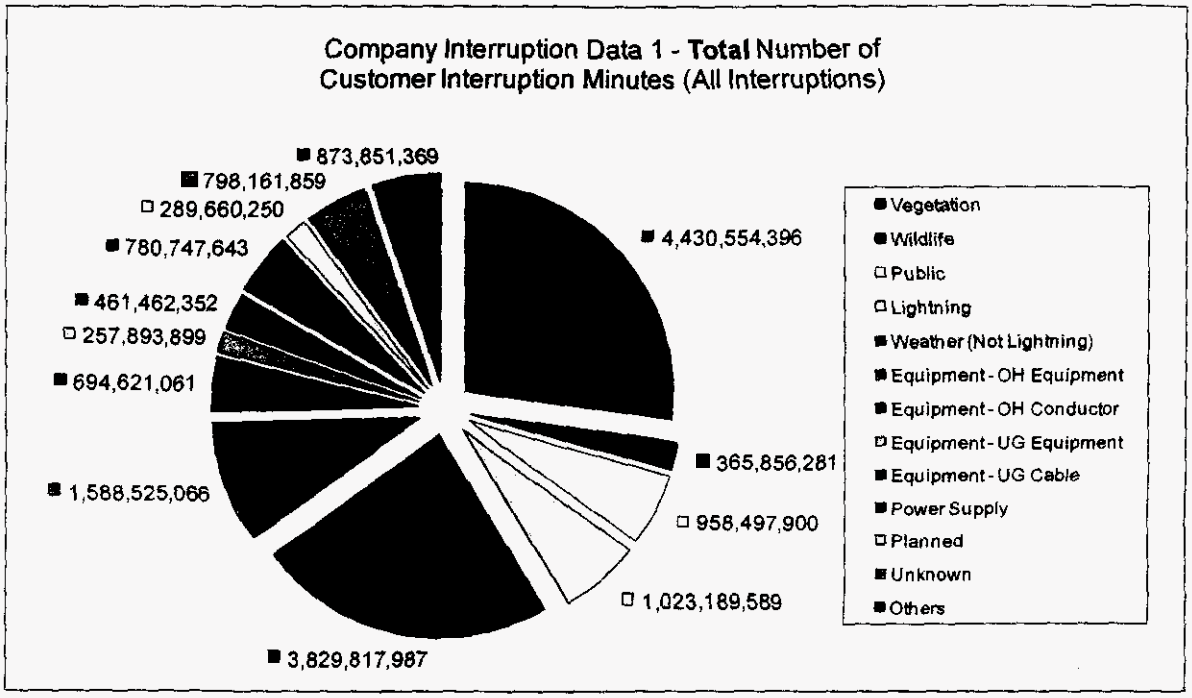
USA Average % of Outage Minutes for All Interruptions



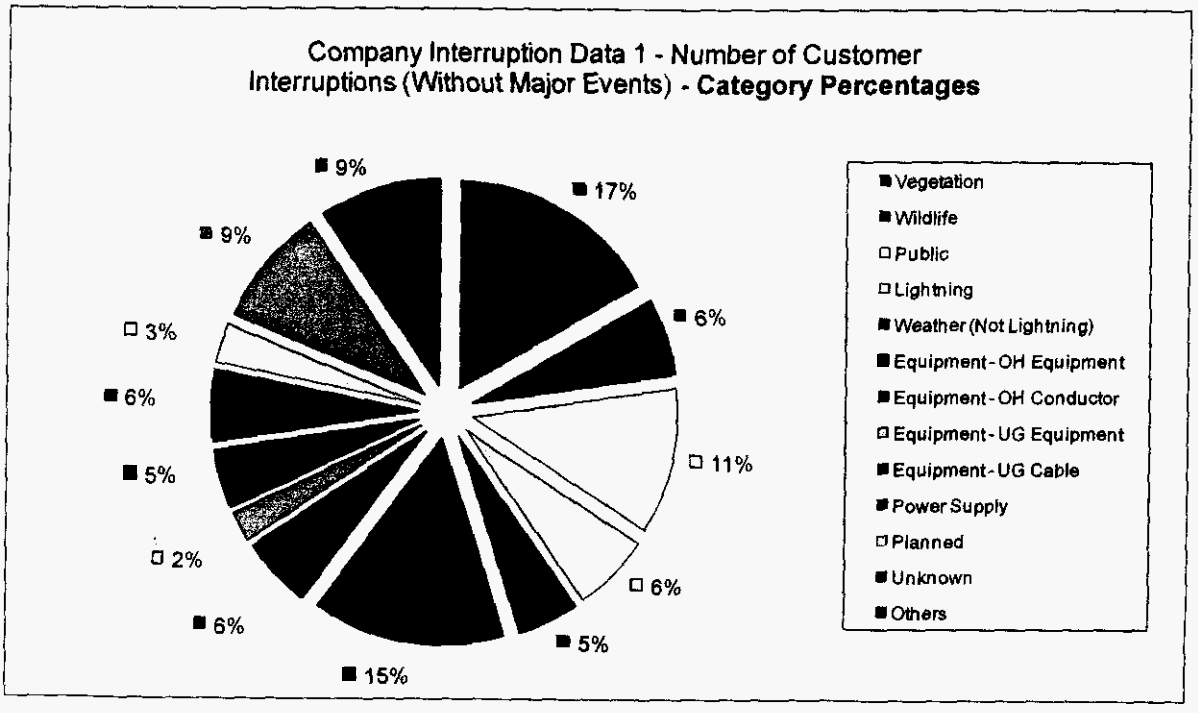
USA Average Outage Minutes for All Interruptions



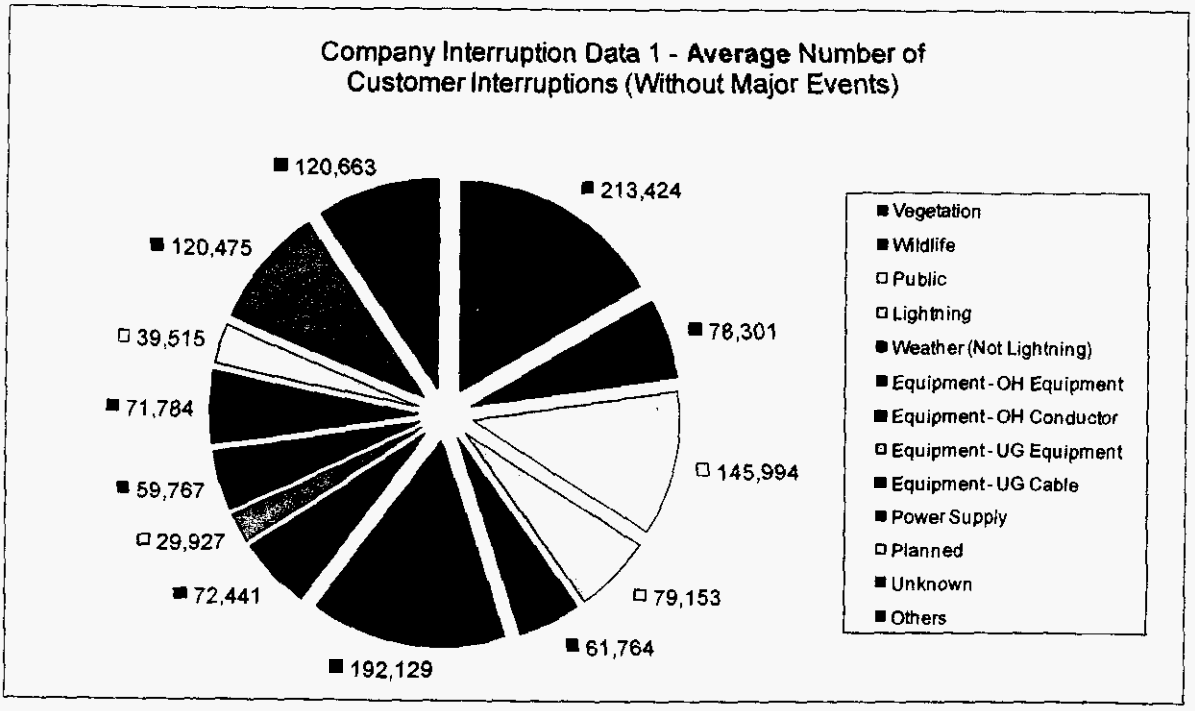
USA Total Number of Outage Minutes for All Interruption



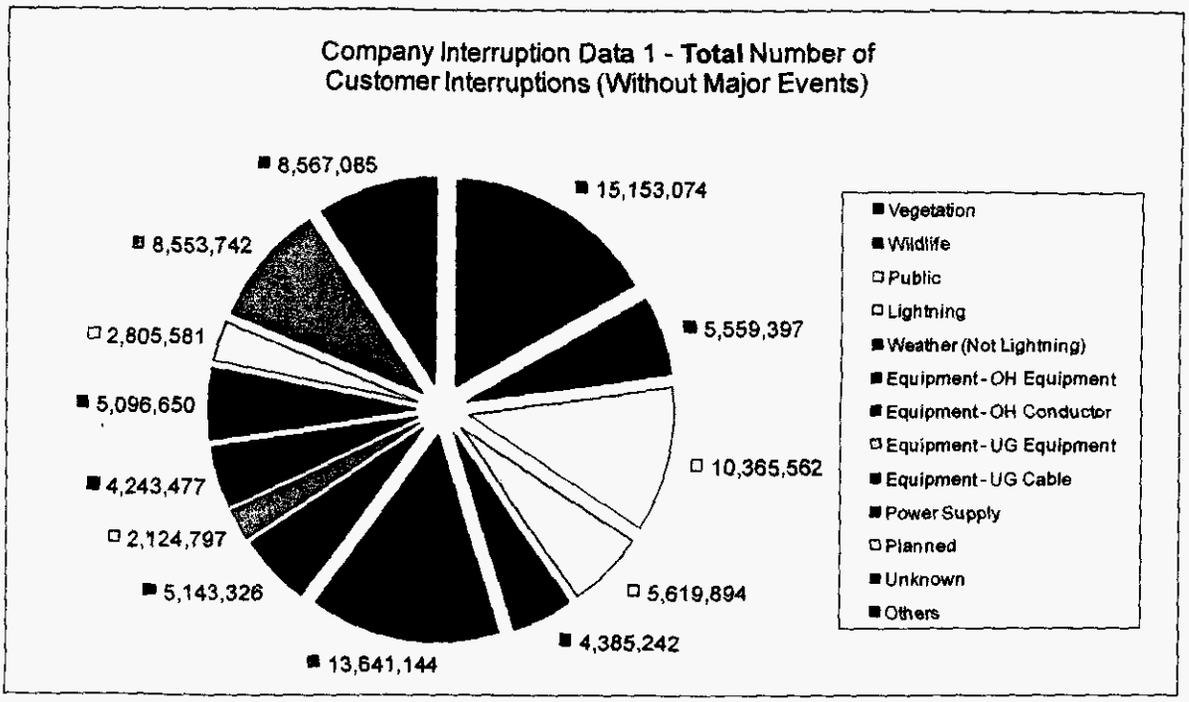
USA Average % of Outage Causes Excluding Major Events



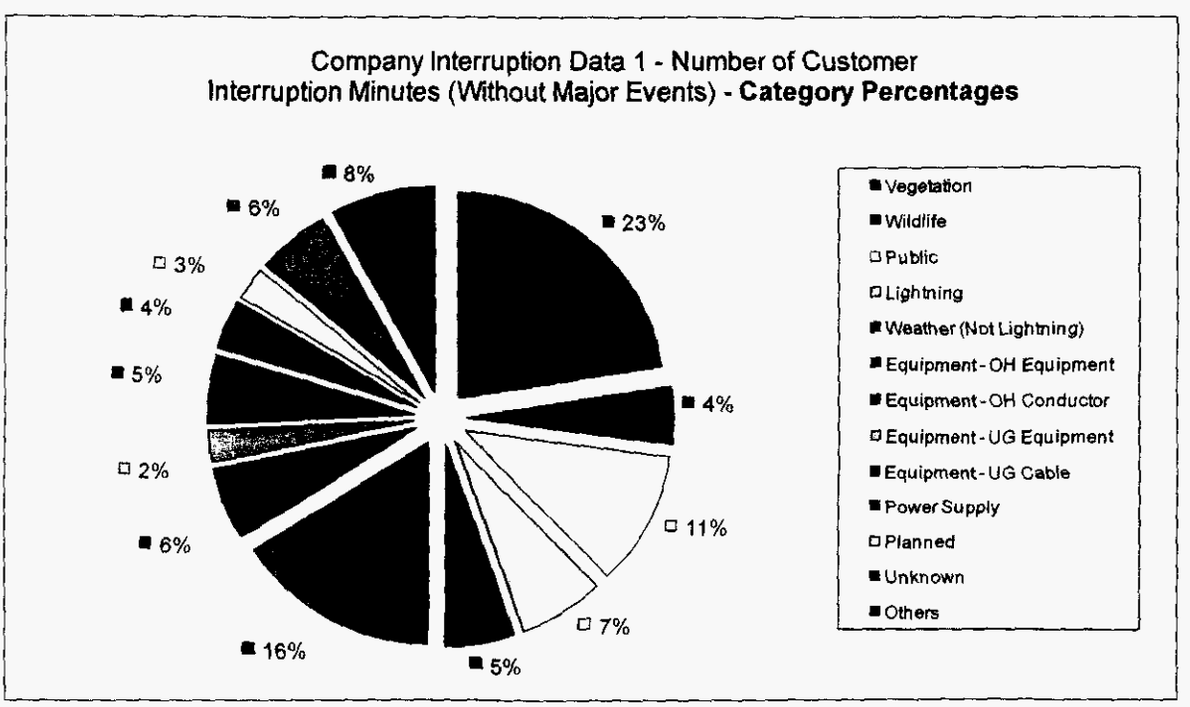
USA Average Number of Outage Causes Excluding Major Events



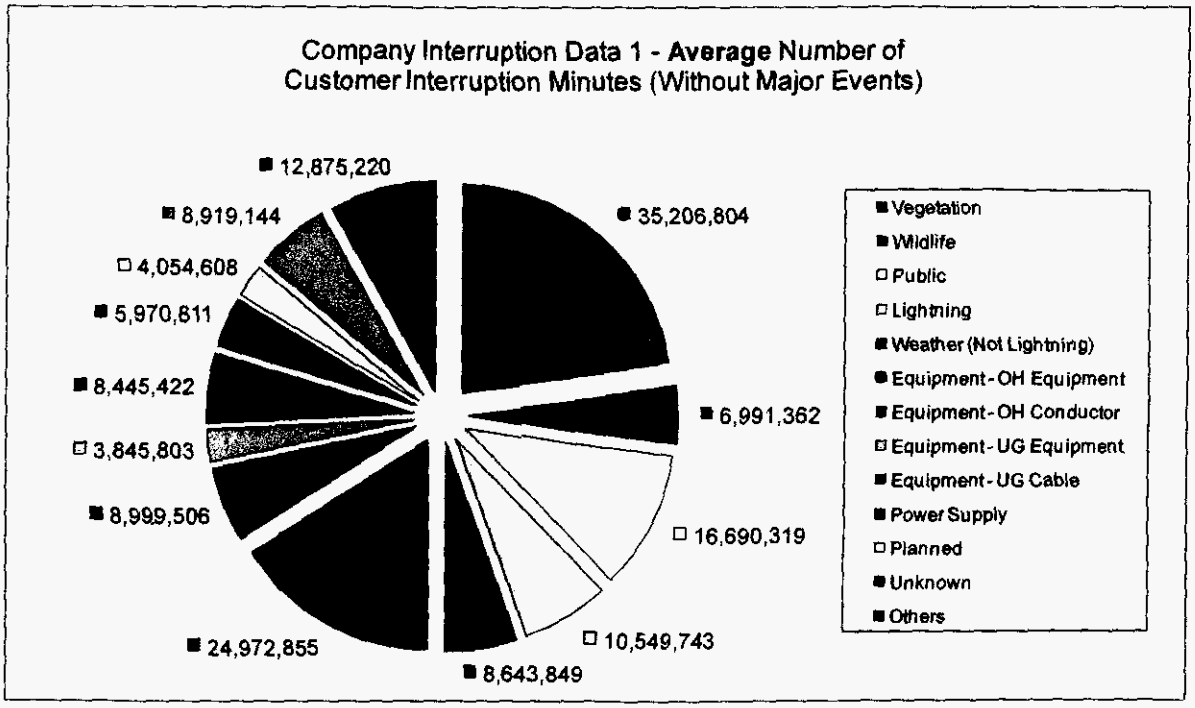
USA Total Number of Outage Causes Excluding Major Events



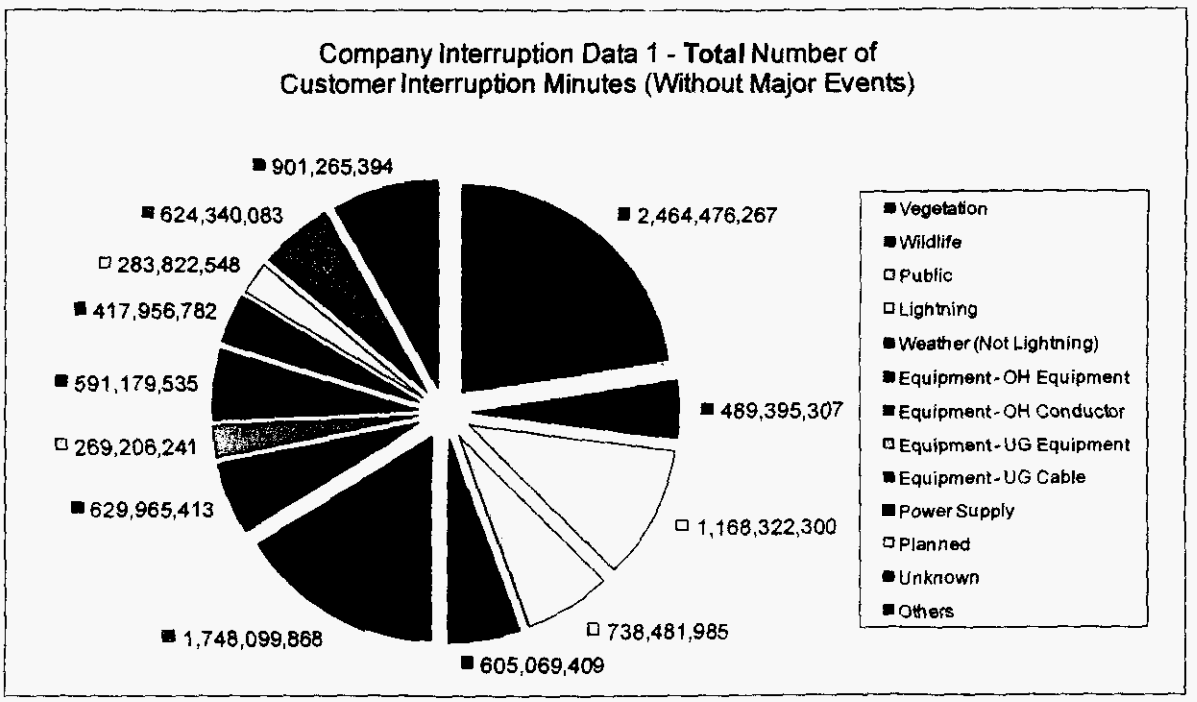
USA Average % of Outage Minutes Excluding Major Events



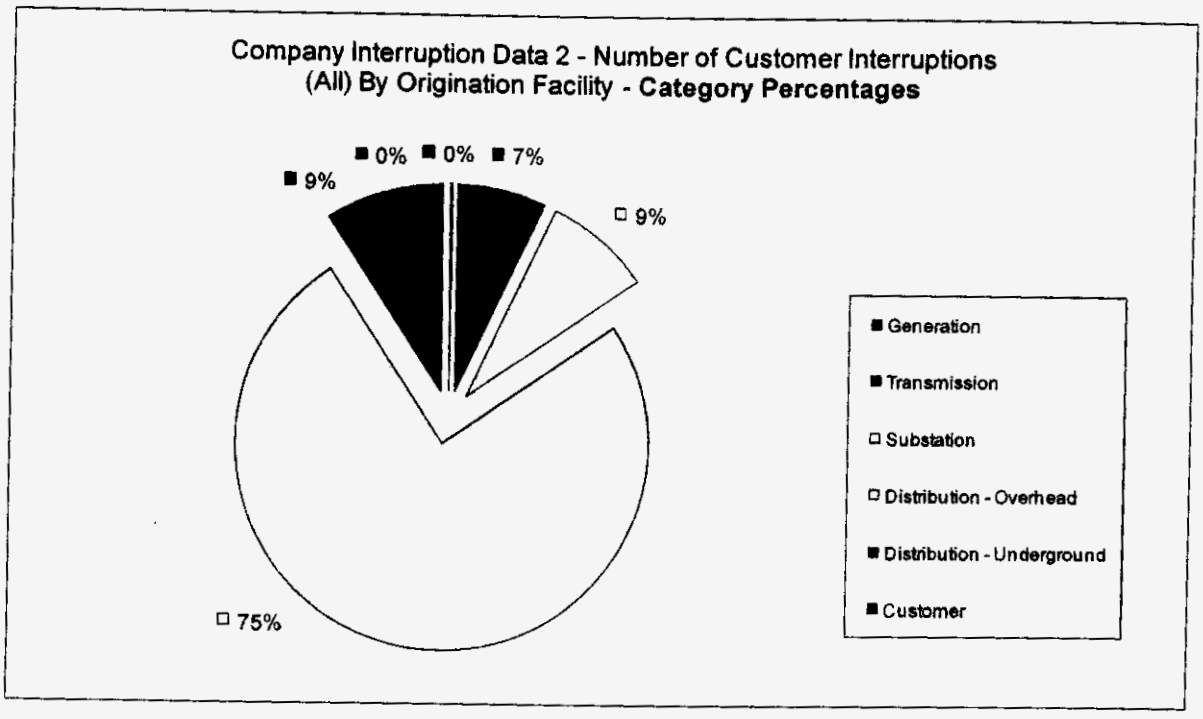
USA Average Outage Minutes Excluding Major Events



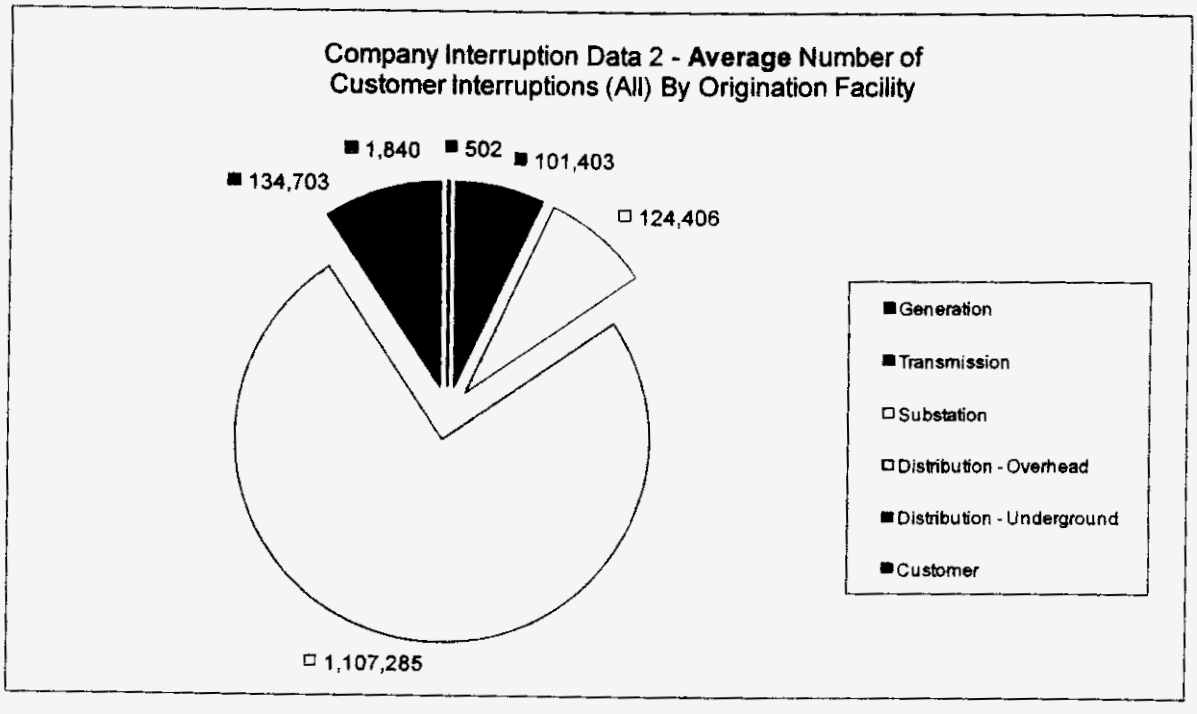
USA Total Outage Minutes Excluding Major Events



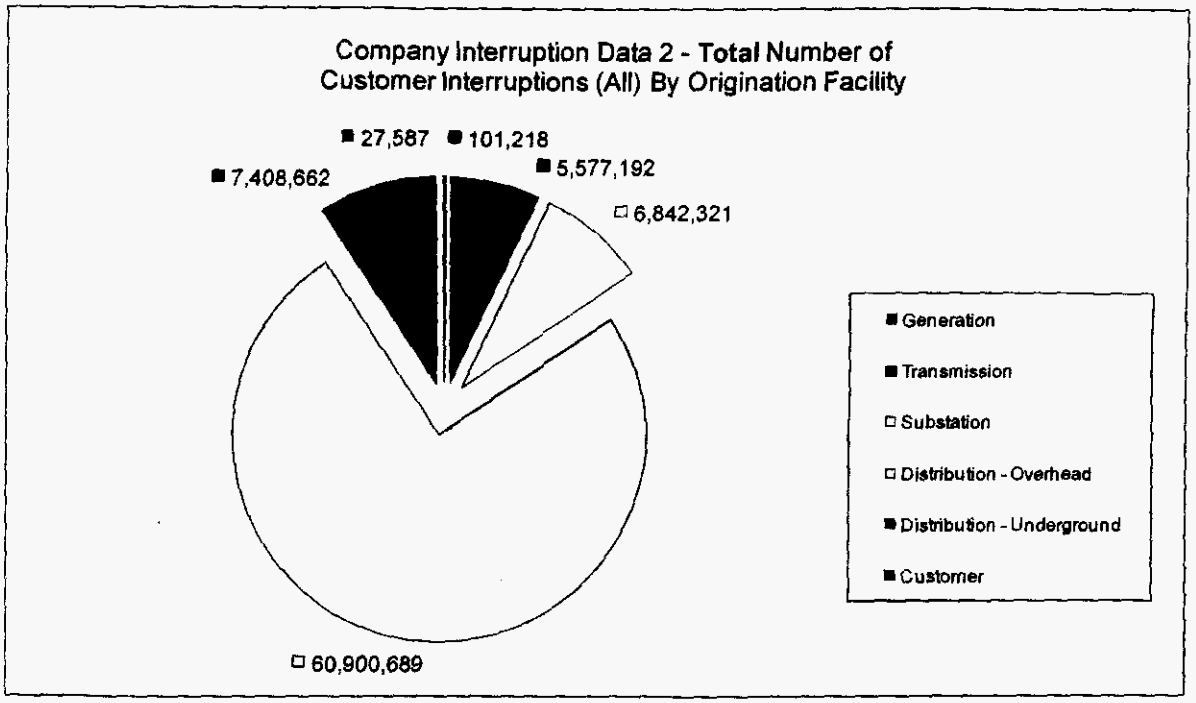
USA % of Outages for All Interruptions by Classification



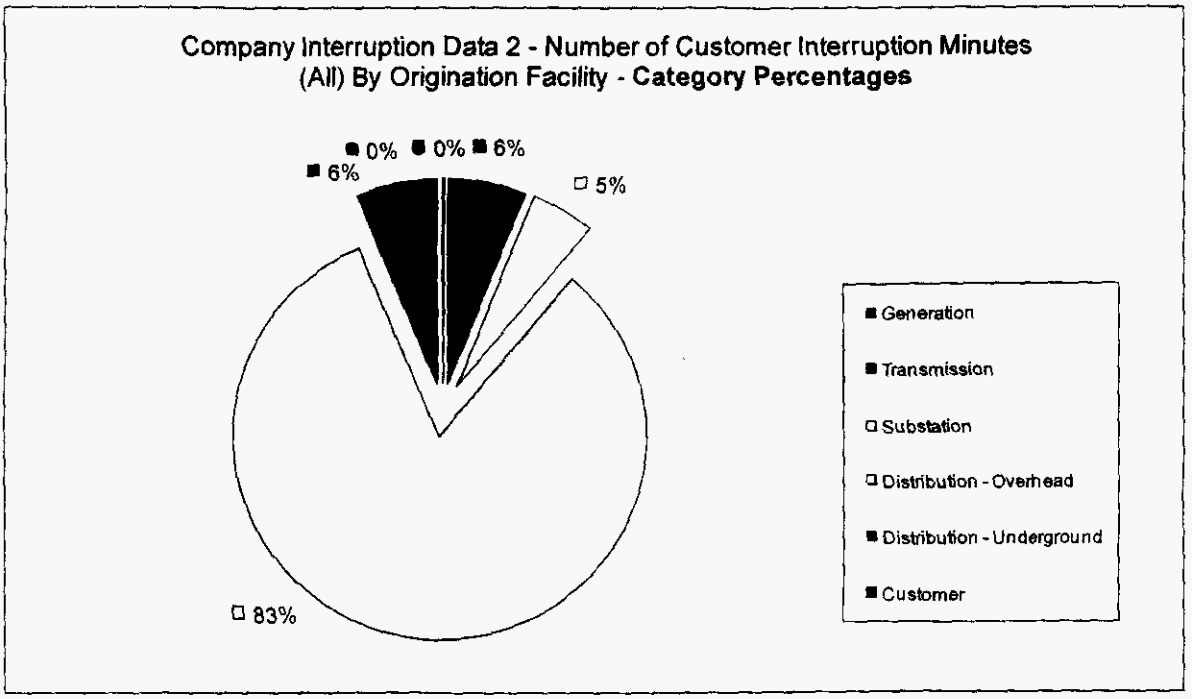
USA Average of Outages for All Interruptions by Classification



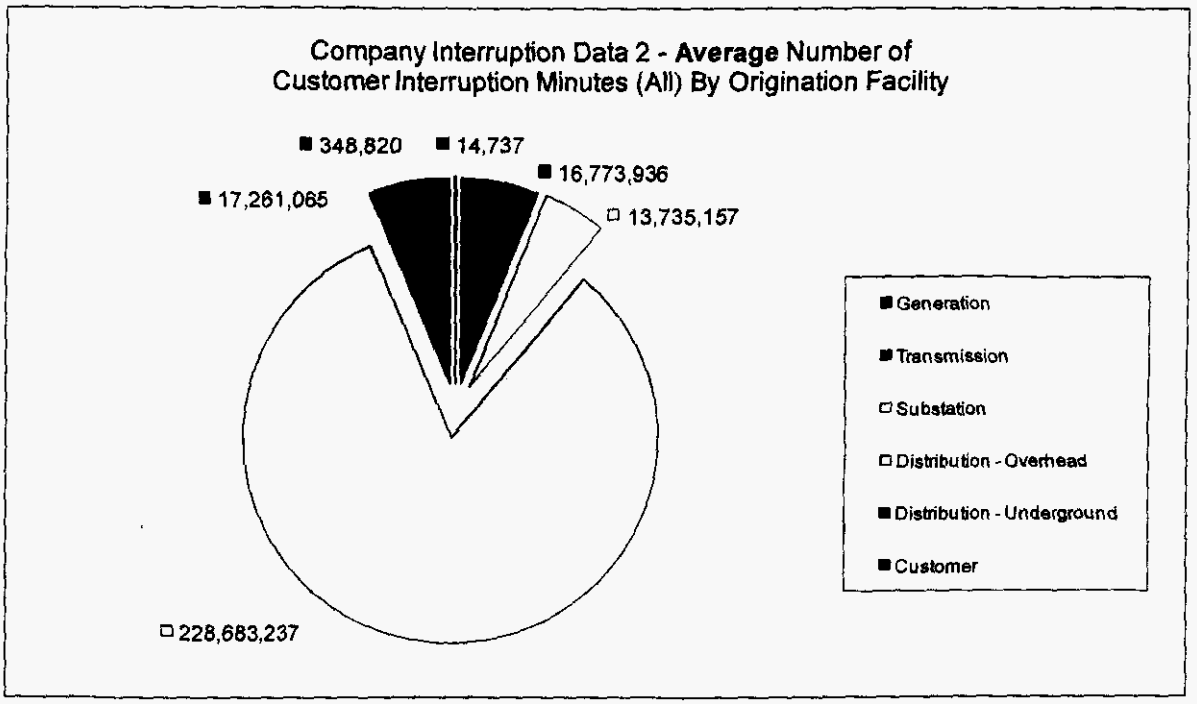
USA Total of Outages for All Interruptions by Classification



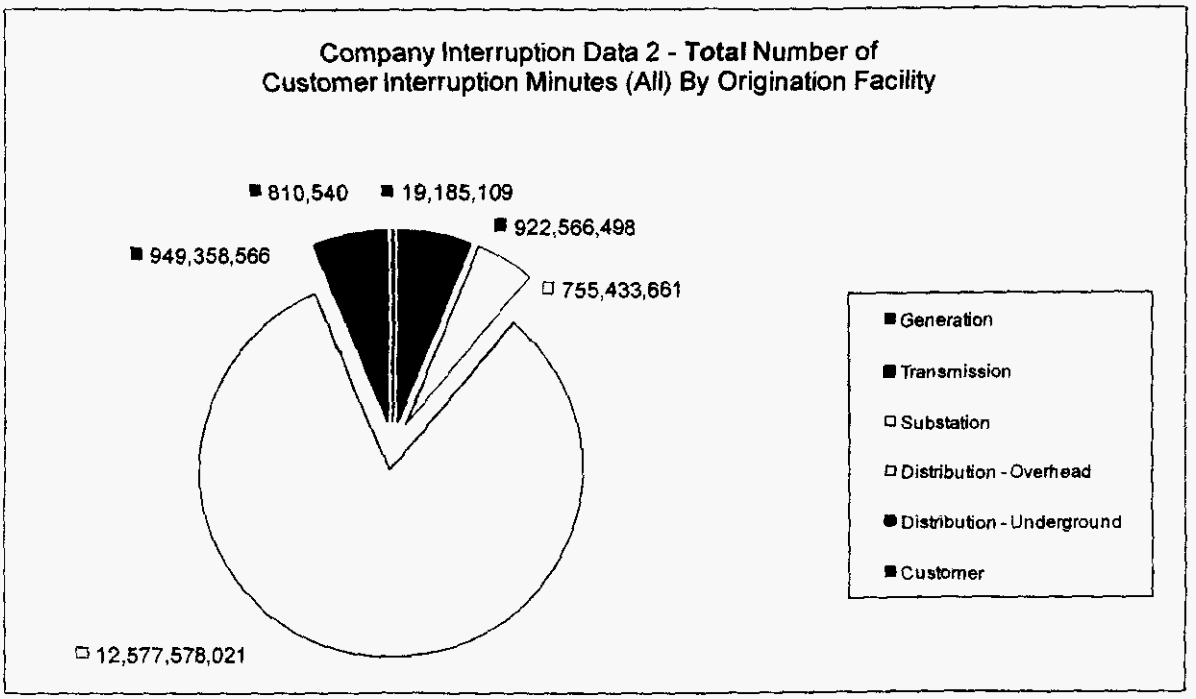
USA Average % of Outage Minutes for All Interruptions by Classification



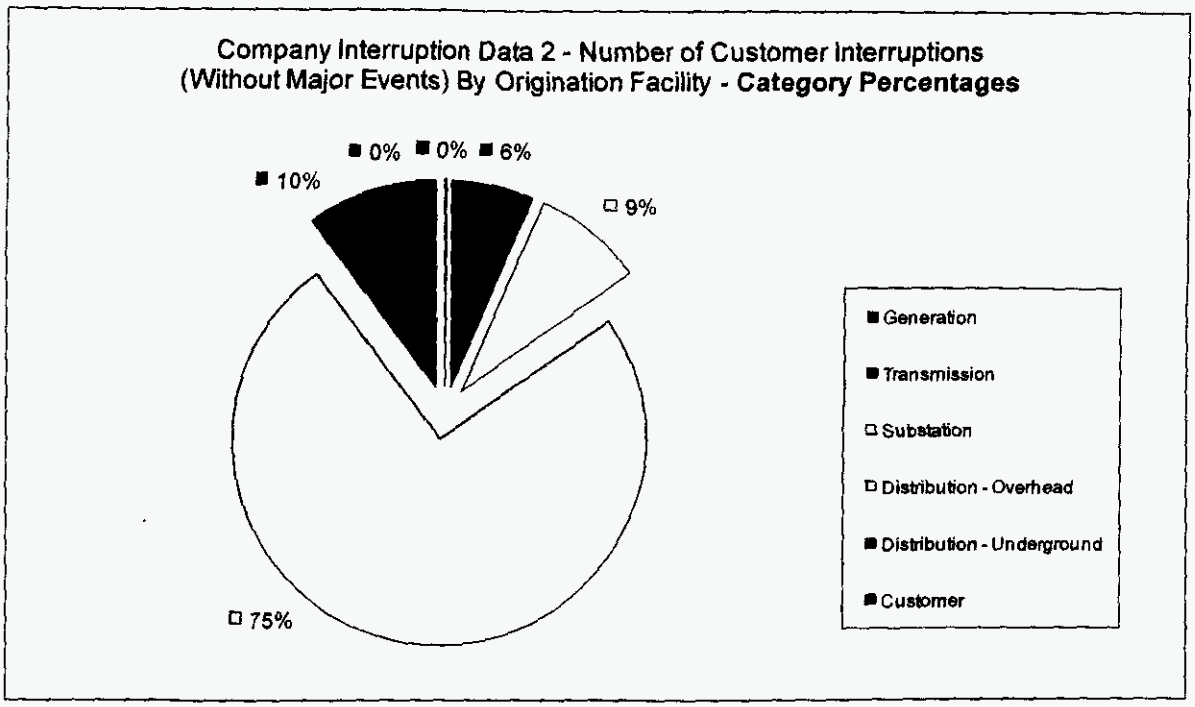
USA Average Outage Minutes of All Interruptions by Classification



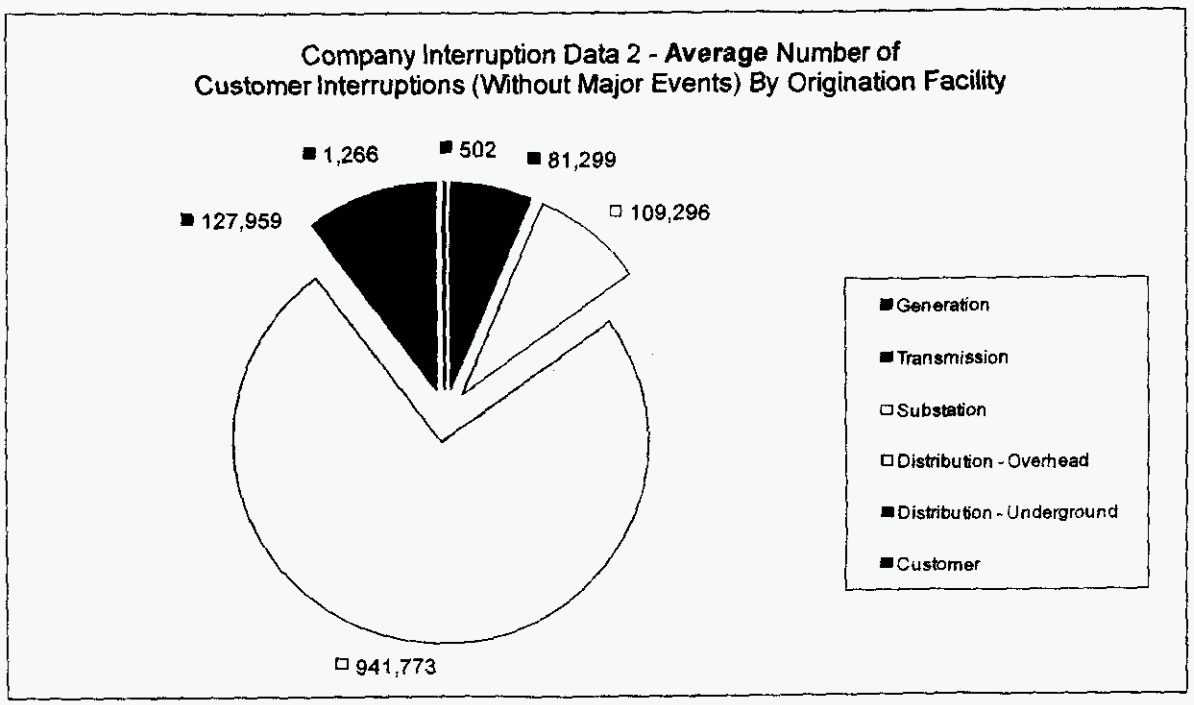
USA Total Outage Minutes of All Interruptions by Classification



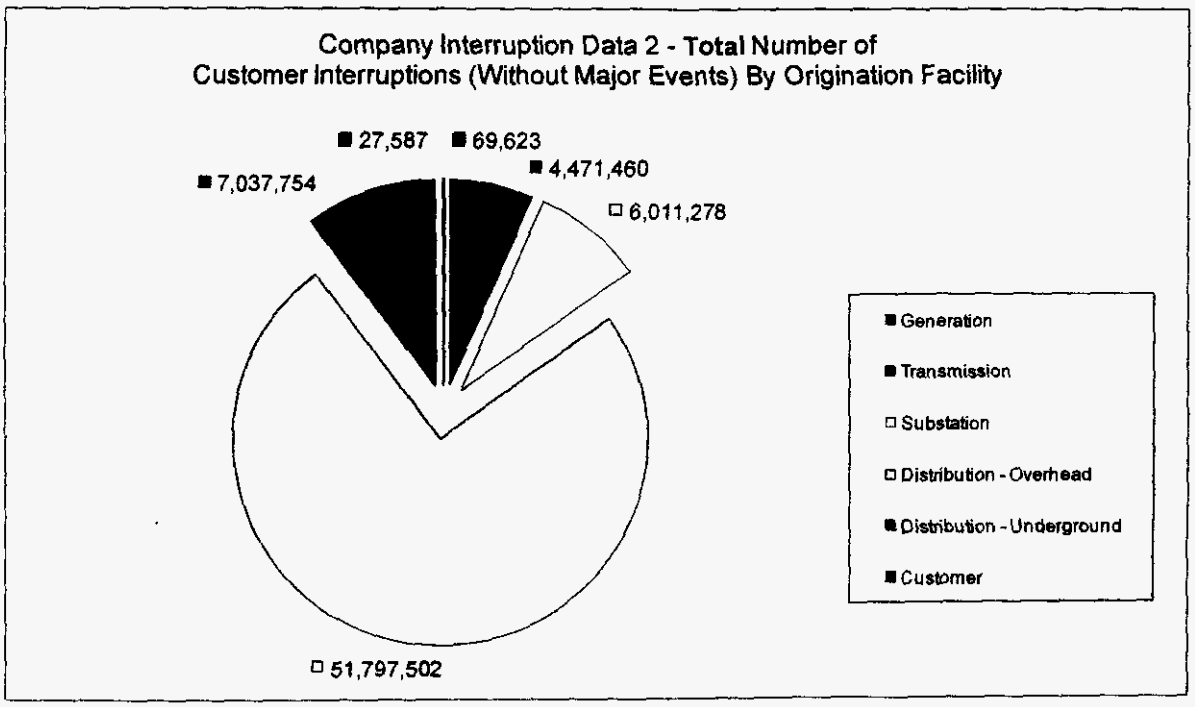
USA % of Outages Excluding Major Event by Classification



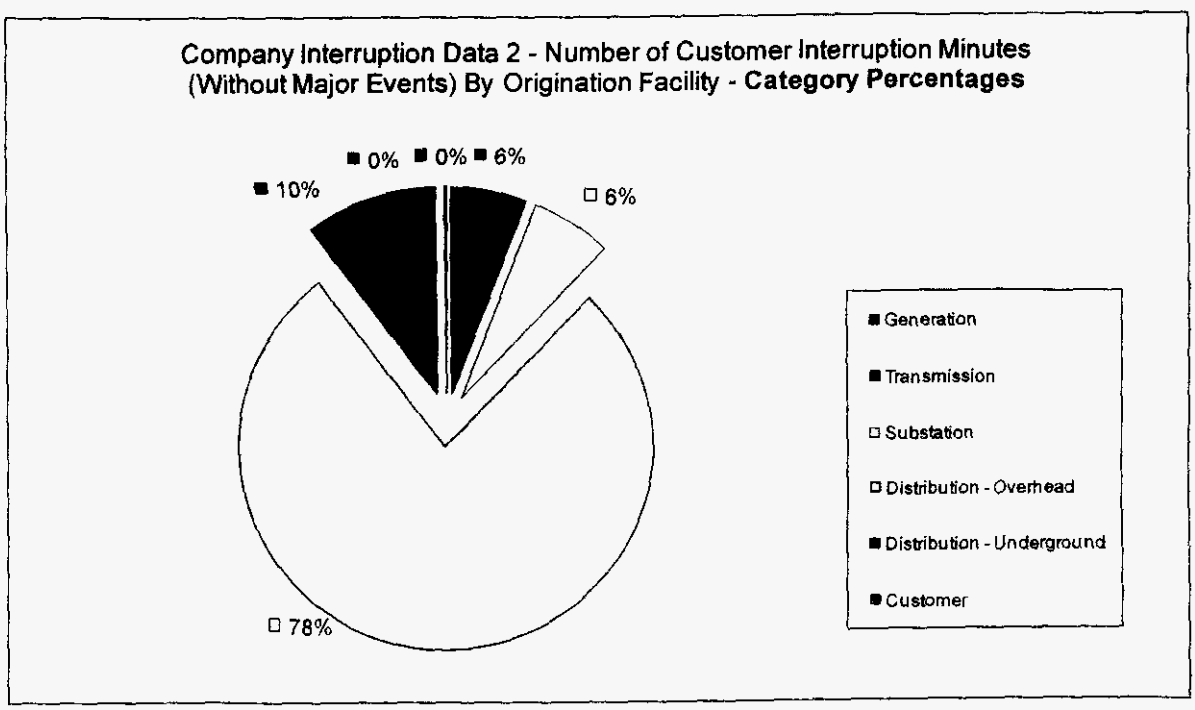
USA Average Outages Excluding Major Events by Classification



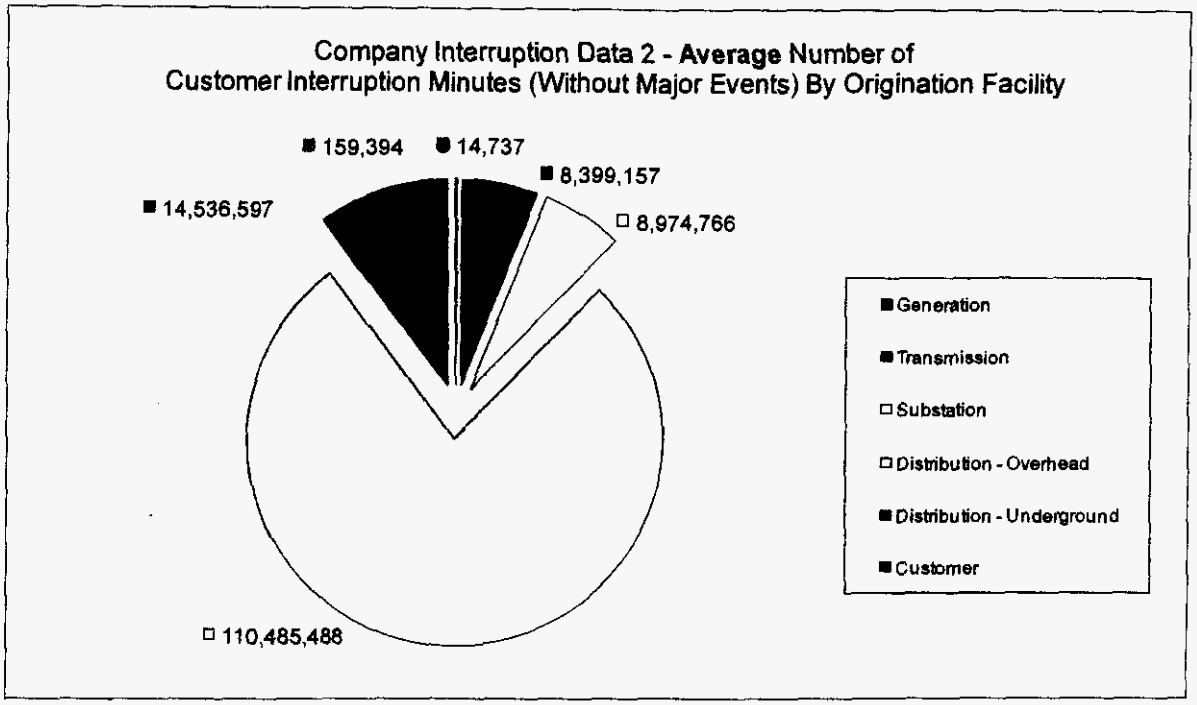
USA Total Outages Excluding Major Events by Classification



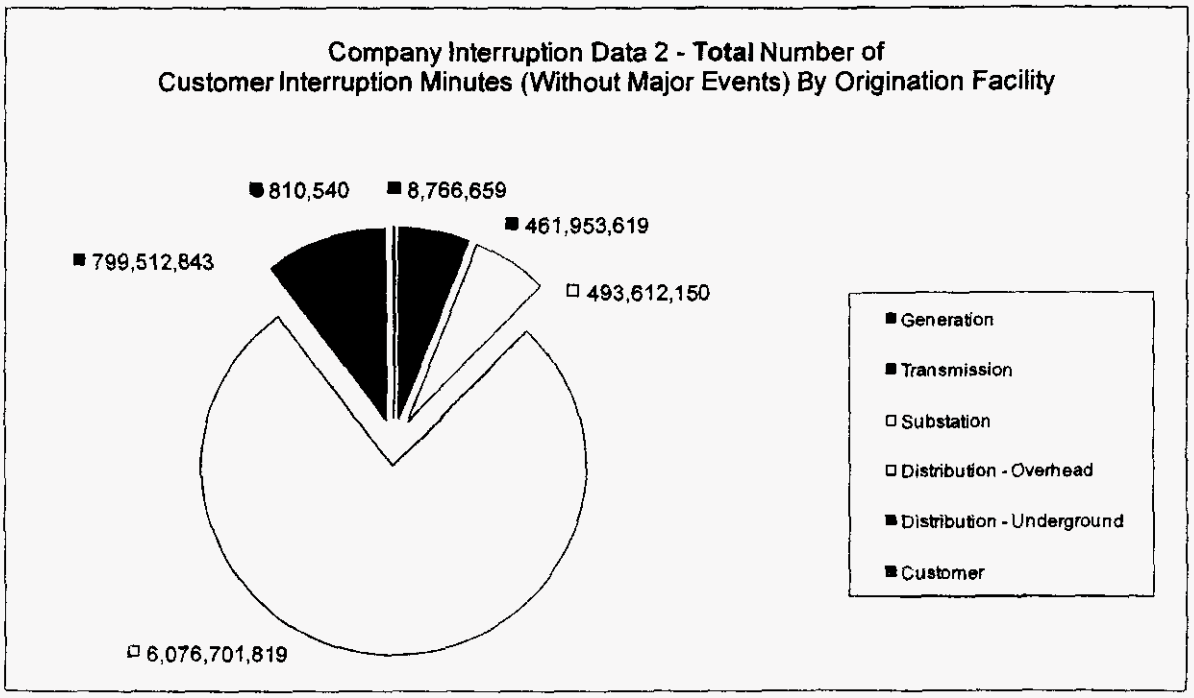
USA % of Outage Minutes Excluding Major Events by Classification



USA Average Outage Minutes Excluding Major Events by Classification



USA Outage Minutes Excluding Major Events by Classification



Company Data for Reliability Indices

Company ID #	Including ALL Interruptions					Excluding MAJOR EVENTS				
	SAIFI	CAIDI	SAIDI	ASAI*	MAIFI	SAIFI	CAIDI	SAIDI	ASAI*	MAIFI
1	2.25	223.54	502.68	99.904	0.00	2.04	174.70	356.10	99.932	0.00
2	2.04	100.76	205.60	99.961	0.00	1.72	84.40	145.50	99.972	0.00
3	2.97	1,323.78	3,934.47	99.251	0.00	1.46	111.30	162.50	99.969	0.00
4	1.83	86.61	158.88	99.970	0.00	1.67	79.90	133.80	99.975	0.00
5	1.20	70.66	84.90	99.984	0.00	1.15	68.20	78.00	99.985	0.00
6	0.00	0.00	0.00	100.000	0.00	0.00	0.00	0.00	100.000	0.00
7	1.45	230.00	333.00	99.937	0.00	1.38	204.00	282.00	99.946	0.00
10	1.49	148.00	220.00	99.958	0.00	1.33	104.00	139.00	99.974	0.00
11	1.81	456.00	824.00	99.843	0.00	1.16	126.00	147.00	99.972	0.00
12	1.81	234.39	424.89	99.919	5.64	1.58	76.75	121.52	99.977	5.64
14	1.11	94.00	105.00	99.980	2.30	1.05	90.00	94.00	99.982	2.25
15	1.64	214.98	352.45	99.933	0.00	1.35	135.20	183.11	99.965	0.00
16	0.00	0.00	0.00	100.000	0.00	0.00	0.00	0.00	100.000	0.00
17	1.51	150.78	227.07	99.957	0.00	1.43	145.71	207.58	99.961	0.00
20	1.98	70.14	152.16	99.971	0.00	1.96	77.14	151.20	99.971	0.00
22	1.83	148.00	272.00	99.948	0.00	1.60	114.00	182.00	99.965	0.00
24	1.57	325.90	512.70	99.902	0.00	1.27	204.40	259.70	99.951	0.00
26	1.02	275.00	280.00	99.947	0.00	0.88	206.00	181.00	99.966	0.00
29	1.55	322.00	499.00	99.905	0.00	1.13	118.00	133.00	99.975	0.00
36	1.91	149.41	285.49	99.946	0.00	1.76	97.54	171.75	99.967	0.00
37	0.00	0.00	0.00	100.000	0.00	0.00	0.00	0.00	100.000	0.00
41	2.18	184.81	402.38	99.923	3.38	1.25	79.62	99.66	99.981	2.18
43	1.55	321.00	498.00	99.905	0.00	1.27	144.00	183.00	99.965	0.00
45	0.76	61.70	46.99	99.991	9.00	0.76	61.70	46.99	99.991	9.00
47	0.94	156.10	146.00	99.972	4.16	0.73	91.10	66.80	99.987	0.00
49	1.03	82.17	84.68	99.984	5.44	0.84	71.49	60.07	99.989	5.05
50	1.22	106.45	129.97	99.975	0.00	1.07	81.99	87.89	99.983	0.00
51	0.42	97.31	41.57	99.992	3.89	0.36	98.50	35.54	99.993	3.67
55	1.48	182.80	271.12	99.948	4.83	1.09	115.32	125.18	99.976	4.27
58	1.26	133.24	167.75	99.968	0.00	1.09	108.41	117.66	99.978	0.00
59	0.00	0.00	0.00	100.000	0.00	0.58	112.11	65.02	99.988	5.36
62	0.49	96.79	47.20	99.991	1.44	0.49	96.79	47.20	99.991	1.44
64	1.18	54.03	63.70	99.988	0.00	1.18	54.03	63.70	99.988	0.00
69	1.64	150.34	247.28	99.953	0.00	1.07	88.52	95.06	99.982	0.00
70	1.14	123.10	140.70	99.973	0.00	1.00	96.40	96.80	99.982	0.00
73	0.98	106.00	104.00	99.980	0.77	0.87	89.00	77.00	99.985	0.72
76	1.84	158.00	291.00	99.945	0.00	1.64	129.00	211.00	99.960	0.00
78	1.24	192.00	238.00	99.955	6.78	1.11	140.00	156.00	99.970	6.23
79	1.54	106.23	163.65	99.969	0.00	1.33	75.11	100.11	99.981	0.00

Company ID #	Including ALL Interruptions					Excluding MAJOR EVENTS				
	SAIFI	CAIDI	SAIDI	ASAI*	MAIFI	SAIFI	CAIDI	SAIDI	ASAI*	MAIFI
81	0.77	81.34	65.11	99.988	0.00	0.77	81.34	62.89	99.988	0.00
82	0.80	85.13	67.76	99.987	1.38	0.76	68.17	51.03	99.990	1.33
83	1.42	220.53	312.29	99.941	0.00	0.97	171.15	166.66	99.968	0.00
84	1.59	77.70	123.61	99.976	10.80	1.42	72.59	103.08	99.980	9.70
87	0.94	96.79	91.01	99.983	0.58	0.94	96.79	91.01	99.983	0.58
88	1.10	137.00	151.30	99.971	1.73	1.06	133.70	141.70	99.973	1.64
89	1.23	72.00	89.00	99.983	0.00	1.23	72.00	89.00	99.983	0.00
90	1.78	57.32	101.76	99.981	0.00	1.71	55.00	94.28	99.982	0.00
94	0.00	0.00	0.00	100.000	0.00	0.00	0.00	0.00	100.000	0.00
95	0.70	103.00	73.00	99.986	0.00	0.69	99.00	68.00	99.987	0.00
100	2.04	466.68	952.15	99.819	0.00	1.36	82.47	112.09	99.979	0.00
102	0.73	116.21	84.90	99.984	0.00	0.63	101.31	63.45	99.988	0.00
103	1.74	129.68	225.54	99.957	0.00	1.70	121.29	205.83	99.961	0.00
105	1.31	162.07	211.58	99.960	0.00	0.92	123.15	113.78	99.978	0.00
107	1.70	121.85	206.72	99.961	0.00	1.70	121.80	206.70	99.961	0.00
108	1.41	266.24	376.39	99.928	0.00	1.13	128.80	145.80	99.972	0.00
109	2.41	170.79	412.40	99.922	0.00	2.28	146.90	334.20	99.936	0.00
110	0.98	105.75	103.90	99.980	0.00	0.98	105.80	103.90	99.980	0.00
111	1.46	157.15	229.82	99.956	0.00	1.43	147.90	211.50	99.960	0.00
112	1.88	164.43	309.13	99.941	0.00	1.88	164.40	309.10	99.941	0.00
119	1.40	149.00	209.00	99.960	4.69	1.14	116.00	132.00	99.975	4.22
120	1.90	180.00	343.00	99.935	0.00	1.52	135.00	205.00	99.961	0.00
121	1.24	150.00	186.00	99.965	0.00	1.22	140.00	170.00	99.968	0.00
123	1.31	115.67	151.31	99.971	0.00	1.23	103.61	127.59	99.976	0.00
124	0.91	87.21	79.73	99.985	0.00	0.80	70.06	55.86	99.989	0.00
126	1.56	226.30	352.15	99.933	0.00	1.17	96.37	112.62	99.979	0.00
127	1.43	163.78	235.02	99.955	0.00	1.10	111.45	122.70	99.977	0.00
128	1.13	102.07	115.45	99.978	0.00	1.03	89.61	91.89	99.983	0.00
129	1.06	140.64	149.18	99.972	0.00	0.77	70.72	54.75	99.990	0.00
132	1.60	123.00	196.00	99.963	0.00	1.46	106.00	155.00	99.971	0.00
133	2.08	169.00	351.00	99.933	0.00	1.75	120.00	210.00	99.960	0.00
134	1.86	170.00	317.00	99.940	0.00	1.69	148.00	252.00	99.952	0.00

*Note: ASAI was calculated this year from the data provided.

$$ASAI = \frac{8760 - SAIDI}{8760}$$

(24 Hours/day x 365 Days/Year = 8,760 Hours/Year)
(NOTE: SAIDI is in Hours or SAIDI(minutes)/60)

Company Data for Reliability Indices (Distribution System)

Company ID #	Including ALL Interruptions					Excluding MAJOR EVENTS				
	SAIFI	CAIDI	SAIDI	ASAI*	MAIFI	SAIFI	CAIDI	SAIDI	ASAI*	MAIFI
1	1.89	239.20	451.20	99.914	0.00	1.71	185.00	316.00	99.940	0.00
2	1.54	104.20	159.90	99.970	0.00	1.31	91.80	120.30	99.977	0.00
3	2.44	1,557.60	3,804.30	99.276	0.00	1.11	121.80	134.60	99.974	0.00
4	1.53	90.90	139.30	99.973	0.00	1.40	83.70	117.40	99.978	0.00
5	0.62	77.00	47.60	99.991	0.00	0.60	75.10	44.90	99.991	0.00
6	1.95	111.38	217.45	99.959	0.00	1.49	102.72	153.05	99.971	0.00
7	1.26	238.00	300.00	99.943	0.00	1.20	211.00	253.00	99.952	0.00
10	1.41	153.00	217.00	99.959	0.00	1.25	108.00	135.00	99.974	0.00
11	1.80	457.00	822.00	99.844	0.00	1.16	127.00	146.00	99.972	0.00
12	0.00	0.00	0.00	100.000	0.00	0.00	0.00	0.00	100.000	0.00
14	0.83	102.00	84.00	99.984	0.00	0.82	103.00	84.00	99.984	0.00
15	1.63	214.82	352.31	99.933	0.00	1.34	135.53	182.97	99.965	0.00
16	0.92	80.00	73.30	99.986	1.74	0.58	74.00	50.21	99.990	1.74
17	1.38	158.34	218.98	99.958	0.00	1.30	153.21	199.48	99.962	0.00
20	0.00	0.00	0.00	100.000	0.00	1.80	78.33	141.00	99.973	0.00
22	1.68	147.00	247.00	99.953	0.00	1.47	112.00	166.00	99.968	0.00
24	1.31	346.30	453.00	99.914	0.00	1.05	210.40	220.90	99.958	0.00
26	1.02	275.00	280.00	99.947	0.00	0.88	206.00	181.00	99.966	0.00
29	1.24	322.00	398.00	99.924	0.00	0.90	118.00	106.00	99.980	0.00
36	1.80	143.99	259.25	99.951	0.00	1.66	99.10	164.87	99.969	0.00
37	0.00	0.00	0.00	100.000	0.00	1.21	60.30	73.20	99.986	11.40
41	2.18	184.81	402.38	99.923	3.38	1.25	79.62	99.66	99.981	2.18
43	1.54	321.00	495.00	99.906	0.00	1.26	143.00	181.00	99.966	0.00
45	0.68	63.14	43.20	99.992	0.00	0.68	63.14	43.20	99.992	0.00
47	0.91	159.00	144.60	99.972	4.16	0.71	92.50	65.30	99.988	0.00
49	0.95	87.04	82.55	99.984	5.17	0.79	75.05	59.05	99.989	4.82
50	1.06	111.25	118.13	99.978	0.00	0.94	85.65	80.60	99.985	0.00
51	0.42	97.31	41.57	99.992	3.89	0.36	98.50	35.54	99.993	3.67
55	0.00	0.00	0.00	100.000	0.00	0.00	0.00	0.00	100.000	0.00
58	0.94	150.48	141.79	99.973	0.00	0.86	117.91	100.91	99.981	0.00
59	0.00	0.00	0.00	100.000	0.00	0.58	112.11	65.02	99.988	5.36
62	0.46	99.49	45.30	99.991	1.33	0.46	99.49	45.30	99.991	1.33
64	0.57	74.98	43.07	99.992	0.00	0.54	74.98	43.07	99.992	0.00
69	1.52	157.69	240.33	99.954	0.00	0.98	92.62	90.36	99.983	0.00
70	1.05	123.30	129.90	99.975	0.00	0.94	96.00	90.10	99.983	0.00
73	0.98	106.00	104.00	99.980	0.77	0.87	89.00	77.00	99.985	0.72
76	1.72	157.00	270.00	99.949	0.00	1.53	128.00	195.00	99.963	0.00
78	1.13	200.00	226.00	99.957	0.00	1.01	143.00	144.00	99.973	0.00

Company ID #	Including ALL Interruptions					Excluding MAJOR EVENTS				
	SAIFI	CAIDI	SAIDI	ASAI*	MAIFI	SAIFI	CAIDI	SAIDI	ASAI*	MAIFI
79	1.32	115.08	151.33	99.971	0.00	1.11	79.29	87.96	99.983	0.00
81	0.00	0.00	55.46	99.989	0.00	0.00	0.00	53.24	99.990	0.00
82	0.00	0.00	0.00	100.000	0.00	0.00	0.00	0.00	100.000	0.00
83	1.22	230.32	281.57	99.946	0.00	0.87	170.65	148.17	99.972	0.00
84	1.48	80.03	118.45	99.977	10.13	1.32	74.64	98.36	99.981	9.05
87	0.81	100.08	81.51	99.984	0.36	0.81	100.08	81.51	99.984	0.36
88	1.08	148.00	149.00	99.972	1.67	1.04	134.00	139.40	99.973	1.58
89	0.86	67.00	58.00	99.989	0.00	0.86	67.00	58.00	99.989	0.00
90	0.00	0.00	0.00	100.000	0.00	0.00	0.00	0.00	100.000	0.00
94	0.68	167.00	114.00	99.978	0.00	0.68	167.00	114.00	99.978	0.00
95	0.70	104.00	73.00	99.986	0.00	0.69	0.00	0.00	100.000	0.00
100	1.73	521.95	904.04	99.828	0.00	1.12	85.64	95.99	99.982	0.00
102	0.73	116.72	84.62	99.984	0.00	0.62	101.78	63.16	99.988	0.00
103	1.52	138.85	211.72	99.960	0.00	1.50	129.79	194.12	99.963	0.00
105	0.79	167.40	131.59	99.975	0.00	0.61	128.93	78.29	99.985	0.00
107	1.50	121.00	181.70	99.965	0.00	1.50	121.00	181.70	99.965	0.00
108	1.10	304.90	334.30	99.936	0.00	0.85	135.90	114.90	99.978	0.00
109	2.14	177.50	380.20	99.928	0.00	2.03	149.20	302.60	99.942	0.00
110	0.98	105.70	103.20	99.980	0.00	0.98	105.70	103.20	99.980	0.00
111	1.16	156.80	181.30	99.966	0.00	1.13	145.90	164.40	99.969	0.00
112	1.75	166.40	292.00	99.944	0.00	1.75	166.40	292.00	99.944	0.00
119	0.00	0.00	0.00	100.000	0.00	0.00	0.00	0.00	100.000	0.00
120	1.45	206.00	301.00	99.943	0.00	1.09	162.00	177.00	99.966	0.00
121	1.18	156.00	184.00	99.965	0.00	1.16	145.00	168.00	99.968	0.00
123	1.11	113.18	125.24	99.976	0.00	1.03	98.80	101.84	99.981	0.00
124	0.82	92.18	75.70	99.986	0.00	0.70	73.60	51.82	99.990	0.00
126	1.41	242.68	341.82	99.935	0.00	1.04	100.68	104.99	99.980	0.00
127	1.17	167.24	196.05	99.963	0.00	0.93	115.06	107.19	99.980	0.00
128	1.10	103.53	113.57	99.978	0.00	1.00	90.84	91.19	99.983	0.00
129	0.84	138.95	117.08	99.978	0.00	0.65	74.97	48.69	99.991	0.00
132	1.53	121.00	184.00	99.965	0.00	1.39	103.00	143.00	99.973	0.00
133	1.84	170.00	313.00	99.940	0.00	1.56	121.00	189.00	99.964	0.00
134	1.77	170.00	301.00	99.943	0.00	1.60	148.00	236.00	99.955	0.00

*Note: ASAI was calculated this year from the data provided.

ASAI = $\frac{8760 - SAIDI}{8760}$ (24 Hours/day x 365 Days/Year = 8,760 Hours/Year)
(NOTE: SAIDI is in Hours or SAIDI(minutes)/60)

Company Data for Reliability Indices (Transmission System)

1	0.35	144.00	51.00	99.990	0.00	0.32	123.00	39.60	99.992	0.00
2	0.51	90.00	45.70	99.991	0.00	0.41	61.00	25.20	99.995	0.00
3	0.53	246.00	130.20	99.975	0.00	0.36	78.00	27.90	99.995	0.00
4	0.30	65.00	19.50	99.996	0.00	0.27	60.00	16.40	99.997	0.00
5	0.58	64.00	37.30	99.993	0.00	0.55	60.60	33.10	99.994	0.00
6	0.00	0.00	0.00	100.000	0.00	0.00	0.00	0.00	100.000	0.00
7	0.18	179.00	33.00	99.994	0.00	0.18	163.00	29.50	99.994	0.00
10	0.07	44.00	3.00	99.999	0.00	0.07	44.00	3.00	99.999	0.00
11	0.00	25.00	0.00	100.000	0.00	0.00	11.00	0.00	100.000	0.00
12	0.00	0.00	0.00	100.000	0.00	0.00	0.00	0.00	100.000	0.00
14	0.28	72.00	20.00	99.996	0.00	0.23	87.00	20.00	99.996	0.00
15	0.01	26.18	0.14	100.000	0.00	0.01	26.18	0.14	100.000	0.00
16	0.00	0.00	0.00	100.000	0.00	0.00	0.00	0.00	100.000	0.00
17	0.12	65.79	8.09	99.998	0.00	0.12	65.79	8.09	99.998	0.00
20	0.00	0.00	0.00	100.000	0.00	0.16	63.75	10.20	99.998	0.00
22	0.06	189.00	10.00	99.998	0.00	0.04	89.00	3.00	99.999	0.00
24	0.27	225.40	59.70	99.989	0.00	0.22	175.80	38.80	99.993	0.00
26	0.00	0.00	0.00	100.000	0.00	0.00	0.00	0.00	100.000	0.00
29	0.31	322.00	101.00	99.981	0.00	0.23	118.00	27.00	99.995	0.00
36	0.11	237.96	26.24	99.995	0.00	0.10	70.83	6.88	99.999	0.00
37	0.00	0.00	0.00	100.000	0.00	0.23	13.00	3.00	99.999	0.80
41	0.00	0.00	0.00	100.000	0.00	0.00	0.00	0.00	100.000	0.00
43	0.01	243.00	2.00	100.000	0.00	0.00	416.00	1.00	100.000	0.00
45	0.08	48.94	3.78	99.999	0.00	0.08	48.94	3.78	99.999	0.00
47	0.03	53.70	1.41	100.000	0.00	0.03	53.70	1.41	100.000	0.00
49	0.08	25.96	2.13	100.000	0.28	0.05	18.90	1.01	100.000	0.23
50	0.16	74.42	11.84	99.998	0.00	0.13	55.64	7.29	99.999	0.00
51	0.00	0.00	0.00	100.000	0.00	0.00	0.00	0.00	100.000	0.00
55	0.00	0.00	0.00	100.000	0.00	0.00	0.00	0.00	100.000	0.00
58	0.31	81.20	25.52	99.995	0.00	0.23	72.09	16.37	99.997	0.00
59	0.00	0.00	0.00	100.000	0.00	0.00	0.00	0.00	100.000	0.00
62	0.03	59.90	1.90	100.000	0.11	0.03	59.90	1.90	100.000	0.11
64	0.57	34.32	19.45	99.996	0.00	0.57	34.32	19.45	99.996	0.00
69	0.12	57.56	6.95	99.999	0.00	0.10	47.84	4.70	99.999	0.00
70	0.09	121.10	10.90	99.998	0.00	0.07	102.40	6.70	99.999	0.00
73	0.00	0.00	0.00	100.000	0.00	0.00	0.00	0.00	100.000	0.00
76	0.03	186.00	6.00	99.999	0.00	0.02	89.00	2.00	100.000	0.00
78	0.10	112.00	12.00	99.998	0.00	0.10	115.00	11.00	99.998	0.00

79	0.23	54.62	12.32	99.998	0.00	0.23	54.35	12.14	99.998	0.00
81	0.00	0.00	9.65	99.998	0.00	0.00	0.00	9.65	99.998	0.00
82	0.00	0.00	0.00	100.000	0.00	0.00	0.00	0.00	100.000	0.00
83	0.19	158.71	30.72	99.994	0.00	0.11	175.27	18.49	99.996	0.00
84	0.01	38.98	0.29	100.000	0.45	0.00	22.33	0.10	100.000	0.44
87	0.12	74.51	9.06	99.998	0.22	0.12	70.51	9.06	99.998	0.22
88	0.02	110.50	2.32	100.000	0.04	0.02	110.50	2.32	100.000	0.04
89	0.26	96.00	25.00	99.995	0.00	0.26	96.00	25.00	99.995	0.00
90	0.21	7.25	1.52	100.000	0.00	0.21	7.25	1.51	100.000	0.00
94	0.00	0.00	0.00	100.000	0.00	0.00	0.00	0.00	100.000	0.00
95	0.00	0.00	0.00	100.000	0.00	0.00	0.00	0.00	100.000	0.00
100	0.31	156.10	48.11	99.991	0.00	0.24	67.56	16.10	99.997	0.00
102	0.01	50.14	0.28	100.000	0.00	0.01	50.14	0.28	100.000	0.00
103	0.13	76.12	9.71	99.998	0.00	0.11	66.30	7.60	99.999	0.00
105	0.32	177.27	57.28	99.989	0.00	0.18	128.90	23.66	99.995	0.00
107	0.20	128.00	25.10	99.995	0.00	0.20	128.00	25.10	99.995	0.00
108	0.32	133.00	42.10	99.992	0.00	0.29	108.00	30.90	99.994	0.00
109	0.27	118.00	32.20	99.994	0.00	0.25	128.00	31.60	99.994	0.00
110	0.01	121.00	0.70	100.000	0.00	0.01	121.00	0.70	100.000	0.00
111	0.31	159.00	48.50	99.991	0.00	0.30	155.00	47.10	99.991	0.00
112	0.13	136.40	17.10	99.997	0.00	0.13	136.40	17.10	99.997	0.00
119	0.00	0.00	0.00	100.000	0.00	0.00	0.00	0.00	100.000	0.00
120	0.00	0.00	0.00	100.000	0.00	0.00	0.00	0.00	100.000	0.00
121	0.06	36.00	2.00	100.000	0.00	0.06	36.00	2.00	100.000	0.00
123	0.20	129.34	26.07	99.995	0.00	0.20	128.30	25.75	99.995	0.00
124	0.09	43.31	4.03	99.999	0.00	0.09	43.31	4.03	99.999	0.00
126	0.15	69.99	10.33	99.998	0.00	0.13	60.65	7.63	99.999	0.00
127	0.26	148.33	38.97	99.993	0.00	0.17	91.61	15.52	99.997	0.00
128	0.03	55.22	1.89	100.000	0.00	0.02	32.68	0.71	100.000	0.00
129	0.22	147.18	32.10	99.994	0.00	0.12	48.58	6.06	99.999	0.00
132	0.02	189.00	3.00	99.999	0.00	0.02	189.00	3.00	99.999	0.00
133	0.09	189.00	18.00	99.997	0.00	0.05	55.00	3.00	99.999	0.00
134	0.01	95.00	1.00	100.000	0.00	0.01	95.00	1.00	100.000	0.00

*Note: ASAI was calculated this year from the data provided.

ASAI = $\frac{8760 - SAIDI}{8760}$ (24 Hours/day x 365 Days/Year = 8,760 Hours/Year)
(NOTE: SAIDI is in Hours or SAIDI(minutes)/60)

Company Outage Data (Interruption Data 1)

Company ID #	Company Interruption Data 1 - Number of Customer Interruptions (All Interruptions)					
	Vegetation	Wildlife	Public	Lightning	Weather (Not Lightning)	Equipment - OH Equipment
1	630,706	70,281	213,737	76,664	110,839	449,444
2	167,256	70,012	123,312	134,403	154,908	193,541
3	209,987	64,987	61,566	104,212	648,512	104,436
4	258,935	81,506	76,929	104,896	45,733	71,010
5	17,116	20,915	11,136	18,103	23,141	21,203
6	705,903	131,053	227,199	473,952	291,134	404,654
7	0	0	0	0	0	0
10	118,006	30,863	53,245	0	0	180,813
11	701,237	49,204	139,851	0	0	437,453
12	408	2,048	287	1,032	2,104	1,451
14	14,834	16,019	123,630	22,311	114,501	285,850
15	428,350	48,831	172,582	74,591	182,353	101,775
16	69	249	115	301	87	316
17	2,429	1,070	381	509	253	760
20	0	0	0	0	0	0
22	377,675	176,187	280,197	148,271	130,461	252,315
24	856,803	85,823	201,093	186,870	90,730	294,187
26	404,209	87,166	61,815	74,038	293,425	431,634
29	969,964	334,247	729,520	114,583	0	1,171,600
36	927,942	265,423	552,179	648,734	293,134	717,184
37	0	0	0	0	0	0
41	102	28	0	0	0	0
43	77,943	84,387	59,636	0	0	290,039
45	50,872	11,901	39,406	21,201	8,855	101,792
47	139,059	13,414	36,156	49,136	36,521	53,220
49	213,571	40,530	0	76,070	0	167,182
50	171,177	70,021	59,587	132,795	3,318	147,190
51	12,019	2,312	842	11,121	0	2,378
55	31,610	8,531	10,992	0	79,740	35,205
58	992	1,176	325	613	1,451	993
59	0	0	0	0	0	0
62	4,633	10,862	84,175	8,048	17,999	83,556
64	126	232	61	125	68	189

Company ID #	Company Interruption Data 1 - Number of Customer Interruptions (All Interruptions)					
	Vegetation	Wildlife	Public	Lightning	Weather (Not Lightning)	Equipment - OH Equipment
69	1,284,778	196,431	375,255	1,138,040	177,719	471,714
70	111,955	32,156	36,806	18,518	0	58,096
73	489,154	33,152	139,783	132,029	21,214	219,367
76	806,463	223,528	341,626	193,195	193,770	302,273
78	607,218	82,631	203,228	209,889	239,058	137,905
79	680,397	66,007	231,893	0	19,044	231,934
81	224	139	97	155	408	132
82	232,906	99,376	146,352	123,959	44,696	92,934
83	818,379	92,812	143,588	8,429	0	96,647
84	692,812	87,949	280,225	591,029	56,684	527,149
87	29,323	35,264	38,774	5,799	2,285	74,268
88	101,807	1,096,845	2,259,516	236,587	1,627,990	1,297,292
89	24,713	13,602	19,579	14,266	11,839	7,256
90	200,233	62,850	11,772	46,280	77,513	474,593
94	146	60	12	40	35	182
95	277	459	78	81	0	212
100	216,287	109,787	43,970	79,861	281,049	170,177
102	146,580	60,452	65,481	89,343	48,713	122,354
103	270,682	6,161	65,103	16,031	84,357	89,605
105	374,962	57,181	91,303	128,860	160,011	144,780
107	188,301	65,281	149,160	72,407	52,781	259,820
108	190,303	40,814	81,748	61,796	72,749	125,264
109	142,146	8,071	32,316	18,343	13,335	73,505
110	18,390	3,423	2,267	3,109	2,227	10,660
111	239,929	46,122	107,677	62,748	62,232	224,285
112	21,542	279	7,379	2,480	5,260	15,394
119	56,747	22,367	50,848	42,953	104,318	45,605
120	745,180	146,873	343,229	33,526	520,844	208,540
121	21,382	28,562	11,257	0	0	64,026
123	413,800	122,492	98,452	76,763	0	213,703

Company ID #	Company Interruption Data 1 - Number of Customer Interruptions (All Interruptions)					
	Vegetation	Wildlife	Public	Lightning	Weather (Not Lightning)	Equipment - OH Equipment
69	1,284,778	196,431	375,255	1,138,040	177,719	471,714
70	111,955	32,156	36,806	18,518	0	58,096
73	489,154	33,152	139,783	132,029	21,214	219,367
76	806,463	223,528	341,626	193,195	193,770	302,273
78	607,218	82,631	203,228	209,889	239,058	137,905
79	680,397	66,007	231,893	0	19,044	231,934
81	224	139	97	155	408	132
82	232,906	99,376	146,352	123,959	44,696	92,934
83	818,379	92,812	143,588	8,429	0	96,647
84	692,812	87,949	280,225	591,029	56,684	527,149
87	29,323	35,264	38,774	5,799	2,285	74,268
88	101,807	1,096,845	2,259,516	236,587	1,627,990	1,297,292
89	24,713	13,602	19,579	14,266	11,839	7,256
90	200,233	62,850	11,772	46,280	77,513	474,593
94	146	60	12	40	35	182
95	277	459	78	81	0	212
100	216,287	109,787	43,970	79,861	281,049	170,177
102	146,580	60,452	65,481	89,343	48,713	122,354
103	270,682	6,161	65,103	16,031	84,357	89,605
105	374,962	57,181	91,303	128,860	160,011	144,780
107	188,301	65,281	149,160	72,407	52,781	259,820
108	190,303	40,814	81,748	61,796	72,749	125,264
109	142,146	8,071	32,316	18,343	13,335	73,505
110	18,390	3,423	2,267	3,109	2,227	10,660
111	239,929	46,122	107,677	62,748	62,232	224,285
112	21,542	279	7,379	2,480	5,260	15,394
119	56,747	22,367	50,848	42,953	104,318	45,605
120	745,180	146,873	343,229	33,526	520,844	208,540
121	21,382	28,562	11,257	0	0	64,026
123	413,800	122,492	98,452	76,763	0	213,703

Company Outage Data (Interruption Data 1) CONTINUED

Company ID #	Company Interruption Data 1 - Number of Customer Interruptions (All Interruptions)						
	Equipment - OH Conductor	Equipment - UG Equipment	Equipment - UG Cable	Power Supply	Planned	Unknown	Others
1	62,730	1,296	2,802	155,734	120,750	52,285	198,450
2	160,479	1,306	6,382	224,937	20,975	96,559	173,760
3	31,785	1,787	7,293	197,020	13,710	31,349	68,041
4	33,558	999	2,259	73,943	11,273	25,662	69,681
5	10,593	255	906	79,427	558	10,286	6,462
6	77,447	0	453	0	461,974	608,766	85,469
7	0	0	0	0	0	0	0
10	26,901	2,175	6,259	30,790	34,629	44,331	61,417
11	184,825	31,150	71,378	12,077	192,072	199,936	138,491
12	0	0	0	0	757	0	815
14	109,680	71,645	143,593	135,997	59,497	65,814	54,748
15	105,337	23,419	205,775	58,867	0	540,157	66,804
16	38	55	21	0	298	187	58
17	74	192	47	0	27	731	58
20	0	0	0	0	0	0	0
22	70,645	14,625	52,822	92,528	0	162,949	150,230
24	57,205	7,928	5,025	476,489	74,143	281,845	212,803
26	360,403	6,674	38,969	0	40,885	371,582	213,630
29	256,111	36,721	163,547	0	216,467	74,626	518,331
36	337,420	30,145	65,269	273,762	80,129	301,540	251,000
37	0	0	0	0	0	0	0
41	0	0	0	0	0	0	0
43	108,659	4,693	27,681	6,701	113,497	54,607	139,077
45	15,412	6,675	18,427	36,224	0	12,068	34,098
47	29,616	14,280	66,160	0	4,569	12,704	52,799
49	54,486	12,245	75,934	90,944	3,900	62,690	344,813
50	36,976	4,771	8,032	139,519	51,901	208,883	43,953
51	644	3,009	6,033	0	0	1,031	15,974
55	0	0	0	0	0	14,834	7,250
58	258	139	387	0	151	608	211
59	0	0	0	0	0	0	0
62	32,798	18,650	54,420	2,253	14,708	23,005	63,868
64	39	27	78	0	74	75	22

Company ID #	Company Interruption Data 1 - Number of Customer Interruptions (All Interruptions)						
	Equipment - OH Conductor	Equipment - UG Equipment	Equipment - UG Cable	Power Supply	Planned	Unknown	Others
69	289,431	97,902	131,535	364,282	205,772	169,134	60,929
70	30,538	5,045	4,645	0	11,321	16,659	6,112
73	137,733	24,569	142,440	0	56,369	45,312	176,035
76	125,813	35,981	118,112	92,528	0	375,022	515,447
78	84,440	6,994	23,183	22,724	36,031	37,307	46,358
79	71,928	19,984	80,006	312,099	134,067	225,961	64,099
81	254	83	344	17	4	312	86
82	298,941	5,102	195,475	262,972	0	46,831	176,792
83	225,804	31,775	97,349	7,749	39,373	68,229	53,014
84	187,095	49,482	44,628	16,904	397,055	283,884	439,524
87	38,504	14,722	7,475	9,636	3,674	0	44,964
88	436,216	1,061,296	1,216,123	174,076	0	2,550,443	1,702,801
89	14,761	512	5,578	27,189	0	15,862	16,459
90	10,090	2,587	5,555	137,774	21,388	43,092	95,968
94	0	0	0	0	0	24	44
95	0	28	0	0	17	69	131
100	74,062	3,829	20,982	205,304	17,416	99,724	36,596
102	67,141	23,969	69,621	6,318	13,679	2,107,134	48,677
103	0	0	0	0	21,149	52,091	8,702
105	52,934	1,182	32,505	805,795	31,790	117,195	77,151
107	109,440	2,640	24,365	69,947	76,883	76,780	110,704
108	29,571	886	3,726	97,976	36,671	19,650	58,070
109	9,827	2	240	28,355	40,935	15,747	37,328
110	364	39	165	137	2,782	165	2,397
111	36,114	444	2,928	91,273	56,592	28,154	76,211
112	5,658	0	158	19	8,472	1,643	9,122
119	7,893	1,077	6,039	0	27,562	51,469	64,074
120	51,801	28,591	23,823	787,766	38,375	120,526	290,606
121	35,908	4,309	13,039	13,408	31,780	19,495	22,487
123	17,319	4,178	68,908	346,562	280,991	76,057	126,743

Company ID #	Company Interruption Data 1 - Number of Customer Interruptions (All Interruptions)						
	Equipment - OH Conductor	Equipment - UG Equipment	Equipment - UG Cable	Power Supply	Planned	Unknown	Others
124	5,361	39	12,718	90,564	66,411	34,110	29,056
126	58,841	71,889	96,382	64,304	79,724	111,356	120,136
127	7,138	662	5,800	20,328	24,300	23,399	10,792
128	56,742	144,710	254,332	10,063	29,571	174,494	125,520
129	694	28	1,475	29,469	7,799	22,000	21,114
132	32,301	4,069	4,597	972	0	69,392	84,710
133	38,344	10,556	48,225	91,556	0	93,557	65,520
134	55,168	21,356	65,290	0	0	212,073	365,217
	4,868,288	1,975,378	3,857,718	6,275,278	3,314,897	10,663,462	8,162,009

Company Outage Minutes (Interruption Data 1)

Company ID #	Company Interruption Data 1 - Number of Customer Minutes (All Interruptions)					
	Vegetation	Wildlife	Public	Lightning	Weather (Not Lightning)	Equipment - OH Equipment
1	221,559,717	6,909,148	29,946,364	15,737,022	37,303,969	72,150,649
2	19,472,723	3,990,076	9,344,661	17,918,931	21,648,187	21,958,126
3	102,901,286	4,358,784	5,936,978	14,568,600	1,830,921,329	10,562,274
4	28,066,507	4,245,402	5,465,191	9,384,977	6,127,886	5,516,013
5	1,122,999	1,025,064	715,871	1,494,559	2,005,526	1,462,659
6	97,445,017	8,567,098	25,754,166	45,226,081	41,666,042	41,326,684
7	0	0	0	0	0	0
10	32,155,501	3,169,021	4,846,073	0	0	19,518,024
11	571,730,228	4,495,813	15,532,177	0	0	137,427,938
12	1,335,974	2,000,476	2,261,914	4,484,705	100,826,010	5,805,696
14	3,034,620	980,040	9,999,360	3,267,480	18,387,180	20,884,027
15	137,105,700	4,759,680	20,983,080	17,232,420	82,152,600	11,425,860
16	347,573	139,930	14,918	842,718	1,856,738	955,044
17	26,773,189	3,133,041	70,880,649	7,383,374	4,336,647	9,148,911
20	0	0	0	0	0	0
22	75,943,542	13,974,266	36,214,362	21,919,492	35,593,546	31,078,970
24	373,239,230	12,511,198	38,103,922	99,810,581	93,001,019	59,291,422
26	132,194,994	11,163,795	10,842,405	23,682,819	157,353,933	87,954,584
29	114,350,662	39,404,979	86,004,320	13,508,321	0	138,121,875
36	104,943,349	18,425,463	60,833,689	66,790,583	230,453,246	70,899,469
37	0	0	0	0	0	0
41	0	0	0	0	0	0
43	46,783,911	8,049,382	8,219,462	0	0	111,447,648
45	4,463,370	790,524	1,864,973	2,682,871	642,999	4,999,030
47	39,616,756	1,028,242	3,820,482	7,472,464	7,092,740	6,281,199
49	29,641,854	3,561,476	0	10,783,676	0	16,599,359
50	34,440,932	5,115,972	5,469,198	16,799,565	228,400	10,400,327
51	1,126,901	213,665	122,610	1,214,581	0	319,113
55	12,211,242	659,638	1,420,395	0	15,620,427	2,983,573
58	13,225,671	1,725,804	2,785,046	1,788,502	17,462,646	8,856,717
59	0	0	0	0	0	0
62	510,691	762,284	8,637,026	485,547	1,626,294	7,034,131
64	391,158	224,871	316,596	258,011	746,221	914,954

Company ID #	Company Interruption Data 1 - Number of Customer Minutes (All Interruptions)					
	Vegetation	Wildlife	Public	Lightning	Weather (Not Lightning)	Equipment - OH Equipment
69	207,824,822	12,573,623	26,154,776	240,948,581	32,455,637	63,164,919
70	20,960,007	2,359,683	2,426,929	2,558,933	0	5,344,813
73	67,756,837	2,363,523	11,968,895	15,087,394	3,695,067	18,022,909
76	168,887,063	19,977,554	45,889,683	34,974,179	47,413,786	37,662,770
78	189,814,653	6,014,672	26,898,129	27,469,913	42,399,155	12,340,114
79	117,042,515	3,717,179	17,603,502	0	1,575,298	20,276,473
81	701,933	453,232	1,398,124	1,447,297	937,077	1,338,725
82	18,945,968	4,936,993	6,711,798	13,332,530	14,463,983	4,123,520
83	216,865,052	9,508,377	23,879,776	790,003	0	13,427,173
84	63,539,345	7,043,926	18,017,936	48,941,439	7,278,752	45,225,156
87	1,700,880	2,808,060	3,258,480	352,080	490,380	4,981,680
88	3,053,356	16,485,928	75,581,020	10,208,165	109,914,496	97,855,027
89	2,361,274	691,602	867,834	881,642	1,041,809	306,885
90	13,782,424	4,103,128	837,874	6,922,906	5,791,880	23,859,043
94	3,221,967	98,539	22,079	263,571	641,908	1,987,787
95	6,162,836	2,898,167	2,128,429	4,033,158	0	4,707,164
100	112,900,534	6,407,175	3,162,067	10,119,237	425,643,424	16,446,487
102	22,922,096	3,948,619	5,069,637	15,288,255	6,210,986	13,317,792
103	40,403,505	452,843	8,530,153	1,705,205	14,635,561	9,130,673
105	77,438,996	5,960,789	11,932,660	27,552,745	34,743,149	17,993,574
107	35,371,869	6,502,333	14,788,084	10,964,534	7,591,085	30,790,312
108	93,284,087	3,606,796	10,254,113	15,294,726	49,853,906	14,708,237
109	34,597,597	724,102	3,991,605	4,567,003	3,964,716	9,830,927
110	2,273,841	261,450	362,981	211,850	138,512	1,047,912
111	51,718,987	4,595,418	11,851,139	9,872,059	18,866,655	30,827,370
112	5,146,119	28,103	617,366	375,096	853,065	2,215,960
119	10,877,346	1,885,377	5,617,417	9,290,689	23,402,021	4,768,667
120	149,668,560	17,565,060	59,343,600	4,478,880	175,926,480	29,670,240
121	3,673,659	3,715,477	1,651,093	0	0	10,446,067
123	62,245,386	8,900,602	12,381,175	10,911,541	0	18,795,492

Company ID #	Company Interruption Data 1 - Number of Customer Minutes (All Interruptions)					
	Vegetation	Wildlife	Public	Lightning	Weather (Not Lightning)	Equipment - OH Equipment
124	14,031,854	862,565	2,178,872	3,635,534	0	4,819,150
126	180,170,732	8,469,399	15,624,293	30,419,778	1,300,046	34,913,130
127	21,588,610	1,216,782	2,903,171	4,626,084	876,988	4,471,742
128	13,691,623	7,650,277	9,750,862	6,046,820	10,337,360	22,520,272
129	905,703	1,706,241	2,526,777	9,905,703	32,907,433	4,199,858
132	20,534,377	8,457,197	17,732,487	7,636,507	14,931,573	12,472,741
133	55,409,165	5,517,069	18,481,875	14,282,985	20,661,973	19,236,229
134	92,943,521	6,003,288	9,765,321	13,054,687	11,820,240	5,953,800
	4,430,554,396	365,856,281	958,497,900	1,023,189,589	3,829,817,987	1,588,525,066

Company Outage Minutes (Interruption Data 1) CONTINUED

Company ID #	Company Interruption Data 1 - Number of Customer Minutes (All Interruptions)						
	Equipment - OH Conductor	Equipment - UG Equipment	Equipment - UG Cable	Power Supply	Planned	Unknown	Others
1	12,026,296	538,187	1,122,198	24,649,537	14,069,655	7,528,615	36,109,939
2	15,092,490	333,904	1,258,481	20,890,681	817,273	6,120,518	15,105,404
3	4,860,437	518,187	1,728,723	50,245,286	1,636,148	1,765,606	14,813,157
4	2,894,411	216,894	434,730	4,982,917	458,386	1,589,457	4,789,933
5	877,913	44,706	142,166	5,549,320	92,639	524,010	494,557
6	7,150,074	0	87,053	0	41,497,500	31,088,550	3,392,347
7	0	0	0	0	0	0	0
10	4,888,610	248,228	1,286,537	1,532,965	2,603,122	5,987,473	10,831,828
11	64,318,072	7,250,116	11,028,828	2,462,721	24,576,970	106,158,938	37,908,941
12	0	0	0	0	1,113,952	0	2,712,961
14	11,307,544	7,386,349	14,036,280	12,975,240	5,198,040	4,087,320	3,269,460
15	13,251,300	5,131,920	31,533,660	3,709,080	0	94,791,420	9,782,880
16	54,861	49,329	44,221	0	782,791	379,864	169,356
17	822,884	1,831,218	1,136,357	0	291,656	3,334,936	1,404,175
20	0	0	0	0	0	0	0
22	10,826,832	3,278,400	8,003,094	15,488,688	0	14,958,669	15,455,964
24	13,704,978	2,185,964	1,768,320	107,406,343	12,778,506	65,551,825	43,390,934
26	103,799,631	2,646,844	10,563,674	0	2,122,514	41,273,708	45,939,292
29	30,193,350	4,329,070	19,280,817	0	25,519,653	8,797,783	61,106,900
36	36,210,398	5,078,865	8,664,636	65,145,049	5,350,162	20,815,544	15,162,178
37	0	0	0	0	0	0	0
41	0	0	0	0	0	0	0
43	42,034,438	912,459	6,504,555	1,846,371	11,802,039	6,546,596	66,247,452
45	793,861	642,621	1,474,218	1,772,695	0	663,367	1,232,300
47	2,686,189	927,233	4,351,554	0	267,588	1,061,156	4,633,831
49	5,202,537	560,493	5,785,968	2,360,842	617,854	5,344,586	13,414,864
50	3,390,617	678,440	1,527,169	10,378,132	4,000,910	19,459,656	2,848,644
51	41,602	435,855	741,451	0	0	48,933	1,159,892
55	0	0	0	0	0	977,833	523,094
58	1,253,932	389,379	2,709,152	0	1,339,726	1,788,502	2,026,087
59	0	0	0	0	0	0	0
62	3,313,178	2,040,195	8,253,514	392,022	1,515,325	46,122	53,745
64	389,112	85,532	76,497	0	35,505	288,191	73,970

Company ID #	Company Interruption Data 1 - Number of Customer Minutes (All Interruptions)						
	Equipment - OH Conductor	Equipment - UG Equipment	Equipment - UG Cable	Power Supply	Planned	Unknown	Others
69	44,534,740	12,028,201	17,579,716	20,968,914	9,671,991	13,785,717	4,450,902
70	1,989,324	1,121,493	1,285,144	0	954,482	1,486,271	378,127
73	11,966,055	4,279,873	15,297,788	0	3,146,185	3,781,304	14,060,519
76	17,650,500	8,952,460	23,892,593	15,488,688	0	44,453,322	59,023,307
78	9,270,228	855,133	4,727,680	1,107,709	3,770,562	2,854,745	3,271,760
79	7,913,556	2,076,490	9,007,780	17,051,441	8,327,427	19,061,053	3,407,105
81	797,945	655,664	1,405,474	678,933	132,954	1,205,305	691,623
82	16,162,357	820,257	18,608,622	40,733,167	0	1,669,515	6,458,880
83	33,448,447	6,726,512	23,358,810	1,180,750	11,340,858	13,259,738	3,976,853
84	13,292,522	9,075,586	2,804,223	658,947	24,906,832	26,042,558	17,115,299
87	4,434,060	2,047,260	1,482,600	1,260,600	794,940	0	6,682,140
88	26,714,187	116,981,075	88,887,215	2,552,443	0	47,694,043	145,509,784
89	857,394	78,826	713,320	3,400,059	0	882,006	228,841
90	1,922,730	837,578	1,247,238	913,379	707,046	2,301,797	4,966,641
94	0	0	0	0	0	236,461	599,496
95	0	1,257,275	0	0	76,786	1,061,716	970,142
100	13,940,592	899,648	2,677,204	32,048,070	1,665,313	6,511,943	1,816,960
102	10,489,650	3,268,946	6,919,142	316,695	2,107,134	3,085,051	1,623,587
103	0	0	0	0	3,507,358	4,416,166	789,096
105	5,977,848	439,439	3,300,585	125,072,279	2,854,906	14,270,596	8,858,690
107	11,730,485	542,503	5,187,586	9,529,341	5,293,331	7,101,010	7,956,538
108	4,527,558	223,695	997,955	15,125,741	2,957,735	1,788,595	5,490,418
109	1,376,130	450	118,729	3,560,507	3,568,724	1,468,842	3,989,798
110	83,276	2,613	23,595	16,988	231,590	16,152	207,112
111	5,021,907	132,288	768,117	13,910,121	4,600,596	2,878,803	7,566,094
112	961,308	0	70,922	2,280	634,169	228,331	1,595,072
119	718,671	272,078	1,323,514	0	2,792,057	4,161,206	6,540,092
120	8,246,280	6,772,500	6,373,200	70,984,920	3,126,900	16,971,480	50,028,060
121	8,936,191	664,137	2,577,141	487,071	2,384,691	2,434,491	2,818,049
123	1,341,380	1,349,583	9,678,162	41,340,448	14,915,864	10,617,157	9,627,759

Company ID #	Company Interruption Data 1 - Number of Customer Minutes (All Interruptions)						
	Equipment - OH Conductor	Equipment - UG Equipment	Equipment - UG Cable	Power Supply	Planned	Unknown	Others
124	199,351	15,071	1,436,566	3,326,628	2,702,220	5,064,899	1,887,649
126	11,295,316	5,280,079	15,875,014	5,002,399	9,201,954	21,503,202	8,703,945
127	900,758	153,884	1,276,428	4,079,919	2,572,287	1,643,464	652,725
128	8,806,304	13,387,463	25,097,054	368,650	1,946,508	17,230,465	7,915,328
129	77,964	2,990	26,789	2,303,979	278,936	1,561,954	914,586
132	4,093,793	994,011	976,243	75,088	0	6,900,781	9,045,702
133	6,733,039	2,284,389	7,026,851	15,413,600	0	8,057,888	6,410,262
134	6,823,668	5,674,060	15,889,499	0	0	29,494,653	43,568,343
	694,621,061	257,893,899	461,462,352	780,747,643	289,660,250	798,161,859	873,851,369

Company Outage Data (Interruption Data 1) w/o Major Events (MEs)

Company ID #	Company Interruption Data 1 - Number of Customer Interruptions (Without Major Events)					
	Vegetation	Wildlife	Public	Lightning	Weather (Not Lightning)	Equipment - OH Equipment
1	547,216	69,838	211,608	73,902	88,518	492,334
2	120,644	69,435	123,115	113,319	118,950	215,309
3	127,982	64,463	53,277	96,154	78,360	98,155
4	243,425	81,237	76,730	92,125	25,314	90,478
5	16,744	20,889	11,136	16,333	22,693	22,912
6	571,858	114,364	208,620	314,490	203,739	319,392
7	571,705	74,776	282,265	201,187	109,051	346,690
10	86,686	30,840	51,352	0	0	171,892
11	254,751	48,856	138,033	0	0	328,174
12	405	2,048	287	1,032	1,038	1,449
14	14,834	16,017	121,506	21,712	109,838	240,080
15	298,936	48,773	168,682	61,658	75,825	98,871
16	69	249	115	301	75	316
17	0	0	0	467	0	0
20	179,545	35,140	45,363	57,738	80,113	91,655
22	295,474	176,007	274,735	115,902	54,035	240,262
24	610,269	83,511	196,117	129,235	24,491	274,739
26	312,604	86,891	61,738	61,993	191,794	401,908
29	1,331,565	458,854	1,001,484	157,299	0	1,608,371
36	870,798	264,018	541,560	617,716	107,486	690,562
37	480,360	232,857	512,240	554,622	454,893	742,213
41	102	28	147	2	30	0
43	45,044	84,324	57,587	0	0	225,496
45	50,872	11,901	39,406	21,201	8,855	101,792
47	62,215	13,400	34,646	43,346	25,680	47,855
49	163,250	40,139	0	25,560	0	151,913
50	129,440	69,817	58,200	91,533	3,318	141,593
51	11,952	2,312	842	2,624	0	2,378
55	16,009	8,429	10,991	0	31,662	35,185
58	865	1,170	316	612	1,142	962
59	182	75	57	6	176	32

Company ID #	Company Interruption Data 1 - Number of Customer Interruptions (Without Major Events)					
	Vegetation	Wildlife	Public	Lightning	Weather (Not Lightning)	Equipment - OH Equipment
62	4,633	10,862	84,175	8,048	17,999	83,556
64	126	232	61	125	68	189
69	706,590	191,483	360,302	488,157	23,321	372,988
70	85,394	32,156	36,765	15,158	0	50,171
73	366,920	33,114	138,219	121,626	15,206	212,596
76	642,875	223,139	336,164	160,826	90,892	288,310
78	471,972	82,631	202,981	209,889	199,402	137,863
79	465,333	65,973	228,301	0	15,051	219,075
81	224	139	97	155	0	132
82	230,830	99,294	146,242	111,721	30,383	90,508
83	393,066	92,466	138,247	8,420	0	88,352
84	573,398	86,650	279,897	431,133	44,805	488,011
87	29,323	35,264	38,774	5,799	2,285	74,268
88	94,363	1,096,845	2,244,870	236,587	1,324,466	1,260,508
89	24,713	13,602	19,579	14,266	11,839	7,256
90	196,966	62,827	11,765	41,484	59,675	459,843
94	146	60	12	40	35	182
95	275	458	78	53	0	210
100	104,002	108,937	43,911	72,960	13,163	165,054
102	122,340	60,408	65,318	65,093	27,585	119,880
103	265,339	6,161	65,103	15,997	78,927	89,345
105	259,814	56,432	90,881	82,736	56,310	138,875
107	192,646	65,281	149,160	72,407	52,781	284,470
108	138,688	40,031	80,831	53,650	24,317	132,982
109	138,722	8,063	32,311	13,083	10,714	81,789
110	18,390	3,423	2,267	3,109	2,227	11,319
111	244,117	46,122	107,661	62,748	54,680	246,922
112	21,542	279	7,379	2,480	5,260	18,299

Company ID #	Company Interruption Data 1 - Number of Customer Interruptions (Without Major Events)					
	Vegetation	Wildlife	Public	Lightning	Weather (Not Lightning)	Equipment - OH Equipment
119	46,752	22,259	50,266	14,469	57,497	45,542
120	527,520	146,646	336,590	33,506	194,060	203,352
121	21,278	28,562	11,183	0	0	63,429
123	352,102	122,487	98,452	76,649	0	201,180
124	84,148	14,746	35,304	38,171	0	53,280
126	145,823	112,577	147,518	29,596	812	176,450
127	63,892	17,540	15,520	5,099	24	39,600
128	53,480	103,254	112,353	39,558	17,767	203,666
129	6,656	35,197	28,706	52,201	45,723	60,414
132	130,780	111,296	153,263	56,584	28,980	101,274
133	164,694	64,711	121,472	59,318	25,055	138,988
134	347,401	47,132	61,429	44,924	36,857	48,048
	15,153,074	5,559,397	10,365,562	5,619,894	4,385,242	13,641,144

Company Outage Data (Interruption Data 1) w/o MEs CONTINUED

Company ID #	Company Interruption Data 1 - Number of Customer Interruptions (Without Major Events)						
	Equipment - OH Conductor	Equipment - UG Equipment	Equipment - UG Cable	Power Supply	Planned	Unknown	Others
1	58,510	1,296	2,769	107,391	119,755	51,452	120,175
2	141,470	1,236	6,356	163,938	19,756	95,268	101,414
3	28,322	1,776	7,088	122,222	13,584	29,737	37,906
4	32,913	999	2,258	50,124	11,133	25,295	49,632
5	9,946	255	906	72,656	558	10,285	4,347
6	73,809	0	453	0	0	361,319	67,322
7	179,512	13,050	38,941	0	0	195,087	136,277
10	22,537	2,174	6,255	30,341	34,033	36,618	51,950
11	131,594	27,768	68,997	6,346	175,891	98,200	107,863
12	0	0	0	0	757	0	811
14	107,857	70,455	142,879	127,695	59,269	65,573	54,742
15	101,364	22,305	198,085	58,867	0	456,633	64,034
16	38	55	21	0	298	187	58
17	0	0	0	0	0	0	0
20	3,383	0	1,486	0	0	34,230	6,751
22	65,664	14,266	49,105	78,038	0	158,464	146,759
24	53,578	7,817	4,961	397,383	73,740	241,102	189,691
26	313,996	6,433	37,978	0	40,884	352,961	197,740
29	351,589	50,410	224,517	0	297,166	102,446	711,564
36	323,762	29,999	65,170	241,086	78,832	297,595	242,686
37	399,681	169,471	378,654	0	0	575,304	921,509
41	0	0	493	0	242	64	0
43	85,070	4,548	26,800	3,243	110,426	47,873	100,618
45	15,412	6,675	18,427	36,224	0	12,068	34,098
47	28,133	11,550	66,016	0	4,559	12,590	47,520
49	47,376	10,912	69,077	59,435	3,900	57,235	302,931
50	36,081	4,722	7,840	114,591	51,294	194,349	43,857
51	644	3,009	6,033	0	0	1,031	15,974
55	0	0	0	0	0	14,782	7,250
58	249	136	383	0	151	600	208
59	5	43	75	0	209	473	99

Company ID #	Company Interruption Data 1 - Number of Customer Interruptions (Without Major Events)						
	Equipment - OH Conductor	Equipment - UG Equipment	Equipment - UG Cable	Power Supply	Planned	Unknown	Others
62	32,798	18,650	54,420	2,253	14,708	23,005	63,868
64	39	27	78	0	74	75	22
69	218,746	87,909	113,142	296,141	174,511	148,613	58,436
70	28,235	5,043	4,592	0	11,321	16,658	6,112
73	129,909	24,203	140,236	0	55,204	34,105	156,852
76	118,495	35,541	78,038	0	0	367,625	499,908
78	84,394	6,916	23,170	22,724	36,031	37,187	46,195
79	65,851	19,308	78,756	309,328	128,221	192,925	61,110
81	254	83	344	17	0	312	86
82	296,630	4,806	193,398	216,652	0	46,831	30,383
83	210,236	37,446	111,080	7,102	7,102	54,954	52,544
84	169,242	48,519	44,628	10,535	390,886	277,446	416,725
87	38,504	14,722	7,475	9,636	3,674	0	44,964
88	428,531	1,057,141	1,208,259	174,076	0	2,393,741	1,626,752
89	14,761	512	5,578	27,189	0	15,862	16,459
90	10,035	2,560	5,458	137,774	21,388	43,023	95,963
94	0	0	0	0	0	24	44
95	0	28	0	0	17	68	131
100	68,743	2,464	20,740	158,692	17,327	92,823	36,507
102	36,330	23,960	67,293	6,318	13,553	43,241	46,085
103	0	0	0	0	21,148	51,990	8,670
105	52,564	1,091	31,904	487,032	31,651	113,823	68,902
107	109,440	2,640	24,365	65,602	76,883	76,780	86,054
108	28,777	687	3,668	52,428	36,403	19,515	43,734
109	9,786	2	240	16,234	40,744	15,720	28,541
110	364	39	165	137	2,782	165	1,738
111	35,932	444	2,928	72,953	56,592	27,866	53,001
112	5,658	0	158	19	8,472	1,643	6,217

Company ID #	Company Interruption Data 1 - Number of Customer Interruptions (Without Major Events)						
	Equipment - OH Conductor	Equipment - UG Equipment	Equipment - UG Cable	Power Supply	Planned	Unknown	Others
119	7,860	1,077	6,022	0	27,541	51,427	61,106
120	51,659	28,591	23,823	727,885	34,716	116,669	247,974
121	31,758	4,291	12,926	13,408	31,627	19,131	22,230
123	16,543	4,178	68,908	345,543	274,060	58,577	124,148
124	5,343	39	12,718	90,564	59,951	19,354	24,861
126	42,785	71,752	91,712	60,327	72,381	88,482	113,993
127	6,800	654	5,364	9,373	23,053	22,257	10,773
128	54,640	122,563	254,006	6,846	29,339	166,334	122,857
129	694	10	1,493	22,244	7,784	19,045	17,446
132	32,097	4,067	4,501	972	0	65,949	81,704
133	33,567	10,199	44,604	77,066	0	92,515	65,055
134	52,831	21,275	65,264	0	0	209,161	353,149
	5,143,326	2,124,797	4,243,477	5,096,650	2,805,581	8,553,742	8,567,085

Company Outage Minutes (Interruption Data 1) w/o Major Events

1	130,208,167	6,868,346	29,425,076	14,954,655	19,848,805	73,338,612
2	11,104,271	3,940,068	9,298,381	13,425,203	14,826,373	19,335,200
3	17,736,752	4,227,733	4,741,544	10,437,366	18,271,242	9,028,787
4	24,431,447	4,233,462	5,381,475	7,722,587	1,969,572	7,090,138
5	1,031,826	1,023,022	715,871	1,328,720	1,879,405	1,583,367
6	69,546,778	7,250,141	23,873,067	31,868,617	24,259,314	30,302,120
7	160,974,740	7,926,055	43,610,803	44,979,995	39,384,721	52,728,062
10	13,822,758	3,167,528	4,719,711	0	0	16,085,779
11	39,714,713	4,346,935	15,031,154	0	0	45,605,148
12	1,296,906	2,000,476	2,261,914	4,484,705	9,034,070	5,803,808
14	3,034,620	979,980	9,999,060	3,267,000	18,386,640	20,879,141
15	51,595,320	4,751,340	19,979,100	11,060,580	13,782,000	10,513,080
16	347,573	139,930	14,918	842,718	358,191	955,044
17	0	0	0	5,963,481	0	0
20	14,913,540	1,828,080	3,027,600	3,981,480	7,905,720	6,143,640
22	35,831,999	13,941,329	32,967,562	16,165,858	6,348,435	28,850,868
24	146,062,652	11,914,104	35,350,635	42,128,667	16,543,751	50,586,345
26	74,218,840	11,072,894	10,808,190	18,327,397	73,505,929	70,993,692
29	428,763,926	147,751,079	322,477,802	50,650,171	0	517,895,363
36	94,212,525	18,329,583	59,423,924	61,861,134	21,261,698	66,178,008
37	43,319,583	13,961,517	30,135,562	42,256,943	32,409,261	31,749,047
41	0	0	0	0	0	0
43	10,460,242	8,045,809	7,723,341	0	0	32,388,693
45	4,463,370	790,524	1,864,973	2,682,871	642,999	4,999,030
47	7,756,812	1,026,235	3,220,918	6,045,904	2,672,563	3,852,599
49	18,205,049	3,520,304	0	2,816,487	0	13,941,257
50	16,404,470	5,093,992	5,298,154	8,381,816	228,400	9,088,589
51	1,101,988	213,665	122,610	464,916	0	319,113
55	1,970,784	654,325	1,420,319	0	3,528,196	2,968,987
58	7,071,453	1,725,744	2,755,347	1,785,202	9,638,772	6,470,947
59	13,434	5,401	8,162	1,016	29,829	8,278

62	510,691	762,284	8,637,026	485,547	1,626,294	7,034,131
64	391,158	224,871	316,596	258,011	746,221	914,954
69	69,717,994	11,964,883	24,789,644	59,081,053	2,415,785	37,074,118
70	10,480,489	2,359,683	2,421,577	2,144,017	0	3,947,503
73	36,449,170	2,351,616	11,850,384	13,025,939	1,425,818	16,999,201
76	90,352,837	19,831,600	42,642,883	29,220,545	12,158,088	34,540,311
78	91,181,001	6,014,672	26,837,682	27,469,913	28,374,024	12,321,385
79	41,689,373	3,715,206	16,969,275	0	1,030,155	17,954,023
81	701,933	453,232	1,398,124	1,447,297	0	1,338,725
82	18,607,590	4,931,909	6,687,000	10,829,853	3,062,190	3,755,280
83	74,093,032	9,473,960	22,862,416	788,041	0	11,631,449
84	44,892,988	6,915,025	17,952,686	34,982,253	4,352,197	39,116,009
87	1,700,880	2,808,060	3,258,480	352,080	490,380	4,981,680
88	2,729,127	16,485,928	74,497,035	10,208,615	82,716,042	94,288,683
89	2,361,274	691,602	867,834	881,642	1,041,809	306,885
90	13,249,834	4,098,692	830,825	6,028,832	3,693,032	22,446,898
94	3,221,967	98,539	22,079	263,571	641,908	1,987,787
95	6,130,556	2,897,327	2,128,429	2,766,678	0	4,689,224
100	10,774,284	6,159,693	3,143,615	8,472,369	2,733,131	14,692,772
102	17,081,381	3,946,265	5,036,617	8,432,543	3,682,754	13,108,574
103	37,787,195	452,843	8,530,153	1,690,313	11,617,823	9,115,171
105	38,222,450	5,866,102	11,825,253	13,453,325	7,940,283	16,970,609
107	36,299,681	6,502,333	14,788,084	10,964,534	7,591,085	33,523,813
108	23,433,732	3,344,301	10,025,867	9,341,002	3,563,309	15,057,021
109	26,986,349	723,612	3,988,114	2,015,598	2,072,059	10,542,064
110	2,273,841	261,450	362,981	211,850	138,512	1,109,887
111	48,656,288	4,595,418	11,849,200	9,872,059	12,529,412	32,696,315
112	5,146,119	28,103	617,366	375,096	853,065	2,667,681

119	7,855,749	1,875,770	5,192,620	2,049,312	8,561,391	4,735,981
120	91,289,940	17,535,540	58,411,380	4,475,880	44,556,240	29,477,160
121	3,604,524	3,715,477	1,628,745	0	0	9,977,569
123	40,987,870	8,899,857	12,381,175	10,868,602	0	17,022,225
124	8,123,926	862,565	2,178,872	3,634,574	0	3,829,771
126	20,772,692	7,775,378	11,998,855	5,022,874	296,430	17,962,781
127	9,897,969	1,213,213	1,374,178	343,351	2,433	4,331,433
128	6,143,553	7,499,039	9,306,244	5,296,273	2,458,407	17,583,908
129	707,455	1,498,058	2,412,950	4,622,509	3,825,158	4,143,834
132	13,743,596	8,455,217	16,925,652	7,636,507	3,356,011	10,824,714
133	22,088,403	5,486,112	16,041,910	8,529,351	2,992,424	18,026,154
134	54,520,838	5,890,271	9,675,321	13,054,687	5,809,653	5,689,443
	2,464,476,267	489,395,307	1,168,322,300	738,481,985	605,069,409	1,748,099,868

Company Outage Minutes (Interruption Data 1) w/o MEs CONTIUED

1	9,398,733	538,187	1,099,032	13,446,369	14,027,751	7,163,610	19,476,359
2	12,627,656	311,239	1,250,715	9,291,019	693,538	5,930,640	6,895,505
3	3,096,872	494,999	1,655,257	8,695,133	1,570,676	1,613,788	2,881,271
4	2,768,995	216,894	434,234	3,116,297	455,938	1,557,971	3,096,244
5	824,708	44,706	142,166	4,775,313	92,639	523,935	326,047
6	6,831,274	0	87,053	0	0	21,215,768	2,560,574
7	28,058,125	2,967,205	11,946,315	0	0	24,368,455	20,918,545
10	3,489,215	245,474	1,284,442	1,431,680	2,485,319	3,639,495	4,396,381
11	18,166,506	4,819,587	9,970,242	142,676	14,821,735	10,698,349	11,543,009
12	0	0	0	0	1,113,952	0	2,702,321
14	11,307,052	7,386,027	14,035,260	12,970,740	5,197,200	4,086,780	3,269,220
15	11,966,280	4,219,380	30,884,520	3,709,080	0	53,110,320	8,066,400
16	54,861	49,329	44,221	0	782,791	379,864	169,356
17	0	0	0	0	0	0	0
20	244,740	0	66,060	0	0	2,049,960	415,200
22	8,265,277	3,170,369	7,890,388	6,945,548	0	14,159,558	14,885,427
24	11,630,501	2,145,597	1,737,022	69,862,000	12,741,253	38,280,186	28,353,497
26	64,191,348	2,369,063	9,380,158	0	2,121,831	37,088,671	35,878,566
29	113,211,581	16,232,080	72,294,491	0	95,687,305	32,987,757	229,123,591
36	34,493,051	4,811,619	8,644,022	17,076,959	5,324,585	20,535,219	14,241,489
37	21,269,268	9,672,611	32,163,912	0	0	22,540,910	43,317,249
41	0	0	0	0	0	0	0
43	17,090,895	885,687	5,395,325	1,235,613	10,010,017	4,533,444	16,173,171
45	793,861	642,621	1,474,218	1,772,695	0	663,367	1,232,300
47	2,116,028	753,873	4,263,466	0	267,398	1,017,214	3,231,105
49	3,952,260	501,929	5,178,316	1,123,617	617,854	4,367,465	12,360,367
50	3,254,549	672,511	1,448,669	6,354,624	3,934,130	14,580,093	2,840,088
51	41,602	435,855	741,451	0	0	48,933	1,159,892
55	0	0	0	0	0	969,321	523,094
58	1,230,833	359,680	2,702,553	0	1,339,726	1,745,604	1,993,089
59	1,249	5,750	11,639	0	17,324	17,897	8,403

62	3,313,178	2,040,195	8,253,514	392,022	1,515,325	2,767,313	3,224,190
64	389,112	85,532	76,497	0	35,505	288,191	73,970
69	20,950,077	10,183,254	15,074,676	14,167,439	7,908,399	9,854,724	3,657,002
70	1,576,115	1,120,933	1,240,214	0	954,482	1,485,798	378,126
73	10,286,966	4,000,450	14,947,269	0	2,728,459	2,543,603	10,505,056
76	14,406,968	8,722,022	69,455,548	0	0	43,220,911	54,793,699
78	9,246,409	820,105	4,716,812	1,107,709	3,770,562	2,769,849	3,255,497
79	7,047,626	1,942,543	8,695,325	16,813,776	6,694,137	13,108,751	3,238,038
81	797,945	655,664	1,405,474	678,933	0	1,205,305	691,623
82	15,905,621	793,913	18,450,014	20,629,745	0	1,669,515	3,062,190
83	29,429,856	7,531,166	24,823,386	1,034,450	1,034,450	9,640,315	3,918,460
84	11,238,354	8,711,634	2,804,223	235,299	24,563,296	24,572,030	16,450,391
87	4,434,060	2,047,260	1,482,600	1,260,600	794,940	0	6,682,140
88	25,029,899	116,721,889	88,390,860	2,552,443	0	38,703,922	142,066,039
89	857,394	78,826	703,320	3,400,059	0	882,006	228,841
90	1,901,854	826,116	1,219,125	913,379	707,046	2,297,538	4,965,643
94	0	0	0	0	0	236,461	599,496
95	0	1,257,275	0	0	76,786	1,052,296	970,142
100	6,004,392	351,351	2,594,270	10,721,936	1,663,392	5,703,445	1,647,465
102	3,644,879	3,266,177	6,343,417	316,695	2,090,981	2,134,349	1,566,439
103	0	0	0	0	3,507,314	4,377,112	779,665
105	5,929,563	402,521	3,158,363	54,863,192	2,841,362	13,687,505	6,115,896
107	11,730,485	542,503	5,187,586	8,601,529	5,293,331	7,101,010	5,223,037
108	3,900,371	162,158	884,075	6,578,278	2,937,295	1,767,021	3,486,887
109	1,357,142	450	118,729	2,398,486	3,563,738	1,459,158	2,921,930
110	83,276	2,613	23,595	16,988	231,590	16,152	145,137
111	4,998,653	132,288	768,117	10,578,804	4,600,596	2,814,459	5,571,785
112	961,308	0	70,922	2,280	634,169	228,331	1,143,351

[redacted]

119	705,982	272,078	1,317,151	0	2,789,420	4,153,298	5,974,186
120	8,220,960	6,772,500	6,373,200	39,941,340	3,049,380	16,279,680	33,278,700
121	6,747,097	655,497	2,555,228	487,071	2,164,622	2,159,369	2,573,905
123	1,225,592	1,349,583	9,678,162	40,952,023	13,546,872	5,377,626	7,769,165
124	197,965	15,071	1,436,566	3,326,628	1,565,461	1,547,581	1,063,186
126	4,102,976	4,998,870	12,727,926	4,270,048	5,227,856	8,763,839	7,306,837
127	817,266	149,666	1,111,991	1,208,259	1,856,852	1,569,370	637,335
128	7,663,821	9,919,104	25,066,024	249,621	1,894,191	14,578,528	7,608,460
129	77,964	740	29,039	1,362,839	277,777	1,228,237	860,026
132	4,014,762	993,554	961,041	75,088	0	6,497,799	8,568,870
133	4,250,515	2,176,815	6,929,347	6,870,460	0	7,661,759	6,316,557
134	6,141,691	5,551,653	15,880,782	0	0	29,061,353	39,908,272
	629,965,413	269,206,241	591,179,535	417,956,782	283,822,548	624,340,083	901,265,394

Company Outage Data (Interruption Data 2) by Classification (All Interruptions)

Company ID #	T & D Only Facility	Company Interruption Data 2: Interruptions (ALL) By Ownership Facility (Number)					
		Generation	Transmission	Substation	Distribution Primary	Distribution Secondary	Customer
1	Y	7,957	147,777	189,906	1,794,325	4,098	1,655
2	Y	0	224,937	153,689	1,139,835	8,764	605
3	Y	0	197,020	78,334	1,258,446	9,356	1,529
4	Y	0	73,943	66,938	711,359	3,511	633
5	Y	0	79,427	27,517	111,721	1,318	118
6	N	0	0	0	0	0	0
7	Y	0	0	0	0	0	0
10	N	0	0	0	0	0	0
11	N	0	0	0	0	0	0
12	N	0	0	0	0	0	0
14	Y	0	102,296	173,257	222,273	215,238	0
15	Y	0	6,361	52,506	1,463,708	486,251	15
16	N	0	0	0	0	0	0
17	Y	0	9	2	6,598	47	55
20		0	0	0	0	0	0
22	Y	0	56,870	99,389	1,685,199	67,447	0
24	Y	0	441,781	218,267	2,125,380	40,130	5,386
26	Y	0	0	14,919	2,158,591	62,331	9,039
29	Y	0	622,826	644,105	4,878,851	201,640	0
36	Y	0	214,194	312,616	4,071,663	145,388	0
37	N	0	0	0	0	0	0
41		0	0	0	0	0	0
43	N	0	0	0	0	0	0
45	Y	7,118	2,830	33,805	286,056	26,386	736
47	Y	0	4,332	9,853	385,453	107,827	169
49	Y	0	20,295	70,649	952,976	98,445	0
50	Y	0	120,049	127,124	787,500	31,864	11,586
51	Y	0	0	11,564	28,435	9,040	0
55	Y	0	0	98,852	89,312	0	33
58	Y	0	231	192	6,082	799	0

Company ID #	Track Origination Facility	Company Interruption Data 2 Interruptions (ALL) By Origination Facility (Min. Events)					
		Generation	Transmission	Substation	Distribution - Overhead	Distribution - Underground	Customer
59		0	0	0	0	0	0
62	Y	0	27,758	58,591	169,911	144,984	0
64	Y	0	15	68	806	227	0
69	Y	0	137,052	227,230	4,002,863	594,533	1,244
70	Y	0	0	26,049	291,230	14,572	169
73	N	0	0	0	0	0	0
76	Y	0	58,683	167,296	2,842,013	255,766	0
78	Y	0	143,090	211,232	1,297,043	48,308	0
79	N	0	0	0	0	0	0
81	N	0	61	0	3,820	1,199	0
82	Y	0	203,342	52,519	1,205,375	214,742	0
83	Y	0	203,980	139,729	1,001,487	147,110	286
84	Y	0	16,904	237,882	2,953,417	437,060	9,157
87	Y	8	44,426	25,542	230,705	41,351	0
88	Y	2,372	186,477	1,064,411	6,160,543	2,563,089	0
89	Y	0	38,526	15,420	116,333	10,287	15
90	Y	0	139,515	303,645	733,112	13,388	35
94	Y	0	0	0	543	0	0
95	Y	0	0	0	0	0	0
100	Y	0	131,325	164,621	1,026,641	36,457	0
102	Y	0	9,400	79,226	643,522	80,477	1,157
103	Y	0	55,813	34,536	573,460	0	0
105	Y	0	514,808	308,397	1,252,444	0	0
107	Y	0	69,947	75,277	1,085,857	27,122	306
108	Y	0	97,976	85,961	629,549	4,622	1,116
109	Y	0	28,355	19,077	372,414	242	62
110	Y	0	137	138	45,633	204	13

Company ID #	Track Origination Facility	Company Interruption Data 2 Interruptions (ALL) By Origination Facility (Numbers)					
		Generation	Transmission	Substation	Distribution Overhead	Distribution Underground	Customer
111	Y	0	91,273	125,000	812,880	3,372	2,184
112	Y	0	19	5,154	72,065	158	10
119	N	0	0	0	0	0	0
120	Y	10,132	425,391	352,243	2,407,769	90,240	53,905
121	N	0	0	0	0	0	0
123	Y	0	210,506	131,112	1,389,332	84,567	0
124	Y	0	43,811	46,753	390,976	11,224	0
126	Y	0	145,728	124,900	1,039,873	226,332	0
127	Y	0	52,487	15,184	200,159	18,820	0
128	Y	0	42,705	144,970	670,376	560,868	0
129	Y	0	83,821	49,378	272,762	1,695	0
132	Y	0	9,303	25,627	801,785	8,666	0
133	Y	0	47,567	73,762	883,414	58,781	0
134	Y	0	1,813	67,907	1,156,814	188,319	0
		27,587	5,577,192	6,842,321	60,900,689	7,408,662	101,218

Company Outage Minutes (Interruption Data 2) by Classification (All Interruptions)

1	Y	525,162	24,124,375	24,495,775	428,648,987	1,660,385	196,612
2	Y	0	20,890,681	13,322,562	117,893,460	1,783,278	61,474
3	Y	0	50,245,286	17,414,180	1,974,710,461	2,323,035	123,833
4	Y	0	4,982,917	4,143,504	64,316,154	685,222	44,907
5	Y	0	5,549,320	1,291,270	8,499,252	203,851	8,296
6	N	0	0	0	0	0	0
7	Y	0	0	0	0	0	0
10	N	0	0	0	0	0	0
11	N	0	0	0	0	0	0
12	N	0	0	0	0	0	0
14	Y	0	10,801,140	9,276,180	22,915,391	21,422,629	0
15	Y	0	166,500	3,542,580	351,443,280	76,704,060	3,180
16	N	0	0	0	0	0	0
17	Y	0	897,731	1,403,721	64,548,899	1,136,357	50,935
20		0	0	0	0	0	0
22	Y	0	10,736,909	14,812,051	246,535,371	11,281,494	0
24	Y	0	104,140,155	48,171,009	756,620,622	13,008,044	804,412
26	Y	0	0	1,647,668	597,838,476	16,209,964	1,557,960
29	Y	0	200,549,508	213,841,679	1,570,989,866	64,928,319	0
36	Y	0	59,415,264	45,983,824	568,942,070	34,431,473	0
37	N	0	0	0	0	0	0
41		0	0	0	0	0	0
43	N	0	0	0	0	0	0
45	Y	95,971	87,915	1,943,582	17,496,236	2,253,923	145,205
47	Y	0	81,292	682,035	70,775,035	7,694,028	7,044
49	Y	0	693,665	1,667,177	82,538,567	8,974,100	0
50	Y	0	8,551,925	9,451,193	91,651,917	4,312,696	770,231
51	Y	0	0	856,214	2,807,939	1,176,993	0
55	Y	0	0	13,259,800	21,136,488	0	3,196
58	Y	0	5,385,306	6,173,963	39,993,818	3,807,992	0

59		0	0	0	0	0	0
62	Y	0	1,635,000	3,545,400	16,552,920	18,082,320	0
64	Y	0	194,692	1,172,888	2,041,607	361,571	0
69	Y	0	688,177	14,125,007	645,732,491	79,322,235	118,899
70	Y	0	0	3,153,322	34,321,795	3,390,088	39,016
73	N	0	0	0	0	0	0
76	Y	0	10,909,470	26,791,264	443,259,774	43,306,397	0
78	Y	0	16,060,494	16,314,486	286,697,583	7,721,833	0
79	N	0	0	0	0	0	0
81	N	0	4,744,239	0	19,392,447	6,344,905	0
82	Y	0	37,977,000	4,554,793	82,587,593	20,542,402	0
83	Y	0	32,373,316	28,467,375	238,403,991	29,854,639	35,648
84	Y	0	658,947	11,196,247	221,227,495	50,260,028	599,804
87	Y	1,140	3,310,320	27,944	22,810,200	5,297,100	0
88	Y	22,967	9,956,487	18,370,054	333,744,340	219,652,872	0
89	Y	0	3,711,946	845,104	7,396,815	1,109,609	827
90	Y	0	1,011,550	11,717,794	52,088,036	3,372,122	4,162
94	Y	0	0	0	7,071,808	0	0
95	Y	0	0	0	0	0	0
100	Y	0	27,332,752	12,950,102	587,957,791	5,998,009	0
102	Y	0	404,532	8,220,978	75,494,907	10,384,851	62,322
103	Y	0	4,248,486	1,682,594	82,222,695	0	0
105	Y	0	91,257,893	35,480,764	209,657,598	0	0
107	Y	0	9,529,341	9,060,297	128,992,725	5,744,918	21,730
108	Y	0	15,125,741	9,257,395	192,345,015	1,225,152	160,259
109	Y	0	3,560,507	2,036,896	66,037,594	119,179	4,954
110	Y	0	16,988	16,410	4,817,745	26,208	521

111	Y	0	13,910,121	20,404,942	127,270,928	900,405	123,158
112	Y	0	2,280	703,550	11,950,715	70,922	324
119	N	0	0	0	0	0	0
120	Y	165,300	49,327,560	21,492,060	494,530,380	19,404,660	14,236,200
121	N	0	0	0	0	0	0
123	Y	0	31,840,025	9,500,423	147,858,424	12,905,677	0
124	Y	0	1,897,588	1,429,040	35,525,318	1,308,413	0
126	Y	0	10,198,475	9,146,872	298,432,490	29,981,449	0
127	Y	0	7,784,668	1,336,984	35,115,395	2,725,796	0
128	Y	0	2,357,461	9,638,457	80,166,602	52,586,465	0
129	Y	0	12,331,083	2,622,988	42,310,741	54,101	0
132	Y	0	1,754,344	4,395,404	95,730,498	1,970,254	0
133	Y	0	8,982,565	10,416,647	150,804,873	9,311,240	0
134	Y	0	172,561	11,979,213	196,724,403	32,024,903	0
		810,540	922,566,498	755,433,661	12,577,578,021	949,358,566	19,185,109

Company Outage Data (Interruption Data 2) w/o MEs by Classification

Company ID #	Plant/Distribution Facility	Company Interruption Data 2 Interruptions (Without Major Event(s)) By Originating Facility					
		Generation	Transmission	Substation	Distribution Overhead	Distribution Underground	Customer
1	Y	7,957	124,089	183,099	1,623,905	4,065	1,649
2	Y	0	163,938	144,451	972,671	8,557	593
3	Y	0	124,365	60,414	565,033	9,035	179
4	Y	0	61,679	65,476	650,414	3,470	624
5	Y	0	72,656	27,472	108,096	1,318	118
6	N	0	0	0	0	0	0
7	Y	0	224,226	56,612	1,868,448	0	0
10	N	0	0	0	0	0	0
11	N	0	0	0	0	0	0
12	N	0	0	0	0	0	0
14	Y	0	95,845	129,359	218,578	213,334	0
15	Y	0	6,361	52,506	1,128,715	466,440	11
16	N	0	0	0	0	0	0
17	Y	0	7	2	6,312	47	55
20		0	0	0	0	0	0
22	Y	0	36,077	97,806	1,471,457	63,371	0
24	Y	0	362,675	201,860	1,679,183	37,686	5,230
26	Y	0	0	14,919	1,851,354	59,720	9,029
29	Y	0	453,690	483,760	3,553,945	146,883	0
36	Y	0	181,518	287,751	3,771,382	130,619	0
37	N	0	0	0	0	0	0
41		0	0	0	0	0	0
43	N	0	0	0	0	0	0
45	Y	7,118	2,830	33,805	286,056	26,386	736
47	Y	0	4,332	9,853	279,324	103,833	169
49	Y	0	10,821	48,614	782,356	89,937	0
50	Y	0	95,121	126,396	683,714	30,791	10,613
51	Y	0	0	11,564	19,871	9,040	0
55	Y	0	0	57,106	67,204	0	33
58	Y	0	180	163	5,665	786	0
59		0	0	0	0	0	0
62	Y	0	27,758	58,591	169,911	144,984	0

Company ID #	Track Origination Facility	Company Interruption Data 2 - Interruptions (Without Major Events) By Origination Facility					
		Generation	Transmission	Substation	Distribution Overhead	Distribution Underground	Customer
64	Y	0	15	68	806	227	0
69	Y	0	104,341	191,800	2,476,731	466,258	1,209
70	Y	0	0	18,928	258,160	14,517	169
73	N	0	0	0	0	0	0
76	Y	0	37,889	164,702	2,519,593	233,998	0
78	Y	0	136,293	200,270	1,139,681	48,153	0
79	N	0	0	0	0	0	0
81	N	0	61	0	3,820	1,199	0
82	Y	0	157,022	52,432	1,175,782	214,742	0
83	Y	0	111,199	113,257	658,442	143,303	271
84	Y	0	10,535	224,349	2,595,268	422,596	9,127
87	Y	8	44,426	25,542	230,705	41,351	0
88	Y	2,372	186,477	1,062,764	5,726,240	2,551,070	0
89	Y	0	38,526	15,420	116,333	10,287	15
90	Y	0	0	0	0	0	0
94	Y	0	0	0	543	0	0
95	Y	0	0	0	0	0	0
100	Y	0	86,839	158,995	625,702	33,787	0
102	Y	0	9,400	76,727	532,968	77,152	1,157
103	Y	0	50,146	34,536	561,314	0	0
105	Y	0	292,493	211,949	967,573	0	0
107	Y	0	69,947	75,277	1,085,857	27,122	306
108	Y	0	82,092	83,861	484,280	4,364	1,114
109	Y	0	24,037	19,077	352,531	242	62
110	Y	0	137	138	45,633	204	13
111	Y	0	89,580	125,000	791,830	3,372	2,184
112	Y	0	19	5,154	72,065	158	10
119	N	0	0	0	0	0	0
120	Y	10,132	367,466	350,287	1,831,875	88,284	24,947

Company ID #	Track Origination Facility	Company Interruption Data 2 - Interruptions (Without Major Events) By Origination Facility					
		Generation	Transmission	Substation	Distribution Overhead	Distribution Underground	Customer
121	N	0	0	0	0	0	0
123	Y	0	209,487	131,112	1,288,336	84,026	0
124	Y	0	43,811	46,753	329,426	11,194	0
126	Y	0	124,306	119,306	691,458	219,138	0
127	Y	0	33,868	12,249	156,407	17,425	0
128	Y	0	27,020	134,650	587,403	537,590	0
129	Y	0	47,971	40,394	207,553	1,695	0
132	Y	0	9,302	25,627	727,970	8,568	0
133	Y	0	26,775	72,179	743,487	54,803	0
134	Y	0	1,812	66,896	1,048,136	170,627	0
		27,587	4,471,460	6,011,278	51,797,502	7,037,754	69,623

Company Outage Minutes (Interruption Data 2) w/o MEs by Classification

Company ID #	Track Origination Facility	Company Interruption Data 2 - Interruptions (Without Major Events) By Origination Facility (Minutes)					
		Generation	Transmission	Substation	Distribution - Overhead	Distribution - Underground	Customer
1	Y	525,162	17,366,024	20,423,013	299,652,218	1,637,219	190,066
2	Y	0	9,291,019	9,550,843	88,333,239	1,706,493	48,214
3	Y	0	8,866,818	5,626,863	67,728,142	2,180,764	48,833
4	Y	0	3,582,675	4,094,959	54,073,298	680,646	43,676
5	Y	0	4,775,313	1,289,065	8,015,200	203,851	8,296
6	N	0	0	0	0	0	0
7	Y	0	34,183,385	11,508,610	392,213,577	0	0
10	N	0	0	0	0	0	0
11	N	0	0	0	0	0	0
12	N	0	0	0	0	0	0
14	Y	0	7,785,840	7,928,160	22,914,393	21,421,287	0
15	Y	0	166,500	3,542,580	150,030,660	69,896,640	1,020
16	N	0	0	0	0	0	0
17	Y	0	793,094	1,403,721	59,099,335	1,136,357	50,935
20		0	0	0	0	0	0
22	Y	0	3,213,406	13,716,536	161,431,919	11,060,757	0
24	Y	0	66,595,812	37,971,083	351,862,573	10,143,112	763,630
26	Y	0	0	1,647,668	381,008,945	14,335,645	1,540,500
29	Y	0	53,486,237	57,031,238	418,980,516	17,316,280	0
36	Y	0	11,347,174	26,780,411	369,780,812	18,485,419	0
37	N	0	0	0	0	0	0
41		0	0	0	0	0	0
43	N	0	0	0	0	0	0
45	Y	95,971	87,915	1,943,582	17,496,236	2,253,923	145,205
47	Y	0	81,292	682,035	28,429,174	7,024,570	7,044
49	Y	0	160,477	963,140	57,936,493	7,524,795	0
50	Y	0	4,528,057	9,355,097	59,020,888	4,035,933	639,750
51	Y	0	0	856,214	2,033,361	1,176,993	0
55	Y	0	0	4,480,130	7,554,982	0	3,196
58	Y	0	3,458,211	3,689,199	27,932,976	3,748,596	0
59		0	0	0	0	0	0
62	Y	0	1,635,000	3,545,400	0	18,082,320	0

Company ID #	Track Origination Facility	Company Interruption Data 2 - Interruptions (Without Major Events) By Origination Facility (Minutes)					
		Generation	Transmission	Substation	Distribution - Overhead	Distribution - Underground	Customer
64	Y	0	194,692	1,172,888	2,041,607	361,571	0
69	Y	0	3,832,205	10,335,234	226,332,350	46,222,466	116,793
70	Y	0	0	1,937,901	22,826,438	3,344,598	39,016
73	N	0	0	0	0	0	0
76	Y	0	3,385,546	25,687,538	315,407,027	36,126,472	0
78	Y	0	15,670,413	14,976,908	175,753,511	7,624,716	0
79	N	0	0	0	0	0	0
81	N	0	474,239	0	19,392,447	6,344,905	0
82	Y	0	17,873,578	4,513,120	67,499,273	20,542,402	0
83	Y	0	19,489,429	20,280,124	107,608,858	28,251,692	33,907
84	Y	0	235,299	10,607,416	178,467,277	46,879,692	596,701
87	Y	1,140	3,310,320	27,944	22,810,200	5,297,100	0
88	Y	22,967	9,956,487	18,353,498	297,107,762	218,897,331	0
89	Y	0	3,711,946	845,104	7,396,815	1,109,609	827
90	Y	0	0	0	0	0	0
94	Y	0	0	0	7,071,808	0	0
95	Y	0	0	0	0	0	0
100	Y	0	6,229,558	11,460,505	52,519,889	4,452,163	0
102	Y	0	404,532	8,180,994	52,564,131	9,439,092	62,322
103	Y	0	3,324,680	1,682,594	74,823,156	0	0
105	Y	0	37,701,868	18,827,702	124,746,855	0	0
107	Y	0	9,529,341	9,060,297	128,992,725	5,744,918	21,730
108	Y	0	8,932,447	8,988,205	65,352,424	1,049,640	158,601
109	Y	0	3,461,193	2,036,896	52,525,207	119,179	4,954
110	Y	0	16,988	16,410	4,817,745	26,208	521
111	Y	0	12,910,706	20,404,942	115,324,183	900,405	123,158
112	Y	0	2,280	703,550	11,950,715	70,922	324
119	N	0	0	0	0	0	0
120	Y	165,300	19,312,980	20,463,060	297,227,460	18,375,660	4,117,440

Company ID #	Track Origination Facility	Company Interruption Data 2 - Interruptions (Without Major Events) By Origination Facility (Minutes)					
		Generation	Transmission	Substation	Distribution - Overhead	Distribution - Underground	Customer
121	N	0	0	0	0	0	0
123	Y	0	31,451,600	9,500,423	116,366,530	12,740,199	0
124	Y	0	1,897,588	1,429,040	23,156,135	1,299,403	0
126	Y	0	7,537,588	8,387,581	71,716,491	23,585,702	0
127	Y	0	3,102,879	902,604	18,375,815	2,132,018	0
128	Y	0	883,448	7,350,254	58,690,864	48,342,607	0
129	Y	0	2,329,994	1,762,334	16,900,157	54,101	0
132	Y	0	1,753,518	4,395,404	73,949,294	1,954,595	0
133	Y	0	1,459,888	9,321,132	87,482,625	9,106,162	0
134	Y	0	172,140	11,971,001	153,975,108	25,065,715	0
		810,540	461,953,619	493,612,150	6,076,701,819	799,512,843	8,766,659

Company Linear Circuit Mile & Customer Data

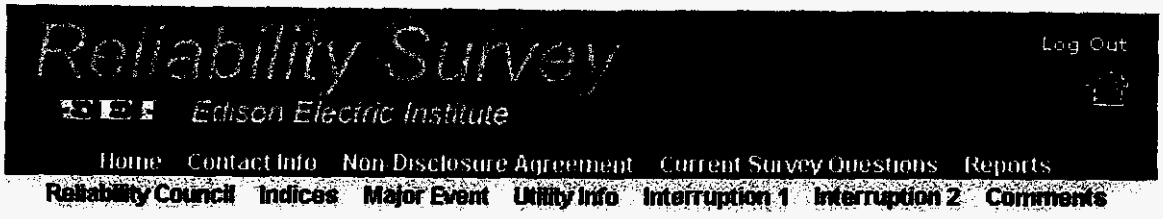
Customer ID #	LINEAR CIRCUIT MILES			LINEAR CIRCUIT MILE By Voltage Class				
	[redacted]	[redacted]	Sub-Total	[redacted]	[redacted]	[redacted]	[redacted]	Sub-Total
1	44,727	4,883	49,610	8,424	32,639	0	8,547	49,610
2	24,421	4,232	28,653	6,430	22,057	166	0	28,653
3	17,368	4,066	21,434	7,370	12,830	743	491	21,434
4	17,668	2,620	20,288	5,915	13,020	180	1,173	20,288
5	12,353	819	13,172	3,792	9,337	43	0	13,172
6	62,437	16,993	79,430	0	0	0	0	0
7	55,800	7,800	63,600	250	62,450	0	900	63,600
10	13,192	1,681	14,873	2,347	9,332	0	1,000	12,679
11	25,644	6,845	32,489	4,046	24,274	47	3,749	32,116
12	7,710	2,711	10,421	384	9,630	199	207	10,420
14	12,471	16,211	28,682	225	28,150	300	7	28,682
15	9,326	14,388	23,714	380	21,999	0	1,335	23,714
16	0	0	0	0	0	0	0	0
17	13,226	1,736	14,962	7,985	6,924	0	53	14,962
20	10,528	886	11,414	279	7,268	441	3,426	11,414
22	14,511	9,252	23,763	1,524	16,005	5,537	697	23,763
24	55,650	9,780	65,430	70	56,130	9,230	0	65,430
26	30,697	15,023	45,720	20,250	21,939	791	2,740	45,720
29	77,000	29,000	106,000	2,000	70,000	26,000	8,000	106,000
36	88,748	9,820	98,568	1,872	83,315	3,572	9,809	98,568
37	35,913	26,255	62,168	0	0	0	0	0
41	1,380	1,396	2,776	0	0	0	0	0
43	18,899	2,639	21,538	1,209	17,826	0	1,351	20,386
45	8,795	5,019	13,814	474	12,482	0	858	13,814
47	8,760	3,600	12,360	40	11,800	0	520	12,360
49	8,906	4,230	13,136	0	0	0	0	0
50	17,898	4,307	22,205	1,771	20,140	27	267	22,205
51	925	1,014	1,939	355	1,613	0	0	1,968
55	7,168	2,238	9,406	1,030	6,828	514	1,006	9,378
58	17,420	3,662	21,082	1,115	18,407	1,560	0	21,082
59	9,833	2,447	12,280	2,458	9,646	176	0	12,280
62	5,510	25,776	31,286	100	30,276	810	100	31,286

Customer ID #	LINEAR CIRCUIT MILES			LINEAR CIRCUIT MILE By Voltage Class				
	OH	UG	Sub-Total	5 kV	12 kV	25 kV	34.5 kV	Sub-Total
64	1,710	468	2,178	336	1,639	193	10	2,178
69	56,191	15,013	71,204	269	52,808	17,961	166	71,204
70	3,652	0	3,652	1,036	2,440	0	176	3,652
73	12,934	15,260	28,194	0	0	0	0	0
76	18,938	15,713	34,651	1,724	25,993	5,737	1,197	34,651
78	27,908	6,981	34,889	0	34,889	0	0	34,889
79	33,780	13,276	47,056	0	4,337	42,588	131	47,056
81	5,675	5,206	10,881	381	10,500	0	0	10,881
82	14,134	7,543	21,677	3,957	15,379	2,225	116	21,677
83	10,401	9,578	19,979	71	19,431	0	483	19,985
84	20,973	9,010	29,983	0	18,173	0	11,810	29,983
87	26,590	8,088	34,678	0	0	0	0	0
88	59,870	39,843	99,713	45,485	41,656	10,609	1,963	99,713
89	3,077	1,156	4,233	128	4,105	0	0	4,233
90	6,137	7,893	14,030	0	0	0	0	0
94	1,849	175	2,024	703	1,321	0	0	2,024
95	2,676	689	3,365	417	2,949	0	0	3,366
100	19,000	3,100	22,100	190	21,700	210	0	22,100
102	18,132	12,130	30,262	939	17,686	11,191	446	30,262
103	16,583	5,805	22,388	0	1,567	20,821	0	22,388
105	36,594	6,819	43,413	24,208	19,160	14	31	43,413
107	12,914	5,961	18,875	3,164	14,036	0	1,675	18,875
108	16,580	3,410	19,990	4,130	15,573	0	287	19,990
109	9,658	151	9,809	1,780	6,214	0	1,815	9,809
110	1,326	198	1,524	359	918	0	247	1,524
111	24,317	2,279	26,596	6,155	19,404	1	1,036	26,596
112	1,409	87	1,496	318	1,087	0	91	1,496
119	7,562	3,158	10,720	19	8,674	1,274	753	10,720
120	29,875	5,167	35,042	0	0	0	0	0
121	6,635	2,273	8,908	70	7,943	0	176	8,189
123	13,549	4,537	18,086	3,282	14,001	701	102	18,086
124	4,994	1,077	6,071	767	4,966	266	72	6,071

Customer ID #	LINEAR CIRCUIT MILES			LINEAR CIRCUIT MILE By Voltage Class					
	OH	UG	Sub-Total	5 kV	15 kV	25 kV	35 kV	Sub-Total	
126	17,390	9,711	27,101	375	21,213	599	4,914	27,101	
127	8,581	1,362	9,943	465	7,281	2,197	0	9,943	
128	10,332	11,402	21,734	0	0	0	0	0	
129	15,398	1,357	16,755	0	0	0	0	0	
132	7,420	2,774	10,194	127	10,061	3	3	10,194	
133	7,091	6,478	13,569	1,397	5,944	5,534	694	13,569	
134	4,427	6,461	10,888	200	9,988	200	500	10,888	
Sub-Totals	1,331,146	492,918		184,547	1,079,353	172,660	75,130		
									68,088,138
TOTAL Customers Served By Survey Participants									

2007 EEI Distribution Reliability Survey Questions From The Reliability Survey Web Site

NOTE: The Survey Questions did not change from 2006 to 2007



Reliability Council

Are you required to report reliability indices to your state public utility commission?

- (•) Yes
- ( ) No

If You answered YES to the question above, which state(s) do you report reliability statistics?

Alaska
Arkansas

(Hold control key down while clicking mouse to select multiple states)

In which Reliability Council Area does your utility reside?

ERCOT
FRCC
MRO (Midwest Reliability Organization - formerly MAPP - Effective Jan 1, 2006)

(Hold control key down while clicking mouse to select multiple areas)

Save Reset

Indices Data

Please provide your 2005 reliability results:
Note: please provide CAIDI and SAIDI data in minutes.

	A. Including all Interruptions.		*B. Excluding Major Events* (per definitions on Major Event Page).	
SAIFI	0		0	
CAIDI	0	minutes	0	minutes
SAIDI	0	minutes	0	minutes
MAIFI	0		0	

Are there additional reliability indices that your company tracks?

- ○ Yes
- ○ No

If you answered YES to the above, that your company tracks additional indices, please list them in the box below.

Is your company required to report any additional reliability indices to a state public utility commission?

- ○ Yes
- ○ No

If you answered YES to the above, that your company is required to report additional indices, please list them in the box below.

Save Reset

Major Event

The following definition of major event-days (per IEEE 1366-2003) should be used to calculate indices without major event days included.

- **Assign each event to the date when that event started**
- **Calculate SAIDI for each day - build data to 5 years then use rolling 5 years.** ***(If the event lasted over a couple of days, all customer interruptions associated with that event are counted in the day when the event started.)***
- **For days with SAIDI = 0, remove these days.**
- **Convert each daily SAIDI value to natural log (ln).**
- **Calculate the average (α) and Std. Dev. (β) of the natural log data to set the threshold for the following year.**
- **Set the threshold to be equal to average + 2.5 Standard Deviations (SD) of the ln data. α + 2.5β.**
- **Convert natural log threshold to SAIDI/day threshold (exp(α + 2.5β)).**
- **Identify days in the following year in which SAIDI/day is greater than the threshold (these are your major event days).**
- **Extract all the events during the days identified as extraordinary.**
- **Calculate all the performance indicators with these major event defined days removed.**

Excel Example File

Do you use the IEEE 1366-2003 definition of major event-normalization?

- ○ Yes
- ○ No

If you answered NO to the question above, please provide your company's definition of major-event normalization. Note: Please keep your responses specific, concise and as generic as possible.

Save Reset

Utility Parameters

In order to promote more useful comparisons based on a better understanding of data quality and other operational parameters, please check the appropriate box for your utility.

A. At my utility, outage data is collected using an automated outage management system supported by a fully connected circuit model.

○ Yes

○ No

B. Identify the percentage of your customers whose outage are capable of being reported through an automated meter reading system (i.e., AMR).

none

C. Identify the percentage of customers served from substations with SCADA.

none

D. Identify the percentage of customers served from circuits utilizing automated switching to restore portions of the feeder either automatically (locally controlled) or remotely (through dispatcher control, e.g. radio to/from dispatcher console).

none

E. Does your company do partial restoration (i.e., step restoration) within your outage management system to stop the accumulation of customer minutes to customers restored through switching?

○ Yes

○ No

F. Select the lowest level that outage data is collected.

none

G. Please indicate what percentage of your Linear Circuit Miles are in each of these categories.

		Definitions
Rural	0 %	Rural <= 50 cust/mi
Suburban	0 %	Suburban 51 to 149 cust/mi
Urban	0 %	Urban >= 150 cust/mi

H. How many Linear Circuit Miles do you have for Overhead and Underground distribution on your system?

500 OH Miles

100 UG Miles

I. How many Linear Circuit Miles for each of these distribution voltage classes do you have on your system?

5 kV 0 Miles

15 kV 200 Miles

25 kV 0 Miles

35 kV 0 Miles

J. How many electric customers did your company serve in 2005?

0 Customers (#)

Save Reset

Interruption Data 1

Please provide the total number of interruptions and the total duration (in minutes) of the interruptions caused by each category listed below: *(Review IEEE Reliability Category Definitions before completing this form.)*

Interruption Data Example **contains three sample outage examples and illustrates how the information should be entered into both Interruption Data 1 and Interruption Data 2 data fields.**

A. Including All Interruptions.

	# of Customer Interruptions	# of Customer Minutes
Vegetation	0	0
Wildlife	0	0
Public	0	0
Lightning	0	0
Weather (not lightning)	0	0
Equipment - OH Equipment	0	0
Equipment - OH Conductor	0	0
Equipment - UG Equipment	0	0
Equipment - UG Cable	0	0
Power Supply	0	0
Planned	0	0
Unknown	0	0
Others	0	0

Save Reset

B. Excluding Major Events
(per definition on the Major Event page).

	# of Customer Interruptions	# of Customer Minutes
Vegetation	0	0
Wildlife	0	0
Public	0	0
Lightning	0	0
Weather (not lightning)	0	0
Equipment - OH Equipment	0	0
Equipment - OH Conductor	0	0
Equipment - UG Equipment	0	0
Equipment - UG Cable	0	0
Power Supply	0	0
Planned	0	0
Unknown	0	0
Others	0	0

Interruption Data 2

Do you track the origination facility (transmission, generation, distribution, etc.) for the interruption?

(•) Yes

( ) No

If you answered Yes to above question, please list the the total duration (in minutes) of the interruptions caused by each facility and the number of minutes of interruption:

Interruption Data Example **contains three sample outage examples and illustrates how the information should be entered into both Interruption Data 1 and Interruption Data 2 data fields.**

A. Including All Interruptions

	# of Customer Interruptions	# of Customer Minutes
Generation	0	0
Transmission	0	0
Substation	0	0
Distribution Overhead	0	0
Distribution Underground	0	0
Customer[1]	0	0

B. Excluding Major Events
(per definition on the Major Event page)

	# of Customer Interruptions	# of Customer Minutes
Generation	0	0
Transmission	0	0
Substation	0	0
Distribution Overhead	0	0
Distribution Underground	0	0
Customer[1]	0	0

[1]Interruption caused by customer equipment that caused an outage for other customers on the utility system.

What percentage of customers has seen the following number of major event-normalized interruptions last year?

Zero interruptions	50 %
1 interruption	50 %
2 interruptions	0 %
3 interruptions	0 %
4 interruptions	0 %
5 interruptions	0 %
6 or more	0 %
Total	100

Save Reset

Survey Comments

Please provide any comments and suggestions for next year's survey.
Note: Please keep your responses specific, concise and as generic as possible.

Save Reset

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