STATE OF NEW HAMPSHIRE

PUBLIC UTILITIES COMMISSION

October 10, 2007 - 9:18 a.m.
Concord, New Hampshire

RE: DE 06-061
INVESTIGATION OF IMPLEMENTATION
OF FEDERAL STANDARDS OF THE
DOMENICI-BARTON ENERGY POLICY ACT OF 2005.

PRESENT: Chairman Thomas B. Getz, Presiding
Commissioner Graham J. Morrison
Commissioner Clifton C. Below

Connie Fillion, Clerk

APPEARANCES: Reptg. Public Service Co. of New Hampshire:
Gerald M. Eaton, Esq.

Reptg. National Grid:
Alexandra E. Blackmore, Esq.

Reptg. Unitil Energy Systems:
Gary M. Epler, Esq.

Reptg. Halifax American Energy Company:
August Fromuth

Reptg. Wal-Mart Stores East:
Karla Doukas, Esq.

COURT REPORTER: STEVEN E. PATNAUDE, CCR

APPEARANCES: (C o n t i n u e d)

Pentti Aalto, pro se

Reptg. N.H. Office of Energy & Planning:
Amy L. Ignatius, Esq., Director

Reptg. Residential Ratepayers:
Meredith Hatfield, Esq., Consumer Advocate
Office of Consumer Advocate

Reptg. PUC Staff:
Suzanne G. Amidon, Esq.

I N D E X

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E X H I B I T S

P R O C E E D I N G S

CHAIRMAN GETZ: Okay. Good morning. We'll open the hearing in docket DE 06-061. Pursuant to Order 24,785, issued on August 31, we have authorized the filing of testimony in this proceeding by September 17, several parties have filed testimony. Pursuant to a secretarial letter dated September 21, we indicated that parties may adopt as testimony previously filed comments. We also attached to that letter a bibliography of materials on demand response, advanced metering, and time-of-use rates, and provided that parties could submit briefs regarding any of those materials by October 26.

Let's begin with appearances please.

MR. EATON: For Public Service Company of New Hampshire, my name is Gerald M. Eaton. Good morning.

CHAIRMAN GETZ: Good morning.

CMSR. BELOW: Good morning.

CMSR. MORRISON: Good morning.

MR. EPLER: Gary Epler, on behalf of Unitil Energy Systems, Inc. Good morning.

CHAIRMAN GETZ: Good morning.

CMSR. MORRISON: Good morning.

CMSR. BELOW: Good morning.

MR. FROMUTH: Gus Fromuth, on behalf of Halifax American Energy Company. And, Mr. Chairman, if I could, before the hearing begins, if you would permit me, I'd like to make a short opening statement.

CHAIRMAN GETZ: Okay. Let's finish with appearances first.

MS. BLACKMORE: Alexandra Blackmore, on behalf of National Grid.

CHAIRMAN GETZ: Good morning.

CMSR. MORRISON: Good morning.

CMSR. BELOW: Good morning.

MS. DOUKAS: Karla Doukas, on behalf of Wal-Mart Stores East.

CHAIRMAN GETZ: Good morning.

CMSR. MORRISON: Good morning.

CMSR. BELOW: Good morning.

MS. IGNATIUS: Good morning. Amy Ignatius, from the Office of Energy and Planning.

CHAIRMAN GETZ: Good morning.

CMSR. MORRISON: Good morning.

CMSR. BELOW: Good morning.

MR. AALTO: Good morning. Pentti Aalto, PJA Energy Systems Design and Roy Morrison Associates.

CHAIRMAN GETZ: Good morning.

CMSR. MORRISON: Good morning.

CMSR. BELOW: Good morning.

MS. HATFIELD: Good morning, Commissioners. Meredith Hatfield, for the Office of Consumer Advocate, representing residential ratepayers. And, with me this morning is Ken Traum, Assistant Consumer Advocate.

CHAIRMAN GETZ: Good morning.

CMSR. MORRISON: Good morning.

CMSR. BELOW: Good morning.

MS. AMIDON: Good morning. Suzanne Amidon, for Commission Staff. And, to my far left is Tom Frantz, who's the Director of the Electric Division, and to my immediate left is George McCluskey, who is an Analyst with the Electric Division.

CHAIRMAN GETZ: Good morning.

CMSR. MORRISON: Good morning.

CMSR. BELOW: Good morning.

CHAIRMAN GETZ: Mr. Fromuth -- was there an objection to Mr. Fromuth making a statement or is this in regard to your Petition to Intervene or --

MR. FROMUTH: Yes, it is, Mr. Chairman. We belatedly showed up with a submission yesterday. We are newly licensed, and, in so doing, we felt that, to

have good standing in this proceeding, that we should await that license before saying our piece. We did so yesterday, and I believe that the Commission has been provided copies of our statement that addresses this docket, as well as circulating amongst the attendees here today.

CHAIRMAN GETZ: Is there any objection to the Petition to Intervene from Halifax?

(No verbal response)

CHAIRMAN GETZ: Hearing no objection, and recognizing that it has demonstrated rights, duties, privileges, or other interests affected by this proceeding, we'll grant the Petition to Intervene. And, there's also some comments that came in after the testimony date. Was it your hope later today to sponsor those comments as testimony and be subject to cross-examination?

MR. FROMUTH: Yes, Mr. Chairman.

CHAIRMAN GETZ: Okay. All right. Well, then, let's address other procedural matters. Anything we need to address, before we hear from, as I understand, PSNH is going to go first, is that correct? Anything prior --

MS. AMIDON: Yes, Mr. Chairman. We all

agreed to the order of presentation today. PSNH will be first, then Unitil Energy Systems will present testimony, followed by National Grid. Then, Wal-Mart will present their comments and adopt their comments and testimony and be subject to cross-examination. And, then, finally Staff. We haven't heard from anyone else who intended to testify. Obviously, all of the witnesses would be subject to cross-examination by all -- by any party to the proceeding.

CHAIRMAN GETZ: Okay.

MS. AMIDON: And, then, those parties who are not represented by a witness, obviously, would be able to present, as is the Commission's custom, a closing statement summarizing their position on the issues that were heard today.

CHAIRMAN GETZ: And, this list should now also include Halifax?

MS. AMIDON: I think if probably Halifax could follow Wal-Mart, and Staff should close.

MR. FROMUTH: Thank you.

CHAIRMAN GETZ: Is there any objection to that procedure?

(No verbal response)

CHAIRMAN GETZ: Okay. Mr. Epler.

MR. EPLER: Yes, Mr. Chairman, Commissioners. Unitil filed supplemental testimony and a motion for leave to file supplemental testimony. I can postpone addressing that until the time comes for us to make our presentation.

CHAIRMAN GETZ: Well, let's take care of it now. We've seen the supplemental testimony and read it. Is there any objection to allowing that testimony?

MR. EATON: No.

CHAIRMAN GETZ: Okay. Then, it will be allowed.

MR. EPLER: Thank you very much.

CHAIRMAN GETZ: Mr. Aalto?

MR. AALTO: Just to say that I will be available for any questioning that, if anyone has any questions of the pilot proposals in my comments from last year, basically, that our position is roughly the same. Thank you.

CHAIRMAN GETZ: Thank you. Anything further? Okay. Then, Mr. Eaton, if you could present your witnesses please.

MR. EATON: I wish to call to the stand, Stephen Hall, Michael Coit and Daniel Comer.

(Whereupon Stephen R. Hall, Michael B.

Coit & Daniel S. Comer was duly sworn and cautioned by the Court Reporter.)

STEPHEN R. HALL, SWORN

MICHAEL B. COIT, SWORN

DANIEL S. COMER, SWORN

DIRECT EXAMINATION

BY MR. EATON:

Q. Mr. Hall, would you please state your name for the record.

A. (Hall) Stephen R. Hall.

Q. For whom are you employed?

A. (Hall) I'm employed by Public Service of New Hampshire. I'm Rate and Regulatory Services Manager.

Q. What are your duties as Rates and Regulatory Services Manager?

A. (Hall) I'm responsible for regulatory interface, regulatory relations, pricing, and rate and tariff administrations.

Q. Have you previously testified before the Commission?

A. (Hall) Yes, I have.

Q. Did you co-sponsor testimony that was filed on September 17th?

A. (Hall) Yes, I did.

Q. Mr. Coit, would you please state your full name for the

record.
A. (Coit) Michael B. Coit.
Q. And, for whom are you employed and what is your position?
A. (Coit) I'm a Senior Engineer at PSNH.
Q. What are your duties as a Senior Engineer for PSNH?
A. (Coit) To keep the Metering Engineering Department and meter shop running.
Q. Are you the head of the Metering Department?
A. (Coit) Yes.
Q. Have you ever testified before the Commission?
A. (Coit) No.
Q. Could you move your mike a little bit closer. I'm getting older, I'm having a hard time hearing. Mr. Comer, could you please state your name for the record.
A. (Comer) Daniel S. Comer.
Q. For whom are you employed and what is your position?
A. (Comer) I'm employed by Public Service Company of New Hampshire. I'm Director of Customer Services.
Q. Mr. Comer, what are your duties as the Director of Customer Services?
A. (Comer) I'm responsible for the call center, credit collections, meter reading, and the billing systems for PSNH.

Q. And, what other duties have you performed for Public Service Company during your career?
A. (Comer) I've held numerous positions with the Company, most recently, prior to returning to Customer Service, I was Director of Human Resources, Safety and Environmental Services. And, prior to that, held various positions within Customer Service, as Customer Service Manager, Credit/Collections Manager, and Training Supervisor, et cetera.
Q. Did you co-sponsor testimony that was filed on September 17th?
A. (Comer) Yes, I did.
Q. And, what is the subject matter that you are prepared to testify here today?
A. (Comer) It's in relation to the billing systems of PSNH.
Q. And, Mr. Coit, could you give us a brief description of your background and professional experience.
A. (Coit) I've been in the electric utility industry for over 20 years. I have a Bachelors of Science degree in Electrical Engineering.
Q. Could you tell us what subject matter you're prepared to testify on today?
A. (Coit) I'm prepared to testify regarding the technical

issues of the metering systems.
Q. So, Mr. Hall, are you prepared to testify on everything else?
A. (Hall) Yes, I suppose I am. My testimony centers on the policy issues associated with time of use rate implementation and real-time pricing implementation.
Q. Okay. Mr. Hall, could you briefly summarize your testimony.
A. (Hall) Sure. In our testimony, what we did is we described PSNH's metering and billing system and capabilities. And, we talked about, initially, the amount of time and effort that would be required if the Commission's initial order, which would require mandatory time of use pricing for all metering customers, were put into effect. So, we talk about some of the costs that we incur, we talk about some of the timeframes involved. We also describe some of the issues that surround real-time pricing. And, finally, what we do is we recommend, of course, an action for the Commission to follow, in order to implement the standards of the Energy Policy Act. And, essentially, what we recommend is that the Commission implement a two-period time-differentiated pricing for energy service for all metered customers, once we've addressed

the other issues, and we'll talk about what those issues are if we implement the optional time of use approach. And, we also recommend that the Commission real-time pricing on an optional basis for all larger customers.

We recommend that a working group be created to examine issues surrounding the critical piece pricing and whether such an option ought to be offered to customers. And, we also recommend that the working group work collaboratively to resolve some rate design issues associated with time of use and real-time pricing. PSNH is in a somewhat unique situation, as compared to the other utilities, in that PSNH generates a significant portion of the energy needs of its customers. The fact that we have generation creates some rate design issues, some revenue reconciliation issues, some issues surrounding how you recover fixed costs associated with generation. And, we think the best way to resolve those issues is to basically sit down and work them out in a collaborative effort, rather than litigate those issues.

Finally, notwithstanding our recommendation, if the Commission nevertheless decided to implement mandatory time-differentiated energy

service pricing for all metered customers, then I think we've got some major issues associated with some of the technical aspects of implementing that. We describe them in our testimony. But, in the event that the Commission were to go that approach, and we hope that they don't, we would definitely have to get together and work out how we're going to implement it, the time frame, the costs involved, how we're going to recover the costs from customers and so on. And, that completes my summary.

Q. I ask all three of you, do you have any corrections to make to the testimony that was filed on September 17th?

A. (Hall) None that I'm aware of.

A. (Coit) No.

A. (Comer) No.

Q. And, it's true and accurate to the best of your knowledge and belief?

A. (Hall) Yes, sir.

A. (Coit) Yes.

A. (Comer) Yes.

Q. And, if I asked you those questions orally today, you'd respond the same way?

A. (Hall) Yes.

MR. EATON: Could I have that document

marked as "Exhibit 1" for identification?

CHAIRMAN GETZ: Be so marked.

(The document, as described, was herewith marked as Exhibit 1 for identification.)

MR. EATON: I'd like to also mark the comments that PSNH supplied on September 29th, 2006 that has a heading of "DE 06-061 Time-Based Metering and Communications ("Smart Metering") Section 1252 of the Energy Policy Act of 2005". I think the Chairman --

CHAIRMAN GETZ: We have it.

MR. EATON: -- and the Clerk and the Court Reporter have copies of those. Does anyone need copies?

CHAIRMAN GETZ: Okay. Those comments will be marked for identification as "Exhibit Number 2".

(The document, as described, was herewith marked as Exhibit 2 for identification.)

MR. EATON: The witnesses are available for cross-examination.

CHAIRMAN GETZ: Mr. Fromuth, do you have questions for the witnesses?

MR. FROMUTH: Yes, Mr. Chairman. I have

a question for Mr. Hall.

BY MR. FROMUTH:

Q. Have you had a chance to give any thought, as you look into the notion of offering hourly pricing, how one would distinguish between the non-hourly costs that were associated with an individual end-user customer and how you would isolate those costs for that customer, as opposed to the aggregate costs that are incurred systemwide, from an ancillary standpoint, for all customers in that customer class?

A. (Hall) By that, I'm assuming you're referring to essentially fixed costs, costs that don't vary by time of use?

Q. Right.

A. (Hall) Yes. We have given thought to it. We've got some ideas, but, rather than, as I said in my summary, rather than litigate those kind of issues, I think that's the -- the best way to approach those kinds of issues is basically get together in a working group and resolve on a collaborative basis. How is it that you recover these fixed costs? How do you allocate them to time periods? And, how do you make sure that they get recovered from the appropriate customers.

MR. FROMUTH: Thank you.

CHAIRMAN GETZ: Mr. Epler?

MR. EPLER: No questions, Mr. Chairman.

MS. IGNATIUS: Mr. Chairman, may I just ask one question for clarification. I thought that the witnesses were each going to do a summary of their testimony. We heard a summary from Mr. Hall on the issues that he was addressing, but not on the issues that Mr. Coit and Mr. Comer said they were to address. So, I was a little bit surprised that we jumped over billing and some of the technical issues so quickly.

MR. EATON: We can do that.

BY MR. EATON:

Q. Mr. Coit, could you please summarize your testimony concerning the metering issues presented by time of use metering.

A. (Coit) I attempted to summarize some options that could be used in a variety of time of use implementation schemes, to address conventional time of use metering, time of use approach with interval data, or an AMI implementation of some sort. And, to come up with a rough estimate of the costs involved for that kind of a metering system.

Q. And, are there meters in place for PSNH's largest customers that could record -- are capable of recording

time of use data?

A. (Coit) The meters that are in place for our largest customers are currently recording interval data. Interval data could conceivably be used to derive time of use quantities. However, it would require changes to the data processing, the billing side of things as well.

A. (Hall) I would just add by that, by "interval data", what we mean is the meters measure consumption in 30 minute increments throughout the month for each customer. And, that data, that 30-minute consumption for all 30-minute intervals in a month could then be split apart into different time periods via the billing system.

Q. Would the existing meters need to be reprogrammed for a time of use or would they need to be adjusted?

A. (Coit) Not if you're going to do the time of use analysis based on simply processing the interval data that we're collecting today. If we were required to display at the meter site various time of use quantities, that would require reprogramming the meters or changing them out.

Q. Mr. Comer, could you please summarize your portion of the testimony.

A. (Comer) Sure. PSNH currently has two billing systems that we use. We have a CIS system for our residential and small commercial customers, which handles about 475,000 customers. And, then, we have a second system called "Large Power Billing", or "LPB system", which is the billing engine for our commercial/industrial customers. We have approximately 2,000 customers on that system. The CIS system is scheduled to be replaced with a new billing system, approximately the third quarter of next year. This has been an ongoing project for the past three and a half years, to develop and test and implement a new billing system for all of the Northeast Utilities operating companies. And, PSNH is scheduled to convert to that system third quarter of next year. So, my testimony talked about the capability -- the current capabilities of the CIS system and the LPB system to handle either time of use or some version of real-time pricing. And, then, some comments about what the C2 system can and cannot do for time of use and/or real-time pricing.

Q. Is PSNH capable of implementing time of use pricing for billing purposes on the CIS system?

A. (Comer) Yes, we believe our current CIS system, as I said, one that is scheduled to be replaced next year,

is capable of billing energy on a time of use basis, as long as that's similar to the way we bill the delivery charge on time of use today.

A. (Hall) That being on-peak and off-peak. No shoulder periods.

A. (Comer) No shoulder periods, correct. The Large Power Billing system is not capable currently of billing energy under a time of use rate. Neither system is capable of billing real-time pricing, hourly pricing or next day hourly pricing. Neither system, nor the new C2 system, none of the three systems are capable currently of doing that without significant enhancements.

Q. Are most of the resources in programming billing systems being devoted to getting the C2 system on line?

A. (Comer) Yes. Currently, all but two of our IT programmers are dedicated to the new system. We retained two of the, I believe, 14 programmers to maintain the current system, keep it running, and implement, you know, fixes as things need to be fixed. And, the remaining programmers are all dedicated to the new system and making sure that's ready for implementation next year.

Q. And, third quarter of 2008, will that be a time when

PSNH could start work on the C2 system or would there be a period after that that the C2 system has to be checked out?

A. (Comer) Our expectation is that there's going to be a stabilization period needed after implementation of a new system. That there will be bugs in the system, there will be things that need to be fixed, and some of them may be critical. We're, obviously, attempting not to have those significant problems. However, with most large billing system implementations, there are issues after you go live on that system. And, so, our expectation is that, yes, there will be a stabilization period of perhaps three months, or longer, depending on the issues. During which time the IT resources will be focused upon making, you know, making those enhancements or fixes to the system, before they can start I'll call "new work" on the system, adding new functionality or new rates or new features to the system.

MR. EATON: Thank you, Mr. Chairman. That completes our summary.

CHAIRMAN GETZ: Thank you. Actually, before we turn to further cross, I want to address this question to -- a general question to I guess Mr. Hall.

Has your parent company stated any corporate policy about time-based rates and advanced metering? And, what's the situation with your sister companies, in terms of their movement to time-based rates and advanced metering?

WITNESS HALL: I know that, in Connecticut, there is a movement toward advanced metering infrastructure and real-time and/or time-based pricing. I think the issues that they face is one of degree. I believe that, up through a certain point, a certain number of customers, they can handle either real-time or time-based pricing. But, I think, once you get beyond that point, it requires additional investment. So, they generally support -- my understanding is that CL&P generally supports real-time or time-based pricing. But, you know, you've got to recognize that there are costs involved with it. I believe the Connecticut DPUC is in favor of such pricing. And, I think they're pressing utilities to implement it. That's my understanding anyway. I'm not intimately familiar with the goings on at CL&P. I'm exclusively focused on New Hampshire.

CHAIRMAN GETZ: Mr. Fromuth, did you have any follow-up?

MR. FROMUTH: Yes, Mr. Chairman. Thank you.

BY MR. FROMUTH:
Q. I'm wondering -- I'm sorry, I've forgotten the name of the gentleman who is in charge of Customer Service, but --
A. (Comer) Dan Comer.
Q. Mr. Comer, thank you. And, your testimony gave rise to a question that I had that certainly might be on the minds of customers who were being shown this option by Public Service. And, they would perhaps want to know from Public Service or your market representatives whether or not there would be any way in which Public Service would be able to demonstrate or show that over time, obviously, back testing as opposed to forward testing, over time, had there been any studies done to determine whether or not a customer, given the choice between, say, your default rate operation, which you have in place now, versus going into a -- well, buying power by the hour, for lack of a better term, has any studies been done internally to determine whether or not a customer would be better or worse off under one or the other pricing regime? And, can you just generally comment on whether or not that analysis has been taken in any fashion by you folks?
A. (Comer) I'm not aware of any such study within PSNH

that has looked at that feature.

MR. FROMUTH: Thank you. Mr. Epler?

MR. EPLER: No questions. Thank you.

Ms. Blackmore?

MS. BLACKMORE: I have no questions.

Thank you.

CHAIRMAN GETZ: Ms. Doukas?

MS. DOUKAS: I have no questions.

CHAIRMAN GETZ: And, Ms. Ignatius?

MS. IGNATIUS: Thank you.

BY MS. IGNATIUS:

Q. Mr. Hall, your description of working groups to work -- continue to work on these problems is -- makes sense, given the complexity of these issues. Have you thought about the length of time that groups like that would have to work before we could get some final resolution and programs in place?

A. (Hall) I haven't really considered the length of time. The amount of time involved is going to be dependent on what else is going on, what other dockets people have to handle. If you have -- If you have a group that's committed to coming up with a solution, I don't see a reason why, within, you know, three or four meetings or exchange of ideas and analysis, I don't see a reason

why you couldn't accomplish it within three or four meetings. Now, how long those meetings take is a matter of two, three months perhaps. Could be longer, depending on what else is going on.

Q. I hope you don't mean individual meetings could take two or three months.

(Laughter.)

BY MS. IGNATIUS:

Q. During the period of time that a working group might be involved, can you anticipate rolling out some additional pilot projects to give us more data to be looking at in these working groups?

A. (Hall) Well, I'm having a bit of a -- I don't have any objection to that. I'm having a bit of a chicken and egg type approach. In order to implement a pilot, with either time-differentiated or real-time pricing, you need to know what the pricing is going to be. So, you almost have to get together and resolve some of the rate design issues before you can even implement a pilot.

Q. Conversely, though, having some experience of customer response would be -- might be helpful in knowing what programs might be more successful than others?

A. (Hall) I agree, but I don't know how you get that

customer response and implement a pilot if we don't know what the pricing is going to be.

Q. So, when you state that, in your view, customers don't necessarily want variable prices, they want stability in pricing, you don't really have any basis to support that, it's just an assumption on your part?

A. (Hall) Correct. That's my belief. And, you know, I base that on customer response to, number one, the time-differentiated delivery rate that we have for residential customers. Number two, the results of the optional time-differentiated pricing that were implemented back in the early days of PURPA, the response was rather small. So, my belief is that customers prefer fixed pricing. However, I think I said in my testimony, we really don't know, and I don't think anyone knows for sure whether or not it's going to be something that's in high demand, number one. And, number two, whether or not, once customers take service under a time-differentiated/real-time approach, if they're actually going to change their consumption habits.

Q. Your Peak Smart Program provides what sort of a service to customers?

A. (Hall) That's an interruptible service where we request

customers to reduce the taking of electricity during times when either the locational marginal price in New Hampshire is high or when we believe that ISO New England is going to be at or near a system peak.

Q. And, it's available only during the summer months?

A. (Hall) Generally, I'm trying to recall, I know we made a change last winter, where we did make it available during the winter months as well. I don't know -- don't recall if that change was permanent or not. I just don't remember offhand. I'd have to look at the tariff.

Q. That's fine. Whether it's just in the summer or some other peak periods, does it afford customers any opportunity to see a savings in their electric bills by participating in the program?

A. (Hall) Sure. Under the interruptible program, what we do is we measure as best we can the amount of interruption that the customers provided in each hour. And, the reason I say "as best we can", you know, it's, obviously, it's kind of tough to measure something that doesn't exist, which is the load that they have interrupted. We have a methodology for estimating or measuring that amount of consumption. And, we give customers a credit that's equal to the locational

marginal price, times the amount of consumption that they didn't use in each hour. That's essentially it. And, there are other adjustments that are made, but that's the basic principle. So, customers do get a credit, and they therefore get a lower electric bill as a result.

Q. They don't, however, see prices in advance or in a closer to real-time ability to change their usage?

A. (Hall) Well, what do you mean by "seeing prices in advance"?

Q. I guess I'm asking you to give me a description of anything that they are aware of, to be able to constrain or conform their behavior and their usage, --

A. (Hall) Okay.

Q. -- based on what's happening in real-time pricing?

A. (Hall) They can easily do that if they have an internet connection. All they have to do is monitor prices on ISO New England's website, which is essentially what PSNH does in its decision as to whether or not to request an interruption. So, they could be looking at exactly the same data that we look at in making decisions requesting interruption. We look at pricing data and we look at load data.

Q. And, so, if someone were actually to take that step and

go into the ISO website and see those prices, what would the steps be that they would have to do at that point in response to it?

A. (Hall) Well, every customer is different. So, I don't know what each individual customer would have to do. But, if customers monitor what prices are, they know the criteria generally that PSNH is going to use to request an interruption. If a customer monitors prices and sees prices, prices building up and increasing during the day, they can at least get prepared to implement a reduction in consumption, to the extent that PSNH contacts them and requests such a reduction.

Q. Have you ever considered a program where you would send out notification to those customers of where the prices are going, when you start seeing those changes, so that they can be thinking about it, to go into those, either a website of yours or of the ISO's to study where the prices are headed?

A. (Hall) You mean like through an e-mail or something?

Q. Yes.

A. (Hall) We haven't done so. Again, it seems to me that the information is readily available to anyone that has it.

Q. I accept that it's readily available. How easy it is

for someone to get involved in evaluating that, when they're also trying to run their manufacturing plant, let's say, is the question.

A. (Hall) Understood.

Q. That sort of communication link might be something that could be explored in a working group, could it not?

A. (Hall) Yes. We're reluctant to do it via the metering system, for reasons described in the portion of testimony that Mr. Coit sponsored. There are better ways of doing it. You know, whether it's e-mail or -- understand that any additional step that you add requires administrative oversight and it requires administrative expense.

Q. Your estimates of costs to implement some of the options that are out there are fairly broad at this point, are they not?

A. (Hall) Yes.

Q. And, that's the sort of thing that could be further pinned down through a working group?

A. (Hall) Yes. The reason -- The reason that they're rough estimates is it's difficult to come up with a precise estimate of the incremental cost associated with metering and modifications to the billing system, if we don't have specification on what exactly is it

that we're willing to implement. It becomes difficult.
Q. I understand. When the Chairman asked you about the position of Northeast Utilities and your sister company, Connecticut Light & Power, you described what you understood to be going on in Connecticut, and said that the Connecticut DPUC was really pushing real-time metering -- real-time pricing to your knowledge?
A. (Hall) That's my understanding.
Q. Does that then account for Connecticut Light & Power's interest in developing such a program? Or, is that a position of the management of Connecticut Light & Power independent of what the Connecticut regulators have done?
A. (Hall) I think it's probably more driven by the regulatory process. May also be driven by management decision. Management didn't consult with me before implementing what they wanted to do in Connecticut. So, I can't say for sure.
Q. Can you characterize the management of PSNH's view towards real-time pricing?
A. (Hall) Sure. I think our view is what we espouse in our testimony, which is we don't think that it should be implemented on a mandatory basis. That it ought to be optional for large customers. We think we can

implement it on an optional basis, with some manual billing. We are prepared to do that, to the extent that the Commission so orders it. And, I think we -- time will tell, if that type of program is implemented, whether there is a demand for it by customers.

Q. There are some programs underway in other parts of the country that are experimenting with different options, are there not?

A. (Hall) I'm sure there are.

Q. Is the experience of those other utilities' programs of value in assessing a program that might or might not be successful in New Hampshire?

A. (Hall) I'm not familiar with the experience that other utilities have had. So, I can't answer that question.

Q. Would that be a useful thing to include in a working group discussion then?

A. (Hall) Sure.

MS. IGNATIUS: Thank you. No other questions.

CHAIRMAN GETZ: Mr. Aalto.

MR. AALTO: Thank you.

BY MR. AALTO:

Q. A couple of brief questions for Mr. Coit. First, technically, on the larger customers with the interval

meters, do they also have pulse output capability on those meters?

A. (Coit) The meters are equipped with pulse initiators. Very few of the customers actually take pulses from those meters, but they are in the meter.

Q. And, the same would apply to smaller customers, there, I assume, you don't have the initiators built in?

A. (Coit) That's right. That would be done on a special request basis.

Q. It seems that it might be easier to implement some of the testing of these concepts perhaps in pilot programs, using pulse outputs without changing the meters, and to do sort of hand billing and hand accounting for the limited number of customers. Do you feel your system could tolerate that if, let's say, external communication methods were applied to get signals to and from the customer's meter, not changing out the existing meters, I guess is what I'm getting at, to save money?

A. (Coit) I'm not sure I understand exactly what you're proposing here.

Q. The meter measures the electricity consumption, it communicates through its pulses what is going on to a communication package that provides for two-way

communication to the site. So, we're not asking the meter itself to be smart, but we're adding smarter capabilities through a separate box that sits beside the meter, so to speak.

A. (Coit) The option to receive a pulse output from these meters is certainly available to today.

Q. So that that might be done?

A. (Coit) That would be possibly from the metering we have today.

Q. Okay. There was some discussion of the possibility of, this would be for Mr. Hall, of some type of pilot. How would you see a pilot being used to provide information that would be useful to further expand the system later?

A. (Hall) We're not proposing a pilot program. We're proposing an optional time of use or real-time pricing. So, in my view, I'm not sure a pilot would provide any value, do you have anything in mind?

Q. Different ways of communicating with the meters, that sort of stuff, different types of structures.

A. (Hall) Uh-huh.

Q. I guess the concern is, as I've gone through this proceeding, is that we have so many different goals in mind as we go through this --

A. (Hall) Right.
Q. -- that we really don't know what it is we're asking our smart meters to be smart about. So, the question would be "how to develop a process that identifies those properties that are useful?"
A. (Hall) We struggle with the same thing, in that, you know, it isn't clear what it is that we're trying to accomplish. However, we're open to discussion. If you've got ideas in mind for a pilot program, I think that's something we can talk about in a working group.
MR. AALTO: Thank you.
CHAIRMAN GETZ: Ms. Hatfield.
MS. HATFIELD: Thank you. Mr. Chairman.
BY MS. HATFIELD:
Q. Mr. Hall, I think you can answer this question, but, if someone else on the panel can answer it better, that's fine. In the testimony, you state that there are currently 52 residential meters that are being used for the optional time of use delivery rates, which I think is what you referred to as "time-differentiated residential rate", is that correct?
A. (Hall) Yes.
Q. And, do you know, has that number been pretty constant over time, that number of 52 residential customers?

A. (Hall) Yes.
Q. And, how long has that program been in place?
A. (Hall) We've had an optional time of use residential rate for many, many years. The specific rate that we're referring to now is for time of use for delivery service. So, that particular rate has been in effect since 2001, when restructuring was implemented.
Q. And, would you mind just taking a minute to explain, from the customer's perspective, how that works? How being on a time of use rate works and what the benefits might be?
A. (Hall) Sure. The rate provides for an additional metering charge, meter reading billing charge, really, over and above what the customer would otherwise pay under the standard rate. And, then, the delivery of electricity is separated into time periods. There's an on-peak period and there's an off-peak period. The on-peak period, if I recall, is -- I want to say 7:00 a.m. to 8:00 p.m. non-holiday weekdays, and the off-peak period I believe is all other hours. And, the delivery price distribution is higher during on-peak periods than the standard price and it's lower during off-peak periods than the standard price.
Q. So, if you are an average residential customer using I

think it's around 600 kilowatt-hours a month, and you aggressively try to shift your load to the off-peak period, can you give us just a ballpark of how much of a difference that could make on your bill?

A. (Hall) Offhand, I can't, I'd have to do some calculations. I'd have to look at the tariff. I don't think a customer with average consumption could shift enough to see significant savings.

CHAIRMAN GETZ: Ms. Hatfield, would you like a record request on that?

MS. HATFIELD: Yes, I was just going to ask --

WITNESS HALL: Sure.

MS. HATFIELD: -- if PSNH wouldn't mind providing an answer to that. Thank you.

CHAIRMAN GETZ: We'll reserve Exhibit Number 3.

(Exhibit 3 reserved)

BY MS. HATFIELD:

Q. Now, we just said there were 52 residential customers enrolled. Is there a cap or a ceiling on the number of residential customers that PSNH's systems could handle in terms of enrolling them in the program?

A. (Hall) No.

Q. So, you could have, potentially, you could have thousands of people, if there was interest?
A. (Hall) Yes.
Q. And, how is that program promoted right now?
A. (Comer) I'm not aware of any marketing campaign that we've done recently to promote the time of day rate to residential or small commercial customers.
Q. And, why is that?
A. (Comer) I don't believe that we've seen enough customer interest in it, you know.
Q. So, customers would need to approach PSNH to tell you that they're interested in it in order to find out about it?
A. (Comer) No. Our customer service reps, when we get a new customer coming on line, we make the customer aware of their rate choices, the standard residential rate or the time of day rate, water heating rates and so forth. So, they are made aware of it if it's a new customer coming on. But, other than that, I'm not aware of any marketing or promoting the program.
Q. Would the Company be willing to do additional marketing to try to increase the number of residential customers on the program?
A. (Comer) Yes, I believe so.

A. (Hall) Sure. If we're given recovery of the costs, we'd be willing to do it.
A. (Comer) We'd also have to make sure that we have enough meters available. So, before we really promote it hard, we would need to make sure we have an inventory of the meters, because it requires a meter change to do that.
Q. And, we understand from your helpful explanation, a reminder that this is only applicable to the delivery rate at this time for PSNH customers. And, so, would the Company be willing, if there's a working group to discuss expansion of these types of programs, would the Company be willing to discuss how you might be able to expand it to allow time of use rates on the energy side for residential customers?
A. (Hall) Yes, that's essentially what we're proposing.
MS. HATFIELD: Thank you. No further questions.
CHAIRMAN GETZ: Ms. Amidon.
MS. AMIDON: Thank you. I'm dividing my responsibilities here between me and Mr. McCluskey, who is responding to some of the inquiries and some of statements made in response to inquiries from Mr. Fromuth. So, I'll ask him to begin, and then it will shift back to me.

CHAIRMAN GETZ: Mr. McCluskey.

MR. McCLUSKEY: Thank you.

BY MR. McCLUSKEY:

Q. A question for Mr. Hall. In response to the first question from the Halifax representative, you mentioned fixed costs associated with the implementation of real-time pricing. Could you give some examples of the fixed costs that you have in mind?

A. (Hall) The fixed costs that I was referring to were things like depreciation, fixed maintenance expense, taxes, and so on, associated with a generating plant. There has to be a way to recover those costs. Mr. Fromuth may have been thinking about we'll call it "semi-fixed costs", like capacity costs and ancillary expenses associated with that from ISO New England.

Q. So, currently, those fixed costs, those generation-related fixed costs, they are currently recovered through your Default Service, --

A. (Hall) Yes, they are.

Q. -- as a matter of fact? And, if the real-time prices that the Company billed to customers on this rate, on this potential rate structure, reflected those Default Service prices, just on an hourly basis, you'd recover those fixed costs through the hourly rates, is that

correct?
A. (Hall) I don't quite follow you there. If the --
Q. Well, if the idea is to go from a current flat Default Service rate that recovers those fixed costs, as well as any incremental costs, --
A. (Hall) Yes.
Q. -- presumably you'd be looking to recover those same fixed costs through hourly prices as well?
A. (Hall) Yes.
Q. Okay.
A. (Hall) Absolutely.
Q. Okay. So, those particular fixed costs would be borne by the customer that availed itself of the real-time pricing option?
A. (Hall) Yes.
Q. Okay. Any other fixed costs that you have in mind?
A. (Hall) No, those are the ones that I was thinking of.
Q. Okay. Moving onto Mr. Comer, you discussed in your summary the replacement of the existing CIS system, which is the billing system for small customers, I understand?
A. (Comer) Yes.
Q. With what is called the "C2 system". Could you just explain why the Company decided to replace the existing

system?

A. (Comer) Sure. There were a couple of reasons. The existing CIS system is close to 30 years old. So, it's built on a platform that's fairly antiquated in today's IT world. And, some of the programming skills and knowledge are retiring, and newer IT folks don't know -- don't necessarily know the language that that system was built on, is what I'm being told by our IT folks. The major reason for the change is because Northeast Utilities currently -- or, currently has three different billing systems for the four operating companies, and we are working towards a single billing system, so that our customer service representatives can handle calls from customers in any one of the four subsidiaries, three states, four companies. And, you really need a single billing system, a common billing system for everybody in order to do that efficiently. To do it otherwise, the representatives would have to have access to and understand and learn three different billing systems, depending on which customer they're getting a call from. So, that was really the driving force, excuse me, the driving force was to get a common platform, so that we could consolidate customer service centers and have the representatives handle calls from

multiple states, multiple companies, but also because the billing systems, ours and Connecticut Light & Power's, are both 30-year vintage systems that just needed to be replaced. They're just not flexible enough in the current world.

Q. So, regardless of the time-based pricing developments in the New England states, PSNH would have made the change-out?

A. (Comer) Change-out to the new billing system?

Q. To the C2 system?

A. (Comer) Yes.

Q. Okay. You said that the C2 system -- I believe you said that the C2 system is currently in place in Connecticut for Connecticut Light & Power, is that correct?

A. (Comer) No, it's not being used yet by any of the companies. The schedule calls for the first company to convert to the new system, to the C2 system, first quarter of 2008, that would be the Yankee Gas subsidiary, and then Connecticut Light & Power and Western Mass. Electric will convert in the second quarter of 2008, and then PSNH will go last, in the third quarter of 2008. So, none of the subsidiaries are using that system currently. It's still being

tested.

Q. So, Connecticut Light & Power will be implementing this system sometime in 2008?

A. (Comer) Yes, that's the plan. They will go second quarter 2008 is the plan.

Q. And, I think we had heard earlier that the Connecticut Commission has required CL&P to implement time of use rates, certainly I'm familiar with that, I'm not so familiar with real-time pricing. But -- So, one assumes that the system that goes into place in Connecticut will be able to support time of use pricing, and possibly real-time pricing, is that correct?

A. (Comer) My understanding is that it will support time of use pricing.

Q. Time of use pricing.

A. (Comer) I believe it will not support real-time pricing, that's my understanding.

Q. So, they would have to make some modifications to it to implement real-time pricing if that happened in Connecticut?

A. (Comer) That's correct. And, it depends also on the time of use model as to whether or not the system can handle it. My understanding is it's currently able to

handle on-peak, off-peak, and one shoulder period.
Q. Okay.
A. (Comer) And, if the rate is something other than that, then C2 would require modification.
Q. Okay. So, and I assume that the system, the C2 system that PSNH puts in, will be the same system that Connecticut Light & Power will have?
A. (Comer) Identical.
Q. So, PSNH should be able to implement time of use prices, at least the structure that you just described, a peak, off-peak, and a shoulder period?
A. (Comer) That is correct.
Q. Okay. So, I believe you said this system would be in place in New Hampshire in the third quarter of 2008?
A. (Comer) Yes, sir.
Q. And, so, you should be able to implement some form of time of use pricing at that time?
A. (Comer) No, I don't believe that that's accurate. What we would need to do is the system is capable of doing on-peak, off-peak and a shoulder. We would then need to specifically code into the tables the rate tables of the system, the hours of those periods, days of the week, the hours of the day, and the pricing, and then do some testing. And, make sure that both the system

and the billing that goes out to the customer is accurate, and then we would implement the rate.

A. (Hall) And all of that would follow the two or three month shakedown period.

A. (Comer) That is correct.

A. (Coit) And, I might add, we'd have to coordinate the meters that would be required to provide the billing system with that information.

Q. If I could just focus on the billing, and just handle one thing at a time, at least my brain can. But wouldn't this testing of the system not be going on with Yankee Gas and Connecticut Light & Power, is the very same system that is going to be implemented in New Hampshire?

A. (Comer) Yes.

Q. So, why would there be a need for extensive testing in New Hampshire?

A. (Comer) Well, I think you're assuming that the New Hampshire prices and hours of on-peak, off-peak and shoulder would be identical to what Connecticut or Massachusetts are implementing. And, if it coincidently happened that way, there would be very little testing. But I think it remains to be seen if that's -- if the rates would be identical in all three

states or the New Hampshire rates would be the same as somebody else's rates.

MR. McCLUSKEY: Okay.

CHAIRMAN GETZ: Actually, could I interrupt, as we're on this billing system, I just want to make sure I understand it, Mr. Comer. So, NU, PSNH is replacing its antiquated billing system with a state-of-art billing system. But, effectively, this billing system is going to limit the number of options we would have, in the terms of requiring one or more of time-based rate options?

WITNESS COMER: No, that wasn't what I meant to imply. The system, as it's being placed into service, can handle on-peak, off-peak, and a shoulder. It has the flexibility to do other things, it's just currently not coded to do that. So, it would require coding and programming, testing in order to implement some other rate structure. We're putting in a system to handle the rates that each of the four operating companies have today. And, that's what's being implemented. It can do more, it just isn't coded yet to do more. But it has the flexibility to do more.

CHAIRMAN GETZ: Ms. Amidon.

MS. AMIDON: Thank you.

BY MS. AMIDON:
Q. First, I just want to follow up on a question raised by Attorney Hatfield regarding the ability of the customer taking the time differentiated rate to save when shifting energy from on-peak to off-peak. Isn't it true that a customer might also choose to save by reducing power at on-peak, and not -- not, you know, and actually displacing power, rather than shifting it, and could incur additional savings in that regard?
A. (Hall) Just an absolute reduction in consumption, you mean?
Q. Correct.
A. (Hall) Well, sure. But the same principle applies today. If you're suggesting the customer, through the implementation of time of use pricing, is simply going to reduce their on-peak consumption and not replace it, then that leads me to the conclusion that, if a customer did that, then right now they're wasting energy. Because, if they weren't, they would do it today.
Q. Well, I'm just asking about these customers, that that is one potential activity a customer could take. They could choose to displace and not shift, correct?
A. (Hall) I hesitate to agree, because, if I agree, then I

have to assume that there's some sort of wasteful usage today.

Q. And, insofar as the response -- the record request that the Chairman requested regarding the activities of CL&P and Connecticut DPUC, could we get that as a record request? The Chairman had a question about the activities going on in Connecticut, and I'd like to ask that the Company respond in the form of a record request.

CHAIRMAN GETZ: Yes, we will reserve Exhibit Number 4 for that record request.

(Exhibit 4 reserved)

MS. AMIDON: Okay. Thank you.

WITNESS HALL: Frankly, I'd be more comfortable responding that way anyway, just in case I misspoke.

MS. AMIDON: Great.

BY MS. AMIDON:

Q. So, I'm going to begin with Mr. Coit. Good morning. As I understand it from your testimony, your written testimony and the testimony here today, PSNH has already installed interval meters with the large customer group, is that correct?

A. (Coit) Yes.

Q. I just want to get clarification on your testimony. On Page 6 of Exhibit 1, at Line 10, you state "It is important to note that existing metering is not configured to display time-different" -- "differentiated metering quantities." Sorry, I butchered that word. But to do -- we wouldn't really have to add that feature to do time of use rates, correct?

A. (Coit) In my opinion, it's not necessary. But it's difficult to know what we had in mind here.

Q. Okay. So, it's not necessary. As I understand from your testimony, what you would need is the ability to transmit the stored interval data from the meters to the billing system?

A. (Coit) For what kind of a time of use implementation?

Q. For a time of use rate. We're talking -- I'm just questioning on time of use rates.

A. (Coit) If it's done on a monthly billing cycle, you don't need to collect the data remotely. You could simply collect it as we do today, where some of them are done locally, some are done remotely.

Q. So, there's no metering-related costs associated with implementing time of use rates?

A. (Coit) It depends on what you end up implementing for a

time of use rate structure.
Q. Well, what you're telling me, though, is that you can read meters as you normally do?
A. (Coit) If you're going to base your time of use structure on processing the interval data, --
Q. Right.
A. (Coit) -- and performing the billing on a monthly cycle?
Q. Correct.
A. (Coit) With no communication requirements to the customer?
Q. Correct.
A. (Coit) Then, it could be done with the existing meters --
Q. Okay. Thank you.
A. (Coit) -- for the large customers.
Q. Thank you. That's what I'm talking about right now is large customers. For Mr. Comer, in your testimony, you indicated that PSNH already has a Large Power Billing system in place to serve your large industrial customers and the lighting customers, correct?
A. (Comer) Yes.
Q. And, according to your testimony, that system, the Large Power Billing or LPB system, would have to be

modified to accept interval data, before the Company could bill on a time of use basis, is that correct?

A. (Comer) Well, not to accept interval data. We have -- We do interval billing now.

Q. Well, in your testimony, at Page 13, I believe that you state that there are some costs associated with modifying the LPB system. If you look at the sentence beginning at Line 14, and you indicate that there's a "two year period of development and a cost of $2 million". What does that relate to?

A. (Comer) This was to do time differentiated pricing for the energy portion of the bill.

Q. Are you talking here about time of use or real-time pricing?

A. (Comer) We're talking time of use pricing.

Q. You don't -- do you have any workpapers to support this estimate, for the $2 million?

A. (Comer) No. As we said in our testimony, the estimates are based upon assumptions that our IT folks have made as to the scope and magnitude of the changes that would be required in the system.

Q. Well, I heard Mr. Hall say that some of the ranges here were because -- were so broad because there was no specific time of use design that the Company was

assuming when it asked for these instructions, so what kind of instructions did you give your IT engineers when you asked them to provide an estimate for this? Did you say "anything and everything" or did you say "are you capable of" -- you know, "what are the costs associated with modifying the LPB system to implement time of use pricing?" Which is what the Commission's order addressed.

A. (Comer) I don't know the specific assumptions that the IT folks used to come up with this range. I think they made some basic assumptions about time of use, that there's, obviously, an on-peak period and an off-peak period, but it was unknown how many shoulder periods there might be, and the days of the week and so forth that would be on-peak/off-peak. They made assumptions about, you know, the bill and what information would need to be printed on the bill, what level of detail. They know that, you know, revenue reporting and ISO reporting systems interfaces would need to be modified. So, you know, they knew that there would be changes required in both the billing -- the LPB billing system, as well as certain interfacing systems, but the magnitude of those changes is what's in question.

Q. Well, we have a record request then that you provide

any and all workpapers that you used to develop this $2 million estimate and the two year implementation period, as stated in your testimony.

MS. AMIDON: Is that -- May we ask for that as a record request, Mr. Chairman?

CHAIRMAN GETZ: Okay. We'll reserve Exhibit Number 5 for that record request.

(Exhibit 5 reserved)

MS. HATFIELD: And, Mr. Chairman, could I interject for just a question. I'm confused, because we're at a hearing on a motion for rehearing, but the utilities have put forward substantive proposals that I think the Commission is considering. But, yet, we haven't had discovery on those proposals. And, I'm wary of conducting discovery through record requests in the hearing. So, I just, this can -- my question can wait till the end, I wanted to ask a question about the outcome of this hearing, because I think that your order scheduling this hearing said that it was your intent "to identify a policy direction and describe the actions and further inquiries needed to execute an implementation strategy". So, I just want to be clear that there are further actions and further inquiries, so these record requests would go to that next phase, or would these

record requests be the basis for a Commission decision approving one of the proposals of the utilities?

CHAIRMAN GETZ: Well, let me just step back to one thing, in discovery, there was a technical session on October 2nd, the intent of that was to provide opportunity for discovery on the testimony that's been filed here today. With respect to what we would do in any time that there's information presented to us in any case, in terms of a record request, I guess it depends on the information, how that informs or directs or drives a decision we would make. So, I don't think I'm capable of answering that question directly. But I think some of this inquiry is relevant, so we're going to provide for the record requests and the record responses. Ms. Amidon.

MS. AMIDON: Thank you.

BY MS. AMIDON:

Q. Mr. Comer, this $2 million we're talking about would be capital costs associated with modifying the LPB, is that correct?

A. (Comer) I don't have a breakdown, because it's a rough estimate. But I would assume the majority of it would be capital.

Q. And, would you agree, subject to check, that the approximate annual revenue requirement associated with

a $2 million capital investment would be about $400,000?

A. (Comer) I'll rely on Steve for that response.

A. (Hall) Close enough.

Q. And, have you done any calculation to determine how much that would be per customer per month in this large customer group?

A. (Comer) I have not.

A. (Witness Hall shake head negatively).

Q. Subject to check, would you agree that would be about $25 a month, per customer per month?

A. (Hall) Sounds about right.

Q. Okay. And, just to be clear, we did discuss -- Mr. McCluskey I know asked questions regarding the implementation of the so-called "C2 billing system". None of the changes associated or the delays associated with implementing the C2 system, or any modifications to it, impact your ability to implement changes to the LPB system for time of use, is that correct?

A. (Comer) No, that's not completely correct, because some of the programmers that would be used to potentially modify the LPB system are currently being used to implement or code and test the C2 systems. It would -- I don't want to say flat out "no", but it depends on

how many -- what the changes are necessary in LPB, what changes are necessary to implement that rate.

Q. What is the reason for the two year implementation for any changes with the LPB system?

A. (Comer) It's to modify the system and those interfacing systems, and then test them, and just make sure that everything is working properly before you put those -- that rate into effect.

Q. I do have a couple of additional -- well, I do have several additional questions, but Mr. McCluskey would like to ask a question to sort of follow up on what we were just talking about.

BY MR. McCLUSKEY:

Q. A follow-up question to Mr. Hall's response to Ms. Amidon regarding the cost per customer per month to recover the billing system costs of $2 million that we've just been talking about. I believe you indicated that $25 per customer per month would be a reasonable estimate to recover that $2 million?

A. (Hall) Yes, subject to check. I don't have a calculator with me.

Q. Okay. And, I understand that. And, clearly, the amount of that surcharge would depend on the depreciation rate assumed for the billing investment,

is that correct? The shorter the life, the higher the surcharge?

A. (Hall) Sure.

Q. Okay. So, my calculations indicate that, using the five year recovery period, that would be in the order of over $30 a month, $33 a month. That sounds reasonable?

A. (Hall) I don't know. I can't sit here and -- I can't do the mental math here. If you want me to respond, I'll have to take a record request.

Q. Just approximate, in the ballpark?

A. (Hall) Sounds ballpark to me.

Q. Okay. And, we heard that there were no metering costs associated with implementing time of use rates for Rate GV and LG?

A. (Hall) Depending on the design, correct.

Q. So, to recover metering and billing costs for time of use rates, we're talking about a surcharge of just over $30 a month for these customers?

A. (Hall) Uh-huh.

Q. In your response to Staff 3-14, --

MS. AMIDON: Why don't we introduce -- why don't we have them take a look at this. I'd like to offer and mark for identification, I believe, as "Exhibit

6" that particular data request, it's a response to Data Request 14, in Set 3 to PSNH. And, I can provide the witness a copy, so he has it.

CHAIRMAN GETZ: Okay. The data request will be marked for identification as "Exhibit Number 6".

(The document, as described, was herewith marked as Exhibit 6 for identification.)

BY MR. McCLUSKEY:

Q. Do you have a copy of that response, Mr. Hall?

A. (Hall) I do.

Q. And, second sentence states that, if the Company were to implement this time of use rate on a manual basis, you'd be charging customers -- those customers $100 to $200 per month?

A. (Hall) Under PSNH's proposal, yes.

Q. So, why, if the cost to recover this billing cost over five years was in the order of $30 a month, why would you be charging them $100 to $200 a month?

A. (Hall) I don't know if the cost is on the order of $30 a month. I haven't done the math to check your numbers, George, and I don't know if there's any other costs that might be involved. That $100 a month -- $100 to $200 a month is an approximate cost of the

manual effort that we think might be involved for an analyst to perform a manual billing. It might be less, I don't know.

Q. But if the cost to do it -- to automate the billing were significantly less, why would you propose to do it on a manual basis?

A. (Hall) If automating the billing means everyone pays that cost, what you're effectively doing is taking the cost and spreading it out over all customers. The $100-$200 a month range is identifying those customers that are responsible for cost incurrence and charging them accordingly. That's the difference.

Q. I see.

A. (Hall) But what we talked about earlier is, "all right, let's do the billing, but let's bill everyone for it." It's a big difference.

Q. Which is the assumption underlying the $30 per month?

A. (Hall) Correct. If we only have five customers who take this optional service, it would cost us between $500 and $1,000 a month to do it. And, if only five customers take it, it doesn't make sense to me to spend a few million dollars and a couple of years to modify the billing system.

MR. McCLUSKEY: Okay. Thank you.

BY MS. AMIDON:
Q. With respect to the answer to Data Request 14, in Staff's third set of data requests, do you have any workpapers to support the $100 to $200 per month figure?
A. (Hall) I think, in our testimony, we said it was perhaps one to two hours of an analyst's time. And, I don't have workpapers for that. It was a rough guess as to what it might take.
Q. So, one to two hours a month?
A. (Hall) Per account, yes.
Q. Okay. Thank you. I'm now going to switch to small customers, ask a few questions on that. And, I'll start again with Mr. Coit. You state in your testimony that, if the Company were to implement time of use rates for small commercial and residential customers, you would have to replace or reprogram all existing meters, is that correct?
A. (Coit) I'm sorry, what section are you referring to?
Q. Well, I don't have a page here. I'm looking at your -- I'm referring to your testimony with respect to the small customers. Let me see if I can find you a page. That begins on Page 8 of your testimony.
A. (Coit) Okay. I'm with you. I'm sorry, could you

repeat that question.
Q. You state that you would have to replace or reprogram all existing meters to implement a time of use rate for small commercial and residential customers, correct?
A. (Coit) Essentially, with the exception of the 52 we have today.
Q. And, in connection with that, you stated that you basically had two options. One option would be to replace the meters with what I'll call "preprogrammed" time of use meters or to replace them with more sophisticated interval meters, is that correct?
A. (Coit) I believe there are three options identified. Two are the ones you've identified, plus an option to put in some sort of an AMI system.
Q. And, let's see, just to be clear, I notice in some of the workpapers attached to data responses, there's I think about 489,000 customers are listed as small customers. And, yet, on Page 9, at the top of the testimony, at the top of the page, you have a grid that indicates that there are 556,000 meters. Does that translate into customers?
A. (Coit) No, it does not.
Q. Could you explain?
A. (Coit) Some of those --

Q. I can see that Mr. Hall is shaking his head, and that you are taking his lead. But could I get an explanation from somebody up there --
A. (Coit) Sure.
Q. -- as to why it doesn't translate into customers?
A. (Coit) Some customers have more than one meter at their location, depending on what kind of rate structure they're in. They have got a master meter and a submeter, that sort of thing.
Q. So, how many customers are we talking about?
A. (Coit) I'll have to defer that question. I work in meters.
Q. Is it roughly the 489 that we see in some of the workpapers?
A. (Comer) Yes.
A. (Hall) Yes.
Q. I just wanted to get that straight.
A. (Hall) And, by "customers", we mean "accounts".
Q. Accounts. Thank you.
BY CMSR. BELOW:
Q. Well, hold on a second there. Are you saying one account may have multiple meters?
A. (Hall) Yes.
A. (Comer) Yes.

Q. But it could also be the case that one customer could have several accounts?
A. (Hall) Yes.
Q. Okay.
A. (Hall) And, each account is -- I'll give you an example. At my house, I have electric water heating. I have 2 meters. I am one customer because I'm one account.
Q. But there may be other cases where there are more accounts than there are customers, because one customer may have multiple accounts?
A. (Hall) Sure. If I own three houses, I have three accounts, but it's all one person.
Q. Okay.
A. (Hall) I don't own three houses.
MR. FROMUTH: You own four.
(Laughter.)
BY MS. AMIDON:
Q. Okay. Well, let's get back to these -- and you're not capable of doing AMI for the small customers, you really didn't -- did you evaluate that in your range of options here on costs?
A. (Coit) On Page 12, there are some rough cost estimates, based on some system evaluations we did in 2004, I

believe.
Q. Right. But you wouldn't need AMI to do time of use?
A. (Coit) I'm sorry?
Q. You wouldn't need an AMI system to do time of use rates for small customers? I mean, it has some of these communications and other features, which really aren't necessary, am I right?
A. (Coit) It's not necessary.
Q. Okay.
A. (Coit) However, it would be certainly worth taking a harder look at an AMI, if the proposal were to be changing out all of the meters on our system anyway.
Q. Okay. But it's not necessary?
A. (Coit) Not required.
Q. Okay. So, on Page 10, if we go to Page 10, this is -- you have costs in a table after Line 16 which indicates some of the prices associated with what I called the "preprogrammed" time of use meters, is that correct?
A. (Coit) Yes.
Q. So, that's $46,000, $47,000, if we round up. And, those are capital costs, is that correct?
A. (Coit) 47 million?
Q. 47 million.
A. (Coit) Yes.

Q. Okay. Yes. I was never good with numbers. Which explains a lot of things in my life. Anyway, so that is 47 million. And, then, if you look on the following page, there's a similar graph which goes for these interval -- which applies to the interval meters, and the costs there are in the neighborhood of 125 million, is that correct?
A. (Coit) That's correct.
Q. And, these are capital costs, is that correct?
A. (Coit) They are rough estimates of the price of the meters.
Q. Okay. So, they would be capital costs?
A. (Coit) I believe so.
Q. All right. What is the associated revenue requirements for the interval meters?
A. (Coit) I'd have to defer to Steve on that.
A. (Hall) I think we might have had a data response on that one.
MS. AMIDON: Okay. I believe that the data response on that is Data Request Number 9, Set 3. And, I'd like to have -- I have copies, if we can introduce that into the record. I'm sorry, I correct myself. It's the response to Data Request 11. And, I do have copies of that to introduce as the next exhibit,

which I can't recall what number that might be. Seven?

CHAIRMAN GETZ: Yes. It will be so marked.

(The document, as described, was herewith marked as Exhibit 7 for identification.)

MS. AMIDON: Thank you.

BY MS. AMIDON:

Q. So, according to this data response, the annual revenue requirement is roughly $21 million, is that correct? For the first year, if you look at Page 3 of --

A. (Hall) Yes.

Q. Did I hear someone say "yes"?

A. (Hall) Yes, I did.

Q. Okay. So, translated, if you use your average number of residential and G customers listed below that on Page 3 of 3, you have "487,669"?

A. (Hall) Uh-huh.

Q. Okay. So, that's "487,669". So, if you divide -- if you work this out on a per customer per month basis, that's roughly $3.67 per month, is that correct, subject to check?

A. (Hall) Yes, high threes.

Q. Okay. So, that would be the associated annual revenue

requirement associated with installing the interval meters for the first year, is that correct? I'm sorry, purchasing and installing?

A. (Hall) Yes.

Q. Okay. So, that's 3.67 per month per customer. Okay. Mr. Comer, I have some questions for you, too. On Page 15 of your testimony, and this goes back to the additional modifications that would be required to be made of the C2 system in order to allow it to bill for time of use rates. You indicate that it's roughly anywhere from 12 million to 24 million?

A. (Comer) That is correct.

Q. Is that correct?

A. (Comer) Yes.

Q. And, you don't -- do you have any workpapers to support this?

A. (Comer) No, I do not.

Q. How is it possible to come up with an estimate of this range without any workpapers?

A. (Comer) I don't know, I mean, I asked our IT folks to give us their best estimate of what it would take.

Q. And, what did you ask them to do? What assumptions did you give to them to come up with this estimate?

A. (Comer) I don't have my request to them in front of me,

but, if my recollection is correct, it was to modify the system to do either time of use pricing for all customers or real-time pricing for all residential customers.

Q. So, you asked them, even though the Commission's order related to "time of use rates" and the "implementation of time of use rates", you asked them to do estimates with respect to real-time pricing as well?

A. (Comer) My understanding was the order was a potential for both, either/or. So, yes, I asked them to do both.

Q. So, what does the "12 Million" refer to? Does the "12 million capital costs" refer to implementing a time of use, making those changes to implement a time of use rate?

A. (Comer) One moment please. Yes. In my response to Data Request 12, I state that "the 12 million estimate is based upon a 3 period time of use rate with pricing updates no more than once a moment, a new Meter Data Management system, and changes to systems that interface with C2 such as meter reading, supplier EDI, rate tables, order processing," et cetera.

Q. And, what are the associated annual revenue requirements with this capital cost?

A. (Comer) I didn't calculate that.

A. (Hall) Twenty percent is a good rule of thumb.
Q. Would you believe that you provide an answer to that in the data response to the Staff Question 13?
MS. AMIDON: Which I will again -- I'd like to mark this for identification as "Exhibit 8".
CHAIRMAN GETZ: It will be so marked.
(The document, as described, was herewith marked as Exhibit 8 for identification.)
BY MS. AMIDON:
Q. And, in that response, you say that roughly the annual revenue requirement would be "approximately 2 million to 5 million". So, is it safe to say that the $2 million is associated with the changes required to implement time of use rates, or the 12 million capital cost?
A. (Hall) I think the answer is "yes", but could you say that again?
Q. Well, just tell me what the associated annual revenue requirement would be for $12 million?
A. (Hall) Roughly 2 million.
Q. Roughly 2 million. Thank you.
A. (Hall) That's close.
Q. So, what would the costs be per customer per month for

the annual revenue requirement? Have you done that calculation?

A. (Hall) For what?

Q. When divided by the number of residential customers and small commercial and industrial customers, what would this revenue requirement equal on a monthly basis per customer?

A. (Hall) I haven't done that, but my guess is it wouldn't be that big.

Q. So, roughly, it's -- it's probably less than $2.00?

A. (Hall) Oh, sure.

Q. Okay. So, my next question is, again, referring to what we've marked for identification as "Exhibit 8" is, in the first part of that response, the Company had said "For smaller customers, an approximation of the higher metering, billing and administrative cost can be determined by taking the difference between the customer charge for standard delivery service and the customer charge for optional time of day delivery service." And, it goes onto say "For residential customers, the difference is $11.70 per month."

A. (Hall) Uh-huh.

Q. So, how do you derive that estimate as the monthly charge to customers, when it's really less than $2.00,

plus -- well, less than $5.00 a month, roughly?
A. (Hall) All I did was take the difference between the time of use charge for our existing optional delivery service rate and for the standard rate. That's what the 11.70 is.
Q. But, based on what we've just talked about here, some of the monthly costs, this doesn't seem to be a good basis to determine --
A. (Hall) Well, two reasons. Number one, it was not necessarily a direct linkage between the costs and pricing with regard to our optional time of use rate. You recall I said it's been around for many, many years. And, over the years, what has happened is that rate has been proportionally adjusted in conjunction with PSNH's other prices. And, that's happened since the late '70s or early '80s. So, there is probably not a direct linkage between costs and pricing. Beyond that, the estimates that we're giving, if you suddenly change out all of your equipment and do everything at once for all customers, there's going to be economies of scale.
Q. Okay. And, this is sort of a general question. The Company indicated in its testimony that a possible outcome of mandatory time of use pricing is that, and

then I'm taking -- this is a quote, that I'm pulling portions of the quote, "large customers who are risk averse would likely be willing to pay a premium to avoid the risk associated with mandatory time-differentiated pricing."

A. (Hall) Uh-huh.

Q. Do you have any evidence that customers prefer to pay a risk premium as opposed to a time of use rate, which would be lower?

A. (Hall) Who said a "time of use rate is going to be lower"? It depends on your consumption patterns.

Q. But do you have any evidence to support your statement?

A. (Hall) Yes, my personal behavior. I buy oil on a fixed price throughout the winter, because I don't want the risk of the price changing unexpectedly on me.

Q. Anything else, besides your pattern in buying oil?

A. (Hall) Based on discussions that we've had with customers. Customers want price certainty, there's no question. And, what we're proposing, the reason we're proposing an optional time of use pricing is that there ought to be a stable priced option, other than going to the market, for those customers who want pricing certainty.

Q. But, if customers go to the market, why is that an

argument against time of use pricing?
A. (Hall) Because it could raise the cost of doing business in New Hampshire.
Q. Raise the cost of PSNH doing business in New Hampshire?
A. (Hall) No, of customers doing business in New Hampshire. That's not good for the state.
Q. I'm sorry, I'm not following you. Could you explain a little more for me?
A. (Hall) Sure. If you implement time of use pricing, and I am a customer who doesn't want to take the risk that my bill is going to go up by an unknown amount, because I don't know whether or not I'm going to be able to shift consumption. I don't know if my on-peak consumption is going to increase significantly. So, now I'm concerned that "Gee, if I'm billed under a mandatory time of use approach, I really don't have pricing certainty. Therefore, I'm going to look for a competitive supplier who is going to provide me with that pricing certainty." A competitive supplier is going to include a risk premium in their price, in order to make sure that the competitive supplier doesn't lose money on the arrangement. If a customer -- And, by a customer going to a competitive supplier, they're effectively paying that risk premium and

raising their cost of doing business.
Q. Well, do you have any evidence that larger customers going out to the competitive market would choose a fixed price or maybe they would prefer a time of use or a real-time price, in order to obtain the benefits of being able to manage their loads and save costs that way?
A. (Hall) That they would prefer?
Q. They would prefer a fixed price, as opposed to going to a time of use or a real-time price --
A. (Hall) Yes.
Q. -- offered by the competitive market? Do you have evidence of that?
A. (Hall) I do have evidence, yes. Several -- A few customers, I shouldn't say "several", a handful of customers have opted to take real-time pricing from the competitive market. And, I believe Mr. Fromuth has been involved in some of those offerings. What we found is that very few customers, number one, took that kind of service. And, number two, those that did returned to PSNH's fixed pricing. What that tells me, the fact that this is currently being offered in the competitive market, real-time pricing that is, yet not a whole lot of customers are taking it, that tells me

that customers don't want it. And, quite frankly, I scratch my head and wonder why would we implement something on a mandatory basis that customers don't want? Beyond that, with regard to time of use pricing, I haven't seen competitive offers come out where customers have been offered and have taken time of use pricing. I just haven't seen it. And, again, that tells me it's not something that customers want.

Q. But this is anecdotal. I mean, if I asked for a record request for you to document this for the Commission, could you do that?

A. (Hall) Yes, I can't prove a negative. I can tell you that we have not seen time of use pricing by competitive suppliers and we have not seen customers taking that kind of service from competitive suppliers.

Q. May I ask, did you read any of the articles that were in the bibliography that --

A. (Hall) I haven't had the time.

Q. So, --

A. (Hall) I have not had the time, I'm sorry.

Q. So, you didn't read the article by Hopper, et al, regarding the patterns of large customers who shifted?

A. (Hall) I have not. I am basing this, I am basing my statement on what I have observed PSNH customers doing

or not doing, for that matter.

BY MR. McCLUSKEY:

Q. Yes, just to follow up on that point. You are aware that National Grid's affiliate in New York has offered real-time pricing to their large customers for many years?

A. (Hall) I'm aware of that.

Q. And, did you ever investigate the reaction of customers to a real-time pricing Default Service?

A. (Hall) It wouldn't surprise me if they did have customers who took service under real-time pricing, or under time of use pricing, for that matter. There's a distinct difference between PSNH and the other utilities here. PSNH owns generation. The ownership of generation keeps PSNH's energy costs low. And, therefore, perhaps unlike the case in other utilities, we can't compare what real-time prices might look like to a market price that already has a risk premium in it, because other utilities get their energy from the competitive market. Competitive suppliers are going to include, in their Default Service energy price, a risk premium. That is one of the reasons why PSNH's default energy service price continues to be the lowest in New England. So, PSNH has a low priced option. And, what

I'm seeing, when one talks about mandatory time of use pricing or mandatory real-time pricing is, my concern is that customers are going to be afraid that their low cost option is now going to go away, they're going to go to the competitive market for a fixed price option that is going to include a risk premium, and, therefore, it's going to raise their cost of doing business. Quite frankly, that doesn't make sense to me.

Q. If PSNH's supply costs are lower, generally lower than the market, wouldn't that mean that a real-time pricing rate structure for Default Service for PSNH would be lower than the same rate structure provided by a competitive supplier?

A. (Hall) It depends on how you price it. It depends on how you reconcile revenue. It depends on how you allocate fixed costs. I mean, these are some of the things that we would need to talk about in a working group. There are a thousand different ways to design rates, as I'm sure you're aware.

Q. Yes. But, assuming that were the case, that, because of PSNH's existing generation, they were able to design real-time prices that fully recovered its costs, and that those prices were effectively offered at a

discount than what would be available in the competitive market. Make that assumption.

A. (Hall) Uh-huh.

Q. Is it likely that those customers would go to the competitive market in that situation?

A. (Hall) That the customers would go to the competitive market?

Q. Correct.

A. (Hall) I think they might, depending on a customer's risk profile.

Q. But, if PSNH's real-time pricing rate was at a discount to the market, why would they go to the competitive market?

A. (Hall) Because the customer doesn't know what the price is ultimately going to be. So, if the customer is risk-averse, quite frankly, it doesn't matter what we think the price might be. All that matters is the customer's perception of what the risk is. And, if they perceive risk associated with real-time pricing, and they're risk-averse, that customer will opt for a fixed price option.

Q. And, just so I'm understanding this, what risk are you referring to for customers taking Default Service from PSNH? Is it to do with the reconciliation or are we

talking about something else?

A. (Hall) Well, if Default Service is priced by the hour, customers are going to perceive that as more risky than a fixed price. There's no question that it's more risky to customers. Now, that being said, some customers might love it. We don't know. That's one of the reasons why we're saying "hey, let's do this on an optional basis, rather than a mandatory basis."

MR. McCLUSKEY: Okay. Thank you.

MS. AMIDON: That concludes our questions. Thank you.

CHAIRMAN GETZ: Let's take a ten-minute recess, and we'll resume with questions from Commissioner Below.

(Recess taken at 11:04 a.m. and the hearing reconvened at 11:17 a.m.)

MS. AMIDON: Mr. Chairman, if I could make a procedural change here. We understand that the witness from Wal-Mart has a 5:00 flight. And, so, what we would propose is that, following the redirect and recross and further examination of the PSNH witnesses, that we have Mr. Baker from Wal-Mart testify, if that's okay?

CHAIRMAN GETZ: I take it there's no objections?

(No verbal response)

CHAIRMAN GETZ: Then, that's fine. I guess, in terms of how we conduct the rest of the day, we'll see where this goes, in terms of taking a lunch break or how long the rest of the witnesses are going to take. But, when we complete this panel, we'll go to Mr. Baker, and then I guess play it by ear.

So, Commissioner Below.

CMSR. BELOW: Thank you, Mr. Chairman.

BY CMSR. BELOW:

Q. Mr. Hall, on Page 18 of your testimony, when it says that "all customers would experience higher electricity delivery prices because of the significant investment in metering and billing systems", in reference to implementing time-differentiated pricing of energy service for all customers. That's just based on your analysis of the cost, correct?

A. (Hall) Yes, sir.

Q. You haven't attempted to analyze the utility operational benefits or to provide cost estimates for potential operational benefits, have you?

A. (Hall) No. And, the other thing that I have not attempted to assess is whether, for certain areas where we have distribution system peaks, whether the peak

would be reduced. I don't know how to assess that, because I don't know what the response is going to be.
Q. Okay. So, it's safe to say you haven't really undertaken any kind of comprehensive business case analysis for AMI or --
A. (Hall) No.
Q. No. And, you haven't attempted to look at the demand response, potential demand response benefits?
A. (Hall) No.
Q. Okay. And, I think I heard -- I think it was Mr. Comer who, perhaps in looking at the cost to do a full AMI system, I had had a note on it, but I'm not finding it -- oh, here it is. On Page 12, on Lines 8 and 9, where it says "Much more study would be required to pursue this option." I think one of you, and maybe it was Mr. Comer, said that it would be "worth taking a harder look at this". That wasn't you?
A. (Coit) That would have been me.
Q. Okay. Okay, Mr. Coit. Mr. Hall, you said "customers want price certainty." Do you or PSNH have any sense of the certainty of what the price is going to be for capacity in the forward capacity market?
A. (Hall) Only for the next few years.
Q. When the price is fixed by -- as a result of

negotiation?
A. (Hall) Yes.
Q. So, nobody really knows what the price is going to clear at when we actually get into the capacity market?
A. (Hall) Right.
Q. And, that will be costs that the customers pay?
A. (Hall) Yes, sir. Correct.
Q. Do you have much certainty on -- well, let's back up a second. In looking at PSNH's average cost of electricity, it sort of builds on a base of baseload, mostly generation that you own, which you've pointed out is lower than the market price, often significantly, right?
A. (Hall) Yes, sir.
Q. And, then, building on top of that is intermediate and peak load and load-following product, some of which is bought under contract from the market and some of which is bought on the spot market at times perhaps, is that correct?
A. (Hall) Correct.
Q. And, it's safe to say that intermediate costs more than base typically, and the load-following product and the peak product typically cost more than the intermediate, is that generally true?

A. (Hall) From an energy perspective, yes.
Q. Right. And, do we have much certainty on what that marginal cost of that peak product and that load-following product is going to be over time?
A. (Hall) No. What PSNH tries to do, and what we've testified to in energy service proceedings is, we attempt to purchase as much of our shortfall in advance as we can for an upcoming one year period, to provide more pricing certainty -- more cost certainty, I should say.
Q. Okay. And, what's been the general trend in the past year or two with PSNH with energy sales versus peak demand?
A. (Hall) Peak demand, in recent years, has increased more rapidly than energy consumption, meaning that our system load factor has decreased.
Q. And, that means lower rates of asset utilization?
A. (Hall) Correct.
Q. A lower load factor. Which, in some economics terms, might be considered a loss of efficiency?
A. (Hall) You could look at it that way, yes, sir.
Q. It certainly raises the fixed cost per unit of electricity delivered?
A. (Hall) Sure.

Q. And, that peak demand growth, is that resulting in a need to do transmission and distribution upgrades?
A. (Hall) Definitely distribution. Transmission is more dependent on New England as a whole, but definitely distribution.
Q. In these days, are new increments of transmission and distribution, for that matter generation, tend to cost more than the average embedded cost of equal units of facility?
A. (Hall) I believe that's the case, yes.
Q. Sometimes significantly more?
A. (Hall) I don't know the answer to that question.
Q. Okay.
A. (Hall) I think generally, though, that's correct.
Q. Is there general concern in the industry or PSNH as to where costs are headed for infrastructure costs, things like copper, steel, concrete?
A. (Hall) Sure. We're always concerned about the cost of providing service to customers. And, we and other utilities I'm sure do everything we can to minimize that cost.
Q. Okay. Your company or your parent's a member of the Edison Electric Institute, are they?
A. (Hall) Yes.

Q. Yes. Did you get a chance to look at this publication from the Edison Electric Institute, entitled "Deciding on "Smart" meters"?
A. (Hall) I have not, sir.
Q. You haven't?
A. (Hall) No, sir.
Q. Well, maybe we can take a look at it here today just a little bit.

(Cmsr. Below handing document to Witness Hall.)

WITNESS HALL: Thank you.

BY CMSR. BELOW:
Q. Could you just read the title, the full title and the date of this publication.
A. (Hall) Of the publication?
Q. Yes.
A. (Hall) Sure. "Deciding on "Smart" Meters: The Technology Implications of Section 1252 of the Energy Policy Act of 2005".
Q. And, the date is?
A. (Hall) September 2006.
Q. Okay. I think, on Page 9, there may be, on your copy, there may be something that's highlighted?
A. (Hall) Yes, there is.

Q. Could you read that?
A. (Hall) There's two paragraphs highlighted.
Q. Okay.
A. (Hall) There's a paragraph above "Customer Benefit", then there's "Customer Benefit".
Q. Okay.
A. (Hall) Do you want me to read both of them?
Q. Yes, please.
A. (Hall) Sure. "PURPA is similarly a policy statement motivated by the broad interests of America as a whole. Some regulatory bodies and utilities will decide to pursue peak sensitive pricing and demand response aggressively, depending upon their perceptions and circumstances. Others will find that the policy objectives already are met or are otherwise not applicable. Local conditions will drive the decisions deemed best for customers. Many utilities, without any regulatory imperative, will continue deploying AMI systems simply because they reduce costs and improve the quality of service to customers [consumers?]."
Q. If I could just -- holding there. That statement seems to suggest that some utilities, irregardless of what's happened, at least in some parts of the country, have deployed AMI because there's been a net benefit, net

cost reduction --

A. (Hall) Uh-huh.

Q. -- to customers, presumably based on operational savings?

A. (Hall) That's what the conclusion implies to me here.

Q. Okay. The next paragraph.

A. (Hall) Sure. This is under the heading "Customer Benefit". "Regulatory utilities traditionally operate as monopolies with an "obligation to serve" for the benefit of shareholders and customers. AMI typically produces a significant financial benefit, but that benefit may not adequately justify a system on a purely economic basis, as discussed below." Want me to continue?

Q. Sure.

A. (Hall) Okay. "AMI systems provide dozens of benefits to customers that are real but not readily quantifiable. These include more rapid resolution of disputed bills, fewer errors, improved response to outages, reduction in theft losses, improved security through elimination of intrusions by meter readers and access with customer-provided keys to indoor meters, off-cycle meter reading, customer-selectable billing and payment dates, and others. These benefits are

discussed in Customer & Societal Benefits starting on Page 12."

Q. Okay. And, it's safe to say you haven't tried to evaluate any of these potential benefits?

A. (Hall) I have not.

Q. No. Okay. If you turn to Page 19, I think there's also something that's highlighted here, towards the top of the right-hand page, the third paragraph down.

A. (Hall) Yes, sir.

Q. Could you read that?

A. (Hall) Sure. "Depending on the utility operating scenario and assumptions, the aggregate benefits of demand response can be greater or less than the AMI benefits in traditional utility operations. If one includes in the demand response benefit the avoided costs and consequences of rolling blackouts, then demand response benefits may be many times the operating benefits, and also many times the cost of the AMI and demand response system. As importantly, benefits accrue to constituents outside the utility such as the ratepayers. The Energy Policy Act suggests that these benefits be assessed and considered even though they may not impact the return on investment as measured from a strictly utility perspective."

Q. And, you haven't tried to assess any of these kinds of demand response benefits or potential avoided costs that could result from enabling demand response, have you?
A. (Hall) Well, we have to a certain extent, but not with respect to AMI metering.
Q. Okay.
A. (Hall) And, the extent that I was referring to is the interruptible program that we talked about earlier.
Q. Okay. But this would take some work to do this kind of analysis?
A. (Hall) Oh, sure.
Q. Which would involve costs and resources. But do you think that might be worth starting to do in a deliberative process?
A. (Hall) It depends on what policy the Commission wants to pursue.
Q. Okay. Let me show you another publication. Hold onto that one. We may want to go back to it. And, this is also from the bibliography that the Commission has circulated. And, it's entitled "From Smart Metering to Smart Pricing". And, could you just read the paragraph that's highlighted, the second paragraph in the article?

A. (Hall) Sure. "Dynamic prices provide customers with a chance to lower their energy bills by curtailing peak period usage and/or shifting it to off-peak periods. In so doing, they offset the need for expensive peaking capacity. They can also help to lower prices in wholesale markets and to mitigate market power being exercised by a few generators. Finally, by reducing emissions, they help to protect the environment."

Q. Okay. In New England, where we've got this forward capacity market, are you generally familiar with that concept?

A. (Hall) Yes.

Q. And how it's going to work?

A. (Hall) Yes.

Q. And, is your understanding that there's going to be an auction based on our incremental need to increase and install capacity for generation, and the market is going to clear at the price of the lowest cost supplier in a bid stack that is enough to meet -- where everybody under that point in the bid stack, plus existing resources, are enough to meet the installed capacity requirement. Is that a reasonable description?

A. (Hall) That's my understanding.

Q. And, if the capacity requirement is greater or less, presumably, the point in the bid stack that the price clears at will be greater or less. Does that make sense?
A. (Hall) Yes. I think what you're saying is, depending on the amount of capacity necessary, that will determine the clearing price? Is that what you mean?
Q. Yes.
A. (Hall) Yes, I agree with that.
Q. Right. So, if the capacity for the region needs is less than it might otherwise be, perhaps because of demand response, that would imply likely a lower clearing price, which would affect the price that all generators are paid and all customers pay through various tariffs, is that correct?
A. (Hall) Okay.
Q. Okay. I want to show you another article. Could you read the title of that.
A. (Hall) Sure. "Breaking Out of the Bubble: Using Demand Response to Mitigate Rate Shocks".
Q. And, this is from Public Utilities Fortnightly March 2007, is that what it looks like?
A. (Hall) Correct.
Q. Okay. Did I highlight anything on that one?

A. (Hall) You did, sir.
Q. Okay. Could you read that first paragraph.
A. (Hall) Sure. "There is strong empirical evidence that during critical peak hours, when the power system is stressed by a shortage of supply relative to demand, reducing customer loads by a few percentage points can lower the wholesale cost of electricity significantly. As shown in California's recent statewide pricing pilot, customers do not have to make drastic adjustments in order to drop their load during these critical hours to achieve this goal."
Q. Okay. And, that's suggesting an argument that, if demand response -- well, let's wait a second. Well, I was looking for an image that I'm not -- oh, oh, I've got it. If we go back to the Edison Electric Institute publication.
A. (Hall) Okay. And, on Page 17 --
CMSR. BELOW: Would it be helpful to mark this as an exhibit?
CHAIRMAN GETZ: Would it be fair to say you may be using these documents again today?
CMSR. BELOW: Possibly, yes.
CHAIRMAN GETZ: Okay. Let's mark for identification, as "Exhibit Number 9", the Edison Electric

Institute document on "Deciding on "Smart" Meters". And, while we're at it, let's mark the article entitled "From Smart Metering to Smart Pricing" as "Exhibit Number 10", and the article with the title "Breaking out of the Bubble" as "Exhibit Number 11".

(The documents, as described, were herewith marked as Exhibits 9, 10 and 11, respectively, for identification.)

WITNESS HALL: May I write on these?

MR. EPLER: Excuse me, Mr. Chairman. Would it be possible, during a break, perhaps during the lunch break, to have copies of these?

CHAIRMAN GETZ: We'll make additional copies during the break.

MR. EPLER: Thank you very much.

BY CMSR. BELOW:

Q. Okay. You'll see there's a graph on the bottom of Page 17. And, that's sort of a classic supply and demand graph. Can you see that?

A. (Hall) Wow. Does the Y axis say "Price of Electricity Supply"?

Q. Well, I can give you a bigger version, if you're having a hard time seeing that. And, this is another document that's entitled "Benefit of Demand Response in

Electricity Markets and Recommendations for Achieving Them: A report to the United States Congress pursuant to Section 1252 of the Energy Policy Act of 2005" by the U.S. Department of Energy dated February 2006. And, on the cover, is that the same graph I was --

A. (Hall) It looks like it.

Q. -- that I was trying to show you? And, when you -- that's a supply and demand chart, is that correct?

A. (Hall) Yes. I call it a "supply curve", with two specific levels of demand.

Q. Right. And, it's just a conceptual one, there's no actual dollar figures or demand figures, correct?

A. (Hall) I agree.

Q. But what it suggests, and I would just sort of ask if the general shape of the curve seems like one that generally represents electricity prices in the wholesale market, such as in ISO New England, where at low levels of demand the price is low.

A. (Hall) Uh-huh.

Q. But, because electricity can't be stored readily, and because there's a limit to the amount of generation capacity within a given area, as the demand approaches, the capacity price goes up steeply, the price for that supply goes up steeply. Is that a reasonable

statement?
A. (Hall) I agree with that, yes, sir.
Q. And, what this graph suggests is there's a fairly modest demand reduction, when you're on that steep part of the curve, can result in a substantial price reduction. Is that what that seems to --
A. (Hall) Yes, I agree. And, I might add, that that is the premise behind PSNH's interruptible program.
Q. Okay. So, you --
A. That you're on the steep part of the curve.
Q. So, you sort of recognize that this is a relationship that exists, and it's something worth trying to address?
A. (Hall) Sure.
Q. Okay. Back to the "Breaking Out of the Bubble", I forget what it's marked as.
CHAIRMAN GETZ: Eleven.
BY CMSR. BELOW:
Q. Exhibit 11. If you could just read the first paragraph in the first sentence of that article.
A. (Hall) Okay. "By protecting customers from" -- excuse me. "By protecting customers from price spikes during a few hours in the year, existing rate design regulations are also preventing them from lowering

their average rates throughout the entire year. That is a paradox of utility regulation."

Q. And, the first sentence of the next paragraph.

A. (Hall) Oh, sure. "Responding to the directives of the Energy Policy Act of 2005, two recent reports by the U.S. Department of Energy and the Federal Energy Regulatory Commission make a strong case for dynamic pricing of electricity."

Q. Okay. That's enough. Yes. And, that reference to the report is the one with the graph on the front of it, that's what I just showed you.

A. (Hall) Yes.

Q. Okay? But you haven't had a chance to read that report --

A. (Hall) I have not.

Q. -- from the Department of Energy from February '06?

A. (Hall) No, sir.

Q. No. Okay. A couple of specific questions. On Page 7 of your testimony, and maybe this is a question for Mr. Coit, concerning meters. At the end of Line 19, it reads "To our knowledge, there is no communication option available for large customer metering that could be used to transmit both metering data and time-sensitive pricing information reliably enough to

avoid billing issues." Could you elaborate on that, if you're responsible for that statement?

A. (Coit) Yes. That was trying to anticipate the possible requirement to use the communication channel between the meter and the utility to also transmit pricing information. That may have been a misdirected answer.

Q. But you're saying that you don't know of such options, systems, that are reliable enough to avoid billing issues?

A. (Coit) In my experience, that's correct.

Q. Have you had experience with such systems?

A. (Coit) I have experience with remote communications meters via modems, and we've had some experience with cellphone communication.

Q. Okay. Could you borrow this Edison Electric Institute publication from Mr. Hall.

CMSR. BELOW: What Exhibit number is that?

CHAIRMAN GETZ: It's 9.

BY CMSR. BELOW:

Q. Nine. Could you turn to Page 32. Do you see some highlighted sections there?

A. (Coit) Yes.

Q. The ones I think starting -- Well, maybe you could just

start with the first one that's highlighted and read that please.

A. (Coit) Sure. "Many utilities have justified fixed network systems based on the combination of the economic benefits derived. It is a significant percentage of residential customers" -- "If a significant percentage of residential customers is likely to be on a time-based rate, a fixed network system will almost always be the most economical way to serve them. However, the pervasive benefits of fixed networks to utility operations are large enough that many leading utilities have justified such systems without any plan or desire to implement TOU rates."

Q. Referring to time of use rates?

A. (Coit) Yes.

Q. Okay. And, further down on the page, under section entitled "Communication for Control", could you read what's highlighted.

A. (Coit) "Alternatives for near-real-time communication include: The path used by an AMI system to communicate with meters."

Q. Oh. And, then, there's other options that are listed, such as what you've mentioned, radio or cellular phone signals, correct?

A. (Coit) Yes.
Q. And, then, on the next page, the paragraph at the top of the page, could you read that.
A. (Coit) "The communication technologies of most AMI systems can be used not only to gather meter data, but also to issue near-real-time control signals. Three available power line systems can send signals to all, or any subset of, customer sites within minutes of the need. And, several of the radio AMI systems can do the same."
Q. And, actually, the next sentence, too.
A. (Coit) Oh, I'm sorry. "But it is not necessary to use the same communication for both metering and control, and in some cases it will be more economical to separate the two data paths."
Q. Okay. So, you don't have any experience with these systems that might use the PLC approach, the Power Line Communication approach, to send signals to advanced meters?
A. (Coit) I have spoken with some of the sales representatives of these companies, and we've discussed some of the options they have available. What I was addressing in this testimony is communicating pricing information, which is different than a control signal.

Q. Okay. Do you think it might merit some further investigation of what the possibilities are here?
A. (Coit) If we understood the requirements of the program, we could certainly investigate other options.
Q. Okay. On the next page, on Page 8, and, actually, the top of Page 9, there's a little table that shows there's 38,300 demand meters, it says "demand metering". And, there's two types that are indicated, "SS", for electronic solid state and "E/M" for electromechanical. But they're shown on one line together as a total of 38,300. Do you have an idea of how many of those are electronic solid state type meters versus electromechanical?
A. (Coit) I don't have a breakdown of that number.
CMSR. BELOW: Okay. Okay, I think that's all. Thank you.
BY CHAIRMAN GETZ:
Q. Mr. Hall, I wanted to ask a question about the notion of the working group that you have talked about. Is this in the context of a PSNH-specific working group or were you thinking more generally, in terms of an all utility working group? What was your thinking behind that?
A. (Hall) I was thinking more in the context of PSNH.

And, the reason is because of the different circumstances for PSNH, as compared to the other utilities. Those being the ownership of generation. That is, by far, the biggest difference, and, therefore, requires certain things that are necessary to look at when it comes to rate design and program implementation.

Q. So, then, you're not proposing a subsequent generic kind of proceeding?

A. (Hall) No.

CHAIRMAN GETZ: Okay. All right. Do you have redirect, Mr. Eaton?

MR. EATON: I have a couple of questions on redirect.

REDIRECT EXAMINATION

BY MR. EATON:

Q. Mr. Coit, a couple of the data responses were marked for identification as exhibits, and they had to do with the costs of changing out meters for the residential and small commercial class. Remember those?

A. (Coit) Yes.

Q. Are the costs of the existing meters captured in those responses?

A. (Coit) The cost of the existing book value of those

meters?
Q. Yes.
A. (Coit) No, those are not considered in my numbers.
Q. Mr. Hall, would PSNH expect to recover the net cost of those meters, minus any salvage value, if we were -- if the Commission ordered PSNH to replace its meters?
A. (Hall) Sure. I view the numbers that Mr. Coit came up with is incremental cost associated with metering. That means that you don't reduce one cost and increase in other rates over and above what's already included in the rate level.
Q. Also, Mr. Hall, and you were asked about what you think customers would react. What's the basis of your knowledge of customer behavior?
A. (Hall) It's based on the interactions that we have with customers every day. PSNH has account executives that have continuous interaction with large customers. And, of course, we've got our customer service reps who have interactions with smaller customers.
Q. And, Mr. Comer, what are some of those interactions regarding price sensitivity or the flexibility that customers have with regard to price?
A. (Comer) Well, I can speak to the requests that we get through the call center, from small commercial

customers and occasionally residential customers, requesting information on energy pricing for the coming year. We frequently get calls, particularly in the third and fourth quarter of a year, asking what's our predictions for the following year, because the customer is putting in their budget and trying to make plans for their financial planning for the following year. And, I know, in my previous jobs, working with account executives, those questions are very frequent from large commercial and industrial customers.

MR. EATON: Thank you. That's all I have on redirect.

CHAIRMAN GETZ: All right. Then, the --

CMSR. BELOW: I'll wait and ask somebody else. Save it for someone else.

CHAIRMAN GETZ: Saved by the bell. The witnesses are excused.

CMSR. MORRISON: Run.

CHAIRMAN GETZ: And, I guess we'll turn next, Ms. Doukas, to the Wal-Mart witness is Mr. Adams?

MS. DOUKAS: No, Mr. Ken Baker. Mr. Ken Baker.

CHAIRMAN GETZ: Baker, I'm sorry.

(Whereupon Kenneth Baker was duly sworn

and cautioned by the Court Reporter.)

KENNETH BAKER, SWORN

DIRECT EXAMINATION

BY MS. DOUKAS:

Q. Would you please state your name and address for the record.

A. My name is Ken Baker. My address is 2001 Southeast 10th Street, in Pentonville, Arkansas.

Q. And, by whom are you employed?

A. I am employed as a Senior Manager of Sustainable Regulation for Wal-Mart Stores.

Q. And, what are your responsibilities in that position?

A. I participate in various regulatory proceedings across the country, excluding rates. I do not do any rate work. I have participated in a number of working groups dealing with demand response, energy efficiency, advanced metering across the country. I've also taken advantage of several opportunities to travel the country speaking on energy efficiency, demand response, and advanced metering, most recently at the EEI conference in Indianapolis. I'm also involved in several of Wal-Mart's renewable energy projects, the most recent being our -- the pilot project that we've announced in California and Hawaii.

Q. And, could you briefly describe your educational background and your professional experience.
A. Sure. I have a Bachelor of Science degree in Health Science and a Juris Doctorate degree, and I'm currently licensed as an attorney in Arkansas. Prior to coming to Wal-Mart, joining Wal-Mart, I worked practicing law in Little Rock for nine years. After arriving at Wal-Mart, I worked in its Real Estate Department, signing and negotiating distribution center contracts for distribution centers across the country. And, I've been in the Energy Department for about ten years -- ten months now, excuse me.
Q. And, what is the purpose of your testimony here today?
A. The purpose of my testimony here today is to get Wal-Mart's policy statements regarding time-based pricing and advanced metering on the record, and also to address any questions the Commission or the parties might have.
Q. Now, Mr. Baker, have you reviewed the comments dated September 17th, 2007, filed on behalf of Wal-Mart in this proceeding?
A. I have. Myself and the Director of my department, Angie Beeler, reviewed and approved those comments.
Q. Do those comments accurately reflect the position of

Wal-Mart on the issues presented in this phase of the hearing, the proceeding?

A. Yes, they do.

Q. And, do you adopt those comments here today?

A. I do.

MS. DOUKAS: We'd like to mark those comments, September 17th, 2007, for identification purposes.

CHAIRMAN GETZ: Okay. We'll mark them for identification as "Exhibit Number 12".

(The document, as described, was herewith marked as Exhibit 12 for identification.)

BY MS. DOUKAS:

Q. Mr. Baker, would you briefly explain Wal-Mart's position for the Commission.

A. Well, Wal-Mart certainly supports the implementation of time-based rates, particularly demand -- or, real-time pricing. It's Wal-Mart's position that real-time pricing provides the most accurate price signals and allow the customers to effectively manage their loads at the most critical peak times. Additionally, with our advanced energy management system, we can get the most out of that. We can control, among other things,

our HVAC, our lighting, our refrigeration and some other things from a central location. As you can imagine, accurate price signals really help us save on expenses and take pressure off the power grid.

Additionally, Wal-Mart does have some very sophisticated advanced meters. It's our position that these advanced meters, if a customer has their own, and provided that those meters meet or exceed standards set by the regulatory authority, that the customer be allowed to use those meters, and should, quite honestly, not be charged for a utility meter, if in fact, their advanced meter is compatible with the utility.

MS. DOUKAS: Thank you, Mr. Baker. I have no further questions on direct examination, but he is available to answer any questions by the parties or the Commission.

CHAIRMAN GETZ: Okay. One issue, Ms. Doukas. There were three earlier sets of comments filed by Wal-Mart. Did you hope to mark any of those or is the single filing in September sufficient from your perspective?

MS. DOUKAS: I'm sure -- I don't believe that's necessary. I think Wal-Mart's position has been

pretty fairly consistent throughout this proceeding. But, if the Commission would like to ask any particular questions or needs to mark them for identification purposes, we wouldn't have any objection.

CHAIRMAN GETZ: Okay. Thank you. We'll start with Mr. Eaton.

MR. EATON: Thank you.

CROSS-EXAMINATION

BY MR. EATON:

Q. Mr. Baker, has the -- in your September 17th, 2007 comments, you comment on PSNH's PeakSmart Program. Are any Wal-Mart facilities located in PSNH's service territory?

A. There are.

Q. Has Wal-Mart participated in the PeakSmart Program and previously the voluntary --

A. We have not. And, right now, we are expanding our programs across the country. We're trying to get in our advanced meters, hopefully, to eventually have the entire U.S. done that correlates with our energy management system. When those are in place, then we do start participating in these programs. And, real-time pricing is a big part of that. But, as of yet, we have not gotten into New Hampshire with our advanced

metering that correlates with our energy management system. There's plans to do that. Right now, off the top of my head, I don't know exactly when that's going to take place. But I know there are plans to do it. I could find or try to pin people down, I guess, on a little bit closer dates when that's going to happen, but that's where we're at right now.

Q. Has, in New Hampshire, has Wal-Mart taken advantage of the real-time pricing offered by the hourly marginal price in ISO New England?

A. In ISO New England, we've used, specifically, I think Connecticut has used some real-time pricing. I may be mistaken on that. But, in the entire New England ISO, through demand response, we've reduced a little over 8,000 kW in 2007, on at least one, probably several called events.

Q. But you don't have the equipment in New Hampshire to do that yet, correct?

A. Not at this point. But, again, you know, we plan to cover the United States. One thing that helps us to decide where to go is consistent and very widespread real-time pricing programs.

Q. Why is it important to Wal-Mart that this is applied to every customer?

A. We just believe that every customer should be able to participate to their maximum potential in real-time pricing, from the largest user, down to the smallest residential. Everyone should be able to participate. The purpose of real-time pricing is to cut power, it's to relieve pressure on the power grid. The more people you have participating in that, the more successful any demand response program or any energy efficiency program is going to be. If you don't use it, what better could there be.

Q. Couldn't the customers who would benefit from real-time pricing participate if it was only optional?

A. Yes. And, in the initial filing, I think we represented, back in 2006, and, again, I wasn't in the Energy Department in 2006, but, as I recall reading that document, we did say "mandatory". The reason we said that is for the reason I just said. The more participation, the more impact you can have. Mandatory is something that we certainly would be willing to talk about the possibility of reconsidering our position on that. But we feel like that is the most efficient way to have the most success.

MR. EATON: Thank you very much.

WITNESS BAKER: Thank you.

MR. EATON: That completes my cross-examination.

CHAIRMAN GETZ: Mr. Fromuth.

MR. FROMUTH: Thank you, Mr. Chairman.

BY MR. FROMUTH:

Q. Mr. Baker, Wal-Mart is often credited, I think correctly so, for being a canny and shrewd manager of its supply management chain for the items that appear on its shelves and what it sells in its store. In connection with that, I have seen lots of references to Wal-Mart's procurement strategy for energy, electric energy, in ERCOT, the ERCOT region, that's in Texas. Could you tell us a bit about what it is that you're doing in Texas that seems to be working very, very well from the standpoint of electric energy cost management for your corporation?

A. Sure. I can tell you what I know. I will tell you that that is a -- it's within the same umbrella, but a slightly different department. Texas Retail Energy acts as our wholesaler and sells energy to our Wal-Mart facilities. You're correct, it's been very successful. And, beyond that, I'm not comfortable really commenting on the TRE Program.

Q. Do you happen to know whether or not the strategy

you're using in Texas that's working so well has been pursued in any other jurisdictions around the country, besides that Texas market?

A. You know, it doesn't matter whether it's the smallest product on the shelf or energy. We are always looking to improve ways to cut costs to best serve our customers. I'm sure that that has been or will be looked at at some point. At this time, I'm not competent to comment on that.

MR. FROMUTH: Thank you, Mr. Chairman.

CHAIRMAN GETZ: Mr. Epler.

MR. EPLER: Yes. Thank you. Mr. Baker, good morning.

WITNESS BAKER: Good morning.

BY MR. EPLER:

Q. Just drawing your attention to Wal-Mart's September 17th comments, at Page 3, the second full paragraph. You discuss there your recommendation to the Commission with respect to meters. Could you give examples of other states where commissions have required this of a utility?

A. We're using it -- I don't know that there is necessarily been a place where commissions have required it of utilities. But there are areas where

the utilities have not objected to this being done. Texas is a good example. In fact, in Texas, I'm not certain, I believe there may be some legislation that allows for that. We're rolling out meters in various parts of the country right now, southern California, we will be in New York, and then there's some confidential plans to do it in a number of other places. And, I will go on to say, I testified at a hearing in South Carolina where the utility commission recently ordered utilities to work with us to work this problem out. And, if, in fact, we couldn't resolve it, they recommended that we file a commission -- a petition with them to come in and discuss the matter.

Q. Would you be able to provide some kind of documentation of how you're proceeding with this in Texas or in those other states?

A. I certainly will.

MR. EPLER: Could I have that as a record request.

CHAIRMAN GETZ: We will reserve Exhibit 13 for the record response.

(Exhibit 13 reserved)

MR. EPLER: That's all the question I have.

CHAIRMAN GETZ: Ms. Blackmore.

MS. BLACKMORE: I have no questions.

WITNESS BAKER: Excuse me, if I may, what's your name, if I could get that?

MR. EPLER: I'll give you a card during a break. Make sure your counsel has that.

WITNESS BAKER: Okay. Thank you.

CHAIRMAN GETZ: Ms. Ignatius.

MS. IGNATIUS: Thank you.

BY MS. IGNATIUS:

Q. Did you hear the testimony of Mr. Hall that the decision of a company to get away from a fixed price option will depend on how risk-averse that company is?

A. Yes, I did hear that. And, I can tell you that's something that we have not, to my knowledge at Wal-Mart, have not even considered. Because the benefits -- we have found the benefits of time-based metering, and specifically where we're using real-time pricing, to be just overwhelmingly advantageous.

Q. And, then, --

A. And, I can't speak for other companies. I'm speaking specifically for Wal-Mart.

Q. All right. Do you know if any of your competitors have come to the same conclusion?

A. I do not. I do know that, from attending a number of conventions, seminars, that a lot of other companies, a lot of other large commercials are beginning to look at things that we've been looking at for quite a long time. We have an incredibly extensive energy efficiency program in our stores, a pretty in-depth demand response program. And, I think other large retailers are beginning to catch on with what we're doing.

Q. Do you know if any smaller customers have experimented with programs where they can respond to price signals more directly than a fixed price option?

A. Only to the extent of the speakers that I have heard at EEI. And, as I've said earlier, I spoke recently at the EEI convention in Indianapolis. And, I wish I could remember the details. It involved Duke Energy. But they did talk about smaller customers being able to participate. It's our position that everyone should be able to participate, because that's going to create the most impact, relieve the power grid, save energy, and that's what this is all about in my opinion.

Q. In your testimony, this is the September 17th comments, at Page 2, you had said that "studies show that smaller customers react to pricing signals", and you noted the

California experience as being a way to reduce energy consumption and lower bills. Is that something you've studied, the California results?

A. I have briefly looked at some of the results from there. And, I assume you're talking about smaller customers?

Q. Yes, sir.

A. I know that California has a smart thermostat, a pretty extensive smart thermostat, or I've been told they have a pretty extensive smart thermostat program that, to this point at any rate, is proving somewhat successful.

Q. All right. On the third page of those same comments, and I don't know if you have those in front of you to help out here, you make some recommendations that the Commission might consider specific to cost recovery requirements that wouldn't penalize customers or discourage them for undertaking some of these other options. Can you describe and maybe expand a bit on your testimony here?

A. Yes. It's our position at Wal-Mart, and I'm certain this will not be a popular position in this room, but it's our position at Wal-Mart that, when you implement demand response programs, when you cut your energy, through whatever means, by monitoring real-time

pricing, time of use pricing, whatever that might be, there are certainly benefits to the utilities for doing that, that relieve congestion on the power grid, better planning, transmission, there's advantages that they get. And, for those reasons, we feel like a majority of the costs at least should be borne by the utility.

Q. So, some balancing of both the costs incurred by the utility to run the program and benefits that they're receiving as a result of the program?

A. And, certainly. And, I feel like the gentleman up here earlier mentioned a "working group". I can think of no better way to try to iron that out and come to compromises on that. I would hope that, if, in fact, a working group is set up, that all parties are allowed to participate in that.

MS. IGNATIUS: Thank you. Nothing else.

WITNESS BAKER: Thank you.

CHAIRMAN GETZ: Mr. Aalto.

BY MR. AALTO:

Q. Mr. Baker, there are a couple of areas of questions. First, you mentioned that you'd like to see the ability for your company to procure its own meters. Is that because you're looking for the capabilities of the meter or the payment for it? I see two aspects there.

One is the meter itself that measures the power, and then there are the smarts that you use to do what you need to do.

A. Yes, I'm referring specifically to the smarts. And, as to wanting to procure, we have already procured. And, we're very aggressively installing them in our stores. We have a number of items submetered beyond the advanced meter as I said. We can control, right now, the HVAC, lighting, refrigeration, and we could add on a lot more things to that, and, in fact, are in the process of doing that. Where we can, you know, react to demand response [witness snapping fingers] just like that. I mean, and that's just an incredibly useful program.

Q. Do you feel that ultimately it would be useful to go to perhaps a five minute or shorter pricing?

A. Without question.

Q. Uh-huh. In the earlier comments of Wal-Mart, back last year, there was a report on I think it was day-ahead pricing, hourly pricing for residential customers in a project in Chicago. The report was, I guess, a report of the first year's results. Were you able to bring that up-to-date at all or have you looked at that further to see what the more recent results of that

experiment have been?
A. I have not looked at that. I would very much appreciate being able to look at a copy of an updated analysis of that experiment or pilot. But I have not seen it. To me, I mean, technology has improved to the point that anyone, in theory, should be able to participate in a demand response program and be able to do so effectively, from the largest industrial, down to the smallest consumer. I mean, you've got smart thermostats. There's no reason why everyone should not be able to participate and have the most impact on loads.
Q. Do you remember if, in those reports, the customers were generally satisfied or at least neutral on their participation?
A. I apologize, I don't remember.
MR. AALTO: Okay. Thank you.
WITNESS BAKER: Thank you.
MS. HATFIELD: Thank you.
BY MS. HATFIELD:
Q. Mr. Baker, I just have one thing I'd like to ask you about. If we think about New Hampshire implementing smart metering as sort of a continuum. You know, we can't just flip the switch and have it tomorrow.

A. Sure.
Q. And, if we think about, as a threshold matter, we might want to make sure that you could use your smart meters as a first step, if maybe mandatory is a later step. Are there barriers today to Wal-Mart actually using the smart meters that you're talking about investing in in New Hampshire?
A. Not in the places that we have implemented. And, I'm going to be honest with you, when we implement our smart meters, we're looking at places that we can, because we need to provide this to our shareholders, but we're looking at places where we can get the most return on our investment. There are jurisdictions that will give you credit for the advanced meters. Like I said earlier, if you have your own, you shouldn't have to pay for a utility advanced meter. And, it's the same for the energy efficiency programs. We'd like to get the best return that we can for our customers and shareholders. So, we look at things like rebates and certainly do that with our advanced meters.
Q. So, is it fair to say that, in Wal-Mart, New Hampshire has a willing partner, and there's a possibility that we may be losing out on that opportunity if we don't facilitate?

A. I think if there's not expansion of the program. And, again, real-time pricing, that's one of the things we look at. And, again, I'll restate that it's our goal to eventually have our systems all over the country that will allow us to do that. I won't say that New Hampshire is losing out. I would say that implementation of real-time pricing would certainly add encouragement to us in our willingness to expand sooner.

MS. HATFIELD: Thank you.

CHAIRMAN GETZ: Ms. Amidon.

BY MS. AMIDON:

Q. How many -- excuse me. How many states, where Wal-Mart operates, can Wal-Mart take real-time pricing?

A. There are several. And, I wish I had gotten that before I came here. I know Georgia Power & Light, we do extensively, real-time pricing extensively with them. And, we're beginning to use it in some areas in New York. And, there's other places, and I apologize, I just -- those don't come to mind off the top of my head.

Q. Would you be able to get that information and provide that in the form of a record request?

A. Certainly. Certainly.

CHAIRMAN GETZ: Well, let's include that in the response to what we've already reserved at "Exhibit Number 13".

WITNESS BAKER: Right.

MS. AMIDON: Thank you.

BY MS. AMIDON:

Q. What would you -- what would Wal-Mart, in order to implement real-time pricing in New Hampshire, what would you ask of the Commission, in terms of, in fashioning a program, an order, an order or a rulemaking, fashioning a program on real-time pricing? What specific components would you ask to allow you to operate as you do in these other states?

A. I think any program that you implement, you've got to have consistent -- or, agreement between the retailers, the utilities, everyone involved. You've got to have agreement, you've got to work together, or the thing is not going to be successful. And, that's why I really appreciated the comment on the "working group". I think those, and I've participated in a number of them across the country, they really do, in my opinion, work in most occasions. And, I think those are the type of issues that the working group should resolve, if indeed there is one.

Q. And, you would include then the rebate or the credit or other type of relief from the meter cost, to allow Wal-Mart to select its own meters and purchase its own meters?

A. Yes, which we have done. And, I don't want to get into another area right now that I think the Commission is examining. But, when we say "rebate", I get a little bit nervous because of the Core Program and that taking rebates requires waiver of capacity payments. And, I don't want to get into that, but that's something we would have to look at, because we have very strong feelings on that. We feel like the customer that does any energy efficiency measure, who goes to the trouble to spend the money, the time, the effort to install their advanced metering, their energy management systems. Those are the people that should be rewarded for those. Whether they're taking rebates for energy efficiency proceedings, advanced metering, whatever, and not to get into that in a lot of detail, it's for another time, but that's where we stand on that.

MS. AMIDON: I understand. Thank you.

WITNESS BAKER: Thank you.

CMSR. BELOW: Yes. Thank you, Mr. Chairman. Good afternoon.

WITNESS BAKER: Good afternoon.

BY CMSR. BELOW:

Q. Is it fair to say that Wal-Mart is very focused on economic efficiency and cost savings?

A. Certainly.

Q. And, that it's fair to say that's been a key part of the success of the Wal-Mart business model?

A. It's been a key part of the Wal-Mart business. But I'm going to be honest with you, we have, and it's a laundry list, and I have it with me, I won't go through it right now, but we have done a number of energy efficiency measures in our stores. One of the biggest tools we have is demand response. And, what we have found is it's not an either/or situation. We can help the environment, save electricity, and lower our expenses all at the same time. It's not an either/or, it's a win-win.

Q. Well, I guess you anticipated my next question, which is, are you advocating for demand response in the enabling metering technology and pricing structure because you believe that that leads to greater economic efficiency and cost savings?

A. Oh, certainly. Yes.

Q. Okay. And, not just for Wal-Mart, but for all customer

classes?

A. I think customer classes and the utilities. I think it benefits everyone, as well as the environment.

Q. And, Wal-Mart is concerned about the carbon emissions --

A. Exactly.

Q. You just need to have one of us at a time speak for the reporter.

A. Okay. I'm sorry.

Q. And, you're worried about carbon emissions from energy use and electricity in part because of the concern about global warming and that impact of the long-term sustainability of your business and the whole environment and economy?

A. Yes, sir. An example of that is the solar program in California I told you about that we've implemented will save we estimate 6,500 to 10,000 metric tons of GHG per year. So, yes.

Q. And, you believe that enabling demand response through advanced metering infrastructure and real-time pricing furthers the goal of reducing carbon emissions?

A. Certainly. I truly do. To me, the most -- the best sustainable program is one where you never use the electricity.

CMSR. BELOW: Mr. Chairman, I mentioned this document before, but it wasn't marked as an exhibit. It's the Department of Energy February '06 report on "Benefits of Demand Response in Electricity Markets and Recommendations for Achieving Them", could we mark that?

CHAIRMAN GETZ: We'll mark that as "Exhibit 14".

(The document, as described, was herewith marked as Exhibit 14 for identification.)

BY CMSR. BELOW:

Q. Are you generally familiar with this document in any way?

A. No, sir.

Q. You're not.

A. I'm not.

Q. Okay. If you turn to Page 7, there's a highlighted section here entitled "Why is Demand Response Important?" Would you mind reading the highlighted sections. And, you can skip over the parenthetical parts.

A. Okay. When you say the "highlighted sections", are you referring to the box or --

Q. No, excluding the boxes.

A. Okay. The first "Why is Demand Response Important? In recent years, there has been growing consensus state among federal and state policymakers that insufficient levels of demand response exist in the U.S. electric power system (EPACT 2005, FERC 2003, NARUC 2000, GAO 2004 and 2005). Due to its physical properties, electricity is not economically storable at the scale of large power systems. This means that the amount of power plant capacity available at any given moment of time must equal or exceed consumers' demand for it in real-time. Electricity has also" -- or, excuse me, "also has few substitutes for certain end uses (refrigeration, lighting). The marginal cost of supplying electricity is extremely variable because demand fluctuates cyclically with time of day and season and can surge due to unpredictable events (extreme temperatures, for instance) and because generation or transmission capacity availability fluctuates (due to a generation plant outage or transmission line failure). While the cost of electric power varies on a very short time scale (every 15 minutes or hourly), most consumers face retail electricity rates that are fixed for months or years at a time, representing average electricity production

(and transmission distribution) costs."

Q. And, the next --

CHAIRMAN GETZ: Actually, Steve, are you -- okay. You might want to slow down a tad.

WITNESS BAKER: Okay. I certainly will.

BY THE WITNESS:

A. The next paragraph: "This disconnect between short-term marginal electricity production costs and retail rates paid by consumers leads to an inefficient use of resources. Because customers don't see the underlying short-term cost of supplying electricity, they would have little or no incentive to adjust their demand to supply-side conditions. Thus, flat electricity prices encourage customers to over-consume, relative to an optimally efficient system in hours when electricity prices are higher than the average rates, and under-consume in hours when the cost of producing electricity is lower than average rates. As a result, electricity costs may be higher than they would otherwise be because high-cost generators must sometimes run to meet the non-price-responsive demands of consumers. The lack of price-responsive demand also gives generators the opportunity to raise prices above competitive levels and exercise market power in certain

situations."
Q. Stopping right there. Is this the kind of economic efficiency that Wal-Mart sees that may come from time of use pricing or real-time pricing?
A. I would tend to agree with that to an extent. I think, as I said earlier, I think real-time pricing gives the consumer the best opportunity to lower their usage at the most critical and most expensive peak times. It reduces the need for peaker plant operation, which is very expensive. And, so, certainly, yes.
Q. So, this description is consistent with your analysis?
A. As sitting here reading it very quickly, yes.
Q. Okay. Well, just slowly, if you could just read the first sentence of the next two paragraphs.
A. Certainly. "In the long term, the impact of insufficient demand response may have been" -- may be even greater as non-price-responsive peak demand can result in a long-term investment in investment generation capacity."
Q. Maybe you read that wrong. Maybe you need to slow down a little bit. "Can result in long-term investments in expensive generation capacity."
A. Exactly. Right. Now, you want the sentence on the next paragraph?

Q. Well, maybe just go ahead and read that last sentence there.
A. Okay. "An important benefit of demand response is therefore avoidance of capacity investments in peaking generation units to serve heightened demand that occurs in just a few hours per year."
Q. And, is that consistent with the point you were making and made in your testimony?
A. I think, whether it's energy efficiency or demand response, which again is one of our most powerful tools, the more of it you do, the less expense you need on new generation, regardless of what day it is.

CMSR. BELOW: Okay. That's good. Thank you.

WITNESS BAKER: Okay.

CMSR. BELOW: Oh, I actually do have another question.

BY CMSR. BELOW:
Q. You were referring to some California pricing experiments, and that suggested residential customers could respond to demand response. And, I'd like to show him a document entitled "The Power of Five Percent: How Dynamic Pricing Can Save $35 Billion in Electricity Costs", dated May 16th, 2007.

A. Uh-huh. Yes, sir.
Q. And, there are three paragraphs. Would you be so kind as to read those.
A. Starting with the yellow highlighter?
Q. Yes.
A. Okay. "In a $20 million pilot that involved some 2,500 residential and small commercial and industrial customers over a three-year period, California's three investor-owned utilities tested a variety of dynamic pricing designs. The experimental process involved a working group that was facilitated by the state's two regulatory commissions and involved dozens of interested parties and stakeholders, some opposed to dynamic pricing and some supporting it. The California experiment provided time-varying prices and smart meters to all participants. In addition, some of the participants also received enabling technologies such as smart thermostats and always-on gateway systems. Smart thermostats automatically raise the temperature setting on the thermostat by two or four degrees when the price becomes critical. Always-on gateway systems adjust the usage of multiple appliances in a similar fashion and represent the state-of-the-art."

"The experiment showed that the average

Californian customer reduce demand during the top 60 summer hours by 13 percent in response to dynamic pricing signals that were five times higher than their standard tariff. Customers who had a smart thermostat reduced their load about twice as much, by 27 percent. And, those who had the gateway system reduced their load by 45 percent" -- "by 43 percent", excuse me.

Q. Okay. Is that the California studies that you're referring to?

A. Actually, part of it may have been drawn from this. It was actually an article, a short article, talking specifically about smart thermostats, saying that they had greatly helped reduce loads with residential customers. This particular article, no, I haven't looked at.

Q. Okay. But is this the kind of potential that you have in mind?

A. I agree. I think there's unlimited potential. I just think there is, and I've said this before and I'll say it again, the more people you can get involved in energy efficiency, demand response, any kind of price reduction during peak time, is don't use it and that's the best savings. And, that's just our position.

CMSR. BELOW: Okay. Thank you.

CHAIRMAN GETZ: Redirect, Ms. Doukas?
CMSR. BELOW: That wasn't marked as an exhibit, but it might be helpful.
CHAIRMAN GETZ: We can mark the -- it's called "The Power of Five Percent" article from The Brattle Group, dated May 2007, as "Exhibit Number 15", I believe.
(The document, as described, was herewith marked as Exhibit 15 for identification.)
CHAIRMAN GETZ: Ms. Doukas, anything --
MS. DOUKAS: I don't have any further questions.
CHAIRMAN GETZ: Okay. Then, you're excused, Mr. Baker. Thank you.
WITNESS BAKER: Thank you. I would like to take this opportunity, before I step down, to thank each of you for allowing me to be here today. I very much appreciate it.
CHAIRMAN GETZ: Thank you. Let's turn to Unitil, Mr. Gantz.
(Whereupon George R. Gantz was duly sworn and cautioned by the Court Reporter.)

CHAIRMAN GETZ: Please.

GEORGE R. GANTZ, SWORN

DIRECT EXAMINATION

BY MR. EPLER:

Q. Can you please state your name for the record and your responsibilities with Unitil?

A. I'm George R. Gantz. I'm Senior Vice President for Customer Services and Communication.

Q. Have you previously testified before this Commission?

A. Yes, I have.

Q. Do you have two documents in front of you, one marked September -- one dated "September 17th" and one dated "October 8th, 2007"?

A. Yes, I do.

Q. The first one, the larger document, does that consist of prefiled Direct Testimony of George R. Gantz, and then several attachments, initial comments of Unitil, reply comments of Unitil, and responses to Staff data requests of Unitil, the first set of data requests and second set of data requests?

A. Yes.

Q. And, the second document, does that consist of four pages of prefiled supplemental testimony?

A. Yes.

Q. And, were these materials either prepared by you or under your direction or do you now adopt these materials as your own?
A. Yes.
MR. EPLER: Mr. Chairman, I would like to have these marked. I believe we're up to Exhibit 16. So, if we could have the thicker document marked as "Exhibit 16" and the thinner document "Exhibit 17".
CHAIRMAN GETZ: They will be so marked.
MR. EPLER: Thank you.
(The documents, as described, were herewith marked as Exhibits 16 and 17, respectively, for identification.)
BY MR. EPLER:
Q. Mr. Gantz, could you please summarize Unitil's position and recommendation in this docket, and particularly with respect to real-time pricing for large customers and time of use pricing for small customers?
A. Yes, I'm happy to summarize our position. And, I refer specifically to Exhibit 17, the latest of our filings in this proceeding. As the supplemental testimony indicates, based upon the Commission's order of rehearing, the testimony of the parties, the discovery, and the technical session last week, we re-evaluated

our sense of what the goals are in the proceeding. And, we now see it as essentially a change in pricing philosophy, to move towards the goal of transparency in retail pricing. And, we also view that change in pricing philosophy as part of a broader change in the distribution business brought about by technology and economics factors that we see taking place today. Given that view of the goal of this proceeding, we then identify and worked to identify over the past week or so what it is that Unitil thinks it can do to accomplish that goal at a reasonable cost.

And, what we have put forth is, we believe we can, within about two years, put in place real-time pricing for all of our G1 customer group, similar to what National Grid is proposing in this proceeding. In addition, we believe we can put in place, within a period of about two years, a pilot program for time of use rates for all customers. We particularly think there is value in doing that in conjunction with demand response programs and pilot programs. And, that program for smaller customers could potentially lead to mandatory time of use pricing for all small customers.

We also talk about the things that we

recommend be in place to facilitate this process moving forward. We think it's tremendously important for the Commission to provide cost recovery for the incremental costs incurred by the utilities in moving forward and fulfilling the goals. We also identify some policies that we recommend to consider -- the Commission continue to consider outside of the context of this particular proceeding, in order to move towards an alignment of ratemaking, with the priority energy policies of energy efficiency and deployment of distributed energy resources in particular, the policy of decoupling utility finances from sales, distribution rate design principles that better match costs with the rates. And, in addition, providing appropriate investment incentives for utilities to undertake efforts in the distributed energy resources area. Those are outside of this proceeding, but we did identify those as part of the regulatory context that is important to be successful in moving forward in these areas.

Q. Do you have anything else to add at this time?

A. To provide a little bit more detail to the concepts that we have in mind for the specific pricing proposals, one of the things that we found of value in

considering a pricing program for large customers was looking at real-time pricing for our large customers, our G1 customers, not as something limited to the Default Service customers, because we have a relatively small number of Default Service customers left, but to look at this as something that would enable real-time pricing for all customers, whether they are Default Service customers or competitive generation customers. So, the way we would conceive of this program for large customers is to enable real-time metering and communication for all customers in the group. For the Default Service customers, for which we would be implementing real-time pricing of Default Service, we would need to provide a billing system, which we do not have yet, but we think that's something we can develop and implement over a period of time, at a reasonable cost. We would also be looking at the procurement process for acquiring Default Service for that customer group and tailor that procurement process to whatever final decisions we make, in terms of the design of the real-time pricing of Default Service.

We think it's going to take time to develop this. This is something we would see a good topic for a working group, given that both National

Grid and Unitil see this as a direction that we believe we can proceed in a cost-effective fashion. So, that's the outlines of a concept for real-time pricing for large customers.

For our small customers, we have a -- the AMI system that we have now in place, and are in the final stages of completing that deployment, does have the capability of providing multi-period time of use pricing for all customers. So, with that infrastructure in place, we believe we could proceed to develop a pilot program for invited customers and communities to fully test the time of use capabilities of the system, as well as the types of pricing mechanisms that might be employed for those customer groups. We would hope to be able to integrate that test with a test of demand response technologies. We are interested in looking at things like ice storage, cooling, and smart thermostats.

I can point out that, from a distribution company standpoint, one of our primary drivers at this point is air conditioning load in the summer, it's been growing rapidly. Our peaks are growing faster than our average energy use. So, developing a companion demand response program as part

of a time of use pilot is something that we would very much like to do. Again, that's something that will take time. We think it's appropriate to have a working group work on some of the details and move us towards program design and implementation. Both of those programs, the real-time pricing for large customers and the pilot program, time of use program for all customers, we think will take about two years to get to the point of implementation.

MR. EPLER: That's all I have. I tender the witness for cross.

CHAIRMAN GETZ: Mr. Eaton.

MR. EATON: Good afternoon, Mr. Gantz.

BY MR. EATON:

Q. When you mentioned in your direct today that you don't have many of your large G&I -- I'm sorry, large G1 customers taking Default Service, could you provide me with some numbers of how many G1 customers you have and how many are still taking Default Service?

A. We have 155 or so G1 customers. I don't remember the numbers offhand, but in excess of 50 percent purchase from the competitive market, and I think that's more than two-thirds of our load in that customer group.

Q. And, if you could refresh my memory, how is Default

Service procured and priced for these customers? My understanding is that you set rates for three months, and there's an individual charge for each month?

A. Yes. There's a fixed monthly -- a fixed flat monthly charge. The supply is procured on a quarterly basis.

Q. And, when do those customers know when the price -- what the price will be for the next quarter?

A. We would alert them when the procurement is completed and the Commission approves the contract and the rate, and that happens approximately 45 days in advance, I believe.

MR. EATON: Thank you, Mr. Gantz. That's all I have.

CHAIRMAN GETZ: Mr. Fromuth.

MR. FROMUTH: Hello, Mr. Gantz.

BY MR. FROMUTH:

Q. Could you tell us if any of your G1 customers are currently using a real-time pricing mechanism in your operations?

A. Yes. We've had one or two of our large customers move to the competitive market and procure from the ISO New England on a real-time basis. I don't know how many right now. I know there is at least one still doing that.

Q. Going forward under your two-year rollout of your proposed implementation of a program to do this across the board for the G1 class, have you given any thought to how you would allocate or assign the non-hourly costs that would be the shared responsibility, if you will, of the ancillaries, they're often referred to as the "ancillaries" by the ISO? Those costs can comprise anywhere from 8, 9 percent of the total monthly energy bill. But, yet, there is some difficulty, I believe anyway, in establishing across the board, if you have multiple accounts participating in this program. The trick, I guess, to make it work perfectly, is to have an allocation system that is fair and appropriate. Have you folks given that some thought?

A. Not in detail. We did discuss that a little bit at the technical session a week ago. National Grid has some experience and their witness may be able to talk to you a little bit more about that. I think the choices, kind of two basic choices about how to structure that. One is to do a procurement that puts all those responsibilities on a third party. The third party would then have a -- there would be a reservation fee or charge from the third party, and then there would be hourly energy pricing that would be based upon what was

in New England. So, you'd have that third party take the responsibility, and then those costs would be shared or paid for by the customers on Default Service. The other way of doing it is, I believe, the way National Grid is doing it in New York, where they do the procurement of ancillary services, along with energy and capacity. And, there is a fixed adder that gets added into the hourly price on a basis that's, you know, that's transparent and understood in advance. So, kind of two different ways of approaching it. And, I think the parties will just need to work out which one of those approaches or any other approach might be the best way to handle the complexities that are involved.

I should mention, our Massachusetts affiliate has, for their G1 Default Service -- well, actually, it's G3, but for their large customer Default Service. They have a pool of Default -- Default Service customers is very small. It's been as few as three customers in the pool. And, we were experiencing some concerns about taking a very small pool of Default Service to market, and then the Default Service bidder is saying "Wait a minute, you know, this could be 3 or it could be 30, if pricing goes the wrong way." So,

the kind of pricing premium we were beginning to fear we would see would be excessive for the option premium. So, we did, on an experimental basis, and we've done it now I think for four quarters in a row, where we procure third party Default Service in Massachusetts, that has, in fact, a reservation charge and an hourly price that closes at the ECP closing price in the ISO New England. So, it is a, in a sense, a real-time acquisition of wholesale power in the pool. The third party has to deal with all the ancillary costs and all the other issues involved. But the price that comes out of it is a real-time price.

We don't know what the closing price is until after the end of the month. So, the customers that are on Default Service in Massachusetts, you know, we post that price to them after the fact. And, it's a fixed price for the month for the customer pool. So, it's not a real-time pricing at retail. But it's given us a little bit of experience in the market.

Q. Using that example, is there any way for the customer, in Massachusetts that you're describing, for them to foresee or to have any kind of a forward look or anticipate what that cost might be or is it basically just a crap shoot for them?

A. We've had questions from customers. And, what we do is we direct them to the information that's available through the ISO New England website. And, you know, there are forecast of prices available. You know, you can go out in the various indices to get forward price curves in New England. I don't think the customers -- our customers that are left in Default Service in Massachusetts aren't, you know, particularly interested in getting all that much better informed. I mean, if they were that interested, we suspect they would be in the competitive market already. So, that has not been an issue for us.

Q. When you were describing a moment ago the process by which you would use perhaps a third party vendor to bundle the non-hourlies and sort of present an all-in ancillary coverage to your G1 class, were you thinking in terms of possibly that vendor being able to maybe hedge some of these hourlies or maybe put a value on them that would enable them to repackage it and resell it in much the same way that you now put an RFP out, for instance, for your sequential quarterly cycle that you were describing a moment ago or is that something that is really not, in your view, subject to that kind of price lock, if you will? In other words, it is what

it is, as opposed to being able to try and nail it down beforehand?

A. Well, I think there are two questions, one is -- and they should be separate. One is the question of pricing at retail. And, you want your pricing at retail to be as closely tied to the actual hourly marginal cost in the pool as you can, for economic efficiency reasons. The issue of how you procure the power from the wholesale market is a separate, but related, question. So, you know, I think that the details that you're asking about are good things for a working group to discuss and come up with a plan to how best to deal with them. You want something that works from an efficiency standpoint and works from an administrative standpoint. And, you'd like to get, you know, 99 percent of the goal with as minimal a cost and aggravation as possible.

MR. FROMUTH: Thank you.

CHAIRMAN GETZ: Ms. Blackmore.

MS. BLACKMORE: I have no questions.

CHAIRMAN GETZ: And, Ms. Doukas.

MS. DOUKAS: I have no questions.

CHAIRMAN GETZ: Ms. Ignatius.

MS. IGNATIUS: Thank you.

BY MS. IGNATIUS:

Q. Mr. Gantz, looking at your October 8th testimony, I think that's Exhibit 17, on Page 2 you state that you believe that the economic efficiency gains from this shift in retail pricing philosophy will, in the long run, outweigh the cost of implementation of those programs, given advanced technologies. What leads you to that conclusion?

A. Well, I think the stated knowledge today in the literature, and a specific factor in our case is the fact that we have an AMI system in place. We're gaining experience with it. And, that provides, you know, the basic platform that enables time of use data to be collected and put in the billing system. And, I think the -- some of the material that has already been talked about in this proceeding. I think there is discussion in EEI documents, NARUC documents, that talks about the long-term efficiency gains from pricing. We know that pricing at the wholesale level varies by time, significantly by time. And, the ability to get that pricing variabilities to customers that actually make decisions about using electricity at various points in time, if you can move in that direction, you're going to improve efficiency. Now,

it's a question of, you know, how much, how fast, and how much is it going to cost?

Q. You've mentioned that, both in your written testimony and now in your summary, that you think within two years or so you could develop a -- have a pilot program for residential and small business customers underway. Can you describe in a little more detail what that pilot program might look like?

A. No.

Q. Just a little more detail?

A. There's a lot of activity taking place now. And, I think, as we got into the detailed design of what that pilot program would be, we would be very interested in being able to put that together with a demand response program, specifically targeted at residential air conditioning or commercial air conditioning. So, we could look for candidate participants from, you know, from a particular pool of users. We have had contact with some energy committees located in various communities, who have suggested they might be willing to be ginny-pigs in, you know, programs. I think that's particularly attractive from the standpoint that they might be able to take on some of the educational responsibilities or enrollment responsibilities for a

program, for a pilot program. So, all of that is open for discussion, to figure out how best to proceed to do that. We'd -- So, I think that's open for further discussion.

Q. If you haven't yet really focused on what the scope of a program might be, how do you come to the conclusion that you think you can do it at a reasonable cost?

A. Because we have the metering in place. It's going to take us time to figure out how to deploy that capability and how to implement that capability. But it is one of the features of the AMI system that we knew was going to be there with the implementation of AMI. I think, as the Commission is aware, we implemented AMI on the basis of the cost reductions we were expecting to see from the transition of our meter reading force, eliminating those positions. So, the cost/benefit of implementation was based strictly on, you know, on those operational cost savings that we identified. But the fact that it had a time of use capability was one of the things that was another attribute of the system that we found to be positive. Now, we're at the position of completing the deployment and beginning to look in detail at those capabilities, what the system can do, how easy it is to pull the

meters, program in time periods, collect that data.

I should mention that the billing system we have in place, at present, does not have a time of use metering module, but that module is available. So, as part of the pilot program, we would be looking to acquire and test a billing module that would then be integrated with the AMI metering system, so that we could go from meter read to, you know, all the way through the billing process in an automated way. That's an essential requirement of having a fully robust time of use system that could potentially be deployed for all customers.

Q. And, when you say "time of use", you don't mean "real-time pricing"?

A. Correct.

Q. Have you thought yet about how far you could go in distinct blocks for time of use pricing, within the constraints of your AMI system?

A. Yes, we've begun to look at that. It was topic at the technical session. And, there is a limited bandwidth or limited capacity, in terms of communications within the system. But, beyond that, there's a lot of flexibility, in terms of actually programming meters to collect the consumption data in varying buckets. So,

we know we could do multi-time periods by month. We may be able to do some form of critical peak pricing that would identify sort of the special time when, you know, requirements were, you know, that system load, et cetera was at a certain level. So, it's more than simply a fixed, you know, on-peak, off-peak, shoulder period, because we're going to have the flexibility of reprogramming the meters automatically. So, in some cases, I know you'd have a metering system where you'd actually have to go out and physically program the meter at the customer premises. We're not going to need to do that. So, I think that flexibility is important as we look at designing a time of use pilot program.

MS. IGNATIUS: Thank you. Nothing else further.

CHAIRMAN GETZ: Mr. Aalto.

MR. AALTO: Good afternoon.

BY MR. AALTO:

Q. Sort of to continue that last line of discussion a bit, does your system have the capability of, in the outward center to the remote communication, to, in effect, think of changing those four registers that you have, so that you could send out a signal that says "we're in

price class 1, 2, 3 or 4", in a sort of semi-real-time way. In other words, let's say that this afternoon looked like it was going to be a very hot day -- no -- but you send out a signal that says we're getting into a more -- you mentioned "critical peak", send out a critical peak signal, but also the four other buckets that you have?

A. We cannot do that on anything close to a real-time basis. But the system may have the capability to establish, you know, -- you know, the communication, reprogramming of all meters, is something that would take, you know, many hours or perhaps days. Our Director of Engineering would have a better -- more detail on that. But it's not something that can be done, you know, in a short window of time. It's going to take many hours or days to complete a processing of reprogramming meters. So, real-time pricing is not feasible with the system we have.

Q. Would you be averse to a, as part of your pilot, to test perhaps an overlay type of communication system that might allow you to do that?

A. Well, we're going to have a lot on our plate. So, there's a limited amount of things that we can do. Certainly willing to discuss that in a working group.

But, I think, you know, we committed to a lot, and we think it's feasible to get from where we are today to get to an endpoint of implementation in about two years. But that means there is an awful lot on the plate. So, we just have to be careful about what we commit to.

Q. Do those smaller meters have pulse output capability?

A. I don't believe they do.

Q. Is it retrofitable to it at a reasonable cost?

A. Well, everything is retrofittable.

Q. At a reasonable cost?

A. But it's whether it's at a reasonable cost.

MR. AALTO: Thank you.

CHAIRMAN GETZ: Ms. Hatfield.

MS. HATFIELD: Thank you. Good afternoon, Mr. Gantz.

BY MS. HATFIELD:

Q. I think I hopefully just have one question for you, related to cost recovery --

A. Yes.

Q. -- for the program that you're proposing. And, you talk about that on Page 3 and 4 of your October 8th filing. I'm wondering if you could just discuss briefly the Company's recommendation to recover the

costs of the program that you propose?

A. Yes. And, again, this is very preliminary. Our preliminary thought is, and I said that at the bottom of Page 3, recommended cost recovery where costs attributable to specific customer classes, such as metering communication, will be recovered in fixed charges from customers in that class. Costs associated with changes in Default Service procurement, if there are any, would be recovered from the Default Service customers. And, costs for technology and billing system changes, essentially the platforms that provide for the enabling of this process, would be recovered from all customers in distribution rates.

Q. So, if I understand correctly, even though it will be -- what you're proposing are voluntary programs, if those were in place, the costs for them would be recovered from all customers within a certain class?

A. I wouldn't want to characterize our proposal as "voluntary" or "voluntary programs". Specifically, what we're contemplating for the large customers is enabling metering technology for all of them. So, in that sense, it's not optional. It would be a mandatory program. You know, you could think about it as saying right now we have an optional advanced metering option

available for all of those customers. And, you know, maybe it's time to make that a mandatory capability. So that, whether your Default Service or competitive market, that capability is there and the data is there for you to use. So, that would be a mandatory program.

Similarly, for the small customers, we -- I guess two observations that we've discussed internally. One is that we're still somewhat skeptical about relying only on customer behavior, i.e., you know, turning off light switches or changing behaviors, as a way of achieving real changes in shifts in customer usage patterns, particularly for the smaller customer classes. So, that's one of the reasons why we think demand response programs, where you actually have an enabling technology that is partnered with a time of use rate is probably the right way to proceed, particularly in a pilot program. And, from that standpoint, you're not talking about -- in a pilot program, you'd be talking about customers self-selecting in. But, you know, once they're in, then it's no longer -- it's not an opportunity for a customer to jump in and then jump out. And, you know, so it's not voluntary in that sense. You're trying to create an environment where you're actually testing

these things, maybe as if it were a mandatory type of program. So, we think that's -- that's important.

The other thing is we discussed the problems of voluntary types of programs. And, the experience that we have going back, you know, many decades, it hasn't been very successful. And, part of it is it's difficult to generate interest in the program. I think the last time, when I was involved in the Rate Department at Unitil, I think we had 7 voluntary time of use customers. And, I think that program has now been terminated. But it just wasn't enough to be of use. And, the second thing is, you have a free rider problem. If you select in to an optional time of use program, well, you're going to select in at those rates to give you a lower bill. And, it doesn't correlate to a change in behavior actually accomplishing something in terms of system peak. So, we're skeptical about voluntary programs that allow a customer to self-select in or self-select out, because it's not clear to us that you'll actually achieve the economies that you're trying to get.

MS. HATFIELD: Thank you.

CHAIRMAN GETZ: Ms. Amidon, how much do you have in the way of questions?

MS. AMIDON: We have quite a bit. Mr. McCluskey has questions regarding the recently filed supplemental testimony, and I have some questions going into some of the assumptions in the initially filed testimony.

CHAIRMAN GETZ: Okay. I'm thinking we may need to take a -- well, at a minimum, we need to take a recess. But it may make sense to take a lunch recess. It seems like there's quite a bit left to address today. So, pushing through would probably not be appreciated by anybody. So, let's take the -- we'll take a lunch recess, and we'll come back at 2:15. Okay. Thank you.

(Recess taken at 1:06 p.m. and the hearing reconvened at 2:21 p.m.)

CHAIRMAN GETZ: Okay. Good afternoon. We're back on the record in docket DE 06-061. I believe everybody should have copies of the five exhibits that Commissioner Below was using in his questioning. So, we turn to Ms. Amidon with the questioning of Mr. Gantz.

MS. AMIDON: Mr. McCluskey is going to begin with questions regarding the supplemental testimony, and then I'll take over on the initial testimony.

CHAIRMAN GETZ: Thank you.

MR. McCLUSKEY: Thank you.

BY MR. McCLUSKEY:
Q. Mr. Gantz, turning to your supplemental testimony, at the bottom of Page 2.
A. Yes.
Q. I'd just like to get some clarification with regards to certain parts of your testimony. Starting with the proposal to implement a program for real-time pricing to G1 customers.
A. Yes.
Q. You say "similar to that proposed by National Grid". Let's start with the metering. Currently, your company has interval meters installed for G1 customers.
A. That is correct.
Q. Okay. Are you prosing to use those meters or are you proposing to replace them with something else? What do you have in mind?
A. The thought would be, if we could use the existing meters and pulse output that's available or install pulse outputs so that it's available, integrate it with the system of communication, you know, all the specifics of which are yet to be determined. We have advanced metering in place for some customers already. So, we would use the experience we have with those customers, and try and figure out the best way to

deploy that for all customers in that class.
Q. So, "pulse output" means that you would send that interval data over the telephone system or --
A. We don't know yet.
Q. You don't know?
A. You know, we would look at telephone, as we have now telephone circuits for some customers.
Q. Yes.
A. We'd look at cellphone, which I think is what National Grid is proposing to look at. So, we would look at the different options that were available, and use the one that would work best for us.
Q. Okay. What about the billing system? Does your billing system require some modification to implement this?
A. Yes, we had some discussion with our IT group, and what they had recommended, again, this is a very preliminary thought, but they believe, for these 155 customers or the, you know, Default Service proportion of these customers, we could develop a billing module that would be essentially a Web-based type system, similar to things that they have done with other systems that would be developed, and it would sit outside of our current billing system. And, with the small number of

customers involved, they think that would be feasible to do without extraordinary expenses.

Q. So, you're saying you wouldn't have to make modifications to your existing billing system --

A. That's correct.

Q. -- that would impact all customers?

A. That's correct.

Q. Okay. Now, Grid also talks about they're going to do all of their customers, that's what you're proposing -- the G1, sorry, all of the large customers?

A. All G1. And, again, what, in our initial testimony, we expressed a significant concern about instituting real-time pricing for just the Default Service customers, since we have relatively few of them in the class, compared to the total class.

Q. Yes.

A. But I think what was important to us in thinking about it is that, if, in this process, we are also enabling real-time pricing for, you know, or any other rate mechanism that the competitive market might provide, you know, that would be a benefit from the program. One of our concerns was, if we institute real-time pricing for Default Service customers, they all end up going into the competitive market, then we've incurred

a significant cost, and we have no -- other than moving customers in the competitive market, we haven't accomplished the demand related or the pricing objectives that we set out to do. I think thinking about this program not as just Default Service real-time pricing, but enabling real-time pricing for all customers in the class, I think changes the program. And, I think it gives it a broader appeal.

Q. How does doing it for all G1 customers discourage them from going to the competitive market?

A. It wouldn't change their motivation to, if the real-time pricing option is one they do not like, they can pursue fixed pricing options in the competitive market. They have the ability to do that. But we are creating a data platform that will allow competitive suppliers to do whatever they feel is appropriate from their standpoint, including implementing, you know, pricing by time period or flat pricing with demand response. It will simply enable, by the platform, it will enable competitive suppliers to make the most efficient choices about how to serve that customer.

Q. Okay. And, Grid also talked about doing this as a trial. You don't mention that. Is this a permanent offering or is this a trial you're proposing? What are

you proceeding?

A. Well, if you put the infrastructure in place, and it works, if one later found reasons why one would want to discontinue it, then you would discontinue it. So, in that sense, it is a trial, you know? If it's something that succeeds in generating benefits, then it would become a permanent program.

Q. Moving onto the -- to what you refer to as the "pilot" for residential and small business customers, so I think you indicated earlier that, by "pilot", you're talking about just some of the population of residential and small business customers would be on this pilot program?

A. Yes.

Q. Okay. And, keeping in mind what you say on Page 2, with regard to -- you say, starting Line 10, "from a policy standpoint, the economic efficiency gains from the transformation to retail pricing transparency are expected, in the long run, to far outweigh the costs of implementation." So, with that in mind, what is the purpose of the pilot? What are you going to be testing in the pilot for these small customers?

A. There's a lot to be tested. We need to be sure in our capabilities to implement the metering infrastructure

with time of use periods. We need to be certain about the billing system upgrades and changes to the billing system that would need to be instituted. We would have experience from a pilot program, in terms of designing, you know, time periods, selection of time periods, figuring out and testing critical period pricing, if we have the capability to do that. Testing both the technology, the systems that go along with the technology, and then, you know, seeing what the results are that, you know, that come out of that choice. And, I think also, very importantly, is the customer acceptance, customer behavior. You know, testing out, getting experience with a smaller group of customers, in terms of "what questions do they ask?" You know, "what's their perspective on this program?" If we do a pilot program, we will learn a lot about the kind of things that we would need to take into account, if we were to then make the determination to proceed with time of use rates for all customers.

Q. And, the one thing that you don't mention there is a cost/benefit test, which presumably, based on what you said on the previous page, would not be part of the pilot program, is that right?

A. Correct. I don't think -- I think the purpose of the

pilot program is to test and evaluate. And, based upon that real experience, you gain a lot of knowledge about what the benefits would be, if you were to proceed to an across-the-board, mandatory time of use kind of rate structure.

Q. Okay. Thank you. Moving onto Page 4, at the top of Page 4, where you talk about cost recovery, you actually start at the bottom of Page 3 and go over to Page 4. Metering communication costs would be recovered through the fixed charges for specific classes, I think is what you're saying there?

A. That's the thought, yes.

Q. And, any -- since, with regard to procurement of Default Service, we're talking about a much different product, so are you saying that if there's any additional procurement costs associated with acquiring that product, you'd recover it through the Default Service charge?

A. Yes.

Q. Then, you go on to say "and costs for technology and billing system changes and upgrades would be recovered from all customers in distribution rates." Before I get to which, the distribution rate that you're talking about, you say "technology and billing system changes",

what technology are we talking about here?

A. The infrastructure that you may need to enable communication metering to be integrated with your IT systems, your billing systems. So, I guess what I'm visualizing is the specific cost of a meter and the communication at the meter, the telephone line and the cellphone, if that's required to enable this, those are the types of costs that would go directly to individual customers. But, if you were developing a capability in a platform, a communication technology, you know, data infrastructure, billing system infrastructure, if you're developing a capability at that level, then that's the appropriate kind of thing to allocate to all customers.

Q. Even if that structure was to implement real-time pricing, you're suggesting that all customers will bear that cost?

A. Yes, I think there's a good argument to say that the knowledge gained in that process and the things that you're going to be testing in that process are a benefit to all customers.

Q. And, so, when you say "recovered from all customers in distribution rates", so all distribution rates would be adjusted to recover those costs, is what you're saying?

A. Yes.

MR. McCLUSKEY: Okay. Thank you.

MS. AMIDON: Good afternoon, Mr. Gantz.

WITNESS GANTZ: Good afternoon.

BY MS. AMIDON:

Q. I have a couple of questions about rate design, which appear early in the testimony that was filed on September 17th, Exhibit 16. At the top of Page 4 in your testimony, you say that "economic efficiency is not the only ratemaking principle." And, then, you talk about a number of other concepts. Do you think that time of use rates are fair? You cite "fairness" as one of the criteria.

A. Well, it depends. The ratemaking principles or guidelines are, you know, are guidelines. They're not -- they're not really used as a quantitative test or precise test. So, there are circumstances in which time of use rates could be found to be unfair. There are times when they would, obviously, be found to be fair. It depends upon individual specific circumstances, I think.

Q. Well, if the time of use rate design is more cost-effective, in what instance would it be unfair?

A. "Cost-effective" in what sense?

Q. Well, isn't that something that you've agreed to in your new testimony?
A. Well, you could have a -- you could make a decision to institute a program on the basis that, in aggregate, you think it is cost-effective. But there could be allocative shifts going on that some customers might find unfair. And, it would be up to the Commission to balance that unfairness with the efficiencies that they feel are going to be gained. I think a good example of that would be, if you were to do a mandatory time of use rates, there are going to be some customers that don't have the ability to change, their bills are going to go up, they're going to perceive that as being unfair. It's up to the Commission to balance that unfairness with the other goals and objectives that they're trying to achieve.
Q. But you just said the "customer might perceive as being unfair". What would the Company do to address the fairness issue?
A. We're here for the customer. You know, we're a public utility. We're here for the customer. So, you know, we would look to do things that were felt to be in the best interest of the customer. So, you know, I mean, using the example, you know, it would be something that

would have to be weighed, in terms of, you know, what are the impacts on individual customers or groups of customers from making a rate design change? And, you know, how does that factor into the, you know, the overall specifics of a program? That's the kind of trade-off that happens all the time in the rate design process or the ratemaking process. You know, you go in, you look at how it's impacting this customer group, you have -- you know, often in a rate case, you may realize you need to increase your allocation to one particular class, but you're going to do it slowly over time. You don't want rapid adjustments. And, you want to preserve as much as you can that sense of fairness to all.

Q. So, the Company would attempt to address that?

A. Yes. And, in the specific proposal we would make, yes, we would address concerns about "how is this fair or unfair to different groups of customers?"

Q. Fair enough. Also, you talk about "customer acceptance". Do you now try to measure customer acceptance when you have a rate increase or design --

A. Oh, yes. We measure it by the number of calls we get or by the response we get, customer acceptance is an important factor, you know, to take into account, and

it's something the Commission is well aware of. If the Commission does something that generates a lot of controversy, you can be sure it may find its way into the Legislature. That's not a pleasant thing to contemplate. So, public acceptance, acceptability is a factor.

Q. Now, I'm going to talk about the large customer group here.

MS. AMIDON: And, I would like to mark for identification two different data responses I have from Unitil. I would ask that Response Number 2-3 be marked as "Exhibit 18" and 2-4 be marked as "Exhibit 19". I think that's where we are at this point, if I'm remembering.

CHAIRMAN GETZ: Be so marked.

(The documents, as described, were herewith marked as Exhibits 18 and 19, respectively, for identification.)

MR. EPLER: Mr. Chairman, the second set of interrogatories are already part of Unitil Exhibit 1. So, counsel can refer to them --

CHAIRMAN GETZ: Well, for the ease of I think the cross at this point, we might as well just mark them.

MS. AMIDON: Thank you. If the Commission wants to pull them from the testimony, that's fine. But I'll make sure I give a copy to the Clerk and to the Stenographer.

MR. EATON: Could I have those numbers again?

MS. AMIDON: 2-4 and 2-3.

BY MS. AMIDON:

Q. With respect to metering, Mr. Gantz, does the Company currently have the capability of billing the time of use rate for large customer?

A. I think you started asking about metering, and then you asked about billing.

Q. Oh. I'm sorry. Do you have the capability of billing a time of use rate?

A. At the moment, we do not have the capability of billing a time of use rate for our large customers.

Q. Okay. So, the answer to that is "no". But, in terms of metering, do you currently have the capability of your meters to develop a time of use using your meters?

A. We have the ability to develop a time of use rate, based upon the metering that is in place for our large customers. You know, subject to some caveats of, you know, completing our installation process for the AMI,

testing capabilities, those sorts of things that still need to be done.

Q. And, what are the capital costs necessary to implement a time-based rate using existing meters?

A. Well, Request 2-3 is looking at a specific question about installing or the capability of metering time of use customers for -- excuse me, large customers for a time of use price. And, the -- right. I'm just reviewing the response. The functionality is in place, the investment that we've made in the metering system would provide the capability to do time of use metering for our large customer group. There would be some additional administrative costs that are estimated at $40,000 to do some additional work that would need to be done.

Q. And, would you consider these costs to be capital costs?

A. Yes.

Q. And, have you calculated what the monthly surcharge for a large customer would be for capital costs of 40,000?

A. No.

Q. Subject to check, would you agree it's about $3.50 per month, given a 20-year life of the meters?

A. Yes, there are a lot of assumption that goes into those

numbers, but I'm not going to argue, it's a pretty small number.

Q. Okay. And, with respect to billing, you just testified that your current billing system is not capable of billing on a time of use basis. And, in your response, which is marked for identification as "Exhibit 19", you stated that the "approximate capital costs of changing the billing system would be $200,000 to $250,000", is that correct?

A. You're referring to Staff Response 2-4?

Q. I'm referring to Unitil's response to Staff Data Request 2-4.

A. Yes. It's my understanding that this estimate was -- okay, I want to make sure I'm clear on -- there was another report that was filed with the Commission, and I want to make sure I'm not confused between the two, because we had different sets of assumptions there.

Q. Will you agree that Staff -- or, that Unitil's response to this is that it would be "approximately $200,000 to $250,000"?

A. Right. I want to be careful because we sometimes refer to G1 customers as "large customers". But, in that prior report that I'm recalling, it was talking about "Large G1 customers", which is a different

categorization of customers. I just want to make sure I'm clear in my response to you.

CHAIRMAN GETZ: Is that something perhaps counsel could inquire from Mr. Lambert to get an answer to that question?

MR. EPLER: We could certainly clarify that record request.

WITNESS GANTZ: If I could see the -- do you have a copy of the November -- or, that's captured in here. I think it will take me just a minute to check on it and then I'll clarify it.

MR. EPLER: May I approach the witness?

CHAIRMAN GETZ: Please.

(Atty. Epler handing document to the witness.)

BY THE WITNESS:

A. Sorry for the delay. In our response to Staff 2-4, we are looking at our G1 customer class, and that response deals with the whole class. So, the estimated costs, total range for estimation is shown on the attachment to the response.

BY MS. AMIDON:

Q. So, and is that in the attachment, on Line 20, that's "$198,785" as the low range and the high range is

"248,481"?
A. Yes, that's for implementation of the program.
Q. Okay. So, it's -- in other words, it sounds like, whoever prepared this response, rounded those numbers up?
A. Yes, that's roughly 200 to 250,000.
Q. And, you would agree this is a capital cost?
A. Yes.
Q. And, would you agree that the monthly cost for a large customer for this incremental capital cost would be about $36 a month?
A. That sounds about right.
Q. In the same data response, you indicate an ongoing annual administrative cost of approximately $128,000. And, if you go to Line 19 of the attachment to that Staff 2-4, it says -- it gives that total, but the breakdown begins with a heading "Recurrent Annual Administration Costs (Customer Relationship and Rate Management)". And, essentially, it looks like there's a full-time job associated with this. Could you please explain what these components are, "customer relationship" and "rate management"?
A. We'll take a -- I can't explain that. I'll have to check with Mr. Lambert and then get a response to you.

MS. AMIDON: Could we have a record request to get an answer to that?

CHAIRMAN GETZ: We will reserve Exhibit Number 20.

(Exhibit 20 reserved)

MS. AMIDON: Thank you, Mr. Chairman.

MR. McCLUSKEY: In the response, could we get some clarification as to whether these are incremental or embedded?

WITNESS GANTZ: I believe they're incremental.

MR. McCLUSKEY: So, the Company is proposing to --

WITNESS GANTZ: But we will confirm that in the data response.

MR. McCLUSKEY: So, the Company is proposing to add staff for this work, is that what you're saying?

WITNESS GANTZ: Yes.

MR. McCLUSKEY: Okay.

MS. AMIDON: And, if you don't have the information, if you would explain now or in the data -- in the record request how it's possible to incur this magnitude of implementation or administrative costs, when

you've already upgraded the billing system to generate time-based rates? Do you have an answer to that now?

WITNESS GANTZ: I will provide that answer as part of the data response.

MS. AMIDON: Okay. I would like that as part of the answer then to what we reserved as Exhibit 20.

BY MS. AMIDON:

Q. And, then, in connection with this, you may -- I hope you can respond to this, but I'm curious what it is about a time of use rate that would require you to incur these costs, the 128,000?

A. Well, I think that answer will be provided in the data response.

MS. AMIDON: Okay. Well, I'd like to mark for identification a data request response that we received from National Grid. It's Request 3-16. And, I request this be marked for identification as "Exhibit 21".

CHAIRMAN GETZ: Be so marked.

(The document, as described, was herewith marked as Exhibit 21 for identification.)

BY MS. AMIDON:

Q. And, I just wanted to direct your attention to the attachment to this response. It's a two-page document.

And, if you look at the lower part of the document, at the lower half, the grid that's below, on the second half of the document, it says "General Time-of-Use (G-1)", and this is the estimated cost of National Grid in connection with implementing a time of use rate for G-1 customers. And, if you look -- oh, I'm sorry. I stand corrected. That is going to hourly pricing. But, if you look at that grid, you see below the grid, with the dollar figures, it says administrative costs would add "$25,000" to "$35,000" a year. So, I need to understand why you say it would cost Unitil four times as much to administer time of use rates for roughly the same amount of customers as Grid?

A. I cannot answer that.

MR. EPLER: Could I object? And, I would like to voir dire the witness, if I may first, on this, on this document.

CHAIRMAN GETZ: What's the basis of your objection?

MR. EPLER: Well, I'd like to establish that the witness has not seen this document, has not prepared this document, and does not have familiarity with what numbers may be behind the document.

CHAIRMAN GETZ: And, I think you've

established that. And, I think he could probably answer that. I think it's a fair question to ask if he can make a comparison. If he doesn't have a basis for making the comparison, let's hear it.

BY THE WITNESS:

A. I cannot make a comparison. I have no idea what's in the Grid numbers. And, so, I really can't say what's in or what's out. I don't think it's possible to do that on the stand. I will say that all of the numbers that we provided in data responses were preliminary analyses, based upon a concept that was very general in nature about what those programs might be. It's not the same as the exercise that you need to go through when you have a very specific program and you're developing specific estimates for what you're actually -- what's actually going to be required to implement a program. So, I would characterize them as "rough estimates". When we get into the detailed planning and program design, ready to implement a program, we're going to have a much better idea of what those costs are going to be. And, at that point, we had better be able to answer all the questions in detail.

Q. Well, yes, and I respect that. But I would make note that you are familiar with the Grid proposal, you sat

through the technical sessions last week. And, as I understand it, Unitil received the data responses to all of -- all of the discovery that was issued by Staff. So, I think it's a fair question. And, if you could provide some clarification of the underlying basis for your $128,000 incremental cost, that would be helpful to Staff.

Now, I want to talk a little bit about the small customer group. In calculating the response to Staff Data Request 3-14, which I have a copy of here, and we're talking about savings, you assumed that the typical residential customer takes 500 kilowatt-hours per month, is that correct?

A. No, this example looks at a customer using 500 kilowatt-hours a month. That's often used for comparison purposes, but that's not to say that's the average customer. I think the average is a little bit higher than that.

Q. And, so, why did you use the 500 kilowatt-hour per month, if the average residential customer, and I believe from the recent Default Service filing, I think Unitil testified that the average residential customer uses about 672 kilowatt-hours per month?

A. Because it's very easy to use 500 kilowatt-hours. It's

a very easy number. And, it's not too far off from the average. So, it's a handy number to use when you're doing comparisons.

Q. But your assumptions then would, using $500 [500 kWh?], would result in an inaccurate reflection of what the actual savings might be, wouldn't it?

A. No. I think we're trying to get at a very -- sort of a gross assessment of, you know, what, you know, what one could expect. But I don't think changing that from 500 to 600 is going to change the conclusion. It might change the numbers a little bit, but it wouldn't change the conclusion.

Q. Well, using --

MS. AMIDON: And, I'm going to ask to mark as Exhibit -- where am I, Mr. Chairman?

CHAIRMAN GETZ: Twenty-two.

MS. AMIDON: -- 22, the response to Unitil's Staff Data Request 3-14, which is not part of the testimony, as I understand it, to just talk about this a little bit further.

(The document, as described, was herewith marked as Exhibit 22 for identification.)

BY MS. AMIDON:

Q. Do you have that, Mr. Gantz?
A. Yes, I do.
Q. Okay. Well, in your response, you, in the first sentence, you indicate the savings to a customer would be about "$2.74 per month". Using the 672 kilowatt-hour per month, would you agree that the savings goes up to $3.70?
A. That sounds about right to me.
Q. Okay. And, your savings assumption embedded in this response does not consider that a customer may, in fact, reduce, rather than displace to off-peak hours, load that was priced at peak rates, is that correct?
A. That's correct. This example was simply to demonstrate what the bill impact would be under a particular scenario of time of use rates if a customer of that size were to shift 40 percent of the usage from on-peak to off-peak. And, actually, the table shows a variety of, you know, what the impact would be at different amounts of energy shifted. But, no, we didn't look at the possibility that the customer would use -- would simply reduce usage in the on-peak period. That wasn't the purpose of the example.
Q. So, the savings could be greater?
A. Yes. Customers could reduce consumption in the on-peak

period.
Q. And, have you attempted to calculate what the implementation costs for time of use rates for small customers would be?
A. We certainly haven't done it based upon the supplemental testimony.
Q. Did you do it for the initial testimony?
A. I don't recall, no.
Q. Would you disagree with me if I said that the response to Data Request 3-15 said that you did not conduct any analysis on the metering or billing cost?
A. I am reminded, yes, that's the answer.
MS. AMIDON: Okay. That concludes our questioning. Thank you, Mr. Chairman.
BY CMSR. BELOW:
Q. Mr. Gantz, in your September 17th testimony, I think you refer, on Page 7, Line 13, you stated that "While Unitil is implementing AMI on the basis of its cost-effectiveness in enabling standard meter-reading and billing functions, we have not yet begun to explore and analyze the advanced features", and it goes on. Am I -- is it reasonable to conclude from the sentence, first part of this sentence, that, when you started looking at AMI, you developed a business case for the

AMI based on the -- or you came to the conclusion that the investments in AMI would be cost-effective because of the savings over time of metering reading and billing functions?

A. Yes.

Q. So, the savings in those business operations have justified you believe what you've invested to date in the system?

A. Yes.

Q. And, that's most of the costs that would enable certain features, time-based pricing features and demand response programs?

A. Yes.

Q. And, in discussing the capability of it, you use the term "transceiver", in describing the meters as having a transceiver. Does that mean that it can both transmit and receive information?

A. Yes. And, I think, I'm not sure where the word "transceiver" was, but what I'm used to hearing is "endpoint data collector", which resides at the meter. And, that endpoint data collector, using the hunt system, has two-way communication with devices that are in the substation and those devices then have two-way communication to our central office.

Q. I think one place where it occurs is on Page 7, actually, of your September 29th, 2006 comments, which are attached right behind your testimony of September 17th of this year. And, on Page 7 of that, at the top of the page, it talks about "This Power Line Carrier (PLC) based AMI will provide enhanced capability for collection of demand and energy information for all customer classes. And, that's where it says "An endpoint transceiver is the AMI device installed in each customer meter."

A. Yes.

Q. And, so, I think the next sentence goes on and explains that -- that it allows the existing and future rate structures to be configurable remotely, meaning you can set the time of use period, for instance, from a central computer and transmit that setting in some manner to the individual meters. Is that correct?

A. Yes, we can reprogram the meters from the central office.

Q. Okay. And, it's set up with certain capabilities now, I think you reference four daily rate periods, but you've also referred to additional capabilities that would be sort of add-ons to the system, is that correct?

A. Yes.
Q. Okay. And, you're still sort of exploring what those add-ons might be, and they probably evolve over time with software and hardware, is that correct?
A. Yes, that's what I understand.
Q. Okay. And, at this point, can a control signal be sent or is this the meter -- type of meter going to allow sending of a control signal to the meter?
A. Yes. As a matter of fact, we have utilized the ability of endpoints to communicate locally in our Massachusetts affiliate, where we have installed the AMI on dual gas and electric customers. The gas meter communicates through radio frequency with the electric meter. The electric meter then transmits all of the data over the power line. So, that capability for remote communication or activation of other devices, you know, we tested it in that application. The obvious application is in demand response.
Q. So, with either a radio frequency or some kind of pulse output, potentially could send a signal to control a circuit and turn off a hot water heater or, with a controllable thermostat, adjust the temperature set point?
A. Yes.

Q. Those are potential capabilities?
A. Those are potential capabilities.
Q. And, in sending such a control signal, that might be a way to communicate, for instance, a critical peak price period?
A. That's one of the things that we're looking at.
Q. As well as automating a response to that critical peak price?
A. Yes.
Q. Okay. So that, if not necessarily communicating the price by the hour or the minute, it might be a way to still communicate a dynamic price signal, that, for instance, you're in a period -- a very high cost period?
A. Yes. One of the ways it was described in the technical session is, at some point ahead of time, far enough ahead that, you know, that you would be able to know that all your meters were going to be receiving the signal, you could reprogram the meters to create a specific bucket for, say, critical peak pricing, you know, and then the data would be available in that bucket and then get transmitted in the regular transmission process.
Q. I do have a document I would like to refer the witness

to. This is -- Could you read the title of this document?

A. It says "Thermal Energy Storage for Space Cooling", and appears to be from the DOE Federal Energy Management Program.

CMSR. BELOW: And, could we have this marked for identification?

CHAIRMAN GETZ: Okay. It will be marked as "Exhibit Number 23".

(The document, as described, was herewith marked as Exhibit 23 for identification.)

BY CMSR. BELOW:

Q. And, the subtitle is "Technology for reducing on-peak electricity demand and cost".

A. Yes.

Q. Do you happen to be familiar with this particular document?

A. No, I've never seen it.

Q. No. But you were referring to the idea of using potentially thermal energy storage as a demand response?

A. Yes. The information that I'm familiar with is with ice storage technology that we're kind of taking a look

at, that would be for residential application that could be retrofitted to existing external compressor units. So, it's got a really nice kind of retrofit application. So, most of the information that I'm familiar with is in the context of looking at that.

Q. Well, would you accept that this document from the Department of Energy is described as "A publication designed to speed the adoption of energy-efficient technologies in the federal sector". And, these are just the first couple of pages of a much longer document that discusses the technologies in a sort of generic way. Would you accept that characterization?

A. I can't dispute.

Q. Okay. Well, if you turn to the second page, there's a block that says "Where to Apply". Could you read that paragraph and the first bullet under "Where to Apply".

A. It says "Cool storage will reduce the average cost of energy consumed and can potentially reduce the energy consumption and initial capital cost of a cooling system compared to a conventional cooling system without cool storage. While most building space cooling applications are potentially attractive candidates, the prospects will be especially attractive if one or more of the following conditions exist:"

And, then it has a list of conditions, including the first condition, I think you want me to read that one?

Q. Yes.

A. "Electricity energy charges vary significantly during the course of a day." And, there are others.

Q. Right. Well, so, the first bullet, that's sort of consistent with the point you were making earlier that, to enable this kind of technology that could reduce peak demand, a key character -- factor might be energy charges that vary over the course of a day?

A. In our looking at energy storage as a possibility or other kinds of demand response like controllable thermostats, it does seem to be almost, you know, it's very logical that they be partnered with time of use pricing.

Q. Now, right now, besides energy prices that are somewhat a function of demand in the system, is it true that there are other components of electric costs that are, if not priced currently, the underlying cost reflect a time-sensitive demand factor, such as congestion and transmission?

A. Yes.

Q. And, some of the transmission charges that are passed onto customers are, to some extent, based on Regional

Network Service, and some of that's charged based on peak, and even coincident peak, is that correct?

A. Yes, essentially coincident monthly peaks are the primary driver for those transmission costs.

Q. Right. And, the capacity charges that are now part of Default Service with the forward capacity market in New England, are those charges dependent on a coincident peak as well?

A. Yes, there is time-varying energy charges and then there are the charges associated with capacity that flow through Default Service. If I might point out, the transmission charges are in a different rate component. And, I believe, in our original comments in the proceeding, we did talk about the fact that, well, I'll just characterize it as saying there might be a missed opportunity, if we're just looking at Default Service pricing, because there are, you know, other aspects of the utility cost structure that aren't in Default Service pricing that, you know, potentially, you know, are time-varying costs or have a different relationship between fixed and variable costs. And, you know, we think all of that stuff really needs to be looked at.

Q. Including perhaps distribution rates?

A. Yes. Yes.
Q. And, looking down the road, there's an incremental cost that might vary depending on how demand is managed and --
A. Yes. One of the primary reasons for us to look at demand response as a distribution utility is because our peaks have been growing faster than our averages, and it's all driven by cooling, air conditioning. And, you know, the air conditioning load that drives the peak in the summer, drives your distribution investments. So, if you can find ways of better controlling the growth of your peak, and that offers significant advantages in terms of controlling the increases that you may see in investments down the road.
Q. Okay. And, the second bullet on this list from this Federal Energy Management Program document, what does that say?
A. "Electricity demand charges are high or ratcheted."
Q. And, right now, by numbers, the majority of your customers don't have demand charges, is that correct?
A. Our residential customers do not. The majority of our business customers do.
Q. Right. But, I mean, just in terms of sheer numbers of

customers?
A. Yes.
Q. Residential don't, and some small business customers don't have demand charges?
A. Yes, I think that's correct. I might point out, though, that that probably constitutes less than half of our total energy throughput.
Q. And, do you have a sense of how much air conditioning demand comes from customers who don't have a demand charge?
A. My understanding is what we've seen, in terms of the growth of our peak in the summer, we think is largely correlated with residential air conditioning, and those rates do not have a demand component.
Q. And, is there potential application that -- do you think it merits exploring through your AMI, and perhaps rate structure, whether there's an opportunity to get demand response from the smaller customers through the use of a demand charge? Is that something that could be explored?
A. It's something that could be explored. I would simply reiterate what I believe I said earlier. And, that is we're somewhat skeptical about simply relying on customer behavior in response to prices. But strongly

supportive of programs that can provide enabling technology that would allow -- give some certainty that customers can respond. You know, and I just -- I just look at the price of gasoline and what people continue to drive on the roadways to, you know, as a source for my skepticism about behavioral change. So, I think we need to promote ways, find ways to promote demand response, and that's what we would like to do as we go forward.

Q. You might recall, I had Mr. Baker read an excerpt from Exhibit 15, on Page 3, there's a discussion about this California experiment with 2,500 residential customers. And, in that report of that experiment, it was observed that, in the residential class, customers without enabling technology lowered their peak by 13 percent, with a smart thermostat, that was more than doubled to 27 percent. And, those with a gateway system, which it's described earlier in the document, a system that controls, you know, all of the devices that are controllable, as opposed to just the temperature setting, lowered their demand by 43 percent. Is that consistent with what you're expecting that enabling technologies that are sort of hard wired in, if you will, will result in more demand response or more

demand reduction?

A. Yes. I'm not familiar with the article, and I'm not familiar with the details of the California pilot. But this is -- you know, what our concern is, if we simply rely on pricing to motivate behavior for the small customers, you know, our concern is that we'd spend a lot of money and create a lot of aggravation and not get much benefit out of it. But, if you can institute technologies that give you the security of knowing you're going to get a result through the demand response/demand control or a technology like ice storage, then you're on much firmer grounds, in terms of the cost/benefit equation.

Q. And, one more document from the Commissioners' bibliography. It's a set of slides. And, this is -- I think it was in the bibliography that was sent out. It was towards the end of the list, under "Presentations". And, it's entitled "Energy Efficient Ice Storage Air Conditioning Summer Peak Demand It's All About AC", from a company called "Ice Energy".

CMSR. BELOW: Could we mark this for identification.

CHAIRMAN GETZ: We'll mark it as "Exhibit Number 24".

(The document, as described, was herewith marked as Exhibit 24 for identification.)

BY CMSR. BELOW:

Q. Is this the product or technology you were thinking might be worth piloting or that you're interested in exploring?

A. Yes. And, some of these slides actually I've seen before.

Q. Okay.

A. Not all of them, but some of them.

Q. Well, on Page 4, there's a pair of slides. The top is a picture of just applications that range from residential to big box. And, in the bottom, there's a list of customer types, as well as some utility customers. Is it your understanding from looking at this that this is a technology that's potentially available to all customer classes that use air conditioning?

A. Potentially. I do have to say, we're still in the early stages. And, you know, although our engineering group probably has a pretty high level -- high standards, in terms of what they look at. But we still have some questions about the state of

commercialization of the technology. So, it's still early, and we think there are some things that need to be tested out, which is one of the reasons why we're looking at this as a good candidate for some pilot applications to get some real world experience. But, if it proves out, it would appear to be a technology that would have applications for customers of all level of, you know, small residential, small business, and large business as well.

CMSR. BELOW: Okay. I think that's all.

BY CHAIRMAN GETZ:

Q. Mr. Gantz, I take it you're familiar with the order on rehearing we issued on August 31st, is that correct?

A. You may have to remind me, but I did read it, yes.

Q. Well, in that order, we indicated that we intended to resolve whether it would be appropriate to adopt two particular standards. One of those standards states that "each electric utility shall offer each of its customer classes and provide individual customers upon customer request a time-based rate schedule under which the rate charged by the electric utility varies during different time periods." And, the other states that "each electric utility shall provide each customer requesting a time-based rate with a time-based meter

capable of enabling the utility and customer to offer and receive such rate." Is it fair to say that Unitil does not object to the Commission adopting those two standards?

A. I guess my opinion is, and I did address that in my original testimony, but I think the federal standard is essentially saying "you have to adopt voluntary programs." "Voluntary", in the sense of the customer asking for the meter. "Voluntary", in the sense of the customer asking to be on a program. And, we're not convinced to the benefits of optional programs.

Q. Well, I guess what I was interpreting is, you wouldn't object to the Commission adopting these standards, but you're basically recommending in your supplemental testimony that, in implementing these standards, we go further, in terms of what type of time-based rate or meter or program we might adopt?

A. I think that's a fair statement. I guess my qualification would be, it's probably a legal opinion as to the significance of adopting a standard, but then not implementing it because you're going beyond the standard, and whether that gets into some fuzzy waters, I just don't know. That might be an item for legal briefs, instead of testimony. But I think, clearly, we

support the Commission going beyond what's intended in the federal standard, and, you know, moving into this area.

CHAIRMAN GETZ: Okay. All right. Thank you. Mr. Epler, do you have redirect?

MR. EPLER: No. Thank you.

CHAIRMAN GETZ: All right. Then, you're excused, Mr. Gantz. Thank you.

WITNESS GANTZ: Thank you.

CHAIRMAN GETZ: Mr. Zschokke I believe is next.

MS. BLACKMORE: Yes.

CHAIRMAN GETZ: Ms. Blackmore.

MS. BLACKMORE: And, I have a few exhibits that I'd like to mark for identification. The first exhibit I'd like to mark is National Grid's initial comments, which were filed on September 29, 2006. And, I think we are up to Exhibit 25?

CHAIRMAN GETZ: That's correct.

MS. BLACKMORE: The second is Mr. Zschokke's testimony and schedules, which were filed on September 17, 2007, which would be 26. And, the third is some weekday average load curves for Granite State and National Grid's system, which would be 27.

CHAIRMAN GETZ: Okay. So marked.

(The documents, as described, were herewith marked as Exhibits 25, 26 and 27, respectively, for identification.)

(Whereupon Peter T. Zschokke was duly sworn and cautioned by the Court Reporter.)

PETER T. ZSCHOKKE, SWORN

DIRECT EXAMINATION

BY MS. BLACKMORE:

Q. Mr. Zschokke, would you please state your full name and business address.

A. My name is Peter Zschokke. And, my business address is 25 Research Drive, Westborough, Massachusetts.

Q. And, what is your position with National Grid, Mr. Zschokke?

A. My position is Vice President - Regulatory Strategy and Research.

Q. And, what are your duties and responsibilities in that position?

A. My disputes are to assist in the regulatory affairs of the distribution operating companies in each of the jurisdictions that we serve.

Q. And, I believe Exhibit 26 contains your testimony in

this proceeding. Do you have any corrections to make to your testimony at this time?

A. Yes, I do. If you turn to Page 28 of my testimony, and, on Line 18, we reference total cost for the third option of 410,000 to 505,000. That is not tied to the estimate of the cost that we have in Exhibit 2, Page 2 of my testimony, which actually is 559,000 to 789,000, I would like to --

Q. I think 459,000?

A. That's the wrong one, right? The actual -- The actual cost range is 459,000 to 604,000. It's on Exhibit 2, Page 2. That's the only -- the capital expenditures cost.

Q. Yes. And, do you adopt the testimony and schedules as your own?

A. Yes, I do. I do want to point out in my testimony, we failed to mention the simplist option, which is actually to adopt the time of use rate that the meters for D-10 residential time of use or the meters for the G-1 time of use that are presently calculating time of use, which are based upon our time of use periods in our tariffs today. If you're familiar with the tariffs of Granite State Electric, the distribution charges tend to be on-peak only. Whereas, the Default Service

is flat for all hours. And, you know, certainly, the easiest way for us to do a time of use rate would be just to bid out, at least for the large customers, I'm not sure we'd get any interest in the residential ones, but, at least for the large customers, bid that out on a time of use basis.

Q. Mr. Zschokke, could you briefly summarize your testimony.

A. Yes. The Company's proposing in its testimony to implement a trial, hourly pricing mechanism for our largest customers that remain on Default Service. We're suggesting this in an effort to help the Commission determine what is the proper policy basis and the proper decisions they should make for moving forward, in terms of advanced -- not just advanced metering systems, but also in terms of what the rates should be for customers who are on Default Service. We do so to, in the understanding that there are many questions that we don't have answered, and I don't think the Commission has answered. As Commissioner Below has pointed out, many people have written lots of articles and done lots of pilot programs in different areas of the country about the benefits of time of use pricing. And, we, certainly, the utilities in the room

have been doing some form of demand response/time of use pricing since probably the early to mid 1980s, until the time of restructuring. And, we're all very familiar with those mechanisms. But we have a different era now, with competition, deregulation, and that customers have an alternative. And, we, quite frankly, can't tell you what will be the benefit moving customers, all customers, to time of use rates or to hourly rates, without actually having done some trials to see what is the response of customers. Before competition, I used to say there were three responses customers could have to rates, time of use rates. One is, you know, they could actually adjust their usage, which is what we're all hoping they would do, and, in accordance with the high price periods, use less in the high price periods, more in the off-peak low price periods.

The second one is they could do nothing. The third one, they could call the PUC, the Attorney General, the Consumer Center, their legislator and say "get rid of this rate". That's happened in the past in my experience. And, the fourth one, which is new in the last decade, is they could actually go to the market for a different pricing structure.

So, the goal of the trial is understanding, you know, if the goal is to elicit demand response from customers, you know, will these customers actually provide demand response? If so, to what extent is it cost justified from the technology that we implement? And, you know, then should we apply it further on to other rates and other customers at smaller levels, based upon the cost that we know at the time and what we see is the benefits from the demand response from customers so far.

The second issue I think that we have to address is, you know, what if the demand response is simply they go to the market? Do we still want to implement these technologies while customers are leaving for the market? And, is that consistent with the goal of trying to implement these meters for demand response or is that consistent with the goal of trying to move customers to the market? And, what is the right way to do either one? There are lots of technologies available to do demand response. There's, you know, real-time pricing and expensive metering systems. There's also other more direct load control devices that may actually save money. So, our goal is to kind of move the ball forward to allow the

Commission to gather some data through this trial process, to determine how they want to move the policy forward in the State of New Hampshire.

Q. Specifically, with regard to the G-1 customer class, why sort of does National Grid advocate for a day ahead hourly pricing for this customer class?

A. We advocate it because it's something that people in the industry have been discussing for a long time. The customers on G-1, like I said before, have had a time of use rate for a long time. They're on a time of use rate currently, although the Default Service is not priced that way, the distribution component is. They're fairly knowledgeable about time of use rates. It should be an easier effort to educate them on the benefits of moving to an hourly pricing, and are trying to motivate themselves to manage their demands at the time of very high prices.

We, in one of the data requests, we did submit a calculation of what the hourly prices would have been versus Default Service. It implies that maybe they would, you know, see something on the order of a 10 percent reduction, if the prior two years of experience continued into the future. But, then you have to the stock broker's conditional at the bottom,

which says, you know, "Past experience is no guarantee of future success." So, it could be -- So, these customers are most knowledgeable in terms of being able to manage their demands. They're our largest customers, so, in the case of some of them, they should have facilities people who are ready to manage their demands. And, I think it will be a good experience for us to learn just how they react to the hourly pricing. So, that is the reason why we chose the largest customers.

I think smaller customers introduce an element of education, an element of complexity, in terms of their ability to adapt, since they have not been on time of use rates, first off. And, secondly, we would prefer to go forward with the smaller customers, knowing what the answer is from the larger customers and how that informs the policy decisions of the Commission.

Q. You may have touched on this last question a little bit, but could you explain why National Grid does not support implementing a three period time of use rate for all customers classes at this time?

A. In addition to my prior answer, which is we are trying to understand, from at least the largest customer

class, the most knowledgeable customer class, what their reaction will be in this market-based environment to a much more detailed time of use rate, and whether or not it will elicit demand response or something else. You know, we are very concerned about the concept of a shoulder rate. I personally am concerned because I have real-world experience of it. And, to that reason, I wanted to discuss the exhibit that was provided on the system average loads, which I assume everyone has a copy of at this point. If you turn to Page 4, these aren't exactly in the order --

Q. They may not all be in the same order.

A. Oh, they may not all be in the same order? If you turn to the chart called "National Grid System Average Weekdays", this is the average weekday for summer and winter --

CMSR. BELOW: Wait a second. Oh, okay. There's only one marked "National Grid". Oh, I see it. Okay.

BY THE WITNESS:

A. The dilemma with shoulder periods is trying to define them, and then trying to decide when it's the right time to close them. Because, as you can see, most -- these system load shapes do give you an idea of why

utilities tend to have very long time periods for on-peak periods. Which I know the Commission discussed in their first order, and the Staff had an opinion on and ISO New England has an opinion on shoulder periods. And, the problem, of course, comes is, if you do move the load to the shoulder areas, it doesn't take long before you fill the shoulder up. And, then, you're question is -- and possibly even create a new peak in the shoulder. And, so, you have a concern there with that. My first utility job in Central Vermont Public Service, we actually had a winter shoulder period in the mid afternoon. And, the result of that is, with the price so advantageously, people put in electric heat with backup wood stoves. And, before you knew it, the middle of the day was peaking, and, you know, it was the same load patterns as the rest of the day. And, the problem, of course, is, when you get into a regulatory forum, where you say "we need to change this rate", people start talking about "well, wait a minute. I made an investment based upon, you know, the rate that was in existence. I need rate continuity. I can't change the rate too greatly because it will raise my bill very high. And, all of a sudden, you're kind of handcuffed in your ability to manage this stuff.

And, that's why the shoulder period concept is used very carefully in a utility construct. On a particular graph you see here, the top line, the more smooth line is the summer average weekday. The kind of jerky line with the 6:00 p.m. peak is the winter, which is very consistent with winter loads. Typically, having a morning peak and an evening peak, which is what Central Vermont faced. But you see that it doesn't take a whole lot of loads in the peak hours to move to other hours before you're seeing very similar load sizes in the average weekday loads. And, so, that's the dilemma with the shoulders, is you have this moving peaks syndrome that is hard to keep up with in a regulatory fashion. If we were kind of an independent company that was marketing things to people and could change them at will, it would be completely different.

Just to walk through some of the charts, if you turn to the Granite State Electric Company average weekday, you'll see the same charts for Granite State Electric as a company, and, again, you see the same shape for summer, it is the higher graph, and you see that kind of spike at 6:00 p.m. for the winter weekday. And, let's turn to Granite State Electric Company, the summer peak day, and the summer is

actually noted on the box on the side here. The top curve, the top most curve is the industrial load shape. The next rounded smooth curve with the midday peak is the commercial, which is very consistent with what you would think is commercial/industrial load shapes. And, then, the large curve would be the small peak in the morning and the evening peak is the residential, which is very consistent with all of our life styles. But, as you can see, I mean, you could possibly do something on an individual rate basis, but, in reality, the system curves that you saw before show that you don't have much room for shifting loads into shoulders.

And, finally, we do a winter comparison. And, there the residential peak is much peakier, more sharply defined, which is why you would get that system load shape. And, of course, the industrial and commercial, again, are kind of smooth. When we thought about it, the reason for our going forward with the hourly option is we felt that the shoulder option, the time of use option, would create more problems going forward and wouldn't actually target what the Commission was trying to target, which is really has been discussed in New England in the last few years is the concern for new capacity, is really the peak hours

that you're looking at, which is a very small percentage, less than 700 hours per year. And, in order to do so, moving to an hourly base rate is much -- could be more effective, if customers accept the rate and don't move to the market. But we don't know that without some empirical evidence.

MS. BLACKMORE: I have nothing further for the witness.

CHAIRMAN GETZ: Mr. Eaton.

MR. EATON: Thank you.

CROSS-EXAMINATION

BY MR. EATON:

Q. Mr. Zschokke, I think on Page 5 you stated that there are 114 customers on Rate G-1?

A. Yes.

Q. And, did you also indicate how many G-1 customers take Default Service from National Grid?

A. We did. I actually have the report here. So, as of September, we have 78 G-1 customers on Default Service and 35 in the market.

Q. And, how much of your Rate G-1 load does the 35 customers represent?

A. In terms of percentage of load, for G-1, the amount that has gone to the market is 65 percent and the

amount that is still on Default Service is 35 percent.
Q. Is the design of your Default Service similar to Unitil's, in that -- or, could you explain how often rates change for G-1 customers on Default Service?
A. I believe the Default Service rate is updated -- hold on a second. I believe we go out quarterly, I believe, for the large customers for Default Service provision. We get one price for that quarter -- three prices? Sorry, I'm getting signals. We get monthly prices for that service for those customers. So, the prices do vary by month.

MR. EATON: Thank you. That's all I have.

CHAIRMAN GETZ: Mr. Fromuth.

MR. FROMUTH: Thank you, Mr. Chairman.

BY MR. FROMUTH:
Q. Mr. Zschokke, within the -- within the offering, the real-time offering, will day-ahead pricing be the only -- the only sort of subchoice within the offering or will customers also be able to choose to price their power at the real-time hourly peak?
A. Currently, the offer is for day-ahead. And, primarily, it's because we are recommending the customers have a chance to know in advance what the prices are and to

have some time to react. You know, certainly down the road you could investigate whether or not we could move to day-ahead notification, but actual hourly, so that, you know, your customers are experienced and they're liking the results. But right now I think -- well, I know, never mind "think", I used to market real-time pricing to customers in many service territories of New England Electric System in the early '90s. And, customers will need a lot of education and they will need some hand-holding through this mechanism to make it effective. So, a day-ahead price makes more sense so that they have time to react.

Q. Do you anticipate constructing some sort of an adder to represent the costs that are not the hourly costs, but the fixed costs that the customer would incur as part of his real-time obligation, aside from just paying for the raw energy, and then the other piece of it?

A. Yes. There are a number of capacity costs in the market that would need to be recovered through rates. So, there would be some form of an adder. I believe, in New York, they increase the rates in the peak hours by that adder. There are other mechanisms that we used early in the '90s, when we did real-time pricing, to allocate the fixed costs to hours based upon

probability of peak, you can investigate that, and it's a question of what's the right mechanism that we would approach customers with.

Q. In the other National -- The other states in New England where National Grid has a franchise, is this the only jurisdiction in which you're introducing this concept or are you also going to do it elsewhere?

A. They have been doing it in New York -- well, there's been a contingent of customers on some form of real-time pricing since 1988 in upstate New York. Since the market began in 1998, the customers over 2,000 kilowatts of demand have been on real-time -- daily, day-ahead real-time pricing. Recently, we have moved customers from 500 kilowatts and above to the day-ahead real-time pricing rate. And, there's a plan to investigate whether or not, you know, to evaluate the movement of those customers over, and then investigate whether or not to move more customers at lower demand levels to the day-ahead rate going forward that the Commission has adopted.

Q. Are you speaking of New York now?

A. I'm speaking of New York, yes.

Q. Okay. What about your plans for Massachusetts and Rhode Island?

A. We don't have any plans in Massachusetts and Rhode Island as of this time.

MR. FROMUTH: Thank you.

CHAIRMAN GETZ: Mr. Epler.

MR. EPLER: No questions. Thank you, Mr. Chairman.

CHAIRMAN GETZ: Ms. Doukas.

MS. DOUKAS: No questions.

CHAIRMAN GETZ: Ms. Ignatius.

MS. IGNATIUS: Thank you. Just a few.

BY MS. IGNATIUS:

Q. Mr. Zschokke, have you thought about what a period of time might be before you would have meaningful results from a trial program? How long a pilot would you need before you can assess its success or lack of success?

A. It depends. We could know immediately. If all the customers moved to the market, we'd have a fairly clear idea on that issue. So, it could happen very quickly. However, you would probably want to get through at least one year to determine the level of demand response. Certainly, in seasons, you could estimate what the levels of demand response and possibly report to the Commission if you had the appropriate amount of data. So, I mean, there could be periodic reports

during the first year. But, certainly, after the first year, you would be able to report on what demand response has been and seeing what the customer reaction is.

Q. For commercial customers that may have a sense of risk that might keep them reluctant to undertake one of these programs, you said that an option is to use a hedging mechanism, is that right?

A. That's correct.

Q. Can you describe briefly how that would work?

A. Well, basically, what we didn't have before restructuring, when we marketed a real-time pricing, we have now is customers can go to a retail supplier to buy a hedge. And, you know, it could be a flat price, it could be a time of use price, depending on what the customer wants to structure with the supplier, and it's really up to the customers. You know, my expectation, based on my experience, is that there will be a number of customers that will actually take advantage of that, due to the nature of their facilities, their production, manufacturing or service facilities, and their inability to be flexible.

Q. Are you anticipating a pilot program for residential customers as well?

A. I think the decision whether or not to implement a pilot program for residential customers would be dependent somewhat on the experience here. And, where the Commission goes with the result of that experience -- with the result of this experience with respect to the policy -- the policy of the Commission, in terms of demand response and promotion of the market, and whether or not this is the right way to approach it.

MS. IGNATIUS: Nothing further. Thank you.

CHAIRMAN GETZ: Mr. Aalto.

MR. AALTO: Very briefly.

BY MR. AALTO:

Q. There was a previous question about using the day-ahead price. Would you be able to accommodate a voluntary or optional real real-time price?

A. We would probably need to investigate that, because of the -- what you would need to do for systems. I don't -- I mean, a real real-time price would be my preference. You know, the day-ahead does have the problem that you're -- by the time the market actually clears, you're a day behind. But, you know, we could investigate that and see if customers were willing to sign onto it, and then investigate whether or not the

systems and the coordination with ISO pricing will actually work and to what extent. You know, we haven't really looked at what are the details in terms of when you can acquire the real real-time price, when the customer will know, will it be satisfactory to the customers? And, then, of course, how we build it into our systems for billing as well.

MR. AALTO: Thank you.

CHAIRMAN GETZ: Ms. Hatfield.

MS. HATFIELD: Thank you. Good afternoon, Mr. Zschokke.

WITNESS ZSCHOKKE: Good afternoon.

BY MS. HATFIELD:

Q. You've just given some testimony on the program that National Grid offers in New York, and you refer to it on Page 8 of your testimony. And, I want to just understand, and I'm also going to ask you about this issue in New Hampshire, in terms of your proposal. How are the costs for the program in New York, that is just for those largest customers, how are those costs recovered across customers?

A. That's a very interesting question. And, I say that because New York -- I was trying to figure an easy way to compare rates in New York to New Hampshire. I

think, if you added -- if you put the tariff books for all of the utilities in New Hampshire, I don't think they would comprise the size of Niagara Mohawk's tariffs. And, you know, I guess I would have to -- there's so many different things going on, such as economic development and promotion of the market and metering costs, that, you know, are you discussing exactly the metering costs associated with the program? If that's the case, the metering costs are recovered from the customers directly, you know, so the communication costs and the metering costs are recovered from the customers directly in the program.

Q. Okay. Thank you. And, on Page 23 in your testimony, you discuss how the costs of your New Hampshire proposal would be recovered. And, I'm wondering if you could just briefly describe what your proposal is for cost recovery?

A. We are requesting that, since this is a trial, that the Commission consider, and we have proposed this, recovery of costs from all customers, because there's really two reasons for this. First one is, if there is demand response, it will affect market prices, and that benefit will flow to all customers. The second reason is, this is a trial, and, as such, we don't understand

right now what the benefit the customers will actually realize from this trial, and whether or not the technology will be valuable to them. We are proposing to move to a group of customers that is much smaller than what is even in place in New York. And, as such, you know, the impact of these costs on those customers will be much greater than what we have seen in New York. So, there's a lot of uncertainty associated with it. You know, it really comes down to a question of fairness. Should these customers, you know, who we are volunteering, they aren't volunteering themselves, be asked to bear this cost due -- you know, because we're trying to figure out some information that will help inform the policy decisions of the Commission in the state with respect to energy policy.

Q. Another area I'd like to explore with you is, you have several statements in your testimony regarding the Company's opinion that the Commission should wait in terms of taking the step toward time-based pricing with smaller customers, smaller C&I and residential. Is that your opinion?

A. Yes. We do think the Commission should evaluate time-based pricing through trials and see what the reactions are, before we move forward on a whole-scale

method. And, one of the reasons why we believe so is simply the element of the market, and the fact that customers have other choices. If the goal is to implement demand response from customers, and if that's what we're trying to do in this proceeding, to find a way to get demand response to lower the peak demands, then we should focus on that goal and implement technologies that get us to that goal. If the goal is to promote competition in New Hampshire, then, you know, we would need to address other issues that may promote competition. And, quite frankly, I can't tell you right now what the answer is. I can tell you that a lot of the customers that are on our real-time pricing program in New York, upstate New York, are in the market, and they're receiving service from a supplier under some mechanism. So, you know, that's really the issues we have to grapple with here is, "is the hourly pricing the most effective mechanism for bringing forward effective demand response?" And, we're willing to trial it and see what happens.

Q. So, would you be willing to do or to explore what Unitil I think is proposing, which is to develop some type of a pilot program for smaller customers, the small C&I and residential, to be available within two

years?
A. Is this for a time of use rate or for an hourly pricing?
Q. For time of use.
A. Well, we have a time of use rate currently open and effective for customers, for residential customers, and it has 450 customers on it. We don't market it because one of the reasons why we moved to competition is that, with the expectation that suppliers would provide those services better, but certainly that could be promoted more strongly. And, if there were effectively enough customers on the rate, maybe we would consider going out for a separate bid for Default Service for those, you know, those time of use periods. Currently, the Default Service is the basic residential rate, which is a flat rate. The time of use portion is basically on the distribution components of the bill.
Q. So, you have 450 customers of Granite State Electric in New Hampshire that are participating?
A. Yes, I was actually kind of surprised at that.
Q. On Page 15, you talk about using some of the current demand-side management program funds to provide audits for interested customers. And, then, you go onto say, you know, there may be additional funds to offer those

types of services. Can you just talk about what you have in mind? And, if that's in your 2008 energy efficiency program filing, you could just direct me there. But this is something that you're seeking in this docket, if you could just explain it, that would be helpful.

A. I don't know if it's in the energy efficiency docket or not. I believe there is -- the $25,000 reference is a set of funds that are available for this type of work. We shouldn't underestimate just how much effort it will be to get customers acclimated to this type of rate, and, you know, and to assist them in terms of figuring out how to use their energy management systems or whatever they have to be able to provide effective demand response on the rate and actually feel more comfortable being on the rate. We think there should be a bucket of money to help us with the education and help the customers with evaluating what they can possibly do. Our experience is, whenever we've done -- whenever we've sold real-time pricing or we've sold interruptible credits prior to deregulation is we did a lot of hand-holding with the customers. What can you do and, you know, and people would actually go in and do this type of evaluation and say "when do you need

this machine or when can you do it, when can you move the load to?" And, we found that very effective in helping the market for certain customers who are willing to be that flexible. And, that's the question, is finding out who can be that flexible and giving them some assistance as we move to this rate. I'm uncertain that, to cover the whole 80 customers, 78 customers, if the $25,000 will, you know, be enough to cover them or not. That's why I think the request for additional funds may come.

Q. Thank you. And, then, in Exhibit 27, the charts that the Company provided to illustrate the different peak periods, just a rough look at this. If you look at the summer average weekday use by residential customers, it looks like the residential peak is in the evening, say, 7:00 to 9:00 p.m.?

A. Yes.

Q. And, then, if you look on the next page, which for me is the National Grid system average weekday, it looks like that the system peak is more 1:00 to 4:00 p.m.?

A. That is correct.

Q. So, is that really the reason that you think that focusing demand response on residential customers just may not have the same bang for the buck at this point?

A. I wouldn't say I'm thinking that way. I would say that, if you wanted to focus on demand response for residential customers, maybe you would want to consider other mechanisms than a time of use rate at this point in time. We could market the time of use rate to customers, and it requires a sense of voluntarism on the part of the customers. We have 450 volunteers. Could we get more? I don't know. We notify them of the tariffs all the time. But we haven't really tried to promote it and get customers on the rate. You know, but other states have shown, California and Illinois, that there are, you know, some volunteers out there for time of use rates, and will respond.

Q. And, I think -- excuse me. Mr. Gantz, I think, talked about the role that air conditioning is playing in New Hampshire's or in our region's peak increasing. And, I wonder if you know, in some of the other experiments that have been done around the country, is it critical that residential customers participate and really have an impact? Is it really important that they have central air conditioning or, you know, I'm just thinking of my own house, you know, I'm not sure how I could really have an impact, because I don't have central air and I'm not very familiar with the

technology. But, you know, if you think about California or some other places where it's actually even warmer than here in the summer, how big a role does that play?

A. Central area is essential. That's the -- You need a thermostat controlled -- centrally thermostat controlled system in order for them to put in a new thermostat that allows the reception of signals. You know, you can program those existing things to move it off-peak. But window air conditioning units aren't going to be programmable, at least the once I am familiar with, not that I'm familiar with a lot, aren't necessarily programmable. And, so, the results, when we've spoken to people like Comverge and Enernoc, I mean, what they're looking for is central systems that they can put a thermostat, controllable thermostat that they can communicate with.

Q. And, do you have any sense in New England for how much of that increased air conditioning, that residential air conditioning load is from central systems? Do you get the sense that new construction is including those central air conditioning systems?

A. It's definitely more in new construction. I think, the concern, the reason why we're -- one of the reasons why

we're focusing on a pilot, it seems like you can sit here and tell us "well, jeez, there's all these studies from California and here and there." But usages really do differ around the country. New England actually has some of the lowest average usage for residential customers in the country. And, it makes sense, when you're comparing us to like Southwestern U.S., which is very hot, very dry, sunny a lot, and Southeastern U.S., which is very humid and very warm for a long period of time. Southeastern U.S. actually has the highest average usages. And, to give you a kind of a real-life example, if you looked at the -- I think it's the 2005 EEI statistical review of the industry, they have a page there that shows what the average price per kilowatt-hour is for customers, and then what the average usage is. And, usually, New England, on an average price per kilowatt-hour, is always in the top 10, you know, top 4 or 5 of the nation. That's on average usage. But, on average bill basis for residential, that actually moves us to the mid twenties, because southeastern Mass. -- Southeastern U.S. and Southwestern U.S. have such high rates of usage on average, that, although their average rates are low, they actually have a tremendous amount of air

conditioning usage that really drives the customers' bills higher than what we see in New England. And, of course, it assists in lowering the cost of -- the cost per kilowatt-hour, because, if I've got a lot of fixed costs, and I have people running air conditioning 24/7, I can amortize a lot of fixed costs over that usage. Which, if you live in Georgia, you are air conditioning your house 24 -- 10 months of the year at least, if not all. And, we just don't have those loads. You know, it's -- I know that, with me, there's many days in the summer that my air conditioning doesn't run. And, I'm sure it's true for everybody here, that the air conditioning won't run that much. And, that's why it creates a much spikier demand in the summertime for New England. It creates a lower load factor, and it results in higher average costs for New England. Which has been -- this is not a new thing. We've written letters to commissions back in '80s and '90s describing the same issue. You know, with the loss of large manufacturing and with the lack of need for tremendous air conditioning, our load factors are much lower than other regions of the country.

MS. HATFIELD: Thank you very much.

CHAIRMAN GETZ: Okay. I'm mindful of

Mr. Patnaude's limits. I think we need to take a brief recess. Just go off the record.

(Brief off-the-record discussion ensued and then a recess was taken at 4:03 p.m. and the hearing reconvened at 4:17 p.m.)

CHAIRMAN GETZ: Okay. We're back on the record and resuming with Ms. Amidon.

MS. AMIDON: Mr. McCluskey has some questions to begin with, regarding the statements we've heard on the record today.

CHAIRMAN GETZ: Okay.

BY MR. McCLUSKEY:

Q. Mr. Zschokke, in response to a question from Attorney Ignatius, regarding how long the trial would run, your response, I'm not sure whether it was tongue and cheek, but you indicated that "you might know pretty quickly, if all the customers went to the market."

A. If they did, yes, you would, you know, at least you would have -- we knew we wouldn't be measuring demand response and we would know that the customers had gone to the market.

Q. So that would be, in your mind, an indicator of failure of the trial, is that correct?

A. I didn't -- no, I never said, well, if -- if the trial

is based on what we can elicit for demand response, then you would have to say we didn't elicit any. You know, if the trial -- if you then want to investigate whether or not you want to do this for competition, to go out to the competitive market, you could say "yes, we have a success". But then the follow-up question is, "could you have done it less expensively and through other mechanisms?"

Q. Okay. Well, leaving out competition for the moment, just focusing on whether demand response is achieved, does it actually follow that, if a customer switches from a Default Service, that's based on real-time pricing, goes to the market, it actually goes to a fixed price?

A. I don't know. The Commission or some independent body would have to survey that customer, because we're not supposed to know anything about what the customers are being charged, and we try to avoid knowing that. And, so, we'd have to do a survey to say, you know, "what price are you getting?"

Q. And, are you familiar with any surveys that are being conducted with regard to National Grid customers, who are priced on the basis of real-time pricing?

A. If you turn to our response to Request 1-11, --

Q. 111?
A. Yes, 1-11. Yes.
Q. What is that? Owe, 1-11?
A. 1-11, yes. The response to Staff's first set of data requests.
Q. Yes.
A. On Page 2 of that response, we actually have a section called "Customer response to hourly pricing". It was a piece of work done by some consultants to determine what was the effect of hourly pricing, it was done actually for the California Energy Commission. It was to determine what was the effect of hourly pricing on customers in upstate New York, who had been on hourly pricing for a long period of time. And, so, because we had the data, and because the person worked -- the consultant actually used to work for Niagara Mohawk knew we had the data, he called us to participate, and we agreed. And, they did do a survey of the customers. And, of the 290, I think, customers that were on at the time, 53 customers, representing 64 accounts, actually responded. There is some very interesting results from that. We don't actually have any specific data regarding what the prices are that customers have received. However, we do -- there's a quote from the

study that we included in Bullet 2 of the response in this section, "Many customers indicate, through their actions and statements, that they would prefer to hedge, either through flat rate supply contracts or financial hedges, rather than being exposed to potentially volatile prices." So, that's one element.

I should just review some of the other responses just for the record. Sixty-five [65] percent of the customers were exposed to hourly prices through the default price or through the supply contracts indexed to the hourly price. Moving customers -- The opinion of the customers is that moving customers to a mandatory hourly price tariff would be a hard sell, if the availability of diverse and fairly priced alternatives was not available. Over 30 percent of survey respondents would forgo discretionary usage to save during high prices. Fifteen percent of survey respondents can move usage from peak periods to lower price periods.

The most interesting, I think, is price elasticity was 0.11 for industrial customers, 0.3 government education customers, and zero for commercial customers.

Q. Have you read The Electricity Journal article that was

on the Commission's website, by Hopper, Goldman and Neenan, summarizing the results of their work regarding customers -- Niagara Mohawk customers on real-time pricing?

A. I've read it once or surveyed it, I don't think I've read it in detail. But I read the study and realized the article was based upon the study, so I just referred to the study.

Q. Okay, subject to check then, would you accept that they say that "significant percentage of customers going from Default Service to the market actually went to a real-time pricing product"?

A. They did. I mean, the second quote I said is, you know, they actually wanted to get something that was more of a hedge. And, what they found, due to the peculiarities of upstate New York in our tariffs, is that they were actually getting basically the same price, but they were taking advantage of some other mechanisms that would save them money.

Q. So, that would suggest then that going to the market does not necessarily mean that we don't get demand response?

A. It doesn't.

Q. Thank you.

A. That's why I think we're suggesting a pilot. I wasn't saying that "going to the market would not elicit demand response." I mean, it could. It's a form of demand response. And, the question is, are you getting further from that? And, you know, what does it mean?

Q. And, also, even if they went to the market and they went to a hedge product, which would not suggest a lot of demand response on that, isn't that itself -- this state does have a policy of promoting retail competition, does it not?

A. It does.

Q. So, that in itself would have some value, whereas you're simply suggesting that that would have no value at all. In other words, --

A. No.

Q. -- I think you're indicating that demand response is the only -- is the only objective or goal of such pricing?

A. Well, with respect to the goals of EPAct '05, I think demand response is a big element of the discussion regarding time of use pricing. I'm not trying to suggest that moving customers to the market is a bad thing. What I would say is, you know, if we were going to discuss how best to promote the market, we could

talk about different alternatives than time of use pricing.

Q. Okay. My second question, this has to do with the Company's proposal to install what I would call "wireless meters"?

A. Uh-huh.

Q. You've got some other long name for them. But I think you know what I'm referring to?

A. I am, yes.

Q. And, you state at Page 9 of your testimony that "there's no communication link to the existing interval meter that will enable customers to have near-real-time access to interval data to manage their load." Okay? So, you're proposing to replace the existing interval meters with what I just referred to as "wireless meters", that would enable the customers, almost in real-time, to determine what their load shapes are. But why is it necessary that the customer know its load shape, as opposed to knowing the real-time prices at any time? Why is it necessary for the success of a real-time pricing program that they actually know the shape of their loads in real-time?

A. Well, they will know the price the day ahead, from the day-ahead prices.

Q. Yes.
A. And, if they know their load, they could easily compute how much they're spending, and whether or not they want to continue spending that money. So, you know, and they could also determine whether or not they have actually reduced things, based upon their load pattern for the day. And, by looking at what their load pattern is, and saying "Well, how come it hasn't gone down? Did I forget to turn off a machine that I thought I was going to turn off?" So, in that sense, it's very important for customers to, you know, if they're going to be successful on this rate, to have some idea of what they're actually using close to real-time, so that they can determine whether or not to continue using that level of electricity.
Q. Wouldn't the customers, these large fairly sophisticated customers, have a pretty good idea of their loads from maybe the prior month? Why does it have to be real-time knowledge, as opposed to knowing typically what their load shapes are from a month past?
A. Well, again, we go into the prior discussion. New England has very varied weather, you know, in our seasons. And, you know, for some customers, that's not an issue; for other customers, it is an issue. But

they could estimate it from the prior year. But, if they have a big air conditioning load, they could be confused. If they do have an EMS system, they can actually figure out what their loads are, and they probably don't necessarily need the IP addressable technology. But they may want it, because they want to compare what they're measuring through their system to what's actually coming through the meter. Because the meter ends up being the cash register. And, so, the customer needs to make sure that what they're seeing in their EMS system actually reflects what's coming through the cash register. If they don't have an EMS system, then, obviously, having the IP address allows them to go to the Internet and get their loads in near-real-time, so that they can determine whether or not they have actually interrupted an adequate amount of load that they expected for that day.

Q. Are there any operational savings to the utility, as opposed to benefits to the customers, from having this kind of technology?

A. I don't know if there are operational savings, quite frankly.

Q. Does it avoid the utility having meter readers, for example?

A. Well, we already did that with automated meter readings. So, we've reduced the number of meter readers by using the van drive-by service. So, we've already taken one step towards future technology to eliminate operations costs.
Q. So, would this technology eliminate the use of the van technology?
A. No, it wouldn't eliminate the use of the van technology, because it's a very small subset of the customers. And, the van will still drive by to get the remainder of the customers.
MR. McCLUSKEY: Thank you very much.
MS. AMIDON: Thank you.
BY MS. AMIDON:
Q. On Page 29 of your testimony, and I'm talking about the small customer group, that's my focus in my questions. You say it will cost between $8.3 million and $9.8 million to implement time of use pricing for residential customers.
A. Correct.
Q. In Data Request 3-16, which is marked for identification, I believe, as "Exhibit 21", do you have that, Mr. Zschokke?
A. Yes.

Q. Okay.
A. At least the response. Yes.
Q. Thank you. In the attachment to that response, there is like an Excel spreadsheet, which explains for each customer class what you would have to do -- or, rather, for each rate class, what the Company would have to do and what costs they would incur for time of use only, is that correct?
A. That's correct.
Q. So, if we look at the "Domestic Service" class, which I just referenced as an estimate, it looks like the majority of the costs are in connection with meter replacement?
A. That's correct.
Q. And, then, there is an installation costs as we move forward, then the CSS costs, which I assume are the billing costs, is that correct?
A. Yes.
Q. And, that leads you to the total, depending on what type of meters are installed, the range that is referenced on your testimony, Page 29. Have you calculated the monthly customer surcharge needed to produce this cost, assuming a 20-year book life for the meters?

A. I haven't.
Q. Well, Staff has, would you believe. And, would you agree, subject to check, that that monthly surcharge for this class of customers, in the first year of implementation, would be about $3.60 per month?
A. I'll agree, subject to check, yes.
Q. Okay. And, then, for this to be an economic change, the savings per customer would have to exceed $3.60 per month under a time of use rate?
A. That's correct.
Q. Okay. But the Company hasn't studied what the customer response is to a time of use rate, is that correct?
A. No, we haven't.
Q. Okay. And, for the largest customers, there may be more savings, for the larger class of customers. Okay. If we go to the G-3 customer group, here again there's replacement costs for meters, there is installation costs, and there are CSS costs, pretty much in line with what we just looked at for the Domestic D-1, the D, D-10 and T customers, and that cost is a range between 1.3 million and 1.5 million. And, similarly, would you agree, subject to check, that the monthly surcharge for this class of customers would be -- just give me one moment please, I'm sorry. It would be

about $5.68 for the first month of implementation?
A. I'll agree the Staff --
Q. Subject to check?
A. -- has probably made a good calculation.
Q. Of course. And, would you think that these customers may be capable of saving a little bit more, if they were, as a result of shifting loads, under a time of use rate?
A. I don't know whether or not they could save that amount of money or whether or not they could shift their loads.
Q. Okay.
A. So, --
Q. All right. Let me just -- give me just one minute here.
A. Dentists probably wouldn't be too happy doing their work at night.
Q. Oh, let them work at night. That's what I say. They're curmudgeons anyway. Well, for the G-1 customers now, you do have a separate calculation for converting the G-1 customers to time of use?
A. That's correct.
Q. And, it looks like that you can use existing meters and only have to modify the billing system, the CSS system,

to convert interval data for billing. And, the range of cost there is between $100,000 and $150,000, correct?

A. That is correct. Although, I do believe -- yes, that's probably assuming that we would actually take the hourly data in and add up the usage internally on the computer systems.

Q. And, under this scenario, the cost would be about $28 a month per customer, according to Staff's calculations, as opposed to the wireless meters, which would be about $200 per month?

A. That is correct.

Q. But, nonetheless, the Company believes that customers would incur more savings under real-time pricing than time of use?

A. Well, the evidence suggests, and, again, the past is not any indication of future performance, that, you know, customers could have saved 10 percent by being on the hourly price immediately. If that continues, the hourly mechanism will be far more advantageous to customers, just by virtue of the fact that the average rate was lower.

So, you know, and the second element, I think it's a policy question is, you know, what is

going to move the ball forward? We have time of use rates in effect now. We can go out for a bid for time of use for G-1 today using the present period. Are we going to go to something that would actually tell us more that would be helpful in addressing the policy issues facing the region and the state? And, my sense is, you know, the Company is offering up a trial to see if hourly pricing is the way to go. People have been talking about hourly pricing for a long time. We did some of it in the early '90s, and that seems to have moved the ball forward in terms of what -- in terms of the policy debate on time of use pricing in New Hampshire. And, you know, for a trial, I think that's what you would want to do is move the ball forward and see what the effect is.

Q. So, you expect to see more savings under real-time pricing than under a time of use pricing for the G-1 customers?

A. I didn't say that.

Q. No, I didn't -- I was just asking you if that's what your expectation is?

A. I am hopeful. I'm hopeful that the customers could save, based upon the historical evidence we've seen, and it would certainly make the sales pitch and the

acceptance much easier. But I also will state that, you know, we're doing this to find out what will be the reaction and what will be the benefits to customers, so that we can determine whether or not to move forward for more customers.

MS. AMIDON: Thank you. That concludes our questions, Mr. Chairman.

CMSR. BELOW: A question, maybe for Ms. Amidon. There was a reference to a data response concerning the study of Niagara-Mohawk. Is that data response marked as an exhibit or is it --

MS. BLACKMORE: I don't believe it's marked as an exhibit, but we could provide it as a record request.

CMSR. BELOW: Okay. If I could request that.

CHAIRMAN GETZ: Okay. That will be Exhibit Number 28.

(Exhibit 28 reserved)

MS. AMIDON: As a matter of fact, Staff has that, if you want -- if it would be more expeditious and easier for Staff to file the response. We'd be happy to do so. It's part of the record. It was a data request related back in time to I think the September 2006

testimony.

CHAIRMAN GETZ: If you could just make -- whoever make it available.

MS. BLACKMORE: Okay. Thank you.

CHAIRMAN GETZ: That would be good.

CMSR. BELOW: And, I just have one question otherwise.

BY CMSR. BELOW:

Q. And, it's that Electricity Journal article that's about that study, --

A. Yes.

Q. -- entitled "Demand Response from Day-Ahead Hourly Pricing for Large Customers". And, there were a number of authors, one of them Charles Goldman of the Lawrence Berkley National Lab.

CMSR. BELOW: And, could we mark that for identification.

WITNESS ZSCHOKKE: I do know -- I have spoken to Charles many times, Charlie [Chuck] many times, and Bernie Neenan as well.

CMSR. BELOW: Okay.

WITNESS ZSCHOKKE: So, I know them very well.

CHAIRMAN GETZ: This article will be

marked for identification as "Exhibit Number 29".

(The document, as described, was herewith marked as Exhibit 29 for identification.)

BY CMSR. BELOW:

Q. And, on Page 62, I guess, which is of the journal, he's drawing some conclusions. And, I'd just -- could you read the part that's marked with a highlighter there.

A. Sure. "Day-ahead default-service RTP for large customers serves not only as an effective means to improve the linkage between wholesale and retail markets, but it also promotes the development of retail competition. The default service sets a standard for competitive alternatives and its structure shapes the types of retail market products that develop, so implementing RTP can have a wide-reaching influence on the amount of load in the market that is exposed to and can respond to hourly prices."

Q. Is that conclusion consistent with what you understand occurred in the -- that part of National Grid's territory?

A. According to the survey that Messrs. Goldman, Neenan, and Ms. Hopper did, yes, many customers were receiving RTP type products, you know, based upon the survey

results they had. I would only point out, like I said before, a lot of them wish they had different products, and not the load -- the rate-following, what the utility is providing type of rates that they have. So, --

Q. I think one of the things they looked at in that case was the fact that the Default Service had -- that they had hourly pricing meant that that was typically a product that was also available off of competitive suppliers, as well as fixed price, as well as -- I think it's called "block and index", a intermediate product that has partially fixed and partially real-time price following. And, is that consistent with your understanding that competitive suppliers typically, in that service territory, offer a variety of products, including ones like that that are available under Default Service?

A. The only thing we know about what the customers are being offered are basically the results of the Neenan and Hopper study, --

Q. Okay.

A. -- because we're not allowed to know any more than that.

Q. Fair enough.

A. We do know they're being offered a variety of products, and lot of them seem to be an RTP-type product. We also -- We pointed out in earlier testimony, we do have a couple of customers receiving hourly pricing service today, through the New England ISO and some retail supplier.

CMSR. BELOW: Okay. Thanks.

CHAIRMAN GETZ: Redirect, Ms. Blackmore?

MS. BLACKMORE: I have nothing further.

CHAIRMAN GETZ: Then, the witness is excused. Thank you, Mr. Zschokke. And, I believe we would now turn to Mr. Fromuth. Do we have a lawyer who's going to volunteer to qualify him? Ms. Amidon?

MS. AMIDON: You're looking at me.

MR. FROMUTH: Should we draw numbers or draw straws perhaps?

(Whereupon August Fromuth was duly sworn and cautioned by the Court Reporter.)

AUGUST FROMUTH, SWORN

DIRECT EXAMINATION

BY MS. AMIDON:

Q. Good afternoon. Would you state your name and business address for the record please.

A. My name is August Fromuth. And, my address is 816 Elm

Street, in Manchester, New Hampshire.
Q. And, what is your employment, Mr. Fromuth?
A. I work for Halifax American Energy Company.
Q. And, could you explain what Halifax Energy Company does in New Hampshire?
A. Yes. Halifax American is a combination of a number of entities that continue to exist independently, but have come together in a venture for the purpose of offering retail -- licensed retail energy products in New Hampshire, as well as four other New England states. Those entities are South Jersey Energy Company, which is a subsidiary of South Jersey Industries, which is a New York Stock Exchange company based in Folsom, New Jersey. The second entity is EMRA Energy Limited, which is the parent company of Nova Scotia Power and Bangor Hydroelectric, and they are based in Halifax, Nova Scotia. And, the third entity is Freedom Logistics, which has been a service provider for industrial/commercial end users in New England for some four years, focused primarily on providing end-users with direct access to the wholesale power market.
Q. So, is it fair to say that Halifax is a competitive energy supplier in the State of New Hampshire or is an aggregator or both?

A. It is a competitive energy supplier, a licensed competitive energy supplier in New Hampshire.
Q. And, what is your expertise, Mr. Fromuth?
A. I have been in the energy industry for some 20 years. I started my career at what's now NSTAR, in I think it was 1979. And, I've worked in a variety of energy industry positions since that time. And, I have been involved in the commercial side of electricity deregulation in the private sector since, well, the deregulation laws were passed in the various New England states, beginning I think in 2000, in Massachusetts.
Q. Did you apply your expertise in preparing the comments that you have submitted to the Commission today?
A. Yes, I did.
Q. And, would you please summarize your comments.
A. Yes. Our comments pertain to the fact that we have watched with growing interest, and I think a sense of appreciation, for what is transpiring here that we've seen on the part of National Grid and Unitil, obviously. And, we wanted to both embrace, to some extent, what they're trying to do, and also offer some observations of some of the challenges involved in perfecting the products that they have -- are bringing

to the table. And, I think that, like we heard the this morning from Public Service of New Hampshire, perhaps the ideal way to go about this is not on a mandatory or compulsory basis, but to offer it on -- with some optionality. In other words, in keeping with what appears to be the proper rollout, if you will, of a competitive marketplace in New England, it's competitive virtually because the options available to the end-user class, the large end-user class, should continue to grow and expand. And, this does that. This accomplishes that. Obviously, we feel there's some tweaking and tuning needed to make it work, but we foresee it to be something that is -- well, the time is right for it.

Q. And, you have served your comments on the service list in this docket, is that correct?

A. Yes, it is.

Q. And, are you available for cross-examination at this point?

A. Yes, I am.

MS. AMIDON: Thank you.

CHAIRMAN GETZ: Okay. And, we'll just note, we'll mark the comments dated October 8th for identification as "Exhibit Number 30".

(The document, as described, was herewith marked as Exhibit 30 for identification.)

CHAIRMAN GETZ: Mr. Eaton?

MR. EATON: I have no questions, Mr. Chairman. Thank you.

CHAIRMAN GETZ: Mr. Epler?

MR. EPLER: No questions. Thank you.

CHAIRMAN GETZ: Ms. Blackmore?

MS. BLACKMORE: I have no questions.

MS. DOUKAS: No questions.

MS. IGNATIUS: No questions. Thank you.

CHAIRMAN GETZ: Mr. Aalto?

MR. AALTO: I guess I'll have to take my turn.

CROSS-EXAMINATION

BY MR. AALTO:

Q. Very briefly, for those customers who you've had contact with hourly pricing, what's the general type of response, what range of response have you had? Has it been satisfactory? Where have excessive risks appeared, and people have left, that sort of thing, kind of from a general point of view?

A. Well, we have currently approximately 50 end-users that

are taking some variant of real-time pricing in -- well, in the Rhode Island, Massachusetts, New Hampshire and Maine markets. And, we have been doing this since, well, the fourth quarter of 2004. And, in that time, we have only had one customer leave the program that we had introduced to them, and returned to some other means by which they would buy their power. And, they left because their load profile was not capturing the overnight benefits of the off-peak pricing in a way that enabled them to kind of have a weighted average cost of power that was below a conventional fixed priced alternative. So, with the exception of that customer, everybody else has had experiences that range from considerable savings, savings that they have merited recognition for the individuals who have done this inside their company, to savings that are simply within the bandwidth, I guess I would say, of what we saw in the National Grid exhibits.

MS. HATFIELD: No questions. Thank you.

MS. AMIDON: We have no questions.

CHAIRMAN GETZ: Okay. I think that completes the examination. Thank you, Mr. Fromuth.

MR. FROMUTH: Thank you.

CHAIRMAN GETZ: And, we turn to Mr.

McCluskey.

(Whereupon George R. McCluskey was duly sworn and cautioned by the Court Reporter.)

GEORGE R. McCLUSKEY, SWORN

DIRECT EXAMINATION

BY MS. AMIDON:

Q. Good morning, Mr. McCluskey. Would you state your name and employer and business address for the record please.

A. My name is George McCluskey. I work for New Hampshire Public Utilities Commission, in the Electricity Division. And, I'm employed as an Analyst.

Q. And, could you summarize the expertise that you used in this docket in developing the comments that you filed with the Commission on November 3rd, 2006.

A. My expertise?

Q. From your experience as a Utility Analyst.

A. Well, I guess it includes two years -- second stint working at the Commission approximately two years, five years prior to that as an energy consultant, 12 or 13 years prior to that as a gas and electricity analyst at the Commission. And, 12 or 13 years prior to that working as a pricing specialist for the Electricity

Council in England.
Q. And, you did apply the experience and expertise that you have in the energy industry in developing your comments regarding the so-called "Smart Metering Standard" in the EPAct that was filed by Staff on November 3rd?
A. Based on the experience that I've just laid out, plus research that was conducted in this current proceeding.
Q. And, do you adopt these comments for the record here so you can be subject to cross-examination?
A. Yes, I do.
MS. AMIDON: Thank you. So, the comments previously been filed, we would ask that they be marked for identification as "Exhibit 31".
CHAIRMAN GETZ: Be so marked.
(The document, as described, was herewith marked as Exhibit 31 for identification.)
MS. AMIDON: Thank you.
CHAIRMAN GETZ: Mr. Eaton.
MR. EATON: Thank you.
CROSS-EXAMINATION
BY MR. EATON:
Q. Mr. McCluskey, turning to Page 24 of your comments,

there's a sentence that starts the second full paragraph. Could you read that sentence please.

A. The first sentence?

Q. Yes, of the first full -- of the second full paragraph.

A. Okay. "Given the complete lack of hard data on the costs and benefits of time-based rates structures in the comments, Staff recommends opening a proceeding to fill that information gap."

Q. And, we filled some of that information gap today, correct? By identifying some costs of implementing programs for large customers and implementing programs for small customers?

A. That's correct. The technical session, the discovery that's been issued over the last several weeks and responded to by the utilities, and today's hearing, has provided quite a lot of information on the cost side. I think there's some extensive understanding of the benefits from a conceptual standpoint. But, in terms of how customers will respond to these, I don't think we necessarily have a good handle on how they would respond to time of use rates or retail or real-time pricing structures. So, I think there's probably still a need to do some work on that side of the cost/benefit analysis, to determine whether it would be appropriate

to apply time of use rates to all customers or just to subsets of customers.

Q. So, is it safe for me to characterize what you just said is that we don't have hard data on the benefits?

A. That's correct. And, so, I think my primary recommendation in the comments was to implement, on a mandatory basis, time of use rates to all customer classes, subject to what I say on Page 24, to studies as to which customers it would be cost/benefit -- it would be beneficial to do that. And, so, we don't know at this point, for example, what the appropriate threshold would be for residential customers to apply time of use rates to.

Q. I think you state on Page 14, in the notes that -- on Note 17, let me read it. "This assumes of course that implementation of the new rate structure is cost-effective." And, Footnote 18, "Again, this assumes that implementation is cost-effective." What's your definition of "cost-effective"?

A. Where the benefits of the rate change would offset, would equal or exceed the cost of implementation, the incremental cost of implementation.

Q. Are you recommending any particular form of time-differentiated rate for the Commission to require

utilities to provide?
A. I believe, in the comments here, I recommend to the Commission a three-period time of use rate, an off-peak, a shoulder, and a peak period. Without specifying what the appropriate time periods would be.
Q. Would there be -- Would the shoulder period appear more than once in a day? In other words, would the day start off off-peak, go to shoulder, then go to peak, then go to shoulder, then go to off-peak?
A. Typically, that would be the structure of a time of use rate with a shoulder period. Yes, the shoulder period would be split by the peak period.
Q. Do you think these changes would add a great deal more complexity for PSNH customers than they face today, as far as Default Service?
A. Well, it depends on what you mean by "complexity". There would certainly be more periods. PSNH's -- The rate that I'm recommending here is not only that there would be a time of use structure, but that the rates, certainly for Unitil and for Grid, the rate -- the rates for certain customer classes would change on a monthly basis, as they do currently. So, you would build that time of use rate structure onto rates that already vary by month, Default Service rates that vary

by month. And, I believe, it's a little while since I looked at these comments in detail, but I believe I've made the same recommendation, in terms of rate structure, for PSNH, as I did for Unitil and National Grid.

Q. So, would this provide more complexity for PSNH customers than they currently have under Default Energy Service rates?

A. There would be more components to the rate. As to whether the customers would view that as a complex rate? I couldn't say. But time of use rate structures have been in effect around the country and other countries for quite some time. So, it's not a new concept.

Q. But it would be a new concept for PSNH default customers, correct?

A. It would be a different rate structure.

Q. And, then, also at Page 14 of your testimony, you say "Staff proposes a similar approach for large customers, even though most large customers are able to respond to time-based price signals and can purchase hedge products that protect against the price volatility associated with real-time pricing." Do you agree, I think with Mr. Zschokke, that hedge products are

different rates that perhaps resemble more average rates for a whole month or a whole time period?

A. That's -- I'm not sure, I don't recall Mr. Zschokke talking too much about hedge products. But, yes, the common rate structure is to have a flat rate, where the supplier -- "flat rate" meaning a fixed price for a specific period, where the supplier is taking the risk. But the customer may be paying for that risk through some risk premium built into the fixed price. But they can come in a variety of rate structures.

Q. And, would you agree that customers value rate stability and predictability?

A. I would think that's one of the -- that's one aspect of purchasing electricity that customers may value. They may also value the opportunity to lower their bills, and that might take a different rate structure in order to achieve that objective.

Q. And, the customers that could lower their bills through a time-differentiated rate could do that if that rate were only optional, correct?

A. Yes. If the rate is optional, and customers believe that they can save on that basis, they may take that option.

Q. In the cost side of the equation, as far as the cost of

implementation, would that include the cost of a new metering, new billing programs, and data management?

A. Is that you're question?

Q. Yes.

A. Okay. Well, it would depend on which class you're talking about. For PSNH's largest customers, you already have in place metering, interval metering. Whether it's sufficient to provide the metering support for time of use, I believe it is. For real-time pricing, that may not be the case. But I believe the existing interval meters that you have installed would support the time of use rate, and hence the incremental cost would not include the cost of a new meter.

Q. Would it be helpful to know, before we took this step, let's talk about the large PSNH customers, about whether consumption habits would change to overcome the cost of additional billing and data management?

A. Well, if the objective is to promote demand response, then it might be useful to have some idea by reviewing studies done elsewhere, as to what the kind of response would be to certain -- to different price structures. Yes, that would be useful to have that information.

Q. What about -- There's only 1,500 customers. What about asking those customers what they would do under certain

circumstances, given a change from the current Default Service rate to a different billing structure, such as a proposed time of use rate or real-time pricing rate?

A. Well, I'm not sure what value that would be. I think it would be far better to price the products on the basis of the structure that you would want implemented and see how they responded. To ask them prior to changing the rate structure, "how are we going to change your load?" I'm not sure whether that would be very valuable in deciding whether to implement or not a new rate structure.

Q. Would you believe that large customers have a greater ability to shift load in response to a time-differentiated rate than small use customers?

A. Because of the size of their loads that we're talking about, they could certainly -- it's more likely that they would be able to shift more load in absolute terms than small customers. And, if you're talking about in percentage terms, is that what you meant?

Q. Yes.

A. Then, it would depend on the nature of their loads. Whether portions of their load were -- could be shifted. Certain parts of a industrial customer's load would not be responsive to the price changes, other

parts would. And, the same would apply to residential customers. It would depend on the make-up of an individual residential customer's load as to whether they would likely -- were likely to shift in response to the price change. So, it's going to vary by residential customer and by industrial customer.

Q. Would you agree that large customers who would be adversely impacted by mandatory time-based rates for Default Service would be likely to switch to a competitive supplier, if they could not shift their usage?

A. Well, this -- So, you're saying that the large customer that did not change their -- did not shift or reduce their loads in response to the time of use Default Service rate, that's the hypothetical, is that correct? Would they -- Would it be likely that they would shift to the competitive market? It would depend on the product that they would be served under by the competitive supplier. You have to give me that part of it. What kind of rate structure would this customer be priced at under service from the competitive supplier?

Q. I will give you the example of a flat -- a flat rate, that lasts for six months, a flat energy rate that lasts for six months.

A. Well, if it's a flat rate, then almost certainly the supplier is going to include a risk premium in the price. So, it's not clear whether the -- this customer will actually go to the competitive market, because it would depend on the magnitude of the risk premium.
Q. Does PSNH's Default Service, as it's designed now, recover a risk premium or does it recover PSNH's actual reasonable and prudent costs?
A. Well, PSNH's Default Service, the supplies for that service are a mixture of owned generation and power purchased from the competitive market. If the power purchased from the competitive market is at all hedged, in other words, it's not spot purchases, then there will be an element of a risk premium in that component of its supply, and that risk premium will be recovered by PSNH through its average Default Service price.
Q. Is there a risk premium added to the cost of PSNH's generation that's included in Default Service or added to the cost of mandated power purchases from independent power producers that are included in PSNH's Default Service rate?
A. As to the first part of the question, PSNH's own generation, you're asking if there's a risk premium there?

Q. Yes.
A. I believe they're just recovering their -- their incurred costs, both the fixed and the fuel costs. I don't believe there's any mark-up.
Q. So, would there be a greater risk premium for an average price supplied by a competitive supplier, as compared to the risk premium on the supplemental supply that PSNH purchases from the market, assuming the customer purchases the same amount every month, once from PSNH Default Service and once from the competitive supplier at an average rate?
A. Well, PSNH buys different products from the market. Some of it is at their spot prices, some is at their hedge prices. And, even those products vary. Sometimes they buy on a monthly hedge, sometimes on a six monthly hedge, sometimes on an annual hedge. So, there's some significant variation in the premium that's going to be reflected in those prices. So, it's very difficult to answer the question.

With regard to the product purchased by a customer in the competitive market, all of their purchases are going to be subject to the risk premium. Where it's only components of PSNH's supplies where you would -- that would be affected by risk premiums.

Q. Is PSNH's Default Service greater than or less than or equal to the locational marginal price from ISO that a customer would get if they became a member of ISO?
A. Well, there's two different products. PSNH's Default Service is a retail product. Locational marginal price is a wholesale product. One's adjusted for losses. I know the PSNH's most recent Default Service rate is significantly higher than the current average locational marginal prices, as you would expect.
Q. Because it includes more products than the locational marginal price?
A. It's a different product. One's at retail, the other one is at wholesale.
Q. If PSNH had to replace the meters that it currently uses for small customers, in order to record time of use, do you think PSNH ought to recover the net salvage value of the existing meters, the depreciated value minus what they could sell those meters for?
A. Assuming that the book cost or the depreciation plus the return on those meters is already in your approved rates, and those meters were replaced, then it would be appropriate for PSNH to recover any incremental cost over and above what's already in rates, any incremental cost to implement that time of use rate. I'm not sure

where the salvage part of it comes in. Maybe it comes in in determining what the appropriate incremental cost to recover would be. If it does, then, yes, I would believe that's appropriate.

Q. Are there differences between PSNH and the other two companies, as far as its pricing structure for Default Service?

A. Currently?

Q. Yes.

A. Yes, there are.

Q. And, you stated, I think in your comments, that "PSNH is subject to a statutory requirement of actual, prudent and reasonable costs to be included in Default Service"?

A. That's my understanding. That's correct. Whereas the other two companies can recover costs incurred, which are effectively market costs, adjusted for any appropriate additional costs that they would incur in providing that service. PSNH's -- If PSNH were to have to implement retail pricing, for example, it's my understanding that it would always have to adjust those market prices to its, whatever you referred to it as, its prudent, two other terms, I forget what they are, but the prudent costs, prudent actual costs. And, so,

there would have to be some reconciliation mechanism that always brought PSNH's revenues back to its actual costs.

Q. And, PSNH must use its generation resources to supply Default Service, correct?

A. That's my understanding. That's correct.

Q. And, after the fact, the customer would be getting a bill that didn't reflect either the time of use price or the real-time price, is that correct, in order to -- in order to reconcile the rate structure to PSNH's actual and prudent and reasonable costs?

A. That's correct. But I think we're talking about marginal impacts. We're not talking about -- you're not going to significantly adjust the, say, the real-time price. The customers would see a cost message, which was pretty close to the market price, adjusted appropriately to the Company's costs. The important point is it would be a significant improvement on the price structure that customers are seeing at the moment, which provides no information to the customer as to the variability in wholesale prices throughout the day or across seasons.

MR. EATON: Thank you, Mr. McCluskey. That's all I have.

WITNESS McCLUSKEY: Thank you.

CHAIRMAN GETZ: Mr. Fromuth?

MR. FROMUTH: I have no questions.

CHAIRMAN GETZ: Mr. Epler?

MR. EPLER: No questions. Thank you.

MS. BLACKMORE: I just have a couple of questions.

BY MS. BLACKMORE:

Q. Mr. McCluskey, I believe that you stated earlier that "time of use rates typically have a shoulder period". Do you have any surveys or studies to support that statement?

A. I don't believe I said that.

Q. Okay.

A. I said that a time of use rate, with shoulder periods, would typically be split by the peak period. I think that's the typical time of use rate structure with a shoulder period.

MS. BLACKMORE: Okay. Thank you.

CHAIRMAN GETZ: Ms. Doukas?

MS. DOUKAS: I have no questions. Thank you.

CHAIRMAN GETZ: Mr. Aalto?

MR. AALTO: Sure. Thank you.

BY MR. AALTO:

Q. You recently responded to the questions by PSNH about the differences in market price versus the Default Service price. If PSNH were to sell its power at market price on a variable hourly basis, would it be possible to take any overrecovery that came from that and apply it to perhaps a reduction, perhaps even turning the stranded cost portion of the distribution service into a negative? The intent here would be to use a market price that's general across the state, across the region, in fact, and then find a way of crediting the customers interest in the existing plant, since I'm going to pay for them anyway, and, if I leave the system, I'm still paying for them through my stranded cost payments. Would that be a way of making sure that everybody came out more or less whole?

A. Well, it's certainly possible. But I think it would -- as to whether the Commission could do that would depend on the reading of the legislation. Is the intent of the legislation that customers pay market prices for their product or do they pay PSNH's actual costs? And, I believe it's the latter. So, to charge them based on market prices, and take any excess and apply it to something else, I'm not sure whether that would be

consistent with the existing legislation.

Q. So, what your sense would be, if PSNH were to have an hourly price, it would be something that would be constructed out of a study of when its own plants were running and whatever power it was buying from either contracts or spot price at any given time, and there would have to be some type of assembly of prices that would -- could be used as a hourly price. That would be quite different from what the other utilities would have?

A. I'm not sure how different it would be. But one option, and I haven't explored this, this is something that would have to be looked at by all of the parties, by PSNH and the Commission. One option is to price on a real-time basis based on market prices, and any overrecovery would be passed to those customers through the reconciliation mechanism, whatever the -- whether it's a monthly, six monthly, or annual reconciliation mechanism. So, you'd flow the overrecovery back to those customers and not pass it to some other account, like the Stranded Cost Charge account or whatever. So, to me, that kind of -- that kind of pricing may pass the legislation test, as to recovering no more than PSNH's actual costs.

Q. That's essentially what I was proposing, I just had it going into a different part of the bill.
A. Okay.
MR. AALTO: Thank you.
CHAIRMAN GETZ: Ms. Hatfield.
MS. HATFIELD: Thank you.
BY MS. HATFIELD:
Q. Mr. McCluskey, it's been almost a year now since you filed comments on behalf of Staff, and very recently the companies have filed proposals, or specifically Grid and Unitil have filed proposals. And, I'm wondering, although your position a year ago was that there should be mandatory time of use rates across all customer classes, with your caveat about it being subject to a cost/benefit test, I think. Would you support what Grid and Unitil have proposed, with the idea that we could look over the next few years at whether it makes sense to do so for the smaller customers, including residential?
A. As you know, I haven't filed testimony commenting or rebutting the testimony that came in by the companies. But I'm certainly not opposed to Grid's and Unitil's recommendation to replace the time of use rate structure that I recommended for large customers,

replace it with a real-time price. I'm not opposed to that. I am opposed to essentially doing nothing with regard to the small customers. I continue to advocate that the time of use rate structure be applied, subject to a cost/benefit test, to small customers.

Q. And, do you think that the working group approach that's been proposed in this docket would be conducive to undertaking that type of review?

A. The working group idea would be good in a number of respects, you know, working out the kinks associated with real-time pricing for large customers, and also determining how to implement time of use prices for small customers. That, to me, is what the purpose of the working group should be. I'm certainly not going to recommend to the Commission that they should delay implementing time of use pricing, other than to work out the -- go through the mechanics of how to implement these rate structures.

MS. HATFIELD: Thank you very much.

CHAIRMAN GETZ: Redirect, Ms. Amidon?

MS. AMIDON: I just have one question, just to clarify for the record.

REDIRECT EXAMINATION

BY MS. AMIDON:

Q. Do you believe the Commission has the authority to implement time-based pricing for PSNH customers, provided the associated revenues are reconciled to actual, prudent, and reasonable supply costs?
A. Yes, I do. I believe I touched on that in the comments, and I continue to believe that's the case.
MS. AMIDON: Thank you. I have no further questions.
CHAIRMAN GETZ: Okay. Then, the witness is excused. Thank you, Mr. McCluskey. Is there -- I guess, the immediate procedural issue, any objection to striking identifications and admitting the exhibits?
MR. EPLER: Yes. Mr. Chairman, Unitil may have a limited objection with respect to Exhibits 9, 10, 11, 14, 15, and I believe it's numbers 23 and 24. And, if I can explain. We do not have objections to the uses that those exhibits were put to in this hearing. Which was essentially questioning of the witnesses on particular passages and their opinion as to those particular passages, and applicability to the circumstances of their companies or facts that they were familiar with. We would object, if the intent were to use those exhibits to establish specific facts or conclusions that are contained in those exhibits.

CHAIRMAN GETZ: So, you would move to limit the admission to the extent that they were used in the questioning of the -- solely to their use in the questioning of the witnesses, is that correct?

MR. EPLER: To the use that they were put in the hearing, we have no objection to the uses that they were used, and for questioning the witnesses, yes.

CHAIRMAN GETZ: Does anybody else have anything on that subject? Mr. Eaton.

MR. EATON: I agree with the position that's taken by Unitil. And, I believe Exhibit 29 was also an article that was used for that purpose.

CHAIRMAN GETZ: All right. Then, we'll strike the identifications for all of the exhibits, and, for the exhibits that were used by Commissioner Below in questioning the witnesses, they will be admitted into the record to the extent they were used for questions of the witnesses here today. And, all other exhibits are fully admitted. Is there -- Mr. Aalto?

MR. AALTO: I am available for any questions that people might have. Considering the hour, I would be glad to take any questions in written form, if that is appropriate.

CHAIRMAN GETZ: Okay. Thank you. I was

going to suggest, given the hour, to forgo closing statements. And, we've already set aside October 26, I think, as the date for further argument or briefs that could be submitted. And, I guess this is a proposal, that have that also be the date for any written closing argument or recommendations on how to proceed go at that time. Is that acceptable to everyone?

MR. EATON: Very.

MR. FROMUTH: Yes.

MS. AMIDON: Seems reasonable to me.

CHAIRMAN GETZ: Okay. Anything else we need to address today?

(No verbal response)

CHAIRMAN GETZ: Okay. Hearing nothing, then we will close the hearing and wait for the written documents on the 26th. Thank you, everyone.

(Whereupon the hearing was adjourned at 5:31 p.m.)