

SALUDA HYDROELECTRIC PROJECT RELICENSING

FERC PROJECT NO. 516

Quarterly Public Meeting

January 12, 2006

7:00 o'clock P.M.

SALUDA SHOALS PARK - ENVIRONMENTAL CENTER

Welcome and Update on Resource Conservation Groups

by, Alan Stuart, Kleinschmidt Water Resources

Presentation,

by, Gene Delk, SCE&G

(Transcribed from recorded cassette tapes of Proceedings:

by, Annette B. Gore, Court Reporter.)

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PUBLIC MEETING:

MR. ALAN STUART: My name is Alan Stuart, and this is our second quarterly relicensing update meeting, part of the relicensing of Saluda. We are trying to do some outreach, continued outreach, to inform the people that are not part of our Resource Conservation Group, and really intricately involved in the project relicensing. As I said, our RCGs have begun. Our RCGs, for the new faces here, are called Resource Conservation Groups. We have a total of seven; they deal with Fish and Wildlife, Water Quality, Cultural Resources, Lake and Land Management, Operations, and Safety. Safety was kind of an ad hoc group that we formed in hopes of a number of Lake Murray Association members, would like to make sure that group continues on even after the new license for Saluda is issued; it deals with safety issues on the Lake as well as the Lower Saluda River. So, that's kind of why that one was formed, and thought this would be a good platform to use to do that. Our Resource Conservation Groups began meeting in December. And one of the first items was for each group to develop a Mission Statement. These Mission Statements were developed by biologists, engineers, electricians, a wide gamut; even a rocket scientist has been involved. So, when I go to read these, you will understand that they are very wordy, but

they have a lot of good meaning in them. So, bear with me. All of these are tongue twisters, I can tell you. Did everybody get a copy of these as they came in? All of them --- well, three of them have been finalized. There are three that are still in draft form up until about the 19th of this month, so we do not think they will change very significantly.

The Operations Resource Group: "The Mission of the Operations Resource Conservation Group (ORCG) is to oversee the development of a robust hydrologic model for the Saluda Project which will establish a baseline of current hydrologic, hydraulic, and operational conditions, and aid in analyzing and understanding the potential upstream and downstream effects of potential changes to project operations, in support of the missions and goals of all other Saluda Hydroelectric Relicensing RCGs. The objective is to fairly consider those impacts, to include low-flow conditions as a part of developing consensus-based, operations focused recommendations for the FERC license application. Model results are to be presented in readily understandable terms and format. A key measure of success in achieving the mission and goals will be a published Protection, Mitigation, and Enhancement (PM&E) Agreement." That Agreement is what we hope to develop and submit with

the final license application. The goal will be to develop environmental enhancement measures, to equally consider all the resources.

The Lake and Land Management Group is another very important group: "The Mission of the Saluda Hydro Relicensing Lake and Land Management Resource Conservation Group is to gather and/or develop information, study and consider all issues relevant to and impacting upon the Saluda Hydroelectric Project Shoreline Management Plan (SMP) and supporting guidelines. The outcome should be the development of a consensus-based, updated SMP for submittal in the Project 516 license application. It should include/consider properties within the Project Boundary Line (PBL) for Project 516, upstream and downstream, and such areas beyond the PBL which SCE&G, through its SMP, can materially influence." As you can see, we are not just limiting to the Lake, it covers the whole gamut of the project.

The Recreation Resource Conservation Group, we finalized this one yesterday: "The Mission of the Recreational RCG is to ensure adequate and environmentally-balanced public recreational access and opportunities related to the Saluda Hydroelectric Project for the term of the new license. The objective is to assess the

recreational needs associated with the lower Saluda River and Lake Murray and to develop a comprehensive recreation plan to address the recreation needs of the public for the term of the new license. This will be accomplished by collecting and developing necessary information, understanding interests and issues and developing consensus-based recommendations." Those recommendations will be, again, part of the PM&E, Protection, Mitigation and Enhancement Agreement.

The Fish and Wildlife Group is in draft form. As I said, I don't think it will change significantly. "The mission of the Fish and Wildlife RCG is to develop a Protection, Mitigation, and Enhancement Agreement (PM&E Agreement) relative to fisheries and wildlife management for inclusion within the Saluda Hydroelectric Project license application. The objective of the PM&E Agreement shall be to assure the development and implementation of a level of integrated management best adapted to serve the public interests. To achieve this mission, the Fish and Wildlife RCG shall identify the need for, define the scope of, and manage or influence as appropriate, data collection and/or studies relative to impacted fish, wildlife, and plant species and ecological communities, eco-systems and/or habitat within the Saluda Hydroelectric Project."

The Water Quality Resource Conservation Group Mission Statement, again, it is also in draft form. "The Mission of the Water Quality Resource Conservation Group (WQRCG) is to develop water quality related recommendations to be included in the Saluda Hydroelectric Project FERC license application. The goal will be to achieve State water quality standards compliance or beyond for Lake Murray and the lower Saluda River. A means to work towards that goal is to identify data needs and to gather or develop that data. A primary measure of success in achieving the mission and goals will be a published WQRCG Protection, Mitigation, and Enhancement (PM&E) Agreement."

Finally, the Safety Resource Conservation Group: "The Mission of the Safety Resource Conservation Group (SRCG) is, through good faith cooperation, to make Lake Murray and the lower Saluda River as safe as reasonably possible for the public. The objective is to develop a consensus-based Recreational Safety Plan proposal for inclusion in the FERC license application. This will be accomplished by gathering or developing data relevant to Saluda Hydroelectric Project safety-related interests/issues, seek to understand those interests/issues and that data, and consider all such interests/issues and data relevant to and significantly affecting safety on Lake

Murray and the lower Saluda River."

All of these Mission Statements were developed as a cooperative group. One thing that I have tried to promote is, these Resource Conservation Groups are open to everybody that is interested in any aspect of relicensing of Saluda. One other item, they typically are held in the day time. And I know it is very difficult for people to take time off from their personal lives; but, we do try to post all of the information on the relicensing web site for those new folks that we have. That is www.saludahydrorelicense.com. There is a calendar that has dates listed when all of these RCGs meet. Anyone who is interested in attending can let Alison Guth know. I believe there is a link on the web site that you can e-mail her; or, you can pick up the phone and call any others, and we will certainly get you in. You need to let us know because typically lunch is catered in, and there are security issues at the gate at the Training Center, which is where we often meet. So, to get through there you will need to let us know. Right now, the RCGs, for those have finalized their Mission Statements, are starting to get into some of the issues, scoping and starting to develop some of the study needs and data requests, and stuff. Also, as part of that we typically hold a number of presentations by State, Federal

and local agencies, and also by private individuals. One of the ones that is identified on your handout says Lee Xanthakos, but it is going to be Gene Delk, who is going to stand in for him, is the operation of Saluda. This presentation has been given to all the RCG Groups, and it is very informative. So, I hope you find it educational.

Right now, are there any questions on the Resource Conservation Groups?

(No response)

Any questions in general?

(No response)

Well, I am going to sit down and I am going to let Gene have it. Like I said, this presentation --- Oh, I'm sorry, Randy.

MR. RANDY MAHAN: Randy Mahan. You will notice that I have gotten a microphone here. And that is for a good reason, not because I like to hear myself speaking. But, this gentleman up here who is making a record of the entire proceedings can hear what I am saying. So, if you have a question, which you are certainly free to ask during the presentation, we would ask you to hold you hand up a little bit like, you know, in grade school. But, if you would hold your hand up so Alison can get this to you, and if you would give your name, again, for the record; and then, just speak

normally, the microphone will pick it up. And we apologize for the little bit of formality because we lose a little bit of that give and take that makes it a real good presentation. But I think you will get the benefit, even though we have to kind of stop and ask that you use the microphone to speak. If you do feel like you have just got to say something and you don't have time for the microphone, at least stand up and speak very loudly so that this gentleman can hear, or they can pick it up on the microphone.

MR. GENE DELK: Good evening, everybody. My name is Gene Delk and I am the Manager of Operations Planning at SCE&G, filling in for Lee Xanthakos. Lee is the Manager of the System Control Room. The System Control Room is basically where dispatch of all of our generation facilities take place. And, a little joke I have with Lee is his job is real easy because we plan everything and plans work out just like they are supposed to. So, he should always have, you know, easy operations. But, that is not really true. But tonight we are here to talk about Saluda Hydro and the operations. But more than that, it is to talk about the Grid. And I am going to flip up some points here of what all we are going to talk about. And we are going to try to give you all an explanation of the Grid, how we work with the

Grid, how the Grid operates itself, the rules of the Grid, emergencies on the Grid, and how we have to respond to them for ourselves for emergencies on our system and emergencies on our neighbors' systems. We will talk about the use of Saluda and emergencies. And one key point that we are going to try to get in here is the balancing of the Grid, which is a very important component that we do instantaneously every minute of every day. So, guys are in the Control Room right now controlling the Grid. So, with that I am going to go in. We have got a microphone there, but please stop me anytime and ask questions because it will be a little better presentation if we can answer your questions as they come up.

What is the Grid? A simple definition is it is a bulk power system. It's the high voltage power lines; not the ones you see out on your street in your neighborhood, not the ones right out here underground feeding this building. But, it's the large towers you see if you go down here to the Dam, and they run out across what is the Cold Stream Country Club, and they go out towards Lexington. It's the large tower lines you see when you are driving around. These large lines are used to connect our generation facilities to one another; they are also used to connect our Control area, which I will get into that some in just a minute, to our neighboring Control areas. We tie with all

of the companies around us: Duke Power, Carolina Power and Light, Southern Company, Santee Cooper. And we will get into a little more of that in just a minute. And power along these lines flows at the speed of light, so it's instantaneously. Lee used an example this morning, you can jump on there and ride across country because we are interconnected all the way up into New York, the whole Eastern interconnection. I wouldn't want to jump on those lines, but those little electrons they certainly do that. This is a map of the whole United States, and the NERC regions. NERC stands for the North American Electrical Reliability Council. I think I have got a little better definition of NERC, and SERC, and VACAR on up. But these are the different regions in the country. You have got a large region out West, the WECC. ERCOT, they are kind of down on their own, that's the Electrical Reliability Council of Texas. And then over on the East side, you have a lot of regions that are all tied together that make up what is called the Eastern Interconnection. We are in this area right down here, which is SERC. And that is our region of NERC. And we are --- SERC, this whole area in blue here, with Florida kind of hanging off down there on their own. This kind of narrows in on that map to the state of South Carolina. You see, we sit right there in the middle, and

then we tie to all the folks around us. I failed to mention SEPA there, SEPA is the Southeastern Power Administration, handles all of the chain of dams along the Savannah River system over there, and others. But, the ones that affect us are right there. We basically serve the lower third part of the state of South Carolina. Our customer base is Columbia down towards Aiken, a little bit over in the McCormick area, and then all the way down to Beaufort, Charleston, and all of that. Have a lot of cross over with Santee Cooper where our lines share right of ways, and things like that. Moving further, we will get into how customers actually set the demands on our system. This is just a picture that was taken at night and it just shows the population densities and how the lights light up around the world. And you can see the Eastern part of the United States, just how dense it is and how strong the electrical system is in that area. That demand, you know, your air conditioner is running, your heaters in the winter time, and your lights that are burning right now, they actually set the demand that we have to respond to in the Control Room with generation. And it is instantaneous; it changes. It has changed in the last two minutes that I have been speaking. Getting on into how Power companies make the power is, you have a lot of different facilities. You have

fossil plants, which are your coal plants primarily. You have nuclear plants, our nuclear plant is V.C. Summer right up the road in Jenkinsville. And then you have hydro, which is what we are here to talk about tonight. Fairfield Pump Storage is a major hydro pump storage unit, which I will get into that a little bit, too. And then we have some other hydro facilities, are just basic run of the River. Pump storage, the difference in that and just the typical dam like Lake Murray is, we can actually release the water out of a pump storage facility, which we do in the day time, and generate with it. And then at night, we actually use our other generators and turn those generators into pumps to pump the power back up the hill, so that we can then reuse that water the next day. That's usually done at night when the demand is lower on the system and we've got extra power to pump with.

Getting into talk about balancing the Grid a little bit, as I said earlier, demand is basically created by the load on the system. And we have generators in place, our neighbors have generators in place; and the objective is to balance your demand on the system with the amount of generation you have. In our Control Area we have measures, we have tie lines that tie to other companies, we have metered measurements on every tie line. And we have signals

in our Control Room that actually measure the demand on the system and how we are in our balance. And, that balance is measured in real time, as Lee says right there in the slide.

The other point I wanted to make right here is, where your meters at home, they run on a kwh, kilowatt hour basis; we are dealing in much larger quantities, thousands of kilowatt hours which is megawatts. So, you will hear me use the term megawatts in a little bit. So, that's just, you know, a larger quantity of kilowatts that we are dealing with. System controllers, who are the folks I mentioned earlier, who are in the Control Room right now, their job is to sit there and respond to changes on the system. Load changes through the day, winter has its pattern, summer has its pattern. A typical winter day --- and we are not having typical winter weather right now; you know, it's seventy degrees out there. But, a typical winter day, you know, at night time everybody is sleeping, they don't have their lights on. You know, some people turn the thermostats down at night, so their heaters aren't running that hard. The demand is kind of low at night time, but first thing in the morning when people wake up the first thing they do is flip on the lights if it's dark outside, because some people get up at 4:00 and 5:00 in the morning. Across the whole area that we operate, that's everybody flicking those lights on,

we can see it start coming in. They go over, and they might bump that thermostat up a little bit because it's chilly. They cut their toaster on, they cut their coffee maker on. So, you see a huge spike come in. And if it's a real cold morning in the winter time, that spike is really high. So, our load number will go way up in the winter time. As people get dressed, go to work, they shut their lights off, they cut the coffee makers and all that off, and we see load actually start falling off. The sun comes up, also, and it starts warming things up on a typical winter day, now. And that load will drop off through the day time somewhat. In the evening when people get home, the same thing happens. It gets dark early, they cut their lights on. So that load will start coming back up a little bit. Typically in the winter, it doesn't match what it is early in the morning because, you know, the atmosphere has warmed up, the sunshine through the day. But then about 8:00 or 9:00 at night, it will kind of start falling off again. And summer time is a little bit different. The morning time, the sun is down at night, it has kind of cooled off; but as the sun comes up, the day starts heating up. So what we see in the mornings is, we will see a little bit of a rise there early in the morning because people are getting up. But as the heat goes up through the day, and those air conditioners start pumping

harder and harder, we see demand just grow continuously all through the day. And about 5:00 o'clock to 6:00 o'clock in the evening in the summer time, we will see this huge spike in demand. And that's the peak of the day, one peak; and then it will start falling gradually off depending on how hot it is. On a real, real hot day, it takes it awhile; it hangs in there until the sun goes all the way down. And then it just kind of falls off, and then through the night it is at a lower level.

Any questions on that at all?

(No response)

Okay. Getting back to the balance question. Each Control Area, and a Control Area is basically an electrically metered area, is responsible for their own load in their own system, and having the generation resources to match that load. You will hear me say "load", "demand" and "load" are the same thing. But on this example, we would have a demand on our system of 4,000, and we need to have generation on our system of 4,000 to be perfectly in demand. Duke, they have got a Control Room, they are doing the same thing up there as are the other Control Areas. 365 days a year, 24 hours a day, you have got guys in the Control Room monitoring the system, dispatching plants to meet that demand, which changes all the time. It is always changing

in some magnitude. On the generation side, which you will hear a little bit later, you know, you have got machines out there that are generators. And those generators have problems. A generator might fall off line. If we lose a generator, the demand is still there, we have got to replace it. But this right here would represent a perfect scenario of balance for our Control Area.

As I just mentioned, when you get a change in generation you get changes in the Grid. The Grid, as I said, was all tied to one another. And because we are all tied to one another, we don't just control for ourselves but we affect our neighbors. So, when generation is lost in our system, is the demand generator in balance? So, we have got to have generation to pick up. Well, instantaneously we can't just flip a --- you know, when that generator goes off, we don't just have another generator come on to take its place. But because we are tied to other Control Areas, the system kind of picks itself up, and we kind of work with each other. The same thing happens for Duke. If they lose a generator, there will be megawatts that are transferred from our system towards them that help actually control the system and keep the Grid stable. On this example, with the load of 4,000 generation, we lost 1,000 megawatt unit. And just for example, we are going to say we lost V.C. Summer. We have a

measure down here in the bottom right corner called ACE. That stands for Area Control Error, which is what that System Controller sits there and monitors. He has got a big chart up there in the Control Room. I don't know, I think Lee has taken some folks on a Control Room tour. I don't know if anybody is here --- you have been there, so you have seen that. But we have got a big chart up there. And ACE has a certain boundary that we can keep it in. If you lose a major unit, that ACE chart is going to go negative, and they are going to have a big, red flashing light come up. So, that System Controller knows that he has got to do something to get the system back in balance. And his job is to sit there and monitor these alarms, and these charts. He has got charts for all of his power plants up there that will alarm him when there is a problem. And when the ACE goes negative, what happens instantaneously is power starts sucking in from our neighbors. Their generators are responding to push load out to kind of keep the system in balance. And so, what we have to do is, within a fifteen minute period --- and I will get into more of that in just a second. We have got to respond to get ourself back in balance. To take the example further, and these are just sort of hypothetical numbers that we have thrown in here. But when we lose that 1,000 megawatt unit in our system

right here in the center, instantaneously we get an in-rush from our neighbor. And if you add those up, and just for example, we might get 350 flowing into our system from Southern Company. 50 may come from SEPA; but let's say SEPA didn't really have it, they may actually be pulling that same 50 in from another Control Area that they are interconnected with. The same with Duke, 250 might be coming from them. From CP&L we may see a change on the power lines where we are pulling in 200 megawatts right here. Well, they may be pulling in 150 from the neighbors to the North of them; so they may be supplying 50 and then pulling in 150. But all in all, instantaneously it balances itself out. But when that happens, we are depending on our neighbor; and, that's not really the way you run the system. We have got rules that we have to live by; so we have to come back and balance the system to get off of being --- pulling all this power in.

What that was, the difference between the demand on the system and the generation on the system when they are not perfectly matched - and they are never perfectly matched - is called imbalance. And here are some reasons basically for imbalance. As I said earlier, these power plants are machines and they break down. You know, you have got components out there. We have tube leaks in a boiler, you

know. You have got a lot heat in there, a lot of water, you know, being made into steam. And it's just wear and tear on the boiler. So, we have tube leaks and that causes the unit to go down. Fuel problems, one of the problems we have had with fuel is, on a cold winter morning, you know, fuel in a line running from a tank out in a tank yard over to the diesel turbine that is trying to run, well, it gets cold, too. And we have had problems with the fuel not wanting to flow very well. So, we couldn't keep the turbine on. Imbalance could also be caused by power lines, if a tree falls into a line. On transmission right of ways, you have got large, open right of ways that hopefully the trees won't fall into. But from time to time, you know, an insulator might break on a power line; because that is equipment out there, too. But when there is a disruption in the flow along a power line, you can have an imbalance also. That would be more of an imbalance on the demand side because you would lose load off your system, not generation. In that instance we might have too much generation and we would have to back some generation down. We also, because we are trying to run the system in the most economical manner, we go out and buy power from time to time. As I said earlier, we are interconnected with all the companies around us, and they buy power from us, and we buy power from them. And

everybody is trying to run their system with the most economical units. But sometimes when you are buying that economy power, it might be that you are buying too much, and the load's lines might load up. Well, when lines load up, the Security Coordinator, which is there to basically handle the security of the whole Grid, they might call what is called a TLR. And I'm getting into some specifics that probably don't interest you. But what TLR does is, it basically cuts the transaction. So, that cheap power we were bringing in is no longer available. Well, when something you are bringing in, generation from outside, is no longer available you have still got demand, so you have got to replace it. So, you have got to get your generator back on line. That imbalance that causes that has got to come back into swing. Probably said some of this, I'm not really looking ahead at these slides. But, in a case when you do have an imbalance, you basically increase generation or you reduce demand, you know. Reducing demand is shutting lights off. Well, we are not in the business to shut lights off, we are in the business to keep lights on and keep the power flowing. So, naturally what we would prefer to do is increase generation. Reduction in demand is something that you would do in an extreme emergency, such as the Northeast black out that they had a few years ago up in --- I guess it

started in Cleveland. And this is what? I guess this is New York City after the black out. As you can see, it's getting dark and no lights are on. Thankfully, I am going to knock on wood, we haven't had that happen in the Southeast. So, we like to think we are doing something right. And a lot of that is because we have really --- the companies we tie to, we have really good working relationships with those guys, and we all depend on each other. I keep talking about a change and a loss of generation in our system, and others helping us, well, it goes the other way, also. They lose power plants on their systems and we try to help them at the same time.

Getting into the Grid rules and who sets them, and what they all mean, as I mentioned earlier NERC is the North American Electrical Reliability Council. And coming down this left column, below that is a region of NERC which is called SERC, which is the Southeastern Reliability Council. And then underneath SERC is sub-regions within SERC, and the sub-region we are in is called VACAR. It's the Virginia, Carolinas sub-region. VACAR is made up ourselves, Santee Cooper, Duke Power, Carolina Power and Light, and Virginia Power. Over on the right, the rules, NERC has over 800 Reliability Standards. And they go from the planning standard side all the way through the operating

standard side. And we have to live by those standards. It governs things such as how do you respond to a tree in the transmission line. You know, you have standards on how do we recover from an emergency. What kind of time do we have to recover. Things like that. Coming on down, SERC has actually compliant sub-committees that basically monitor the compliance with those standards that NERC puts out. And then, at the lower level, which is where all the task forces are, we have task forces in VACAR that basically come up with a governing agreement for how we are going to work with our neighbors, how we are going to work with the guys around us to meet these standards and agreements that we entered into. As I mentioned earlier, balancing is one of the big things you have got to do. You need to balance your demand with your generation at all times. One of the standard BAL 002, and you can guess what BAL stands for. This is a NERC numbered standard. Basically, that's what governs how we --- what we would need to do and how we use Saluda to do it. It says at a minimum the Balancing Authority or Reserve Sharing Group

--- and that's an important point right there. I use the term Control Area. That's actually an old term. Just about a year ago NERC came up with some new standards. We used to have policies, and they changed the policies to standards,

and they changed the acronym from Control Area to Balancing Authorities. So, you will hear me uses the old term because it's real hard to get used to the new ones. But, it says as a minimum this BAL 002 --- says that Balancing Authority or Reserve Sharing Group shall carry at least enough contingency reserve to cover the most severe contingency. All right, what that basically says is, you have got to cover --- you have got to have enough generation in reserve to cover the worst loss onto your system that you can have.

It just so happens on our system at V.C. Nuclear Plant, that's our largest unit on our system. So, one way of meeting BAL 002 for just our Balancing Authority would be to hold 1,000 megawatts of generation on stand by at all times.

That's expensive to do that. We have an option in the "or" statement there, which is a Reserve Sharing Group. We are a member of a Reserve Sharing Group, and I will get into some of the specifics of that to help you understand how it works. And, again, I am ahead of myself. But this is V.C. Summer Nuclear Plant, a right pretty picture there taken at night. It generates 1,000 megawatts, which is enough power to heat 1,000 homes for one month. As I said, we don't want to carry 1,000 megawatts in reserve because that's expensive. To avoid it, we actually are entered into contracts and agreements with our VACAR partners, Virginia

Power, Carolina Power and Light, Duke, Santee Cooper, and ourselves; and it is called the VACAR Reserve Sharing Group.

Collectively as a group, we carry 1,500 megawatts in reserve, which is equal to about one and half times the largest unit in VACAR. I think it is one of the Duke units, and the numbers are a little bit rounded. V.C. Summer is just a hair under 1,000; and I think Duke has got a unit, it was Catawba, they upgraded one of their other units so it's a little larger now. But basically, we all as a group, instead of carrying one times our largest unit, as a group carry one and a half times our largest unit. When it breaks down by formula --- and the Reserve Sharing Group is based on the load of your system and the amount of generation you have on your system, or your largest unit on your system. In the Reserve Sharing Agreement, we have to carry 200 megawatts of the 1,500. And I think --- I wrote these numbers down earlier. Virginia Power and Progress, they carry roughly 350 each. Duke carries about 550; naturally they have the larger nuclear unit, larger load on their system. So, they have to carry the Lion's Share of the reserve. And then Santee Cooper is about like us, we both carry about 200 megawatts. Having reserves on your system is there for emergencies. And most of the time when you are not having a problem, that 200 megawatts is just kind of

sitting there waiting; it's waiting for when that event does happen for you to respond to that change in generation, to keep yourself back in balance of demand. Now, there are other reasons a unit like Saluda might run. You know, they have rain coming in and all that, so --- but most of the time, from a reserve standpoint, it's just kind of sitting there and we're counting.

Getting into a little example here, or basically stating how emergencies happen on the Grid, and I might have said this earlier. If generators trip, the Balancing Authority, or Control Area as I used the term earlier, we have got to recover in fifteen minutes from that event happening. That's one of the NERC rules. You know, if instantaneously we would lose that generator, yeah, our neighbors were going to help keep us up for a little bit. But we have to recover from that loss in fifteen minutes. And on our system we only have a few units that can actually respond to give us that 200 megawatts in a fifteen minute period. Going a step further, that we don't have on a slide, is not only do we have to recover in fifteen minutes, but let's say we do recover we've got to --- and we would use our reserve to do that, plus maybe our neighbors, you know, if we lost a large unit. And examples, I am going to show you in a little bit our larger units. We have got to replace

those reserves ninety minutes following the event. So, if we use our reserve, emergency recovery, you get back in balance, you probably used your reserve to do that. Well, ninety minutes later you have got to get reserve again. Because ninety minutes later you might have a neighbor trip, and he may need reserve to help. How all this is measured is basically we have come up with compliance reports that we do with VACAR and those have been generated on a quarterly to SERC. And SERC compiles them and sends them up to NERC. A little bit more on that, if the event happens on our system and we call on reserve from say Santee Cooper, then we will be obligated to generate a report, send it to Santee Cooper, they have to fill the report out to make sure that --- to show that they recovered in order to ensure compliance with the standards that are measured. Probably the easiest way to explain more of this is just to go through an example here. Williams Station, that's a big plant we have down in Charleston area, somewhere around Goose Creek, Monck's Corner --- below Monck's Corner. But it's a fossil plant, burns coal. And it's 600 megawatts. When a plant falls off line, or has a problem, comes off, we call it a trip. And if we were in perfect balance and all of a sudden we lost Williams Station, our ACE would go negative 600. So, we have got a problem. That big red chart up there

would go to flashing. And the dispatcher sitting there, he would respond. And he has got fifteen minutes from that event to get 600 megawatts back on the system to get us back in balance. You know, one option would be he could just go open a few breakers and drop 600 megawatts load. As I said earlier, that's not what we want to do. We want to go generation on line to keep everybody's lights on; you know, keep the employees working at the plants that are running. What we would do to get 1,500 megawatts, and this is just an example, we have got Fairfield Pump Storage up here, and if this happened in sort of getting close to a peak of the day, we may cut on a couple of units at Fairfield to give us 150 megawatts. We can get those dispatched very quickly. We have got folks up there at Fairfield sitting in the Control Room that can flip the switch and get them going. We would call on 200 megawatts from out here at Saluda. And our dispatchers in the Control Room can actually start those units up from right there at their desk. Well, we are almost there, but we need some more reserves, and that might be really all we have got that's quick that we can get on. So, we would call Duke and get 250 megawatts from Duke. And that would get us over that hump in that fifteen minute period. Now, when we call Duke to get 250, well he is carrying 550 in reserve, but he is just going to use his

reserve to supply it. And then to get off of that in ninety minutes, we are going to have to go and buy power on the spot market, or get another unit started. We might have another unit that's slower to start that we can get cranked up. But we would need to get 600 megawatts back very quickly to get off of our reserve and to get off our neighbors' reserve.

Another example here would be, let's say CP&L called us and they had lost a unit, a small unit, 150 megawatts. But we are obligated to supply 200; so, we would ship them 150 megawatts instantaneously, or as soon as they called it. The one minute ramp that he has got there, that's basically how you actually tag the transaction into your neighbor's Control Area. And you come up with an agreed upon amount of time that, you know, you are going to go up, and it's going to affect his ACE. But when we put that instantaneous ramp in, our ACE is going to go down because we are supplying more generation off of our system, so it becomes 150. So, now we have to recover, because our ACE just went negative for helping supply our neighbor. And so, in order to replace that 150, we are going to load up Fairfield, and we might load up one unit at Saluda; but I know there's an example here because I did cheat and look ahead. Is that enough? Well, one of the small units at

Saluda is only 35 megawatts. So, if you have got one unit at Fairfield that's 70 and one at Saluda over here that's only 35, you wanted 150; so the answer is, no. You have got to put one more of the units on at Saluda. And then that gets you off over the hump.

That's just two examples, and they seem, I guess to me, pretty simple because we live it every day. And I don't know if it's simple to y'all. But, that's really how it happens. I mean, we respond to problems on our system and we help our neighbors respond to problems on their system. The whole Grid is interconnected and it's there to kind of keep itself up, and to not let anybody fall off. And then after the fact, we actually all do report to one another.

Let's get into more --- I guess why y'all are here, probably more interesting for y'all would be, why Saluda? Well, Saluda --- I like to use the term from our standpoint in the Control Room, Saluda is like a bread and butter. You know, it's a unit that comes on, it's water, water flows by gravity, spins those turbines, and pretty much all the time we can depend on it much like our units up at Fairfield, unlike some of our other generation that doesn't respond as quickly. V.C. Summer --- well, if you need 200 megawatts in fifteen minutes, it's about 13 megawatts per minute that you need to be ramping up. V.C.

Summer, let's say it was back down for some reason, which isn't normal in a nuclear plant. That's your base load unit, the cheapest thing you have got on a system; you want that load at all times. But if it was back down and you needed some megawatts, you could call up there but you are only get about 1 megawatt per minute. And in fifteen minutes that ain't going to help you out a whole lot. Our coal plants average about 5 megawatts per minute. You know, coal is back down sometimes. But there again, only 5 megawatts a minute, you don't get a lot of that quick response. Quick start turbines certainly would help. But, as I mentioned earlier, there is issues with mechanical machines. And from our experience, the quick start turbines, you know, you've got fuel that has got to flow. It's an engine, you have got to get it started, it's got to turn over and start. They don't run a whole lot, so you have got to hope it's going to start when you crank it, you know. It's not like something you run every day; you get in your car and drive every day. So, they are not as reliable as your hydro resources are for responses to emergencies. A little bit --- what I mentioned earlier is about the reserve being off line, there's a lot of times at night, load drops off at night. And in weather like we are having right now, it is so non-typical. We have got power plants off line right now because there is not

enough demand on the system to have all of those units on line. So, what we are actually having to do this week in addition to keeping units off line is, we are actually backing our steam plants down to their minimum. Williams Station, as I mentioned earlier, is a 600 megawatt plant. But you can't just shut Williams down tonight and have it back tomorrow morning. You know, these big coal plants don't operate like that. It will only back down to about 450 megawatts; so, that's your minimum run. And when we say we have got minimum problems, that's because we have backed everything we have got down to minimum, and we have still got too much generation on our system. So, that's just a point I wanted to bring out about the weather this week. The other thing that I had a note down here to mention is, if you are holding reserves on one of these coal plants because it's backed down --- so, let's say Williams, we've got it backed down to 450 and it can do 600, well, you can do the math and see what you can get in fifteen minutes, which isn't a whole lot. But, if that is the unit that trips, guess what? Your reserve just went away with it. So, that station doesn't really do you a whole lot of good for reserve.

A little bit of review here. Generation trips, they happen at any time. They can happen tonight at

midnight. And to give you another example there with the use of Fairfield Pump Storage up there. At night time what we do, as we back the steam down, we will start pumping at Fairfield Hydro, Fairfield Pump Storage. Well, when we pump up there that puts more demand on our system, so we have got to have more generation. But, the way we do that is, as load drops down instead of backing your generators on down, we might start throwing pumps on to balance it out. So we will start pumping some water back up the hill. At night time, if we lose a major unit at night time, and let's say it's a 600 megawatt plant, well, we could be pumping 600 megawatts up at Fairfield. Well, the way we recover there is, we just shut the pumps down. We don't have to run Saluda, we don't have to ramp anything else up, we have just gotten rid of 600 megawatts of load, so we are back in balance. So, that's kind of a little trick we can use with the Fairfield Pump Storage that is really good for companies, Control Areas Balancing Authority, to have pump storage facilities.

But, on into the review, generation trips can happen at any time. There is always exposure because there is always machines that are running. Summer afternoons and winter mornings are the most likely times because that is when your systems are peaking, that's usually when you have

more units on line, so you have got peak conditions that you are trying to respond to. There's many factors that can cause that interruption of generation. And, you know, we get a few mornings, we might have a plant operator call us and say, "Hey, I have a tube leak that just sprung out. I have got to bring this thing down to the minimum." We try to get them to hold on as long as we can, but the longer you run those units with a tube leak the worse damage you can cause to the actual boiler itself. So, you don't want to cause more damage because that's going to be more time without that unit on line. But as far as Saluda, when we need it, it's 200 megawatts, it meets our reserve sharing obligation which is exactly 200, by chance. And it's very reliable, and it helps us to respond to emergencies when we need them, when we don't have other units to do it with. That's really I have got in the presentation. You guys are very nice in not asking questions, but I guess we ought to open it up now. I feel like I flew through that, but if you folks have got any questions, I will do my best to answer. If not, I am going to point to Randy.

MR. BOB REAM: I'm Bob Ream, and I am just a homeowner attending out of interest. And, understanding your Grid and everything was very helpful. What didn't come out of it, to me, was what is the sensitivity of the amount

of power coming from the Dam? To put it in simpler words, if you have a billion units of something and the Dam represents one unit, it's sensitivity on the system isn't very much; and in that, it doesn't give you an appreciation for how much the Dam impacts on that Grid. Is it a substantial volume? How much of a reserve is it? Does it make a hundred units when you are trying to recover 200,000 units? That really doesn't come through to the listener.

MR. DELK: Let me go to the demand on our system. Our peak load occurred about last August. And I don't know the exact numbers, but seems like it was about 4,800 megawatts. But, 4,800 megawatts would be the highest peak demand we have ever seen. So, we need 4,800 megawatts of generation. The Saluda would be 200 megawatts of that 4,800. But from a generation standpoint, we can add up 1,000 up at V.C. Summer. Getting a little specific here, but we only get two-thirds of V.C. Summer because our friends down at Santee Cooper own the other third; so, you know, we don't 1,000, we get 760, or whatever. But then we go to --- Williams Station is another 600. So, we can stack all of our, you know, the resources that we have, the generation resources, and add them up. I mean, 200 would be Saluda versus our peak demand of 4,800. Is that kind of what you are asking about?

MR. REAM: To me, as a listener, it doesn't sound

like it's enough (inaudible).

MR. ALAN STUART: Alan Stuart with Kleinschmidt. You maybe do have that 4,800 at peak demand, you still must maintain 200 megawatts in reserve somewhere.

MR. DELK: Oh, yeah.

MR. STUART: So, if everything is exhausted, they have to maintain 200 megawatts as part of the Sharing Agreement.

MR. DELK: Yeah. Maybe I didn't get clear enough on the Reserve Sharing Agreement. The Reserve Sharing Agreement basically, which looks at the whole reserve sharing group; and it divides up the amount of generation that each Control Area needs to hold at all times to be able to recover from the loss of one and a half times the largest unit in the Reserve Sharing Group. And our portion of that is 200 megawatts. So, we have to have 200 megawatts on standby all the time to respond to changes on our system and our neighbors' system because of the Agreement. Now, 200 megawatts is a lot better than having a whole 1,000 megawatts, or 765 megawatts, or 780, or whatever the number changes, you know. Because, it's simple economics, you know, you don't hold something sitting here that you are not running it, it's just sitting there on standby, and you run it if you need it. So, would you rather have 200 that you

have got to hold there? Or, 765? We would rather be the part of this Reserve Sharing Group and only have the 200.

MR. REAM: So, is it fair to say that the Saluda Dam, then, is the majority of the reserve that is your primary source of reserve?

MR. DELK: You heard me use the term, and this is my term, I kind of coined it because I work in the Control Room. It's the bread and butter, because it --- you know, we don't normally operate Saluda to serve load, it's usually sitting there on standby all the time. When it is run, it's usually --- I mean, there's other reasons it runs. We are running right now because we have got to get the Lake level down, you know, to do the work on the --- what is it, the rip rap along the road there. So, you know, we are running it right now. I think we are running it at about --- did you see today, was it 100 megawatts or so? To try and get rid of that water. So, if we are running it at 100, then yeah, I have got another 100 sitting there that I can count towards reserve, but I have another 100 megawatts that I have got to have somewhere else so that I will have 200 megawatts that I am not running anywhere. But it just so happens that most of the time --- and another example, when we would run Saluda, that Lee used this morning is a very good example. When we have these storms coming up, you know, hurricanes or

these tropical storms coming up out of the Gulf that might dump a bunch of rain on us, well, the first thing we do is to start calling Bill Argentieri when the thing even comes on the weather channel, and say, "Hey, you need to start running your models and tell us how much water is going to come in the Lake." Because, you know, if the Lake level is up at 355 to 358, or wherever, it doesn't take a whole lot of rain to keep it going up; and, you know, we don't want a flood. You know, that 360 there that is our limit. So, we will start actually running ahead of time to try and get the Lake level down to make room for that rain that's coming. Now, you know, what typically happens, we start running it because these models are predicting that the flood is going to come our way and we are going to get, you know, six or eight inches of rain dumped on us, and the Lake level is going to spike up. So, we try to start making some room, you know, head room in there. And Duke, if it's raining up at Lake Greenwood, you know, they are going to start opening their gates and start, you know, piling a bunch water down into us. So, we have got that coming down. And I think your model takes all that into account. Correct? So, you know, we will run it then to make room for that water that's coming in. You know, as typically happens sometimes, we'll start running like crazy and drop the Lake a few inches, or maybe

a foot; well, that tropical storm turns and goes the other way, and we don't get one third of what we thought we would get. But, if it does come, we have gotten rid of the water and the Lake comes right back up to where it is? Well, you know, we look pretty good. We don't control that weather, you know. But, to your point about the 200, if we are running Saluda, we have got to have the 200, the total of 200, somewhere else. And it's usually at Fairfield or Saluda.

MR. TONY ZANDEREJ: You talk about your 200 coming out of Saluda, to get the 200, what does that bring the Lake level down? Per day? Per hour?

MR. DELK: You know, I would argue that when we run it for emergencies as I just mentioned, we crank those units up to 200 megawatts to respond to an emergency, well, we have got to get off of that in ninety minutes. Because, we have got to have our reserves back. I don't even think, I mean, I don't think you will see it for the emergency --- It's a very, very small fraction. You probably could see more evaporation in the summertime. You know, with the drought we had what? Three years ago, now? And we were sitting having conversations with Duke Power every day about, you know, "What are you going to do at Greenwood? Are you going to help us out? Are you going to put some water in

the Lake?" We weren't running the Lake at all, and I mean, it was dropping, and it was pure evaporation from not having any rain coming.

MR. ZANDEREJ: Is there a lower level when Saluda no longer becomes reserve? Like if it gets down to 354 in the summertime?

MR. DELK: Well, I think that number --- that number right now was 345.

MR. ZANDEREJ: 345 is when you would stop the Saluda Plant?

MR. DELK: Now, I say that. You have got the River downstream, you have got to keep flow, so --- but I mean, you have got leakage around the units that keep that. Now, Bill knows those numbers of what you have keep flowing, I mean, you know, to keep the River going.

MR. ZANDEREJ: I'm doing it backwards. But for the record, my name is Tony Zanderej, we are just a homeowner. We used to live on Lake Lanier, and Lake Lanier seemed to, when there was drought, would just go way down and they would keep it down.

MR. DELK: Is that Duke, sir?

MR. ZANDEREJ: No. It's actually --- it's not a generation plant. Over in Georgia. Yeah, it's Army Corp. So this lake wouldn't go down, and you would keep it down

for creating generation in the middle of the summer, or something?

MR. DELK: No. Like I said, Saluda is mainly our bread and butter for reserve. We don't dispatch it every single day, you know, to meet that demand that I told you about that comes in every morning. We have got other units that we are load --- that's called loads following, is what you are getting into, which is, you know, what units do we run to meet demands on the system on a daily basis? Now, if we have to do something like we are doing right now, we have got to get the Lake down, well, yeah, it's going to serve some loads; but that head room that is not running right now, well, that we don't count as reserve. But we have got to go get the rest of our reserve from somewhere else, though, here. Yes, sir. I think she wants you to get the mike.

(End of "A" side of tape)

MR. TED TSOLOVOS: If you are running 17,000 ccs down the Saluda, whether your are running ---

MR. DELK: Say your name, please.

MR. TSOLOVOS: Ted Tsolovos, with Trout Unlimited.

Whether you are running 17,000 ccs, or 8,000 ccs, you are only getting 220 megawatts? It doesn't matter? I mean, is

there a formula there for the amount of water going down?

MR. DELK: Bill needs to talk about that. I look at megawatts. You know, we want to keep the lights on.

MR. BILL ARGENTIERI: Bill Argentieri, SCE&G. Megawatts generation equates to cubic feet per second. So, 18,000 cfs, cubic feet per second equals about 206 megawatts. If he is only using 100 megawatts, then we are going to be looking at 9,000 cfs. So, that the amount of megawatts that we are using reduces as the --- no, the cfs reduces as the amount of megawatts reduces.

MR. TSOLOVOS: So, I'm sorry. If it's 9,000 it will be ---

MR. ARGENTIERI: Equal to about 100 megawatts. 18,000 would be equal to a little over 200 megawatts.

MR. TSOLOVOS: At least when I am out there, I am going to (inaudible).

MR. ARGENTIERI: What's that, now?

MR. TSOLOVOS: So, if I am out there fishing and I get caught out on the island, or something, briefly how much electricity is burned.

MR. ARGENTIERI: If you can measure cfs while you are out there, yeah.

MR. DELK: You might just impress your friends, say, "Hey, you know, I think somebody just lost a power

plant somewhere."

MR. KEVIN CLOUD: I am Kevin Cloud, I am with Trout Unlimited. And, you mentioned Fairfield and the Saluda, what makes --- are there other plants producing?

MR. DELK: Producing? Oh, yeah. I mean, we can go through the list. McMeekin Station right down here, the big coal pile you see right beside the Saluda facility, that's two units, 125 megawatts each, 250 megawatts of coal plant; Cope station down outside of Orangeburg, between Orangeburg and Bamberg, 415 megawatts, coal; Williams, we mentioned that. Urquhart --- down in North Augusta, got one coal unit and combined with cycled gas facilities there. Our newest plant, Jasper, which is down in Beaufort --- what's that? Jasper County. But, we just put a large combined cycle unit down there, three gas turbines with one steam turbine. We have got a lot of little turbines, you know, scattered around the system. You know, in an electric system, and we didn't get into all the voltage, and how you have go to keep the voltage up, and all that. But, you want your generation dispersed and spread out because of us keeping the voltage up and keeping the lights bright, and all that. I didn't get into frequency and all that, but we could, you know. If we were out of balance --- this is something that I learned in the Control Room, which I thought was pretty neat. But,

if we are out of balance and it's because we are generating too much, and let's say everybody, all of our neighbors were out of balance, you know, the whole Eastern interconnection, every Control Area decided, "Well, you know, we are going to run a little high today; we are going to get up above our -- - our ACE is going to be positive and not zero." What happens is, the frequency of the whole interconnection - because we are tied together - starts creeping up above 60 cycles per second; and it might be 60.01 or .02, and on up. Well, what that causes is, your clocks to run a little faster in your house; so we actually would be speeding the time up. And, that's true. I mean, we have actually --- we entered into --- there is a time correction monitor for the Eastern interconnection that's AEP, American Electric Power Company; and they actually monitor the interconnection frequency and then the time component. And we actually will enter into time corrections where we will put a little offset into our ACE. Everybody in the Eastern interconnection will do it to get our clock time, our electrical Grid clock time, back on the atomic clock time. So, that's monitored in the Eastern interconnection. Yes, sir?

MR. JAY SCHABACKER: I am Jay Schabacker, a homeowner on the Lake. And I didn't have a lot of the

knowledge that you have as I walked in here; and so, I was under the impression, maybe I still am, that Saluda is the coal plant, plus the water generators. So, you may have to correct me and tell me how much you generate in the coal plant, and how much you generate in the water generator. And, explain that little bit.

MR. DELK: Okay, you want just those two units? Do you want to understand that? Is that what you are asking?

MR. SCHABACKER: Well, tell me about the coal plant.

MR. DELK: There are two units right down --- you are talking about McMeekin Station, there is two units there. Coal fired boilers, 125 megawatts each. We run those pretty much full boil, wide open. That's what we are serving load with right now.

MR. SCHABACKERK: They are not related to the ---

MR. DELK: No, no. They are completely different facility, different operators. You know, when we have got to dispatch --- you know, when we want ramp a coal plant up, we call the operator at that facility and get them to ramp it up. Like right now, you know, it is getting dark outside, people --- well, some people are going to bed right now, I guess. But what happens is load is actually dropping off right now. So, what the guys in the Control Room are doing

right now is, as load drops off, well, he has got this generation on line; well, he has got to get back in balance; so, he is calling our power plant, and he is doing it on --- he's trying to do it on the most economic basis we can. And he is calling the most expensive unit we have got on out there, and he is saying, "Okay, back me down 50 megawatts."

And, you know, a load may have only dropped 20 right now, but he knows it's going to continue to drop so he will get that steam plant to back down 50; and then load is going to kind of come back, and keep coming down, keep coming down, and he will be back in balance. And he will do that all through, til later on tonight. And he will get all of his units back down to where he is basically as low as he can get his units. And then he is going to start pumping at Fairfield. He is not pumping at Fairfield tonight, I know that because there is not enough demand on the system right now to necessitate us pumping expensive, you know, water up the hill and creating an expense. So, we won't be pumping tonight, we will be backing those units down as low as we can get. What that is also going to cause us to have to do tonight is, the water that we have been running at Saluda to try to get rid of, well, if we don't have the pumping load, we are going to have to shut those units off at Saluda. And it will be shut down tonight. Now, tomorrow morning we can

start those units back up as the load comes in to try to keep getting rid of that water.

MR. SCHABACKER:: Someone said to me --- explained something to me, quite awhile ago which is not the way you are talking about it right now. And that was maybe incorrect. But that was, well, the Saluda Power Water Generation Plant, we use that when --- ramp it up when the other coal plants are down for maintenance, or something or other. In other words, your output from the Saluda is variable depending upon the needs of the others. It was a little bit different than what you said.

MR. DELK: Do you remember the name?

MR. SCHABACKER: And the other alternative is, it seems like the generation from the water generation, is that pretty constant? I mean, you don't stop and start it? It's pretty constant? In other words, you are not fluctuating the power upward from the turbines too much?

MR. DELK: No, not on --- like, what we are doing at Saluda right now, I think we --- I wasn't a part of the actual plan that was developed, but we are trying to get the Lake level down. And I think the plan was, "We will start those units up, get them to a certain level, and just run it there all day." Does anybody else know --- Mike, do you know?

I think it's 100 megawatts, you know, all day long, leave it right there and let it run all day, and let's get rid of some of that water. But, no, changes in demand, you know, that's --- and our response is called load following. We are trying to follow that load. Now, you say hydro. See, we consider hydro to be Fairfield. So, to your statement, yes, we do use some hydro to follow load. Fairfield is our prime example up there because we can start a unit as the load comes in; when load gets on up, and that first unit is maxed out, yeah, we will go start another unit at Fairfield. But, typically, we don't do that with the Saluda Plant here. And then, our other hydro facilities are run of the River; so, whatever the River is giving us at that time, that's the generation you are getting. Okay?

MR. GREG ATKINSON: Greg Atkinson. And maybe the gentleman with the model, if it's going down to 345, how long is it going to be there? And, theoretically, how long in turn would it take to fill back up to a normal winter level?

MR. ARGENTIERI: Bill Argentieri, SCE&G, again. We normally don't take the Lake down to 345. The normal operating range is between 358 and 350. The only time we would take it down to 345 would be for a maintenance activity. So, if we ever took it down that long, it would

be down there based on --- it would be down at that elevation based on how long the maintenance was going to take. Whether the maintenance be on the Dam, the spillway, the intake tower, wherever the maintenance activity was required. As far as filling back up, that is all based on Mother Nature; and if there is a lot of rain, it will fill up quickly. If we don't get a lot of rain, it will take longer to fill up.

MR. ATKINSON: When is the process --- should it be finished this time, to start the process?

MR. ARGENTIERI: For why we are drawing it down at this time? We are looking at a six week window to do the actual work, once the water level is down to 348. So, we are shooting to have that --- the Lake level down to 348 by sometime next week. So, we should have that actually sometime early next week, it should be down there. And then a six week window to do the work; and then whatever it takes as far as the rainfall that we get to bring it up. Normally, January through May is our rain season. So, in a normal year we should have enough rainfall to bring the Lake level back up to normal Summer levels, which are 358.

MR. DELK: I think there was one over here.

MS. SUZANNE RHODES: I am Suzanne Rhodes, with the Weather (phonetic) Federation. It's sort of a different

kind of a question. But, it seems to me in the past we have heard a lot about brown-outs. And even with the drought over the last two years, I haven't seen that much about brown-outs. So there are kind of two questions. One is, is it because you have refined the balancing? Or, the other is, what percentage of your generation has the failure --- or, how does demand and generation have to separate itself before --- where are the brown outs?

MR. DELK: I don't know. I mean, luckily, we --- and like I said, in the Southeast, you know, we are pretty proud of the way we have handled the Grid in the Southeast.

We have got really good working relationships with Southern Company, who is huge. Now, they cover Georgia all the way to Mississippi, Alabama, and all those states; and Duke, which is getting bigger and bigger. So, you know, we do have problems. We do have loses of generation. But fortunately, we have had reserves on line, and we have been able to use our reserve and our neighbors' reserves, and we haven't had to drop any loads. You know, one of the things in the blackout that --- you know, and we have looked at many, many reports of the blackout; and a lot of changes are going on on our side of the business in response to the blackout. But that blackout, in our minds, could have been prevented. The events that started that blackout started about 1:30 in the

afternoon. The blackout in the Northeast didn't occur until about ten minutes after 4:00. But there were some lines in the Cleveland area that started loading up; and when lines load up, the lines heat up, and when lines heat up, they sag down. And what happened is, they started loading up and the line sagged down. And that was because they had some generators that were off line in the Cleveland area that would have been supplying loads. Those generators were off, and it was requiring power to be pulled in more than the lines could handle. So, you had lines tripped off. Well, when one line trips out, it is not carrying load; that load that is still being served is being carried by other loads; because, as I said, we are all interconnected. But, I know I'm getting --- we haven't had the experience with the problem, thank goodness. But we do have mechanisms in place that if we did see an event occurring, you know, we could go --- and the Controller is sitting in the Control Room right now; he can open a breaker, and he can --- you know, we control the Grid, we don't control your city streets, but he could open a breaker that wouldn't just shut down one street out here in Irmo; he could open a breaker that would shut down all of Irmo. So, we would see --- an instant relief is what we could get, if we got into that emergency. You know, we haven't ever had to experience that; but we do --- we

train our dispatchers, our System Controllers in doing that so that they are ready to do it. Because, if dropping load saves the Grid, then that's what they have the right to do. Matt Bullard, sitting here, works for me, he is a NERC certified System Controller. And we all have to be certified in these NERC standards; it's an exam you have got to go take. And you know, you were in training today. Right?

MR. MATT BULLARD: Yes, sir.

MR. DELK: And we go through training every month on different things to make sure these guys are ready to respond when those events happen. Because, you know, when they are sitting up there in the Control Room monitoring the Grid, they have time to pick up the phone and call a manager, or call a vice president, or call anybody; they have got to respond and take action right then. And that's what they are --- we have a written statement in there that comes from the Vice President of our Company that gives them the authority to shed load on the system. But, their objective is not to shed load; their objective is to sit there and use the resources that we have got on our system to keep the lights on.

MR. REED BULL: Reed Bull, with the Midlands Stripers Club. The hydro unit, generation unit, at Saluda, there are five.

MR. DELK: Yes, sir.

MR. BULL: And, as I understand it, there are four that are deep draw and different sizes. What are the sizes of those? And, is basically the sequence in which you turn them on, basically based on the demand? Like one is 35, if you need 35 you cut it on? But there is no fixed sequence because --- there has been a lot of discussion about Unit 5, and I think, as I understand it, and I am telling you more than I know right now, it comes off at a high level --- and, there has been some association of that with problems with the dissolved oxygen during the summertime. And, I mean, are there some things that can be done to not use that unit? Or, do you have to use it so often? Or, what? Just generally, what are the ground rules there?

MR. DELK: You had better ---

MR. ALAN STUART: Alan Stuart, with Kleinschmidt. As part of an agreement with the South Carolina Coastal Conservation League, I don't think we have a representative here, we did some turbine testing on those units. Four of the units, I think, deliver about 37 and 1/2 megawatts.

MR. DELK: I can answer that part.

MR. STUART: Okay.

MR. DELK: Number 5 unit is about 70 megawatts.

The first four, which if you are looking at them from the Dam, the four to your right, the big ones on the far left, I think, those are about 35 megawatts each. So, you are right in your response. If we need it, we would try to get it from whatever combination of those. If we needed 100, it will be a 70 and one of the 35, probably. But it could be four of the 35, you know.

MR. STUART: Can I elaborate on his statement? During the period from about July through pretty much the end of November, the DO in the bottom of the reservoir obviously is very low. And the discharges from the hydro affect the DO in the tell rates at Saluda. As part of a settlement agreement with the South Carolina Coastal Conservation League, we did some turbine testing. SCE&G installed what they call hub baffles on the units, on the runner. And these hub baffles, they accentuate the air flow through the unit, and actually inject oxygen into the discharge, into the tell rate. As part of that turbine testing, we went through and documented how much each unit would aspirate. And as part of that, we developed what they call "look up tables". And their group, based on this turbine testing, some obviously like Unit 1 is very good at aspiration, where Units 3 and 4 may not be as well. So, what they try to do is match generations based on using operating

Units 1, 3 and 4; it's a 30% gate. And so --- as opposed to, you know, if they need 100 megawatts, we'll say. Take the numbers here. Instead of just firing on Unit 5 and Unit 1, what they would do is, probably fire up Unit 1 fully because it aspirates the best; and then a combination of maybe 2 and 3, which may do half of --- you know, make up the difference to get to the 100. So, that's why Unit 5 typically is the last to come on, as far as I know. It does aspirate very well, but it is typically the last to come on, as far as I know.

MR. BULL: Well, if you look at (inaudible) it creates a problem in the (inaudible), it creates a problem for the stripers. I think --- and I don't know whether this is right or not, but it's what I have been told. So, that's what I am trying to find out, what's right and what's wrong.

The several fish kills we have had over years, there seems to be some association with the amount of time that Unit 5 is run, which is pulling off the higher area that has some dissolved oxygen content that may be affecting that striper kill. I am just trying to find out what we know about it.

MR. STEVE SUMMER: Steve Summer, SCE&G. In the Southeast, it's very common for reservoirs to stratify in warm water on the top, cold water the bottom. As that happens in the summertime, as things decay, everything from

microscopic plants and animals, to leaves, or anything else in the water, the bacteria tend to use oxygen up. So, as that summer progresses, we are getting toward the fall, the dissolved oxygen levels in the bottom of the Lake get very low. And because of the stratification in the Lake, we have a layer between the warm water on top and the cold water on the bottom called a thermocline (phonetic). That layer effectively prevents mixing from the surface, which has a lot of oxygen because of the contact with the air, and the bottom which has no contact with the air and can't get any oxygen source. So, as long as that thermocline (phonetic) is stable, and that stratification is stable in the Lake, that dissolved oxygen in the bottom part of the Lake continues to go down. And we get into the cooler weather, mixing starts to happen and the problem goes away. The stripers end up doing pretty well in Lake Murray. But, they have temperature limits and dissolved oxygen limits. And it just so happened that they don't like the water on top, in the late summer it's too hot for them, they want to go deeper. They try to go deeper, they can't function very well because there is not much oxygen; so, they tend to get stuck in a band of water that just so happens to be right about where the intake of Unit 5 is. So, the crunch for the stripers can happen, but the operation of Unit 5 may impact that.

Operation of Unit 5, or not operation of it may not prevent the kill, it might help make it worse or better. And generally, during that worse time of the year, we have tried to have Unit 5 last off, and the last on, first off, to try to prevent that from happening. Sometimes they are doing better than others.

MR. BULL: One other question. This fish kill last year, and then there was another one back in '90 or '91, I can't remember the exact year. Didn't both of those occur shortly after the Lake was down and the water was brought back up? Because, ya'll drew it down the first time, was in --- was it '90? And then we did it in '96? '90, '96? And then recently. Could that be something that is contributing to it? I think all the vegetation may have had something to do with this summer.

MR. SUMMER: I think that's entirely possible. You know, when we flood that reservoir, you have got a lot more material that grew up over that time period, to that long draw down. So, I can't say that that was the case, but it sure seems reasonable that it could have been a factor.

MR. DELK: Yeah, we'll have to practice, I'm not very good at it. Over the year before we had the --- well, last year we, I think, D&R put in how many stripers?

MR. Mahan: I don't know what the stocking rate

is, it varies over the years. I thought over the past year and a half it's been over a million stripers. About a million stripers put in there. Do we have any estimate on the number of stripers? Now, I think one of the real problems with it is, the stripers that seem to be most impacted are a pretty nice size area. But in terms of having overall impact on the striper fishery, in terms of numbers, it's really a very small number that gets impacted by this. At the same time, it doesn't make it any easier to see out there when you go out and --- and, we were out there on the boat when this started happening to see the kind of stripers --- I know, just would have bitten my hook if I had just been out there fishing. And they are in the hundreds at the same time. Overall, Lake Murray certainly is no worse, no different, than most other Southeastern lakes, deep lakes, that have striper populations. Fish kills happen every now and then. I think what we need to do is just to --- as Steve indicated, we need to understand as well as we can what the impact of our operating Unit 5, and as much as we can to reduce whatever adverse impact that is, is to be careful that we do that. Last on, first off, a pretty plain rule on there; but, if there is anything in addition to that, we certainly --- that's one of the things we are looking at in our fisheries, RCG.

MR. DELK: Let me have one more response to the Control Room. And Lee would have answered that question better because he is the manager over that group. But, what they did with those look up tables is our most senior guy in the Control Room, is called a Senior System Controller, he basically --- and there is two guys that have that position that are in there every day. Not weekend, but --- they actually understand the look up table. And when the guy on the generation desk needs to start those units, what he would do is look back and say, "I need 'X' amount. Tell me what to run." And that's what he would do. So, we do use those look up tables that were developed to do that.

(Off the record)

MR. MALCOLM LEAPHART: Malcolm Leaphart, Trout Unlimited. I have a couple of questions about the Grid. One, I understand this is a --- being in the Grid is required by The Federal Power Act. Right? Okay. My question is, it looks like what you are emphasizing is having the insurance, if you will, of having the ability to generate the 200 megawatts quickly. Okay. But, I guess, what I am wondering is, is this also a profit maker? What kind of steps do you have, say, over an annual period as far as power in, power out? Do you ever bring power in from other

MR. DELK: Oh, yes.

MR. LEAPHART: And, how does it compare to the, you know, the power that you send, you know, back out to the sub-regions?

MR. DELK: Yeah. I mean, what we do every day, every night at midnight, we actually have a check out with all of our neighboring utilities. And we verify meter readings on, you know, how much power flowed to Duke, how much power flowed back to us. You know, on a AC power system, power is going both ways. I mean, it may be --- we may be bringing in power --- we may be perfectly in balance, but still bringing in power from Duke. And that power might be going out to Southern Company. We may be sucking in power from Duke right now - and I am just going to use Duke for an example - and then some event happens on the system, and all of a sudden the power flow on that line will be reversed. Matt, one of his jobs here is, when he is on shift, is to actually study the Grid, and study --- "Okay, this is the way the system is configured right now. We know the load is going to about to change." Okay, what's going to happen? You know, if this line --- he runs what is called a contingency analysis, and it says, "Okay, if this line trips off line, this is how those flows are going to change." So, we are constantly studying the Grid, monitoring the system.

And then after the fact, we do check outs with our neighbors to see, you know, where the power flows. And if we are out of balance, we actually have to go and do things to bring, you know, a balance back between. The measurement that --- it's an ongoing --- accumulated measurement on the Grid is called "Inadvertent". Inadvertent is simply the difference between the amount of power you schedule to flow and the amount that actually flows. And that is measured continually; it's broken into what is called "on peak hours" and "off peak hours". But it is a running total, and if your inadvertence gets out of whack, you know, you do something. And say our inadvertence is out of whack with Duke, well, we will go and put in a schedule adjustment to bring that inadvertence back in line so that everybody, every Control Area, every Balancing Authority, is doing what they are supposed to do. A little bit more to your point about being interconnected. You, by all means, want to be interconnected; because, if you are not interconnected and you are your own system, and you are dependent on your own self only. And it's a lot better --- that's called "islanding". And during the blackout, one of the things that happened is, there were portions of the Grid up in that area that actually kept their lights on, but they were on an island. And they weren't interconnected to

anybody. And they were responsible for balancing that generation and load. That's not a desirable state because if you lose a generator, and you are on an island, you know, you don't have anybody else with power to come in with flows and keep your system whole, you know. If you lose that generator, you are probably going to lose your system very quickly. So, one of the basic things they teach you in interconnection operations is, you by all means do everything you can to stay interconnected with the systems around you.

MR. MAHAN: Malcolm, I think I also heard you ask basically the question of whether or not we make money by selling hydro, by selling Saluda to other utilities. We do not sell Saluda in the market.

MR. LEAPHART: (inaudible)

MR. MAHAN: You know, I find it interesting that all this relying upon one another, you know, when we lose some --- we lose generation and we get that instantaneous response from our neighbors, and so forth, there is no money that changes hands that's on those transactions. Which is why it is --- everyone absolutely wants to make sure that somebody out there is not gaming the system by leaning too much on this, quote, "free power". We don't do it to our neighbors, we don't want them to do it to us. And that's why

I say we don't sell Saluda. Okay? Saluda is there to meet those reserves and, guess what? Nobody makes money on reserves. The only way you make money on reserves is by avoiding costs that you otherwise would have if you had to maintain 100% of your own reserves.

MR. DELK: And I kind of think of it like this. When you are running --- you are in the Control Room, a Controller sitting there, you know, yeah, he has cost in his mind. He wants to be --- he wants to run the least cost unit. Because running the least cost, you know, it keeps --- most of them are on the E&G system, it keeps their power bill down, it keeps yours. So, but profit is calculated down stream by somebody in a finance group. You don't have time to worry about that. But you do have to --- you know, you do try and think of ways you can minimize cost. But in emergency situation, when you have got to keep the Grid whole, you probably are not being very profitable because you are going to get whatever the quickest generation you can get on line. And it might be your most expensive. But that's what you have got to do. Now, you try to get off it very soon by replacing it with something that is less expensive. But, in that instant when you are trying to run the Grid, you really don't have time to think about profit, even though you are keeping cost in your mind.

MR. MATT BULLARD: Pumping at Fairfield late at night, (inaudible).

MR. DELK: Matt mentioned about pumping at Fairfield. Well, we wait to start pumping at night after we have --- after all of our load have dropped off. And we, a lot of times, are buying very inexpensive power from other systems, and we are using that power to pump with rather --- you know, we may have our own steam backed down to the minimum, and maybe buying power off our system for that pumping, to get the water back in the pond. And that makes the value of that water as a generator the next day less expensive.

MR. ROY TRYON: Roy Tryon, Trout Unlimited and Palmetto Paddlers. I appreciate your presentation, it was really clear and compelling. So compelling that I am now wondering as a paddler and as a trout fisherman down in the Saluda whether there is any solution to the problems that we perceive as, you know, the flow that sometimes carries some of us away. Given the fact that the Saluda seems to be the key to your ability to ramp up quickly for that margin that you need. Do you see any way to --- out of this for us? That is to get a more reliable flow?

MR. DELK: You know, like --- what we very much want to have in the Control Room is that quick start ability

to get the megawatts. Because, our objective, as I have said over and over, is to keep the lights on and to be able to respond to emergencies. And then we try to get off of it as quickly as possible. You know, it's a dam; it was built to generate electricity. And that's kind of what we use it for, understanding that there are effects downstream. But, you know, it's not like we do it every single day, either. We don't have emergencies every day and have to ramp it up every single day. And a lot of times in our emergencies, we don't use Saluda; we use another unit, we will use Fairfield. If Fairfield --- as I mentioned earlier, if Fairfield is pumping, we will just shut the pumps down. Or, if we only have one unit at Fairfield, we have got a total of eight units at Fairfield, we will just start the other seven, or however many we need. And a lot of times, what we might do is, if we have got one of those steam plants backed down on its minimum, what we will do is start a quick hydro resource until that slow ramping steam unit can come up, and then we will very quickly back off of the hydro to recover, and then allow another resource that is unloaded to load on up, and then we will get off. We do try and get off as quickly as possible.

MR. TRYON: Yeah. I mean, it probably seems unreasonable on my part to, you know, ask this question

MR. DELK: Hey, I just mentioned Duke.

MR. TRYON: Yeah, I'm sure a couple of times when I have been literally carried away and ---

MR. DELK: I'll give you point of order.

MR. TRYON: But I know you are running the business.

MR. DELK: I work in the Control Room, so I've got --- you know, some of my buddies that are striper fishermen, you know, they think they are my best friends in striper season and they call me, and I'm --- "No, way. Do nothing for you." One day I said, "Well, let's go fishing," you know. Got him and brought him to fishing, I said, "Yeah, we'll go." So, I went up to the Control Room, and you know, everything was perfect. I said, "Meet me at my house," because I live right over here in Lexington. And we got there, and from the time I had left the office, got home, he picked me up, we got there, the River was already high. I'm like, "Great," you know, "here I am on the River and, you know, we aren't going to catch anything." But, wasn't anything I did. We had lost a unit somewhere and we just had to have power.

MR. MAHAN: Don't be so gloomy about the prospects, there might be some things that we can do or look

at. If nothing else, what you guys who spend a lot of time on the River, in the River, need as much as anything else is much good, real time information, as much advanced information as you can get. But see, one problem with quote, "advance information", what we expect or plan to do today and tomorrow, is even the person in charge may not be able --- we can't predict when that plant is going to come off line, we are going to get a call from another utility that says, "We need 200 megawatts from you, and we need it now." So, there are always going to be those circumstances where the water is going to come up in the River faster than we might like to see for the benefit of those who are on the River, or in the River. But, what we can try to do a better job of, I think, is to get information to you, and make it available to you as much as possible. We are working on a web site that will give you --- give folks who can --- who are planning some activity on the River, the ability to go in and see basically that gives us almost the same kind of information as our System Dispatchers have. But, the System Dispatchers understand, and we need to be sure that anybody who looks at that information, understands it can change in an absolute instant. And once you get on the River, it's going to be very difficult to know what may have happened since the time you checked it before you went and got in

your car, and went down to the River, and got in the River.

But, we can do a better job, and we certainly want to do that. Malcolm?

MR. MALCOLM LEAPHART: I was going to try to clarify because we have discussed this issue for probably twenty years in the lower Saluda Advisory Council. And it's pretty much a consensus that not having a schedule release is a real safety concern. But, I think, you addressed that well. My question was, just kind of light here and anecdotal. As they have been generating looks like about 19,000 cfs for the past few weeks to lower the Lake quickly, it looked like in many places that the River is just totally out of its bank. And I wonder, is there are any flow level that is known that says, "This is pretty much the carrying capacity of the River, and we are overflowing the banks"? Because, you know, you have got the erosion concern. And I'm just wondering if we built a lake a lot bigger than what the River can really handle? Or, you know, when all five are running? I don't know if anybody has ever given any thought to that or not. I don't remember the topic coming up before, but ---

MR. MAHAN: I believe the maximum flow that we can generate with is about 18,000 cfs. That's a little bit over that. And if the Dam weren't there, I think the --- I

know the flood of record is probably over 150,000 cfs. So, to say the 18,000 cfs flow is more than the River can handle --- Well, yeah, it can come over the banks a little bit, there is no question about that. I say over the banks, it's over the banks has been established since it's now gotten to where it never sees anything over 18,000 cfs.

MR. LEAPHART: (inaudible)

MR. DELK: You know, I seem to remember one time when we had a lot of rain in the little tributarys feeding in downstream, and we might have been only running one unit, and people would call and say, "You know, you are flooding everything out," and we would only have one unit, or maybe not even a unit on. But it's so much rain piling in.

MR. LEAPHART: The spillway (inaudible)

MR. STUART: If we are talking about flooding, Lee this morning, I think, mentioned something about (inaudible) Fairfield ---

MR. DELK: Yeah. Fairfield has got some restrictions on it. It's in the licensing, right? Fairfield?

Where if there is more than 40,000 cfs coming down the Broad River there, we can't generate at Fairfield, thus releasing the water out of Monticello in the Parr reservoir because we would be contributing more to it. So, that's a restriction

that we have in the operation of Fairfield that, you know, when you get a lot of rain, and we have seen this before, you will have more than 40,000 coming down the River. So, we have got a 600 megawatt unit that, guess what? It's unavailable to us. So, you know, that's 600 gone. We have got to go replace it somewhere. And that doesn't really just happen instantaneously, we can see it coming. But, that's one restriction. The other one is, if we are releasing too much, you know, you can back water up there at the Parr reservoir. What, do they --- the train tracks, there's a --- what's it called? Station 13. And the System Controllers who actually --- they do this every day. They know all this stuff. And Lee might know it a little better. But, we can't back the water up there because we will flood the train tracks out. So, you have got to --- it's a balancing act on the River to actually maintain enough flow going down, don't back anything up, but at the same time have your elevation up at Fairfield, and then the Parr reservoir, such that you can pump and generate. And V.C. Summer has some needs on their side that we have to accomodate, also. So, there is many, many little issues like that that we have to keep straight in the operation. You know, there are many times when we will have a unit unavailable. These hydro units, you know, talked about how reliable they were earlier; but they

do still require maintenance. So, there are times when those units are unavailable to us. All right. Got one more?

MR. BULL: Can one Grid sell to another Grid like if up North it's real cold and we are warm down here ---

MR. DELK: Absolutely.

MR. BULL: I mean, it's sold across Grid?

MR. DELK: Absolutely. We have a marketing group that actually handles the buying and selling of power for our company. And, you know, if we can go buy economic power as opposed to generating ourselves, what the System Controller will do is talk to the marketer and say, "Hey, I need this much. I am going to ramp this unit up ---" The marketer will say, "Well, don't do that. I can go buy it cheaper than that." And they will actually --- there is a sophisticated tagging mechanism where, you know, we may buy power from as far away as Pennsylvania, New Jersey. You know, this time of year it's usually colder up there, so we might be selling up there. But the other use is that because we are interconnected, it might be that Southern Company is selling power up into the Pennsylvania area, and they actually will buy a contract, transmission path, across our system to wheel that power up there, to get it there. But, yeah, we buy and sell. Just like the Control Room, there is another

room that is for the Power Marketing Group; and they actually are charged with more of the economic side of getting it right on that. One more, right there?

MS. JOY DOWNS: I am Joy Downs, the Lake Murray Association. I had understood Lee to say that 200 megawatts is a guarantee, that you must have that available to VACAR, I believe. Is that not true?

MR. DELK: That's our --- it's an obligation that we have with our VACAR partners.

MS. DOWNS: Right. So, when that 200 watts, when you are guaranteeing that that is there, available at all times, and you use Saluda in some other manner, for an emergency, what replaces --- then what guarantees VACAR?

MR. DELK: We are off the hook for a short period, for ninety minutes. So, we don't have to have --- you know, you have got to have time to recover. But what we would do is, we would normally go and, like I said earlier, if we have got a coal fired unit that is unloaded, we would just get it loaded up, and then get off of the generation. But it might be that we get a turbine, which is a slower start unit. We have got a turbine down in Charleston called Haygood Station, which is another very good unit, 100 megawatts; but, it takes it about an hour or a hour and a half to get on line. So, what we might would do is, call the

guys at Haygood and say, you know, "Get her warmed up and cranked up, and let's get running." And then that would allow us to get off of the Saluda.

MS. DOWNS: You need your reserve power for ninety minutes if necessary ---

MR. DELK: Oh, yeah.

MS. DOWNS: Without violating anything that they might require.

MR. DELK: And really, I think --- you know, I would have to go look at the agreement. But, 90 is kind of a rule of thumb to just get off. Now, in the hot, smoldering summertime, when we have got every unit on our system stressed out to the max, and we are losing units, and you know, we supply our reserve, and a lot of times there is not a whole lot left to go get. You know, the way you would get relief there is, just go shut down some loads. You are not really as held to the ninety minutes there because in the peak summertime, those conditions usually only last for an hour or two, maybe three, so load is going to start dropping off. So, you are going to get your relief like that. But typically, it is a ninety minute criteria to get off. And, you know, those peak conditions, you know, they only occur once a summer. We had a peak every day, but the actual system high peak really only occurs one time in the

summertime usually, for three or four days in the summertime. That's when we sweat, you know, on our jobs.

MS. DOWNS: Thank you, Joy Downs, Lake Murray Association.

UNIDENTIFIED: I need to understand the ninety minutes versus the fifteen minutes ---

MR. DELK: Yeah. The question is, for everybody, the difference in the ninety minutes versus the fifteen minutes. The fifteen minute requirement is a NERC requirement that we get the system back in balance. So, you remember I told you about the Area --- Control Error, the ACE measurement, when it goes negative out of bounds because of a loss of generation, you have got fifteen minutes to recover. And recovery is --- there's two measures. If your ACE is positive, which means you are over-generating when you lost it, then you have only got to get your ACE back to zero, which is perfectly balanced. So, let's say you were in a situation right when the event happened, and you were under-generating --- let's say you were under-generating about 10 megawatts. In fifteen minutes, you just have to recover to that pre-disturbance level, which is negative ten on your ACE, so --- but the fifteen minutes is the recovery to get yourself back in balance. The ninety minute measure is after that event occurs --- and the way you are going to

get back in balance is you are going to use your reserve or call on somebody else's reserve to get yourself back in balance. The ninety minutes is the amount of time from that event that you have to recover your reserve. Because, if I am in an event and I lose my unit, and I use my reserves, well, guess what? I don't have them anymore. So, you are given a ninety minute leeway there to recover them so that when that next event occurs you have got your reserves back.

And we have lost two units within a ninety minute period before, two major units. And once again, that's when you really start jumping around. But, you know, two of our major units, the whole group as a whole was carrying one and a half times the largest of those. So, you just call on more reserve, is what you do in that situation. All right, thanks for your time.

[Applause]

MR. STUART: I want to thank everybody for coming. Again, I urge you to try to attend the Resource Conservation Groups. They are very informative, and some of the things that we have talked about, some other issues, you know, the stripers and trout. So, again, I encourage you to please come out.

PUBLIC MEETING ADJOURNED.