JOINT LEGISLATIVE COMMISSION ON ENERGY POLICY
December 3, 2013
Room 544 Legislative Office Building

The Joint Legislative Commission on Energy Policy met on Tuesday, December 3, 2013 at 1:30 PM. The meeting was held in Room 544 of the Legislative Office Building in Raleigh. Senator Bob Rucho presided. All documents and presentations are available on the Commission's website.

Members present were: Senator Bob Rucho, Chair, Representative Mike Hager, Chair, Senator Andrew Brock, Senator Kathy Harrington, Senator Gene McLaurin, Senator E.S. (Buck) Newton, Senator Ronald Rabin, Senator Trudy Wade, Representative James L. Boles, Representative Rick Catlin, Representative Ken Goodman, Representative Jacqueline Schaffer, and Representative Mike Stone. Dr. Jeff Warren, Senate Senior Policy Advisor; Andy Munn, House Senior Policy Advisor; Ms. Jennifer McGinnis, Mr. Peter Ledford, and Mr. Jeff Cherry, Commission Counsels; Ms. Jennifer Mundt, Commission Analyst, Lindsey Dowling and William Verbiest, Commission Clerks.

Call to order and introductory remarks

Senator Rucho called the meeting to order at 1:31 PM and welcomed members, staff, and visitors in attendance and explained the importance of creating a "better" North Carolina through economic growth and job creation. "BETTER" standing for Budget, Education, Transportation, Tax Reform, Energy, and Regulatory Reform. Senator Rucho introduced the Sergeants-At-Arms, Bob Ross, Bill Bass, Ed Kessler, Canton Lewis. Representative Mike Hager had no further introductory remarks.

Hardening the Grid

Senator Rucho explained that the first topic of the meeting would concern "hardening the grid." Presentations focused on issues concerning the electrical grid and measures and strategies that may be taken to strengthen and protect the integrity of the grid from direct or indirect attacks and/or the effects of natural disasters. Senator Rucho advised members to hold their questions until the end of the presentations.

Senator Rucho first introduced Sid Morris, founder of the NOAH Foundation, who presented the Commission with the mission statement (see 3 - NOAH Foundation, 3a – Morris Introduction) of the NOAH Foundation and a short video outlining the issue at hand. Senator Rucho then introduced Dr. William Forstchen, Historian and author of "One Second Later", who explained his reasons for writing the book and describing the Electrical Grid as "Our Most Important Infrastructure." Senator Rucho then introduced R. James Woolsey, former Director of the CIA, who commented on the current status and vulnerability of the grid (3c –Woolsey Testimony, Woolsey The Future US Energy Picture). Dr. Peter V. Pry, Executive Director of the Task Force on National and Homeland Security, then presented "Why Isn't Our Grid Hardened?" Following Dr. Pry's presentation, Senator Rucho opened the floor to questions at 2:19 PM.

QUESTION AND ANSWER

> Representative Stone: Thank you Mr. Chair and I will say that you never cease to enlighten us with another great presentation today, it was very informative and I learned a lot, but with that come a lot of questions as well. I think we all share your views on Washington, I think that's probably

been a problem for many decades, as a lot of us youngsters look at it and wonder what Washington will do. But I have quite a few questions, but I will simply start with that you said the federal government is not current providing this service, we talked about $20 million to protect the State of North Carolina, there's a number of co-ops and different electrical companies providers here in North Carolina. Truth be known, $20 million is not a lot of money when you look at their annual revenue coming in, so why couldn't they do this on their own, what laws prohibit them from going ahead and protecting their investment, which is their business, the same as we all do our own businesses back home where we may buy an alarm system or whatever to protect our business. I'm just wondering if there is anything exempting you all and not allowing you to do that?

Dr. Pry: There is nothing prohibiting them from doing that and I think that the actual estimate, I think it's less than $10 million dollars to protect North Carolina. There is nothing prohibiting them and if they were doing that, if the private sector was going on its own and NERC, which is the bad guy in this scenario, the North American Electrical Reliability Corporation which is supposed to be responsible for reliability and protection of the electric power grid, but in fact they are basically a lobby for the electric power industry that is constantly thwarting efforts to do something. If they were doing, acting on their own to protect the grid, we wouldn't be here. I'd be perfectly happy with that, I prefer private sector solutions. But, Dr. Graham who was the head of the Congressional EMP commission was asked "Well why haven't they done that?" because it just makes so much sense that they would protect their own assets and Dr. Graham's reply was "it is moments like these that instead of having a degree in electrical engineering, I wish my degree was in abnormal psychology" because it's hard to understand why industries like the Zeppelin industry for example in the 1920s didn't use helium to run their Zeppelins and instead, despite all the scientific warnings that they were making a mistake to go with hydrogen, but they tried to convince the public that hydrogen travel was perfectly safe and their whole industry was destroyed with the Hindenburg. And NERC, the electric power industry, is basically flying this whole country like a gigantic Hindenburg right now into an encounter with a future geomagnetic storm or the nuclear terrorist attack. How come automobile industries didn't put in padded dashboards and seatbelts in automobiles until the federal government required such regulations, there is a role for the federal government. I'm a big believer in the private sector and I believe the invisible hand of Adam Smith is the best way to do things in terms of lowering costs and acquiring the most efficient ways of invest, but when it comes to "Black Swan" events, the private sector isn't good at that. "Black Swan" events, once in 100 year things or the rare, occasional things that only have to happen once and it's catastrophic, that's why we have government, that's where government comes in and says "you guys are doing a great job on the day-to-day kinds of problems, like maybe a falling telephone poll or something like that, but when it comes to something like a nuclear EMP event or a natural EMP catastrophe, this is why we have government." I would add that's why the Congress is there too.

Representative Stone: One quick follow up? Now you've lowered it to $10 million, I know that is just an estimated figure you've thrown out, do you think you we could do this without encouraging a rate increase, because obviously that's where I'm fearing this is going and I mean, $10 million is nothing in the State of North Carolina for these power companies.

Dr. Pry: Well the financial mechanisms of how to do it depend on, I'm not sure what alternative you have. Usually the recommended way of doing it is by raising rates. That wouldn't necessarily fall on the average householder because most electricity is not consumed by the average householder, its consumed by industry, and so the people who consume electricity, sort of the way we maintain highways and things of that sort, but there are others ways of doing it. One thing I had suggested, there was a federal program called SPIDERS. You might look at federal programs, DOT programs, for example. I don't want to take up too much time with this, but they're spending $10 million to provide energy security to a single military base, they are hardening three military bases for a cost of $30 million this year as an experiment to see if they can do it with green renewable sources. So $10 million on a single military base and yet I think for less than that you can harden the whole State of North Carolina. Now I don't know how many EHV transformers, it's possible to come up with a much more precise estimate, but some of the information is proprietary, like how many EHV transformers are in the State. There is a formula one could get into so that you could come up with a more precise estimate.

Senator Newton: Thank you Doctor and again I echo the comments from Representative Stone; it is not every day that we get to hear from such august panel of experts on something so interesting that I wish I knew more about before today. My question to you is I'm going to leave aside where we are going to get the money and who pays for it and all that, my question to you is what would the $10 or $20 million whatever it is, what are we getting for that? Where are we putting the money specifically? I guess another question to ask would be where are the most critical areas that if we were to start this, that we would start. Maybe assuming that we don't have $10 million today to start.

Dr. Pry: Well the most important part of the grid is the EHV transformer that is the Extra High Voltage transformers; they are basically what make modern civilization possible. They were invented by Nikola Tesla; they are built the same way by hand. An EHV transformer enables you, for example in New York, to take electricity from Niagara Falls and drive it all the way down across the country and then have another EHV transformer at the end of the line that steps it down, so that it can be consumed locally. The electric grid will not work without these transformers and they are fantastically expensive, its costs tens of millions of dollars to build one, they weigh hundreds of tons, so just moving them into place. They are not even made in this country, they were invented here but unfortunately, like so many things, they are not even made in this country anymore. South Korea and Germany make them, they are the only countries to make them, the worldwide production of EHV transformers is 200 per year and there are 3,000 of them in this country. So we can't afford to lose any of these transformers, so one of the things we could do, for example, is put blocking devices on the transformer, there are surge arresters, there are actually many technical ways that have advantages and disadvantages in terms of cost and things like that. You could put a Faraday cage; they are almost a Faraday cage now, if you were to put filters where the wires go into the transformer that could protect it as well. The other thing you need to protect are the skaters, supervisors control and data acquisition systems, these are little computers that basically regulate things like the way the electricity goes into the transformer and there are thousands of these things that are critical to the electric grid, typically they are kept in colonies clustered together for ease of maintenance. If you just did something as simple as put them inside a metal shed with no windows and a metal door in the front, you would enclose the whole thing in a Faraday cage and they've got to be protected from the weather anyway, so why not make it a metal shed with no windows and then you are good to go, you've protected your skaters. So those are two things that could be done, that must be done in order to protect the grid.

Senator Rucho: OK, thank you. We've got three more folks asking questions, so let's try to be careful of the time and I've got Representative Catlin.

Representative Catlin: Thank you Mr. Chairman, thank you very much. I just want to say thank you to Dr. Forstchen for being here, it's an excellent book. When I read that it changed my whole perspective on the world and I actually brought that book for some of my local law enforcement people where I live, because there are more issues than just the power grid, there are a lot of issues with the potential for EMP or other loss of power. One of the things that I have a question about is that our grids are multi-state connected and I agree we need to do something, I think this is very important. I actually looked at a study bill to deal with this issue. They are multi-state connected so would it be possible to get some of the national groups, like the NERC or Electronic Power Research Institute to present to us so that we could at least coordinate and combine that information?

Senator Rucho: I will say to you that, if this Commission would like, we can have an additional meeting in the future with an update from the electric industry and or other groups that might help shed light on this. Our effort is to raise awareness, but more importantly, find a way to have cooperation between public/private so that we can help resolve some of these concerns. Alright, Senator Ron Rabin.

Senator Rabin: Very nice briefing, it reminded me of the Pentagon actually. I have one question and it relates to what was just brought up, if we have an interconnected grid system and I understand that we do and if we harden North Carolina's grid as you say we can, what is pushing electricity into our hardened system that we saved if we can only work it? The State solution, I don't think, is going to work by itself without cooperation with other states which mean you have to go up a level or two, is that incorrect, can we just protect our own?

Dr. Pry: That is incorrect, you can "island" your grid within the larger regional grid which is what they plan to do in Maine, and they are part of a larger regional grid called ISO New England. When you harden your grid, it doesn't do anything to prevent you from importing electricity from a neighboring state or from exporting electricity from other states. What it does do, these surge arresters, Faraday cages, they work when an EMP happens or a cyber-attack happens and saves those assets that you have. Now that is advantageous for the neighboring states as well. There is nothing harder to do than a "black start," when all the lights are knocked out and if the grid were to completely collapse, well we've never even exercised trying to recover a regional grid, let alone a national grid, from those circumstances. But if you have protected one of the states within that regional grid, not only are you saving the lives of your own people within that state, but it will enable the recovery of neighboring states much quicker because you can provide electricity to them to the extent that they are able to receive it and support communication and sort of come to the rescue to the other states in the regional grid. So when you "island" a grid, it doesn't cut you off in terms of the normal day-to-day operations of the electric grid, these protections become relevant only in the emergency where they are necessary. I would add that these protections are relevant to more than just EMP, you know the commission took what's called an "all hazards" approach, I mean this is the worst-case scenario, the worst threat that you can have to the grid, but it mitigates all the other lesser threats, things like cyber-attacks or sabotage of the grid or natural disasters. To just use a common sense example, one of the things that happens in hurricanes or tornadoes that will cause a blackout is a tree will get pulled up or tree branches will fall and damage systems, damaging part of the grid. Well doesn't it make sense that you would want to protect those, if they were inside of a metal shed, they would be protected not just against EMPs, but they would be protected against that kind of kinetic damage, that might be caused by Mother Nature or by some criminal or mad man that takes a high powered rifle for example or possibly terrorists as happened in San Jose and wanted to try to shoot holes in critical parts of the grid, putting them in that metal shed protects against that. So it enables you to protect it against all hazards and recover against all hazards as well, there is no disadvantage to hardening your own state.

Senator Rucho: Last question, Chairman Hager.

Representative Hager: Thank you Chairman Rucho. As just a little bit of truth in advertising, I've got 20 years of Duke Energy work in power plants and work on those transformers you were talking about and during the Y2K scandal we did start scenarios and those things, and I've found NERC and FERC very easy to work with and when we had issues and when we had to set standards. Is there an issue here to make sure, in working with NERC and FERC, that we really set the standard for grid hardening, a standard that everybody can meet first before we move forward into this? I'll go a little further and say that NERC has got some issues in place, such as the high-impact, low-frequency task force, their geomagnetic disturbance task force, their cyber-attack task force, their severe impact resilience task force, those things that are working on it now, so why should we get ahead of the standard, when I know that when the nuclear regulatory issues they have always been there, the NRC has been there, those folks have always been there to set the standards that everybody had to comply with. Is there a danger of getting out in front?

Dr. Pry: There isn't a danger of getting out front, because the fact of the matter is that NERC isn't really working on those standards. I served on the geomagnetic disturbance taskforce, for example, as an observer as did many other specialists in this field. I'll tell you sir, in fact we have called it this in public in Congress to NERC's face, that it was a "junk" science report, they pretended that they were doing serious scientific work but it was really, they basically came to a conclusion, I mean we've talked to you about a Carrington Event for example, their report came to the conclusion that if a Carrington Event happened today, that they would be able to recover the grid in 24 hours. Now even without a background in physics, from what you have heard from these other experts, I think you know that is a falsehood or you should know that is a falsehood. They can't even recover the grid from snowstorms and normal terrestrial kinds of weather, let alone something as unprecedented as a Carrington Event or a nuclear EMP attack. I look at the history of the NERC when it comes to putting forward standards, remember in 2003 the Northeast Blackout? The great 2003 Northeast Blackout that put 50 million Americans in the dark was caused by a falling tree branch. Last year they finally came up with standard called "vegetation control," it took them a decade to put in a standard to better provide regulation of falling tree

branches so that a repetition of the 2003 Northeast Blackout won't happen, you know? NERC is making the very argument that I heard here, that we should wait for NERC to come up with the solution because they are working on it supposedly. Well NERC may be good at…you know they don't have a single person working who is an expert on EMP or on geomagnetic storms and so I think the danger, I wouldn't be here today if I thought NERC was going to handle, we wouldn't have to be here today and FERC, by the way, agrees with this approach and supported us in Maine. We had a technical conference on the NERC report that came out that in front of the Federal Energy Regulatory Commission demonstrated that they had produced a "junk" science report. Jim, you wanted to say something?

R. James Woolsey: One point on that, the rulemaking authority that NERC utilizes, some of the rules that it generates are on relatively minor matters and system works to a certain extent, but on anything that is major, they require consensus which is to say, unanimity and they average time required for those major decisions by NERC, the last time I looked, was three years and eight months. Three years and eight months is precisely the amount of time the United States was in World War II from the bombing of Pearl Harbor to the surrender of the Japanese in Tokyo Bay was three years and eight months. So when you have an institution that is dealing with something as important as this is and their normal decision making is equivalent for each decision to the time it took us to win WWII, I think one has to be somewhat skeptical that they are moving as promptly as necessary.

Representative Hager: I guess I don't share you guy's reluctance to rely on NERC, I know on working former employer that we in the US have the best electric system in the world and there is a reason we got there. We got there by changes that happen, that are good standard changes that happen and are well thought through, not a knee-jerk reaction, but I do appreciate what you guys think. Have you guys worked at all with local utilities, Duke Energy, on this issue?

Dr. Pry: I'm from Washington, so no I haven't.

Sid Morris: Sid Morris with NOAH, we've had two meetings, both of which were postponed.

Representative Hager: Mr. Chair, I would like to request that we have Duke present and possibly NERC and FERC if we could.

Senator Rucho: OK, we will talk with staff and see if we can put that together. Dr. Pry thanks very much for sharing your knowledge with us, it was a very enlightening topic and we appreciate you coming down and taking time and sharing this issue.

Municipal Electric Systems

Senator Rucho then introduced T. Graham Edwards, CEO of ElectriCities of North Carolina, for a presentation on how municipal electric systems are structured, governing mechanisms, and an explanation of rates. Mr. Edward's presentation is filed as 4 – Edwards ElectriCities Overview. Senator Rucho opened the floor for questions at 2:55 PM.

QUESTION AND ANSWER

Representative Stone: As always, I'm still learning a lot and enjoying it. I'll tell just as a side note, when the electricity goes out, it doesn't matter where, they call someone elected that is for sure. I was interested in, you didn't talk about your rate of return, I made several notes that wasn't included and I was interested why. The other thing I would like to follow up on is, we're looking at energy throughout the State but we are also looking at it as some kind of economic driver and what we can do. Energy policy has been a big problem with us in the State of North Carolina, as we are trying to find ways to compete and bring industry here, so my question to you would be what can we do, what do you recommend to us to take some burdens from regulation that you may know about that we don't, that would actually help the industry because we are trying to help some of those cities and counties down in the east to get more industry and we are fighting rising energy costs that is keeping industry out, so any insight you can give us will be greatly helpful. Thank you.

Mr. Edwards: Representative Stone, you want clarification. I said rate of return was not on that chart, because we don't have a rate of return. We are a non-profit, so whatever our costs are without any kind of mark up or profit is what our members pay. As far what we are trying to do, especially in the eastern side of the State, is to encourage economic development with our members, our cities, for retail development. It seems like we can compete for certain industries, several cities in the east have seen some successes, Rocky Mount has had a couple, Kinston has had a couple, and Wilson has had one. I think that we are trying to work with the cities and we can do that by installing some distributive generation, to put it behind the meter, to help reduce the reliance on the volt power system. That can save money, so we are working very closely with the Department of Commerce as well. From a regulatory perspective, I always find that one stop shopping really does help, not just from an electrical reliability perspective, plus water, sewer, all those things, it seems like one stop shopping in a state has really benefited, if you will. So other than that, I'm not sure what we can do. I do think that electricity costs unfortunately will continue to go up in the future. Whether because of Fukushima and the nuclear accident in Japan, that is driving our cost a lot as is Duke and the cooperative, general inflation, whether it is environmental issues or whatever the issues are, continues to drive our costs up. I do not see our costs going down. I do see us trying to do things for distributive generation, additional solar to help, so with those issues that is really the only response I can give.

Representative Hager: Thanks for coming today. You know it is pretty evident if you look at the cost of electricity across North Carolina, that the eastern folks have the most struggle, if you look at those are pretty high, 20 to 25% in some cases. Can you explain to me why that anomaly is out there compared to the Western power agency?

Mr. Edwards: Yes sir, it's the amount of indebtedness we had to issue and incur as a result of Harris nuclear facility. The overruns at Harris basically all the eggs were in one basket and the amount of indebtedness that it took to finance the facility, that is the bottom line. Now we have looked at ways to try to mitigate that and stretch the debt out, but it is a lot more costly to try to stretch that debt out versus paying for it as soon as you can and our Board has said "Let's stay the course," try to continue to pay that debt down as much as we can and by 2025 that debt will be paid off. There are several things that drove that, construction delays, regulatory changes, in addition to that just like when you are building a house, you have interest during construction, we have that on our power plants as well, but we don't have a revenue stream to pay for that in the interim until the plant became commercial. So we had to finance a lot of this interest and that was a big reason as well for the amount of indebtedness that we had to incur.

Representative Hager: That explains why the average base costs is higher, but I see cities and towns across eastern North Carolina that are much higher. For example, a lady in Red Springs right across the street, their rate was 30% less. What causes that anomaly, is it within the cities themselves and second question, I'll go ahead and ask at the same time, is it the right thing to have a uniform rate system like we do with Duke Energy through the Utilities Commission?

Mr. Edwards: As far as the disparity and I will say Duke Progress and the eastern side of the State, a lot of time people look at their power bill and they think they are seeing their power bill but it's really the bill from the city that includes water/sewer/gas in some cases and they are not comparing apples to apples. Now the rates are higher, a lot of the difference and with your background you will understand this, a lot of the difference is the load factor within the city itself. The more commercial, the more industrial you have on your system, such as Wilson has Bridgestone Firestone and they use energy around the clock and that benefits their entire system. If you look at Red Springs or you look at Benson or some of the others that really don't have any industry and they are being supported by residential consumers that have a poor load factor means using energy around the clock, that's what is really causing the disparity between the members themselves is the load characteristics of each of the cities. As far as a uniform rate, the municipalities were created as far as the electric systems go to have that local control and they have the authority to set their rates in accordance with recovering their costs and their distribution costs and they are not required to report to the North Carolina Utilities Commission and that was a part of legislation to create them as well as part of the bond resolutions that we have to operate under as we go forward to finance the system going forward. The reason was to give that local control and local protection.

Representative Hager: Last follow up. Looking at the disparity we see, and I agree with Representative Stone, these high electric rates are really hurting the economic development in these towns like Red Springs for instance, with the cost they see, they may not see any manufacturing, any production, any of those things. Is it the time to get out of this business for the cities?

Mr. Edwards: My response is no. Now, as I told the subcommittee, Senator Newton and Representative Collins had a subcommittee to review the high rates and indebtedness of eastern power agency. They asked me at the time to talk with Duke Progress and see if there was anything we could do to work together and we continue those conversations, but if we were to get out of the generation business, for Eastern Power Agency we have got to come up with $2 billion for the assets, not counting distribution, just generation to pay off the indebtedness. I'm not sure where it's going to come from, I'm not sure that Duke Progress will pay us $2 billion for the assets, I certainly will ask them and have, but as far as the generation side, I would separate that out because the bonds have to be paid off. Now the distribution system is a different story and I think that is up to the individual towns and cities about whether they want to continue operating their distribution system or get out of that business as well.

Senator Rucho: Mr. Edwards, thank you for spending time with us and there may be some other opportunities to share some information. Have a safe flight.

Utilities Commission

Senator Rucho introduced Edward S. Finley Jr., chairman of the North Carolina Utilities Commission. Before Mr. Finley began, Senator Rucho recognized Commissioners Brown-Bland, Rabon, and Beatty. Mr. Finley presented on the structure and function of the Utilities Commission and emerging issues in utility regulation, which is filed as 5 – Finley NCUC Overview. Senator Rucho opened the floor to questions at 3:30 PM.

QUESTION AND ANSWER

Senator Brock: Just a quick announcement after the first presentation, if anyone in the room wants to buy cows or horses, I do have some on my farm for sale. But looking at the processing of waste and what we currently store on site, is there any movement to go to processing like France, they process their nuclear waste, we know that the byproduct is weapons-grade Plutonium but is there any push on the national stage to go that way, I know after the incident in Japan, we've kind of backed off that.

Mr. Finley: Well there has always been talk about that, I happened to hear a presentation on reprocessing the last few weeks, and I'm no expert on that, but what I was told in that meeting was that actually the nuclear waste that comes out of a nuclear power plant is not very good nuclear Plutonium to use for bombs, if you were going to be a terrorist and use it for a bomb you would really go someplace else. The reason that we don't reprocess is because of the threat that the reprocessed Uranium would fall into the hands of the wrong people and be used for weapons-grade bombs and that has sort of been the view of the United States, I really don't see any great movement away from that now, although it is done quite successfully in France.

Representative Stone: Just a little clarity, for some smaller utilities, I'm just asking for clarity, can they increase the rates by less than 5% without coming before the Utilities Commission?

Mr. Finley: I think what you are making reference to there is the adjustment that the Legislature has recently approved, that allows them to make system improvements to correct for environmental deficiencies. We had a hearing about that this morning, we are trying establish rules about that, but it does make a provision along those lines for those particular companies to the extent that those improvements are reasonable and are not imprudent.

Representative Stone: Just to clarify, my concern is I live in a small community and we have a small utility and they usually buy their utility from another local nearby utility and I've had the privilege on sitting on city council and actually where they buy the rate, it ends up being 300% higher compared to our neighbor a mile down the road, sometimes less than that. It is just the

small pockets of communities that this is affecting, I don't know if we are scrutinizing that or not, but I hope that in the future we will be because it seems like these small communities are taken advantage of. I'll give you an example, we offered the utility a lower rate, but because 5% of $3 is more than 5% of $1.85, they didn't want a lower rate, they wanted to keep it higher because their margins are based off the higher rate, so basically we are building budgets and it's very concerning. I know that my community back home will be glad I brought it up because it has been going on for literally decades and we have not scrutinized it yet and hopefully in the future we will take a closer look at that.

Mr. Finley: Well, we would be happy to scrutinize it with great care and if you can pass along to me the particulars.

Representative Hager: Just for a short comment, Chairman Finley I've worked with you guys for the last couple of years and I just want to tell you how much I appreciate the job you guys do. I think we have a great electric system in North Carolina because of what you guys do that helps make it great and Public Staff also, thank you. Appreciate the hard work.

Public Staff

Senator Rucho introduced Christopher J. Ayers, Executive Director of the North Carolina Utilities Commission Public Staff. Director Ayers then introduced members of his staff, Tony Wike, Tim Dodge, and Diana Downey. Director Ayers gave a presentation on the structure and function of Public Staff, a primer on rate-making for utilities including a discussion of avoided cost proceedings, and emerging issues, which is filed as 6 – Ayers Public Staff Overview. Senator Rucho opened the floor to questions at 4:06 PM.

QUESTION AND ANSWER

Representative Hager: Thank you Mr. Ayers, I appreciate you coming. You talked a little bit about qualifying utilities and avoided costs. When you look at avoided costs, does that include that standby charge that Duke would have to incur to keep a rotating generator spinning?

Mr. Ayers: Yes it does.

Representative Hager: The other question I had is, you talk about avoided cost and pressure, it seems to me, and tell me if I am wrong, that the higher the avoided cost, the higher rate that consumers see. Is that correct?

Mr. Ayers: That is correct.

Representative Hager: So a higher avoided cost for renewables, which makes the renewable company more money, would actually be a price increase to the consumer, is that correct?

Mr. Ayers: That is correct.

Senator Brock: One thing you did mention, and I'm glad Chairman Hager mentioned making widows on fixed incomes paying higher energy rates so that certain people could benefit, you mentioned tree complaints and tree ordinances, and we heard about the blackout in Northeastern United States. Do a lot of these complaints come from towns and cities that have pretty strict tree ordinances about who can cut what trees?

Mr. Ayers: No, well let me back up. They come from across the State and it is not unique to just towns that have specific tree ordinances. When a utility comes through, particularly if they haven't come through in a number of years and they start aggressive tree trimming along the line. Let's say it is in your front yard on your property, most people, especially if they didn't know they were coming, are shocked and surprised and that generates an aesthetic complaint. A lot of times though, they will call, we can talk with them, utility representatives will talk and explain why tree trimming is necessary in order to avoid a 2003-type Blackout, in that the utilities have a rather thick, comprehensive manual in terms of what is allowed and what is not allowed in their tree trimming practices, but still the aesthetic effect triggers a reaction. We have seen some towns, some municipalities, react. There is a complaint pending before the Utilities Commission right

now from the city of Greensboro, where Duke Energy went through a year ago trimmed in a lot of neighborhoods and got a lot of residents upset and so they are trying to work through a tree trimming ordinance for the city and they've hit a couple of sticking points and they are asking the Utilities Commission to resolve that.

Senator Rabin: You mentioned EMP or I wouldn't have brought it up again. The way I understand, the way it is visualized in my non-technical mind, the windmill spends for renewable energy and it puts down some power lines and it feeds into some collective resource that puts the energy into the power grid. Is that close to right?

Mr. Ayers: Yes.

Senator Rabin: And the same thing would be true then for solar panels, is that correct?

Mr. Ayers: If you are talking utilities, yes. If it is on someone's house…

Senator Rabin: I mean a big solar farm that we put out to collect all this stuff that's going to feed this grid that is costing me money anyhow as a taxpayer, when the EMP bomb goes off if you will, doesn't that fry the wires that are delivering the power to the grid that we are supposed to be relying on and it never gets to the transformer? So we have to rewire everything again?

Mr. Ayers: Well, I'm not an engineer so I can't specifically speak to frying the wires, but if it's going to mess up one electric system, it is going to mess up them all.

Senator Rabin: So in other words, the renewable energy world would come to a screeching halt until it all got rewired again?

Mr. Ayers: That is electric generation that has to go through transformers just like everyone else. Yes.

Electric Cooperatives

Senator Rucho introduced Joe Brannan, Executive Vice President and CEO of the North Carolina Electric Membership Corporation. Mr. Brannan's presentation covered how electric cooperatives are structured, governing mechanisms, and alternate methods of regulation, and is filed as 7 – Brannan Electric Co-ops Overview. Senator Rucho opened the floor to questions at 4:21 PM.

QUESTION AND ANSWER

Representative Hager: I think most of us here are concerned about personal property rights and how we manage that for the consumer to make sure we have a strong grid. The way I understand it, I think you guys have the power of eminent domain, is that correct?

Mr. Brannan: That is correct.

Representative Hager: If you are looking at, especially if you are looking at line that is below 161 kv, can you explain to me how the consumer or the citizen's interest for that land you are going to cross is balanced with the need for the power line and where are the checks and balances on that?

Mr. Brannan: In trying to explain what each of the utility across the State looks at is trying to balance, as you said, the ability to serve the consumer in the most reliable manner and in the instances that new infrastructure, in particular distribution or subtransmission lines that would require, they would identify multiple paths and then from that standpoint work through a process to try to address the issues that may be raised with property owners. If all is able to amenable process through identifying and resolving any of the issues, it is left at that level, but if it is not addressed or it isn't amenable solutions, the process that is available to the utilities in this state is a process that would be handled through the courts and as it gets into the area of the courts, there is as you are well aware, a process that takes place that is recognized in a way that each of the counties on which that proposed transmission line or infrastructure is to be placed has representation and they go through a process of accessing a value for the land and try to work

through the process with the land owner in order to reach an amenable solution. So, from the stand point of the process that is available or the processes that are available for respecting property rights, I think what I would say is: there are really two levels. One is trying to handle it at the local level and try to work through the concerns of the property owner and if that doesn't work and the requirements are necessary to proceed, the courts of this State are the next level that would address that situation.

Representative Hager: Thank you Mr. Brannan. The next question I have is in developing the business case for where you would do this type of project, is that data available to the public on how you would arrive at your solution?

Mr. Brannan: I think the information that is utilized to make the case is presented, if it is in the courts, it is presented to the courts, the information, the data, information that supports the case so that is my understanding.

Representative Hager: So there is no public hearing, there is no local input other than what you gather originally?

Mr. Brannan: I think the local input is with the individual property owners, it is also managed at the Board level of each of the cooperatives, in our case it is heard at the Board level. As I mentioned, being a consumer-owned entity, the consumer does have the ability to bring issues before the Board of the individual cooperatives. So there appears to be, in this case, multiple avenues to raise concerns and I think addressing the concerns are the two processes that I identified.

Representative Hager: Last follow up. I had the question come to me about a facility charge that the co-ops would charge, take tobacco barns for instance, if a tobacco barn disconnects, I think there is a facility charge for that and maybe I don't think Duke Energy charges. So say they disconnect in October and reconnect in May, is there a facility charge for that time from the co-op for that time they are off line?

Mr. Brannan: I personally can't speak to all, but I would assume and I could follow up with this that there would be. As you mentioned earlier about the renewables, even though someone disconnects, the infrastructure is still there.

Representative Hager: Last one, I apologize. Is there any or would you have any issue if we looked at the 160 kv line and what goes to the Utilities Commission and lower that to and high tension line, let's say 44 kv and let's say 44 kv and above?

Mr. Brannan: Well from my standpoint, not knowing the process nor the reasoning behind 161 kv, I think it appears to be the appropriate level based on what has taken place in this state and the infrastructure that is in place has worked well under the current process, so I personally find no reason based on what I know.

There being no further business, the meeting adjourned at 4:27 PM. The next meeting will be held on January 7, 2013 at 1:30 PM.

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Senator Bob Rucho
Presiding

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Will Verbiest
Committee Clerk