STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
PUBLIC UTILITIES COMMISSION

In re: Issuance of Advisory Opinion to the Energy Facility Siting Board Regarding	:	Narragansett Electric Company d/b/a National Grid's Application to Construct and Alter Major Energy Facilities
		Docket No. 4029

PREFILED DIRECT TESTIMONY OF
Gregory L. Booth
President, PowerServices, Inc.
On Behalf of Rhode Island Division of Public Utilities and Carriers

WITH THE FOLLOWING EXHIBITS:

Divider	Exhibit	Description
1	GLB-1	Curriculum Vitae
2	GLB-2	Letter from Kazem Farhoumand, State of Rhode Island and Providence Plantations, Rhode Island Department of Transportation to Nick UCCI, Energy Facility Siting Board
3	GLB-3	PPI for Metals and Metal Products Indices and Distillate Fuel Oil
4	GLB-4	Summary of Cost Estimate Differences

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On Behalf of Rhode Island Division of Public Utilities and Carriers

RIPUC Docket No. 4029

Rhode Island Reliability Project

Prefiled Direct Testimony
April 6, 2009

DIRECT TESTIMONY OF GREGORY L. BOOTH, PE

GENERAL

Q. PLEASE STATE YOUR NAME AND THE BUSINESS ADDRESS OF YOUR EMPLOYER.

A. My name is Gregory L. Booth. I am employed by PowerServices, Inc. ("PowerServices"), UtilityEngineering, Inc. ("UtilityEngineering"), and Gregory L. Booth, PLLC ("Booth, PLLC") all located at 1616 E. Millbrook Road, Suite 210, Raleigh, North Carolina 27609.

Q. ON WHOSE BEHALF ARE YOU TESTIFYING IN THIS MATTER?

A. I am testifying on behalf of the Rhode Island Division of Public Utilities and Carriers.

Q. WHAT IS YOUR POSITION WITH POWERSERVICES, INC., UTILITYENGINEERING, INC., AND BOOTH, PLLC?

A. I am president of PowerServices, Inc., an engineering and management services firm, UtilityEngineering, Inc., a design/build firm, and Booth, PLLC, an engineering firm. As such, I am responsible for the direction, supervision, and preparation of engineering projects and management services for our clients, including the corporate involvement in engineering planning, design, construction management, and testimony for our clients.

Q. WOULD YOU PLEASE OUTLINE YOUR EDUCATIONAL BACKGROUND?

A. I graduated from North Carolina State University in Raleigh, North Carolina in 1969 with a Bachelor of Science Degree in Electrical Engineering. I am a registered professional engineer in twenty states, as well as District of Columbia, and including Rhode Island. I am also a registered land surveyor in North Carolina. I am also registered under the National Council of Examiners for Engineering and Surveying.

Q. ARE YOU A MEMBER OF ANY PROFESSIONAL SOCIETIES?

A. I am an active member of the National Society of Professional Engineers, the Professional Engineers of North Carolina, The Institute of Electrical and Electronics Engineers ("IEEE"), American Public Power Association, American Standards and Testing Materials Association, and the Professional Engineers in Private Practice. I am also a member of the IEEE Distribution Subcommittee on Reliability and the National Fire Protection Association, and an advisory member of the National Rural Electric Cooperative-Cooperative Research Network, which is an organization similar to EPRI.

Q. HAVE YOU PUBLISHED ANY TREATISES, MANUALS, COURSES, OR TAUGHT SEMINARS?

A. Since 1972, I have authored manuals and taught numerous seminars each year on engineering matters, including reliability, rates and regulations, design and construction and construction management and services matters. I have also prepared engineering manuals and text for instruction, seminars and courses. My manuals and texts have included subjects such as the National Electrical Safety Code ("NESC"), Power Loss Management, Power System Protective Coordination, Long-Range Planning, Asset Management Strategic Planning, Electric Utility Best Practices, Power Factor Optimization, Underground Design Standards, Hazard Assessment and Arc Flash Mitigation, the National Electrical Code, and many others. My seminars, instructions, courses and speaking have been before state and national organizations across the United States. I have been nationally published on some of these subjects as well.

Q. HAVE YOU ATTACHED TO YOUR TESTIMONY A COPY OF YOUR CURRICULUM VITAE?

A. Yes. My curriculum vitae is attached as *Exhibit GLB-1*, and includes an overview of my experience since beginning my work in 1963, and lists some of my publications, seminars conducted, and testimony provided.

Q. PLEASE BRIEFLY DESCRIBE YOUR EXPERIENCE WITH ELECTRIC UTILITIES.

A. I have worked in the area of electric utility engineering and management services since 1963. I have been actively involved in system planning and protective coordination and stability studies, including detailed analyses of all components of distribution and transmission systems including electric utilities in 40 states, and the District of Columbia, for over 300 clients. My experience includes all phases of consulting engineering, engineering design and management services from generation through transmission and substation design and distribution of power on electric utility systems. I have been actively involved in cost-of-service studies, rate studies and rate design, both retail and wholesale. My involvement has also included the planning, design, and construction management of generation, transmission, substation, and distribution line facilities. This involvement has included the inspection of these facilities and the evaluation of service reliability. I have performed hundreds of long-range and short-range planning studies, load flow studies, and cost estimates for electric utilities across the United States. I was involved in the management of all of the divisions of Booth & Associates, Inc. ("Booth & Associates"), for over 30 years, including transmission, substation, and distribution facilities design and construction management of approximately $100 million dollars per year in plant value additions. My involvement included electric utility systems in rural and urban areas as well as coastal, plain and mountain areas throughout the eastern United States and as far west as Arizona, Washington State, and Alaska, along with

design and construction in light, medium and heavy loading districts as defined in the NESC. My work has included services to numerous electric systems in the northeast, including Maine, Maryland, Massachusetts, New Hampshire, New Jersey, Pennsylvania, Rhode Island, and Virginia. I have been involved in power supply contract bids, negotiations, economic analyses and implementation, including evaluating the transmission system network capabilities. I have also been involved in projects to relieve or mitigate transmission congestion in the PJM area.

Q. DO YOU HAVE OTHER INVOLVEMENT AND EXPERIENCE WITH COMPANIES THAT PROVIDE YOU WITH ADDITIONAL EXPERTISE RELEVANT TO THIS DOCKET?

A. Yes. My electric utility reliability assessment work for the Rhode Island Division of Public Utilities and Carriers ("Division"), the New Jersey Board of Public Utilities ("NJBPU") and at the Pennsylvania PUC and the Virginia State Corporation Commission ("SCC") over the last ten years has involved in-depth assessment and working with northeastern electric utilities on reliability enhancement and the costs associated with such enhancement. Additionally, my involvement with IEEE, including the progress of IEEE 1366-2003 Standard on reliability provides additional insight into a variety of reliability issues. Also, I was directly involved in the purchase and transition of electric utility facilities from Progress Energy Florida (formerly Florida Power Corporation) to the City of Winter Park, Florida, and also the Fort Bragg Army Base electric utility system purchase by Sandhills Utilities, LLC and its transition along with Delmarva Power & Light distribution and transmission system on the Eastern Shore of Virginia purchased by A & N Electric Cooperative.

Q. HAVE YOU PREVIOUSLY TESTIFIED AS AN EXPERT BEFORE STATE UTILITY COMMISSIONS, OTHER REGULATORY AGENCIES, AND/OR COURTS?

A. Yes. I have testified on numerous occasions before the Federal Energy Regulatory Commission ("FERC"), including pre-filed testimony in both wholesale rate matters as well as in electric utility reliability complaints, including Duke Power Company and Dominion Power issues. I have also testified before the New Jersey Board of Public Utilities, the Delaware Public Service Commission, Minnesota Department of Public Service Environmental Quality Board, Virginia State Corporation Commission, the Pennsylvania Public Utility Commission, and the North Carolina Utilities Commission, most of them on multiple occasions. I have testified before the Rhode Island Public Utilities Commission on numerous matters, including Docket Nos. 3732 and 3564. I have also testified in electric utility acquisition hearings in Florida.

Q. HAVE YOU BEEN ACCEPTED AS AN EXPERT BEFORE STATE OR FEDERAL COURTS?

A. Yes. I have been accepted as an expert in the area of electrical engineering and electric utility engineering, construction and reliability matters and the NESC, EMF matters, and forensic engineering, including standard and customary construction practices in the electric utility industry and the electric industry before numerous states including Delaware, Florida, New York, North Carolina, Pennsylvania, Virginia, West Virginia, and federal courts.

SCOPE OF TESTIMONY

Q. HAVE YOU REVIEWED THE PRELIMINARY DECISION AND ORDER DATED SEPTEMBER 19, 2008 ISSUED BY THE ENERGY FACILITY SITING BOARD (EFSB)?

A. Yes.

Q. HAVE YOU REVIEWED THE TESTIMONY OF THE NATIONAL GRID WITNESSES, THEIR EXHIBHTS, AND THE FILINGS, INCLUDING VOLUMES 1 AND 2 AND APPENDICES FOR THE RHODE ISLAND RELIABILITY PROJECT ("PROJECT") WITH NATIONAL GRID'S ENERGY FACILITIES SITING BOARD (EFSB) APPLICATION DATES SEPTEMBER 8, 2008 FOR THE RHODE ISLAND RELIABILITY PROJECT, INCLUDING THE ENVIRONMENTAL REPORT ("ER")?

A. Yes, I have reviewed all of the documents as filed in Docket No. 4029.

Q. ON WHOSE BEHALF ARE YOU TESTIFYING?

A. I am testifying on behalf of the Rhode Island Division of Public Utilities and Carriers ("Division").

Q. WHAT IS THE SCOPE OF YOUR SERVICES FOR THE RHODE ISLAND DIVISION OF PUBLIC UTILITIES AND CARRIERS ("DIVISION")?

A. Under the statute and regulations, the Division of Public Utilities and Carriers (Division) is expected to assist the Commission in rendering its Advisory Opinion to the EFSB by its participation in the Commission Docket 4029. The Division has requested I provide an evaluation of the proposed project and review the original Narragansett Electric Company's (d/b/a National Grid) application made to the EFSB addressing the need, cost and possible alternatives to the Project. As part of my scope of services to the Division, I

have also examined: supplemental information filed by Narragansett Electric; responses to interrogatories and data requests issued by the various parties; information filed by other interveners, the Southern New England Transmission Reliability Needs Analysis Report as prepared by the ISO New England; and other materials provided by Narragansett concerning the New England East-West Solution (NEEWS) as prepared by Mr. Frank Mezzanotte. The Division has retained me as its expert, and, as such, I have produced certain data requests, performed certain analyses to assist in formulating a recommendation, provided discussion with the Division regarding status of the review of the aforementioned documents, and produced this testimony which includes my conclusions and findings and recommendations.

Q. WHAT IS THE SCOPE OF YOUR TESTIMONY IN THIS PROCEEDING?

A. My testimony will address my review, findings, and conclusions as they relate to the Project, as proposed, and the alternatives to the Project, including a No Build option, Non-Transmission Alternatives and various transmission alternatives to the Project. My analysis has specifically focused on the need and if the Project is cost justified, expressly determining the reasonableness of the cost of the Project and the rationale of Narragansett Electric Company's selection of the particular facility type and location. I have included in my review and consideration the economic and reliability benefits, and if the Project causes any unacceptable harm. My testimony will address the cost estimates and the appropriateness of any alternative. I will discuss areas of concurrence with the Narragansett filing and witnesses, together with those areas of divergence from the testimony of the witnesses.

Q. HOW HAVE YOU ORGANIZED YOUR TESTIMONY?

A. I have organized my testimony by first discussing the cost estimate, then by each National Grid witness, and have finished with a summary of my findings and my conclusions.

COST ESTIMATE

Q. HAVE YOU EVALUATED THE COST ESTIMATES PREPARED BY NATIONAL GRID FOR THE PROPOSED PROJECT AND THE ALTERNATIVE PROJECTS, INCLUDING THEIR UNDERGROUND ALTERNATIVE?

A. Yes. I have reviewed the cost estimates contained in its filing and as revised in testimony. I also evaluated the detailed cost estimates and data provided as a part of the responses to discovery.

Q. WOULD YOU FIRST SUMMARIZE ANY DIFFERENCES OR COMMENTS YOU HAVE IN REGARD TO YOUR EVALUATION OF THEIR COST ESTIMATES?

A. Yes. First it must be recognized that National Grid has done a study grade estimate at this point in the process. What that means is that you have a potential fifty percent spread in high to low for the cost estimate, based on the utilization of plus or minus twenty five percent contingency in the analysis. Simply stated, that means that the proposed Project could cost as little as $202.5 million and as much as $337.5 million with the National Grid estimate being $270 million. The cost estimates, including the details provided in response to data requests, have been carefully evaluated. Each individual project estimate contained substantial detail that even goes beyond the simple customary study grade cost estimate often done on an average cost per mile basis. National Grid included substantial detail, including rock removal costs and many details generally only seen in higher level estimates. Although these estimates have been characterized as study grade estimates and are not based on detailed design, they do contain substantial specifics, including labor and material costs and details by project component that I evaluated and reached generally the same cost estimate. Quite often I do not see the level of detail

contained in these estimates for study grade purposes. I have some differences of opinion concerning the inclusion of certain costs and the assumptions, which I will discuss in greater detail later in my testimony. I found the unit costs on the over head and underground project estimates to be consistent with the levels in the industry. My evaluation of the Project estimates for the overhead lines results in a cost estimate which would be closer to the low end of the National Grid study grade Project cost estimate. A similar analysis for all of the alternative overhead Project estimates was completed, and also resulted in general concurrence albeit lower cost. A substantially different cost estimate result was reached for the underground alternatives. It is my opinion that National Grid's cost estimate for the underground alternative has failed to incorporate more than fifty percent of likely cost on the upper limit, therefore significantly understating what the ultimate cost may be for an underground project along the potential route.

Q. DO YOU HAVE ANY OTHER GENERAL COMMENTS CONCERNING THE COST ESTIMATE FOR THE PROPOSED PROJECT AND ALTERNATIVES BEFORE WE DISCUSS ANY DETAILS?

A. Yes. My review of the cost estimates as prepared by National Grid indicate that each line segment was priced as if it was an independent stand-alone project. Therefore, there is a degree of duplication of cost. As an example, there is the same cost inserted on each project for access roads. Clearly, as the 359 line is being built along rights-of-ways where other lines are being relocated and reconstructed, the same access road would be utilized for all the projects within the same right-of-way, therefore, this represents a duplication of cost. This represents as much as $3.3 million of additional cost included in the proposed project estimate. Similar to the duplication of cost for access roads, there is

also the cost associated with mobilization/demobilization on each project. Where projects are going to be constructed concurrently in the same right-of-way as is the case with the proposed project, there will only be the mobilization and demobilization cost associated with beginning and ending the project. It is reasonable to assume that if the proposed project goes forward, the construction will begin and proceed from beginning to end as one project not a series of small projects. This would result in approximately a million dollar reduction in the overall cost estimate as prepared by National Grid. Also, there is a small job mobilization factor which, if the smaller jobs were stand-alone projects, would seem reasonable. However, recognizing that 1) the proposed project represents a large and extensive project, and 2) would be expected to be constructed all within the same construction time period, and 3) would all be part of the same project, the small job mobilization factor appears to be unnecessary. That would only be applicable if individual small contractors for each small job were engaged, or if the project was a series of small stop and start projects.

Q. WOULD YOU OUTLINE THE ADDITIONAL DETAILS ASSOCIATED WITH YOUR REVIEW OF THE COST ESTIMATE AND ANY ADJUSTMENTS YOU BELIEVE ARE APPROPRIATE?

A. Yes. Beyond those listed above, there were details associated with the overall project I could not identify and items which I believe were duplicative costs.

1. Each cost estimate includes three (3) railroad crossings and the associated cost of crossing railroads. I was unable to locate on the information provided three railroad crossings. These crossings were not located on aerial/satellite documents or during the helicopter tour. This would be a minor detail and would likely only result in $33,000 of savings.

2. The new Circuit 359, 345 kV line includes the same cost per foot for the proposed 954 ACSR conductor to be used on this line as the cost per foot which is proposed for the 1590 to be used on conductor for the other lines. This overstates the cost of labor and materials associated with the conductor for Circuit 359 by approximately one million dollars.

3. I recognize that the quantity of structures in the estimate is a study grade estimate. My review indicates that there could be approximately 13% fewer structures required. My estimate would include 209 structures in lieu of the 240 structures in the National Grid estimate because I believe that the average span length could easily be 548 feet in lieu of 462 feet. Overall, I believe the Circuit 359 estimate, although reasonable, is easily overstated by $1.5 million based on structure quantity.

4. For Circuits S-171 and T-172, the estimate incorporates three railroad crossings and helicopter wire stringing operations. I have been unable to identify any railroad crossings, and to the extent that I do not anticipate helicopter wire stringing operations, there would be a savings of approximately $1.8 million. Additionally, the cost estimate includes $780,000 of right-of-way security and environmental controls for each line, which were also included in the Circuit 359 estimate. I believe this cost would only be incurred once, not duplicated for each line. This would be an approximate $1.56 million savings. Lastly, on these lines it appears that the site preparation and cleanup for each of the 115 kV circuits is more than $490,000 greater than the same cost associated with Circuit 359.

5. The Circuit 332 estimated cost was not originally included in the project cost. It was added later in the February 9, Data Request Number 1 Response. It also has what is identified as a small job mobilization factor and other costs which I feel substantially

overstate the cost associated with this particular 400' long line section work. I feel the cost shown for this work, which National Grid has provided less detail for, is overstated by some 250%.

6. The Circuit H-17 line construction cost estimate is based on what appears to be an average cost per mile of $2.5 million, which is the cost for the 345 kV construction not 115 kV construction. Similarly to the other smaller line sections, there is a small job mobilization factor which I believe would only be appropriate if this was a stand-alone job and not part of substantially larger project. I believe this project, although relatively small, is overstated by $200,000.

7. I believe Circuits G-185S, L-190 and G-185N are all somewhat overstated because of the utilization of the small job mobilization factor and the fact that there is mobilization/demobilization and access road costs which will already be incurred as part of the 345 kV line project, and thus these project costs are driven up above the average cost per mile for the 345 kV construction, even though they are 115 kV line construction.

Q. COULD YOU SUMMARIZE WHAT YOUR OVERHEAD LINE COST ESTIMATE REVIEW HAS INDICATED?

A. Yes. What I have determined is that National Grid's cost estimate for the overhead line construction is approximately $17.7 million higher than an estimate which I would prepare. This means that the overhead line construction cost estimate in 2008 dollars is overstated by 7%. This is not necessarily unreasonable considering this is, in fact, a study grade estimate. The reason I address this is that, when parties are comparing the proposed project and various alternatives, including the underground alternative, it is understood that the overhead line construction cost estimate is not understated but rather

overstated and therefore the differential in cost between the proposed overhead line construction and an underground alternative would be greater.

Q. HAVE YOU EVALUATED THE UNDERGROUND ALTERNATIVES IN A SIMILAR MANNER AS YOU EVALUATED THE OVERHEAD PROJECTS?

A. Yes, I performed a detailed evaluation of the cost estimate as prepared by National Grid for the underground alternatives in a similar fashion to my evaluation of the overhead projects. I found several components which I believe substantially understate the costs associated with the underground project.

Q. COULD YOU DELINEATE THOSE ITEMS YOU BELIEVE CONSTITUTE COMPONENTS THAT NATIONAL GRID FAILED TO REFLECT IN THEIR UNDERGROUND COST ESTIMATE?

A. Yes. The major components in National Grid's cost estimate being understated are as follows:

First, on projects such as a major 345 kV transmission line in duct bank being installed along highway rights-of-way where there is a high probability of encountering water, sewer, natural gas and other utility facilities, it has been my experience that the depth in which the line must be installed is greater than proposed by National Grid. I would anticipate that the average depth required in order to avoid conflict, most particularly with sewer lines, would be three (3) to four (4) additional feet. Although natural gas lines, telecommunication lines, water lines and other utility facilities, including the electric utilities (low and medium voltage distribution systems) can have some degree of flexibility in depth, a sewer system does not have the flexibility of adjustment, since sewer systems are based on gravity and not pressure. This means there is little if any adjustment in sewer line elevation that can be achieved. In underground projects, most

particularly large transmission duct bank projects, I have found that a significant portion of the cost of the project is associated with other utilities and the handling and relocation and incorporation of those utilities into the total project. I have also found that the impact of sewer lines is the greatest as it relates to depth, overall location, and the associated excavation cost. Recognizing that this is a study grade estimate and there has not been identification of all the other utilities that would be in and along the DOT corridor in particular, and the amount of sewer line and its depth has not been identified, I believe it is necessary to incorporate substantially more dollars in what will be the inevitable cost that is not reflected in the estimate at this time.

Q. WOULD YOU OUTLINE THOSE DIFFERENCES WHICH YOU IDENTIFIED IN THE ALTERNATIVE UNDERGROUND CONSTRUCTION PROJECTS?

A. Yes. First I believe that the amount of underground cable length is understated by as much as 17,000 feet. It is my opinion there will be substantially greater scrap, slack, and splicing waste in each pull (from manhole to manhole) than is reflected in the total cable footage. I believe this would account for as much as $4.4 million of additional cost. Second, it is my opinion that the underground alternative utilizing the highway right-of-way option is substantially understated due to several factors that I generally find are encountered that will require additional labor and construction time and substantial additional depth to the installed location of the cabling system. The fact that other utilities are nearly always encountered and that these utilities, most particularly gas, water, sewer and storm sewer, cannot be readily relocated requires the actual install depth of the underground facilities be greater than the depth provided in the example. Most often this is 3 to 4 feet deeper than otherwise anticipated. This alone could add as much as $5 million dollars to the cost of the project. Third, during the helicopter tour it was

apparent that there is a significant degree of rock that will be encountered. The installation of a duct bank underground transmission system, particularly along the road where greater depths will be required, that will encounter substantial rock will result in a tremendous increase in the installation cost. Although some $4.3 million has been included for rock in the National Grid estimate, I believe, due in part to the greater depth I estimate, this cost should be at least $8 million higher.

Q. DO YOU HAVE ANY OTHER OBSERVATIONS CONCERNING THE COST ESTIMATES FOR THE ALTERNATIVE UNDERGROUND ROUTES?

A. Yes. The cost estimates for the underground routes contain the same plus or minus twenty five percent study grade differential as the overhead line construction. Although during the 1990's and early 2000 time frame that has been a reasonable approach, in the last several years it has been found that it substantially understates the potential maximum cost associated with an underground project, most particularly an underground transmission project. The market has seen, in recent years, wild swings in the price of a barrel of oil. If a barrel of oil moves from $40 a barrel to $150 a barrel, we all recognize the impact at the gas pump, however, it must also be recognized that, because a substantial portion of the material cost associated with a solid dielectric transmission conductor is petroleum product insulation, this type of change in price of a barrel of oil will reflect itself in a significantly higher cost associated with the transmission cable. Based on the volatility of material cost, the volatility associated with the encountering of other underground utilities, and underground issues that cannot be anticipated until one begins the project, and my belief that, from a route observation standpoint, there will be a significant amount of rock encountered, the cost of construction for the underground alternative could easily be 100% higher than estimated. It is my opinion that, in order to

provide a reasonable evaluation of the cost differential between the various alternative projects, it must be recognized that the underground transmission alternatives would not have a plus or minus 25% cost spread but, rather, would have cost spread of between -25% and +100%. I would estimate the underground construction project alternative of $415 million could easily approach $580 million for comparative purposes.

Q. HAVE YOU INCLUDED AN EXHIBIT THAT REFLECTS YOUR COST ESTIMATE ADJUSTMENTS AS DISCUSSED?

A. Yes. *Exhibit GLB-4*, Sheets 1 of 4 through 4 of 4 summarizes my adjustments and the impact on the Project cost estimate, and the preferred underground alternative cost estimate.

ELECTRIC AND MAGNETIC FIELDS

Q. HAVE YOU REVIEWED THE ELECTRIC AND MAGNETIC FIELD RESEARCH UPDATE IN THE RHODE ISLAND RELIABILITY PROJECT, VOLUME 1?

A. Yes, I have.

Q. WHAT COMMENTS DO YOU HAVE IN REGARD TO THE ELECTRIC AND MAGNETIC FIELD RESEARCH UPDATE IN THE RIRP?

A. There have been numerous studies to attempt to determine any potential health risks associated with exposure to electric and magnetic fields. Also, there have been generally accepted ranges for EMF levels at the edge of transmission right-of-way in some states. My prior research and testimony, including a recent study in Virginia, are consistent with the materials contained in Volume 1.

Q. WHAT ARE THE RESULTS OF YOUR RESEARCH?

A. EMF has been the subject of a great deal of study both in United States and internationally. New York and Florida in their analyses have established 200 and 150 milliGauss, respectively, in each state as a preferred maximum level at the edge of transmission rights-of-way for new lines. The estimated levels for the proposed Project on Tables 7-7 and 7-8 are within this limit. That is not to say that this is the highest acceptable level, it only gives a reference to a few other states that have established recommended levels. EMF can be measured in units of Gauss or Tesla, and there is significant data available to determine the milliGauss levels of electrical devices and equipment, however, there has been no definitive link to EMF being a carcinogen.

Q. HAS YOUR ANALYSIS IN THIS MATTER OR OTHERS DETERMINED THAT ANY STATE AGENCY HAS EVALUATED THE EMF ISSUE AND THEN TAKEN NO SUBSEQUENT ACTION?

A. Yes. In 1985, the Virginia General Assembly adopted a resolution requesting the State Corporation Commission and the Virginia Department of Health monitor ongoing research on the health and safety effects of high voltage transmission lines and the correlation to EMF. In 1998, after 13 years of monitoring and reporting, the Virginia General Assembly decided it was no longer needed. The Virginia Department of Health in conjunction with the State Corporation Commission issued a final report on October 31, 2000. The conclusion of the report was "Evidence from laboratory studies has thus far failed to confirm that exposure to EMF causes cancer in experimental animals. Laboratory experiments have also failed to show how EMF could initiate or promote the growth of cancer." The Commonwealth of Virginia and the State Corporation Commission took no further action and established no minimum acceptable standards.

Q. DO YOU FIND ANY ADVERSE LEVELS PROJECTED FOR ELECTRIC OR MAGNETIC FIELDS IN APPENDIX B AS FILED?

A. No. It is simply important to recognize the EMF levels for the underground alternative will be substantially higher than those produced by the overhead proposed project.

NATIONAL GRID WITNESSES' TESTIMONY

DAVID J. BERON

Q. HAVE YOU REVIEWED THE TESTIMONY OF DAVID J. BERON, PE, PMP, AND DO YOU HAVE ANY COMMENTS?

A. Yes, I reviewed Mr. Beron's testimony. He is National Grid's (Narragansett's) project Manager who introduced the Project to the EFSB and sponsored the application and supporting information. Mr. Beron has outlined the overall project selection, the alternatives, and the estimated project cost. Although I have outlined in detail in my earlier testimony the comments which I have concerning my detailed evaluation of the National Grid cost estimates, I find that Mr. Beron's Attachment DJB-1 estimated project cost in 2008 dollars for the proposed Project of $270 million to be an acceptable cost estimate, particularly as supplemented to incorporate a portion of the cost missing from the initial filing. Even with all of my comments concerning the overhead construction cost being overstated, the $270 million is within the plus or minus twenty five percent study grade level estimate.

MARK STEVENS

Q. HAVE YOU REVIEWED THE PRE-FILED TESTIMONY OF MR. MARK STEVENS, PE AND WOULD YOU PROVIDE COMMENTS?

A. Yes, I have reviewed the pre-filed testimony of Mr. Stevens. As part of reviewing Mr. Stevens' testimony, I have also reviewed documents provided in advance of the National

Grid filing concerning the New England East-West Solution (NEEWS) Planning Study and the fact that the need for the project, as outlined in the ER, is part of a broader solution as proposed in the NEEWS study. Additionally I reviewed the other documents as filed in the ER and Mr. Stevens' exhibits, along with the relevant New England ISO Needs Assessment. Most particularly, Table 3-1 of the ER and Attachment MS-2 outline a series of contingency scenario analyses both single and double contingencies. These outline what I believe are reasonable contingency and potential loss of transmission system components that will result in the loss of significant levels of load up to 500 megawatts. I do question a single contingency analysis which includes a generator outage and a line outage. On the surface, this would represent a double contingency scenario. I understand from discovery response and ISO materials that the ISO expects National Grid to run its transmission outage scenarios with certain generator outage conditions or dispatch stress conditions. This would represent a highly stressed condition on the system which is less probable than a single contingency or double contingency transmission outage alone. It does, however, have a potential to occur. I would, however, not expect a critical generating plant in Rhode Island to be off-line during a peak load condition for dispatch reasons unless it was also having an outage condition. It appears unlikely that a critical plant would not be dispatched during peak load conditions, whether normal or stressed dispatch. There is, however, often economic dispatch that may have a particular plant offline. The proposed Project resolves the planning criteria violations (voltage and thermal) and thus results in a more enhanced level of transmission system reliability. I reviewed Mr. Stevens' testimony in light of the alternative projects outlined and find that his explanations and conclusions are reasonable and appear supported by the load flow contingency analysis. The ER and his testimony outline a

need that is supported by the study and the Table 3-1 summary of the most severe planning criteria violations. In reviewing the proposed project and the alternative projects, including the no build option, in light of the transmission planning criteria National Grid, ISO New England, NEPOOL, NPPC, and NERC, the proposed project stands out as a reasonable solution for Rhode Island while having the additional benefit of being the most prudent alternative to incorporate in the overall NEEWS Project.

Q. DID YOU OBSERVE ANY INCONSISTENCY IN MR. STEVEN'S TESTIMONY WITH ANY OTHER WITNESS THAT REPRESENTS A CONCERN?

A. Yes. On page 15 Mr. Stevens' states “non-transmission alternatives to the Rhode Island Reliability Project were found not to be satisfactory or sufficient in nature to displace or defer the need for the Project.” I will also point out that on page 6 in the Table outlined by Mr. Stevens he addresses the fact that the state of Rhode Island's load of 2,137 megawatts is 6.5 percent of the total New England load. Also, the contingency analyses contained in the ER, and Table 3-1, and Mr. Stevens' statement on page 6 “this table shows load shedding requirements in the 100 megawatt to more than 500 megawatt range” would mean the maximum loss of load is 500 MW versus the total Rhode Island load of 2137 MW. I find Mr. Stevens' statement and Mr. Collison’s testimony and the report of ICF to be some what incongruent and irreconcilable. The idea that 2000 megawatts of non-transmission alternatives would be required in lieu of the “Project” seems substantially overstated in light of Mr. Stevens' testimony. I will discuss this in greater detail on my comments associated with Mr. Collison's and ICF's report in my later testimony. However, I believe it is important under Mr. Stevens' testimony to point out this incongruence in the overall non-transmission alternative discussions. It would appear that Mr. Stevens' testimony and Mr. Collison's, as I will comment later, are more

specifically focusing the issue of non-transmission alternatives at levels of 2,000 megawatts being required when one reviews the entire New England East-West Solution and not the level of non-transmission alternative required to defer or offset the proposed 345 kV transmission project and associated 115 kV project upgrades just to bring the Rhode Island transmission into compliance with ISO criteria.

KENNETH K. COLLISON

Q. HAVE YOU REVIEWED THE TESTIMONY OF MR. COLLISON WITH ICF, AND THE REPORT THAT HE AND HIS FIRM PREPARED THAT WAS ATTACHED TO THE ENVIRONMENTAL REPORT ("ER") AS APPENDIX F, AND DO YOU CONCUR WITH ALL OF HIS FINDINGS?

A. Yes I have reviewed Mr. Collison's testimony and the report included in the ER as Appendix F. I do not concur with all of the findings of the ICF International report or his testimony.

Q. COULD YOU BRIEFLY OUTLINE THE AREAS OF WHICH YOU DO NOT CONCUR?

A. Yes. The following three areas are the areas in which I either believe his testimony does not reasonably reflect today's technologies and capabilities, or are issues which appear to lack concurrence between Mr. Collison's testimony and the studies and testimony of other National Grid witnesses, and the ISO witness. These are:

1. His testimony indicates Non-Transmission Alternatives, including Demand Side Management (DSM) and distributed generation capabilities, and Combined Heat and Power Resources (CHP), cannot be real time dispatched efficiently or effectively, and that they cannot be relied upon to a significant degree of reliability, and distributed

generation can take a very long time to be brought online. I will later discuss that this has not been my experience, and I believe that the technology exists that allows distributed generation and CHP and DSM to be as reliable if not more reliable than nearly any other form of utility generation that can be brought online in a timely fashion.

2. Mr. Collison states that between 1,500 and 2,000 megawatts of Non-Transmission Alternative resources would be required to offset the value of the 345 kV transmission project as proposed. On the surface this appears to be incongruent with the National Grid Study, and appears to be incongruent with the evaluation of the Rhode Island project. It also seems very excessive considering Mr. Mezzanotte's testimony on behalf of the ISO. I will discuss this in further detail later.

3. Mr. Collison appears to be indicating in his testimony and report that Non-Transmission Alternatives cannot be sufficiently incorporated to allow any of the other alternative projects considered to be effective. Again, this appears to be somewhat incongruent with the testimony and study of National Grid, and I will discuss this in further detail.

Q. WHAT DIRECT EXPERIENCE HAVE YOU HAD WITH THE APPLICATION OF DSM, HEAT RECOVERY, "PURPA QUALIFIED" GENERATION, CHP AND DISTRIBUTED GENERATION AND ITS DISPATCH?

A. I have been involved in the economic analysis, design and installation of hundreds of megawatts of distributed generation, including CHP, within eastern North Carolina and other states. This generation was installed to be used as a peak demand reduction resource and has been effectively operated for over fifteen years, being called on and dispatched within minutes and being extremely reliable and efficient and effective for

peak load demand reduction. I also have firsthand knowledge of generation being effectively dispatched from a central control center managing over 800 megawatts of distributed generation and CHP. My experience includes operations in Florida, Delaware and Virginia, in addition to North Carolina.

Q. DOES THIS FIRSTHAND EXPERIENCE, IN YOUR OPINION, SERVE AS THE BASIS FOR YOUR DISAGREEMENT WITH A PORTION OF MR. COLLISON'S TESTIMONY AND REPORT AND WOULD YOU EXPLAIN IN GREATER DETAIL WHAT THE DIFFERENCES ARE?

A. Yes. This experience has shown me that, in particular, DSM, CHP and other forms of distributed generation can be dispatched on a real time basis, have a very high reliability, and can be dispatched very quickly to be extremely effective for controlling peak load which would be required if this was one of the non-transmission alternatives utilized. I do believe demand side management and distributed generation resources can be, and are in many locations, a reliable alternative to base and intermediate generation and transmission capacity installed by the electric utilities to relieve potential constraints on transmission systems and lower cost.

Q. YOU HAVE INDICATED THAT YOU BELIEVE THE TESTIMONY OF NATIONAL GRID AND THE ICF REPORT IS INCONGRUENT. COULD YOU PLEASE EXPLAIN?

A. The ICF report and the testimony of Mr. Collison seem to indicate that the combination of non-transmission alternatives would have to result in between 1,500 and 2,000 megawatts of new resource or demand reduction capability at a level of 40 to 70 percent of the total load in Rhode Island. My review indicates that Mr. Collison's requirement must be the level to offset the entire New England East-West Solution (NEEWS) project

as proposed by the ISO, not the level required to offset the contingency study loss of load level shown in the National Grid ER. The reason this 1,500 to 2,000 megawatts does not seem to directly correlate to Rhode Island is that the testimony of Mr. Stevens, with National Grid, the ER itself, and Table 3-1 in Section 3, Purpose and Need, which would indicate that there would be something between 100 and 500 megawatts of load interruption under the various transmission contingency scenarios evaluated by National Grid. Of course there is a very significant difference between a maximum of 500 megawatts of lost load and the requirement for 2000 megawatts of non-transmission alternative. Although an interrogatory question was submitted asking for some clarification, sufficient clarification was not provided to dissuade my concerns about this incongruence. Additionally, the ISO witness, Mr. Mezzanotte testified that the entire northeast blackout in August 2003 interrupted some 2500 MW of New England load. Certainly, 2000 MW of non-transmission alternatives is not required for just one transmission reliability project in Rhode Island, particularly when the entire Rhode Island load is less than 2200 megawatts as evaluated in the needs analysis per Mr. Stevens. Hopefully, the parties will clarify this in their follow-up rebuttal testimony addressing this issue as I have raised it in my testimony.

Q. DOES THE NATIONAL GRID RESPONSE TO DPUC 2-20 HAVE AN EFFECT ON YOUR PRIOR QUESTION RESPONSE?

A. It does not change my overall concern. If Mr. Collison and the ICF report change to state that only 800 MW of Non-Transmission Alternatives is required to offset the proposed Project, then I would agree this level approaches the expected level required.

Q. DO YOU THINK IT IS REALISTIC TO EXPECT NATIONAL GRID TO BE ABLE TO ACHIEVE EVEN THE LOWER 500 MEGAWATT LEVEL OF

DISTRIBUTED GENERATION AND DSM INSTALLATIONS IN THE SAME TIME FRAME THAT THEY PROPOSED TO COMPLETE THE 345 KV LINE?

A. No, I do not. As I indicated above, I have significant experience in the installation of a very large amount of demand side management, distributed generation and heat recovery generation projects, in North Carolina and Florida and Virginia in particular. It took well in excess of 10 years to implement some 400 megawatts worth of demand side management, distributed generation and heat recovery project installation, even with aggressive efforts and a more than $19.00 per kW monthly coincident peak demand benefit in North Carolina. I believe it would be an extremely aggressive project to take on, and somewhat unlikely that sufficient DSM, distributed generation and heat recovery projects could be brought online in the same time period as the transmission Project under the assumption that no more than 500 megawatts was required.

Q. IN YOUR THIRD ITEM OF CONCERN WITH THE ICF TESTIMONY AND REPORT, YOU HAVE INDICATED YOU BELIEVE THE COMPARISON OF THE REQUIRED GENERATION IS TO THE ENTIRE TRANSMISSION PROJECT. COULD YOU PROVIDE FURTHER EXPLANATION?

A. Yes, my reading of the testimony and the ICF report is that the 1,500 to 2,000 megawatts is the requirement of generation in Rhode Island to offset the entire New England East-West Solution project and, furthermore, the testimony seems to be comparing what level of Non-Transmission Alternative is required to create the equivalency to the 345 kV transmission system. I do not believe this is the appropriate comparison or question. The first question should be how much of this non-transmission alternative is required to defer the project and the second questions should be how much non-transmission alternative is required to eliminate the project, including if the project was significantly

smaller with non-transmission alternatives as part of the scenario. There is no question that a 345 kV transmission line using bundled 954 ACSR conductor is going to have tremendous capacity capability, and it would clearly take 1,500 to 2,000 megawatts of non-transmission alternatives to even reasonably approach the value of such a transmission line. I do not believe, however, that it is the appropriate comparison. The correct comparison is what non-transmission alternatives are necessary to defer or eliminate the contingency outage concerns in Rhode Island. Even recognizing that the non-transmission alternatives do not create an equivalency of capability and capacity, neither do they offer a complete solution for the NEEWS project.

Q. ARE YOU RECOMMENDING NON-TRANSMISSION ALTERNATIVES FOR THE 345 KV TRANSMISSION LINE PROJECT AS PROPOSED?

A. No. What I am suggesting is that the non-transmission alternatives have not been given full and appropriate evaluation based on the information contained in the testimony or report and interrogatories responses. National Grid and its consultant can, hopefully, further explain what I see as a lack of congruency between their contingency analysis, the ICF study, and the actual level of non-transmission alternatives required. My main purpose for raising this issue is to achieve clarity and to point out that non-transmission alternatives can be part of a reliable, broader and longer view of all of the needs, both in Rhode Island and throughout New England. As it relates to this specific 345 kV transmission project in Rhode Island, I am not suggesting or recommending that non-transmission alternatives be utilized in lieu of the 345 kV Project. I believe the other benefits to Rhode Island, including enhanced transmission reliability and enhanced capability of wheeling on a long term basis more cost competitive generation options and market power without constraints into Rhode Island, would offset even the ability to

defer or eliminate for some time period the 345 kV transmission Project. Furthermore, even at the 500 MW level the Non-Transmission Alternatives would cost as much or more to install as the proposed Project. The potential for optimum location of 500 MW of generation (Non-Transmission Alternative) presents numerous implementation concerns not addressed by the National Grid filing documents. At a minimum I see installing this level of integrated generation in Rhode Island presenting the following problems:

1. Availability of land and generation siting issues and environmental impact on virgin lands
2. Availability of adequate fuel supply, natural gas being the most likely choice
3. Adequate availability of gas pipeline capacity
4. Construction of high pressure natural gas lines and the routing and environmental impact
5. Construction of the substation and switching station and transmission interface facilities and the environmental impact on virgin lands
6. The duration associated with the generation addition process could be well beyond the time frame when transmission system stability and criteria violations are severe and in excess of the 500 MW loss of load scenario
7. The project construction cost would easily approach $375,000,000
8. The 500 MW of generation only defers the transmission need and does not eliminate the need for the same transmission project in the future

The proposed 345 kV transmission line will conservatively provide 3 times the immediate needed capacity relief and the 1500 MW of capacity value suggested to be

needed in the ICF Report. In summary, although I do not agree with several of the points in the ICF study and I find an incongruence between their study and non-transmission alternative load reduction and capacity requirements versus the loss of load study contingency scenario completed by National Grid, which does need to be addressed to complete the record, I support the 345 kV transmission Project as a better long term solution, a more readily achievable solution in the near term and a lower cost solution with less environmental impact. Although I support the proposed Project over the Non-Transmission Alternatives, it is for different reasons than presented by National Grid in its testimony and exhibits and filing Appendix F.

TODD G. KOPOYAN

Q. HAVE YOU REVIEWED THE PRE-FILED TESTIMONY OF MR. KOPOYAN AND COULD YOU PROVIDE YOUR COMMENTS?

A. I have reviewed Mr. Kopoyan's pre-filed testimony and his exhibits, together with how his testimony supports the project and outlines the substation/switching station and transmission intertie needs. I find that his testimony reasonably reflects what is proposed. I believe the proposed solution for the Rhode Island Reliability Project ("RIRP") and the integration of the Rhode Island Interstate Project ("RIIP") represent a reasonable and appropriate solution. I believe the approach outlined and proposed provides the most prudent long-term solution and cost effective integration of the Rhode Island Reliability Project with what has been described as a Near Term Proposed Rhode Island Interstate Project. The proposed Project must include modification of the transmission switching station facilities in order to incorporate the intertie of the new 345

kV transmission line. It is my understanding that National Grid may need to expend some additional $7.4 million on the switching station at West Farnum Substation. This is a direct result of further engineering analysis that may require additional gas insulated bus unless National Grid can take a more extended outage to complete the additional expansion beyond that currently proposed in the filing. The explanation provided during the site visit was reasonable and is accepted as a possible additional cost that I believe is justified.

DAVID M. CAMPILII

Q. HAVE YOU REVIEWED THE PRE-FILED TESTIMONY AND EXHIBITS OF MR. DAVID M. CAMPILII, PE AND WOULD YOU PROVIDE US WITH YOUR COMMENTS?

A. Yes. I have reviewed the pre-filed testimony of Mr. Campilii, including his exhibits in regard to the two alternative underground projects outlined in the filing and in the ER. In general, I am in agreement with most of the testimony as presented by Mr. Campilii. Most specifically, I agree with the operation and maintenance comparison list he has outlined on pages 4 and 5, although I believe that his description under the heading "Reclosing" provides a more adverse picture than is reality. The reason for having automatic circuit breakers reclose back for momentary outages on overhead transmission systems is, as Mr. Campilii states, most overhead system outages are momentary in nature. The reasons these outages are momentary in nature is because they are most frequently either a result of lightning or trees and sometimes animals. In the case of transmission facilities, lightning is the most predominant cause since transmission right-of-ways are substantially more secure than distribution rights-of-way from a tree

trimming and danger tree standpoint. Mr. Campilii again correctly points out that for underground systems there are rarely, if ever, momentary outage scenarios, particularly on transmission. Therefore, protective equipment is not set up to reclose and thus maintain service through a momentary interruption, but rather create a sustained interruption. The fact is, however, underground systems, even with reclosing, would have very few if any momentary interruptions since animals, trees, and lightning are all generally not impacting the underground system. To the extent that lightning impacts the underground system it does, in fact, create substantial damage and a sustained outage. Therefore, I would say that Mr. Campilii's discussion of reclosing, although accurate, does not fully depict the situation and I would not characterize it as necessarily a disadvantage or advantage, but simply a fact of the substantial difference in what events impact an overhead system versus what impacts an underground system.

I do not see any discussion or comments relative to a recent Department of Transportation letter providing comment on the installation of underground facilities along highway rights-of-way. It is important to point out that the Department of Transportation sees the installation of an underground transmission system along its highway right-of-way as having an adverse impact. I have attached to my pre-filed testimony *Exhibit GLB-2* which is a copy of this letter. This letter may not have been considered by Mr. Campilii at the time he assisted in preparing the filing or his testimony and may impact his testimony on Page 7 where he answers "any underground alternative is expected to have significant cost, operational and schedule disadvantages compared to the proposed project. At this point, I believe the most practical underground alternative would be one that would use the roadway network, and which would utilize a solid dielectric cable construction." Although I agree with the first portion of his statement

concerning the fact that an underground alternative is expected to have significant cost, operational and schedule disadvantages, if undergrounding were to be pursued it may be necessary to review, in light of D.O.T.'s letter, whether the roadway network alternative is in fact the preferred underground alternative.

Q. YOU HAVE PREVIOUSLY PROVIDED TESTIMONY CONCERNING YOUR COMMENTS ON THE COST ESTIMATE ASSOCIATED WITH THE UNDERGROUNDING ALTERNATIVES. SINCE MR. CAMPILII IS THE CONSULTANT WHO IS APPARENTLY RESPONSIBLE FOR THE DEVELOPMENT OF THIS COST ESTIMATE AND DISCUSSES THE UNDERGROUND TRANSMISSION ALTERNATIVES IN HIS TESTIMONY, DO YOU HAVE ANY COMMENTS CONCERNING HIS COST ESTIMATE AND TESTIMONY AND WOULD YOU OUTLINE WHAT THEY ARE?

A. Yes I have several comments in regard to the cost estimate and Mr. Campilii's testimony. First I would anticipate that Mr. Campilii would revise his testimony on page 6 to be consistent with the testimony of Mr. Beron by adjusting the proposed Project cost estimate from approximately $245 million to the revised estimate of $270 million, as contained in both responses to data request and as contained in Mr. Beron's testimony. Second, on page 6 Mr. Campilii summarized that the underground alternative for the 359 line between West Farnam Substation and Kent County Substation is estimated at $415 million. He goes on, in his testimony on page 7, to characterize the cost estimate as a study grade estimate with an accuracy of plus or minus 25% and that it is based on a conceptual design. What I believe Mr. Campilii's cost estimate reflects is the conceptual design based on an instant in time and it is not reflecting a substantial amount of volatility in many areas that can result in a much more costly underground project than +25%. I

did not find in Mr. Campilii's testimony or work product any evaluation or reflection of a variety of components that can result in substantial cost volatility, resulting in a project that could cost not 25% more than a conceptual estimate, but rather upwards of 50 to 100 percent more. I believe the upper limit on the underground construction cost could easily be $580 million based on the following volatile factors that do not appear to be reflected in Mr. Campilii's testimony, nor would they be factored into a general plus or minus 25% accuracy estimate. The components of volatility which I believe are not fully reflected in an upper limit for the cost are:

1. The need to install the transmission duct bank system upwards of three to four feet deeper as a result of conflicts with other utilities including water, sewer, electric and gas.
2. Increased costs associated with project delays, redesigns, mobilization, and demobilization due to encountering unknown or unexpected underground obstructions, including more rock at greater installation depths.
3. The significant cost impact associated with the removal of large quantities of rock during the construction process, which significantly impacts the trenching and duct bank installation cost. Mr. Campilii has included substantial rock removal cost ($4,342,950) based on his more shallow depth. I believe this could be understated on the upper limit by at least as much as an additional $8,000,000.
4. The volatile petroleum market, which has seen swings in raw petroleum product cost of upwards of 300% will significantly impact the cost of solid dielectric cable. This could affect the cable cost as much as $147,200,000. See *Exhibit GLB-3* for a recent Producer Price Indices ("PPI") analysis.

5. Significant cost overruns as a result of delays associated with encountering unexpected and adverse components in the underground construction, which can compound material cost due to substantial escalating cost in raw materials because of time delays, which result in swings much greater than the 25% plus or minus contingency level discussed with study grade estimates.

Overhead line construction is substantially less volatile and the plus or minus 25% levels imposed on study grade estimates is well within acceptable industry standard. In recent years with significant volatility in raw material cost including steel, concrete and most particularly petroleum, underground projects, most particularly underground transmission projects, can and will see significantly greater volatility than a plus 25% contingency level will provide. In order for there to be a reasonable evaluation of the economic considerations of the proposed project versus alternative overhead projects and alternative underground projects, the range of the cost of the projects needs to be reasonably reflected. The upper limit of the cost associated with the overhead project is $270 million plus 25% or $338 million. The underground project estimated at $415 million would have a potential upper limit closer to $580 million. This would mean that we are not looking at a $145 million difference between the proposed project and the underground alternative, but rather a differential that more than likely will reach $242 million, or nearly double the cost. Furthermore, cost overruns on the underground project approaching an additional 40%, particularly over the recent years of volatility, could be much more realistic than even the likelihood of a 25% overrun on the cost associated with the overhead project.

MR. FRANK W. MEZZANOTTE

Q. HAVE YOU REVIEWED THE DIRECT TESTIMONY OF MR. FRANK MEZZANOTTE?

A. Yes.

Q. WOULD YOU COMMENT ON THE RELAVENT ISSUES IN MR. MEZZANOTTE'S TESTIMONY THAT YOU RELIED UPON IN ARRIVING AT YOUR OVERALL CONCLUSIONS?

A. Yes, Mr. Mezzanotte's testimony indicates the ISO is concerned about the reliability of the existing electricity delivery system in Rhode Island. He depicts immediate transmission concerns driven by a dependence on local generation. His testimony and the ISO Needs Assessment identifies and details reliability concerns with the existing Rhode Island electric transmission system. His testimony on page 11 points directly to an unacceptable risk associated with the Rhode Island transmission system, while indirectly indicating the system is insufficient to import what could be low cost generation from outside the area. The transmission facilities thermal and voltage violations exist with the year 2009 system loads. That can only lead to the conclusions that before a solution can be implemented, the situation will become worse and the risk of load interruption will increase. My conclusion from this testimony and the ISO Needs Assessment follows.

First, a No Build Option is completely unacceptable since the load interruption risk currently exists. Second, a solution is required in the very near term or the risks continue to become exacerbated. Third, the ISO perspective is that the proposed project is the best solution for the region and Rhode Island. Fourth, Mr. Mezzanotte portrays a potential cascading outage scenario that would affect the region and substantially extend the

duration of a Rhode Island transmission outage. Fifth, a 500 MW interruption could easily translate to some 90,000 customers.

Mr. Mezzanotte's testimony, on pages 13 and 14, in the kindest of ways states the Rhode Island transmission is in violation of both thermal and voltage criteria outlined in the ISO Reliability Standards, while only one violation would place the system out of compliance. I find a series of realistic outage scenarios that could interrupt 90,000 or more customers to be simply unacceptable and must be corrected in the most prudent, timely and cost-effective manner.

CONCLUSION

Q. IN YOUR EVALUATION OF THE NATIONAL GRID FILING AND ER DID YOU ARRIVE AT AN OPINION ABOUT THE NEED FOR THIS PROJECT? WHAT WAS THE BASIS FOR YOUR ASSESSMENT AND OPINION?

A. Yes. I find a need to solve the transmission system capacity limitations in the near term. The solution needs to remedy both voltage violations and thermal overloads that arise from the contingency scenarios evaluated by National Grid and the ISO. I have evaluated the entire filing by National Grid, including all of the appendices, testimony, and exhibits attached to testimony, and the responses to interrogatories and additional documents produced. Additionally, a portion of the basis for my opinion of the need for this Project includes the years I have been involved with the Rhode Island Division of Public Utilities and Carriers and the reliability assessment process associated with evaluating the National Grid system in Rhode Island. It is clear that Rhode Island expects a high level of reliability from the electric utility system. It would be incongruent for the Division, and me as a consultant to the Division, to expect distribution system improvements and the achievement of a high level of distribution system reliability, while not expecting a comparable if not better level of reliability associated with the transmission delivery system. Therefore, part and parcel to my opinion is the overall reliability expectation that I have seen exhibited through my work with the Division. Additionally, I believe the testimony and analysis not only of National Grid and its consultants, but also the ISO New England and materials presented, upon which my opinion is based, have been presented fairly and accurately recognizing the modifications precipitated through the discovery process.

Q. IS IT YOUR TESTIMONY THAT THE COST ESTIMATE FOR THE PROPOSED PROJECT IS REASONABLE?

A. Yes. Although my evaluation found the National Grid overhead cost estimate to be higher than one I would prepare, it is certainly within a reasonable study grade level. The $270 million for the proposed project is a reasonable estimate.

Q. DO YOU BELIEVE THE PROPOSED PROJECT REPRESENTS THE MOST COST EFFECTIVE METHOD TO MEET THE NEED AS IT HAS BEEN PRESENTED?

A. Yes. The proposed Project utilizes existing rights-of-way and provides the preferred reliability solution and the greatest capacity. I would not recommend a No Build option and the alternative options presented, including the Non-Transmission options, do not represent the best solution for Rhode Island or the New England East-West Solution. I have evaluated the proposed Project both based on Rhode Island need alone, and as a portion of a greater New England East-West Solution (NEEWS). The proposed Project meets a very specific reliability and load serving need in Rhode Island. An additional benefit is its interrelationship with the NEEWS as proposed by the ISO New England. Furthermore, although there is little discussion of a potential larger benefit to customers by allowing more transmission capacity and flexibility to move more economical generation into the area, this is an inherent benefit of eliminating potential transmission constraints and developing a stronger networked system. In response to Request DPUC 1-7 by the Division, National Grid states: "Additionally, the Project increases the ability of customers to purchase power from suppliers outside of the area and move that power into the area without congestion". Considering the numerous cases of congestion I have seen over recent years that have presented significant cost to customers, this is an

additional benefit to Rhode Island customers that I find very important, particularly when this benefit comes with needed reliability enhancement at no additional cost beyond relieving a loss of load risk.

Q. IS A NO BUILD OPTION ACCEPTABLE?

A. A No Build option, in my opinion, is unacceptable.

Q. WHY DO YOU BELIEVE A NO BUILD OPTION IS UNACCEPTABLE?

A. My review of the National Grid contingency analysis indicates the level of transmission system reliability would be unacceptable low without a solution to the loss of load risk which exists. The risk of a major interruption of power to a broad segment of Rhode Island electric customers is real and should not be allowed to persist. Not implementing a solution to the present and continually increasing risk of a significant portion of Rhode Island elective load being interrupted for a potentially extended duration would, in my opinion, subject the electric customers to an unacceptably low level of service reliability and likely adverse economic harm.

Q. SINCE YOU HAVE RULED OUT A NO BUILD OPTION AND THE NON-TRANSMISSION ALTERNATIVES THROUGH YOUR EVALUATION, DOES THE PROPOSED PROJECT CAUSE UNACCEPTABLE HARM?

A. Because the proposed Project will be constructed on lands already being utilized for transmission facilities, the minimal short term harm to the environment during the construction phase would be acceptable. The proposed mitigation of land impact outlined in the ER further reduces any short term environmental consequences. The long term impact on such items as water quality, wetlands, noise, visual and other factors will be negligible and only marginally measurable based on the amount of maintenance activity. Considering the improvements to existing lines and right-of-way as part of the

Project, it is highly likely the maintenance activity and its associated disturbance to the lands will be less for the next 40 years than would be expected without the Project improvements. Therefore, I conclude the Project does not cause any unacceptable harm.

Q. HAVE YOU GIVEN ANY CONSIDERATION TO WHETHER THE PROPOSED PROJECT IS ECONOMICALLY JUSTIFIED?

A. Yes. As part of the discovery questions that I prepared and that were served on National Grid, I requested the overall cost impact associated with the inclusion of this project in the transmission cost. National Grid responded to Request DPUC 1-8 that the total incremental cost to Narragansett Electric Company customers would be approximately $0.00038 per kWh or $0.20 per month to an average 500 kWh residential customer bill. This certainly is within a reasonable cost occurrence given the risk that would be imposed due to a outage under any one of a number of the outage scenarios evaluated, and the adverse impact that would come from a transmission line outage under any one of the evaluated scenarios. Unfortunately, in 2003 the northeast became all too aware of how a simple and unexpected outage, if at the right point and the right time on the system, can result in a catastrophic and multi-state outage scenario. Although the Rhode Island project is specifically needed for reliability within Rhode Island, I believe it will also clearly strengthen the ability for customers within Rhode Island to bring in more low cost power over time. This project is also a portion of a much larger and more comprehensive New England East-West Solution which is intended to strengthen the transmission grid within a much broader area of New England. Although the total scope of my evaluation was not to consider the reliability impact issues on other states, it is inevitable in evaluating the materials provided, including the NEEWS analyses, that this be a consideration recognizing how the weak link in one state or one portion of a state can, in

fact, impact an entire state or region, or potentially the entire northeast. Although there is no evidence in this case that an outage of one of the National Grid transmission system components in Rhode Island under their scenario analyses would stretch beyond a significant adverse impact in Rhode Island, there is certainly that unexpected consequence as was the result in 2003 when a tree came across 115 kV transmission line on another transmission owner's system. When it comes to risk analysis and cost benefit analysis it is often times difficult to measure the value of enhanced system reliability. Certainly, if an outage never occurs then the project to eliminate a major loss of load due to the outage is not needed. Outages do occur from time-to-time, and the risk of loss of 500 MW due to an outage is real. Thus, the need is real and the solution is necessary because the interruption of 100 to 500 megawatts is not satisfactory. I would expect the parties could agree, and ISO New England could provide even greater insight than I, that no one expected the 2003 First Energy 115 kV transmission line outage to result in an outage of the preponderance of the northeast. Therefore, even though engineers have done their best job to lay out reasonable scenarios, they may not be complete and comprehensive for all of the potential consequences associated with an outage. What is clear is that, without the proposed 345 kV transmission reliability project known as the Rhode Island Reliability Project, there would be substantial consequences and loss of load if one of the proposed scenarios occurs and, in my professional opinion, that such an event would be unsatisfactory to Rhode Island, the customers of National Grid, and the Commission. Furthermore, $0.20 per month per 500 kWh customer seems to me a reasonable cost to mitigate a very serious potential outage event.

Q. YOUR TESTIMONY INDICATES THAT YOU NOT ONLY REVIEWED THE PROPOSED 345 KV TRANSMISSION LINE, BUT ALSO ALL OF THE

ALTERNATIVES TO THE PROPOSED PROJECT INCLUDING THE UNDERGROUND ALTERNATIVE, THE NO BUILD ALTERNATIVE, AND THE NON-TRANSMISSION ALTERNATIVE, IS THAT CORRECT?

A. Yes.

Q. HAVE YOU PRIORITIZED THE RHODE ISLAND RELIABILITY PROJECT SOLUTIONS AND DOES YOUR PRIORITIZATION RESULT IN THE SAME PROPOSED PROJECT AS NATIONAL GRID HAS PRESENTED, OR HAVE YOU SELECTED ONE OF THE OTHER ALTERNATIVES, OR HAVE YOU IDENTIFIED ADDITIONAL ALTERNATIVES THAT SHOULD BE CONSIDERED BEYOND THOSE OUTLINED IN THE FILINGS OF NATIONAL GRID?

A. I have carefully considered all of the projects as proposed by National Grid and I have evaluated their cost estimates, the cost effectiveness of those projects, and the no build option together with the non-transmission alternative options. I have evaluated each solution based on its reasonableness, effect on the surrounding environment, and its ability to meet the needs cost effectively in a timely manner. Although, as I have testified, I do not fully concur with all of the National Grid assumptions, I do, at the end of my entire assessment, reach the same final conclusion that the proposed 345 kV transmission line is needed and represents the best and most cost effective solution for achieving the needed system improvements to sustain a reliable transmission system with the capability of transporting competitively priced power into the region, while also providing an integrated transmission solution for the New England East-West Solution.

Q. DO YOUR ANALYSES AND CONCLUSIONS MEAN NONE OF THE ALTERNATIVE PROJECTS REPRESENT A SOLUTION?

A. No, in fact many of the alternative projects in fact are a solution. However, they do not represent the best solution. Some appear to potentially have an even more adverse impact on the environment, particularly during the construction phase. Many of the alternatives, including the use of available right-of-way which is currently not being utilized would result in much more harm to the environment than the proposed Project. Also, there are overhead construction solutions that are more short term in nature that ultimately would not eliminate the need for the 345 kV transmission line, and would simply be a short term solution with a much more expensive total long term cost.

Q. THROUGH YOUR EVALUATION HAVE YOU REACHED AN OPINION SATISFACTORY TO YOU AND TO A REASONABLE DEGREE OF ENGINEERING CERTAINTY THAT THE PROPOSED PROJECT IS NEEDED?

A. Yes. I am of the opinion that the need for the proposed Project is clearly demonstrated in filings by National Grid. I believe the studies, including the scenario analyses, have been prepared on a reasonable basis utilizing reasonable and acceptable assumptions within the utility industry, including the standards as outlined by the ISO New England. I believe that the study's contingency analyses, overall ER, and its appendices combined with the discovery materials demonstrate that if a solution is not approved and the Project is not approved that there will, in time, be a situation arise under one of the contingency scenarios that will result in a significant loss of load. I do not believe that it is in the best interest of the electric customers to accept a contingency analysis scenario resulting in the likely loss of load approaching 500 megawatts and potentially even greater in future years. This, in my professional opinion, would be an unacceptable risk to impose on the State of Rhode Island and potentially a broader New England area and, therefore, a solution is necessary. My evaluation concludes that the proposed Project, including the

new 345 kV line, 115 kV line upgrades, switching station upgrade, and methodology of design, construction and routing represents the best solution for Rhode Island.

Q. CAN YOU SUMMARIZE YOUR TESTIMONY IN ONE SENTENCE?

A. Yes. It is unacceptable to allow a realistic transmission outage risk to jeopardize electric service to 90,000 or more customers when the proposed Project is the lowest cost solution with the least harm that can be implemented in a timely manner.

Q. DOES THIS COMPLETE YOUR TESTIMONY?

A. Yes.

EXHIBIT NO. GLB-1

CURRICULUM VITAE

CURRICULUM VITAE OF

GREGORY L. BOOTH

GREGORY L. BOOTH, PE, PLS
President
Gregory L. Booth, PLLC
PowerServices, Inc.
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RESUME

Gregory L. Booth is a registered professional engineer with engineering, financial, and management services experience in the areas of utilities, industry private businesses and forensic investigation. He has been representing over 300 clients in some 38 states for more than 41 years.

Mr. Booth has been accepted as an expert before state and federal regulatory agencies. He has been accepted as an expert in both state and federal courts. Investigation and testimony experience includes areas of wholesale and retail rates, territorial disputes, electric service reliability, right-of-way acquisition and impact of electromagnetic fields and evaluation of transmission line options for utility commissions. Additionally, Mr. Booth has extensive experience serving as an expert witness before state and federal courts on matters including property damage, forensic evaluation, fire investigations, fatality, and areas of electric facility disputes and Occupational, Safety and Health Administration violations and investigations together with National Electric Code and National Electrical Safety Code and Industry Standard compliance.

The following pages provided are the education and experience from 1963 through the present. Also included are courses taught, publications and a list of cases from 1981 to present.

Resume

GREGORY L. BOOTH, PE, PLS

Mr. Booth is a Registered Professional Engineer with engineering, financial, and management experience assisting local, state, and federal governmental units; rural electric and telephone cooperatives; investor owned utilities, industrial customers and privately owned businesses. He has extensive experience representing clients as an expert witness in regulatory proceedings, private negotiations, and litigation.

PROFESSIONAL EDUCATION:

NORTH CAROLINA STATE UNIVERSITY; Raleigh NC, Bachelor of Science, Electrical Engineering, 1969

REGISTRATIONS:

Registered as Professional Engineer in Alabama, Arizona, Connecticut, District of Columbia, Delaware, Florida, Georgia, Kansas, Maryland, Minnesota, Missouri, New Hampshire, New Jersey, North Carolina, Oklahoma, Pennsylvania, Rhode Island, South Carolina, Commonwealth of Virginia, West Virginia, and Wisconsin

Professional Land Surveyor in North Carolina

Council Record with National Council of Examiners for Engineering and Surveying

EXPERIENCE:

1963-1967
Technician
Booth & Associates

Transmission surveying and design assistance, substation design assistance; distribution staking; construction work plan, long-range plan, and sectionalizing study preparation assistance for many utilities, including Cape Hatteras EMC, Halifax EMC, Delaware Electric Cooperative, Prince George Electric Cooperative, A&N Electric Cooperative; assistance generation plant design, start-up, and evaluations.

1967-1973
Project Engineer
Booth & Associates

Transmission line and substation design; distribution line design; long-range and construction work plans; rate studies in testimony before State and Federal commissions; power supply negotiations; all other facets of electrical engineering for utility systems and over 30 utilities in 10 states.

1973-1975
Professional Engineer
Booth & Associates
1975-1994
Executive Vice President
Booth & Associates

Directed five departments of Booth & Associates, Inc.; provided engineering services to electric cooperatives and other public power utilities in 23 states; provided expert testimony before state regulatory commissions on rates and reliability issues; in accident investigations and tort proceedings; transmission line routing and designs; generation plant designs; preparation and presentation of long-range and construction work plans; relay and sectionalizing studies; relay design and field start-up assistance; generation plant designs; rate and cost-of-service studies; reliability studies and analyses; filed testimony, preparation and teaching of seminars; preparation of nationally published manuals; numerous special projects for statewide organizations, including North Carolina EMC. Work was provided to over 130 utility clients in 23 states,

PWC of the City of Fayetteville, NC, Cities of Wilson, Rocky Mount and Greenville are among the utilities in which I have provided engineering services in North Carolina during this time frame. Services to industrial customers include Texfi Industries, Bridgestone Firestone, Inc and many others.

1994-2004
President
Booth & Associates

Responsible for the direction of the engineering and operations of Booth & Associates, Inc. for all divisions and departments. The engineering work during this time frame has continued to be the same as during 1974 through 1993 with the addition of greater emphasis on power supply issues, including negotiating power supply contracts for clients; increased involvement in peaking generation projects; development of joint transmission projects, including wheeling agreements, power supply analyses, and power audit analyses. The work during this time frame includes providing services to over 200 utility clients across the United States, including NCEMC and NRECA.

2004-Present
President
Gregory L. Booth, PLLC

Providing engineering and management services to the electric industry, including planning and design. Providing forensic engineering, product evaluation, fire investigations and accident investigation, serve as an expert witness in state and federal regulatory matters and state and federal court.

2005-Present
President
PowerServices, Inc.

Providing engineering and management services to the electric industry, including planning and design. Providing forensic engineering, product evaluation, fire investigations and accident investigation, serve as an expert witness in state and federal regulatory matters and state and federal court.

2007-Present
President
UtilityEngineering, Inc.

Providing engineering and management services to the electric industry, including planning and design. Providing forensic engineering, product evaluation, fire investigations and accident investigation, serve as an expert witness in state and federal regulatory matters and state and federal court.

WORK AND EXPERTISE:

Electric Utilities:
(more than 300 clients)

- System studies, including long-range and short-range planning, sectionalizing studies, transmission load flow studies, system stability studies (including effects of imbalance and neutral-to-earth voltage), environmental analyses and impact studies and statements, construction work plan, power requirements studies, and feasibility studies.
- Fossil and hydro generation plan analysis, design, and construction observation.
- Transmission line design and construction observation through 230 kV overhead and underground.

- Switching station and substation design and construction observation through 230 kV.
- Distribution line design and staking, overhead and underground.
- Design of submarine cable installations.
- Supervisory control and data acquisition system design, installation and operation assistance.
- Load management system design, installation and operation assistance.
- Computer program development.
- Load research and alternative energy source evaluation.
- Field inspection, wiring, and testing of facilities.
- Relay and energy control center design.
- Mapping.
- Specialized grounding for abnormal lightning conditions.
- Ground potential rise protection.
- Protective system/relay coordination.

TELECOMMUNICATION: UTILITIES:

- Subscriber and trunk carrier facilities design.
- Stand-by generation and DC power supplies
- DC-AC inverters for interrupted processor supplies.
- Plant design and testing.
- Fiber optics and other transmission media.
- Microwave design.

FINANCIAL SERVICES:

- Long-term growth analyses and venture analyses.
- Lease and cost/benefit analyses.
- Capital planning and management.
- Utility rate design and service regulations.
- Cost-of-Service studies.
- Franchise agreements.
- Corporate accounting assistance.

FORENSIC ENGINEERING:

- Compliance with NESC, NEC, OSHA other codes and industry standard.
- Equipment and product failure and analysis and electrical accident investigation.
- Stray voltage, electrical shocking, and electrocution investigations.
- Building code investigations.
- New product evaluation.

INDUSTRIAL/ELECTRICAL ENGINEERING:

- Building design (commercial and industrial).
- Building code application and investigation.
- Electric thermal storage designs for heating, cooling, and hot water.
- Standby generation and peaking generation design

INSTRUCTIONAL SEMINARS AND TEXT:

- Courses taught on National Electrical Safety Code and National Electrical Code.
- Courses taught on Distribution System Power Loss Evaluation.
- Courses taught on Distribution System Protection.
- Text prepared on Distribution System Power Loss Management.
- Text prepared on Distribution System Protection.
- Seminars taught on substation design, NESC capacitor application, current limiting fuses, arresters, and many others electrical engineering subjects.
- Courses taught on accident investigations and safety.

TESTIMONY AS AN EXPERT:

- Concerning rate and other regulatory issues before Federal Energy Regulatory Commission and state commissions in North Carolina, Virginia, Delaware, New Jersey, Pennsylvania, Rhode Island, and Minnesota.
- Concerning property damage or personal injury before courts in Maryland, Minnesota, North Carolina, Virginia, West Virginia, Wisconsin, New York, South Carolina, Texas and Pennsylvania.

FIELD ENGINEERING:

- Transmission line survey.
- Distribution line staking.
- Property surveying.
- Relay and recloser testing.
- Substation start-up testing.
- Generation acceptance and start-up testing.
- Ground resistivity testing.
- Work order inspections.
- Operation and maintenance surveys.

PROFESSIONAL ORGANIZATIONS:

a. National Society of Professional Engineers (NSPE)
b. Professional Engineers in Private Practice (PEPP)
c. National Council of Examiners for Engineering & Surveying (NCEES)
d. Professional Engineers of North Carolina (PENC)
e. National Fire Protection Association (NFPA)
f. Associate Member of the NRECA
g. NRECA Cooperative Network Advisory Committee (NRECA-CRN)
h. The Institute of Electrical and Electronics Engineers (IEEE) (Distribution sub-committee members on reliability)
i. American Standards and Testing Materials Association (ASTM)
j. Occupational Safety and Health Administration (OSHA) Certification
k. American Public Power Association (APPA)

ACTIVE

CASE LIST

GREGORY L. BOOTH, PE, PLS
EXPERT WITNESS

ACTIVE CASES

CASE	
2004 Richard J. Powers, III vs Georgia Power CAFN: 2004 V 7977-L	**(P-DE)**
2004 Stephen Shepard vs First Electric Cooperative Corp., et. al.	**(P-DE)**
2005 Joseph Williams vs Florida Power & Light	**(P)**
2005 Progress Energy Corporation vs Piedmont EMC 02 CVS 835/02-CVS-15	**(D-DE)**
2006 Rivera vs Tampa Electric	**(P)**
2006 Summerour vs W. A. Chester	**(D)**

D = Work for Defense
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CASE	
2007 Jason Burden vs Duke Power	**(P)**
2007 Jose Hernandez vs Duke Power	**(P)**
2007 Xavier Massey vs Duke Power	**(P)**
2006 Rojas vs Stryker Electric Contracting Case No. 06-001110 CACE (08)	**(P)**
2007 Raymond Vasilas vs Florida Power & Light Company	**(P)**
2007 Vancil vs Desbuild	
2007 McNulty vs Florida Power & Light	**(P)**

CASE	
2007 Kim Shade vs PEPCO	**(D)**
2008 William Elder vs WE Energies	**(P)**
2008 Linda Hamilton, Representative of Estate of Herbert Hamilton vs Florida Power & Light Company, Asplundh Tree Expert Company, Boynton Landscape Company, Inc. and Susan Smith Case No. 2006 CA 005471 MB AE	**(P)**
2008 Hunter vs Ingersoll-Rand	**(P)**
2008 Lynn vs FP&L	**(P)**
2008 Richardson vs Monroe	**(D)**
2008 Travelers vs PEPCO	**(D)**

CASE	
2008 Addis vs Duke	**(P)**
2008 Morales, Vargas vs Duke, Greensboro Contracting	**(P)**
2008 Robeson vs Penelec	**(P)**
2008 Kornfield vs PEPCO	**(D)**
2008 Washington Baptist vs PEPCO	**(P)**
2008 Hayes vs Time Warner Cable 2008 CVS 1889	**(P)**
2008 Eubank vs KCP&L	**(P)**

CASE	
2009 Carl W. Hibbert and Margaret I. Hibbert vs The City of Raleigh 07 CVS 009258	**(D)**
2009 Jeffrey McCall vs Florida Power & Light Company, Riverland Hedging and Topping, Inc.	**(P)**
2009 City of Monroe vs Pike Electric	**(P)**

HISTORICAL

CASE LIST

GREGORY L. BOOTH, PE, PLS
EXPERT WITNESS

TESTIMONY IN DEPOSITION AND/OR TRIAL

CASE	
1981 Hulse Brothers Farms vs Steuben REC, Inc.	**(D-DE-TE)**
1982 Joseph M. Phelps vs Duke Power Company	**(P-DE-TE)**
1983 Leonard L. O'Shields, Jr. vs Duke Power Company	**(P-DE-TE)**
1983 Roy Marcus Burwell vs VEPCO	**(P)**
1984 Carr's Truck Lines, Inc. vs Arthur C. Forrester & Community Electric Company	**(D)**

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1984 Investigation of Possible Cause of Fire at Residence of Ms. Annie Cobb	**(D)**
1984 Z. B. Robinson vs Salem Hilton Inn	**(P)**
1985 McFadden et. ux. vs United Electric Cooperative, Inc.	**(D)**
1985 Gary Ray Joyner and Phyllis T. Condrey vs City of Wilson, et.al. 85-CVS 242	**(D-DE)**
1985 Delton W. Denton, Wrongful Death	
1986 Steve Brooks v Duke Power Company	**(P-DE)**

1986 Estate of Rickey Glenn Bowland v Duke Power Company	**(P)**
1986 Estate of Danny J. Hill vs Pitt & Greene EMC	**(D)**
1987 Avis Johnson, Admx. Of the estate of Theodore Johnson, Jr. v Carolina Power & Light	**(P-DE)**
1987 Peggy Ann Bradshaw vs Hudson & Lane Electrical Contractors	**(D-DE)**
1988 Cecil Leroy Rook and Christina Rook vs Carolina Power & Light Company	**(P)**
1988 Robert Reeves King, Admx. vs Carolina Power & Light	**(P)**
1988 James “Ray” Robertson vs Duke Power Company	**(P)**

1988 Edith W. Campbell, Admx. vs The City of Elizabeth City, North Carolina	**(D-DE)**
1988 John W. Lawson and Lee S. Lawson vs VEPCO	**(P-DE)**
1988 James E. Sinclair, Admx. vs Duke Power Company	**(P)**
1989 Nelson vs Duke University	**(P)**
1989 Linda B. Cobb, Admx. for James Olden Cobb, Jr. vs Carolina Power & Light	**(P-DE)**
1989 Elflist Smith, Deceased	
1989 Roanoke EMC vs Estate of Lois Batt Woodard	**(D-DE)**
1989 Laura Ann Porter g/a/l for Andy L. Hernley vs Public Works Commission of the City of Fayetteville	**(D-DE)**

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1989 Sarah O. Banks, Admx. vs Appalachian Power Company	**(P)**
1989 James O. Cox vs Texas Gulf	**(P-DE)**
1990 Charles B. Johnson vs VEPCO	**(P)**
1991 Cecil L. Davis Jr., Personal Representative of the Estate of Pamela J. Powell vs Talquin Electric Cooperative, Inc.	**(D-DE)**
1991 Reuben Blount vs Wake Electric Membership Corporation	**(D)**
1991 Bart Mattucci vs CP&L	**(P-DE)**
1991 Nathan Thomas Cox and Blue Ridge Tobacco Company, Inc. vs City of Washington	**(D-DE)**

1992 Sea Ranch Motel vs North Carolina Power	**(P)**
1992 Robin K. White vs R.H. Bouligny, Inc.	**(D)**
1992 Investigation of South Whiteville Meter Point Failure, June 5, 1992	**(D)**
1993 Edward Scott Padgett vs Town of Fountain 93-CVS-756	**(D)**
1993 Mrs. Lou Pridgett Adms. Of Estate of Michael Baker vs Royster-Clark, Inc. City of Wilson 93 CVS 599	**(D-DE)**
1993 Clarence Gene Leggett vs Carteret Craven EMC 93-CVS-727	**(D)**

1993 William Earl Todd III (deceased) And Fred L. Montgomery vs City of Elizabeth City	**(D-DE)**
1994 Juan Hernandez vs Carl H. Boone, Clarence Wiggins, John T. Colley III, A. Ezzell and Carolina Power & Light, Inc.	**(D-DE)**
1994 Glenda L. Lambert Estate of Donald L. Lambert vs Monongahela Power Company	**(P)**
1994 Lisa Sowards, Administratrix of the Estate of Randy D. Sowards, Deceased v Harrison-Wright Company, Inc. and Duke Power Company	**(D)**
1994 Roger Payne vs Haynes Electric Utility Corporation, Haynes Electrical Utility Corporation and M.B. Haynes Corporation	**(D)**
1994 Huntington Park Apartments vs Duke Power Company	**(P)**
1994 Glenn Higgs and Carla Higgs Memphis Light, Gas & Water Division vs TSE International, Inc.	**(P-DE)**

1994 Donald Ward vs Brunswick EMC 94 CVS 864	**(D-DE)**
1994 Dannie Lee Ham vs Talquin Electric Cooperative, Inc.	**(D)**
1994 Richard Jerome Guffey And wife, Lori C. Guffey vs City of Monroe, NC 94 CVS-1485	**(D-DE-TE)**
1995 Eddie Morris vs IBM, James True, and Marshall Contractors 94 CVS 00319	**(P-DE)**
1995 Brunswick EMC Whiteville Substation Accident vs Reliance Insurance Company & Planet Insurance Company	**(D)**
1995 Tammy Stevens Buffkin vs Sumter Builders and Davidson EMC	**(D)**

1995 Smithfield Carroll Farms, Inc. vs Roanoke EMC Civil Action No. 2-95-CV-62-BO(3)	**(D)**
1995 Emma L. Hill vs Pitt & Greene EMC 4:95-CV-35-H-1	**(D-DE-TE)**
1995 Willie O. Powell and Doretha Powell vs Halifax EMC	**(D-DE)**
1995 Delaware County 34.5kV Line Contact Accident	**(D)**
1996 Ronald Dion vs Duke Power Company	**(P-DE)**
1996 Linda Braswell vs Brunswick Electric Membership Corporation 96 CVS 1000 and Bobby Lee Sweat vs Brunswick Electric Membership Corporation 96 CVS 1218	**(D-DE-TE)**

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1996 Kerry Hux vs Dixie Yarns	**(P-DE-TE)**
1996 Leslie C. Murray vs Mallinckrodt 5:96-CV-585-F2	**(P-DE)**
1996 Estate of Leon Swaim, Jr. vs NC Power	**(P)**
1996 Estate of Jeffrey Vanasek vs Duke Power Company, Et. al.	**(P-DE)**
1996 John Vastis vs RJ Griffin & Company, et. al.	**(P-DE-TE)**
1996 Fire at 1005 Norris Street, Raleigh, NC Kipdale Homes State Farm Insurance	**(D)**
1997 Accident Investigation of Injuries of Vince Kennedy on Davidson EMC electric system on May 23, 1997	**(D)**
1997 Accident Investigation of Injuries to David Tuck of Weeks Construction Company, July 15, 1997 (Wake EMC)	**(D)**
1997 Leslie Adams vs Jones-Onslow EMC	**(D)**

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1997 Charlotte Sunroofs, Inc. vs Duke Power Company	**(P)**
1997 Cecil B. Stanley, Jr. vs Brunswick EMC	**(D-DE-TE)**
1998 W.L. Perry vs Carolina Power & Light	**(P-DE)**
1998 Resident Fire at 178 Butters Loop Road Bladenboro, NC	**(D)**
1998 Accident Investigation of Burns sustained by Harold Futrell employed by South Atlantic Electrical Contracting, Inc at BB&T, Raleigh, NC	
1998 Stillwell, et.al. vs City of Wheeling, et. al. West Virginia	**(P-DE-TE)**
1998 Accident Investigation involving Matelda Benjamin of February 1, 1996	
1998 Concord Telephone Company, inc. vs Power & Telephone Supply Compnay, et. al. 97-CVS-588	**(D-DE)**
1998 Damon Shane Perry vs Line Construction Inc. and Carolina Power & Light Company	**(P-DE)**

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1998 **(D)** Electric System Damages caused by Cotton Picker
1998 **(D-DE-TE)** James L. Martishius and Cindy K. Martishius vs Carolina Power & Light Company, Hertz Equipment Rental Corporation, Carolco Studies, Inc., Edward R. Pressman Film Corporation, and Crowvision, Inc.
1998 Douglas D. Cunningham – Fatal Injury investigation
1998 **(P-DE)** William Johnson vs Florida Power & Light
1998 **(D-DE)** Roberto Castilli Trujillo, and William Lewis King, Administrator of the Estate of Pedro Beltran Borbonio vs Donald Ray Vick, Edgecombe-Martin Co. EMC, Halifax EMC, Melvin O. Harrell, Fay Harrell, and Russell H. Harrell, and Robert T. Harrell, Individually and d/b/a Harrell Farms
1998 **(D)** Meredith College vs Jodi Lynn Abbate & Susan Marie Fortunes 98-CVS-01734 (Wake County, NC)
1999 **(D)** Joseph C. Trappler and William J. Trappler vs Steuben Rural Electric Cooperative, Inc.
1999 **(P)** Ralph Ray vs Duke Power Company

1999 Doublewide Trailer Fire Investigation Bailey Nursery Road Hebron, Maryland 27271	**(D)**
1999 Accident Investigation at Clingman Avenue, Asheville, NC involving CP&L line	**(D)**
1999 Accident Investigation at the Grand Masters of Masons Temple Latta, South Carolina involving CP&L Line	**(D)**
1999 Fatality Involving Charles McDougal, October 22, 1999 Central EMC, Sanford NC	**(D)**
1999 Cathy Celentano vs Duke Power Company	**(P-DE)**
1999 Leonard P. Goldman and Jan W. Goldman vs Meridian Management Corporation	**(D-DE)**
1999 Gregory Gipson vs Carteret-Craven EMC, et.al.	**(D)**
1999 Stanley P. Smith, Employer of Working Solutions, LLP	**(D)**
1999 Edward Sanchez (for the estate of Betty Jean Sanchez) vs The City Public Service Board of the City of San Antonio, 285th Judicial District; Bexar County, Texas	**(P-DE)**

1999 Commission of Labor of the State of North Carolina vs Brunswick EMC (Involving the fatality of Harry Jones, A Brunswick EMC employee)	**(D-HE)**
1999 Isley, Guardian ad litem for Mykal Mclean vs Carolina Power & Light, et. al. 99-CVS 2905	**(D)**
2000 Via Electric vs Gregory Poole Power Systems Claim No. 966-0005-6915-001	**(D)**
2000 Lilly case	**(P)**
2000 William Jones vs Haynes Electric Company	**(D)**
2000 March, et. al. vs Goerke, et. al Langlade County Case no. 00-CV-16	**(P-DE)**

2000 H. Lin vs Commonwealth Edison	**(D)**
2000 Tyler Rutzen vs Wisconsin Public Service	**(P-DE)**
2000 Cornelius Jenkins (for Daniel Jenkins) vs Duke Power	**(P)**
2000 Monte Whitt vs Wisconsin Public Service	**(P-DE)**
2000 Fairways Apartment Fire vs Duke Power	**(P)**
2000 Harry Jones vs Simmons Construction	**(P)**

2000 Bernell Gamble and Gloria Gamble vs RDH Consultants, Inc.	**(P-DE)**
2000 Lilly Sport Boats vs General Electric Company	**(D)**
2000 General Electric vs Consolidated Edison of NY New York County Index No. 110254/93	**(D-DE)**
2000 Carteret-Craven Electric Cooperative Mobile Home Park Accident	**(D)**
2001 Carolina Power & Light – Accident occurring in Cheraw, SC	**(D)**
2001 Carolina Power & Light – Accident occurring in Clayton, NC	**(D)**
2001 Wake EMC Electromagnetic Field Litigation	**(D-TE)**

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2001 Deborah Hunt vs The Andersons, Inc., et. al. In the Circuit Court of Montgomery County, Alabama Civil Action No. CV-2000-3177-MC	**(P-DE)**
2001 Mayra I. Cruz Rivera, et. al. vs General Electric Company, Inc., et. al Civil No. 00-2353 (CCC)	**(D-DE)**
2001 Bill and Vicky Wallace vs Oakwood Homes	**(D)**
2001 Wake Medical Center vs Gregory Poole Equipment Company	**(D)**
2001 Sonyia Woody Case	**(P)**
2001 Odele Bethune vs Florida Power Corporation Case No. 00-573-CI-20	**(P)**
2002 Suzanne C. Sifford vs Thompson Heating and Air Conditioning and Becker Electric	**(D)**

2002 McDonald vs Carolina Power & Light	**(D)**
2002 Musick/Colvin vs Paccar, Inc. CV No.: CV-01-J-1050	**(P-DE)**
2002 Deaton vs Jefferson Mills	**(P)**
2002 Lyle E. Metzdorf	**(P)**
2002 Brunswick EMC vs Howell Construction	**(D)**
2002 Kenneth Davis; Donna Davis; George T. Hicks; Mozelle Raye Hicks vs Piedmont EMC Orange County, NC 02 CVS 835/02-CVS-15	**(D-DE)**
2002 In the Circuit Court of the 15th Judicial Circuit of the State of Florida in and for Palm Beach County Scott and Jackie Cameron vs Florida Power & Light Company CA-01-13486-AG	**(P-DE)**

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2002 Property of Ed Harris Siler City Transmission Line Issues vs Progress Energy Carolina	**(D)**
2003 James Andrew Miller Date of Injury: 10/23/01 vs Duke Power Company / Asplundh Tree Service 03-CP-42-0606	**(P-DE)**
2003 Rutherford EMC Underground Complaint by David Clark	**(D)**
2003 The Travelers Indemnity, et. al. vs North Beach Services, Inc., et. al. CA No: 2003-CV-37-80	**(D-DE)**
2003 Melvin Ernie Whitfield vs Seigler Enterprises, Inc. and Mobile Tool International C.A. No: 2002-CP-37-214	**(P-DE)**
2003 Jerry A Jones, Plaintiff vs AAA Electric Company, Inc. Defendant General Court of Justice, Superior Court Division – 01-CVS 1113	**(D-DE)**

2003 Gervacio vs Blue Ridge EMC	**(D)**
2003 Barbara Hunter vs FPC	**(P)**
2003 Myrick vs Balmer, Vincent Electric	**(D)**
2003 Benjamin Carosella vs FP&L C.A. No. 01-1982-CA Collier Co.	**(P-DE)**
2003 Norma L. Lourenco, Administratrix vs City of New Bern, N.C. 04-CVS-4CVS 01163	**(D-DE)**
2003 Manuel Salazar, Jr. vs South Carolina Electric & Gas and Grove Worldwide, Inc. Case: 03-CP-40-5996	**(P-DE)**

2003 Stephan, et. al. vs Grove Worldwide, Inc. et. al. W. E. Energies 03 CV 008731	**(P-DE)**
2003 Emmanuel Martinez, Donald Weygant, and Sandra Weygant vs Duke Energy Corporation, Camp Dresser & McKee, Anthony Crane Rental, Maxim Crane Works and Terex Corporation Civil Action No. 6-03-0049-20	**(P-DE)**
2004 Jean Victorin vs Florida Power & Light Co. Case No. 00-29976 CA 30	**(P-DE-TE)**
2004 Thomas and Alta Wilson vs Lakewood Industries C.A. No.: 1:04-CV-0516-TWT	**(P)**

2004 Shirrese Brockington (Vollejo) Estate of Heric Moreno Vollejo vs Heinsohn Electric Service, Inc., C & W Services, Inc., et. al. Civil Action No.: 03-CP-15-357 and Fenix Cardon (Cardona) Estate of Rusbein Raminez Cardona vs Heinsohn Electric Service, Inc., C & W Services, Inc., et. al. Civil Action No.: 03-CP-15-358	**(P-DE)**
2004 Marty Wayne Brown vs Duke Power Company	**(P)**
2004 Richard Warren King, et. al. vs American Power Conversion Corporation Case No.: 5:03-CV-704-BR(3)	**(D-DE)**
2004 Gerald Richter vs Anderson Windows	**(P)**

2004 Continental Insurance Company vs G&G Manufacturing LLC, & Home Depot USA, Inc. No. 7:04-CV-122-F(3)	**(D-DE)**
2004 National Institute of Science vs General Electric Company	**(D)**
2004 Central EMC Investigation	**(D)**
2004 Timothy Gray vs Comcast, United Cable & Berkley E.C. 03-CP-08-1759	**(P)**
2004 Hall, et. al. Standard Fire Insurance vs Potomac Electric Power Company Case: 250018-V	**(D-DE)**
2004 Bennett Truck Transport vs Progress Energy Carolina (CP&L) 03-CVS-683	**(D)**
2004 Ray Deloache vs SCE & G, et. al.	**(P-DE)**

2004 Jeffrey L. Curry vs Coast Electric Power Association Civil Actions No. A-2401-03-530 Harrison County, Mississippi	**(P)**
2004 Brunswick EMC vs Sellars (Nationwide) 03-CVD-404	**(D-DE)**
2004 Standard Fire Insurance vs Potomac Electric Power Company Case: 250018-V	**(D-DE)**
2004 Keith Fulbright, Sr. and Velma Fulbright vs Lawrence Booth and PACCAR, Inc.	**(P)**
2004 Jose Manuel Ruiz vs Fletcher Bright Corp., et. al S.C. E & G	**(P-DE)**
2005 Estate of Craig Cecere vs Florida Power & Light Company	**(P)**
2005 ***(Investigation)*** Rappahannock A.P. Hill Accident Investigation	**(D)**

2005 ***(Investigation)*** Sawnee EMC Calcun Overvoltage Fire	**(D)**
2005 Payton Wade Vaught vs J. H. Bowman Electric Company, Inc. J. Hyatt Hammond Associates, Inc. Lyon Construction, Inc., and the City of Greensboro, North Carolina Case: 05 CVS 4127	**(P-DE-TE)**
2005 Walter Washington vs Square D Company Case: CL04S00672-00	**(P-DE)**
2005 Charles David West and Chastity Dawn West and Jack William Delancey and Donna Darlene Delancey vs Northern Tool & Equipment Company, Inc., and S & H Industries, Inc.	**(P)**
2005 Phyllis Absalom vs TECO Energy, Inc., Tampa Electric Company, and Southeast Milk, Inc.	**(P)**

2005 Aaron Cody Hokanson vs Oklahoma Gas and Electric Company, et. al. Case Number CJ-2005-116-01	**(P-DE)**
2005 The Travelers Indemnity, et. al. vs North Beach Services, Inc., et. al. CA No: 2003-CV-37-80	**(D-DE)**
2005 Tyrone Williams vs Florida Power & Light	**(P-DE)**
2005 Perez and Mendez vs Florida Power & Light Company	**(P)**
2005 Donald Addison vs Potomac Electric Power Company (PEPCO) Case: 04-6079	**(D)**
2005 Jason Payne vs Surry-Yadkin Electric Membership Corporation CaseNo.: 04 CVS 02757	**(D)**

2005 Santos vs General Electric and Commonwealth Edison	**(D)**
2005 Marel Trujillo; Marvin Trujillo; Sandra Trujillo; Carolina Trujillo vs Florida Power & Light Company vs BellSouth Telecommunications vs The Tower Group	**(P-DE)**
2005 Adam Hall vs Florida Power & Light	**(P)**
2005 Wallace Graham and Dorothy Graham vs Progress Energy Carolinas, Inc., et. al. Case No. 4:05-cv-02895-TLW-TER	**(P)**
2006 *(Investigation)* EnergyUnited Fire Incident Investigation	**(D)**
2006 Billy Campbell and Ruth Ross Campbell vs Central Electric Membership Corporation Case No.: 05 CVS 00775 (Moore County)	**(D-TE)**

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2006 **(P)** Parker Liapple vs Square D Company Case: CL04S00672-00
2006 ***(Investigation)*** Dennis Settlemyre / Vulcan Materials Case
2006 Lewis vs Carteret-Craven Electric Cooperative
2006 Bentz vs Wisconsin Electric
2006 **(P)** Khadafy Bennett vs City of Warner Robins Case No. 06-075
2006 **(D)** Hobbs vs General Electric, Westinghouse, and ABB
2006 **(P)** Eric Bennett and Pamela Bennett vs Carolina Power & Light Company d/b/a Progress Energy Carolinas, Inc.

2006 Summerour vs PEPCO	**(D)**
2006 Larry Shifflett vs General Electric Company, Electric Power Systems, and Electric Power Systems International Civil Action No.: 5:06CV00127	
2006 Brown vs Duke	**(P)**
2006 Dale Cooper vs Waffle House	**(P)**
2007 West, Miller, and Nichols vs EnergyUnited	**(D)**
2007 Wolfe vs Wisconsin Electric	**(P-TE)**

2008 Beverly Jean Burgess, and Michelle Mullins, on behalf of the Estate of Jean Aubrey Smith vs The City Public Service Board of CPS Energy Cause No. 2007 CI 03011	**(P)**
2008 Price-Clanton vs Consolidated Metropolitan	**(P-DE)**
2008 Nathan Davis Kenemore vs EnergyUnited	**(D)**
2008 James Tuck vs Wake EMC	**(D)**
2008 Rodriguez vs Mastec North America, Carolina Power & Light Company, and Progress Energy	**(D)**

FEDERAL AND STATE

REGULATORY TESTIMONY

CASE LIST

TESTIMONY BEFORE STATE AND FEDERAL REGULATORY AUTHORITIES
BY GREGORY L. BOOTH, PE, PLS

Federal Energy Regulatory Commission ER76-, ER77-, ER78-, ER81-344, ER84- Public Works Commission of the City of Fayetteville, NC Post Office Box 1089 (28302-1089) 508 Person Street (28301) Fayetteville, N.C. v Carolina Power & Light Company 2000 Federal Energy Regulatory Commission ER01-282-000 and ER01-283-000 Duke Energy Corporation and Duke Electric Transmission vs North Carolina EMC Federal Energy Regulatory Commission EL90-26-00 North Carolina Electric Membership Corporation v Virginia Electric Power Company dba North Carolina Power
North Carolina Utilities Commission Larry Eaves, et. al v Town of Clayton Post Office Box 879 231 East Second Street Clayton, NC 27520

TESTIMONY BEFORE STATE AND FEDERAL REGULATORY AUTHORITIES
BY GREGORY L. BOOTH, PE, PLS

North Carolina Utilities Commission (Continued)
Poly-Loc

v

Town of Tarboro
Post Office Box 220
500 Main Street
Tarboro, NC 27886

1990
North Carolina Utilities Commission E-7, Sub 474, EC-10, Sub 37, E-13, Sub 151
Delora Dennis, et. al.

v

Haywood EMC

1990
North Carolina Utilities Commission Docket No. EL90-26-000
North Carolina Electric Membership Corp.

vs

Virginia Electric Power Company dba North Carolina Power

2004
North Carolina Utilities Commission Docket No. E-2, Sub 855
John Wardlaw, et. al.
Interveners

vs

Progress Energy Carolinas

Delaware Public Service Commission – Retail Rate Case
Delaware Electric Cooperative, Inc.
Post Office Box 600
US Route 13, South
Greenwood, DE 19950

TESTIMONY BEFORE STATE AND FEDERAL REGULATORY AUTHORITIES
BY GREGORY L. BOOTH, PE, PLS

Virginia Public Service Commission Retail Rate Case for A&N Electric Cooperative, Post Office Box 1128, 19056 Greenbush Road, Parksley, VA 23421 Case Nos. PUE-2007-00060, 00061, 00062, 00063, and 00065 Delmarva Power & Light System Acquisition Purchase for A & N Electric Cooperative, Post Office Box 290, 21275 Cooperative Way, Tasley, VA 23441 and Old Dominion Electric Cooperative, 4201 Dominion Boulevard, Glen Allen, VA 23060
New Jersey Public Service Commission – Retail Rate Case Sussex Rural Electric Cooperative Post Office Box 346 22 East Main Street Sussex, NJ 07461 2004 New Jersey Public Service Commission Docket No. EX02120950 Focused audit of the planning, operations and maintenance practices, policies and procedures of Jersey Central Power & Light Company
Minnesota Department of Public Service/Environmental Quality Board Transmission Line Assessment Minnesota Department of Public Service 121 7th Place East, Suite 200 St. Paul, MN 55101-2145 Minnesota Environmental Quality Board 658 Cedar Street St. Paul, MN 55155

TESTIMONY BEFORE STATE AND FEDERAL REGULATORY AUTHORITIES
BY GREGORY L. BOOTH, PE, PLS

2004
Pennsylvania Public Utilities Commission
Docket No. I-00040102
Investigation regarding the Metropolitan Edison Company
Pennsylvania Electric Company and
Pennsylvania Power Company
Reliability Performance

2006
Pennsylvania Public Utilities Commission Docket Nos. R-00061366, R-0061367, et. al.
Investigation regarding Pennsylvania Rural Electric Association / Allegheny Electric Cooperative Rates

2007
Pennsylvania Public Utilites Commission v Wellsboro Electric Company
Docket No. P-2008-2020257

TESTIMONY BEFORE STATE AND FEDERAL REGULATORY AUTHORITIES
BY GREGORY L. BOOTH, PE, PLS

<table>
<tr><td colspan="2">Rhode Island Public Utilities Commission

Docket No. 2489
Testimony before the Rhode Island Utilities Commission, on behalf of Rhode Island Division of Public Utilities and Carriers, May 15, 1997

Docket No. 2930
Testimony before the Rhode Island Utilities Commission on behalf of Rhode Island Division of Public Utilities and Carriers, December 2003

Docket No. 3564
Issuance of Advisory Opinion to Energy Facility Siting Board Regarding The Narragansett Electric Company’s Application to Relocate Transmission Lines Between Providence and East Providence, 2004

Docket No. 3732
Issuance of Advisory Opinion to Energy Facility Siting Board Regarding the Narragansett Electric Company d/b/a National Grid's Application to Construct and Alter Major Energy Facilities, 2006</td></tr>
<tr><td>1990
ElectriCities of North Carolina, Inc. (North Carolina Eastern Municipal Power Agency)

vs

Carolina Power & Light Company</td><td>Mr. John R. Jolly, Jr.
Poyner & Spruill
Post Office Box 10096
Raleigh, NC 27605

Mr. Donald Weightman
Spiegel & McDiarmid
Suite 1100
1350 New York Avenue, NW
Washington, DC 20005-4798</td></tr>
<tr><td>2001
City of Casselberry, FL

vs

Florida Power Corporation</td><td>Mr. Thomas A. Cloud
Gray Harris
Attorneys at Law
301 East Pine Street, Suite 1400
Orlando, FL 32801</td></tr>
<tr><td>2002
City of Winter Park, Florida

vs

Florida Power Corporation</td><td>Mr. Thomas A. Cloud
Gray Harris
Attorneys at Law
301 East Pine Street, Suite 1400
Orlando, FL 32801</td></tr>
</table>

TESTIMONY BEFORE STATE AND FEDERAL REGULATORY AUTHORITIES
BY GREGORY L. BOOTH, PE, PLS

2002 Property of Ed Harris Siler City Transmission Line Issues vs Progress Energy Carolina	 Mr. Robert F. Page Crisp, Page & Currin, LLP 4010 Barrett Drive, Suite 205 Raleigh, NC 27609 Phone: 919-876-8282 Fax: 919-791-0010
2004 **(P)** City of Bedford, N.H. vs Public Service of New Hampshire	 Mr. Doug Patch Orr & Reno, P.A. One Eagle Square Concord, N.H. 03302 Phone: 603-223-9161
2005 Haynes vs Progress Energy Corporation	 Mr. W. Paul Pulley, Jr. Pulley, Watson, King & Lisher, PA Brightleaf Square 905 West Main Street, Suite 21-F (27701) Post Office Drawer 3600 (27702) Durham, NC Phone: 919-682-9691 Fax: 919-688-9107
2006 Carolina Power & Light Company, d/b/a Progress Energy Carolinas, Inc. vs Lake Boone Trail Office Center, Associates, et. al. Wake County Superior Court Case No. 05SP4955	 Mr. Marc C. Tucker Smith Moore LLP Attorneys at Law 2800 Two Hannover Square (27601) Post Office Box 27525 (27611) Raleigh, North Carolina Phone: 919-755-8700 Direct: 919-755-8713 Fax: 919-838-3131 marc.tucker@smithmoorelaw.com
2007 Florida Transmission Intervention	 Mr. J. Christy Wilson, III 437 North Magnolia Avenue Orlando, Florida 32801-1524 Phone: (407) 843-4321 Toll Free: (877) 843-4321 Fax: (407) 423-1505

CURRENT & HISTORICAL

CLIENT

LISTS

Partial List of Historical Electrical Utility Clients

Client Name	*City*	*State*
4 CES/CEEC	Seymour Johnson AFB	NC
A&N Electric Cooperative	Parksley	VA
ACRES International Corp.	Grand Forks	ND
Action Sensors, Inc.	Wendell	NC
Adams Rural Electric Coop	West Union	OH
AFL Telecommunications		NC
Alaska 220 Communications	Anchorage	AK
Albemarle EMC	Hertford	NC
Alcoa Fujikura, Ltd.	Spartanburg	SC
Allegheny Electric Coop	Harrisburg	PA
Alleghany Power Energy	Greensburg	PA
Alternative Energy Corp.	RTP	NC
American Public Power Assn.	Washington	DC
American Telecommunications	Raleigh	NC
Apex Communications, LLC	Wynne	AR
Apex, Town of	Apex	NC
Arkansas Electric Coop Corp.	Little Rock	AR
AT&T	Durham	NC
Atlantic Power Generation	Charlotte	NC
Ayden, Town of	Ayden	NC
Bailey & Dixon	Raleigh	NC
Baker, Jenkins, Jones & Daly	Ahoskie	NC
BARC Electric Coop	Millboro	VA
Barnhill Contracting Co.	Tarboro	NC
Bath Electric, Gas & Water	Bath	NC
Battle, Winslow, Scott & Wiley	Rocky Mount	NC
Beckwith Power Systems	North Versailles	PA
Bedford, City of	Bedford	VA
Belhaven, Town of	Belhaven	NC
Bellsouth Mobility DCS	Raleigh	NC
Bennettsville, City of	Bennettsville	SC
Benson, Town of	Benson	NC
Biltmore Dairy Farms, Inc.	Asheville	NC
Blue Ridge Electric Coop.	Pickens	SC
Blue Ridge EMC	Lenoir	NC
Brantley & Wilkerson, PC	Montgomery	AL
Brunswick EMC	Shallotte	NC
Burlington-Northern Railroad	St. Paul	MN
Burroughs Wellcome Company	RTP	NC
Cape Hatteras EMC	Buxton	NC
Carolina Power & Light	Raleigh	NC
Carroll Electric Coop	Carrollton	OH
Carteret Craven Electric Coop	Morehead City	NC

Client Name	*City*	*State*
Central Electric Coop., Inc.	Parker	PA
Central EMC – NC	Sanford	NC
Central Georgia EMC	Jackson	GA
Central Virginia Electric Coop	Lovingston	VA
Centura Bank	Rocky Mount	NC
Charter Communications	Holly Ridge	NC
Cherry Hospital – DHR	Goldsboro	NC
Choptank Electric Coop	Denton	MD
Claverack REC	Wysox	PA
Clayton, Town of	Clayton	NC
CNA Insurance Companies	Rockville	MD
Cobb EMC	Marietta	GA
Community Electric Cooperative	Windsor	VA
Cornelius & Huntersville	Huntersville	NC
Continental Cooperative Services	Harrisburg	PA
Cornice Engineering, Inc.	Pagosa Springs	CO
CP&L Area Cooperatives		NC
Crawford & Company	Raleigh	NC
Crescent EMC	Statesville	NC
Dalton Utilities	Dalton	GA
Danvers, Town of	Danvers	MA
Danville, City of	Danville	VA
Davidson Water Cooperative	Welcome	NC
Delaware County Electric Coop	Delhi	NY
Delaware Div. Of Parks & Rec.	Dover	DE
Delaware Electric Cooperative	Greenwood	DE
Dover, City of	Dover	DE
East Carolina University	Greenville	NC
East Kentucky Power Corp.	Winchester	KY
Easton Utilities Commission	Easton	MD
Eden, City of	Eden	NC
Edgecombe Martin County EMC	Tarboro	NC
Electric Cooperative of SC	Cayce	SC
Electricities of NC, Inc.	Raleigh	NC
Elizabeth City, City of	Elizabeth City	NC
EMC Technologies	Raleigh	NC
Energy United (Davidson)	Statesville	NC
Enfield, Town of	Enfield	NC
Enron Wind Corporation	Tehachapi	CA
Farmville, Town of	Farmville	NC
Flint Energies	Warner Robins	GA
Florida Municipal Elec. Assoc.	Tallahassee	FL
Fort-Bragg – USA	Fort Bragg	NC
Four County EMC	Burgaw	NC
Fox Islands Electric Coop	Vinalhaven	ME
Fremont, Town of	Fremont	NC

Client Name	*City*	*State*
Georgia Consumers Utility Council	Atlanta	GA
Gillette, City of	Gillette	WY
Greenville Utilities	Greenville	NC
Greer, SC Comm. Of Public Works	Greer	SC
Greystone Power Corporation	Douglasville	GA
Groton Utilities	Groton	CT
Guernsey-Muskingum Elec. Coop	New Concord	NH
Habersham EMC	Clarksville	GA
Halifax EMC	Enfield	NC
Hancock-Wood Elec. Coop	N. Baltimore	OH
Harkers Island EMC	Harkers Island	NC
Harron Communications	Frazer	PA
Hart EMC	Hartwell	GA
Haywood EMC	Waynesville	NC
Hertford, Town of	Hertford	NC
High Point, City of	High Point	NC
High Point, Regional Hospital	High Point	NC
Joe Wheeler EMC	Trinity	AL
Jones-Onslow EMC	Jacksonville	NC
Kinston, City of	Kinston	NC
LaGrange, Town of	LaGrange	NC
Lee County Electric Coop		FL
Lewes, DE Board of Public Works	Lewes	DE
Lewis County REC	Lewiston	MO
Lexington Utilities	Lexington	NC
Lexington, City of	Lexington	NC
Louisburg, Town of	Louisburg	NC
Lumbee River MEC	Red Springs	NC
Lumberton, City of	Lumberton	NC
Lynches River Electric Coop	Pageland	SC
Madison, Borough of	Madison	NJ
Maine Public Service Company	Presque Isle	ME
Mebane, City of		NC
Mecklenburg Electric Coop	Chase City	VA
Milford, City of	Milford	DE
Minnesota DPS	St. Paul	MN
Mitchell EMC	Camilla	GA
MN Planning/Environmental	St. Paul	MN
Monroe, City of	Monroe	NC
Morganton, City of	Morganton	NC
Municipal Gas Group	Wilson	NC
National Rural Telecom Coop	Herndon	VA
National Spinning Co., Inc.	Washington	NC
NC AT&T State University	Greensboro	NC

Client Name	*City*	*State*
NC Eastern Municipal Power	Raleigh	NC
NC Electric Membership Co.	Raleigh	NC
NC League of Municipalities	Raleigh	NC
NC Rural Telecommunications Coop	Enfield	NC
New Bern, City of	New Bern	NC
New Enterprise REC	New Enterprise	PA
New Hampshire Electric Coop	Plymouth	NH
North Carolina AEC	Raleigh	NC
North Carolina State University	Raleigh	NC
North Georgia EMC	Dalton	GA
Northern Neck Electric Coop	Warsaw	VA
Northern Virginia Electric Coop	Gainesville	VA
Northfield Electric Department	Northfield	VT
Northwest Public Power Assn.	Vancouver	WA
Northwestern REC Association	Cambridge Springs	PA
NRECA	Arlington	VA
Ohio Rural Electric Coop Inc.	Columbus	OH
Old Dominion Electric Coop	Glen Allen	VA
Ostego Electric Coop	Hartwick	NY
Pee Dee Electric Coop	Darlington	SC
Pee Dee EMC	Wadesboro	NC
Penn. Rural Elec. Assn.	Harrisburg	PA
Perkasie, Borough of	Perkasie	PA
Piedmont EMC	Hillsborough	NC
Pineville, Town of	Pineville	NC
Pitt & Greene EMC	Farmville	NC
Pitt County Memorial Hospital	Greensville	NC
Potomac Electric Power Co.	Washington	DC
Prince George Electric Coop	Waverly	VA
PWC of the City of Fayetteville	Fayetteville	NC
Randolph EMC	Asheboro	NC
Rappahannock Electric Coop	Fredericksburg	VA
REA Energy Coop (SW Central)	Indiana	PA
Red Springs, Town of	Red Springs	NC
RI Div. Of Public Utilities	Warwick	RI
Roanoke Electric Coop	Rich Square	NC
Rocky Mount, City of	Rocky Mount	NC
Roxboro, City of	Roxboro	NC
Rutherford EMC	Forest City	NC
Salem City of	Salem	VA
Sandhills Utility Services, LLC	Red Springs	NC
Santee Cooper	Myrtle Beach	SC
SCAMPS	Columbia	SC
Scotland Neck, Town of	Scotland Neck	NC
Seaford, Town of	Seaford	DE

Client Name	*City*	*State*
Selma, Town of	Selma	NC
SMECO	Hughesville	MD
Smithfield, Town of	Smithfield	NC
Snapping Shoals EMC	Covington	GA
Somerset Rural Electric Coop	Somerset	PA
South River EMC	Dunn	NC
Southport, City of	Southport	NC
Southside Electric Coop	Crewe	VA
Stantonsurg, Town of	Stantonsburg	NC
Steuben Rural Electric Coop	Bath	NY
STS Hydro Power Limited	Northbrook	IL
Sullivan County REC	Forksville	PA
Sulphur Springs Valley EMC	Willcox	AZ
Sumter Electric Coop		FL
Surry-Yadkin EMC	Dobson	NC
Sussex Rural Electric Coop	Sussex	NJ
Talquin Electric Coop	Quincy	FL
Tarboro, Town of	Tarboro	NC
Tideland EMC	Pantego	NC
Tri-County EMC	Dudley	NC
Tri-County EMC	Lafayette	TN
Tri-County REC	Mansfield	PA
TVPPA	Chattanooga	TN
UNC – Asheville	Asheville	NC
UNC – Chapel Hill	Chapel Hill	NC
UNC- Greensboro	Greensboro	NC
Union EMC	Monroe	NC
United Electric Coop	DuBois	PA
US Generating Company	Bethesda	MD
VA, MD, DE AEC	Glen Allen	VA
Valley Rural Electric Coop	Huntington	PA
Wake Electric Membership Corp	Wake Forest	NC
Wake Forest, Town of	Wake Forest	NC
Walstonburg, Town of	Walstonburg	NC
Washington Electric Coop	E. Montpelier	VT
Washington EMC	Sandersville	GA
Washington, City of	Washington	NC
Waynesville, Town of	Waynesville	NC
Wellsboro Electric Company	Wellsboro	PA
West Virginia Power Company	Lewisburg	WV
Western Carolina University	Cullowhee	NC
Wilmington, City of	Wilmington	NC
Wilson, City of	Wilson	NC
Winter Park, City of	Winter Park	FL
Winterville, Town of	Winterville	NC

Partial List of Historical Law Firm Clients

Client Name	*City*	*State*
Bailey & Dixon	Raleigh	NC
Baker, Jenkins, Jones & Daly	Ahoskie	NC
Barr, Murman, Tonelli, Slother & Sleet	Tampa	FL
Battle, Winslow, Scott & Wiley	Rocky Mount	NC
Brantley & Wilkerson, PC	Montgomery	AL
Brown, Crump, Vanore & Tierney, LLP	Raleigh	NC
Cozen O'Connor	Charlotte	NC
Crisp, Page & Currin	Raleigh	NC
David B. Mishael	Miami	FL
Ford, Chevernak & Foote	Rockville	MD
Freeman & Freeman	Rockville	MD
G,H & R (City of Casselberry, FL)	Orlando	FL
Habush, Habush & Rottier	Milwaukee	WI
Harrison, White, Smith & Coggins, PC	Spartanburg	SC
Harry Shevin	West Palm Beach	FL
Hedrick, Eatman, Gardner & Kinchel	Charlotte	NC
Herzfeld & Rubin	New York	NY
John Gehlhausen	Lamar	CO
Kassel Law	Columbia	SC
Kaufman & Canoles	Richmond	VA
Kenneth J. Dorchak	North Miami	FL
Marshall, Williams & Gorham, LLP	Wilmington	NC
Maupin Taylor	Raleigh	NC
McGougan, Wright, Worley, Harper, Bullard, LLP	Tabor City	NC
Michie, Hamlett, Lowry, Rasmussen & Tweel, PLLC	Charlottesville	VA
Miles & Stockbridge, PC		
Modern Lighting Protection, Inc.	Greenville	NC
Montgomery & Larson, LLP	West Palm Beach	FL
Orr & Reno, P.A.	Concord	NH
Parker, Poe, Adams & Bernstein, LLP	Charlotte	NC
Paton-Zucchino & Assoc.	Raleigh	NC
Patterson, Dilthey, Clay & Bryson	Raleigh	NC
Peters, Murdough, Parker, Eltsroth & Detrick	Hampton	SC
Pope & Tart	Dunn	NC
Pulley, Watson, King & Lisher, PA	Durham	NC
Ragsdale Liggett	Raleigh	NC
Ricci & Leopold, PA	Palm Beach Gardens	FL
Richardson, Patrick, Westbrook & Brickham, LLC	Columbia	SC
Romano, Eriksen, Cronin & Mullins	Lake Worth,	FL
Romano, Eriksen, Cronin & Mullins	West Palm Beach	FL
Ronald C. Jessamy, Sr.	Washington	DC
Scherffius, Ballard, Still & Ayers, LLP	Atlanta	GA
Scott Kimmel	Lighthouse Point	FL
Silverstein, Silverstein, & Silverstein, PA	Aventura	FL
Smith, Helms, Muliss & Moore	Raleigh	NC

Client Name	*City*	*State*
Stites & Hopkins	Kansas City	MO
Sumrell, Suggs, Carmichael, Hicks & Hart	New Bern	NC
Thompson, Smyth & Coiffi, LLP	Raleigh	NC
Walker & Morgan, LLC	Lexington	SC
Young, Moore & Henderson	Raleigh	NC

Partial List of Historical Industrial Clients

Client Name	*City*	*State*
AT&T	Durham	NC
Atlantic Power Generation	Charlotte	NC
Beckwith Power Systems	North Versailles	PA
Black & Decker	Tarboro	NC
Bridgestone/Firestone (BFS)	Wilson	NC
Burroughs Wellcome Company	RTP	NC
Caswell Center	Kinston	NC
Centura Bank	Rocky Mount	NC
Centex Construction	Atlanta	GA
Charter Communications	Surf City	NC
Cherry Hospital – DHR	Goldsboro	NC
Clapp Research Associates	Raleigh	NC
Clark Substations, LLC	Calera	AL
Cornice Engineering, Inc.	Pagosa Springs	CO
Data Comlink, Inc.	Sandersville	GA
Design Dimensions, Inc.	Raleigh	NC
Dolan and Dolan	Newton	NJ
Dupaco	Kinston	NC
Drucker & Falk	Raleigh	NC
E&R Construction	Kinston	NC
Empire of Carolina	Tarboro	NC
Farmville Water and Wastewater Systems	Farmville	NC
Frigidaire	Kinston	NC
Fontaine Fifth Wheel	Birmingham	AL
Fonville-Morrisey	Raleigh	NC
Fort Bragg	Fort Bragg	NC
General Electric	Fairfield	CT
Glenoit Industries	Tarboro	NC
Goldsboro, City of	Goldsboro	NC
Cherry Hospital DHR	Goldsboro	NC
Gregory Poole Power Systems	Raleigh	NC
Harris Development Corp.	Wilson	NC
Hesco, Incorporated	Smithfield	NC
High Point Regional Hospital	High Point	NC
Honeywell	Fort Bragg	NC
Jag Management, Inc.	Raleigh	NC
KCI Technologies, Inc.	Raleigh	NC
Kelly Springfield Tire Co.	Fayetteville	NC
Kinston City Hall	Kinston	NC
Larry A. Blattenberger, Inc.	Martinsburg	PA
Lenior, City of	Lenoir	NC
Lenoir Memorial Hospital	Kinston	NC
Lewes, DE, City of	Lewes	DE
Maida Vale, LLC	Raleigh	NC

Client Name	*City*	*State*
NC Department of Human Resources	Raleigh	NC
NC Department of Transportation	Raleigh	NC
NC Division of Mental Health	Raleigh	NC
NC Licensing Board – General Contractor	Raleigh	NC
NC School of Deaf	Raleigh	NC
NC State Construction Office	Raleigh	NC
New Hanover County	Wilmington	NC
North Hills PBX	Raleigh	NC
Nucor Steel	Charlotte	NC
Pope Air Force Base	Pope AFB	NC
Power Delivery Associates	Smyrna	GA
PS & W Engineering	Cary	NC
Raleigh, City of	Raleigh	NC
Rocky Mount City Hall	Rocky Mount	NC
Sara Lee Corporation	Tarboro	NC
Seymour-Johnson Air Force Base	Goldsboro	NC
Talisman Partners, Inc. (now Earthtech)	Englewood	CO
Tantalus Systems, Corp.	Burnaby, BC	Canada
Tarboro Elementary School	Tarboro	NC
Tarboro High School	Tarboro	NC
Tarboro Water and Wastewater Systems	Tarboro	NC
Teligent, Inc.	Alpharetta	GA
Texfi Industries	Fayetteville	NC
The West Co.	Kinston	NC
Time Warner Cable	Newport	NC
Transco	Charlottesville	VA
US Postal Services (GSA)	Raleigh	NC
Utility Engineering Services	Jackson	TN
Volvo Data North America	Greensboro	NC
Wake County Parks & Recreation	Raleigh	NC
West Company	Kinston	NC
Western North Carolina School for the Deaf	Morganton	NC
Williams Energy Group	Tulsa	OK
Zenith Controls, Inc.	Chicago	IL

Partial List of Historical Insurance Company Clients

Client Name	*City*	*State*
CNA Insurance Companies	Rockville	MD
Federated Rural Electric Insurance	Shawnee Mission	KS
Iowa National Mutual Ins. Co.	Greenville	NC
Nationwide Insurance Companies	Mt. Olive	NC
SAFECO Insurance		
St. Paul Travelers	St. Paul	MN
Ohio Casualty Group	Hamilton	Ohio

SEMINARS,

PRESENTATIONS

& PUBLICATIONS

Seminars/Presentations and Publications (Past 15 Years)

North Carolina Association of Municipal Electrical Systems (NCAMES)

Date	*Location*	*Presentation/Seminar/Class Title*
1987	Annual Meeting	System Losses Overview
1990	Annual Meeting	NESC – Clearance & Liabilities
1992	Annual Meeting	CL Fuses Presentation
1993	Annual Meeting	NESC Revisions/Partial Review
1996	Annual Meeting May 13, 1996 Greensboro, NC	NESC 1997 Proposals/Partial Review
1997	Annual Meeting Charlotte, NC	Overhead High Voltage Line Safety Act
May 16-18, 2000	39th Annual Conference Raleigh, NC	Protective Relaying Principles Presentation
May 2000	Annual Meeting	Distribution System Protective Coordination Principles
May 2006	Annual Meeting	Asset Management Strategic Planning and Long-Range Planning
May 2007	Annual E & O Conference	Arc Flash Hazard and the NESC (Protection Assessment) Summary Presentation
April 2008	Annual E & O Conference Concord, NC	Long-Range Planning and Distribution Protection

National Rural Electric Cooperative Association (NRECA)

Date	*Location*	*Presentation/Seminar/Class Title*
July 18-20, 1983	St. Louis, MI	Store, Deter, Delay or Interrupt
Nov. 16, 1989		Report on Distribution Improvements that pay off through Lower Power Loss
1991	Annual Meeting	Distribution System Loss Management
1992		Distribution Loss Seminar
June 24-26, 1992	San Antonio, TX	Distribution System Loss Workshop
Sept. 23-24, 1993	Herndon, VA	Cost Effective Management of System Planning & Purchasing
January 2000		Recloser Actuator Engineering Analysis Update
February 2001	TechAdvantage Meeting	ABCs of System Planning
February 2002	TechAdvantage Meeting	Economic Conductor Sizing
August 2006	CRN Member Summit - Cooperative Research Council Meeting	Asset Management Strategic Planning Reliability and Trends

American Public Power Association
(APPA)

Date	*Location*	*Presentation/Seminar/Class Title*
October 6-7, 1986	Kansas City, MI	Distribution Line Loss Seminar & Manual
Sept. 28-30, 1987	Raleigh, NC	Distribution Line Loss Seminar & Manual
April 11-13, 1988	Colorado Springs, CO	Distribution Line Loss Seminar & Manual
June 24, 1988		National Distribution Improvements Pay Off through Power Losses
October 12-14, 1988	Minneapolis, MN	Distribution Line Loss Guide

North Carolina Electric Membership Corporation
& North Carolina Association of Electric Cooperatives
(NCEMC & NCAEC)

Date	*Location*	*Presentation/Seminar/Class Title*
October 1986		NCAEC – Distribution System Loss Evaluation
October 30, 1986	Greenville Utilities Commissions	NCAEC – Reduce Losses in Distribution Systems
November 13, 1986	Crescent UMC Statesville, NC	NCAEC – Reduce Losses in Distribution Systems
1993	Operations Conference	1993 NESC Revisions Partial Review
December 12, 1996	Nash Community College, Rocky Mount, NC	NCAEC – Advanced Lineman Training NESC Introduction
June 1999	E & O Conference	Distribution Protective Coordination Workshop
June 2000	E & O Conference	NCAEC – Proposed changes to 1997 NESC
June 2001	E & O Conference	NCAEC – The NESC
December 5-6, 2001	System Engineer's Workshop	NCAEC -- The NESC
June 2002	E & O Conference	NCAEC – Overview of 2002 NESC Changes
September 2002	NCEMC Manager's Conference, Sunset Beach, NC	NCEMC – Overview 2002 NESC Changes

June 2007	NCAEC 2007 E & O Conference	Arc Flash Hazard and the NESC (Protection Assessment) Summary Presentation
December 6, 2007	System Engineers Workshop	Arc Flash Hazard and the NESC (Protection Assessment) 7 Hour Seminar for Electric Cooperatives
June 2008	2008 E & O Conference	Two Presentations: Arc Flash Hazard Update and The National Electrical Code and How it Applies to Utilities

North Carolina Electric Municipal Power Association (NCEMPA)
& ElectriCities of North Carolina, Inc.

Date	*Location*	*Presentation/Seminar/Class Title*
1983	Wake Tech. College Raleigh, NC	Distribution System Protection School
1985	Wake Tech. College Raleigh, NC	Distribution System Protection School
June 17, 1987	ElectriCities	NESC & Municipal Electric System Safety Seminar
Sept. 28-30, 1988	Raleigh, NC	Distribution System Loss Evaluation Manual
November 1990	ElectriCities	NESC Course Manual
Dec. 11-12, 1991	ElectriCities	NESC
November 1992	ElectriCities	NESC Course Manual
Nov. 17-18, 1993	Raleigh, NC	NESC School
Nov. 16-17, 1994	ElectriCities	NESC Seminar
November 13, 1996	ElectriCities	1997 NESC Course
December 11, 2007	City of Wilson, North Carolina	Arc Flash Hazard and the NESC (Protection Assessment) 4 Hour Workshop for Municipalities

Other

Date	*Location*	*Presentation/Seminar/Class Title*
May 1988	SC Public Service Authority-Santee Cooper	NESC Training Guide
November 14, 1989	City of Bennettsville, SC	Value of System Planning
1990	Joe Wheeler EMC Hartselle, AL	NESC
May 1990	Northeast Assoc. of Electric Cooperatives	Power Quality Presentation & Distribution Cost Trends Presentation
May 22-24, 1990	New England Statewide	NARC
Dec. 10-11, 1990	Lexington, NC	NESC School
Dec. 26, 1990	City of Kinston, NC	NESC Course
1993	Davidson Electric Membership Cooperative Lexington, NC	NESC Course Manual Partial Review
Jan. 12-14, 1993	Rappahannock Electric Cooperative Fredericksburg, VA	Distribution System Loss Management Workshop
June 18-19, 1993	Joe Wheeler EMC Hartselle, AL	NESC School
July 2000		CP&L Accident Investigation Workshop

June 2000	SCAMPS Annual Meeting	Distribution System Protective Coordination Principles
June 2001	SCAMPS Annual Meeting	Accident Investigation and Avoidance Issues
February 2002	SCAMPS Columbia, SC	2002 NESC
July 2002	Florida Municipal Electric Association Orlando, FL	2002 NESC
April 2003	Old Dominion Electric Cooperative	Load Research Relevance to Distribution Planning
April 2004	Virginia, Maryland & Delaware Association of Electric Cooperatives	• System Grounding Presentation • Capacitor Placement & Power Factor Correction • System Planning
May 2004	Virginia, Maryland & Delaware Association of Electric Cooperatives	Interval Data and Construction Work Plan Design
January 2008	PREA State College, PA	Arc Flash Hazard and the NESC (Protection Assessment) Summary Presentation
April 15, 2008	Virginia, Maryland & Delaware Association of Electric Cooperatives	Arc Flash Hazard and the NESC (Protection Assessment) 7 Hour Workshop for Electric Cooperatives

Distribution System Loss Evaluation Seminars

Date	*Location*
September 30 – October 2, 1991	Marco Island, FL
November 15, 1991	Albuquerque, NM
November 18, 1991	St. Louis, MI
November 22, 1991	Charlotte, NC
January 15, 1992	Jones Onslow EMC Jacksonville, NC
May 11-13, 1992	Nashville, TN
September 30 – October 2, 1992	Northwest Public Power Association Seattle, WA
October 4-7, 1992	District Manager's Conference San Antonio, TX
November 12, 1992	Four County EMC Burgaw, NC
July 18-21, 1993	Materials Management Conference Hilton Head, SC
October 13-16, 1993	Northwest Public Power Authority Portland, OR
June 15-17, 1994	North Carolina Association of Electric Cooperatives E&O Conference Sunset Beach, NC
October 18, 1994	North Carolina Electric Membership Cooperative Raleigh, NC

October 23-26, 1994	NRECA E&O Conference Jacksonville, FL
January 17, 1995	United EC Dubois, PA
November 20 – December 1, 1995	Minneapolis, MN
December 14-15, 1995	Nashville, TN
May 22-24, 1996	San Antonio, TX
June 12-14, 1996	Denver, CO
April 22-23, 1997	Minneapolis, MN
May 9, 2000	Lewis County REC Lewistown, MI

National and State Publications

Date	*Location*
1986	Distribution System Loss Evaluation Manual American Public Power Association
1991	Distribution System Loss Management Manual – NRECA
1994	Distribution System Loss Reduction Manual Tennessee Valley Public Power Association, Research & Development
1999	Distribution Protective Coordination Workshop Materials
2000	Improving Distribution System Performance
2001	National Electrical Safety Code Workshop Materials
2001	Evaluation of Recloser Actuators – NRECA
2003	Power Loss Management Manual for the Deregulated Utility Environment NRECA-CRN
2004	Virginia, Maryland & Delaware Association of Electric Cooperatives • System Grounding Materials • Capacitor Placement & Power Factor Correction Materials • System Planning Materials
2004	Interval Data and Construction Work Plan Design Materials
2007	Arc Flash Hazard and the NESC (Protection Assessment) Seminar Materials

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS

Rhode Island Department of Transportation
OFFICE OF THE CHIEF ENGINEER
Two Capitol Hill, Rm 224
Providence, RI 02903-1124
PHONE 401-222-2492
FAX 401-222-3435 TDD 401-222-4971

February 18, 2009

Mr. Nick Ucci
Coordinator
Energy Facility Siting Board
89 Jefferson Boulevard
Warwick, Rhode Island 02888

Reference: The Narragansett Electric Company d/b/a National Grid
Rhode Island Reliability Project Application

Dear Mr. Ucci:

We have examined the *Environmental Report* and the *Visibility and Visual Impact Assessment* prepared respectively by Vanasse Hangen Brustlin, Inc. and Environmental Design & Research for Narragansett Electric Company's proposed *Rhode Island Reliability Project*. The overhead placement of the new 375 kV transmission line and the relocated/reconstructed existing 115 kV transmission line provide less of an impact to State roads than the standalone installation of an underground duct bank for the new 375 kV transmission line.

This project will require a Utility Permit for any work on or over a State road right-of-way. Plans for each crossing of a State road right-of-way must be submitted for our review and comment. If you have any questions or require clarification regarding this matter, please contact me.

Sincerely,

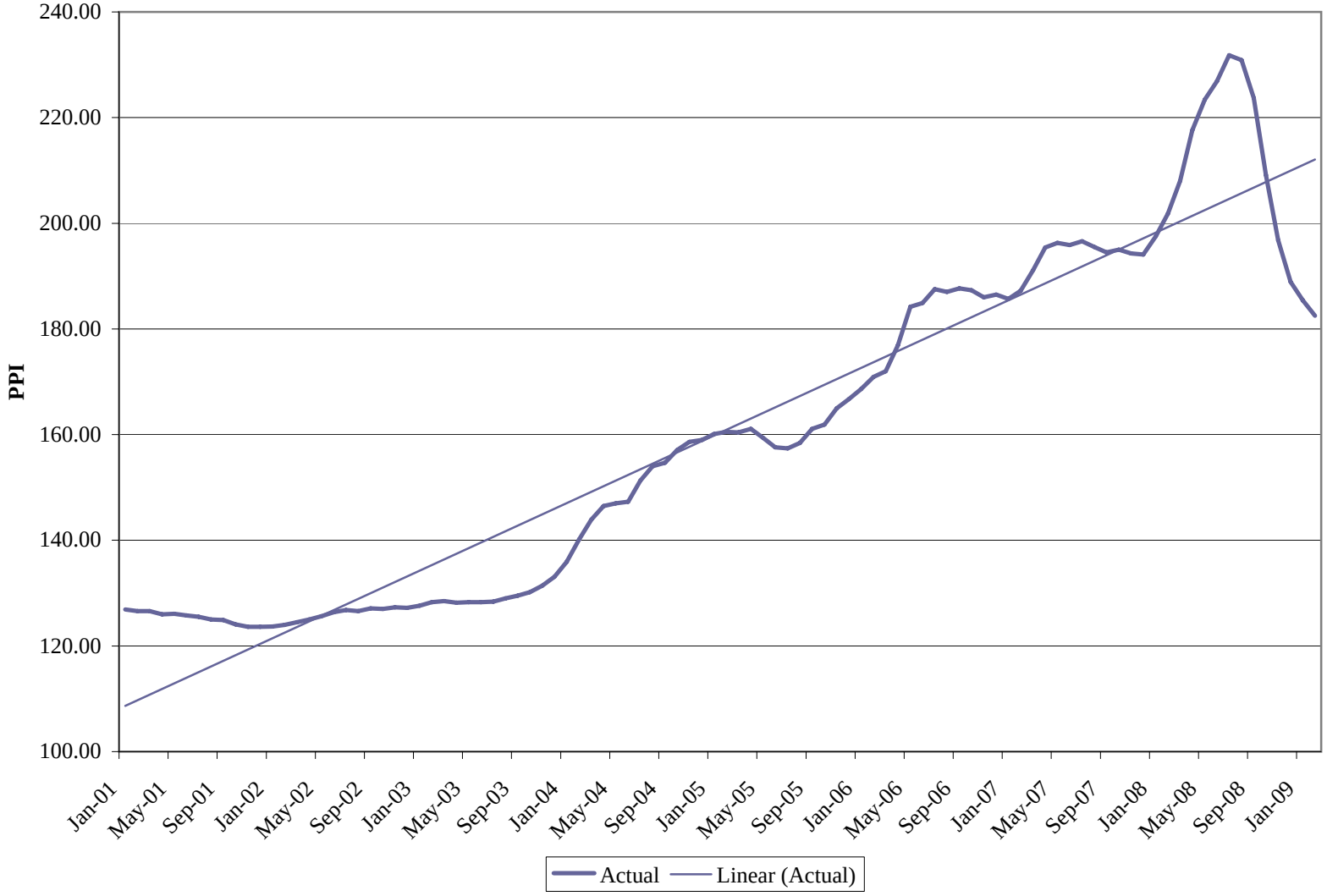
Kazem Farhoumand, P.E.
Chief Engineer

MLP

cy: Alves, Farhoumand, Smith; File
Narragansett Electric Company
280 Melrose Street
Providence, RI 02907

Exhibit GLB-3
Sheet 1 of 2

Metals and Metal Products PPI



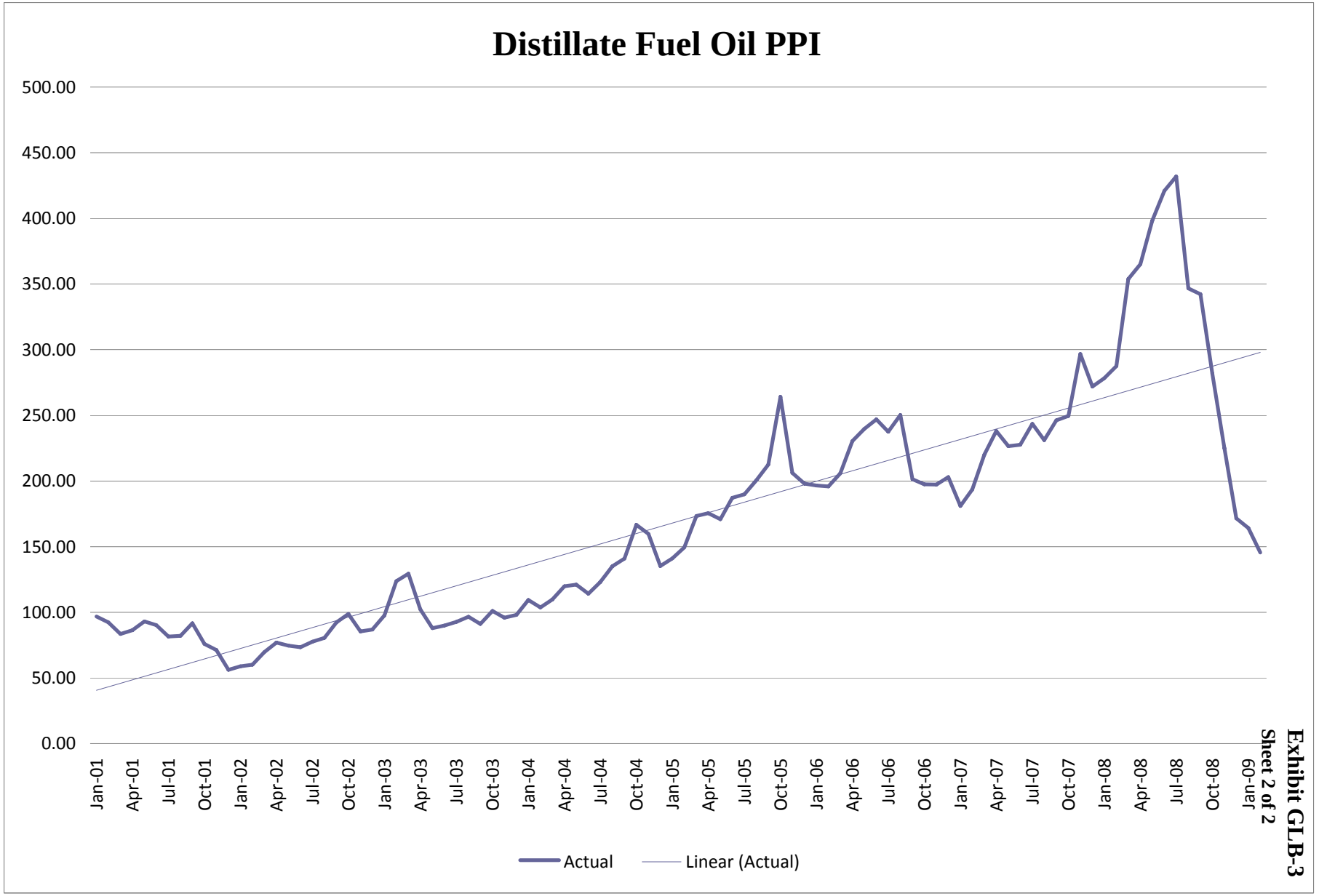


Exhibit GLB-3
Sheet 2 of 2

Proposed Booth Overhead Line Cost Adjustments

Project Components	Cost Estimate Adjustments
Aprons & Access Roads	$ (3,316,500)
Site Preparation & Cleanup	$ (976,800)
Mobilization / Demobilization	$ (336,700)
Railroad Crossings	$ (330,000)
Differential Cost 1590 to 954 Conductor	$ (1,050,000)
Booth Preliminary Design - 13% Less Structures	$ (1,568,000)
Helicopter Wire Stringing	$ (1,600,000)
Small Job Mobilization Factor	$ (880,000)
Structure Cost	$ (5,992,000)
Right-of-Way Security and Environmental Controls	$ (1,678,000)
TOTAL BOOTH OVERHEAD ADJUSTMENTS	**$ (17,728,000)**

Estimated Overhead Project Costs With Booth Overhead Cost Adjustments

Project Components	Cost Estimate Adjustments
New 359 345 kV Transmission Line	$ 61,900,000
Relocate and Reconstruct S-171 and T-172 115 kV Transmission Lines	$ 115,600,000
Reconductor G-185N 115 kV Transmission Line	$ 3,800,000
Modify Kent County Substation	$ 22,100,000
West Farnum Substation 345 kV Equipment Additions and Upgrades	$ 63,000,000
332 Line Relocation	$ 1,350,000
315 Line Relocation	$ 750,000
H-17 115 kV Transmission Line Relocation	$ 750,000
B-23 115 kV Transmission Line Relocation	$ 250,000
G-185S/L-190 115 kV Transmission Line Relocations	$ 500,000
Total Estimated Overhead Project Cost	**$ 270,000,000**
Cost Estimate Adjustment From Sheet 1 of 4	**$ (17,728,000)**
TOTAL BOOTH OVERHEAD ESTIMATE	**$ 252,272,000**

Proposed Booth Alternate Underground Line Cost Adjustments

Project Components	Cost Estimate Adjustments
Rock Removal	$ 8,000,000
Additional Cable Length Required (Labor and Material)	$ 9,450,000
Additional Cable Pricing Due to Material Volatility	$ 147,200,000
TOTAL BOOTH UNDERGROUND ADJUSTMENTS	**$ 164,650,000**

Estimated Alternate Underground Project Costs With Booth Underground Line Cost Adjustments

Project Components	Cost Estimate Adjustments
New 359 345 kV Underground Transmission Line	$ 336,400,000
Reconductor S-171 and T-172 115 kV Transmission Line	$ 4,000,000
Reconductor G185N 115 kV Transmission Line	$ 3,800,000
Modify Kent County Substation	$ 22,700,000
West Farnum Substation 345 kV Equipment Additions and Upgrades	$ 47,700,000
Relocate H17 115 kV Line	$ -
Relocate B23 115 kV Transmission Line	$ 250,000
Relocate G185S / L190 Transmission Lines	$ 500,000
Total Estimated Project Cost	**$ 415,350,000**
Cost Estimate Adjustment From Sheet 3 of 4	**$ 164,650,000**
TOTAL BOOTH UNDERGROUND ESTIMATE	**$ 580,000,000**