



**U.S. Department of Energy  
Electricity Advisory Committee Meeting  
NRECA Conference Center  
Arlington, VA  
June 5, 2013**

**Summary of Meeting**

## PARTICIPANTS

### EAC:

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Executive Vice President, ITC Holdings

MERWIN BROWN  
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PAUL CENTOLELLA  
Vice President, Analysis Group

BOB CURRY  
Commissioner Emeritus, NY; Charles River Associates

CLARK GELLINGS  
Electric Power Research Institute

DIAN GREUNICH  
Dian Greunich Consulting

PAUL HUDSON  
Stratus Energy Group, Austin

SUE KELLY  
American Public Power Association

RALPH MASIELLO  
DNV KEMA

RICH MEYER (for BARRY LAWSON)  
National Rural Electric Cooperative Association

CLAIR MOELLER  
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State Representative, Kansas

DAVID TILL  
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### **Welcome and Developments Since October 2012 Meeting**

Mr. Sonny Popowsky welcomed the Committee and introduced himself as the Vice Chair standing in for Rich Cowart, Chairman. Mr. Popowsky asked for brief introductions from the participants and then thanked Jay Morrison for hosting the meeting at NRECA and thanked members Dian Greunich, Brad Roberts and Ralph Cavanaugh whose term has ended and noted that DOE would hopefully add new members to be appointed by the new Secretary by October's meeting. Mr. Popowsky thanked the DOE staff, ICF, the EAC subcommittees, working groups, committee leadership and members for all the work to prepare for the meeting. Mr. Popowsky acknowledged the new Secretary of Energy and asked for him to attend a meeting in the near future. Mr. Popowsky introduced Mr. David Meyer and Assistant Secretary Patricia Hoffman who expressed thanks and welcomed the Committee.

### **Update on the U.S. Department of Energy (DOE), Office of Electricity Delivery and Energy Reliability's (OE) 2013 Programs and Initiatives**

Assistant Secretary Hoffman mentioned the reorganization at DOE, and noted the creation of a modeling and analysis group. The Assistant Secretary stated that they hoped to strengthen the depth of discussions that the Department is having on various topics, and pull together a group of experts to analyze the benefits around some of the strategic thoughts and directions. The Assistant Secretary noted that it was important to her and also the new Secretary, Ernest Moniz, who expressed that he wanted DOE to be stronger in their analysis and how they look at issues. Other issues that Assistant Secretary Hoffman discussed with Dr. Moniz included: the Department's synchrophaser activities, the development of tools that are available to system operators, the importance of cyber security, strategic directions for energy storage, and natural gas and electricity interdependency. The Assistant Secretary noted that the issues covered on this committee are very relevant and that she will keep the committee updated.

Ms. Dian Greunich asked Assistant Secretary Hoffman if there would be any diminishment or continuation in the world of energy efficiency. The Assistant Secretary responded that she didn't foresee a change.

Mr. Granger Morgan noted that at the National Academy meeting some of the China representatives in the electric power area were doing some amazing things that will be posted on the Academy of Engineering's website and are worth looking into.

Mr. Paul Centolella asked if the new Secretary had ideas about the organization and implantation of the Department's research agenda.

Assistant Secretary Hoffman noted that as the Department continues to evolve, different partnership models and ways of doing business will be explored, but that ultimately we have to ask if we are achieving the goals that we hoped to achieve through this partnership. Assistant Secretary Hoffman said the Secretary would likely look at what we're trying to achieve and determine the effective partnerships that are moving things forward and he may tweak some of the other ones that aren't getting results.

Mr. Merwin Brown asked if the Secretary gave any indication of his top three priorities. Assistant Secretary Hoffman noted that he mentioned grid investment and continued electricity research and development.

Mr. Curry questioned the work with utilities; would they be public authorities? Or, how would there be access to utilities under the current framework of the Sandy legislation?

Assistant Secretary Hoffman stated that some activities are allowed under the CDBG and the existing FEMA funds, but those are limited in scope. In other areas we would provide technical assistance to labs in partnership with the utilities on microgrids in order to work with communities on pilots to help with analysis. There would not be infrastructure investment. The goal is to help people ask the right questions and analyze the issues to anticipate what they need to think about and taking some of the lessons learned. It is an optimization as well as resiliency discussion.

Assistant Secretary Hoffman continued that the Department wants to help facilitate the discussion on resiliency, how it translates to infrastructure, and how that translates to customer and restoration expectations. The Committee then discussed resiliency as a hot topic with regard to storms and natural disasters. Assistant Secretary Hoffman reiterated the need to clarify the meaning of resiliency, and to align this definition with each regions' goals.

### **Federal Energy Regulatory Commission (FERC) Update**

Mr. Popowsky then introduced Cheryl La Fleur, who thanked the committee and provided an update on FERC's Order 1000 compliance.

FERC voted out about six compliance orders under Order 1000 and there are at least four more ahead. The biggest change was the public policy requirement, which requires both local and regional transition planning processes to consider transmission needs driven by public policy requirements that are established by federal and state laws and regulations.

President Obama put out an Executive Order on cyber security, calling for more information sharing, as well as the development of a voluntary cyber framework. FERC set up an Office of Energy Information Security, and Joe McClelland's group has been meeting with folks in past groups, the states, National Association of Regulatory Utility Commissioners (NARUC), Department of Homeland Security (DHS), and others to collaborate in the development of the voluntary framework.

Commissioner La Fleur noted recent and future FERC activity on reliability including a final rule on geomagnetic disturbances that requires the development of a standard operational procedure response if a massive solar storm occurs, a technical conference on reliability on July 9<sup>th</sup>, and a technical conference on capacity markets in the fall.

Mr. Popowsky thanked Commissioner La Fleur and asked for questions.

Assistant Secretary Hoffman mentioned that Dr. Moniz planned a quadrennial energy review, and that the states should consider energy strategy and infrastructure requirements from this review as

they do their energy plans. Dr. Moniz also noted that Joe McClelland's doing an independent maturity model Q&A questionnaire for utilities and asked the federal government to gain some consensus from different assessment pools.

Commissioner La Fleur agreed that it makes sense to work together.

Mr. Rick Miller, HDR Engineering, asked what guidance or insights could be provided to the industry on fostering the linkage between the DOE Office of Electricity and FERC.

Commissioner La Fleur suggested that the hydro folks engage the conversation regarding what they can do to help balance other renewables, and as storage technology type.

Mr. Miller followed up questioning if that was the most effective way to deal with FERC and Office of Markets, or the Commission staff or through the Office of Electricity?

Commissioner La Fleur replied that in terms of FERC it is best to get to know the staff that regulates you as well as the Commissioners.

Ms. Greunich asked what FERC could do to foster continued interactions among the ISOs/RTOs across the three interconnections similar to what took place at the 3-interconnections meeting?

Commissioner La Fleur noted it was not something that occurred on a regular basis even though interregional and inter-connection communication does take place in the context of metrics reports, gas/electric coordination issues and the like. She agreed that there could be further opportunities to create the opportunity for interactions of that sort, but that “technical conference overload” is a concern.

Ms. Greunich suggested they should consider it on a periodic basis noting some issues of concern being: 1 – the relationship between state public policies and the capacity markets, 2 – demand response, and 3 – energy efficiency.

Commissioner La Fleur agreed that a staff briefing book would be really helpful.

### **EAC Race to the Top Initiative Working Group Discussion**

Mr. Popowsky presented information on the progress of the Race to the Top Working Group, indicating the goal was to get recommendations to the DOE Secretary in a timely manner. The Working Group reviewed the Race to the Top material and supports the goals behind the initiative. They recognized that policies that can support energy efficiency and energy productivity do occur at the state- and at the utility-level, and supporting this Race to the Top concept will 1) reward states that make the most progress in meeting the energy goals established by the President and by DOE, and 2) identify successful models that other states can follow. There were five recommendations for DOE as noted in the presentation:

1. The Race to the Top should allow participation by states and other eligible applicants with all types of utility ownership and business models



2. The qualifying criteria should be descriptive rather than prescriptive. That is, allowing the states and other applicants flexibility to innovate.
3. Race to the Top applicants should be judged and rewarded based on their own improved performance. This arises from the concern that applicants will have very different starting points.
4. Support the two-phase program; phase one funds should be used to support the development of innovations, programs, policies, regulations and/or laws that advance energy efficiency and energy productivity. Whereas phase two awards should be made based on the achievement of improvements in energy efficiency and energy productivity.
5. RTT awards should be focused on achieving improvements in energy efficiency and productivity.

Mr. Popowsky then called on Mr. Bob Curry and Ms. Holmes Hummell to see if they had anything to add.

Dr. Hummell thanked the subcommittee and indicated that the proposal is an innovative approach in terms of federal relationships with states, and reserves to the states the full flexibility of achieving objectives that still serve national interests and the goals of many state leaders. The Department operates under a continuing resolution that states the DOE is forbidden from even issuing a request for information to invite stakeholder input on this proposal until it is appropriated. For that reason, FACA members and the State Energy Advisory Board members are the two places that DOE can go to seek policy input in a public setting that would allow for continued development of the idea.

Mr. Curry added that the idea of the descriptive, not prescriptive is important, and that Secretary Moniz has made this a significant ingredient in the way he sees things playing out going forward. Having confidence in him and his perspective on our industry is deserving of the committee's full attention.

Professor Granger Morgan suggested one additional sentence in section 4 that read: Because the successful adoption of many energy efficiency measures depends on human preferences and behaviors, the EAC believes DOE would be well advised to place particular focus on the inclusion of high quality behavioral social science in the design, exclusion and evaluation of our RTT projects.

The committee discussion continued about textual changes.

Mr. Popowsky stated that they had to rely on public documents, but among the working group there was unanimous support in principle.

Mr. Ball reiterated his concern that the committee provides recommendations only on the publicly available information.

Dr. Hummell reiterated that the committee has an opportunity to express to a larger audience that, there is some merit to the federal government giving states an opportunity to be rewarded for

superior performance against their own aspirations in areas that are aligned with national interests. This proposal will not be any further developed unless it is appropriated and wanted to be clear about the committee's constraints and restrictions about further developing the proposal in the absence of appropriations.

Mr. Curry noted that the committee has reviewed the information that is publicly available regarding the Race to the Top proposal and fully supports the concept as described therein.

Mr. Popowsky stated that they would work on the final language during the break.

Assistant Secretary Hoffman added that in past documents they would note within the document issues that arose.

Mr. Popowsky asked for volunteers to meet over the break and re-write the language.

Mr. Samir Succar noted some logistical items about the break and dinner.

#### **Panel – Key Federal Roles to Enhance Cyber Security in the Power Sector**

Mr. Popowsky introduced Mr. Chris Peters to lead the panel discussion on cyber security. Mr. Peters introduced the panelists: Marianne Swanson, at National Institute of Standards and Technology (NIST); Jason Christopher, DOE; Robert Coles, National Grid; and Samara Moore, White House National Security.

Ms. Marianne Swanson discussed cyber security and the actions of NIST. Recent accomplishments include a NIST interagency report, Guidelines for Smart Grid Cyber Security. NIST is also working on a user's guide, an assessment guide, white papers on automating Smart Grid security, and a framework for the Presidential executive order on cyber security for critical infrastructure.

Mr. Christopher spoke about the Electricity Subsector Capability, Cyber Security Capability Maturity Model (ES-C2M2), led by DOE with collaboration from both the private and public sectors. The challenge was to develop maturity indicating capabilities and managing dynamic threats, to understand the cyber security posture of the grid. He noted the need for benchmarking, and the tool DOE developed that the utilities have found very useful. He noted that the tool kit and model are both available online.

Dr. Coles discussed National Grid's dedication to risk management. His team has a systematic process for looking at threats and incidents, and understanding the business and how it's changing, which may introduce risk or it may mitigate risk in its own right. Similarly, technology and technological change may introduce risk or may indeed mitigate risk.

Ms. Moore discussed the White House's efforts related to critical infrastructure, cyber security and the combined approach that's being taken to address the cyber threats that are faced by the critical infrastructure. This approach focuses on the combination of information sharing and adoption of cyber security practices. Ms. Moore highlighted that as organizations realize the efficiencies of

information technology, there is an increased reliance on information systems and the internet to accomplish core business functions or to achieve mission objectives. Ms. Moore noted that one of the activities focused on by the President is the Executive Order 13636 with the goal of helping strengthen cyber security protections for critical infrastructure. She noted information sharing forums such as the ESISAT, the Industrial Control Systems Cyber Emergency Response Team (ICS-CERT), and the DHS are all resources that are available now, that the sector should be leveraging. Ms. Moore then recognized that the Executive Order is not enough because some challenges related to information sharing could only be addressed through legislation and that they continue to actively work in this area. Related to information sharing legislation, there are three fundamental priorities: carefully safeguarding privacy and civil liberties, insuring that we preserve the long-standing and respective roles and missions of civilian and intelligence agencies, and provide for targeted liability protections to help enable information sharing.

Mr. Peters thanked the panelists and opened up the floor for committee members to ask questions.

### **EAC Member Discussion of Key Cyber Security Issues**

Assistant Secretary Hoffman mentioned the importance determining levels of perceived and accepted risk and how a common metric for these risks would be useful. Assistant Secretary Hoffman also discussed the physical maturity model that was originally developed under DHS to compare the cost effectiveness of various security measures. Assistant Secretary Hoffman questioned if there was a need for disclosure roles within the supply chain community and their users. Finally, she noted that she met with several CEOs, the Deputy Secretary, and senior leadership of DHS and DOE, and they discussed situational awareness, also referred to as continuous monitoring and information sharing.

Dr. Coles mentioned the processes of risk assessment, and risk management noting that you can't benchmark risks because the risks that National Grid faces are entirely unique. There may be some commonality in the threat, but the impacts and the probability of attack are unique. One cannot benchmark risk. Dr. Coles further suggested that the role of the regulator should be around assessing the proficiency of an organization and their ability to understand and manage their risks. The implementation decisions of peer organizations are not necessarily good barometers for best practices across the industry.

Mr. Curry, former regulator in New York asked if there is adequate education at the regulator level and if that was something DOE might be able to enhance.

Dr. Coles agreed and noted he was doing the best he can to educate state level regulators and discussed the challenge of recruiting and retaining senior experts into those organizations.

Pr. Morgan expressed his concern around the reliability of the bulk power system. He warned against a singular focus on cyber attacks on the bulk power system at the expense of physical attacks. He also asked if there were any existing efforts to test the efficacy of maturity scores against real world tests of resiliency against attack.

Ms. Swanson discussed DOD's Capability Maturity Model (CMM) maturity model and that it

tracks improvement over time rather than relying on a single snapshot.

Pr. Morgan asked if they were just talking about bulk power.

Ms. Swanson felt it wasn't just about bulk power, but about the whole organization. She noted there are many program management pieces to cyber security that need to get deployed, including elements of work force, program management and others.

Mr. Christopher agreed that maturity scores are not a silver bullet and using the ES-C2M2, or any maturity model, period, may not provide the answer. However, it gives indicators.

Pr. Morgan asked about whether maturity models were being developed in a closed loop and informed by data from red team attacks and the like.

Ms. Moore noted that some of the key inputs into the development were leveraging some analysis and work that had been done over the years including prior vulnerability testing of industrial facilities.

Ms. Phyllis Reha referred back to Dr. Coles remark that industry needs a nimble environment to allow investment in security infrastructure to address changing risks rather than more standards or compliance-based rules. Ms. Reha asked about tools for regulators to guide cost benefit of infrastructure costs and to judge cost recovery in the absence of additional standards.

Dr. Coles suggested addressing this concern by evaluating an organization's processes for understanding its risks. He suggested that performing exercises such as the NYPSC's recent industry review of current practices can be used as a means for evaluating a company's risk assessment procedures. By challenging the decision making processes of companies, regulators can act as a normalizing agent.

Mr. Centolella expressed concern over the impact of a small organization on the reliability of the bulk grid. Even in CIP 5, smaller generating plants are at the lowest level of requirements. He was concerned that many aspects of the distribution system are not included within the definition of the bulk power system, and therefore are not covered.

Mr. Christopher acknowledged the vulnerabilities and commented regarding the capability and maturity model. He noted it's more than just the vulnerabilities by themselves; the risk equation itself is vulnerabilities, impact and threat.

Mr. Centolella restated that he was talking about critical national infrastructure, not the billing system. He wondered whether or not we are setting up criteria in how we think about this that does not reflect the risk to the system as a whole, and how we insure that there's not a gap in our governance in an organization that maybe is a small utility that maybe doesn't have a lot of resources, but if we looked at it from a national perspective, might be critical to the maintenance of the power system.

Ms. Moore mentioned one of their activities is DHS in partnership with the sector-specific

agencies was looking at each of the sectors to understand the critical functions within the sector, the value chain for each critical function, and the systems that underpin that function. That facilitates identification of what organizations own and operate those assets so that they are aware of the national impact of individual systems. DHS is undertaking an initial analysis of catastrophic impacts that will be completed in July in order to make sure there is a basic level of risk awareness. There will be further analysis to follow this initial step.

Ms. Swanson added that as NIST starts to develop their framework document on best practices and providing guidance on how the sectors should be securing their information technology (IT) and their operational technology (OT), they will be using the DHS guidance as one filter.

Commissioner La Fleur asked Robert about the point that any standard that sets a minimum will automatically become the maximum.

Dr. Coles replied that if you don't have an educated set of management that really understand the risks, then they don't engage in that deep thinking about what they're protecting themselves against, and assume that the industry consensus should be good enough. The standards don't work because the threat that the industry is facing is changing much more quickly than the standard setting entities can respond to reflect those changes in the consensus-based standards.

Commissioner La Fleur commented that there were several legislative vehicles around energy-focused cyber security information sharing and the like but it is unclear whether cyber security legislation specific to the energy industry had favorable prospects of passage.

Mr. Curry stated his concern for state regulatory agencies that are charged with looking at the prudence of expenditures, often the minimum can become the maximum when regulators are not far enough up the learning curve with respect to these issues where additional expenditure in cyber security is deemed to be on the shareholder's equity side rather than on the ratepayer's side.

Dr. Coles noted his company has encountered these issues and has overcome this through internal discussions on the risks and educating management. He noted that the risk of not recovering that money is deemed to be a risk that National Grid has been prepared to take, because they think it's important enough to manage the risks.

Mr. Masiello commented that it is common business practice in that industry to deliver the source code with systems. It's usually a contractual requirement. So here we've got critical infrastructure, and chances are good the source code for a lot of it is available in regions where U.S. suppliers can't do business. There is a substantial focus on intrusion and external threats, but the threat of something buried in three or four million lines of source code that has been potentially available for five years, is probably the greatest threat. It is certainly one place where the damage potential could be the highest. Entry into U.S. facilities often requires security clearance and background checks, but those writing software for suppliers certainly don't face the same level of scrutiny.

Ms. Swanson acknowledged they are aware of potential places where bad things can happen to products and noted that NIST has written a special publication on supply chain that talks about these types of risks and provides procurement language to address some of them.

Mr. Masiello raised the question of resiliency where another piece of the interconnected IT systems can detect that something that shouldn't ever happen is happening, and stop the process. He noted the concern about security and the intrusion

Ms. Moore stated there is an effort to look both at security and resilience, and trying to have the appropriate balance of protective measures, detective measures to identify when things go wrong, and it may be identifying something on the physical side that doesn't quite look right that might be an indicator of a cyber or vice versa, and also response and recovery capabilities. So they approach this challenge from a different perspective

Mr. Peters and Mr. Popowsky thanked the panelists. He introduced Gordon Van Welie (sitting in for Mr. Mike Heyeck) on behalf of the Transmission Subcommittee.

### **EAC Transmission Subcommittee 2013 Papers and Work Plan for 2013**

Mr. Van Welie read two paragraphs from the paper on interconnection-wide transmission planning to convey the scope of the paper and its recommendations. He noted the EAC commends the interconnection-wide planning efforts to date funded by the DOE. He noted that the funding provided the first-of-its-kind interconnection-wide planning efforts in the eastern interconnection, and both of the existing interconnection-wide efforts in the West and Texas. The process allowed for greater stakeholder input across public and private sectors. The EAC recommended that DOE work with each group to facilitate their continued efforts with clear objectives and governance and assist the groups in arranging their own funding mechanisms either through established mechanisms, by proposal to the DOE, or by other means. To the extent that other funding is forthcoming, they encourage DOE to protect its initial investment by responding positively to well-grounded proposals from the interconnection-wide planning groups.

Mr. Ball added that their long term focus needs to be moved into an area where these good efforts are financially sustainable on their own. Mr. Ball agreed with the recommendation of the paper, but encouraged DOE to continue to find a way such that the efforts can continue in a self-sustaining way.

Assistant Secretary Hoffman agreed and recognized they had some successes and also identified areas for improvement.

Mr. Popowsky asked for a motion to support the recommendation from the Transmission Subcommittee. The motion was approved.

Mr. Van Welie then put forth the recommendation on the Council of State Governments (CSG) interstate transmission signing compact, and wanted to propose some additional language to the committee concerning the details of the interstate electric transmission line signing compact, and to correct the references that NARUC had considered this in light of the fact that they had not yet formally considered the language of the compact. Mr. Van Welie revised the recommendation to ask the Department to engage in supportive efforts as are reasonable, including but not limited to communicating to state governors and legislatures the DOE's support for the state's adoption of interstate compacts in general, but including as appropriate the specific interstate compact that is

referenced in this document.

Mr. Sloan suggested a strong statement as possible to help DOE and FERC meet some of the objections raised to what's in the Energy Policy Act of 2005 (EPA05) in terms of backstop siting authority and transmission corridor designations. He recognized concerns from the regulatory perspective in spite of the compact's voluntary nature.

Ms. Greunich noted she was comfortable with the changes.

Ms. Wagner noted that she likes the idea of state compacts, but was concerned about the interpretation with respect to EPA05 and whether states falling under the national interest electric corridors designated by DOE as congested areas would be the only states involved in such a compact. Further she questioned the implication that no state was doing enough for transmission noting the positive work being undertaken in WECC. Ms. Wagner noted that with the proposed language modifications, she would be in support of the recommendations.

Mr. Curry requested a revised language overnight so the committee could review the exact language in the morning.

Mr. Van Welie agreed to distribute it electronically so everybody can get to see it and they could vote tomorrow.

### **EAC Discussion and Decision on Transmission Subcommittee Plans and Recommendations**

Mr. Van Welie stated that the paper on transmission technologies was on hold until they hear back from the DOE grid tech team. Mr. Van Welie then asked Mr. David Till for an update on the status of work on grid resiliency and ageing transmission assets.

Mr. Till indicated there were two major sections that have been drafted: one on the aging assets of the grid by Clark Gellings, and the other reasonable solutions by David. They would be combining them to make sure the merged document is consistent and then build from there. They would report back at the next EAC meeting to present the paper.

Mr. Popowsky informed the committee that Mike Heyeck planned to schedule a panel on post-Sandy, grid resiliency and related issues at the next EAC meeting.

Mr. Popowsky concluded day one of the meeting by asking for any additional questions or comments. He noted that tomorrow they would review a revised draft of the transmission compact letter. He confirmed that they had approved the interconnection-wide planning recommendations, and by tomorrow would have a revised draft of the Race to the Top and interstate transmission siting compact documents. He asked for anyone who wanted to make public comments to sign up to speak tomorrow. He thanked the committee and concluded the first day of the meeting.

Respectfully Submitted and Certified as Accurate,



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Richard Cowart  
Regulatory Assistance Project  
Chair  
DOE Electricity Advisory Committee

9/10/13

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Date



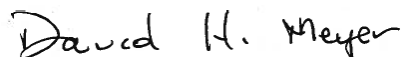
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Irwin "Sonny" Popowsky  
Pennsylvania Consumer Advocate  
Vice-Chair  
DOE Electricity Advisory Committee

9/10/13

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Date



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David Meyer  
Office of Electricity  
Designated Federal Official  
DOE Electricity Advisory Committee

9/10/13

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Date



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Matthew Rosenbaum  
Office of Electricity  
Designated Federal Official  
DOE Electricity Advisory Committee

9/10/13

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Date