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July 24, 2013

Mark D. Marini, Secretary  
Department of Public Utilities  
One South Station, Fifth Floor  
Boston, MA 02110

Re: D.P.U. 12-76 – Investigation into Modernization of the Electric Grid

Dear Secretary Marini:

Enclosed for filing are the Initial Comments submitted on behalf of NSTAR Electric Company (“NSTAR Electric”), and Western Massachusetts Electric Company (“WMECO”)(collectively, “Northeast Utilities” or the “Companies”) in response to a notice for comments on the Massachusetts Grid Modernization Stakeholder Working Group Process: Report to the Department of Public Utilities from the Steering Committee (“Grid Modernization Report”) issued by the Department of Public Utilities (the “Department”) on July 10, 2013 in Investigation by the Department of Public Utilities on its own Motion into Modernization of the Electric Grid, D.P.U. 12-76 (October 2, 2012) (the “Notice of Investigation”). The Department’s Notice for Comments set a deadline of July 24, 2013 for interested parties to file Initial Comments.<sup>1</sup>

NSTAR Electric and WMECO were pleased to participate in the Grid Modernization Stakeholder Working Group and appreciate the opportunity to offer these Initial Comments in support of the positions they have taken throughout the Working Group process and in the Grid Modernization Report.

Thank you for your attention to this matter.

Sincerely,



Danielle C. Winter

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<sup>1</sup> NSTAR Electric and WMECO reserve the right to respond to Initial Comments filed by signatories to the Grid Modernization Report and by other interested parties.

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Enclosures

cc: Benjamin Davis, Director, Electric Power Division  
Julie Howley-Westwater, Esq., Hearing Officer



the Department convened the Grid Modernization Working Group, comprised of the Distribution Companies, the Department of Energy Resources (“DOER”), the Office of the Attorney General (“Attorney General”), the New England Independent System Operator (“ISO-NE”) and numerous environmental and smart grid technology stakeholders. NSTAR Electric and WMECO were active participants on the Steering Committee, the Grid-facing Subcommittee, the Customer-facing Subcommittee and the various sub-groups created to respond to tasks necessary to advance the work of the Grid Modernization Working Group and were deeply involved in the drafting and refining of the Grid Modernization Report.

Northeast Utilities strongly supports the Department’s efforts to institute a process to address the important issue of continuing grid modernization. NSTAR Electric and WMECO were pleased to participate in the Grid Modernization Working Group and appreciate the opportunity to offer these Initial Comments in support of the positions they have taken throughout the Working Group process and in the Grid Modernization Report. The Companies look forward to participating in the ongoing Grid Modernization proceeding and working with the Department to explore alternatives to further modernize the electric distribution systems.

## **II. Commitment to Safe and Reliable Service**

NSTAR Electric and WMECO have a public-service obligation to provide safe and reliable service to electric customers at a reasonable cost. Decisions affecting the NSTAR Electric and WMECO electric distribution systems, including the implementation of technologies to help further modernize the grid, must be grounded in this fundamental principle. The Department has recognized the importance of this responsibility. “Safety and reliability are of paramount importance to the Department. Although the advancement of [distributed generation] DG is a very important goal, it must not jeopardize the reliability of the electric distribution system, the distribution equipment

itself, or the safety of customers or those who maintain the system.” Investigation by the Department of Public Utilities on its own Motion into Distributed Generation, D.P.U. 11-75-E (March 13, 2013); Maintenance and Repair Standards for Distribution Systems, D.P.U. 08-78 at 4, 11 and 21 (July 1, 2009); NSTAR Electric Company, D.T.E./D.P.U. 06-107-B at 23 and 57 (November 30, 2009). Both NSTAR Electric and WMECO adhere to this fundamental principle when developing and implementing traditional capital planning and investment projects and processes. Given that grid modernization technologies have a direct impact on the operation of the electric distribution system, Northeast Utilities approached the Grid Modernization Working Group process and the Grid Modernization Report with this critical mandate at the forefront. The recommendations put forth by the Companies within the Grid Modernization Working Group and the Grid Modernization Report allow for the additional effective and efficient modernization of the grid, while keeping with this mandate.

### **III. GRID MODERNIZATION EXPANSION - PRE-APPROVAL PROCESS**

During the Grid Modernization Working Group process, Northeast Utilities, along with the other signatories to the Grid Modernization Report, coalesced around a series of grid modernization goals and priorities, specifically related to enhancing electric distribution system reliability, reducing electricity costs, empowering customers to better manage their electricity usage through the provision of new service offerings, developing a more efficient electric distribution system and promoting clean energy resources. Grid Modernization Report at 8. Northeast Utilities and other signatories also agreed that grid modernization investments should be made with the goal of accomplishing certain outcomes, including reducing the impact of outages, optimizing demand, integrating demand resources, optimizing workforce and asset management, and preventing outages. Id. at 12. Northeast Utilities recognizes that a dynamic, comprehensive and flexible regulatory

model is critical to achieving these goals. Indeed, many other participants to the Grid Modernization Working Group, including Unitol, National Grid, the Clean Energy Caucus (“CEC”), the DOER, Retailers, the Cape Light Compact (“CLC”), and General Electric, agree that current regulatory policies may not provide the Distribution Companies with sufficient guidance regarding Grid Modernization investments, and that a framework for regulatory review and cost recovery needs to be established. *Id.* at 9.

Northeast Utilities, in conjunction with Unitol, has developed a grid modernization regulatory framework (“Grid Modernization Expansion – Pre-Approval Process”) designed specifically to remove this barrier to grid modernization. The Grid Modernization Expansion – Pre-Approval Process enables and encourages the development of company-specific grid modernization plans geared towards meeting the Department’s and the Grid Modernization Working Group’s stated Grid Modernization goals. The Grid Modernization Expansion - Pre-Approval Process enables the Distribution Companies and their customers to leverage grid modernization opportunities, while keeping the safety and reliability of the electric distribution systems as a paramount consideration.

The Grid Modernization Expansion – Pre-Approval Process provides the Department the best opportunity to meet grid modernization goals and opportunities quickly and efficiently, at a reasonable cost to customers, and in a way that effectively interfaces with the Distribution Companies’ existing systems. The proposed process focuses specifically on grid modernization plans, as opposed to subsuming grid modernization into an electric distribution company’s all-encompassing capital planning and investment process. This decision to focus solely on grid modernization plans, technologies and investments allows for the more expeditious and efficient development and implementation of grid modernization plans, subject to full Department review prior to implementation of the plans, in order to ensure such plans meet grid modernization goals

and objectives. Additionally, the Grid Modernization Expansion - Pre-Approval Process will foster more innovative solutions to achieving grid modernization goals by enabling an incremental approach to infrastructure investment that allows for flexibility by the Distribution Company in the face of rapidly changing technologies. Furthermore, in addition to their own unique insights and expertise, NSTAR Electric and WMECO will benefit from stakeholders' insights through participation in the Companies' proceedings regarding customer protections, bill impacts, empowerment and enablement issues and the various risks associated with grid modernization technologies and investments.

The Grid Modernization Expansion - Pre-Approval Process also offers the regulatory flexibility necessary for the Department and the Distribution Companies to adapt to advances in grid modernization technologies and goals which drive grid modernization efforts. Taken together, the benefits associated with the Grid Modernization Expansion - Pre-Approval Process provides the optimal platform from which to launch grid modernization plans.

Under the Grid Modernization Expansion - Pre-Approval Process, each Distribution Company will develop a company-specific grid modernization plan, specifically tailored to the respective distribution system and customer needs. Rather than mandating that certain technologies and plan configurations comprise an electric distribution company's grid modernization plan, the Grid Modernization Expansion - Pre-Approval Process was crafted to afford each company the flexibility to develop and implement grid modernization technologies and plans that are most likely to provide benefits to its respective distribution system and customer base, taking into account technologies and investments previously made to further modernize the distribution system. This enables the Distribution Companies to optimally deploy resources to develop and implement plans that provide benefits and help advance the Department's goals.

Under the Grid Modernization Expansion - Pre-Approval Process, each Distribution Company would develop a grid modernization plan, relying on the utility's expertise and knowledge of the distribution system and customer base. See, Grid Modernization Report at 108. The Grid Modernization Expansion - Pre-Approval Process applies to both customer-facing and grid-facing opportunities.<sup>2</sup> *Id.* at 107. The Distribution Companies would each file company-specific plans and associated budgets with the Department for pre-approval. *Id.* at 108. At the time the Distribution Companies file for pre-approval of their plans, the Department would open an adjudicatory proceeding designed to allow for a full review of the proposed plans. *Id.* Stakeholders would be able to participate in this process in order to examine and fully understand the proposed plans and provide their insight and input, although, as more fully discussed in Section IV, stakeholders would not be empowered to require the Distribution Companies to implement specific grid modernization technologies or plans. *Id.* at 109.

This pre-approval process will ensure that the proposed program is fully vetted prior to the Companies expending funds and committing resources to implement their grid modernization plans. It is important for the Department to review and pre-approve the grid modernization plans and budgets prior to implementation in order to provide the Distribution Companies with guidance as to the appropriateness of the plans.

Regarding the ratemaking and cost-recovery mechanisms associated with grid modernization proposals, the Grid Modernization Expansion - Pre-Approval Process allows Distribution Companies to propose a cost-recovery mechanism outside the context of base rates. An effective cost-recovery mechanism must be developed and proposed within the context of a company-specific

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<sup>2</sup> Chapters three and four of the Grid Modernization Report contain more detailed information as to the types of customer-facing and grid-facing technologies that could be proposed for implementation in a grid modernization plan, along with a description of those technologies already implemented on the NSTAR Electric and WMECO distribution systems.

plan in order to ensure that the means of recovery is closely tailored and appropriate given the investments proposed. Id. at 108. As stated previously, many participants to the Grid Modernization Working Group, including the Distribution Companies, CEC, DOER, Retailers, CLC, and General Electric, agree that, among other things, a framework for cost recovery needs to be established. Id. at 9. The cost recovery construct considered within the Grid Modernization Expansion – Pre-Approval Process serves to remove this barrier to grid modernization, while adhering to Department precedent that investments must be deemed to be prudent and “used and useful.” In addition, this proposal contemplates that cost recovery could be enabled consistent with existing Department precedent regarding historic test years, but may also be modified to accommodate a future test-year approach. Id at 64. Similarly, the Grid Modernization Expansion - Pre-Approval Process allows for performance targets or metrics and incentives to be developed and proposed in conjunction with the company-specific grid modernization proposals. Id. at 108. Any performance targets must be based on the Department’s articulated principles and protocols for establishing benchmarks based on objective and prospective empirical data.

The Grid Modernization Expansion - Pre-Approval Process allows for the careful consideration of distribution-system characteristics, including existing grid modernization investments, and customer characteristics and the flexibility to develop grid modernization plans that address those needs and characteristics, while providing a full opportunity for Department oversight and stakeholder participation. This process presents the best framework with which to further implement grid modernization technologies and investments in order to support and advance grid modernization goals. In time, as the Distribution Companies, their customers and the Department become accustomed to more wide-spread deployment of grid modernization technologies and the technologies themselves demonstrate that they are capable of enhancing the safety and reliability of

the electric distribution systems, it may be appropriate to revisit and refine the Grid Modernization Expansion - Pre-Approval Process. Until that balance is achieved, the Grid Modernization Expansion - Pre-Approval Process provides the most reliable path forward to balance the Distribution Companies' public-service obligation to assure the safe and reliable operation of the electric-distribution system with the goal of further grid modernization.

#### **IV. FOCUS ON GRID MODERNIZATION AND RELIANCE ON NORTHEAST UTILITIES EXPERTISE**

As demonstrated by the Grid Modernization Expansion – Pre-Approval Process, both NSTAR Electric and WMECO are supportive of the creation of an adjudicatory process before the Department with the participation of stakeholders regarding their grid modernization plans in order to provide both the Department and interested stakeholders a full review of the proposed plan prior to implementation. See Grid Modernization Report at 63-64. Such a process will allow all stakeholders to review the benefits, costs and other pertinent aspects of the Companies' proposed plans, including but not limited to how the proposed technologies and programs will positively impact the electric distribution systems, the necessary consumer protections, the cost-recovery mechanism and the bill impacts associated with the proposed programs, and how the proposed technologies and investments would empower and enable greater reliability and safety. *Id.* at 64. This process will aid in the understanding of the careful analysis and deliberation undertaken by the Distribution Companies to ensure that safety and reliability are not compromised while advancing grid modernization policies and opportunities.

It is important to note that, pursuant to the Grid Modernization Expansion - Pre-Approval Process, any adjudicatory process regarding proposed grid modernization plans would encompass grid modernization technologies and investments, but would not include or extend to the Companies' traditional capital planning and investment processes. This targeted focus on grid modernization

plans, technologies and investments helps to ensure that grid modernization goals are addressed in an expeditious, efficient and innovative manner. The Grid Modernization Expansion - Pre-Approval Process is designed to augment the effectiveness of the current capital planning and investment process with a separate mechanism aimed at encouraging further application of innovative programs and technologies that deliver meaningful benefits to customers while advancing grid modernization goals.

The Grid Modernization Expansion - Pre-Approval Process creates a process whereby distribution company technical experts can develop forward-looking plans delivering specific, measurable objectives through the implementation of new and innovative technologies and programs. For example, if a specific desired outcome is to reduce the impact of outage events, a distribution company may propose a multi-year initiative to add advanced sensing and control capabilities to its underground system to use real time information to prevent against overloaded feeders. Such a plan would provide clear articulation of costs, benefits, timelines and deliverables and incorporate feedback from interested stakeholders to the extent possible, within the context of an adjudicatory proceeding before the Department.

In contrast, a distribution company's traditional planning process must balance multiple priorities, such as meeting reliability targets for the system and individual circuits; responding to load growth projections; preventing outages; improving customer satisfaction; and maintaining the basic systems and facilities required to run the distribution system. Although this process is effective at producing a comprehensive plan that takes into consideration the diverse service requirements and complex engineering challenges faced by the Distribution Companies, it does not lend itself to stakeholder input focused on a particular technology or initiative as opposed to the numerous trade-offs required to craft a complete capital-investment plan.

Under the Grid Modernization Expansion - Pre-Approval Process, the Distribution Companies retain the sole authority to determine which technologies and investments would be implemented and in what configuration. Given that the core responsibility to maintain reliable and safe distribution systems lies exclusively with the Distribution Companies, the Distribution Companies alone bear the risk associated with any impacts on safety and reliability. The Distribution Companies have each developed a considerable depth of knowledge and expertise regarding their respective electric distribution systems, which cannot and should not be superseded in pursuit of interests that may not be fully targeted to safety and reliability considerations. As a result, the Distribution Companies must make the final decision regarding the implementation of any grid modernization technologies investments. None of the stakeholders who may opine on the proposed grid modernization programs have the same level of familiarity, knowledge or expertise regarding the distribution systems, nor do they shoulder any responsibility for maintaining the safety and reliability of the distribution system, or of any other risk associated with operation of the system.

Currently, the Distribution Companies alone determine, based on their expertise and identified distribution system and customer needs, which capital projects to implement in order to maintain the reliability and safety of the grid. Historically, the Department has recognized that the design and determination as to which capital projects are the most appropriate to undertake is clearly within the purview of the Companies. Fitchburg Gas and Electric Light Company d/b/a Unitil, D.P.U. 07-71 at 28 (February 29, 2008) citing Attorney General v. Department of Public Utilities, 390 Mass. 208, 229 (1983). Tellingly, and pursuant to its oversight powers delineated in M.C.L. c. 164 §76, the Department has consistently refrained from dictating the business decisions of management regarding which capital investments are necessary to undertake. Massachusetts Electric Company and Nantucket Electric Company, d/b/a National Grid, D.P.U. 09-39 at 95

(November 30, 2009); Western Massachusetts Electric Company, D.P.U. 10-70 at 58 (January 31, 2011). A change from this long-standing principle would be significant and may not be consistent with Massachusetts law, which places both the public-service obligation and the choice of operational strategies to meet that obligation within the discretion and prerogative of utility management.

This deference to the Companies' decisions regarding traditional capital planning and investments should extend to grid modernization investments. Here, as with traditional capital projects, the Companies are the only entities with the requisite expertise regarding the appropriate strategies for maintaining safety and reliability, which is expertise garnered through experience, insight, and continuing analysis and judgment. The Companies are the only entities with full line-of-sight on the issues involved in adding new and/or unproven grid modernization technologies to the distribution system; including assessments on obsolescence, interoperability and cyber-security, and how those issues impact proposed grid modernization technology implementations. The Companies regard cyber-security and privacy issues to be critical considerations to be analyzed and then addressed in any grid modernization plan. The Companies' discretion, in determining whether a grid modernization technology or investment is appropriate for inclusion in their respective distribution systems, must remain inviolate in light of the public-service obligation imposed exclusively on the Distribution Companies.

## **V. COST-EFFECTIVENESS OF GRID MODERNIZATION INVESTMENTS**

Under the Grid Modernization Expansion – Pre-Approval Process, grid modernization plans would contain a full examination of the cost-effectiveness of the technologies sought for inclusion in the plans. Among the Distribution Companies, the CEC, DOER, CLC, Retailers and General Electric, there was broad consensus as to how the cost-effectiveness of grid modernization

investments should be treated. Grid Modernization Report at 74-75, 79. Traditional cost-effectiveness tests may be applicable to certain grid modernization technologies and where possible, should be applied to a particular investment or technology. Grid Modernization Report at 80. However, due to the nature of these technologies and investments, it is not always possible to apply traditional cost-effectiveness tests. *Id.* Where a particular technology or investment does not lend itself to a traditional cost-effectiveness test, the Distribution Companies would develop a business case construct to analyze the quantitative and qualitative benefits expected of technology or investment, including scope and schedule of the proposed investment, its rationale and business drivers, the expected costs and benefits, any assumptions underpinning the evaluation of expected benefits, the options considered, and expected risks, including sensitivities. *Id.* at 79-80. The Distribution Companies would use the business case to demonstrate that a grid modernization technology or investment is properly included in the respective plans.

Under the Grid Modernization Expansion - Pre-Approval Process, the Department will have the opportunity to consider and analyze all costs, benefits, alternatives, opportunities, modeling assumptions, risks, sensitivities and cost-benefit analyses developed by the Companies in support of their proposals. *Id.* Department approval of the investments, and their underlying cost-effectiveness tests or business cases, will reflect a finding that the benefits associated with the investment and the underlying assumptions and analyses support prudent investments. *Id.* This pre-approval does not relieve the Distribution Companies of the responsibility to implement all investments in a prudent and cost-effective manner, nor to show after implementation that the costs of installation were prudently incurred; however it would represent a finding of prudence with regard to the initial decision point of directing investment to particular grid-modernization projects. *Id.* In this manner, the Grid Modernization Expansion - Pre-Approval Process provides a deliberate and robust review

and pre-approval of proposed grid modernization investments, which protects customer and Distribution Company interests while advancing the Department's grid modernization goals.

## **VI. TIME VARYING RATES**

Regarding time varying rates ("TVR"), the Distribution Companies, along with the CEC, the CLC, the DOER and General Electric acknowledge that TVR is best addressed in a separate proceeding. Grid Modernization Report at 93. TVR, in general, is a complex concept worthy of in-depth analysis and consideration. In addition, it is a topic which affects numerous interdependent NSTAR Electric and WMECO business departments, including the customer care, billing, rates and regulatory and engineering departments. These departments, with their specific expertise, need to weigh in on the development of a Company-specific proposal, including but not limited to the type and design of a TVR mechanism which best achieves grid modernization goals, which rate classes would be affected, whether TVR would be mandatory and, if so, for which rate classes, and how best to educate customers as to the opportunities and mechanics of the proposed TVR mechanism.

Metering issues and functionalities are also intertwined with the issue of TVR, along with the variety of systems, such as communications and billing, which are impacted by metering decisions. Many of the same departments noted above would need to be involved in the event that either NSTAR Electric or WMECO, following a full analysis of the costs and benefits, proposed a metering initiative to complement a proposed TVR mechanism.

Simply put, in order to successfully implement a TVR mechanism decisions regarding the design and development of that mechanism require additional investigation and analysis and cannot be made in a vacuum. In order to ensure that a proposed TVR mechanism, along with its attendant customer education plan, is properly designed, with all potential impacts analyzed, NSTAR Electric

and WMECO strongly recommend that TVR be addressed in a separate proceeding where due attention can be given to the complex nature of such an undertaking.

## **VI. NEXT STEPS**

The Grid Modernization Working Group efforts and the Grid Modernization Report developed from those efforts represent the first step in developing a framework for robust and beneficial grid modernization efforts. NSTAR Electric and WMECO, along with Unitil, the CLC and General Electric, support the creation of a generic docket in which the Department would provide further direction and guidance as to the elements to be included in any future grid modernization programs. Grid Modernization Report at 93. Northeast Utilities suggests that the Department structure this generic proceeding in much the same manner as the investigation into decoupling in D.P.U. 07-50-A. *Id.* at 93. The process should include, at a minimum, a straw proposal(s) or series of questions outlining the proposed regulatory process and framework to be followed in developing and reviewing grid modernization proposals, cost-effectiveness frameworks, and grid modernization policies and principles. *Id.* This effort should not include directives to implement specific investments or technologies as those determinations as more properly made by the Distribution Companies in their grid modernization proposals. The Distribution Companies and interested stakeholders would provide comments and/or alternatives on the Department's output which would lead to a more refined proposal offered by the Department for review and comment. *Id.* Although sworn testimony would not be required in the context of the proceeding, NSTAR Electric and WMECO do not preclude filing testimony depending on the scope of the straw proposal(s). *Id.* This process provides the Department with the necessary input and evidence on which to base its determinations regarding the scope, general content and format of grid

modernization proposals, each of which would be subject to a full adjudicatory proceeding before the Department as contemplated in the Grid Modernization Expansion - Pre-Approval Process.

## **VII. FURTHER COMMENTS**

Pursuant to the Grid Modernization Working Group ground rules and the Department's July 10, 2013 Notice for Comment on the Grid Modernization Report, signatories to the Grid Modernization Report and stakeholders who did not participate in the working group process are able to file comments on the Grid Modernization Report. Given the potential for substantive comments on the Grid Modernization Report, NSTAR Electric and WMECO reserve the right to respond to Initial Comments filed by signatories to the Grid Modernization Report and by other interested parties.

## **VIII. CONCLUSION**

NSTAR Electric and WMECO continuously work to provide safe and reliable service for their customers. Further enhancing the resilience and safety of their distribution systems through additional grid modernization investments is an important and complex issue. The Grid Modernization Working Group process, as instituted by the Department, is an excellent first step in addressing these issues. NSTAR Electric and WMECO, through their efforts in the Grid Modernization Working Group and development of the Grid Modernization Expansion – Pre-Approval Process, have sought to advance these efforts through the creation of a regulatory framework which advances the Department and the Grid Modernization Working Group's goals.