UNITIL ENERGY SYSTEMS, INC.

DIRECT TESTIMONY

OF

SARA M. SANKOWICH

EXHIBIT SMS-1

New Hampshire Public Utilities Commission

Docket No. DE 21-030

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Exhibits

I. INTRODUCTION

Q. Please state your name and business address.

A. My name is Sara M. Sankowich. My business address is 30 Energy Way, Exeter, New Hampshire 03833.

Q. What is your position and what are your responsibilities?

A. I am the Manager of Forestry Operations & Sustainability of Unitil Service Corp. ("Unitil Service"). My primary responsibility is the planning and management of the electric operations vegetation management program for Unitil Corporation's two electric distribution company subsidiaries, Unitil Energy Systems, Inc. ("UES" or the "Company") and Fitchburg Gas and Electric Light Company ("FG&E").

Q. Please describe your business and educational background.

A. I have over 20 years of professional experience in the utility industry with an extensive background utility vegetation management. I joined Unitil Service in 2011 as the System Arborist. Prior to joining Unitil Service, I was employed for six years at National Grid where I advanced through positions in utility vegetation management. The last position I held with National Grid was that of Manager, Vegetation Management Strategy. Prior to National Grid I held a utility arborist position with Orange & Rockland Utilities, and a position with Northern Indiana Public Service Company as a consultant through Environmental Consultants Inc. I hold a Bachelor of Science degree in Forestry Resource Management from the State University of New York, College of Environmental Science and Forestry.

Q. Do you have any certifications that qualify you to speak to issues related to vegetation management?

A. Yes. I am a Certified Arborist through the International Society of Arboriculture.

Q. Have you previously testified before the New Hampshire Public Utilities Commission ("Commission")?

A. Yes, I have appeared previously before the Commission in multiple reconciliation filing hearings. I have also supplied expert testimony in other state regulatory proceedings relating to vegetation management.

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to describe and provide support for the Company's vegetation management program ("VMP") and the storm resiliency program ("SRP").

Q. Please summarize your testimony.

A. The Company has a comprehensive vegetation management program intended to prevent trees from interfering with electric lines during normal weather conditions and minor storm events. The program's components cost-effectively address the different areas of risk and provide benefits to customers, support favorable reliability, and provide a measure of public safety. The Company is also proposing the continuation of its storm resiliency program, which is the component of the VMP that has been specifically designed to reduce tree exposure along electric overhead lines in order to reduce the overall cost of storm preparation and response, and improve system performance during major storm events.

Q. How have you organized your testimony?

A. My testimony will first discuss the current status of the vegetation management program, including the program's components of cycle pruning, hazard tree mitigation, mid-cycle review, forestry reliability assessment, and sub-transmission maintenance. My testimony will then discuss the storm resiliency program, including a summary of work completed under the program, the recent results of the program, including its costs and benefits.

II. VEGETATION MANAGEMENT PROGRAM, POLICY, AND STRATEGY

Q. Does the Company have a comprehensive vegetation management program to prevent trees from interfering with electric lines?

A. Yes. UES's VMP consists of four main components: cycle pruning; hazard tree mitigation; mid-cycle review; and forestry reliability assessment. Each component of the program is designed to minimize the potential for tree and vegetation contact with the overhead utility lines and the incidence and resulting damage of tree and limb failures from above and alongside the conductors.

Vegetation maintenance pruning and clearing done on a cyclical schedule by circuit is called "cycle pruning." The Company's base cycle length is five years.

A hazard tree is a danger tree (any tree or tree part which, on failure, is capable of interfering with the safe, reliable transmission of electricity) that has both a target and a noticeable defect that increases the likelihood of failure. The hazard tree mitigation component program involves the consolidation of hazard tree removal activities into a formalized program.

The mid-cycle review program component targets circuits for inspection and pruning based on time since last circuit pruning and forecasted next circuit pruning. The aim of this program is to proactively address the fastest growing tree species that will grow into the conductors prior to the next cyclic pruning.

The forestry reliability assessment program component targets circuits for inspection, pruning, and hazard tree removal based on recent historic reliability performance. This allows reactive flexibility to address immediate reliability issues not otherwise addressed by the scheduled maintenance programs, without compromising their integrity.

The overall goals of these integrated components of the VMP are to improve and continue favorable reliability performance, consistent with the Company's ongoing obligation to provide safe and reliable service, and which meet the Commission's expectations and increases customer satisfaction. In addition to these overall goals, cycle pruning and mid-cycle review also aim to provide a measure of public safety by minimizing the potential for direct contact by the public with energized conductors by climbing trees, and indirect contact though vegetation in contact with energized equipment, as well as minimizing the potential for electrically caused fire in trees and brush.

Q. Does the Company have a vegetation management component to respond to unscheduled necessities such as customer calls and emergency needs?

A. Yes. UES's VMP has a non-discretionary or "Core Work" component. This critical component of the VMP allows for the ability to respond to emergencies, customer

requests, new construction needs, and other non-discretionary and unscheduled work. A dedicated number of specialized crews are required on site on a year-round basis to address the Company's Core Work needs.

Q. Does the Company have full control over the amount of Core Work completed each year?

A. No. The amount of Core Work completed each year is highly variable as it is comprised of fluctuating components such as customer and emergency needs. More frequent severe weather events can change the quantity of Core Work activities dramatically as restoration and damage needs increase, but also as customers become aware of the consequences of tree and wire conflict and, as a result, request tree work. For this reason, work amount expectations can be easily exceeded due to frequent minor weather events or residual impact of large weather events.

Q. Does the Company have a vegetation management component to maintain the rights-of-way that connect substations together?

A. Yes. The Company has a sub-transmission maintenance component that applies the principles and practices of integrated vegetation management ("IVM") to maintain the rights-of-way. This includes identifying compatible and incompatible vegetation, considering action thresholds, evaluating control methods and selecting and implementing controls to achieve a specific objective. The plants to be controlled are primarily tall growing trees that can grow into or fall onto electric lines. Right-of-way maintenance includes: cyclical floor maintenance such as mowing, hand cutting, and herbicide application; side line pruning; and hazard tree removal.

III. VEGETATION MANAGEMENT PROGRAM COSTS

Q. What are the work component drivers of the VMP's cost?

A. The VMP's costs are driven primarily by the cost to implement cycle pruning, the largest program work category. The second largest program cost is hazard tree mitigation, and the third largest program cost is sub-transmission right-of-way maintenance. A large uncontrollable, but necessary, cost relates to required police protection and flaggers for traffic safety. The Company has limited ability to control these generally increasing costs.

Q. Are there any shared vegetation management costs for jointly-owned poles?

A. Yes. The companies which jointly own poles share vegetation maintenance and storm costs pursuant to the respective Joint Ownership Agreement ("JOA") and the Intercompany Operating Procedures' ("IOP") Joint Trimming process. These procedures are followed to share applicable costs between the joint pole owner companies.

Q. Has the Company reduced its request for recovery of its vegetation management costs by the amounts charged to joint owners under each applicable IOP for tree trimming costs incurred during the test year?

A. No. The Company's request to recover vegetation management costs is not reduced for these amounts because payment by the joint owners is not guaranteed nor always timely, and the integrity of the VMP should not be dependent upon the occurrence of these payments.

Q. **How is the Company proposing to treat the contributions received from joint pole owners towards trimming expenses?**

A. As discussed in the direct testimony of UES witnesses Messrs. Christopher Goulding and Daniel Nawazelski, the Company is proposing to continue the current reconciliation process through the External Delivery Charge mechanism ("EDC"). Any payment received from a joint pole owner will be credited to customers through the EDC reconciliation. As part of that process, the Company will continue to provide its VMP plan for the upcoming project year to Staff and the OCA for review. The Company will make itself available to meet with Staff and the OCA in technical sessions to discuss the plan, obtain comments, and answer any questions regarding the plan to be implemented for that fiscal year. After that review, the Company will take all reasonable steps deemed appropriate to carry out and implement the plan, taking into account the comments received.

Q. What are the benefits to the Company and its customers of continuing the VMP at its current scope?

A. The benefits of continuing the current scope of the VMP are the continuation of greater reliability, customer satisfaction, safety, and maintenance efficiency.

Reliability

There is a risk to reliability improvement and continued favorable reliability performance trends if the there is a reduction or lapse in ongoing implementation of the VMP. The risk of tree related interruptions from grow-in conditions are significantly low when all circuits are kept on their appropriate pruning schedule. Each year approximately 20 percent of the system is being maintained while growth is occurring

on the other 80 percent. The risk to reliability increases if the full cycle maintenance scope is not implemented.

Customer Satisfaction

Failure to implement the full scope of the VMP has the potential to result in negative customer satisfaction. Customer expectation of continued reliability would not occur and reliability performance may deteriorate. The perception of proactively managing vegetation to improve reliability performance would be lost and replaced with the perception of a reactive program that is always behind the curve. Negative customer satisfaction can also result in increased customer complaints and requests for individual pruning work, which require more supervisor review and management and increased work and cost to mitigate.

Safety

Not implementing the full scope of the VMP results in risks of public injury, property damage, and liability. In the absence of necessary maintenance there is the risk of electrocution through direct contact in a climbable tree or indirect contact through the tree itself, as well as the risk of fire. The absence of sideline hazard tree mitigation increases risk to life and property through direct contact, or potential for contact through energized conductors being brought down within public contact zones. Tree-caused outages that would be addressed by maintenance work often result in the most significant damage, large amount of customers affected, long duration outages and increased risk to safety. Large trees and limbs bringing conductors down also increases the risk of loss of electric service to municipalities' critical infrastructure and emergency services.

Efficiency

There is a risk to efficiency if the full scope of the VMP is not implemented. Efficiency losses will develop if vegetation is allowed to encroach on the overhead assets, as working around conditions with vegetation growth in close proximity to conductors will slow routine maintenance and typical storm restoration, as well as deter accurate and efficient line inspections. Efficiency and reliability losses may also occur with the potential to delay fault locating when an event occurs.

Q. Has the program seen an increased cost to perform annual work?

A. Yes, the cost to complete the annual VMP has increased in recent years.

Q. What is the largest driver of increasing VMP costs?

A. The cost of contracted labor has been the largest driver of increasing VMP costs over the past recent years. After seeing an increasing trend in market price for line clearance tree pruning, the Company held informational meetings with each bidding vendor individually to determine the driving factors behind the increase in costs. In statements from these vendors, the causes for increased costs compared to costs from 5 years ago were consistent: 1) increased wages for retention and recruitment; 2) increased labor burden driven by health insurance premiums, insurance costs, and auto insurance costs for commercial motor carriers; and 3) increased costs of equipment, tools, and supplies.

Q: Why is there a need for increased wages for retention and recruitment?

A. Line-Clearance vendors have expressed a struggle throughout the industry with recruitment of new applicants and retention of existing workers, driven by the need to offer a competitive wage and benefits comparable to other job opportunities.

Q: Is this an effect of the pandemic, and do you see costs reducing in the future?

A: No, this is not a result of the pandemic. Workforce recruitment and retention issues have been on the rise before the start of the COVID-19 pandemic. The pandemic has not exacerbated the issue, but due to the complex nature of labor availability and desire to enter and stay in the industry, there is not an immediate fix, and I expect current and possibly increasing costs to continue into the future. However, while the labor workforce is not completely controllable by the Company, the Company has embarked on some initiatives in conjunction with our vendors to address the problem, raise the issue at a regional and a national level, and help provide a steady and qualified labor force for future work.

I initiated a regional workforce retention discussion where the issue was confirmed across 5 regional utilities. These utilities also commented on the increase of vegetation damaging storms and an increase in regional vegetation management initiatives and necessary workforce. I brought the matter to a national level through the Utility Arborist Association ("UAA") where similar concerns were raised, elevating the issue to the topic of focus for the UAA Vegetation Manager's Summit. The focus was on the workforce retention issue facing the utility line-clearance industry, the impact of utility practices on vendor workforce retention, and next steps to retain and attract workers. The formation of a UAA Workforce Retention and Recruitment Task force

was formed and I am the current co-chair of the initiative. I am also involved in efforts led by American Forests, supported by grants, to create a tree worker pre-apprenticeship program aimed at worker recruitment and retention. Areas of opportunity and lessons learned from these efforts will be used to bolster the Company's program and combat the workforce issue.

Q: What other factors drive the VMP's costs?

A: Other field factors such as high tree density, high customer density per mile, overall forest health, scenic road designations, and traffic control / work protection requirements, all affect program costs in the Company's service territory when compared to other companies or locations.

<u>High Tree Density</u>

High tree density found in the service territory contributes to increased costs for all program components relative to similar components in land areas with lower tree density. The overall tree pruning and maintenance needs are higher when there are more trees per mile, resulting in increased costs. Not only are there more trees to prune per mile, but there are potentially more hazard trees to remove per mile. Increased pruning requirements also increase the volume and time required for wood debris and chip disposal. Further, with a higher number of trees per mile, the increased exposure of trees to electric overhead lines results in potential for increased customer requests and damage in storm events and the associated costs.

<u>High Customer Density</u>

Areas with high customer density per mile also contribute to increased costs for all program components relative to similar components in areas with lower customer densities. High customer density per mile necessitates increased customer outreach, which is typically time-consuming and costly. High customer exposure also results in higher customer awareness, and potential increased customer concern which could cause program restrictions on work originating from private property (i.e., outside the Company's right of way), increasing program costs.

Forest Health

The overall forest health of the service territory, with regard to tree and stand age, health, and maturity, as well as overall hazard tree population and mortality rate, has the potential to affect the costs for all program components. Poor forest health can be a factor of overall tree population aging, commonly found in New Hampshire where stands matured together after areas cleared for farming returned to forest. This can lead to an increased hazard tree population relative to other areas with a mixed stand age population. Another factor for poor forest health is the effect of damaging storm events and the residual health decline that occurs after many trees cannot recover from the extensive damage. The Company has seen an increasing trend of damaging storm events, resulting in ice damage, wind damage and heavy wet snow damage that has affected the forest health. Pest infestations, such as the highly destructive and invasive Emerald Ash Borer, as well as the Winter Moth, and the Hemlock Wooly Adelgid, all found in the Company's service territory, also have the potential to affect forest health and contribute to increased tree mortality. All of these factors affecting forest health - aging stand maturity, decline after damaging storm events, and pest infestation, lead to

high hazard tree populations and increased costs to manage and reduce the risk from hazard tree and limb failure.

Importantly, the highly destructive and invasive Asian Longhorned Beetle present in the neighboring state of Massachusetts, is not currently affecting the Company's costs, but has the potential to impact costs substantially if discovered in the service territory.

Scenic Road Designations

Scenic roads and other municipality designations that impose restrictions, measures, or guidelines that must be followed for vegetation pruning and hazard tree removal contribute to increased costs for all program components. Scenic road planning, hearings, notifications, and permits add increased supervisory and administrative costs. This also requires the design, production and distribution of educational material and resources such as printed literature and web information sites. Restrictions imposed on obtaining authority for the necessary work also impacts costs as full program benefits are not realized and "hot spotting" or other work between pruning cycles therefore must be scheduled.

Traffic Control and Work Protection

Traffic control and work zone protection is a necessary part of vegetation management work completed along roadways. Program costs are affected by the requirement to use traffic control protection, specifically with the use of police officer details on the majority of streets in the Company's service territory. Estimated costs for traffic control are based on historic annual spend per work type. This cost is tracked separately from the individual program work types since the Company has limited

control over police costs and requirements, which allows for an improved ability to measure actual cost of work for the individual program work types. Even though the Company has limited control over traffic control costs, it is a large factor in overall costs, and every effort is made through contract strategy, field practices, and oversight to minimize traffic control costs.

Q. Is management and implementation oversight necessary to minimize the vegetation management program's costs?

A. Yes. Management and work implementation oversight is a critical component to keeping costs minimized and to maximizing cost savings. Effective management planning "streamlines" implementation and eliminates time loss and duplication of effort. Direct oversight of field work and field communication minimizes down time, keeps productivity high and engages workers in striving toward Company goals and targets, which all work to boost efficiencies and effectiveness.

IV. STORM RESILIENCY PROGRAM

A. OVERVIEW, DEVELOPMENT AND STRATEGY

Q. Is UES proposing the continuation of the SRP?

A. Yes. The Company is proposing the continuation of the SRP, which is a companion or complementary program to the VMP. The SRP is different in that it is aimed at reducing tree exposure along critical sections of select circuits in order to improve performance during major storm events. The goal of this program is to reduce tree-related incidents, resulting customer interruptions, and more significantly, municipality

impact along critical portions of targeted lines in minor and major weather events. In turn, the Company aims to reduce the overall cost of storm preparation and response, improve restoration, and preserve municipal critical infrastructure for the purpose of enhancing public health and safety.

Q. What is the history behind this program and its importance?

A. In 2011, the Company experienced two large weather events that affected its service territory: Hurricane Irene, and the October Snowstorm, where over two feet of snowfall was recorded in New Hampshire. The 2011 October Snowstorm caused widespread damage and prolonged outages and was the second largest event in the Company's history. In 2012, the Company was hit by Hurricane Sandy. Prior to 2011, the Company had also sustained other frequent major storm events over the previous four years.

As a consequence of the type of damage experienced and the length and cost of restoration efforts, the Company began to explore the options available to "harden" or make critical elements of the system more resilient to storms. After a review of different options available, such as undergrounding electric lines, and reviewing rough cost estimates, the Company recognized that there was an opportunity to implement a vegetation-centered storm hardening program which would provide many of the expected benefits at a much lesser cost than alternatives.

Q. What is the scope of work related to this program?

A. The scope of work for the SRP is for critical three-phase sections of select circuits, defined as the circuitry from the substation out to a desired protection device, to

undergo tree exposure reduction by: (i) removing all overhanging vegetation, or pruning "ground to sky;" and (ii) performing intensive hazard tree review and removal. In addition, under the SRP the remaining three phase circuitry beyond the designated critical portions receive hazard tree review and removal. The scope of work also takes into account critical infrastructure needs for the towns and cities affected. The locations of police and fire departments, schools, emergency shelters and other critical business centers are considered along with the critical electric infrastructure.

Q. How does this program differ from the VMP?

A. The SRP differs from the VMP in that it targets areas that are outside of the VMP's scope. The current VMP is designed to be effective for normal conditions and weather events, described as up to 50-60 mph winds, where the failure of defective trees and limbs predominates. The storm resiliency program involves the removal of *all* tree exposure to the lines, affecting non-actionable and non-defective tree failure that begins to predominate above 50 mph winds. The difference between maintenance pruning and reduction of exposure can be seen by looking at: 1) the pruning specifications for the cycle pruning program versus the storm resiliency program; and 2) the intensity of hazard tree removal on the hazard tree mitigation program versus the storm resiliency program.

Cycle pruning specifications are to prune vegetation away from the conductors to a height of only 15 feet above, 10 feet to the side and 10 feet below. Such clearing is adequate for normal conditions. The storm resiliency program specifications, however,

are to remove all overhanging branches and limbs from above the conductors and out 10 feet to the side.

The difference in intensity between the hazard tree mitigation program and the removal of hazard trees under the storm resiliency program can be broken down into two components: 1) the actual tree populations inspected for each program; and 2) the risk accepted, or the level of defect found on inspection that actually warrants tree removal.

First, hazard tree removal under the hazard tree mitigation program component is governed by risk as described in the tree risk management protocol. Under this protocol, risk is assessed based on a specific population of trees only as defined by the location on the circuit and the corresponding customer damage category. The tree inspections performed are focused on the tree population on the same side of the street as the pole line, as the Company assumes less risk due to their proximity to the pole lines, and a limited visual assessment of the opposite side of the street from the pole line. These surveys are predominantly performed from a vehicle. In many cases only limited danger trees (when specified defects or tree health problems are observed) are inspected. In the SRP, all trees capable of interfering with the safe, reliable transmission of electricity upon failure are inspected. Tree inspections performed under the SRP are walking surveys of the tree population, including 360 degree examinations around the electric facilities, which includes tree populations on the opposite side of the street from the pole line.

Second, the level of risk accepted on the hazard tree mitigation program is higher than that of the SRP. Trees showing inspection defect(s) with a likelihood of

failure of "imminent" and "probable with a modifier" are removed in customer damage categories of high and moderate. This is adequate for normal weather conditions. For the SRP, trees with a likelihood of failure of "imminent," "probable with a modifier," as well as those with a likelihood of "probable," "possible with a modifier," and "possible" are removed. Again, this level of clearing is designed for major storm events.

Q. How did the Company decide which circuits should be included in the SRP?

A. The Company reviewed all circuits individually for inclusion in the SRP. In order to be effective, certain criteria such as tree field conditions and customers served on a circuit were deemed to be significant. Criteria for the program included: 1) tree-related field condition; 2) customer count; 3) circuit total miles of three-phase; and 4) presence of scenic roads or other vegetation restrictions. Any circuits that were located primarily in low tree density areas, without critical municipality needs, were removed from the program circuit list. Any circuits with less than 500 customers served were reviewed for need as well as any circuit with less than two miles of three-phase line. Areas designated as scenic roads or with other known restrictions were also removed from the program.

Q. Was this program implemented in previous years?

A. Yes. This program was implemented as a pilot in 2012 and 2013, then transitioned to a full program in 2014. Over the past nine years of SRP work, 39 circuits along 284.3 miles of line were mitigated, serving 51,337 customers and numerous life line, life safety and community resources including schools, community emergency shelters, and hospitals. Over 20,600 risk trees were removed.

Each year, implementation began with an outreach program, where the municipalities were notified of the intent, scope of work, and given a tentative schedule. A trained work planner identified work to be performed, conducted extensive customer outreach and education related to the program, and sought tree owner consent for pruning and removal. Over these nine years, overall customer understanding and acceptance of the program was very high.

Tree pruning and removal work began in the final quarter of each year and continued through the end of the fiscal year. The use of specialized equipment such as cranes, and log loaders along with staged wood removal sites was employed to reduce the surrounding vegetation impact and overall appearance to the community.

Each year, the program wraps up with tree removal replacements offered to customers that underwent significant tree pruning or removal activity. Overall, customers were pleased with the work and the replacement trees which fit the "right tree, right place" goal for compatible trees adjacent to the overhead electric lines.

Q: What work is remaining from the initial SRP proposal?

A: There are two years remaining in the initial SRP proposal work plan. This year's work of 37.6 miles is described in the Company's annual VMP filing DE 20-183. Approximately 26 miles is scheduled to be done in calendar year 2022.

Q. Has a similar program been implemented anywhere else?

A. Yes. The Company's affiliate, FG&E has implemented a successful SRP in its Massachusetts service territory since 2014.

B. WORK PERFORMED, COSTS, AND BENEFITS

Q. What were the costs of the SRP for the test year?

A. As indicated in the testimony of Messrs. Goulding and Nawazelski, the costs for the 2020 storm resiliency program were $1,439,617[1], slightly above the estimated 2020 budget of $1,423,000.

Q. What are the expected costs of completing the work for the remaining two years of the initial proposed SRP?

A. The Company expects the costs of the SRP to be $2,931,380 to complete the approximately 63.6 miles of qualifying overhead, three-phase lines identified through the initial project scope. Due to the varying nature of storm resiliency work and traffic control, the Company experience minor variances, with final annual costs being slightly above or below the estimated budget. The Company believes that $1,465,690 (equal to the current annual program funding level of $1,423,000 plus 3% inflation, driven by recent increase in labor costs) is an appropriate and reasonable estimate of the Company's targeted spending for its SRP in 2021.

Q. Are there additional factors that can affect cost?

A. Yes. There are some variable factors that can affect cost. The actual hazard tree population and number of removals necessary along the program area will vary, which would affect cost to implement the work. Customer and municipal acceptance of desired work can affect the number of trees pruned and/or removed. Other ongoing

[1] Messrs. Goulding and Nawazelski Schedule RevReq-3-3, Column 2 Line 13.

work on neighboring utilities' systems could affect the level of third party resources available to complete the work and the bidding vendor pool, thus affecting cost.

Q. How will these variable factors be minimized?

A. These variable factors will be minimized through extensive planning as well as field and management oversight. Hazard trees to be removed will be prioritized according to risk. The Company will engage in extensive interaction and advance notice to towns and the use of a specialized trained company representative for customer education and consent, and to promote the acceptance of the work. Advance planning and notice to a large vendor pool and timing of project and bid release will be used to minimize cost changes associated with competing work.

Q. What are the desired benefits of implementing the SRP?

A. The desired benefits of the SRP are, at the core level, improved reliability, improved customer service and satisfaction, reduced safety risks, and avoided costs during storm events. These benefits are seen by the prevention of tree-related failures and subsequent electric incidents. This reduction in incidents reduces damage to the electric infrastructure and the need for crews to respond, in turn reducing overall storm restoration costs. More information on the expected benefits of the SRP can be found in my testimony for the 2016 rate case, excerpt attached as Exhibit SMS-2.

Q. Have any measurable benefits been realized since the implementation of the SRP work in 2012?

A. Yes, the Company has had instances of storms and foul weather over the last 9 years to put the SRP to the test. As explained in the previous 2016 rate case, DE 16-384, the Company has found favorable results by examining tree failures in major storms. The results indicate appropriate field identification of risk trees, avoided interruptions and costs, and positive public acceptance.[2] In addition to this data, the Company wanted to analyze the results of the program in more depth. In order to do that, the Company brought in a team of consultants to build and implement an analysis tool that could process the large amount of data from multiple sources and accurately compare areas of non-SRP work to areas of SRP work. The tool was then used to do an independent analysis of the Company's SRP program. The full report titled "Storm Resiliency Program Analysis and Assessment" prepared by Environmental Consultants (ECI) is attached as Exhibit SMS-3.

The analysis used vegetation management work data, outage management data, and customer calls mapped spatially using the geographical information system, LiDAR and imagery. By comparing circuit performance for areas of non-SRP to areas of SRP, the assessment found the following:

> *The six trend graphs show a clear improvement trend in SRP circuit performance for SAIDI, SAIFI, and CAIDI as compared to the non-SRP circuit performance. The increase seen in Outages by Year for all phases are due to increases in tree-caused outages (including increased weather-related events) on the single-phase portion of the circuits that were not maintained as part of the SRP program. The largest improvements in SRP circuit performance can be seen in the graphs for three-phase only performance (Figure 12) particularly during storm events (Figure 14).*[3]

[2] Additional information can be found in an excerpt of 2016 rate case DE 16-384 attached as Exhibit SMS-2

[3] Quote from page 12 of 22 of Exhibit SMS-3 – Environmental Consultants "Storm Resiliency Program Analysis and Assessment"

In addition, using storm financials and the Interruption Cost Estimate (ICE) calculator, the analysis found that there is significant total external and internal cost avoided by implementing the full SRP program, estimated to be between $6.46M and $17.87M per year with the net cost avoided after funding the SRP program to be between $4.58M and $15.99M per year.[4]

Q. Has the Company drawn conclusions about the benefit of a storm resiliency program?

A. Yes. After reviewing the results of the storm resiliency initiatives implemented in New Hampshire and Massachusetts, the Company concluded that the reliability effects, the avoided interruptions and costs, the positive public acceptance, and the benefits to customers are significant benefits that more than offset the cost to implement. As demonstrated by the results of the ECI Assessment and the Company's performance in storm events, this program brings savings to customers through future avoided storm costs, and many additional and important public health and safety benefits. For this reason, the Company is proposing the continuation of the vegetation management SRP.

C. CONTINUED PERFORMANCE AND NEXT STEPS

Q. Is the Company proposing continuation of additional SRP after the conclusion of the initial proposed program?

A. Yes. The Company is proposing to continue SRP efforts past the conclusion of the initial program in 2022. This next cycle of SRP work will be aimed at revisiting circuits done in the first cycle, performing work on any sections that may have been

[4] Exhibit SMS-3 - Environmental Consultants "Storm Resiliency Program Analysis and Assessment", Page 20

added due to circuit reconfiguration or construction, and also extending SRP work out further on circuits where appropriate. In addition to reviewing the same circuits that were done 10 years ago, the Company's new storm resiliency analysis dashboard allows for performance tracking and can be used to identify poor performance, worsening conditions, and areas that need additional work.

Q. Why is this next cycle important?

A. It is important to revisit the circuits that underwent SRP work in the first cycle to ensure that these circuits continue to be resilient during storm events and that the investment made toward this effort is not diminished and ultimately lost. This next cycle will bolster these circuits toward the goal of continued improved performance for an additional cycle. During the 11 years that elapse from the first cycle to the second cycle, many field conditions can change and trees that were assessed during the first cycle and found to pose a low risk, may now have declined and pose a higher risk. There was a significant initial investment made which produced results making the system more resilient; the need to maintain that investment in order to continue receiving the benefits is critical. In addition, the Company can build upon the initial investment and add further benefit with additional work on poor performing circuits or circuit segments and extension of work sections farther out on a circuit.

Q. What funding do you expect to be necessary to implement this next phase of SRP?

A. The Company expects the next cycle of SRP, beginning in 2023, to require some reallocation of funding. It is expected that the next cycle will have less ground-to-sky maintenance pruning as part of the SRP scope, as that clearance has already been

obtained 11 years prior, and the pruning cost associated with maintaining that initially cleared ground-to-sky work will be borne as part of the cycle pruning maintenance activity instead. Through estimation of the vendor costs for the past cycle, it was estimated that approximately 20% of the cost per mile of SRP would transfer to cycle pruning in 2023. Using the projected cost per mile in 2021 of $38,981 per mile and the 34.65 miles planned in 2023, this calculates to approximately $1,081,000 for SRP per year. The remaining $384,690 is expected to be required to cover the increase in cycle pruning and would be reallocated to this line item after the initial SRP cycle concludes in 2022.

Q. Could storm performance and reliability suffer if the SRP is not continued?

A. Yes, storm performance and reliability could suffer if the SRP is not continued. Customers have seen avoided minutes of interruption due to the SRP program, calculated at approximately 567,000 customer minutes of interruption ("CMI") savings through 2019 and estimated at being approximately 1.6 million CMI through 2022.[5] Each year that the SRP lines are not maintained and risk vegetation develops along the lines, the likelihood of tree related vegetation damage occurrence on the SRP portion of lines increases. Instead of avoiding 1.6 million CMI each year that number will diminish and customers will see more minutes of interruption for each storm event.

Q. Could customers incur additional costs if the SRP is not continued?

[5] Exhibit SMS-3 - Environmental Consultants "Storm Resiliency Program Analysis and Assessment", Page 10

A. Yes, since customers could see an increase in minutes of interruption, the customer interruption cost, or the economic cost that customers incur when they experience an interruption in electricity service, would also increase. If all of the calculated expected reliability improvement of the SRP program diminishes, the annual customer cost avoided which is estimated between $5.44 million and $16.85 million[6] would be lost and customers would instead experience the economic cost of those interruptions.

Q. Does this conclude your testimony?

A. Yes, it does.

[6] Exhibit SMS-3 - Environmental Consultants "Storm Resiliency Program Analysis and Assessment", Page 20