State of New Hampshire
Site Evaluation Committee
Merrimack Valley Reliability Project
SEC Docket # 2015-05

PREFILED DIRECT TESTIMOY
of
MARGARET HUARD
Intervener

Q. Please state your name and address.

My name is Margaret Huard. I reside at 13 David Drive in Hudson, NH. I also work at this address during the proposed hours of construction.

Q. What is your role in the proceedings for this docket?

I am an intervener in the proceedings for this docket.

Q. Please describe the current environment that you live in.

My home on David Drive is set back into a wooded land. We have a large amount of mature forested land behind my home and a small amount of mature trees on one side.

On the other side there are few trees. Ironically, this is the side that faces the existing utility ROW that the applicant would like to place their MVRP in.

Our home is a short walk to one of Hudson, NH's finest conservation pieces of land, Robinson Pond on Robinson Road, off Kienia Road. The Ingersoll tree farm is another piece of conservation land on Griffin Road in Hudson, NH that is also a short walk from my home.

The environment around my home is a natural environment, dominant with woodland vegetation and a large amount of mature trees. There are also a large amount of animals that roam and come out of the forested land, including deer, birds, turkeys, salamanders, heron, turtles, owls, hawks, snapping turtles, squirrels, chipmunks, fishers, snakes, rabbits, woodpeckers and bees.

The area is extremely quiet and conducive to recreation activities including walking, camping, biking and hiking. Much of the area had been originally developed as a recreation area extending from Robinson Pond.

Q. How will the MVRP effect the surrounding natural environment?

The Merrimack Valley Reliability Project will have a negative, unreasonable effect on the existing surrounding natural environment.

The noise from the construction vehicles, blasting and helicopters poses a negative, unreasonable effect on humans and the natural wildlife as well.

This noise will completely destroy the usual peaceful environment that we are used to. The noise and dust from the ROW will travel to my home only a mere four houses from the ROW, despite any of the named intended mitigation procedures. I have yet to be able to obtain a firm answer whether blasting or helicopters will be used.

There is a risk that the natural wildlife will be disturbed, frightened, leave and not return.

"Impacts of Noise on Wildlife" is a summary of literature available from the National Parks Service, summarizing a variety of negative effects noise can have on wildlife.

An excerpt listed in this summary of literature, "The Effects of Aircraft Noise on Wildlife", claims that the effects of helicopter noise on humans can range from discomfort to severe with irreversible damage. In animals, strong and lasting noise causes psychological changes that can affect health.

A large amount of mature forests (app. 50-90 ft wide) from David Drive, Hudson, NH to Londonderry is proposed to be removed. These mature forests provide wildlife habitats, soil stabilization, shade, aesthetic value and a delicate system that keeps our air clean. This is achieved through a delicate cycle that takes in carbon dioxide (CO_2) through its leaves and H_2O through its roots, giving off plenty of oxygen back out through its leaves. The removal of these trees will increase the carbon footprint in this area.

While many wildlife species will be able to adapt to the proposed succession plantings consisting of shrubland and secondary growth trees, there are some habitats that existed in the mature forests that will no longer be able to be sustained by shrubland or secondary growth trees. Large seeds such as acorns that are produced by the mature oaks will no longer be available in this large area of proposed tree removal. The many species of wildlife that use them will have to forage for them elsewhere. This will force some of the wildlife to permanently relocate, which will in turn change the food available for the wildlife that remains in these areas. The mature forest and vegetation that will be disturbed will never again be the same, despite the mitigation plans and plans to restore.

Migration of wildlife from these areas, also propose a risk of an overabundance of wildlife in other residential areas that have had their mature forests remain in tact.

The removal of this large amount of mature forest in and around wetlands and waterbodies may increase and disperse water levels, causing a disturbance to dry land.

These trees also serve as an erosion buffer in many areas. The project proposes leaving four foot stumps in place to help with erosion. While this may work for a short period of time, the risk of major erosion over time is great.

Q. Please describe your current visibility of HVTLs and how this has that changed over the years?

My family and I live four houses from the edge of the area the applicant for the Merrimack Valley Reliability Project, calls a RIGHT of WAY. David Drive is the point of demarcation for the two applicants. There are currently three transmission structures visible from my home. One is a steel lattice tower from a high voltage DC transmission line along with their related insulators. There are two rather large transmission poles visible from my property as well. One is right next to this steel lattice tower. The other is only a mere 2 yards from the roadside, on the opposite side of the road from the point of demarcation.

The area of demarcation currently has a combination of eight poles and steel lattice towers, ranging in size, height and color. They are all visible from the road side as I walk, bike and commute up David Drive.

This area of demarcation joins another ROW that runs behind my property, carrying two transmission lines. There is only a small piece of property between our property and that RIGHT of WAY. While there is no visibility of these transmission lines from my home, a map shows that there are two poles right at my property.

When we purchased our home in January of 2001, all that was visible from our home was the very top of one of the high voltage transmission poles. Over the years, trees have been trimmed exposing more of this pole as well as the steel lattice tower. Another pole was moved into our full visibility in and around 2012/2013 by the applicant. It is a mere two yards from the very edge of the road at the David Drive ROW crossing.

We were never informed of the move in 2012/2013. We were never informed there was any process in 2012/2013. I do not find a docket filed with the NH SEC for this time period. The MVRP was the first time that we were notified of any project and invited to participate in the process.

Most recently, my immediate neighbor fully exposed the transmission pole and the steel lattice tower by removing a tree in his yard. There was nothing else blocking my view of these two structures.

We also have visibility of distribution lines running along our road with a transformer lowering the voltage right at our home.

I encounter numerous views of HVTLs as I walk, bike and commute the area proposed for the MVRP on a regular basis. I often walk, bike and commute Griffin Road as well as

Kienia. Road There is a rather large area of steel lattice towers visible to all on Kienia Road. As I commute from NH to MA on regular basis, I drive under transmission lines and by steel lattice towers on Mammoth Road at the Pelham and Windham borders. I frequently shop at Derry Meadow Plaza, the shopping plaza right next to the Scobie Pond substation. My family and I have also shopped at the Londonderry Flea Market. There is a grouping of four large steel lattice towers running through this flea market.

Q. How will the overall visibility of HVTLs change with the construction of the Merrimack Valley Reliability Project?

The Merrimack Valley Reliability Project will have a gross and unreasonable effect on the aesthetics for a greater amount of people than the applicants' experts have considered and concluded, providing a far greater visible impact than the applicants' expert has concluded.

The MVRP would add 1 to 3 structures to my visibility from my home, depending on the final height of these structures. Two are proposed to be placed in the area of demarcation already containing 6-8 structures. NEP and PSNH structures proposed to be added at the area of demarcation, appear to be significantly larger and higher that any structure currently placed there. The structure added on the opposite side of David Drive would be clearly visible from my front yard.

In addition, my visibility while commuting, walking, bicycling and visiting neighbors would change drastically. The increase in poles/structures proposed for the area of demarcation will increase from 8 to 10 structures. The contrast between the colors and material of the various poles is vast. The total transmission structures will increase from ten to thirteen in the entire area that the ROW crosses David Drive.

I, as well as many will have a clear view of this area as we walk and commute by it. The amount of trees that are proposed to be removed on both sides of David Drive right next to this portion of the ROW, is so vast that it will open up the view for so many others away from the ROW on the Griffin Road side of David Drive. There will be a FULL new view of the entire ROW for more than half the neighborhood, as you round the corner of David Drive.

As I commute and walk the rest of the area proposed for the MVRP, I will be faced with increase views of the HVTLs as well on Griffin, Bockes, Kienia in Hudson, NH and at the Windham/Pelham line. Large amounts of trees proposed to be removed on Kienia Road and Lenny Lane will fully expose large areas of the HVTLs to many that do not currently have a view of these HVTLs.

Q. How do you think your health will be affected by the addition of the MVRP?

The MVRP will only add to my ever growing concerns and experiences with the health effects from living and walking near HVTLs. I have experienced two shocks, one mild

and in January of 2016, one strong enough to cause cardiac arrest. There is significant information available describing electric shock, which correlates with what I experienced.

My concerns grow as I study the information regarding the health effects and risks of EMFs and the risks and levels of electric shock and electrocution. My concerns also grow as I witness the health and lives of others in my neighborhood being adversely affected.

Q. Have you ever questioned the safety of living, walking or commuting in such close proximity to HVTLs?

My family and I have walked and biked these roads for many years on a regular basis. During this time we have walked and biked under many high voltage transmission lines on the roads without any warning or sign not to do so.

Over the past few years, I have become increasingly concerned about the safety of the HVTLs in my neighborhood.

In 2009/2010 I was walking in the rain, on the road, under the powerlines, carrying an umbrella and received a small shock. It was about this time that I began to question the safety of these high voltage transmission lines.

In 2012/2013, after a transmission pole was moved road side, I began to experience a significant pain and sensitivity from head to toe. I thought it was from the pole, but did not know who to report it to. I merely stopped walking across the ROW on a regular basis and the pain began to subside.

In January 2016, while taking pictures for these docket proceedings, I went into immediate cardiac arrest, after taking a picture of a sign on one of the steel lattice towers. I was in my car, directly under transmission wires on the side of the road. There was no warning not to engage in this sort of activity. There are also numerous pictures near and around HVTLs included with the application, so I never would have thought that there would have been a danger. There is significant information on electric shock to correlate my experience with electric shock.

This incident demonstrates the dangers of being in close proximity to these high voltage transmission lines and the lack of sufficient warning to the public about these dangers.

In the past few years, three people have died that walked on a regular basis, near or lived in close proximity to the HVTLs in the David Drive/Kienia Road area. My 37 year old neighbor, a 14 year old girl and a 59 year old man, all seemingly died from the effects of living and walking near HVTLs.

My 37 year old neighbor lived one property closer to the ROW. She also drove a school bus and parked it overnight at the ROW on the side of demarcation. Before she died, she started to have blackouts. She was in a one car accident after the blackouts began.

The fourteen year old girl lived with steel lattice towers in her back yard. She died of Fibrolamellar Heptacellular Carcinoma.

The 59 year old man walked David Drive on a regular basis with his dogs. He also died from cancer.

There are other neighbors that suffer from heart issues and dizzy spells.

I am sure that there are many other people in this area that suffer from health effects from living and walking near HVTLs that go to the doctor and have their symptoms treated without ever realizing that the symptom had been caused from the HVTLs.

Q. What do you think of the applicants' choice of the brown self weathering steel for the MVRP?

Weathering steel is best known under the trademark COR-TEN steel. While self weathering steel has been around for sometime, the use of it for transmission poles is fairly new, especially locally. Currently, there are no brown self weathering poles in the general area, from the Hudson, NH border starting at Bockes Road all the way to the other side of the Hudson, NH border at Boyd Road. I am quite sure that you will find that there are few, or none along any part of the proposed ROW from the MA border all the way to Scobie Pond. I just started seeing brown self weathering poles being erected in the area in the past year. One of the closest ones is a massive one just up from Robinson Pond, on Robinson Road which is off of Kienia Road. Last spring, there were trails of what looked like rust in the sand along the side of Robinson Road.

According to the following literature, there are disadvantages to self weathering steel, especially in wetlands.

"The steel forms a protective layer on its surface under the influence of weather. The layer protecting the surface develops and regenerates continuously when subjected to the influence of the weather. In other words, the steel is allowed to rust in order to form the 'protective' coating."

"Weathering steel is not rustproof in itself. If water is allowed to accumulate in pockets, those areas will experience higher corrosion rates, so provisions for drainage must be made."

"Weathering steel's NORMAL surface weathering can also lead to rust stains on nearby surfaces."

(Wikipedia)

“In suitable environments weathering steel forms an adherent protection rust ‘patina’, that inhibits further corrosion.”

“The rust ‘patina’ develops under conditions of alternate wetting and drying to produce a protective barrier that impedes further access of oxygen, moisture and pollutants. The result is a much lower corrosion rate than would be found on ordinary structural steel.”

“Weathering steel is an alloy of steel, chromium, copper and nickel.”

(Weathering Steel-Steelconstruction.info)

The poles have to go through a phase that is actually rusting before they are “rust proof”. During this time, the ‘patina’ will be emitted into the air and water. This “rust” will get into our surface water, it will get into the brooks and streams in the area and ultimately into the Merrimack River The “rust” patina will get into the pond by the connected brooks and streams in the ROW proposed for the MVRP.

Rust indicates a presence of iron in water. Water with high mineral content can cause problems with hair, scalp and skin. It can also cause problems with pipes and wells if the surface water were to carry this rust to the ground water that feed the aquifers for our wells.

As for the aesthetics of these brown self weathering poles, they are actually going to be a huge contract to what is already in the ROW proposed for the MVRP. This ROW consists of all light colored poles, from the steel lattice towers and poles to weathered wooden poles.

Q. How do you think the MVRP will affect the surrounding air quality?

The air quality will be changed by the large amounts of tree removal proposed with the MVRP.

A large amount of mature forests (app. 50-90 ft wide) from the David Drive, Hudson, NH to Londonderry, NH is proposed to be removed. These mature forests provide a delicate system that keeps our air clean. This is achieved through a delicate cycle that takes in carbon dioxide (CO2) through its leaves and H2O through its roots, giving off plenty of oxygen back out through its leaves. The removal of these trees will increase the carbon footprint in a large area.

The rust “patina” from the self weathering poles will be emitted into the air, adversely affecting the air quality as well.

Q. How do you think the MVRP will affect the various wetlands and bodies of water that the project will cross, as well as the nearby Robinson Pond?

There is a significant amount of wetlands and waterbodies that the MVRP is proposed to cross. Most specifically, in the area from David Drive to Kienia Road and Lenny Lane, there is a large watershed for a Robinson Pond, off Kienia Road in Hudson, NH.

There is a stream that runs behind David Drive, beginning in or near the point of the proposed MVRP construction. There is also a piping system on both David Drive and Lenny Lane. Both the stream and piping system collect the surface run off water and brings it down to Robinson Pond. Howard Brook off Kienia also flows directly to Robinson Pond. Robinson Pond flows into Beaver Brook. Beaver Brook flows into a major river, the Merrimack. Beaver Brook is also proposed to be crossed at other points along the MVRP path.

Beaver "brook" has already expanded to be quite large in size (app. 50 ft -100 ft. wide). It more resembles a small pond that a brook. There is a rather large crossing proposed for this brook, along with a significant amount of mature forest to be removed on both sides of this waterbody.

There is also a significant amount of trees proposed to be removed throughout this entire watershed area, from David Drive to Lenny Lane/Kienia Road, all the way to Boyd Road.

While the project proposes to leave 4 FOOT stumps in place, this will serve as a very short term measure against erosion and a rise and disbursement of the water levels..

A tree's roots no longer grow after a tree is cut down. The roots need nutrients supplied by the trees leaves. Roots do not receive the fuel necessary for their proper growth if the tree no longer has leaves to undergo photosynthesis.

This will create an enormous opportunity for major flooding and severe erosion, especially in the area of Howard Brook. The removal of the large amounts of trees in the various wetlands, including the major watershed for David Drive, may cause the water levels to rise and spread into areas that were not wetlands before. Many of these areas would have had transmission poles placed there because they were **not** wetlands!.

The combination of increased and disbursed water levels into areas with transmission towers and poles is a dangerous mix, causing alarm for electric shock and electrocution to humans and animals alike.

The rust like "patina" from the self weathering poles will contaminate the same bodies of water and wetlands noted above.

Q. Have you looked at the financial statements that the applicants included with their application?

Yes. I have also looked at the complete 2014 Form 10K for Eversource available at sec.gov. Eversource had not included the full 2014 Form 10K with the application. This complete Form 10K included integral notes and an auditor's report that were not included with the application. I was only able to look at portions of the financial statements for NEP/NG since they included them in the application with out the integral notes. The financial statements for NEP/NG included with the application did not include the asset page.

Q. What are your thoughts on their financial stability and strength to finance this project?

While both applicants are financially strong, they are posing a large, unfair burden for numerous, consecutive projects on the ratepayers. Currently, the NH Legislature is actively pursing litigation limiting and prohibiting costs of projects such as the MVRP from being recovered from the ratepayers

The MVRP is a segment of a much larger overall upgrade of the electric system. Currently the applicants have numerous projects proposed in both MA and NH, including the Greater Boston and New Hampshire Solution (includes the MVRP, Woburn to Wakefield Line and the Mystic to Woburn Line), the Seacoast Reliability Project and the Northern Pass Project. The two applicants are also equity investors in the Access Northeast Project with Spectra. All of these seek to recover costs from the ratepayers.

The applicants are vulnerable to a significant amount of financial risk. If any one of the following situations were to occur by themselves or collectively, the applicants' financial stability and credit rating can diminish rather quickly.

Risks include reduction in or no customers to pay bills, ratepayers' independence from the grid, new legislation and regulations, maintaining environmental and safety responsibilities, limits on access to and increase on the costs of capital, a weakened economy, grid disturbances, operation changes, loss of key personnel, reputation risks, project delays, abandonment of projects, over budgeting of projects, requests to decommission dangerous infrastructure, regulations preventing full recovery of project costs, severe storms, suppliers/vendors not meeting their obligations, judicial proceedings limiting recovery of costs, subsidiaries dividends and need to pay out post retirement benefits and severance packages for employees and key top executives.

Many of these risks are already occurring or have the likelihood of occurring.

Numerous ratepayers are actively seeking independence from the grid.

Eversource is being asked to clean up the mercury emissions from their coal generated electric plants.

Decommissioning possibilities exist without proper costs planned and disclosed.

Costs to clean up after the environmental disaster sure to follow the construction of the MVRP will be significant.

Q. How do you think the MVRP will affect your ability to sell your home for market price in the normal real estate market?

The Merrimack Valley Reliability Project will greatly affect the ability to sell any home within miles of the project in the ordinary market in a reasonable amount of time, for market value, due to the change in aesthetics and natural environment.

The combination of exposure to the MVRP and new exposure to the existing HVTLs and the drastic change in the natural environment would greatly diminish my ability to sell my home in the ordinary market at market value for a similar home not in close proximity to HVTLs.

There is a risk that there will be a large number of homes placed on the market at once, if the project is approved and construction begins.

Q. Has the applicant demonstrated legitimate ownership and easement rights to construct the MVRP in the ROW that they propose?

Eversource provided me with an easement from 1969 for the homes at the proposed David Drive crossing. Eversource does not have outright ownership of these two properties.

PSNH obtained the easement in 1969 at a time when the boundaries were written in coordinates and stonewalls, etc. In 1969, this property in the alleged ROW was undeveloped. Over the years, the property around the ROW was sub divided, developed and sold, lot by lot. This easement has not been clearly conveyed as the property has been transferred from owner to owner.

Additionally, there is a drawing with the 1969 easement record that depicts the alleged ROW easement formed at that time. The current development of the ROW at David Drive already appears to have been developed to the full capacity intended by this 1969 easement.

Much of the ROW proposed for the MVRP is not out right owned. It is questionable if valid easements exist for all of the residential property that the applicant proposes to place the MVRP on.

Q Has the applicant done enough to convince you that the MVRP is needed to increase the stability and reliability of the grid?

I am not convinced that the MVRP has been proposed out of the need for the stability and reliability of the grid.

The MVRP is a segment of a much larger overhaul of the New England electric transmission grid system. Currently the applicants have numerous projects proposed in both MA and NH, including the Greater Boston and New Hampshire Solution (includes the MVRP, Woburn to Wakefield Line and the Mystic to Woburn Line), the Seacoast Reliability Project and the Northern Pass Project. The two applicants are also an equity investor in the Access Northeast Project with Spectra.

The greater Boston and New Hampshire Solutions anticipated the closure of the old Salem Harbor coal electric generation plant and the opening of the new Salem Harbor natural gas plant/energy center constructed by Footprint power, in its place. MVRP and Access Northeast are proposed to go online in conjunction with the completion of the new power plant on Salem Harbor. Access Northeast is a pipeline project proposed to bring capacity to the new Salem Harbor natural gas electric plant. The MVRP is part of a much larger project with upgrades needed to bring the Salem Harbor Plant on line with the NE grid.

MVRP is an AC project that was chosen over a proposed HVDC project that would have run under the ocean directly around the Salem Harbor.

The application and expert testimony show that the system stability and reliability concerns are based on far too many tests done on far too much hypothetical computer models that do not necessarily have the actual likelihood of happening alone or in the combination that they have anticipated.

Q. Do you feel that the applicant has demonstrated sound technical and managerial ability to oversee the construction and operation of the MVRP?

The applicant does not have the technical and managerial ability to construct and operate the MVRP **on their own**. They have an over reliance on outside contractors, experts and union laborers. Many of these outside contractors have demonstrated ability that is less than acceptable for a major project like MVRP that poses to affect such a large number of peoples property, lives and the environment.

The people named as the lead managers in the MVRP have deferred questions to outside experts at times and have objected to questions that they should have been able to answer. In many cases, these lead managers have failed to determine whether the outside experts have provided an accurate or competent assessment in planning the project. A manager of a project should have knowledge of all other aspects of the project they oversea.

Q. Do you feel that the NH SEC should award a CERTIFICATE OF SITE AND FACILITY for the construction of the MVRP?

The applicant has failed to properly monitor and assess their HVTLs in the past. I have little doubt that constructing and operating the MVRP will be any different. They have failed to properly and sufficiently monitor the harmful effects of their existing HVTLs, as well as the harmful effects of adding the MVRP. They have failed to sufficiently warn the public about the risks of electric shock and electrocution.

I reported a mild experience with electric shock that I had in 2009 at the MVRP meetings. At that time Eversource had scheduled an appointment with me to come out and look at the HVTLs on our road. Once I became an intervener in the docket, they cancelled the appointment and never checked their transmission lines.

In January of 2016, I sustained a very strong electric shock after taking a picture of a sign on one of the high voltage steel lattice towers belonging to National Grid. I reported the incident to the NH PUC safety division. I was told that the safety division would let NG/NEP know and that NG would come and take a look. Instead of receiving a call from NG/NEP I received a call from someone from an outsourced public affairs/political company asking me the same questions the NH PUC had. To this day, no one has properly followed up on this incident, nor taken the measures necessary to prevent this from happening to anyone else.

They deny that there are any harmful effects from HVTLs, when there is evidence that this is.

They claim that the EMFs are within the standard, but never ever take any readings.

They claim that the MVRP will not effect air and water yet have no plans to test either before or after.

They missed or have failed to acknowledge the health risks associated with the proposed removal of a large removal of trees.

They have provided insufficient proposals to properly mitigate the enormous negative and detrimental changes to the natural environment in many areas.

They deny any change in aesthetics and any basis that HVTLs have an effect on the market value of our homes, when there is significant evidence to both.

Far too much of their planning and analysis was done using computer software, hypothetical models and probabilities that have no concrete basis of reality.

As I watch PSNH engage in what they call storm hardening measures in the ROW that crosses my road, I have little confidence that they can construct the MVRP safely or without major destruction to the environment. They are using vehicles in an environmentally sensitive area without BMPs outlined in their own manual. They are digging and negatively altering the environment in this area. They are attempting a pole change to a brown self weathering pole in this area, despite my concerns about the environmental and health hazards of "rust" patina.

For all of these reasons and the additional reasons presented in my testimony, I request that the applicant NOT be awarded a CERTIFICATE of SITE and FACILITY for the construction of the MVRP

Certification of Service

I hereby certify that on the 2nd of March, an electronic copy of this pre-filed testimony was served upon the SEC Distribution List.

Margaret Huard