

**BEFORE  
THE PUBLIC UTILITIES COMMISSION OF OHIO**

In the Matter of the Complaint of Citizens	)	
Against Clear Cutting, <i>et al.</i> ,	)	
	)	
Complainants,	)	
v.	)	Case No. 17-2344-EL-CSS
	)	
Duke Energy Ohio, Inc.,	)	
	)	
Respondent.	)	

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**POST-HEARING BRIEF OF DUKE ENERGY OHIO, INC.**

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## I. INTRODUCTION

Like other electric utility companies in Ohio and throughout the United States, Duke Energy Ohio, Inc. (Duke Energy Ohio or the Company) regularly conducts vegetation management below and near its high-voltage transmission lines. These services are necessary to assure the safe and reliable operation of the Company's transmission grid. If those services are not performed in a strategic and methodical manner, both outages and hazardous conditions (*i.e.* close proximity vegetation) may occur. In contrast to circumstances along distribution lines, outages and hazardous conditions on high-voltage transmission lines can be far more damaging, often impacting thousands of residential and commercial customers. In the event of a cascading outage like the Northeast blackout of 2003, the results can be catastrophic across state and national boundary lines.<sup>1</sup>

The Public Utilities Commission of Ohio (Commission) is well-versed in these issues and most assuredly appreciates the critical nature of the vegetation management activities conducted by Duke Energy Ohio along its high-voltage transmission lines. Complainants, on the other hand, apparently do not. In a nutshell, the entire case presented by Complainants at the hearing may be summed up as follows: without providing relevant or useful evidence of any kind, Complainants want Duke Energy Ohio to treat high-voltage transmission lines like distribution lines by conducting vegetation *maintenance* within the Company's easements on their properties rather than vegetation *management* in accordance with industry best practices, Duke Energy Ohio's programs and policies, and the Company's rights under its easements. Complainants offered little more than self-serving testimony regarding how certain trees were pruned in the past and why they would prefer that Duke Energy Ohio resort to prior practices no longer considered appropriate or

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<sup>1</sup> The infamous Northeast blackout of 2003 is but one example of a massive outage caused, at least in part, by poor vegetation management. See, [https://en.wikipedia.org/wiki/Northeast\\_blackout\\_of\\_2003](https://en.wikipedia.org/wiki/Northeast_blackout_of_2003).

followed by other utilities on transmission rights of ways. The other evidence offered by Complainants came from a commercial arborist with limited relevant experience working on high-voltage transmission lines. That witness essentially concluded that Duke Energy Ohio should not remove any trees from below or near transmission lines; instead, Duke Energy Ohio should take the astonishing risk of relying on property owners to prune trees along transmission lines, notwithstanding the Company's legal and regulatory obligations in that regard.

In contrast, Duke Energy Ohio presented well-informed testimony from experts who each have decades of experience in vegetation management along transmission lines, helped develop industry standards and best practices, and either studied or implemented electric utility companies' vegetation management programs, policies and procedures along transmission lines. Duke Energy Ohio's witnesses attested to the strategic and environmental benefits of the Company's vegetation management program, including the Integrated Vegetation Management (IVM) strategy. They also firmly rejected any notion that an electric utility such as Duke Energy Ohio should conduct vegetation maintenance practices along high-voltage transmission lines by pruning trees like a landscaper.

In short, even though the burden of proof in this case at all times remains on Complainants, the evidentiary record reflects that Duke Energy Ohio disproved every claim and allegation raised by Complainants. Accordingly, their complaint against Duke Energy Ohio must be denied.

## **II. PROCEDURAL BACKGROUND**

On April 28, 2016, Duke Energy Ohio filed an Application under Rule 4901:1-10-27(E)(2), O.A.C., to modify its Programs for Inspection, Maintenance, Repair and Replacement of

Distribution and Transmission Lines, Section (f).<sup>2</sup> The Company identified the proposed modifications by attaching to the Application a red-lined version of Section (f). Other than filing the Application with the Commission, which necessarily made the Application a matter of public record, there are no customer notice requirements in Rule 4901:1-10-27(F)(2). As provided in Rule 4901:1-10-27(F)(2), the Company's Application was approved after the Commission reviewed it and decided that no action was warranted or appropriate.<sup>3</sup>

Although Duke Energy Ohio already had successfully completed vegetation management work along 21.45 of the 27.37 miles of transmission lines at issue in this case without issue or incident,<sup>4</sup> property owners involved in this case started filing complaints against Duke Energy Ohio in October 2017. Twenty-five property owners then joined together in filing the initial complaint in this case on November 14, 2017. By Entry dated November 16, 2017, the Company was ordered to stay further vegetation management activities on Complainants' properties. Complainants subsequently were allowed, over the Company's objection, to file an Amended Complaint and add additional property owners as Complainants.<sup>5</sup> In January 2018 Complainants again were allowed, over Duke Energy Ohio's objection, to file a Second Amended Complaint which joined additional property owners as Complainants.<sup>6</sup>

Complainants' Second Amended Complaint essentially is a collateral attack on the approved modifications to Section (f) of the Company's Programs for Inspection, Maintenance, Repair and Replacement of Distribution and Transmission Lines. In Count I, Complainants allege

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<sup>2</sup> See, Complainants' Ex. 1, Second Amended Complaint ¶104; *In the Matter of the Application of Duke Energy Ohio, Inc. for Approval of Revised Paragraph (f) of its Programs for Inspection, Maintenance, Repair and Replacement of Distribution and Transmission Lines*, Case No.16-915-EL-ESS, Application (April 4, 2016).

<sup>3</sup> See, Complainants' Ex. 1, Second Amended Complaint ¶110.

<sup>4</sup> Duke Energy Ohio Ex. 2, Direct Testimony of Ron A. Adams, at 18; Tr. Vol. I at 155.

<sup>5</sup> See, Entry, November 28, 2017.

<sup>6</sup> See, Entry, January 25, 2018.

that Duke Energy Ohio has not justified the modification to Section (f), which the Commission already approved; in Count II, Complainants claim that the Company's plan, as reviewed by Commission Staff and approved by Rule, supposedly is unjust and unreasonable; in Count III, Complainants allege that Duke Energy Ohio somehow hid the modifications to its plan when it filed the Application and attached to that Application a red-line version of Section (f), as reflected in Case No. 16-0915-EL-CSS; and, finally, Complainants allege in Count IV that the modified plan reviewed by Commission Staff and approved by Rule is "unjust and unreasonable" in violation of O.R.C. 4905.22.

The hearing was conducted November 6-8, 2018. The evidentiary record is now closed with the filing of supplemental testimony of OCC witness James Williams, the hearing transcript and all exhibits. Based on the evidentiary record in this case, the Commission must conclude that Complainants have not sustained their burden of proof as to any claim or allegation against Duke Energy Ohio.

### **III. DISCUSSION**

#### **A. Complainants have not sustained their burden of proof in this complaint proceeding.**

It is undeniable that the Complainants have the burden of proof in this proceeding.<sup>7</sup> And where the burden is not met, as in this case, a complaint must be denied.<sup>8</sup> As explained more fully below, the collective testimony offered by various Complainants and a single commercial arborist is woefully inadequate to satisfy Complainants' burden of proof in this case. With that evidentiary

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<sup>7</sup> *Grossman v. Public Utilities Commission of Ohio*, (1966), 5 Ohio St.2d 189, 190, 214 N.E.2d 666. See also, *Ohio Bell Telephone Co. v. Public Utilities Commission of Ohio*, (1984), 14 Ohio St.3d 49, 50, 471 N.E.2d 475 (reiterating that burden of proof upon the complainant in a complaint proceeding) and *Luntz Corporation v. Public Utilities Commission of Ohio*, (1997), 79 Ohio St.3d 509, 513, 684 N.E.2d 43, 1997-Ohio-342 (same).

<sup>8</sup> See, e.g., *Corrigan v. Cleveland Electric Illuminating Company*, Case No. 09-492-EL-CSS, Opinion and Order, at pp. 13 and 15 (March 26, 2014)(denying complaint where lone witness for complainants rendered unsubstantiated conclusions and lacked the necessary qualifications to provide probative evidence).

failure, along with other legal failures concerning various aspects of the claims asserted by Complainants, their Complaint must be denied.

**B. This Complaint case is not the proper forum to review Duke Energy Ohio's transmission vegetation management program.**

The first three claims in Complainants' Second Amended Complaint are nothing more than a request by Complainants to review or reconsider—or possibly undo, if that were legally feasible—Duke Energy Ohio's transmission vegetation program, as modified by Rule in June 2016. Regardless of whether Complainants claim that the Company did not justify the modification (Count I), that the modification is unjust or unreasonable (Count II), or that Duke Energy Ohio concealed the proposed modifications when it filed the Application (Count III), the Commission previously approved the modified program in accordance with Rule 4901-1-10-27, O.A.C. Therefore, as the Commission found in another case, this complaint “proceeding is not the proper forum for a review of” Duke Energy Ohio transmission vegetation management program.<sup>9</sup> Accordingly, Counts I, II and III of Complainants' Second Amended Complaint must be denied for that reason alone, in addition to the complete lack of evidentiary support, as discussed further below.

**C. Electric utility companies like Duke Energy Ohio must manage their transmission rights of way differently than distribution rights of way.**

Throughout this proceeding, and particularly at the hearing, it became clear that Complainants mistakenly believe that Duke Energy Ohio should treat its high-voltage transmission lines like distribution lines. In essence, Complainants seem to think that the Company should prune trees along transmission lines to the bare minimum clearance and then maintain those

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<sup>9</sup> *In the Matter of the Complaint of Kurt Wimmer/Wimmer Family Trust v. Ohio Edison Company*, Case No. 09-777-EL-CSS, 2011 Ohio PUC LEXIS 100 at \*21.

minimum clearances throughout an electric grid that consists of more than 1,600 miles of transmission lines in Duke Energy Ohio's service territory. Complainants also want Duke Energy Ohio to conduct vegetation management along its transmission lines on a tree-by-tree basis, essentially serving as a private landscaping and tree maintenance service for property owners who may want the same species of trees pruned to different clearances or treated with growth regulators to limit their growth, depending essentially on the property owners' preferences and whims. In fact, Complainants even went so far as to suggest that Duke Energy Ohio should rely on property owners to maintain appropriate clearances along its transmission lines, as if the Company were able to delegate that risk and responsibility to thousands of property owners along more than 1,600 miles of transmission lines. While Duke Energy Ohio appreciates Complainants' concerns and respects their interests as customers and property owners, the Company's transmission vegetation management program, including the implementation of IVM within the rights of way, is both reasonable and appropriate given the size and criticality of the transmission system, risks of a potential outage and associated community impact along that system, and the developments in industry best practices.

### **1. Breadth and Functionality of Duke Energy Ohio's Transmission System in Ohio**

As one of the nation's largest electric utilities, Duke Energy Ohio and its affiliates manage 31,645 miles of transmission lines, across six states, providing transmission grid security, safety and reliability in compliance with state and federal regulations.<sup>10</sup> In Ohio, the Company has thousands of customers and property owners along 1,607 miles of transmission lines at various voltage levels: 402 miles of 345 kV, 734 miles of 138 kV, and 471 miles of 69 kV.<sup>11</sup>

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<sup>10</sup> Duke Energy Ohio Ex. 2, Direct Testimony of Ron A. Adams, at 3.

<sup>11</sup> Duke Energy Ohio Ex. 2, Direct Testimony of Ron A. Adams, at 4.

From a functional perspective, the Company's 345 kV transmission lines operates like an interstate highway system, transporting power between states and regional entities by connecting with other utilities or generating stations.<sup>12</sup> Duke Energy Ohio maintains the 345 kV transmission line under the purview of the North American Electric Reliability Corporation (NERC) because those lines exceed the 200 kV threshold for NERC's responsibility.<sup>13</sup>

The transmission lines at issue in this case are 138 kV.<sup>14</sup> The Company's 138 kV system operates as a loop network system surrounding the Ohio/Kentucky service territory and serves as the main conduit from the 345 kV system to the 69 kV system and distribution system. Although it has lower voltage, the 138 kV transmission lines serve a similar function as the 230 kV system which Duke Energy Ohio's affiliated entities own and operate in other jurisdictions.<sup>15</sup>

**2. The Company's easements along its transmission lines are clear, unambiguous and indisputable.**

The 138 kV transmission lines at issue in this case were built in the early 1950s. That is also the time during which Duke Energy Ohio obtained the easements along the transmission lines. By acquiring those easements, the Company obtained certain rights and interests superior to those enjoyed by the property owners.<sup>16</sup> Those easements established Duke Energy Ohio's rights of way along its high-voltage transmission lines, thereby enabling the Company to build the transmission lines, gain access to and maintain those lines, and conduct necessary vegetation management along the lines.

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<sup>12</sup> Duke Energy Ohio Ex. 2, Direct Testimony of Ron A. Adams, at 6.

<sup>13</sup> Duke Energy Ohio Ex. 2, Direct Testimony of Ron A. Adams, at 6; Duke Energy Ohio Ex. 3, Direct Testimony of Kevin McLoughlin, at 3; Tr. Vol. III at 533, 574.

<sup>14</sup> Duke Energy Ohio Ex. 2, Direct Testimony of Ron A. Adams, at 6; Duke Energy Ohio Ex. 3, Direct Testimony of Kevin McLoughlin, at 13; Tr. Vol. III at 527, 536.

<sup>15</sup> Duke Energy Ohio Ex. 2, Direct Testimony of Ron A. Adams, at 7-8; Tr. Vol. I at 155, 206, 218.

<sup>16</sup> See, e.g., *Roll v. Bacon* (Ohio Misc., Clermont Cty.), 2010-Ohio-5540, ¶41.



While the area may have been rural when Duke Energy Ohio first acquired the easements, the Company's rights and interests remain in place to this day.<sup>17</sup> Regardless of the level of development along the Company's transmission lines—whether farmland, suburban or more urban—Duke Energy Ohio retains its easement rights. And those rights remain inviolable and undisturbed, at least before the Company was temporarily barred from conducting vegetation management within its rights-of-way while this case remains pending.<sup>18</sup>

The Company's easement rights are not in dispute—both Duke Energy Ohio and Complainants readily acknowledge the Company's easement rights along the subject transmission lines.<sup>19</sup> Multiple easements are included in the evidentiary record. Among other rights, those easements generally granted to Duke Energy Ohio “the right to cut, trim or remove any trees, overhanging branches or other obstructions both within and without the limits of the above described right of way and easement which in the opinion of the grantee's engineers may endanger the safety of or interfere with the construction, operation or maintenance of said system.” The language of Duke Energy Ohio's easements is clear and unambiguous. Based on well-established and binding precedent at the Commission, it is clear that Duke Energy Ohio has the right to implement its transmission vegetation management program on Complainants' properties by following IVM and, where necessary, removing trees and pruning trees back to safe clearances from the transmission lines.<sup>20</sup>

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<sup>17</sup> Duke Energy Ohio Ex. 2, Direct Testimony of Ron A. Adams, at 10.

<sup>18</sup> Duke Energy Ohio Ex. 2, Direct Testimony of Ron A. Adams, at 4.

<sup>19</sup> See, Complainants' Ex. 1, Second Amended Complaint at ¶100; Duke Energy Ohio Ex. 2, Direct Testimony of Ron A. Adams at 3-4.

<sup>20</sup> See, *Wimmer v. Public Utilities Commission of Ohio*, 2012-Ohio-757, ¶¶6-7; *Corrigan v. Illum. Co.*, 2009-Ohio-2524, ¶19.

### **3. Seriousness of a potential outages along transmission lines**

Duke Energy Ohio is committed to providing safe and reliable service to its customers. Whereas Complainants are focused on individual trees and other vegetation, Duke Energy Ohio must manage an entire electric grid consisting of high-voltage transmission lines and lower voltage distribution lines. As development has occurred and continues to occur since the transmission lines were built in the 1950s, trees have grown and matured throughout the rights-of-way, thereby presenting increased risk to reliability and public safety. Unless the Company mitigates and manages those risks consistent with industry best practices, a potential outage or public safety event could occur and be very harmful.

In the Greater Cincinnati area, Duke Energy Ohio is required to, and does, operate the 138 kV system from a contingency perspective to withstand the loss of a single line. However, depending on conditions at a given point in time—such as weather and load on the transmission line—an outage along one of the transmission lines at issue in this case could put the Company in a contingency situation resulting in a localized blackout if a second 138 kV line were lost. Essentially, while Duke Energy Ohio is prepared to deal with the loss of a single line, a localized blackout could occur if the configuration and conditions on the ground overload an adjacent transmission line. A localized blackout may not be as severe as a cascading outage of the type that occurred in 2003 with the Northeast Blackout, but the negative impact is certainly felt by those residential and commercial customers affected by the outage, as well as the Company itself.<sup>21</sup>

At issue in this case are threats to the transmission system presented by trees and other vegetation. Trees can damage transmission lines in two ways: physical contact between a tree and transmission line can result in damage to the utility infrastructure, also known as the

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<sup>21</sup> Duke Energy Ohio Ex. 2, Direct Testimony of Ron A. Adams, at 7-8; Tr. Vol. I at 205.

“mechanical mode” of failure; and the “electrical mode” of failure occurs when a tree provides a short circuit fault pathway either by direct contact between a tree and an energized conductor or by an air gap flash-across.<sup>22</sup> Both circumstances can result in interruptions or outages of service, and direct costs to Duke Energy Ohio to respond, restore service and repair damaged equipment.<sup>23</sup> However, given the higher voltage of transmission lines, an electrical short circuit fault can be far more dangerous, possibly resulting in a concentrated discharge of an amount of energy used to power a mid-sized city.<sup>24</sup> Alternatively, the flashover can result in energy traveling from the tree, to the ground and even into homes causing property damage.<sup>25</sup> Considering that an air gap flash across fault can occur without physical contact between transmission lines and trees, the fact that conductors move—both horizontally due to wind and vertically due to sag under higher electric load and in periods of hot weather—adds to the element of risk which electric utilities like Duke Energy must address.<sup>26</sup> That is precisely why, in this case, Duke Energy Ohio moved away from *maintaining* vegetation along its transmission lines to proactively *managing* that vegetation.<sup>27</sup>

#### **4. Regulatory requirements for vegetation management**

Changes in policy with respect to transmission vegetation management were prompted by the Northeast Blackout in 2003. As the Commission is all too aware, that blackout was triggered by four 345 kV transmission lines within FirstEnergy’s territory in Ohio faulting out to ground via contacts with trees in a cascading manner. In light of the blackout, the Federal Energy Regulatory Commission (FERC) certified NERC as the “electric reliability organization” (ERO) for the United States. NERC was charged with the responsibility to promulgate legally enforceable and

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<sup>22</sup> Duke Energy Ohio Ex. 5, Direct Testimony of John W. Goodfellow, at 3.

<sup>23</sup> Duke Energy Ohio Ex. 5, Direct Testimony of John W. Goodfellow, at 4.

<sup>24</sup> Duke Energy Ohio Ex. 5, Direct Testimony of John W. Goodfellow, at 4.

<sup>25</sup> Duke Energy Ohio Ex. 3, Direct Testimony of Kevin McLoughlin, at 8.

<sup>26</sup> Duke Energy Ohio Ex. 5, Direct Testimony of John W. Goodfellow, at 5; Duke Energy Ohio Ex. 3, Direct Testimony of Kevin McLoughlin, at 7-9.

<sup>27</sup> Tr. Vol. II at 249.

mandatory reliability standards for the bulk power system, subject to FERC approval. Ultimately FERC approved 83 NERC reliability standards,<sup>28</sup>

Although existing NERC regulations are mandatory only for transmission lines at or above 200 kV, industry standards and utility best practices require vegetation management to prevent vegetation-related outages for all transmission lines, regardless of the size of the line. That requirement necessarily applies to the 138 kV transmission lines at issue in this case. In other words, nothing prohibits electric utility companies like Duke Energy Ohio from applying the standards across all of its transmission lines, including the 138 kV lines at issue in this case.<sup>29</sup> One would think that the Commission and the Company's rate payers would want Duke Energy Ohio to apply more stringent reliability and vegetation management standards to all of its transmission lines, so as to further enhance the reliability and safety of the electric grid and to achieve certain efficiencies.

In 2007 NERC adopted the original standard for transmission vegetation management (FAC-003-1) to prohibit vegetation-related outages from occurring within the right-of-way, requiring companies to adopt vegetation management policies for that very purpose.<sup>30</sup> NERC has defined a right-of-way as a segment of land used for the route of a transmission line. Because the primary purpose of a high voltage transmission line right-of-way is the safe and reliable delivery of electrical energy services, NERC makes it clear that a right-of-way must be clear of vegetation that can interfere with a transmission line.<sup>31</sup>

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<sup>28</sup> Duke Energy Ohio Ex. 2, Direct Testimony of Ron A. Adams, at 9; Duke Energy Ohio Ex. 3, Direct Testimony of Kevin McLoughlin, at 2.

<sup>29</sup> Duke Energy Ohio Ex. 3, Direct Testimony of Kevin McLoughlin, at 3.

<sup>30</sup> Duke Energy Ohio Ex. 2, Direct Testimony of Ron A. Adams, at 9-10; Duke Energy Ohio Ex. 3, Direct Testimony of Kevin McLoughlin, at 3-4.

<sup>31</sup> Duke Energy Ohio Ex. 3, Direct Testimony of Kevin McLoughlin, at 4, citing "*Utility Vegetation Management and Bulk Electric Reliability Report From the Federal Energy Regulatory Commission*", September 7, 2004.

The NERC standards are not guidelines which electric utilities may choose to follow or ignore, nor may such companies tolerate vegetation-related outages along transmission lines. Otherwise the result can be fines of up to \$1 million dollar per day and other sanctions and mitigation measures imposed by NERC, not to mention the potential physical and financial harm to hundreds or thousands of residential customers and businesses.<sup>32</sup> While NERC has a zero tolerance for outages caused from vegetation within the right-of-way along applicable transmission lines, Duke Energy Ohio certainly wants to prevent as many vegetation-related outages as possible along the 138 kV transmission lines at issue in this case.

To comply with NERC's standard, the Company initiated work on its easement rights on all applicable NERC lines (at or above 200 kV) in the Midwest. Around the end of 2012, Duke Energy Ohio and its affiliates completed reclaiming these lines and moving them into the IVM program strategy which had been initiated. Thereafter, in 2016, the Company turned its focus on the 138 kV transmission system in Ohio. As Duke Energy Ohio witness Ron Adams testified, the Company uses the same operational concepts on all transmission lines across the enterprise.<sup>33</sup> While the 138 kV lines may not be subject to regulation and oversight by NERC, Duke Energy Ohio applies the relevant NERC vegetation management standard management practice to those lines because these management practices are viewed as industry best practices.<sup>34</sup>

For example, a NERC/FERC Staff report regarding outages from a snow storm in October 2011 found "that roughly 25% of the confirmed vegetation-related transmission line outages during the October event were caused by trees that fell into transmission lines from inside a utility's full right-of-way. These on-right-of-way trees were all located outside the utility's maintained

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<sup>32</sup> Duke Energy Ohio Ex 3, Direct Testimony of Kevin McLoughlin, at 4-5.

<sup>33</sup> Tr. Vol. II at 275.

<sup>34</sup> Duke Energy Ohio Ex. 2, Direct Testimony of Ron A. Adams, at 10.

right-of-way.” In light of the NERC standards for vegetation management along transmission lines, the FERC Staff recommended that, “where possible and practical, utilities implement the industry best practice of ensuring that danger trees are not present within their full rights-of-way. In particular, to the extent a utility manages vegetation only on maintained rights-of-way rather than full rights-of-way, it should work toward reclaiming the full right-of-way width where feasible.”<sup>35</sup>

As such, industry best practices, which have developed as a result of the NERC standards, provide for electric utilities to maintain the entire area within its full right-of-way regardless of whether the high-voltage transmission line is governed by NERC standards. In particular, utility companies like Duke Energy Ohio should reclaim the full right-of-way, provided they have legal rights to do so, by removing all incompatible vegetation such as trees and woody shrub species that have the capacity to grow tall enough at or near maturity to interfere with the safe and reliable operation of the transmission line.<sup>36</sup> That is precisely what Duke Energy Ohio is doing—the Company is taking NERC’s philosophy of having zero tolerance for outages from within the transmission lines right-of-way under its jurisdiction and applying that same philosophy to the Company’s other transmission lines.<sup>37</sup> These are industry best practices which Duke Energy Ohio follows in accordance with its vegetation management program on file with and approved by the Commission.

## **5. Duke Energy Ohio’s Transmission Vegetation Management Program**

Two things became clear over the course of this proceeding, and especially throughout the hearing: Complainants do not understand Duke Energy Ohio’s transmission vegetation

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<sup>35</sup> Duke Energy Ohio Ex. 3, Direct Testimony of Kevin McLoughlin, at 5-6.

<sup>36</sup> Duke Energy Ohio Ex. 3, Direct Testimony of Kevin McLoughlin, at 6.

<sup>37</sup> Tr. Vol. II at 275.

management program; and they confuse provisions relating to distribution vegetation management with provisions regarding transmission vegetation management. The Company's modified transmission vegetation management program, as approved by the Commission, was not changed from the prior version and follows industry best practices to provide optimum safety and reliability for Duke Energy Ohio customers. Rather, the document was rewritten to clarify the distinction between transmission and distribution practices.

The Company's transmission vegetation program is carried out through the work of many employees, contract employees and arborists across the Duke Energy footprint. That footprint is massive—Duke Energy Ohio and its affiliated entities manage 31,645 miles of transmission lines, across six states, and throughout diverse terrains and in ecosystems such as mountains, wetlands, plains, rural and urban locations throughout the service territories. The Company and its affiliates provide transmission grid security, safety and reliability across that huge transmission network in compliance with state and federal regulations.<sup>38</sup>

Duke Energy Ohio's transmission vegetation management program is set forth in the Application to modify its Programs for Inspection, Maintenance, Repair and Replacement of Distribution and Transmission Lines, Section (f), as filed under O.A.C. Rule 4901:1-10-27(E) (the Plan). The Company filed that Application because the prior version of Section (f), entitled "Right of way vegetation management," went back and forth between provisions relating to distribution lines and provisions specific to transmission lines, without any clear delineation between the two. As Duke Energy Ohio witness Ron Adams testified, even he was confused by the prior version of Section (f) despite his years of experience with the Company. Accordingly, the Company modified Section (f)

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<sup>38</sup> Duke Energy Ohio Ex. 2, Direct Testimony of Ron A. Adams, at 3.

to eliminate the apparent confusion and to more clearly distinguish between vegetation management along transmission and distribution lines.<sup>39</sup>

But, substantively, Duke Energy Ohio's transmission vegetation management program did not change as a result of the modified Section (f). The modified section (f) simply explained, in clear and unambiguous language, the Company's minimum clearing cycles and minimum clearing distances along its transmission lines, while also reaffirming Duke Energy Ohio's legal rights under its easements to cut down and remove trees and other vegetation when necessary to protect the safety and reliability of the electric grid. As the Company's witness Ron Adams explained, whereas IVM is "a strategy and a philosophy . . . [t]he program that was filed was more practical and procedural and more in alignment with [the Company's] technical specs."<sup>40</sup> In other words, IVM is a strategy that Duke Energy Ohio uses to implement its transmission vegetation management program.

## **6. Integrated Vegetation Management**

The Company previously had managed its transmission lines like distribution lines, tending to maintain trees and vegetation along the transmission line right-of-way through periodic pruning rather than actively managing the vegetation within the transmission line right-of-way so as to more effectively eliminate risks to the electric grid. As Duke Energy Ohio witness Ron Adams explained, prior practices created operational risks that the Company had to manage. While those risks increased costs and hazardous conditions (*i.e.* close proximity vegetation), Duke Energy Ohio successfully managed those risks.<sup>41</sup> Those risks resulted from the Company's practice of managing the transmission system like a distribution system and doing a lot of pruning. Mr. Adams identified

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<sup>39</sup> Tr. Vol. II at 406-409.

<sup>40</sup> Tr. Vol. II at 251.

<sup>41</sup> Tr. Vol. II at 253, 262.



the increased risks associated with doing off-cycle vegetation management and aerial patrols; the presence of excessive incompatible species within the right-of-way which lead to undesirable topping;<sup>42</sup> and the safety hazards when employees need to get close to the high-voltage transmission lines.<sup>43</sup> Again, Duke Energy Ohio did not put the safety and reliability of the transmission system at risk, but the prior transmission vegetation management practices created additional risks that the Company had to manage.<sup>44</sup> Continuing with this practice was unsustainable. The change in the Company's strategy regarding reclamation and IVM was intended to alleviate the need to continually manage those risks on an ongoing basis, which was both reasonable and appropriate, not to mention best practices in the industry.

In order to implement its transmission vegetation management program and follow industry best practices, Duke Energy Ohio started implementing the IVM strategy in the 2010-2011 time frame.<sup>45</sup> IVM is well regarded as an industry best practice for vegetation management along transmission lines.<sup>46</sup> ANSI A300 Part 7 is the standard for IVM, and is recognized by NERC and FERC, along with the Utility Arborist Association, as industry best practice.<sup>47</sup> IVM is an active and efficient management system intended to establish sustainable conditions on transmission system rights of way. The concept of compatible and incompatible plants is a core concept of IVM. The objective of IVM is to actively manage rights of way for the establishment of compatible vegetation that reduces risk, rather than simply attempting to control or maintain incompatible trees from growing into close proximity with energized conductors. Over time, as incompatible trees are

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<sup>42</sup> See, e.g., Duke Energy Ohio Ex. 5, Direct Testimony of John W. Goodfellow, at 10-11.

<sup>43</sup> Tr. Vol. II at 253-254.

<sup>44</sup> Tr. Vol. II at 255.

<sup>45</sup> Duke Energy Ohio Ex. 2, Direct Testimony of Ron A. Adams, at 4, 5-6.

<sup>46</sup> Duke Energy Ohio Ex. 5, Direct Testimony of John W. Goodfellow, at 6-7; *A300 -American National Standard for Tree Care Operations – Trees, Shrubs, and Other Woody Plant Management – Standard Practices*, American National Standards Institute.

<sup>47</sup> Duke Energy Ohio Ex. 5, Direct Testimony of John W. Goodfellow, at 7; Tr. Vol. I at 167, 169.

selectively removed, low growing, sun loving species begin to dominate the right of way, thereby precluding the future regrowth and establishment of incompatible trees. IVM is efficient in that it results in the establishment of relatively stable plant communities and landscapes that reduce the amount of future work required to maintain and sustain transmission system rights of way.<sup>48</sup> As Duke Energy Ohio witness Ron Adams explained, from a utility vegetation management perspective, “IVM is a much broader preventative approach than just managing clearances. It’s managing an ecosystem to mitigate the risk of an outage.”<sup>49</sup> The Company is using the IVM strategy to “convert [the] right-of-way to a compatible vegetation environment that is conducive for the people, the trees, and the power lines.”<sup>50</sup>

The core values of IVM are safety, reliability and access.<sup>51</sup> Duke Energy Ohio pursues those values through the use of various vegetation management tools such as mechanical, herbicide, and/or manual floor maintenance, tree pruning, and tree felling including the removal of danger and hazard trees along the outside edge of the rights of way. Under the supervision of Ron Adams, a registered professional engineer who serves as the General Manager of Transmission Vegetation Management for the Duke Energy enterprise, the IVM strategy is implemented by qualified, trained arborists who inspect and clear vegetation that poses a threat to Duke Energy Ohio’s power lines.<sup>52</sup>

Complainants mistakenly believe that Duke Energy Ohio plans to remove all vegetation from the transmission rights-of-way and to “clear cut” all trees within the Company’s easements. There is no evidence in the record to support those contentions. Instead, Duke Energy Ohio primarily is doing

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<sup>48</sup> Duke Energy Ohio Ex. 5, Direct Testimony of John W. Goodfellow, at 7-8; Duke Energy Ohio Ex. 2, Direct Testimony of Ron A. Adams, at 6; Duke Energy Ohio Ex. 3, Direct Testimony of Kevin McLoughlin, at 9-11.

<sup>49</sup> Tr. Vol. III at 249.

<sup>50</sup> Tr. Vol. I at 238.

<sup>51</sup> Tr. Vol I. at 199; Tr. Vol. II at 263-264; Tr. Vol. III at 600-601, 604-606.

<sup>52</sup> Duke Energy Ohio Ex. 2, Direct Testimony of Ron A. Adams, at 1, 5-6; Duke Energy Ohio Ex. 3, Direct Testimony of Kevin McLoughlin, at 9.

selective removal of incompatible trees, while also mechanically mowing dense vegetation in more rural areas, and selectively applying herbicides.<sup>53</sup>

Much like other utilities, Duke Energy Ohio has adopted a practice that separates the transmission corridor into zones—the wire zone and border zone—based on the location of transmission conductors. The “wire zone” is directly below and extends some distance beyond the overhead conductors depending on the voltage of that particular transmission line. The border zone is that area beyond the wire zone to the edge of the cleared corridor. In this case, which involves 138 kV lines, the 100-foot right-of-way corridor is broken up into a wire zone which extends 20 feet beyond the outermost conductor, and a border zone comprised of the remaining portion of the right-of-way. Duke Energy Ohio fully explains those areas and related restrictions to the general public in both printed and online materials.<sup>54</sup>

Duke Energy Ohio’s vegetation management plan defines compatible species in the wire zone as those plants (but not trees) that do not reach a mature height in excess of seven feet, and trees and other vegetation whose mature heights do not exceed 15 feet in the border zone. Various engineers and other subject matter experts were involved in the development of Duke Energy Ohio’s transmission vegetation management program and those height restrictions, thereby enabling the Company to ensure the safety and reliability of, and access to, its electric grid.<sup>55</sup> As the Company’s expert witnesses uniformly concurred, those reasonable restrictions adhere to industry best management practices for transmission vegetation management.<sup>56</sup>

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<sup>53</sup> Tr. Vol. I at 232-234; Tr. Vol. II at 412.

<sup>54</sup> Duke Energy Ohio Ex. 5, Direct Testimony of John W. Goodfellow, at 8; Duke Energy Ohio Ex. 2, Direct Testimony of Ron A. Adams, at 14-15; Duke Energy Ohio Ex. 3, Direct Testimony of Kevin McLoughlin, at 9; Tr. Vol. I at 150.

<sup>55</sup> Duke Energy Ohio Ex. 2, Direct Testimony of Ron A. Adams, at 3; Tr. Vol. I at 161; Tr. Vol. II at 300, 386.

<sup>56</sup> Duke Energy Ohio Ex. 5, Direct Testimony of John W. Goodfellow, at 8; Duke Energy Ohio Ex. 2, Direct Testimony of Ron A. Adams, at 14-15; Duke Energy Ohio Ex. 3, Direct Testimony of Kevin McLoughlin, at 9.

Complainants admit their trees are located within the wire zone and border zone in violation of Duke Energy Ohio's policies.<sup>57</sup> Complainants' expert arborist also noted in the various reports attached to his testimony where Complainants have multiple trees located in both the wire zone and border zone.<sup>58</sup> One of the Complainants further admits to having agreed to remove "non-compliant vegetation," including a number of trees that were in violation of the Company's policies.<sup>59</sup> Complainants also admit that, not only is the Company allowed to remove trees under its transmission vegetation management program, but removal may be necessary for safe and reliable service.<sup>60</sup> Notably Complainants' arborist admits that trees must be removed notwithstanding his uninformed testimony that trees can be pruned and maintained at specific heights.<sup>61</sup>

While Complainants focused primarily on whether a particular tree could grow to a certain height, suggesting at times, for example, that Duke Energy Ohio does not need to remove trees only 10 feet in height and within 15-20 feet of a conductor, Complainants ignore the third core principle of IVM, namely access. Incompatible vegetation has become so dense and tall along the transmission lines at issue in this case that both reliability and access to the transmission facilities are affected.<sup>62</sup> It seems almost unnecessary to state the obvious, but the Company must have

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<sup>57</sup> See, e.g., Complainants' Ex. 2, Direct Testimony of Kim Carrier, at 4, Attachment D; Complainants' Ex. 3, Direct Testimony of Karen Dabdoub, at 7, Attachment F; Complainants' Ex. 4, Direct Testimony of Dr. Randall Fick, at 7; Complainants' Ex. 5, Direct Testimony of Joseph Grossi, at 10, Attachment G; Complainants' Ex. 6, Direct Testimony of John Gump, at 4, Attachment B; Complainants' Ex. 9, Direct Testimony of Jonathan Mackey, at 7, Attachment F; Complainants' Ex. 11, Direct Testimony of Mike Preissler, at 7; Complainants' Ex. 12, Direct Testimony of Steve Schmidt, at 4; Complainants' Ex. 13, Direct Testimony of Olga Staios, at 7-8; Complainants' Ex. 14, Direct Testimony of Kim Wiethorn, at 5; Complainants' Ex. 16, Direct Testimony of Fred Vonderhaar, at 6;

<sup>58</sup> See, e.g., Complainants' Ex. 35, Direct Testimony of Tim Back, at 9, Appendix A to Attachments A-I

<sup>59</sup> Complainants' Ex. 6, Direct Testimony of John Gump, at 9-10, Attachment F;

<sup>60</sup> See, e.g., Complainants' Ex. 5, Direct Testimony of Joseph Grossi, at 13; Complainants' Ex. 10, Direct Testimony of Nicole Menkaus, at 6

<sup>61</sup> Complainants' Ex. 35, Direct Testimony of Tim Back, Attachments D and I

<sup>62</sup> Duke Energy Ohio Ex. 2, Direct Testimony of Ron A. Adams, at 7; Tr. Vol. I at 184, 227.

access to its transmission facilities to be able to maintain and repair its equipment, provide safe work zones for its employees and contractors, and maintain the reliability of the electric grid.<sup>63</sup>

#### **7. Reclamation of Corridor through Proper Transmission Vegetation Management, not Distribution Vegetation Maintenance and Pruning**

As Duke Energy Ohio's witnesses explained, the manner in which the Company has implemented industry best practices such as IVM and incorporated such practices into the Company's transmission vegetation program has been dynamic. The presence and dense growth of incompatible vegetation along the transmission lines resulted from the Company's previous practice over many years or decades of accommodating property owner desires and granting them flexibility within and adjacent to the Company's easements over a number of years. That accommodation/flexibility is neither sustainable over time nor an industry best practice.<sup>64</sup>

As Duke Energy Ohio witness Ron Adams testified, the presence of abundant incompatible vegetation within transmission line rights-of-way "didn't get this way overnight" and the Company is "not going to change it overnight."<sup>65</sup> Duke Energy Ohio realized that it would take time—years, in fact—to rectify the transmission vegetation problems that had developed over the prior years or decades.<sup>66</sup> Again, Mr. Adams testified as to this undertaking to reclaim the transmission line corridor: "It took many years for it to get this way. It's going to take several years for us to convert it."<sup>67</sup> The Company also is cognizant of the stress to the community and property owners; however, in the long term, implementing vegetation management best practices through reclamation and IVM was in the best interests of all parties and communities involved, and the

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<sup>63</sup> Duke Energy Ohio Ex. 2, Direct Testimony of Ron A. Adams, at 8; Tr. Vol. I at 184, 199; Tr. Vol. II at 263-264; Tr. Vol. III at 600-601, 604-606.

<sup>64</sup> Duke Energy Ohio Ex. 2, Direct Testimony of Ron A. Adams, at 7.

<sup>65</sup> Tr. Vol. I at 237.

<sup>66</sup> Duke Energy Ohio Ex. 2, Direct Testimony of Ron A. Adams, at 9; Tr. Vol. I at 237.

<sup>67</sup> Tr. Vol. I at 237.

right thing to do.<sup>68</sup> This is especially true here because these lines serve not only the neighborhoods wherein Complainants reside, but a much larger population of customers beyond these neighborhoods.

As evidence of the problematic conditions existing on the transmission lines at issue in this case, when the Company's Vegetation Management Specialists (VMS) recently conducted aerial patrols of the 3881 transmission line, the assessing VMS noted that the tree canopy had grown so tall and thick that visual sight of the 3881 line was lost in particular segments. Those conditions are neither typical nor acceptable for a transmission line and puts the transmission grid at risk.<sup>69</sup> Duke Energy Ohio also surveyed the transmission lines while this case was pending and the vegetation management stay was in effect. The Company identified several hundred incompatible trees that required emergency pruning—which, again, is not best practice along a transmission line—and even had to de-energize the circuits involved twice during spring 2018.<sup>70</sup> Those field surveys and resulting emergency pruning further demonstrate the problems encountered by Duke Energy Ohio when incompatible vegetation is allowed to grow near high-voltage transmission lines contrary to the best management practices surrounding IVM.

Accordingly, the Company initiated the multi-year exercise to align the Ohio transmission vegetation management program with the corporate IVM program strategy and recognized industry best practices. Although it would take several years for the reclamation strategy to be fully implemented and yield results, the long-term strategy was the best way to maintain and protect Duke Energy Ohio's transmission system.<sup>71</sup> Over successive years from 2011 through 2013, the Midwest service territories within the enterprise, including Duke Energy Ohio,

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<sup>68</sup> Duke Energy Ohio Ex. 2, Direct Testimony of Ron A. Adams, at 9.

<sup>69</sup> Duke Energy Ohio Ex. 2, Direct Testimony of Ron A. Adams, at 10.

<sup>70</sup> Tr. Vol. II at 255, 363-364.

<sup>71</sup> Duke Energy Ohio Ex. 2, Direct Testimony of Ron A. Adams, at 8.

introduced IVM, the wire zone/border zone concepts, and a vegetation management program.<sup>72</sup> By 2014 the Company's affiliate in Indiana had started the reclamation process along the 69 kV and 138 kV transmission lines in that state, after which Duke Energy Ohio would start the similar process.<sup>73</sup>

ANSI A300, which both NERC and FERC recognize as being industry best practices, defines rights of way reclamation as "reestablishing IVM on a right of way that is not currently managed to the full extent of its easement or ownership rights and intended purposes. Conditions on a right of way in need of reclaiming include tall, dense amounts of undesirable vegetation, and utility facilities that are inaccessible. Reclamation usually involves non-selective methods of mechanical mowing or clearing, hand-cutting or broadcast application of herbicides". Duke Energy Ohio has reasonably and appropriately decided to adopt this industry best practices along all of its transmission lines and, therefore, initiated reclamation in Ohio in the 2015-2016 time frame.<sup>74</sup>

Duke Energy Ohio witness Ron Adams testified at length regarding the detailed steps taken by the Company to execute the reclamation process along its transmission line in Ohio, including: Pre-Planning Activity, Notification and Planning, Work Performance, Quality Audit, and Restoration.<sup>75</sup> Mr. Adams also stressed and explained the considerable costs for this extensive undertaking—in excess of \$36,000 per mile, approximately 30% of which are dedicated to site restoration on property owned by property owners along the Company's transmission lines. The site restoration costs are particularly instructive, as they demonstrate the Company's ongoing efforts to minimize the effects to Complainants and other property owners by going above and

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<sup>72</sup> Tr. Vol. II at 249, 286, 383, 404, 408; OCC-Complainants' Joint Ex. 1, Attachment JDW-3.

<sup>73</sup> Tr. Vol. II at 286, 288.

<sup>74</sup> Tr. Vol. I at 142, 232, 235; Tr. Vol. II at 248, 320.

<sup>75</sup> Duke Energy Ohio Ex. 2, Direct Testimony of Ron A. Adams, at 25-27.

beyond industry norms in that regard. In other words, Duke Energy Ohio is sensitive to the impact of the change in Company policy and provides additional site restoration to help property owners adapt to that change.<sup>76</sup> Moreover, while the costs to reclaim the transmission corridor will be higher upfront, those costs will decrease over time as IVM is implemented and the Company is better able to manage the ecosystem with low-growing, compatible vegetation.<sup>77</sup>

Prior to the various complaints which gave rise to this proceeding, Duke Energy Ohio successfully completed reclamation on approximately 260 miles of transmission circuit in the southwestern Ohio service area without any problems or complaints.<sup>78</sup> For the transmission lines at issue in this case, the Company completed reclamation work along 21.45 miles with only 5.92 miles of the 3881 transmission line remaining to be completed.<sup>79</sup> This section of the 3881 line serves multiple retail substations that feed multiple distribution circuits, several large industrial facilities, two 33 kV lines feeding the Brecon and Blue Ash substations and one 13.2 kV dedicated feeder serving the Procter & Gamble research center. Were a vegetation-caused outage to occur on this line, more than 20,000 customers would be affected, including industrial facilities and at least one research center.<sup>80</sup> Images of a site before and after the reclamation work done by the Company speak volumes.<sup>81</sup> As reflected in the photographs and explained at the hearing, the reclamation work included removing trees inside and outside the right of way, as authorized by Duke Energy Ohio's transmission vegetation program and the Company's easement rights, and also consistent with utility best practices.<sup>82</sup>

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<sup>76</sup> Duke Energy Ohio Ex. 2, Direct Testimony of Ron A. Adams, at 18-19; Tr. Vol. III at 757.

<sup>77</sup> Tr. Vol. III at 654.

<sup>78</sup> Duke Energy Ohio Ex. 2, Direct Testimony of Ron A. Adams, at 8.

<sup>79</sup> Duke Energy Ohio Ex. 2, Direct Testimony of Ron A. Adams, at 16; Tr. Vol. I at 155.

<sup>80</sup> Duke Energy Ohio Ex. 2, Direct Testimony of Ron A. Adams, at 16.

<sup>81</sup> Duke Energy Ohio Ex. 2, Direct Testimony of Ron A. Adams, at 18-19; Vol. I at 144.

<sup>82</sup> Duke Energy Ohio Ex. 2, Direct Testimony of Ron A. Adams, at 8-9; Tr. Vol. I at 205-206.



Whereas Complainants mistakenly believe that an electric utility should conduct transmission vegetation management on a tree-by-tree or property-by-property basis, their uninformed opinions should not be persuasive. In comparison, Duke Energy Ohio witness John Goodfellow is a recognized expert in vegetation management along transmission lines and literally helped write the rules in that regard.<sup>83</sup> He explained the impracticalities of having Duke Energy Ohio (or other electric utilities, for that matter) trying to manage a transmission line on an individual tree basis. In fact, he is not aware of a single utility company that handles transmission vegetation management in the manner suggested by Complainants.<sup>84</sup> Instead of developing a standard set of specifications that would enable Duke Energy Ohio to manage the transmission line corridor—which is what the Company does—the Complainants’ proposed tree-by-tree basis would require different intervals for maintenance depending on the tree species, thereby creating extra risk to the reliability and security of the transmission line, not to mention the considerable additional costs. The bottom line for Mr. Goodfellow: it is much more effective to conduct transmission vegetation management in the manner proscribed by Duke Energy Ohio’s vegetation management program and IVM.<sup>85</sup>

Duke Energy Ohio witness Ron Adams, who has years of industry experience in this area, elaborated further as to why it is neither reasonable nor efficient to manage transmission vegetation management execution on a tree-by-tree basis, as seemingly proposed by Complainants. On the contrary he testified that, when an electric utility is performing vegetation management on a large, overhead electrical network, the utility must have a standard specification and execute that specification consistently with all property owners.<sup>86</sup> That is the whole purpose of IVM:

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<sup>83</sup> Tr. Vol. III at 674-675, 689

<sup>84</sup> Tr. Vol. III at 739.

<sup>85</sup> Tr. Vol. III at 738-739.

<sup>86</sup> Duke Energy Ohio Ex. 2, Direct Testimony of Ron A. Adams, at 18.

proactively manage the entire ecosystem within the transmission line right-of-way to mitigate the risk of an outage.<sup>87</sup> On the contrary, arborists like Complainants' expert Tim Back are focused only on managing trees and saving trees regardless of whether it is practical or feasible for an electric utility like Duke Energy Ohio to conduct transmission vegetation management in that manner along more than 1,600 miles of transmission lines.<sup>88</sup>

In order to implement the Company's transmission vegetation management program, Duke Energy Ohio's recognized experts testified as to why the Company must remove incompatible vegetation from the rights-of-way and not simply continue pruning or topping trees, as Complainants also would have the Company do. Duke Energy Ohio expert witness John Goodfellow explained that ANSI A300 Part 9 is the standard used by utilities to assess risks to the overhead transmission systems posed by trees, and how that standard considers both the likelihood of a tree initiated event and the consequence of that event.<sup>89</sup> Mr. Goodfellow further testified that trees growing underneath transmission conductors are incompatible with the primary use of the site and inconsistent with the recognized industry best practice of IVM. Based on Duke Energy Ohio's risk assessment, the Company is willing to tolerate risks associated with vegetation (but no trees of any kind) less than 7 feet in the wire zone and trees and other vegetation that will not exceed 15 feet at maturity in the border zone. As Mr. Goodfellow explained, trees in violation of those restrictions represent greater risk than Duke Energy Ohio has determined to be acceptable and also create risk due to uncertainty and their crown forms.<sup>90</sup>

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<sup>87</sup> Tr. Vol. III at 249.

<sup>88</sup> Tr. Vol. III at 379.

<sup>89</sup> Duke Energy Ohio Ex. 5, Direct Testimony of John W. Goodfellow, at 9.

<sup>90</sup> Duke Energy Ohio Ex. 5, Direct Testimony of John W. Goodfellow, at 9-10.

In particular, Duke Energy Ohio witness John Goodfellow testified why ongoing pruning is not appropriate below transmission lines, stating clearly that it “should never be done.”<sup>91</sup> Trees respond to pruning with an exaggerated flush of regrowth, and stem elongation rates can be twice that of normal rates of growth. In addition, the regrowth response can be varied and continue for two growing seasons following height reduction pruning, thereby causing most of the clearance achieved at the time of pruning to be lost quickly. Therefore, one would need to do excessive pruning to trees beneath conductors in order to achieve adequate clearances at the time of pruning, which calls into question the aesthetic and/or biological viability of the trees.<sup>92</sup> Considering that Complainants bitterly objected to the Company trimming trees beyond the bare minimally acceptable clearance of 15 feet from the conductors, it goes without saying that Complainants would not appreciate the amount of pruning necessary to have trees remain below transmission lines. Moreover, the Company’s expert witness further explained that excessive pruning beneath conductors actually creates additional risk of a flashover between a transmission line and trees located beneath conductors and which are “topped”—hence the need to remove all such trees.<sup>93</sup> In fact, Mr. Goodfellow specifically noted that he witnessed evidence of past pruning along the transmission lines which raised concerns for system reliability and public safety.<sup>94</sup>

Duke Energy Ohio expert witness Kevin McLoughlin concurred with and expressed many of those same opinions. As he testified, pruning or trimming trees located within a high-voltage transmission line right-of-way is a temporary solution to a long-term problem. As a result of excessive regrowth caused by pruning, the time periods between necessary prunings shorten, and the overall size of the trees continues to increase. This process exacerbates the future possibility

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<sup>91</sup> Tr. Vol. III at 721.

<sup>92</sup> Duke Energy Ohio Ex. 5, Direct Testimony of John W. Goodfellow, at 10.

<sup>93</sup> Duke Energy Ohio Ex. 5, Direct Testimony of John W. Goodfellow, at 10-11.

<sup>94</sup> Tr. Vol. III at 688.

of a tree contact resulting in a flashover and a line to ground fault. Therefore, Mr. McLoughlin testified that, in accordance with transmission vegetation management best practices, electric utility companies should not manage entire transmission systems through pruning and, instead, should remove all incompatible vegetation.<sup>95</sup> As Mr. McLoughlin clearly testified, electric utilities should not be conducting pruning of any kind along transmission lines.<sup>96</sup>

When compared to the testimony of Duke Energy Ohio's three experts in the field of transmission vegetation management, the single arborist proffered by Complainants was substandard, at best. But for having pruned some trees years ago, Mr. Back has no relevant experience whatsoever—he has no experience with the construction or maintenance of a transmission system; he has never prepared any type of vegetation management program; nor has he prepared related policies, guidelines, etc.<sup>97</sup> As an arborist, Complainants' witness Tim Back simply wanted to find a way for Complainants to keep trees and other vegetation.<sup>98</sup> In order to accomplish that goal, Mr. Back essentially testified to a tree-specific process that no electric utility company follows,<sup>99</sup> or ever would. For one, Mr. Back believes that an electric utility like Duke Energy Ohio could rely on its customers to have necessary vegetation management performed along its transmission lines.<sup>100</sup> While he backtracked a bit later by confirming that property owners should not personally prune trees along the transmission lines,<sup>101</sup> Complainants' arborist ultimately recommends a transmission vegetation program whereby Duke Energy Ohio essentially polices its transmission lines by giving notice to customers and then taking action to remove trees

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<sup>95</sup> Duke Energy Ohio Ex. 3, Direct Testimony of Kevin McLoughlin, at 13.

<sup>96</sup> Tr. Vol. III at 598, 628.

<sup>97</sup> Tr. Vol. I at 427.

<sup>98</sup> Tr. Vol. I at 420.

<sup>99</sup> Tr. Vol. III at 739.

<sup>100</sup> Tr. Vol. III at 435.

<sup>101</sup> Tr. Vol. II at 486.

if customers fail to preserve their trees.<sup>102</sup> Somehow, without any further explanation, Complainants' arborist suggests that Duke Energy Ohio is supposed to follow that implausible plan along more than 1,600 miles of transmission lines. Finally, the less than persuasive, tree-specific suggestions offered by Mr. Back is further demonstrated by his various reports, in which he recommends pruning some trees every 2-3 years, other trees every 3-5 years (even when they are the same species of tree) and other trees without any time specified; removing 10%, 15%, 20%, or 25% of a tree canopy without rhyme or reason; agreeing that some trees must be removed from the wire zone and border zone, but stating that other incompatible trees could stay with limited pruning; suggesting the use of a growth regulator<sup>103</sup> on some, but not all, trees, again with no verifiable explanation;<sup>104</sup> and concluding that property owners essentially should be allowed to keep their trees regardless of industry best practices, regulatory requirements and Duke Energy Ohio's rights under its Commission-approved transmission vegetation management program and easements. Mr. Back's testimony has little, if any, value, and the Commission should treat it accordingly, especially when compared to the Company's learned experts.

Complainants also have a flawed understanding of the term "clear cutting" and constantly refer to the proverbial "eight-lane highway" when, in reality, removing incompatible trees during reclamation is an appropriate undertaking to effectuate the industry best practice of IVM. Duke Energy Ohio expert Kevin McLoughlin testified to the need for electric utilities to remove copious numbers of incompatible trees and tree stems in high density arrangements to address the previously ineffective transmission vegetation management actions. As he testified, removing all

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<sup>102</sup> Tr. Vol. II at 488.

<sup>103</sup> Notably, despite the fact that Complainants complain about Duke Energy Ohio's selective application of herbicides during IVM, Complainants' expert advocates the indiscriminate use of growth regulators like Cambistat (a type of herbicide) via "soil drenching." Tr. Vol. II at 440-442; Tr. Vol. I at 232-234.

<sup>104</sup> Tr. Vol II at 446, 453, 456, 458, 460-461, 466-467, 471; Complainants' Ex. 35, Direct Testimony of Tim Back, Appendix A to Attachments A-I

incompatible trees at once in a total reclamation effort is both necessary and appropriate, regardless of whether Complainants cast aspersions by referring to “clear cutting.” When sections of rights-of-way occupied by high-density trees leave little room for desirable species to be preserved, the compatible understory vegetation is often sparse due to shading. Hence the complete removal of all incompatible vegetation may appear to leave a “clear cut” condition which, in the long run, will allow for the growth of numerous species composed of both desirable low growing plants as well as undesirable tall growing tree seedlings, the latter of which can be addressed through selective follow up IVM treatments.<sup>105</sup> Thereafter, additional IVM treatments performed cyclically over the intervening years will serve to enhance the extent of cover of the compatible, lower growing plant communities while continuously eliminating the threat posed by tall growing incompatible vegetation.<sup>106</sup>

The reclamation work being done by Duke Energy Ohio along the transmission lines helps transition the Company from, as previously noted, the past practice of performing vegetation *maintenance* to the plan moving forward of performing vegetation *management*. As Duke Energy Ohio’s experts readily confirmed, the process to reclaim the transmission corridors and implement IVM under the Company’s transmission vegetation management program is consistent with industry standards, best management practices and contemporary vegetation management programs in the utility industry.<sup>107</sup>

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<sup>105</sup> Tr. Vol. III at 616.

<sup>106</sup> Duke Energy Ohio Ex. 3, Direct Testimony of Kevin McLoughlin, at 13-14.

<sup>107</sup> Duke Energy Ohio Ex. 5, Direct Testimony of John W. Goodfellow, at 2; Duke Energy Ohio Ex. 3, Direct Testimony of Kevin McLoughlin, at 21; Duke Energy Ohio Ex. 2, Direct Testimony of Ron A. Adams, at 27.

**8. The Company's transmission vegetation management program is consistent with other electric utilities in Ohio.**

If the Commission were to find in favor of Complainants in this complaint proceeding, not only would that decision ignore prior precedent, but it would open the floodgates to complaint cases against other utility companies in Ohio that have similar transmission vegetation management programs. Duke Energy Ohio's transmission vegetation management program, as approved by the Commission, is consistent with programs adopted and filed by other electric utilities in Ohio. For example, FirstEnergy also operates under a wire zone and border zone areas within its transmission corridors, with two key differences: (1) the height limit in the wire zone is only 5 feet, compared to 7 feet for Duke Energy Ohio; and (2) if FirstEnergy's right-of-way is less than 100 feet, it does not offer a border zone.<sup>108</sup> Transmission vegetation management plans for both AEP and DPL provide for the removal of trees within its rights-of-way, just like the Company's program.<sup>109</sup>

Here, Duke Energy Ohio's transmission vegetation management program has been automatically approved pursuant to the Commission's rules. The Company is implementing that program by reclaiming its transmission corridor and following IVM. In doing so, Duke Energy Ohio's engineers, foresters and other experts conducted a risk analysis and determined the appropriate types and heights of vegetation that are appropriate within the wire zone and border zone areas of its transmission rights-of-way.<sup>110</sup> Complainants' suggestion that Duke Energy Ohio's transmission vegetation management program is unjust or unreasonable is not supported

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<sup>108</sup> Tr. Vol I at 164.

<sup>109</sup> Tr. Vol I at 173-175; Complainants' Ex. 20, Ohio Power Company's Commission Requested Revised Vegetation Management Program, Case No. 12-3320-EL-ESS; Complainants' Ex. 21, Application of the Dayton Power and Light Company to Amend its Transmission and Distribution Inspection, Maintenance, Repair and Replacement Programs, Case No. 14-1771-EL-ESS.

<sup>110</sup> Tr. Vol. I at 158-159, 161

by any actual evidence in the record and, in fact, is contradicted by comparable programs adopted by other electric utilities in Ohio. That conclusion is also directly rebutted by the testimony of experts, all of whom confirmed, without equivocation, that Duke Energy Ohio's transmission vegetation program is consistent with industry standards, best management practices, and contemporary vegetation management programs in the utility industry<sup>111</sup> Those experts further confirmed that the Company's use of the wire zone and border zone areas within the transmission right-of-way is central to IVM—recognized by NERC and FERC as an industry best management practice—and promote IVM's core principles of safety, reliability and access for the transmission system. As both the Commission and Ohio Supreme Court have recognized in prior cases, “continuous pruning and trimming [is] not a viable option” along high-voltage transmission lines.<sup>112</sup> The Commission should follow those precedents and deny Complainants' complaints against Duke Energy Ohio.

**9. The Company's history of good stewardship is enhanced by the environmental benefits of implementing IVM along its transmission lines.**

In addition to the benefits associated with IVM that relate directly to the core principles of safety, reliability and access, there is also a critical environmental benefit of the Company's implementation of IVM within its transmission rights-of-way. Duke Energy Ohio witness Scott Fletcher testified how the corporate Natural Resources group supports the Transmission Vegetation Management Department regarding environmental compliance, assessment, and conservation stewardship.<sup>113</sup> As Manager/Principal Environmental Specialist, Mr. Fletcher

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<sup>111</sup> Duke Energy Ohio Ex. 5, Direct Testimony of John W. Goodfellow, at 2, 9, 11-12; Duke Energy Ohio Ex. 3, Direct Testimony of Kevin McLoughlin, at 1.

<sup>112</sup> See, *Wimmer v. PUC*, 2012-Ohio-757, ¶9, 131 Ohio St. 3d 283, 285; *In the Matter of the Complaint of Leo and Cindy Jeffers et al. v. Toledo Edison Company*, Case No. 10-430-EL-CSS, 2013 Ohio PUC LEXIS 13 (finding that trimming is not a viable option); *Corrigan, supra*, at ¶¶13-14

<sup>113</sup> Duke Energy Ohio Ex. 1, Direct Testimony of Scott T. Fletcher, at 2.



explained how he frequently interacts and communicates with vegetation management specialists in the field, as well as with governmental agencies, and personally oversees how the Company complies with environmental regulations when conducting transmission vegetation management.<sup>114</sup> He also testified how, across the entire enterprise, Duke Energy takes great care to ensure that rights of way maintenance activities do not adversely impact the environment but, instead, protect the environment and enhance natural conditions consistent with best practices.<sup>115</sup> In particular, Mr. Fletcher testified to guidelines established by the Company in order to protect the environment, as well as steps taken by the Company to adhere to those guidelines.<sup>116</sup> Finally, Mr. Fletcher testified how the IVM strategy promotes environmental stewardship along the Company's transmission lines. As he noted, Duke Energy is a Gold Sponsor of the Utility Arborist Association, a national organization whose members are committed to promoting compatible vegetation within the power line rights-of-way for the purpose of ensuring safe and reliable distribution of electricity to the public. Consistent with the testimony from Duke Energy Ohio's other experts, Mr. Fletcher explained how IVM helps to create a biodiverse ecosystem within the transmission right-of-way, essentially turning that corridor into a "green space" filled with various low-growing plants, grasses, flowers and shrubs, in addition to animals and insects. These benefits to the environment and local communities are self-evident.<sup>117</sup>

#### **IV. CONCLUSION**

Setting aside Complainants' improper attempts to use this complainant proceeding to review Duke Energy Ohio's transmission vegetation management program, which was approved by Rule, there is only one issue before the Commission in this case: have Complainants sustained their burden

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<sup>114</sup> Tr. Vol I at 117, 121-122.

<sup>115</sup> Duke Energy Ohio Ex. 1, Direct Testimony of Scott T. Fletcher, at 3; Tr. Vol. I at 119, 122-123.

<sup>116</sup> Duke Energy Ohio Ex. 1, Direct Testimony of Scott T. Fletcher, at 3-5.

<sup>108</sup> Duke Energy Ohio Ex. 1, Direct Testimony of Scott T. Fletcher, at 7.

of proving that the Company's transmission vegetation management program is "unjust and unreasonable" in violation of O.R.C. 4905.22, as alleged in Count IV of their Second Amended Complaint? The evidentiary record does not support an affirmative answer to that question. In contrast to Complainants' testimony about their trees and their arborist's uninformed ideas about how certain trees might be pruned or treated with growth regulators, Duke Energy Ohio put forth three experts who have decades of experience in transmission vegetation management issues, served on NERC committees, work daily with ANSI A300 standards for vegetation management and tree risk assessment, and help develop industry best practices in these areas. Based on their experienced and well-informed testimony, it is clear that the Company's transmission vegetation management program, including the implementation of the IVM strategy within the transmission corridor, is fair, reasonable, and consistent with industry best practices. Therefore, the Commission must find in favor of Duke Energy Ohio and deny Complainants' Second Amended Complaint in its entirety.

Respectfully submitted,

/s/ Elizabeth H. Watts

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Rocco O. D'Ascenzo (0077651)  
Deputy General Counsel  
Elizabeth H. Watts (0031092)  
Associate General Counsel  
Duke Energy Business Services, Inc.  
139 Fourth Street, 1303-Main  
P. O. Box 960  
Cincinnati, Ohio 45202-0960  
(513) 287-4359 (telephone)  
(513) 287-4385 (facsimile)  
Rocco.D'Ascenzo@duke-energy.com  
Elizabeth.Watts@duke-energy.com

Robert A. McMahon (0064319)  
Eberly McMahon Copetas LLC  
2321 Kemper Lane, Suite 100  
Cincinnati, Ohio 45206  
(513) 533-3441 (telephone)  
(513) 533-3554 (facsimile)  
bmcmahon@emclawyers.com

Attorneys for Respondent Duke Energy Ohio, Inc.

### **CERTIFICATE OF SERVICE**

I hereby certify that a copy of the foregoing was served on the following counsel of record by electronic service on this 17<sup>th</sup> day of December, 2018:

Kimberly W. Bojko, Esq.  
Stephen E. Dutton, Esq.  
Brian W. Dressel, Esq.  
Carpenter Lipps & Leland LLP  
280 Plaza, Suite 1300  
280 North High Street  
Columbus, OH 43215  
[bojko@carpenterlipps.com](mailto:bojko@carpenterlipps.com)  
[Dutton@carpenterlipps.com](mailto:Dutton@carpenterlipps.com)  
[dressel@carpenterlipps.com](mailto:dressel@carpenterlipps.com)  
**Counsel for Complainants**

Terry L. Etter, Esq.  
Assistant Consumers' Counsel  
Office of the Ohio Consumers' Counsel  
65 East State Street, 7<sup>th</sup> Floor  
Columbus, Ohio 43215-4313  
[terry.etter@occ.ohio.gov](mailto:terry.etter@occ.ohio.gov)  
**Counsel for Office of the Ohio Consumers'  
Counsel**

/s/ Elizabeth H. Watts

**This foregoing document was electronically filed with the Public Utilities**

**Commission of Ohio Docketing Information System on**

**12/17/2018 4:20:28 PM**

**in**

**Case No(s). 17-2344-EL-CSS**

Summary: Brief POST-HEARING BRIEF OF DUKE ENERGY OHIO, INC. electronically filed by Mr. Robert A. McMahon on behalf of Duke Energy Ohio, Inc.