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Eliminate Stray Voltage Program (Agriculture, Trade and Consumer Protection and Public Service Commission)

[LFB 2017-19 Budget Summary: Page 63, #3 and Page 378, #4]

CURRENT LAW

The Department of Agriculture, Trade and Consumer Protection (DATCP) and the Public Service Commission (PSC) jointly investigate the causes of stray voltage on individual farms, recommend to farmers solutions to stray voltage problems, and evaluate the effectiveness of on-site technical assistance. The programs of each agency are primarily funded by assessments on certain electric utilities and electric cooperatives.

DATCP operates its stray voltage program, known as rural electric power services (REPS), as part of the Wisconsin Farm Center. Farm Center services include technical assistance related to production, processing and marketing, as well as financial consultations, farm succession planning, and minority outreach.

GOVERNOR

Under DATCP, delete $547,400 PR in 2017-18 and $548,300 PR in 2018-19 and 5.0 positions associated with DATCP implementation of the stray voltage program. Repeal requirements for DATCP to develop and distribute educational materials on stray voltage in cooperation with University of Wisconsin-Extension and the Technical College System Board. Repeal two DATCP annual appropriations, including one supported by DATCP fees on rural electric cooperatives, and another supported by PSC fees on large public utilities and farms receiving assistance under the program. Under the PSC, repeal provisions authorizing the stray voltage program, effective upon enactment of the bill. Delete 1.0 position and decrease funding by $305,100 PR annually. Repeal authority of DATCP and the PSC to charge assessments or fees for stray voltage activities.

DISCUSSION POINTS

1. The U.S. Department of Agriculture (USDA) defines stray voltage as a "small voltage (less than 10 volts) measured between two points that can be simultaneously contacted by an animal." The animal's contact completes a circuit resulting in a current flow. A 2006 report by the PSC explains why stray voltage occurs.

> Electrical systems - including farm systems and utility distribution systems - must be grounded to the earth by code to ensure continuous safety and reliability. Inevitably, some current flows through the earth at each point where the electrical system is grounded and a small voltage develops. The voltage is called neutral-to-earth voltage (NEV). When a portion of this NEV is measured between two objects that may be simultaneously contacted by an animal, it is frequently called stray voltage.

2. At certain levels, electrical current can adversely affect the health of dairy herds and reduce milk production. When farmers suspect that stray voltage is a contributing factor, they can request that their electric service provider test for the presence of stray voltage. Farmers dissatisfied with their provider's findings may request the PSC to review those results. For instances in which dairy herds exhibit signs of adverse health, but no stray voltage is found, farmers may request that DATCP's veterinarians assess their herd's health to determine the source of the health issues. The following sections of this paper separately examine the stray voltage functions performed by the PSC and DATCP.

Public Service Commission

3. Stray voltage is common on Wisconsin farms and is generally not a source of concern because it exists at such low levels. When dairy livestock exhibit signs of agitation or illness, or experience reduced milk production, stray voltage may be a contributing factor. However, there is disagreement on what level of voltage causes livestock distress. A 1991 USDA handbook entitled Effects of Electrical Voltage/Current on Farm Animals summarized the research. It defines various thresholds in terms of milliamperes (mA, one one-thousandth of an ampere, or "amp"), which is a measure of electrical current:

- at 2.0 mA, the average dairy cow will perceive the presence of electricity, although that threshold could be as low as 1.0 mA for sensitive cows and as high as 3.0 mA for other cows;

- from 3.0 to 6.0 mA, cows will exhibit a response to the presence of electricity; and

- above 6.0 mA, cows may exhibit a "severe" behavioral response to the presence of electricity and the loss of milk production may result from increases in stress hormone levels.

4. In 1987, the PSC opened a docket to evaluate stray voltage research. That docket resulted in a 1989 PSC order that has been amended on several occasions, including 1996. The 1996 PSC order establishes 2.0 mA as the "level of concern" at which the electric provider and farmer are expected to take action. The Commission reasoned:

> Because dairying is such a core industry for Wisconsin, reasonable regulation should set a standard for stray voltage at a conservative, preventive level. Prudence demands that the level of concern be set below the point where moderate avoidance behavior is likely to occur. The USDA Handbook does not recommend monitoring stray voltage below 2.0 mA. However, in recognition of the importance of dairying to Wisconsin, the Commission finds that a total stray voltage level of 2.0 mA is a conservative level of concern and is reasonable in this state.

5. The PSC order also establishes the concept of "equal responsibility," where the responsibility for addressing levels of stray voltage exceeding 2.0 mA is shared by the farmer and electric provider. In such instances, the provider is required to apply mitigation measures and is responsible for keeping its contribution of stray voltage to 1.0 mA or less. The farmer is expected to take similar action, but because the PSC does not regulate farms or farm wiring, it is the responsibility of the farmer to take that action at his or her initiative.

6. The PSC's standard for level of concern and concept of equal responsibility is not enforceable if the statutory authorization for the PSC's stray voltage program is repealed. Electric providers could set their own standards and rules, which would be subject to judicial review.

7. Initially, all stray voltage complaints were investigated by PSC staff. With assistance from DATCP and UW-Madison, the PSC developed a system in the late 1990's for training utility staff to perform stray voltage investigations. Currently, these training programs are offered annually, lasting three days, and electric providers now perform investigations for their customers. The PSC conducts unannounced spot checks of investigations, reviews disputed investigations at the request of the farmer or electric provider, reviews the data collected from investigations, and assigns responsibility for mitigating stray voltage levels exceeding 2.0 mA. If the statutory authorization for the PSC's stray voltage program were repealed, there would be no state-sponsored training, standardized screening and diagnostic measurement tests, or administrative procedure for resolving farmer-electric provider disputes.

8. The PSC indicates that the number of stray voltage investigations averages about 420 each year – 100 from each of the four largest investor-owned utilities and 20 from all of the electric cooperatives. On average, PSC staff monitor over 125 investigations each year, either at the request of the farmer or the electric provider. For instances in which the farmer is unsatisfied with the electric provider's stray voltage response, the farmer can seek judicial review. There are currently three stray voltage cases awaiting judicial decisions.

9. PSC stray voltage staff also oversee the farmstead rewiring programs provided through the state's utilities and the farmstead rewiring education program, which provides electricians special training on rewiring agricultural facilities. Stray voltage staff are also involved in siting and regulatory issues related to electric transmission lines. The 1.0 PSC position the bill would delete is currently filled.

10. If the Committee wishes to retain the PSC's stray voltage program, Alternative A2 would delete the Governor's proposal as it applies to PSC.

Department of Agriculture, Trade and Consumer Protection

11. DATCP's REPS program started in 1987 with a volunteer veterinarian to help evaluate stray voltage issues on farms as part of the PSC program. Due to limitations of using veterinary diagnostic testing alone to identify stray voltage, DATCP began the Dairy Herd-Based Diagnostic program (DHBD). Under the program, veterinarians address herd performance issues that remain unresolved if testing eliminates stray voltage as a possible cause, as is now commonly the case. DHBD activities are part of the greater REPS program, funded by PSC assessments on utilities and DATCP fees on rural electric cooperatives, and are typically conducted by 2.0 veterinarians.

12. DATCP reports financially distressed farms may seek out stray voltage-related assistance in attempt to improve herd performance. Data from 2007-2012 shows that an average of 19% of farms annually that requested assistance had gone out of business by the end of 2013, compared to an average of 4% annually for Wisconsin dairy farms over the same time period. DATCP notes that the diagnostic assistance it provides to resolve herd health and production problems involves complex issues, and that many farmers who contact REPS would be otherwise unable to afford such assistance. It could be argued that assistance provided by the DHBD program helps to improve herd performance at struggling farms and limit the attrition of Wisconsin's dairy farms.

13. DHBD places a priority on involving local veterinarians in service calls. Further, DATCP provides financial support to assist with local veterinary diagnostics. It pays lab fees related to testing of samples and, where financial constraints exist, pays fees for sample collection by local veterinarians, who may collect samples instead of DATCP staff. Therefore, the DHBD program could be seen as building capacity for local veterinarians to handle herd-diagnostic issues. It also could be seen as making veterinary support available in areas where a shortage exists. Through a current grant program, the USDA has identified several areas across 16 Wisconsin counties experiencing shortages of large-animal veterinarians.

14. With assistance from REPS, the Minnesota Public Utilities Commission conducted a survey of Minnesota and Wisconsin farmers to examine farmers' knowledge of stray voltage. Data collected from the survey demonstrates that farmers perceive certain symptoms and behaviors as caused by stray voltage, despite research establishing they are not. Also, between 2008 and 2013, 17% of farmers requesting DATCP veterinary assistance cited stray voltage as a concern, while only 4% of farms tested during the time period had stray voltage issues. As a result, when farmers interpret behaviors or symptoms as caused by stray voltage that are not, they may be reluctant to accept PSC or utility findings that there are not stray voltage issues at their farm. Once stray voltage is ruled out, DATCP veterinarians are often able diagnose other causes for herd performance issues and address the farmers' concerns. Utilities report that veterinarians are able to mediate between utilities and farmers to clear up the misunderstanding between causes of herd issues and stray voltage. The result, utilities argue, is the prevention of lawsuits or other disputes. Utilities have expressed that current assessments by PSC and DATCP are low-cost alternatives that prevent litigation.

15. Stray voltage findings have decreased substantially over time. PSC data indicates typically no more than 6% of farms in any year since 2000 have tested positive for contact voltage

exceeding the Commission's level of concern. Further, DATCP reports that in 2016, no cases involving DATCP staff resulted in a finding of stray voltage. Despite this, veterinarian caseload has typically numbered 20-30 cases annually since 2000. DATCP estimates 80% of requests for assistance under the DHBD program do not cite stray voltage as a potential problem. DATCP suggests stray voltage cases have decreased substantially as the number of dairy farms in the state has fallen from 17,000 in 2000 to less than 10,000 today, and because many farms have had their electric wiring updated under utility farm rewiring programs. DATCP reports farm rewiring programs have spent $85 million and helped rewire over 7,000 dairy farms.

16. It should be noted DATCP administers the Grow Wisconsin Dairy Producer (Dairy 30x20) grant program under s. 93.40 of the statutes and administrative code Chapter ATCP 161. The grant program, while inactive in 2016-17 as the Department considered changes to its structure, typically provides grants to assist dairy farmers in improving business-related practices on farms, such as farm profitability or production efficiency. The grant program is appropriated general purposes revenues (GPR) of $200,000 annually in 2015-17 and is budgeted the same amount in 2017-19 under the Governor's bill. Although grants are intended primarily to address efficiency in business practices, and DHBD evaluations assess biological impairments to herd production, it is possible certain farms currently assisted through the DHBD program could be eligible for assistance through the Grow Wisconsin Producer program.

17. The positions proposed to be deleted under DATCP include: (a) 2.0 veterinarians, (b) 1.0 office operations associate; (c) 1.0 agricultural program specialist; (d) 0.8 research analyst; (e) 0.1 administrative manager; and (f) 0.1 budget and policy supervisor. The 2.0 veterinarians provide dairy herd diagnostics, which include farm visits, data and sample collection, consulting with local veterinarians, and educating farmers to resolve herd health and production problems. The 1.0 office operations associate provides administrative support to the program's veterinarians, which includes processing DHBD applications, managing supplies, processing invoices, and sending reports to clients. The 1.0 agricultural program specialist is a general contact for questions about the DHBD program, and provides financial analysis to farmers, communication with PSC and utility staff, and attends industry training events for networking and educational purposes. The 0.8 research analyst researches issues related to stray voltage and provides education to staff and stakeholders related to its findings. Finally, the 0.1 administrative manager and 0.1 budget and policy supervisor provide oversight, supervision, and administrative support to the program. DATCP reports the office associate, agricultural program specialist, and research analyst are vacant and that activities related to these 2.8 vacant positions have been absorbed by other Farm Center staff.

18. Considering the reduction in stray voltage issues and increased dedication of DHBD staff to non-stray voltage assistance, DATCP argues it is no longer appropriate to charge utilities for veterinary assistance not related to electric wiring issues. DATCP also notes it does not have an alternative funding source for the program, which is why it was included in the Department's 2017 Act 201 2017-19 budget submission. The Committee could consider adopting the Governor's recommendation [Alternative B1].

19. In the event the Governor's proposal is adopted, DATCP reports it intends for current Farm Center employees to continue to provide referrals to PSC or utilities, act as a mediator where

necessary, and work with farmers' veterinarians, in place of positions deleted under this proposal. It should be noted that veterinary assistance activities would not be replaced by current Farm Center staff, and the DHBD program would be eliminated. The Committee could consider deleting 2.8 vacant positions, but restoring veterinary and other positions [Alternative B2]. If the Committee wished to retain other research, outreach, and communications staff currently associated with REPS, the Committee could consider restoring 5.0 positions [Alternative B3].

ALTERNATIVES

A. Public Service Commission

1. Approve the Governor's proposal to repeal the PSC stray voltage program, effective upon enactment of the bill. Under the PSC, delete 1.00 position and decrease funding by $305,100 PR annually. Repeal authority for DATCP and the PSC to charge assessments or fees for stray voltage activities.

ALT A1	Change to Base		Change to Bill	
	Funding	Positions	Funding	Positions
PR	- $610,200	- 1.00	$0	0.00

2. Delete the Governor's proposal to repeal the PSC stray voltage program.

ALT A2	Change to Base		Change to Bill	
	Funding	Positions	Funding	Positions
PR	$0	0.00	$610,200	1.00

B. Department of Agriculture, Trade and Consumer Protection

1. Approve the Governor's proposal to repeal the DATCP stray voltage program. Delete $547,400 PR in 2017-18 and $548,300 PR in 2018-19 and 5.0 positions. Repeal authority for DATCP and the PSC to charge assessments or fees for stray voltage activities.

ALT B1	Change to Base		Change to Bill	
	Funding	Positions	Funding	Positions
PR	- $1,095,700	- 5.00	$0	0.00

2. Restore 2.0 veterinarians, 0.2 in administrative staff, and funding of $367,400 PR in 2017-18 and $368,300 PR in 2018-19 in DATCP. Restore DATCP statutory authorities for the program. (This alternative would delete 2.8 vacant positions and associated funding, and would continue to fund DATCP positions from PSC assessments on utilities and rural electric cooperatives.)

ALT B2	Change to Base		Change to Bill	
	Funding	Positions	Funding	Positions
PR	- $360,000	- 2.80	$735,700	2.20

3. Delete provision. (This would restore 5.0 PR positions and funding of $547,400 in 2017-18 and $548,300 in 2018-19 in DATCP, as well as statutory authority for DATCP stray voltage fees and programing.)

ALT B3	Change to Base		Change to Bill	
	Funding	Positions	Funding	Positions
PR	$0	0.00	$1,095,700	5.00

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