


**BEFORE
THE PUBLIC UTILITIES COMMISSION OF OHIO**

In the matter of the Annual Report of the)
Electric Service and Safety Standards,) Case No: 19 - 1000-EL-ESS
Pursuant to Rule 4901:1-10-26(B) of the Ohio)
Administrative Code)

ANNUAL REPORT OF
Dayton Power & Light
submitted for the year 2018 .

I certify that the following report accurately and completely reflects the annual report requirements pursuant to Rule 4901:1-10-26 of the Ohio Administrative Code.


Signature

Bobby J. Bentley
Printed Name

Surv. US Wh. Line Operations
Title

4/1/19
Date

**Dayton Power & Light
Rule 26 Report for 2018**

**1. 4901:1-10-26(B)(1), (B)(1)(b), (B)(1)(c) Future investment plan for facilities and equipment, covering period of
no less than three years**

Identification of project, program, or plan	Transmission or Distribution	Project description and goals	Portion of service territory affected	Characteristics of territory affected	Estimated cost	Initiation Date	Planned Completion Date
CAP-015	Distribution	Capacitor Program - install new capacitors and controls to optimize reactive supply on circuits	Various	Various	\$200,000	1/1/2022	12/31/2022
CRP-015	Distribution	Cable Replacement Program - replace or inject deteriorating bare neutral primary cable	Various	Various	\$3,250,000	1/1/2022	12/31/2022
ORP-015	Distribution	Overhead Reliability Program - complete repairs, upgrades or other reliability improvements to least-reliable circuits	Various	Various	\$750,000	1/1/2022	12/31/2022
PRC-011	Distribution	Planned replacement of cutouts	Various	Various	\$1,000,000	1/1/2022	12/31/2022
PRP-015	Distribution	Distribution Pole Inspection and Replacement Program - inspect distribution poles and repair/replace poles as necessary	Various	Various	\$5,000,000	1/1/2022	12/31/2022
RAP-015	Distribution	Reliability Action Plan - complete repairs, upgrades or other reliability improvements to least-reliable branch-lines	Various	Various	\$500,000	1/1/2022	12/31/2022

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1. 4901:1-10-26(B)(1), (B)(1)(b), (B)(1)(c) Future investment plan for facilities and equipment, covering period of no less than three years

Identification of project, program, or plan	Transmission or Distribution	Project description and goals	Portion of service territory affected	Characteristics of territory affected	Estimated cost	Initiation Date	Planned Completion Date
TP-015	Transmission	Transmission Pole Inspection - inspect transmission poles and repair or replace as necessary	Various	Various	\$910,000	1/1/2022	12/31/2022
TRU-014	Transmission	Transmission Relay Upgrade - replacing/upgrading transmission relays	Various	Various	\$1,000,000	1/1/2022	12/31/2022
RTP-01	Transmission	Expansion of West Milton Substation for capacity needs and system resiliency	Various	Various	\$12,000,000	1/1/2019	12/31/2021
RTP-02	Transmission	Build new substation in Marysville to support load growth	Various	Rural	\$14,000,000	1/1/2019	12/31/2021

Notes: DP&L budgets annually for this ongoing program

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1a. 4901:1-10-26(B)(1), (B)(1)(a) Relevant characteristics of the service territory

Transmission or Distribution	Overhead Miles	Underground Miles	Notable Characteristics
Transmission	1,717	8	System reliability performance is a good indicator of the physical condition of the system and industry standard measures show that system performance is consistently reliable.
Distribution	10,451	3,735	A review of Dayton Power & Light's historical reliability performance clearly shows the distribution system to be in excellent condition.

Notes: DP&L's transmission has the capacity to meet projected loading. System Operating monitors the condition of the transmission system on a daily basis. Any findings that may impact safety or reliability are immediately addressed.

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1b. 4901:1-10-26(B)(1) Future investment plan for facilities and equipment

Transmission or Distribution	2018 Planned Costs	2018 Actual Costs	2019 Planned Costs	2020 Projected Costs	2021 Projected Costs	2022 Projected Costs
Transmission	\$3,550,000	\$4,529,000	\$1,550,000	\$1,750,000	\$27,750,000	\$1,750,000
Distribution	\$10,400,000	\$14,235,000	\$11,175,000	\$10,800,000	\$10,550,000	\$10,200,000

Notes: Transmission reliability projects less than 3 years are not included.
Distribution reliability projects less than 3 years are not included.

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2. 4901:1-10-26(B)(1)(d), (B)(1)(f) Complaints from other entities

Entity making complaint	Date complaint received	Nature of complaint	Action taken to address complaint	Resolved (yes/no)	Date complaint resolved	If not resolved, why?
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Notes: No Complaints

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3a. 4901:1-10-26(B)(1)(e), (B)(1)(f) Electric Reliability Organization standards violations

Standard number	Standard name	Date of violation	Risk factor	Severity factor	Penalty dollars	Violation description	Resolved (yes/no)	Date resolved	If not resolved, why?
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Notes: No Violations

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3b. 4901:1-10-26(B)(1)(e), (B)(1)(f) Regional Transmission Organization (RTO) violations

Name of RTO violation	Violation description	Resolved (yes/no)	Date resolved	If not resolved, why?
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Notes: No Violations

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3c. 4901:1-10-26(B)(1)(e) Transmission Load Relief (TLR) events

Event Start	Event End	Highest TLR	Firm load	Amount of	Description of event
		during event	interrupted	load (MW) interrupted	

Notes: No TLR

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3d. 4901:1-10-26(B)(1)(e) Top ten congestion facilities by hours of congestion

Rank	Description of facility causing congestion
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Notes: No facilities experienced congestion

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3e. 4901:1-10-26(B)(1)(e) Annual System Improvement Plan and Regional Transmission Operator Expansion Plan

Relationship between annual system improvement plan and RTO transmission expansion plan

Our annual system improvement plan includes the regional transmission operator's transmission project plan. The RTO driven project is the West Milton-Eldean transmission line which is in the permitting process at the Ohio Power Siting Board.

Notes:

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4. 4901:1-10-26(B)(2) Report of implementation plans from previous reporting periods

Identification of project, program, or plan	Transmission or Distribution	Planned Completion Date	Actual Completion Date	Identification of deviation from previous plan	Reason for deviation from previous plan
CAP-011	Distribution	12/31/2018	12/31/2018		
CAP-012	Distribution	12/31/2019			
CAP-013	Distribution	12/31/2020			
CRP-011	Distribution	12/31/2018	12/31/2018		
CRP-012	Distribution	12/31/2019			
CRP-013	Distribution	12/31/2020			
ORP-011	Distribution	12/31/2018	12/31/2018		
ORP-012	Distribution	12/31/2019			
ORP-013	Distribution	12/31/2020			
PRC-008	Distribution	12/31/2018	12/31/2018		
PRC-008	Distribution	12/31/2019			
PRC-009	Distribution	12/31/2020			
PRP-011	Distribution	12/31/2018	12/31/2018		
PRP-012	Distribution	12/31/2019			
PRP-013	Distribution	12/31/2020			
RAP-011	Distribution	12/31/2018	12/31/2018		
RAP-012	Distribution	12/31/2019			
RAP-013	Distribution	12/31/2020			
RTU-011	Distribution	12/31/2018	12/31/2018		

Report date: 4/1/2019

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4. 4901:1-10-26(B)(2) Report of implementation plans from previous reporting periods

Identification of project, program, or plan	Transmission or Distribution	Planned Completion Date	Actual Completion Date	Identification of deviation from previous plan	Reason for deviation from previous plan
RTU-012	Distribution	12/31/2019			
RTU-013	Distribution	12/31/2020			
TCW-003	Transmission	12/31/2018	12/31/2017		Project completed in 2017
TPI-011	Transmission	12/31/2018	12/31/2018	Increased dollars	Changed scope of project
TPI-012	Transmission	12/31/2019		Increased dollars	Changed scope of project
TPI-013	Transmission	12/31/2020		Increased dollars	Changed scope of project
TRU-010	Transmission	12/31/2018	12/31/2018		
TRU-011	Transmission	12/31/2019			
TRU-012	Transmission	12/31/2020			
CAP-014	Distribution	12/31/2021			
CRP-014	Distribution	12/31/2021			
ORP-014	Distribution	12/31/2021			
PRC-010	Distribution	12/31/2021			
PRP-014	Distribution	12/31/2021			
RAP-014	Distribution	12/31/2021			
TPI-014	Transmission	12/31/2021		Increased dollars	Project scope increased
TRU-013	Transmission	12/31/2021			
RTU-014	Distribution	12/31/2021		Dollars reduced	Project on an as needed basis

Report date: 4/1/2019

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4. 4901:1-10-26(B)(2) Report of implementation plans from previous reporting periods

Identification of project, program, or plan	Transmission or Distribution	Planned Completion Date	Actual Completion Date	Identification of deviation from previous plan	Reason for deviation from previous plan
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Notes:

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5. 4901:1-10-26(B)(3), (B)(3)(a) Characterization of condition of company's system

Transmission or Distribution	Qualitative characterization of condition of system	Explanation of criteria used in making assessment for each characterization
Distribution A review of Dayton Power & Light's historical reliability performance shows the distribution system has met the standards prescribed by the Public Utilities Commission of Ohio.	System reliability performance is a good indicator of the physical condition of the system and industry standard measures show that system performance is consistently reliable.	The performance of the electric system over a period of several years is reflective of its physical condition. Consistently safe and reliable service can only be achieved through a well-maintained distribution system. System level reliability performance is tracked on a monthly basis and reported annually as required by O.A.C. 4901:1-10-10. DP&L's transmission has the capacity to meet projected loading. System Operating monitors the condition of the transmission system on a daily basis. Any findings that may impact safety or reliability are immediately addressed.

Notes:

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6. 4901:1-10-26(B)(3), (B)(3)(b) Safety and reliability complaints

Transmission or Distribution	Availability of Service	Damage	Momentary Interruption	Out of Service	Quality of Service	Repair Service	Public Safety	Total Complaints
Distribution			2	16				18

Notes:

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7a. 4901:1-10-26(B)(3)(c), (B)(3)(c)(i) Transmission capital expenditures

Total transmission capital expenditures in 2018	\$6,187,000
Total Transmission investment as of year end	\$412,102,805
Transmission capital expenditures as % of total transmission investment	1.50%

Notes:

7b. 4901:1-10-26(B)(3)(c), (B)(3)(c)(i) Transmission maintenance expenditures

Total transmission maintenance expenditures in 2018	\$5,220,170
Total Transmission investment as of year end	\$412,102,805
Transmission maintenance expenditures as % of total transmission investment	1.27%

Notes:

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7c. 4901:1-10-26(B)(3), (B)(3)(c)(ii), (B)(3)(c)(iii) Transmission capital expenditures - Reliability specific

Transmission capital budget category	2018 Budget	2018 Actual	% Variance	Explanation of variance if over 10%	2019 Budget
Transmission - Substation Reliability					
Transmission Blankets - Other	\$1,000,000	\$768,000	23.20%	Forced repairs were lower than budgeted.	\$1,000,000
Transmission Reliability - Projects	\$3,728,000	\$6,269,000	68.00%	RTEP Projects	\$39,451,000
Transmission Reliability - CCD	\$500,000	\$-3,511,000	-702.20%	In 2018 the CCD construct was dissolved.	

Notes:

Transmission Catastrophic Repairs and Distribution Catastrophic Repairs are budgeted together as one number. The budget is only included in Distribution Catastrophic Repairs.

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7d. 4901:1-10-26(B)(3), (B)(3)(c)(ii), (B)(3)(c)(iii) Transmission maintenance expenditures - Reliability specific

Transmission maintenance budget category	2018	2018	% Variance	Explanation of variance if over 10%	2019
	Budget	Actual			Budget
Transmission Reliability	\$278,611	\$292,366	5.00%		\$340,166
Transmission Line Clearance	\$2,131,272	\$2,117,398	-0.07%		\$2,480,435

Notes:

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8a. 4901:1-10-26(B)(3)(d), (B)(3)(d)(i) Distribution capital expenditures

Total distribution capital expenditures in 2018	\$78,135,000
Total distribution investment as of year end	\$1,826,132,233
Distribution capital expenditures as % of total distribution investment	4.28%

Notes:

8b. 4901:1-10-26(B)(3)(d), (B)(3)(d)(i) Distribution maintenance expenditures

Total distribution maintenance expenditures in 2018	\$48,088,772
Total distribution investment as of year end	\$1,826,132,233
Distribution maintenance expenditures as % of total distribution investment	2.63%

Notes:

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8c. 4901:1-10-26(B)(3), (B)(3)(d)(ii), (B)(3)(d)(iii) Distribution capital expenditures - Reliability specific

Distribution capital budget category	2018 Budget	2018 Actual	% Variance	Explanation of variance if over 10%	2019 Budget
Distribution - Specific Projects	\$1,648,000	\$1,238,000	-25.00%	Projects expenditures in 2018 were less than budgeted.	\$2,500,000
Distribution - Field Reliability	\$6,167,000	\$9,121,000	47.00%	Replaced additional poles.	\$6,400,000
Distribution - Substation Reliability	\$3,570,000	\$5,884,000	65.00%	Increased spend to address transformer failures.	\$4,425,000
Distribution - Underground Reliability	\$3,500,000	\$5,852,000	67.00%	Replaced additional cable.	\$3,000,000
Distribution - Blanket Other	\$8,500,000	\$8,374,000	-2.00%		\$7,300,000
Distribution Planning - Reliability	\$1,550,000	\$1,576,000	19.50%	Fewer network events.	\$1,500,000
Distribution Blanket - Transformers	\$13,250,000	\$15,836,000	19.00%	Replaced more transformers than anticipated.	\$13,500,000

Notes:

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8d. 4901:1-10-26(B)(3), (B)(3)(d)(ii), (B)(3)(d)(iii) Distribution maintenance expenditures - Reliability specific

Distribution maintenance budget category	2018 Budget	2018 Actual	% Variance	Explanation of variance if over 10%	2019 Budget
Distribution Reliability	\$25,123,704	\$33,850,008	35.00%	Storm Activity	\$25,253,464
Distribution Line Clearance	\$16,251,541	\$15,800,508	-3.00%		\$20,630,678

Notes:

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9. 4901:1-10-26(B)(3)(e) Average remaining depreciation life of distribution and transmission facilities

Transmission or Distribution	Asset type	FERC account/ subaccount	Total depreciable life of asset	Total depreciated life of asset	Total remaining life of asset	Percent of remaining life of asset	How age was determined
Transmission	Structures and Improvements	352	50.00	44.69	5.31	10.27%	Net Plant/Gross Plant
Transmission	Station Equipment	353	50.00	46.65	3.35	6.70%	Net Plant/Gross Plant
Transmission	Towers and Fixtures	354	49.60	48.57	1.03	2.08%	Net Plant/Gross Plant
Transmission	Poles and Fixtures	355	46.70	38.96	7.74	16.58%	Net Plant/Gross Plant
Transmission	Overhead Conductors and Devices	356	48.20	43.35	4.85	10.08%	Net Plant/Gross Plant
Transmission	Underground Conduit	357	60.00	33.40	26.60	44.34%	Net Plant/Gross Plant
Transmission	Underground Conductors and Devices	358	45.00	29.78	15.22	33.83%	Net Plant/Gross Plant
Transmission	Roads and Trails	359	45.00	38.70	6.30	14.01%	Net Plant/Gross Plant
Distribution	Structures and Improvements	361	45.00	35.14	9.86	21.93%	Net Plant/Gross Plant
Distribution	Station Equipment	362	50.00	39.71	10.29	20.59%	Net Plant/Gross Plant
Distribution	Poles , Towers and Fixtures	364	38.00	32.47	5.53	14.56%	Net Plant/Gross Plant
Distribution	Overhead Conductors and Devices	365	40.00	30.56	9.44	23.60%	Net Plant/Gross Plant
Distribution	Underground Conduit	366	55.00	41.30	13.70	24.92%	Net Plant/Gross Plant
Distribution	Underground Conductors and Devices	367	38.00	30.82	7.18	18.90%	Net Plant/Gross Plant
Distribution	Line Transformers	368	44.00	31.68	12.32	28.02%	Net Plant/Gross Plant
Distribution	Services	369	33.00	29.33	3.67	11.13%	Net Plant/Gross Plant
Distribution	Meters	370	32.00	24.47	7.53	23.54%	Net Plant/Gross Plant

Report date: 4/1/2019

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9. 4901:1-10-26(B)(3)(e) Average remaining depreciation life of distribution and transmission facilities

Transmission or Distribution	Asset type	FERC		Total		Total		Total		Percent of remaining life of asset	How age was determined
		account/	subaccount	depreciable	life of asset	depreciated	life of asset	remaining	life of asset		
Distribution	Installations on Customer Premises	371		20.00		18.58		1.42		7.10%	Net Plant/Gross Plant
Distribution	Leased Property on Customer Premises	372		40.00		0.00		0.00		0.00%	Net Plant/Gross Plant

Notes:

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10. 4901:1-10-26(B)(3)(f), (B)(3)(f)(i) Inspection, maintenance, repair, and replacement of distribution, transmission, and substation programs summary report

Asset type	Program Name	Program Goals	Goals achieved?
Transmission	345 kV Aerial Patrol	Inspect 345 kV circuits, 4 times per year	Y
Transmission	138 kV Aerial Patrol	Inspect 138 kV circuits, 4 times per year	Y
Transmission	69 kV Aerial Patrol	Inspect 69 kV circuits, semi-annually	Y
Transmission	Thermographic Inspection of Transmission Lines	Perform thermographic inspections where needed	Y
Transmission	Transmission Line Clearance	Trim trees where needed	Y
Transmission	Herbicide Application	Apply herbicide as needed	Y
Transmission	Transmission Inspection Program	Inspect 25 circuits in metro - no fly zone	Y
TS and DS	External visual inspection of Substation Transformers	Inspect approximately 300 Substation Transformers monthly	Y
Transmission	Thermographic Imaging of Substation Transformers	Infrared approximately 300 Substation Transformers	Y
Transmission	Substation Transformers Dielectric Oil Breakdown Test	Perform oil dielectric breakdown on 65 transformers	Y
TS and DS	Substation Transformer LTC Maintenance	Complete maintenance on 56 LTCs	Y
TS and DS	Substation Transformer Power Factor Test	Perform power factor testing on 65 substation transformers	Y
TS	Operational Testing of Circuit Breakers	Conduct an operational test for breakers that are not otherwise operated during the calendar year	N
TS and DS	Visual Inspection of Circuit Breakers	Inspect approximately 1,300 Circuit Breakers monthly	Y

Report date: 4/1/2019

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10. 4901:1-10-26(B)(3)(f), (B)(3)(f)(i) Inspection, maintenance, repair, and replacement of distribution, transmission, and substation programs summary report

Asset type	Program Name	Program Goals	Goals achieved?
TS/DS	Circuit Breaker Preventive Maintenance	Complete maintenance on 288 circuit breakers	Y
TS	BES Relay Testing	Test 78 BES relays	Y
DS	Non-BES Relay Testing	Test 241 Non-BES transmission relays	Y
Distribution	Distribution Relay Testing	Test 386 Distribution relays (12/4 kV)	Y
TS	Thermographic Inspection of Substation Switches	Infrared approximately 2,362 Substation Switches	Y
Distribution	Visual Inspection of Airbreak Switches	Inspect approximately 1,616 switches	Y
Distribution	Capacitor Inspections	Complete the inspection of approximately 1329 capacitors	Y
Distribution	Recloser Inspections	Complete the inspection of approximately 584 reclosers	Y
Distribution	Underground Device Inspections	Inspect URD devices on 349 map grids	Y
Distribution	Monitor Circuit Reliability Performance	Evaluate least-reliable circuits and initiate remedial action where needed	Y
Distribution	Monitor Branch Line Reliability Performance	Evaluate least-reliable branch lines and initiate remedial action where needed	Y
Distribution	Distribution Circuit Patrol	Inspect 94 circuits	Y
Distribution	Distribution Line Clearance	Perform full circuit vegetation maintenance on 2,787 miles and 108 circuits in order to return to a 5 year cycle. Fewer miles will be trimmed if increased costs and labor resource constraints continue as discussed in Section 10b.	N
Distribution	Pole Replacement and Testing Program	Inspect approximately 34,628 poles on 45 circuits	Y

Report date: 4/1/2019

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10. 4901:1-10-26(B)(3)(f), (B)(3)(f)(i) Inspection, maintenance, repair, and replacement of distribution, transmission, and substation programs summary report

Asset type	Program Name	Program Goals	Goals achieved?
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Notes:

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10a. 4901:1-10-26(B)(3)(f), (B)(3)(f)(i), (B)(3)(f)(ii) If response in Column "Goals achieved?" of Report 10 is "Yes"

Program Name	Explanation of how goals were achieved	Quantitative description of goal achieved	Summary of Findings
345 kV Aerial Patrol	Inspected 14-345 kV transmission lines, 4 times each	100%	
138 kV Aerial Patrol	Inspected 33-138 kV transmission lines, 4 times each	100%	
69 kV Aerial Patrol	Inspected 89-69 kV transmission lines, 2 times each	100%	
Thermographic Inspection of Transmission Lines	No inspections were scheduled in 2018.	100%	
Transmission Line Clearance	Full maintenance on 34590 and 34591. Spot trimming completed in 297 locations and maintenance trimming in 387 locations.	100%	
Herbicide Application	82 areas received herbicide application.	100%	
Transmission Inspection Program	Inspected 25 circuits in metro no fly zone.	100%	
External visual inspection of Substation Transformers	Performed monthly inspections on approximately 300 transformer units monthly.	100%	
Thermographic Imaging of Substation Transformers	Performed infrared inspection on 300 transformer units.	100%	
Substation Transformers Dielectric Oil Breakdown Test	Performed oil dielectric breakdown tests on 67 transformers.	100%	
Substation Transformer LTC Maintenance	Performed maintenance on 56 LTCs.	100%	
Substation Transformer Power Factor Test	Power factor testing was performed on 67 transformers.	100%	

Report date: 4/1/2019

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10a. 4901:1-10-26(B)(3)(f), (B)(3)(f)(i), (B)(3)(f)(ii) If response in Column "Goals achieved?" of Report 10 is "Yes"

Program Name	Explanation of how goals were achieved	Quantitative description of goal achieved	Summary of Findings
Visual Inspection of Circuit Breakers	Visually inspected 1300 circuit breakers monthly.	100%	
Circuit Breaker Preventive Maintenance	Performed maintenance on 288 circuit breakers.	100%	
BES Relay Testing	78 BES relays tested.	100%	
Non-BES Relay Testing	221 Non-BES transmission relays tested.	100%	In 2018, DP&L moved 32- 138 kV Capacitor Type (U.P.) relays into the 2018 relay testing plan as a result of several failures of this type of relay. DP&L later ceased testing of the 138 kV U.P. relays and is currently evaluating a full replacement program based upon the results of the initial U.P. relay inspections and testing. The U.P. relays will be tested in their normal testing cycle or replaced outright.
Distribution Relay Testing (12/4 kV)	385 Distribution relays (12/4 kV) relays tested.	100%	Difference from planned numbers were due to relay a that was replaced.
Thermographic Inspection of Substation Switches	Performed inspections on approximately 2362 substation switches.	100%	
Visual Inspection of Airbreak Switches	Inspected 1621 airbreak switches	100%	Difference is related to added airbreak switches
Capacitor Inspections	Inspected 1327 capacitors	100%	Difference is related to circuits being re-evaluated and removing capacitor banks.
Recloser Inspections	Inspected 581 reclosers	100%	Difference is related to reclosers installed or removed on the system
Underground Device Inspections	Completed inspections on 349 URD grds.	100%	

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10a. 4901:1-10-26(B)(3)(f), (B)(3)(f)(i), (B)(3)(f)(ii) If response in Column "Goals achieved?" of Report 10 is "Yes"

Program Name	Explanation of how goals were achieved	Quantitative description of goal achieved	Summary of Findings
Monitor Circuit Reliability Performance	Analyzed the 39 Rule 11 circuit through the Overhead Reliability Program.	100%	
Monitor Branch Line Reliability Performance	Multiple branchlines on 15 distribution circuits were inspected and reliability plans initiated where appropriate.	100%	
Distribution Circuit Patrol	Completed inspections on 94 circuits.	100%	
Pole Replacement and Testing Program	Inspected 34,609 poles on 45 circuits through the pole inspection program.	100%	Approximate number of poles reported in 4901:1-26(10)

Notes:

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10b. 4901:1-10-26(B)(3)(f), (B)(3)(f)(i), (B)(3)(f)(ii) If response in Column "Goals achieved?" of Report 10 is "No"

Program Name	Cause(s) for not achieving goals	Description of level of completion	Quantitative description of level of completion	Summary of Findings
Distribution Line Clearance	Challenging labor market conditions affecting the entire vegetation management industry have led to widespread price increases and schedule completion shortfalls for many utilities. Currently there is not enough qualified labor in the utility vegetation management industry to effectively meet the increasing needs of electricity providers. DP&L employs 6 contractors (5 national, 1 local) who all are struggling with these labor market conditions and we continue to evaluate more potential vendors to grow the local workforce. As a result, DP&L has faced significant challenges in trying to overcome the labor shortages and the related price increases. To the best of its ability, DP&L made strategic decisions to focus its vegetation management efforts in such a way as to maximize the potential benefit to customers by prioritizing circuits based on safety, reliability and vegetation risk.	Per DP&L's ESSS Rule Vegetation Management program, full circuit maintenance trimming was completed on 71 circuits. The remaining 37 circuits are being deferred until there is sufficient contractor resources to safely and effectively complete the work due to the aforementioned cost and labor resource issues. DP&L provides monthly program updates to PUCO Staff which include circuit completion, budget utilization and crew status.	We identified the circuits to be deferred based upon safety, reliability and vegetation risk.	Performed full circuit vegetation management on 1319.25 miles of our distribution system which encompasses 71 circuits.

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10b. 4901:1-10-26(B)(3)(f), (B)(3)(f)(i), (B)(3)(f)(ii) If response in Column "Goals achieved?" of Report 10 is "No"

Program Name	Cause(s) for not achieving goals	Description of level of completion	Quantitative description of level of completion	Summary of Findings
Operational Testing of Circuit Breakers	Conduct an operational test for breakers that are not otherwise operated during the calendar year	4 breakers that are normally open breakers and only routinely used as circuit ties in the event they are needed. 4 breakers could not be operated due to a customer outage.	98.9% of breakers operated	4 of the normally open breakers were operated in January 2019.

Notes:

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10c. 4901:1-10-26(B)(3)(f), (B)(3)(f)(iii) Remedial activity

Program Name	Program finding(s) resulting in remedial action	Remedial activity performed	Completion date	Remedial activity yet to be performed	Estimated completion date
Transmission Aerial Patrols	Found 33 items that needed repaired	Completed 10 repair items from 2018 patrols.	12/31/2018	23 repair items are scheduled to be repaired in conjunction with regular work on the circuit.	
External visual inspection of Substation Transformers	6 maintenance items were identified as requiring remedial activity. Examples of repair items include: inoperative cooling fans, inoperative winding temperature gauge, bushing low oil level, low oil level in main tank or LTC compartments, major LTC filter oil leak and sudden pressure relay operations	All repairs were completed.	12/31/2018		
Thermographic Imaging of Substation Transformers	There were 3 loose connection issues identified using infrared.	All repairs were completed.	12/31/2018		
Substation Transformer Power Factor Test	2 repair items identified	All repairs were complete.	12/31/2018		
Operational Testing of Circuit Breakers	2 breakers failed to operate and 1 had a burnt trip coil	All repairs were complete.	12/31/2018		
Visual Inspection of Circuit Breakers	17 items were identified requiring remedial activity.	12 repair items include compressor or motor problems, low oil or SF6 gas levels.	12/31/2018	5 minor breaker problems are scheduled to be repaired in conjunction with next maintenance cycle.	
Thermographic Inspection of Substation Switches	Infrared inspections of substation switches identified bad or deteriorated contacts. 5 problems were identified during inspections.	A second thermographic picture was taken to confirm problem. Once the problem(s) was confirmed the switches were replaced or removed from service, cleaned, maintenance and returned to service. 5 repairs were made in 2018.	12/31/2018		

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10c. 4901:1-10-26(B)(3)(f), (B)(3)(f)(iii) Remedial activity

Program Name	Program finding(s) resulting in remedial action	Remedial activity performed	Completion date	Remedial activity yet to be performed	Estimated completion date
Visual Inspection of Airbreak Switches	13 repair items were identified during the airbreak inspections. Typical repairs include blown lightning arresters and pole grounds, etc.	Completed 9 airbreak repairs.	12/31/2018	4 repair items remain from 2018 which will be scheduled with regular work on the circuit.	
Capacitor Inspections	104 repair items were identified during the capacitor inspections. Typical repairs include replacing blown fuses, bad capacitors, or control issues.	Completed 76 repairs.	3/6/2019	28 maintenance repairs to be completed from the 2018 inspections.	
Recloser Inspections	2 repair items were identified during recloser inspections. Items identified were cutouts.	All repairs were completed during the inspection.	12/31/2018		
Underground Device Inspections	838 repair items were identified during the underground device inspection program. Typical repair items can be described as defective locking mechanisms, defective pads, exposed cable	630 repair items completed.	2/12/2019	208 repair items still need to be completed. Additionally, 28 repair items still need to be completed from 2016 inspections, and 94 repair items from 2017 inspections which will be scheduled with regular work on circuit.	
Distribution Circuit Patrol	3,283 repairs were identified during the inspections. Repair items include broken groundwires and loose or broken guy wires, blown arrestors, broken crossarms or braces, etc.	3,098 items have been completed.	3/6/2019	185 items remain from the 2018 inspections. Additionally, 625 repair items from 2017 inspections, 501 repair items from 2016 inspections, and 113 repair items from 2015 inspections which will be scheduled with routine work on the circuit.	
Pole Replacement and Testing Program	Inspected 34,609 poles through the pole replacement program	3,298 poles failed the inspection or integrity test with 23 poles replaced.		344 poles to be reinforced and 2,931 poles to be replaced.	6/1/2021
Monitor Circuit Reliability Performance	Repair items were identified during the inspection of ORP circuits. Typical repair items include: Lightning arrestors, cut-out, pole replacements/reinforcements, cable injection or replacement	Refer to Rule 11 for specifics on remedial items for individual ORP circuits.		Refer to Rule 11 for specifics on remedial items for individual ORP circuits	12/31/2019

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10c. 4901:1-10-26(B)(3)(f), (B)(3)(f)(iii) Remedial activity

Program Name	Program finding(s) resulting in remedial action	Remedial activity performed	Completion date	Remedial activity yet to be performed	Estimated completion date
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Notes:

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10d. 4901:1-10-26(B)(3)(f): Current Year Goals

Asset Type	Program Name	Program Goals
Transmission	345 kV Aerial Patrol	Inspect 345 kV circuits, 4 times per year
Transmission	138 kV Aerial Patrol	Inspect 138 kV circuits, 4 times per year
Transmission	69 kV Aerial Patrol	Inspect 69 kV circuits, semi-annually
Transmission	Thermographic Inspection of Transmission Lines	Perform thermographic inspections where needed
Transmission	Transmission Line Clearance	Trim trees where needed
Transmission	Herbicide Application	Apply herbicide as needed
Transmission	Transmission Inspection Program	Inspect 25 circuits in metro - no fly zone
TS and DS	External visual inspection of Substation Transformers	Inspect approximately 300 Substation Transformers monthly
Transmission	Thermographic Imaging of Substation Transformers	Infrared approximately 300 Substation Transformers
Transmission	Substation Transformers Dielectric Oil Breakdown Test	Perform oil dielectric breakdown on 55 transformers
TS and DS	Substation Transformer LTC Maintenance	Complete maintenance on 44 LTCs
TS and DS	Substation Transformer Power Factor Test	Perform power factor testing on 55 substation transformers
TS	Operational Testing of Circuit Breakers	Conduct an operational test for breakers that are not otherwise operated during the calendar year
TS and DS	Visual Inspection of Circuit Breakers	Inspect approximately 1,300 Circuit Breakers monthly

Report date: 4/1/2019

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10d. 4901:1-10-26(B)(3)(f): Current Year Goals

Asset Type	Program Name	Program Goals
TS/DS	Circuit Breaker Preventive Maintenance	Complete maintenance on 208 circuit breakers
TS	BES Relays	Test 100 relays
DS	Non-BES Transmission Relays	Test 150 relays
Distribution	Non-BES Distribution Relays	Test 550 relays
TS	Thermographic Inspection of Substation Switches	Infrared approximately 2,362 Substation Switches
Distribution	Capacitor Inspections	Complete the inspection of approximately 1335 capacitors
Distribution	Recloser Inspections	Complete the inspection of approximately 584 reclosers
Distribution	Underground Device Inspections	Inspect URD devices on 346 map grids
Distribution	Monitor Circuit Reliability Performance	Evaluate least-reliable circuits and initiate remedial action where needed
Distribution	Monitor Branch Line Reliability Performance	Evaluate least-reliable branch lines and initiate remedial action where needed
Distribution	Distribution Circuit Patrol	Inspect 91 circuits
Distribution	Distribution Line Clearance	Perform full circuit vegetation maintenance in order to return to a 5 year cycle. Fewer miles will be trimmed if increased costs and labor resource constraints continue as discussed in Section 10b.
Distribution	Pole Replacement and Testing Program	Inspect approximately 30,111 poles on 48 circuits
Distribution	Regulator Inspection Program	Inspect approximately 540 regulators

Report date: 4/1/2019

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10d. 4901:1-10-26(B)(3)(f): Current Year Goals

Asset Type

Program Name

Program Goals

Notes:

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11. 4901:1-10-26(B)(3)(f), (B)(3)(iv): Prevention of overloading or excessive loading of facilities and equipment

Transmission or Distribution		Program Name	Program Goals
D		Distribution Planning	The distribution planning process includes an ongoing analysis of each component and its response to current and projected peak loads. Short and long-range plans are developed and continually refined based on changing customer needs and the dynamic nature of the distribution system.
T		Transmission Planning	DP&L performs an evaluation of its transmission system on an annual basis and in response to significant proposed changes to the system, such as the installation of a generating plant or a large change in customer load at a given location. DP&L bases its transmission system evaluations on a recent power flow model developed by ReliabilityFirst on behalf of its members. A detailed model of the DP&L transmission system is then inserted in order to include all 69 kV and 138 kV facilities. Changes may be made to the generation dispatch in order to evaluate the most stressful conditions on the system. The evaluations typically consist of comprehensive contingency analyses including outages of single segment transmission lines, multiple-terminal transmission lines, transformers, generating units, and double circuits. The results of these studies are checked for thermal overloading and excessive voltage drop according to NERC/ReliabilityFirst.

Notes:

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12. 4901:1-10-26(B)(3)(f), (B)(3)(iv): Actions to remedy overloading or excessive loading of facilities and equipment

Transmission or Distribution	Sub/Circuit name	Date overloading identified	Plan to remedy overloading	Estimated completion date	Actions taken to remedy overloading	Actual completion date
Distribution	Marysville / CB1202	10/26/2016	Improve relay setting protection	8/30/2019	Install recloser and change fusing on distribution circuit CB1202 to improve relay coordination at the substation	
Distribution	Coldwater / KA1201	2/6/2017	Improve relay setting protection		Install recloser and change fusing on distribution circuit KA1201 to eliminate overload condition and improve relay coordination at the substation	Project cancelled
Distribution	Greenville / LD1202	1/23/2017	Improve relay setting protection	5/30/2018	Replace capacitor bank with voltage regulator on LD1202	2/20/2018
Distribution	Airway/AJ1205	1/8/2018	Phase Balancing	5/1/2019	Phase swap on distribution circuit AJ1205 to balance phases	
Distribution	Gladly Run/GR1212	1/8/2018	Phase Balancing	5/30/2019	Phase swap on distribution circuit GR1212 to balance phases	
Distribution	Middleboro/ HM1202	1/8/2018	Phase Balancing	5/30/2019	Phase swap on distribution circuit HM1202 to balance phases	
Distribution	Urbana/DB1206	4/4/2017	Upgrade line regulators	9/1/2018	Upgrade line regulator from 219A to 3-328A	5/24/2018
Distribution	Martinsville/HD1206	11/12/2018	Upgrade circuit and line reclosure	9/1/2019	Reconductoring part of the circuit and installing reclosures	
Distribution	Wilmington/HB1202	1/23/2018	Upgrade line recloser	7/1/2019		
Distribution	Wilmington/HB1202	1/23/2018	Upgrade line regulator	7/1/2019		
Distribution	Staunton/OE1204	6/18/2018	Upgrading OVHD Conductor	6/15/2019		
Distribution	Greenville/LD1211	3/1/2018	Upgrading OVHD Conductor	7/1/2019		
Distribution	Brookville/ME1204	8/28/2018	Installing Line Recloser	4/15/2019	Installed Solids and Removed fusing	

Report date: 4/1/2019

**Dayton Power & Light
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12. 4901:1-10-26(B)(3)(f), (B)(3)(iv): Actions to remedy overloading or excessive loading of facilities and equipment

Transmission or Distribution	Sub/Circuit name	Date overloading identified	Plan to remedy overloading	Estimated completion date	Actions taken to remedy overloading	Actual completion date
Distribution	Gladly Run/GR1213	1/30/2019	Upgrade Recloser and swap phases	10/1/2019		

Notes:

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13. 4901:1-10-26(B)(3)(f), (B)(3)(f)(vi): Programs deleted

Facility Type	Deleted Program Name
Distribution	Airbreak Switch Inspection
Notes: Airbreak Switches are inspected during Distribution Line Patrol.	

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14. 4901:1-10-26(B)(3)(f), (B)(3)(f)(vi): Programs modified

Facility Type	Deleted Program Name
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Notes: No programs modified

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15. 4901:1-10-26(B)(3)(f), (B)(3)(f)(vi): Programs added

Facility Type	Deleted Program Name
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Notes: No program changes

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16. 4901:1-10-26(B)(4): Service interruptions due to other entity

Date of Interruption	Time of Interruption	Type of entity causing interruption	Name of entity causing interruption	Impact on Transmission or Distribution	Sub/Circuit Interrupted	Cause of interruption
6/9/18	3:03 PM	Other Electric Utility	Midwest REA	Transmission and Distribution	Coldwater/Rossburg - 6684 LC1201 - KG1201-KG1203	Tree

Notes:

This foregoing document was electronically filed with the Public Utilities

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Case No(s). 19-1000-EL-ESS

Summary: Report Annual Report Pursuant to Rule 4901:1-10-26 Annual System Improvement Plan for the year 2018 electronically filed by Mr. Alan M. O'Meara on behalf of The Dayton Power and Light Company