BEFORE THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA

APPLICATION OF PUBLIC SERVICE COMPANY OF OKLAHOMA, AN OKLAHOMA CORPORATION, FOR AN ADJUSTMENT IN ITS RATES AND CHARGES AND THE ELECTRIC SERVICE RULES, REGULATIONS AND CONDITIONS OF SERVICE FOR ELECTRIC SERVICE FOR ELECTRIC SERVICE IN THE STATE OF OKLAHOMA	)))))))))	CAUSE NO. PUD 202100055

RESPONSIVE TESTIMONY OF WILLIAM W. DUNKEL
ON BEHALF OF
JOHN O'CONNOR, OKLAHOMA ATTORNEY GENERAL

John O'Connor, the Attorney General of Oklahoma, on behalf of the utility customers of this State, hereby submits the Responsive Testimony of William W. Dunkel in the proceeding referenced above. The Attorney General urges close consideration of the testimony.

Respectfully submitted,

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CERTIFICATE OF SERVICE

On this 6th day of August, 2021, a true and correct copy of the *Responsive Testimony of William W. Dunkel on Behalf of John O'Connor, Oklahoma Attorney General* was sent via electronic mail to the following interested parties:

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BEFORE THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA

APPLICATION OF PUBLIC SERVICE	)	
COMPANY OF OKLAHOMA, AN	)	
OKLAHOMA CORPORATION, FOR AN	)	CAUSE NO. PUD 202100055
ADJUSTMENT IN ITS RATES AND	)	
CHARGES AND THE ELECTRIC SERVICE	)	
RULES, REGULATIONS AND CONDITIONS	)	
OF SERVICE FOR ELECTRIC SERVICE	)	
FOR ELECTRIC SERVICE IN THE STATE	)	
OF OKLAHOMA	)	

RESPONSIVE TESTIMONY

OF

WILLIAM W. DUNKEL

ON BEHALF OF

JOHN O'CONNOR,

OKLAHOMA ATTORNEY GENERAL

August 6, 2021

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I. Introduction

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is William W. Dunkel. My business address is 8625 Farmington Cemetery Road, Pleasant Plains, Illinois 62677.

Q. HAVE YOU PREPARED A SUMMARY OF YOUR QUALIFICATIONS AND EXPERIENCE INCLUDING A LIST OF PRIOR REGULATORY PROCEEDINGS IN WHICH YOU HAVE TESTIFIED?

A. Yes. Exhibit WWD-1 is a summary of my qualifications, experience, and a list of prior testimonies before state utility regulatory agencies. As shown on that exhibit, I have participated in over 300 state regulatory proceedings, including my testimony on depreciation rates before the Oklahoma Corporation Commission ("Commission"). Previous cases where I have testified before this Commission include the prior Public Service Company of Oklahoma ("PSO" or "Company") proceedings Cause Nos. PUD 201700151 and PUD 201800097 as well as in the Oklahoma Gas and Electric Company proceedings Cause Nos. PUD 201700496 and PUD 201800140.

I graduated from the University of Illinois with a Bachelor of Science Degree in Engineering. For several years, I was a design engineer designing electric watt-hour meters used in the electric utility industry. I was granted patent No. 3822400 for a solid-state meter pulse initiator which was used in electric utility metering.

Q. HAVE YOU PARTICIPATED IN A FIELD VISIT TO SOME OF PSO'S FACILITIES?

A. Yes. While preparing my analysis for Cause No. PUD 201700151, I participated in a field visit on August 17 and 18, 2017, to some of PSO's facilities located in Oklahoma. As requested, knowledgeable Company personnel were made available at each site to answer questions and discuss the operations and facilities.

Q. ARE YOU A MEMBER OF A DEPRECIATION PROFESSIONAL ORGANIZATION?

A. Yes. I am a member in good standing of the Society of Depreciation Professionals. My firm was invited to make a presentation to the Society of Depreciation Professionals annual convention in Indianapolis, Indiana, pertaining to depreciation issues in state proceedings, which I co-presented on September 17, 2018.

Q. ON WHOSE BEHALF ARE YOU PROVIDING TESTIMONY?

A. I am testifying on behalf of the Office of the Oklahoma Attorney General.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. There are two major purposes of my testimony, which are the following:

(1) The first purpose of this testimony is to address certain technical issues pertaining to PSO witness Steven F. Baker's proposal "to replace all assets in each category that are currently greater than 40 years of age"[1] at ratepayers' expense. Attorney General expert witness Todd F. Bohrmann will present the overall recommendation of Attorney General pertaining to Mr. Baker's proposal.

(2) The second purpose of this testimony is to address depreciation rates and certain amortizations rates. This testimony responds to, among other things, the Direct Testimony of Jason A. Cash, the PSO Depreciation Study Report (Exhibit JAC-2),

[1] Direct Test. of Steven F. Baker on Behalf of Public Service Company of Oklahoma 45:13–18 (Apr. 30, 2021) [hereinafter "Baker Direct"].

the Demolition Cost Estimates (Exhibit JAC-3), and associated workpapers, discovery responses, and other information. I recommend specific, appropriate depreciation and amortization rates for PSO.

II. PSO's Accelerated Replacement Proposal

Q. WHAT DOES PSO WITNESS STEVEN F. BAKER PROPOSE?

A. Witness Baker proposes "to replace all assets in each category that are currently greater than 40 years of age"[2] at ratepayers' expense.

Witness Baker would replace these facilities if they "are currently greater than 40 years of age" regardless of condition.[3] I will address certain issues pertaining to this proposal. Attorney General expert witness Todd F. Bohrmann will address the overall position of the Attorney General regarding this issue.

Q. PLEASE SUMMARIZE YOUR TECHNICAL CONCERNS WITH MR. BAKER'S PROPOSAL.

A. The clearest way to explain the problem is to provide an analogy. Assume that a home construction firm proposed to a government body that all houses in Oklahoma that are over the age of 40 must be demolished. All houses over the age of 40 would be demolished and rebuilt even if the existing homes were in use, had been well maintained, were in excellent condition, and passed all inspections. They also proposed that the government order a

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[2] Baker Direct 45:13–18 ("The middle option is to replace all assets in each category that are currently greater than 40 years of age. . . . The middle option is the recommended option as it provides the ability to replace the oldest assets on the system in a reasonably aggressive manner.").

[3] Mr. Baker's workpaper in support of Figure 19 of his direct testimony clearly indicates PSO's intent to retire all investments in these categories that are over 40 years old, without exception. The workpaper "PSO Asset Age 2010 vs. 2020 prop acctg" was provided with the shortened filename "PSOASS~1.xls" by PSO in response to AG-PSO-1-3.

method for the home construction firm to collect payment from the people in Oklahoma for the money needed to fund the proposal that all houses over age 40 be demolished and be rebuilt. That would be a fair analogy to Mr. Baker's proposal, as I explain further below.

Q. WHAT SPECIFIC DISTRIBUTION FACILITIES WOULD BE RETIRED EARLIER UNDER THE PSO PROPOSAL TO "TO REPLACE ALL ASSETS IN EACH CATEGORY THAT ARE CURRENTLY GREATER THAN 40 YEARS OF AGE"?[4]

A. The additional investments that PSO states would be made under this PSO proposal are shown below in Figure 1 by category.[5] These investments are in addition to the normal historic investment levels.[6]

Figure 1: Additional Investments Under the Baker Proposal

	Additional Investments	Percent of Total
Underground Conductor	$ 287,689,100	39%
Station Transformers	$ 241,680,000	33%
Poles	$ 147,380,600	20%
Station Breakers	$ 36,900,000	5%
Station Protection	$ 26,250,000	4%
	$ 739,899,700	100%

[4] Baker Direct 45:13–18.
[5] Each figure represents the "Annual" amount from the middle column ("> 40 Yrs") of Figure 19 on page 46 of Mr. Baker's direct testimony multiplied by 10, which is the number of years proposed by Mr. Baker.
[6] Mr. Baker's workpaper in support of Figure 19 of his direct testimony shows these amounts are in excess of the historic investment levels. The workpaper "PSO Asset Age 2010 vs. 2020 prop acctg" was provided with the shortened filename "PSOASS~1.xls" by PSO in response to AG-PSO-1-3. Figure 19 of Mr. Baker's direct testimony shows 10 percent of the total amounts as an annual amount for the ten-year program.

A. PSO stopped the proper maintenance of poles after 2018.

Q. PSO WITNESS BAKER STATES THAT IN 2019 AND 2020, PSO HAD A "WORSENING TREND IN RELIABILITY PERFORMANCE" COMPARED TO 2018.[7] DID DISCOVERY REVEAL ANY RELEVANT INFORMATION?

A. Yes. After 2018, PSO stopped the "ground line" inspections which help identify the poles that have internal or below-ground decay. In response to discovery, PSO provided the following information about its previous inspection practices:

> In 2018, a contractor was hired to perform a <u>ground line</u> inspection of poles. The steps involved in the inspection process include: visual inspection from ground line to the top of pole, <u>sounding</u> with a hammer, <u>excavation at the base of the pole</u> to determine degree of external decay and <u>boring</u> to <u>detect internal decay</u>.[8]

However, after 2018, PSO virtually stopped "excavating at the base of the poles" and stopped "boring to detect internal decay" and stopped "sounding" the poles (I will refer to these as "ground line" inspections). PSO stopped the ground line inspections that are intended to locate below ground decay or internal decay that is not visible. PSO explained as much in the same discovery response quoted above:

> This approach was discontinued in 2019 and inspections were performed as part of PSO's overhead inspection process <u>to improve efficiencies</u>.[9]

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[7] Baker Direct 30, Figs. 10 & 11; Baker Direct 31, Fig. 12; Baker Direct 33:4.
[8] PSO's Response to AG-PSO-14-6, attached as Ex. WWD-2 (emphasis added).
[9] PSO's Response to AG-PSO-14-6, attached as Ex. WWD-2 (emphasis added).

PSO also provided the following information about its current practices:

> PSO has inspected its poles as part of its overhead inspection process over the past two years. The inspections are primarily visual inspections performed by qualified personnel. The personnel inspecting the pole are primarily checking for damage that would affect the structural integrity of the pole.[10]

Q. DOES OTHER INFORMATION OBTAINED IN DISCOVERY CONFIRM THAT PSO STOPPED THE "GROUND LINE" INSPECTIONS OF THE POLES AFTER 2018?

A. Yes. The PSO Quality of Service Reports prepared as a result of a settlement in Cause No. PUD 200300076 reveals key information on pole inspections for the last 3 years.[11] I used that information to develop Figure 2 below.

Figure 2: Number of PSO Pole Inspections and Treatments the Last Three Years

PSO Distribution Asset Program Work Completed

	Pole Inspections and Treatment Units Completed
2018	26,953 Poles
2019	*
2020	0

*In 2019, PSO focused efforts on increased overhead patrols and repairs, rather than a targeted ground line inspection and treatment program of poles. This approach included a pole inspection as well as inspection of other overhead facilities.

[10] PSO's Response to AG-PSO-14-6, attached as Ex. WWD-2 (emphasis added).
[11] PSO's Response to AG-PSO-14-6, Attachments 2, 3, and 4, attached as Ex. WWD-3.

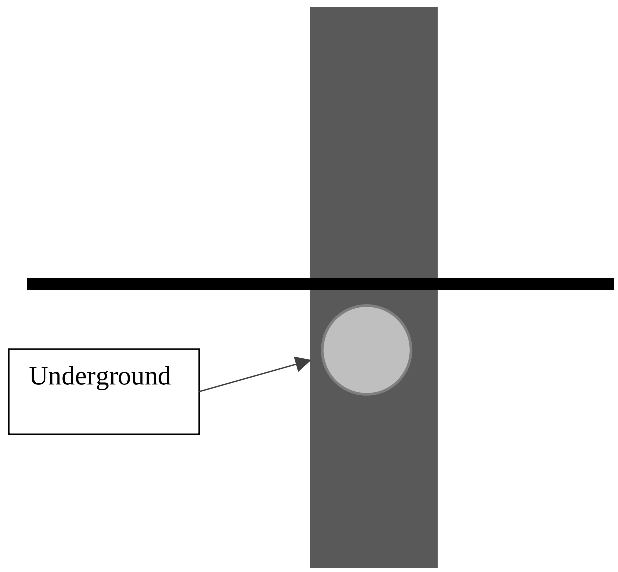
Q. ARE JUST "VISUAL" INSPECTIONS A REASONABLE SUBSTITUTE FOR ALSO "EXCAVATION AT THE BASE OF THE POLE", "BORING" INTO THE POLE "TO DETECT INTERNAL DECAY" AND "SOUNDING" THE POLE?

A. No. The United States Bureau of Reclamation provides the following information about the importance of ground line inspections:

> In most cases, the first occurrence of decay will be just below the groundline. This is where the conditions of moisture, temperature, air, and the absence of direct sunlight are most favorable to the growth of fungi.[12]

[12] U.S. Bureau of Reclamation, *Facilities Instructions, Standards, & Techniques* 3 (vol. 4-6).

Figure 3: "In most cases, the first occurrence of decay will be just below the groundline."



To help illustrate the importance of ground line inspections, I have prepared Figure 3 above, which depicts a pole, the ground line, and the underground location where decay typically begins. "Excavation at the base of the pole" can locate "decay just below the groundline" that a "visual inspection" alone cannot. "Boring" holes into the pole, including at an angle down in the excavated area at the base of the pole, can locate internal decay that a visual inspection alone cannot. "Sounding" is normally done for at least several feet from the ground line up. "Sounding" passes sound through the interior of the pole to determine whether the interior is solid wood. "Sounding" (generally followed by boring holes into the areas that failed the sounding test) can reveal internal decay or other internal weakness that cannot be observed just by visual inspection.

Q. WHAT IS DECAY?

A. Decay is often the result of fungi or other microbes consuming the wood. There are treatments for that which can extend the reliable useful life of the pole if the decay is detected in time. There are standards for deciding when a pole with some decay should be treated or replaced.[13]

Q. IS DECAY A MAJOR CAUSE OF POLE REMOVAL?

A. Yes. "[D]ecay was the chief reason for removing a wood pole" in a survey of utilities.[14]

Q. CAN DECAY IN POLES CAUSE FAILURES DURING ADVERSE WEATHER CONDITIONS?

A. Yes. For example, in Tukwila, Washington, 26 utility poles fell during high winds, crushing a car and sending two people to the hospital. The investigation revealed that the poles that failed first had advanced internal decay. The initial failure of two decayed poles put pressure on the poles next to them, causing sequential failures.[15]

Q. WITNESS BAKER PROPOSES TO "TO REPLACE ALL ASSETS IN EACH CATEGORY THAT ARE CURRENTLY GREATER THAN 40 YEARS OF AGE."[16] WOULD REPLACING ALL POLES OVER AGE 40 HAVE AVOIDED THIS

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[13] At the time the pole is installed it has an extra margin of strength above the strength needed even in storm conditions. This margin of strength allows for some limited future loss of strength. AEP has standards for deciding when a pole should be treated versus replaced. *See* pages 15-17 of PSO's Response to PSO-AG-14-6, attached as Ex. WWD-2. PSO also provided information on treatments in response to AG-PSO-15-1.
[14] North American Wood Pole Council, "Estimated Service Life of Wood Poles," at 4, Fig. 2, Technical Bulletin No. 12-U-101.
[15] Nelson Research, "Recommendations Report for The City of Seattle" (Nov. 15, 2019); Nelson Research, "Storm Report for The City of Seattle" (Sept. 30, 2019); David Gutman, "'Great deal of rot' caused collapse of 26 Seattle City Light utility poles in Tukwila," The Seattle Times (Oct. 9, 2019). These reports indicate that the utility was aware of decay in at least some of the poles, but it had not taken adequate corrective actions. Some of the poles also had evidence of a beetle larvae infestation.
[16] Baker Direct 45:13–18.

FAILURE?

A. No. The decayed poles that initially failed had been installed between 1991 and 1995.[17] These decayed poles were only 24 to 28 years old when they collapsed in 2019. Witness Baker's proposal to replace facilities over age 40 would have made no difference.

Q. WHAT DO YOU RECOMMEND ON THIS ISSUE?

A. It is not the age of the pole that causes such failures; it is the condition of the pole. PSO needs to resume periodic ground line examinations of the poles. Decayed poles need to be identified, and treated or replaced,[18] regardless of their age. Proper maintenance of the poles, including ground line inspections, impacts the reliability of distribution facilities, including during adverse weather.

The condition of a pole cannot be determined just by looking at the record of the year the pole was installed and looking at the above-ground exterior of the pole. PSO's parent company, American Electric Power Co., Inc. ("AEP") has "Specification 125" which, in addition to visual inspections, includes requiring that every ten years each wood pole must be given a detailed ground line examination, including excavating at the base of the pole, boring into the pole to detect internal decay and "sounding" to detect internal decay or other internal weakness.[19] PSO stopped following this "Specification 125" after 2018. [20] I recommend that the Commission consider PSO's own failure to follow its Specification

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[17] Gutman, *supra* note 15. *See also* Nelson Research, *supra* note 15, at 8 (noting poles were manufactured "back in the 1990's").
[18] There are standards that determine what action is appropriate based on the severity of the damage. They are described in Attachment 1 to PSO's response to AG-PSO-14-6, which is included in Exhibit WWD-2.
[19] Specification 125 is included as Attachment 1 to PSO's response to AG-PSO-14-6 and is included in Exhibit WWD-2. As part of the standard, groundline inspections are required after a specified age.
[20] *See* PSO's Response to AG-PSO-14-6, attached as Ex. WWD-2.

125 requirement when reviewing reliability data in support of any proposed plan by PSO. Further, to the extent it is within the Commission's authority, I recommend that the Commission order PSO to resume following the Specification 125 requirements, including periodic ground line inspections.[21]

Q. DO YOU RECOMMEND THAT WOOD POLES BE REPLACED JUST BECAUSE THEY ARE OVER 40 YEARS OLD?

A. No.[22] The industry, including PSO's parent AEP, has tests and specifications which can determine which poles are solid versus which poles are decayed or cracked. PSO stopped performing the ground line tests after 2018. Replacing a perfectly good pole that reaches age 40, at ratepayers' expense, because PSO does not bother to determine its condition, would be a waste of resources and is not reasonable.

In addition, if PSO is allowed to retire a perfectly good pole because PSO did not bother to determine its condition, that generally means as the replacement a living tree must be harvested, transported, and processed, for no valid reason.

B. PSO's existing distribution facilities are "two-way."

Q. PSO REFERS TO GENERATION INCLUDING CUSTOMER ROOF TOP SOLAR AND CUSTOMER WIND TURBINES AS "DISTRIBUTED GENERATION" OR

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[21] In addition to testing to detect decay, PSO should also be taking the steps needed to assure poles with adequate strength are in service.
[22] Likewise, I do not recommend that overhead conductors, underground conductors, or station transformers be replaced just because they are over the age of 40.

"DG." HOW DOES DG RELATE TO PSO'S ACCELERATED REPLACEMENT PROPOSAL?

A. PSO argues that DG creates a need for replacing distribution assets to allow two-way power flows. PSO witness Horeled states the following:

> Although there is not significant DG penetration on PSO's system at the present time, as I explained earlier, that will not be the case in the future. As Company witness Steven Baker testifies, the distribution system was not designed for two-way power flows. The distribution system will have to transition to accommodate the expected future levels of DG.[23]

Q. CAN THE UNDERGROUND CONDUCTORS, STATION TRANSFORMERS AND OTHER DISTRIBUTION FACILITIES THAT PSO IS PROPOSING TO REPLACE CARRY "TWO-WAY POWER FLOWS"?

A. Yes. All of the PSO distribution facilities, even the oldest ones, have always allowed "two-way power flows." The PSO distribution system is an <u>alternating</u> current (AC) distribution system, in which current flows in both directions. In response to discovery, PSO admitted this:

> Yes, it is correct that current flows both directions through a conductor in an alternating current (AC) system.[24]

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[23] Direct Test. of Matthew A. Horeled on Behalf of Public Service Company of Oklahoma 9: 15–19 (April 30, 2021).
[24] PSO's Response to AG-PSO-14-4(a), attached as Ex. WWD-4.

In response to discovery, PSO also agreed that "current flows both directions" in PSO's station transformers, PSO's overhead and underground conductors, and PSO's station breakers, <u>specifically including</u> those that "are over 40 years old."[25]

Q. COULD YOU FURTHER EXPLAIN THE TWO-WAY POWER FLOWS IN THE EXISTING PSO ELECTRIC SYSTEM?

A. Yes. I will use an east-west underground conductor to explain alternating current. At one instant the current might be flowing east. A fraction of a second later the current is zero. A fraction of a second later the current flows west. Then it stops. Then is flows east again. The alternating direction of current flow occurs many times per second every second.[26] All PSO distribution facilities carry current two ways. There is no need to replace distribution conductors, station transformers, or breakers to carry two-way power; they can already do that.

Q. BUT IN ITS RESPONSE TO AG-PSO-14-4, PSO SAYS THAT "THE ELECTRIC DISTRIBUTION SYSTEM WAS DESIGNED TO DISTRIBUTE POWER" A CERTAIN WAY. DOES THAT MEAN THAT THE CONDUCTORS OR STATION TRANSFORMERS WILL ONLY ALLOW POWER TO FLOW IN ONE DIRECTION?

A. No. Power flows equally well in either direction through a metal conductor, regardless of how the system was originally "designed." Assume when the system was designed, the generator was on the east end of a conductor and the load was on the west end of that

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[25] PSO's Response to AG-PSO-14-4(a)–(d), attached as Ex. WWD-4.
[26] In the United States, the electric system's AC current is 60 cycles per second (60 Hertz). This means the current flows one direction 60 times in a second and the other direction 60 times in a second.

conductor. If later the generator was moved to the west end and the load moved to the east end, the conductor would conduct the power in that direction just as well. The conductors, station transformers, and breakers, including the ones that are over 40 years old, work equally well delivering power in either direction, regardless of how the system was originally "designed."

Q. IF THERE IS NO QUESTION THAT EVEN THE OLDER CONDUCTORS, STATION TRANSFORMERS, AND OTHER FACILITIES CAN CARRY POWER TWO WAYS, WHAT DID PSO SAY THEY MEANT BY THE "TWO-WAY" TESTIMONY?

A. PSO stated in response to AG-PSO-14-4 the following:

> As DER [distributed energy resource] devices are added on the edge of the grid, more power will be imported (via reverse power flows) through the distribution system which will create <u>operational challenges that will need to be resolved</u>.[27]

Q. DOES THE STATEMENT THAT THERE ARE "OPERATIONAL CHALLENGES THAT WILL NEED TO BE RESOLVED" MEAN THAT HUNDREDS OF MILLIONS OF DOLLARS OF UNDERGROUND CONDUCTORS, STATION TRANSFORMERS, AND POLES HAVE TO BE REPLACED?

A. No. Older vintages of these facilities carry power equally well in either direction just the same as newer vintages carry power equally well in either direction. There may be administrative or operational issues that PSO will have to resolve if distributed energy

[27] PSO's Response to AG-PSO-14-4, attached as Ex. WWD-4 (emphasis added).

resources become more common, but resolving those administrative or operational issues does not involve replacing conductors, station transformers, breakers, etc.

Q. IN THE RESPONSE TO AG-PSO-14-4, PSO SAYS THERE COULD BE "CONDUCTOR AND TRANSFORMER OVERLOADING (WHERE IMPORTED POWER EXCEEDS THE CAPACITY REQUIRED TO SERVE LOADS)." IS IT REASONABLE TO EXPECT THAT IF CUSTOMERS START PRODUCING MORE OF THEIR OWN POWER THAT WOULD GENERALLY <u>INCREASE</u> THE POWER THOUGH THE PSO CONDUCTORS AND STATION TRANSFORMERS?

A. No. If customers in an area start producing more of their own power, it is reasonable to expect that would generally <u>reduce</u> the amount of power PSO would have to deliver to that area. That would generally <u>reduce</u> the load on the PSO station transformers and on the PSO conductors that deliver power to that area.[28]

C. Retirement based solely on age is not the proper criteria.

Q. IS RETIRING AN ASSET SOLELY ON THE BASIS IT HAS REACH A SPECIFIC AGE CONSISTENT WITH ESTABLISHED REGULATORY REQUIREMENTS?

A. No. Determining when utility assets are properly expected to retire is an important part of determining regulatory depreciation rates. Regulators have specified the reasons that should be considered in determining the expected life of the utility assets, and <u>age is not even one</u> of the listed factors. The Federal Energy Regulatory Commission ("FERC")

[28] In addition, the distribution system does not have to be built for the possibility that a large wind farm or solar farm could be built anywhere. If a large wind farm or solar farm is built, then special arrangements would be made to connect that power, sometimes including the construction of a transmission line(s).

definition of depreciation contained in the FERC Uniform System of Accounts states the following:

> 12. *Depreciation,* as applied to depreciable electric plant, means the loss in service value not restored by current maintenance, incurred in connection with the consumption or prospective <u>retirement</u> of electric plant in the course of service from causes which are known to be in current operation and against which the utility is not protected by insurance. <u>Among the causes to be given consideration are wear and tear, decay, action of the elements, inadequacy, obsolescence, changes in the art, changes in demand and requirements of public authorities</u>.[29]

The "causes to be given consideration" when determining how long utility investments are expected to be in service does <u>not even mention the "age"</u> of the asset as a specific consideration.

D. Other PSO witness actions indicate they do not expect the accelerated replacement proposal to be adopted.

Q. AS HAS BEEN DISCUSSED, WITNESS BAKER PROPOSES "TO REPLACE ALL ASSETS IN EACH CATEGORY THAT ARE CURRENTLY GREATER THAN 40

[29] Uniform System of Accounts Prescribed for Public Utilities and Licensees Subject to the Provisions of the Federal Power Act, 18 C.F.R. pt. 101(12) (emphasis added).

YEARS OF AGE."[30] WHAT EFFECT WOULD THAT HAVE ON DEPRECIATION RATES IF ADOPTED?

A. If the Baker proposal was adopted, the proposed earlier retirements would increase depreciation rates. We use the average Remaining Life in the calculation of the depreciation rate of an account. Remaining Life is the number of years that the investments are expected to remain in service until they retire. The earlier retirements that would occur if witness Baker's proposal was adopted would shorten the Remaining Life and therefore increase the depreciation rates in the accounts effected.

PSO witness Cash admitted that earlier retirements under the Baker proposal should "increase" the depreciation rates. When asked about witness Baker's proposal, PSO witnesses Cash and Baker replied with the following:

> Generally speaking, depreciation rates <u>should be increased</u> in order to reflect the retirement of the assets over a shorter period of time than what the depreciation study produced. The Company will propose to update depreciation rates in future proceedings, which may or may not consider the option that is ultimately approved.[31]

However, the depreciation rates PSO witness Cash proposes in this case effectively assume that the Baker proposal will <u>not</u> be adopted. In response to discovery, PSO witnesses Cash and Baker stated as much:

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[30] Baker Direct 45:13–18.
[31] PSO's Response to AG-PSO-14-3(b), attached as Ex. WWD-5 (emphasis added).

> Depreciation rates were calculated using the retirement history of the account and <u>no adjustments were made based on the testimony of Company Witness Baker</u>.[32]

The depreciation rates PSO proposes in this case effectively assume the Baker proposal will <u>not</u> be adopted.

Q. AS DISCUSSED, WITNESS BAKER PROPOSES "TO REPLACE ALL ASSETS IN EACH CATEGORY THAT ARE CURRENTLY GREATER THAN 40 YEARS OF AGE."[33] IF ADOPTED, THIS PROPOSAL WOULD RESULT IN EARLIER RETIREMENTS THAN OTHERWISE EXPECTED. ARE CERTAIN OTHER PSO WITNESSES' ACTIONS CONSISTENT WITH THE EXPECTATION THAT THE BAKER PROPOSAL WILL <u>NOT</u> BE ADOPTED?

A. Yes. The Baker proposal would result in earlier retirements than otherwise expected, which would shorten the remaining life, if adopted. PSO was asked the following in discovery:

> Please identify and provide copies of Company programs and plans that might substantially affect the remaining lives of any plant assets.[34]

Several PSO witnesses and executives sponsored the following response:

> PSO currently has no Company programs and plans that might substantially affect the remaining lives of any plant assets.[35]

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[32] PSO's Response to AG-PSO-14-3(a), attached as Ex. WWD-5 (emphasis added).
[33] Baker Direct 45:13–18.
[34] PSO's Response to OIEC-PSO-5-17, attached as Ex. WWD-6.
[35] PSO's Response to OIEC-PSO-5-17, attached as Ex. WWD-6.

This PSO response was provided by Daryll Jackson, VP Generating Assets, Matthew A. Horeled, VP Regulatory & Finance, and Jason A. Cash, Accounting Senior Manager.

The Baker proposal would be shortening "the remaining lives." This PSO response is valid only if it is assumed that the Baker proposal will <u>not</u> be adopted.

E. PSO does not show the full cost of the accelerated replacement proposal.

Q. DOES PSO SHOW THE FULL COST OF THE ACCELERATED REPLACEMENT PROPOSAL?

A. No. As previously discussed regarding the Baker proposal, PSO witness Cash admitted "depreciation rates should be increased in order to reflect the retirement of the assets over a shorter period of time," but witness Cash has not done so.[36]

Q. DID WITNESS BAKER UNDERSTATE THE COST OF THE BAKER PROPOSAL?

A. Yes. Figures 19 and 21 in the Baker testimony show the cost of the Baker proposal. But witness Baker failed to include the higher depreciation rates that would result from the earlier retirements witnesses Baker proposes. In response to discovery, PSO admitted the following:

> c) Correct. No depreciation expense is included in the dollar amounts included in Figure 19.
>
> d) Correct. No depreciation expense is included in the dollar amounts included in Figure 21.[37]

[36] PSO's Response to AG-PSO-14-3, attached as Ex. WWD-5.
[37] PSO's Response to AG-PSO-14-3(c) and (d), attached as Ex. WWD-5.

Witness Baker is not revealing to the Commission the full cost of the Baker proposal.

F. PSO's own data shows "PSO's electric system is" not actually "growing older by the day."

Q. WHAT IS ONE CLAIM MR. BAKER MAKES IN SUPPORT OF HIS ACCELERATED REPLACEMENT PROPOSAL?

A. Witness Baker makes the following assertion:

> "PSO's electric system is growing older by the day."[38]

Q. DO PSO'S OWN WITNESSES DISPROVE THIS CLAIM?

A. Yes. PSO's own witnesses prove that the accounts at issue are now lightly younger on average than they were in the PSO 2018 case.

The accounts that witness Baker's proposal addresses are shown on Figure 19 of the Baker direct testimony. In the prior case, Cause No. PUD 201800097, the PSO depreciation witness Davis filed an exhibit which showed the Average Age of each of these accounts in the year 2017. Further, in the current proceeding, PSO depreciation witness Cash's workpapers show the Average Age of each of these accounts in the year 2020. As determined by PSO's depreciation witnesses, Figure 4 below compares the Average Age of each account in 2017 to the Average Age in 2020.

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[38] Baker Direct 37:3–4.

Figure 4: Average Age as Stated by PSO Depreciation Witnesses

	Account	PSO Davis,[39] Average Age in 2017	PSO Cash,[40] Average Age in 2020	Increase (Decrease) in Average Age
362	Station Equipment	14.96	13.83	-1.13
364	Poles, Towers and Fixtures	14.30	14.48	0.18
365	Overhead Conductors and Devices	13.13	13.04	-0.09
367	Underground Conductor	13.09	14.12	1.03

The largest single change was a decrease in the average age of Account 362, Station Equipment in 2020 compared to 2017.

In addition, Station Equipment is the account with the largest Incremental Cost in the Baker proposal. On Figure 19 of the Baker testimony Station Transformers, Station Protection, and Station Breakers are all in Account 362. Account 362, Station Equipment has an Incremental Cost of $30,483,000 per year in the middle column of Baker Figure 19.[41]

Overall, the Average Age actually decreased slightly in 2020 compared to 2017 for the four accounts addressed in the Baker proposal, using the 2017 compared to 2020 Average Ages as provided by PSO's own depreciation witnesses.[42]

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[39] These figures are from the depreciation workpapers of David A. Davis, PSO's depreciation witness, in Cause No. PUD 201800097. They have been attached as Exhibit WWD-7.
[40] These figures are from depreciation workpapers provided by PSO witness Cash in response to discovery question AG-PSO-1-3 in this case. The relevant excerpt here have been attached as Exhibit WWD-8.
[41] This is the middle column (">40") on Figure 19. Account 362 includes Station Breakers ($3,690,000), Station Transformers ($24,168,000), and Station Protection ($2,625,000), which sum up to equal the $30,483,000 in Account 362. The account numbers were derived from PSO's response to AG-PSO-15-2.
[42] Witnesses Davis and Cash both used the same method to calculate the Average Age of an account.

Q. WHAT ARE EXHIBITS WWD-7 AND WWD-8?

A. These exhibits are the PSO source documents for the Average Ages used in Figure 4.

Exhibit WWD-7 contains the Average Ages in 2017 from PSO Exhibit DAD-3 in Cause No. PUD 201800097.[43] For example, for Account 362 Station Equipment, the PSO document says the following: "The average age of property in this account is 14.96 years."

Exhibit WWD-8 contains the Average Ages in 2020 from the PSO depreciation workpapers in the current proceeding.[44] For example, for Account 362 Station Equipment, the PSO document says the following: "The average age of property in this account is 13.83 years."[45]

Comparing the two sets of workpapers shows that Witness Davis and Witness Cash both used the same method to calculate the Average Age of an account in both proceedings. These are comparable sets of Average Ages.

1. PSO witness Baker calculates the Average Age differently than PSO witness Cash calculates the Average Age.

Q. IN THE PRIOR SECTION YOU STATED THE PSO WITNESS CASH IN THIS CASE USED THE SAME METHOD TO CALCULATE THE AVERAGE AGE OF AN ACCOUNT AS PSO WITNESS DAVIS DID IN THE 2018 CASE. DID PSO

[43] Quotation from page 2, Ex. WWD-7, PSO 2018 Depreciation Workpapers Excerpt pages 360-362, 364, 388-393, and 397.
[44] PSO Depreciation Workpapers Excerpt, Ex. WWD-8.
[45] Quotation from page 3, Ex. WWD-8, PSO Depreciation Workpapers Excerpt pages 369-371, 373, 398, 404, 407, and 408.

WITNESS BAKER CALCULATE THE AVERAGE AGE OF AN ACCOUNT THE SAME WAY PSO WITNESSES DAVIS AND CASH DID?

A. No. PSO witness Baker calculated the Average Age of an account very differently than PSO witness Cash did in the current proceeding or PSO witness Davis did in the 2018 case. For example, for distribution poles, witness Baker says the Average Age in 2020 is 25.8 years.[46] However, for the distribution poles in 2020, PSO witness Cash says the following: "The average age of property in this account is 14.48 years." [47] Both the 14.48 years and 25.8 years PSO "Average Age" numbers are for the same year (2020) and for the same account (Account 364).[48] For each account on Baker Figure 17, Figure 5 below compares what PSO witness Cash says the Average Age is in 2020 to what PSO witness Baker says the Average Age is in 2020:

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[46] Baker Direct 44.
[47] PSO Depreciation Workpapers Excerpt, Ex. WWD-8, at 4.
[48] The PSO response to AG-PSO-15-2 specifically shows that "Poles" on Baker Figure 19 specifically refers to Account 364, Poles, Towers and Fixtures (which is the same Account 364 the Cash said the Average Service life was 14.48 years).

Figure 5: Comparison of the PSO Baker Average Age to the PSO Cash Average Age, All During the Year 2020

	Account	PSO Cash, Average Age in 2020[49]		PSO Baker, Average Age in 2020 [50]	Difference (Years)
364	Poles, Towers and Fixtures	14.48		25.8	11.3
365	Overhead Conductors & Devices	13.04		25.3	12.3
367	Underground Conductor	14.12		25.4	11.3
362	Station Equipment[51]	13.83			
362			Transformer	42.0	28.2
362			Breakers	25.4	11.6
362			Protection	23.1	9.3

These very different PSO "Average Age" numbers are for the same year (2020) and for the same accounts.

For example, the 25.3-year Average Age of Overhead Conductor according to witness Baker is almost twice the 13.04-year Average Age of Overhead Conductor the way PSO normally calculates Average Age. Both of these PSO numbers are for the year 2020.

It is fortunate for witness Baker that witness Baker found a different way to calculate the claimed Average Age. If witness Baker used the normal PSO calculation, witness Baker's testimony would have been that the Average Age of Overhead Conductors in 13.04 years. That would not support witness Baker's claims that the PSO investment is old.

[49] These figures are from PSO's depreciation workpapers included in Exhibit WWD-8.
[50] Baker Direct 44, Fig. 17.
[51] Witness Cash does not show the Average Age of Account 362 by subaccount.

No significant weight should be given to witness Baker's claims about Average Age. As previously discussed, age by itself is not even one of the factors included in what should be considered in determining expected life.

2. PSO witness Baker's methodology for calculating Average Age is flawed.

Q. PLEASE USE STATION TRANSFORMERS TO DEMONSTRATE ONE PROBLEM IN WITNESS BAKER'S CALCULATION OF THE ALLEGED AVERAGE AGE.

A. The older PSO station transformers have a capacity that is tiny compared to the newer PSO station transformers. Witness Baker used a weighting method that gave these tiny older transformers a disproportionate weighting in calculating the alleged Average Age. For example, the Attorney General sent the following discovery request to understand how two different transformers would be weighted in witness Baker's calculations:

> Assume that the two transformers are completely identical except that transformer B has five times the kVa capacity as transformer A.

In response, Witness Baker answered with the following:

> Transformers A and B would be listed with the same quantity.[52]

Q. THE RESPONSE DISCUSSED ABOVE ASSUMED ONE HYPOTHETICAL STATION TRANSFORMER HAD FIVE TIMES THE CAPACITY OF ANOTHER HYPOTHETICAL STATION TRANSFORMER. WHAT ACTUAL DIFFERENCE

[52] PSO's Response to AG-PSO-15-6(b), attached as Ex. WWD-9.

IS THERE IN THE PSO DATA ABOUT THE ACTUAL PSO STATION TRANSFORMERS?

A. The most recent PSO station transformers have a capacity 50 times the capacity of the oldest PSO station transformers.

Witness Baker miscalculated the alleged Average Age in part by giving the same weighting to the tiny older transformers that have 1/50th the power capacity of the newer transformers.

Q. WHAT IS EXHIBIT WWD-10?

A. Exhibit WWD-10 is the PSO response which shows the capacity of the PSO station transformers by year manufactured. As can be seen, the PSO station transformers manufactured in the recent year 2019 have power capacities that ranged from 54,000 kilovolt-amps ("kVA") to 10,000 kVA. The average power capacity for the year 2019 station transformers is 26,000 kVA.[53] As can also be seen on Exhibit WWD-10, the three oldest PSO station transformers on this response each have a power capacity of 500 kVA. The oldest PSO station transformers are only 1/50th the capacity of the station transformers PSO installed in the recent year 2019.[54] However, in the Average Age calculation, witness Baker ignored this obvious and huge difference. Witness Baker used a weighting method that gave these tiny older transformers a disproportionate weighting in calculating the Average Age.

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[53] For the 2019 transformers, the average is the sum of (30,000 + 25,000 + 10,000 + 10,000 + 24,000 + 54,000 + 30,000) divided by 7, resulting in 26,143 kVA.
[54] 500 kVA divided by 26,000 kVA is 1.92 percent, which is less than 1/50.

Q. YOU HAVE DISCUSSED STATION TRANSFORMERS. DO WITNESS BAKER'S AVERAGE AGE CALCULATIONS HAVE SIMILAR PROBLEM IN OTHER ACCOUNTS?

A. Yes. Witness Baker's Average Age calculations have similar problem in other accounts. For example, regarding Account 365, Overhead Conductor and Devices, the Attorney General asked the following discovery question about how two conductors would be weighted in witness Baker's calculations:

> The two overhead conductors have the same length and are completely identical except that conductor B has a larger diameter that enables it to carry five times the current that conductor A can carry.

In response, witness Baker provided the following answer:

> Conductors A and B would have the same quantity.[55]

As yet another example, regarding Account 367, Underground Conductor, in discovery the Attorney General asked how the following two cables would be weighted:

> Each cable has the same length and are completely identical except that cable B has three conductors, while cable A has one conductor.

In response witness Baker said:

> Cable B would be included in the same quantity.[56]

[55] PSO's Response to AG-PSO-15-3(d), attached as Ex. WWD-11.
[56] PSO's Response to AG-PSO-15-4(b), attached as Ex. WWD-12.

Q. PLEASE SUMMARIZE YOUR RECOMMENDATIONS ABOUT THE AVERAGE AGE CLAIMS OF WITNESS BAKER.

A. For the reasons discussed above, no significant weight should be given to witness Baker's claims about Average Age. As previously discussed, age by itself is not even one of the factors that should be considered in determining expected life.

3. PSO witness Baker's "Estimated Absolute Mortality Curve" is contrary to PSO's actual data.

Q. ON PAGE 49 OF HIS TESTIMONY, PSO WITNESS BAKER PRESENTS WHAT HE CALLS THE "ESTIMATED ABSOLUTE MORTALITY" CURVE FOR POLES AND FOR UNDERGROUND CABLE. ARE THESE CURVES CONSISTENT WITH THE PSO ACTUAL DATA?

A. No. PSO records when a specific pole or a specific cable at a specific location is installed. Years or decades later when that specific pole or specific cable at that specific location retires, PSO also records that retirement date. From this actual data, the historical actual lives for the PSO facilities in an account are known. As part of the PSO depreciation study, PSO depreciation witness Cash assembled the actual PSO life data.[57]

Figure 6 below shows the actual percentage of the original PSO Underground Cable investment that actually retired by age ("mortality") from the data in PSO witness Cash's depreciation study.[58] This actual mortality data is compared to the alleged "Estimated Absolute Mortality" curve PSO witness Baker presents.

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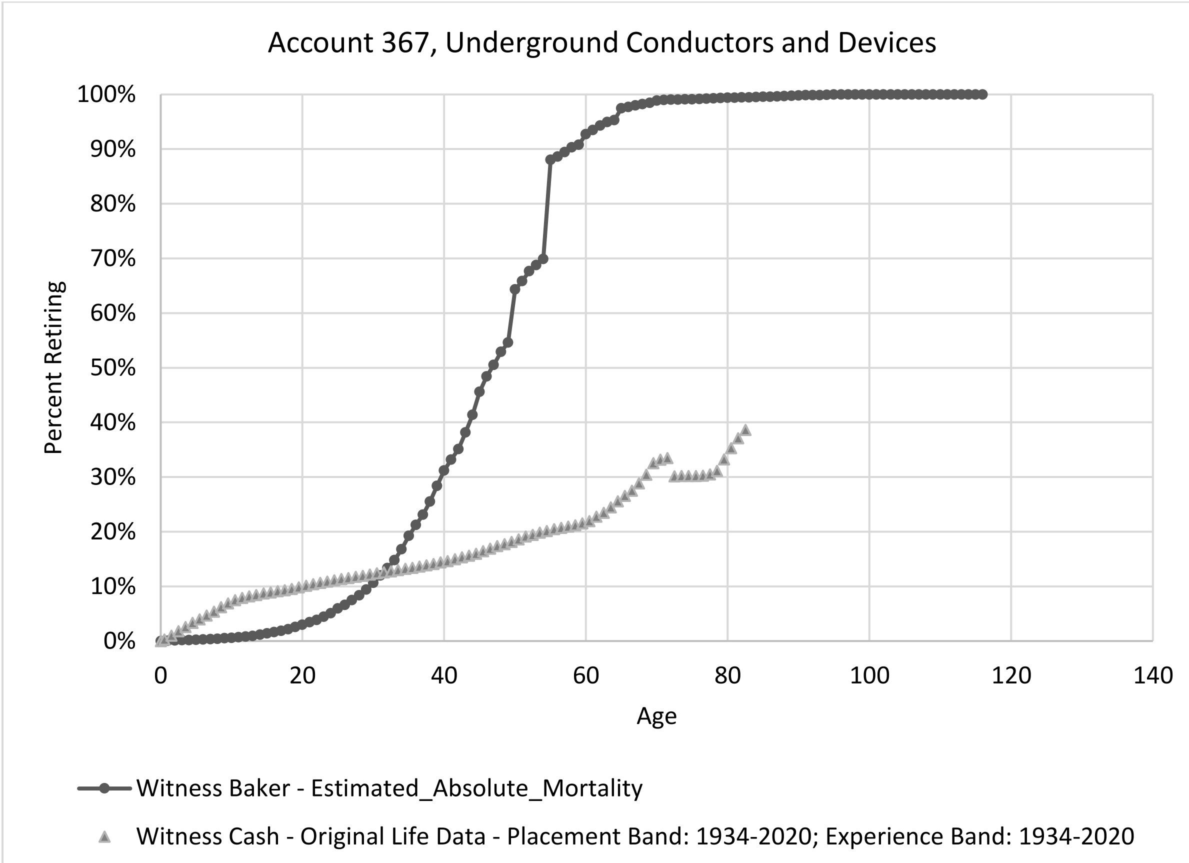
[57] PSO witness Cash followed the specific accepted method of analyzing the actual data, which is called an "actuarial" analysis.

[58] This data is available in the Observed Life Table for Account 367, Underground Conductor and Devices, from pages 447 and 448 of PSO's depreciation workpapers provided in response to AG-PSO-1-3. The

Figure 6: Percent of Original Investment That Has Retired (Mortality) by Age, Comparing the Actual PSO Data to the Baker Graph



As can be seen in Figure 6, the "Estimated Absolute Mortality" curve PSO witness Baker presents is far removed from the actual PSO data. For example, the actual PSO data shows that less than 20 percent of the underground cable has retired by age 50.[59] However, PSO witness Baker "Estimated Absolute Mortality" curve alleges that over 60 percent of the underground cable will have retired by age 50.[60]

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relevant excerpt is attached as Ex. WWD-13. The percent that have retired (mortality) can be calculated from the present surviving with the following formula: 100% - % Surviving = % Mortality.

[59] PSO Depreciation Workpapers Excerpt, attached as Ex. WWD-13.

[60] *See* PSO's Response to AG-PSO-14-5, Attachment 1, attached as Ex. WWD-14.

The actual data should be used, not "estimates" that are wildly inconsistent with the actual data.

Q. THE PSO DEPRECIATION WITNESS CASH USED THE ACCEPTED "ACTUARIAL" ANALYSIS OF THE ACTUAL PSO DATA.[61] DID WITNESS BAKER'S "ESTIMATED ABSOLUTE MORTALITY" CURVES USE THE ACCEPTED "ACTUARIAL" ANALYSIS?

A. No. The workpapers for PSO witness Baker's "Estimated Absolute Mortality" curves make no mention or use of an "actuarial" analysis.[62]

Q. WHAT IS EXHIBIT WWD-13?

A. Exhibit WWD-13 contains the workpapers from PSO witness Cash that show the actual Account 367 percent surviving by age. The last column shows the percent surviving by age. For example, at age 50.5, the actual data shows 81.40 percent of the original investment is surviving (still in service). The percent that has retired (mortality) is 100 percent less the percent surviving. So, at age 50.5 the percent that has retired (mortality) is 18.60 percent based on actual PSO recorded data.[63]

Q. DOES THE ACTUAL OBSERVED LIFE DATA FROM THE PSO DEPRECIATION STUDY THAT IS EXHIBIT WWD-13 FURTHER DEMONSTRATE PROBLEMS WITH THE PROPOSAL "TO REPLACE ALL

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[61] Direct Test. of Jason A. Cash on Behalf of Public Service Company of Oklahoma, Ex. JAC-2, at 8–9 (Apr. 30, 2021) [hereinafter "Cash Direct"].
[62] The relevant workpapers are found at PSO's response to AG-PSO-14-5, Attachment 1, tab "Estimated Mortality Curves." The workpapers do not use or employ any actuarial analysis.
[63] This figure represents 100 percent minus 81.4 percent surviving to result in 18.4 percent retired (mortality).

ASSETS IN EACH CATEGORY THAT ARE CURRENTLY GREATER THAN 40 YEARS OF AGE"?

A. Yes. The actual data shows nothing drastic happens to Underground Cable at age 40. Less than one half of 1 percent of the Underground Cable retires during the year when it turns 40.[64]

In addition, at age 40.5 the actual PSO data shows that 85 percent of the underground cable is still in service.[65] Obviously, if that cable were not meeting PSO standards, the Company would and should have replaced it. Although this cable is apparently meeting the PSO requirements to remain in service, under the Baker proposal "to replace all assets in each category that are currently greater than 40 years of age," all of this cable would be retired, just because of its age.

G. Underground cable does not pose a material reliability concern during wind and ice storms.

Q. WHAT IS ANOTHER PROBLEM WITH THE BAKER TESTIMONY?

A. A major argument PSO witness Baker makes is that this proposal is needed to protect "customers during major weather events such as the October 2020 ice storm."[66] However, one of the largest investments he proposes is the replacement of <u>underground</u> conductor.[67] Underground conductor is underground. Ice and wind should have little impact on <u>underground</u> conductor. Further, data in the Baker workpapers show that in 2020

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[64] This can be observed in the Retirement Ratio column which shows 0.00328 (0.328% of investment retires during the 12 months following age 39.5) on the Age 39.5 line on Exhibit WWD-13.
[65] *See* Ex. WWD-13, on the Age 40.5 line.
[66] Baker Direct 41:14–15.
[67] Baker Direct 46, Fig. 19 (showing relevant data in middle column).

underground conductor facilities were responsible for less than 1 percent of the Weather-Only Customer Minutes Interrupted and Customers Interrupted.[68]

Q. PLEASE SUMMARIZE YOUR TESTIMONY REGARDING PSO'S ACCELERATED REPLACEMENT PROPOSAL.

A. While another witness will present the Attorney General's overall recommendation regarding witness Baker's proposal, I have demonstrated several relevant technical points, with citations and support, in my above testimony:

(1) After 2018, PSO stopped the "groundline" inspections of poles that are needed to locate below-ground decay or internal decay that is not visible. I recommend that the Commission consider PSO's own failure to follow its Specification 125 requirements when reviewing reliability data. Further, to the extent it is within the Commission's authority, I recommend that the Commission order PSO to resume following the Specification 125 requirements, including periodic groundline inspections.

(2) PSO's existing distribution facilities at issue are Alternating Current (AC), two-way facilities. They can carry power equally well in either direction. This specifically includes the facilities that are over age 40.

(3) Retirement based solely on age is not appropriate. Age is not even one of the factors listed by FERC to consider when estimating expected life.

(4) The actions of other PSO witness are consistent with the expectation that the Baker proposal will <u>not</u> be adopted. For example, the PSO depreciation witness admitted the

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[68] PSO's Response to AG-PSO-1-3, attachment "File 620 2016-2020 Summary for Charts" provided with shortened name "FILE 62~1.xls," tab "Summary 2016,17,18,19,20" attached as Exhibit WWD-15.

earlier retirements under the Baker proposal would increase depreciation rates. But in the depreciation rates PSO filed, "no adjustments were made based on the testimony of Company Witness Baker."[69]

(5) PSO has not revealed the full cost of the Baker proposal. The cost PSO filed failed to include the higher depreciation rates that would result from the earlier retirements witness Baker proposes.

(6) PSO's own witnesses proves that PSO's electric system is <u>not</u> growing older by the day. For the accounts at issue, the PSO depreciation witnesses have provided the Average Age in 2017 and the Average Age in 2020. On average, for the accounts at issue, the Average Age is lower (younger) in 2020 than it was in 2017.

(7) Witness Baker altered the way PSO normally calculates Average Age. For example, PSO witness Cash says for distribution poles that the Average Age is 14.48 years in 2020. PSO witness Baker claims that the Average Age is 25.8 years for the same year (2020) and for the same account (Account 364).

(8) Witness Baker provided an "Estimated Absolute Mortality" curve that is vastly inconsistent with the actual PSO data.

(9) PSO witness Baker claims his proposed additional investments are needed to protect customers from weather events. However, one of the largest investment category he proposes to replace is underground conductor facilities. Underground conductor facilities are already substantially protected from weather events by the fact that they are underground.

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[69] PSO's Response to AG-PSO-14-3(a), attached as Ex. WWD-5.

III. Depreciation Rates

Q. COULD YOU PLEASE PROVIDE THE DEFINITION OF DEPRECIATION?

A. Yes. The definition contained in the FERC Uniform System of Accounts states the following:

> 12. *Depreciation,* as applied to depreciable electric plant, means the loss in service value not restored by current maintenance, incurred in connection with the consumption or prospective retirement of electric plant in the course of service from causes which are known to be in current operation and against which the utility is not protected by insurance. Among the causes to be given consideration are wear and tear, decay, action of the elements, inadequacy, obsolescence, changes in the art, changes in demand and requirements of public authorities.[70]

Q. ARE THE PROCEDURES AND TECHNIQUES YOU UTILIZED CONSISTENT WITH PRIOR COMMISSION ORDERS?

A. Yes. The depreciation rates are determined based on the average service life procedure and the remaining life technique. This is consistent with prior depreciation rates adopted by the Commission.

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[70] Uniform System of Accounts Prescribed for Public Utilities and Licensees Subject to the Provisions of the Federal Power Act, 18 C.F.R. pt. 101(12).

Q. WHAT IS THE IMPACT OF PSO WITNESS CASH'S PROPOSED CHANGES IN DEPRECIATION AND AMORTIZATION RATES ("DEPRECIATION RATES")?

A. The impact is significant. Witness Cash's proposed depreciation rates would increase the annual depreciation expense by over $57 million.[71] This is a 35 percent proposed increase from the depreciation expense at current depreciation rates.[72]

Q. PLEASE COMPARE THE ANNUAL DEPRECIATION ACCRUALS PSO WITNESS CASH RECOMMENDS TO THE ANNUAL DEPRECIATION ACCRUALS YOU RECOMMEND.

A. For reasons discussed further in this testimony below, I recommend the "AG" depreciation and amortization rates shown on Exhibit WWD-16. The annual accruals (annual depreciation expense) resulting from the depreciation rates PSO witness Cash recommends, and the depreciation rates the Attorney General recommends, compared to the current depreciation rates, are shown in the following Figure 7 below.

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[71] Cash Direct 5.
[72] A proposed increase of $57,188,674 divided by $162,004,200 in current depreciation rate expense shows an approximate increase of 35 percent. All of these amounts are calculated on investment as of December 31, 2020.

Figure 7: Comparison of PSO and AG Proposed Annual Accrual Amounts

Comparison of Annual Accrual Amounts based on 12/31/2020 Estimated Investments						
Function	Current Approved	PSO Proposed	PSO Difference from Current	AG Proposed	AG Difference from Current	AG Difference from PSO
Production	$44,242,372	$96,757,262	$52,514,890	$47,920,072	$3,677,700	($48,837,190)
Transmission	$26,019,887	$27,805,526	$1,785,639	$27,805,526	$1,785,639	$0
Distribution	$84,613,270	$85,332,033	$718,763	$80,420,296	($4,192,974)	($4,911,737)
General	$7,128,671	$9,298,053	$2,169,382	$9,224,507	$2,095,836	($73,546)
Total	$162,004,200	$219,192,873	$57,188,673	$165,370,401	$3,366,201	($53,822,473)

A. Northeastern Unit 3

Q. WHAT IS THE DEPRECIATION OR AMORTIZATION ISSUE THAT HAS THE LARGEST DOLLAR IMPACT?

A. The depreciation or amortization issue that has the largest dollar impact is the recovery period of Northeastern Unit 3 (“NE3”). The shorter recovery period that PSO proposes for NE3 would increase the expense by $43 million per year.

Q. WHAT DOES PSO PROPOSE PERTAINING TO NORTHEASTERN UNIT 3?

A. PSO asks the Commission to reverse the prior Commission decisions on NE3. In Cause No. PUD 201500208 (“2015 case”), PSO indicated it was shortening the lives of NE3 and Northeastern Unit 4 (“NE4”) and asked for higher depreciation rates. In the 2015 case, PSO asked for higher depreciation to recover the unrecovered investment of NE3 over the period ending in 2026.

In that case, the Commission rejected the proposed higher depreciation, making the finding quoted below:

> The Commission finds that PSO should be denied cost recovery for the accelerated depreciation that PSO seeks to recover for Northeastern Units 3 and 4 over the 2016 to 2026 period and that, to mitigate rate increases, depreciation for the undepreciated, "original" costs of these two units should continue on its current pace to 2040.[73]

In the current proceeding, PSO is again proposed what the Commission has already specifically rejected. In the current proceeding, PSO again proposes the following:

> Therefore, it is the recommendation of this depreciation study to update the depreciation rate calculation for Northeastern Unit 3 using a 2026 retirement date[.][74]

The Commission previously rejected this proposal in the 2015 case.

Q. WHAT HAS OCCURRED ON THIS ISSUE SINCE THE 2015 CASE?

A. After the 2015 case, PSO retired NE4. Further, between the 2015 case and the current case, there have been two other PSO cases which included depreciation studies. These two intervening cases are Cause No. PUD 201700151 ("2017 case") and Cause No. PUD 201800097 ("2018 case").

Q. PLEASE SUMMARIZES WHAT HAS OCCURRED PERTAINING TO THE COMMISSION ORDER "TO MITIGATE RATE INCREASES, DEPRECIATION

[73] Final Order, Order No. 657,877, at 5, *Pub. Serv. Co. of Okla. Rates & Charges & Rules for Elec. Serv*., No. PUD 201500208 (Okla. Corp. Comm'n 2016) [hereinafter "2015 PSO Order"].
[74] Cash Direct 12:8–10.

FOR THE UNDEPRECIATED, 'ORIGINAL' COSTS OF THESE TWO UNITS SHOULD CONTINUE ON ITS CURRENT PACE TO 2040."[75]

A. What has occurred on the recovery period for these two units is summarized on the following Figure 8.

Figure 8: Recovery Period for NE3 and NE4 in Recent Cases

Recovery Period to Year Shown				
Cause No.	201500208	201700151	201800097	Current Case 202100055
	Ordered by Commission	Filed by PSO & AG Supported & Adopted	Filed by PSO & AG Supported & Adopted	Filed by PSO
NE U4:	2040	2040	2040	2040
NE U3:	2040	2040	2040	**<u>2026</u>**

In both the 2017 case and the 2018 case, the depreciation studies PSO filed included a recovery period through 2040 for both units, which is consistent with the Commission order in the 2015 case.

Q. WHAT DOES PSO PROPOSE IN THIS CASE?

A. In the 2015 case, the Commission ordered recovery through the year 2040 for the "two units" NE3 and NE4. In the current case, PSO proposes to follow the Commission order to recover to the year 2040 for NE4, but not for NE3. PSO's proposal is arbitrary and internally inconsistent.

In the current case, PSO acknowledges that for calculation purposes it is using 2040 as the final retirement year for NE4. In response to discovery, PSO stated it was "correct" that

[75] 2015 PSO Order 5.

on PSO Schedule I-4 the "annual amortization amount was calculated using a final retirement year for Northeastern Unit 4 of 2040."[76]

Q. PSO WITNESS CASH STATES "NORTHEASTERN UNIT 3 WILL RETIRE IN 2026."[77] IS THAT A NEW EXPECTED RETIREMENT DATE?

A. No. This is nothing new. That 2026 was the expected retirement date was specifically mentioned in the referenced Order in the 2015 case.[78] 2026 is the same expected retirement date for NE 3 that was known in the 2015 case, and in the 2017 case, and in the 2018 case.

Q. IN OBJECTING TO USING 2040 AS THE FINAL YEAR IN THE RECOVERY PERIOD FOR THE NE3, WHAT DOES PSO WITNESS CASH SAY?

A. Witness Cash says that using 2040 as the final year in the recovery period for NE3 would not properly be defined as "Depreciation Accounting."[79]

Q. DOES THAT MEAN THAT THE COMMISSION CANNOT CONTINUE TO USE A PERIOD THROUGH 2040 AS THE RECOVERY PERIOD FOR NE3?

A. Of course not. PSO is playing a word game. In fact, PSO filed using a recovery period though 2040 for NE4, so obviously it is acceptable. When PSO uses 2040 as the final year in the recovery period for the NE4, PSO calls that an "Amortization."[80]

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[76] PSO answered that it is "correct" that on PSO Schedule I-4, Proposed Amortization Expense, the "$3,519,992 annual amortization amount was calculated using a final retirement year for Northeastern Unit 4 of 2040." PSO's Response to AG-PSO-11-7.
[77] Cash Direct 11:17.
[78] 2015 PSO Order 5.
[79] Cash Direct 11:18–12:3.
[80] The amount is included in PSO Schedule I-4, Proposed Amortization Expense, meaning it is labeled as an amortization.

Q. DO YOU HAVE ANY OBJECTION TO CALLING THE RECOVERY OF THE UNRECOVERED NE3 INVESTMENT THROUGH THE YEAR 2040 AN "AMORTIZATION"?

A. No. Calling it an "amortization" expense instead of a "depreciation" expense does not have any dollar impact.

The term "depreciation" is often used to include items that are technically "amortizations." In fact, witness Cash's "Depreciation Study Report" Exhibit JAC-2 includes a number of rates and expenses under the heading of "depreciation" that are technically "amortizations."[81] That difference in the technical name has no real dollar significance. As witness Cash does, in my testimony I may use the term "depreciation" to include items that are technically "amortizations."

Q. WHAT DO YOU RECOMMEND FOR NE3?

A. I recommend continuing the treatment that was ordered by the Commission in the 2015 case and followed in the 2017 case and in the 2018 case. The 2026 date that PSO proposes in the current proceeding is the same date PSO proposed in the 2015 case and the Commission specifically rejected. PSO has not presented anything new on this issue.

In the 2015 case the Commission found the following:

> The Commission finds that PSO should be denied cost recovery for the accelerated depreciation that PSO seeks to recover for Northeastern Units 3 and 4 over the 2016 to 2026 period and that, to

[81] "As a result, my recommendation for these accounts is that the current useful life approved by the Commission be retained and used to continue <u>amortization</u> of the account balances." Cash Direct, Ex. JAC-2, at 10 (emphasis added).

> mitigate rate increases, depreciation for the undepreciated, "original" costs of these two units should continue on its current pace to 2040.[82]

The "rate increases" issue the Commission refers to in the 2015 Order is a valid concern in the current proceeding. The shorter recovery period that PSO propose for NE3 would increase the depreciation or amortization expense by $43 million per year. That is significant.

In addition, PSO's proposal is arbitrary and internally inconsistent. In the current case PSO proposes to follow the Commission order to use a recovery period to the year 2040 for NE 4, but not for NE3.

In my depreciation and amortization recommendations, I followed the Commission decision in the 2015 case, which is to recover to the year 2040.

B. Oklaunion

Q. HOW DID PSO TREAT THE OKLAUNION PRODUCTION PLANT IN THE DEPRECIATION STUDY?

A. PSO proposes to recover the unrecovered cost of the Oklaunion production plant through PSO's proposed NE3 depreciation rates.[83]

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[82] 2015 PSO Order 5.

[83] The PSO depreciation study reduced the NE3 depreciation reserve amount by $34,513,373 to recover the PSO share of the Oklaunion unrecovered investment. *See* PSO's Response to OIEC-PSO-5-6 & Attachment 1. For NE3, this results in PSO proposing depreciation rates higher than they otherwise would be because of Oklaunion. I did not accept this PSO adjustment.

Q. WHAT IS THE KEY ISSUE REGARDING OKLAUNION?

A. As Attorney General expert witness Todd F. Bohrmann explains, the retired Oklaunion production plant was retired early to get a non-regulated affiliate out of an unfavorable long-term contract. Mr. Bohrmann also demonstrates that, in the Texas jurisdiction, the unrecovered Oklaunion plant investment was recovered from the non-regulated affiliate, not from the regulated ratepayers. Based upon that testimony and recommendations, I did not include any recovery for the Oklaunion plant in the depreciation or amortization rate calculations.

C. Terminal Net Salvage of Production Units

Q. WHAT IS TERMINAL NET SALVAGE OF PRODUCTION UNITS?

A. In the future, after a production plant retires, it is expected that PSO will demolish that plant, which will incur a cost. It is also expected that scrap copper, steel, and other items will have significant salvage value. The terminal net salvage is the difference between the estimated salvage value and the estimated cost to demolish the plant.

These amounts are estimates, and the higher the estimated terminal net salvage, the higher the production units' depreciation rates, everything else equal.

Q. PLEASE PROVIDE AN OVERVIEW OF THE TERMINAL NET SALVAGE ISSUES YOU WILL ADDRESS.

A. In several prior cases, the Commission has already considered the major Terminal Net Salvage issues I will address, namely "Escalation" and "Contingency." On these two issues, I recommend that the Commission adopt the same positions it has repeatedly adopted in prior cases.

The only new Terminal Net Salvage issue is in this case is that PSO has proposed to significantly increase a relatively small cost called "Owners Cost" or "Indirect Cost." On that issue I will recommend a smaller increase than PSO proposes.

Q. THE PSO DEMOLITION COST ESTIMATES FOR POWER PLANTS IN EXHIBIT JAC-3 WERE PREPARED BY SARGENT AND LUNDY. DOES SARGENT AND LUNDY HAVE ANY EXPERIENCE IN <u>ACTUALLY</u> DEMOLISHING ANY POWER PLANT?

A. No. Sargent and Lundy has never participated in the actual demolition of any power plant. In discovery, the Attorney General asked the following question:

> How many power plants has Sargent & Lundy participated in the demolition of since its founding?

PSO provided the response below:

> The Company is not aware of any power plants in which Sargent & Lundy (S&L) has participated in the demolition of since its founding.[84]

1. Contingency Costs

Q. DOES THE PSO DEMOLITION COST ESTIMATE PREPARED BY SARGENT AND LUNDY INCLUDE WHAT IS REFERRED TO AS CONTINGENCY COSTS?

A. Yes.

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[84] PSO's Response to AG-PSO-11-8, attached as Ex. WWD-17.

Q. WHAT ARE CONTINGENCY COSTS AS USED IN THE PSO DEMOLITION COST ESTIMATE?

A. After Sargent and Lundy has estimated the various amount used in the Demolition Cost Estimate, they then assume those amounts will be either 15 percent higher or 15 percent lower than estimated, whichever direction makes the net demolition cost higher. For example, after Sargent and Lundy have estimated the material cost, they add 15 percent to the material cost. This addition makes the net demolition cost higher. However, the money PSO would receive from scrap is a deduction when calculating the net demolition cost. Therefore, if they also added 15 percent to the Scrap Value, that would reduce the net demolition cost. They do not add 15 percent to the Scrap Value. Instead, they deduct 15 percent from the Scrap Value because that is the direction of the adjustment that increases the net demolition cost.

Q. PLEASE PROVIDE AN EXAMPLE OF WHAT PSO INCLUDES IN THE CONTINGENCY COST.

A. PSO's Contingency Cost includes the following:

> Scrap Value: Included as a 15.0% reduction in the salvage value resulting in a total net reduction in the salvage value. The contingency assumes a potential drop in salvage value thus increasing the project cost.[85]

This is clearly a one-sided assumption. No one knows what a market is going to do in the future. There is no valid reason to charge ratepayers more because PSO or Sargent and

[85] Cash Direct, Ex. JAC-3, at 58 (emphasis added).

Lundy "assumes a potential drop in salvage value." It would be just as reasonable to include a contingency that assumes a potential increase in the salvage value.[86] The market for scrap could be (1) higher than expected, or (2) about the same as expected, or (3) lower than expected. Assuming the one-out-of-three possibility that will increase the cost to ratepayers is what will occur marks an unfounded and speculative assumption.

The rest of the contingency cost is likewise based on assumptions that are intentionally made in whatever direction increases costs to ratepayers.

Q. PSO OR SARGENT AND LUNDY "ASSUMES A POTENTIAL DROP IN SALVAGE VALUE."[87] ARE YOU ASSUMING A POTENTIAL INCREASE IN SALVAGE VALUES?

A. No. I do not adjust for either an assumed increase or an assumed decrease. As the Commission has repeated done in the past, I make no contingency adjustment.

Q. WHAT DID THE COMMISSION DECIDE ON CONTINGENCY COST IN PSO CAUSE NO. PUD 201500208, PSO'S 2015 RATE CASE?

A. The Commission rejected the Contingency Cost in PSO's 2015 rate case. The ALJ wording the Commission adopted stated that PSO's "reasoning fails to consider the fact that certain occurrences could reduce estimated costs."[88]

[86] I am not recommending a contingency that assumes a potential increase in the salvage value. This is just to point out the one-sided nature of the PSO adjustment. I made no contingency adjustment in either direction.
[87] Cash Direct, Ex. JAC-3, at 58.
[88] 2015 PSO Order, App. A, at 164–65; 2015 PSO Order 7 (adopting ALJ report finding).

Q. WHAT DID THE COMMISSION DECIDE ON CONTINGENCY COST IN PSO CAUSE NO. PUD 201700151, PSO'S 2017 RATE CASE?

A. The Commission rejected Contingency Cost in the 2017 case. The Commission adopted the finding below from the ALJ report:

> 107. THE COMMISSION FURTHER FINDS that the Attorney General's total demolition cost estimates are reasonable and appropriate and therefore adopt them in this Cause.[89]

I was the Attorney General's witness that addressed demolition cost estimates in that proceeding. I excluded contingency cost from my recommendations.[90]

Q. DO THE PSO DEPRECIATION RATE CURRENTLY IN EFFECT INCLUDE CONTINGENCY COST?

A. No. The depreciation rates adopted in the 2017 case were not changed in Cause No. PUD 201800097, PSO's most recent rate case.[91] The current PSO depreciation rates do not include contingency costs.

Q. WHAT DO YOU RECOMMEND REGARDING CONTINGENCY COSTS?

A. As the Commission has done in both the 2015 and 2017 PSO cases, the Commission should reject contingency costs. Assumptions that are intentionally made in whichever direction

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[89] Final Order, Order No. 672,864, Attachment 1, at 28, *Pub. Serv. Co. of Okla. Rates & Charges & Rules for Elec. Serv.*, No. PUD 201700151 (Okla. Corp. Comm'n 2018) [hereinafter "2017 PSO Order"]; PSO 2017 Order 3 (adopting findings of ALJ report except where explicitly rejected or modified).

[90] *See* 2017 PSO Order, Attachment 1, at 139 (noting Dunkel as Attorney General depreciation witness).

[91] Final Order Approving Joint Stipulation and Settlement Agreement, Order No. 692,809, at 6, *Pub. Serv. Co. of Okla. Rates & Charges & Rules for Elec. Serv. & Performance Base Rate Proposal*, No. PUD 201800097 (Okla. Corp. Comm'n 2019).

will increase the cost to ratepayers are arbitrary, one-sided, and should not be included in a proper cost study.

2. Escalation of Costs

Q. DO THE PSO DEPRECIATION RATES CURRENTLY IN EFFECT INCLUDE "ESCALATION"?

A. No. The current PSO depreciation rates were established in Cause No. PUD 201700151, PSO's 2017 case. In the 2017 case, the Commission rejected escalation. The ALJ wording the Commission adopted included the following:

> 107. THE COMMISSION FURTHER FINDS that the Attorney General's total demolition cost estimates are reasonable and appropriate and therefore adopt them in this Cause. Furthermore, the <u>Commission rejects Mr. Spanos's escalation</u> of the production plant demolition cost estimates.[92]

Q. DID THE COMMISSION ADOPT ESCALATION IN PSO CAUSE NO. PUD 201500208?

A. No. In PSO's 2015 rate case, the Commission rejected PSO's proposed escalation of the demolition cost estimate.[93]

A section of the ALJ Report that was adopted by the Commission stated the following:

> The results of the S&L studies were then expanded by Mr. Spanos for as many as 44 years into the future <u>without discounting such</u>

[92] 2017 PSO Order, Attachment 1, at 28 (emphasis added).
[93] 2015 PSO Order, App. A, at 164–65; 2015 PSO Order 7 (adopting ALJ report finding).

> values back to the present, and the estimated impact of interim net salvage was applied. Based on the elimination of contingencies and the escalation of estimated costs into the future without discounting cost back to a net percent value[.][94]

Q. THE PRIOR COMMISSION ORDER REJECTED "ESCALATION OF ESTIMATED COSTS INTO THE FUTURE WITHOUT DISCOUNTING COST BACK TO A NET PERCENT VALUE." IS INCREASING A COST FOR FUTURE INFLATION WITHOUT ALSO "PRESENT VALUING" THAT INFLATION FUTURE AMOUNT ONE-SIDED?

A. Yes. If a cost is increased for future inflation, the accepted practice is to also "present value" that future inflated cost. For example, in the Asset Retirement Obligation ("ARO") calculations, as authorized by both FERC[95] and the Financial Accounting Standards Board,[96] two major adjustments are made to the estimated obligation.[97] These two major adjustments are: (1) the cost is increased for future inflation, and (2) that inflated future cost is then "present valued." "Present value" works in the opposite direction of the future inflation adjustment. FERC Order No. 631 adopted the same "present value" treatment of the "legal" asset retirement obligations[98] that the Financial Accounting Standards Board

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[94] *Id.* at 165 (emphasis added).
[95] *See generally* Order No. 631, Accounting, Financial Reporting, and Rate Filing Requirements for Asset Retirement Obligations, 103 FERC ¶ 61,021 [hereinafter "FERC Order 631"].
[96] FASB, Accounting For Asset Retirement Obligations, SFAS 143 (June 2001).
[97] I am not claiming that the PSO production plant demolition costs meet the definition of an ARO. The approved ARO calculation are presented to show that it is an accepted practice that if a cost is increased for future inflation, it is also appropriate to take the "present value" of that future inflated cost.
[98] *See* FERC Order 631, at ¶ 14 (adopting proposed rules with modifications); *see also* Notice of Proposed Rulemaking, Accounting, Financial Reporting, and Rate Filing Requirements for Asset Retirement

had adopted. FERC stated the following: "In summary, the new accounting standard requires the present value of the liability to be recorded for all assets."[99]

Q. WHAT IS EXHIBIT WWD-18?

A. Exhibit WWD-18 contains pages from SFAS 143 showing the approved calculation method for AROs. As can be seen on page 3, on the "Inflation factor" line, the obligation in current dollars of $283,500 is increased to $419,637 for future inflation. In a similar manner, witness Cash increased (escalated) the number of dollars of the demolition cost for future inflation.[100]

However, as can be seen on the "Present value" line of page 3 of Exhibit WWD-18, the approved ARO calculation later reduces the amount from $440,619 to $194,879 by taking the "present value" of the inflated future amount. Witness Cash failed to reduce the PSO amounts by taking the present value of the inflated future demolition cost.

To increase the estimated cost for future inflation without also taking the "present value" of the inflated future cost is a one-sided adjustment, which the Commission has properly previously rejected.

Q. WHAT DO YOU RECOMMEND REGARDING ESCALATION?

A. The Commission should reject escalation for the reasons discussed above and for the reasons it rejected escalation in both the 2015 and 2017 cases.

Obligations, 101 FERC ¶ 61,102, at ¶¶ 5–8 (proposing "present value calculations" later adopted in Order 631) [hereinafter "FERC ARO NOPR"].

[99] FERC ARO NOPR, ¶ 8.

[100] Using the Riverside plant as an example, PSO's estimated Terminal Net Salvage was negative $22,292,071 in 2021 dollars. Witness Cash escalated this to negative $47,745,426 in Terminal Net Salvage in future inflated dollars. However, witness Cash did not "Present Value" this inflated amount. The lack of such a calculation is evident in the workpaper file "Net Salvage Ratio Calculation for Production 2020.xlsx," tab "Terminal Amts and Retirement," provided by PSO in response to AG-PSO-1-3.

3. Indirect Costs

Q. WHAT ARE THE "INDIRECT COSTS" IN THE PSO DEMOLITION COST ESTIMATES?

A. The "Indirect Costs" are also called the "Owners Cost." They are a relatively small amounts in the Demolition Cost Estimates. PSO provides the following explanation:

> Owners Cost: Included as 10.0% of the total direct labor and material cost. Owners Costs include owner project engineering, administration and construction management, permits and fees, legal expenses, taxes, etc.[101]

Q. WHAT IS THE ISSUE?

A. PSO is proposing to raise the Owners Cost from 7 percent to 10 percent. When the current depreciation rates were established in the 2017 PSO case, the PSO demolition cost estimate said the following:

> Owners Cost: <u>Included as 7.0%</u> of the total direct labor and material cost. Owners Costs include owner project engineering, administration and construction management, permits and fees, legal expenses, taxes, etc.[102]

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[101] Cash Direct, Ex. JAC-3, at 7.
[102] Direct Test. of Thomas J. Meehan on Behalf of Public Service Company of Oklahoma, Ex. TJM-3, at 7, *Pub. Serv. Co. of Okla. Rates & Charges & Rules for Elec. Serv.*, No. PUD 201700151 (Okla. Corp. Comm'n June 30, 2017) (emphasis added). The exact name of the study varies. For example, in the 2017 case PSO called it the "Conceptual Demolition Cost Estimate." "Conceptual" is not in the name of the study in the current case.

Q. HOW DID PSO EXPLAIN THE PROPOSED INCREASE FROM 7 PERCENT TO 10 PERCENT?

A. In response to discovery, PSO stated that because of changes in certain amounts the 7 percent is multiplied against, using 7 percent in this case would result in a lower total dollar amount of Owners Cost than in the 2017 case. PSO stated that "it is not appropriate to decrease 'Owner's Cost.'"[103]

Q. WHAT DO YOU RECOMMEND?

A. My analysis shows that it is correct that applying 7 percent in this case would have resulted in a lower total dollar amount of Owner's Cost than in the 2017 case. However, going all the way to 10 percent significantly increased the Owner's Cost compared to the 2017 case. Using 8.5 percent results in a modest increase in the Owner's Cost and does not "decrease 'Owner's Cost.'" I recommend 8.5 percent be used in calculating the Owner's Cost (Indirect Cost).

Q. PLEASE SUMMARIZE THE DIFFERENCES BETWEEN THE PSO TERMINAL NET SALVAGE AND YOUR RECOMMENDATIONS.

A. As the Commission has done in prior cases, I did not include Contingency or Escalation. In addition, I used 8.5 percent instead of PSO's proposed 10 percent for Owner's Cost (Indirect Cost).[104]

[103] PSO's Response to AG-PSO-17-7.
[104] The differences in the terminal net salvage result in differences in the Attorney General's proposed Future Net Salvage Percents compared to the PSO-proposed Future Net Salvage Percents for production plants, which is shown on pages 11 to 13 of Exhibit WWD-16.

D. AMI Meters

Q. AMONG THE DISTRIBUTION PLANT ACCOUNTS, WHAT IS THE LARGEST INCREASE THAT WITNESS CASH RECOMMENDS?

A. The largest increases that witness Cash recommends among the Distribution Plant accounts is a $2,726,466 annual increase for Advanced Metering Infrastructure ("AMI") Meters, Account 370.16.[105] This proposed increase is primarily due to witness Cash recommending that the currently approved 0 percent net salvage be replaced by a negative 30 percent net salvage.

Q. ON WHAT BASIS DOES WITNESS CASH PROPOSE TO CHANGE THE AMI METER NET SALVAGE FROM 0 PERCENT TO NEGATIVE 30 PERCENT?

A. Witness Cash stated the following:

> A net salvage rate of 0% rate was approved for Account 370.16 in Cause No. PUD 201700151. It is reasonable to expect that net salvage for the AMI meters in account 37016 will be equal to the net salvage for the <u>conventional meters in account 370</u>. The recommendation is to use a salvage rate of 0% and a removal rate of 30% which yields a net salvage rate of -30%.[106]

Q. WHAT IS ONE PROBLEM WITH THIS CLAIM?

A. This argument is looking at the wrong account. Witness Cash says that the approved net salvage of 0 percent for Account 370.16 should be changed because for a <u>different</u> and

[105] *See* Cash Direct, Ex. JAC-2, at 23.
[106] PSO Depreciation Workpapers Excerpt, Ex. WWD-19, at 4 (emphasis added); *see* also Cash Direct 16:5–8.

much smaller account, a negative 30 percent net salvage was approved in the 2017 case. For this account at issue, Account 370.16, a 0 percent net salvage was adopted in the 2017 case. The account at issue, Account 370.16, is over 5 times the size of the other account witness Cash refers to as having a negative 30 percent net salvage, Account 370.[107]

Q. WHAT ELSE IS WRONG WITH WITNESS CASH'S CLAIM THAT SINCE "THE CONVENTIONAL METERS IN ACCOUNT 370" HAVE A NET SALVAGE OF NEGATIVE 30 PERCENT, "IT IS REASONABLE TO EXPECT THAT NET SALVAGE FOR THE AMI METERS IN ACCOUNT 37016 WILL BE EQUAL TO THE NET SALVAGE FOR THE CONVENTIONAL METERS IN ACCOUNT 370"?

A. Another thing wrong with this claim is that witness Cash knows that the primary investments in Account 370 are not meters. Only a few pages away in the Cash workpapers, witness Cash notes the following:

> In 2013 PSO began a program to modernize its existing meters by replacing them with AMI (Advanced Meter Infrastructure) meters. The new AMI meters are recorded in account 370.16. As a result, the balance in account 370.00 is primarily ancillary equipment including current and voltage transformers.[108]

It is misleading to base on argument on Account 370.0 including meters, when the account's balance is primarily not meters.

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[107] Account 370.16 has an investment of $94,746,778, dividing that balance by Account 370's investment of $17,325,918 results in a ratio of 5.5 times. The balances were derived from page 23 of Exhibit JAC-2.
[108] PSO Depreciation Workpapers Excerpt, Ex. WWD-19, at 5 (emphasis added).

Q. WAS THE NEGATIVE 30 PERCENT NET SALVAGE THAT WITNESS CASH RELIES UPON USED FOR ANY PURPOSE IN CAUSE NO. PUD 201700151?

A. No. In the 2017, case the negative 30 percent is shown for Account 370, but for that account the Commission continued to use the 9.58 percent depreciation rate that had been agreed upon in the 2013 case settlement. The 9.58 percent depreciation rate was not calculated using a negative 30 percent net salvage.[109] The negative 30 percent net salvage that witness Cash relies upon from the 2017 case was not used for any purpose in the 2017 case.

Q. IS THE DEPRECIATION DATA FOR METERS USABLE?

A. No. The transition from conventional meters to AMI meters produced abnormal data. For example, attached as page 7 of Exhibit WWD-19 is the Cash workpaper showing net salvage data for Account 370.00. The data shows a <u>positive</u> 33.68 percent overall net salvage.[110] Witness Cash is claiming a <u>negative</u> 30 percent net salvage for this account, which is very different from a <u>positive</u> number. The meter data is not usable because it is abnormal data resulting from the transition from conventional meters to AMI meters.

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[109] Negative 30 percent net salvage was not used in the calculation of the 9.58 percent depreciation rate. *See* Direct Test. of John J. Spanos on Behalf of Public Service Company of Oklahoma, Ex. JJS-2, at 50, *Pub. Serv. Co. of Okla. Compliance with Orders and Rates and Charges for Elec. Serv.*, No. PUD 201300217 (Okla. Corp. Comm'n Jan. 17, 2014).

[110] This data is from the PSO depreciation workpapers provided by PSO in response to AG-PSO-1-3. The relevant data is attached to this testimony as page 7 of Exhibit WWD-19. I am not relying on this positive net salvage information because the meter data is abnormal due to the transition to AMI. A positive net salvage produces a lower depreciation rate than a negative net salvage, everything else being equal, but I am not proposing a positive net salvage for this account.

Q. BECAUSE OF THIS TRANSITION AND RESULTING UNUSABLE DATA, WHAT HAS THE COMMISSION PREVIOUSLY ADOPTED FOR DEPRECIATION FOR THE METER ACCOUNTS?

A. AMI meters were in dispute back in PSO's 2013 rate case, Cause No. PUD 201300217. Major parties reached a settlement regarding AMI. A regulatory asset was established for the unrecovered net book value of the non-AMI meters.[111] The settlement included using a 9.58 percent depreciation rate for the non-AMI meters,[112] while for the AMI meters the Commission-approved settlement adopted a 6.84 percent depreciation rate that was calculated using a 15-year life and a 0 percent net salvage.[113] It also adopted a 6.67 percent depreciation rate for AMI Network (Account 397.16).[114]

Q. WHAT METER DEPRECIATION RATES HAS THE COMMISSION ADOPTED IN THE PSO CASES SINCE THE 2013 CASE?

A. The depreciation rates currently in effect were established in Cause No. 201700151. When depreciation rates were revised in Cause No. 201700151, the Commission continued to follow the 2013 settlement's depreciation treatment of meters. This includes the continued use of the prior settlement 9.58 percent depreciation rate for the non-AMI meters[115] and

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[111] Final Order, Order No. 639,314, Attachment A, at 175, *Pub. Serv. Co. of Okla. Compliance with Orders & Rates & Charges & Rules for Elec. Serv.*, No. PUD 201300217 (Okla. Corp. Comm'n 2015) [hereinafter "2013 PSO Order"].
[112] *Id.*
[113] 2013 PSO Order, Attachment A, at 176 (adopting "6.84% for AMI meters"). The 6.84 percent was calculated using a 15-year life and a 0 percent Net Salvage. *See* Direct Test. of John J. Spanos on Behalf of Public Service Company of Oklahoma, Ex. JJS-2, at 50, line "370.16 AMI Meters," *Pub. Serv. Co. of Okla. Compliance with Orders & Rates & Charges & Rules for Elec. Serv.*, No. PUD 201300217 (Okla. Corp. Comm'n Jan. 17, 2014).
[114] 2013 PSO Order, Attachment A, at 176.
[115] The current Approved Rate for Account 370.0, Meters is 9.58 percent. Cash Direct, Ex. JAC-2, 23.

the continued use the prior settlement amount of 6.67 percent for the depreciation rate for AMI Network. Further, for AMI meters, it continued use of a 15-year life, 0 percent net salvage that had been used in the prior settlement, with a technical update resulting in a 6.76 percent depreciation rate for the AMI meters.[116]

Q. WHAT DO YOU PROPOSE FOR METERS?

A. The transition to AMI meters created abnormal and unusable historic data. AMI is a relatively new technology. Because of these unusual circumstances, for purposes of this case I recommend the same treatment of these three accounts that was adopted when the current depreciation rates were established in Cause No. PUD 201700151.[117]

It would not be appropriate to increase the annual depreciation expense by over $2 million in the meter accounts[118] based upon a misunderstanding of what the Commission adopted in the 2017 case.

E. Net Salvage for Services

Q. WHAT ARE SERVICES?

A. Service lines are the power lines that connect to the customer's home or business (premise). They maybe overhead or underground. The buried service lines are generally retired in place.[119]

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[116] *See* Cash Direct, Ex. JAC-2, at 24.
[117] For each of the two smallest meter accounts, the Commission adopted the continued the use of the depreciation rate for that account stated in the settlement of the 2013 case. For the largest meter account, 370.16 the depreciation rate adopted in Cause No. PUD 201700151 was a "technical update." In a technical update, the previously approved parameters are used, but they are applied to the current plant-in-service amount, the current depreciation reserve amount, and the current remaining life.
[118] Cash Direct, Ex. JAC-2, at 23.
[119] *See* PSO's Responses to AG-PSO-11-1, AG-PSO-11-4, and AG-PSO-11-5.

Q. WHAT TOTAL NET COSTS DOES PSO ACTUALLY INCUR TO RETIRE SERVICES IN ACCOUNT 369?

A. The Company records show that the total net salvage costs PSO incurs retiring Services average $441,310 per year, as shown in Figure 9 below:[120]

Figure 9: PSO Actual Accruals for Net Salvage in Account 369, Services

Services, Account 369	
Year	Negative Net Salvage Costs Incurred
2016	$ 426,481
2017	$ 414,275
2018	$ 616,018
2019	$ 348,870
2020	$ 400,906
Average	$ 441,310

Q. HOW MUCH DOES WITNESS CASH PROPOSE TO COLLECT ANNUALLY FROM RATEPAYERS FOR THE NET SALVAGE COSTS IN THIS SAME ACCOUNT?

A. PSO witness Cash proposes to collect $3,118,311 annually just for net salvage in Account 369, Services. The total annual accrual (depreciation expense) PSO proposes for this account is $7,915,712. Of this amount, $3,118,311 is for net salvage alone.[121]

[120] These values are shown on witness Cash's depreciation workpapers provided by PSO in response to AG-PSO-1-3, specifically on page 429. The relevant except has been attached as Exhibit WWD-20.
[121] Witness Cash proposes a "Net Salvage Ratio" of 1.65 for Account 369.0, Services. *See* Cash Direct, Ex. JAC-2, at 20. This means that for every $165 of depreciation accrual, $65 of that is for net salvage. Dividing that 65 by 165 results in a percentage of 39.39 percent. The total annual accrual PSO proposes is $7,915,712. Of this amount, $3,118,311 is for net salvage: 39.39 percent multiplied by $7,915,712 results in $3,118,311.

For net salvage in this account, witness Cash propose to collect annually from ratepayers over 7 times[122] as much as the annual cost PSO incurs for net salvage.

Q. WOULD THE AMOUNT COLLECTED FOR NET SALVAGE INCREASE IN THE FUTURE?

A. Yes. The $3,118,311 annual amount collected for net salvage is calculated on the investment as of December 31, 2020. In the future, as the plant-in-service investment in the account increases, the amount collected for net salvage would increase in proportion to the increase in investment.[123]

Q. WHAT NET SALVAGE DO YOU RECOMMEND FOR ACCOUNT 369, SERVICES?

A. A depreciation recommendation requires judgement. Relevant information in addition to what PSO has prepared can properly be considered. The interests of the Company should be considered, but the interests of the ratepayers should also be considered. In my judgement, PSO collecting annually from ratepayers for net salvage over 7 times as much as the annual costs PSO incurs for net salvage is excessive and should be adjusted.

I recommend a future net salvage of negative 20 percent for Account 369.0 Services. This would produce an annual collection from the ratepayers of $861,320 for net salvage

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[122] $3,118,311 in net salvage annual accrual divided by the $441,310 average negative net salvage incurred cost results in a ratio of 7.1.

[123] What would be approved in this proceeding is not a fixed dollar amount but is instead a depreciation "rate." In the future, that depreciation rate would be applied to the then-current original cost investment amount.

in Account 369.0 Services.[124] This would be collecting annually from ratepayers for net salvage approximately 2 times as much as the annual costs PSO incurs for net salvage.[125]

IV. Conclusion

Q. WHAT DEPRECIATION AND AMORTIZATION RATES DO YOU RECOMMEND?

A. I recommend the depreciation and amortization rates show on Exhibit WWD-16.

Q. WHAT DO YOU RECOMMEND PERTAINING TO THE GROUND LINE INSPECTION OF WOOD POLES?

A. I recommend that the Commission consider PSO's own failure to follow its Specification 125 requirements when reviewing reliability data in support of any proposed plan by PSO. Further, to the extent it is within the Commission's authority, I recommend that the Commission order PSO to resume following the Specification 125 requirements, including periodic ground line inspections.[126]

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[124] A future net salvage of negative 20 percent for Account 369.0, Services means that for every $120 of depreciation accrual, $20 of that is for net salvage. Under this recommendation, the total annual accrual would be $5,167,919. Of this, $861,320 is for net salvage: 20 divided by 120 results in 16.67 percent, which multiplied by $5,167,919 results in $861,320 for net salvage. These figures are based on investment at December 31, 2020. The $861,320 for net salvage would increase in the future as the plant in service investment grows.
[125] The $861,320 net salvage annual accrual divided by the $441,310 average net salvage incurred cost results in a ratio of 2.0.
[126] In addition to testing to detect decay, PSO should also follow up by taking the steps needed to assure poles with adequate strength are in service.

Q. WHAT DO YOU RECOMMEND PERTAINING TO THE PSO PROPOSAL "TO REPLACE ALL ASSETS IN EACH CATEGORY THAT ARE CURRENTLY GREATER THAN 40 YEARS OF AGE"[127] AT CUSTOMERS' EXPENSE?

A. Generally, retiring all facilities in a category at age 40 regardless of condition is inefficient, wasteful of resources, and wasteful of customers' money. Many of the claims made in support of the Baker proposal are provably incorrect. For example, the PSO distribution facilities at issue are definitely "two-way" facilities, including the ones that are over 40 years old. Attorney General expert witness Todd F. Bohrmann will present the overall position of the Attorney General with respect to this proposal.

Q. DOES THIS CONCLUDE YOUR RESPONSIVE TESTIMONY?

A. Yes.

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[127] Baker Direct 45:13–18.

AFFIDAVIT OF WILLIAM W. DUNKEL

STATE OF ILLINOIS)
) **ss**
COUNTY OF SANGAMON)

I, William W. Dunkel, do hereby swear/affirm that the foregoing testimony is true and correct to the best of my knowledge and belief.

William W. Dunkel
William W. Dunkel

Subscribed and sworn to/affirmed before me this 6th day of August, 2021.

OFFICIAL SEAL
CHARLES R. GUDGEL, JR
NOTARY PUBLIC STATE OF ILLINOIS
My Commission Expires 09-04-2024
ID # 840230

Charles R. Gudgel Jr
Notary Public

My Commission expires on 09/04/2024.

William Dunkel, Consultant
8625 Farmington Cemetery Road
Pleasant Plains, Illinois 62677

Qualifications

William Dunkel is a consulting engineer specializing in utility regulatory proceedings. He has participated in over 300 state regulatory proceedings as listed on the attached Relevant Work Experience. Mr. Dunkel is a member of the Society of Depreciation Professionals.

Mr. Dunkel has provided cost analysis, rate design, jurisdictional separations, depreciation, expert testimony and other related services to state agencies throughout the country in numerous state regulatory proceedings.

Mr. Dunkel made a presentation pertaining to "The Largest Depreciation Issue that is Generally in Dispute in State Utility Depreciation Studies: Net Salvage" at the Society of Depreciation Professionals Conference held in September 2018 in Indianapolis, IN.

Mr. Dunkel made a presentation pertaining to Current Depreciation Issues in State Rate Case Proceedings at the Society of Depreciation Professionals 25th Annual Meeting held September 2011 in Atlanta, GA.

Mr. Dunkel made a presentation pertaining to Video Dial Tone at the NASUCA 1993 Mid-Year Meeting held in St. Louis.

Mr. Dunkel made a presentation to the NARUC Subcommittee on Economics and Finance at the NARUC Summer Meetings held in July 1992. That presentation was entitled "The Reason the Industry Wants to Eliminate Cost Based Regulation--Telecommunications is a Declining Cost Industry."

Mr. Dunkel has testified before the Illinois House of Representatives Subcommittee on Communications, as well as participated in numerous other schools and conferences pertaining to the utility industry.

Mr. Dunkel provides services almost exclusively to public agencies, including the Public Utilities Commission, the Public Counsel, Office of Attorney General, or the State Department of Administration in various states.

William Dunkel currently provides, or in the past has provided, services in state utility regulatory proceedings to the following clients:

The Public Utility Commission or the Staffs in the States of:

Arkansas	Maryland
Arizona	Mississippi
Delaware	Missouri
District of Columbia	New Mexico
Georgia	North Carolina
Guam	Utah
Illinois	Virginia
Kansas	Washington
Maine	U.S. Virgin Islands

The Office of the Public Advocate, or its equivalent, in the States of:

Alaska	Maryland
California	Massachusetts
Colorado	Michigan
Connecticut	Missouri
District of Columbia	Nebraska
Florida	New Jersey
Georgia	New Mexico
Hawaii	Ohio
Illinois	Oklahoma
Indiana	Pennsylvania
Iowa	Utah
Maine	Washington

The Department of Administration in the States of:

Illinois	South Dakota
Minnesota	Wisconsin

Mr. Dunkel graduated from the University of Illinois in February 1970 with a Bachelor of Science Degree in Engineering Physics, with emphasis on economics and other business-related subjects. He has taken several post-graduate courses since graduation.

Mr. Dunkel has taken the AT&T separations school which is normally provided to AT&T personnel.

Mr. Dunkel has taken the General Telephone separations school which is normally provided for training of the General Telephone Company personnel in separations.

Mr. Dunkel has completed an advanced depreciation program entitled "Forecasting Life and Salvage" offered by Depreciation Programs, Inc.

From 1970 to 1974, Mr. Dunkel was a design engineer for Sangamo Electric Company (Sangamo was later purchased by Schlumberger) designing electric watt-hour meters used in the electric utility industry. He was granted patent No. 3822400 for a solid state meter pulse initiator which was used in metering.

In April 1974, Mr. Dunkel was employed by the Illinois Commerce Commission in the Electric Section as a Utility Engineer. In November of 1975, he transferred to the Telephone Section of the Illinois Commerce Commission and from that time until July, 1980, he participated in essentially all telephone rate cases and other telephone rate matters that were set for hearing in the State of Illinois. During that period, he testified as an expert witness in numerous rate design cases and tariff filings in the areas of rate design, cost studies and separations. During the period 1975-1980, he was the Separations and Settlements expert for the Staff of the Illinois Commerce Commission.

From July 1977 until July 1980, Mr. Dunkel was a Staff member of the FCC-State Joint Board on Separations, concerning the "Impact of Customer Provision of Terminal Equipment on Jurisdictional Separations" in FCC Docket No. 20981 on behalf of the Illinois Commerce Commission. The FCC-State Joint Board is the national board that specifies the rules for separations in the telephone industry.

Since July 1980, Mr. Dunkel has been regularly employed as an independent consultant in state utility regulatory proceedings across the nation.

RELEVANT WORK EXPERIENCE OF WILLIAM DUNKEL

ALASKA

- Cook Inlet Natural Gas Storage
  - Depreciation Rate Proceeding — Docket No. U-18-043
- Golden Heart Utilities and College Utilities Corporation
  - Depreciation Rate Proceeding — Docket No. U-15-089
- Chugach Electric
  - Depreciation Rate Proceeding — Docket No. U-09-097
- Homer Electric
  - Depreciation Rate Proceeding — Docket No. U-09-077
- TDX Sand Point Generating
  - Depreciation Rate Proceeding — Docket No. U-09-029
- AWWU
  - Depreciation Rate Proceeding — Docket No. U-08-004
- Enstar Natural Gas Company
  - Depreciation Rate Proceeding — Docket No. U-07-174
- ML&P
  - Depreciation Rate Proceeding — Docket No. U-12-149
  - Depreciation Rate Proceeding — Docket No. U-06-006
- ACS of Anchorage — Docket No. U-01-34
- ACS
  - General rate case — Docket Nos. U-01-83, U-01-85, U-01-87
  - AFOR proceeding — Docket No. R-03-003
- All Telephone Companies
  - Access charge proceeding — Docket No. R-01-001
- Interior Telephone Company — Docket No. U-07-75
- OTZ Telephone Cooperative — Docket No. U-03-85

ARIZONA

- Citizens Communications Company, Arizona Gas Division
  - Depreciation Rates — Docket No. G-01032A-02
- U.S. West Communications (Qwest)
  - General Rate Case/Price Cap Renewal — Docket No. T-01051B-03-0454
  - Wholesale cost/UNE case — Docket No. T-00000A-00-0194
  - General rate case — Docket No. E-1051-93-183
  - Depreciation case — Docket No. T-01051B-97-0689
  - General rate case/AFOR proceeding — Docket No. T-01051B-99-0105
  - AFOR proceeding — Docket No. T-01051B-03-0454

ARKANSAS

- Southwestern Bell Telephone Company — Docket No. 83-045-U

CALIFORNIA
(on behalf of The Utility Reform Network (TURN))
- Southern California Edison Company — Docket No. 16-09-001
(on behalf of the Office of Ratepayer Advocates (ORA))
- Kerman Telephone General Rate Case — A.02-01-004
(on behalf of the California Cable Television Association)
- General Telephone of California — I.87-11-033
- Pacific Bell
  - Fiber Beyond the Feeder Pre-Approval Requirement

COLORADO
- Mountain Bell Telephone Company

General Rate Case	Docket No. 96A-218T et al.
Call Trace Case	Docket No. 92S-040T
Caller ID Case	Docket No. 91A-462T
General Rate Case	Docket No. 90S-544T
Local Calling Area Case	Docket No. 1766
General Rate Case	Docket No. 1720
General Rate Case	Docket No. 1700
General Rate Case	Docket No. 1655
General Rate Case	Docket No. 1575
Measured Services Case	Docket No. 1620

- Independent Telephone Companies
  - Cost Allocation Methods Case — Docket No. 89R-608T

CONNECTICUT
- Connecticut Yankee Gas Company
  - Depreciation Study — Docket No. 18-05-10
- Connecticut Natural Gas Corporation
  - Depreciation Study — Docket No. 18-05-16
- Southern Connecticut Gas Company
  - General Rate Case — Docket No. 17-05-42
- Connecticut Light & Power
  - Depreciation Study — Docket No. 17-10-46
- United Illuminating Company
  - General Rate Case — Docket No. 16-06-04

DELAWARE
- Diamond State Telephone Company
  - General Rate Case — PSC Docket No. 82-32
  - General Rate Case — PSC Docket No. 84-33

Report on Small Centrex	PSC Docket No. 85-32T
General Rate Case	PSC Docket No. 86-20
Centrex Cost Proceeding	PSC Docket No. 86-34

<u>DISTRICT OF COLUMBIA</u>

- Washington Gas Light Company	
Depreciation issues	Formal Case No. 1091 & 1093
- Potomac Electric Power Company	
Depreciation issues	Formal Case No. 1076
Depreciation issues	Formal Case No. 1053
- C&P Telephone Company of D.C.	
Depreciation issues	Formal Case No. 926

<u>FCC</u>

- Review of jurisdictional separations	FCC Docket No. 96-45
- Developing a Unified Intercarrier Compensation Regime	CC Docket No. 01-92

<u>FLORIDA</u>

- BellSouth, GTE, and Sprint	
Fair and reasonable rates	Undocketed Special Project

<u>GEORGIA</u>

- Atlanta Gas Light Company	
General Rate Proceeding	Docket No. 42315
General Rate Proceeding	Docket No. 31647
- Georgia Power Company	
General Rate Proceeding	Docket No. 42516
- Southern Bell Telephone & Telegraph Co.	
General Rate Proceeding	Docket No. 3231-U
General Rate Proceeding	Docket No. 3465-U
General Rate Proceeding	Docket No. 3286-U
General Rate Proceeding	Docket No. 3393-U

<u>HAWAII</u>

- GTE Hawaiian Telephone Company	
Depreciation/separations issues	Docket No. 94-0298
Resale case	Docket No. 7702

<u>ILLINOIS</u>

- Commonwealth Edison Company	
General Rate Proceeding	Docket No. 80-0546
General Rate Proceeding	Docket No. 82-0026

Section 50	Docket No. 59008
Section 55	Docket No. 59064
Section 50	Docket No. 59314
Section 55	Docket No. 59704
- Central Illinois Public Service	
Section 55	Docket No. 58953
Section 55	Docket No. 58999
Section 55	Docket No. 59000
Exchange of Facilities (Illinois Power)	Docket No. 59497
General Rate Increase	Docket No. 59784
Section 55	Docket No. 59677
- South Beloit	
General Rate Case	Docket No. 59078
- Illinois Power	
Section 55	Docket No. 59281
Interconnection	Docket No. 59435
- Verizon North Inc. and Verizon South Inc.	Docket No. 02-0560
DSL Waiver Petition Proceeding	
- Geneseo Telephone Company	
EAS case	Docket No. 99-0412
- Central Telephone Company	
(Staunton merger)	Docket No. 78-0595
- General Telephone & Electronics Co.	
Usage sensitive service case	Docket Nos. 98-0200/98-0537
General rate case (on behalf of CUB)	Docket No. 93-0301
(Usage sensitive rates)	Docket No. 79-0141
(Data Service)	Docket No. 79-0310
(Certificate)	Docket No. 79-0499
(Certificate)	Docket No. 79-0500
- General Telephone Co.	Docket No. 80-0389
- SBC	
Imputation Requirement	Docket No. 04-0461
Implement UNE Law	Docket No. 03-0323
UNE Rate Case	Docket No. 02-0864
Alternative Regulation Review	Docket No. 98-0252
- Ameritech (Illinois Bell Telephone Company)	
Area code split case	Docket No. 94-0315
General Rate Case	Docket No. 83-0005
(Centrex filing)	Docket No. 84-0111
General Rate Proceeding	Docket No. 81-0478
(Call Lamp Indicator)	Docket No. 77-0755
(Com Key 1434)	Docket No. 77-0756
(Card dialers)	Docket No. 77-0757

	(Concentration Identifier)	Docket No. 78-0005
	(Voice of the People)	Docket No. 78-0028
	(General rate increase)	Docket No. 78-0034
	(Dimension)	Docket No. 78-0086
	(Customer controlled Centrex)	Docket No. 78-0243
	(TAS)	Docket No. 78-0031
	(Ill. Consolidated Lease)	Docket No. 78-0473
	(EAS Inquiry)	Docket No. 78-0531
	(Dispute with GTE)	Docket No. 78-0576
	(WUI vs. Continental Tel.)	Docket No. 79-0041
	(Carle Clinic)	Docket No. 79-0132
	(Private line rates)	Docket No. 79-0143
	(Toll data)	Docket No. 79-0234
	(Dataphone)	Docket No. 79-0237
	(Com Key 718)	Docket No. 79-0365
	(Complaint - switchboard)	Docket No. 79-0380
	(Porta printer)	Docket No. 79-0381
	(General rate case)	Docket No. 79-0438
	(Certificate)	Docket No. 79-0501
	(General rate case)	Docket No. 80-0010
	(Other minor proceedings)	Docket No. various
-	Home Telephone Company	Docket No. 80-0220
-	Northwestern Telephone Company	
	Local and EAS rates	Docket No. 79-0142
	EAS	Docket No. 79-0519

<u>INDIANA</u>

-	Indiana-American Water Company	
	Depreciation issues	Cause No. 44992
-	Indiana Michigan Power Company (I&M)	
	Depreciation issues	Cause No. 44075
	Depreciation issues	Cause No. 42959
-	Public Service of Indiana (PSI)	
	Depreciation issues	Cause No. 39584
-	Indianapolis Power and Light Company	
	Depreciation issues	Cause No. 39938

<u>IOWA</u>

-	U S West Communications, Inc.	
	Local Exchange Competition	Docket No. RMU-95-5
	Local Network Interconnection	Docket No. RPU-95-10
	General Rate Case	Docket No. RPU-95-11

KANSAS

- Black Hills/Kansas Gas Utility Company	
General rate proceeding	Docket No. 14-BHCG-502-RTS
- Kansas Gas Services	
General rate proceeding	Docket No. 12-KGSG-838-RTS
- Westar Energy, Inc.	
General rate proceeding	Docket No. 18-WSEE-328-RTS
General rate proceeding	Docket No. 12-WSEE-112-RTS
General rate proceeding	Docket No. 08-WSEE-1041-RTS
- Midwest Energy, Inc.	
General rate proceeding	Docket No. 11-MDWE-609-RTS
General rate proceeding	Docket No. 08-MDWE-594-RTS
- Generic Depreciation Proceeding	Docket No. 08-GIMX-1142-GIV
- Kansas City Power & Light Company	
General rate proceeding	Docket No. 15-KCPE-116-RTS
General rate proceeding	Docket No. 12-KCPE-764-RTS
General rate proceeding	Docket No. 10-KCPE-415-RTS
- Atmos Energy Corporation	
General rate proceeding	Docket No. 12-ATMG-564-RTS
General rate proceeding	Docket No. 08-ATMG-280-RTS
- Sunflower Electric Power Corporation	
Depreciation rate study	Docket No. 08-SEPE-257-DRS
- Southwestern Bell Telephone Company	
Commission Investigation of the KUSF	Docket No. 98-SWBT-677-GIT
- Rural Telephone Service Company	
Audit and General rate proceeding	Docket No. 00-RRLT-083-AUD
Request for supplemental KUSF	Docket No. 00-RRLT-518-KSF
- Southern Kansas Telephone Company	
Audit and General rate proceeding	Docket No. 01-SNKT-544-AUD
- Pioneer Telephone Company	
Audit and General rate proceeding	Docket No. 01-PNRT-929-AUD
- Craw-Kan Telephone Cooperative, Inc.	
Audit and General rate proceeding	Docket No. 01-CRKT-713-AUD
- Sunflower Telephone Company, Inc.	
Audit and General rate proceeding	Docket No. 01-SFLT-879-AUD
- Bluestem Telephone Company, Inc.	
Audit and General rate proceeding	Docket No. 01-BSST-878-AUD
- Home Telephone Company, Inc.	
Audit and General rate proceeding	Docket No. 02-HOMT-209-AUD
- Wilson Telephone Company, Inc.	
Audit and General rate proceeding	Docket No. 02-WLST-210-AUD
- S&T Telephone Cooperative Association, Inc.	
Audit and General rate proceeding	Docket No. 02-S&TT-390-AUD

-	Blue Valley Telephone Company, Inc.	
	Audit and General rate proceeding	Docket No. 02-BLVT-377-AUD
-	JBN Telephone Company	
	Audit and General rate proceeding	Docket No. 02-JBNT-846-AUD
-	S&A Telephone Company	
	Audit and General rate proceeding	Docket No. 03-S&AT-160-AUD
-	Wheat State Telephone Company, Inc.	
	Audit and General rate proceeding	Docket No. 03-WHST-503-AUD
-	Haviland Telephone Company, Inc.	
	Audit and General rate proceeding	Docket No. 03-HVDT-664-RTS

MAINE

-	Northern Utilities, Inc. (Unitil)	
	General rate proceeding	Docket No. 2017-065
-	Emera	
	General rate proceeding	Docket No. 2013-443
-	Central Maine Power Company	
	General rate proceeding	Docket No. 2013-168
	General rate proceeding	Docket No. 2007-125
-	New England Telephone Company	
	General rate proceeding	Docket No. 92-130
-	Verizon	
	AFOR investigation	Docket No. 2005-155

MARYLAND

-	Washington Gas Light Company	
	Depreciation rate proceeding	Case No. 9103
	Depreciation Rate Case	Case No. 8960
-	Baltimore Gas and Electric Company	
	Depreciation rate proceeding	Case No. 9610
	Depreciation rate proceeding	Case No. 9355
	Depreciation rate proceeding	Case No. 9096
-	PEPCO	
	General rate proceeding	Case No. 9286
	General rate proceeding	Case No. 9217
	General rate proceeding	Case No. 9092
-	Delmarva Power & Light Company	
	General rate proceeding	Case No. 9285
-	Chesapeake and Potomac Telephone Company	
	General rate proceeding	Case No. 7851
	Cost Allocation Manual Case	Case No. 8333
	Cost Allocation Issues Case	Case No. 8462
-	Verizon Maryland	

	PICC rate case	Case No. 8862
	USF case	Case No. 8745
-	Chesapeake Utilities Corporation	
	General rate proceeding	Case No. 9062

MASSACHUSETTS

-	Eversource Energy (NSTAR Electric Company and Western Massachusetts Electric Company)	
	Depreciation Issues	Case No. D.P.U. 17-005
-	National Grid (Massachusetts Electric Company/Nantucket Electric Company)	
	Depreciation Issues	Case No. D.P.U. 15-155

MICHIGAN

-	Wisconsin Electric Power Company	
	Depreciation Rate Case	Case No. U-15981
-	SEMCO Energy Gas Company	
	Depreciation Rate Case	Case No. U-15778
-	Michigan Consolidated Gas Company	
	Depreciation Rate Case	Case No. U-15699
-	Consumers Energy Company	
	Depreciation Rate Case	Case No. U-15629

MINNESOTA

-	Access charge (all companies)	Docket No. P-321/CI-83-203
-	U. S. West Communications, Inc. (Northwestern Bell Telephone Co.)	
	Centrex/Centron proceeding	Docket No. P-421/91-EM-1002
	General rate proceeding	Docket No. P-321/M-80-306
	Centrex Dockets	MPUC No. P-421/M-83-466
		MPUC No. P-421/M-84-24
		MPUC No. P-421/M-84-25
		MPUC No. P-421/M-84-26
	General rate proceeding	MPUC No. P-421/GR-80-911
	General rate proceeding	MPUC No. P-421/GR-82-203
	General rate case	MPUC No. P-421/GR-83-600
	WATS investigation	MPUC No. P-421/CI-84-454
	Access charge case	MPUC No. P-421/CI-85-352
	Access charge case	MPUC No. P-421/M-86-53
	Toll Compensation case	MPUC No. P-999/CI-85-582
	Private Line proceeding	Docket No. P-421/M-86-508
-	AT&T	
	Intrastate Interexchange	Docket No. P-442/M-87-54

MISSISSIPPI

- South Central Bell

	General rate filing	Docket No. U-4415

<u>MISSOURI</u>

-	AmerenUE	
	Electric rate proceeding	ER-2010-0036
	Electric rate proceeding	ER-2008-0318
-	American Water Company	
	General rate proceeding	WR-2008-0311
-	Empire District Electric Company	
	Depreciation rates	ER-2008-0093
-	AmerenUE	
	Electric rate proceeding	ER-2007-0002
-	Southwestern Bell	
	General rate proceeding	TR-79-213
	General rate proceeding	TR-80-256
	General rate proceeding	TR-82-199
	General rate proceeding	TR-86-84
	General rate proceeding	TC-89-14, et al.
	Alternative Regulation	TC-93-224/TO-93-192
-	United Telephone Company	
	Depreciation proceeding	TR-93-181
-	All companies	
	Extended Area Service	TO-86-8
	EMS investigation	TO-87-131
	Cost of Access Proceeding	TR-2001-65

<u>NEBRASKA</u>

-	SourceGas Distribution	
	Depreciation proceeding	NG-0079
-	Black Hills Nebraska Gas	
	General Rate Proceeding	NG-0109

<u>NEW JERSEY</u>

-	Atlantic City Electric Company	
	General Rate Proceeding	BPU Docket No. ER18080925
-	Rockland Electric Company	
	General Rate Proceeding	BPU Docket No. ER16050428
-	New Jersey Natural Gas Company	
	General Rate Proceeding	BPU Docket No. GR19030420
	General Rate Proceeding	BPU Docket No. GR15111304
-	South Jersey Gas Company	
	General Rate Proceeding	BPU Docket No. GR13111137
-	Atlantic City Electric Company	

	General Rate Proceeding	BPU Docket No. ER12121071 OAL Docket No. PUC00617-2013
-	Aqua New Jersey, Inc.	
	General Rate Proceeding	BPU Docket No. WR20010056
-	New Jersey Bell Telephone Company	
	General rate proceeding	Docket No. 802-135
	General rate proceeding	BPU No. 815-458 OAL No. 3073-81
	Phase I - General rate case	BPU No. 8211-1030 OAL No. PUC10506-82
	General rate case	BPU No. 848-856 OAL No. PUC06250-84
	Division of regulated from competitive services	BPU No. TO87050398 OAL No. PUC 08557-87
	Customer Request Interrupt	Docket No. TT 90060604

NEW MEXICO

-	Public Service Company of New Mexico	
	Depreciation issues	Case No. 15-00261-UT
	Depreciation issues	Case No. 10-00086-UT
	Depreciation issues	Case No. 08-00273-UT
-	U.S. West Communications, Inc.	
	E-911 proceeding	Case No. 92-79-TC
	General rate proceeding	Case No. 92-227-TC
	General rate/depreciation proceeding	Case No. 3008
	Subsidy Case	Case No. 3325
	USF Case	Case No. 3223
-	VALOR Communications	
	Subsidy Case	Case No. 3300
	Interconnection Arbitration	Case No. 3495

OHIO

-	Ohio Bell Telephone Company	
	General rate proceeding	Docket No. 79-1184-TP-AIR
	General rate increase	Docket No. 81-1433-TP-AIR
	General rate increase	Docket No. 83-300-TP-AIR
	Access charges	Docket No. 83-464-TP-AIR
-	General Telephone of Ohio	
	General rate proceeding	Docket No. 81-383-TP-AIR
-	United Telephone Company	
	General rate proceeding	Docket No. 81-627-TP-AIR

OKLAHOMA

- Public Service of Oklahoma	
General Rate Case	Cause No. PUD 202100055
General Rate Case	Cause No. PUD 201800097
General Rate Case	Cause No. PUD 201700151
Depreciation Case	Cause No. 96-0000214
- Oklahoma Gas and Electric Company	
General Rate Case	Cause No. PUD 202100063
General Rate Case	Cause No. PUD 201800140
General Rate Case	Cause No. PUD 201700496

PENNSYLVANIA

- GTE North, Inc.	
Interconnection proceeding	Docket No. A-310125F002
- Bell Telephone Company of Pennsylvania	
Alternative Regulation proceeding	Docket No. P-00930715
Automatic Savings	Docket No. R-953409
Rate Rebalance	Docket No. R-00963550
- Enterprise Telephone Company	
General rate proceeding	Docket No. R-922317
- All companies	
InterLATA Toll Service Invest.	Docket No. I-910010
Joint Petition for Global Resolution of Telecommunications Proceedings	Docket Nos. P-00991649, P-00991648, M-00021596
- GTE North and United Telephone Company	
Local Calling Area Case	Docket No. C-902815
- Verizon	
Joint Application of Bell Atlantic and GTE for Approval of Agreement and Plan of Merger	Docket Nos. A-310200F0002, A-311350F0002, A-310222F0002, A-310291F0003
Access Charge Complaint Proceeding	Docket No. C-200271905

SOUTH DAKOTA

- Northwestern Bell Telephone Company	
General rate proceeding	Docket No. F-3375

TENNESSEE
(on behalf of Time Warner Communications)

- BellSouth Telephone Company	
Avoidable costs case	Docket No. 96-00067

UTAH

- Questar Gas Company	
Depreciation rate proceeding	Docket No. 13-057-19

- Rocky Mountain Power	
Depreciation rate proceeding	Docket No. 13-035-02
- U.S. West Communications (Mountain Bell Telephone Company)	
General rate case	Docket No. 84-049-01
General rate case	Docket No. 88-049-07
800 Services case	Docket No. 90-049-05
General rate case/ incentive regulation	Docket No. 90-049-06/90-049-03
General rate case	Docket No. 92-049-07
General rate case	Docket No. 95-049-05
General rate case	Docket No. 97-049-08
Qwest Price Flexibility-Residence	Docket No. 01-2383-01
Qwest Price Flexibility-Business	Docket No. 02-049-82
Qwest Price Flexibility-Residence	Docket No. 03-049-49
Qwest Price Flexibility-Business	Docket No. 03-049-50
- Carbon/Emery	
General rate case/USF eligibility	Docket No. 05-2302-01

<u>VIRGIN ISLANDS, U.S.</u>

- Virgin Islands Telephone Company	
General rate case	Docket No. 264
General rate case	Docket No. 277
General rate case	Docket No. 314
General rate case	Docket No. 316

<u>VIRGINIA</u>

- General Telephone Company of the South	
Jurisdictional allocations	Case No. PUC870029
Separations	Case No. PUC950019

<u>WASHINGTON</u>

- US West Communications, Inc.	
Interconnection case	Docket No. UT-960369
General rate case	Docket No. UT-950200
- All Companies-	Analyzed the local calling areas in the State

<u>WISCONSIN</u>

- Wisconsin Bell Telephone Company	
Private line rate proceeding	Docket No. 6720-TR-21
General rate proceeding	Docket No. 6720-TR-34

BEFORE THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA

APPLICATION OF PUBLIC SERVICE COMPANY	)	
OF OKLAHOMA, AN OKLAHOMA	)	
CORPORATION, FOR AN ADJUSTMENT IN ITS	)	
RATES AND CHARGES AND THE ELECTRIC	)	CAUSE NO. PUD 202100055
SERVICE RULES, REGULATIONS AND	)	
CONDITIONS OF SERVICE FOR ELECTRIC	)	
SERVICE IN THE STATE OF OKLAHOMA	)	

PUBLIC SERVICE COMPANY OF OKLAHOMA'S RESPONSE TO OKLAHOMA ATTORNEY GENERAL'S FOURTEENTH SET OF DATA REQUESTS TO RESPONDENT PUBLIC SERVICE COMPANY OF OKLAHOMA AG-PSO-14

Question No. 14-6:

Distribution: Please refer to the direct testimony of Steven F. Baker, page 45, where Mr. Baker states that "[t]he middle option is to replace all assets in each category that are currently greater than 40 years of age . . . . The middle option is the recommended option." a) Please provide a detailed explanation for how PSO currently determines when to retire wooden distribution poles recorded in FERC Account 364. b) Please identify the frequency with which PSO conducts a visual inspection of each wooden distribution pole recorded in FERC Account 364. Please include a detailed explanation of the steps involved in a visual inspection, including any tests performed, equipment used, and how the results of such tests are used. Please also include a copy of any documents setting out procedures or policies governing visual inspection of wooden distribution poles. c) Please identify the frequency with which PSO performs a detailed examination of the physical condition of each wooden distribution pole recorded in FERC Account 364. Please include a detailed explanation of the steps involved in a detailed examination, including any tests performed, equipment used, and how the results of such tests are used. Please also include a copy of any documents setting out procedures or policies governing detailed examinations of the physical condition of wooden distribution poles. d) Please provide the same information requested in parts (a), (b), and (c) for overhead conductors recorded in FERC Account 365, underground conductors recorded in FERC Account 367, and station transformers.

Response No. 14-6:

a.) <u>POLES:</u> In general, the majority of the poles are primarily retired as a result of necessary line upgrades to increase capacity on the distribution system, the necessary relocation of existing lines, weather related damage, vehicle accidents, or as deemed necessary as part of PSO's normal maintenance practices.
<u>STATION TRANSFORMERS:</u> Station transformers are retired due to transformer failure or other indicators of transformer degradation. Transformer degradation can be determined through various operations, inspection, and maintenance activities, including those identified in responses (b) and (c) below.
b.) <u>POLES:</u> Please refer to PSO Quality of Service Stipulation Report (PUD 200300076, Section I) historical filings for information regarding the details for the number of poles inspected on an annual basis. PSO has inspected its poles as part of its overhead inspection process over the past two years. The inspections are primarily visual inspections performed by qualified personnel. The personnel inspecting

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the pole are primarily checking for damage that would affect the structural integrity of the pole. In 2018, a contractor was hired to perform a ground line inspection of poles. The steps involved in the inspection process include: visual inspection from ground line to the top of pole, sounding with a hammer, excavation at the base of the pole to determine degree of external decay and boring to detect internal decay. The determination on the need to replace a pole for this method was based upon visual inspection and the amount of potential rot below ground level. This approach was discontinued in 2019 and inspections were performed as part of PSO's overhead inspection process to improve efficiencies. Please refer to specification 125, AG 14-6 Attachment 1, for additional details regarding ground line inspections.
TRANSFORMERS: Visual inspections of station transformers typically occur on a 2 calendar month interval. Visual inspection tasks include the following:

- Check for tank and bushing oil leaks
- Check operation of fans and pumps
- Check standby power source energized
- Record operation range of oil and winding temperature indicators
- Check tap changer range and record
- Check gas blanket bottle level and regulator pressure
- Record main tank pressure
- Check silica gel cartridges and change if needed
- Inspect oil containment - drain water if needed,
- Check oil level and pressure relief indicators
- Listen for unusual sounds
- Check bushings for chipped, broken skirts
- Confirm operability of reactor/load tap changer
- Run through neutral if voltage limitations permit
- Record voltage, counter, and indicator positions

c.) POLES: Please refer to response for part b.
TRANSFORMERS: Transformer maintenance typically occurs on an interval of 4-12 years, depending on the transformer type and condition. Transformer maintenance tasks include the following:

- Perform pre-engineering (are there upgrades, bushings to be replaced, etc.)
- Obtain oil sample for oil analysis and DGA
- Operate sudden pressure/fault pressure relay
- Inspect LTC if applicable - Repair/upgrade as needed
- Clean all porcelain
- Perform Power Factor Test
- Exercise DETC
- Repair oil leaks - minor repairs

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- Check Cooling System: fan blades/motors and pumps, obstructions in radiators (i.e. bird nests); Obtain Tecsonics readings on pumps.
- Check all gauges: use of Drywell/Joffa type calibrators for temp. Gauges; verify oil level gauge operation and alarms (if applicable).
- Tighten loose bolts and hardware
- Check wiring terminations for tightness/secure
- "Spot" paint tank as required
- Apply oxidation inhibitor to all HV electrical connections (thin coat), torque all connections (consider re-torque values if applicable)

d.) Please refer to PSO Quality of Service Stipulation Report (PUD 200300076 Section I) historical filings for information regarding details regarding the miles patrolled and maintained on an annual basis. The inspections are primarily visual inspections performed by qualified personnel. The personnel inspecting the lines are not solely focusing on just overhead conductors. Rather, they are checking for any visible damage on the various components of the line that would affect the structural integrity of the line itself, which would include overhead conductors.
PSO does not perform a visual inspection or periodic testing on its underground conductors.

Witness: Steven F. Baker   Title: VP Dist Region Opers

Date Response Provided: 6/16/2021

AMERICAN ELECTRIC POWER
Specifications for
Inspection, Groundline Treatment & Reinforcement of Standing Wood Poles

1. **SCOPE**

1.1 This specification applies to material, equipment, and services purchased by American Electric Power (AEP) Procurement Services for the AEP Operating Companies and delivered to locations within the AEP service territories.

1.2 These requirements apply to the above and below groundline inspection and groundline treatment of standing wood poles in AEP service territories.

1.3 AEP operating units shall furnish the Contractor with electronic map data including the listing of poles that meet the inspection criteria.

2. **DEFINITIONS**

2.1 “AEP Representative” shall mean the AEP or Operating Company Personnel directly involved with and responsible for the administration and / or implementation of the Pole Inspection and Treatment Program.

2.2 “Contractor” shall mean any contractor or agent of a contractor who seeks to provide electrical distribution services to AEP.

2.3 “Treatment Materials” shall mean any EPA and AEP approved treatment chemicals (pesticides and preservatives) listed in Attachment “A”.

2.4 “Reported” means that the inspection data results (findings) shall be recorded on the inspection spread sheet and/or electronic recording medium.

3. **CONTRACTOR RESPONSIBILITIES**

3.1 Contractor shall furnish all qualified supervision, labor, tools, equipment, materials and training necessary or required for the described work. All supervisors or inspectors furnished by the contractor shall be experienced and trained for at least three months in the skill of pole and associated facilities inspection to include safety requirements. Evidence of previous experience and training and the ability to pass a written test, may be required by AEP.

3.2 Pesticide applicator licenses are required by law and copies of the certificates shall be supplied to the AEP representative. All treatment material shall be used for its intended use and applied according to manufacturer’s specifications. Contractor shall submit product labels and MSDS information for all materials applied. Contractor shall comply with OSHA and all governmental laws and regulations.

3.3 Contractors should attempt to notify property owner or residents if entering gates, digging in yards, going through fields or any other potentially disruptive activity. Contractor shall provide their own location to store preservatives and other materials. Storage areas are to be kept in good condition.

3.4 Contractor shall supply all necessary treatment materials. External treatment materials applied shall consist of paste and wraps. Internal treatment materials applied shall consist of liquid and granular material.

(A) Contractor shall keep a record of the product batch numbers used for a period of one (1) year.

(B) Contractor shall apply treatment material according to the manufacturer's specifications. As the treating solution contains a pesticide, particular care must be taken to avoid spillage. Any trace of solution spilled on the ground during treatment or in the transport and filling of apparatus shall be cleaned up.

(C) Contractor shall follow the manufacturer's instructions for pesticide storage, disposal and container disposal.

(D) A copy of the Contractor's safety program and spill procedures shall be sent to the AEP representative.

3.5 "Underground location requests", such as "Call Before You Dig" are the responsibility of the contractor.

3.6 All required documents from the contractor shall be provided prior to beginning any work.

4. POLE AND FACILITIES INSPECTION

4.1 This program shall be performed such that every pole meeting the in-service criteria described below shall be inspected and maintained as required on a ten year cycle based on the initial pole treatment types (i.e., CCA, Penta, and Creosote):

4.1.1 Poles in service 15 years and longer (10 years for coastal areas of Texas) treated with Penta, Creosote and Copper Naphthenate.

4.1.2 Poles in service 30 years and longer treated with CCA. These vintage CCA poles shall not be dug or treated but shall be given a visual inspection only.

4.1.3 Any pole <u>designated for inspection</u> that is less than 15 years old (10 years for coastal areas of Texas) with any treatment type shall only be given a visual inspection and reported.

4.2 All poles designated for inspection and/or treatment shall be given a visual inspection and sounded with a hammer to determine the condition of the pole <u>before excavating for the groundline inspection</u>.

4.3 Above Groundline Inspection

4.3.1 Each pole designated for inspection shall be examined visually from groundline to top of the pole for conditions such as woodpecker holes, cracks, splintered or crushed wood or decay and damage due to lightning. If the pole is a reject due to excessive damage by one of the above or some other conditions, the pole shall be reported as a "Visual Reject", with no treatment being given. "Visual Reject" poles shall be sound and bored to determine priority for replacement.

(A) Visual inspection of the pole and facilities on the pole shall be made to determine if there are defective (slack or broken) guys, anchors, crossarms, braces, hardware, conductors, insulators, fittings, and / or broken or loose ground wires, leaning poles or other damaged equipment. Observed defects as well as unauthorized attachments such as clotheslines and hunting stands shall be reported. Contractor is to immediately notify AEP of any hazardous conditions that may endanger life or property, or potentially cause an outage.

4.3.2 All poles designated for inspections that are set in pavement or poles that cannot be easily excavated around shall be sounded with a hammer and bored.

4.3.3 "Sound & Bore" poles shall be visually inspected above ground, sounded with a hammer from groundline to 8 feet above and a test boring made (at groundline) at a 45 degree angle to the center of the pole with a 3/8" bit to detect decay. If the pole is found to have no internal decay it is to be recorded as Sound & Bore. If internal decay is present, a second boring shall be done approximately 180 degrees from the first boring to determine the extent of the decay. If decay is excessive an additional boring may be needed (maximum of 3 borings). A shell thickness gauge shall be used in determining the amount of sound wood remaining (see Attachment B). If sufficient sound wood remains in the pole to provide the necessary strength, it shall be treated per section 5.2, if it is practical and possible to do so considering the environment surrounding the pole. Poles not meeting this condition shall be reported as rejected.

(A) All holes shall be plugged with tight fitting pressure treated wooden dowels two inches in length and 7/16" in diameter or approved plastic plugs. Plugs shall be driven in to within 1/8" with the pole surface. Plugged holes shall be marked with chalk.

4.3.4 If a pole is designated for inspection, but cannot be bored due to obstructions, it shall be given a visual inspection and be reported as a "Visual Inspection" pole.

4.3.5 Pole number tags that are missing or not legible shall be re-installed per the AEP Distribution Standard (D.S. 11-A), refer to attachment "C". AEP label tags shall also be installed on all AEP owned poles without an existing ownership tag. The AEP representative shall supply these tags to the Contractor. AEP Identification tags shall not be installed on foreign-owned poles.

4.4 Below Groundline Inspection

4.4.1 All poles with underground primary risers shall not be dug and inspected below ground.

4.4.2 Poles with secondary underground risers or any other type of underground facilities shall be dug, inspected and treated unless there are so many that the poles cannot be adequately treated. Underground riser poles not dug shall be sounded and bored and internally or fumigant treated if appropriate (see section 4.3.3). All other poles that pass the above groundline inspection shall be excavated for a condition based inspection where possible.

4.4.3 A condition based maintenance inspection includes the removal of a minimum of one shovel full of soil (approximately 10" wide by 6" to 8" in depth) at the base of the pole. The exposed area of the pole shall be visually inspected for external decay and bored at a 45 degree angle to the center of the pole with a 3/8" bit to determine if internal decay is present. If no decay is present the hole shall be backfilled with no treatment applied. If external decay and/or internal decay are present, the pole shall be fully excavated where possible per section 4.4.4. <u>During this process, safety precautions shall be taken in handling the ground wires, underground cables, conduits etc.</u>

4.4.4 All poles that exhibit external and/or internal decay as a result of the condition based maintenance inspection shall be excavated to a minimum of 18" below the groundline (low side). The width of the hole around the pole shall provide a minimum clearance of 6” at the bottom of the hole and 12” at the groundline. Landscaping such as shrubs and flowers shall not be disturbed without property owner permission, and this condition (shall be) reported if unable to proceed. For excavations in lawns or gardens, tarpaulins shall be provided to keep the surrounding area as clean as possible and the turf around the pole shall be carefully cut and neatly replaced after the hole has been backfilled.

4.4.5 External decay inspection:

(A) No prods, bars, or picks shall be used to determine the extent of decay. All poles shall be carefully examined by sounding the pole from bottom of the hole to 1 foot above groundline.

(B) The surface to be treated shall be brushed clean with a wire brush or shell scraper. All loose, rotted wood is to be removed from the treating zone and all overhanging, loose wood is to be removed to at least 6” above groundline. No good or sound wood shall be removed from the pole. All loose chips and decayed pieces shall be removed from the hole and the surrounding area and properly disposed of.

(C) The portion of sound wood remaining shall be determined (see Attachment B), and if sufficient sound wood remains in the pole to provide the necessary strength, it shall be treated per section 5.1. Poles not meeting this condition shall be reported as rejects. The original pole circumference (of the decay area) may be obtained by adding the measurements of the pole circumference directly above and below the decay area and dividing by two.

4.4.6 Internal decay inspection:

(A) The minimum number of borings shall be 2 for standard distribution poles spaced at 180 degrees, and 3 for larger (54 inch circumference or greater) poles spaced at 120 degrees around the pole.

(B) If decay is excessive additional borings shall be taken as necessary to determine the location and extent of the decay.

(C) A shell thickness gauge shall be used in determining the amount of sound wood remaining. If sufficient sound wood remains in the pole to provide the necessary strength, it shall be treated per section 5.2, if it is practical and possible to do so considering the environment surrounding the pole. Poles not meeting this condition shall be reported as rejects.

(D) All holes shall be plugged with tight fitting pressure treated wooden dowels two inches in length and 7/16” in diameter or approved plastic plugs. Plugs shall be driven in to within 1/8” with the pole surface. Plugged holes shall be marked with chalk or other means acceptable to AEP.

4.4.7 On poles with push braces, each pole shall be inspected and treated as a separate pole. On stubbed poles, the stub shall be ground line inspected and treated instead of the groundline portion of the original pole.

4.4.8 Previously reinforced poles shall not be excavated. Pole borings shall be made per section 5.3.2 or 5.3.3 and section 5.3.4 to determine the average shell thickness. Poles meeting the minimum shell thickness requirements shall receive internal treatment or be fumigated as per section 5.2. Any of these poles not meeting the minimum shell thickness requirements shall be rejected and identified for replacement with no treatment applied.

4.4.9 Poles with internal decay and a minimum average shell thickness of 1 inch or less shall be reported as Priority Reject Poles. Poles with external decay with 50% or less of the original strength (measured by loss of circumference) remaining shall be reported as Priority Reject Poles (see Attachment B).

5. POLE TREATMENT

5.1 External Treatment

5.1.1 External treatment materials applied shall consist of paste or wraps. Refer to Attachment “A” for treatment material approved by AEP.

5.1.2 Treatment shall be directly applied on the surface of the pole and over a total length of 21” commencing at 3” above the groundline and extending to 18” below groundline. The materials shall be applied in accordance with the manufacturer’s recommendations. A bandage of polyethylene coated craft paper shall be placed around the pole where treatment was applied. The bandage shall extend from 4” above ground to 18” below ground and be stapled to the pole. In yards, parks and pastures, where animals or the public has regular contact, the preservative shall not be put above ground.

5.1.3 Care shall be used to prevent treatment material from being applied on cable surfaces and safety precautions shall be taken when digging near attachments such as ground wires or underground electric or phone cables. Contractor shall be responsible for damage incurred.

5.1.4 A high strength taping material (padlock tape) shall be applied on top of the bandage of externally treated poles, as designated by Owner.

5.1.5 Poles shall not be treated if they are within 10 feet of any stream, pond, open water or well and shall be reported (as such).

5.2 Internal Treatment

5.2.1 Internal treatment materials applied shall consist of liquid and granular material. Refer to Attachment “A” for treatment material approved by AEP.

5.2.2 Poles with internal decay and voids larger than 1” in diameter shall be internally treated. Internal treatment price is for the treatment labor and material cost only. The treatment material shall be pumped into the bottom inspection hole in the decay or void area specified in section 4.4.5 until it flows out the next higher hole. This hole shall be plugged and additional preservative pumped into the cavity until it flows out the next higher hole; this procedure is continued until the cavity is filled (a pressure of 50 psi shall be applied) or a maximum of two gallons is injected. If treatment material has not flowed out the top hole, a maximum of one gallon shall be pumped into this top hole. All holes that have not been previously plugged shall be plugged at this time. When necessary, similar methods shall be used in treating enclosed decay pockets.

5.2.3 Poles with internal decay pockets less than 1” in diameter shall be fumigated.

(A) Poles to be fumed shall be drilled at a steep angle (45 degrees or more) downward into the pole taking care not to allow the bit to intersect deep checks or to extend through the opposite side of the pole. Bore holes shall be 3/4" to 7/8" in diameter per the treatment product label and 15" in length. Poles with a circumference of 32" or less shall be drilled at three locations and those greater than 32" shall be drilled at four locations. The first hole should be at ground line and succeeding holes in a spiral pattern approximately 6" higher and rotated 90 degrees from the next lower hole for applications requiring four holes and 120 degrees for applications requiring three holes. Inject equal amounts of fumigant into all holes using a total of one (1) pint per pole on the average. All holes shall be sealed using the appropriately sized plugs that would typically be 7/8" or 15/16" by 3" treated wood dowels or plastic plugs.

5.3 Reinforcement

AEP owned poles identified as groundline "rejects" because of insufficient shell thickness at groundline shall be examined above ground for reinforcement candidates using the following procedures.

5.3.1 A visual check shall be made to determine if there are any obvious physical conditions that may prevent the pole from being reinforced. This would include rock conditions, unsuitable terrain conditions and any other local Company directives as regards URD risers, etc. Should one or more of these conditions be present the pole shall be recorded as a non-reinforceable below ground reject.

5.3.2 A 3/8" auger bit shall be used to bore the pole at approximately 15" above grade and a shell gauge used to determine the average shell thickness (a 2" minimum shell is required for pole to be reinforced). A minimum of 3 borings per pole, spaced at 120 degrees around the pole, shall be taken with at least 4" vertical separations up or down between holes. Additional borings may be taken if necessary to determine the average shell thickness. Poles without an average 2" shell thickness at approximately 15" above grade shall be examined according to paragraph 5.3.3.

5.3.3 NOTE: The requirements of this paragraph only apply if the requirements of section 5.3.2 cannot be met. A 3/8" auger bit shall be used to bore the pole at approximately 26" above grade and a shell gauge shall be used to determine the average shell thickness (2" minimum is required for pole to be reinforced). A minimum of 3 borings per pole, spaced at 120 degrees around the pole, shall be taken with at least 4" vertical separations up or down between holes. Additional borings may be taken if necessary to determine the average shell thickness.

5.3.4 A 3/8" auger bit shall be used to bore the pole at approximately 54" above grade and a shell gauge shall be used to determine the average shell thickness (4" minimum is required for a pole to be reinforced). A minimum of 3 borings per pole, spaced at 120 degrees around the pole shall be taken with at least 4" vertical separations up or down between holes. Additional borings may be taken if necessary to determine the average shell thickness.

5.3.5 All bored holes are to be plugged with treated wooden dowels or approved plastic plugs. If the pole is a candidate for reinforcing (meeting the requirements of either section 5.3.2 or 5.3.3 and section 5.3.4), the pole is to be treated externally as required by this specification. Reinforcement candidates shall be noted on the inspection report. The cost of inspecting for reinforcement candidates shall be included in the bid rates. No adders are to be written in on the bid proposal.

5.3.6 All rejected poles identified for reinforcement that have internal voids shall also be internally treated with a copper naphthenate in oil solution at a 2% copper as metal rate. At least nine (9) 3/8" diameter holes (which include previously bored inspection holes as appropriate) shall be bored to the center of the pole starting from groundline in a spiral fashion to a height of approximately 4 feet. The internal treatment shall be applied to all holes bored with a minimum of 50-PSI pressure. The treatment material shall be pumped into the bottom hole until it is noticed at the next higher hole. The initial hole is then plugged and additional preservative pumped into the cavity until it is noticed at the next higher hole. This procedure is followed until the cavity is filled. All holes shall be plugged with tight fitting pressure treated wooden dowels or plastic plugs.

6. BACKFILL

6.1 After external treatment, all poles shall be solidly backfilled. Rocks or stones shall not be placed directly against the bandage. The ground wires should be handled in such a way that the connection integrity to the ground rod is well maintained and no mechanical damage is done to the ground wires during this refill process. The soil shall be replaced in 6" layers and solidly tamped before adding the next layer. Care shall be used to prevent the tamping tool from striking the bandage. A layer of soil shall be placed against the pole all the way up to a point 3" above the groundline. Any excess soil shall be cleaned up, and the finished job shall have a mound of soil extending at least 3" above the groundline to allow for further settling. On lawns the backfill soil is to be carefully tamped and all turf to be carefully replaced to match its original location. Excess excavated soil shall be removed from the surrounding lawn. Backfill shall not to be placed above the wrapping paper or padlock tape.

7. MARKING AND RECORDING

7.1 Poles inspected/treated shall be marked to indicate the date of inspection and type of treatment if any. Markers shall be specified by AEP and placed 3" below the pole number for easy recognition. All rejected poles shall be tagged with a square (approximately 2") aluminum tag and reported. Reject poles that are a candidate for reinforcement, including priority reinforcements, shall be marked with an additional square (approximately 2") yellow tag. Priority poles being designated for replacement shall be marked with a red tag with white arrow pointing up or down to the area on the pole causing it to be a "priority pole". All reinforcement and replacement "priority poles" shall be reported to the AEP representative within 24 hours. AEP distribution personnel responsible for program oversight shall confirm these or other local tagging and notification requirements with the contractor.

8. QUALITY CONTROL

8.1 The Contractor's work should be checked every week or two by the AEP representative and the inspector's supervisors. Approximately 3% of the previously inspected and/or treated poles shall be reinspected. The re-inspection for full excavation poles shall consist of re-excavating, removing the paper wrap and treatment materials. These poles shall be completely reinspected and retreated. If any serious errors are discovered, all the work between spot checks shall be reinspected and/or retreated at no cost to the Owner.

9. INSPECTION RECORDS

9.1 Contractor shall keep complete records during the course of the inspection and treatment of poles. These records are to be maintained by Contractor for a period of at least one (1) year. The minimum information required shall be provided in electronic data reports such as excel spreadsheet files per sample files provided to the Contractor. Weekly completion report files and YTD Summary files shall be forwarded to the AEP representative via email. Monthly completion reports shall be provided utilizing File Transfer Protocol (FTP) with formatting requirements provided to the Contractor. The requirements for the FTP data are defined in the documents “AEP Pole Inspect Format” and “AEP Pole Reinforcement Format”. Data must be provided on the FTP site or through an AEP interface and must meet the approved data format. The cost for acquiring this data electronically, including the cost of handheld devices and data input, shall be included in the bid proposal rates. No adders shall be accepted for this work. This required information includes the following:

- Pole number and location
- Pole vintage date (estimated if unknown per records)
- Pole class and length (estimated if unknown per records)
- Species of wood & original treatment
- Pole manufacturer
- Date and type of re-treatment of previously retreated poles
- Equivalent ground line circumference
- Condition of pole above ground line
- Condition of facilities on pole and attachments
- Sketch showing decay areas of pole (not for hand-held)
- Broken, loose, or damaged Ground wire
- Batch number of materials used

9.2 The following defects, as a minimum, must be identified within all electronic data reports. These electronic reports shall be in a format such as excel spreadsheet files.

- Broken, tilted, or split cross arm and/or brace
- Broken conductor strand
- Broken/missing ground wire molding
- Broken/missing guy guard
- Broken insulator
- Lightning damage
- Leaking oil
- Overload signal on transformer
- Slack or Broken guy
- Broken or damaged cutout
- Cutout fuse blown
- Fire damage
- Broken ground wire and/or loose ground connection
- Identification No. missing
- Damaged/blown lightning arrester
- Loose hardware
- Loose tie wire
- Pulled/damaged anchor
- Unauthorized attachment
- Leaning poles
- Conductor/wire/service drop too low – safety concern

9.3 All pole inspection report files shall be numbered sequentially, with the AEP map number or other agreed upon file nomenclature such as week ending date. In addition, the

Contractor shall indicate what was done to each pole within the electronic report file. Suggested codes for actions taken and/or determinations made are as follows:

- T- Treated Pole (groundline, internally, or fumigated)
- X- Rejected Pole
- V- Visually Inspected Pole
- SB- Sound & Bore Pole
- CM- Condition Based Maintenance Inspection
- XR- Reinforce Candidate
- XX- Priority Rejected Pole

10. POLE GROUND WIRE & GROUND WIRE REPAIRS

10.1 Pole ground wires shall not to be pulled away from the pole to apply treatment products. Preservative treatment (with paper) shall be applied over the ground wire. See section 5.1 for external treatments. If Contractor damages the ground wire during the inspection and treatment process, Contractor shall be responsible for that ground wire repair at their expense.

10.2 Contractor shall have properly instructed employees performing ground wire repairs and shall have all tools and safety equipment to perform this work. The ground wire repair work shall include repairs to/or replacement of broken or missing ground wire (found during the inspection) from the ground line up to 7' height on the pole using AEP supplied materials. Refer to AEP Distribution Standard (D.S. 65), attachment "D". Ground wire repairs shall begin on the ground rod side of the open ground point.

10.3 Evidence of vandalism of the ground wire shall be reported to the AEP representative promptly.

11. ADDITIONAL INFORMATION

11.1 Foreign-Owned Poles (not AEP) are not to be inspected unless specifically requested by the AEP representatives. If a foreign-owned pole with AEP attachments is observed to have a defect as contractor is passing by, the defect shall be noted and the pole recorded as a "Visual Inspection".

11.2 In conjunction with those poles designated for inspection, poles identified in the field (that are not shown on the electronic maps) with AEP attachments shall be inspected and recorded as a "Visual Inspection". All pertinent information regarding these poles shall be recorded including pole ownership and x-y coordinates (latitude/longitude). A comment shall be included in the Remarks field of the report for these poles that "a follow-up trip is required for AEP personnel" as directed by the AEP representative. If these poles (that are not shown on the maps) are determined to be AEP poles, they shall be inspected and treated as required. Any question regarding these situations/conditions shall be directed to the local AEP representatives.

11.3 The Contractor shall have their company identification sign on each of their vehicles. It is strongly recommended that Contractors provide their employees with personal photo identification.

11.4 Electronic invoices shall be submitted weekly via "CATS" (Contract Administration Tracking System); the distribution internet based invoicing system. Invoices shall be submitted by complete map section, unless other arrangements are made with the AEP representative. Each invoice is to reference the AEP map number(s), the sequential report number(s), and week ending date for which it covers. A field-marked copy of the map section or other electronic tracking documentation shall accompany the invoice. Separate invoices shall be submitted for each AEP Operating Company. All invoices shall be submitted to the appropriate AEP representative.

11.5 Contractors shall report their locations daily or weekly, as requested, to AEP local area inspectors.

11.6 The AEP representative shall be immediately notified of any customer complaints or any damages to customer or Company facilities so that arrangements for any necessary repairs can be made in a timely manner

Prepared by:

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D. J. Thompson

Reviewed by:

John H. Tucker

J.H. Tucker

Approved by:

Fredric A. Friend

Fredric A. Friend, P.E

<table>
<tr><th colspan="4">MATERIALS APPROVED FOR GROUNDLINE TREATMENT OF STANDING WOOD POLES</th></tr>
<tr><th></th><th colspan="2">Material</th><th>Manufacturer</th></tr>
<tr><td rowspan="2">External Treatment Products</td><td colspan="2">Cu-Bor</td><td>Copper Care Wood Preservatives, Inc (Osmose)</td></tr>
<tr><td colspan="2">CuRap 22</td><td>Genics</td></tr>
<tr><td rowspan="6">Internal Fumigant Treatment Products</td><td rowspan="3">Liquid</td><td>Wood Fume</td><td>Osmose</td></tr>
<tr><td>L Fume 33</td><td>Poles, Inc.</td></tr>
<tr><td>SMDC-Fume</td><td>Copper Care Wood Preservatives, Inc (Osmose)</td></tr>
<tr><td rowspan="3">Granular</td><td>DuraFume II</td><td>Osmose</td></tr>
<tr><td>Super-Fume</td><td>Copper Care Wood Preservatives, Inc (Osmose)</td></tr>
<tr><td>UltraFume</td><td>PoleCare Inc.</td></tr>
<tr><td rowspan="3">Internal Liquid Void Treatment Products</td><td rowspan="3">Liquid</td><td>Hollow Heart CB</td><td>Osmose</td></tr>
<tr><td>Cu-Nap Concentrate</td><td>Copper Care Wood Preservatives, Inc (Osmose)</td></tr>
<tr><td>QNAP8</td><td>Nisus</td></tr>
</table>

Attachment "A"

TABLE I
MINIMUM ALLOWABLE DIMENSIONS OF
REMAINING SOUND WOOD WITH EXTERNAL DECAY

ORIGINAL CIRCUMFERENCE (INCH)	MINIMUM CIRCUMFERENCE (INCH)		
	REJECT		PRIORITY REJECT 50% LOSS OF STRENGTH
	NESC RULE 250B ✳	NESC RULE 250C & D ☆	
20	17.5	18.2	15.9
21	18.3	19.1	16.7
22	19.2	20.0	17.5
23	20.1	20.9	18.3
24	21.0	21.8	19.0
25	21.8	22.7	19.8
26	22.7	23.6	20.6
27	23.6	24.5	21.4
28	24.5	25.4	22.2
29	25.3	26.3	23.0
30	26.2	27.3	23.8
31	27.1	28.2	24.6
32	28.0	29.1	25.4
33	28.8	30.0	26.2
34	29.7	30.9	27.0
35	30.6	31.8	27.8
36	31.4	32.7	28.6
37	32.3	33.6	29.4
38	33.2	34.5	30.2
39	34.1	35.4	31.0
40	34.9	36.3	31.7
41	35.8	37.3	32.5
42	36.7	38.2	33.3
43	37.6	39.1	34.1
44	38.4	40.0	34.9
45	39.3	40.9	35.7
46	40.2	41.8	36.5
47	41.1	42.7	37.3
48	41.9	43.6	38.1
49	42.8	44.5	38.9
50	43.7	45.4	39.7
51	44.6	46.3	40.5
52	45.4	47.2	41.3
53	46.3	48.2	42.1
54	47.2	49.1	42.9
55	48.0	50.0	43.7
56	48.9	50.9	44.4
57	49.8	51.8	45.2
58	50.7	52.7	46.0
59	51.5	53.6	46.8
60	52.4	54.5	47.6

✳ BASED ON 2/3 INITIAL STRENGTH
☆ BASED ON 3/4 INITIAL STRENGTH

Attachment "B"

NESC LOADINGS
(FOR THE INSPECTION AND TREATMENT
OF STANDING WOOD POLES)

NESC RULE 250B ✡

1. ANY POLE NOT MEETING THE HEIGHT AND CONDUCTOR REQUIREMENTS STATED IN RULE 250C & D.

NESC RULE 250C & D ✡

1. ANY POLE OVER 60 FEET IN HEIGHT ABOVE GRADE.
2. ANY POLE WITH CONDUCTOR 60 FEET IN HEIGHT ABOVE GRADE, AT ANY PORTION OF THE CONDUCTOR SPAN LENGTH.

✡ POLE HEIGHT (ABOVE GRADE) CAN BE ESTIMATED BY TAKING POLE LENGTH (FROM MAP DATA) AND SUBTRACTING 10% PLUS 2 FEET (BELOW GRADE PORTION).

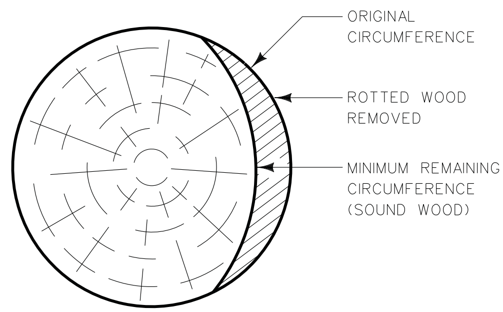


FIGURE A

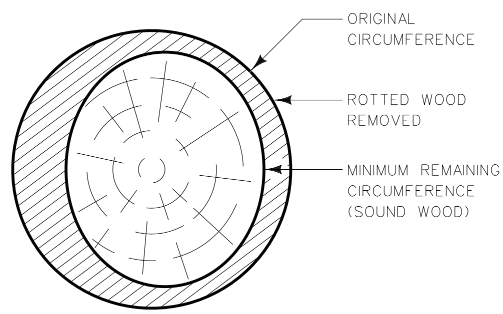


FIGURE B

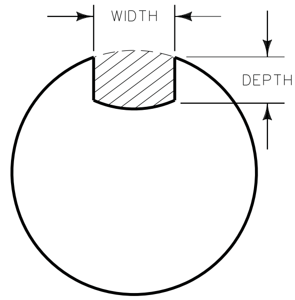


FIGURE C

TABLE II
ALLOWANCE FOR EXTERNAL POCKETS
NESC RULE 250B (BASED ON 2/3 INITIAL STRENGTH)

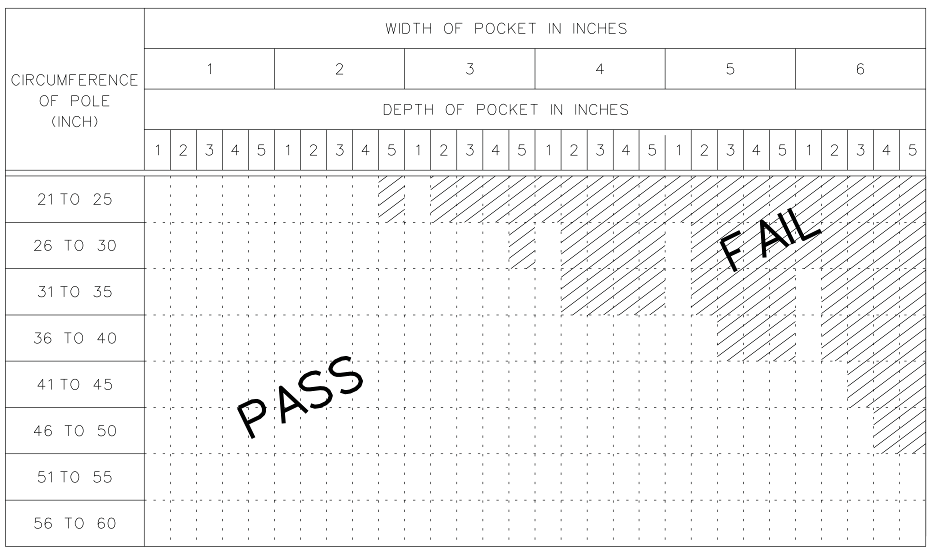


TABLE III
ALLOWANCE FOR EXTERNAL POCKETS
NESC RULE 250 C & D ¾ INITIAL STRENGTH)

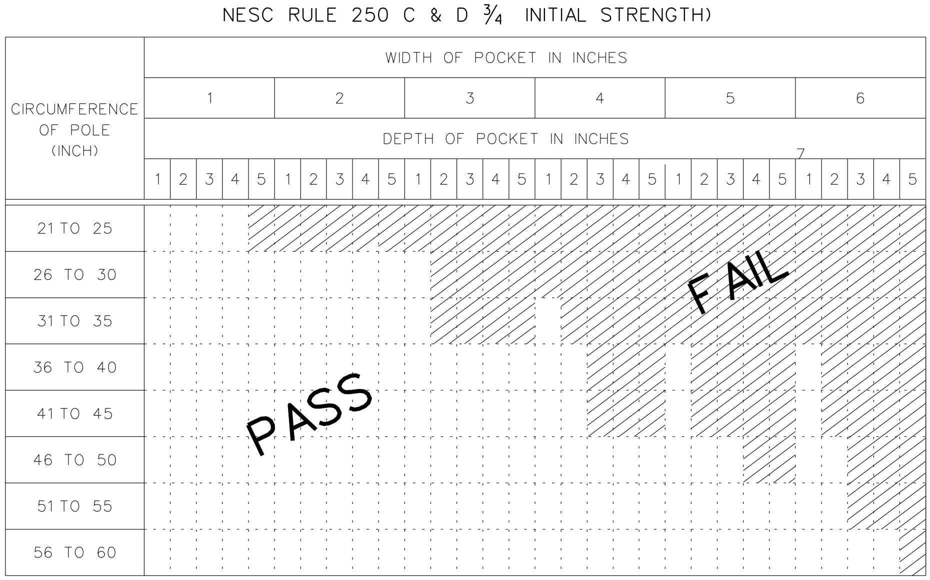


TABLE IV
MINIMUM ALLOWABLE SHELL THICKNESS OF
WOOD POLES DUE TO HEART ROT

MINIMUM THICKNESS OF SHELL (INCH)	CIRCUMFERENCE OF POLE (INCH)	
	NESC RULE 250B (BASED ON 2/3 INITIAL STRENGTH)	NESC RULE 250C & D (BASED ON 3/4 INITIAL STRENGTH)
1.5	20.0 - 30.0	20.0 - 25.0
2.0	31.0 - 40.0	26.0 - 33.0
2.5	41.0 - 50.0	34.0 - 42.0
3.0	51.0 - 60.0	43.0 - 50.0
3.5	61.0- 70.0	51.0 - 60.0

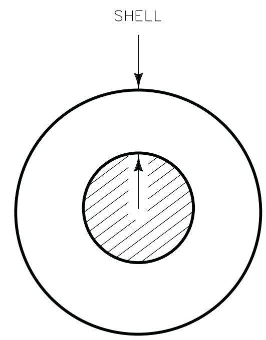


FIGURE D

TABLE V
MINIMUM SHELL AND MAXIMUM DIAMETER
ALLOWANCE FOR ENCLOSED POCKETS

CIRCUMFERENCE OF POLE (INCH)	SHELL (S) (INCH)	NESC RULE 250B (BASED ON 2/3 INITIAL STRENGTH)	NESC RULE 250C & D (BASED ON 3/4 INITIAL STRENGTH)
		DIAMETER (D) (INCH)	DIAMETER (D) (INCH)
20 TO 29	1.5	4	3.5
	2	3.5	3.5
	2.5	3	3
	3	2.5	2.5
	3.5	2	2
30 TO 60	1.5	3.5	2
	2	4.5	2.5
	2.5	6	3.5
	3	5.5	4
	3.5	5	4.5

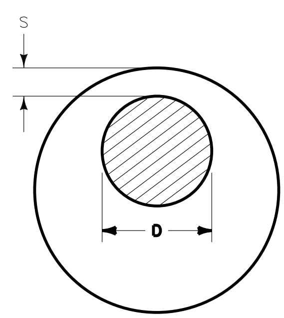


FIGURE E

AMERICAN ELECTRIC POWER COMPANY
DISTRIBUTION STANDARDS

Spec 125
October 30, 2017

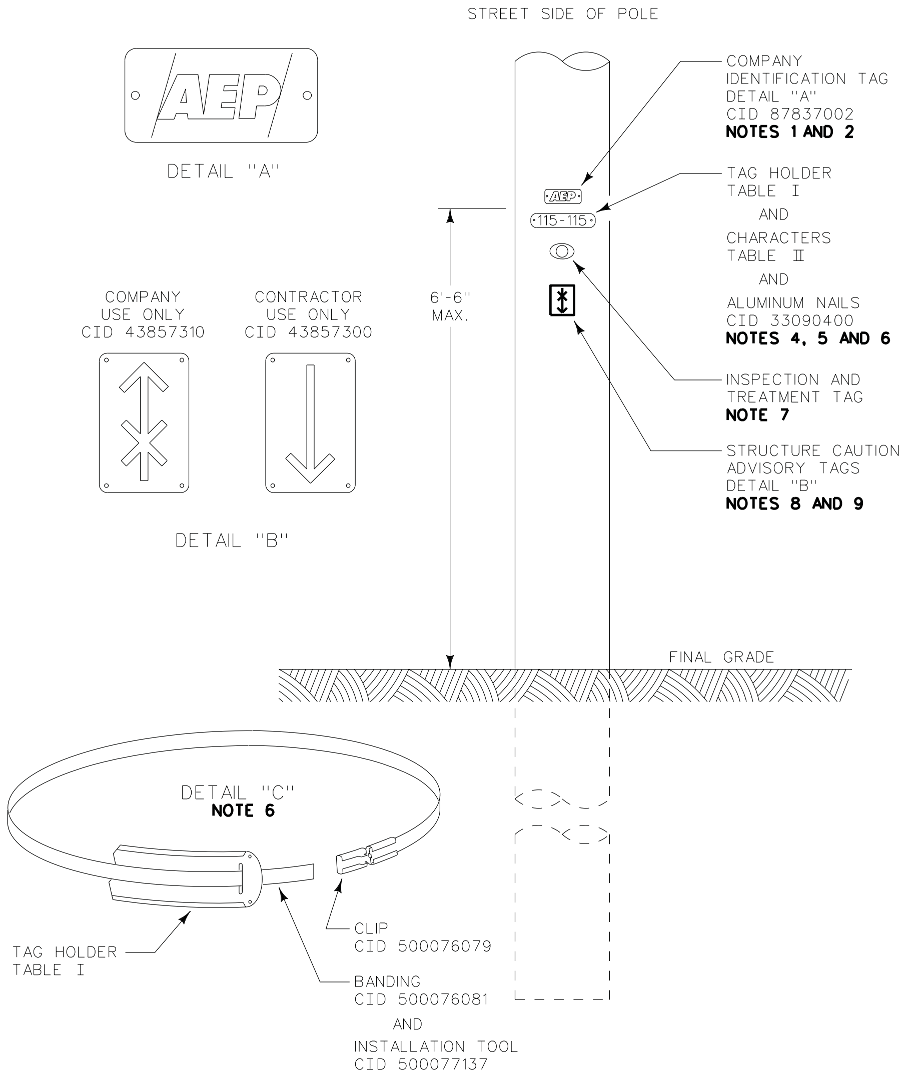


TABLE I

CID NUMBER	HOLDER LENGTH (INCHES) **NOTE 3**
87835980	8 1/2
87835985	9 1/2
87835990	10 1/2
87836200	12 1/2

TABLE II

CID NUMBER	CHARACTER
87447005	0
87447105	1
87447205	2
87447305	3
87447405	4
87447505	5
87447605	6
87447705	7
87447805	8
87447905	9
87156104	DASH
87156404	BLANK
87432605	A
87432705	B
87432805	C
87432905	D
87433005	E
87433105	F
87433205	G
87433305	H
87433405	I
87433505	J
87433605	K
87433705	L
87433805	M
87433905	N
87434005	O
87434105	P
87434205	Q
87434305	R
87434405	S
87434505	T
87434605	U
87434705	V
87434805	W
87434905	X
87435105	Y
87435205	Z

NOTES:

1. COMPANY IDENTIFICATION TAGS SHALL ONLY BE INSTALLED ON COMPANY OWNED POLES.
2. ONLY POLE NUMBERS SHALL BE USED TO IDENTIFY AEP CONTACTS ON FOREIGN OWNED POLES; AEP COMPANY IDENTIFICATION TAG SHALL NOT BE USED TO IDENTIFY CONTACT ON FOREIGN POLES.
3. TAG HOLDERS ACCOMMODATE ONE CHARACTER PER INCH.
4. CRIMP BOTH ENDS OF ALUMINUM HOLDER AFTER CHARACTERS ARE INSTALLED.
5. IN AREAS WITH GRID NUMBERS, INSTALL GRID TAG CID 43857700 (OHIO) OR 43857714 (TEXAS).
6. TO SECURE POLE TAGS TAG TO STEEL POLES, REFER TO DETAIL "C". FOR DUCTILE IRON OR COMPOSITE POLES, SELF-TAPPING SCREWS CID 366969 OR 366968 ARE PREFERRED..
7. STANDING WOOD POLES THAT ARE INSPECTED OR TREATED SHALL BE MARKED TO INDICATE DATE AND TYPE OF TREATMENT.
8. POLE ADVISORY TAGS SHALL ONLY BE INSTALLED BY CONTRACTORS OR COMPANY PERSONNEL WHEN THE CONDITION OF THE FACILITIES WARRANTS FOLLOW-UP EVALUATION AND/OR REPAIR.
9. UPON INSTALLATION, THE ARROW SHALL POINT IN THE DIRECTION OF THE HAZARD.

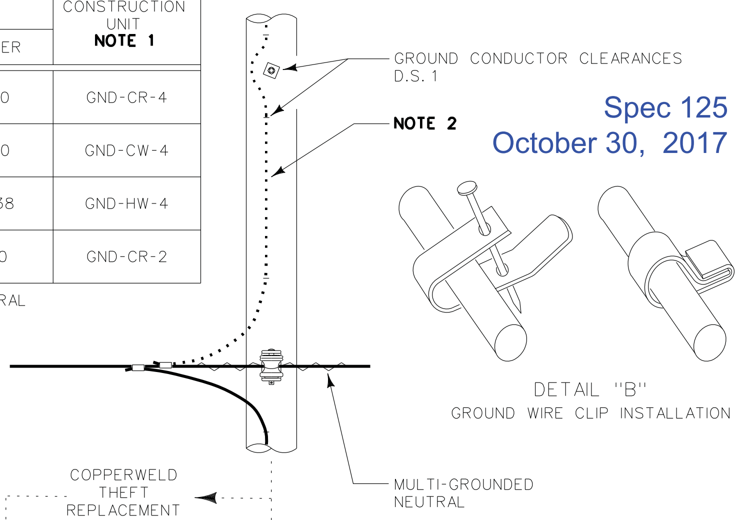
AMERICAN ELECTRIC POWER COMPANY
DISTRIBUTION STANDARDS

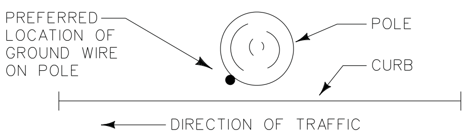
Spec 125
October 30, 2017

TABLE I

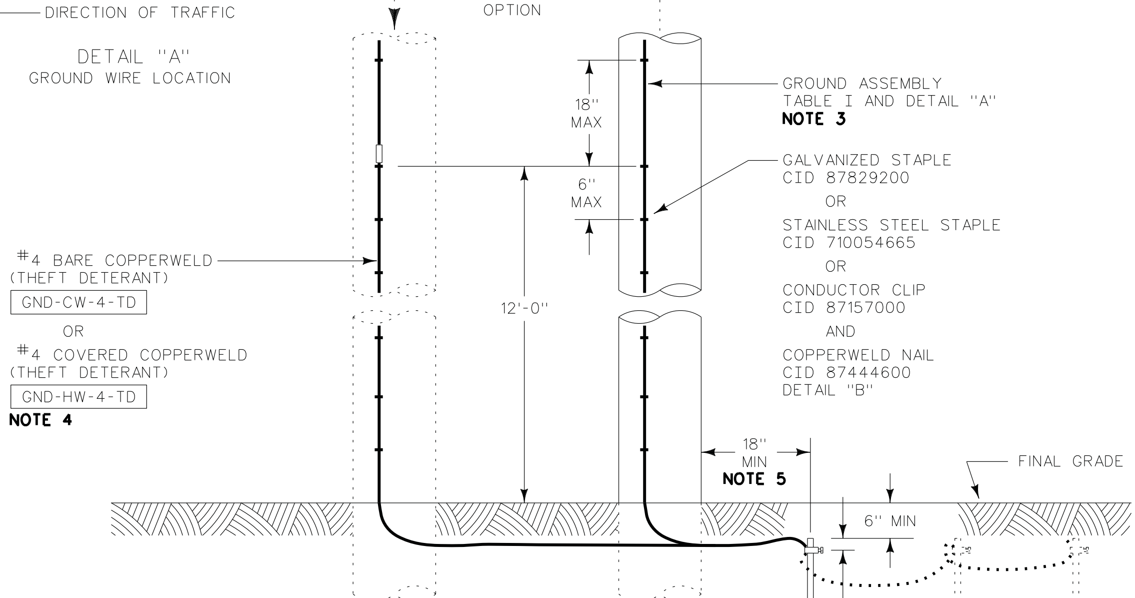
MINIMUM GROUNDING CONDUCTOR			CONSTRUCTION UNIT **NOTE 1**
SIZE	DESCRIPTION	CID NUMBER	
#4	BARE COPPER SOFT DRAWN	87843600	GND-CR-4
	BARE COPPERWELD SOLID	87843700	GND-CW-4
	COVERED COPPERWELD SOLID	500068938	GND-HW-4
#2 ✳	BARE COPPER SOFT DRAWN	55040100	GND-CR-2

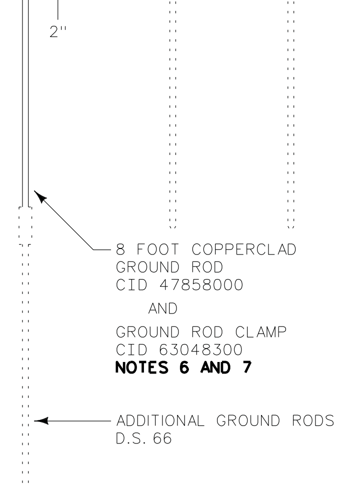
✳ FOR USE ON SPECIAL APPLICATIONS OR LARGE NEUTRAL SIZES AS DEFINED IN NESC RULE 93C2.





DETAIL "A"
GROUND WIRE LOCATION





NOTES:

1. THE CONSTRUCTION UNITS IN TABLE I INCLUDE THE CONDUCTOR STAPLES AND GROUND ROD TO CONSTRUCT ASSEMBLY AS SHOWN.
2. THE POLE GROUND WIRE SHOULD NOT BE EXTENDED ABOVE THE NEUTRAL POSITION UNLESS BONDING TO EQUIPMENT OR THE POLE GROUND NEEDS TO BE EXTENDED TO BOND TO THE SHIELD WIRE.
3. MULTI-GROUNDED NEUTRAL SHALL HAVE AT LEAST FOUR GROUND (ROD) CONNECTIONS IN EACH MILE OF LINE EXCLUSIVE OF GROUND (ROD) CONNECTIONS AT CUSTOMERS' SERVICE EQUIPMENT.
4. WHERE PRACTICAL ITS ACCEPTABLE TO EXTEND THE COPPERWELD CONDUCTOR TO THE SYSTEM NEUTRAL.
5. IN PAVED AREAS, REMOVE JUST ENOUGH PAVEMENT ADJACENT TO POLE TO PROVIDE SPACE TO MAKE INSTALLATION. DRIVE GROUND ROD AT A 45° ANGLE INTO UNDISTURBED EARTH.
6. GROUND RODS ARE TO BE DRIVEN TO THE DEPTH SHOWN UNLESS ROCK OR OTHER OBSTRUCTIONS ARE ENCOUNTERED. IN THESE CASES, THE GROUND RODS MAY BE CUT TO A SHORTER LENGTH BUT THE TOP OF THE GROUND ROD IS STILL TO BE 6" MIN BELOW GRADE.
7. RESISTANCE OF INDIVIDUAL GROUND LOCATIONS SHOULD BE LOWERED TO PRACTICAL VALUES. ADDITIONAL GROUND RODS MAY BE DRIVEN TO LOWER GROUND RESISTANCE, HOWEVER, NO MORE THAN THREE GROUND RODS ARE TO BE INSTALLED AT ANY SINGLE LOCATION, REFER TO D.S. 66.

MARCH 15, 2016

GROUND ROD AND GROUND CONDUCTOR INSTALLATION
ALL DISTRIBUTION VOLTAGES

D.S. 65

Attachment "D"

BEFORE THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA

APPLICATION OF PUBLIC SERVICE COMPANY OF OKLAHOMA, AN OKLAHOMA CORPORATION, FOR AN ADJUSTMENT IN ITS RATES AND CHARGES AND THE ELECTRIC SERVICE RULES, REGULATIONS AND CONDITIONS OF SERVICE FOR ELECTRIC SERVICE IN THE STATE OF OKLAHOMA	)))))))	CAUSE NO. PUD 202100055

PUBLIC SERVICE COMPANY OF OKLAHOMA'S RESPONSE TO OKLAHOMA ATTORNEY GENERAL'S FOURTEENTH SET OF DATA REQUESTS TO RESPONDENT PUBLIC SERVICE COMPANY OF OKLAHOMA AG-PSO-14

Question No. 14-6:

Distribution: Please refer to the direct testimony of Steven F. Baker, page 45, where Mr. Baker states that "[t]he middle option is to replace all assets in each category that are currently greater than 40 years of age . . . . The middle option is the recommended option." a) Please provide a detailed explanation for how PSO currently determines when to retire wooden distribution poles recorded in FERC Account 364. b) Please identify the frequency with which PSO conducts a visual inspection of each wooden distribution pole recorded in FERC Account 364. Please include a detailed explanation of the steps involved in a visual inspection, including any tests performed, equipment used, and how the results of such tests are used. Please also include a copy of any documents setting out procedures or policies governing visual inspection of wooden distribution poles. c) Please identify the frequency with which PSO performs a detailed examination of the physical condition of each wooden distribution pole recorded in FERC Account 364. Please include a detailed explanation of the steps involved in a detailed examination, including any tests performed, equipment used, and how the results of such tests are used. Please also include a copy of any documents setting out procedures or policies governing detailed examinations of the physical condition of wooden distribution poles. d) Please provide the same information requested in parts (a), (b), and (c) for overhead conductors recorded in FERC Account 365, underground conductors recorded in FERC Account 367, and station transformers.

Response No. 14-6:

a.) POLES: In general, the majority of the poles are primarily retired as a result of necessary line upgrades to increase capacity on the distribution system, the necessary relocation of existing lines, weather related damage, vehicle accidents, or as deemed necessary as part of PSO's normal maintenance practices.
STATION TRANSFORMERS: Station transformers are retired due to transformer failure or other indicators of transformer degradation. Transformer degradation can be determined through various operations, inspection, and maintenance activities, including those identified in responses (b) and (c) below.
b.) POLES: Please refer to PSO Quality of Service Stipulation Report (PUD 200300076, Section I) historical filings for information regarding the details for the number of poles inspected on an annual basis. PSO has inspected its poles as part of its overhead inspection process over the past two years. The inspections are primarily visual inspections performed by qualified personnel. The personnel inspecting

BEFORE THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA

APPLICATION OF PUBLIC SERVICE COMPANY OF OKLAHOMA, AN OKLAHOMA CORPORATION, FOR AN ADJUSTMENT IN ITS RATES AND CHARGES AND THE ELECTRIC SERVICE RULES, REGULATIONS AND CONDITIONS OF SERVICE FOR ELECTRIC SERVICE IN THE STATE OF OKLAHOMA	)	CAUSE NO. PUD 202100055

the pole are primarily checking for damage that would affect the structural integrity of the pole. In 2018, a contractor was hired to perform a ground line inspection of poles. The steps involved in the inspection process include: visual inspection from ground line to the top of pole, sounding with a hammer, excavation at the base of the pole to determine degree of external decay and boring to detect internal decay. The determination on the need to replace a pole for this method was based upon visual inspection and the amount of potential rot below ground level. This approach was discontinued in 2019 and inspections were performed as part of PSO's overhead inspection process to improve efficiencies. Please refer to specification 125, AG 14-6 Attachment 1, for additional details regarding ground line inspections.
TRANSFORMERS: Visual inspections of station transformers typically occur on a 2 calendar month interval. Visual inspection tasks include the following:

- Check for tank and bushing oil leaks
- Check operation of fans and pumps
- Check standby power source energized
- Record operation range of oil and winding temperature indicators
- Check tap changer range and record
- Check gas blanket bottle level and regulator pressure
- Record main tank pressure
- Check silica gel cartridges and change if needed
- Inspect oil containment - drain water if needed,
- Check oil level and pressure relief indicators
- Listen for unusual sounds
- Check bushings for chipped, broken skirts
- Confirm operability of reactor/load tap changer
- Run through neutral if voltage limitations permit
- Record voltage, counter, and indicator positions

c.) POLES: Please refer to response for part b.
TRANSFORMERS: Transformer maintenance typically occurs on an interval of 4-12 years, depending on the transformer type and condition. Transformer maintenance tasks include the following:

- Perform pre-engineering (are there upgrades, bushings to be replaced, etc.)
- Obtain oil sample for oil analysis and DGA
- Operate sudden pressure/fault pressure relay
- Inspect LTC if applicable - Repair/upgrade as needed
- Clean all porcelain
- Perform Power Factor Test
- Exercise DETC
- Repair oil leaks - minor repairs

BEFORE THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA

APPLICATION OF PUBLIC SERVICE COMPANY OF OKLAHOMA, AN OKLAHOMA CORPORATION, FOR AN ADJUSTMENT IN ITS RATES AND CHARGES AND THE ELECTRIC SERVICE RULES, REGULATIONS AND CONDITIONS OF SERVICE FOR ELECTRIC SERVICE IN THE STATE OF OKLAHOMA	)	CAUSE NO. PUD 202100055

- Check Cooling System: fan blades/motors and pumps, obstructions in radiators (i.e. bird nests); Obtain Tecsonics readings on pumps.
- Check all gauges: use of Drywell/Joffa type calibrators for temp. Gauges; verify oil level gauge operation and alarms (if applicable).
- Tighten loose bolts and hardware
- Check wiring terminations for tightness/secure
- "Spot" paint tank as required
- Apply oxidation inhibitor to all HV electrical connections (thin coat), torque all connections (consider re-torque values if applicable)

d.) Please refer to PSO Quality of Service Stipulation Report (PUD 200300076 Section I) historical filings for information regarding details regarding the miles patrolled and maintained on an annual basis. The inspections are primarily visual inspections performed by qualified personnel. The personnel inspecting the lines are not solely focusing on just overhead conductors. Rather, they are checking for any visible damage on the various components of the line that would affect the structural integrity of the line itself, which would include overhead conductors.
PSO does not perform a visual inspection or periodic testing on its underground conductors.

Witness: Steven F. Baker Title: VP Dist Region Opers

Date Response Provided: 6/16/2021

Public Service Company of Oklahoma

PSO Quality of Service Stipulation Report
(PUD 200300076, Section I)

May 2019

Public Service Company of Oklahoma
PUD 200300076, Section I
May 2019 Filing

In Section 1 - Quality of Service, of the Stipulation filed in Cause No. PUD 200300076, American Electric Power Company, Inc. ("AEP"), Public Service Company of Oklahoma ("PSO") and Central and South West Corporation ("CSW") agree to the quality of service standards set forth. PSO (or "the Company") offers this report as information/substantiation of its performance as outlined in the aforementioned Stipulation.

2.a - Commission customer complaints by category. To the extent practicable, the report will also provide information on non-complaint contacts between PSO and its customers.

Complaint Category	Count
Billing/ Estimations And Rates	25
Deposits/ Credit And Collections	73
Other	7
Service Issues	14
Grand Total	**119**

The following information provides the number of calls received in various categories from Oklahoma customers in 2018. In addition to this data, PSO receives e-mail, fax and written communications from customers. Only 119 customer contacts, or 0.005% of the number of calls, resulted in Commission complaints in 2018.

Disposition	Number of Calls
Account Maintenance	865,628
Billing	314,413
Budget	83,532
Change In Service	3,928
Credit	582,234
End Service	34,657
Internal Work Orders	1,022
Investigation Orders	38,562
New Installations	9,509
Owner Agent	253
Record Purposes Only	120
Service Transfers	122,010
Start Service	206,083
Trouble	203,843
Total	**2,465,794**

2.b - Meter installation requests involving construction and PSO's performance fulfilling those requests.

During 2018, the Company completed 9,171 total meter installation requests requiring construction, completing 9,169 (99.98%) within 10 business days.

2.c - PSO's current distribution organization and any changes to PSO's distribution organization that materially affect service quality.

PSO's 2018 distribution organization is provided in the attached titled "2018 PSO Distribution Organizational Chart.pdf." There were no changes that would materially affect service quality.

2.d - Results of PSO's distribution asset maintenance program.

PSO 2018 DISTRIBUTION ASSET PROGRAM WORK COMPLETED	
Asset Maintenance Program Description	**Units Completed**
Pole Inspections and Treatment	26,953 Poles
Pole Replacements	3,993 Poles
Pole Reinforcements	0 Poles
Reclosure Maintenance/Replacements	13 Reclosures
Small Overhead Wire Replacement	$101,404
Small Underground Wire Replacement*	$0
URD Inspections/Repairs	$350,632
Circuit Inspections	3,451 Miles Overhead Line
Circuit Inspection Replacements	$1,265,358
Animal Mitigation	4,551 Animal Guards
Lightning Mitigation	3,345 Lightning Arrestors
Network Maintenance	449 Network Units
Sectionalizing	$469,580

***This program is focused in targeted areas and only on proactive small wire replacement of underground cable. PSO is currently evaluating this program and exploring options to proactively mitigate potential underground cable failures of all conductor sizes in a cost effective manner.**

2.e - Tree trimming and vegetation management program plan for the upcoming year and the results of trimming and vegetation management activities for the preceding year, including all information included in Staff's Exhibit KRZ-3.

Please See Appendix 1: "PSO 2019 Annual Vegetation Management Plan" for the annual vegetation management plan for 12 months ending December 2019 and Appendix 2: "PSO Vegetation Management Performance Summary Cycles 3 & 4" for results through December 2018 of PSO's third and fourth vegetation management cycle.

The following provides an explanation of the columns in Appendices 1 and 2:

- **District:** Identifies the Operating District within which the targeted circuit is located.
- **Station:** Identifies the Substation with which the targeted circuit is associated.
- **Location:** Identifies the general location of the substation associated with the targeted circuit.
- **Circuit Name:** Provides the PSO Circuit identification number.
- **Percent Complete:** This column indicates the percent of the total circuit miles completed through December 2018.
- **Date Complete:** Included in Appendix 2 only, this column indicates the actual date the Plan work was completed.

Public Service Company of Oklahoma

PSO Quality of Service Stipulation Report
(PUD 200300076, Section I)

May 2020

Public Service Company of Oklahoma
PUD 200300076, Section I
May 2020 Filing

In Section 1 - Quality of Service, of the Stipulation filed in Cause No. PUD 200300076, American Electric Power Company, Inc. ("AEP"), Public Service Company of Oklahoma ("PSO") and Central and South West Corporation ("CSW") agree to the quality of service standards set forth. PSO (or "the Company") offers this report as information/substantiation of its performance as outlined in the aforementioned Stipulation.

2.a - Commission customer complaints by category. To the extent practicable, the report will also provide information on non-complaint contacts between PSO and its customers.

Complaint Category	Count
Billing/ Estimations And Rates	15
Deposits/ Credit And Collections	46
Other	11
Service Issues	5
Grand Total	**77**

The following information provides the number of calls received in various categories from Oklahoma customers in 2019. In addition to this data, PSO receives e-mail, fax and written communications from customers. Only 119 customer contacts, or 0.004% of the number of calls, resulted in Commission complaints in 2019.

Disposition	Number of Calls
Account Maintenance	640,714
Billing	181,249
Budget	44,703
Change In Service	3,197
Credit	407,062
End Service	27,710
Internal Work Orders	901
Investigation Orders	30,919
New Installations	10,607
Owner Agent	181
Record Purposes Only	42
Service Transfers	98,352
Start Service	204,237
Trouble	136,248
Total	1,880,109

2.b - Meter installation requests involving construction and PSO's performance fulfilling those requests.

During 2019, the Company completed 10,081 total meter installation requests requiring construction, completing 10,068 (99.87%) within 10 business days.

Public Service Company of Oklahoma
PUD 200300076, Section I
May 2020 Filing

2.c - PSO's current distribution organization and any changes to PSO's distribution organization that materially affect service quality.

PSO's 2019 distribution organization is provided in the attached titled "2019 PSO Distribution Organizational Chart.pdf." There were no changes that would materially affect service quality.

2.d - Results of PSO's distribution asset maintenance program.

PSO 2019 DISTRIBUTION ASSET PROGRAM WORK COMPLETED	
Asset Maintenance Program Description	**Units Completed**
Pole Inspections and Treatment	*
Pole Replacements	1,952
Pole Reinforcements	0 Poles
Reclosure Maintenance/Replacements	12 Reclosures
Small Overhead Wire Replacement	$77,300
Small Underground Wire Replacement*	$87,608
URD Inspections/Repairs	$395,469
Circuit Inspections	5,337 Miles
Circuit Inspection Replacements	$2,234,391
Animal Mitigation	2,610 Animal Guards
Lightning Mitigation	2,293 Lightning Arresters
Network Maintenance	403 Network Units
Sectionalizing	$998,183

* In 2019, PSO focused efforts on increased overhead patrols and repairs, rather than a targeted ground line inspection and treatment program of poles. This approach included a pole inspection as well as inspection of other overhead facilities.

2.e - Tree trimming and vegetation management program plan for the upcoming year and the results of trimming and vegetation management activities for the preceding year, including all information included in Staff's Exhibit KRZ-3.

Please See Appendix 1: "PSO 2020 Annual Vegetation Management Plan" for the annual vegetation management plan for 12 months ending December 2020 and Appendix 2: "PSO Vegetation Management Performance Summary Cycle 4" for results through December 2019 of PSO's fourth vegetation management cycle.

The following provides an explanation of the columns in Appendices 1 and 2:

- **District:** Identifies the Operating District within which the targeted circuit is located.
- **Station:** Identifies the Substation with which the targeted circuit is associated.
- **Location:** Identifies the general location of the substation associated with the targeted circuit.
- **Circuit Name:** Provides the PSO Circuit identification number.
- **Percent Complete:** This column indicates the percent of the total circuit miles completed through December 2019.
- **Date Complete:** Included in Appendix 2 only, this column indicates the actual date the Plan work was completed.

Public Service Company of Oklahoma

PSO Quality of Service Stipulation Report
(PUD 200300076, Section I)

May 2021

Public Service Company of Oklahoma
PUD 200300076, Section I
May 2021 Filing

In Section 1 - Quality of Service, of the Stipulation filed in Cause No. PUD 200300076, American Electric Power Company, Inc. ("AEP"), Public Service Company of Oklahoma ("PSO") and Central and South West Corporation ("CSW") agree to the quality of service standards set forth. PSO (or "the Company") offers this report as information/substantiation of its performance as outlined in the aforementioned Stipulation.

2.a - Commission customer complaints by category. To the extent practicable, the report will also provide information on non-complaint contacts between PSO and its customers.

Commission Complaint Category[1]	Count
Profile and Preferences	1
Billing and Payments	31
Service Requests	3
Outage and Reliability	14
Company	1
Environment	1
Equipment and Infrastructure	5
Other	2
Grand Total	**58**

The following information provides the number of calls received in various categories from Oklahoma customers in 2020. In addition to this data, PSO receives e-mail, fax and written communications from customers. Only 58 customer contacts, or 0.004% of the number of calls, resulted in Commission complaints in 2020.

Disposition	Number of Calls
Account Maintenance	620,504
Billing	175,411
Budget	31,881
Change In Service	3,431
Credit	271,737
End Service	56,043
Internal Work Orders	896
Investigation Orders	15,796
New Installations	9,898
Owner Agent	102
Record Purposes Only	44
Service Transfers	42,354
Start Service	211,492
Trouble	166,937
Total	**1,606,526**

2.b - Meter installation requests involving construction and PSO's performance fulfilling those requests.

[1] The Company transitioned to a new software platform in late 2019. In the new platform, Commission complaints are tracked using different categories than those included in its May 2020 Quality of Service Stipulation Report.

During 2020, the Company completed 10,587 total meter installation requests requiring construction, completing 10,584 (99.97%) within 10 business days.

2.c - PSO's current distribution organization and any changes to PSO's distribution organization that materially affect service quality.

PSO's 2020 distribution organization is provided in the attached titled "2020 PSO Distribution Organization Chart.pdf." There were no changes that would materially affect service quality.

2.d - Results of PSO's distribution asset maintenance program.

PSO 2020 DISTRIBUTION ASSET PROGRAM WORK COMPLETED	
Asset Maintenance Program Description	**Units Completed**
Pole Inspections and Treatment*	0
Pole Replacements	3,352 Poles
Pole Reinforcements	0
Reclosure Maintenance/Replacements	36 Reclosures
Small Overhead Wire Replacement	$4,982
Small Underground Wire Replacement*	$42,369
URD Inspections/Repairs	$193,735
Circuit Inspections	1,343 Miles
Circuit Inspection Replacements	$3,685,717
Animal Mitigation	$65,327
Lightning Mitigation	$51,674
Network Maintenance	420 Network Units
Sectionalizing	$540,814

* In 2020, PSO completed its pole inspections as part of the overhead inspection program. PSO accelerated the overhead inspection program in 2019, thus resulting in a decrease in overhead inspection miles completed in 2020.

2.e - Tree trimming and vegetation management program plan for the upcoming year and the results of trimming and vegetation management activities for the preceding year, including all information included in Staff's Exhibit KRZ-3.

Please See Appendix 1: "PSO 2021 Annual Vegetation Management Plan" for the annual vegetation management plan for 12 months ending December 2021 and Appendix 2: "PSO Vegetation Management Performance Summary Cycle 4" for results through December 2020 of PSO's fourth vegetation management cycle.

The following provides an explanation of the columns in Appendices 1 and 2:

- **District:** Identifies the Operating District within which the targeted circuit is located.
- **Station:** Identifies the Substation with which the targeted circuit is associated.
- **Location:** Identifies the general location of the substation associated with the targeted circuit.
- **Circuit Name:** Provides the PSO Circuit identification number.
- **Percent Complete:** This column indicates the percent of the total circuit miles for each circuit completed through December 2020.
- **Date Complete:** Included in Appendix 2 only, this column indicates the actual date the planned work for each circuit was completed.

BEFORE THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA

APPLICATION OF PUBLIC SERVICE COMPANY OF OKLAHOMA, AN OKLAHOMA CORPORATION, FOR AN ADJUSTMENT IN ITS RATES AND CHARGES AND THE ELECTRIC SERVICE RULES, REGULATIONS AND CONDITIONS OF SERVICE FOR ELECTRIC SERVICE IN THE STATE OF OKLAHOMA	)))))))	CAUSE NO. PUD 202100055

PUBLIC SERVICE COMPANY OF OKLAHOMA'S RESPONSE TO OKLAHOMA ATTORNEY GENERAL'S FOURTEENTH SET OF DATA REQUESTS TO RESPONDENT PUBLIC SERVICE COMPANY OF OKLAHOMA AG-PSO-14

Question No. 14-4:

Distribution: Please refer to the direct testimony of Matthew A. Horeled, page 9, which includes the following: "As Company witness Steven Baker testifies, the distribution system was not designed for two-way power flows. The distribution system will have to transition to accommodate the expected future levels of [distributed generation]." Please also refer to the direct testimony of Steven F. Baker, page 46, Figure 19, where the middle column lists major categories of distribution plant that PSO proposes be replaced if currently over 40 years old. a) Is it a correct statement that PSO currently operates an alternating current (A/C) distribution system, which meansa that the current flows in one direction in a conductor, then a fraction of a second later the current flows in the opposite direction that conductor? If this is not a correct statement, please provide the corrected statement along with the support for the corrected statement. b) Is it a correct statement that PSO's overhead conductors and underground conductors currently in service, including conductors that are over 40 years old, can conduct current in both directions? If this is not a correct statement, please provide the corrected statement along with the support for the corrected statement. c) Is it a correct statement that PSO's station transformers currently in service, including state transformers that are over 40 years old, can conduct current in both directions? If this is not a correct statement, please provide the corrected statement along with the support for the corrected statement. d) Is it a correct statement that PSO's station breakers currently in service, including station breakers that are over 40 years old, can conduct current in both directions? If this is not a correct statement, please provide the corrected statement along with the support for the corrected statement.

Response No. 14-4:

a.) Yes, it is correct that current flows both directions through a conductor in an alternating current (AC) system. However, the electric distribution system was designed to distribute power from central generating stations across high voltage transmission lines to distribution substations and through the distribution system ultimately terminating at an end use customer premise in a one way manner. This one-way flow of power, which has been in place for 100+ years, has resulted in a distribution system optimized to serve loads rather than import power from generating devices on the periphery of the electric grid. As a result, the load carrying capacity of the distribution system generally decreases with distance from the substation. With the expected proliferation of distributed energy resource (DER) devices on the distribution system, more and more of the generating capacity connected to a utility electric system will be located on what has traditionally been the load side of the grid. As DER devices are added on the edge

BEFORE THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA

APPLICATION OF PUBLIC SERVICE COMPANY	)	
OF OKLAHOMA, AN OKLAHOMA	)	
CORPORATION, FOR AN ADJUSTMENT IN ITS	)	
RATES AND CHARGES AND THE ELECTRIC	)	CAUSE NO. PUD 202100055
SERVICE RULES, REGULATIONS AND	)	
CONDITIONS OF SERVICE FOR ELECTRIC	)	
SERVICE IN THE STATE OF OKLAHOMA	)	

of the grid, more power will be imported (via reverse power flows) through the distribution system which will create operational challenges that will need to be resolved. The primary operational issues created by increasing levels of reverse power flows include; conductor and transformer overloading (where imported power exceeds the capacity required serve loads), voltage regulation and bi-directional control requirements for certain types of equipment.

b.) Please refer to PSO's response to part a) of this question.

c.) Please refer to PSO's response to part a) of this question.

d.) Please refer to PSO's response to part a) of this question.

Witness: Steven F. Baker Title: VP Dist Region Opers

Date Response Provided: 6/16/2021

BEFORE THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA

APPLICATION OF PUBLIC SERVICE COMPANY OF OKLAHOMA, AN OKLAHOMA CORPORATION, FOR AN ADJUSTMENT IN ITS RATES AND CHARGES AND THE ELECTRIC SERVICE RULES, REGULATIONS AND CONDITIONS OF SERVICE FOR ELECTRIC SERVICE IN THE STATE OF OKLAHOMA	)	CAUSE NO. PUD 202100055

PUBLIC SERVICE COMPANY OF OKLAHOMA'S RESPONSE TO OKLAHOMA ATTORNEY GENERAL'S FOURTEENTH SET OF DATA REQUESTS TO RESPONDENT PUBLIC SERVICE COMPANY OF OKLAHOMA AG-PSO-14

Question No. 14-3:

Distribution: Please refer to the direct testimony of Steven F. Baker, page 45, where Mr. Baker states that "[t]he middle option is to replace all assets in each category that are currently greater than 40 years of age . . . . The middle option is the recommended option." a) IS it a correct statement that the distribution depreciation rates recommended in PSO Exhibit JAC-2 were not calculated on the basis that "all assets in each category that are currently greater than 40 years of age" will be retired? If this is not a correct statement, please provide the corrected statement along with the support for the corrected statement. b) Please provide the revised distribution depreciation rates calculated otherwise the same as the distribution depreciation rates shown on page 20 of Exhibit JAC-2, except calculated on the basis that "all assets in each category that are currently greater than 40 years of age" will be retired. c) The middle column of Figure 19 on page 46 of the direct testimony of Steven F. Baker is entitled "10 Year Plan – Annual incremental Cost to Replace All Assets Currently > 40 Yrs." Is it a correct statement that the dollar amounts shown in that middle column do not include the impact on depreciation expense resulting from "all assets in each category that are currently greater than 40 years of age" being replaced? If this is not a correct statement, please provide the corrected statement along with the support for the corrected statement. d) Is it a correct statement that the dollar amounts shown on Figure 21 on page 48 of the direct testimony of Steven F. Baker do not include the impact on depreciation expense resulting from "all assets in each category that are currently greater than 40 years of age" being replaced? If this is not a correct statement, please provide the corrected statement along with the support for the corrected statement.

Response No. 14-3:

a) Correct. Depreciation rates were calculated using the retirement history of the account and no adjustments were made based on the testimony of Company Witness Baker.
b) The Company has not performed the calculation that has been requested. Generally speaking, depreciation rates should be increased in order to reflect the retirement of the assets over a shorter period of time than what the depreciation study produced. The Company will propose to update depreciation rates in future proceedings, which may or may not consider the option that is ultimately approved.
c) Correct. No depreciation expense is included in the dollar amounts included in Figure 19.
d) Correct. No depreciation expense is included in the dollar amounts included in Figure 21.

Witness: Jason A. Cash — Title: Accounting Sr Mgr

Witness: Steven F. Baker — Title: VP Dist Region Opers

Date Response Provided: 6/16/2021

BEFORE THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA

APPLICATION OF PUBLIC SERVICE COMPANY	)	
OF OKLAHOMA, AN OKLAHOMA	)	
CORPORATION, FOR AN ADJUSTMENT IN ITS	)	
RATES AND CHARGES AND THE ELECTRIC	)	CAUSE NO. PUD 202100055
SERVICE RULES, REGULATIONS AND	)	
CONDITIONS OF SERVICE FOR ELECTRIC	)	
SERVICE IN THE STATE OF OKLAHOMA	)	

PUBLIC SERVICE COMPANY OF OKLAHOMA'S RESPONSE TO OKLAHOMA INDUSTRIAL ENERGY CONSUMERS FIFTH SET OF DATA REQUESTS

Question No. OIEC 5-17:

Please identify and provide copies of Company programs and plans that might substantially affect the remaining lives of any plant assets.

Response No. OIEC 5-17:

PSO currently has no Company programs and plans that might substantially affect the remaining lives of any plant assets.

Witness: Daryll Jackson	Title: VP Generating Assets
Witness: Matthew A. Horeled	Title: VP Regulatory & Finance
Witness: Jason A. Cash	Title: Accounting Sr Mgr

Date Response Provided: 6/8/2021

PUBLIC SERVICE COMPANY OF OKLAHOMA

DEPRECIATION STUDY AS OF DECEMBER 31, 2017

DEPRECIATION STUDY WORK PAPERS

PUBLIC SERVICE COMPANY OF OKLAHOMA
Depreciation Study as of December 31, 2017
Distribution Plant

Account ***362 STATION EQUIPMENT***

	Current	Recommended
Depreciable Balance	$357,505,235	
Average Service Life (Yrs)	75	60
Iowa Curve	R0.5	R3.0
Gross Removal, %	5	20
Gross Salvage, %	0	15
Net Salvage %	-5	-5

This account contains a variety of distribution substation equipment such as transformers and switchgear.

The average age of property in this account is 14.96 years.

The results of the life analysis indicate that the 75 average service life for this account is unreasonably long and that it should be changed to 60 years following a R3.0 curve which is the curve/life combination recommended for Transmission Station Equipment Account 353. The R0.5, 75 curve/life combination indicates that more than 40% (more than $143 million) of the property survives at 80 years which is excessive.

A net salvage rate of -5% rate was approved for Account 362 in Cause No. PUD 201700151. The account history confirms that the -5% negative net salvage rate is reasonable. The recomendation is to use a salvage rate of 15% and a removal rate of 20% which continues to yield a net salvage rate of -5%.

PUBLIC SERVICE COMPANY OF OKLAHOMA
Depreciation Study as of December 31, 2017
Distribution Plant

Account ***364 POLES, TOWERS & FIXTURES***

Depreciable Balance	$416,302,441	
	Current	Recommended
Average Service Life (Yrs)	53	50
Iowa Curve	R1.0	R1.0
Gross Removal, %	100	104
Gross Salvage, %	0	4
Net Salvage %	-100	-100

N/A = not available

This account includes poles and towers of various material types such as wood, concrete and steel.

The average age of property in this account is 14.30 years.

The current life analysis indicates that the average service life for this account should be changed from 53 years to 50 years while continuing to follow a R1.0 dispersion. The best curve fit as measured by the sum of the square differences is at 50 years.

A net salvage rate of -100% rate was approved for Account 364 in Cause No. PUD 201700151. The account history and 5 year average produce a higher negative net salvage rate. However, the recommendation is to continue to use the -100% negative net salvage rate for this account with a salvage rate of 4% and a removal rate of 104% which continues to yield a net salvage rate of -100%.

PUBLIC SERVICE COMPANY OF OKLAHOMA
Depreciation Study as of December 31, 2017
Distribution Plant

Account ***365 OVERHEAD CONDUCTOR & DEVICES***

Depreciable Balance	$398,478,926	
	Current	Recommended
Average Service Life (Yrs)	46	46
Iowa Curve	R0.5	R0.5
Gross Removal, %	50	55
Gross Salvage, %	0	5
Net Salvage %	-50	-50

Account 365 consists of overhead conductor and items like switches, reclosers and lightning arresters.

The average age of property in this account is 13.13 years.

The current life analysis indicates that the average service life for this account should continue to be 46 years following a R0.5 dispersion.

A net salvage rate of -50% rate was approved for Account 365 in Cause No. PUD 201700151. The account history and 5 year average provides a negative net salvage rate between -44% and -63% for this account. The recommendation is to continue to use the currently approved negative net salvage rate using a salvage rate of 5% and a removal rate of 55% which continues to yield a net salvage rate of -50%.

PUBLIC SERVICE COMPANY OF OKLAHOMA
Depreciation Study as of December 31, 2017
Distribution Plant

Account ***367 UNDERGROUND CONDUCTOR & DEVICES***

Depreciable Balance	$344,269,950	
	Current	Recommended
Average Service Life (Yrs)	65	70
Iowa Curve	R1.5	R1.5
Gross Removal, %	25	31
Gross Salvage, %	0	4
Net Salvage %	-25	-27

Account 367 contains underground property such as distribution conductor, switches and switchgear.

The average age of property in this account is 13.09 years.

The current life analysis supports a change from a 65 year life to use a 70 year average service life while continuing to use a R1.5 dispersion.

A net salvage rate of -25% rate was approved for Account 367 in Cause No. PUD 201700151. The account history and 5 year average provides a slightly higher negative net salvage rate between -27% and -28% for this account. The recommendation is to change to use a salvage rate of 4% and a removal rate of 31% which yields a net salvage rate of -27%.

PUBLIC SERVICE COMPANY OF OKLAHOMA
DEPRECIATION STUDY AS OF DECEMBER 31, 2017
CALCULATION OF AVERAGE AGE OF SURVIVING PLANT

DISTRIBUTION PLANT, Account 362 Station Equipment

VINTAGE YEAR	SURVIVING BALANCE	AGE (YEARS)	DOLLAR YEARS	AVERAGE AGE (YEARS)
1934	147,991	83.5	12,357,250	
1935	113,368	82.5	9,352,831	
1936	17,718	81.5	1,444,054	
1937	124,095	80.5	9,989,678	
1938	51,273	79.5	4,076,238	
1939	51,261	78.5	4,023,956	
1940	11,016	77.5	853,704	
1941	22,165	76.5	1,695,649	
1942	93,754	75.5	7,078,462	
1943	13,848	74.5	1,031,692	
1944	57,835	73.5	4,250,901	
1945	41,405	72.5	3,001,844	
1946	12,613	71.5	901,809	
1947	103,067	70.5	7,266,233	
1948	255,010	69.5	17,723,173	
1949	415,200	68.5	28,441,220	
1950	345,557	67.5	23,325,107	
1951	279,870	66.5	18,611,337	
1952	748,606	65.5	49,033,724	
1953	821,763	64.5	53,003,730	
1954	1,289,345	63.5	81,873,434	
1955	1,203,538	62.5	75,221,120	
1956	1,042,618	61.5	64,121,034	
1957	1,644,775	60.5	99,508,901	
1958	1,332,363	59.5	79,275,594	
1959	1,136,363	58.5	66,477,241	
1960	986,024	57.5	56,696,408	
1961	1,025,116	56.5	57,919,048	
1962	932,754	55.5	51,767,870	
1963	738,729	54.5	40,260,727	
1964	1,129,134	53.5	60,408,649	
1965	1,812,110	52.5	95,135,777	
1966	1,455,762	51.5	74,971,762	
1967	1,100,098	50.5	55,554,960	
1968	1,955,439	49.5	96,794,208	
1969	1,394,328	48.5	67,624,921	
1970	1,150,526	47.5	54,649,976	
1971	968,086	46.5	45,015,988	
1972	1,766,668	45.5	80,383,404	
1973	1,751,376	44.5	77,936,218	
1974	1,525,452	43.5	66,357,172	
1975	3,428,063	42.5	145,692,693	
1976	2,325,098	41.5	96,491,560	
1977	1,136,874	40.5	46,043,386	

PUBLIC SERVICE COMPANY OF OKLAHOMA
DEPRECIATION STUDY AS OF DECEMBER 31, 2017
CALCULATION OF AVERAGE AGE OF SURVIVING PLANT

DISTRIBUTION PLANT, Account 362 Station Equipment

VINTAGE YEAR	SURVIVING BALANCE	AGE (YEARS)	DOLLAR YEARS	AVERAGE AGE (YEARS)
1978	3,811,255	39.5	150,544,559	
1979	1,824,882	38.5	70,257,974	
1980	2,239,558	37.5	83,983,407	
1981	372,273	36.5	13,587,960	
1982	2,767,093	35.5	98,231,815	
1983	2,759,199	34.5	95,192,350	
1984	2,325,228	33.5	77,895,149	
1985	1,958,012	32.5	63,635,396	
1986	1,472,497	31.5	46,383,643	
1987	917,237	30.5	27,975,715	
1988	2,002,781	29.5	59,082,042	
1989	4,241,730	28.5	120,889,317	
1990	5,732,689	27.5	157,648,944	
1991	6,936,769	26.5	183,824,384	
1992	3,451,622	25.5	88,016,356	
1993	3,736,083	24.5	91,534,044	
1994	3,892,617	23.5	91,476,501	
1996	3,986,977	21.5	85,720,005	
1997	5,009,555	20.5	102,695,871	
1998	6,224,179	19.5	121,371,498	
1999	6,760,702	18.5	125,072,978	
2000	2,063,621	17.5	36,113,373	
2001	4,608,458	16.5	76,039,555	
2002	4,400,869	15.5	68,213,474	
2003	6,905,836	14.5	100,134,626	
2004	3,452,911	13.5	46,614,303	
2005	4,233,216	12.5	52,915,194	
2006	6,945,026	11.5	79,867,796	
2007	13,435,496	10.5	141,072,708	
2008	10,714,078	9.5	101,783,743	
2009	14,326,426	8.5	121,774,622	
2010	9,446,628	7.5	70,849,706	
2011	11,639,698	6.5	75,658,039	
2012	13,699,076	5.5	75,344,918	
2013	30,490,200	4.5	137,205,898	
2014	28,059,842	3.5	98,209,446	
2015	26,257,227	2.5	65,643,068	
2016	23,387,671	1.5	35,081,507	
2017	33,057,962	0.5	16,528,981	
	357,505,236		5,347,715,508	**14.96**

PUBLIC SERVICE COMPANY OF OKLAHOMA
DEPRECIATION STUDY AS OF DECEMBER 31, 2017
CALCULATION OF AVERAGE AGE OF SURVIVING PLANT

DISTRIBUTION PLANT, Account 364 Poles, Towers & Fixtures

VINTAGE YEAR	SURVIVING BALANCE	AGE (YEARS)	DOLLAR YEARS	AVERAGE AGE (YEARS)
1934	27,512	83.5	2,297,285	
1935	104,670	82.5	8,635,273	
1936	6,698	81.5	545,901	
1937	11,535	80.5	928,533	
1938	5,143	79.5	408,880	
1939	5,961	78.5	467,902	
1940	5,219	77.5	404,502	
1941	3,112	76.5	238,070	
1942	10,867	75.5	820,455	
1943	12,089	74.5	900,633	
1944	15,729	73.5	1,156,051	
1945	16,111	72.5	1,168,074	
1946	53,858	71.5	3,850,881	
1947	159,055	70.5	11,213,354	
1948	223,471	69.5	15,531,263	
1949	267,207	68.5	18,303,666	
1950	281,385	67.5	18,993,498	
1951	307,794	66.5	20,468,271	
1952	301,865	65.5	19,772,156	
1953	475,624	64.5	30,677,760	
1954	300,524	63.5	19,083,277	
1955	373,871	62.5	23,366,908	
1956	475,984	61.5	29,273,028	
1957	568,903	60.5	34,418,651	
1958	528,498	59.5	31,445,627	
1959	478,955	58.5	28,018,849	
1960	623,291	57.5	35,839,246	
1961	705,226	56.5	39,845,250	
1962	700,439	55.5	38,874,375	
1963	740,268	54.5	40,344,601	
1964	141,653	53.5	7,578,410	
1965	824,462	52.5	43,284,233	
1966	552,739	51.5	28,466,042	
1967	455,015	50.5	22,978,235	
1968	987,723	49.5	48,892,307	
1969	1,022,165	48.5	49,575,026	
1970	1,088,427	47.5	51,700,260	
1971	1,140,968	46.5	53,055,000	
1972	1,180,967	45.5	53,733,984	
1973	1,299,541	44.5	57,829,561	
1974	1,334,921	43.5	58,069,083	
1975	1,147,476	42.5	48,767,712	
1976	1,318,763	41.5	54,728,673	
1977	1,427,889	40.5	57,829,498	
1978	1,913,088	39.5	75,566,957	
1979	2,560,566	38.5	98,581,781	
1980	1,951,239	37.5	73,171,461	
1981	2,368,082	36.5	86,434,980	

PUBLIC SERVICE COMPANY OF OKLAHOMA
DEPRECIATION STUDY AS OF DECEMBER 31, 2017
CALCULATION OF AVERAGE AGE OF SURVIVING PLANT

DISTRIBUTION PLANT, Account 364 Poles, Towers & Fixtures

VINTAGE YEAR	SURVIVING BALANCE	AGE (YEARS)	DOLLAR YEARS	AVERAGE AGE (YEARS)
1982	4,033,979	35.5	143,206,251	
1983	3,168,386	34.5	109,309,316	
1984	4,112,610	33.5	137,772,437	
1985	3,714,971	32.5	120,736,550	
1986	3,512,817	31.5	110,653,747	
1987	4,049,586	30.5	123,512,385	
1988	3,709,472	29.5	109,429,411	
1989	3,972,545	28.5	113,217,523	
1990	3,341,912	27.5	91,902,582	
1991	3,931,843	26.5	104,193,845	
1992	4,069,305	25.5	103,767,275	
1993	5,044,130	24.5	123,581,175	
1994	4,828,046	23.5	113,459,072	
1995	5,688,070	22.5	127,981,571	
1996	11,337,863	21.5	243,764,063	
1997	8,103,831	20.5	166,128,525	
1998	10,836,596	19.5	211,313,629	
1999	11,086,221	18.5	205,095,079	
2000	12,542,549	17.5	219,494,605	
2001	9,688,684	16.5	159,863,285	
2002	4,536,425	15.5	70,314,590	
2003	6,814,365	14.5	98,808,288	
2004	12,608,289	13.5	170,211,896	
2005	11,915,757	12.5	148,946,957	
2006	13,970,466	11.5	160,660,355	
2007	14,902,627	10.5	156,477,583	
2008	17,351,165	9.5	164,836,069	
2009	10,105,991	8.5	85,900,924	
2010	12,351,253	7.5	92,634,395	
2011	17,148,192	6.5	111,463,250	
2012	20,231,418	5.5	111,272,800	
2013	21,216,262	4.5	95,473,178	
2014	24,451,136	3.5	85,578,974	
2015	23,667,899	2.5	59,169,747	
2016	28,932,811	1.5	43,399,216	
2017	24,818,428	0.5	12,409,214	
	416,302,441		5,953,475,185	**14.30**

PUBLIC SERVICE COMPANY OF OKLAHOMA
DEPRECIATION STUDY AS OF DECEMBER 31, 2017
CALCULATION OF AVERAGE AGE OF SURVIVING PLANT

DISTRIBUTION PLANT, Account 365 Overhead Conductor

VINTAGE YEAR	SURVIVING BALANCE	AGE (YEARS)	DOLLAR YEARS	AVERAGE AGE (YEARS)
1934	52,566	83.5	4,389,229	
1935	61,992	82.5	5,114,344	
1936	1,885	81.5	153,589	
1937	5,613	80.5	451,859	
1938	5,672	79.5	450,932	
1939	5,843	78.5	458,636	
1940	8,741	77.5	677,410	
1941	10,946	76.5	837,391	
1942	8,039	75.5	606,964	
1943	4,587	74.5	341,721	
1944	5,987	73.5	440,069	
1945	5,313	72.5	385,213	
1946	19,031	71.5	1,360,710	
1947	65,340	70.5	4,606,486	
1948	71,576	69.5	4,974,529	
1949	158,232	68.5	10,838,888	
1950	157,109	67.5	10,604,839	
1951	206,184	66.5	13,711,235	
1952	178,270	65.5	11,676,705	
1953	281,447	64.5	18,153,301	
1954	306,874	63.5	19,486,486	
1955	359,787	62.5	22,486,669	
1956	419,165	61.5	25,778,651	
1957	566,318	60.5	34,262,246	
1958	337,422	59.5	20,076,613	
1959	308,229	58.5	18,031,404	
1960	441,492	57.5	25,385,797	
1961	536,169	56.5	30,293,521	
1962	407,524	55.5	22,617,561	
1963	446,926	54.5	24,357,467	
1964	530,903	53.5	28,403,331	
1965	853,718	52.5	44,820,191	
1966	721,151	51.5	37,139,293	
1967	798,636	50.5	40,331,107	
1968	621,380	49.5	30,758,295	
1969	988,450	48.5	47,939,820	
1970	743,319	47.5	35,307,637	
1971	1,036,539	46.5	48,199,043	
1972	1,016,949	45.5	46,271,193	
1973	1,064,392	44.5	47,365,438	
1974	908,719	43.5	39,529,260	
1975	704,115	42.5	29,924,897	
1976	805,833	41.5	33,442,051	
1977	1,064,526	40.5	43,113,307	
1978	1,117,929	39.5	44,158,176	
1979	1,696,356	38.5	65,309,724	
1980	1,169,556	37.5	43,858,337	
1981	1,281,665	36.5	46,780,783	

PUBLIC SERVICE COMPANY OF OKLAHOMA
DEPRECIATION STUDY AS OF DECEMBER 31, 2017
CALCULATION OF AVERAGE AGE OF SURVIVING PLANT

DISTRIBUTION PLANT, Account 365 Overhead Conductor

VINTAGE YEAR	SURVIVING BALANCE	AGE (YEARS)	DOLLAR YEARS	AVERAGE AGE (YEARS)
1982	2,468,455	35.5	87,630,168	
1983	2,168,352	34.5	74,808,156	
1984	2,556,776	33.5	85,651,982	
1985	1,920,780	32.5	62,425,345	
1986	1,800,894	31.5	56,728,152	
1987	2,181,316	30.5	66,530,135	
1988	2,256,171	29.5	66,557,043	
1989	2,983,385	28.5	85,026,465	
1990	2,886,515	27.5	79,379,156	
1991	3,535,038	26.5	93,678,498	
1992	3,843,543	25.5	98,010,342	
1993	4,882,757	24.5	119,627,537	
1994	5,079,883	23.5	119,377,249	
1995	653,783	22.5	14,710,106	
1996	11,406,046	21.5	245,229,994	
1997	5,267,252	20.5	107,978,666	
1998	5,489,865	19.5	107,052,368	
1999	6,844,814	18.5	126,629,053	
2000	6,641,024	17.5	116,217,918	
2001	5,966,301	16.5	98,443,958	
2002	11,592,966	15.5	179,690,968	
2003	10,365,699	14.5	150,302,639	
2004	15,723,765	13.5	212,270,822	
2005	14,559,901	12.5	181,998,767	
2006	22,677,143	11.5	260,787,142	
2007	19,819,773	10.5	208,107,616	
2008	31,346,981	9.5	297,796,318	
2009	12,104,385	8.5	102,887,273	
2010	32,618,252	7.5	244,636,890	
2011	11,451,582	6.5	74,435,286	
2012	15,987,315	5.5	87,930,232	
2013	17,670,238	4.5	79,516,070	
2014	19,647,152	3.5	68,765,031	
2015	17,879,533	2.5	44,698,833	
2016	20,578,904	1.5	30,868,356	
2017	21,053,978	0.5	10,526,989	
	398,478,926		5,232,573,871	**13.13**

PUBLIC SERVICE COMPANY OF OKLAHOMA
DEPRECIATION STUDY AS OF DECEMBER 31, 2017
CALCULATION OF AVERAGE AGE OF SURVIVING PLANT

DISTRIBUTION PLANT, Account 367 Underground Conductor

VINTAGE YEAR	SURVIVING BALANCE	AGE (YEARS)	DOLLAR YEARS	AVERAGE AGE (YEARS)
1938	32,272	79.5	2,565,628	
1939	8,364	78.5	656,594	
1940	4,481	77.5	347,298	
1941	1,227	76.5	93,869	
1946	1,041	71.5	74,437	
1947	1,051	70.5	74,098	
1949	45,409	68.5	3,110,540	
1950	93,831	67.5	6,333,624	
1951	3,500	66.5	232,726	
1953	7,872	64.5	507,754	
1954	340,064	63.5	21,594,059	
1955	4,052	62.5	253,243	
1956	197,027	61.5	12,117,162	
1957	147,853	60.5	8,945,097	
1958	94,066	59.5	5,596,926	
1959	118,239	58.5	6,916,972	
1960	82,657	57.5	4,752,773	
1961	41,856	56.5	2,364,862	
1962	56,299	55.5	3,124,581	
1963	54,782	54.5	2,985,634	
1964	121,345	53.5	6,491,937	
1965	142,383	52.5	7,475,123	
1966	174,323	51.5	8,977,633	
1967	400,160	50.5	20,208,092	
1968	261,150	49.5	12,926,928	
1969	318,790	48.5	15,461,293	
1970	341,243	47.5	16,209,039	
1971	578,270	46.5	26,889,543	
1972	708,769	45.5	32,248,997	
1973	1,635,540	44.5	72,781,517	
1974	976,929	43.5	42,496,403	
1975	1,343,297	42.5	57,090,134	
1976	1,015,098	41.5	42,126,566	
1977	1,454,645	40.5	58,913,116	
1978	1,902,762	39.5	75,159,102	
1979	2,113,577	38.5	81,372,727	
1980	2,005,846	37.5	75,219,239	
1981	1,929,123	36.5	70,412,993	
1982	1,855,171	35.5	65,858,580	
1983	2,188,107	34.5	75,489,678	
1984	2,793,234	33.5	93,573,345	
1985	2,942,283	32.5	95,624,197	

PUBLIC SERVICE COMPANY OF OKLAHOMA
DEPRECIATION STUDY AS OF DECEMBER 31, 2017
CALCULATION OF AVERAGE AGE OF SURVIVING PLANT

DISTRIBUTION PLANT, Account 367 Underground Conductor

VINTAGE YEAR	SURVIVING BALANCE	AGE (YEARS)	DOLLAR YEARS	AVERAGE AGE (YEARS)
1986	1,562,290	31.5	49,212,137	
1987	1,739,197	30.5	53,045,514	
1988	1,811,340	29.5	53,434,527	
1989	2,389,751	28.5	68,107,896	
1990	3,166,984	27.5	87,092,051	
1991	4,079,494	26.5	108,106,601	
1992	2,721,070	25.5	69,387,275	
1993	3,852,866	24.5	94,395,218	
1994	7,108,783	23.5	167,056,405	
1995	399,394	22.5	8,986,363	
1996	12,439,448	21.5	267,448,140	
1997	8,636,045	20.5	177,038,920	
1998	8,549,097	19.5	166,707,396	
1999	8,256,212	18.5	152,739,914	
2000	9,783,169	17.5	171,205,451	
2001	5,673,871	16.5	93,618,871	
2002	4,263,400	15.5	66,082,695	
2003	3,270,726	14.5	47,425,533	
2004	8,218,304	13.5	110,947,100	
2005	8,520,241	12.5	106,503,015	
2006	11,666,322	11.5	134,162,705	
2007	17,925,989	10.5	188,222,884	
2008	34,148,209	9.5	324,407,988	
2009	17,337,780	8.5	147,371,130	
2010	13,355,391	7.5	100,165,431	
2011	11,428,501	6.5	74,285,259	
2012	13,856,336	5.5	76,209,850	
2013	12,182,728	4.5	54,822,276	
2014	15,941,738	3.5	55,796,083	
2015	20,076,645	2.5	50,191,611	
2016	24,490,525	1.5	36,735,788	
2017	16,880,115	0.5	8,440,058	
	344,269,950		4,505,006,144	**13.09**

BEFORE THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA

APPLICATION OF PUBLIC SERVICE COMPANY	)	
OF OKLAHOMA, AN OKLAHOMA	)	
CORPORATION, FOR AN ADJUSTMENT IN ITS	)	
RATES AND CHARGES AND THE ELECTRIC	)	CAUSE NO. PUD 202100055
SERVICE RULES, REGULATIONS AND	)	
CONDITIONS OF SERVICE FOR ELECTRIC	)	
SERVICE IN THE STATE OF OKLAHOMA	)	

PUBLIC SERVICE COMPANY OF OKLAHOMA'S RESPONSE TO OKLAHOMA ATTORNEY GENERAL'S FIRST SET OF DATA REQUESTS TO RESPONDENT PUBLIC SERVICE COMPANY OF OKLAHOMA AG-PSO-1

Question No. AG-PSO 1-3:

General: Please provide working copies of all computer models, spreadsheets, workpapers, and calculations used to prepare any testimony, exhibit, or workpaper filed on April 30, 2021, in this proceeding. Such computer models, spreadsheets, workpapers, and calculations should be provided in Excel-compatible format with all formulas fully functional and intact.

Response No. AG-PSO 1-3:

Please see AG 1-3 Workpapers in the Non-Confidential and Confidential folders submitted for this response..

Witness: Henry C. Steele Title: Regulatory Case Mgr

Date Response Provided: 5/24/2021

PUBLIC SERVICE COMPANY OF OKLAHOMA

DEPRECIATION STUDY AS OF DECEMBER 31, 2020

DEPRECIATION STUDY WORK PAPERS

PUBLIC SERVICE COMPANY OF OKLAHOMA
Depreciation Study as of December 31, 2020
Distribution Plant

Account ***362 STATION EQUIPMENT***

Depreciable Balance	$458,744,588	
	Current	Recommended
Average Service Life (Yrs)	75	75
Iowa Curve	R0.5	L0.0
Gross Removal, %	5	18
Gross Salvage, %	0	10
Net Salvage %	-5	-8

This account contains a variety of distribution substation equipment such as transformers and switchgear.

The average age of property in this account is 13.83 years.

The results of the analysis indicated that that the average service life of 75 years should remain unchanged but the R0.5 curve selected previously should be updated using an L0.0 type curve. The recommendation is to retain the average service life of 75 years using an L0.0 type curve.

A net salvage rate of -5% rate was approved for Account 362 in Cause No. PUD 201700151. The account history is showing that net salvage is increasing . The recommendation is to use a salvage rate of 10% and a removal rate of 18% which yields a net salvage rate of -8%.

PUBLIC SERVICE COMPANY OF OKLAHOMA
Depreciation Study as of December 31, 2020
Distribution Plant

Account ***364 POLES, TOWERS & FIXTURES***

Depreciable Balance	$482,354,853	
	Current	Recommended
Average Service Life (Yrs)	53	55
Iowa Curve	R1.0	L0.5
Gross Removal, %	100	100
Gross Salvage, %	0	0
Net Salvage %	-100	-100
N/A = not available		

This account includes poles and towers of various material types such as wood, concrete and steel.

The average age of property in this account is 14.48 years.

The current life analysis indicates that both the average service life and curve should be changed to 55 years and a L0.5 curve. The recommendation is to update the average service life to 55 years and the curve to a L0.5 type curve.

A net salvage rate of -100% rate was approved for Account 364 in Cause No. PUD 201700151. The account history and 5 year average producing a higher negative net salvage rate. However, the recommendation is to continue to use the -100% negative net salvage rate for this account with a salvage rate of 0% and a removal rate of 100% which continues to yield a net salvage rate of -100%.

PUBLIC SERVICE COMPANY OF OKLAHOMA
Depreciation Study as of December 31, 2020
Distribution Plant

Account ***365 OVERHEAD CONDUCTOR & DEVICES***

Depreciable Balance	$477,878,778	
	Current	Recommended
Average Service Life (Yrs)	46	45
Iowa Curve	R0.5	R0.5
Gross Removal, %	50	50
Gross Salvage, %	0	4
Net Salvage %	-50	-46

Account 365 consists of overhead conductor and items like switches, reclosers and lightning arresters.

The average age of property in this account is 13.04 years.

The current life analysis for this account indicates we continue to follow the R0.5 curve using a 45 year average service life versus the 46 years currently approved for account 365.

A net salvage rate of -50% rate was approved for Account 365 in Cause No. PUD 201700151. The years 2014-2020 in this account show a negative net salvage rate between -42% and -57% and the 5 year averages during that same timeframe further supports it. The recommendation is to use the 5 year average salvage rate of 4% and removal rate of 50% which yields a net salvage rate of -46%.

PUBLIC SERVICE COMPANY OF OKLAHOMA
Depreciation Study as of December 31, 2020
Distribution Plant

Account ***367 UNDERGROUND CONDUCTOR & DEVICES***

Depreciable Balance $393,438,559

	Current	Recommended
Average Service Life (Yrs)	65	70
Iowa Curve	R1.5	R1.5
Gross Removal, %	25	32
Gross Salvage, %	0	3
Net Salvage %	-25	-29

Account 367 contains underground property such as distribution conductor, switches and switchgear.

The average age of property in this account is 14.12 years.

The current life analysis supports a change from a 65 year life to use a 70 year average service life while continuing to use a R1.5 dispersion.

A net salvage rate of -25% rate was approved for Account 367 in Cause No. PUD 201700151. The account history and 5 year average shows that the net salvage continues to increase. The recommendation is to change using a salvage rate of 3% and a removal rate of 32% which yields a net salvage rate of -29%.

PUBLIC SERVICE COMPANY OF OKLAHOMA
DEPRECIATION STUDY AS OF DECEMBER 31, 2020
CALCULATION OF AVERAGE AGE OF SURVIVING PLANT

DISTRIBUTION PLANT, Account 362 Station Equipment

VINTAGE YEAR	SURVIVING BALANCE	AGE (YEARS)	DOLLAR YEARS	AVERAGE AGE (YEARS)
1934	136,868	86.5	11,839,075	
1935	99,149	85.5	8,477,278	
1936	17,526	84.5	1,480,909	
1937	124,039	83.5	10,357,282	
1938	51,211	82.5	4,224,906	
1939	50,339	81.5	4,102,626	
1940	11,016	80.5	886,751	
1941	21,314	79.5	1,694,453	
1942	93,754	78.5	7,359,725	
1943	13,848	77.5	1,073,237	
1944	55,820	76.5	4,270,205	
1945	41,405	75.5	3,126,059	
1946	12,613	74.5	939,648	
1947	95,597	73.5	7,026,366	
1948	233,491	72.5	16,928,082	
1949	414,081	71.5	29,606,825	
1950	323,543	70.5	22,809,795	
1951	279,870	69.5	19,450,946	
1952	706,217	68.5	48,375,897	
1953	807,744	67.5	54,522,748	
1954	1,247,417	66.5	82,953,209	
1955	1,071,384	65.5	70,175,660	
1956	1,007,265	64.5	64,968,595	
1957	1,585,416	63.5	100,673,906	
1958	1,326,201	62.5	82,887,582	
1959	1,122,310	61.5	69,022,065	
1960	968,905	60.5	58,618,725	
1961	993,366	59.5	59,105,306	
1962	886,550	58.5	51,863,169	
1963	732,778	57.5	42,134,738	
1964	1,094,043	56.5	61,813,427	
1965	1,751,204	55.5	97,191,801	
1966	1,442,775	54.5	78,631,254	
1967	1,077,112	53.5	57,625,510	
1968	1,928,654	52.5	101,254,351	
1969	1,324,499	51.5	68,211,676	
1970	1,114,891	50.5	56,301,993	
1971	937,189	49.5	46,390,863	
1972	1,561,563	48.5	75,735,806	
1973	1,717,314	47.5	81,572,403	
1974	1,508,263	46.5	70,134,211	
1975	3,352,576	45.5	152,542,198	
1976	2,279,401	44.5	101,433,356	

PUBLIC SERVICE COMPANY OF OKLAHOMA
DEPRECIATION STUDY AS OF DECEMBER 31, 2020
CALCULATION OF AVERAGE AGE OF SURVIVING PLANT

DISTRIBUTION PLANT, Account 362 Station Equipment

VINTAGE YEAR	SURVIVING BALANCE	AGE (YEARS)	DOLLAR YEARS	AVERAGE AGE (YEARS)
1977	1,131,278	43.5	49,210,600	
1978	1,972,444	42.5	83,828,854	
1979	1,810,075	41.5	75,118,117	
1980	2,014,983	40.5	81,606,814	
1981	361,710	39.5	14,287,547	
1982	2,690,598	38.5	103,588,005	
1983	2,746,731	37.5	103,002,419	
1984	2,295,720	36.5	83,793,785	
1985	1,910,662	35.5	67,828,517	
1986	1,457,424	34.5	50,281,130	
1987	870,736	33.5	29,169,650	
1988	1,971,975	32.5	64,089,172	
1989	4,206,529	31.5	132,505,676	
1990	5,333,844	30.5	162,682,241	
1991	6,761,477	29.5	199,463,564	
1992	3,442,886	28.5	98,122,252	
1993	3,701,875	27.5	101,801,556	
1994	3,827,841	26.5	101,437,788	
1996	3,984,754	24.5	97,626,462	
1997	4,988,005	23.5	117,218,123	
1998	6,051,290	22.5	136,154,036	
1999	6,644,070	21.5	142,847,496	
2000	2,038,170	20.5	41,782,494	
2001	4,502,019	19.5	87,789,375	
2002	4,334,826	18.5	80,194,283	
2003	6,798,263	17.5	118,969,609	
2004	3,361,986	16.5	55,472,774	
2005	4,203,005	15.5	65,146,583	
2006	6,246,957	14.5	90,580,870	
2007	12,288,790	13.5	165,898,664	
2008	10,659,615	12.5	133,245,191	
2009	13,739,731	11.5	158,006,906	
2010	9,156,836	10.5	96,146,779	
2011	11,484,818	9.5	109,105,767	
2012	13,391,794	8.5	113,830,246	
2013	30,458,419	7.5	228,438,143	
2014	27,197,742	6.5	176,785,326	
2015	25,600,323	5.5	140,801,777	
2016	23,137,158	4.5	104,117,211	
2017	37,312,136	3.5	130,592,475	
2018	39,283,860	2.5	98,209,650	
2019	31,129,234	1.5	46,693,851	
2020	36,621,477	0.5	18,310,739	

PUBLIC SERVICE COMPANY OF OKLAHOMA
DEPRECIATION STUDY AS OF DECEMBER 31, 2020
CALCULATION OF AVERAGE AGE OF SURVIVING PLANT

DISTRIBUTION PLANT, Account 362 Station Equipment

VINTAGE YEAR	SURVIVING BALANCE	AGE (YEARS)	DOLLAR YEARS	AVERAGE AGE (YEARS)
	458,744,588		6,345,577,134	**13.83**

PUBLIC SERVICE COMPANY OF OKLAHOMA
DEPRECIATION STUDY AS OF DECEMBER 31, 2020
CALCULATION OF AVERAGE AGE OF SURVIVING PLANT

DISTRIBUTION PLANT, Account 364 Poles, Towers & Fixtures

VINTAGE YEAR	SURVIVING BALANCE	AGE (YEARS)	DOLLAR YEARS	AVERAGE AGE (YEARS)
1934	23,818	86.5	2,060,260	
1935	91,694	85.5	7,839,802	
1936	6,310	84.5	533,184	
1937	9,426	83.5	787,090	
1938	3,992	82.5	329,350	
1939	5,033	81.5	410,221	
1940	4,176	80.5	336,128	
1941	2,681	79.5	213,115	
1942	8,933	78.5	701,203	
1943	10,555	77.5	818,027	
1944	13,961	76.5	1,068,018	
1945	14,314	75.5	1,080,684	
1946	48,185	74.5	3,589,765	
1947	142,497	73.5	10,473,543	
1948	200,621	72.5	14,545,030	
1949	240,242	71.5	17,177,321	
1950	253,343	70.5	17,860,653	
1951	277,664	69.5	19,297,628	
1952	272,628	68.5	18,675,050	
1953	430,314	67.5	29,046,198	
1954	271,919	66.5	18,082,583	
1955	339,275	65.5	22,222,511	
1956	432,537	64.5	27,898,624	
1957	517,559	63.5	32,865,016	
1958	481,355	62.5	30,084,684	
1959	435,879	61.5	26,806,588	
1960	569,099	60.5	34,430,487	
1961	645,039	59.5	38,379,846	
1962	643,318	58.5	37,634,101	
1963	679,157	57.5	39,051,507	
1964	129,503	56.5	7,316,947	
1965	758,239	55.5	42,082,291	
1966	508,715	54.5	27,724,941	
1967	418,404	53.5	22,384,614	
1968	911,257	52.5	47,841,018	
1969	944,329	51.5	48,632,923	
1970	1,006,664	50.5	50,836,552	
1971	1,056,638	49.5	52,303,599	
1972	1,094,954	48.5	53,105,290	
1973	1,206,212	47.5	57,295,069	
1974	1,239,836	46.5	57,652,390	
1975	1,067,028	45.5	48,549,770	
1976	1,226,493	44.5	54,578,921	
1977	1,330,721	43.5	57,886,377	
1978	1,784,012	42.5	75,820,508	
1979	2,390,749	41.5	99,216,070	

PUBLIC SERVICE COMPANY OF OKLAHOMA
DEPRECIATION STUDY AS OF DECEMBER 31, 2020
CALCULATION OF AVERAGE AGE OF SURVIVING PLANT

DISTRIBUTION PLANT, Account 364 Poles, Towers & Fixtures

VINTAGE YEAR	SURVIVING BALANCE	AGE (YEARS)	DOLLAR YEARS	AVERAGE AGE (YEARS)
1980	1,822,204	40.5	73,799,276	
1981	2,215,051	39.5	87,494,502	
1982	3,778,449	38.5	145,470,273	
1983	2,969,830	37.5	111,368,628	
1984	3,860,082	36.5	140,892,977	
1985	3,491,947	35.5	123,964,114	
1986	3,293,685	34.5	113,632,143	
1987	3,802,090	33.5	127,370,014	
1988	3,487,373	32.5	113,339,632	
1989	3,736,304	31.5	117,693,579	
1990	3,145,378	30.5	95,934,033	
1991	3,706,855	29.5	109,352,227	
1992	3,843,388	28.5	109,536,570	
1993	4,774,036	27.5	131,285,988	
1994	4,578,765	26.5	121,337,283	
1995	5,393,602	25.5	137,536,860	
1996	10,819,858	24.5	265,086,519	
1997	7,734,104	23.5	181,751,442	
1998	10,345,354	22.5	232,770,456	
1999	10,617,888	21.5	228,284,598	
2000	12,046,053	20.5	246,944,088	
2001	9,287,360	19.5	181,103,524	
2002	4,384,046	18.5	81,104,845	
2003	6,640,174	17.5	116,203,048	
2004	12,277,827	16.5	202,584,147	
2005	11,532,867	15.5	178,759,437	
2006	13,534,173	14.5	196,245,508	
2007	14,399,433	13.5	194,392,349	
2008	16,806,816	12.5	210,085,196	
2009	9,823,789	11.5	112,973,571	
2010	12,100,736	10.5	127,057,727	
2011	16,889,259	9.5	160,447,958	
2012	19,905,428	8.5	169,196,140	
2013	20,777,450	7.5	155,830,876	
2014	24,147,033	6.5	156,955,715	
2015	23,534,203	5.5	129,438,115	
2016	28,489,791	4.5	128,204,060	
2017	28,448,485	3.5	99,569,696	
2018	24,551,736	2.5	61,379,340	
2019	24,704,384	1.5	37,056,576	
2020	26,508,288	0.5	13,254,144	
	482,354,853		6,984,212,671	**14.48**

PUBLIC SERVICE COMPANY OF OKLAHOMA
DEPRECIATION STUDY AS OF DECEMBER 31, 2020
CALCULATION OF AVERAGE AGE OF SURVIVING PLANT

DISTRIBUTION PLANT, Account 365 Overhead Conductor

VINTAGE YEAR	SURVIVING BALANCE	AGE (YEARS)	DOLLAR YEARS	AVERAGE AGE (YEARS)
1934	31,251	86.5	2,703,227	
1935	39,589	85.5	3,384,889	
1936	1,160	84.5	98,055	
1937	3,742	83.5	312,470	
1938	4,017	82.5	331,391	
1939	4,009	81.5	326,696	
1940	6,079	80.5	489,371	
1941	7,669	79.5	609,712	
1942	5,774	78.5	453,233	
1943	3,530	77.5	273,563	
1944	4,695	76.5	359,134	
1945	4,329	75.5	326,868	
1946	15,341	74.5	1,142,925	
1947	52,883	73.5	3,886,884	
1948	55,168	72.5	3,999,710	
1949	130,036	71.5	9,297,569	
1950	129,908	70.5	9,158,502	
1951	170,079	69.5	11,820,488	
1952	149,015	68.5	10,207,513	
1953	236,253	67.5	15,947,053	
1954	255,856	66.5	17,014,430	
1955	304,786	65.5	19,963,492	
1956	356,407	64.5	22,988,258	
1957	482,269	63.5	30,624,054	
1958	291,229	62.5	18,201,794	
1959	267,844	61.5	16,472,381	
1960	385,238	60.5	23,306,921	
1961	469,272	59.5	27,921,660	
1962	358,989	58.5	21,000,841	
1963	397,324	57.5	22,846,154	
1964	472,913	56.5	26,719,598	
1965	762,510	55.5	42,319,292	
1966	647,051	54.5	35,264,301	
1967	721,205	53.5	38,584,443	
1968	564,530	52.5	29,637,818	
1969	897,897	51.5	46,241,715	
1970	678,798	50.5	34,279,300	
1971	948,090	49.5	46,930,430	
1972	933,526	48.5	45,276,011	
1973	980,216	47.5	46,560,236	
1974	840,400	46.5	39,078,622	
1975	653,441	45.5	29,731,571	
1976	750,237	44.5	33,385,551	
1977	993,262	43.5	43,206,913	
1978	1,049,188	42.5	44,590,496	
1979	1,592,276	41.5	66,079,434	

PUBLIC SERVICE COMPANY OF OKLAHOMA
DEPRECIATION STUDY AS OF DECEMBER 31, 2020
CALCULATION OF AVERAGE AGE OF SURVIVING PLANT

DISTRIBUTION PLANT, Account 365 Overhead Conductor

VINTAGE YEAR	SURVIVING BALANCE	AGE (YEARS)	DOLLAR YEARS	AVERAGE AGE (YEARS)
1980	1,102,498	40.5	44,651,151	
1981	1,209,636	39.5	47,780,639	
1982	2,333,235	38.5	89,829,528	
1983	2,052,009	37.5	76,950,331	
1984	2,426,451	36.5	88,565,461	
1985	1,826,665	35.5	64,846,607	
1986	1,717,685	34.5	59,260,142	
1987	2,084,034	33.5	69,815,131	
1988	2,158,173	32.5	70,140,623	
1989	2,854,598	31.5	89,919,833	
1990	2,766,091	30.5	84,365,767	
1991	3,391,730	29.5	100,056,043	
1992	3,691,625	28.5	105,211,299	
1993	4,696,305	27.5	129,148,397	
1994	4,891,505	26.5	129,624,874	
1995	628,560	25.5	16,028,287	
1996	10,970,633	24.5	268,780,510	
1997	5,062,867	23.5	118,977,378	
1998	5,290,806	22.5	119,043,133	
1999	6,601,039	21.5	141,922,347	
2000	6,445,820	20.5	132,139,303	
2001	5,693,859	19.5	111,030,258	
2002	11,223,927	18.5	207,642,658	
2003	9,941,435	17.5	173,975,119	
2004	15,223,510	16.5	251,187,923	
2005	14,087,416	15.5	218,354,950	
2006	21,994,796	14.5	318,924,537	
2007	19,150,926	13.5	258,537,501	
2008	30,111,235	12.5	376,390,441	
2009	11,826,099	11.5	136,000,137	
2010	31,757,258	10.5	333,451,209	
2011	10,910,915	9.5	103,653,691	
2012	15,475,780	8.5	131,544,134	
2013	17,171,048	7.5	128,782,859	
2014	19,086,899	6.5	124,064,841	
2015	17,127,045	5.5	94,198,748	
2016	19,870,945	4.5	89,419,251	
2017	21,509,708	3.5	75,283,978	
2018	17,965,381	2.5	44,913,453	
2019	25,742,806	1.5	38,614,209	
2020	49,696,544	0.5	24,848,272	
	477,878,778		6,231,229,922	**13.04**

PUBLIC SERVICE COMPANY OF OKLAHOMA
DEPRECIATION STUDY AS OF DECEMBER 31, 2020
CALCULATION OF AVERAGE AGE OF SURVIVING PLANT

DISTRIBUTION PLANT, Account 367 Underground Conductor

VINTAGE YEAR	SURVIVING BALANCE	AGE (YEARS)	DOLLAR YEARS	AVERAGE AGE (YEARS)
1938	29,580	82.5	2,440,385	
1939	7,686	81.5	626,377	
1940	4,130	80.5	332,449	
1941	1,132	79.5	90,014	
1946	970	74.5	72,284	
1947	985	73.5	72,420	
1949	42,795	71.5	3,059,853	
1950	88,621	70.5	6,247,783	
1951	3,311	69.5	230,131	
1953	7,480	67.5	504,918	
1954	323,715	66.5	21,527,067	
1955	3,862	65.5	252,956	
1956	188,218	64.5	12,140,049	
1957	141,482	63.5	8,984,115	
1958	90,154	62.5	5,634,624	
1959	113,518	61.5	6,981,343	
1960	79,467	60.5	4,807,738	
1961	40,298	59.5	2,397,717	
1962	54,283	58.5	3,175,536	
1963	52,886	57.5	3,040,947	
1964	117,318	56.5	6,628,479	
1965	137,829	55.5	7,649,497	
1966	168,951	54.5	9,207,820	
1967	388,298	53.5	20,773,954	
1968	253,683	52.5	13,318,345	
1969	310,015	51.5	15,965,796	
1970	332,189	50.5	16,775,542	
1971	563,508	49.5	27,893,642	
1972	691,327	48.5	33,529,372	
1973	1,596,790	47.5	75,847,514	
1974	954,595	46.5	44,388,674	
1975	1,313,715	45.5	59,774,027	
1976	993,532	44.5	44,212,183	
1977	1,424,872	43.5	61,981,922	
1978	1,865,205	42.5	79,271,215	
1979	2,073,345	41.5	86,043,798	
1980	1,969,005	40.5	79,744,682	
1981	1,894,920	39.5	74,849,335	
1982	1,823,416	38.5	70,201,533	
1983	2,151,931	37.5	80,697,403	

PUBLIC SERVICE COMPANY OF OKLAHOMA
DEPRECIATION STUDY AS OF DECEMBER 31, 2020
CALCULATION OF AVERAGE AGE OF SURVIVING PLANT

DISTRIBUTION PLANT, Account 367 Underground Conductor

VINTAGE YEAR	SURVIVING BALANCE	AGE (YEARS)	DOLLAR YEARS	AVERAGE AGE (YEARS)
1984	2,748,681	36.5	100,326,851	
1985	2,896,945	35.5	102,841,539	
1986	1,539,028	34.5	53,096,468	
1987	1,714,139	33.5	57,423,641	
1988	1,786,135	32.5	58,049,374	
1989	2,357,562	31.5	74,263,187	
1990	3,125,768	30.5	95,335,918	
1991	4,028,130	29.5	118,829,841	
1992	2,687,878	28.5	76,604,515	
1993	3,807,379	27.5	104,702,918	
1994	7,027,603	26.5	186,231,468	
1995	395,042	25.5	10,073,565	
1996	12,284,349	24.5	300,966,562	
1997	8,519,441	23.5	200,206,874	
1998	8,424,843	22.5	189,558,958	
1999	8,139,797	21.5	175,005,635	
2000	9,692,910	20.5	198,704,651	
2001	5,585,222	19.5	108,911,823	
2002	4,199,962	18.5	77,699,299	
2003	3,231,484	17.5	56,550,963	
2004	8,117,682	16.5	133,941,749	
2005	8,408,229	15.5	130,327,555	
2006	11,528,130	14.5	167,157,887	
2007	17,738,216	13.5	239,465,917	
2008	33,798,736	12.5	422,484,204	
2009	16,971,547	11.5	195,172,790	
2010	13,207,188	10.5	138,675,477	
2011	11,311,344	9.5	107,457,768	
2012	13,719,746	8.5	116,617,844	
2013	12,089,396	7.5	90,670,473	
2014	15,793,322	6.5	102,656,594	
2015	19,949,544	5.5	109,722,490	
2016	24,508,174	4.5	110,286,783	
2017	19,942,932	3.5	69,800,261	
2018	23,429,028	2.5	58,572,569	
2019	14,273,097	1.5	21,409,645	
2020	12,160,936	0.5	6,080,468	
	393,438,559		5,557,257,963	**14.12**

BEFORE THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA

APPLICATION OF PUBLIC SERVICE COMPANY	)	
OF OKLAHOMA, AN OKLAHOMA	)	
CORPORATION, FOR AN ADJUSTMENT IN ITS	)	
RATES AND CHARGES AND THE ELECTRIC	)	CAUSE NO. PUD 202100055
SERVICE RULES, REGULATIONS AND	)	
CONDITIONS OF SERVICE FOR ELECTRIC	)	
SERVICE IN THE STATE OF OKLAHOMA	)	

PUBLIC SERVICE COMPANY OF OKLAHOMA'S RESPONSE TO OKLAHOMA ATTORNEY GENERAL'S FIFTEENTH SET OF DATA REQUESTS TO RESPONDENT PUBLIC SERVICE COMPANY OF OKLAHOMA AG-PSO-15

Question No. 15-6:

Distribution: Please refer to PSO's response to AG-PSO-1-3, particularly the response included with Steven F. Baker's workpapers and labeled PSOASS~1, tab "Station 2020." The value in Column B, line 116 shows 14 as the quantity of power transformers in service with a 1974 vintage. a) Please explain how the capacity of a transformer, measured by kilovolt-amps or other measure, was used in calculating the referenced quantity. b) Assume two transformers included in the 1974 vintage data in the referenced workpaper: transformer A and transformer B. Assume that the two transformers are completely identical except that transformer B has five times the kVa capacity as transformer A. In the method used to determine the quantity of 14 in Column B, line 116, would transformer B be included with the same quantity or a different quantity from transformer A? c) If the response to part (b) is that transformer B would be included with a different quantity than transformer A, please identify how much larger transformer B's quantity would be and provide a detailed explanation for how the difference would be determined. d) If the response to part (b) is that transformer B would be included with the same quantity as transformer A, please provide a detailed explanation for why PSO would count a transformer with a higher capacity as the same "quantity" as a lower-capacity transformer.

Response No. 15-6:

a.) Transformer capacity was not used to determine the quantity of units.
b.) Transformers A and B would be listed with the same quantity.
c.) n/a
d.) The purpose of the aging asset analysis was to identify the magnitude of aging assets that have an elevated risk of failure due to their age and associated degraded condition. The analysis did not attempt to identify the magnitude of installed capacity associated with these aging assets. The analysis was based on the replacement of individual transformer units.

Witness: Steven F. Baker Title: VP Dist Region Opers

Date Response Provided: 6/17/2021

BEFORE THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA

APPLICATION OF PUBLIC SERVICE COMPANY	)	
OF OKLAHOMA, AN OKLAHOMA	)	
CORPORATION, FOR AN ADJUSTMENT IN ITS	)	
RATES AND CHARGES AND THE ELECTRIC	)	CAUSE NO. PUD 202100055
SERVICE RULES, REGULATIONS AND	)	
CONDITIONS OF SERVICE FOR ELECTRIC	)	
SERVICE IN THE STATE OF OKLAHOMA	)	

PUBLIC SERVICE COMPANY OF OKLAHOMA'S RESPONSE TO OKLAHOMA ATTORNEY GENERAL'S FIFTEENTH SET OF DATA REQUESTS TO RESPONDENT PUBLIC SERVICE COMPANY OF OKLAHOMA AG-PSO-15

Question No. 15-7:

Distribution: Please refer to PSO's response to AG-PSO-1-3, particularly the response included with Steven F. Baker's workpapers and labeled PSOASS~1, tab "Station 2020." The value in Column B, line 159 shows 7 as the quantity of power transformers in service with a 2019 vintage. a) Please list the capacity in kVa for each of the transformers included in the quantity of 7. b) Please provide the same information as requested in part (a) except for vintage years 1936, 1959, 1979, and 1999.

Response No. 15-7:

Please see AG 15-7 Attachment 1 for the requested information.

Witness: Steven F. Baker   Title: VP Dist Region Opers

Date Response Provided: 6/17/2021

Transformer Capacity in kVA

Manufacturing Year	Capacity (kVA)	Primary kV	Secondary kV
2019	30,000	138	37.74
2019	25,000	138	26.4
2019	10,000	13.8	4.16
2019	10,000	138	13.09
2019	24,000	138	13.8
2019	54,000	138	70.5
2019	30,000	138	37.74
1999	10,500	138	13.8
1999	22,400	138	13.8
1999	37,300	138	13.8
1999	22,400	138	4.1
1999	37,300	138	13.8
1999	33,300	138	13.8
1979	14,000	138	4.36
1979	22,400	138	13.8
1979	14,000	138	4.36
1979	37,300	138	23.9
1979	14,000	138	4.36
1979	27,560	69	34.5
1959	7,500	67	13.8
1959	3,120	67	13.2
1959	3,130	69	2.4
1959	3,130	69	2.4
1959	3,120	67	13.2
1959	3,120	67	13.2
1959	33,000	69	13.2
1959	4,680	13.2	4.3
1959	3,130	69	2.4
1936	500	66	13.2
1936	500	66	13.2
1936	500	66	13.2

BEFORE THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA

APPLICATION OF PUBLIC SERVICE COMPANY OF OKLAHOMA, AN OKLAHOMA CORPORATION, FOR AN ADJUSTMENT IN ITS RATES AND CHARGES AND THE ELECTRIC SERVICE RULES, REGULATIONS AND CONDITIONS OF SERVICE FOR ELECTRIC SERVICE IN THE STATE OF OKLAHOMA	)))))))	CAUSE NO. PUD 202100055

PUBLIC SERVICE COMPANY OF OKLAHOMA'S RESPONSE TO OKLAHOMA ATTORNEY GENERAL'S FIFTEENTH SET OF DATA REQUESTS TO RESPONDENT PUBLIC SERVICE COMPANY OF OKLAHOMA AG-PSO-15

Question No. 15-3:

Distribution: Please refer to PSO's response to AG-PSO-1-3, particularly the response included with Steven F. Baker's workpapers and labeled PSOASS~1, tab "D Line 2020." The value on Line 130, Column F shows 885,990 as the "active quantity" of overhead conductors recorded in FERC Account 365 with a 1973 vintage. a) Is the active quantity of 885,990 shown calculated based on the dollar amount or cost of the 1973 vintage, or are the assets directly tracked? b) Please provide a detailed explanation for how the active quantity of 885,990 was calculated. If the figure is estimated using dollar amount or cost data, please provide workpapers showing the calculation. If the figure is derived from quantities shown in PSO's business records, please explain in detail how the quantities in PSO's business records are determined. c) Please explain whether and how the current carrying capacity of a conductor is used in calculating the referenced active quantity. d) Assume two overhead conductors were installed in vintage year 1973: conductor A and conductor B. The two overhead conductors have the same length and are completely identical except that conductor B has a larger diameter that enables it to carry five times the current that conductor A can carry. In the method used to determine the active quantity of 885,990 for 1973, would conductor A and B both be included as the same quantity or as different quantities? e) If the response to part (c) is that the conductors would be included with different quantities, please identify how much larger conductor B's quantity would be and provide a detailed explanation for how the difference would be determined.

Response No. 15-3:
a.) The assets are directly tracked
b.) The quantity 885, 990 is not a calculated figure. The quantity was obtained directly from the property records.
c.) The current carrying capacity was not used to calculate the active quantity.
d.) Conductors A and B would have the same quantity.
e.) N/A

Witness: Steven F. Baker Title: VP Dist Region Opers

Date Response Provided: 6/17/2021

BEFORE THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA

APPLICATION OF PUBLIC SERVICE COMPANY	)	
OF OKLAHOMA, AN OKLAHOMA	)	
CORPORATION, FOR AN ADJUSTMENT IN ITS	)	
RATES AND CHARGES AND THE ELECTRIC	)	CAUSE NO. PUD 202100055
SERVICE RULES, REGULATIONS AND	)	
CONDITIONS OF SERVICE FOR ELECTRIC	)	
SERVICE IN THE STATE OF OKLAHOMA	)	

PUBLIC SERVICE COMPANY OF OKLAHOMA'S RESPONSE TO OKLAHOMA ATTORNEY GENERAL'S FIFTEENTH SET OF DATA REQUESTS TO RESPONDENT PUBLIC SERVICE COMPANY OF OKLAHOMA AG-PSO-15

Question No. 15-4:

Distribution: Please refer to PSO's response to AG-PSO-1-3, particularly the response included with Steven F. Baker's workpapers and labeled PSOASS~1, tab "D Line 2020." The values in Column F, lines 258 through 334 show "active quantities" for underground conductors recorded in FERC Account 367 with various vintage years. a) Please provide a detailed explanation for how the number of underground conductors in a cable are used to calculate the referenced quantity. b) Assume two cables included in a particular vintage year in the referenced workpaper: cable A and cable B. Each cable has the same length and are completely identical except that cable B has three conductors, while cable A has one conductor. In the method used to determine the active quantities in Column F, lines 258 through 334 in the referenced workpaper, would cable B included with the same quantity or a different quantity from cable A? c) If the response to part (b) is that cable B would be included with a different quantity than cable A, please identify how much larger cable B's quantity would be and provide a detailed explanation for how the difference would be determined. d) If the response to part (b) is that cable B would be included with the same quantity as cable A, please provide a detailed explanation for why PSO would count a single-conductor cable as the same "quantity" as a multiconductor cable.

Response No. 15-4:

a.) The reference quantity is directly tracked
b.) Cable B would be included in the same quantity
c.) N/A
d.) The quantity that is sent from the work order is fed into the Property Record, therefore we look at each as the same quantity. Please refer to the answer in part b.) From a Property Record standpoint, the Company is not required to keep that level of detail.

Witness: Steven F. Baker Title: VP Dist Region Opers

Date Response Provided: 6/17/2021

BEFORE THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA

APPLICATION OF PUBLIC SERVICE COMPANY OF OKLAHOMA, AN OKLAHOMA CORPORATION, FOR AN ADJUSTMENT IN ITS RATES AND CHARGES AND THE ELECTRIC SERVICE RULES, REGULATIONS AND CONDITIONS OF SERVICE FOR ELECTRIC SERVICE IN THE STATE OF OKLAHOMA	)))))))	CAUSE NO. PUD 202100055

PUBLIC SERVICE COMPANY OF OKLAHOMA'S RESPONSE TO OKLAHOMA ATTORNEY GENERAL'S FIRST SET OF DATA REQUESTS TO RESPONDENT PUBLIC SERVICE COMPANY OF OKLAHOMA AG-PSO-1

Question No. AG-PSO 1-3:

General: Please provide working copies of all computer models, spreadsheets, workpapers, and calculations used to prepare any testimony, exhibit, or workpaper filed on April 30, 2021, in this proceeding. Such computer models, spreadsheets, workpapers, and calculations should be provided in Excel-compatible format with all formulas fully functional and intact.

Response No. AG-PSO 1-3:

Please see AG 1-3 Workpapers in the Non-Confidential and Confidential folders submitted for this response..

Witness: Henry C. Steele — Title: Regulatory Case Mgr

Date Response Provided: 5/24/2021

PUBLIC SERVICE COMPANY OF OKLAHOMA

DEPRECIATION STUDY AS OF DECEMBER 31, 2020

DEPRECIATION STUDY WORK PAPERS

PUBLIC SERVICE COMPANY OF OKLAHOMA
DEPRECIATION STUDY AS OF DECEMBER 2020
OBSERVED LIFE TABLE - ACCOUNT 367 UNDERGROUND CONDUCTOR AND DEVICES

Placement Band 1934 to 2020
Observation Band 1934 to 2020

Age at Beginning of Interval	Exposures at Beginning of Interval	Retirements During Interval	Retirement Ratio	Survivor Ratio	Percent Surviving at Beginning of Interval
0	431,422,512	1,068,225	0.00248	0.99752	100.00
0.5	418,193,351	3,085,091	0.00738	0.99262	99.75
1.5	400,835,163	3,343,386	0.00834	0.99166	99.02
2.5	374,062,750	2,784,831	0.00744	0.99256	98.19
3.5	351,334,987	2,708,898	0.00771	0.99229	97.46
4.5	324,117,915	2,328,312	0.00718	0.99282	96.71
5.5	301,840,059	2,150,939	0.00713	0.99287	96.01
6.5	283,895,799	2,084,878	0.00734	0.99266	95.33
7.5	269,721,524	2,395,133	0.00888	0.99112	94.63
8.5	253,606,644	1,867,702	0.00736	0.99264	93.79
9.5	240,427,598	1,430,842	0.00595	0.99405	93.10
10.5	225,789,568	1,019,035	0.00451	0.99549	92.55
11.5	207,798,986	725,106	0.00349	0.99651	92.13
12.5	173,275,144	421,289	0.00243	0.99757	91.81
13.5	155,115,638	446,631	0.00288	0.99712	91.58
14.5	143,140,878	322,503	0.00225	0.99775	91.32
15.5	134,410,145	324,769	0.00242	0.99758	91.11
16.5	125,967,694	269,220	0.00214	0.99786	90.89
17.5	122,466,991	307,224	0.00251	0.99749	90.70
18.5	117,959,804	382,543	0.00324	0.99676	90.47
19.5	111,992,040	371,939	0.00332	0.99668	90.18
20.5	101,927,191	308,363	0.00303	0.99697	89.88
21.5	93,034,304	267,983	0.00288	0.99712	89.61
22.5	82,887,529	198,103	0.00239	0.99761	89.35
23.5	72,814,879	192,150	0.00264	0.99736	89.14
24.5	58,370,590	145,882	0.00250	0.99750	88.90
25.5	57,788,186	135,120	0.00234	0.99766	88.68
26.5	50,625,464	128,690	0.00254	0.99746	88.47
27.5	46,689,395	95,560	0.00205	0.99795	88.25
28.5	43,905,957	124,047	0.00283	0.99717	88.06
29.5	39,753,780	86,392	0.00217	0.99783	87.82
30.5	36,541,621	82,825	0.00227	0.99773	87.62
31.5	34,101,235	74,683	0.00219	0.99781	87.43
32.5	32,240,417	85,099	0.00264	0.99736	87.23
33.5	30,441,180	77,069	0.00253	0.99747	87.00
34.5	28,825,083	64,163	0.00223	0.99777	86.78
35.5	25,863,975	66,798	0.00258	0.99742	86.59
36.5	23,048,497	63,859	0.00277	0.99723	86.37
37.5	20,832,707	57,279	0.00275	0.99725	86.13
38.5	18,952,012	55,258	0.00292	0.99708	85.89
39.5	17,001,834	55,807	0.00328	0.99672	85.64
40.5	14,977,023	59,782	0.00399	0.99601	85.36
41.5	12,843,896	47,654	0.00371	0.99629	85.02
42.5	10,931,037	40,741	0.00373	0.99627	84.70
43.5	9,465,425	42,120	0.00445	0.99555	84.39
44.5	8,429,772	42,882	0.00509	0.99491	84.01

PUBLIC SERVICE COMPANY OF OKLAHOMA
DEPRECIATION STUDY AS OF DECEMBER 2020
OBSERVED LIFE TABLE - ACCOUNT 367 UNDERGROUND CONDUCTOR AND DEVICES

Placement Band 1934 to 2020
Observation Band 1934 to 2020

Age at Beginning of Interval	Exposures at Beginning of Interval	Retirements During Interval	Retirement Ratio	Survivor Ratio	Percent Surviving at Beginning of Interval
45.5	7,073,176	42,431	0.00600	0.99400	83.58
46.5	6,076,149	31,474	0.00518	0.99482	83.08
47.5	4,447,885	21,320	0.00479	0.99521	82.65
48.5	3,735,238	18,370	0.00492	0.99508	82.26
49.5	3,153,360	17,385	0.00551	0.99449	81.85
50.5	2,803,786	17,235	0.00615	0.99385	81.40
51.5	2,476,536	10,494	0.00424	0.99576	80.90
52.5	2,212,359	9,863	0.00446	0.99554	80.56
53.5	1,814,198	7,692	0.00424	0.99576	80.20
54.5	1,637,556	7,210	0.00440	0.99560	79.86
55.5	1,492,517	4,259	0.00285	0.99715	79.51
56.5	1,370,940	3,803	0.00277	0.99723	79.28
57.5	1,314,251	4,265	0.00325	0.99675	79.06
58.5	1,255,704	4,889	0.00389	0.99611	78.80
59.5	1,210,517	6,416	0.00530	0.99470	78.50
60.5	1,124,634	12,356	0.01099	0.98901	78.08
61.5	998,760	8,653	0.00866	0.99134	77.22
62.5	899,953	12,029	0.01337	0.98663	76.55
63.5	746,442	11,029	0.01478	0.98522	75.53
64.5	547,196	7,020	0.01283	0.98717	74.41
65.5	536,314	6,932	0.01293	0.98707	73.46
66.5	205,666	3,894	0.01893	0.98107	72.51
67.5	194,292	4,256	0.02190	0.97810	71.13
68.5	190,036	5,807	0.03056	0.96944	69.58
69.5	180,918	1,671	0.00923	0.99077	67.45
70.5	90,626	390	0.00430	0.99570	66.83
71.5	47,441	-2,385	-0.05027	1.05027	66.54
72.5	49,826	42	0.00085	0.99915	69.89
73.5	48,799	19	0.00039	0.99961	69.83
74.5	47,809	0	0.00000	1.00000	69.80
75.5	47,809	37	0.00077	0.99923	69.80
76.5	47,772	169	0.00354	0.99646	69.75
77.5	47,603	430	0.00904	0.99096	69.50
78.5	47,173	1,444	0.03061	0.96939	68.87
79.5	44,597	1,373	0.03078	0.96922	66.76
80.5	39,094	1,108	0.02835	0.97165	64.71
81.5	30,300	720	0.02376	0.97624	62.87
82.5	0	0	0.00000	1.00000	61.38

T Cut at 70 years

6,187,955,415	Total Exposures subject to retirement
588,850	Exposures subject to retirement age 70.5+
0.00952%	70.5+ as a % of total exposures

BEFORE THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA

APPLICATION OF PUBLIC SERVICE COMPANY	)	
OF OKLAHOMA, AN OKLAHOMA	)	
CORPORATION, FOR AN ADJUSTMENT IN ITS	)	
RATES AND CHARGES AND THE ELECTRIC	)	CAUSE NO. PUD 202100055
SERVICE RULES, REGULATIONS AND	)	
CONDITIONS OF SERVICE FOR ELECTRIC	)	
SERVICE IN THE STATE OF OKLAHOMA	)	

PUBLIC SERVICE COMPANY OF OKLAHOMA'S RESPONSE TO OKLAHOMA ATTORNEY GENERAL'S FOURTEENTH SET OF DATA REQUESTS TO RESPONDENT PUBLIC SERVICE COMPANY OF OKLAHOMA AG-PSO-14

Question No. 14-5:

Distribution: Please refer to the direct testimony of Steven F. Baker, page 49, Figures 22 through 26. The referenced figures show age-based mortality curves for a variety of assets. Please provide the numeric value of each data point shown in the figures in Excel-compatible format with all formulas fully functional and intact.

Response No. 14-5:

Please see AG 14-5 Attachment 1 for the requested information.

Witness: Steven F. Baker Title: VP Dist Region Opers

Date Response Provided: 6/16/2021

Failure Curve Data Points Used in Analysis

Asset	Age	Mortality Type	Mortality_Value
UG Cables	0	Estimated_Absolute_Mortality	0
UG Cables	1	Estimated_Absolute_Mortality	0.00039992
UG Cables	2	Estimated_Absolute_Mortality	0.00079968
UG Cables	3	Estimated_Absolute_Mortality	0.001299155
UG Cables	4	Estimated_Absolute_Mortality	0.001698556
UG Cables	5	Estimated_Absolute_Mortality	0.002097797
UG Cables	6	Estimated_Absolute_Mortality	0.002696358
UG Cables	7	Estimated_Absolute_Mortality	0.003294561
UG Cables	8	Estimated_Absolute_Mortality	0.003992011
UG Cables	9	Estimated_Absolute_Mortality	0.004788498
UG Cables	10	Estimated_Absolute_Mortality	0.005683786
UG Cables	11	Estimated_Absolute_Mortality	0.006677605
UG Cables	12	Estimated_Absolute_Mortality	0.007868877
UG Cables	13	Estimated_Absolute_Mortality	0.009355958
UG Cables	14	Estimated_Absolute_Mortality	0.011236395
UG Cables	15	Estimated_Absolute_Mortality	0.013705217
UG Cables	16	Estimated_Absolute_Mortality	0.016069486
UG Cables	17	Estimated_Absolute_Mortality	0.018624382
UG Cables	18	Estimated_Absolute_Mortality	0.021759765
UG Cables	19	Estimated_Absolute_Mortality	0.025275098
UG Cables	20	Estimated_Absolute_Mortality	0.029457417
UG Cables	21	Estimated_Absolute_Mortality	0.034104859
UG Cables	22	Estimated_Absolute_Mortality	0.038633914
UG Cables	23	Estimated_Absolute_Mortality	0.044289274
UG Cables	24	Estimated_Absolute_Mortality	0.050955889
UG Cables	25	Estimated_Absolute_Mortality	0.059364906
UG Cables	26	Estimated_Absolute_Mortality	0.066113156
UG Cables	27	Estimated_Absolute_Mortality	0.074572976
UG Cables	28	Estimated_Absolute_Mortality	0.083597866
UG Cables	29	Estimated_Absolute_Mortality	0.094166713
UG Cables	30	Estimated_Absolute_Mortality	0.106581354
UG Cables	31	Estimated_Absolute_Mortality	0.119530508
UG Cables	32	Estimated_Absolute_Mortality	0.133332602
UG Cables	33	Estimated_Absolute_Mortality	0.148197
UG Cables	34	Estimated_Absolute_Mortality	0.167648124
UG Cables	35	Estimated_Absolute_Mortality	0.192409374
UG Cables	36	Estimated_Absolute_Mortality	0.212585118
UG Cables	37	Estimated_Absolute_Mortality	0.231334973
UG Cables	38	Estimated_Absolute_Mortality	0.254947058
UG Cables	39	Estimated_Absolute_Mortality	0.283802993
UG Cables	40	Estimated_Absolute_Mortality	0.312091882

Failure Curve Data Points Used in Analysis

Asset	Age	Mortality Type	Mortality_Value
UG Cables	41	Estimated_Absolute_Mortality	0.331621066
UG Cables	42	Estimated_Absolute_Mortality	0.351180032
UG Cables	43	Estimated_Absolute_Mortality	0.381525923
UG Cables	44	Estimated_Absolute_Mortality	0.413510199
UG Cables	45	Estimated_Absolute_Mortality	0.455887907
UG Cables	46	Estimated_Absolute_Mortality	0.484129751
UG Cables	47	Estimated_Absolute_Mortality	0.505199189
UG Cables	48	Estimated_Absolute_Mortality	0.528907117
UG Cables	49	Estimated_Absolute_Mortality	0.546064427
UG Cables	50	Estimated_Absolute_Mortality	0.643028738
UG Cables	51	Estimated_Absolute_Mortality	0.658429097
UG Cables	52	Estimated_Absolute_Mortality	0.676320031
UG Cables	53	Estimated_Absolute_Mortality	0.687577862
UG Cables	54	Estimated_Absolute_Mortality	0.698866021
UG Cables	55	Estimated_Absolute_Mortality	0.880172252
UG Cables	56	Estimated_Absolute_Mortality	0.88624406
UG Cables	57	Estimated_Absolute_Mortality	0.894294674
UG Cables	58	Estimated_Absolute_Mortality	0.903411926
UG Cables	59	Estimated_Absolute_Mortality	0.907957053
UG Cables	60	Estimated_Absolute_Mortality	0.927378917
UG Cables	61	Estimated_Absolute_Mortality	0.934878466
UG Cables	62	Estimated_Absolute_Mortality	0.943153464
UG Cables	63	Estimated_Absolute_Mortality	0.949642112
UG Cables	64	Estimated_Absolute_Mortality	0.953084164
UG Cables	65	Estimated_Absolute_Mortality	0.974648059
UG Cables	66	Estimated_Absolute_Mortality	0.977072082
UG Cables	67	Estimated_Absolute_Mortality	0.979727703
UG Cables	68	Estimated_Absolute_Mortality	0.982020085
UG Cables	69	Estimated_Absolute_Mortality	0.984496663
UG Cables	70	Estimated_Absolute_Mortality	0.988486097
UG Cables	71	Estimated_Absolute_Mortality	0.989631677
UG Cables	72	Estimated_Absolute_Mortality	0.990307472
UG Cables	73	Estimated_Absolute_Mortality	0.990621168
UG Cables	74	Estimated_Absolute_Mortality	0.990783869
UG Cables	75	Estimated_Absolute_Mortality	0.99105893
UG Cables	76	Estimated_Absolute_Mortality	0.991383704
UG Cables	77	Estimated_Absolute_Mortality	0.992336604
UG Cables	78	Estimated_Absolute_Mortality	0.992884644
UG Cables	79	Estimated_Absolute_Mortality	0.993347749
UG Cables	80	Estimated_Absolute_Mortality	0.993646186
UG Cables	81	Estimated_Absolute_Mortality	0.994012612

Cause No. 202100055
AG 14-5 Attachment 1

Failure Curve Data Points Used in Analysis

Asset	Age	Mortality Type	Mortality_Value
UG Cables	82	Estimated_Absolute_Mortality	0.994253705
UG Cables	83	Estimated_Absolute_Mortality	0.994513145
UG Cables	84	Estimated_Absolute_Mortality	0.994916727
UG Cables	85	Estimated_Absolute_Mortality	0.99553774
UG Cables	86	Estimated_Absolute_Mortality	0.995680433
UG Cables	87	Estimated_Absolute_Mortality	0.996110987
UG Cables	88	Estimated_Absolute_Mortality	0.996859584
UG Cables	89	Estimated_Absolute_Mortality	0.997664665
UG Cables	90	Estimated_Absolute_Mortality	0.998079174
UG Cables	91	Estimated_Absolute_Mortality	0.998358919
UG Cables	92	Estimated_Absolute_Mortality	0.998621005
UG Cables	93	Estimated_Absolute_Mortality	0.998843203
UG Cables	94	Estimated_Absolute_Mortality	0.999257806
UG Cables	95	Estimated_Absolute_Mortality	0.99951361
UG Cables	96	Estimated_Absolute_Mortality	0.99976626
UG Cables	97	Estimated_Absolute_Mortality	0.999911296
UG Cables	98	Estimated_Absolute_Mortality	0.999975888
UG Cables	99	Estimated_Absolute_Mortality	0.999998346
UG Cables	100	Estimated_Absolute_Mortality	0.999998663
UG Cables	101	Estimated_Absolute_Mortality	0.999998697
UG Cables	102	Estimated_Absolute_Mortality	0.999998829
UG Cables	103	Estimated_Absolute_Mortality	0.99999885
UG Cables	104	Estimated_Absolute_Mortality	0.999998858
UG Cables	105	Estimated_Absolute_Mortality	0.999998885
UG Cables	106	Estimated_Absolute_Mortality	0.999998915
UG Cables	107	Estimated_Absolute_Mortality	0.999998974
UG Cables	108	Estimated_Absolute_Mortality	0.999999018
UG Cables	109	Estimated_Absolute_Mortality	0.999999036
UG Cables	110	Estimated_Absolute_Mortality	0.999999044
UG Cables	111	Estimated_Absolute_Mortality	0.999999074
UG Cables	112	Estimated_Absolute_Mortality	0.999999101
UG Cables	113	Estimated_Absolute_Mortality	0.999999156
UG Cables	114	Estimated_Absolute_Mortality	0.999999173
UG Cables	115	Estimated_Absolute_Mortality	0.999999192
UG Cables	116	Estimated_Absolute_Mortality	0.999999248

BEFORE THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA

APPLICATION OF PUBLIC SERVICE COMPANY	)	
OF OKLAHOMA, AN OKLAHOMA	)	
CORPORATION, FOR AN ADJUSTMENT IN ITS	)	
RATES AND CHARGES AND THE ELECTRIC	)	CAUSE NO. PUD 202100055
SERVICE RULES, REGULATIONS AND	)	
CONDITIONS OF SERVICE FOR ELECTRIC	)	
SERVICE IN THE STATE OF OKLAHOMA	)	

PUBLIC SERVICE COMPANY OF OKLAHOMA'S RESPONSE TO OKLAHOMA ATTORNEY GENERAL'S FIRST SET OF DATA REQUESTS TO RESPONDENT PUBLIC SERVICE COMPANY OF OKLAHOMA AG-PSO-1

Question No. AG-PSO 1-3:

General: Please provide working copies of all computer models, spreadsheets, workpapers, and calculations used to prepare any testimony, exhibit, or workpaper filed on April 30, 2021, in this proceeding. Such computer models, spreadsheets, workpapers, and calculations should be provided in Excel-compatible format with all formulas fully functional and intact.

Response No. AG-PSO 1-3:

Please see AG 1-3 Workpapers in the Non-Confidential and Confidential folders submitted for this response..

Witness: Henry C. Steele　　　　Title: Regulatory Case Mgr

Date Response Provided: 5/24/2021

2020 Weather Related Outages w D Top 4 Equip Types Embedded	2020 Top 4 D EQ Type Weather Only CMI	2020 Top 4 D EQ Type Weather Only CI		Top 4 D EQ Type Weather Only 2020 CMI During MED	Top 4 D EQ Type Weather Only CI During MED	Percentage of CMI - Weather / Top 4 D EQ During MED	Percentage of CI - Weather / Top 4 D EQ During MED	PSO 2020 CMI All Sustained, All MCC	PSO 2020 CI All Sustained, All MCC	Percentage of PSO CMI is Top 4 D EQ Embedded in Weather Minor Cause Codes	Percentage of PSO CI is Top 4 D EQ Embedded in Weather Minor Cause Codes	PSO All Weather Only CMI Total T and D 2020	Percentage of PSO 2020 CMI Related to Weather	PSO All Weather Only CI Total T and D	Percentage of PSO 2020 CI Related to Weather
CROSSARM	2,470,081	6,932	CROSSARM	2,240,729	5,623	90.71%	81.12%	147,605,077	790,317	1.67%	0.88%				
OH COND	21,024,360	26,218	OH COND	19,277,941	15,979	91.69%	60.95%	147,605,077	790,317	14.24%	3.32%				
POLE	4,185,600	8,336	POLE	1,717,478	1,567	41.03%	18.80%	147,605,077	790,317	2.84%	1.05%				
UG COND	165,043	309	UG COND	163,845	297	99.27%	96.12%	147,605,077	790,317	0.11%	0.04%				
2020 Grand Total	27,845,084	41,795	2020 Grand Total	23,399,993	23,466	84.04%	56.15%	147,605,077	790,317	18.86%	5.29%	96,795,512	65.58%	247,391	31.30%

2019 Weather Related Outages w D Top 4 Equip Types Embedded	2019 D Top 4 EQ Type Weather Only CMI	2019 D Top 4 EQ Type Weather Only CI		Top 4 D EQ Type Weather Only 2019 CMI During MED	Top 4 D EQ Type Weather Only CI During MED	Percentage of CMI - Weather / Top 4 D EQ During MED	Percentage of CI - Weather / Top 4 D EQ During MED	PSO 2019 CMI All Sustained, All MCC	PSO 2019 CI All Sustained, All MCC	Percentage of PSO CMI is Top 4 D EQ Embedded in Weather Minor Cause Codes	Percentage of PSO CI is Top 4 D EQ Embedded in Weather Minor Cause Codes	PSO All Weather Only CMI Total T and D 2019	Percentage of PSO 2019 CMI Related to Weather	PSO All Weather Only CI Total T and D	Percentage of PSO 2019 CI Related to Weather
CROSSARM	343,298	1,354	CROSSARM	5,641	36	2%	3%	89,348,358	807,463	0.38%	0.17%				
OH COND	3,809,409	12,028	OH COND	2,200,237	2,325	58%	19%	89,348,358	807,463	4.26%	1.49%				
POLE	3,260,608	11,136	POLE	1,371,998	3,183	42%	29%	89,348,358	807,463	3.65%	1.38%				
UG COND	99,341	636	UG COND	2,356	19	2%	3%	89,348,358	807,463	0.11%	0.08%				
2019 Grand Total	7,512,656	25,154	2019 Grand Total	3,580,232	5,563	48%	22%	89,348,358	807,463	8.41%	3.12%	40,819,202	45.69%	247,576	30.66%

2018 Weather Related Outages w D Top 4 Equip Types Embedded	2018 D Top 4 EQ Type Weather Only CMI	2018 D Top 4 EQ Type Weather Only CI		Top 4 D EQ Type Weather Only 2018 CMI During MED	Top 4 D EQ Type Weather Only CI During MED	Percentage of CMI - Weather / Top 4 D EQ During MED	Percentage of CI - Weather / Top 4 D EQ During MED	PSO 2018 CMI All Sustained, All MCC	PSO 2018 CI All Sustained, All MCC	Percentage of PSO CMI is Top 4 D EQ Embedded in Weather Minor Cause Codes	Percentage of PSO CI is Top 4 D EQ Embedded in Weather Minor Cause Codes	PSO All Weather Only CMI Total T and D 2018	Percentage of PSO 2018 CMI Related to Weather	PSO All Weather Only CI Total T and D	Percentage of PSO 2018 CI Related to Weather
CROSSARM	409,056	4,496	CROSSARM	0	0	0.00%	0.00%	69,875,582	738,878	0.59%	0.61%				
OH COND	620,937	2,885	OH COND	98,588	119	15.88%	4.12%	69,875,582	738,878	0.89%	0.39%				
POLE	2,489,288	12,037	POLE	433,984	1,407	17.43%	11.69%	69,875,582	738,878	3.56%	1.63%				
UG COND	1,187	6	UG COND	0	0	0.00%	0.00%	69,875,582	738,878	0.00%	0.00%				
2018 Grand Total	3,520,468	19,424	2018 Grand Total	532,572	1,526	15.13%	7.86%	69,875,582	738,878	5.04%	2.63%	26,353,194	37.71%	213,433	28.89%

2017 Weather Related Outages w D Top 4 Equip Types Embedded	2017 D Top 4 EQ Type Weather Only CMI	2017 D Top 4 EQ Type Weather Only CI		Top 4 D EQ Type Weather Only 2017 CMI During MED	Top 4 D EQ Type Weather Only CI During MED	Percentage of CMI - Weather / Top 4 D EQ During MED	Percentage of CI - Weather / Top 4 D EQ During MED	PSO 2017 CMI All Sustained, All MCC	PSO 2017 CI All Sustained, All MCC	Percentage of PSO CMI is Top 4 D EQ Embedded in Weather Minor Cause Codes	Percentage of PSO CI is Top 4 D EQ Embedded in Weather Minor Cause Codes	PSO All Weather Only CMI Total T and D 2017	Percentage of PSO 2017 CMI Related to Weather	PSO All Weather Only CI Total T and D	Percentage of PSO 2017 CI Related to Weather
CROSSARM	57,595	219	CROSSARM	22,108	38	38.39%	17.35%	98,722,130	731,499	0.06%	0.03%				
OH COND	1,297,451	4,203	OH COND	860,314	2,339	66.31%	55.65%	98,722,130	731,499	1.31%	0.57%				
POLE	3,293,673	10,177	POLE	986,482	881	29.95%	8.66%	98,722,130	731,499	3.34%	1.39%				
UG COND	95,969	325	UG COND	11,387	59	11.87%	18.15%	98,722,130	731,499	0.10%	0.04%				
2017 Grand Total	4,744,688	14,924	2017 Grand Total	1,880,291	3,317	39.63%	22.23%	98,722,130	731,499	4.81%	2.04%	48,541,711	49.17%	219,752	30.04%

2016 Weather Related Outages w D Top 4 Equip Types Embedded	2016 D Top 4 EQ Type Weather Only CMI	2016 D Top 4 EQ Type Weather Only CI		Top 4 D EQ Type Weather Only 2016 CMI During MED	Top 4 D EQ Type Weather Only CI During MED	Percentage of CMI - Weather / Top 4 D EQ During MED	Percentage of CI - Weather / Top 4 D EQ During MED	PSO 2016 CMI All Sustained, All MCC	PSO 2016 CI All Sustained, All MCC	Percentage of PSO CMI is Top 4 D EQ Embedded in Weather Minor Cause Codes	Percentage of PSO CI is Top 4 D EQ Embedded in Weather Minor Cause Codes	PSO All Weather Only CMI Total T and D 2016	Percentage of PSO 2016 CMI Related to Weather	PSO All Weather Only CI Total T and D	Percentage of PSO 2016 CI Related to Weather
CROSSARM	498,744	1,527	CROSSARM	412,635	998	82.73%	65.36%	158,671,255.00	771,725.00	0.31%	0.20%				
OH COND	2,936,038	6,899	OH COND	2,352,965	2,171	80.14%	31.47%	158,671,255.00	771,725.00	1.85%	0.89%				
POLE	620,389	2,523	POLE	30,332	45	4.89%	1.78%	158,671,255.00	771,725.00	0.39%	0.33%				
UG COND	0	0	UG COND	0	0	0.00%	0.00%	158,671,255.00	771,725.00	0.00%	0.00%				
2016 Grand Total	4,055,171	10,949	2016 Grand Total	2,795,932	3,214	68.95%	29.35%	158,671,255.00	771,725.00	2.56%	1.42%	111,103,420	70.02%	256,430	33.23%

OpUnit Indices

Year	OpUnit	Operating Unit ID	Served	Outages	CI	CMI	SAIDI	SAIFI	CAIDI
12/31/16	AEP-PSO	5	542,836	22,302	771,725	158,671,255	292.30	1.42	205.61
12/31/17	AEP-PSO	5	547,761	21,853	731,499	98,722,130	180.23	1.34	134.96
12/31/18	AEP-PSO	5	550,649	20,584	738,878	69,875,582	126.90	1.34	94.57
12/31/19	AEP-PSO	5	553,971	21,522	807,463	89,348,358	161.29	1.46	110.65
12/31/20	AEP-PSO	5	559,804	20,453	790,317	147,605,077	263.67	1.41	186.77

File: "620 2016-2020 Summary for Charts" (FILE62~1.xls), Tab: Summary 2016,17,18,19,20

Public Service Company of Oklahoma
Comparison of Proposals
Using Estimated Plant Balances as of December 31, 2020

		Current Approved		Cash Exh. JAC-2 Proposal			AG Proposal			
Function	**12/31/20 Plant in Service**	**Accrual Rate**	**Accrual Amount**	**Accrual Rate**	**Accrual Amount**	**Difference from Current**	**Accrual Rate**	**Accrual Amount**	**Difference from Current**	**Difference from Company**
(A)	(B)	(C)	(D)	(E)	(F)	(G)=(F)-(D)	(L)	(M)	(N)=(M)-(D)	(O)=(M)-(F)
Production	1,452,085,951	3.05%	44,242,372	6.66%	96,757,262	52,514,890	3.30%	47,920,072	3,677,700	(48,837,190)
Transmission	1,066,204,757	2.44%	26,019,887	2.61%	27,805,526	1,785,639	2.61%	27,805,526	1,785,639	0
Distribution	2,844,758,422	2.97%	84,613,270	3.00%	85,332,033	718,763	2.83%	80,420,296	(4,192,974)	(4,911,737)
General	197,841,814	3.60%	7,128,671	4.70%	9,298,053	2,169,382	4.66%	9,224,507	2,095,836	(73,546)
Total	**5,560,890,944**	**2.91%**	**162,004,200**	**3.94%**	**219,192,873**	**57,188,673**	**2.97%**	**165,370,401**	**3,366,201**	**(53,822,473)**

Public Service Company of Oklahoma
Table 1: Summary of Accrual Rates and Annual Accrual Amounts
Using Estimated Plant Balances as of December 31, 2020

			Current Approved		Cash Exh. JAC-2 Proposal			AG Proposal			
Account	Description	12/31/20 Plant in Service	Accrual Rate	Accrual Amount	Accrual Rate	Accrual Amount	Difference from Current	Accrual Rate	Accrual Amount	Difference from Current	Difference from Company Proposed
(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(M)	(N)	(O)	(P)
Steam Production Plant											
	Coal Plants										
	Northeastern Unit 3										
311.00	Structures and Improvements	20,459,054	2.55%	521,706	16.33%	3,340,389	2,818,683	2.73%	558,227	36,521	(2,782,162)
312.00	Boiler Plant Equipment	377,283,656	3.29%	12,412,632	12.77%	48,177,529	35,764,897	3.24%	12,217,672	(194,960)	(35,959,857)
314.00	Turbogenerator Units	46,210,041	2.13%	984,274	9.01%	4,162,999	3,178,725	1.99%	921,021	(63,253)	(3,241,978)
315.00	Accessory Electric Equipment	21,223,839	1.47%	311,990	7.25%	1,539,162	1,227,172	1.58%	334,589	22,599	(1,204,573)
316.00	Miscellaneous Power Plant Equip	18,289,214	2.61%	477,348	10.79%	1,972,693	1,495,345	2.61%	477,095	(253)	(1,495,598)
	Total	*483,465,804*	*3.04%*	*14,707,950*	*12.24%*	*59,192,771*	*44,484,821*	*3.00%*	*14,508,604*	*(199,346)*	*(44,684,167)*
	Rail Spur										
310.10	Rail Spur - Land Rights	939,196	3.77%	35,408	13.66%	128,308	92,900	3.85%	36,189	781	(92,119)
312.00	Rail Spur	22,359,915	1.34%	299,623	3.58%	800,717	501,094	1.01%	225,843	(73,780)	(574,874)
312.11	Rail Cars	5,255,850	0.14%	7,358	0.20%	10,501	3,143	0.06%	2,982	(4,376)	(7,519)
	Total	*28,554,961*	*1.20%*	*342,389*	*3.29%*	*939,526*	*597,137*	*0.93%*	*265,014*	*(77,375)*	*(674,512)*
	Total Coal Plants	**512,020,765**	**2.94%**	**15,050,339**	**11.74%**	**60,132,297**	**45,081,958**	**2.89%**	**14,773,618**	**(276,721)**	**(45,358,679)**
	Gas & Combined Cycle Plants										
	Comanche										
311.30	Structures and Improvements	6,704,510	2.35%	157,556	3.48%	233,531	75,975	3.41%	228,839	71,283	(4,692)
312.30	Boiler Plant Equipment	66,469,107	4.80%	3,190,517	5.05%	3,355,330	164,813	4.98%	3,307,059	116,542	(48,271)
314.30	Turbogenerator Units	70,267,023	2.71%	1,904,236	3.56%	2,499,229	594,993	3.48%	2,446,157	541,921	(53,072)
315.30	Accessory Electric Equipment	7,864,069	1.84%	144,699	3.06%	240,871	96,172	2.99%	235,349	90,650	(5,522)
316.30	Miscellaneous Power Plant Equip	3,326,973	2.61%	86,834	3.69%	122,914	36,080	3.62%	120,433	33,599	(2,481)
	Total	*154,631,682*	*3.55%*	*5,483,842*	*4.17%*	*6,451,875*	*968,033*	*4.10%*	*6,337,837*	*853,995*	*(114,038)*
	Northeastern Units 1 and 2										
311.30	Structures and Improvements	12,099,317	3.07%	371,449	3.13%	378,214	6,765	2.93%	354,521	(16,928)	(23,693)
312.30	Boiler Plant Equipment	94,695,651	3.12%	2,954,504	3.02%	2,860,437	(94,067)	2.82%	2,672,050	(282,454)	(188,387)
314.30	Turbogenerator Units	143,820,980	2.67%	3,840,020	3.50%	5,032,326	1,192,306	3.28%	4,721,474	881,454	(310,852)

Public Service Company of Oklahoma
Table 1: Summary of Accrual Rates and Annual Accrual Amounts
Using Estimated Plant Balances as of December 31, 2020

			Current Approved		Cash Exh. JAC-2 Proposal			AG Proposal			
Account	**Description**	**12/31/20 Plant in Service**	**Accrual Rate**	**Accrual Amount**	**Accrual Rate**	**Accrual Amount**	**Difference from Current**	**Accrual Rate**	**Accrual Amount**	**Difference from Current**	**Difference from Company Proposed**
(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(M)	(N)	(O)	(P)
315.30	Accessory Electric Equipment	16,206,082	2.63%	426,220	3.34%	541,785	115,565	3.14%	508,913	82,693	(32,872)
316.30	Miscellaneous Power Plant Equip	8,491,520	2.88%	244,556	2.95%	250,898	6,342	2.75%	233,462	(11,094)	(17,436)
	Total	*275,313,550*	*2.85%*	*7,836,749*	*3.29%*	*9,063,659*	*1,226,910*	*3.08%*	*8,490,420*	*653,671*	*(573,239)*
	Riverside Units 1 and 2										
311.30	Structures and Improvements	11,467,300	3.00%	344,019	3.78%	433,198	89,179	3.12%	357,563	13,544	(75,635)
312.30	Boiler Plant Equipment	79,247,369	2.19%	1,735,517	2.67%	2,118,547	383,030	2.02%	1,597,183	(138,334)	(521,364)
314.30	Turbogenerator Units	72,855,844	2.75%	2,003,536	3.11%	2,264,473	260,937	2.44%	1,777,519	(226,017)	(486,954)
315.30	Accessory Electric Equipment	11,268,102	2.09%	235,503	2.13%	239,704	4,201	1.47%	165,871	(69,632)	(73,833)
316.30	Miscellaneous Power Plant Equip	8,590,228	4.06%	348,763	5.02%	431,474	82,711	4.31%	370,384	21,621	(61,090)
	Total	*183,428,843*	*2.54%*	*4,667,338*	*2.99%*	*5,487,396*	*820,058*	*2.33%*	*4,268,520*	*(398,818)*	*(1,218,876)*
	Southwestern Units 1 - 3										
311.30	Structures and Improvements	8,978,821	3.55%	318,748	6.24%	559,973	241,225	5.60%	503,247	184,499	(56,726)
312.30	Boiler Plant Equipment	37,883,646	3.51%	1,329,716	5.79%	2,194,437	864,721	5.17%	1,957,453	627,737	(236,984)
314.30	Turbogenerator Units	38,039,551	3.51%	1,335,188	5.99%	2,279,592	944,404	5.37%	2,043,740	708,552	(235,852)
315.30	Accessory Electric Equipment	11,587,644	3.54%	410,203	6.13%	709,939	299,736	5.51%	638,662	228,459	(71,277)
316.30	Miscellaneous Power Plant Equip	1,850,553	3.08%	56,997	7.20%	133,207	76,210	6.44%	119,127	62,130	(14,080)
	Total	*98,340,215*	*3.51%*	*3,450,852*	*5.98%*	*5,877,148*	*2,426,296*	*5.35%*	*5,262,229*	*1,811,377*	*(614,919)*
	Tulsa Units 2 and 4										
311.30	Structures and Improvements	8,084,569	4.20%	339,552	4.83%	390,836	51,284	4.30%	347,768	8,216	(43,068)
312.30	Boiler Plant Equipment	26,996,282	3.07%	828,786	4.32%	1,166,045	337,259	3.76%	1,016,184	187,398	(149,861)
314.30	Turbogenerator Units	31,925,874	3.55%	1,133,369	3.70%	1,181,436	48,067	3.17%	1,012,261	(121,108)	(169,175)
315.30	Accessory Electric Equipment	10,517,251	4.59%	482,742	5.97%	627,893	145,151	5.43%	571,219	88,477	(56,674)
316.30	Miscellaneous Power Plant Equip	3,285,344	4.28%	140,613	5.92%	194,592	53,979	5.26%	172,669	32,056	(21,923)
	Total	*80,809,320*	*3.62%*	*2,925,062*	*4.41%*	*3,560,803*	*635,741*	*3.86%*	*3,120,101*	*195,039*	*(440,702)*
	Total Gas & Combined Cycle Plants	**792,523,610**	**3.07%**	**24,363,843**	**3.84%**	**30,440,881**	**6,077,038**	**3.47%**	**27,479,107**	**3,115,264**	**(2,961,774)**
	Total Steam Production Plant	**1,304,544,375**	**3.02%**	**39,414,182**	**6.94%**	**90,573,178**	**51,158,996**	**3.24%**	**42,252,725**	**2,838,543**	**(48,320,453)**

Other Production Plant

Public Service Company of Oklahoma
Table 1: Summary of Accrual Rates and Annual Accrual Amounts
Using Estimated Plant Balances as of December 31, 2020

			Current Approved		Cash Exh. JAC-2 Proposal			AG Proposal			
Account	Description	12/31/20 Plant in Service	Accrual Rate	Accrual Amount	Accrual Rate	Accrual Amount	Difference from Current	Accrual Rate	Accrual Amount	Difference from Current	Difference from Company Proposed
(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(M)	(N)	(O)	(P)
	Weleetka										
341.00	Structures and Improvements	922,151	12.20%	112,502	22.15%	204,301	91,799	21.48%	198,112	85,610	(6,189)
342.00	Fuel Holders, Producers, and Accessories	1,383,128	3.25%	44,952	8.46%	117,026	72,074	7.79%	107,805	62,853	(9,221)
344.00	Generators	16,445,048	4.09%	672,602	10.27%	1,689,211	1,016,609	9.60%	1,578,841	906,239	(110,370)
345.00	Accessory Electric Equipment	567,519	11.47%	65,094	40.32%	228,851	163,757	39.64%	224,990	159,896	(3,861)
346.00	Miscellaneous Power Plant Equip	2,690,372	9.35%	251,550	16.95%	456,067	204,517	16.29%	438,131	186,581	(17,936)
	Total	*22,008,218*	*5.21%*	*1,146,700*	*12.25%*	*2,695,455*	*1,548,755*	*11.58%*	*2,547,879*	*1,401,179*	*(147,576)*
	Comanche - Diesel										
342.00	Fuel Holders, Producers, and Accessories	2,994	2.44%	73	2.35%	70	(3)	2.28%	68	(5)	(2)
344.00	Generators	819,929	1.03%	8,445	1.34%	10,963	2,518	1.27%	10,398	1,953	(565)
346.00	Miscellaneous Power Plant Equip	58,180	0.00%	0	5.68%	3,303	3,303	5.60%	3,260	3,260	(43)
	Total	*881,103*	*0.97%*	*8,518*	*1.63%*	*14,337*	*5,819*	*1.56%*	*13,726*	*5,208*	*(611)*
	Northeastern Units 1 and 2 - Diesel										
342.00	Fuel Holders, Producers, and Accessories	63,289	1.12%	709	1.80%	1,140	431	1.61%	1,018	309	(122)
344.00	Generators	644,479	1.91%	12,310	5.05%	32,549	20,239	4.86%	31,302	18,992	(1,247)
345.00	Accessory Electric Equipment	83,558	4.32%	3,610	2.69%	2,250	(1,360)	2.66%	2,220	(1,390)	(30)
346.00	Miscellaneous Power Plant Equip	3,019	1.36%	41	1.12%	34	(7)	0.93%	28	(13)	(6)
	Total	*794,345*	*2.10%*	*16,670*	*4.53%*	*35,973*	*19,303*	*4.35%*	*34,568*	*17,898*	*(1,405)*
	Northeastern Unit 3 - Diesel										
344.00	Generators	437,950	2.05%	8,978	2.82%	12,341	3,363	2.45%	10,749	1,771	(1,592)
	Total	*437,950*	*2.05%*	*8,978*	*2.82%*	*12,341*	*3,363*	*2.45%*	*10,749*	*1,771*	*(1,592)*
	Riverside - Diesel										
342.00	Fuel Holders, Producers, and Accessories	24,392	4.97%	1,212	3.88%	946	(266)	3.25%	792	(420)	(154)
344.00	Generators	470,175	1.02%	4,796	1.51%	7,118	2,322	0.88%	4,137	(659)	(2,981)
345.00	Accessory Electric Equipment	68,642	1.67%	1,146	4.39%	3,011	1,865	3.65%	2,507	1,361	(504)
	Total	*563,209*	*1.27%*	*7,154*	*1.97%*	*11,076*	*3,922*	*1.32%*	*7,436*	*282*	*(3,640)*
	Southwestern - Diesel										
342.00	Fuel Holders, Producers, and Accessories	58,811	3.67%	2,158	2.87%	1,686	(472)	2.44%	1,436	(722)	(250)
344.00	Generators	212,484	0.88%	1,870	1.39%	2,959	1,089	0.96%	2,047	177	(912)

Public Service Company of Oklahoma
Table 1: Summary of Accrual Rates and Annual Accrual Amounts
Using Estimated Plant Balances as of December 31, 2020

			Current Approved		Cash Exh. JAC-2 Proposal			AG Proposal			
Account	**Description**	**12/31/20 Plant in Service**	**Accrual Rate**	**Accrual Amount**	**Accrual Rate**	**Accrual Amount**	**Difference from Current**	**Accrual Rate**	**Accrual Amount**	**Difference from Current**	**Difference from Company Proposed**
(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(M)	(N)	(O)	(P)
	Total	*271,295*	*1.48%*	*4,028*	*1.71%*	*4,645*	*617*	*1.28%*	*3,483*	*(545)*	*(1,162)*
	Tulsa - Diesel										
342.00	Fuel Holders, Producers, and Accessories	70,372	1.47%	1,034	1.73%	1,216	182	1.21%	851	(183)	(365)
344.00	Generators	608,404	1.42%	8,639	1.67%	10,177	1,538	1.15%	7,022	(1,617)	(3,155)
	Total	*678,776*	*1.43%*	*9,673*	*1.68%*	*11,393*	*1,720*	*1.16%*	*7,873*	*(1,800)*	*(3,520)*
	Weleetka - Diesel										
342.00	Fuel Holders, Producers, and Accessories	10,291	6.49%	668	9.65%	993	325	8.98%	924	256	(69)
344.00	Generators	666,380	6.63%	44,181	8.90%	59,290	15,109	8.23%	54,848	10,667	(4,442)
345.00	Accessory Electric Equipment	36,296	7.75%	2,813	4.45%	1,615	(1,198)	3.78%	1,372	(1,441)	(243)
346.00	Miscellaneous Power Plant Equip	63,417	8.46%	5,365	65.61%	41,610	36,245	64.95%	41,187	35,822	(423)
	Total	*776,384*	*6.83%*	*53,027*	*13.33%*	*103,508*	*50,481*	*12.67%*	*98,331*	*45,304*	*(5,177)*
	Riverside Units 3 and 4										
342.00	Fuel Holders, Producers, and Accessories	9,797,993	2.54%	248,869	2.59%	253,985	5,116	2.23%	218,105	(30,764)	(35,880)
344.00	Generators	46,474,344	2.74%	1,273,397	2.62%	1,217,713	(55,684)	2.25%	1,046,755	(226,642)	(170,958)
345.00	Accessory Electric Equipment	4,942,565	5.97%	295,071	3.32%	163,938	(131,133)	2.94%	145,107	(149,964)	(18,831)
346.00	Miscellaneous Power Plant Equip	182,932	3.54%	6,476	2.91%	5,317	(1,159)	2.54%	4,647	(1,829)	(670)
	Total	*61,397,834*	*2.97%*	*1,823,813*	*2.67%*	*1,640,953*	*(182,860)*	*2.30%*	*1,414,614*	*(409,199)*	*(226,339)*
	Southwestern Units 4 and 5										
341.00	Structures and Improvements	4,849,128	2.91%	141,110	3.51%	170,171	29,061	3.28%	159,229	18,119	(10,942)
344.00	Generators	45,401,789	2.48%	1,125,964	2.77%	1,256,108	130,144	2.56%	1,160,783	34,819	(95,325)
345.00	Accessory Electric Equipment	9,429,248	5.10%	480,892	2.40%	226,556	(254,336)	2.20%	207,211	(273,681)	(19,345)
346.00	Miscellaneous Power Plant Equip	52,297	3.18%	1,663	3.00%	1,568	(95)	2.80%	1,465	(198)	(103)
	Total	*59,732,462*	*2.93%*	*1,749,629*	*2.77%*	*1,654,403*	*(95,226)*	*2.56%*	*1,528,688*	*(220,941)*	*(125,715)*
	Total Other Production Plant	**147,541,576**	**3.27%**	**4,828,190**	**4.19%**	**6,184,084**	**1,355,894**	**3.84%**	**5,667,347**	**839,157**	**(516,737)**
Total Production Plant		**1,452,085,951**	**3.05%**	**44,242,372**	**6.66%**	**96,757,262**	**52,514,890**	**3.30%**	**47,920,072**	**3,677,700**	**(48,837,190)**

Public Service Company of Oklahoma
Table 1: Summary of Accrual Rates and Annual Accrual Amounts
Using Estimated Plant Balances as of December 31, 2020

				Current Approved		Cash Exh. JAC-2 Proposal			AG Proposal			
Account	**Description**		**12/31/20 Plant in Service**	**Accrual Rate**	**Accrual Amount**	**Accrual Rate**	**Accrual Amount**	**Difference from Current**	**Accrual Rate**	**Accrual Amount**	**Difference from Current**	**Difference from Company Proposed**
(A)	(B)		(C)	(D)	(E)	(F)	(G)	(H)	(M)	(N)	(O)	(P)
Transmission Plant												
350.10	Land Rights		45,326,605	1.07%	484,995	1.18%	536,619	51,624	1.18%	536,619	51,624	0
352.00	Structures and Improvements		17,290,782	2.05%	354,461	1.77%	306,212	(48,249)	1.77%	306,212	(48,249)	0
353.00	Station Equipment		469,303,389	1.72%	8,072,018	1.81%	8,496,597	424,579	1.81%	8,496,597	424,579	0
354.00	Towers and Fixtures		17,858,379	1.73%	308,950	2.71%	483,386	174,436	2.71%	483,386	174,436	0
355.00	Poles and Fixtures		318,474,098	3.92%	12,484,185	4.06%	12,936,832	452,647	4.06%	12,936,832	452,647	0
356.00	Overhead Conductors and Devices		197,879,589	2.18%	4,313,775	2.55%	5,044,484	730,709	2.55%	5,044,484	730,709	0
358.00	Underground Conductor		71,915	2.09%	1,503	1.94%	1,396	(107)	1.94%	1,396	(107)	0
Total Transmission Plant			**1,066,204,757**	**2.44%**	**26,019,887**	**2.61%**	**27,805,526**	**1,785,639**	**2.61%**	**27,805,526**	**1,785,639**	**0**
Distribution Plant												
360.10	Land Rights		2,825,149	1.07%	30,229	1.10%	30,940	711	1.10%	30,940	711	0
361.00	Structures and Improvements		18,523,980	2.38%	440,871	2.53%	468,285	27,414	2.53%	468,285	27,414	0
362.00	Station Equipment		458,744,588	1.20%	5,504,935	1.35%	6,215,865	710,930	1.35%	6,215,865	710,930	0
364.00	Poles, Towers, and Fixtures		482,354,853	4.14%	19,969,491	3.78%	18,216,673	(1,752,818)	3.78%	18,216,673	(1,752,818)	0
365.00	Overhead Conductors and Devices		477,878,778	3.44%	16,439,030	3.35%	16,019,875	(419,155)	3.35%	16,019,875	(419,155)	0
366.00	Underground Conduit		101,670,983	2.06%	2,094,422	2.07%	2,103,184	8,762	2.07%	2,103,184	8,762	0
367.00	Underground Conductor		393,438,559	1.95%	7,672,052	1.86%	7,304,502	(367,550)	1.86%	7,304,502	(367,550)	0
368.00	Line Transformers		391,772,570	3.15%	12,340,836	3.41%	13,353,939	1,013,103	3.41%	13,353,939	1,013,103	0
369.00	Services		291,143,953	2.85%	8,297,603	2.72%	7,915,712	(381,891)	1.78%	5,167,919	(3,129,684)	(2,747,793)
370.00	Meters	(1)	17,325,918	9.58%	1,659,823	8.84%	1,531,212	(128,611)	9.58%	1,659,823	0	128,611
370.16	Meters - AMI	(3)	94,745,778	6.76%	6,404,815	9.64%	9,131,281	2,726,466	7.22%	6,838,727	433,912	(2,292,554)
371.00	Installations on Customers' Premises		49,897,588	4.06%	2,025,842	3.22%	1,607,475	(418,367)	3.22%	1,607,475	(418,367)	0
373.00	Street Lighting and Signal Systems		64,435,725	2.69%	1,733,321	2.22%	1,433,089	(300,232)	2.22%	1,433,089	(300,232)	0
Total Distribution Plant			**2,844,758,422**	**2.97%**	**84,613,270**	**3.00%**	**85,332,033**	**718,763**	**2.83%**	**80,420,296**	**(4,192,974)**	**(4,911,737)**
General Plant												
390.00	Structures and Improvements		71,876,748	1.76%	1,265,031	2.02%	1,450,324	185,293	2.02%	1,450,324	185,293	0
391.00	Office Furniture & Equipment		1,552,458	2.44%	37,880	5.70%	88,417	50,537	5.70%	88,417	50,537	0
391.10	Office Equipment - Computers		89,985	20.00%	17,997	31.01%	27,907	9,910	31.01%	27,907	9,910	0
392.00	Transportation Equipment		1,880,130	6.67%	125,405	7.18%	134,937	9,532	7.18%	134,937	9,532	0
393.00	Stores Equipment		2,650,341	3.33%	88,256	3.86%	102,434	14,178	3.86%	102,434	14,178	0
394.00	Tools Shop & Garage Equipment		29,352,116	4.00%	1,174,085	4.33%	1,270,926	96,841	4.33%	1,270,926	96,841	0

Public Service Company of Oklahoma
Table 1: Summary of Accrual Rates and Annual Accrual Amounts
Using Estimated Plant Balances as of December 31, 2020

				Current Approved		Cash Exh. JAC-2 Proposal			AG Proposal			
Account	**Description**		**12/31/20 Plant in Service**	**Accrual Rate**	**Accrual Amount**	**Accrual Rate**	**Accrual Amount**	**Difference from Current**	**Accrual Rate**	**Accrual Amount**	**Difference from Current**	**Difference from Company Proposed**
(A)	(B)		(C)	(D)	(E)	(F)	(G)	(H)	(M)	(N)	(O)	(P)
395.00	Laboratory Equipment		1,160,776	1.94%	22,519	6.32%	73,393	50,874	6.32%	73,393	50,874	0
396.00	Power Operated Equipment		637,521	4.24%	27,031	7.93%	50,574	23,543	7.93%	50,574	23,543	0
397.00	Communication Equipment		65,774,167	4.54%	2,986,147	6.97%	4,586,413	1,600,266	6.97%	4,586,413	1,600,266	0
397.16	Communication Equipment - AMI	(2)	14,427,599	6.67%	962,321	7.18%	1,035,867	73,546	6.67%	962,321	0	(73,546)
398.00	Miscellaneous Equipment		8,439,973	5.00%	421,999	5.65%	476,861	54,862	5.65%	476,861	54,862	0
Total General Plant			**197,841,814**	**3.60%**	**7,128,671**	**4.70%**	**9,298,053**	**2,169,382**	**4.66%**	**9,224,507**	**2,095,836**	**(73,546)**
TOTAL DEPRECIABLE PLANT			**5,560,890,944**	**2.91%**	**162,004,200**	**3.94%**	**219,192,873**	**57,188,673**	**2.97%**	**165,370,401**	**3,366,201**	**(53,822,473)**

Notes:
(1) Account 370.00, Meters depreciated at 9.58% based on Order No. 639314 in Cause No. PUD 201300217 at 176 (Stipulation page 4) paragraph (c).
(2) Account 397.16, AMI-Communications Equipment amortized at 6.67% based on Order No. 639314 in Cause No. PUD 201300217 at 176 (Stipulation page 4) paragraph (c).
(3) Account 370.16, AMI-Meters depreciation rate is a technical update using the paramters used to calculate the 6.84% rate in the stipulation in Order No. 639314 in Cause No. PUD 201300217 at 176 (Stipulation page 4) paragraph (c).

Public Service Company of Oklahoma
Table 2: Calculation of Remaining Life Annual Accrual Rate
Using Estimated Plant Balances as of December 31, 2020

							Total Annual	
Account	**Description**	**12/31/20 Plant in Service**	**12/31/20 Book Reserve Amount**	**Book Reserve Percent**	**Future Net Salvage Percent**	**Remaining Life**	**Calculated Accrual Rate**	**Accrual Amount**
(A)	(B)	(C)	(D)	(E)	(F)	(G)	)=(1-(E)-(F))/(	(I)=(C)*(H)
Steam Production Plant								
	Coal Plants							
	Northeastern Unit 3							
311.00	Structures and Improvements	20,459,054	10,555,823	51.59%	-3%	18.8	2.73%	558,227
312.00	Boiler Plant Equipment	377,283,656	155,611,170	41.25%	-3%	19.1	3.24%	12,217,672
314.00	Turbogenerator Units	46,210,041	30,041,681	65.01%	-3%	19.1	1.99%	921,021
315.00	Accessory Electric Equipment	21,223,839	15,416,378	72.64%	-3%	19.3	1.58%	334,589
316.00	Miscellaneous Power Plant Equip	18,289,214	9,873,278	53.98%	-3%	18.8	2.61%	477,095
	Total	*483,465,804*	*221,498,330*	*45.81%*			*3.00%*	*14,508,603*
	Rail Spur							
310.10	Rail Spur - Land Rights	939,196	233,504	24.86%	0%	19.5	3.85%	36,189
312.00	Rail Spur	22,359,915	17,955,973	80.30%	0%	19.5	1.01%	225,843
312.11	Rail Cars	5,255,850	5,198,828	98.92%	0%	19.1	0.06%	2,982
	Total	*28,554,961*	*23,388,305*	*81.91%*			*0.93%*	*265,015*
	Total Coal Plants	**512,020,765**	**244,886,635**	**47.83%**			**2.89%**	**14,773,618**
	Gas & Combined Cycle Plants							
	Comanche							
311.30	Structures and Improvements	6,704,510	3,568,493	53.23%	-2%	14.3	3.41%	228,839
312.30	Boiler Plant Equipment	66,469,107	22,260,287	33.49%	-2%	13.8	4.98%	3,307,059
314.30	Turbogenerator Units	70,267,023	39,285,241	55.91%	-2%	13.2	3.48%	2,446,157
315.30	Accessory Electric Equipment	7,864,069	4,669,987	59.38%	-2%	14.2	2.99%	235,349
316.30	Miscellaneous Power Plant Equip	3,326,973	1,778,503	53.46%	-2%	13.4	3.62%	120,433
	Total	*154,631,682*	*71,562,511*	*46.28%*			*4.10%*	*6,337,837*
	Northeastern Units 1 and 2							
311.30	Structures and Improvements	12,099,317	7,152,033	59.11%	-4%	15.3	2.93%	354,521
312.30	Boiler Plant Equipment	94,695,651	58,188,962	61.45%	-4%	15.1	2.82%	2,672,050
314.30	Turbogenerator Units	143,820,980	84,039,767	58.43%	-4%	13.9	3.28%	4,721,474
315.30	Accessory Electric Equipment	16,206,082	9,327,506	57.56%	-4%	14.8	3.14%	508,913
316.30	Miscellaneous Power Plant Equip	8,491,520	5,420,305	63.83%	-4%	14.6	2.75%	233,462
	Total	*275,313,550*	*164,128,573*	*59.62%*			*3.08%*	*8,490,419*
	Riverside Units 1 and 2							
311.30	Structures and Improvements	11,467,300	5,222,437	45.54%	-7%	19.7	3.12%	357,563
312.30	Boiler Plant Equipment	79,247,369	53,234,350	67.17%	-7%	19.8	2.02%	1,597,183
314.30	Turbogenerator Units	72,855,844	43,383,012	59.55%	-7%	19.5	2.44%	1,777,519
315.30	Accessory Electric Equipment	11,268,102	8,765,986	77.79%	-7%	19.8	1.47%	165,871
316.30	Miscellaneous Power Plant Equip	8,590,228	2,420,930	28.18%	-7%	18.3	4.31%	370,384
	Total	*183,428,843*	*113,026,715*	*61.62%*			*2.33%*	*4,268,520*
	Southwestern Units 1 - 3							
311.30	Structures and Improvements	8,978,821	4,031,359	44.90%	-7%	11.1	5.60%	503,247
312.30	Boiler Plant Equipment	37,883,646	18,631,606	49.18%	-7%	11.2	5.17%	1,957,453
314.30	Turbogenerator Units	38,039,551	17,628,492	46.34%	-7%	11.3	5.37%	2,043,740
315.30	Accessory Electric Equipment	11,587,644	5,130,811	44.28%	-7%	11.4	5.51%	638,662
316.30	Miscellaneous Power Plant Equip	1,850,553	884,123	47.78%	-7%	9.2	6.44%	119,127
	Total	*98,340,215*	*46,306,391*	*47.09%*			*5.35%*	*5,262,229*
	Tulsa Units 2 and 4							
311.30	Structures and Improvements	8,084,569	4,080,823	50.48%	-7%	13.1	4.30%	347,768
312.30	Boiler Plant Equipment	26,996,282	16,071,938	59.53%	-7%	12.6	3.76%	1,016,184
314.30	Turbogenerator Units	31,925,874	20,788,721	65.12%	-7%	13.2	3.17%	1,012,261
315.30	Accessory Electric Equipment	10,517,251	3,833,330	36.45%	-7%	13.0	5.43%	571,219
316.30	Miscellaneous Power Plant Equip	3,285,344	1,704,023	51.87%	-7%	10.5	5.26%	172,669
	Total	*80,809,320*	*46,478,835*	*57.52%*			*3.86%*	*3,120,100*

Public Service Company of Oklahoma
Table 2: Calculation of Remaining Life Annual Accrual Rate
Using Estimated Plant Balances as of December 31, 2020

Account	Description	12/31/20 Plant in Service	12/31/20 Book Reserve Amount	Book Reserve Percent	Future Net Salvage Percent	Remaining Life	Total Annual Calculated Accrual Rate	Total Annual Accrual Amount
(A)	(B)	(C)	(D)	(E)	(F)	(G)	)=(1-(E)-(F))/(	(I)=(C)*(H)
	Total Gas & Combined Cycle Plants	**792,523,610**	**441,503,025**	**55.71%**			**3.47%**	**27,479,104**
	Total Steam Production Plant	**1,304,544,375**	**686,389,660**	**52.62%**			**3.24%**	**42,252,722**
Other Production Plant								
	Weleetka							
341.00	Structures and Improvements	922,151	691,514	74.99%	-7%	1.5	21.48%	198,112
342.00	Fuel Holders, Producers, and Accessories	1,383,128	1,318,239	95.31%	-7%	1.5	7.79%	107,805
344.00	Generators	16,445,048	15,243,728	92.69%	-7%	1.5	9.60%	1,578,841
345.00	Accessory Electric Equipment	567,519	276,510	48.72%	-7%	1.5	39.64%	224,990
346.00	Miscellaneous Power Plant Equip	2,690,372	2,221,502	82.57%	-7%	1.5	16.29%	438,131
	Total	*22,008,218*	*19,751,493*	*89.75%*			*11.58%*	*2,547,880*
	Comanche - Diesel							
342.00	Fuel Holders, Producers, and Accessories	2,994	2,063	68.90%	-2%	14.5	2.28%	68
344.00	Generators	819,929	685,559	83.61%	-2%	14.5	1.27%	10,398
346.00	Miscellaneous Power Plant Equip	58,180	14,742	25.34%	-2%	13.7	5.60%	3,260
	Total	*881,103*	*702,364*	*79.71%*			*1.56%*	*13,727*
	Northeastern Units 1 and 2 - Diesel							
342.00	Fuel Holders, Producers, and Accessories	63,289	50,048	79.08%	-4%	15.5	1.61%	1,018
344.00	Generators	644,479	185,082	28.72%	-4%	15.5	4.86%	31,302
345.00	Accessory Electric Equipment	83,558	54,538	65.27%	-4%	14.6	2.66%	2,220
346.00	Miscellaneous Power Plant Equip	3,019	2,705	89.60%	-4%	15.5	0.93%	28
	Total	*794,345*	*292,373*	*36.81%*			*4.35%*	*34,567*
	Northeastern Unit 3 - Diesel							
344.00	Generators	437,950	391,970	89.50%	-3%	5.5	2.45%	10,749
	Total	*437,950*	*391,970*	*89.50%*			*2.45%*	*10,749*
	Riverside - Diesel							
342.00	Fuel Holders, Producers, and Accessories	24,392	9,872	40.47%	-7%	20.5	3.25%	792
344.00	Generators	470,175	418,282	88.96%	-7%	20.5	0.88%	4,137
345.00	Accessory Electric Equipment	68,642	29,132	42.44%	-7%	17.7	3.65%	2,507
	Total	*563,209*	*457,286*	*81.19%*			*1.32%*	*7,435*
	Southwestern - Diesel							
342.00	Fuel Holders, Producers, and Accessories	58,811	39,226	66.70%	-7%	16.5	2.44%	1,436
344.00	Generators	212,484	193,995	91.30%	-7%	16.3	0.96%	2,047
	Total	*271,295*	*233,221*	*85.97%*			*1.28%*	*3,483*
	Tulsa - Diesel							
342.00	Fuel Holders, Producers, and Accessories	70,372	63,807	90.67%	-7%	13.5	1.21%	851
344.00	Generators	608,404	556,194	91.42%	-7%	13.5	1.15%	7,022
	Total	*678,776*	*620,001*	*91.34%*			*1.16%*	*7,873*
	Weleetka - Diesel							
342.00	Fuel Holders, Producers, and Accessories	10,291	9,625	93.53%	-7%	1.5	8.98%	924
344.00	Generators	666,380	630,755	94.65%	-7%	1.5	8.23%	54,848
345.00	Accessory Electric Equipment	36,296	36,793	101.37%	-7%	1.5	3.78%	1,372
346.00	Miscellaneous Power Plant Equip	63,417	6,076	9.58%	-7%	1.5	64.95%	41,187
	Total	*776,384*	*683,249*	*88.00%*			*12.67%*	*98,330*
	Riverside Units 3 and 4							
342.00	Fuel Holders, Producers, and Accessories	9,797,993	2,741,123	27.98%	-7%	35.5	2.23%	218,105
344.00	Generators	46,474,344	12,735,221	27.40%	-7%	35.3	2.25%	1,046,755
345.00	Accessory Electric Equipment	4,942,565	337,503	6.83%	-7%	34.1	2.94%	145,107
346.00	Miscellaneous Power Plant Equip	182,932	30,782	16.83%	-7%	35.5	2.54%	4,647
	Total	*61,397,834*	*15,844,629*	*25.81%*			*2.30%*	*1,414,614*

Public Service Company of Oklahoma
Table 2: Calculation of Remaining Life Annual Accrual Rate
Using Estimated Plant Balances as of December 31, 2020

							Total Annual	
Account	**Description**	**12/31/20 Plant in Service**	**12/31/20 Book Reserve Amount**	**Book Reserve Percent**	**Future Net Salvage Percent**	**Remaining Life**	**Calculated Accrual Rate**	**Accrual Amount**
(A)	(B)	(C)	(D)	(E)	(F)	(G)	)=(1-(E)-(F))/(	(I)=(C)*(H)
	Southwestern Units 4 and 5							
341.00	Structures and Improvements	4,849,128	249,296	5.14%	-7%	31.0	3.28%	159,229
344.00	Generators	45,401,789	9,879,414	21.76%	-7%	33.3	2.56%	1,160,783
345.00	Accessory Electric Equipment	9,429,248	3,019,249	32.02%	-7%	34.1	2.20%	207,211
346.00	Miscellaneous Power Plant Equip	52,297	3,951	7.55%	-7%	35.5	2.80%	1,465
	Total	*59,732,462*	*13,151,910*	*22.02%*			*2.56%*	*1,528,688*
	Total Other Production Plant	**147,541,576**	**52,128,496**	**35.33%**			**3.84%**	**5,667,345**
Total Production Plant		**1,452,085,951**	**738,518,156**	**50.86%**			**3.30%**	**47,920,067**
Transmission Plant								
350.10	Land Rights	45,326,605	18,221,977	40.20%	0%	50.5	1.18%	536,619
352.00	Structures and Improvements	17,290,782	1,332,240	7.70%	-3%	53.8	1.77%	306,212
353.00	Station Equipment	469,303,389	92,388,991	19.69%	-4%	46.6	1.81%	8,496,597
354.00	Towers and Fixtures	17,858,379	8,580,303	48.05%	-61%	41.7	2.71%	483,386
355.00	Poles and Fixtures	318,474,098	54,311,453	17.05%	-60%	35.2	4.06%	12,936,832
356.00	Overhead Conductors and Devices	197,879,589	66,602,717	33.66%	-60%	49.6	2.55%	5,044,484
358.00	Underground Conductor	71,915	52,510	73.02%	0%	13.9	1.94%	1,396
Total Transmission Plant		**1,066,204,757**	**241,490,191**	**22.65%**			**2.61%**	**27,805,526**
Distribution Plant								
360.10	Land Rights	2,825,149	1,165,540	41.26%	0%	53.6	1.10%	30,940
361.00	Structures and Improvements	18,523,980	2,535,738	13.69%	-5%	36.1	2.53%	468,285
362.00	Station Equipment	458,744,588	78,546,100	17.12%	-8%	67.1	1.35%	6,215,865
364.00	Poles, Towers, and Fixtures	482,354,853	132,207,761	27.41%	-100%	45.7	3.78%	18,216,673
365.00	Overhead Conductors and Devices	477,878,778	101,443,271	21.23%	-46%	37.2	3.35%	16,019,875
366.00	Underground Conduit	101,670,983	18,500,293	18.20%	-60%	68.6	2.07%	2,103,184
367.00	Underground Conductor	393,438,559	77,373,591	19.67%	-29%	58.9	1.86%	7,304,502
368.00	Line Transformers	391,772,570	108,277,007	27.64%	-15%	25.6	3.41%	13,353,939
369.00	Services	291,143,953	102,966,361	35.37%	-20%	47.7	1.78%	5,167,919
370.00	Meters	17,325,918	5,205,687	30.05%			9.58%	1,659,823
370.16	Meters - AMI	94,745,778	28,752,062	30.35%	0%	9.7	7.22%	6,838,727
371.00	Installations on Customers' Premises	49,897,588	16,136,383	32.34%	-18%	26.6	3.22%	1,607,475
373.00	Street Lighting and Signal Systems	64,435,725	30,815,391	47.82%	-27%	35.6	2.22%	1,433,089
Total Distribution Plant		**2,844,758,422**	**703,925,185**	**24.74%**			**2.83%**	**80,420,296**
General Plant								
390.00	Structures and Improvements	71,876,748	10,159,550	14.13%	-10%	47.5	2.02%	1,450,324
391.00	Office Furniture & Equipment	1,552,458	628,502	40.48%	0%	10.5	5.70%	88,417
391.10	Office Equipment - Computers	89,985	59,845	66.51%	0%	1.1	31.01%	27,907
392.00	Transportation Equipment	1,880,130	534,812	28.45%	0%	10.0	7.18%	134,937
393.00	Stores Equipment	2,650,341	1,150,708	43.42%	0%	14.6	3.86%	102,434
394.00	Tools Shop & Garage Equipment	29,352,116	8,750,401	29.81%	0%	16.2	4.33%	1,270,926
395.00	Laboratory Equipment	1,160,776	624,271	53.78%	0%	7.3	6.32%	73,393
396.00	Power Operated Equipment	637,521	398,811	62.56%	0%	4.7	7.93%	50,574
397.00	Communication Equipment	65,774,167	12,938,691	19.67%	0%	11.5	6.97%	4,586,413
397.16	Communication Equipment - AMI	14,427,599	4,110,364	28.49%			6.67%	962,321
398.00	Miscellaneous Equipment	8,439,973	2,865,928	33.96%	-3%	12.2	5.65%	476,861
Total General Plant		**197,841,814**	**42,221,883**	**21.34%**			**4.66%**	**9,224,507**
TOTAL DEPRECIABLE PLANT		**5,560,890,944**	**1,726,155,415**	**31.04%**			**2.97%**	**165,370,396**

Source:
Northeastern Unit 3 Accumulated Book Reserve from PSO reponse to AG-PSO-17

Public Service Company of Oklahoma
Table 3: Current and Proposed Parameters
Using Estimated Plant Balances as of December 31, 2020

		Current Approved				Cash Exh. JAC-2 Proposal						AG Proposal					
Account	Description	Average Year of Final Retireme	Projection Life Years	Survivor Curve	Future Net Salvage Percent	Average Year of Final Retirement	Projection Life Years	Survivor Curve	Average Service Life Years	Average Remaining Life Years	Future Net Salvage Percent	Average Year of Final Retirement	Projection Life Years	Survivor Curve	Average Service Life Years	Average Remaining Life Years	Future Net Salvage Percent
(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(O)	(N)	(O)	(P)	(Q)	(R)
Steam Production Plant																	
	Coal Plants																
	Northeastern Unit 3																
311.00	Structures and Improvements	6-2040	90	R1.5	-4%	6-2026	0.007773	IRR	32.58	5.38	-5%	6-2040	0.007773	IRR	46.04	18.84	-3%
312.00	Boiler Plant Equipment	6-2040	65	R1.5	-4%	6-2026	0.005068	IRR	22.26	5.42	-5%	6-2040	0.005068	IRR	35.91	19.07	-3%
314.00	Turbogenerator Units	6-2040	65	S1	-4%	6-2026	0.005174	IRR	34.03	5.42	-5%	6-2040	0.005174	IRR	47.67	19.06	-3%
315.00	Accessory Electric Equipment	6-2040	75	R2.5	-4%	6-2026	0.002794	IRR	35.20	5.46	-5%	6-2040	0.002794	IRR	49.00	19.26	-3%
316.00	Miscellaneous Power Plant Equip	6-2040	50	S0	-4%	6-2026	0.008373	IRR	25.99	5.37	-5%	6-2040	0.008373	IRR	39.41	18.79	-3%
	Rail Spur																
310.10	Rail Spur - Land Rights	6-2040		SQUARE	0%	6-2026	0.000000	IRR	14.61	5.50	0%	6-2040	0.000000	IRR	28.61	19.50	0%
312.00	Rail Spur	6-2040	55	R3	0%	6-2026	0.000000	IRR	30.46	5.50	0%	6-2040	0.000000	IRR	44.46	19.50	0%
312.11	Rail Cars	6-2040	35	S3	0%	6-2026	0.004483	IRR	32.29	5.43	0%	6-2040	0.004483	IRR	45.98	19.12	0%
	Gas & Combined Cycle Plants																
	Comanche																
311.30	Structures and Improvements	6-2035	90	R1.5	-5%	6-2035	0.001969	IRR	40.55	14.29	-3%	6-2035	0.001969	IRR	40.55	14.29	-2%
312.30	Boiler Plant Equipment	6-2035	65	R1.5	-5%	6-2035	0.006980	IRR	24.21	13.77	-3%	6-2035	0.006980	IRR	24.21	13.77	-2%
314.30	Turbogenerator Units	6-2035	30	S0	-5%	6-2035	0.012031	IRR	30.88	13.24	-3%	6-2035	0.012031	IRR	30.88	13.24	-2%
315.30	Accessory Electric Equipment	6-2035	75	R2.5	-5%	6-2035	0.002470	IRR	40.34	14.24	-3%	6-2035	0.002470	IRR	40.34	14.24	-2%
316.30	Miscellaneous Power Plant Equip	6-2035	50	S0	-5%	6-2035	0.010347	IRR	30.56	13.41	-3%	6-2035	0.010347	IRR	30.56	13.41	-2%
	Northeastern Units 1 and 2																
311.30	Structures and Improvements	6-2036	90	R1.5	-9%	6-2036	0.001531	IRR	51.07	15.32	-7%	6-2036	0.001531	IRR	51.07	15.32	-4%
312.30	Boiler Plant Equipment	6-2036	65	R1.5	-9%	6-2036	0.003463	IRR	37.44	15.08	-7%	6-2036	0.003463	IRR	37.44	15.08	-4%
314.30	Turbogenerator Units	6-2036	30	S0	-9%	6-2036	0.013510	IRR	31.16	13.88	-7%	6-2036	0.013510	IRR	31.16	13.88	-4%
315.30	Accessory Electric Equipment	6-2036	75	R2.5	-9%	6-2036	0.005935	IRR	34.55	14.79	-7%	6-2036	0.005935	IRR	34.55	14.79	-4%
316.30	Miscellaneous Power Plant Equip	6-2036	50	S0	-9%	6-2036	0.007426	IRR	32.83	14.61	-7%	6-2036	0.007426	IRR	32.83	14.61	-4%
	Riverside Units 1 and 2																
311.30	Structures and Improvements	6-2041	90	R1.5	-14%	6-2041	0.003757	IRR	45.46	19.71	-20%	6-2041	0.003757	IRR	45.46	19.71	-7%
312.30	Boiler Plant Equipment	6-2041	65	R1.5	-14%	6-2041	0.003507	IRR	53.11	19.76	-20%	6-2041	0.003507	IRR	53.11	19.76	-7%
314.30	Turbogenerator Units	6-2041	30	S0	-14%	6-2041	0.004993	IRR	48.40	19.45	-20%	6-2041	0.004993	IRR	48.40	19.45	-7%
315.30	Accessory Electric Equipment	6-2041	75	R2.5	-14%	6-2041	0.003152	IRR	52.55	19.84	-20%	6-2041	0.003152	IRR	52.55	19.84	-7%
316.30	Miscellaneous Power Plant Equip	6-2041	50	S0	-14%	6-2041	0.010594	IRR	31.62	18.28	-20%	6-2041	0.010594	IRR	31.62	18.28	-7%
	Southwestern Units 1 - 3																
311.30	Structures and Improvements	2022, 2024, 2(	90	R1.5	-8%	2022, 2024, 20:	0.005626	IRR	45.96	11.08	-14%	2022, 2024, 20:	0.005626	IRR	45.96	11.08	-7%
312.30	Boiler Plant Equipment	2022, 2024, 2(	65	R1.5	-8%	2022, 2024, 20:	0.004845	IRR	34.74	11.19	-14%	2022, 2024, 20:	0.004845	IRR	34.74	11.19	-7%
314.30	Turbogenerator Units	2022, 2024, 2(	30	S0	-8%	2022, 2024, 20:	0.004068	IRR	36.99	11.29	-14%	2022, 2024, 20:	0.004068	IRR	36.99	11.29	-7%
315.30	Accessory Electric Equipment	2022, 2024, 2(	75	R2.5	-8%	2022, 2024, 20:	0.003415	IRR	30.42	11.38	-14%	2022, 2024, 20:	0.003415	IRR	30.42	11.38	-7%
316.30	Miscellaneous Power Plant Equip	2022, 2024, 2(	50	S0	-8%	2022, 2024, 20:	0.019453	IRR	25.18	9.20	-14%	2022, 2024, 20:	0.019453	IRR	25.18	9.20	-7%

Public Service Company of Oklahoma
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(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(O)	(N)	(O)	(P)	(Q)	(R)
	Tulsa Units 2 and 4																
311.30	Structures and Improvements	6-2034	90	R1.5	-10%	6-2034	0.003960	IRR	51.00	13.14	-14%	6-2034	0.003960	IRR	51.00	13.14	-7%
312.30	Boiler Plant Equipment	6-2034	65	R1.5	-10%	6-2034	0.009817	IRR	47.61	12.61	-14%	6-2034	0.009817	IRR	47.61	12.61	-7%
314.30	Turbogenerator Units	6-2034	30	S0	-10%	6-2034	0.003241	IRR	45.93	13.21	-14%	6-2034	0.003241	IRR	45.93	13.21	-7%
315.30	Accessory Electric Equipment	6-2034	75	R2.5	-10%	6-2034	0.005631	IRR	36.55	12.99	-14%	6-2034	0.005631	IRR	36.55	12.99	-7%
316.30	Miscellaneous Power Plant Equip	6-2034	50	S0	-10%	6-2034	0.033094	IRR	24.13	10.49	-14%	6-2034	0.033094	IRR	24.13	10.49	-7%
<u>Other Production Plant</u>																	
	Weleetka																
341.00	Structures and Improvements	6-2022	55	R2	-5%	6-2022	0.007105	IRR	21.84	1.49	-8%	6-2022	0.007105	IRR	21.84	1.49	-7%
342.00	Fuel Holders, Producers, and Accessories	6-2022	55	R4	-5%	6-2022	0.001058	IRR	28.74	1.50	-8%	6-2022	0.001058	IRR	28.74	1.50	-7%
344.00	Generators	6-2022	55	R2	-5%	6-2022	0.005975	IRR	32.67	1.49	-8%	6-2022	0.005975	IRR	32.67	1.49	-7%
345.00	Accessory Electric Equipment	6-2022	25	L2	-5%	6-2022	0.030659	IRR	9.50	1.47	-8%	6-2022	0.030659	IRR	9.50	1.47	-7%
346.00	Miscellaneous Power Plant Equip	6-2022	40	S0	-5%	6-2022	0.003573	IRR	15.50	1.50	-8%	6-2022	0.003573	IRR	15.50	1.50	-7%
	Comanche - Diesel																
342.00	Fuel Holders, Producers, and Accessories	6-2035	55	R4	-4%	6-2035	0.000000	IRR	31.00	14.50	-3%	6-2035	0.000000	IRR	31.00	14.50	-2%
344.00	Generators	6-2035	55	R2	-4%	6-2035	0.000000	IRR	57.77	14.50	-3%	6-2035	0.000000	IRR	57.77	14.50	-2%
346.00	Miscellaneous Power Plant Equip	6-2035	40	S0	-4%	6-2035	0.007820	IRR	19.70	13.68	-3%	6-2035	0.007820	IRR	19.70	13.68	-2%
	Northeastern Units 1 and 2 - Diesel																
342.00	Fuel Holders, Producers, and Accessories	6-2036	55	R4	-5%	6-2036	0.000000	IRR	62.00	15.50	-7%	6-2036	0.000000	IRR	62.00	15.50	-4%
344.00	Generators	6-2036	55	R2	-5%	6-2036	0.000000	IRR	36.09	15.50	-7%	6-2036	0.000000	IRR	36.09	15.50	-4%
345.00	Accessory Electric Equipment	6-2036	25	L2	-5%	6-2036	0.007703	IRR	38.31	15.50	-7%	6-2036	0.007703	IRR	37.39	14.58	-4%
346.00	Miscellaneous Power Plant Equip	6-2036	40	S0	-5%	6-2036	0.000000	IRR	47.00	15.50	-7%	6-2036	0.000000	IRR	47.00	15.50	-4%
	Northeastern Unit 3 - Diesel																
344.00	Generators	6-2026	55	R2	-1%	6-2026	0.000000	IRR	45.00	5.50	-5%	6-2026	0.000000	IRR	45.00	5.50	-3%
	Riverside - Diesel																
342.00	Fuel Holders, Producers, and Accessories	6-2041	55	R4	-5%	6-2041	0.000000	IRR	65.00	20.50	-20%	6-2041	0.000000	IRR	65.00	20.50	-7%
344.00	Generators	6-2041	55	R2	-5%	6-2041	0.000000	IRR	64.99	20.50	-20%	6-2041	0.000000	IRR	64.99	20.50	-7%
345.00	Accessory Electric Equipment	6-2041	40	S0	-5%	6-2041	0.013424	IRR	33.24	17.68	-20%	6-2041	0.013424	IRR	33.24	17.68	-7%
	Southwestern - Diesel																
342.00	Fuel Holders, Producers, and Accessories	6-2037	55	R4	-4%	6-2037	0.000000	IRR	63.00	16.50	-14%	6-2037	0.000000	IRR	63.00	16.50	-7%
344.00	Generators	6-2037	55	R2	-4%	6-2037	0.001487	IRR	59.61	16.30	-14%	6-2037	0.001487	IRR	59.61	16.30	-7%
	Tulsa - Diesel																
342.00	Fuel Holders, Producers, and Accessories	6-2034	55	R4	-6%	6-2034	0.000000	IRR	60.00	13.50	-14%	6-2034	0.000000	IRR	60.00	13.50	-7%
344.00	Generators	6-2034	55	R2	-6%	6-2034	0.000023	IRR	67.00	13.50	-14%	6-2034	0.000023	IRR	67.00	13.50	-7%
	Weleetka - Diesel																

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(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(O)	(N)	(O)	(P)	(Q)	(R)
342.00	Fuel Holders, Producers, and Accessories	6-2022	55	R4	-3%	6-2022	0.000000	IRR	34.00	1.50	-8%	6-2022	0.000000	IRR	34.00	1.50	-7%
344.00	Generators	6-2022	55	R2	-3%	6-2022	0.000951	IRR	45.80	1.50	-8%	6-2022	0.000951	IRR	45.80	1.50	-7%
345.00	Accessory Electric Equipment	6-2022	25	L2	-3%	6-2022	0.008255	IRR	39.84	1.49	-8%	6-2022	0.008255	IRR	39.84	1.49	-7%
346.00	Miscellaneous Power Plant Equip	6-2022	40	S0	-3%	6-2022	0.000000	IRR	3.75	1.50	-8%	6-2022	0.000000	IRR	3.75	1.50	-7%
	Riverside Units 3 and 4																
342.00	Fuel Holders, Producers, and Accessories	6-2056	55	R4	-9%	6-2056	0.000000	IRR	47.98	35.50	-20%	6-2056	0.000000	IRR	47.98	35.50	-7%
344.00	Generators	6-2056	55	R2	-9%	6-2056	0.000260	IRR	47.78	35.34	-20%	6-2056	0.000260	IRR	47.78	35.34	-7%
345.00	Accessory Electric Equipment	6-2056	25	L2	-9%	6-2056	0.002185	IRR	42.47	34.12	-20%	6-2056	0.002185	IRR	42.47	34.12	-7%
346.00	Miscellaneous Power Plant Equip	6-2056	40	S0	-9%	6-2056	0.000001	IRR	41.95	35.50	-20%	6-2056	0.000001	IRR	41.95	35.50	-7%
	Southwestern Units 4 and 5																
341.00	Structures and Improvements	6-2056	55	R2	-5%	6-2056	0.007105	IRR	43.14	31.02	-14%	6-2056	0.007105	IRR	43.14	31.02	-7%
344.00	Generators	6-2056	55	R2	-5%	6-2056	0.003431	IRR	44.73	33.34	-14%	6-2056	0.003431	IRR	44.73	33.34	-7%
345.00	Accessory Electric Equipment	6-2056	25	L2	-5%	6-2056	0.002185	IRR	46.30	34.12	-14%	6-2056	0.002185	IRR	46.30	34.12	-7%
346.00	Miscellaneous Power Plant Equip	6-2056	40	S0	-5%	6-2056	0.000000	IRR	39.32	35.50	-14%	6-2056	0.000000	IRR	39.32	35.50	-7%
Transmission Plant																	
350.10	Land Rights		75	R4.0	0%		75	R4.0	75.00	50.51	0%		75	R4.0	75.00	50.51	0%
352.00	Structures and Improvements		60	R3.0	-5%		60	R3.0	60.00	53.81	-3%		60	R3.0	60.00	53.81	-3%
353.00	Station Equipment		60	R1.5	-5%		57	L1.0	57.00	46.57	-4%		57	L1.0	57.00	46.57	-4%
354.00	Towers and Fixtures		75	R3.0	-20%		75	R3.0	75.00	41.73	-61%		75	R3.0	75.00	41.73	-61%
355.00	Poles and Fixtures		46	R1.0	-60%		42	R0.5	42.00	35.19	-60%		42	R0.5	42.00	35.19	-60%
356.00	Overhead Conductors and Devices		69	S1.0	-45%		67	R2.0	67.00	49.56	-60%		67	R2.0	67.00	49.56	-60%
358.00	Underground Conductor		45	R4.0	0%		45	R4.0	45.00	13.90	0%		45	R4.0	45.00	13.90	0%
Distribution Plant																	
360.10	Land Rights		70	R4.0	0%		70	R4.0	70.00	53.64	0%		70	R4.0	70.00	53.64	0%
361.00	Structures and Improvements		45	S0.0	-5%		40	L0.0	40.00	36.12	-5%		40	L0.0	40.00	36.12	-5%
362.00	Station Equipment		75	R0.5	-5%		75	L0.0	75.00	67.07	-8%		75	L0.0	75.00	67.07	-8%
364.00	Poles, Towers, and Fixtures		53	R1.0	-100%		55	L0.5	55.00	45.70	-100%		55	L0.5	55.00	45.70	-100%
365.00	Overhead Conductors and Devices		46	R0.5	-50%		45	R0.5	45.00	37.22	-46%		45	R0.5	45.00	37.22	-46%
366.00	Underground Conduit		78	R2.0	-60%		78	R2.5	78.00	68.55	-60%		78	R2.5	78.00	68.55	-60%
367.00	Underground Conductor		65	R1.5	-25%		70	R1.5	70.00	58.89	-29%		70	R1.5	70.00	58.89	-29%
368.00	Line Transformers		36	R1.0	-15%		35	R1.0	35.00	25.63	-15%		35	R1.0	35.00	25.63	-15%
369.00	Services		60	R1.5	-70%		60	R1.5	60.00	47.68	-65%		60	R1.5	60.00	47.68	-20%
370.00	Meters	12-2027	28	R0.5	-25%		15	L0.0	15.00	11.31	-30%	12-2027	28	R0.5	10.77	6.57	-25%
370.16	Meters - AMI		15	S2.5	0%		15	R2.0	15.00	10.34	-30%		15	S2.5	15.00	9.65	0%
371.00	Installations on Customers' Premises		30	O1.0	-30%		34	L0.0	34.00	26.59	-18%		34	L0.0	34.00	26.59	-18%
373.00	Street Lighting and Signal Systems		40	R0.5	-35%		45	L0.0	45.00	35.60	-27%		45	L0.0	45.00	35.60	-27%
General Plant																	
390.00	Structures and Improvements		64	S0.0	-10%		56	L0.0	56.00	47.51	-10%		56	L0.0	56.00	47.51	-10%
391.00	Office Furniture & Equipment		20	SQ	0%		20	SQ	20.00	10.45	0%		20	SQ	20.00	10.45	0%
391.10	Office Equipment - Computers		5	SQ	0%		5	SQ	5.00	1.08	0%		5	SQ	5.00	1.08	0%

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(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(O)	(N)	(O)	(P)	(Q)	(R)
392.00	Transportation Equipment		15	SQ	0%		15	SQ	15.00	9.97	0%		15	SQ	15.00	9.97	0%
393.00	Stores Equipment		30	SQ	0%		30	SQ	30.00	14.64	0%		30	SQ	30.00	14.64	0%
394.00	Tools Shop & Garage Equipment		25	SQ	0%		25	SQ	25.00	16.21	0%		25	SQ	25.00	16.21	0%
395.00	Laboratory Equipment		20	SQ	0%		20	SQ	20.00	7.31	0%		20	SQ	20.00	7.31	0%
396.00	Power Operated Equipment		18	SQ	0%		18	SQ	18.00	4.72	0%		18	SQ	18.00	4.72	0%
397.00	Communication Equipment		15	SQ	0%		15	SQ	15.00	11.52	0%		15	SQ	15.00	11.52	0%
397.16	Communication Equipment - AMI		15	SQ	0%		15	SQ	15.00	9.96	0%		15	SQ	15.00	9.96	0%
398.00	Miscellaneous Equipment		20	SQ	0%		20	SQ	20.00	12.22	-3%		20	SQ	20.00	12.22	-3%

Public Service Company of Oklahoma
Table 4: Production Plant Average Future Net Salvage Percent
Using Estimated Plant Balances as of December 31, 2020

Plant	Terminal Salvage Amount	Interim Salvage Amount	Total Salvage Amount	Terminal Removal Amount	Interim Removal Amount	Total Removal Amount	Original Cost	Total Salvage as Percent of Original Cost	Total Removal as Percent of Original Cost	Total Net Salvage as Percent of Original Cost
(A)										
Northeastern Units 3&4	15,232,473	1,400,349	16,632,822	29,848,911	2,614,864	32,463,775	483,903,754	3.44%	6.71%	-3.27%
Comanche	2,189,719	2,139,398	4,329,117	3,686,382	3,995,724	7,682,106	155,512,785	2.78%	4.94%	-2.16%
Northeastern Units 1&2	8,811,130	4,107,937	12,919,067	15,519,034	7,670,725	23,189,759	276,107,895	4.68%	8.40%	-3.72%
Riverside Units 1-4	9,768,172	1,807,732	11,575,904	26,241,531	3,483,736	29,725,267	245,389,886	4.72%	12.11%	-7.39%
Southwestern Units 1-5	6,637,906	4,513,180	11,151,086	12,046,797	9,402,280	21,449,077	158,343,972	7.04%	13.55%	-6.51%
Tulsa	5,694,508	820,456	6,514,964	10,844,945	1,532,057	12,377,002	81,488,096	7.99%	15.19%	-7.20%
Weleetka	597,160	1,029	598,189	2,066,158	19,643	2,085,801	22,784,602	2.63%	9.15%	-6.52%
	48,931,068	14,790,081	63,721,149	100,253,758	28,719,029	128,972,787	1,423,530,990	4.48%	9.06%	-4.58%

BEFORE THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA

APPLICATION OF PUBLIC SERVICE COMPANY	)	
OF OKLAHOMA, AN OKLAHOMA	)	
CORPORATION, FOR AN ADJUSTMENT IN ITS	)	
RATES AND CHARGES AND THE ELECTRIC	)	CAUSE NO. PUD 202100055
SERVICE RULES, REGULATIONS AND	)	
CONDITIONS OF SERVICE FOR ELECTRIC	)	
SERVICE IN THE STATE OF OKLAHOMA	)	

PUBLIC SERVICE COMPANY OF OKLAHOMA'S RESPONSE TO OKLAHOMA ATTORNEY GENERAL'S ELEVENTH SET OF DATA REQUESTS TO RESPONDENT PUBLIC SERVICE COMPANY OF OKLAHOMA AG-PSO-11

Question No. 11-8:

Depreciation: Please refer to the direct testimony of Jason A. Cash, page 8, lines 18 to 21. The referenced testimony indicates that PSO retained Sargent & Lundy to prepare demolition cost estimates. How many power plants has Sargent & Lundy participated in the demolition of since its founding?

Response No. 11-8:

The Company is not aware of any power plants in which Sargent & Lundy (S&L) has participated in the demolition of since its founding.
S&L has prepared hundreds of demolition cost estimate studies for power plants while exclusively serving the power plant industry for more than 130 years. The firm's work includes early power plant site development, power plant permitting, conceptual power plant engineering and design, detailed power plant engineering and design, and construction management and commissioning of power plants. Activities include both new power plant work as well the maintenance or upgrading of power plant configurations for a variety of plant changes. S&L is on major industry code committees and assists in developing and establishing technical engineering code requirements to ensure public safety.
S&L is one of the most experienced power plant architectural engineering firms in the world; it has worked on nuclear power plants, fossil fueled power plants (e.g., coal fired, oil fired, natural gas fired, etc.), and renewable energy facilities. Every single new generation power plant design project and a vast majority of power plant retrofit projects that have been performed by S&L throughout its 130-year history have involved some type of site grading and/or demolition. This fact is true whether the assignment was related to the full decommissioning and demolition of a facility or a partial demolition to accommodate the development of new facilities and/or the retrofit of existing facilities.

Witness: Jason A. Cash — Title: Accounting Sr Mgr

Date Response Provided: 6/9/2021

Statement of Financial Accounting Standards No. 143

FAS143 Status Page
FAS143 Summary

Accounting for Asset Retirement Obligations

June 2001

Financial Accounting Standards Board
of the Financial Accounting Foundation
401 MERRITT 7, P.O. BOX 5116, NORWALK, CONNECTICUT 06856-5116

measurement provisions of this Statement for an ARO liability that is incurred over more than one reporting period. Example 4 illustrates accounting for asset retirement obligations that are conditional and that have a low likelihood of enforcement.

C2. The examples in this appendix and those in Appendixes D and E incorporate simplified assumptions to provide guidance in implementing this Statement. For instance, Examples 1 and 2 relate to the asset retirement obligation associated with an offshore production platform that also would likely have individual wells and production facilities that would have separate asset retirement obligations. Those examples also assume straight-line depreciation, even though, in practice, depreciation would likely be applied using a units-of-production method. Other simplifying assumptions are used throughout the examples.

Example 1

C3. Example 1 depicts an entity that completes construction of and places into service an offshore oil platform on January 1, 2003. The entity is legally required to dismantle and remove the platform at the end of its useful life, which is estimated to be 10 years. Based on the requirements of this Statement, on January 1, 2003, the entity recognizes a liability for an asset retirement obligation and capitalizes an amount for an asset retirement cost. The entity estimates the initial fair value of the liability using an expected present value technique. The significant assumptions used in that estimate of fair value are as follows:

a. Labor costs are based on current marketplace wages required to hire contractors to dismantle and remove offshore oil platforms. The entity assigns probability assessments to a range of cash flow estimates as follows:

Cash Flow Estimate	Probability Assessment	Expected Cash Flows
$100,000	25%	$ 25,000
125,000	50	62,500
175,000	25	43,750
		$131,250

b. The entity estimates allocated overhead and equipment charges using the rate it applies to labor costs for transfer pricing (80 percent). The entity has no reason to believe that its overhead rate differs from those used by contractors in the industry.

c. A contractor typically adds a markup on labor and allocated internal costs to provide a profit margin on the job. The rate used (20 percent) represents the entity's understanding of the profit that contractors in the industry generally earn to dismantle and remove offshore oil platforms.

d. A contractor would typically demand and receive a premium (market risk premium) for bearing the uncertainty and unforeseeable circumstances inherent in "locking in" today's price for a project that will not occur for 10 years. The entity estimates the amount of that premium to be 5 percent of the estimated inflation-adjusted cash flows.
e. The risk-free rate of interest on January 1, 2003, is 5 percent. The entity adjusts that rate by 3.5 percent to reflect the effect of its credit standing. Therefore, the credit-adjusted risk-free rate used to compute expected present value is 8.5 percent.
f. The entity assumes a rate of inflation of 4 percent over the 10-year period.

C4. On December 31, 2012, the entity settles its asset retirement obligation by using its internal workforce at a cost of $351,000. Assuming no changes during the 10-year period in the cash flows used to estimate the obligation, the entity would recognize a gain of $89,619 on settlement of the obligation:

Labor	$195,000
Allocated overhead and equipment charges (80 percent of labor)	156,000
Total costs incurred	351,000
ARO liability	440,619
Gain on settlement of obligation	$ 89,619

Initial Measurement of the ARO Liability at January 1, 2003

	Expected Cash Flows 1/1/03
Expected labor costs	$131,250
Allocated overhead and equipment charges (.80 × $131,250)	105,000
Contractor's markup [.20 × ($131,250 + $105,000)]	47,250
Expected cash flows before inflation adjustment	283,500
Inflation factor assuming 4 percent rate for 10 years	1.4802
Expected cash flows adjusted for inflation	419,637
Market-risk premium (.05 × $419,637)	20,982
Expected cash flows adjusted for market risk	$440,619
Present value using credit-adjusted risk-free rate of 8.5 percent for 10 years	$194,879

Interest Method of Allocation

Year	Liability Balance 1/1	Accretion	Liability Balance 12/31
2003	$194,879	$16,565	$211,444
2004	211,444	17,973	229,417
2005	229,417	19,500	248,917
2006	248,917	21,158	270,075
2007	270,075	22,956	293,031
2008	293,031	24,908	317,939
2009	317,939	27,025	344,964
2010	344,964	29,322	374,286
2011	374,286	31,814	406,100
2012	406,100	34,519	440,619

Schedule of Expenses

Year-End	Accretion Expense	Depreciation Expense	Total Expense
2003	$16,565	$19,488	$36,053
2004	17,973	19,488	37,461
2005	19,500	19,488	38,988
2006	21,158	19,488	40,646
2007	22,956	19,488	42,444
2008	24,908	19,488	44,396
2009	27,025	19,488	46,513
2010	29,322	19,488	48,810
2011	31,814	19,488	51,302
2012	34,519	19,488	54,007

BEFORE THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA

APPLICATION OF PUBLIC SERVICE COMPANY OF OKLAHOMA, AN OKLAHOMA CORPORATION, FOR AN ADJUSTMENT IN ITS RATES AND CHARGES AND THE ELECTRIC SERVICE RULES, REGULATIONS AND CONDITIONS OF SERVICE FOR ELECTRIC SERVICE IN THE STATE OF OKLAHOMA	)))))))	CAUSE NO. PUD 202100055

PUBLIC SERVICE COMPANY OF OKLAHOMA'S RESPONSE TO OKLAHOMA ATTORNEY GENERAL'S FIRST SET OF DATA REQUESTS TO RESPONDENT PUBLIC SERVICE COMPANY OF OKLAHOMA AG-PSO-1

Question No. AG-PSO 1-3:

General: Please provide working copies of all computer models, spreadsheets, workpapers, and calculations used to prepare any testimony, exhibit, or workpaper filed on April 30, 2021, in this proceeding. Such computer models, spreadsheets, workpapers, and calculations should be provided in Excel-compatible format with all formulas fully functional and intact.

Response No. AG-PSO 1-3:

Please see AG 1-3 Workpapers in the Non-Confidential and Confidential folders submitted for this response..

Witness: Henry C. Steele   Title: Regulatory Case Mgr

Date Response Provided: 5/24/2021

PUBLIC SERVICE COMPANY OF OKLAHOMA

DEPRECIATION STUDY AS OF DECEMBER 31, 2020

DEPRECIATION STUDY WORK PAPERS

PUBLIC SERVICE COMPANY OF OKLAHOMA
Depreciation Study as of December 31, 2020
Distribution Plant

Account ***370 METERS***

Depreciable Balance	$17,325,918	
	Current	Recommended
Average Service Life (Yrs)	15	15
Iowa Curve	L0.0	L0.0
Gross Removal, %	30	30
Gross Salvage, %	0	0
Net Salvage %	-30	-30

Account 370 includes all distribution meters.

The average age of property in this account is 8.79 years.

The current life analysis continues to support an average service life for this account of 15 years with a L0.0 dispersion.

A net salvage rate of -30% rate was approved for Account 370 in Cause No. PUD 201700151. In 2013 PSO began a program to modernize its existing meters by replacing them with AMI (Advanced Meter Infrastructure) meters. As shown by the account history most of the meter change outs occurred in 2015 and 2016. The Commission allowed PSO to recover the remaining value of the older meters through a regulatory asset and the journal entries to record the transfer of the remaining meter cost from account 370 to the regulatory asset were recorded as salvage in the Company's property system. These entries caused a distortion in the Company's account 370 salvage and removal history for account 370. For that reason, the recommendation is to continue to use the -30 net salvage with a salvage rate of 0% and a removal rate of 30%.

PUBLIC SERVICE COMPANY OF OKLAHOMA
Depreciation Study as of December 31, 2020
Distribution Plant

Account ***370.16 AMI METERS***

Depreciable Balance	$94,745,778	
	Current	Recommended
Average Service Life (Yrs)	15	15
Iowa Curve	S2.5	R2.0
Gross Removal, %	0	30
Gross Salvage, %	0	0
Net Salvage %	0	-30

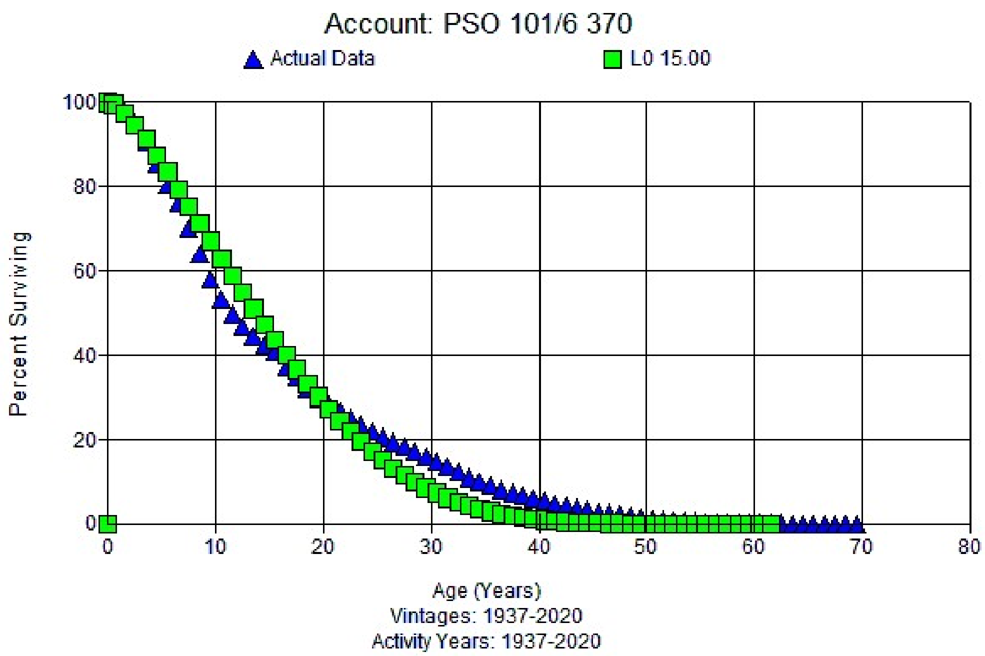
Account 370.16 includes all distribution meters.

The average age of property in this account is 5.49 years.

The current life analysis supports an average service life for this account of 15 years using a R2.0 dispersion.

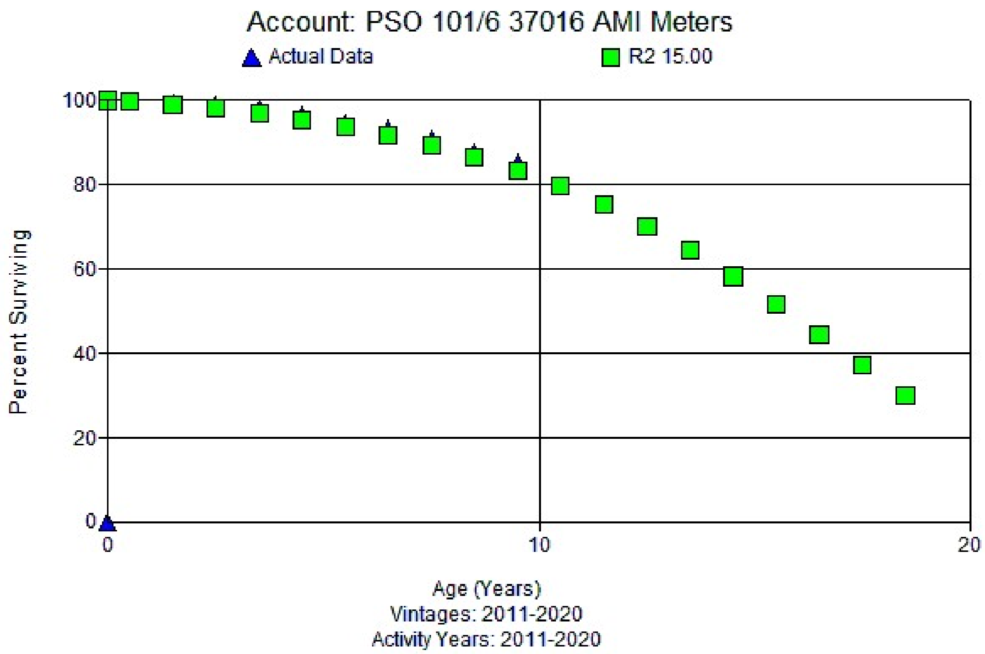
A net salvage rate of 0% rate was approved for Account 370.16 in Cause No. PUD 201700151. It is reasonable to expect that net salvage for the AMI meters in account 37016 will be equal to the net salvage for the conventional meters in account 370. The recommendation is to use a salvage rate of 0% and a removal rate of 30% which yields a net salvage rate of -30%.

PUBLIC SERVICE COMPANY OF OKLAHOMA
DEPRECIATION STUDY AT DECEMBER 31, 2020
DISTRIBUTION GRAPHS



Account 370.00 was analyzed for activity years 1937 to 2020. In 2013 PSO began a program to modernize its existing meters by replacing them with AMI (Advanced Meter Infrastructure) meters. The new AMI meters are recorded in account 370.16. As a result, the balance in account 370.00 is primarily ancillary equipment including current and voltage transformers. The majority of the investment in FERC Account 370 is in 370.16 and the manufacturer of the AMI meters estimated a service life of 15 years. Because of this, a 15 year average service life was approved for both account 370.00 and 370.16 in Cause No. PUD 201700151 and the current study recommends retaining the 15 year service life for account 370.00 following a L0.0 curve.

PUBLIC SERVICE COMPANY OF OKLAHOMA
DEPRECIATION STUDY AT DECEMBER 31, 2020
DISTRIBUTION GRAPHS



Account 370.16 was analyzed for activity years 2011 to 2020. In 2013 PSO began a program to modernize its existing meters by replacing them with AMI (Advanced Meter Infrastructure) meters. The new AMI meters are recorded in account 370.16. The majority of the investment in FERC Account 370 is in 370.16 and the manufacturer of the AMI meters estimate a service life of 15 years. Because of this, a 15 year average service life was approved for both account 370.00 and 370.16 in Cause No. PUD 201700151 and the current study recommends retaining the 15 year service life for account 370.16 but updating to the better fitting R2.0 curve as shown above.

PUBLIC SERVICE OF OKLAHOMA
DISTRIBUTION NET SALVAGE ANALYSIS
DEPRECIATION STUDY AS OF DECEMBER 31, 2020

Account 370, Meters

Year	Retirements	Salvage Amount	Salvage %	Salvage 5 Yr. Avg	Removal Amount	Removal %	Removal 5 Yr Avg	Net Salvg Amt	Net Salvg %	Net Salvg 5 Yr Avg
1985	173,178	0	0.00		6,642	3.84		-6,642	-3.84	
1986	293,566	0	0.00		16,132	5.50		-16,132	-5.50	
1987	405,044	13,553	3.35		15,008	3.71		-1,455	-0.36	
1988	730,231	900	0.12		12,114	1.66		-11,214	-1.54	
1989	621,442	0	0.00	0.65	24,892	4.01	3.36	-24,892	-4.01	-2.71
1990	1,219,643	36,560	3.00	1.56	20,602	1.69	2.71	15,958	1.31	-1.15
1991	148,401	3,818	2.57	1.75	24,418	16.45	3.11	-20,600	-13.88	-1.35
1992	485,715	2,255	0.46	1.36	22,009	4.53	3.25	-19,754	-4.07	-1.89
1993	985,014	2,725	0.28	1.31	43,606	4.43	3.92	-40,881	-4.15	-2.61
1994	1,016,218	6,126	0.60	1.34	51,898	5.11	4.22	-45,772	-4.50	-2.88
1995	0	0	0.00	0.57	0	0.00	5.39	0	0.00	-4.82
1996	0	0	0.00	0.45	0	0.00	4.73	0	0.00	-4.28
1997	2,443,898	159	0.01	0.20	481,316	19.69	12.98	-481,157	-19.69	-12.77
1998	148,356	31,667	21.35	1.05	145,880	98.33	18.82	-114,213	-76.99	-17.77
1999	2,049,188	5,739	0.28	0.81	457,351	22.32	23.37	-451,612	-22.04	-22.56
2000	982,949	6,571	0.67	0.78	316,621	32.21	24.91	-310,050	-31.54	-24.13
2001	1,571,391	1,493	0.10	0.63	453,842	28.88	25.78	-452,349	-28.79	-25.15
2002	550,553	2,987	0.54	0.91	454,721	82.59	34.48	-451,734	-82.05	-33.57
2003	995,193	114	0.01	0.27	455,774	45.80	34.77	-455,660	-45.79	-34.50
2004	1,018,005	143,938	14.14	3.03	1,104,015	108.45	54.41	-960,077	-94.31	-51.38
2005	1,409,966	0	0.00	2.68	845,281	59.95	59.76	-845,281	-59.95	-57.08
2006	2,065,084	88,542	4.29	3.90	1,200,714	58.14	67.24	-1,112,172	-53.86	-63.34
2007	2,153,382	66,661	3.10	3.92	1,901,015	88.28	72.06	-1,834,354	-85.18	-68.15
2008	2,050,232	83,001	4.05	4.39	1,863,429	90.89	79.51	-1,780,428	-86.84	-75.11
2009	2,203,332	250,884	11.39	4.95	1,690,892	76.74	75.91	-1,440,008	-65.36	-70.96
2010	1,679,370	321,756	19.16	7.99	1,574,890	93.78	81.08	-1,253,134	-74.62	-73.09
2011	2,661,092	68,789	2.59	7.36	2,346,784	88.19	87.25	-2,277,994	-85.60	-79.89
2012	1,729,863	386,208	22.33	10.76	2,563,316	148.18	97.24	-2,177,108	-125.85	-86.49
2013	2,781,218	320,485	11.52	12.19	3,316,007	119.23	103.95	-2,995,522	-107.71	-91.76
2014	1,965,706	175,767	8.94	11.77	1,961,757	99.80	108.74	-1,785,990	-90.86	-96.97
2015	37,700,844	37,851,806	100.40	82.84	-1,046,507	-2.78	19.52	38,898,313	103.18	63.33
2016	27,193,204	16,848,464	61.96	77.88	-5,178,326	-19.04	2.26	22,026,789	81.00	75.61
2017	1,303,198	7,997,316	613.67	89.08	12,424,804	953.41	16.18	-4,427,488	-339.74	72.90
2018	1,542,070	0	0.00	90.20	-213,111	-13.82	11.40	213,111	13.82	78.80
2019	152,598	0	0.00	92.35	167,468	109.74	9.06	-167,468	-109.74	83.28
2020	436,595	0	0.00	81.12	-121,301	-27.78	23.11	121,300	27.78	58.01
	104,865,739	**64,718,284**	**61.72%**		**29,403,953**	**28.04%**		**35,314,331**	**33.68%**	

A net salvage rate of -30% rate was approved for Account 370 in Cause No. PUD 201700151. In 2013 PSO began a program to modernize its existing meters by replacing them with AMI (Advanced Meter Infrastructure) meters. As shown by the account history most of the meter change outs occurred in 2015 and 2016. The Commission allowed PSO to recover the remaining value of the older meters through a regulatory asset and the journal entries to record the transfer of the remaining meter cost from account 370 to the regulatory asset were recorded as salvage in the Company's property system. These entries caused a distortion in the Company's account 370 salvage and removal history for account 370. For that reason, the recommendation is to continue to use the -30 net salvage with a salvage rate of 0% and a removal rate of 30%.

PUBLIC SERVICE OF OKLAHOMA
DISTRIBUTION NET SALVAGE ANALYSIS
DEPRECIATION STUDY AS OF DECEMBER 31, 2020

Account 370.16, AMI Meters

Year	Retirements	Salvage Amount	Salvage %	Salvage 5 Yr. Avg	Removal Amount	Removal %	Removal 5 Yr Avg	Net Salvg Amt	Net Salvg %	Net Salvg 5 Yr Avg
2012	45,530	35,014	76.90		25,446	55.89		9,568	21.01	
2013	31,902	77,215	242.04		11,868	37.20		65,348	204.84	
2014	50,057	4	0.01		53,005	105.89		-53,001	-105.88	
2015	245,756	-14,250	-5.80		405,352	164.94		-419,602	-170.74	
2016	359,002	1	0.00	13.38	188,044	52.38	93.37	-188,044	-52.38	-79.99
2017	383,914	0	0.00	5.88	100,472	26.17	70.87	-100,472	-26.17	-64.99
2018	623,709	0	0.00	-0.86	190,316	30.51	56.37	-190,316	-30.51	-57.23
2019	2,328,355	0	0.00	-0.36	675,829	29.03	39.59	-675,829	-29.03	-39.95
2020	1,648,819	0	0.00	0.00	455,775	27.64	30.14	-455,775	-27.64	-30.14
	5,717,045	**97,984**	**1.71%**		**2,106,107**	**36.84%**		**-2,008,123**	**-35.13%**	

A net salvage rate of 0% rate was approved for Account 370.16 in Cause No. PUD 201700151. It is reasonable to expect that net salvage for the AMI meters in account 37016 will be equal to the net salvage for the conventional meters in account 370. The recommendation is to use a salvage rate of 0% and a removal rate of 30% which yields a net salvage rate of -30%.

BEFORE THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA

APPLICATION OF PUBLIC SERVICE COMPANY OF OKLAHOMA, AN OKLAHOMA CORPORATION, FOR AN ADJUSTMENT IN ITS RATES AND CHARGES AND THE ELECTRIC SERVICE RULES, REGULATIONS AND CONDITIONS OF SERVICE FOR ELECTRIC SERVICE IN THE STATE OF OKLAHOMA	)))))))	CAUSE NO. PUD 202100055

PUBLIC SERVICE COMPANY OF OKLAHOMA'S RESPONSE TO OKLAHOMA ATTORNEY GENERAL'S FIRST SET OF DATA REQUESTS TO RESPONDENT PUBLIC SERVICE COMPANY OF OKLAHOMA AG-PSO-1

Question No. AG-PSO 1-3:

General: Please provide working copies of all computer models, spreadsheets, workpapers, and calculations used to prepare any testimony, exhibit, or workpaper filed on April 30, 2021, in this proceeding. Such computer models, spreadsheets, workpapers, and calculations should be provided in Excel-compatible format with all formulas fully functional and intact.

Response No. AG-PSO 1-3:

Please see AG 1-3 Workpapers in the Non-Confidential and Confidential folders submitted for this response..

Witness: Henry C. Steele

Title: Regulatory Case Mgr

Date Response Provided: 5/24/2021

PUBLIC SERVICE COMPANY OF OKLAHOMA

DEPRECIATION STUDY AS OF DECEMBER 31, 2020

DEPRECIATION STUDY WORK PAPERS

PUBLIC SERVICE OF OKLAHOMA
DISTRIBUTION NET SALVAGE ANALYSIS
DEPRECIATION STUDY AS OF DECEMBER 31, 2020

Account 369, Services

Year	Retirements	Salvage Amount	Salvage %	Salvage 5 Yr. Avg	Removal Amount	Removal %	Removal 5 Yr Avg	Net Salvg Amt	Net Salvg %	Net Salvg 5 Yr Avg
1985	616,411	0	0.00		173,943	28.22		-173,943	-28.22	
1986	623,403	8,428	1.35		224,525	36.02		-216,097	-34.66	
1987	551,509	4,638	0.84		220,488	39.98		-215,850	-39.14	
1988	387,349	0	0.00		288,803	74.56		-288,803	-74.56	
1989	371,256	0	0.00	0.51	210,897	56.81	43.87	-210,897	-56.81	-43.36
1990	441,070	984	0.22	0.59	243,168	55.13	50.02	-242,184	-54.91	-49.43
1991	999,296	5,374	0.54	0.40	275,567	27.58	45.04	-270,193	-27.04	-44.64
1992	916,841	3,140	0.34	0.30	323,971	35.34	43.08	-320,831	-34.99	-42.78
1993	781,631	4,123	0.53	0.39	265,969	34.03	37.59	-261,846	-33.50	-37.21
1994	884,159	2,684	0.30	0.41	321,054	36.31	35.54	-318,370	-36.01	-35.13
1995	0	0	0.00	0.43	0	0.00	33.13	0	0.00	-32.70
1996	0	0	0.00	0.39	0	0.00	35.27	0	0.00	-34.89
1997	96,678	1,973	2.04	0.50	2,059,725	2130.50	150.17	-2,057,752	-2128.46	-149.67
1998	68,732	0	0.00	0.44	324,487	472.10	257.75	-324,487	-472.10	-257.31
1999	26,446	0	0.00	1.03	1,105,442	4180.00	1818.89	-1,105,442	-4180.00	-1817.86
2000	302,926	0	0.00	0.40	1,048,971	346.28	917.30	-1,048,971	-346.28	-916.90
2001	148,184	0	0.00	0.31	492,929	332.65	782.55	-492,929	-332.65	-782.25
2002	0	0	0.00	0.00	0	0.00	544.00	0	0.00	-544.00
2003	2,125,979	457	0.02	0.02	97,376	4.58	105.42	-96,919	-4.56	-105.41
2004	126,791	153	0.12	0.02	274,171	216.24	70.77	-274,018	-216.12	-70.74
2005	101,596	0	0.00	0.02	64,400	63.39	37.12	-64,400	-63.39	-37.09
2006	409,162	685	0.17	0.05	350,422	85.64	28.46	-349,738	-85.48	-28.41
2007	343,368	27	0.01	0.04	232,130	67.60	32.78	-232,102	-67.60	-32.74
2008	519,636	458	0.09	0.09	391,170	75.28	87.45	-390,713	-75.19	-87.37
2009	700,087	84	0.01	0.06	589,047	84.14	78.46	-588,963	-84.13	-78.40
2010	551,684	783	0.14	0.08	520,424	94.33	82.54	-519,642	-94.19	-82.46
2011	617,687	797	0.13	0.08	532,982	86.29	82.92	-532,184	-86.16	-82.84
2012	913,023	7,634	0.84	0.30	867,055	94.97	87.84	-859,421	-94.13	-87.55
2013	747,194	46	0.01	0.26	1,004,549	134.44	99.56	-1,004,503	-134.44	-99.29
2014	1,029,229	106	0.01	0.24	368,170	35.77	85.34	-368,065	-35.76	-85.10
2015	960,534	20	0.00	0.20	432,962	45.08	75.12	-432,942	-45.07	-74.91
2016	1,631,330	678	0.04	0.16	427,159	26.18	58.70	-426,481	-26.14	-58.53
2017	1,316,179	4,615	0.35	0.10	418,890	31.83	46.65	-414,275	-31.48	-46.55
2018	2,481,671	18	0.00	0.07	616,037	24.82	30.51	-616,018	-24.82	-30.43
2019	1,002,552	199	0.02	0.07	349,069	34.82	30.36	-348,870	-34.80	-30.28
2020	871,495	654	0.08	0.08	401,560	46.08	30.30	-400,906	-46.00	-30.21
	23,665,089	**48,757**	**0.21%**		**15,517,511**	**65.57%**		**-15,468,754**	**-65.37%**	

A net salvage rate of -70% rate was approved for Account 369 in Cause No. PUD 201700151. The account history shows that net salvage continues to decrease. The recommendation is to change using a salvage rate of 0% and a removal rate of 65% which yields a net salvage rate of -65%.