MEMORANDUM

To: File No. EO-2023-0213, *In the Matter of Evergy Missouri West, Inc. d/b/a Evergy Missouri West's 2023 Integrated Resource Plan Annual Update Filing*

From: Lena M. Mantle, PE, Senior Analyst
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Date: August 31, 2023

Re: Comments of the Office of Public Counsel

Evergy Missouri West, Inc. ("Evergy West") makes several statements in its annual resource plan update report ("annual update") which seem to indicate that it is changing from its current reliance on Evergy Metro and the Southwest Power Pool ("SPP"), respectively, for its capacity and energy needs. It uses terms like "greater self-sufficiency"[1] and states its reasons for why it should have "less market dependence for meeting energy and capacity needs"[2] by explaining that it no longer expects "other utilities or merchant generators to build excess resources that are dispatchable or aligned to the load profile of Missouri West's customers."[3] However, a close look at the workpapers Evergy West provided with this annual update show that Evergy West is continuing its imprudent practice of relying on the SPP energy market sales of other utilities and merchant generators to meet the energy needs of its customers. This memo provides information from Evergy West's own workpapers that, contrary to statements in its annual update, document its plan to continue to rely on those SPP energy market sales of others to meet the needs of its customers.

In addition, this memorandum explains how:

- The capacity balance graph of Evergy West's preferred plan as shown on page 97 of its annual update is misleading;
- **_____ **
- Evergy West's explanation in its annual update regarding the potential acquisition of a portion of the Dogwood Energy Center is incomplete;
- It is unclear how Evergy West is planning for the addition of large customers its Schedule MRT was created to serve;
- Evergy West's baseline projections for energy and demand growth are essentially flat, the cost of its demand-side management and demand response programs are extremely high with little annual reduction in energy usage and demand. Further, the demand and energy savings of these programs will likely happen without them; therefore, for Evergy West's customers paying for the costs of those programs is not justified; and
- Evergy West's annual update is inconsistent with the workpapers that accompany it.

[1] Page 6.
[2] Page 7.
[3] *Id.*

Evergy West Plans to Continue to Rely on the SPP markets and Other Generators

In its workpapers, Evergy West provided the following graph of the results of its preferred plan modeling that shows the average hourly load and the average generation of its plan resources.

Graph 1[4]
Evergy West Preferred Plan ECAA

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_____ ** Since Evergy West has a fuel adjustment clause ("FAC") its strategy of depending on the SPP energy market shifts an incredible amount of that SPP energy market risk onto its customers and, if its FAC sharing mechanism (95/5) remains the same, leaves Evergy West with very little of that risk.

Evergy West states in its annual update that it limited its modeling to only adding one "project" per year. It states it did so based on its "assumed ability to finance these additions,"[5] thus limiting its corporate risk at the expense of its customers.

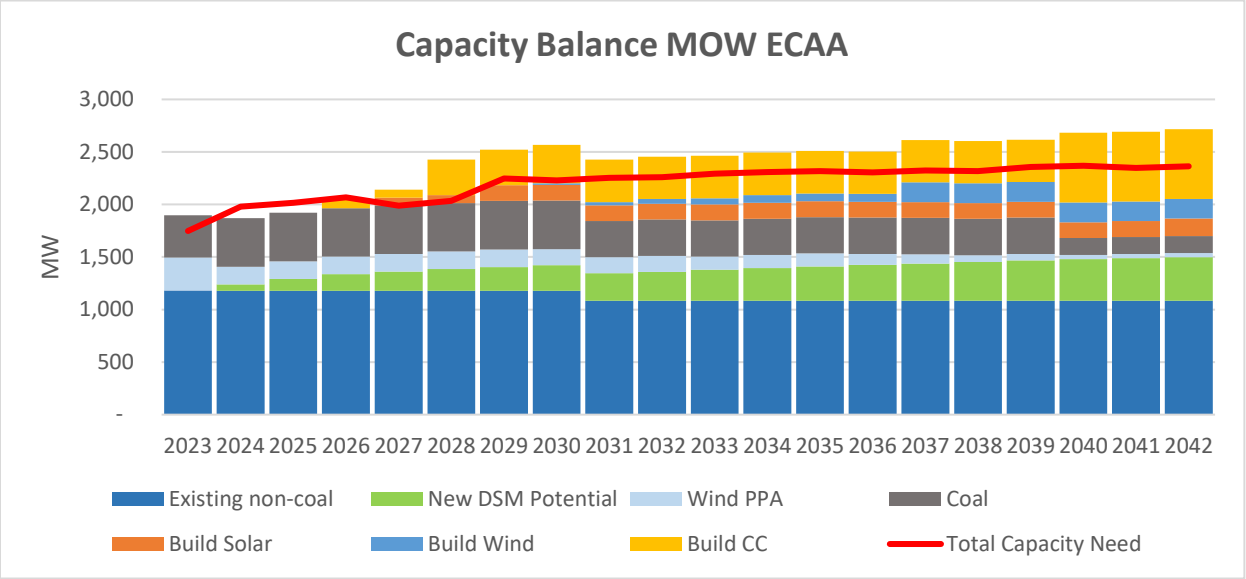
[4] The data used to create this graph is provided as Confidential Attachment A. The graph in this memo is different from the graph on Attachment A in that all of the resources that are not included were removed from the legend and a label was added to the vertical axis.
[5] Page 68.

It is imprudent for Evergy West to place that SPP market risk on its customers while limiting its own financing risks for projects it needs to own to provide sufficient energy resources for its customers.

Capacity Balance Graph of the Preferred Plan is Misleading

On page 97 of its annual update, Evergy West provides the following Graph 2 that shows the summer capacity position of its new preferred plan. Confidential Attachment B to this memorandum provides, from Evergy West's Workpapers, the data Evergy West used to create this capacity balance graph.[6]

Graph 2
Preferred Plan Summer Capacity Composition



This graph seems to show that Evergy West will meet its summer capacity needs every year in the 20-year planning horizon by the capacity of Evergy West's current generation, its planned additions and its demand-side management ("DSM") potential, i.e., it will not need to depend on the capacity of others to meet its capacity requirements.

Evergy West's workpapers provide additional information regarding this graph. As provided in Confidential Attachment B, **_____ _____ ** Capacity purchases do not include energy. A capacity purchase only means that generation capacity is to be available to generate *energy to be sold into the market*. When Evergy West needs the energy that capacity can produce then Evergy

[6] The differences between Graph 2 and the graph provided in Evergy West's report is that in Graph 2 the vertical axis is labeled and resources not included in the preferred resource plan are excluded from the legend. The data used is the same.

West must purchase that energy at the then SPP market prices, and Evergy West receives no revenues from the energy that capacity generates.

Evergy West's workpapers show that **_____ _____ _____ _____ _____ **

Graph 3 below shows the capacity Evergy West needs and the capacity of Evergy West's generating resources in its preferred plan for every year of the 20-year planning horizon.

Graph 3
Balance of Summer Capacity Needed and Planned Generation Resources

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_____ _____ _____ _____

_____ _____ _____ **

Graph 4 below includes the capacity purchases included in Evergy West's preferred resource plan.

Graph 4
Balance of Summer Capacity Needed and Planned Resources

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In its annual update Evergy West discusses changing conditions that it is monitoring. One of the "conditions that Evergy West is monitoring is the possibility of SPP implementing a winter resource adequacy requirements on load-serving SPP market participants such as Evergy West. Given the extreme impact of Storm Uri in February 2021 and the lesser, yet significant, impact of Storm Elliott in December 2022, it is very unlikely that SPP will back down from its current plans to impose winter resource adequacy requirements. Therefore, the changing condition that Evergy should monitor is not whether SPP will impose winter resource adequacy requirements, but what those resource adequacy requirments will be.

One of the changes that Evergy West expects is that SPP will implement a standalone winter reserve margin requirement in the 2025/2026 winter season based on applying the summer reserve

margin to winter load.[7] Its workpapers include its preferred plan winter capacity graph with a 15% reserve requirement provided as Graph 5 below.

Graph 5[8]
Winter Capacity Balance with 15% Reserve Requirement

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** The graph below shows Evergy West's winter capacity balance with the capacity purchases shown as a resource, instead of netted against the capacity needed as shown in the graph above.

[7] Page 101.
[8] The data used to create this graph is provided as Confidential Attachment C. The graph in this memo is different from the graph on Attachment C in that all of the resources that are not included were removed from the legend and a label was added to the vertical axis.

Graph 6
Balance of Winter Capacity Needed and Planned Resources

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Dogwood Energy Center

Evergy West's annual update includes adding ownership of ** ** of the Dogwood Energy Center ("Dogwood") to Evergy's portfolio of resources. Evergy West states that Evergy would *assign* ownership of the 22.2% of Dogwood to Evergy West beginning in 2024.[9] My examination of Evergy West's workpapers fills in some specifics **

[9] On page 97 of its annual update Evergy West states that Dogwood would be added in 2023.
[10] This information was provided to OPC and Staff in a presentation by Evergy West on July 6, 2023.

[redacted] **

Planning for the Addition of Large Customers

Evergy West requested, and the Commission approved, a Special High Load Factor Market rate Tariff (Schedule MKT) in response to multiple potential customers seeking to locate high load factor facilities in Evergy West's service territories.[12] Customers on this rate must have a monthly demand of 150 MW or greater. Adding just one such customer would have a large impact on Evergy West because Evergy West does not have a lot of excess capacity during normal conditions. In fact, just one such customer would have a demand (capacity need) greater than the eventual 143 MW of Dogwood summer capacity that Evergy West is considering purchasing.

It is unclear how Evergy West incorporated this potential for large demand customers in its resource plan.

Evergy West states in the load forecasting section of its annual update:

> Recently announced new large industrial loads (e.g., META) *have not been incorporated into the load forecasts described in this section*. However, the latest projections for these

[11] From workpaper "MOW ECAA Plan – Excel".
[12] EO-2022-0061, *In the Matter of the Application of Evergy Missouri West, Inc. d/b/a Evergy Missouri West for Approval of a Special High Load Factor Market Rate for a Data Center Facility in Kansas City, Missouri,* Application.

> loads are factored into Integrated Analysis for the purposes of determining capacity requirements. (Emphasis added).[13]

In contrast, in the section of its annual update describing changes from its 2021 triennial resource plan filing,[14] Evergy West states that it updated its forecast to include large customers in Missouri and, based on existing economic development pipeline, took into consideration future large customer growth in its load forecast.

Later in its annual update Evergy West states that it included a buffer of 40-100 MW above its current SPP capacity requirement to account for the potential addition of large customers that could exceed this requirement to mitigate the risk of the impact of new large customers coming into its service territory.

I did not find in my review of Evergy West's workpapers any clarity on how Evergy West analyzed the impacts of adding large customers in its service territory.

Evergy West acknowledges the potential impacts of adding large customers, but does not seem to have used a well thought out way of analyzing the impacts in its resource planning process. Being "unknown" is not a good rationale for not being included in a systematic manner in the resource planning process. Most inputs in a resource planning process are unknowns. One of the purposes of resource planning is to prepare for the unknown.

Evergy West should develop a good methodology for forecasting the impact on its resource plans of the large customers that are in its economic development pipeline.

Demand Side Management and Demand Response Projections

The DSM/DR Market Potential Study for Evergy West shows that the baseline projections for demand and energy increase by only a small amount over the period from 2023-2043. The costs for the DSM and DR programs are extremely high and reduce demand and energy by very little annually. Because the baseline projections for energy and demand are basically flat, these programs do not provide customers with benefits that would justify the high costs. Furthermore, the analysis of the savings show that these would likely happen without these programs, and thus the proposed DSM and DR programs are merely a way for the Company to recover costs for shareholders at ratepayers' expense while not properly planning to meet capacity and energy needs.

Evergy Services, Inc. employed Applied Energy Group ("AEG") to model the energy and demand savings projections for future Demand Side Management ("DSM") and Demand Response ("DR") programs in the Evergy West service territory. Part of this modeling process was determining a baseline projection for the demand of Evergy West customers. By projecting the demand, AEG can see how much generation (in MW) will be needed for the years modeled in the projection. This projection serves as a way to measure demand savings from DSM and DR. These DSM and

[13] Page 11.
[14] Page 66.

DR savings show Evergy West how much generation can be avoided by implementing future DSM and DR programs.

The study conducted by AEG looked at different potential demand and energy savings projections based on different assumptions. These are the technical potential, the economic potential, and the maximum and realistic achievable potentials ("RAP"). Because Evergy West chose one of the RAPs, we will focus on that one alone. The "Realistic Achievable Potential…reflects expected program participation given barriers to customer acceptance, non-ideal implementation conditions, and limited program budgets."[15] In short, the RAP scenario takes into account realistic conditions that would affect idealizations about energy and demand savings that assume no restrictions. The RAP scenario is further broken down into RAP+ and RAP-, which assume greater and lesser, respectively, levels of acceptance of program measures. AEG and Evergy West chose the RAP+ scenario as the best option for IRP purposes. Like the RAP scenario, RAP+ assumes 50% standard TOU rate retention and a 4-year customer learning curve for TOU rates. The only change from the RAP scenario is that RAP+ has an assumed participation adjustment 10% higher than the base RAP scenario.

The baseline demand projection, developed by AEG from Evergy data, is basically flat from 2023 to 2043 (see figures 1 and 2 below). Figure 1 shows that over a 10-year period from 2023-2033, AEG does not see a year over year demand increase that goes above 2% (for any of the select years in the chart). During that same 10-year period, the percent change from the first year to the last is 4.4%[16]. This projection shows that Evergy West's forecasted demand will be close to what it is at the present. This is corroborated by Evergy West workpapers showing peak monthly demand projections for the same 10-year period, and for the full 20-year projection from 2023-2043.

Figure1

Table 2-22 Cumulative DR/DSR Potential, Select Years (Summer MW) – Evergy West

	2024	2025	2026	2029	2033
Baseline Projection (MW)	1,962	1,970	1,979	2,009	2,049
Achievable Potential (MW)					
RAP	128	161	187	201	204
MAP	162	184	202	206	208
Achievable Potential (% of Baseline)					
RAP	7%	8%	9%	10%	10%
MAP	8%	9%	10%	10%	10%

[15] Evergy 2023 DSM Market Potential Study, Applied Energy Group, Inc., p. 6.
[16] *Ibid*., p. 34.

Figure 2

Table 2-17 Cumulative Energy Efficiency Potential, Select Years (GWh) – Evergy West

	2024	2025	2026	2029	2033
Baseline Projection (GWh)	8,818	8,849	8,868	8,907	8,926
Cumulative Savings (GWh)					
Realistic Achievable Potential	28	58	88	181	313
Maximum Achievable Potential	47	95	143	286	477
Economic Potential	90	181	274	540	876
Technical Potential	216	429	639	1,217	1,871
Cumulative as % of Baseline					
Realistic Achievable Potential	0.3%	0.7%	1.0%	2.0%	3.5%
Maximum Achievable Potential	0.5%	1.1%	1.6%	3.2%	5.3%
Economic Potential	1.0%	2.0%	3.1%	6.1%	9.8%
Technical Potential	2.4%	4.9%	7.2%	13.7%	21.0%

Figure 2 shows the same flat trajectory for energy (GWh) baseline projection for Evergy West. The year over year percentage change in energy never goes above 0.5%, and the percentage change from the first year to the last is 1.2%.

Figures 3 and 4 below show more clearly just how flat the projected demand and energy projections for Evergy West are. Figure 3 is a graph that plots the forecasted energy sales in GWh over time (from 2023-2043), and Figure 4 is a graph that plots the summer energy in MW over time (from 2024-2043). The forecasts that we are concerned with here are the baseline forecasts for each, because they show very little change in either energy or demand for Evergy West through 2043.

Figure 3

Figure 2-12 Annual DR/DSR Summer Potential – Evergy West

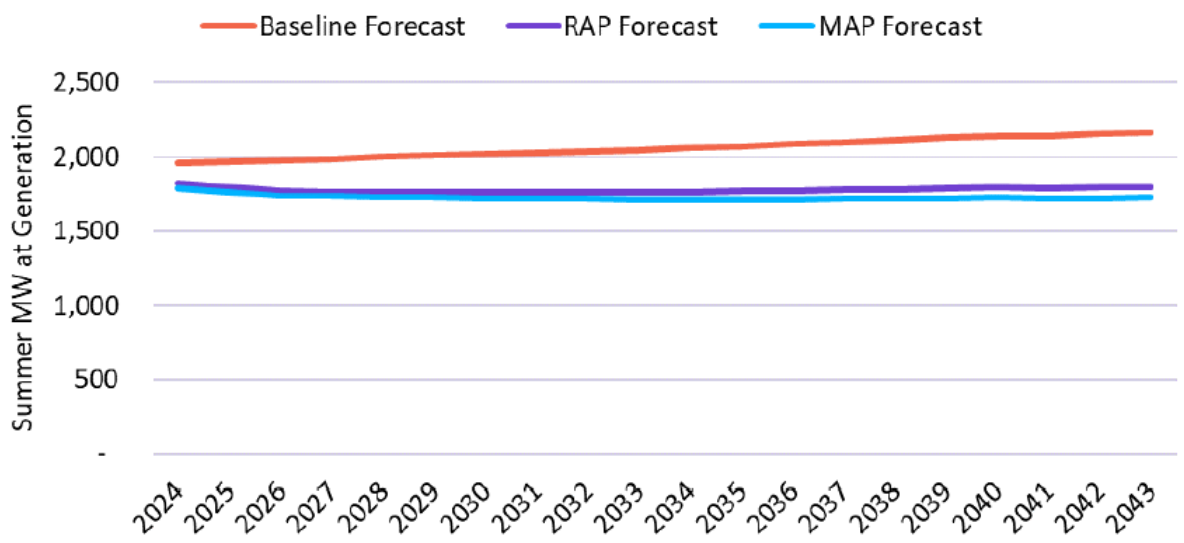

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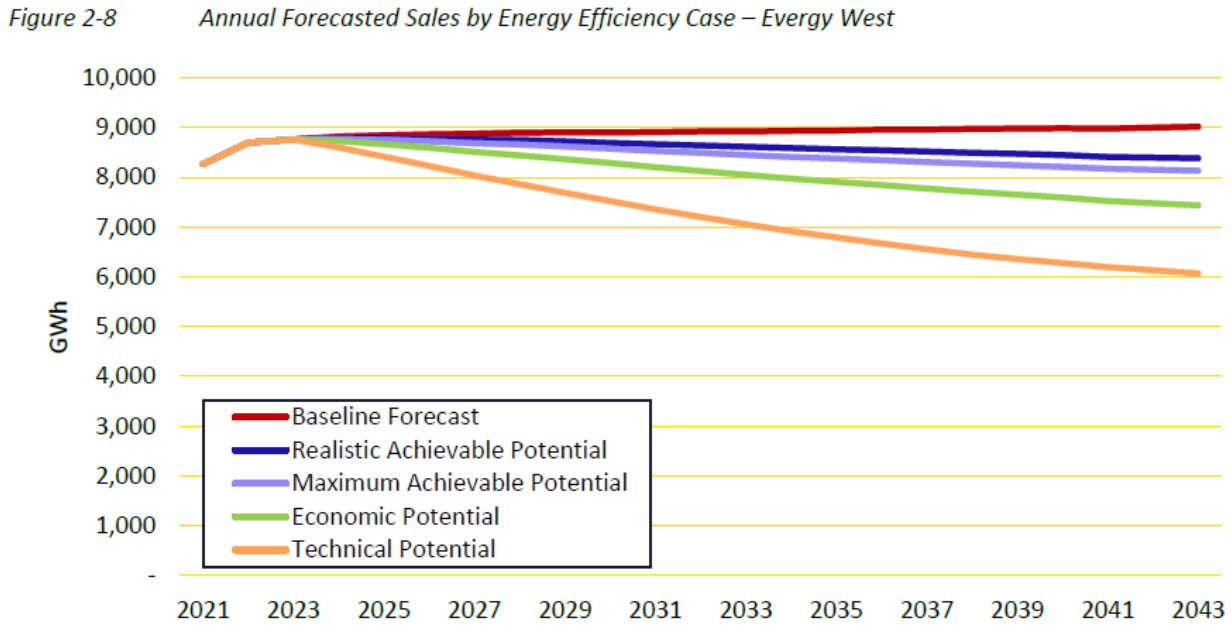
Figure 4



This flat demand and energy trajectory is corroborated by Evergy West workpapers showing peak monthly demand projections for the same 10-year period, and for the full 20-year projection from 2023-2043. The same trend is corroborated even though the numbers and percent changes differ between AEG's projections and Evergy West's.

The reductions in demand and energy projected by AEG are listed in the Evergy Missouri West IRP 2023 Annual Update. Based on the data presented, the RAP+ scenario would have an annual average demand savings of **_____ **, with the high end being **_____ ** in 2043. The RAP+ scenario projected annual energy savings would be **_____ **, with the high end being **_____** in 2043. The annual average cost of the Evergy West DSM/DR programs is **_____**. The total program costs for the 20-year period are **_____**.[17]

These costs are extraordinarily high for a modest reduction in demand and energy per year and over the 20-year period. Because all the projections of demand and energy by both AEG and Evergy West show very little increase, there is no clear reason for incurring huge annual costs over 20 years for DSM and DR. In the Market Potential Study Results for West, in the Energy Efficiency Potential Analysis[18] we are told that "HVAC measures provide the bulk of savings" with "central air conditioner upgrades…the top measure," followed by building shell improvements, and heat pump installations. This means that the demand and energy savings in the residential class is driven by HVAC upgrades and insulation and roof improvements.

[17] Evergy Missouri West IRP 2023 Annual Update. Cumulative demand savings are found on p. 61, cumulative energy savings are found on p. 60, and program costs are found on p. 62.
[18] Evergy 2023 DSM Market Potential Study. This is pdf pp. 132-137, but document pp. 9-14.

HVAC upgrades will continue to be done by customers voluntarily throughout the 20-year period, and will be mostly driven in the next 5 years by federal funds for energy efficiency and electrification. The building shell improvements are already something that is being done by utilities but also by the Missouri Department of Energy and federal assistance programs as well. Furthermore, this section shows that the baseline projection for energy in the residential class mirrors the flat trajectory for Evergy West as a whole. We can see this flat trajectory in baseline projections for the Commercial and Industrial revenue classes in the same document, as well as the majority of savings being driven by HVAC and building upgrades in both the Commercial and the Industrial classes.[19]

Comparing these findings with the above comments regarding the planned shortfall of capacity and energy, it appears that the apparent need for DSM and DR is artificially created, and not much needed anyway. If the Company were to build a combined cycle single shaft, combustion turbine H class, it would receive a net output of roughly 420 MW at an estimated capital cost of roughly $455,000,000.[20] That is **_____** less than the total cost of DSM and DR programs for 20 years. Such a plant would also provide **_____ ** more than the annual average of **_____ ** from DSM and DR programs.

Adding to the problems, it is unclear why the data concerning DSM savings and the data for baseline projections used for the DSM analysis do not match the data in the workpapers for Evergy West. Projections of DSM demand savings in the Evergy West workpapers[21] do not match those shown in the AEG DSM Analysis. The baseline projections used by AEG also do not match those used in these workpapers. Without knowing where the errors are, it is hard to know if the projected savings are accurate.

The Annual Update is Inconsistent with the Workpapers

In addition to the lack of information in the annual update regarding the energy and capacity that would be available to Evergy West if it acquired Dogwood, the workpapers show a jump in the accredited wind capacity of new wind resources by over 100 MW in 2037 with no explanation. Evergy West's annual update does not include any new wind builds after 2033. Evergy West provides no explanation of why it more than doubled its wind capacity in that year.

The average annual load Evergy West used in its workpapers is higher than the load forecasts provided in annual update, as are the peak loads in the capacity balance tables. The demand side potential in the workpapers is actually less than those in the annual update.

The differences make review of workpapers and annual update time consuming and confusing.

[19] Ibid. The Commercial section is pdf pp. 139-143 and document pp. 16-20. The Industrial section is pdf pp. 145-149 and document pp. 22-26.
[20] See Attachment D, pdf pp. 86-92.
[21] MOWest_NSI_Peak Monthly_Annual, Base tab, in the Evergy West workpapers.

Evergy West should provide workpapers that are consistent with its annual update, or update its annual update to be consistent with its workpapers.