



2018-2022 ACTUARIAL REVIEW

CPS Energy Pension Plan

December 2023

Prepared for CPS Energy

Stephen Hassman

857.239.1270

Stephen.Hassman@SpringGroup.com

30 Federal Street, 4th Floor

Boston, MA 02110

TABLE OF CONTENTS

- 1 INTRODUCTION 1**
- 2 KEY SUMMARY OF OUR RESULTS 2**
- 3 INDEPENDENT ACTUARIAL REVIEW 3**
 - 3.1. Data Sources.....3
 - 3.2. Reasonableness of Census Data3
 - 3.3. Reasonableness of Assumptions and Plan Provisions5
 - 3.3.1. Inflation6
 - 3.3.2. Valuation interest rate.....6
 - 3.3.3. Salary scale7
 - 3.3.4. Overtime and incentive pay7
 - 3.3.5. Cost-of living adjustments (COLA).....7
 - 3.3.6. Retirement rates8
 - 3.3.7. Termination rates8
 - 3.3.8. Disability rates8
 - 3.3.9. Mortality rates9
 - 3.3.10. Forms of payment.....9
 - 3.3.11. Accrued vacation benefit enhancement10
 - 3.3.12. Plan provisions10
 - 3.4. Reasonableness of Actuarial Cost Method.....10
 - 3.5. Reasonableness of Asset Valuation Method10
 - 3.6. Reasonableness of Results Comparison11
 - 3.7. Actuarial Valuation Report Compliance with ASOP No. 411
- 4 RELIANCES & LIMITATIONS 15**

1 INTRODUCTION

CPS Energy retained Spring Consulting Group, LLC (Spring) to perform an actuarial review of its actuarial valuation results for the period from 2018 through 2022 for the CPS Energy Pension Plan (the Plan).

House Bill 2664 passed by the 80th Legislature of the State of Texas requires public retirement systems to retain an independent actuary every five years who will review the actuarial valuations, studies, and reports. This report is intended to meet the requirements under House Bill 2664.

The scope of our actuarial review includes:

- The reasonableness of the data used to determine the actuarial accrued liability and normal cost;
- The reasonableness of the assumptions used to determine the actuarial accrued liability and normal cost;
- The reasonableness of the actuarial cost method used to determine the actuarial accrued liability and normal cost of the Plan;
- The reasonableness of the asset valuation method used to determine the actuarial value of assets;
- The reasonableness of the actuarial valuation results for the January 1, 2022 actuarial valuation;
- Adherence to Actuarial Standards of Practice (ASOPs) published by the American Academy of Actuaries

As an independent actuary, we have been asked to express an opinion regarding the reasonableness and accuracy of the valuation data, actuarial assumptions, actuarial cost methods, and actuarial valuation results. This report documents the results of our review. Based on this scope, our review encompassed the following documents prepared by Milliman:

- Actuarial Valuation Reports for the periods as of January 1, 2018 through January 1, 2022, and
- Experience Study and Actuarial Assumptions Review dated June 2017, June 2020, and August 2022

We believe that Spring's review and the content of this report meet the requirements of House Bill 2664 that "every five years the actuarial valuations, studies, and reports of a public retirement system...must be audited by an independent actuary."

2 KEY SUMMARY OF OUR RESULTS

Based on our review, the actuarial valuation, studies, and reports of the Plan for the five-year period from January 1, 2018 through January 1, 2022 are reasonable, used reasonable assumptions, and complied with actuarial guidelines.

We offer the following recommendations based on the valuation methods and assumptions used in the January 1, 2018 through January 1, 2022 valuations:

- In future valuations:
 - The retirement plan actuary should determine participant counts by status consistently across all exhibits of the actuarial valuation report or explain the reason for any differences,
 - The retirement plan actuary should provide average age, average employment service, and average base rate of pay in the actuarial valuation report,
 - The retirement plan actuary should gather historical compensation history for each active member, if available, to provide a more refined projection of benefits and liabilities, and
 - The retirement plan actuary should include documentation of the accrued vacation benefit enhancement in the actuarial valuation report.
- In future experience studies:
 - Each form of payment should be reviewed individually to determine the impact on valuation liabilities for assuming additional forms of payment.

We believe that the items noted above should be addressed and, if necessary, reflected in future valuations.

3 INDEPENDENT ACTUARIAL REVIEW

3.1. Data Sources

CPS Energy and CPS Energy's retirement plan actuary, Milliman, provided the following requested items:

- January 1, 2018 through January 1, 2022 actuarial valuation reports,
- Original January 1, 2022 census data files from CPS Energy that were sent to the actuary for the 2022 actuarial valuation,
- Complete January 1, 2022 census data that was used in the 2022 actuarial valuation, reflecting any data edits that would have been made by the actuary after receiving the original data from CPS Energy,
- Most recent experience study regarding the development of major assumptions such as discount rate, employee turnover and retirement rates, and
- Most recent plan document, plan amendments, and Summary Plan Description (SPD)

3.2. Reasonableness of Census Data

In an actuarial valuation, the retirement plan actuary reviews the data for reasonableness. Typically, each data element is reviewed to make sure it contains reasonable information, and data elements are often matched to the prior year's final valuation data to determine changes in valuation status.

Below is a summary of the comparison between the original census data provided by CPS Energy and the final data used by Milliman for the January 1, 2022 valuation.

	Original Data from CPS Energy	Processed Data from Milliman	Percent Difference
Active Employees			
Number	2,759 ¹	2,759	0.0%
Average Age	46.5	46.6 ²	0.2%
Average Employment Service	16.8	16.8 ²	0.0%
Average Base Rate of Pay	\$88,541 ¹	\$87,356 ²	(1.3)%
Terminated Vested Participants			
Number	265	258	(2.7)%
Retirees and Beneficiaries			
Number	2,773	2,678	(3.4)%
Average Age	70.6	70.7 ²	0.1%
Average Annual Benefit	\$41,266	\$42,789	3.7%

¹ Original data from CPS Energy on Pension Active, Pension Retiree, and Deferred Vested files includes some records that are not in the valuation; in addition, there are some records in the actuarial valuation that were not part of these files from CPS Energy.

² Calculated based upon January 1, 2022 valuation data audit file from Milliman; these data statistics were not provided in Milliman’s January 1, 2022 actuarial valuation report

Small changes in averages of these data elements are common during the valuation process since the retirement plan actuary asks clarifying data questions to CPS Energy and incorporates CPS Energy’s data responses into the valuation. We believe that the differences above are within reason.

Not all of the above statistics are available in or consistent throughout Milliman’s actuarial valuation report. Therefore, Spring calculated the above statistics based on the valuation provided by Milliman. We recommend that the retirement plan actuary:

- Determine participant counts by status consistently across all exhibits of the actuarial valuation report or explain the reason for any differences (i.e., Exhibits 1 and 3),
- Provide average age, average employment service, and average base rate of pay in the actuarial valuation report.

We noticed that only the most recent year of pensionable earnings is used in the actuarial valuation. While this method is reasonable for projecting pensionable earnings into the future, historical pensionable earnings are not accounted for. We recommend that the retirement plan actuary gather historical compensation history for each active member, if available, so that accrued benefits and the attribution of benefits under the entry age normal cost method are more accurately reflected. We do not anticipate that this will have a material impact on the liabilities.

Based on the differences noted in the table above, we believe that the final data used in the actuarial valuation is reasonable as compared to the data provided by CPS Energy.

3.3. Reasonableness of Assumptions and Plan Provisions

There are two broad categories of actuarial assumptions.

- Economic assumptions: The key economic assumptions are the inflation rate, the valuation interest rate (i.e., expected return on retirement plan assets which forms the basis for discounting future benefit payments), and the salary scale. These assumptions affect the amount and timing of future benefit payments as well as the discounted present value of these future benefit payments.

ASOP No. 27, Selection of Economic Assumptions for Measuring Pension Obligations, emphasizes that each economic assumption selected by the actuary should individually satisfy this standard and represent a single point best estimate for that assumption.

- Demographic assumptions: The key demographic assumptions are the assumed retirement rates, withdrawal rates, disability rates and mortality rates. These assumptions affect the amount and timing of future benefit payments. Demographic assumptions should reflect the retirement plan's own experience and an expectation of the future. As such, the Plan's actuary should continue to prepare periodic experience studies to review the current actuarial assumptions and revise them as necessary.

ASOP No. 35, Selection of Demographic and Other Non-Economic Assumptions, requires the actuary to use professional judgment in the selection of demographic and other non-economic actuarial

assumptions considering the relevant universe of possible choices. It also directs the actuary to consider the specific characteristics of the particular benefit provisions and covered group of the retirement plan being valued.

The most recent experience study for the Plan was completed by Milliman in 2020. Spring reviewed the reasonableness of each assumption from January 1, 2018 through January 1, 2022, considering the most recent experience study and any assumption changes given the experience of the Plan.

3.3.1. Inflation

The inflation assumption underlies other economic assumptions for the Plan, such as the long-term investment return, salary scale, and cost-of-living adjustments (COLA).

The retirement plan actuary used an inflation assumption, as measured by CPI-U, of 2.30%.

We believe that the inflation assumption is reasonable.

3.3.2. Valuation interest rate

The long-term investment return is used to discount actuarial liabilities.

The valuation interest rate should represent the long-term investment return expected on the actuarial value of assets. It should take into consideration the real rate of return on the Plan’s assets, the underlying inflation rate, investment management expenses, the Plan’s asset allocation policy, and future long-term expectations.

Using the target asset allocation provided by the investment consultant, Wilshire, Milliman’s Expected Return Model supports a 7.00% long-term investment return assumption. We assume that similar investment consulting backup was provided in prior years. In addition, the March 2023 issue brief of public pension plan investment return assumptions by the National Association of State Retirement Administrators (NASRA), provides a median nominal rate of return of 7.00%. The same issue brief also notes that the projected long-term inflation rate remains below 2.5%.

	CPS Energy Pension Plan
Nominal Rate of Return	7.00%
Inflation	2.30%
Real Rate of Return	4.70%

The retirement plan actuary used a valuation interest rate of 7.00% for the 2022 valuation.

We believe that the valuation interest rate is reasonable.

3.3.3. Salary scale

The salary scale, or assumed annual rates of salary increase, should consider actual salary increases versus expectations as well as internal consistency with the other economic assumptions, including valuation interest rate and inflation.

The Plan's salary scale, applied to the base rate of pay, should consist of general wage inflation assumption, plus real wage growth that reflects expected growth for the economy and industry, plus merit or promotional increases.

The current assumption varies by age, with representative rates of 11.58% at age 25 and 3.55% at age 65, since merit or promotion increases are generally higher at younger ages. The current assumption is supported by the experience study.

We believe that the salary scale assumption is reasonable.

3.3.4. Overtime and incentive pay

The Plan's definition of compensation includes earnings attributable to overtime and incentive pay. The valuation methodology is to assume that these components are a stated percentage of base pay rate. The current assumption for overtime pay is applied to non-exempt employees only and scales down from 16.0% of base pay starting at age 25 to 6.0% of base pay at age 70. The incentive pay is assumed to be a constant percent of base pay that varies by employment category, from Senior Executive to Wage Scale, and does not vary by age. In addition, for incentive pay, a percentage of target bonus paid is applied.

We understand that the current overtime and incentive pay assumptions are consistent with CPS Energy's compensation practices, and we believe that the current overtime and incentive pay assumptions are reasonable.

3.3.5. Cost-of living adjustments (COLA)

On January 1 of each year, annuitants receive a COLA equal to 50% of the CPI-U increase or decrease measured as of the prior September. The COLA assumption is 1.25% per year, compounded annually. The inflation assumption is 2.30%. The current assumption is supported by the experience study.

We believe that the COLA assumption is reasonable.

3.3.6. Retirement rates

These rates are used to determine when retirement benefits are payable. Benefits are unreduced at the Plan's Normal Retirement Age, which is age 65. Reduced benefits are available once an employee completes 25 years of service or attains age 55 and completes 10 years of service. Participants who leave before becoming eligible for a retirement benefit, may be eligible for a future benefit if they are vested upon termination.

The retirement rates are structured to coincide with retirement eligibility and are based on the experience of the Plan. The experience study continues to support a retirement assumption with a maximum retirement age of age 70, which extends beyond the Plan's Normal Retirement Age of age 65, to account for employees who continue to work at CPS Energy beyond age 65.

Rates were updated in the 2020 experience study and were further refined for deferred disabled vested participants in the 2022 Actuarial Assumption Review.

We believe that the retirement rates are reasonable.

3.3.7. Termination rates

A participant who terminates employment with a partially vested benefit (after three years of service) or a fully vested benefit (after seven years of service or attainment of age 40) generally receives a deferred vested pension. Participants terminating with no vested benefit will receive a refund of their contributions with interest.

Rates were updated in the 2020 experience study.

We believe that the termination rates are reasonable.

3.3.8. Disability rates

Upon disablement before retirement, eligible participants receive a benefit similar to the early retirement benefit paid by the Plan, but with less reduction for early commencement. The disability rates increase as age increases. In general, this assumption has a small impact on the valuation results. Additionally, very little retirement plan experience generally exists to set a more refined assumption.

We believe that the disability rates are reasonable.

3.3.9. Mortality rates

The mortality assumption impacts how long pension payments are expected to be made to a participant. The mortality assumption applies both before and after retirement. Generally, gender distinct rates are used. In addition, generational improvements in future mortality rates are often expected.

The Plan's 2022 actuarial valuation uses established mortality tables published by the Society of Actuaries, specifically the Pri-2012 Private Retirement Plans Mortality Tables projected with Mortality Improvement Scale MP-2021, with employee rates before commencement and healthy annuitant rates after commencement (adopted January 1, 2022). Separate tables are used for disabled participants and contingent annuitants. The prior valuation used the same base mortality tables combined with Mortality Improvement Scale MP-2020.

3.3.10. Forms of payment

Upon retirement, participants can elect to receive their benefit in either the normal form of payment, a life annuity with the first 120 months guaranteed if single or a life annuity with 50% continuing to their spouse in the event of the Member's death if married. Alternatively, participants can elect to receive the actuarial equivalent of their benefit in an optional form of payment. This includes annuities with various guaranteed payments and joint-and-survivor percentages.

The 2022 valuation assumption is that a percentage of retiring members in the future elect the following forms of payment:

- Life only – 18%
- 10-year certain and life – 10%
- Joint & 100% survivor – 37%
- Joint & 75% survivor – 18%
- Joint & 50% survivor – 17%

The current assumption is supported by the experience study. We noticed that some existing retirees have elected additional forms of payment, such as combinations of these forms like certain and life benefits with a certain period other than 10 years or joint & survivor benefits with a certain period.

Since the optional forms of payment are determined based upon the Plan's actuarial equivalence definition, we believe that the current form of payment assumption is. However, we recommend that, in the next experience study, each form of payment should be reviewed individually to determine the impact on valuation liabilities for assuming additional forms of payment. We do not anticipate that this recommendation will have a material impact on the liabilities.

3.3.11. Accrued vacation benefit enhancement

Upon retirement, employees with accrued vacation time can receive an enhanced benefit amount. Unused vacation time is paid as a lump sum that impacts the final pay period in the Plan's pensionable earnings definition. The assumption is based on historical plan experience, which is currently 3%.

This assumption is documented in the experience study, but not in the actuarial valuation report. We recommend that Milliman include documentation of the accrued vacation benefit enhancement in the actuarial valuation report.

We believe that the accrued vacation benefit enhancement is reasonable.

3.3.12. Plan provisions

Spring reviewed the summary of plan provisions in each actuarial valuation report from January 1, 2018 through January 1, 2022 and compared these plan provisions to the plan document. Spring is not aware of any principal plan provisions that were not valued.

We believe that the plan provisions valued by the retirement plan actuary are reasonable.

3.4. Reasonableness of Actuarial Cost Method

The actuarial cost method used in the valuations is the individual entry age normal cost method. Costs are attributed as a level percentage of pay.

Entry age normal is the required actuarial cost method under GASB 67 and 68. We believe that the actuarial cost method used to develop the actuarial accrued liability for the Plan is reasonable.

3.5. Reasonableness of Asset Valuation Method

ASOP No. 44, Selection and Use of Asset Valuation Methods for Pension Valuations, provides standards for determination of actuarial value of assets (AVA). The method should bear a reasonable relationship to the market value of assets (MVA), recognize investment gains and losses over an appropriate time period, and avoid systematic bias that would overstate or understate the AVA in comparison to MVA.

The asset valuation method used to develop the AVA for the Plan is the MVA adjusted for a weighted average of asset gains / (losses) over the prior four-year period (also known as five-year smoothing). The AVA cannot be less than 80% nor more than 120% of the MVA.

We believe that the asset valuation method used to develop the Actuarial Value of Assets for the Plan is reasonable.

3.6. Reasonableness of Results Comparison

Spring performed a full replication of Milliman’s liability results from the January 1, 2022 valuation. Based on the data, assumptions, methods, and plan provisions outlined in the January 1, 2022 actuarial valuation report and in the information received by CPS Energy and the retirement plan actuary at the onset of the project, the results of our replication are as follows:

January 1, 2022 Actuarial Valuation Results Comparison

	Milliman	Spring	Percentage Difference
Present Value of Benefits	\$2,726,009,797	\$2,687,379,664	(1.4)%
Actuarial Accrued Liability	\$2,274,878,917	\$2,274,297,101	0.0%
Total Normal Cost	\$46,560,095	\$45,745,386	(1.7)%

Different actuarial firms may use different actuarial valuation systems and methods, which can cause differences in liability calculations between two actuaries. Spring replicated Milliman’s liability and target normal cost measures within a 2% threshold. Generally, liability and target normal cost differences within approximately 2% are considered reasonable.

Since there were few changes in assumptions and plan provisions from earlier reviews and since the difference was within 2%, Spring was able to rely on a previous sample of individual calculations, called test cases, from Milliman to ensure that Milliman valued individual benefit amounts and liabilities under the assumptions disclosed in the actuarial valuation report.

3.7. Actuarial Valuation Report Compliance with ASOP No. 4

ASOP No. 4 provides guidance to actuaries when performing actuarial services with respect to measuring obligations under a pension plan and determining periodic costs or actuarially determined contributions for such plans. Other actuarial standards of practice address actuarial assumptions and asset valuation

methods. This standard addresses broader measurement issues and communication of all of the elements of an actuarial valuation of a pension plan.

A revised ASOP No. 4 standard is effective for any actuarial report that is issued on or after February 15, 2023 or the measurement date in the actuarial report is on or after February 15, 2023. The revised standard does not apply to the years in this actuarial review.

Spring reviewed the 2018 through 2022 actuarial valuation reports to make sure that they were in compliance with the following items specifically stated in ASOP No. 4:

- a. a statement of the intended purpose of the measurement and a statement to the effect that the measurement may not be applicable for other purposes;
- b. the measurement date;
- c. a description of adjustments made for events after the measurement date;
- d. an outline or summary of the plan provisions included in the actuarial valuation, a description of known changes in significant plan provisions included in the actuarial valuation from those used in the immediately preceding measurement prepared for a similar purpose, and a description of any significant plan provisions not included in the actuarial valuation, along with the rationale for not including such significant plan provisions;
- e. the date(s) as of which the participant and financial information were compiled;
- f. a summary of the participant information;
- g. if hypothetical data are used, a description of the data;
- h. a description of any accounting policies or funding elections made by the principal that are pertinent to the measurement;
- i. a description of the methods used to value any significant benefit provisions such that another actuary qualified in the same practice area could make an objective appraisal of the reasonableness of the actuary's work as presented in the actuarial report;
- j. a description of the actuarial cost method and the manner in which normal costs are allocated, in sufficient detail to permit another actuary qualified in the same practice area to assess the significant characteristics of the method;
- k. a description of the cost allocation procedure or contribution allocation procedure including a description of amortization methods and any pay-as-you-go funding. The actuary should disclose the outstanding amortization balance, the amortization payment included in the periodic cost or actuarially determined contribution, and the remaining amortization period for each amortization base along with a disclosure if the unfunded actuarial accrued liability is not expected to be fully amortized. For purposes of this section, the actuary should assume that all actuarial assumptions will be realized and actuarially determined contributions will be made when due;

- l.** a statement indicating that the contribution allocation procedure is significantly inconsistent with the plan accumulating adequate assets to make benefit payments when due, if applicable;
- m.** a qualitative description of the implications of the contribution allocation procedure or plan sponsor's funding policy on future expected plan contributions and funded status. The actuary should disclose the significant characteristics of the contribution allocation procedure or plan sponsor's funding policy, and the significant assumptions used in the assessment;
- n.** a description of the types of benefits regarded as accrued or vested if the actuary measured the value of accrued or vested benefits, and, to the extent the attribution pattern of accrued benefits differs from or is not described by the plan provisions, a description of the attribution pattern;
- o.** a description of whether and how benefit payment default risk or the financial health of the plan sponsor was included, if a market-consistent present value measurement was performed;
- p.** funded status based on an immediate gain actuarial cost method if the actuary discloses a funded status based on a spread gain actuarial cost method;
- q.** if applicable, a description of the particular measures of plan assets and plan obligations that are included in the actuary's disclosure of the plan's funded status. For funded status measurements that are not prescribed by federal law or regulation, the actuary should accompany this description with each of the following additional disclosures:
 - 1.** whether the funded status measure is appropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan's benefit obligations;
 - 2.** whether the funded status measure is appropriate for assessing the need for or the amount of future contributions; and
 - 3.** if applicable, a statement that the funded status measure would be different if the measure reflected the market value of assets rather than the actuarial value of assets.
- r.** a statement, appropriate for the intended users, indicating that future measurements (for example, of pension obligations, periodic costs, actuarially determined contributions, or funded status as applicable) may differ significantly from the current measurement. In addition, the actuarial communication should include one of the following:
 - 1.** if the scope of the actuary's assignment included an analysis of the range of such future measurements, disclosure of the results of such analysis together with a description of the factors considered in determining such range; or
 - 2.** a statement indicating that, due to the limited scope of the actuary's assignment, the actuary did not perform an analysis of the potential range of such future measurements;
- s.** a description of known changes in assumptions and methods from those used in the immediately preceding measurement prepared for a similar purpose. For assumption and method changes that are not the result of a prescribed assumption or method set by another party or a prescribed assumption or method set by law, the actuary should include an explanation of the information and analysis that led to those changes. The explanation may be brief but should be pertinent to the plan's circumstances;

- t. a description of all changes in cost allocation procedures or contribution allocation procedures that are not a result of a prescribed assumption or method set by law, including the resetting of an actuarial asset value. The actuary should disclose the reason for the change and the general effects of the change on relevant periodic cost, actuarially determined contribution, funded status, or other measures, by words or numerical data, as appropriate. The disclosure of the reason for the change and the general effects of the change may be brief but should be pertinent to the plan's circumstances;
- u. a description of adjustments of prior measurements used; and
- v. if, in the actuary's professional judgment, the actuary's use of approximations and estimates could produce results that differ materially from results based on a detailed calculation, a statement to this effect.

We believe that the 2018 through 2022 actuarial valuation reports are in compliance with ASOP 4.

4 RELIANCES & LIMITATIONS

Spring's analysis and projections are based upon a number of assumptions and information from CPS Energy and its service providers.

Other than a general review for reasonableness, Spring has not independently verified any of the information received from CPS Energy or its service providers. Where data was unavailable or incomplete, Spring used reasonable judgement to estimate missing values.

This document is meant to be viewed as a complete document and is to be used by CPS Energy solely for the limited purpose of meeting the requirements under House Bill 2664 passed by the 80th Legislature of the State of Texas.

Spring is not a tax, legal or accounting firm, and we recommend that you review these results with others as needed.

The undersigned consultant is a Fellow of the Society of Actuaries and an Enrolled Actuary and has the credentials required for an actuary under Section 802.101(d). The underlying consultant meets the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein.



Stephen Hassman, FSA EA

Senior Consulting Actuary

Stephen.Hassman@SpringGroup.com | 857.239.1270

Spring Consulting Group, LLC

December 29, 2023