

**EXHIBIT NO. RAM-20
DOCKET NOS. UE-090704/UG-090705
2009 PSE GENERAL RATE CASE
WITNESS: DR. ROGER A. MORIN**

**BEFORE THE
WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION**

**WASHINGTON UTILITIES AND
TRANSPORTATION COMMISSION,**

Complainant,

v.

PUGET SOUND ENERGY, INC.,

Respondent.

**Docket No. UE-090704
Docket No. UG-090705**

**FIRST EXHIBIT (NONCONFIDENTIAL) TO THE
PREFILED REBUTTAL TESTIMONY OF
DR. ROGER A. MORIN
ON BEHALF OF PUGET SOUND ENERGY, INC.**

DECEMBER 17, 2009

1 **PUGET SOUND ENERGY, INC.**

2 **FIRST EXHIBIT (NONCONFIDENTIAL) TO THE**
3 **PREFILED REBUTTAL TESTIMONY OF**
4 **DR. ROGER A. MORIN**

5 **REBUTTAL TO MR. HILL'S TESTIMONY REGARDING**
6 **FLOTATION COST ALLOWANCE**

7 **Q. Assuming *arguendo* that you were advocating for a flotation cost adjustment**
8 **for PSE in this proceeding, is Mr. Hill's testimony consistent with regard to**
9 **flotation costs?**

10 A. No. Mr. Hill's testimony is inconsistent with regard to flotation costs. In a
11 discussion of sustainable growth in the DCF model, Mr. Hill recognizes that
12 "investor expectations regarding growth from external source (sales of stock)
13 must also be considered and examined." Exhibit No. SGH-1HCT at page 33,
14 lines 18-20. Indeed, Mr. Hill quantifies the effect of such issues on company
15 growth in Exhibit No. SGH-7 under the heading "external growth." If one must
16 consider and examine investor expectations regarding growth from external
17 source (sales of stock), then one must also consider and examine the cost of such
18 growth (flotation costs).

19 Mr. Hill's disregard of flotation costs is also inconsistent with (i) Value Line
20 forecasts that show that electric utilities will be issuing new common stock in the
21 future, and (ii) Mr. Hill's own exhibit, which demonstrates that Mr. Hill's

1 comparable companies are expected to issue considerable amounts of new equity.
2 See Exhibit No. SGH-7 under the heading “external growth” for 2009, 2010 and
3 2012-2014.

4 **Q. Why should the authorized ROE generally be adjusted to include an**
5 **allowance for flotation costs?**

6 A. Flotation costs represent the discounts that must be provided to place new
7 securities in the issues of new equity. Flotation costs have a direct and an indirect
8 component. The direct component represents monetary compensation to the
9 security underwriter for (i) marketing/consulting services, (ii) the risks involved
10 in distributing the issue, and (iii) any operating expenses associated with the issue
11 (printing, legal, prospectus, etc.). The indirect component represents the
12 downward pressure on the stock price as a result of the increased supply of stock
13 from the new issue (frequently referred to as “market pressure”).

14 Flotation costs for common stock are analogous to the flotation costs associated
15 with past bond issues, which, as a matter of routine regulatory policy, continue to
16 be amortized over the life of the bond, even though no new bond issues are
17 contemplated. Flotation costs for common stock are not amortized because such
18 securities have no finite life. Therefore, the recovery of flotation cost requires an
19 upward adjustment to the authorized ROE by dividing the expected dividend
20 yield component of the DCF model by $(1 - f)$, where “f” is the flotation cost
21 factor. Please see Appendix A to this Exhibit No. RAM-20 for a discussion of the

1 flotation cost allowance.

2 **Q. Does Mr. Hill explain why would not provide an allowance for flotation costs**
3 **in his recommended ROE?**

4 A. Mr. Hill offers four spurious reasons as to why he would not include an allowance
5 for flotation costs.

6 First, Mr. Hill erroneously asserts that flotation costs on common stocks are
7 analogous to bonds sold at a premium to par value (i.e., the company's cost of
8 debt is less than the coupon rate). *See* Exhibit No. SGH-1HCT at page 58,
9 line 19, through page 59, line 14. In practice, the calculation of the embedded
10 cost of debt accounts for issuance costs and premiums or discounts at the time of
11 issue, and recognizes sinking fund and call provisions. This is because premiums
12 or discounts and flotation costs influence the effective yield to the investor and
13 cost to the utility and are typically allowed to be recovered by regulators.

14 Unlike bonds, however, a utility's book equity account is credited by the net
15 proceeds of a common stock issue after issuance costs and not by the gross
16 proceeds. In other words, the common stock investment recorded on the balance
17 sheet, unlike bond issues, is less than the amount of money actually put up by the
18 investor by the amount of issuance costs, regardless of whether the net issue price
19 is less than, equal to or greater than book value. If the investor is to earn the
20 required return on a reduced book equity base, the allowed return needs to exceed
21 the required return by an amount sufficient to cover the discrepancy between

1 gross and net proceeds from a common stock issue. Moreover, unlike bonds, the
2 allowed ROE is the market, or current, return and not the embedded cost of debt.

3 **Q. What is the second rationale provided by Mr. Hill as to why he would not**
4 **include an allowance for flotation costs?**

5 A. Mr. Hill argues that “the reduction of the book value of stockholder investment
6 due to issuance expenses can occur only when the utility’s stock is selling at a
7 market price at or below its book value.” Exhibit No. SGH-1HCT at page 59,
8 lines 16-18. This argument, however, fails to address the simple fact that, in
9 issuing common stock, a company’s common equity account is credited by an
10 amount less than the market value of the issue. Therefore, the company must earn
11 slightly more on its reduced rate base to produce a return equal to that required by
12 shareholders. The stock’s M/B ratio is irrelevant because flotation costs are
13 present, irrespective of whether the stock trades above, below, or at book value.

14 **Q. What is the third rationale provided by Mr. Hill as to why he would not**
15 **include an allowance for flotation costs?**

16 A. Mr. Hill then argues that the majority of the flotation costs are not out-of-pocket
17 expenses incurred by the issuing utility and, as such, should not be recovered.
18 *See* Exhibit No. SGH-1HCT at page 60, lines 1-7. This argument, if taken to a
19 logical conclusion, would suggest that depreciation expenses associated with the
20 construction of plant should not be recovered because depreciation expenses are
21 not out-of-pocket expenses.

1 In theory, flotation costs could be expensed and recovered through rates as they
2 are incurred. This procedure is not considered appropriate, however, because the
3 equity capital raised in a given stock issue remains on the utility's common equity
4 account and continues to provide benefits to ratepayers indefinitely. The expense
5 and recovery of flotation costs would burden current ratepayers with the full costs
6 of raising capital when the benefits of that capital extend indefinitely. Moreover,
7 as discussed in my pre-filed direct testimony, common stocks, unlike bonds, have
8 no finite life over which flotation costs could be amortized. Therefore, the most
9 appropriate method to recover flotation costs is via an upward adjustment to the
10 authorized ROE.

11 Mr. Hill then makes the argument that the flotation cost allowance is unwarranted
12 because investors factor these costs in the stock price. *See* Exhibit No. SGH-
13 1HCT at page 60, lines 8-16. Such circular reasoning could be used to justify any
14 regulatory policy, regardless of the propriety of the policy. For example, under
15 Mr. Hill's reasoning, it would be appropriate to authorize a clearly confiscatory
16 ROE, such as of 1%, because investors would reflect this return in the stock price.

17 **Q. What is the fourth rationale provided by Mr. Hill as to why he would not**
18 **include an allowance for flotation costs?**

19 A. Mr. Hill's final argument is that "research has shown that a specific adjustment
20 for issuance expenses is unnecessary." Exhibit No. SGH-1HCT at page 61,
21 lines 1-2. In an attempt to support this assertion, Mr. Hill cites a sole source—a

1 “note” in a relatively obscure bulletin. Indeed, Mr. Hill’s statement stands in
2 sharp contrast to (i) most finance textbooks and (ii) the myriad articles published
3 in academic journals documenting and quantifying the flotation cost allowance.

4 **Q. Are you now advocating a flotation cost adjustment for PSE in this**
5 **proceeding?**

6 A. No. For the reasons set forth in my prefiled direct testimony and summarized
7 above, I am not advocating for a flotation cost adjustment for PSE in this
8 proceeding because of the unique ownership structure of PSE. I simply offer
9 these criticisms of Mr. Hill’s arguments against flotation costs, which generally
10 are a proper adjustment to a utility’s ROE.

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APPENDIX A: FLOTATION COST ALLOWANCE

To obtain the final cost of equity financing from the investors' expected rate of return, it is necessary to make allowance for underpricing, which is the sum of market pressure, costs of flotation, and underwriting fees associated with new issues. Allowance for market pressure should be made because large blocks of new stock may cause significant pressure on market prices even in stable markets. Allowance must also be made for company costs of flotation (including such items as printing, legal and accounting expenses) and for underwriting fees.

A. Magnitude of Flotation Costs

According to empirical studies, underwriting costs and expenses average at least 4% of gross proceeds for utility stock offerings in the U.S. (See Logue & Jarrow: "Negotiations vs. Competitive Bidding in the Sale of Securities by Public Utilities", Financial Management, Fall 1978.) A study of 641 common stock issues by 95 electric utilities identified a flotation cost allowance of 5.0%. (See Borum & Malley: "Total Flotation Cost for Electric Company Equity Issues", Public Utilities Fortnightly, Feb. 20, 1986.)

Empirical studies suggest an allowance of 1% for market pressure in U.S. studies. Logue and Jarrow found that the absolute magnitude of the relative price decline due to market pressure was less than 1.5%. Bowyer and Yawitz examined 278 public utility stock issues and found an average market pressure of 0.72%. (See Bowyer & Yawitz, "The Effect of New Equity Issues on Utility Stock Prices", Public Utilities Fortnightly,

1 May 22, 1980.)

2 Eckbo & Masulis ("Rights vs. Underwritten Stock Offerings: An Empirical
3 Analysis", University of British Columbia, Working Paper No. 1208, Sept., 1987) found
4 an average flotation cost of 4.175% for utility common stock offerings. Moreover,
5 flotation costs increased progressively for smaller size issues. They also found that the
6 relative price decline due to market pressure in the days surrounding the announcement
7 amounted to slightly more than 1.5%. In a classic and monumental study published in
8 the prestigious Journal of Financial Economics by a prominent scholar, a market pressure
9 effect of 3.14% for industrial stock issues and 0.75% for utility common stock issues was
10 found (see Smith, C.W., "Investment Banking and the Capital Acquisition Process,"
11 Journal of Financial Economics 15, 1986). Other studies of market pressure are reported
12 in Logue ("On the Pricing of Unseasoned Equity Offerings, Journal of Financial and
13 Quantitative Analysis, Jan. 1973), Pettway ("The Effects of New Equity Sales Upon
14 Utility Share Prices," Public Utilities Fortnightly, May 10 1984), and Reilly and Hatfield
15 ("Investor Experience with New Stock Issues," Financial Analysts' Journal, Sept.- Oct.
16 1969). In the Pettway study, the market pressure effect for a sample of 368 public utility
17 equity sales was in the range of 2% to 3%. Adding the direct and indirect effects of
18 utility common stock issues, the indicated total flotation cost allowance is above 5.0%,
19 corroborating the results of earlier studies.

20 As shown in the table below, a comprehensive empirical study by Lee, Lochhead,
21 Ritter, and Zhao, "The Costs of Raising Capital," Journal of Financial Research, Vol.
22 XIX, NO. 1, Spring 1996, shows average direct flotation costs for equity offerings of

1 3.5% - 5% for stock issues between \$60 and \$500 million. Allowing for market pressure
2 costs raises the flotation cost allowance to well above 5%.

3 **FLOTATION COSTS: RAISING EXTERNAL CAPITAL**

4 (Percent of Total Capital Raised)

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6 Amount Raised	Average Flotation	Average Flotation
7 in \$ Millions	Cost: Common Stock	Cost: New Debt
8		
9 \$ 2 - 9.99	13.28%	4.39%
10 10 - 19.99	8.72	2.76
11 20 - 39.99	6.93	2.42
12 40 - 59.99	5.87	1.32
13 60 - 79.99	5.18	2.34
14 80 - 99.99	4.73	2.16
15 100 - 199.99	4.22	2.31
16 200 - 499.99	3.47	2.19
17 500 and Up	3.15	1.64

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20 **Note: Flotation costs for IPOs are about 17 percent of the value of common stock**
21 **issued if the amount raised is less than \$10 million and about 6 percent if more than**
22 **\$500 million is raised. Flotation costs are somewhat lower for utilities than others.**

23 **Source: Lee, Inmoo, Scott Lochhead, Jay Ritter, and Quanshui Zhao, "The Costs**
24 **of Raising Capital," *The Journal of Financial Research*, Spring 1996.**

25 Therefore, based on empirical studies, total flotation costs including market
26 pressure amount to approximately 5% of gross proceeds. I have therefore assumed a 5%
27 gross total flotation cost allowance in my cost of capital analyses.

28 **B. Application of the Flotation Cost Adjustment**

29 The section below shows: 1) why it is necessary to apply an allowance of 5% to

1 the dividend yield component of equity cost by dividing that yield by 0.95 (100% - 5%)
2 to obtain the fair return on equity capital, and 2) why the flotation adjustment is
3 permanently required to avoid confiscation even if no further stock issues are
4 contemplated. Flotation costs are only recovered if the rate of return is applied to total
5 equity, including retained earnings, in all future years.

6 Flotation costs are just as real as costs incurred to build utility plant. Fair
7 regulatory treatment absolutely must permit the recovery of these costs. An analogy with
8 bond issues is useful to understand the treatment of flotation costs in the case of common
9 stocks.

10 In the case of a bond issue, flotation costs are not expensed but are rather
11 amortized over the life of the bond, and the annual amortization charge is embedded in
12 the cost of service. This is analogous to the process of depreciation, which allows the
13 recovery of funds invested in utility plant. The recovery of bond flotation expense
14 continues year after year, irrespective of whether the company issues new debt capital in
15 the future, until recovery is complete. In the case of common stock that has no finite life,
16 flotation costs are not amortized. Therefore, the recovery of flotation cost requires an
17 upward adjustment to the allowed return on equity. Roger A. Morin, The New
18 Regulatory Finance, Public Utilities Reports Inc., Arlington, Va., 2006, provides
19 numerical illustrations that show that even if a utility does not contemplate any additional
20 common stock issues, a flotation cost adjustment is still permanently required. Examples
21 there also demonstrate that the allowance applies to retained earnings as well as to the
22 original capital.

1 From the standard DCF model, the investor's required return on equity capital is
2 expressed as:

$$3 \quad K = D_1/P_o + g$$

4 If P_o is regarded as the proceeds per share actually received by the company from which
5 dividends and earnings will be generated, that is, P_o equals B_o , the book value per share,
6 then the company's required return is:

$$7 \quad r = D_1/B_o + g$$

8 Denoting the percentage flotation costs 'f', proceeds per share B_o are related to market
9 price P_o as follows:

$$10 \quad P - fP = B_o$$

$$11 \quad P(1 - f) = B_o$$

12 Substituting the latter equation into the above expression for return on equity, we obtain:

$$13 \quad r = D_1/P(1 - f) + g$$

14 that is, the utility's required return adjusted for underpricing. For flotation costs of 5%,
15 dividing the expected dividend yield by 0.95 will produce the adjusted cost of equity
16 capital. For a dividend yield of 6% for example, the magnitude of the adjustment is 32
17 basis points: $.06/.95 = .0632$.

18 In deriving DCF estimates of fair return on equity, it is therefore necessary to
19 apply a conservative after-tax allowance of 5% to the dividend yield component of equity

1 cost.

2 Even if no further stock issues are contemplated, the flotation adjustment is still
3 permanently required to keep shareholders whole. Flotation costs are only recovered if
4 the rate of return is applied to total equity, including retained earnings, in all future years,
5 even if no future financing is contemplated. This is demonstrated by the numerical
6 example contained in pages 7-9 of this Appendix. Moreover, even if the stock price,
7 hence the DCF estimate of equity return, fully reflected the lack of permanent allowance,
8 the company always nets less than the market price. Only the net proceeds from an
9 equity issue are used to add to the rate base on which the investor earns. A permanent
10 allowance for flotation costs must be authorized in order to insure that in each year the
11 investor earns the required return on the total amount of capital actually supplied.

12 The example shown on pages 7-9 shows the flotation cost adjustment process
13 using illustrative, yet realistic, market data. The assumptions used in the computation are
14 shown on page 7. The stock is selling in the market for \$25, investors expect the firm to
15 pay a dividend of \$2.25 that will grow at a rate of 5% thereafter. The traditional DCF
16 cost of equity is thus $k = D/P + g = 2.25/25 + .05 = 14\%$. The firm sells one share
17 stock, incurring a flotation cost of 5%. The traditional DCF cost of equity adjusted for
18 flotation cost is thus $ROE = D/P(1-f) + g = .09/.95 + .05 = 14.47\%$.

19 The initial book value (rate base) is the net proceeds from the stock issue, which
20 are \$23.75, that is, the market price less the 5% flotation costs. The example
21 demonstrates that only if the company is allowed to earn 14.47% on rate base will

1 investors earn their cost of equity of 14%. On page 8, Column 1 shows the initial
2 common stock account, Column 2 the cumulative retained earnings balance, starting at
3 zero, and steadily increasing from the retention of earnings. Total equity in Column 3 is
4 the sum of common stock capital and retained earnings. The stock price in Column 4 is
5 obtained from the seminal DCF formula: $D_1/(k - g)$. Earnings per share in Column 6 are
6 simply the allowed return of 14.47% times the total common equity base. Dividends start
7 at \$2.25 and grow at 5% thereafter, which they must do if investors are to earn a 14%
8 return. The dividend payout ratio remains constant, as per the assumption of the DCF
9 model. All quantities, stock price, book value, earnings, and dividends grow at a 5%
10 rate, as shown at the bottom of the relevant columns. Only if the company is allowed to
11 earn 14.47% on equity do investors earn 14%. For example, if the company is allowed
12 only 14%, the stock price drops from \$26.25 to \$26.13 in the second year, inflicting a
13 loss on shareholders. This is shown on page 9. The growth rate drops from 5% to
14 4.53%. Thus, investors only earn $9\% + 4.53\% = 13.53\%$ on their investment. It is
15 noteworthy that the adjustment is always required each and every year, whether or not
16 new stock issues are sold in the future, and that the allowed return on equity must be
17 earned on total equity, including retained earnings, for investors to earn the cost of
18 equity.

1 **C. Capital Attraction and Market-to-Book Ratios**

2 This section illustrates the adverse consequences for both ratepayers and
3 stockholders of selling stock below book value ($f < 0$) by means of a numerical example.

4 Consider a utility with \$500 of plant investments, all equity-financed, with 20
5 common shares outstanding. The book value per share is therefore $\$500/20$, or \$25. The
6 allowed rate of return is 10%, and the market's required return is 20%.

7 Earnings will total $10\% \times \$500 = \50 , and earnings per share will be $\$50/20 =$
8 $\$2.50$. The stock price is therefore $\$2.50/.20 = \12.50 , or half of the book value per
9 share since the allowed return is one half of the required return. The M/B is $M/B = 0.50$.

10 What happens if the utility requires an additional \$500 of assets to be financed by
11 a \$500 stock issue with each share selling for \$12.50? The company is allowed to earn
12 an additional \$50 on this incremental investment ($.10 \times \$500$), for a total earnings figure
13 of \$100. To finance an amount of \$500 at \$12.50 per share requires the issuance of 40
14 additional shares bringing the total number of shares from 20 to 60. Earnings per share
15 decline to $\$100 / 60 = \1.67 , and the price of each share drops to $\$1.67 / .20 = \8.55 in
16 order for shareholders to continue earning 20%. The book value per share drops from
17 $\$25$ to $\$1000/60 = \16.67 . Summarizing the results in tabular form:

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	<u>BEFORE</u>	<u>AFTER</u>
Equity capital	\$500	\$1000
Number of shares	20	60
Book value per share	\$25.00	\$16.67
Earnings (10% of equity)	\$50	\$100
Earnings per share	\$2.50	\$1.67
Market price (20% return)	\$12.50	\$8.35
Market-to-book ratio	0.50	0.50

Therefore, sale of stock when the M/B ratio is less than one dilutes the share in ownership of the original holders of the 20 shares. The book value for each share they own declines from \$25 to \$16.67, since the new equity capital base is now shared among 60 shares. The market price drops by 52% as a consequence of the equity dilution.

The above example does not imply that utilities cannot in fact raise capital when share prices are below book value, but that they can only do so at the expense of existing shareholders. When expected earnings are less than investors' requirements and a sale of stock occurs, new shareholders can only expect to gain their return requirement at the expense of the old shareholders. The market recognizes the potential dilution impact and reprices the shares downward as protection of the required return. Systematic dilution of equity imposed on shareholders, because of deficient earnings, endangers the success of the next stock issue. Investor uncertainties as to whether reasonable earnings will be allowed are raised, thereby increasing the cost of debt and equity.

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ASSUMPTIONS:

ISSUE PRICE = \$25.00
 FLOTATION COST = 5.00%
 DIVIDEND YIELD = 9.00%
 GROWTH = 5.00%

EQUITY RETURN = **14.00%**
 (D/P + g)
 ALLOWED RETURN ON EQUITY = **14.47%**
 (D/P(1-f) + g)

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r	COMMON	RETAINED	TOTAL	STOCK	MARKET/ BOOK	EPS	DPS	PAYOUT
	STOCK	EARNINGS	EQUITY	PRICE	RATIO			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	\$23.75	\$0.000	\$23.750	\$25.000	1.0526	\$3.438	\$2.250	65.45%
2	\$23.75	\$1.188	\$24.938	\$26.250	1.0526	\$3.609	\$2.363	65.45%
3	\$23.75	\$2.434	\$26.184	\$27.563	1.0526	\$3.790	\$2.481	65.45%
4	\$23.75	\$3.744	\$27.494	\$28.941	1.0526	\$3.979	\$2.605	65.45%
5	\$23.75	\$5.118	\$28.868	\$30.388	1.0526	\$4.178	\$2.735	65.45%
6	\$23.75	\$6.562	\$30.312	\$31.907	1.0526	\$4.387	\$2.872	65.45%
7	\$23.75	\$8.077	\$31.827	\$33.502	1.0526	\$4.607	\$3.015	65.45%
8	\$23.75	\$9.669	\$33.419	\$35.178	1.0526	\$4.837	\$3.166	65.45%
9	\$23.75	\$11.340	\$35.090	\$36.936	1.0526	\$5.079	\$3.324	65.45%
10	\$23.75	\$13.094	\$36.844	\$38.783	1.0526	\$5.333	\$3.490	65.45%

	5.00%	5.00%	5.00%	5.00%
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Yr	COMMON STOCK	RETAINED EARNINGS	TOTAL EQUITY	STOCK PRICE	MARKET/BOOK RATIO	EPS	DPS	PAYOUT
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
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1	\$23.75	\$0.000	\$23.750	\$25.000	1.0526	\$3.325	\$2.250	67.67%
2	\$23.75	\$1.075	\$24.825	\$26.132	1.0526	\$3.476	\$2.352	67.67%
3	\$23.75	\$2.199	\$25.949	\$27.314	1.0526	\$3.633	\$2.458	67.67%
4	\$23.75	\$3.373	\$27.123	\$28.551	1.0526	\$3.797	\$2.570	67.67%
5	\$23.75	\$4.601	\$28.351	\$29.843	1.0526	\$3.969	\$2.686	67.67%
6	\$23.75	\$5.884	\$29.634	\$31.194	1.0526	\$4.149	\$2.807	67.67%
7	\$23.75	\$7.225	\$30.975	\$32.606	1.0526	\$4.337	\$2.935	67.67%
8	\$23.75	\$8.627	\$32.377	\$34.082	1.0526	\$4.533	\$3.067	67.67%
9	\$23.75	\$10.093	\$33.843	\$35.624	1.0526	\$4.738	\$3.206	67.67%
10	\$23.75	\$11.625	\$35.375	\$37.237	1.0526	\$4.952	\$3.351	67.67%
			4.53%	4.53%		4.53%	4.53%	

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