BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF SOUTH DAKOTA

In the Matter of the Application of South Dakota Intrastate Pipeline Company for Authority to Increase its Natural Gas Transportation Rate

Docket No. NG17-009

DIRECT TESTIMONY

AND EXHIBITS

OF

DR. MARC HELLMAN

ON BEHALF OF SOUTH DAKOTA INTRASTATE PIPELINE COMPANY

November 20, 2017

TABLE OF CONTENTS

Page

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DIRECT TESTIMONY OF MARC HELLMAN

I. INTRODUCTION AND SUMMARY

Q. Please state your name and business address.

A. My name is Marc Hellman. My business address is 2760 Eagle Eye Ave NW, Salem, Oregon 97304.

Q. What is your occupation and by whom are you employed?

A. I am an economist employed as an independent consultant retained by the South Dakota Intrastate Pipeline Company ("SDIPC") for this docket.

Q. Please describe your education.

A. I have a Masters and PhD in Economics awarded by Claremont Graduate School and a Bachelor's degree in both Economics and Mathematics awarded by California State Polytechnic University, Pomona.

Q. Please describe your professional experience.

A. I have over 38 years of experience in various capacities working for the Public Utility Commission of Oregon with the last twenty years or so in a management capacity, Administrator of the Energy Rates, Finance and Audit Division, leading economists, accountants and financial analysts in the review of utility general rate filings and rate

proposals, financing and affiliated interest applications, property sales and mergers and acquisitions. I have also provided consulting services with my most recent projects for the Commonwealth Utilities Corporation with headquarters in Saipan.

In addition, from 2008 through 2016, I was an economics instructor for Oregon State University Economics Department, and taught principles of microeconomics, macroeconomics and undergraduate and graduate level energy economics.

Q. On whose behalf are you testifying?

A. SDIPC.

Q. What is the purpose of this testimony?

A. The purpose of my testimony is to address three issues: (a) SDIPC Management Fee; (b) the DIPC cost of equity and overall rate of return; and, (c) a decommissioning charge to fund future decommissioning costs.

II. SDIPC MANAGEMENT FEE

Q. Please discuss the issue of a SDIPC Management Fee.

A. This docket is somewhat unique where there is essentially no pipeline rate base when rates are to go into effect. The pipeline investment is the principal investment made by the company and the focus of SDIPC's operations. When the South Dakota Public Utilities Commission approved the original 25-year contract between SDIPC and MDU, the Commission directed that the pipeline investment be depreciated over the 25-year contract term. Therefore, the follow-on rates that the Commission will order in this docket cover a time period over which the pipeline has been fully depreciated. The lack of any pipeline rate base gives rise for the need of, and justification for, a Management Fee.

Q. Has this situation occurred before with any other utility?

A. Yes. The case that I have seen cited is the Tarpon case 57 FERC ¶ 61,371, a case decided in 1991. I have attached the FERC order as Exhibit (MH-D-1).

Q. What did FERC decide to do in the Tarpon case?

A. While the order reads for itself, I conclude that FERC decided that in place of the typical return on rate base FERC authorized a management fee. A key section of the FERC order reads as follows (at pg. 33):

> *"…a management fee is appropriate in light of the fact that Tarpon's investment in its transmission plant is now fully depreciated. As Oryx points out, the fee is an operator's fee to compensate Tarpon's owners for the risks of continuing to operate the pipeline and to provide incentive for efficient operations. While Tarpon's owners receive salaries for the daily management of the pipeline, they continue to have an entrepreneurial interest in the pipeline. Absent an owner's fee, they would have only limited incentives to manage the operations of the pipeline on an efficient basis, because the actual return on equity is so small once Tarpon's gas transmission plant has been depreciated……The conclusion here is therefore consistent with the Commission's orders in Green Canyon Pipe Line Co., supra, and Kern River Gas Transmission Company."*

The case here with SDIPC is quite analogous where the pipeline is fully depreciated and yet there still remains the risk associated with operating the pipeline and so a management is warranted.

Q. Please discuss how you derive the SDIPC Management Fee.

A. I propose a SDIPC Management Fee constructed using the same framework as the FERC Tarpon case. That is, I take the original gross plant for the pipeline, take the average plant balance, apply a ten percent factor, and then apply the cost of capital to this balance, and gross up that value to equate it to the pre-tax return.

Q. Do you have a reference or quote to the FERC order that provides an explanation or discussion of its calculation?

A. Yes. At pg. 35, the FERC order reads,

> *"…The Commission will therefore adopt formula supported by the record here. This is an owner's that applies the current pre-tax cost of capital to 10 percent of the historical average rate base…"*

Q. Do you have a table that provides this SDIPC Management Fee derivation?

A. Yes. The table below shows this derivation.

Table 1

	Facility Gross Plant Investment		Total Gross Plant Investment	Average Rate Base	Apply Tarpon 10% Factor	Apply SDIPC Cost of Capital	Apply 1/0.6 Gross Up Factor
	Pipeline	Pig Valve	(A)+(B) = C	D = C/2	E = 0.1*C	F=E*0.0891	F=E/0.6
	(A)	(B)					
Dollars	$13,703,564	$87,617	$13,791,181	$6,895,591	$689,559	$61,440	$102,400

Q. What does application of FERC's Tarpon result in with respect to the SDIPC Management fee?

A. The SDIPC Management Fee is $102,400. This is based on transmission pipe investment totaling $13,791,181, yielding an average rate base of $6,895,591. The cost of capital is

8.91 percent as established in my next section of testimony. The gross up factor is 1/.6 or 1.667.

III. SDIPC COST OF EQUITY and OVERALL RATE OF RETURN

Q. What is a fair and reasonable cost of equity for SDIPC?

A. A fair and reasonable cost of equity for SDIPC is 10.0 percent.

Q. How did you derive this value?

A. This cost of equity is based on my analysis for typical cost of equity authorized for other regulated natural gas companies.

Q. What is the standard for identifying what represents a reasonable return on equity?

A. The standard is usually cited to the Hope and Bluefield legal cases.[1] In Bluefield, we have the following principles established:

- "The return should be reasonably sufficient to assure confidence in the financial soundness of the utility and should be adequate, under efficient and economical management to maintain and support its credit and to enable the utility to raise the money necessary for the proper discharge of its public duties."[2]
- A fair return can change along with economic conditions and capital markets.

In Hope, we have the following principles established:

- "[T]he return to the equity owner should be commensurate with returns on investments in other enterprises having corresponding risks. That return,

[1] *Bluefield Waterworks & Improvement Co. v. Public Service Commission of the State of West Virginia*, 262 U.S. 679 (1923) ("Bluefield"); and *Federal Power Commission v. Hope Natural Gas Co.*, 320 U.S. 591 (1944) ("Hope").
[2] *Bluefield*, 262 U.S. at 692.

moreover, should be sufficient to assure confidence in the financial integrity of the enterprise, so as to maintain its credit and attract capital."[3]

- It is the end result that is important and not the methods used to arrive at the rates.

Q. How do analysts typically arrive at an estimate for the equity component of the cost of capital?

A. In estimating the cost of equity for larger regulated utilities, analysts typically undertake discounted cash flow analysis, capital asset pricing methodologies, and bond-risk premiums to analytically derive the cost of capital.

Q. Would such an analysis make sense to conduct for SDIPC?

A. No. Even for a moderately sized utility, undertaking this analysis can be costly in comparison to the effect it has with regards to change in revenue requirements. For a company like SDIPC, hiring a consultant to do these involved studies would be very costly and, as described in detail below, unlikely to deliver sufficient value to either SDIPC (in terms of financial impact) or SDIPC's ratepayer (in terms of rate case expense). I will discuss this point in more detail later on in this testimony.

Q. Is there another consideration as well?

A. Yes, SDIPC has only a small remaining rate base included in this case as the pipeline investment will be fully depreciated at the end of the 25-year term of the MDU/SDIPC contract. While typical utilities might have billions of dollars of rate base by which to litigate over for the appropriate return of capital, that is not the case for SDIPC. In fact, the use of the cost of equity estimate is to apply in the calculation of the SDIPC Management Fee as discussed above as well as calculating the rate of return on the relatively small remaining investment base.

[3] *Hope*, 320 U.S. at 603.

Q. How did you arrive at an estimate of 10 percent for the equity component of the cost of capital?

A. For the ten percent cost of equity recommended in this proceeding, I reviewed two documents. The first document is a report by the Bank of America, in which it reviewed cost of capital issued by regulatory commissions across the United States. It finds that on average, for 2016, state regulatory commissions authorized rate of returns for the cost of equity at 9.5 percent. This document is attached as Exhibit (MH-D-2) to my testimony.

The second document was provided in a formal general rate case investigation in Oregon that reviews cost of equity decisions across the United States. This document is attached as Exhibit (MH-D-3) to this testimony. It is a report noting that in 2016, the average return on equity authorized for natural gas companies in the United States was 9.5 percent. Based on a review of these documents, it is clear that two separate studies looking at the same issue found that state regulatory commissions adopted, on average, a cost of equity value of 9.5 percent.

Q. If in Oregon, a 9.4 percent return on equity has been viewed as fair and reasonable, and in your attached exhibit it states on average a 9.5 percent has been authorized by Commissions around the United States, why do you recommend a 10 percent return on equity?

A. I recommend a 10 percent return on equity due to the small size of SDIPC. I have attached as Exhibit (MH-D-4) a copy of testimony offered by Bente-Villadsen that discusses the basis for a small-company adjustment. (See beginning page 51 of that testimony.) It is clear from that testimony, given the size of SDIPC that a 50 basis point adjustment is well within the range of reasonableness.

Q. There appears to be a downward trend in the cost of equity authorized by Commissions. Why should that trend not continue?

A. In my view, while the trend is true and observable, it will not continue.

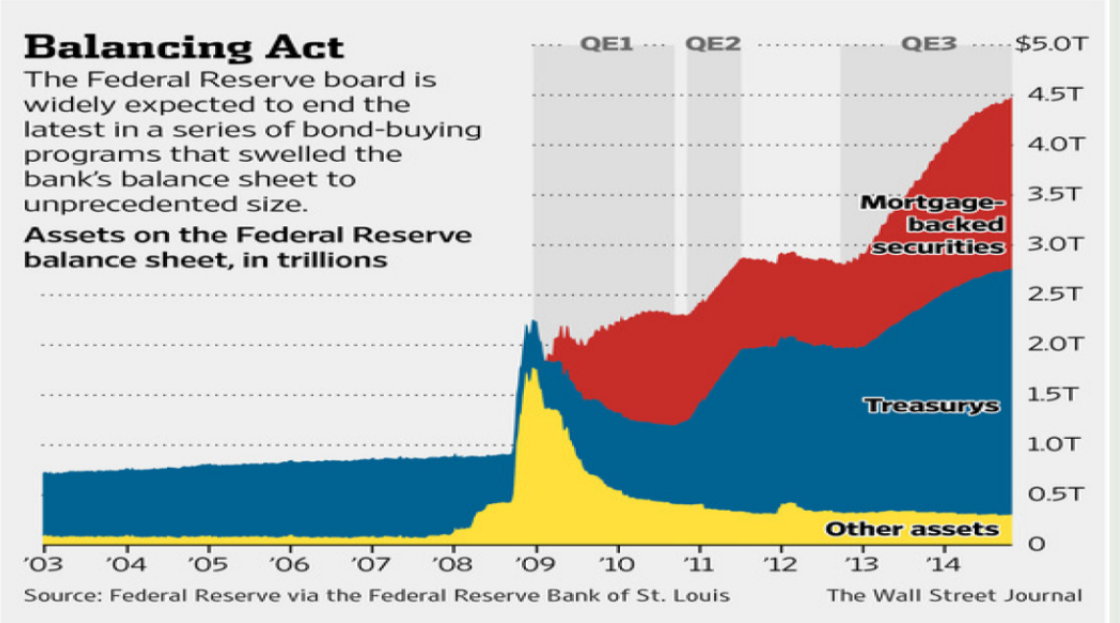
Q. Why not?

A. For two reasons. First, the Federal Reserve has announced its intention to raise interest rates and already has begun doing so. The trend in interest rates is likely for the rates to move higher in the near term. Janet Yellen in late September of 2017 said that the Federal Reserve remains on track to raise interest rates again in 2017 and such a move would likely tend to raise interest rates in the near term.[4] I consider this a response to the improving economy and stubbornly low inflation.

The second reason has to do with the Federal Reserve Balance sheet. During the fiscal crises, the Federal Reserve embarked on a bond and mortgage buying program. When the dust settled, the Federal Reserve had accumulated trillions of additional securities. An illustration of the financial crises Federal Reserve buying action is provided on the following page.

[4] https://www.nytimes.com/2017/09/26/us/politics/janet-yellen-fed-interest-rates-inflation.html

The Fed's Actions and the financial crisis of 2008



The Federal Reserve has begun to unwind these transactions, which is in essence "tightening" the money supply that will put upward pressure on interest rates as well. That is why, in my opinion, the downward trend in interest rates will come to an end and that will be reflected by regulatory commissions as well.

Q. Do you have anything else with regards to cost of equity estimation?

A. Yes. Another method of estimating the cost of equity is called the risk premium analysis where analysts look at cost of equity decisions issued in other states and then adjust the cost of equity values by the change in corporate bond yields. Table 2 below provides the Federal Reserve data for Aaa bonds for 2016 and data available for 2017, which is through October. It shows that the bond rates have edged slightly higher.

Table 2

2016 average	3.67
2017 average	3.78

If we observe that in 2016 the average return on equity authorized by regulatory Commissions was 9.5 percent, we could adjust that value by looking at the change in corporate bond yields from 2016 to end of 2017. It appears that corporate bond yields have increased roughly 11 basis points from average 2016 values. If you added the 11 basis points to the 9.5 percent authorized by regulatory commissions in the United States results in a 9.61 percent return. This again shows that when adding 50 basis points for SDIPC being a very small company, that the requested 10 percent return on equity is fair, just and reasonable.

Q. Given your role as Administrator of the Energy Rates, Finance and Audit Division for the Public Utility Commission of Oregon, do you have any insight into how that commission addressed cost of equity issues?

A. Yes. I note that in Oregon, the Commission has recently adopted cost of equity values equal to 9.4 percent. These values were the result in the two most recent natural gas orders--UG 305, Order No. 16-477, issued on December 12, 2016, and the second is UG 325, Order No. 17-344, issued on September 13, 2017.

The UG 305 docket is of interest for two reasons. First, the utility in that case was Cascade Natural Gas, which is a subsidiary of MDU. Second, in that docket the utility approached the interested parties to see if there was a way to avoid the administrative cost of litigating the cost of capital. As I noted before, litigating cost of capital is costly and Cascade was interested in reducing rate case expense by seeking a settlement of the cost of capital, including the cost of equity. As the Administrator of the Energy Rates, Finance and Audit Division, I was in charge of leading staff review of utility general rate filings and I was authorized to engage in discussions in this regard.

To this end, we convened meetings with interested parties. And we worked out a reasonable resolution on a 9.4 percent cost of equity, which my staff said they could defend. Therefore, I directed my staff to provide a thorough analysis demonstrating that a 9.4 percent return on equity is fair and reasonable.

Q. How do customers benefit by not spending dollars to hire a cost of capital expert?

A. The costs a utility incurs in presenting and defending its general rate filing is a standard cost of business that is recoverable in rates as part of rate case expense. Estimates of future rate case costs can be developed from costs incurred in prior general rate case filings. Typically in Oregon, we would take the general rate case expense and amortize it over a few years, assuming a utility does not submit a general rate case each year. If the utility avoids hiring a consultant whose primary focus is cost of capital, then that administrative rate case cost is not included in the general rate case expense. Furthermore, commission staff resources are not needed to rebut and respond in the level that could be required of a full-blown litigated cost of capital. Those "saved" resources can be used elsewhere.

Q. In this docket, what is the cost of equity being used for?

A. The cost of equity is being used to derive the SDIPC Management fee and in calculating the overall rate of return on the minor remaining investment base.

Q. Please move on to deriving the SDIPC cost of capital.

A. To derive the cost of capital, I looked in to the rate base component and applied the cost of equity to all components except for the potential for new truck loans.

In discussing the issue with SDIPC, I became aware that there are two trucks to be purchased in the future covering the time period over which the rates would be in effect.

One purchase is for a dump truck valued at $95,000; and, the second is a diesel truck valued at $60,000. This yields a total of $155,000. Also in looking over recent truck transactions, it appears the company uses a combination of cash and bank loans. For purposes of this calculation, I will assume that half of the truck purchase is financed with cash and the other half through a bank loan.

Q. What bank loan did you assume?

A. I assumed 3.9 percent as that is the rate most recently obtained for a new truck loan.

Q. Do you have a table that shows the cost of capital derivation?

A. Yes, the table below shows the SDIPC cost of capital.

Table 3

Plant	Rate Base Value	Percent of Capitalization	Interest Rate	Weighted Return
Working Cash	$174,092	40.17%	10.00%	4.02%
Office and Operations	$73,000	16.84%	10.00%	1.68%
Trucks outstanding without loans	$77,500	17.88%	10.00%	1.79%
Trucks with outstanding loans	$77,500	17.88%	3.900%	0.70%
Other	$31,306	7.22%	10.00%	0.72%
	$433,398	100.00%		8.91%
		% debt	17.88%	
		% equity	82.12%	

The rate base values are consistent with SDIPC's amended filing. The SDIPC cost of capital equals 8.91 percent.

Q. Is there another way to estimate the cost of capital?

A. Yes. Another approach is to look at the company capitalization instead of outstanding net plant balances. The audit and financial statement prepared by CPA David

McCullough, derives shareholder equity of $2,005,136. Using that valuation yields the following cost of capital:

Table 4

		Percent of Capitalization	Interest Rate	Weighted Return
Shareholder Equity	$2,005,136	96.28%	10.00%	9.63%
Truck Debt	$77,500	3.72%	3.90%	0.15%
Total	$2,082,636	100.00%		9.77%

While I am recommending the 8.91 percent cost of equity, the 9.77 percent is also supportable. However, I am recommending the lower value to be conservative.

Q. For your conservative estimate for the SDIPC cost of capital, what is the revenue requirement effect of alternative costs of equity on the rate of return on rate base?

A. First, to answer that question we need to see how the overall rate of return changes with a different cost of equity. Table 5 provides such an example using a 9.5 percent cost of equity.

Table 5

Plant	Rate Base Value	Percent of Capitalization	Interest Rate	Weighted Return
Working Cash	$174,092	40.17%	9.50%	3.82%
Office and Operations	$73,000	16.84%	9.50%	1.60%
Trucks outstanding without loans	$77,500	17.88%	9.50%	1.70%
Trucks with outstanding loans	$77,500	17.88%	3.900%	0.70%
Other	$31,306	7.22%	9.50%	0.69%
	$433,398	100.00%		8.50%

Using a 9.5 percent cost of equity lowers the overall rate of return from 8.91 percent to 8.5 percent.

Q. How does that translate into a revenue requirement difference?

A. Table 6 displays that information.

Table 6 Rate Base	Cost of Capital Assuming 10.00%	Return With No Gross Up	Return With Gross Up	Cost of Capital Assuming 9.50%	Return With No Gross Up	Return With Gross Up
$433,398	8.91%	$38,612	$64,354	8.50%	$36,833	$61,388

The point is that taking a litigated approach to cost of equity, where parties spend $50,000 or more to put on a full cost of capital position yields differences in revenue requirements of less than $3,000 for the return on rate base. ($64,354 - $61,388 = $2,966). I would note that this relationship is proportional, so that even if you believed a full blown litigated approach might yield a range of 100 basis points in potentially justified positions, the difference in cost is less than $6,000. From an economic standpoint, the costs incurred to measure are greater than the benefit (as the ratepayer, who ultimately would have this cost includable as part of rate case expense).

Even though Cascade Natural Gas Company is a much larger company than SDIPC, this logic is what led parties to discuss cost of equity and decide to not fully litigate cost of capital in an adversarial manner. It certainly seems applicable in this docket given the modest revenue requirement effects.

IV. DECOMMISSIONING FUND

Q. Please define the term "decommissioning," as it is commonly understood.

A. Decommissioning means the process of returning the area where facilities are placed back to their original state subject to federal and state requirements.

Q. Please define the term "depreciation" as it is commonly understood.

A. Depreciation refers to the return of capital investment while the plant is in operation over its useful service life. Depreciation accounting rateably allocates these capital costs over the plant's service life through current charges to utility expenses. The depreciation expense included in this docket and recovered over the twenty-five year contract term is designed to recover the costs of the capital investment.

Q. For summary purposes, what do you recommend with respect to decommissioning?

A. I recommend the Commission direct its staff, interested parties, and SDIPC to develop a rate mechanism and design that both collects the decommissioning costs, as well as ensures a sound investment of such monies collected, so that the funds will be available and in sufficient amount to cover decommissioning costs.

Q. Is this a significant issue that deserves the attention of this Commission?

A. Yes, I believe so. As noted in the supplemental direct testimony of Gordon Woods, SDIPC commissioned a report on the cost of decommissioning and dismantling its pipeline. The study finds that the cost of decommissioning is estimated to be $13.21 per foot and total approximately $12.415 million dollars, so it is a significant sum of money.

Q. When is this decommissioning expected to take place?

A. After the useful life of the plant. This is expected to be in roughly another twenty-five years. This assumes a life of the pipeline of 50 years. Action today, however, does not depend on knowing the exact useful life of the equipment, although that is clearly preferred. I am using 50 years here and note that back in 1993 when the Commission was first addressing the SDIPC rates and contract, South Dakota Commission Staff were recommending a 40-year life of the pipeline.

Q. Still if the pipeline has another 25 years of useful life, why do we need to begin thinking about and establishing a decommissioning mechanism now?

A. For three reasons. First, rate stability is enhanced when $12+ million dollars is collected over a longer time period than a shorter one. For example, assume decommissioning was to occur 24 years in the future for sake of simplicity. Assuming further that there is no interest, again for sake of simplicity, waiting until the last year to collect the decommissioning costs would force customers to pay $12 million. If, on the other hand, collection started in year one, customers would need to contribute $500,000 annually. Second, the rate shock on customers is less if the mechanism is implemented sooner rather than later. Waiting until the last year for decommissioning means that with a $4 million revenue requirement, customers would face an increase of 300 percent. Assuming the mechanism was implemented in year one, the rate increase would be 12.5 percent. ($500,000/$4,000,000) Third, and perhaps most importantly, it is equitable among generations and customers to have all customers participate in the funding of the decommissioning mechanism. This is a burdens and benefit concept. Current customers benefit from the services that the pipeline provides. The pipeline will need to be decommissioned. Therefore, it is fair that current customers also help fund the decommissioning costs. I would note that when you consider that the fund being collected earns interest, the beginning dollar amount to be collected is a lot smaller.

Q. Is starting the mechanism now just a way for SDIPC to capture additional revenues for its owners?

A. Absolutely not. As noted below, SDIPC should not have access to the decommissioning fund.

Q. Can you provide some more detail to your recommendation with respect to decommissioning?

A. Yes. What I recommend to the Commission is to direct parties to investigate and develop a decommissioning fund. I suggest two frameworks to be included in this direction. The first framework is to determine whether it is possible to establish a trust separate from the Company and managed by a trustee to invest such funds with minimal risk to principal. The Company would collect the monies for the Trust and transfer the funds as collected and hence is not SDIPC's money at all and would not have access to it. The second framework is to analyze the accounting safeguards necessary for the fund not to be held and managed by an independent trust but by SDIPC. In this alternative, the Commission would require SDIPC to not have access to the funds except for decommissioning purposes, and again that the fund is invested to earn the maximum interest while ensuring minimal risk to principal. In other words, the monies collected by SDIPC can be used for no other purpose and the Commission would establish monitoring and reporting provisions to ensure this direction is carried out.

The interested parties would report back to the Commission and the SDIPC would prepare a decommissioning fund filing for Commission review and approval.

Q. Once this fund is established, would there still be a role for SDIPC, Commission staff and other parties?

A. Yes. As time passes, the Commission should direct staff to review updated decommissioning cost estimates and revise the surcharge to customers as needed to collect fewer or greater dollars. The earnings history by the trust on the fund will also affect whether the surcharge should be adjusted.

Q. As we get closer to the date of decommissioning would the estimates of the decommissioning costs be more precise?

A. Yes for at least two reasons. First, we will be closer to the time of decommissioning and so will have a better handle on costs including the effects of inflation. Second, the decommissioning study itself will be more precise because it will make more sense to spend the resources to do an even more detailed and analyzed study. It does not make sense to do such a study now because we know things will change such as environmental requirements. But as we get close, it does make sense to spend more dollars to get a detailed analysis to ensure the fund is sufficient to pay for the decommissioning costs.

Q. What do you recommend should happen to the funds in the event the decommissioning fund over-collected the amounts required?

A. I would recommend that in the order directing the implementation of the fund, the Commission note that any over-collections are to the benefit of customers. I would also recommend that the Commission note that it reserves final judgment on final dispensation of any remaining monies.

Q. Does this conclude your testimony?

A. Yes.