STATE OF NEW JERSEY
OFFICE OF ADMINISTRATIVE LAW
BEFORE HONORABLE RICHARD MCGILL, ALJ

I/M/O the Verified Petition of JCP&L for Review and Approval of Increases in and Other Adjustments to its Rates and Charges for Electric Service, and For Approval of Other Proposed Tariff Revisions in Connection Therewith; and for Approval of an Accelerated Reliability Enhancement Program ("2012 Base Rate Filing")	))))))))	**OAL Docket No. PUC 16310-12N** **BPU Docket No. ER12111052**

DIRECT TESTIMONY OF MICHAEL J. MAJOROS, JR.
ON BEHALF OF THE
NEW JERSEY DIVISION OF RATE COUNSEL

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Introduction

Q. Please state your name and business address.

A. My name is Michael J. Majoros, Jr. and my business address is 8100 Professional Place, Suite 306, Landover, MD 20785. Further information can be found at www.snavely-king.com

Q. By whom are you employed and in what capacity?

A. I am President of Snavely King Majoros & Associates, Inc. ("Snavely King Majoros" or "SKM").

Q. Please describe SKM.

A. SKM is an economic consulting firm founded in 1970 to conduct research on a consulting basis into the rates, revenues, costs and the economic performance of regulated firms and industries. Our clients include government agencies, businesses and individuals that pay for telecom, public utility and transportation services. In addition to consumer cost and anti-trust issues, we have provided our expertise in support of a clean environment and personal damages resulting from discrimination in agricultural programs.

The firm has a professional staff of 11 economists, accountants, engineers, and cost analysts. Most of our work involves the development, preparation, and presentation of expert witness testimony before Federal and state regulatory agencies. Over the course of our 42-year history, members of the firm have participated in more than 1,000 proceedings before almost all of the U.S. state and Federal commissions that regulate utilities or transportation prices.

Q. On whose behalf are you submitting this testimony?

A. I am appearing at the request of the New Jersey Division of Rate Counsel ("Rate Counsel" or "RC").

Q. What is the subject of your testimony?

A. Depreciation is the subject of my testimony. Later I discuss some of the technical details associated with depreciation, but here I explain why depreciation is a very important subject in a rate case proceeding. A public utility's investors, not its customers, are supposed to provide the capital for plant investment. When a public utility spends money for plant and equipment, it records the amount as a capital expenditure on its balance sheet. That means the utility expects to get use out of that expenditure for more than one year. Otherwise, it would have recorded the expenditure as an operating expense on its books. For example, when one purchases a car, that is a capital expenditure, because typically a car lasts more than one year. However, when one rents a car, that is an operating expense incurred in less than one year.

Instead of charging one hundred percent of the capital expenditure to operating expense all in one year, utilities depreciate the capital expenditure by spreading the cost in equal yearly amounts over the life they expect for the capital expenditure. They record the yearly depreciation amounts as operating expenses in each year. From an accounting standpoint, the utilities "allocate" or spread the cost over its life. From a ratemaking standpoint, utilities "recover" their capital expenditure over its life, because depreciation expense does not involve a cash outlay in the year the utilities record the expense.

So, when the utilities charge depreciation expense to their revenue requirements and ultimately to customers, they retain the cash inflow as "return of the original capital

expenditure", i.e. return of capital. While the utilities wait for recovery of the undepreciated portion of the original capital expenditure, they receive a return on the undepreciated portion; this is a "return on capital."

Depreciation is important in the ratemaking context because it involves direct pass through of cash from the customers to the utility which it retains for non-utility purposes. Rate base rate of return ratemaking assumes that the utilities' investors make the investment in plant and equipment, and customers provide a return on and return of capital over its service life. So, if the utility understates the period over which the depreciation is allocated, the resulting expense and charges to customers are excessive and actually represent a forced capital investment in the utility by its customers. Instead of providing a return of capital, they are actually being required to make capital investments in the utility, but they do not have any ownership interest in their capital investments.

My testimony addresses the proper annual amount that customers should pay each year to return JCP&L's capital expenditures to it over the life of those expenditures. Mr. Henkes then includes the results of my analyses into his recommended revenue requirement calculation.

Q. Do you have any specific experience in the field of public utility depreciation?

A. Yes. Among other areas, my firm specializes in the field of public utility depreciation. Our clients have ranged from consumer organizations such as the Rate Counsel to carriers such as AT&T; both regulated entities and the regulatory bodies that oversee them. We have appeared as expert witnesses on depreciation before the regulatory

commissions of more than half the states in the country. I have testified in over 100 proceedings on the subject of public utility depreciation, including several appearances before the New Jersey Board of Public Utilities ("BPU" or "Board").

Q. In how many New Jersey proceedings have you addressed public utility depreciation?

A. I have been involved in at least twenty New Jersey proceedings on the subject of public utility depreciation. These have included electric, gas, water, telephone and waste removal utilities.

Q. Have you attached a summary of qualifications and experience?

A. Yes. Appendix A is a brief description of my qualifications and experience. Appendix B is a listing of my appearances before state and Federal regulatory bodies.

Purpose of Testimony

Q. What is the purpose of your testimony?

A. Rate Counsel asked me to review Jersey Central Power and Light Company's ("JCP&L" or "the Company") depreciation-related testimony and exhibits in the referenced proceeding.[1] I was asked to express an opinion regarding the accuracy and reasonableness of the Company's depreciation study and proposed treatment for ratemaking purposes and, if warranted by the evidence, make alternative proposals.

Q. Have you reviewed the Company's testimony and exhibits?

A. Yes, I have reviewed the Company's testimony and exhibits and I have conducted the additional analyses I deemed necessary to conduct a thorough review and reach reasoned

[1] The Company's depreciation testimony and exhibits, including a new depreciation study, were prepared and sponsored by Company witness John J. Spanos, filed on June 14, 2013.

conclusions as to how the Company addresses depreciation in this base rate case.

Q. What is the result of your review and additional analyses?

A. The Company is proposing a $5.8 million decrease to depreciation expense based on 2012 plant balances.[2] By contrast, I am proposing a $1.6 million decrease to depreciation rates and the resulting expense, but I am also proposing $13.9 million of annual negative amortization of JCP&L's depreciation reserve excess.[3] JCP&L has understated the service lives of many of its asset categories, therefore producing excessive depreciation expense.

Q. Do you have an opinion regarding the Company's depreciation study?

A. Yes. JCP&L recognizes that its current depreciation expense is excessive, and therefore proposes a decrease. However, even though the Company is proposing a decrease, the reduced depreciation expense continues to be excessive. It is too high and results in the extraction of capital contributions from its ratepayers rather than from its investors. The Company's statistical data supports much longer lives than the Company proposes and therefore lower depreciation rates. The correct rates are much lower than the Company's existing depreciation rates. That difference demonstrates excessive and unneeded cash flow, at the expense of the ratepayer.

Q. Have you calculated the amount of JCP&L's reserve excess using the correct lives?

A. Yes, JCP&L has a $662 million depreciation reserve excess.4 The excess includes a portion of a $147 million excess the company collected in the past for future negative net

[2] Response to RCR-DEP-75, Attachment 1
[3] Exhibit___(MJM-6)
4 Id.

salvage (removal) costs. While the $147 million is currently included in the company's book reserve for regulatory purposes, the Company reports the $147 million as a regulatory liability on its GAAP and SEC financial statements.

In this case the Company proposes to move the portions of the $147 million excess relating to its distribution and general plant to account 256-Other regulatory liabilities and amortize them back as negative amortization. I do not object to that proposal, but the Company also proposes that the regulatory liability not be deducted from rate base. I do object to the latter, the $147 million excess already is a rate base deduction by virtue of being included in accumulated depreciation. In addition, the $147 million excess is ratepayer provided capital, just like accumulated deferred taxes, so the Regulatory liability should continue to be treated as a rate base deduction.

Q. What do you propose?

A. I propose whole life depreciation rates and separate remaining life amortization of the entire $662 million reserve excess relating to the distribution and general functions. I recommend that the entire excess be reclassified out of accumulated depreciation and into account 256-Other regulatory liabilities. This regulatory liability should continue to be a rate base deduction until fully amortized.

<u>Company Proposal</u>

Q. Please explain JCP&L's depreciation proposal.

A. Mr. Spanos states, "The principle conclusion of the [his] Study is that JCP&L's current depreciation rates be updated based on the more appropriate life parameters upon which

the rates are based. I have proposed updated depreciation accrual rates by distribution and general plant account in the Depreciation Study. Generally, my recommended rates are based on a combination of my review of historic data and JCP&L's operating maintenance practices, as well as the application of informed engineering judgment."[5]

Q. What is the result of Mr. Spanos's study?

A. Exhibit___ (MJM-1) compares the existing rates and accruals to Mr. Spanos's proposed rates and accruals. Overall, Mr. Spanos is proposing a reduction to JCP&L's current depreciation rates. Based on December 31, 2012 plant balances, his proposals would reduce depreciation expense by the following amounts:

Spanos's Change to Current Expense[6]

Current Expense	**$96,138,239**
Spanos's Proposal	**$90,385,945**
Change	**-$5,752,294**

Q. Can you provide Mr. Spanos's proposed changes by plant function?

A. Yes, the next table shows Mr. Spanos's proposed changes by plant function:

Function	**Spanos's Change to Current Rates[7]**
Distribution	**-$7,597,202**
General	**$1,844,908**
Total	**-$5,752,294**

Q. What drives the decrease in the distribution function?

A. The decrease in the distribution function is driven by two factors: (1) JCP&L's existing

[5] Spanos 2013 Testimony, page 4, lines 7 to 12. (Emphasis added.)
[6] Response to RCR-DEP-75, Attachment 1
[7] Response to RCR-DEP-75, Attachment 1

depreciation rates are based on understated lives, and (2) the understated lives lead to excessive depreciation rates which also included estimated future negative salvage thus creating a depreciation reserve excess. A depreciation reserve excess lowers depreciation expense in addition to the reduction in depreciation expense resulting from longer service lives.

Q. Is negative net salvage driving any portion of Mr. Spanos's proposal?

A. Mr. Spanos states "Based on recent practices by the New Jersey Board of Public Utilities, the net salvage percentage accrual has been replaced by expensing all cost of removal and gross salvage. I have used this practice in the study in order to be consistent with the accepted practice of the Board…"[8]

The Company also states:

> As of August 1, 2003, JCP&L began to record cost of removal, net of gross salvage, as an operating expense pursuant to the BPU's Final Order entered May 17, 2004 at Docket No. ER02080506. … In this case, JCP&L proposes to remove all cost of removal and gross salvage from its depreciation reserve and amortize that amount to income, as explained in Exhibit JC-3 at page 10.[9]

Q. Do you agree with these statements?

A. Yes. I note that a significant portion of the depreciation reserve excess discussed above resulted from the Company's prior inclusion of negative net salvage in its depreciation rates. That amount is included in the Company's depreciation reserve for regulatory purposes but reported as a regulatory liability for GAAP purposes.[10]

Q. Why is depreciation treatment of negative net salvage no longer favored in New Jersey?

[8] Spanos 2013, page 10 lines 3 to 6.
[9] Response to RCR-DEP-13
[10] Generally accepted accounting principles ("GAAP")

A. Utilities use a technique to inflate the negative net salvage they include in depreciation rates. The result is that the utilities' approach to net salvage charges current ratepayers for future inflation to cost of removal that has not been incurred. The result is the $147 million regulatory liability discussed above and later in my testimony.

History of JCP&L's Depreciation Rates

Q. What is the history of JCP&L's current depreciation rates?

A. JCP&L's current depreciation rates have a long history. On March 3, 1995, JCP&L filed a petition in Docket No. EO95030098 for changes in depreciation rates applicable to certain categories of utility plant. That proceeding was resolved by a Stipulation and Addendum which were subsequently approved by the Board in a Summary Order.[11] According to the Company, its depreciation rates changed in accordance with that series of Orders, Stipulations and Addendums. My Exhibit___ (MJM-2) consists of the relevant portions of: (1) The March 24, 1997 Summary Order; (2) the June 27, 1996 Stipulation of Final Settlement; (3) the June 27, 1996 Stipulation of Settlement of Depreciation Rates; and (4) the December 31, 1996 Addendum to Stipulation of Final Settlement in BPU Docket No. EO95030098.

Paragraph 17 of the June 27, 1996 Stipulation of Final Settlement states "In addition, the Parties further agree that, effective January 1, 2000, JCP&L shall change its method of depreciation to remaining life depreciation, updated annually and booked in accordance with such annual updates commencing January 1, 2000."[12]

[11] I/M/O JCP&L,BPU Docket No. EO95030098 et. al. (Summary Order, 3/24/97).

[12] Stipulation of Final Settlement, BPU Docket No. EO95030098, June 27, 1996, para. 17. (Emphasis added.)

In the Company's previous base rate case, Docket No. ER02080506, the Company proposed a $2.4 million increase to depreciation expense.[13] By contrast, I recommended a $35.9 million decrease.[14] JCP&L's depreciation witness in Docket No. ER02080506 described his proposed $2.4 million adjustment as "an annualization of depreciation expense based upon the projected net depreciable plant balance at December 31, 2002, and depreciation rates for 2002."[15] I was not able to trace what Mr. Preiss described as the BPU Approved Rates to any prior Order.[16] I recommended that net salvage be removed from the depreciation rate calculations and replaced with the 5-year rolling average net salvage allowance approach used by the Pennsylvania Public Utility Commission.

The Board agreed that the inclusion of net salvage in depreciation rates was inappropriate. It adopted a $4.8 million net salvage allowance, based on the cost of removal included in JCP&L's test year budget for transmission, distribution and general plant.

As Ordered by the Board:

> Depreciation Expense. The Company is requesting a net depreciation expense annualization adjustment of $1,515,000 and total annualized depreciation expenses of $114,547,000. The Company maintains that it is complying with the terms of a June 27, 1996 stipulation ("Final Stipulation") approved by the Board, by updating the book depreciation rate computations annually for plant additions, retirement, transfers and adjustments and keeping the negative net salvage rate percentages and depreciation service lives consistent with the separate Stipulation of Settlement of

[13] Docket No. ER02080506, Majoros Direct, page 3
[14] Id.
[15] Docket No. ER02080506, Direct Testimony of Richard F. Preiss, page 5, lines 15 – 17.
[16] Docket No. ER02080506, Majoros Direct, page 5

> Depreciation Rates, also dated June 27, 1996, which was also approved by the Board as part of the Final Stipulation. *I/M/O the Petitions of Jersey Central Power & Light Company for Approval of an Increase in its Levelized Energy Adjustment Charge, Demand Side Factor, Implementation of a Remediation Adjustment Clause (RAC) Other Tariff Changes, Recovery of Crown/Vista and Freehold Buyout Costs, Changes in Depreciation Rates, Settlement of Phase 1 of the Board's Generic Proceeding on the Recovery of NUG Capacity Payments,* Docket Nos. ER95120633, ER95120634, EM95110532, EX93060255 and EO95030398, (March 24, 1997). The Board HEREBY FINDS, consistent with the recommendations of the RPA and Staff, that the Company's inclusion of net negative salvage value in depreciation rates is inappropriate and instead, HEREBY ADOPTS utilization of a net salvage allowance of $4.8 million which is the cost of removal reflected in the Company's test-year budget for transmission, distribution and general plant. Accordingly, the Board HEREBY ADOPTS a depreciation expense in the amount of $77,146,000.[17]

Q. What is the relevance of this history?

A. The one important fact is that the Company's depreciation study in this which Rate Counsel insisted it file makes it clear that JCP&L has waited too long between depreciation studies and that the Company's existing depreciation rates are excessive and have been excessive for a long time.

Utility Depreciation Fundamentals

Q. Is there anything unique about public utility depreciation?

A. Yes. Two unique factors distinguish JCP&Ls depreciation rates from normal non-regulated depreciation rates. First, public utility depreciation rates recognize average group lives as opposed to individual asset lives. Second, utilities charge the original cost of retired assets to accumulated depreciation as opposed to writing them off in the retirement year. Each of these factors affect the depreciation rates for a group of assets

[17] I/M/O Jersey Central Power & Light Company, BPU Docket Nos. ER0208056, ER0208057, EO02070417 and ER02030173, Summary Order, August 1, 2003, p. 6.

recorded in FERC's Uniform System of Accounts ("USoA") plant accounts, and each of these factors is different than non-regulated depreciation approaches.

Q. Please explain the concept of group life depreciation.

A. Public utility companies are capital intensive, which is why depreciation is one of their primary cost of service drivers. Utilities own millions of assets, represented by billions of dollars of investment. Given this capital intensity, it is impossible to track and depreciate every single asset a utility owns. As a result, public utilities utilize group depreciation, reflecting averages of asset service lives and remaining lives within a specific group. Group depreciation assumes full depreciation of retired assets regardless of whether they are retired before or after the attainment of the estimated life. That is why utilities charge retirements to accumulated depreciation rather than writing off the net book value and recording a loss or gain in the retirement year.

Q. Will you please provide a brief fundamental discussion of public utility depreciation rates?

A. Yes. I will start with a discussion of plant additions, retirements, and balances.

Q. What are plant additions, retirements, and balances?

A. Public utilities record their plant investment activity in the individual plant accounts set forth in the USoA. Additions, retirements, and balances relate to individual accounts - Structures and Improvements (Account 321), for example. Consider a checkbook with a $1,000 beginning balance. An annual addition ($200 deposit) is the original cost of an asset added to the account during the year. An annual retirement ($100 withdrawal) is the original cost of an asset already in service that is removed from service in the current year. The $1,100 ending balance is what is left, and it reflects the original cost of all

assets in service at that time. That ending "plant balance" becomes next year's beginning plant balance, and the process repeats itself.

	Plant Account
Beginning balance	**$1,000**
Plus addition	**$200**
Minus retirement	**$(100)**
Ending balance	**$1,100**

Q. What is depreciation expense?

A. For the purposes of this testimony and in general, I define depreciation expense as a charge (reduction) to operating income to reflect a utility's recovery of the cost of its investment (capital) in plant and equipment. In other words, investors make the investment and ratepayers return the investment through depreciation expense. While the rate of return provides investors a return on their investment, depreciation expense provides an annual payment to the utility of its original capital investment in plant and equipment.

Q. Is this definition consistent with the USoA definition of depreciation?

A. Yes, I believe it is consistent.

Q. Is it true that depreciation is a non-cash expense?

A. Yes. Depreciation is a non-cash expense in contrast to a payroll expense, for example, which involves the current outlay of cash. That is, depreciation does not involve a specific payment by the public utility during the test-year. Both depreciation and payroll

are included as expenses in the income statement and cost of service, but no cash flows out of the public utility for depreciation expense. Instead of reducing the cash account, a utility records depreciation expense on its income statement as an expense and simultaneously records it on the balance sheet in the accumulated depreciation account, which it reports as an offset to the cost of "plant in service."

Q. Does the fact that depreciation is a non-cash expense render it any less legitimate than any other expense?

A. Depreciation is a legitimate expense that requires a substantial amount of judgment and arcane analysis to estimate as well as several different procedures, methods, and techniques to calculate. Consequently, the measurement of depreciation and the calculation of the expense warrant careful consideration. It is in a utility's shareholders' best interest to maximize depreciation expense whenever possible because depreciation expense provides pure cash flow into the utility.

Q. How does depreciation produce cash flow to a utility?

A. Depreciation expense allowed in the cost of service produces a cash inflow to the utility without any corresponding cash outflow or expenditure. The utility retains the cash inflow. That is how depreciation expense provides capital recovery.

Q. What is the accumulated depreciation account?

A. Accumulated depreciation (also called reserve) is an offset to plant in service. In essence, it is a record of the previously recorded depreciation expense; therefore, at any point in time, the accumulated depreciation account represents the net accumulated amount of the original cost of assets and net salvage that a utility has recovered through regulated service rates. It is a measure of the depreciation recovered from ratepayers.

Q. How do public utilities calculate annual depreciation expense?

A. Public utilities calculate annual depreciation expense by multiplying plant balances by a depreciation rate. The cost of service includes the resulting depreciation expense (also called accrual) just as it includes any other expense. From there the utility charges the depreciation expense to its ratepayers.

Annual Depreciation Expense

Plant balance	**$1,100**
Times depreciation rate	**x 10%**
Equals depreciation expense	**$110**

Q. How do public utilities determine annual depreciation rates?

A. Public utility depreciation expense is typically straight-line over service life, which means assigning an equal share of the original cost to annual expense over the service life of assets. A service life is the period of time during which depreciable plant [and equipment] is in service.[18] Public utilities calculate depreciation rates using one of two techniques: the whole life technique or the remaining life technique.

Q. Please explain the whole life technique.

A. Assume a 10-year[19] estimated service life for a transmission pole and a straight-line whole life depreciation rate, assuming a 10-year average service life.

Straight-Line Whole Life Rate

[18] Public Utility Depreciation Practices, August, 1996. National Association of Regulatory Utility Commissioners ("NARUC"), p. 321.

[19] A 10-year life is unrealistically short for a transmission pole, but it is used here to keep the example simple.

Assuming 10-Year Life

$$\frac{100\%}{10 \text{ yrs.}} = 10.0\%$$

Each year, the public utility would apply a 10.0 percent depreciation rate to the balance in the transmission Pole account to record depreciation expense.

Q. What is net salvage?

A. Net salvage is the cost to remove a retired asset less any positive value received. Sometimes utilities physically remove retired plant and equipment and resell it for value. For example, if a utility reduces a retired transmission pole to wood chips and sells the chips, the value received for the wood chips would constitute "gross salvage."[20] The expenses incurred in removing the pole from the ground and running it through a chipper would constitute the "cost of removal."[21] Net salvage is the difference between gross salvage and cost of removal.[22]

Q. What happens when a utility includes net salvage in a depreciation rate calculation?

A. The term "negative net salvage" indicates that the cost of removal exceeds the asset's gross salvage or, in other words, it cost more to remove the asset from service than the asset was worth when resold or reused. When a utility includes negative net salvage in its depreciation rate its increases those rates to collect for inflated and unincurred future cost of removal.

Q. Does JCP&L include negative net salvage in its depreciation rates?

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[20] In more technical terms, gross salvage is the amount recorded due to the sale, reimbursement, or reuse of retired property. *See* NARUC at 320.

[21] Cost of removal is the cost incurred in connection with the retirement from service and the disposition of depreciable plant. *See* NARUC at 317.

[22] Net salvage is the gross salvage for the property retired less its cost of removal. *See* NARUC at 322.

A. In the past, JCP&L used to include negative net salvage in its depreciation rates, and as a result has accumulated a $147 million liability to its customers which I will discuss later. However, as of August 1, 2003 JCP&L discontinued including negative net salvage in its depreciation rates and now charges it to expense as incurred.[23]

Q. Please explain the remaining life technique.

A. The remaining life technique is similar to the whole life technique, but it incorporates accumulated depreciation into the numerator of the equation, and the denominator becomes the remaining life rather than the complete service life. If the transmission pole is three years old, the transmission pole would have a seven-year remaining life.

	Remaining Life	
Life	**10**	**years**
Less Age	**(3)**	**years**
Equals Remaining Life	**7**	**years**

Also after 3 years, the accumulated depreciation account should be 30.0 percent of its original cost if the utility had been using the whole life method because the original 10.0 percent depreciation rate would have been applied for three years (3 x 10.0% = 30.0%). The result of the calculation I just described is a simplified version of the "theoretical reserve" because it reflects what should be in the book reserve based on current parameter estimates.

With these assumptions, the remaining life rate would still be 10.0 percent, as shown in the following table:

23 Response to RCR-DEP-13.

Straight-Line Remaining Life Rate
Assuming 10-year Life, 7-year Remaining Life

$$\frac{100\% - 30.0\%}{7 \text{ years}} = 10\%$$

Notice that the 10.0% remaining life depreciation rate is the same as the 10.0% whole life depreciation rate.

Q. Please explain why the whole life depreciation rate and the remaining life depreciation rate are both 10.0 percent?

A. In these examples, the 10.0 percent remaining life depreciation rate and the 10.0 percent whole life depreciation rate are the same because I have assumed that the accumulated depreciation account is in balance. In other words, the utility collected exactly the right amount of depreciation (30.0 percent) in the prior three years.

Q. What would happen if the estimated service life changes over the course of an asset's life?

A. If the service life estimate of either the service life of the asset were to change during the life of the asset, the accumulated depreciation account will be out of balance, and the remaining life rate will be either higher or lower than the whole life rate depending on the direction of the imbalance. That is because; given current life estimates the utility will have collected either too much depreciation or not enough depreciation in the past.

Q. What happens if you change a service life estimate?

A. In depreciation analysis, it is axiomatic that the shorter the life, the higher the resulting depreciation rate. For example, what if the 10-year life I used in the earlier examples really should have been 50 years? The following table shows the impact of a shorter life.

Impact of Increasing a Life Estimate from 10 Years to 50 Years

10 year life = 100%/10 = 10.0%

50 year life = 100%/50 = 2.0%

If the life should have been 50 years, the rate should have been 2.0 percent rather than 10 percent; the shorter the life, the higher the rate. If the life is too short, the resulting rate is excessive, and the utility collects more depreciation expense than is necessary, unreasonably increasing rates.

Q. Are there any other reasons a depreciation reserve could be out of balance?

A. Yes, if company management makes mistake regarding plant investments, the result throws the book reserve out of balance. For example, if the company invests in a new technology, but then finds that that technology was not serviceable, it retires the technology. The mistake winds up as a debit (reduction) to accumulated depreciation and ratepayers pay for it automatically if remaining life depreciation is approved.

Q. In this proceeding, what caused the imbalance?

A. In this proceeding JCP&L's depreciation reserve contains an excess for at least two reasons. First, it has been collecting depreciation based on artificially short lives, which created an excess, second, in the past JCP&L included excessive negative net salvage in its depreciation rates. As a result, JCP&L continues to include $147 million of that excess recovery in accumulated depreciation as a reserve excess. However, it recognizes the $147 million as a regulatory liability for GAAP purposes.

Regulatory Liability

Q. Earlier, you mentioned a regulatory liability resulting from the Company's prior collection of negative net salvage in its depreciation rates. Can you provide more information and explanation regarding that regulatory liability?

A. Yes, the Company states that: "FirstEnergy's 2011 10K filing to the SEC shows regulatory liabilities for accumulated removal costs of $240 million and $237 million for 2011 and 2010 respectively. The JCP&L portion of these balances is $147 million in both periods. This balance consists of $150 million of cost of removal and salvage reserve that has been unchanged since the Company's last rate case. The difference between the $150 million cost of removal and salvage and the $147 million balance shown in FirstEnergy's 10K consists of $3 million for depreciation and accretion on ARCs, and AROs."[24]

Q. Do you know why the JCP&L portion of the regulatory liabilities remained constant in both periods?

A. Yes, the Board had the foresight to discontinue the inclusion of vast amounts of negative net salvage in depreciation rates.

Q. What do you recommend?

A. While it already may have done so, the Board should again officially recognize the $147 amount as a regulatory liability embedded in JCP&Ls accumulated depreciation account. It is unclear whether FirstEnergy will adopt the International Financial Accounting Standards ("IFRS"), but if adopted it will flow the regulatory liability into its equity accounts because that is what IFRS requires.[25]

[24] Response to RCR-DEP-51.
[25] Response to RCR-DEP-19.

Q. Is the $147 million included in accumulated depreciation and therefore in the $660 million excess you recommend to be transferred from accumulated depreciation and into account 256-Other regulatory liabilities?

A. I believe it is.

Q. What if IFRS is not adopted by FirstEnergy in the near future?

A. It does not affect my recommendation since it minimizes the potential of ratepayers losing these excess collections without transparency and accountability relating to these amounts sometime in the future.

Whole Life versus Remaining Life Depreciation

Q. Is JCP&L witness Spanos proposing remaining life depreciation rates or whole life depreciation rates?

A. JCP&L Witness Spanos is proposing remaining life depreciation rates.

Q. What is the difference between whole life and remaining life depreciation rates?

A. As explained above, whole life depreciation rates and remaining life depreciation rates are the same if the book reserve is in balance. However, they are not the same if the book reserve is out of balance relative to current life estimates. Both JCP&L Witness Spanos and I have estimated "projection lives" for JCP&L's plant accounts. A projection life is an estimate of the average life of a new addition to plant. We combined the projection lives and estimated retirement patterns to compute average service lives and average remaining lives for the particular plant account involved. The reciprocal of the average service life is the whole life depreciation rate.

As explained, the remaining life technique is designed to account for reserve imbalances resulting from changes to prior depreciation parameter estimates. In theory, a whole life rate and the equivalent remaining life rate are the same if there are no reserve imbalances. On the other hand, if reserve imbalances exist the remaining life rate will be either higher or lower than the whole life rate depending on the direction of the imbalance.

Q. What is the function of a difference between whole life and remaining life depreciation rates?

A. A difference between a whole life depreciation rate and a remaining life depreciation rate computed at the same point in time and based on the same parameters merely provides a mechanism for amortization of reserve imbalances.

Q. Do you propose replacement of remaining life depreciation with whole life depreciation?

A. Yes, I make this recommendation for several reasons. First, whole life depreciation is superior to remaining life depreciation for new additions to plant. While a remaining life rate may be appropriate for existing plant, if the remaining life rate was calculated to cure a reserve imbalance, it is wholly inappropriate for new additions. A remaining life rate will create even more imbalances on a going-forward basis. A whole life rate is a superior rate because it is appropriate for both existing plant and new additions to plant.

Q. Can you provide an example?

A. Yes, consider an example in which a $1,000 asset was assumed to have a 20-year life,

and thus was initially depreciated using a 5% depreciation rate.[26] The accumulated depreciation after 10 years would be $500, or 50 percent of the original $1,000 cost. Now assume that, at the end of 10 years, it is determined that the total life is expected to be 15 years rather than the originally estimated 20 years. The existing depreciation reserve is immediately deficient, based on the new life assumption. The new whole life rate is 6.7 percent.[27] The remaining life rate, however, would be 10 percent.[28] The 6.7 percent whole life rate reflects the life anticipated for both the original $1,000 asset and any additional assets going-forward. Hence, it is appropriate for all assets in the account. The 10 percent remaining life rate is only appropriate for the initial $1,000 asset, it is inappropriate for the new assets. Application of the 10 percent to new assets will create reserve excesses for those assets.

Q. If a whole life rate is appropriate, how can the commission deal with any reserve imbalances?

A. If there is a significant reserve imbalance, as there is in this proceeding, the Commission can adopt a separate amortization of the imbalance, thus providing the appropriate depreciation rate for both existing plant and new additions going-forward, and yet still amortize the imbalance. Under this approach, the imbalance to be amortized would be the total reserve imbalance.

Q. Have you calculated the reserve imbalance resulting from your recommendations?

A. JCP&L has a $662 million depreciation reserve excess. I am proposing whole life depreciation rates and separate remaining life amortization of the reserve excess. I

[26] 100%/20 years = 5.0%
[27] 100%/15 years = 6.7%.
[28] (100%-50%)/5 years=10%

recommend that the entire excess be reclassified for accumulated depreciation to account 256-Other Regulatory Liabilities. This regulatory liability should continue to be a rate base deduction until fully amortized.

Excessive Depreciation

Q. What is an excessive depreciation rate?

A. An excessive depreciation rate produces more depreciation expense than necessary to return a company's capital investment over its service life.

Q. Have any courts addressed the concept of excessive depreciation?

A. Yes, the concept of excessive depreciation was explained by the U.S. Supreme Court in a landmark 1934 decision, Lindheimer v. Illinois Bell Telephone Company, as follows:

> If the predictions of service life were entirely accurate and retirements were made when and as these predictions were precisely fulfilled, the depreciation reserve would represent the consumption of capital, on a cost basis, according to the method which spreads that loss over the respective service periods. But if the amounts charged to operating expenses and credited to the account for depreciation reserve are excessive, to that extent subscribers for the telephone service are required to provide, in effect, capital contributions, not to make good losses incurred by the utility in the service rendered and thus to keep its investment unimpaired, but to secure additional plant and equipment upon which the utility expects a return.
>
> Confiscation being the issue, the company has the burden of making a convincing showing that the amounts it has charged to operating expenses for depreciation have not been excessive. That burden is not sustained by proof that its general accounting system has been correct. The calculations are mathematical, but the predictions underlying them are essentially matters of opinion. They proceed

> from studies of the behavior of large groups of items. These studies are beset with a host of perplexing problems. Their determination involves the examination of many variable elements and opportunities for excessive allowances, even under a correct system of accounting, [are] always present. The necessity of checking the results is not questioned. The predictions must meet the controlling test of experience.[29]

Q. Who pays for excessive depreciation rates?

A. In the decision above, the word "subscribers" means ratepayers. Ratepayers pay for excessive depreciation rates by including the excessive depreciation expense in revenue requirements charges to ratepayers. And again from the decision above, excessive depreciation charges to ratepayers result in "capital contributions" from ratepayers which in my opinion, is not an acceptable result.

Estimation of Service Lives and Retirement Dispersion Patterns

Q. What does this discussion cover?

A. This discussion addresses Mr. Spanos's puzzling rejection of several service life curves, and presents more appropriate service life curve analysis which would result in additional changes to depreciation rates and expense.

Q. Please describe the life analysis and life estimation process.

A. Life analysis is the process of estimating how long plant has lived in the past. Life estimation is the process of estimating how long the existing and new plant will live in the future. Again, this is important to ratepayers because understated estimates lead to

[29] Lindheimer v. Illinois Bell Telephone Company, 292 U.S. 151, 168-170, 54 S.Ct. 658, 665-666 (1934). (Emphasis added; footnote deleted.)

forced capital contributions in the company which violates the basic principle that investors should make the investments in the company – not ratepayers. Mr. Spanos used the retirement-rate actuarial method to study most plant lives. This is the ideal statistical method for studying plant lives. Unfortunately, in many instances, Mr. Spanos did not rely on his own results. Furthermore, He proposes arbitrary amortization periods for the remaining general plant accounts. An amortization period is arbitrary by definition, since it is based on a judgment call rather than a life study.

Q. What is the retirement rate method?

A. The retirement rate method is an actuarial technique used to study plant lives, much like the actuarial techniques used in the insurance industry to study human lives. It is used to determine the life expectancy, necessary to accurately reflect the financial value of the assets, for purposes of determining an accurate rate of return. It requires a record of the dates of placement (birth) and retirement (death) for each asset unit studied. It is the most sophisticated and reliable method of the statistical life analysis methods in that it relies on the most refined level of data. Aged retirements and exposures data from a company's records are used to construct observed life tables ("OLT"). These are then smoothed and extended by fitting, using least-squares analysis, to a family of 31 predefined retirement patterns ("Iowa Curves") using varying life assumptions. The process continues until a best fit life is found for each curve. Numerous interactive calculations are required for a retirement rate analysis. In this manner one can determine to a reasonable degree of certainty the experienced life of an asset.

Q. What are Iowa Curves?

A. Iowa Curves are a set of predefined retirement patterns which are used to study plant lives. Iowa Curves were developed at Iowa State University. They are designated as "R" right, "S" symmetrical, "L" left and "O" origin. These designations identify the modal (maximum) frequency of retirements relative to the average service life of a group of assets. For example, an R-curve indicates that the modal frequency of retirements will occur to the right of the average service life. These letters are also combined with subscripts indicating the range of dispersion from wide (1) to narrow (5).). Iowa curves, when plotted on tables, visually illustrate the decline in terms of units or dollars over time of an average vintage group of assets.

Q. Did you review Mr. Spanos's retirement rate analyses?

A. Yes, I did.

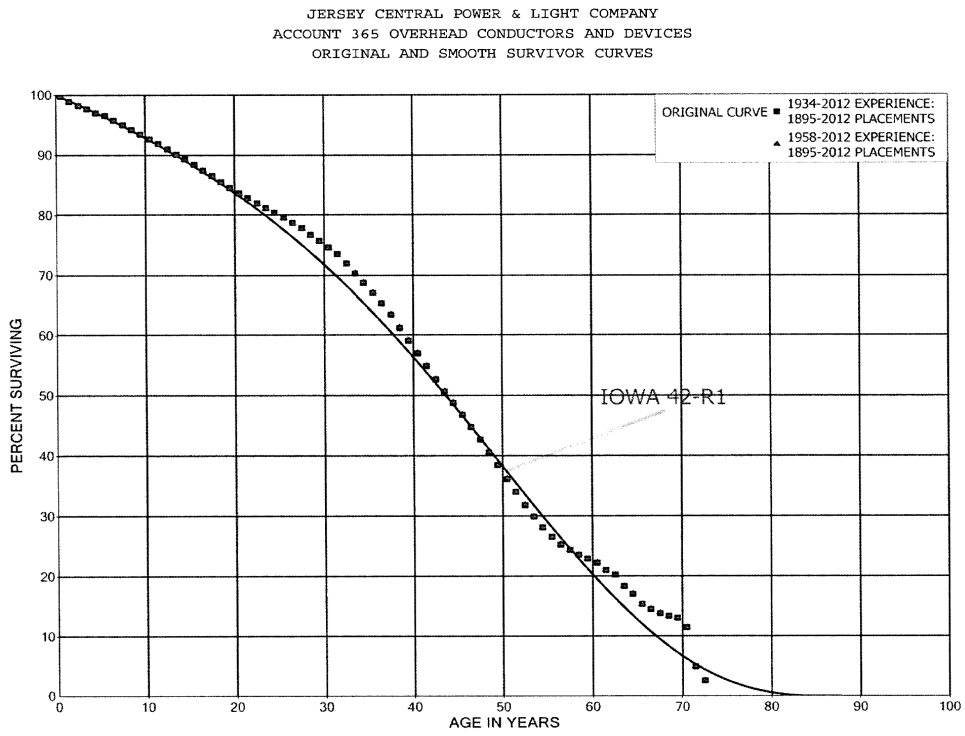
Q. What did you conclude?

A. Mr. Spanos conducted a least squares analysis on the actual observed life table.[30] That means he compared Iowa curves with varying life assumptions to the observed life table and determined which life combined with a given curve, produced the smallest mathematical difference between the observed data and the standardized curve. He then proposed lives and Iowa curves. Mr. Spanos provided the results of his least squares analyses in response to RCR-DEP-99. I have attached the response as Exhibit___(MJM-3).

Q. Did Mr. Spanos explain his selection process?

A. Yes, Mr. Spanos describes his selection process at pages 12 to 13 of his Direct Testimony. The Table below is Mr. Spanos's retirement rate study for account 365.

[30] Response to RCR-DEP-99



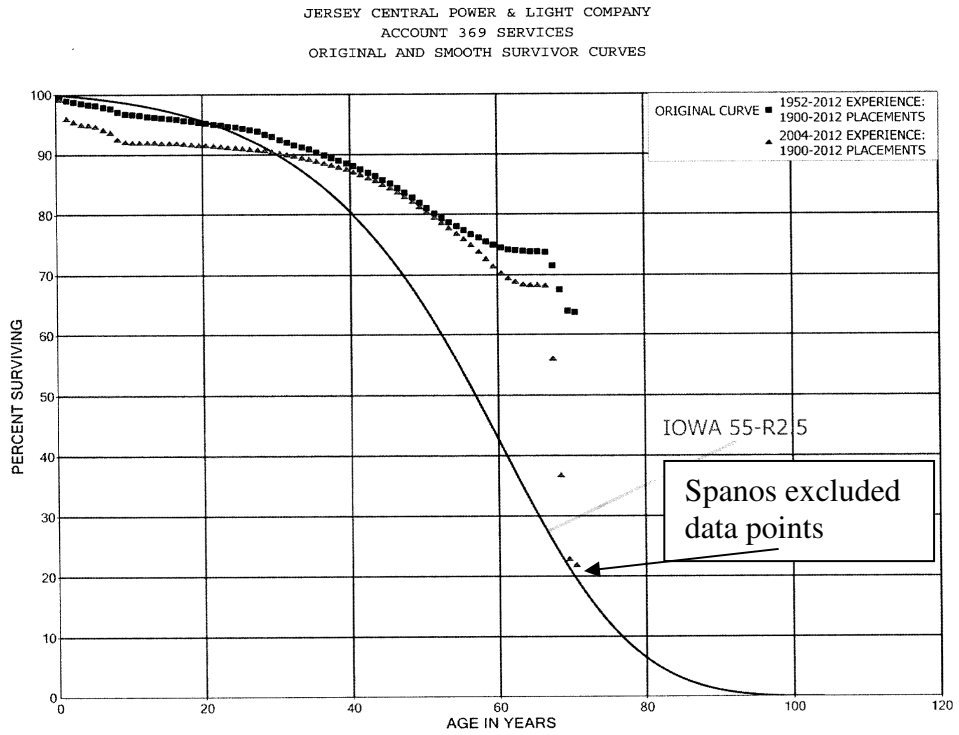
In my opinion, the 42-R1 life and curve in this analysis visually fits the data, and I have accepted Mr. Spanos's 42-R1 proposal for account 365. Furthermore, as shown in Exhibit___(MJM-3), the 42 R1 life and curve is the statistical best fit resulting from Mr. Spanos's retirement rate analysis for this account

Q. Based on your review, did Mr. Spanos always propose the statistical best fit resulting from his retirement rate analyses?

A. No. I concluded that several of Mr. Spanos's proposed lives and curves are not good fits to the actual observed life tables. Mr. Spanos did not provide compelling reasons, either in his study or in responses to data requests, to reject the actual life indications to such a degree.

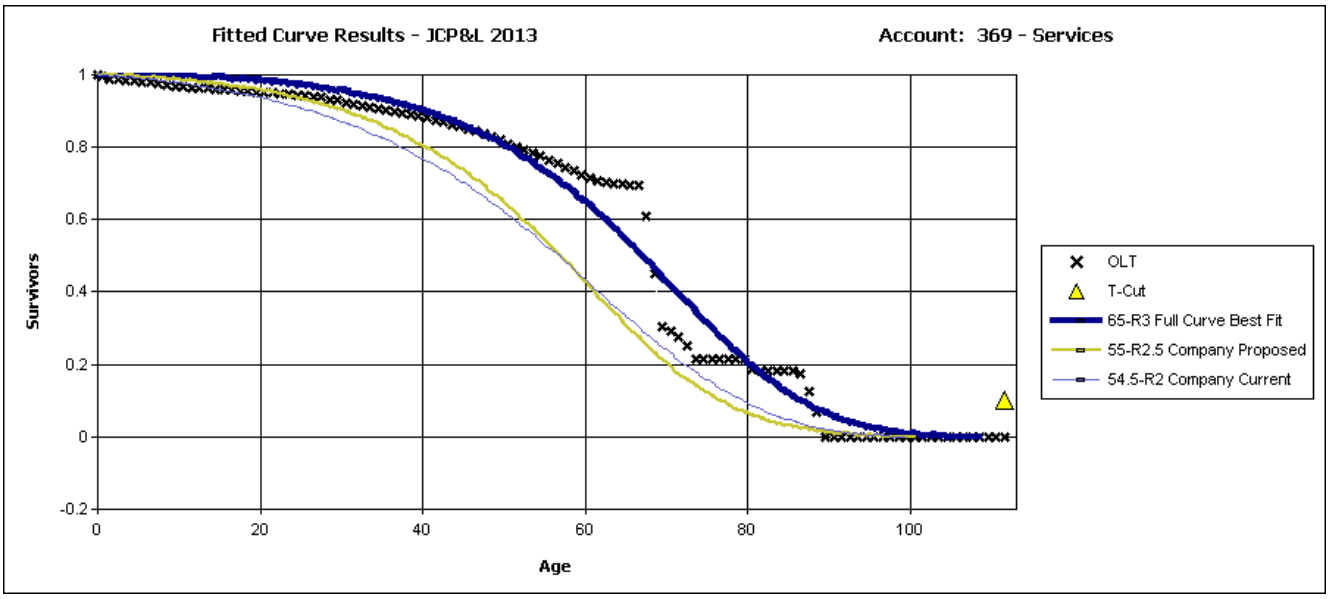
Q. Can you provide an example of an instance where you did not accept Mr. Spanos's proposal?

A. Yes, the next graph is Mr. Spanos's analysis of account 369-Services.



Visually, Mr. Spanos's proposed 55-R2.5 life and curve does not fit the data. Furthermore, as revealed in Exhibit___(MJM-3), his proposed 55-R2.5 is not even included in the list of his statistical results.

The shortest life in Mr. Spanos's retirement rate study for account 369-Services is 62 years. The best fit I found is a 65-R3 life and curve based on my independent analysis included in Exhibit___(MJM-5), and that is what I recommend for this account. See below:



Q. Did you attempt to obtain Mr. Spanos's rationale for disregarding the actual life data?

A. Yes, we asked Mr. Spanos to identify each FERC account for which the proposed life and or curve shape are not based on a regression analysis to choose the best fit among possible lives and curves, and the reason for not using a best fit result for hat account.[31] He responded,

> Mr. Spanos does not conduct strictly statistical life analyses and, as a consequence, the depreciation life or depreciation curve shape is not based solely on a regression analysis for any account. As explained on page II-24 of the Depreciation Study, the service life estimates developed in that study are based on judgment, which is informed by, and considers, several factors, including statistical analyses, Company policies and outlook, survivor curve estimates from previous studies for JCP&L and estimates of other electric companies.[32]

Q. Did you attempt to obtain additional information that might rationalize a deviation from the statistical results?"

[31] Response to RCR-DEP-72
[32] Response to RCR-DEP-72

A. Yes, Exhibit___(MJM-4) consists of copies of several data requests seeking such information. From the responses, we gleaned the following information:

- The Company is not aware of any policy or programmatic changes since the last Depreciation Study that would have a material impact on depreciable lives or retirement patters.[33]
- The Company anticipated that if any changes such as those described above were to have or could have an impact on depreciable lives or retirement patterns; they would be addressed in Mr. Spanos's study.[34]
- Changes in all financial; operating, and maintenance since the most recent depreciation study that have affected depreciation lives, retirement patterns, if and as they may have occurred since the last depreciation study, have not been documented.[35]
- The Company has not implemented any Programs which might affect plant lives.[36]
- The Company has not prepared any internal life extension studies or programs, maintenance or capital, designed to extend lives and/or increase capacity of existing plant.[37]
- The Company's engineers have not prepared estimates of the average service lives of physical assets placed in service at JCP&L because such studies have not been required.38
- There are no plans to change the current maintenance practices: therefore, future service

[33] Response to RC R-DEP-17
[34] Id.
[35] Response to RCR-DEP-33
[36] Response to RCR-DEP-45
[37] Response to RCR-DEP-46
[38] Response to RCR-DEP-49

lives, dispersion patterns and net salvage were not affected.[39]

- JCP&L has not instituted any programs that would have a material impact on service lives or dispersion patterns. Additionally, there have not been any changes in maintenance practices that would materially alter capital expenditures, retirements or service lives or dispersion patterns.[40]
- The Company had [sic] not prepared any internal studies of life extension for distribution plant.[41]

Q. What do you conclude?

A. There is no reason to reject the statistical life studies as Mr. Spanos did for several accounts.

Q. What did you do when Mr. Spanos's proposal did not fit his data?

A. I conducted an independent retirement rate analysis. The results for account 369-Services are shown below.

Curve	Life	Sum of Squares Difference	Curve	Life	Sum of Squares Difference
Band: 1952 - 2012					
R3	65.0	3,141.115	S6	68.0	14,133.193
R4	66.0	3,785.283	L2	67.0	14,334.298
S3	66.0	4,169.307	R1	61.0	14,637.818
R2.5	64.0	4,183.026	L1.5	66.0	18,019.190
L4	68.0	4,549.072	S0	62.0	18,177.348
S4	67.0	5,553.746	R0.5	60.0	22,205.275
S2	65.0	5,740.207	L1	65.0	22,801.189
L5	68.0	6,291.107	S-0.5	60.0	24,358.864
R2	63.0	6,437.890	SQ	68.0	26,090.234
S1.5	65.0	7,596.361	L0.5	65.0	27,580.659

[39] Response to RCVR-DEP-88
[40] Response to RCR-DEP-101
[41] Response to RCR-DEP-102

R5	67.0	7,944.465	O1	58.0	31,739.082
L3	67.0	8,007.983	L0	65.0	33,305.851
S5	68.0	9,447.047	O2	67.0	36,504.015
R1.5	62.0	9,904.007	O3	85.0	53,823.599
S1	64.0	10,355.183	O4	114.0	61,056.857
S0.5	63.0	13,805.668			

The indicated life from my independent standpoint is 65 years rather than 55 years.

Q. Did you accept Mr. Spanos's amortization proposals?

A. Only where the statistical data supported his proposed life. Where they did not, I used the statistical results.

Q. Have you summarized the results of your analyses?

A. Yes, Exhibit___(MJM-6) summarizes my recommendations. I am proposing a $15,611,070 reduction as opposed to Mr. Spanos's proposed $5,752,294 reduction.

Cash Flow

Q. Why do you say that JCP&L has extracted substantial excess cash from its customers?

A. Exhibit___(MJM-7) is taken from an analysis we prepared to review what has happened with the Company since 2001. We conducted the analysis to detect trends and anomalies that might help us in our service life estimation process. Upon completion we noted that we had an analysis useful to test certain claims the Company has made regarding its need for additional cash. For example, Mr. Mader states:

> "The accompanying cost-recovery mechanism will provide the necessary rate treatment to allow the Company to recover costs associated with its accelerated capital investments in a timely manner."[42]

[42] Mader Direct, page 17.

Q. What is the bottom-line result of your analysis?

A. The bottom line is that JCP&L's cash basis returns have far exceeded its accrual basis [ratemaking] returns by $1.8 billion since 2001. Furthermore, JCP&L's free cash flow has been $2.1 billion since 2001.

Q. What is free cash flow?

A. Free cash flow is the cash left over after a Company has paid all of its expenses, including interest and all of its capital expenditures. In my opinion, JCP&L's free cash flow has been substantial and positive. It already recovers more than it needs to finance any accelerated construction program. Its free cash flow was $2.1 billion after it paid cash for the $1.9 billion it added to plant since 2001. The following table is drawn from Exhibit___(MJM-7).

JCP&L Free Cash Flow

2001-2011[43]

($millions)

Net Cash Provided by (Used in) Operating Activities	$3,987
Cash Outflows for Plant	(1,889)
Free Cash Flow	$2,098

Q. What should the Board do?

A. First, the Board must evaluate whether it is appropriate for monopolies to collect this much free cash flow. Second, the Board must not be swayed by claims that the Company needs higher depreciation expense to support its construction program.

[43] See Exhibit___(MJM-8), original source Form-1, Statements of Cash Flows, page 120.

Q. Does this conclude your testimony?

A. Yes, it does.