DEPARTMENT OF PUBLIC SERVICE REGULATION
BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MONTANA

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In the Matter of the Application of	**)**	**REGULATORY DIVISION**
MONTANA-DAKOTA UTILITIES CO.	**)**	
A Division of MDU Resources Group,	**)**	**DOCKET NO. D2012.9.100**
Inc., for Authority to Establish Increased	**)**	
Rates for Natural Gas Service	**)**	

Direct Testimony

of

Jacob Pous

On behalf of

Montana Consumer Counsel

Diversified Utility Consultants, Inc.
1912 West Anderson Lane, Suite 202
Austin, TX 78757

February 25, 2013

DIRECT TESTIMONY AND EXHIBITS OF JACOB POUS

ACRONYMS

2008 STUDY	Depreciation Studies, dated December 31, 2008
AICPA	American Institute of Certified Public Accountants
ALG	Average Life Group
ASL	Average Service Life
CFR	Code of Federal Regulations
CI	Conformance Index
COMMISSION	Montana Public Service Commission
CPI	Consumer Price Index
DUCI	Diversified Utility Consultants, Inc.
ELG	Equal Life Group
FERC	Federal Energy Regulatory Commission
MCC	Montana Consumer Counsel
MDU or COMPANY	Montana-Dakota Utilities Company
REI	Retirement Experience Index
SPR	Simulated Plant Records
USOA	Uniform System of Accounts

TABLE OF CONTENTS

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In the Matter of the Application of MONTANA-DAKOTA UTILITIES CO., A Division of MDU Resources Group, Inc., for Authority to Establish Increased Rates for Natural Gas Service	**)** **)** **)** **)**	**REGULATORY DIVISION** **DOCKET NO. D2010.9.100**

SECTION I: INTRODUCTION

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Jacob Pous and my business address is 1912 W Anderson Lane, Suite 202, Austin, Texas 78757.

Q. WHAT IS YOUR OCCUPATION?

A. I am a principal in the firm of Diversified Utility Consultants, Inc. ("DUCI"). A copy of my qualifications appears as Appendix A.

Q. PLEASE DESCRIBE DIVERSIFIED UTILITY CONSULTANTS, INC.

A. DUCI is a consulting firm located in Austin, Texas with an international client base. The personnel of DUCI provide engineering, accounting, economic, and financial services to its clients. DUCI provides utility consulting services to municipal governments with utility systems, to end-users of utility services, and to regulatory bodies such as state public service commissions. DUCI provides complete rate case analyses, expert testimony, negotiation services, and litigation support to clients in electric, gas, telephone, water, sewer, and cable utility matters.

Q. HAVE YOU PREVIOUSLY TESTIFIED IN PUBLIC UTILITY PROCEEDINGS?

A. Yes. Appendix A also includes a list of proceedings in which I have previously presented testimony. In addition, I have been involved in numerous utility rate proceedings that resulted in settlements before testimony was filed. In total, I have participated in well over 400 utility rate proceedings in the United States and Canada. Also worthy of note is that I have testified on behalf of the staff of five different state regulatory commissions and one Canadian regulatory commission.

Q. WHAT IS YOUR PROFESSIONAL BACKGROUND?

A. I am a registered professional engineer. I am registered to practice as a Professional Engineer in the State of Texas, as well as numerous other states.

Q. ON WHOSE BEHALF ARE YOU PROVIDING THIS TESTIMONY?

A. I am testifying on behalf of the Montana Consumer Counsel (MCC).

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. I have been requested to review Montana-Dakota Utilities Company's (MDU or Company) depreciation request, and to the extent I identify concerns or problems to address such concerns and problems with an alternative recommendation.

Q. PLEASE SUMMARIZE YOUR TESTIMONY.

A. The Company retained AUS Consultants to perform depreciation analyses for both its Gas and Common plant divisions. Mr. Robinson of AUS Consultants developed two depreciation studies (2008 Study). The first study is for the Gas division and identified as Exhibit No._(EMR-1) while the second study is for the Common plant and is presented as Exhibit No._(EMR-2). After review of the Company's studies, workpapers, and responses to discovery, I conclude that the

results of the studies are significantly flawed and yield excessive levels of depreciation expense. A brief summary of the issues I address follows.

Gas Plant

- **Life** – While it appears the Company has some level of age retirement data, it has selected the Simulated Plant Records (SPR) semi-actuarial analysis approach for life analysis investigation. Unfortunately, the Company failed to retain the underlying results of the SPR statistical analyses. Based on the available information, an adjustment to MDU's proposal for its largest plant account, Account 376 – Distribution Mains, is warranted. The Company's proposed 47-year average service life (ASL) with a R4 Iowa Survivor curve significantly understates the reasonable expected life for the investment in this account. My recommended 60R2.5 life-curve combination reflects a more realistic life expectation and results in a $1,043,790 reduction in total Company annual depreciation expense based on plant as of December 31, 2008.

- **Net Salvage** – The Company fails to support or explain its various proposals. In addition, the Company employs an unusual quantitative analysis that assumes inflation is the sole driving factor of future net salvage expectations. Review of the available data and correction of the inappropriate reliance on inflation results in the need to modify Mr. Robinson's proposal for the three largest accounts. The three largest accounts represent the vast majority of depreciation expense at issue. Adoption of more realistic negative net salvage values for the three accounts results in a $1,496,989 reduction to total Company depreciation expense based on plant as of December 31, 2008.

- **Combined Impact** – The combined impact of the various life and salvage adjustments are not simply the summation of the individual standalone impacts when both life and net salvage adjustments are proposed for the same account.

The combined impact of my recommendations for Gas plant depreciation expense is a total Company reduction of $2,279,808 for plant as of December 31, 2008 and is set forth on Exhibit (JP-1) page 1.

Common Plant

- **Life** – Account 390 – Structures & Improvements represents the majority of the investment at issue in Common plant. Mr. Robinson performed an actuarial analysis on the data and appears to rely on his interpretation of the results of such analyses for his proposal of a 35-year ASL. Upon review of the Company's investment in this account, which is overwhelmingly associated with steel office buildings, a much longer ASL is warranted. Adoption of a 55-year ASL results in a $263,866 reduction to total Company depreciation expense based on plant as of December 31, 2008.

- **Net Salvage** – Without support or explanation, Mr. Robinson proposes a zero (0)% net salvage for retirement of steel office buildings after a 35-year ASL. Review of historical data, Mr. Robinson's unusual future forecasting analysis, as well as the actual retirement of 11 buildings by the Company during the last 20 years clearly demonstrates that a zero (0) level of net salvage for the investment in this account is woefully inadequate. Adoption of an initial step to a positive 20% net salvage in this proceeding results in a $283,205 reduction in total Company depreciation expense based on plant as of December 31, 2008.

- **Combined Impact** – The combined impact of the various life and salvage adjustments are not simply the summation of the individual standalone impacts when both life and net salvage adjustments are proposed for the same account. The combined impact of my recommendations for Common plant depreciation expense is a total Company reduction of $383,630 and is set forth on Exhibit (JP-1) page 2.

Q. IS THERE AN AREA OF CONCERN THAT NEEDS TO BE DISCUSSED PRIOR TO THE REMAINING PORTION OF YOUR TESTIMONY?

A. Yes. Having been involved in over 400 rate proceedings including hundreds of analyses of depreciation requests, the presentation by the Company in support of its proposals stands out and raises significant concerns. Overall, the Company's support and justification for its various proposals at best can be characterized as vague and meager. Mr. Robinson provides only very limited and general comments as to any steps undertaken and how any information obtained from historical analyses is combined with any other item of information to produce his ultimate proposal.

However, what makes this particular situation even more untenable is the fact that Mr. Robinson elected to destroy or not retain critical workpapers he developed as part of his life analysis for Gas plant depreciation. In performing SPR life analysis, the standard output yields the best-fitting ASL for 29 different Iowa Survivor curves for each different historical band of data analyzed. While Mr. Robinson claims he performed such analyses, he further states that the "output of SPR analysis is not maintained in paper copy or other format."[1] Mr. Robinson's decision to destroy or not maintain such workpapers was made with the full knowledge that the SPR "method was the primary input for estimating the average service life parameters."[2] (Emphasis added). In other words, he destroyed the underlying workpapers that formed the statistical and primary basis for his proposals. Such actions in a depreciation study are not standard by any means. Moreover, Mr. Robinson's results cannot be duplicated given his vague presentation of analysis he performed.

[1] Response to MCC-150.
[2] Response to MCC-177.

No matter what the outcome of this proceeding, I recommend that the Montana Public Service Commission (Commission) order the Company to actually document how it specifically arrived at each of its life and net salvage proposals and provide such information in its next depreciation study. The documentation should include all analyses and items of information obtained in the overall process in order to permit a more reasonable vetting of what the Company actually performed and how it arrived at its proposals. Such information is critical given the limited time and access to Company personnel and records available to intervenors in rate proceedings.

SECTION II: DEPRECIATION

Q. WHAT IS DEPRECIATION?

A. There are two commonly-cited definitions of depreciation. The first comes from the Federal Energy Regulatory Commission (FERC):[3]

> 'Depreciation,' as applied to depreciable plant, means the loss in service value not restored by current maintenance, incurred in connection with the consumption or prospective retirement of gas plant in the course of service from causes which are known to be in current operation and against which the utility is not protected by insurance. Among the causes to be given consideration are wear and tear, decay, action of the elements, inadequacy, obsolescence, changes in the art, changes in demand and requirements of public authorities.

The second definition, from the American Institute of Certified Public Accountants (AICPA), is similar:

> Depreciation accounting is a system of accounting which aims to distribute the cost or other basic value of tangible capital assets, less salvage (if any) over the estimated useful life of the unit (which may

[3] Title 18 of the Code of Federal Regulations (CFR) Part 201, Definition 12.

be a group of assets) in a systematic and rational manner. It is a process of allocation, not of valuation. Depreciation for the year is a portion of the total charge under such a system that is allocated to the year. Although the allocation may properly take into account occurrences during the year, it is not intended to be a measurement of the effect of all such occurrences.

Q. WHAT ARE THE TWO GENERAL FORMULAS USED IN DETERMINING DEPRECIATION RATES?

A. The whole life and the remaining life technique are the most commonly used formulas. The whole life technique is as follows:[4]

$$\text{Depreciation Rate (\%)} = \left[\frac{\frac{(\text{Original Cost} - \text{Net Salvage})}{\text{Average Service Life}}}{\text{Original Cost}}\right]$$

The remaining life technique is as follows:

$$\text{Depreciation Rate (\%)} = \left[\frac{\frac{\text{Original Cost} - \text{Accumulated Provision For Depreciation} - \text{Net Salvage}}{\text{Remaining Service Life}}}{\text{Original Cost}}\right]$$

The two formulas should equal each other when the difference between the theoretical reserve and the actual Accumulated Provision for Depreciation is recovered over the remaining life of the investment under the whole life technique.

Q. ARE THERE ADDITIONAL CONSIDERATIONS IN DEPRECIATION BEYOND THE DEFINITIONS?

A. Yes. The definitions provide only a general outline of the overall utility depreciation concept. In order to arrive at a depreciation-related revenue requirement in a rate proceeding, a depreciation system must be established.

[4] A theoretical depreciation reserve calculation is developed and compared to the actual accumulated provision for depreciation in conjunction with the whole life technique. If the differential is significant, an amortization of the differential for some period of time may be recommended.

Q. WHAT IS A DEPRECIATION SYSTEM?

A. A depreciation system constitutes the method, procedure, and technique employed in the development of depreciation rates.

Q. BRIEFLY DESCRIBE WHAT IS MEANT BY "METHOD."

A. "Method" identifies whether a straight-line, liberalized, compound interest, or other type of calculation is being performed. The straight-line method is normally employed for utility depreciation proceedings.

Q. BRIEFLY DESCRIBE WHAT IS MEANT BY "PROCEDURE."

A. "Procedure" identifies a calculation approach or grouping. For example, procedures can reflect the grouping of only a single item, items by vintage (year of addition), items by broad group or total grouping, or equal life groupings (ELG). The average life group (ALG) procedure is used by the vast majority of utilities. Both Mr. Robinson and I have utilized the ALG procedure in this case.

Q. BRIEFLY DESCRIBE WHAT IS MEANT BY "TECHNIQUE."

A. There are two main categories of techniques with various sub-groupings: the whole life technique and the remaining life technique. The whole life technique simply reflects calculation of a depreciation rate based on the whole life (*e.g.*, a 10-year life would imply a 10% depreciation rate over the life of the plant). The remaining life technique recognizes that depreciation is a forecast or estimation process that is never precisely accurate and that requires true-ups in order to recover exactly 100% of what a utility is entitled to over the entire life of the investment. Therefore, as time passes, the remaining life technique attempts to recover the remaining unrecovered balance over the remaining life or other period of time. Most utilities rely on a remaining life technique in utility rate matters. Both the Company and I have utilized the remaining life technique.

Q. DO THE METHODS, PROCEDURES, AND TECHNIQUES INTERACT WITH ONE ANOTHER?

A. Yes. Different depreciation rates will result depending on what combination of method, procedure, and technique is employed. Differences will occur even when beginning with the same ASL and net salvage values.

Q. WHAT IS NET SALVAGE?

A. Net salvage is the value obtained from retired property (the gross salvage) less the cost of removal. Net salvage can be either positive, in cases where gross salvage exceeds cost of removal, or negative, in cases where cost of removal is greater than gross salvage.

Q. HOW DOES NET SALVAGE IMPACT THE CALCULATION OF DEPRECIATION?

A. The intent of the depreciation process is to allow the Company to recover 100% of investment less net salvage. Therefore, if net salvage is a positive 10%, then the utility should only recover 90% of its investment through annual depreciation charges, under the theory that it will recover the remaining 10% through net salvage at the time the asset retires (90% + 10% = 100%). Alternatively, if net salvage is a negative 10%, then the utility should be allowed to recover 110% of its investment through annual depreciation charges so that the negative 10% net salvage that is expected to occur at the end of the property's life will still leave the utility whole (110% - 10% = 100%).

SECTION III: LIFE ANALYSIS

A. General

Q. WHAT IS THE PURPOSE OF THIS SECTION OF YOUR TESTIMONY?

A. This section of my testimony will address the Company's proposed life-curve combinations represented by an ASL and a corresponding Iowa Survivor curve. In order to develop a depreciation rate for each account, a remaining life based on a specific life-curve combination must be developed.

Q. HOW ARE LIFE-CURVE COMBINATIONS NORMALLY DEVELOPED FOR UTILITY PROPERTY?

A. Normally, for mass property accounts such as those at issue in this particular case, statistical life analyses are performed either on an actuarial or semi-actuarial basis. Actuarial analyses are performed when aged data is available.[5] Alternatively, when only unaged data is available, semi-actuarial analyses utilizing the SPR method are normally relied upon. In this case, the Company performed SPR analyses for Gas plant and actuarial analyses for Common plant.

[5] Aged data represents a situation where a utility maintains the installation year corresponding to each item of plant so that the age can be obtained when the item retires.

Q. DOES MR. ROBINSON PRESENT GENERAL INFORMATION REGARDING ACTUARIAL, SEMI-ACTUARIAL, AND IOWA SURVIVOR CURVES IN HIS TESTIMONY AND 2008 STUDY?

A. Yes. Since Mr. Robinson has already presented a generalized explanation of these items I will not repeat or expand upon such explanations in my testimony.

Q. IS THERE ANY NEED TO INVESTIGATE THE MANNER IN WHICH MR. ROBINSON EMPLOYED ACTUARIAL ANALYSIS?

A. No. The only adjustment I recommend in this proceeding associated with Mr. Robinson's actuarial analyses is to Common plant Account 390 – General Plant Structures & Improvements. However, my recommended adjustment for this account does not relate to actuarial analyses. In addition, while Mr. Robinson did not perform actuarial analyses for Distribution mains, I did perform an actuarial analysis on limited age data provided by the Company.

Q. PLEASE DISCUSS THE SPR ANALYSIS IN THIS PROCEEDING.

A. For Gas plant, Mr. Robinson relied on the SPR method. This method simulates plant balances over time and compares the simulated results to actual plant balances for each of 29 different Iowa Survivor curves. The best-fitting curves results from a sum of squared difference calculation standpoint are ranked, and a Retirement Experience Index (REI) is produced as part of the SPR analyses.[6] In this particular situation, Mr. Robinson chose to destroy or not retain the output of each of his various unidentified SPR analyses for each account.

[6] Retirement Experience Index simply represents the statistical stability of the results based upon the completeness of the Iowa Survivor curve and must be considered in conjunction with sum of squared difference statistics.

Q. WHY DID MR. ROBINSON NOT RETAIN CRITICAL WORKPAPERS?

A. The reasoning for his actions is unknown, but unacceptable. Other depreciation analysts do specifically provide such information, quite often even in their direct filing, but otherwise in response to discovery. Unfortunately, Mr. Robinson did not and cannot provide such information.

Q. ARE THE RESULTS OF STATISTICAL ANALYSES THE ONLY CONSIDERATION IN ESTABLISHING LIFE EXPECTATIONS FOR UTILITY PROPERTY?

A. No. Other factors such as understanding of the type of investment currently in place versus the type of investment reflected in historical retirements, changes in technology, changes in Company policy, and other factors can have an impact in certain instances. However, it must be noted that Mr. Robinson admits that the SPR analysis was the "primary input" for the ASL proposals.[7]

Q. DID MR. ROBINSON PROVIDE ANY SPECIFICS ASSOCIATED WITH ANY OTHER FACTORS FOR ANY OF HIS LIFE ANALYSIS PROPOSALS?

A. No. Mr. Robinson chose to reference "other factors," but only in the most general sense. None of Mr. Robinson's general or vague references support any given ASL or related Iowa Survivor curve selection.

Q. GIVEN THE LACK OF SUPPORT PRESENTED BY MR. ROBINSON, HOW WERE YOU ABLE TO PERFORM YOUR ANALYSES?

A. For Gas plant, the investment and corresponding depreciation expenses at issue are highly concentrated in three accounts. In fact, Account 376 – Distribution Mains, Account 380 – Distribution Services, and Account 381 – Distribution Meters

[7] Response to MCC-177.

reflect approximately 84% and 90% of the investment and depreciation expense at issue, respectively.[8] For these three accounts. Mr. Robinson's ASL proposal for Account 376 – Distribution Mains on its face appears to be low. The reason Mr. Robinson's proposal stood out on its face is that the industry discussion now generally centers on values for Distribution mains between the upper 50-year range to the mid 70-year range. In comparison, Mr. Robinson proposes a 47-year ASL. Absent a strong showing associated with situations that may reflect problematic pipe that must be replaced early, a 47-year ASL requires substantial justification before acceptance. As previously discussed, Mr. Robinson provides no meaningful justification for any of his proposals. Due to Mr. Robinson's significantly short ASL proposal for this account, I focused my efforts there.

B. Gas Plant Life Analysis

Q. WHAT IS THE ISSUE YOU ADDRESS IN THIS PORTION OF YOUR TESTIMONY?

A. This portion of my testimony will address the Company's unsupported proposal for a 47-year ASL for Account 376 – Distribution Mains. This single account represents 47% of the Company's investment in Distribution plant as of the depreciation study period.

Q. FROM A HIGH LEVEL PERSPECTIVE, WHAT IS THE COMPANY'S BASIS FOR ITS PROPOSED 47-YEAR ASL?

A. Mr. Robinson states that the "proposed average service life for each subproperty group [in Account 376 – Mains] was changed in accordance with the life indication developed through an analysis of the Company's historical data and

[8] 2008 Study Exhibit No._(EMR-1) page 2-1.

consideration of future expectations."[9] Elsewhere in the 2008 Study, Mr. Robinson states that he also held discussions with MDU management to obtain an overview of the Company's facilities and to discuss the general scope of operations together with other factors, which "could" have a bearing on the service life of the property.[10] In other words, from a high level, Mr. Robinson states that he analyzed historical data using the SPR statistical technique and held discussions with Company management in order to obtain information that "could" have a meaningful bearing on the overall life expectancy of plant at issue. However, as previously noted, the "primary input" for Mr. Robinson's proposed 47-year ASL was his SPR analyses, which he elected to destroy or not retain.

Q. PLEASE DISCUSS MR. ROBINSON'S ANALYSIS OF HISTORICAL DATA.

A. While Mr. Robinson claims he performed SPR analyses, he cannot produce the underlying workpapers. In the only two instances where Mr. Robinson professes to have captured and retained some SPR results, the SPR results presented in no way compared to the ASLs he proposes.[11] In other words, to the extent one accepts Mr. Robinson's claim that he performed numerous SPR analyses for each account, the only actual, but very limited, information he provided in response to discovery indicates dramatically longer ASLs compared to his proposal.

[9] 2008 Study Exhibit No._(EMR-1) at page 1-5.
[10] 2008 Study Exhibit No._(EMR-1) at pages 3-1 and 3-2.
[11] Responses to MCC-150 and 151.

Q. DO YOU HAVE CONCERNS REGARDING MR. ROBINSON'S CLAIM THAT HE PERFORMED NUMEROUS SPR ANALYSES FOR THE VARIOUS GAS PLANT ACCOUNTS?

A. Yes. Having been involved in hundreds of depreciation proceedings, I do not recall ever encountering a situation where the depreciation witness either did not provide the standard output for SPR analyses as part of the depreciation study, or provided such information in discovery. Unfortunately, Mr. Robinson claims that he destroyed the results of each of the claimed SPR analyses performed when he elected not to retain the analyses either in paper copy or other format.[12]

Q. IF MR. ROBINSON DID NOT KEEP HARD COPIES OR ELECTRONIC FILES ASSOCIATED WITH THE OUTPUT OF THE VARIOUS CLAIMED SPR ANALYSIS, HOW IS HE ABLE TO PRODUCE THE ONE-PAGE LIMITED SUMMARY OF CERTAIN SPR ANALYSES IN RESPONSE TO DISCOVERY?

A. That is a very good question. The two positions are inconsistent. In other words, one cannot destroy or fail to retain the SPR results, but then produce a very limited and incomplete listing of certain results. Either: (1) the results exist and Mr. Robinson does not want to provide them as they may not support his proposals, or (2) the results did not exist, but Mr. Robinson chose to recreate a limited portion of them for discovery purposes. In either instance, Mr. Robinson's claimed reliance on SPR results are totally unsupported with detailed output of SPR programs, or to the extent the limited reproduced information is all that exists, then Mr. Robinson has woefully understated the expected ASL based on historical analyses.

[12] Responses to MCC-150 and 151.

Q. WHAT DID MR. ROBINSON SPECIFICALLY PRODUCE AS AN INDICATION OF SPR RESULTS FOR ACCOUNT 376 – DISTRIBUTION MAINS?

A. In response to MCC-150, Mr. Robinson produced a one-page summary of simulated curve-fitting results, claiming that it is based on a five-year band. That document is set forth as Exhibit (JP-2). Review of Exhibit (JP-2) indicates that the most relevant information is not associated with a five-year band, but rather a full experience band reflecting data from 1916 through 2008. Next, assuming the best-fitting curve is presented for each of the limited band analyses performed, it is clear that Mr. Robinson could not identify a single analysis based on the last 35 years of experience that yielded a best-fitting life-curve combination with less than a 61-year ASL. This compares to Mr. Robinson's proposed 47-year ASL. The only available conclusion is that the shortest ASL indicated by SPR analysis is 30% greater than Mr. Robinson's proposed ASL.[13]

Q. WHY DID MR. ROBINSON PRESENT FIVE-YEAR INCREMENTS IN EXPERIENCE BANDS AS SET FORTH ON EXHIBIT (JP-2)?

A. Mr. Robinson states in his 2008 Study that "various test bands are reviewed to determine trends or changes to indicated service lives in the various bands of years."[14]

[13] (61.2 years – 47 years) / 47 years = 30.2%.
[14] 2008 Study Exhibit No._(EMR-1) at page 3-19.

Q. TO THE EXTENT A TREND EXISTS IN THE DATA FOR ACCOUNT 376 BASED ON SPR RESULTS, DO THEY INDICATE A LENGTHENING OR SHORTENING OF LIFE?

A. To the extent any of the information contained in Exhibit (JP-2) can be considered appropriate, the information indicates a significant lengthening of life expectancy for investment in Distribution mains over time.

Q. PLEASE EXPLAIN YOUR PRIOR STATEMENT THAT MR. ROBINSON'S SPR PRESENTATION SET FORTH ON EXHIBIT (JP-2) IS LIMITED AND INCOMPLETE AT BEST.

A. The typical type of results obtained from SPR analyses are set forth on Exhibit (JP-3). Exhibit (JP-3) represents a typical printout presented by another utility in another current proceeding.

Review of Exhibit (JP-3) identifies that SPR results for any given band analysis normally yields the best-fitting ASL for 29 different Iowa Survivor curves. Iowa Survivor curves are standardized curves utilized throughout the industry in determining and presenting depreciation parameters for utility rate matters. In addition, the typical printout produces a Conformance Index (CI) and a REI for each of the 29 different Iowa Survivor curves tested. The CI and REI are statistical measures of goodness of fit or completeness of the simulated Iowa Survivor curve. There are industry accepted ranking criteria for CIs and REIs that provide guidance in the selection of the best-fitting life-curve combination based on proper interpretation of the information, not necessarily the top-listed curve.

Q. HOW DOES MR. ROBINSON'S PRESENTATION DIFFER FROM THE INDUSTRY STANDARD PRESENTATION?

A. Obviously, Mr. Robinson's presentation identifies the results for only a single Iowa Survivor curve and not for the remaining 28 Iowa Survivor curves for each band analysis. Moreover, it would be unusual to perform a full-band analysis and a five-year experience band analysis with no intermittent band analyses. In other words, to the extent Mr. Robinson actually performed SPR analyses, the results undoubtedly were of a much more expansive nature than presented in his one-page limited summary. Therefore, no credence can be given to Mr. Robinson's claim that his proposal is based on a detailed analysis of historical data.

Q. DID YOU SPECIFICALLY SEEK THE RANKING CRITERIA RELIED UPON BY MR. ROBINSON TO THE EXTENT HE ACTUALLY PERFORMED SPR ANALYSES?

A. Yes. Unfortunately, Mr. Robinson chose to remain silent in his response to that particular request.[15]

Q. DID MR. ROBINSON PROVIDE THE UNDERLYING DATABASE THAT WOULD PERMIT REPLICATION OF HIS SPR ANALYSES?

A. No, not initially. While Mr. Robinson claims he provided the claimed database, he initially failed to identify what is specifically contained in the tens of thousands of values provided. In particular, there are "codes" associated with each line item but there was no explanation of what the code represents.[16] Moreover, since Mr. Robinson did not identify the specific experience band, placement band, and intervals or test points for each account, there is no way that anyone could know which combination of values to analyze in order to attempt to duplicate results that

[15] Responses to MCC-150 and 151.
[16] Response to MCC-135.

Mr. Robinson apparently chose to destroy or not retain. In other words, Mr. Robinson's offer to provide the input data in a less than meaningful manner only ensured that no one could duplicate his unknown analyses.

Q. THEN FROM AN ANALYSIS OF HISTORICAL DATA STANDPOINT WHICH MR. ROBINSON ADMITS IS THE "PRIMARY" BASIS FOR ESTABLISHING A PROPOSED ASL, HE CANNOT PRODUCE ANYTHING THAT WOULD SUPPORT HIS CLAIM, CORRECT?

A. That is correct.

Q. DID MR. ROBINSON PROVIDE A GRAPHICAL PRESENTATION OF THE CLOSENESS OF FIT BETWEEN HIS PROPOSAL AND THE ACTUAL BALANCE OVER TIME?

A. Yes. In Section 5 of his Gas plant 2008 Study, he produced what he claims to be a graphical representation over time of the simulated plant balance associated with his proposed life-curve combination and the actual plant balances for those years.

Q. IS THAT PRESENTATION BY MR. ROBINSON COMPLETE AND MEANINGFUL?

A. No. The graphical presentation fails to demonstrate whether other life-curve combinations were superior or more representative of the data. Indeed, when Mr. Robinson performed actuarial analysis for the Company's Common plant, he not only provided the graphical comparison, but he also provided the underlying numerical values as set forth in Exhibit No._(EMR-2) Section 5. In other words, Mr. Robinson's presentation for SPR analyses is inconsistent with the level of support set forth when he performs actuarial analysis as he did for the Company's Common plant. For his Common plant life analysis, Mr. Robinson recognized the need to retain workpapers, both in paper copy and apparently in electronic format,

a practice he failed to perform for SPR analyses performed for the Company's Gas plant.

Q. TURNING TO THE OTHER ASPECT OF LIFE ESTIMATION, THAT BEING THE OTHER FACTORS MR. ROBINSON ALLUDED TO IN HIS TESTIMONY, WHAT DID MR. ROBINSON ACTUALLY PRESENT IN SUPPORT OF HIS POSITION?

A. Unfortunately, Mr. Robinson's presentation for the "other factors" is no better than his presentation of SPR results. Apparently, Mr. Robinson believes his proposals are adequately supported by simply stating the final life parameter and that the parameter is based on undocumented generalized concepts. Indeed, the greatest level of definition to the other factors is set forth in Section 4 of his Gas plant 2008 Study, which in reality provides no specificity in support of his proposals.

Q. WHAT DOES MR. ROBINSON CLAIM FOR THE LARGEST PLANT ACCOUNT, ACCOUNT 376 – DISTRIBUTION MAINS?

A. For Account 376.1 – Distribution Mains – Steel, Mr. Robinson identifies that a portion of the property is associated with bare steel while the Company now continues to install coated and wrapped steel mains for higher pressure and larger size requirements.[17] However, these items of information in no way define a specific life; rather they only give insight as to why there is a trend in the data towards a longer life.

Indeed, many utilities across the country, including those analyzed by Mr. Robinson, have implemented bare steel replacement programs where bare steel investment is being removed at ages earlier than they would have obtained absent such programs. While these programs shorten the overall expected life of

[17] 2008 Study Exhibit No._ (EMR-1) page 4-4.

historical steel mains, they are not indicative of the replacement mains associated with coated and wrapped steel. Indeed, as better technology has been developed for coated and wrapped steel, longer life expectations have become the industry standard. Yet Mr. Robinson failed to note a single other factor as he claims he considers for all items of investment.

Q. DID YOU SPECIFICALLY INQUIRE AS TO THE CATEGORIZATION OF INVESTMENT IN ACCOUNT 376 – DISTRIBUTION MAINS BETWEEN BARE STEEL, COATED STEEL, WRAPPED STEEL, ETC.?

A. Yes, yet the Company claims it does not keep track of steel mains by bare, coated, or wrapped steel.[18] In addition, I inquired as to the dollar level of retirement by year associated with Account 376.1 – Distribution Steel Mains by type of pipe. However, the Company again claimed that it did not maintain information associated with its investment or retirement of such investment in steel mains by type of steel. Therefore, Mr. Robinson's brief reference to bare steel versus coated steel or wrapped steel as considerations for future expectations in his 2008 Study either points to a longer ASL or are meaningless.

Q. TURNING TO ACCOUNT 376.2 – DISTRIBUTION MAINS – PLASTIC, DID MR. ROBINSON'S AND THE COMPANY'S PRESENTATION YIELD BETTER RESULTS THAN IT DID FOR STEEL MAINS?

A. No. For plastic Distribution mains, Mr. Robinson claims in numerous completed depreciation studies for other utilities he has experienced shorter lives for plastic mains than for steel mains, and that plastic mains are often installed in areas that experience higher growth and thus replacements.[19] In other words, the total additional other factors that he identifies under plant considerations for future expectations reference what he claims to be his experience with other systems and

[18] Response to MCC-156.
[19] 2008 Study Exhibit No._(EMR-1) at page 4-5.

thus may have nothing to do with this specific analysis or any particular item of information obtained from MDU's management. Moreover, such a limited item of information in no way supports an ASL as short as 47 years.

Q. IS MR. ROBINSON'S STATEMENT REGARDING PLASTIC MAINS HAVING A SHORTER LIFE THAN STEEL MAINS SUPPORTED BY HIS ANALYSIS IN OTHER PROCEEDINGS?

A. Not on a consistent basis. For the limited number of other studies provided by Mr. Robinson, the largest gas system analyzed had a much longer life for plastic mains than what Mr. Robinson proposed for steel mains.[20] In other words, some of the results Mr. Robinson recommended for other utilities are inconsistent with his claim in this proceeding, thus calling into question the credibility of the very limited other generalized statement he presented in his 2008 Study.

Q. IN REVIEW OF MR. ROBINSON'S OTHER STUDIES, DID YOU FIND INDICATIONS THAT HE RECOMMENDS LONGER ASLs FOR DISTRIBUTION MAINS ELSEWHERE?

A. Yes. While Mr. Robinson's recommendations for mains generally appear to be lower than the recommendations elsewhere in the industry, he often does recommend ASLs for other utilities significantly longer than the 47-year ASL he proposes for MDU in this proceeding. Thus, it has to be questioned why Mr. Robinson believes that MDU has not or cannot obtain the same life expectancy for its Distribution mains as other utilities are able to do, even those that Mr. Robinson analyzes.

[20] Response to MCC-161.

C. Gas Plant Account 376

Q. DO YOU AGREE WITH MR. ROBINSON'S PROPOSED 47-YEAR ASL FOR DISTRIBUTION MAINS?

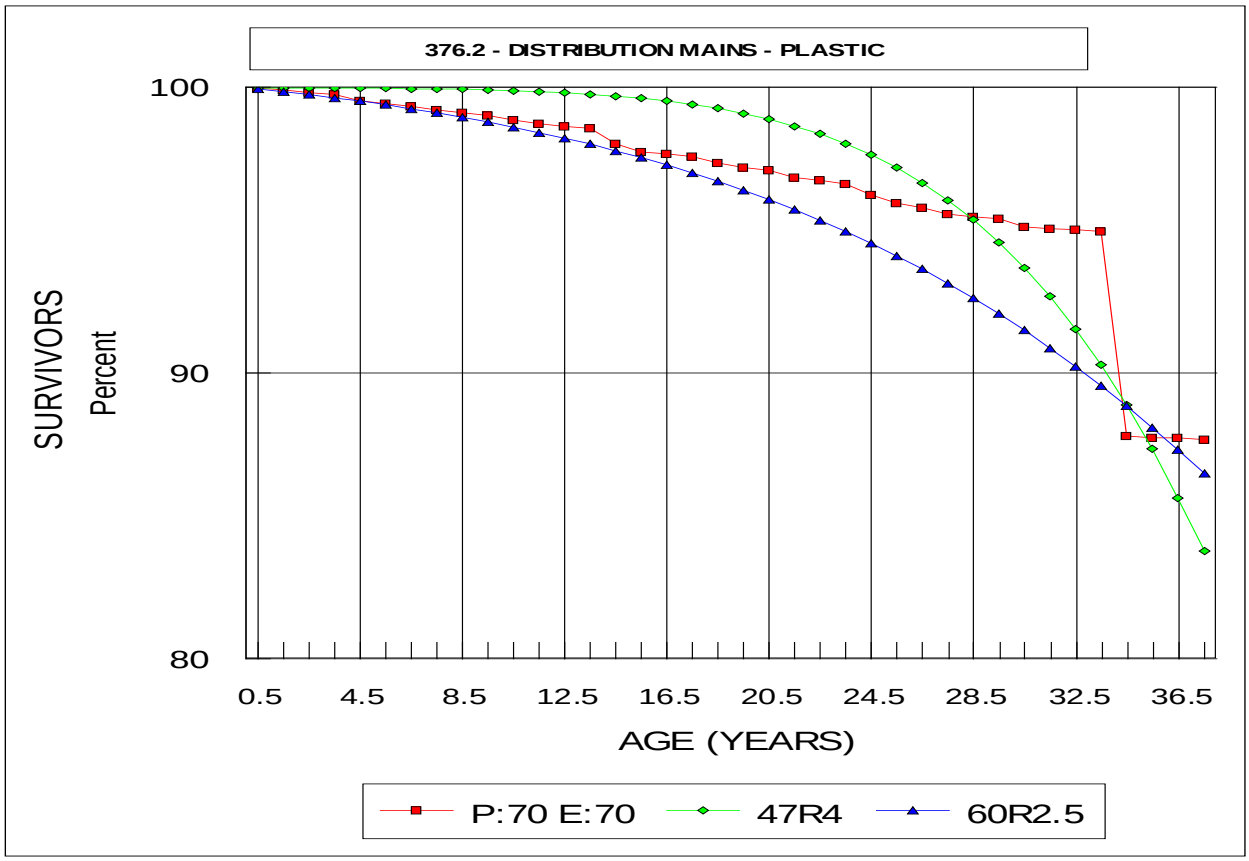
A. No. As previously noted, absent a strong showing in support of such an artificially short value, the ASL must be increased. I recommend an initial step to a 60R2.5 life-curve combination.

Q. WHAT IS THE BASIS FOR YOUR RECOMMENDATION?

A. My recommendation is based on a combination of investigations into statistical results of the historical data, an understanding of the changes in the industry, and realistic industry expectations.

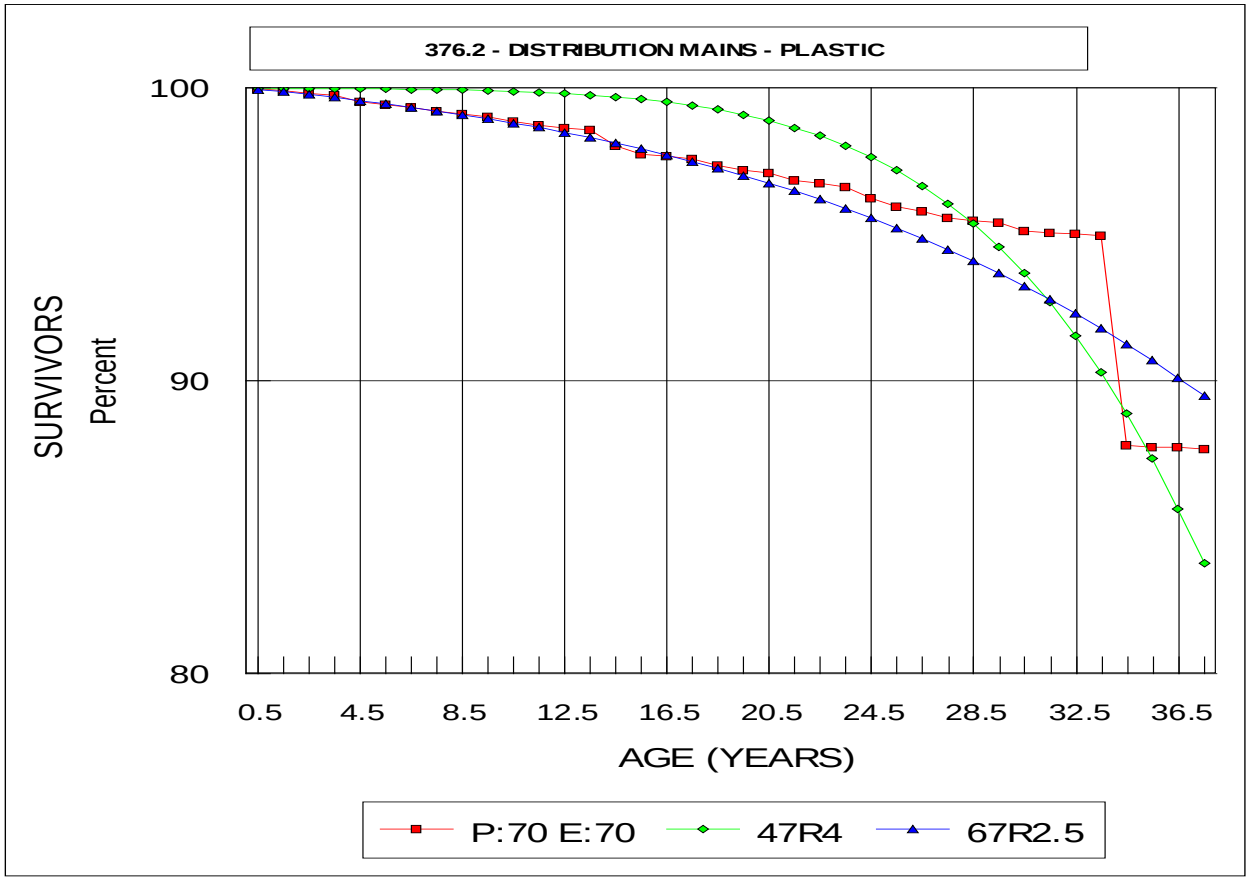
While Mr. Robinson claims he performed a statistical SPR analysis, the only limited results he did provide indicate much longer ASLs than either the 47-year level he proposed or the 60-year level I recommend.[21] However, in reviewing what limited information Mr. Robinson has provided, there is aged information for plastic and steel mains.[22] Based on my interpretation of what Mr. Robinson presented for age data associated with plastic and steel mains, I performed actuarial analyses which yielded good-fitting indications in the 60- to 70-year ASL range. As set forth in the graph below, my recommendation of a 60R2.5 life-curve combination is a far superior curve fit to the historic data or observed life table (i.e., the result from an actuarial analysis) for plastic mains than is Mr. Robinson's proposed 47R4 life-curve combination.

[21] Response to MCC-150.
[22] Response to MCC-135.


376.2 - DISTRIBUTION MAINS - PLASTIC
SURVIVORS
Percent
100
90
80
0.5
4.5
8.5
12.5
16.5
20.5
24.5
28.5
32.5
36.5
AGE (YEARS)
P:70 E:70
47R4
60R2.5

1

While the 60R2.5 life-curve combination is a good fit, as shown in the graph below a 67R2.5 life-curve combination is even a better fit for plastic mains.



However, until the Company provides more information for its investment and the life characteristics for its investment in the next depreciation study, I have limited the level of increase in ASL to the 60-year level.

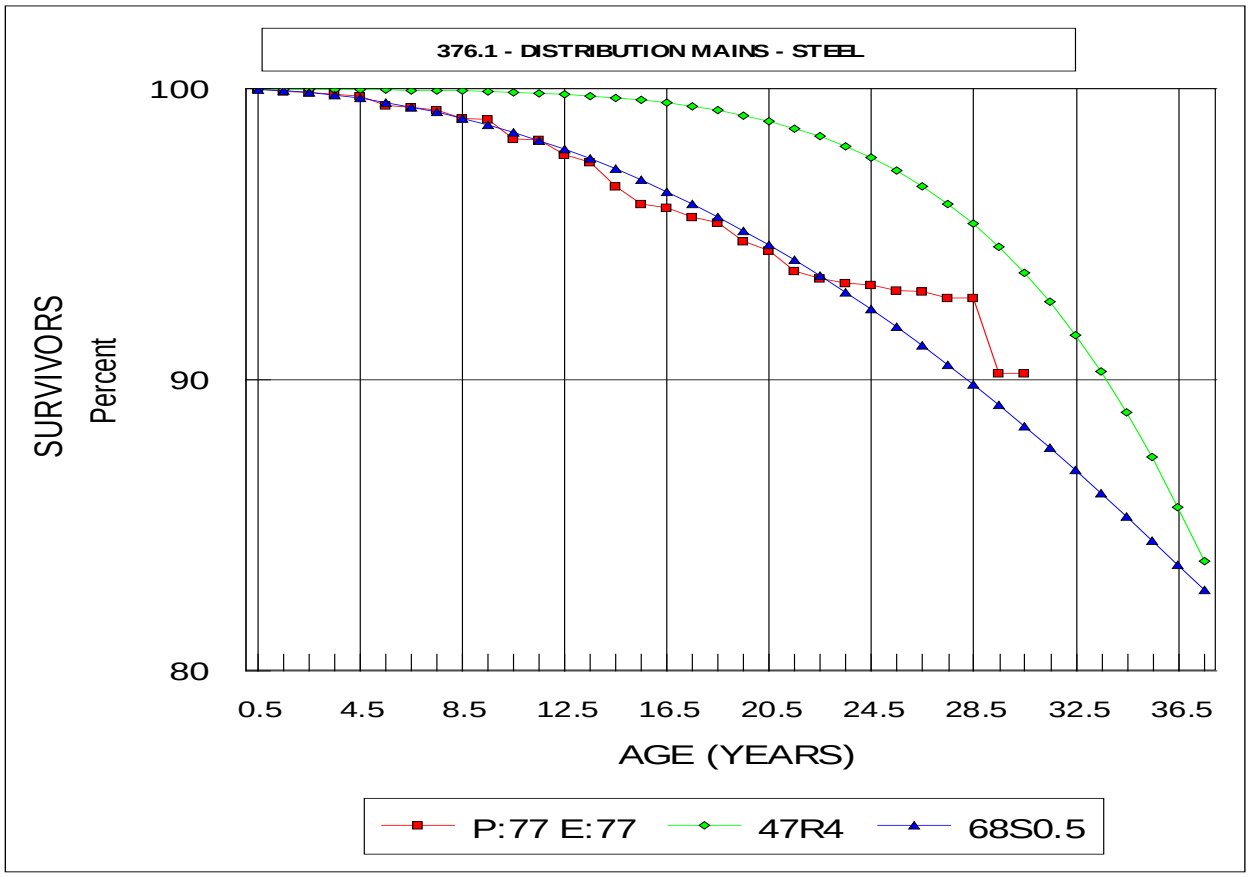
It must be noted that 45- to 55-year life indication for plastic mains is more indicative of early generations of plastic pipe installed in the 1960s and early 1970s that had chemical composition problems as well as installation problems. Such problems resulted in shorter life expectancy for such investment compared to life expectations for newer generation plastic pipe installed in the 1980s, 1990s, and 2000s. Given that the vast majority of investment in this account for MDU was placed into service after the 1980s, one would expect that the 60- to 70-year

ASLs indicated by the actuarial analysis to be more appropriate than Mr. Robinson's proposed 47-year ASL for plastic mains.

The actuarial information for steel mains is more limited than that for plastic mains, but still indicates a much longer life. As set forth in the graph below, a 68S0.5 life-curve combination is a superior fit to the observed life table than is Mr. Robinson's proposed 47R4 life-curve combination. Therefore, given the conservative estimate I recommend for plastic mains, such a recommendation would also be conservative for steel mains.

Turning to industry comparative data, it must be noted that even Mr. Robinson in his limited number of gas cases during the past five years has also proposed ASLs for Distribution mains in the mid-60- to even the mid-70-year level.[23] In other words, given the heavier weighting of investment to more current periods (e.g., the 1980s through the present), ASLs in the 60- to 70-year range are indicative of industry expectations and values even proposed by Mr. Robinson.

[23] Response to MCC-161.



In summary, whether viewed from the limited SPR results Mr. Robinson was prepared to provide, to limited actuarial analysis, to Mr. Robinson's own industry comparative data, or to other industry comparative data as well as recognition of the change in material and installation practices during the past several decades[24], an ASL no shorter than 60 years for Distribution mains should be adopted for any subaccount that Mr. Robinson proposed a 47-year ASL.

[24] Responses to MCC-179 and 180.

Q. WHAT IS THE IMPACT OF YOUR RECOMMENDATION?

A. My recommendation for an initial step to a 60-year R2.5 life-curve combination results in a $1,043,790 reduction in total Company depreciation expense based on plant as of December 31, 2008.

D. Common Plant Life Analysis

Q. WHAT IS THE ISSUE IN THIS PORTION OF YOUR TESTIMONY?

A. This portion of my testimony will address the Company's proposed life for Common plant Account 390. Common plant Account 390 is by far the largest single Common plant account and has the largest depreciation expense for any Common plant account. For this account, Mr. Robinson proposes a 35-year ASL. Given the type of investment in the account, a 35-year ASL is artificially short.

Q. WHAT DOES THE COMPANY PROPOSE FOR COMMON PLANT ACCOUNT 390 – STRUCTURES & IMPROVEMENTS?

A. The Company proposes a 35R1 life-curve combination.[25]

Q. WHAT IS THE COMPANY'S BASIS FOR ITS PROPOSAL?

A. As was the case for Gas plant, the Company's basis for its actual proposals for each account is limited to vague and generalized statements relating to analysis of historical information and discussion with Company personnel. However, for Common plant, Mr. Robinson performed actuarial analyses rather than SPR analyses as he performed for Gas plant. In performing actuarial analyses Mr. Robinson did provide the resulting observed life tables. The observed life tables associated with actuarial analyses provides more information than the graphical

[25] Exhibit No._(EMR-2) page 2-5 Column I.

presentation of simulated balances to actual balances, which is all he provided in the SPR analyses for Gas plant.

Q. DO YOU AGREE WITH THE COMPANY'S PROPOSAL?

A. No. The Company's proposal represents an artificially short ASL. I recommend nothing shorter than a 55R1 life-curve combination.

Q. WHAT IS THE BASIS FOR YOUR RECOMMENDATION?

A. My recommendation not only reviews the results of the actuarial analyses, but unlike Mr. Robinson recognizes the actual type of investment in the account.

In particular, the vast majority of the investment in this account is associated with major office buildings and service centers.[26] These investments are steel buildings with either brick or pre-cast concrete exteriors and are owned, not leased, by the Company. Therefore, the retirement activity reflected in the actuarial results (e.g., roofs, A/C systems, etc.) relied upon by Mr. Robinson will significantly understate the life expectancy of the majority of the investment in the account (e.g., steel structures). Moreover, Mr. Robinson's actuarial analyses are inappropriately skewed to an artificially short ASL due to the inclusion of major retirements associated with transfer of the corporate office building to MDU Resources Corporation 6 years after completion.[27] Office buildings, warehouses, and service centers can and do last for 60 or 70 years or even longer periods. Indeed, MDU's general office in Bismarck, North Dakota was built in 1968 and is still in service with no identified plans for retirement. In other words, the largest single investment in this account has already lasted 45 years compared to Mr. Robinson's proposed 35-year ASL for this account.

[26] Response to MCC-148.
[27] Responses to MCC-185 through 187.

While the replacement of air conditioning systems, roofs, and other interim retirements will have an impact on the overall ASL for this account, a 35-year ASL is unrealistically short. Recognizing that the majority of the investment in this account is in actual steel buildings that can last for 60 or 70 years or longer, relying on a 55-year ASL is a more realistic expectation for the investment by the Company. This would be equivalent to assuming approximately a 70-year life span for the buildings and a 20-year life span for roofs and air conditioning systems, with a 70/30 split in investment, respectively. While the assumed 70/30 split between buildings and interim components is conservative, it does provide a logical basis at arriving at a 55-year overall ASL.

Q. WHAT IS THE IMPACT OF YOUR RECOMMENDATION?

A. My recommendation results in a $263,866 reduction to total Company Common plant depreciation expense based on plant as of December 31, 2008.

SECTION IV: NET SALVAGE

A. Gas Plant Net Salvage General

Q. WHAT IS THE ISSUE IN THIS PORTION OF YOUR TESTIMONY?

A. This portion of my testimony addresses the Company's request for significant levels of negative net salvage in its calculation of Gas plant depreciation expense. Indeed, the Company's request reflects the fact that a majority of its requested depreciation expense is associated with its proposed net salvage parameters.[28]

[28] Reliance on a zero net salvage would reduce depreciation expense by $5.9 million, or 57.8% based on plant as of December 31, 2008.

Q. GIVEN THE SIGNIFICANCE OF THE COMPANY'S REQUESTED NET SALVAGE, DID IT PROVIDE DETAILED EXPLANATION AND SUPPORT FOR ITS REQUEST FOR VARIOUS ACCOUNTS?

A. No. In spite of the magnitude of the impact associated with the proposed net salvage values, Mr. Robinson presents little more than generalized statements that he performed historical analysis, attempted to identify trends, and was influenced by future estimates of the cost of removal based on age consideration of plant retired compared to the estimated ASL.[29] Indeed, a review of Mr. Robinson's testimony, 2008 Study, and workpapers yields the stark fact that the Company's proposed net salvage ratios are unsubstantiated and unsupported. It is essential to recognize that generalized phrases of performing historical analysis and considering future expectations are meaningless in establishing whether a -50%, a -30%, or any other value is the appropriate value to be utilized for ratemaking purposes for any given account.

Q. IS THERE A PARTICULAR CONCERN REGARDING MR. ROBINSON'S APPARENT PROCESS FOR ESTABLISHING NET SALVAGE VALUES?

A. Yes. Mr. Robinson incorporates his estimate of future inflation into his determination of net salvage ratios to be utilized for current ratemaking purposes. Mr. Robinson employs a methodology not utilized by others in the industry in order to provide his estimated quantification of future inflation. Indeed, in this proceeding, Mr. Robinson assumes a 2.75% annual future inflation rate for as long as 57 years into the future for one minor account, but also as far as 37 years into the future for a major account.[30]

[29] Mr. Robinson's testimony at pages 5, 15, and 18.
[30] 2008 Study Exhibit No._(EMR-1) Section 7 pages 7-3 and 7-13, respectively.

Q. DOES MR. ROBINSON'S UNIQUE PROCESS OF QUANTITATIVELY INCORPORATING A CALCULATION OF FUTURE INFLATION HAVE A SIGNIFICANT IMPACT?

A. Yes. For the largest single account, Distribution mains, Mr. Robinson's assumption that future inflation is the only consideration to be recognized for estimating future net salvage results in a current expected dollar of net salvage being increased to a level of $2.71.[31] In other words, Mr. Robinson wants current customers to pay for future escalated costs with their current dollars. This proposal is inappropriate as, at a minimum, it creates intergenerational inequity and violates the matching principle.

Q. IS MR. ROBINSON CORRECT IN ASSUMING FUTURE INFLATION APPLIED TO HISTORICAL ANALYSES IS THE APPROPRIATE APPROACH TO ESTIMATING FUTURE NET SALVAGE?

A. No, and in this particular instance there are additional problems to Mr. Robinson's analyses. First, it must be noted that if inflation were the only consideration for changes in future net salvage, there would be no need to hire a depreciation expert to quantify the impact that such a driving factor would have on the final determination of net salvage. In reality, even the historical analysis Mr. Robinson has presented clearly demonstrates that there is not a continuous increase in negative net salvage as would be expected if inflation were the driving or major factor associated with gross salvage and cost of removal. Indeed, there are numerous other factors and considerations that go into net salvage analyses. Unfortunately, Mr. Robinson fails to focus on any factor other than his estimate of future inflation.

[31] 2.75% annual inflation rate for 36.8 years compounded annually results in a 2.71 factor.

Q. WHAT ARE SOME OTHER FACTORS THAT SHOULD BE CONSIDERED?

A. Some of the other factors that affect net salvage are the circumstances associated with a particular retirement, the internal accounting for costs incurred between a new installation that replaces the retired plant, the actual item being retired within an account, the quantity of assets retired at any given time, as well as other considerations. For example, the per unit cost to remove a 10-foot section of main can be dramatically different depending on several factors. The cost to remove a 10-foot section of main on a three-day holiday weekend at 2 a.m. under emergency situations is going to be dramatically higher than the cost to remove a 10-foot section that is part of a one-mile replacement of mains on a planned basis during normal work hours. The per unit cost of removal between these two examples could be different by an order of magnitude.

Q. EVEN IF ONE WERE TO ASSUME INFLATION WAS THE KEY FACTOR IN ESTIMATING FUTURE NET SALVAGE, HAS MR. ROBINSON'S ASSUMED 2.75% ANNUAL INFLATION RATE BEEN ACCURATE IN THE YEARS THAT HAVE PASSED SINCE THE 2008 DEPRECIATION STUDY?

A. No. Inflation as measured by the Consumer Price Index (CPI) from the end of the 2008 Study through 2012 was 6.6%.[32] The 6.6% increase in CPI over the past four years compares to Mr. Robinson's estimation of 11.5% for the same period.[33] Indeed, during the four years subsequent to Mr. Robinson's depreciation study, his estimation of future inflation is in error by 73%.[34]

[32] U.S. Bureau of Labor Statistics CPI Index December 2012 value of 229.594 versus December 2008 value of 215.303.
[33] 1.0275^4=11.5%.
[34] 11.5% / 6.6%.

Q. HOW DID MR. ROBINSON TAKE INFLATION INTO ACCOUNT?

A. As with the balance of Mr. Robinson's depreciation study, his explanation of how he incorporated his concept of future inflation into the development of his final proposed net salvage parameters is extremely vague. When specifically requested to provide how annual inflation was employed in the development of the final proposed net salvage parameters, Mr. Robinson responded by saying the forecast is an "additional tool used to provide information."[35] He further states that his estimation process "gives consideration to the overall average, recent experience, and forecasted analysis. The estimation process is one of gradualism towards more future looking calculations which is more representative of future net salvage that can be anticipated at the end of life of the property group."[36] In other words, even when specifically requested to provide how he employed his inflation calculation in determining the final proposed net salvage values, he continues the process of being exceptionally vague and nonresponsive to what he actually did to arrive at net salvage factors. This failure to identify what is the basis for his proposal is inappropriate and unacceptable given that his net salvage estimations represent the majority of the requested depreciation expense. As will be discussed in the account specific section of my testimony, Mr. Robinson's failure to provide specifics appear to be tied in part to the significance he actually did give to his future inflation estimates in his process of proposing net salvage values for accounts.

Q. BASED ON YOUR REVIEW OF THE MAJOR GAS PLANT ACCOUNTS, ARE YOU RECOMMENDING ADJUSTMENTS?

A. Yes. I am recommending adjustments to the three major Gas plant accounts which comprise in excess of 90% of the depreciation expense requested in the 2008

[35] Response to MCC-143.
[36] *Id.*

Study. The table below sets forth for the three accounts, the Company's proposals, my recommendations, and the standalone difference of each recommendation on a total Company basis as of December 31, 2008.

Account Description	**MDU Proposed**	**MCC Recommended**	**Impact of Adjustment**
Account 376 – Distribution Mains	-50%	-30%	$761,817
Account 380 – Distribution Services	-200%	-175%	$507,095
Account 381 – Distribution Meters	-15%	-5%	$228,078
Total			$1,496,990

In addition, I am recommending an adjustment to Common plant Account 390 – Structures & Improvements.

B. Gas Plant Account Specific

Account 376

Q. WHAT DOES THE COMPANY PROPOSE FOR ACCOUNT 376 – DISTRIBUTION MAINS?

A. The Company proposes a -50% net salvage, which is less negative than the existing -60% net salvage for this account.[37]

Q. WHAT IS THE COMPANY'S BASIS FOR ITS PROPOSAL?

A. The Company presents no specific basis for its proposal. As previously noted, Mr. Robinson has provided various generalized and vague references to concepts, trends, and other information, yet has failed to provide any specifics as to how he arrived at his proposed -50% net salvage value.

Q. DO YOU AGREE WITH THE COMPANY'S PROPOSAL?

A. No. The Company's proposal is excessively negative. I recommend a -30% net salvage for this account.

Q. WHAT IS THE BASIS FOR YOUR RECOMMENDATION?

A. My recommendation is based on an analysis of historical data recognizing patterns or trends in the data and taking into account the likely type of activity that is occurring. First, it must be noted that while Mr. Robinson claims that he relies on trends in the data for this account, that statement is not accurate. The trend in the data from the early 2000s through 2008 has been generally to a less negative level between approximately -20% and -30%.[38] Indeed, even relying on the three-year rolling average band analyses presented by Mr. Robinson, the trend has also been

[37] 2008 Study Exhibit No._(EMR-1) Section 4 page 4-4.
[38] 2008 Study Exhibit No._(EMR-1) at page 7-10.

towards a -25% to -35% value.[39] Moreover, it is worth noting that during the past 20 years the Company has experienced a value as negative as a -50% in only two years.[40] In fact, for four out of the past five years, the Company has experienced a negative net salvage less negative than a -35%. Therefore, from a trend analysis or analysis of historical data, a net salvage value between -25% and -30% would be more appropriate.

Another consideration is the fact that on systems such as the Company's, without identified main replacement programs, mains are frequently replaced due to emergency situations. The level of negative net salvage that is incurred during emergency replacement activity is normally more negative than would normally be expected in the future, as a greater quantity of mains are retired on a more planned basis.

In addition, my recommendation is approximately the level experienced by the Company over the entire historical database relied upon by Mr. Robinson in his 2008 Study.[41] I, however, did not incorporate the impact of estimated future inflation as did Mr. Robinson. In fact, for this account, it would appear that the only pathway to a -50% net salvage as proposed by Mr. Robinson would be to give significant weight to his future inflated -92% value. Indeed, it would be necessary to give Mr. Robinson's estimated future inflation results of a negative 92% an approximate 40% weighting with a 60% weighting for the current or trend values of approximately a -25% to -30% to arrive at an overall -50% net salvage level.[42] Such analysis by Mr. Robinson is inappropriate and demonstrates the fatal flaw reflected in his proposal.

[39] *Id.* at page 7-12.
[40] *Id.* at pages 7-9 and 7-10.
[41] *Id.* at page 7-13.
[42] (-92% x 40% + -25% x 60%) = 51.8%.

Q. WHAT IS THE IMPACT OF YOUR RECOMMENDATION?

A. My recommendation of a -30% net salvage for this account results in a $761,817 reduction in total Company annual depreciation expense based on plant as of December 31, 2008.

Account 380

Q. WHAT DOES THE COMPANY PROPOSE FOR ACCOUNT 380 – DISTRIBUTION SERVICES?

A. The Company proposes a -200% net salvage, or a value more negative than the existing
-175% net salvage.[43]

Q. WHAT IS THE COMPANY'S BASIS FOR ITS PROPOSAL?

A. As with all other accounts, the Company provided no specific explanation as to how it arrived at its proposed -200% net salvage. However, the proposed -200% net salvage is approximately equal to the inflation adjusted forecasted future expected net salvage value developed by Mr. Robinson.[44]

Q. DO YOU AGREE WITH THE COMPANY'S PROPOSAL?

A. No. The Company's proposal is one of the most negative net salvage levels utilized in the industry. In fact, it must be realized that the Company's -200% net salvage represents a situation where the Company seeks to recover $3 from customers for every $1 it invests in Distribution services. Given the Company's lack of detailed information associated with its investment in this account, I conservatively recommend retaining the existing -175% net salvage.

[43] 2008 Study Exhibit No._(EMR-1) at Section 4 pages 4-11 through 4-13.
[44] 2008 Study Exhibit No._(EMR-1) at Section 7 page 7-28.

Q. WHAT IS THE BASIS FOR YOUR RECOMMENDATION?

A. The Company's historical values vary significantly over time. The range of values reported by the Company for years that cost of removal or gross salvage values are recorded range from a high of a -28% to a low of a -286%.[45] In addition, it is common for the Company to report annual variations of 40 percentage points or more. Annual variations of this magnitude call into question the Company's accounting practices as well as field practices associated with the retirement of services.

While the overall historical database presented by the Company yields a -88% net salvage, the overall value includes numerous years where no gross salvage or cost of removal was reported.[46] When the historical database is reviewed from 1995 through 2008, corresponding to the period when the Company did record gross salvage or cost of removal in each consecutive year, the resulting net salvage is a -179%. While a -179% is still excessively negative compared to industry values and realistic expectations, it may be the best information available given the Company's presentation.

From an industry standpoint, even one grounded in Mr. Robinson's recent experience, the proposed -200% net salvage for this account is excessively negative. Indeed, during the past five years the most negative net salvage value proposed by Mr. Robinson is a -160%, with the average proposed negative net salvage value being approximately a -88%.[47] In other words, even the existing -175% net salvage is more negative than any value Mr. Robinson proposed during the past five years and in fact is as much as eight times more negative than the -25% value he proposed for Rochester Gas & Electric for the same depreciation test period as reflected in the Company's 2008 Study. Variations of this

[45] *Id.* at Pages 7-24 through 7-25.
[46] *Id.* at Pages 7-24 through 7-28.
[47] Response to MCC-161.

magnitude demand significant support and justification, none of which has been provided by Mr. Robinson or the Company.

While I am uncomfortable recommending retention of even the -175% existing net salvage level, it is the only value that can reasonably be identified based on the information provided by the Company. However, in conjunction with recommending the retention of the -175% net salvage, I also recommend the Commission order the Company to make a full and complete analysis of why its recorded levels of negative net salvage are not only becoming more negative, but are at high negative levels compared to the rest of the industry. Such analysis should include a detailed review and justification of those costs directly assigned to cost of removal when replacement activity occurs. It may very well be a situation where activities that should be assigned to the new replacement investment are being booked as cost of removal. However, in no instance should the Commission adopt a more negative value than currently exists.

Q. WHAT IS THE IMPACT OF YOUR RECOMMENDATION?

A. My recommendation to retain the -175% net salvage results in a $507,095 reduction in total Company annual depreciation expense based on plant as of December 31, 2008.

Account 381

Q. WHAT DOES THE COMPANY PROPOSE FOR ACCOUNT 381 – DISTRIBUTION METERS?

A. The Company proposes a significant change in net salvage. The Company proposes a -15% compared to the existing zero (0) level of net salvage.[48]

Q. WHAT IS THE COMPANY'S BASIS FOR ITS PROPOSAL?

A. As with all other accounts, the Company does not provide any meaningful basis for how it arrived at its proposed net salvage value. However, based on a review of the Company's historical analysis of data, it would appear that the -15% proposal is based on Mr. Robinson's reliance on his forecast of future inflation, which results in a -19%. This future inflation escalated value of -19% and Mr. Robinson's statement that he gradually tends to move to the future inflated value, appears to support his -15% proposal.

Q. DO YOU AGREE WITH THE COMPANY'S PROPOSAL?

A. No. The Company's proposal is excessively negative. I recommend a value no more negative than a -5%.

Q. WHAT IS THE BASIS FOR YOUR RECOMMENDATION?

A. Review of the historical database indicates a positive overall 7% net salvage.[49] Further review of historical data indicates that, during just the past 10 years, the Company experienced a range from a high of positive 75% to a low of a -175%.[50] Moreover, the trend in the data based on three-year rolling averages is towards a less negative value but is heavily influenced by the most recent 2008 value

[48] 2008 Study Exhibit No._(EMR-1) at page 4-14.
[49] *Id.* at Page 7-33.
[50] *Id.* at Page 7-30.

corresponding to a -175%. Thus, to the extent that moving to a negative value is appropriate, nothing more negative than a -5% is warranted, and in fact, even such movement may be unwarranted. However, without any further additional information a -5% net salvage recommendation is a conservative value.

Q. WHAT IS THE IMPACT OF YOUR RECOMMENDATION?

A. My recommendation results in a $228,078 reduction in total Company annual depreciation expense based on plant as of December 31, 2008.

C. Common Plant Net Salvage

Q. WHAT IS THE ISSUE IN THIS PORTION OF YOUR TESTIMONY?

A. This portion of my testimony addresses the Company's proposal for a zero (0) level of net salvage associated with Common plant Account 390 – General Structures & Improvements.

Q. WHAT DOES THE COMPANY PROPOSE FOR ITS COMMON PLANT ACCOUNT 390 – GENERAL PLANT STRUCTURES & IMPROVEMENTS?

A. The Company proposes a zero (0) net salvage for the investment in this account.

Q. WHAT IS THE COMPANY'S BASIS FOR ITS PROPOSAL?

A. As with all other proposals by the Company, there is no specific basis provided, either in testimony or in the 2008 Study. However, review of Mr. Robinson's net salvage presentation in Section 7 of his 2008 Study for Common plant indicates

that a significant positive net salvage is warranted based on either review of historical data or Mr. Robinson's forecasted inflation analysis.[51]

Q. DO YOU AGREE WITH MR. ROBINSON'S PROPOSAL?

A. No. Mr. Robinson's proposal significantly understates the realistic future net salvage expectations for this account. I recommend a positive 20% as a first step towards recognition of the true value these investments will produce when retired.

Q. WHAT IS THE BASIS FOR YOUR RECOMMENDATION?

A. My recommendation is based both on an analysis of historical transactions by the Company and analysis of the type of investment that currently exists. From either standpoint, the positive 20% net salvage is the minimal first step that must be taken.

An analysis of the overall historical database relied upon by the Company yields a positive 21% net salvage.[52] In addition, the three-year rolling bands produced by Mr. Robinson of historical data indicate 50% to 90% positive net salvage values. Therefore, based on actual Company experience, a positive net salvage significantly in excess of positive 20% is warranted.

Further investigation into historical retirements of buildings further yields a strong historical pattern of positive net salvage value for such investments. Indeed, during the past 20 years the Company retired 11 general office structures.[53] In all instances, the Company experienced positive net salvage. In fact, the overall level of positive net salvage experienced by the Company for its retirement of general office structures during the past 20 years was in excess of a positive 100%.[54] Not only is a large positive net salvage demonstrated by Company actual experience,

[51] 2008 Study Common plant Exhibit No._(EMR-2) Section 7 pages 7-1 through 7-5.
[52] *Id.* at page 7-5.
[53] Response to MCC-149.
[54] *Id.*

but is consistent with both logic and common sense. A building, if constructed appropriately and maintained over its useful life for a particular owner, is normally expected to have a significant positive level of net salvage. Given that the vast majority of the Company's investment in this account currently corresponds to steel office buildings, there is no reasonable expectation that it will receive a zero (0) level of net salvage when it does retire such facilities.

Finally, it must be noted that had Mr. Robinson given consideration to his forecasted future net salvage calculations as he has done in other accounts, he would have recognized a value significantly in excess of a positive 20% net salvage. A value much greater than a positive 20% represents a net salvage value more positive than the level I recommend in this proceeding.

In summary, whether viewed from a standpoint of the overall actual data for the account, the actual experience for 11 buildings retired over the last 20 years, the standard understanding of appreciation of buildings over time that are appropriately constructed and maintained, recognition of the type of investment currently in service, or even Mr. Robinson's forecast analyses, there is no logical basis for assuming a zero (0) net salvage as proposed by the Company. My recommended positive 20% net salvage should be viewed as a very conservative initial step in conjunction with the recommendation that the Commission order the Company to perform a detailed analysis of reasonable net salvage expectations for its investment in office buildings to be incorporated in the Company's next depreciation study.

Q. WHAT IS THE IMPACT OF YOUR RECOMMENDATION?

A. My recommendation results in a $283,205 reduction to total Company depreciation expense based on plant as of December 31, 2008.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes. However, to the extent I have not addressed an issue, method, procedures, or other matter relevant to the Company's rate case, it should not be construed that I am in agreement with the Company's proposed issue, method, or procedures.