VERIFIED DIRECT TESTIMONY OF RICHARD A. MORGAN

Q1. Please state your name, title and business address.

A1. My name is Richard A. Morgan. I am President of Morgan Marketing Partners, LLC ("MMP"). My business address is 6205 Davenport Drive, Madison, Wisconsin, 53711-2447. I am submitting this testimony on behalf of Northern Indiana Public Service Company ("NIPSCO" or the "Company").

Q2. Please describe MMP.

A2. MMP is a professional services firm formed in 1995 that partners with utility and governmental clients to provide energy efficiency consulting services including program design and development, cost-effectiveness modeling, strategic marketing consulting, implementation and operations assistance, new product and service development, management assistance, and evaluation and assessments. MMP has worked with clients including but not limited to Vectren, DTE Energy, Consumer's Energy, Duke Energy, California Public Utility Commission, Energy Trust

of Oregon, Missouri River Energy Services, Kansas City Power & Light, Jacksonville Electric Authority, Rochester Public Utilities, MidAmerican Energy, Hawaii Electric, Northwest Energy Efficiency Alliance, the State of Indiana, and Wisconsin Focus on Energy administered by Wisconsin Energy Conservation Corporation ("WECC"). One of MMP's longest-term clients is Duke Energy. Since MMP was formed, I have worked with Duke Energy on program planning and design. One of these programs was recognized by The American Council for an Energy Efficient Economy ("ACEEE") as an award-winning program for low-income customers. From 2001 to 2011, MMP served as planner and advisor to WECC and the State of Wisconsin on the statewide residential and business public benefits efficiency program, *Wisconsin Focus on Energy*. MMP has also developed comprehensive energy efficiency program portfolios for Detroit Edison, Michigan Consolidated Gas, Kansas City Power & Light and Missouri River Energy Services. I served as one of two principal auditors to complete a management audit for the Energy Trust of Oregon to review all aspects of the Trust including organizational structure, program design/delivery, support systems, public involvement,

and overall management. The California Public Utility Commission retained MMP to participate on an independent review team to provide advice regarding the portfolio of utility energy efficiency programs developed for 2006-2008. Also for California, I recently worked with a team of evaluators to assess all the energy efficiency programs offered by the California utilities. One of MMP's specialties is cost benefit analysis utilizing the DSMore modeling tool. MMP has completed cost benefit analysis for all the utilities in Michigan as well as many other clients including Vectren, Missouri River Energy, KCP&L, Central Minnesota Municipal Power Authority and assisted Duke Energy, ComED and Ameren.

Q3. Can you summarize your educational background and professional qualifications?

A3. I earned a Bachelor of Science degree in Resource Management from Ohio State University, School of Natural Resources in 1976. I am the Past President of the American Marketing Association, Madison Chapter, and a past Board Member and Vice President, Business Development for the Association of Energy Services Professionals ("AESP"). I am currently on

the Board of the Midwest Energy Efficiency Alliance. I have had numerous papers and research published at AESP and ACEEE as well as general articles in energy literature and marketing articles in *The Capital Times* newspaper in Madison. I am also the winner of the 2002 AESP *B.H. Prasad Outstanding Contributor of the Year*.

Q4. Can you describe your professional background and experience?

A4. I have over thirty-five years of management, planning, program design, implementation, and marketing experience in the energy field. Prior to starting MMP in 1995, I spent four years as a manager and consultant with A&C Enercom, a leading energy services and consulting company. I was also Marketing Manager for EWI Engineering, a one hundred person engineering consulting firm. Before joining EWI Engineering, I spent over eleven years with Wisconsin Power & Light Company in its marketing and energy efficiency department. I held numerous positions managing many different services including low-income programs, residential services, commercial and industrial gas services, demand-side management programs, and marketing/sales initiatives. Within my various positions my responsibilities included program planning,

evaluation oversight, new product/service development, program design, market research, advertising/promotion planning, implementation and operations management, evaluation, budgeting, tracking, training, government interface, sales, field customer service support, quality control, and business center operations. Prior to joining Wisconsin Power and Light, I worked for the Oregon Department of Energy and the Western SUN, a federally funded regional solar center.

Q5. Have you ever provided expert testimony in the State of Indiana?

A5. Yes. I provided testimony to support NIPSCO's 2013 electric DSM case filed in Cause No. 44363. In addition, I have provided testimony for Detroit Edison, Michigan Consolidated Gas and Consumer's Energy in Michigan and for Duke Energy in North Carolina.

Q6. What is the purpose of your testimony?

A6. The purpose of my testimony is to support the cost benefit analysis of NIPSCO's proposed 2016-2018 Electric DSM Program for the period of January 1, 2106 through December 31, 2018 ("2016-2018 Electric DSM

Program"), which was developed by MMP using the information provided by the vendors selected by NIPSCO's Oversight Board ("OSB").

Q7. What does your analysis include?

A7. The analysis performed by MMP included taking the data provided by the selected vendors and performing an independent analysis of the costs and benefits of those programs for NIPSCO's proposed 2016-2018 Electric DSM Program. This was done utilizing DSMore, which I describe in more detail below.

Q8. What are the cost effectiveness tests you performed?

A8. As required by the Indiana Utility Regulatory Commission ("IURC" or "Commission"), the analysis considers the Utility Cost test (also known as the Program Administrator Cost test), the Total Resource Cost test ("TRC test"), the Ratepayer Impact Measure ("RIM" test), and the Participant Test.

Q9. Please describe these tests.

A9. The various tests can be described as follows:

- **Utility Cost Test**: Defined as the ratio of the net benefits of the programs to the program costs incurred by the utility for the programs. For a program to be cost-effective, this ratio needs to be greater than one.

- **TRC Test**: Defined as the total avoided cost divided by the program costs plus the participant's incremental costs. Incentives paid to the customer are in both the cost and benefit sides of the equation, so they cancel each other out.

- **RIM Test**: Defined as the avoided cost benefits divided by the program costs and lost revenues.

- **Participant Test**: Defined as the participant's benefits in energy savings from their bill plus their incentives divided by their costs to participate.

Q10. For what period was the analysis performed?

A10. The analysis was developed for the period of 2016-2018. It considers the costs and benefits for each proposed program and the two portfolios –

residential and commercial and industrial ("C&I").

Q11. Please describe MMP's overall approach and process used to perform this analysis.

A11. The development of the analysis was a multi-step process with inputs from many parties. First, proposed program information and data were gathered and reviewed. This information included the projected savings and costs from the selected vendors and interviews with the proposed implementation contractors. Additional inputs on existing programs were received from the NIPSCO program managers running the programs. In addition, MMP reviewed NIPSCO's the forecast performed in 2014 by Applied Energy Group ("AEG").

Q12. Indiana Code § 8-1-8.5-10 ("Section 10") sets out what the Commission should consider in making a determination of the overall reasonableness of a plan. Specifically, Section 10 states the Commission should consider a cost and benefit analysis of the plan, including the likelihood of achieving the goals of the energy efficiency programs included in the plan. Does your analysis indicate that NIPSCO is likely

to achieve the goals included in its proposed 2016-2018 Electric DSM Program?

A12. Yes. The program goals for each year are similar to NIPSCO's achievement in previous program years. These programs are also similar to other programs we have analyzed by other utilities which have been successful in meeting their goals. Given the history of the success of NIPSCO's program and the similarity to other successful utility programs, it is my opinion that NIPSCO will continue to successfully meet its goals with this plan.

Q13. Are NIPSCO's proposed programs cost effective?

A13. As shown in Table 1, both the residential and C&I portfolios pass the TRC and the UCT tests. All individual programs included in the residential and C&I portfolios also pass the TRC and UCT tests.

1

Table 1

Residential Electric Programs 2016-2018								
	ALL RES	HEA	HVAC	RLP	SCH	RCY	APR	BEH
Utility (PAC) Test	2.35	1.36	2.97	3.85	4.42	1.75	1.14	2.73
TRC Test	1.97	1.36	1.75	2.46	4.47	1.75	1.14	2.73
RIM Test	0.33	0.28	0.58	0.27	0.38	0.29	0.29	0.37
Participant Test	13.95	N/A	2.63	11.20	N/A	N/A	N/A	N/A

C&I Electric Programs 2016-2018						
	ALL C&I	CUS	PRE	NC	RCx	SBDI
Utility (PAC) Test	7.07	7.40	9.16	17.29	2.73	3.34
TRC Test	4.16	4.40	4.99	9.94	1.51	2.28
RIM Test	0.31	0.31	0.32	0.33	0.21	0.29
Participant Test	13.05	12.76	12.70	24.80	7.50	14.91

2

KEY - Res Electric	
All Residential Electric Programs	ALL RES
Home Energy Analysis	HEA
HVAC Rebates	HVAC
Lighting	RLP
School Education	SCH
Appliance Recycling	RCY
Appliance Replacement	APR
Behavioral Program	BEH

KEY - C&I Electric	
All C&I Electric Programs	ALL C&I
Custom Program	CUS
Prescriptive Program	PRE
New Construction	NC
Retro-commissioning Program	RCx
Small Business Direct Install	SBDI

3

Q14. How was cost effectiveness determined?

A14. MMP used the DSMore cost analysis tool to calculate and report cost-effectiveness for the programs.

Q15. Can you describe the DSMore modeling tool?

A15. The DSMore modeling tool is award-winning modeling software that is nationally recognized and used in many states across the country to determine cost-effectiveness for energy efficiency programs. Developed and licensed by Integral Analytics (based in Cincinnati, Ohio) the DSMore cost effectiveness modeling tool takes hourly prices and hourly energy savings from the specific measures and technologies being considered for the energy efficiency program, and then correlates both to weather. This tool looks at over 30 years of historic weather variability to get the full weather variances appropriately modeled. In turn, this allows the model to capture the low probability, but high consequence, weather events and apply appropriate value to the measure during those events. In determining the scores of the various tests I discussed earlier, a weighted average price and weather value is used. Thus, a more accurate view of

the value of the efficiency measure can be captured in comparison to other alternative supply-side options.

Q16. What type of program information do you use for model inputs?

A16. Inputs into the model include participation rates, customer incentives paid, measure energy savings, measure life, implementation costs, administrative costs, and incremental costs to the participant of the high efficiency measure.

Q17. What costs did you use for the calculation?

A17. Program costs for the period 2016-2018 were based on projections as provided by the implementation contractors plus administrative costs provided by NIPSCO. This represents the most realistic expectation of costs based on real field performance and contracts. Costs used include NIPSCO administrative costs, implementation costs by contractors, customer incentives, direct installation of measures if required, and evaluation, measurement and verification ("EM&V") costs at the portfolio level.

Q18. Section 10 defines "program costs" as direct and indirect costs of energy efficiency programs, costs associated with the EM&V of program results, and other recoveries or incentives approved by the Commission, including lost revenues and financial incentives. Is it appropriate to use this definition of program costs when performing the cost effectiveness tests?

A18. No. Each of the cost effectiveness tests have certain costs and benefits that are considered. For the purposes of these tests, the definition of "program cost" is different than what the General Assembly included in Section 10. If all of the costs included as "program cost" in Section 10 were included, the results would not be an accurate reflection of what each test is meant to measure.

Q19. How were the energy and demand savings associated with each of the various measures determined?

A19. The energy and demand savings were provided by the vendors. In its requests for proposals NIPSCO required the vendors to use the current Indiana Technical Resource Manual ("Indiana TRM"). If a particular measure was not included in the Indiana TRM, the vendor could use

another applicable source so long as information on what source was selected and why was provided.

Q20. Why was this appropriate?

A20. The Indiana TRM was prepared specifically for Indiana and was done so relatively recently. In addition, having all vendors use the same source for the majority of measures allowed NIPSCO and its OSB to have a clear basis of comparison.

Q21. What type of utility information is used in the DSMore cost analysis tool?

A21. For utility information, DSMore utilizes utility rates; escalation rates; discount rates for the utility, society and the participant; and avoided costs.

Q22. What is the source of the utility information used for DSMore inputs?

A22. Utility inputs were provided by NIPSCO. NIPSCO witness Victoria Vrab describes the utility inputs that were provided.

Q23. Did MMP assume any EM&V costs in the benefit cost analysis of NIPSCO's proposed 2016-2018 Electric DSM Program?

A23. Yes. MMP used a 5% allocation based on program costs (before NIPSCO administration costs were included) to determine EM&V budgets. These budgets were then included in the portfolio benefit cost analysis.

Q24. Section 10 also states the Commission should consider the projected changes in customer consumption of electricity resulting from the implementation of the plan. How does NIPSCO consider changes in customer consumption resulting from its proposed plan?

A24. NIPSCO's 2016-2018 Electric DSM Program considers the change in customer consumption of electricity resulting from the plan in two ways. The first is the savings the participant sees from making the efficiency improvement. This is shown in the "Participant" Test of the cost benefit analysis. The results show that in all cases the participant saves more than they invest in the efficiency improvement. Although this test only applies to programs where the customer purchases equipment, not programs where equipment is installed and/or paid for by the utility, it still provides a mechanism for NIPSCO to measure the costs and benefits of the

customer installing a measure. The second way NIPSCO considers the change in consumption is through consideration of the savings from the programs in the IRP modeling for utility planning.

Q25. Section 10 also states the Commission should consider the effect, or potential effect, in both the long term and the short term, of the plan on the electric rates and bills of customers that participate in the energy efficiency programs compared to the electric rates and bills of customers that do not participate in energy efficiency programs. What does your analysis show concerning bill impacts?

A25. Customer bills are affected by the program differently if you are a participant or a non-participant in the program. Participants see direct savings and bill reductions from the energy efficiency change they perform due to the program. The Participant Test in the benefit cost analysis looks at these bill savings compared to the incremental cost of the efficiency action the participant takes. In effect, the Participant Test measures the benefits the customer receives over the life of the efficiency improvement so a score greater than 1.0 indicates the customer is saving more money than expended, thus reducing the energy bill. All of the

programs included in NIPSCO's proposed 2016-2018 Electric DSM Program have a positive Participant Test score greater than 1.0. The potential impact on non-participants are shown by the RIM Test, which is calculated by looking at the program costs plus the lost revenues not collected by the utility due to the efficiency improvements compared to the utility avoided benefits. A score less than one shows rates will potentially increase over the analysis period. However, it does not necessarily mean that rates will increase. The RIM score for NIPSCO's proposed 2016-2018 Electric DSM Program is less than 1.0, which is typical for energy efficiency programs.

Q26. Given your review of NIPSCO's plan, the analysis of the goals and the cost benefit modeling results, do you believe that NIPSCO's 2016-2018 Electric DSM Program is cost effective and achievable??

A26. Yes.

Q27. Does this conclude your testimony?

A27. Yes.

VERIFICATION

I, Richard A. Morgan, President of Morgan Marketing Partners, LLC, affirm under penalties of perjury that the foregoing representations are true and correct to the best of my knowledge, information and belief.

Richard A. Morgan

Richard A. Morgan

Date: 6/2/2015