

STATE OF INDIANA

INDIANA UTILITY REGULATORY COMMISSION

FILED

July 26, 2017

INDIANA UTILITY
REGULATORY COMMISSION

PETITION OF INDIANA MICHIGAN POWER)
COMPANY, AN INDIANA CORPORATION, FOR)
(1) AUTHORITY TO INCREASE ITS RATES AND)
CHARGES FOR ELECTRIC UTILITY SERVICE)
THROUGH A PHASE IN RATE ADJUSTMENT; (2))
APPROVAL OF: REVISED DEPRECIATION)
RATES; ACCOUNTING RELIEF; INCLUSION IN)
BASIC RATES AND CHARGES OF QUALIFIED)
POLLUTION CONTROL PROPERTY, CLEAN)
ENERGY PROJECTS AND COST OF BRINGING)
I&M'S SYSTEM TO ITS PRESENT STATE OF)
EFFICIENCY; RATE ADJUSTMENT MECHANISM)
PROPOSALS; COST DEFERRALS; MAJOR)
STORM DAMAGE RESTORATION RESERVE)
AND DISTRIBUTION VEGETATION)
MANAGEMENT PROGRAM RESERVE; AND)
AMORTIZATIONS; AND (3) FOR APPROVAL OF)
NEW SCHEDULES OF RATES, RULES AND)
REGULATIONS.)

CAUSE NO. 44967-NONE

SUBMISSION OF DIRECT TESTIMONY OF
DANIEL E. HIGH

Petitioner, Indiana Michigan Power Company (I&M), by counsel, respectfully submits the direct testimony and attachments of Daniel E. High in this Cause.



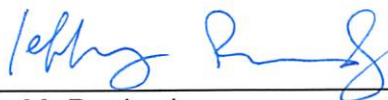
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CERTIFICATE OF SERVICE

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INDIANA MICHIGAN POWER COMPANY

PRE-FILED VERIFIED DIRECT TESTIMONY

OF

DANIEL E. HIGH

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**PRE-FILED VERIFIED DIRECT TESTIMONY OF DANIEL E. HIGH
ON BEHALF OF
INDIANA MICHIGAN POWER COMPANY**

1 **Q. Please state your name and business address.**

2 A. My name is Daniel E. High. My business address is 1 Riverside Plaza,
3 Columbus, Ohio 43215.

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

5 A. I am employed by American Electric Power Service Corporation (AEPSC) as
6 Principal Regulatory Consultant in the Regulatory Strategy Department. AEPSC
7 supplies engineering, financing, accounting, planning, advisory, and other
8 services to the subsidiaries of the American Electric Power (AEP) system, one of
9 which is Indiana Michigan Power Company (I&M or the Company).

10 **Q. Please describe your educational and professional background.**

11 A. In December 1989, I received a Bachelor of Science Degree in Energy
12 Management from West Liberty University. In May 1997, I received a Master of
13 Business Administration degree from Ashland University.

14 In February 1990, I joined Columbus Southern Power Company as a
15 Marketing and Customer Services Representative in the Marketing and
16 Customer Services Department of the Columbus Region. In August 1998, I
17 joined the Regulated Pricing & Analysis Department as a Regulatory Consultant.
18 From 2006 through 2008, I performed duties as a Regulatory Consultant in
19 Transmission & Interconnection Services under the Regulatory Services
20 Department, where I was responsible for rate design and maintaining wholesale

1 contracts. In January 2009, I returned to Regulated Pricing & Analysis under the
2 Regulatory Services Department as a Regulatory Consultant.

3 **Q. What are your responsibilities as a Staff Regulatory Consultant?**

4 A. My responsibilities include preparation of cost-of-service studies, rate design and
5 tariff provisions for AEP operating companies, as well as other projects related to
6 regulatory issues and proceedings, individual customer requests, and general
7 rate matters.

8 **Q. Have you taken any courses in cost allocation and rate design?**

9 A. Yes. In 1999, I attended the Edison Electric Institute's (EEI) school on cost
10 allocation and rate design. In 2003, I attended EEI's advanced cost allocation
11 and rate design school.

12 **Q. Have you previously submitted testimony in any regulatory proceedings?**

13 A. Yes. I have submitted testimony before the Public Service Commission of
14 Kentucky on behalf of Kentucky Power Company; before the Michigan Public
15 Service Commission (MPSC or Commission) and the Indiana Utility Regulatory
16 Commission on behalf of I&M; and before the Public Utilities Commission of Ohio
17 on behalf of Ohio Power Company.

18 **PURPOSE OF TESTIMONY**

19 **Q. What is the purpose of your testimony in this proceeding?**

20 A. The purpose of my testimony is to support and describe the development of the
21 Company's class cost-of-service study, which allocates the total Indiana retail
22 jurisdiction rate base, revenues, and expenses to each rate schedule. The cost
23 allocation methodology used in the class cost-of-service study assigns costs

1 among the customer classes in a fair and equitable manner based on principles
2 of cost causation. Customers who cause costs to be incurred are allocated such
3 costs in the Company's class cost-of-service study.

4 **Q. What is the test period used to prepare the class cost-of-service study in**
5 **this proceeding?**

6 A. The test period used to develop the class cost-of-service study in this proceeding
7 is the twelve month period ending December 31, 2018 (Test Year).

8 **Q. Are you sponsoring any attachments in this proceeding?**

9 A. I am sponsoring the following attachment:

- 10 • Attachment DEH-1: Test Year class cost-of-service study

11 **Q. Are you sponsoring any workpapers in this proceeding?**

12 A. I am sponsoring the following workpapers:

- 13 • WP-DEH-1: Test Year Proposed Equalized ROR
14 • WP-DEH-2: Test Year Allocation Factors
15 • WP-DEH-3: Test Year Allocators
16 • WP-DEH-4: Test Year Transmission and Subtransmission
17 • WP-DEH-5: Summary Allocators
18 • WP-DEH-6: Customer and Demand Allocators
19 • WP-DEH-7: Revenue Allocators Summary
20 • WP-DEH-8: Revenue Allocators
21 • WP-DEH-9: Number of Customers Allocators
22 • WP-DEH-10: 6 CP Demand and Energy Allocators
23 • WP-DEH-11: Class Peak Data

- 1 • WP-DEH-12: Call Center Allocation (Account 903)
- 2 • WP-DEH-13: Meter Reading Allocation (Account 902)
- 3 • WP-DEH-14: Meter Allocation (Account 370)
- 4 • WP-DEH-15: Allocation of Forfeited Discounts (Account 450) and
- 5 Miscellaneous Service Revenue (Account 451)
- 6 • WP-DEH-16: Allocation of Poles (Account 364), Overhead Conductors
- 7 (Account 365), Underground Conductors (Account 367) and Transformers
- 8 (Account 368)
- 9 • WP-DEH-17: Phase-In Rate Adjustment Class Cost-of-Service study
- 10 • WP-DEH-18: Phase-In Rate Adjustment Proposed Equalized ROR
- 11 • WP-DEH-19: Phase-In Rate Adjustment Allocation Factors
- 12 • WP-DEH-20: Phase-In Rate Adjustment Allocators

13 **Q. Were the attachments and workpapers that you are sponsoring prepared**
14 **by you or under your direction?**

15 A. Yes.

16 **OVERVIEW OF CLASS COST-OF-SERVICE STUDIES**

17 **Q. Briefly describe the nature and purpose of a cost-of-service study.**

18 A. Cost studies are utilized to determine the revenue requirement for the services
19 offered by the utility and to determine the costs that different classes of
20 customers impose on the utility system. A cost-of-service study is a basic
21 analytical tool used in traditional utility rate design. When all of the jurisdictional
22 costs are allocated to the various customer classes, the result is a fully allocated
23 class cost study that is a guide in establishing rates based on costs.

1 **Q. Please describe how you prepared the class cost-of-service study.**

2 A. An Excel spreadsheet (Attachment DEH-1) was used to prepare the class cost-
3 of-service study. The Excel spreadsheet permits the analyst to use two types of
4 allocation factors – those which are generated externally and input to the
5 program and those which are developed internally as a result of the allocation
6 process. An example of an external allocation factor would be the total number
7 of secondary customers served at distribution level (DIST_SERV). An example
8 of an internal factor would be the rate base gross utility plant electric plant in
9 service distribution allocation factor (RB_GUP_EPIS_D).

10 **Q. What is the source of the data used in a cost-of-service study?**

11 A. A jurisdictional allocation of rate base, revenue, and expenses was prepared for
12 the forecasted Test Year by Company witness Stegall. The Indiana retail rate
13 base and expense components were then assigned to the various customer
14 classes using the standard three-step process to assign costs: functionalization,
15 classification, and allocation.

16 **Q. Please describe the functionalization process.**

17 A. Once the relevant data is gathered, the costs are then separated by major
18 electric system functions. Typically, functions in an electric utility are:

- 19 • Production and Purchased Power Costs
- 20 • Transmission Costs
- 21 • Distribution Costs
- 22 • Customer Service Costs
- 23 • Administrative and General (A&G) Costs

1 The production function includes the costs associated with power
2 generation and power purchases and their delivery to the bulk transmission
3 system. The transmission function consists of costs associated with the high
4 voltage system utilized for the transmission of power to and from interconnected
5 utilities to the load centers of the utility's system. The distribution function
6 includes the distribution system that connects the transmission system and the
7 ultimate customer. The customer service function includes the costs associated
8 with providing meter reading, billing and collection, and customer information and
9 services. The A&G function is comprised of administrative costs that may not be
10 directly assignable to other cost functions. These costs include such items as
11 salaries, insurance, and administrative costs.

12 **Q. Please describe the classification process.**

13 A. The second step is to separate the functionalized costs into the following
14 classifications:

- 15 • Demand costs (costs that vary with the demand or kW/kVa imposed by the
16 customer).
- 17 • Energy costs (costs that vary with the number of kilowatt hours used by the
18 customer).
- 19 • Customer costs (costs that are directly related to the number of customers
20 served).

21 Typical cost classifications used in cost-of-service studies are shown on
22 Figure DEH-1:

**Figure DEH-1
Cost Classifications**

Function	Classification
Production	Demand, Energy
Transmission	Demand
Distribution	Demand, Customer
Customer Service	Customer
Administrative & General	Demand, Customer, Energy

1 Production plant costs, such as depreciation and return on investment, are
2 considered to be demand-related costs because costs of this nature are incurred
3 regardless of the amount of energy consumed or the number of customers.
4 Some production costs such as fuel costs and certain production operation and
5 maintenance (O&M) expenses are energy-related because they vary with the
6 quantity of electricity produced. Transmission costs are classified as demand-
7 related costs because they are fixed costs and do not vary with energy usage
8 and do not directly change with the number of customers utilizing the
9 transmission system. Generally, the distribution system costs are affected either
10 by the instantaneous peak demand imposed on the distribution facilities or by the
11 number of customers served. Demand-related distribution costs typically vary
12 with the size of the electrical load served, while customer-related distribution
13 costs vary based on the number of customers receiving the service. Customer
14 service costs are primarily related to the number of customers. The classification
15 process provides a basis on which to allocate different categories of costs
16 (demand, energy, or customer costs) to the Company's classes.

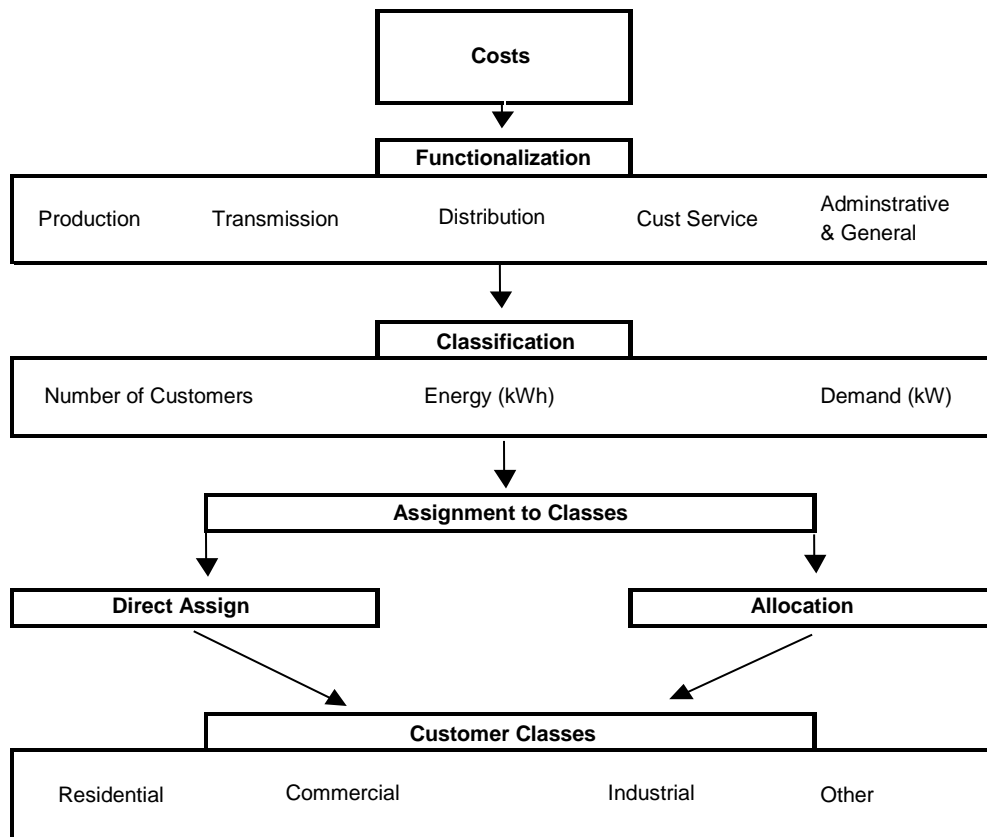
1 **Q. Please describe the allocation process.**

2 A. The third and final step is to allocate these costs among the classes of customers
3 based on how the costs are incurred for each class. Customer classes are
4 determined and grouped according to the nature of service provided, voltage
5 level, and the load usage characteristics. In general, the five principal customer
6 classes are residential, commercial, industrial, outdoor lighting, and street
7 lighting.

8 The allocation process involves dividing the functionalized and classified
9 costs among the customer classes. The objective in this process is to determine
10 a reasonable, appropriate, and understandable method to assign the costs.
11 Some costs are directly assignable to a single class, or even a single customer.
12 For instance, the equipment used wholly for public street and highway lighting
13 are directly assigned to the street lighting class. Most costs, however, are
14 attributable to more than one customer class. These are joint costs and must be
15 allocated to customers by an allocation methodology that is based on the manner
16 in which the costs are caused by the different customers. The joint costs are
17 incurred based on the capacity demanded, the energy used, or the number of
18 customers.

19 The following flowchart, Figure DEH-2, provides an overview of how the
20 allocation of costs to customer classes is determined:

**Figure DEH-2
Cost Allocation Example**



1 In Figure DEH-2, costs are functionalized into production, transmission,
 2 distribution, customer service, and A&G. Some of these costs can be directly
 3 assigned to a customer class as mentioned previously. The remaining joint costs
 4 are incurred based on the number of customers, the energy used, or by the
 5 capacity demanded. In many instances, the classification process will lead to an
 6 allocation methodology. For example, costs associated with reading customer
 7 meters will vary with the number of customers as well as the complexity of
 8 reading the meter, so those costs associated with reading customer's meters are
 9 allocated to the classes based on a weighted number of customers. A weighted

1 number of customers allocation factor is developed by multiplying the number of
2 customers in each class by a factor representing the difference in cost
3 associated with providing that service to different types of customers. Similarly,
4 the cost of fuel varies by the number of kilowatt hours consumed and therefore is
5 allocated based on the proportion of total energy used by a customer class.

6 When this process is completed and all of the costs are allocated to the
7 customer classes, the result is a fully allocated cost-of-service study that
8 establishes cost responsibility and the Test Year rate of return earned from each
9 class, making it possible to determine the rates each class of customer should
10 pay based on costs that are just and reasonable.

11 **Q. What criteria must be established to ensure that the allocation of costs to**
12 **the customers is appropriate?**

13 A. Generally, the following criteria should be used to determine the appropriateness
14 of an allocation methodology:

- 15 • The method should match customer benefit from the use of the system with
16 the appropriate cost responsibility for the system.
- 17 • The method should reflect the planning and operating characteristics of the
18 utility's system.
- 19 • The method should recognize customer class characteristics such as energy
20 usage, peak demand on the system, diversity characteristics, number of
21 customers, etc.
- 22 • The method should produce stable results on a year-to-year basis.

1 **Q. Does the allocation method employed by the Company meet these**
2 **objectives?**

3 A. Yes, it does. The allocation methodology utilized in the Company's cost-of-
4 service study was chosen while considering each of the criteria listed above.
5 The results of the cost-of-service study for the forecast period can be relied upon
6 to determine the appropriate revenue requirement for I&M's customer classes.

7 **ALLOCATION OF COMPONENTS OF RATE BASE**

8 **Q. Please describe the allocation of electric plant in service.**

9 A. From the jurisdictional cost-of-service allocation study, as prepared by Company
10 witness Stegall, Electric Plant in Service is identified and functionalized into
11 production, transmission, distribution, and general plant. Production plant is
12 classified as demand-related and is allocated using the production demand
13 allocation factor (PROD_DEMAND). The production demand allocation factor
14 assigns costs based on the class contribution to the average of I&M's six monthly
15 coincident peaks on the production facilities.

16 The six months that were used to derive the production, transmission, and
17 primary distribution demand allocation factors were the three summer months of
18 June, July, and August and the three winter months of December, January, and
19 February for the Test Year. This is known as the summer and winter peak
20 method or the 6CP method. The importance of these six months is that
21 Company engineers plan and size equipment (e.g., poles, lines, and
22 transformers) to meet customers' maximum expected demand on those facilities
23 during the peak months in the summer and winter.

1 **Q. Please explain coincident peak cost allocation.**

2 A. Coincident peak cost allocation refers to the process of determining each class's
3 hourly demand contribution to the Company's monthly peak demand. For
4 instance, a single coincident peak method (1 CP) would allocate costs to the
5 customer classes according to the load of that class at the time of the utility's
6 highest measured one-hour peak demand in the Test Year. Conversely, an
7 allocator based on the class contribution to the 12 monthly maximum system
8 peaks (12 CP) might be used when the monthly peaks lie within a narrow range
9 and there are no definite spikes in the load curve. I&M, for class allocation
10 purposes, used the summer and winter peak method to assign customer costs to
11 reflect two seasonal peaks.

12 **Q. What CP demand allocator is the Company proposing in this proceeding?**

13 A. The Company is proposing to utilize the 6 CP demand allocator in this
14 proceeding, consistent with the 6 CP methodology found appropriate in Cause
15 No. 44075.

16 **Q. Is the 6 CP demand allocator the most appropriate demand allocator to
17 assign demand-related costs among the customer classes in this
18 proceeding?**

19 A. Yes. The 6 CP is the most appropriate demand allocator considering the load
20 profile during the Test Year continues to reflect six monthly peaks, three during
21 the summer and three during the winter, which supports the use of a 6 CP
22 allocator. The benefit of the 6 CP demand allocator is that each customer class

1 is being allocated their fair share of demand costs based on their contributions to
 2 the average of the six monthly peaks during the Test Year.

3 **Q. Has I&M conducted analyses to confirm that the 6 CP demand allocator is**
 4 **the most appropriate demand allocator in this proceeding?**

5 A. Yes. On page 116 of the Commission’s Order in Cause No. 44075, the
 6 Commission directed I&M to conduct a comprehensive and fresh analysis to
 7 determine the best demand allocation methodology. The Company has
 8 responded to that directive by conducting an additional analysis of I&M Indiana
 9 load profile data for the periods in this proceeding – i.e., the historic twelve
 10 months ended December 31, 2016 and forecast twelve months ended December
 11 31, 2018. Figure DEH-3 and Figure DEH-4 provide visual depictions of these
 12 load profiles. These data points confirm a long-term pattern that I&M Indiana
 13 retail loads demonstrate summer and winter peaks. Therefore, it is appropriate
 14 to use a 6 CP demand allocator.

Figure DEH-3

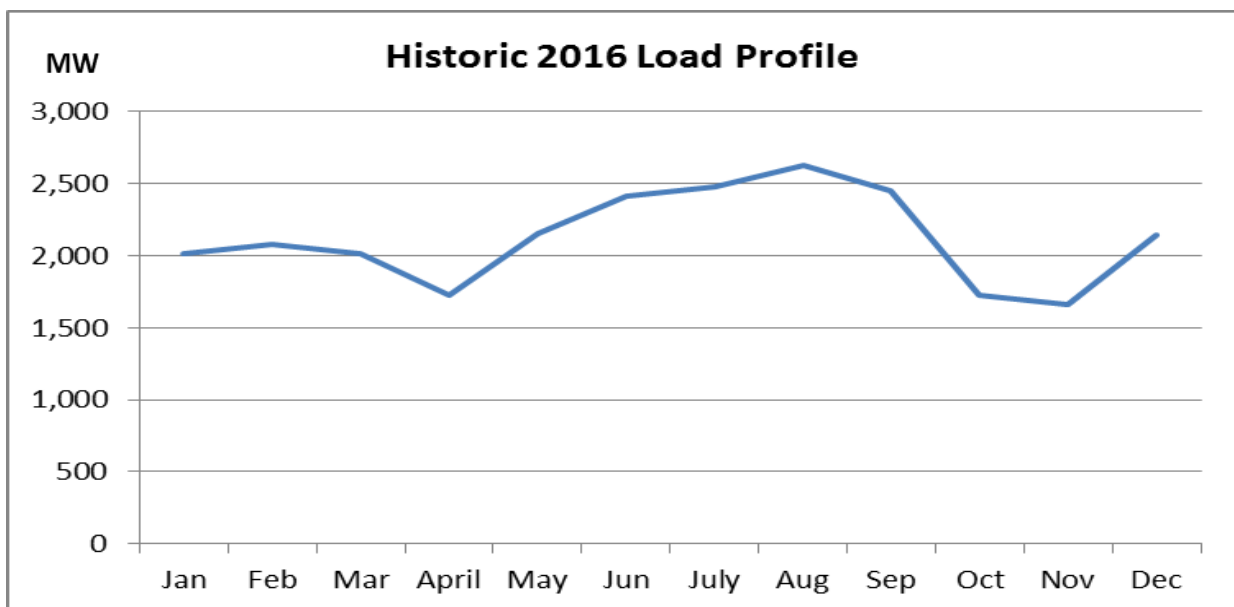
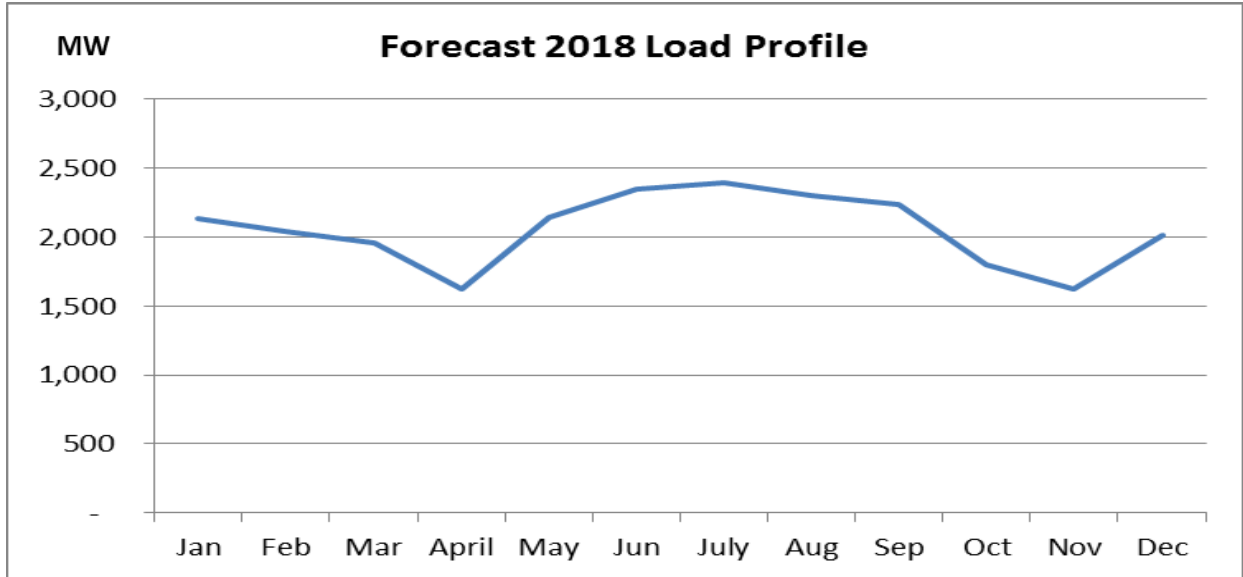
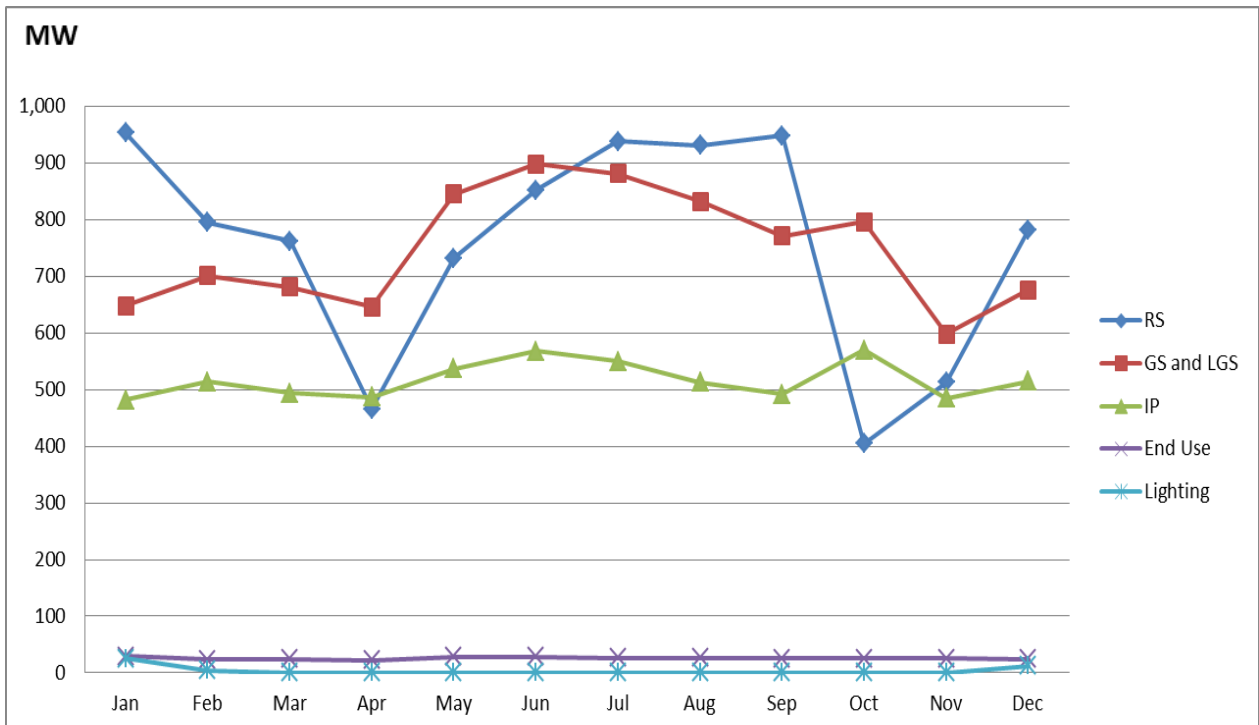


Figure DEH-4



- 1 **Q. Have you also examined the Indiana retail class loads for the forecast test**
- 2 **year?**
- 3 **A. Yes. Figure DEH-5 summarizes class monthly peak information for the forecast**
- 4 **twelve months ended December 31, 2018.**

Figure DEH-5
Class Load Profile for Forecast Test Period 2018



1 **Q. What did the Company learn from these analyses?**

2 A. Figure DEH-3 and Figure DEH-4 show that the I&M Indiana retail load profile
3 continues to have three summer peaks and three winter peaks. This is
4 consistent with the load profiles shown in the March 2011 test year in Cause No.
5 44075.

6 As shown in Figure DEH-5, the Residential (RS) class demonstrates
7 summer and winter peaks, the Lighting class is winter peaking, General Service
8 (GS) and Large General Service (LGS) classes are summer peaking and the
9 Industrial Power (IP) class demonstrates a flat load shape. The seasonality of
10 the retail class load shapes support the Company's proposed 6 CP demand
11 allocator as the best method to allocate demand costs among the customer
12 classes.

13 **Q. Please explain why it is reasonable to utilize a different demand allocator (6**
14 **CP) in the class cost-of-service study from what is used in a jurisdictional**
15 **separation study.**

16 A. For class cost-of-service, one must consider the individual retail class load
17 shapes in addition to the jurisdictional load shape. It is the combination of the
18 variability of the load shapes by class and the seasonality of the retail class load
19 shapes that supports the Company's proposed 6 CP demand allocator as the
20 best method to allocate demand costs among the customer classes.

21 **Q. How were the portions of the transmission plant allocated?**

22 A. The functional components of transmission plant were obtained directly from the
23 jurisdictional study and are classified as demand-related and allocated to the

1 classes based on their contribution to the average of the six monthly peak
2 demands on the power supply transmission (BULK_TRANS) and sub-
3 transmission systems (SUB_TRANS), respectively. Generator step-up
4 transformers are included in transmission plant based on the FERC accounts,
5 but are separately identified and allocated using the production demand
6 allocation factor since they are related to the production function.

7 **Q. How were the portions of distribution plant allocated?**

8 A. Distribution plant is classified as demand- and customer-related and allocated to
9 the customer classes using factors based on demand levels or number of
10 customers. Distribution plant Accounts 360 through 368 were classified solely as
11 demand-related for class allocation purposes. Accounts 360 (Land and Land
12 Rights), Account 361 (Structures and Improvements), and Account 362 (Station
13 Equipment) were allocated to the distribution customer classes based on their
14 contributions to the average of I&M's six monthly peak demands on the primary
15 distribution system (DIST_CPD).

16 Accounts 364 through 367, Overhead and Underground Lines, were split
17 into primary and secondary voltage functions based upon information contained
18 in the Company's records and the expertise of the Company's distribution
19 engineers. The primary portions of Accounts 364 through 367 were allocated
20 using the DIST_CPD, and the secondary component of Accounts 364 through
21 367 were allocated based on a combination of each class's 12-month maximum
22 demand and the summation of individual customers' annual maximum demands
23 (DIST_POLES, DIST_OHLINES, and DIST_UGLINES). This recognizes that

1 that some secondary facilities serve only one customer, while others serve two or
2 more customers.

3 Account 368, Distribution Transformers and Devices, was split into
4 primary and secondary voltage functions based upon information contained in
5 the Company's records and the expertise of the Company's distribution
6 engineers as to the determination of the functional use of the equipment. The
7 primary portion of Account 368 – cutouts, arresters, capacitors, voltage
8 regulators, and network protectors – was allocated using the DIST_CPD
9 allocator. The secondary portion – primary-to-secondary transformers – was
10 allocated using the appropriate secondary voltage demand allocation factor,
11 which is based on a combination of each class's 12-month maximum demand
12 and the summation of individual customers' annual maximum demands
13 (DIST_TRANSF).

14 Account 369, Services, was classified as customer-related and was
15 allocated using the average number of secondary customers served
16 (DIST_SERV).

17 Account 370, Meter Plant, was allocated using the average number of
18 customers weighted by a factor that considers the cost differential of various
19 metering installations (DIST_METERS). Account 371 was directly assigned to
20 the outdoor lighting class (DIST_OL), and Account 373 was directly assigned to
21 the street lighting class (DIST_SL).

1 **Q. How was the general and intangible portion of electric plant classified and**
2 **allocated?**

3 A. General and intangible plant investment was classified as labor-related. It was
4 allocated to the customer classes on the basis of a payroll labor allocator
5 (LABOR_M), constructed by first allocating the functional components of
6 operation and maintenance (O&M) expense by the applicable class demand,
7 energy, and customer allocation factors, and then summing the allocated
8 components by class to create a set of labor expense ratios.

9 **Q. Has the Company made the appropriate classification of distribution plant?**

10 A. Yes. The method of classification of services and meters as customer-related –
11 and primary and secondary poles, lines, and transformers as demand-related – is
12 a method that has been adopted in cases before this and other Commissions.
13 This classification recognizes the standard engineering practice to plan the
14 distribution facilities to meet the maximum expected demand on the system, not
15 necessarily the number of customers being served by the facilities. It is more
16 appropriate to classify services and meters as customer-related since a single
17 service is required to serve each customer. For other distribution facilities, a
18 diversified mix of commercial and residential customers will be served from those
19 facilities. It is the customers' demand placed on those facilities that drives the
20 size and cost of the distribution facilities, not the absolute number of customers
21 served from those facilities. The benefit of the Company's approach in
22 classifying distribution plant is that each customer class is being allocated its
23 equitable share of distribution facilities based on contributions to peak demand

1 associated with Accounts 360-368, and based on the number of customers with
2 Accounts 369-373.

3 **Q. Please describe the allocation of Accumulated Provision for Depreciation**
4 **and Amortization.**

5 A. The functionalized components of Accumulated Provision for Depreciation and
6 Amortization were obtained directly from the jurisdictional study and classified
7 and allocated in a fashion similar to Electric Plant in Service.

8 **Q. Please describe the allocation of working capital.**

9 A. Fuel stock and allowances were allocated using the energy allocation factor
10 (PROD_ENERGY). The energy allocation factor allocates costs based on the
11 loss adjusted class energy used during the period compared to the total energy
12 used by all classes. The functional components of material and supplies were
13 allocated on the corresponding plant items.

14 **Q. How were the other rate base items functionalized, classified, and**
15 **allocated?**

16 A. The rate base elements of prepaid pension expenses were functionalized,
17 classified, and allocated on O&M labor expense. The balance of the deferred
18 gain from the sale of Rockport Unit 2 Sales was classified as demand-related
19 and allocated to the retail classes based on the production demand allocation
20 factor. The individual components of other rate base items were allocated as
21 well using internally and externally derived allocation factors deemed to best
22 reflect the causative nature of the particular other rate base items.

1 **ALLOCATION OF REVENUES, O&M, AND A&G EXPENSES**

2 **Q. How were revenues developed for each class?**

3 A. Forecasted sales revenue was directly assigned to each class. Demand-related
4 system sales and interruptible sales revenues were allocated based on the
5 PROD_DEMAND allocation factor. Energy-related system sales and interruptible
6 sales revenues were allocated based on the PROD_ENERGY allocation factor.

7 Forfeited discounts and miscellaneous service revenues were directly
8 assigned based on an analysis of accounting records.

9 The functional components of rent from electric property and other electric
10 revenue were obtained directly from the jurisdictional study and allocated to classes
11 based on corresponding functional plant ratios.

12 **Q. Please describe the allocation of production O&M expense.**

13 A. Production-related O&M was classified as either demand- or energy-related in
14 the jurisdictional study. The demand component was allocated using the
15 production demand allocation factor (PROD_DEMAND) and the energy
16 component was allocated using the energy allocation factor (PROD_ENERGY).
17 Non-fuel nuclear O&M was allocated using the production demand allocation
18 factor (PROD_DEMAND), and nuclear fuel expense was allocated using the
19 energy allocation factor (PROD_ENERGY).

20 **Q. Please describe the allocation of transmission O&M.**

21 A. The functional components of transmission-related O&M were obtained directly
22 from the jurisdictional study and classified as demand-related and allocated using
23 the transmission demand allocation factor (TRAN_TO). O&M expense

1 associated with generator step-up transformers was separately identified and
2 allocated using the production demand allocation factor (PROD_DEMAND).

3 **Q. Please describe the allocation of distribution O&M between the various**
4 **customer classes.**

5 A. Distribution O&M expenses were functionalized and classified according to the
6 associated distribution plant accounts and allocated accordingly. Accounts 581,
7 Load Dispatching, and Account 582, Station Expenses, were allocated using the
8 distribution demand allocation factor (DIST_CPD). Account 583, Overhead Line
9 Expense, was allocated based upon the same allocation used for plant Account
10 365, Overhead Lines (DIST_OHLINES). Account 584, Underground Line
11 Expense, was allocated based upon the same allocation used for plant Accounts
12 366, Underground Conduit, and Account 367, Underground Lines
13 (DIST_UGLINES).

14 Account 585, Street Lighting and Signal System Expense, was classified
15 as customer-related and directly assigned to the street lighting class. Meter
16 Expense, Account 586, was classified customer-related and allocated in the
17 same manner as meter plant. Account 587, Customer Installation Expense, was
18 classified customer-related and allocated based on primary customers
19 (DIST_PCUST).

20 Accounts 588 and 589 were allocated on total distribution plant and
21 classified accordingly. Account 580, Operation Supervision and Engineering,
22 was classified demand- and customer-related and allocated using the allocated
23 subtotal of Accounts 581 through 589.

1 Account 591, Maintenance of Structures, and Account 592, Maintenance
2 of Station Equipment, were classified as demand-related and allocated on the
3 distribution demand allocation factor DIST_CPD. Account 593, Maintenance of
4 Overhead Lines, Account 594, Maintenance of Underground Lines, and Account
5 595, Maintenance of Line Transformers, were functionalized and classified
6 according to the associated distribution plant accounts and allocated accordingly.
7 Account 596, Maintenance of Street Lighting and Signal Systems, was classified
8 customer-related and directly assigned to the street lighting class. Account 597,
9 Maintenance of Meters, was classified customer-related and allocated in the
10 same manner as meter plant. Account 598, Maintenance of Miscellaneous
11 Distribution Plant, was classified customer-related and directly assigned to the
12 outdoor lighting class. Account 590, Maintenance Supervision and Engineering,
13 was classified and allocated based on the sum of the allocated O&M expense
14 Accounts 591 through 598.

15 **Q. Please explain how customer accounting (Accounts 901-905), customer**
16 **services, and sales expense (Accounts 907-912) were allocated?**

17 A. Account 902, Meter Reading Expense, was allocated to those classes with meter
18 installations based upon an average number of customers weighted to reflect
19 differences in meter reading requirements. Customer Records Expense,
20 Account 903 was divided into two categories of cost which included the call
21 center and other. Call center costs were first split into residential and other
22 based on the actual number of calls received by the call center and then other
23 call center expenses were allocated based on the number of customers.

1 Account 904, Uncollectibles, was allocated based on revenue for each class.
2 Accounts 901 and 905 were allocated based on the sum of the allocated
3 Accounts 902, 903, and 904. Accounts 907-912 were allocated using the
4 allocated total of Accounts 901-905. All customer accounting, customer services,
5 and sales expense accounts were classified as customer-related.

6 **Q. Please describe the allocation of A&G expense.**

7 A. The regulatory expense associated with the Nuclear Regulatory Commission
8 (NRC) was allocated based on the production demand allocation factor. The
9 functional components of property insurance were taken directly from the
10 jurisdictional study and allocated based on the appropriate plant allocation factor.
11 The regulatory expense associated with retail rate case proceedings was
12 allocated based on class revenue levels and all other A&G expenses were
13 functionalized, classified, and allocated based on O&M labor expense.

14 **ALLOCATION OF DEPRECIATION AND TAXES**

15 **Q. Please describe the allocation of depreciation and amortization expense.**

16 A. The functionalized components of depreciation and amortization expense were
17 allocated using the corresponding plant items.

18 **Q. How were other regulatory expense items allocated?**

19 A. The functional components related to asset retirement obligations were obtained
20 directly from the jurisdictional study and allocated using the appropriate plant
21 allocation factor.

1 **Q. How were taxes assigned to the retail classes?**

2 A. Individual other tax items were allocated and classified using the appropriate
3 demand, revenue, or plant allocator.

4 Interest expense was calculated on rate base and individual Schedule M
5 items were allocated using the appropriate allocators. State and current Federal
6 income taxes were computed by class. Deferred Federal Income Tax and
7 Deferred Investment Tax Credit were allocated using the appropriate allocation
8 factors.

9 **EARNED RETURNS**

10 **Q. Please summarize the resulting earned rate of return for each class shown**
11 **in the class cost-of-service study.**

12 A. The resulting earned rates of return for the class cost-of-service study under
13 Attachment DEH-1 are shown on Figure DEH-6:

**Figure DEH-6
Rates of Return for Projected Class Cost-of-Service Study**

Customer Class	Rate of Return
Residential	2.31%
General Service	2.45%
Large General Service	2.30%
Industrial Power	1.92%
Municipal and School Service	1.33%
Water and Sewage Service	2.73%
Electric Heating General	3.12%
Irrigation Service	0.06%
Outdoor Lighting	6.25%
Street Lighting	3.82%
Total I&M Jurisdictional Class	2.30%

1 **Q. How are these rates of return used in this proceeding?**

2 A. Company witness Nollenberger utilized the earned rates of return for each class
3 as a basis for the allocation of the revenue increase required for each class.

4 **PHASE-IN RATE ADJUSTMENT (PRA) COST-OF-SERVICE STUDY**

5 **Q. Please describe the additional cost-of-service study you completed related**
6 **to the Phase-In Rate Adjustment (PRA) mechanism.**

7 A. In addition to the Test Year class cost-of-service study (Attachment DEH-1)
8 developed in this filing, I performed an additional class cost-of-service study in
9 support of the Company's proposed PRA mechanism, which is supported by
10 Company witness Williamson. This additional cost-of-service study, which is
11 shown in Workpaper WP-DEH-17, provides class rates of return for the PRA. It
12 uses as its inputs the PRA jurisdictional separation study prepared by Company
13 witness Stegall.

14 **Q. How did you complete this additional cost-of-service study in support of**
15 **the PRA?**

16 A. I prepared the additional cost-of-service study shown on WP-DEH-17 in a
17 manner that was consistent with the Test Year class cost-of-service study shown
18 on Attachment DEH-1. All differences between this additional study and
19 Attachment DEH-1 are due to the different inputs provided by the jurisdictional
20 separation studies supported by Company witness Stegall.

CONCLUSION

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Q. Please summarize your testimony in this proceeding.

A. My testimony describes the class cost-of-service allocation study for the Test Year and presents the resulting class-by-class rates of return. The cost allocation methods used to prepare the study meet the criteria identified in my testimony and assign costs to the cost causers. The class cost-of-service study equitably allocates costs among the customer classes based on contributions to demand and energy levels and number of customers.

The results of the study help guide the allocation of the proposed sales revenue to each customer class, as explained by Company witness Nollenberger.

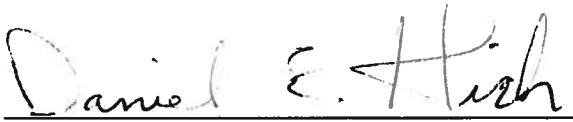
Q. Does this conclude your pre-filed verified direct testimony?

A. Yes.

VERIFICATION

I, Daniel E. High, Staff Regulatory Consultant for American Electric Power Service Corporation (AEPSC), affirm under penalties of perjury that the foregoing representations are true and correct to the best of my knowledge, information, and belief.

Date: 7-20-17


Daniel E. High

Daniel E. High

**INDIANA MICHIGAN POWER COMPANY - INDIANA
CLASS COST-OF-SERVICE STUDY
FORECAST TWELVE MONTHS ENDING DECEMBER 31, 2018**

Label	Constant	Allocation Factor	Function	Total Retail 1	RS 2	Total GS	Total LGS	Total IP	MS 14	WSS_SEC 15	WSS_PRI 16	WSS_SUB 17	Total WSS	EHG 18	IS 19	OL 20	SL 21
Demand	-	PROD_DEMAND	TOTAL	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Energy	86,383,166	PROD_ENERGY	TOTAL	86,383,166	28,865,059	12,846,534	17,029,642	25,717,245	218,857	545,716	336,728	67,439	949,882	41,917	7,819	274,565	431,648
Total	86,383,166		TOTAL	86,383,166	28,865,059	12,846,534	17,029,642	25,717,245	218,857	545,716	336,728	67,439	949,882	41,917	7,819	274,565	431,648
Other Operating Revenues																	
Forfeited Discounts (Acct. 450)	4,395,935	FORF_DISC	TOTAL	4,395,935	3,271,941	656,080	309,245	136,922	700	6,531	918	-	7,449	2,428	-	8,939	2,231
Miscellaneous Service Revenue (Acct. 451)	4,037,147	MISC_SERV_REV	TOTAL	4,037,147	3,793,442	229,556	7,798	3,328	-	520	260	-	781	134	-	1,262	846
Rent Assoc Co - Prod	3,167	RB_GUP_EPIS_P	TOTAL	3,167	1,257	562	548	752	10	15	9	2	26	2	0	4	6
Rent Assoc Co - Trans	-	RB_GUP_EPIS_T	TOTAL	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rent Assoc Co - Dist	4,089,405	RB_GUP_EPIS_D	TOTAL	4,089,405	2,145,614	787,422	609,236	370,493	10,783	18,412	6,181	152	24,745	2,758	1,758	77,427	59,170
Rent Non-Assoc Co - Prod	100,353	RB_GUP_EPIS_P	TOTAL	100,353	39,833	17,819	17,351	23,824	304	471	291	59	821	61	14	130	196
Rent Non-Assoc Co - Trans	82,351	RB_GUP_EPIS_T	TOTAL	82,351	32,764	14,601	14,174	19,557	245	385	237	54	676	50	12	109	165
Rent Non-Assoc Co - Dist	389,275	RB_GUP_EPIS_D	TOTAL	389,275	204,243	74,956	57,994	35,268	1,026	1,753	588	14	2,355	263	167	7,370	5,632
Rent ABD - Trans	185,754	RB_GUP_EPIS_T	TOTAL	185,754	73,903	32,934	31,971	44,113	553	868	535	122	1,525	113	27	245	372
Rent ABD - Dist	3,263,352	RB_GUP_EPIS_D	TOTAL	3,263,352	1,712,203	628,364	486,171	295,654	8,605	14,692	4,933	121	19,746	2,201	1,403	61,787	47,218
Other Electric Revenue - Prod	247,228	RB_GUP_EPIS_P	TOTAL	247,228	98,132	43,898	42,747	58,692	750	1,161	716	146	2,023	150	35	321	482
Other Electric Rev. Production-Retail Demand (456)	0	PROD_DEMAND	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Electric Rev. Production-Retail Energy (456)	(0)	PROD_ENERGY	TOTAL	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
Other Electric Revenue - Transmission	120,497,293	TRAN_TO	TOTAL	120,497,293	47,940,201	21,363,740	20,739,626	28,615,981	358,483	562,880	347,062	79,051	988,993	73,025	17,195	158,918	241,129
Other Electric Revenue - Dist	1,703,308	RB_GUP_EPIS_D	TOTAL	1,703,308	893,686	327,975	253,757	154,317	4,491	7,669	2,575	63	10,307	1,149	732	32,250	24,645
Other Electric Revenue - Local Facil Charge	244,129	RB_GUP_EPIS_D	TOTAL	244,129	128,089	47,007	36,370	22,118	644	1,099	369	9	1,477	165	105	4,622	3,532
Total - Other Operating Revenues	139,238,698		TOTAL	139,238,698	60,335,309	24,224,913	22,606,988	29,781,018	386,593	616,456	364,674	79,795	1,060,924	82,496	21,449	353,384	385,624
Total Other Revenues	312,932,559		TOTAL	312,932,559	118,424,543	50,078,514	56,830,139	81,444,395	827,047	1,712,477	1,040,959	215,248	2,968,684	166,874	37,208	903,989	1,251,165
Gain on Disp of Emission Const. Allow.	-	PROD_ENERGY	TOTAL	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Operating Revenues	1,299,116,835		TOTAL	1,299,116,835	535,443,203	223,220,771	223,717,113	287,855,213	3,418,504	6,595,124	3,843,658	753,166	11,191,948	785,880	189,462	7,117,533	6,177,206
Operating Expense																	
O&M Expense																	
Production																	
Demand	351,104,497	PROD_DEMAND	TOTAL	351,104,497	139,363,958	62,341,732	60,707,400	83,352,018	1,064,567	1,648,496	1,016,663	207,852	2,873,011	212,945	49,178	455,652	684,035
Energy	335,236,837	PROD_ENERGY	TOTAL	335,236,837	112,019,871	49,854,984	66,088,840	99,803,794	849,342	2,117,822	1,306,777	261,716	3,686,315	162,671	30,342	1,065,536	1,675,143
GSU	433,499	PROD_DEMAND	TOTAL	433,499	172,069	76,972	74,954	102,912	1,314	2,035	1,255	257	3,547	263	61	563	845
Total	686,774,834		TOTAL	686,774,834	251,555,898	112,273,687	126,871,194	183,258,725	1,915,224	3,768,353	2,324,695	469,825	6,562,873	375,879	79,581	1,521,750	2,360,023
Transmission																	
Transmission	12,252,667	TRAN_TO	TOTAL	12,252,667	4,874,760	2,172,354	2,108,892	2,909,792	36,452	57,236	35,291	8,038	100,565	7,425	1,748	16,159	24,519
Total	12,252,667		TOTAL	12,252,667	4,874,760	2,172,354	2,108,892	2,909,792	36,452	57,236	35,291	8,038	100,565	7,425	1,748	16,159	24,519
Distribution Operation																	
580 Supervision & Engineering	4,477,568	TOTOXEXP	TOTAL	4,477,568	2,300,468	962,312	648,880	400,148	11,855	20,160	6,883	376	27,419	3,137	2,044	66,031	55,275
581 Load Dispatching	1,002,578	DIST_CPD	TOTAL	1,002,578	457,052	183,319	183,058	162,842	2,591	4,923	3,035	-	7,959	621	178	1,914	3,044
582 Station Expenses	-	DIST_CPD	TOTAL	-	-	-	-	-	-	-	-	-	-	-	-	-	-
583 Overhead Lines	(292,949)	DIST_OHLINES	TOTAL	(292,949)	(149,519)	(54,790)	(51,123)	(32,461)	(847)	(1,478)	(540)	-	(2,018)	(206)	(124)	(720)	(1,140)
584 Underground Lines	1,884,792	DIST_UGLINES	TOTAL	1,884,792	976,681	353,642	326,739	194,934	5,533	9,546	3,157	-	12,703	1,347	865	4,783	7,563
585 Street Lighting	-	DIST_SL	TOTAL	-	-	-	-	-	-	-	-	-	-	-	-	-	-
586 Meters	1,413,209	DIST_METERS	TOTAL	1,413,209	500,144	752,130	95,274	34,460	4,065	6,086	1,222	1,067	8,375	1,570	1,379	-	15,810
587 Customer Installations	(1,819)	DIST_PCUST	TOTAL	(1,819)	(1,512)	(197)	(13)	(1)	(1)	(1)	(0)	-	(2)	(1)	(0)	(89)	(4)
588 Miscellaneous Distribution	13,160,875	RB_GUP_EPIS_D	TOTAL	13,160,875	6,905,199	2,534,149	1,960,694	1,192,352	34,702	59,254	19,893	489	79,636	8,875	5,659	249,183	190,425
588 Miscellaneous Distribution - Misc Distribution IN Ft. W	914,592	DIST_LABOR_M	TOTAL	914,592	587,509	146,838	100,389	62,144	1,841	3,083	1,061	24	4,167	497	330	6,129	4,748
589 Rents	1,300,733	RB_GUP_EPIS_D	TOTAL	1,300,733	682,464	250,458	193,782	117,844	3,430	5,856	1,966	48	7,871	877	559	24,628	18,820
Total	23,859,580		TOTAL	23,859,580	12,258,487	5,127,863	3,457,680	2,132,263	63,169	107,427	36,678	2,004	146,110	16,719	10,890	351,858	294,543
Distribution Maintenance																	
590 Supervision & Engineering	24,507	TOTMXP	TOTAL	24,507	12,347	4,571	4,266	2,790	70	123	47	0	170	17	10	174	90
591 Structures	-	DIST_CPD	TOTAL	-	-	-	-	-	-	-	-	-	-	-	-	-	-
592 Station Equipment	1,259,135	DIST_CPD	TOTAL	1,259,135	574,010	230,230	229,901	204,513	3,254	6,183	3,812	-	9,995	780	224	2,404	3,823
593 Overhead Lines	31,359,698	TOTOHLINES	TOTAL	31,359,698	15,920,104	5,858,662	5,485,288	3,555,994	90,207	158,009	59,701	-	217,710	21,913	12,902	76,251	120,667
594 Underground Lines	1,131,694	TOTUGLINES	TOTAL	1,131,694	586,433	212,339	196,185	117,045	3,323	5,732	1,896	-	7,628	809	519	2,872	4,541
595 Line Transformers	179,203	DIST_TRANSF	TOTAL	179,203	102,478	34,362	29,641	9,429	580	931	91	-	1,023	143	126	552	870
596 Street Lighting	(5,158)	DIST_SL	TOTAL	(5,158)	-	-	-	-	-	-	-	-	-	-	-	-	(5,158)
597 Meters	65,048	DIST_METERS	TOTAL	65,048	23,021	34,619	4,385	1,586	187	280	56	49	385	72	63	-	728
598 Miscellaneous Distribution	161,015	DIST_OL	TOTAL	161,015	-	-	-	-	-	-	-	-	-	-	-	161,015	-
Total	34,175,141		TOTAL	34,175,141	17,218,393	6,374,783	5,949,668	3,891,357	97,621	171,258	65,603	49	236,911	23,735	13,844	243,268	125,561
Customer Accounts																	
901 Supervision	862,138	TOTOX234	TOTAL	862,138	772,421	77,199	9,540	298	503	578	21	7	606	218	206	-	1,147
902 Meter Read	2,116,296	CUST_902	TOTAL	2,116,296	1,800,250	234,149	76,231	-	1,526	1,754	62	22	1,838	660	1,642	-	-
903 Customer Records	9,532,668	CUST_903	TOTAL	9,532,668	8,636,479	808,940	52,672	4,032	5,276	6,056	216	78	6,350	2,279	1,136	-	15,503
904 Uncollectibles	-	UNCOLFAC	TOTAL	-	-	-	-	-	-	-	-	-	-	-	-	-	-
905 Miscellaneous	3,001,265	TOTOX234	TOTAL	3,001,265	2,688,942	268,744	33,211	1,039	1,752	2,012	72	26	2,110	757	716	-	3,994
Total	15,512,367		TOTAL	15,512,367	13,898,092	1,389,032	171,653	5,369	9,058	10,399	371	134	10,905	3,914	3,699	-	20,645
Customer Service & Inf & Sales Exp																	
907 Supervision	803,369	EXP_OM_CUSTACCT	TOTAL	803,369	719,767	71,936	8,890	278	469	539	19	7	565	203	192	-	1,069
908 Customer Assist	8,408,171	EXP_OM_CUSTACCT	TOTAL	8,408,171	7,533,185	752,897	93,041	2,910	4,910	5,637	201	73	5,911	2,121	2,005	-	11,190
909 Information & Instruction	28,531	EXP_OM_CUSTACCT	TOTAL	28													

INDIANA MICHIGAN POWER COMPANY - INDIANA
CLASS COST-OF-SERVICE STUDY
FORECAST TWELVE MONTHS ENDING DECEMBER 31, 2018

<u>Label</u>	<u>Constant</u>	<u>Allocation Factor</u>	<u>Function</u>	<u>Total Retail 1</u>	<u>RS 2</u>	<u>Total GS</u>	<u>Total LGS</u>	<u>Total IP</u>	<u>MS 14</u>	<u>WSS_SEC 15</u>	<u>WSS_PRI 16</u>	<u>WSS_SUB 17</u>	<u>Total WSS</u>	<u>EHG 18</u>	<u>IS 19</u>	<u>OL 20</u>	<u>SL 21</u>
Insurance - Distribution	249,324	RB_GUP_EPIS_D	TOTAL	249,324	130,814	48,008	37,144	22,588	657	1,123	377	9	1,509	168	107	4,721	3,607
A&G - Labor Related	70,711,145	LABOR_M	TOTAL	70,711,145	31,496,077	12,264,060	11,355,010	14,449,472	198,748	315,470	181,364	34,279	531,113	41,778	13,011	172,461	189,416
Total	82,699,172		TOTAL	82,699,172	36,310,240	14,394,321	13,415,670	17,242,629	234,881	371,590	215,568	41,194	628,351	49,058	14,784	192,978	216,259
Total O&M Expense	864,513,831		TOTAL	864,513,831	344,394,384	142,559,428	152,077,005	209,443,333	2,361,800	4,492,458	2,678,426	521,325	7,692,210	479,061	126,749	2,326,014	3,053,847
Depreciation & Amortization Expense																	
Production	59,161,452	RB_GUP_EPIS_P	TOTAL	59,161,452	23,482,964	10,504,643	10,229,256	14,044,897	179,381	277,773	171,309	35,023	484,105	35,881	8,287	76,778	115,261
Nuclear	68,800,801	RB_GUP_EPIS_P	TOTAL	68,800,801	27,309,112	12,216,195	11,895,939	16,333,273	208,608	323,032	199,220	40,730	562,982	41,728	9,637	89,287	134,040
GSU	785,266	RB_GUP_EPIS_P	TOTAL	785,266	311,696	139,431	135,776	186,422	2,381	3,687	2,274	465	6,426	476	110	1,019	1,530
Transmission	19,664,413	TRAN_TO	TOTAL	19,664,413	7,823,544	3,486,430	3,384,579	4,669,951	58,502	91,859	56,638	12,901	161,398	11,917	2,806	25,934	39,351
Distribution	74,404,032	RB_GUP_EPIS_D	TOTAL	74,404,032	39,038,030	14,326,626	11,084,641	6,740,876	196,187	334,986	112,465	2,764	450,215	50,174	31,990	1,408,738	1,076,555
General & Intangible	17,995,386	RB_GUP_EPIS_G	TOTAL	17,995,386	8,015,484	3,121,099	2,889,754	3,677,268	50,580	80,285	46,156	8,724	135,164	10,632	3,311	43,890	48,205
Total Depreciation & Amort Expense	240,811,351		TOTAL	240,811,351	105,980,830	43,794,424	39,619,945	45,652,687	695,638	1,111,621	588,062	100,606	1,800,289	150,809	56,141	1,645,647	1,414,941
Regulatory Debits/Credits																	
Reg Debits / Credits - Generation	1,098,696	RB_GUP_EPIS_P	TOTAL	1,098,696	436,106	195,083	189,969	260,830	3,331	5,159	3,181	650	8,990	666	154	1,426	2,141
Reg Debits / Credits - Nuclear	5,471,088	RB_GUP_EPIS_P	TOTAL	5,471,088	2,171,640	971,440	945,973	1,298,833	16,589	25,688	15,842	3,239	44,769	3,318	766	7,100	10,659
Reg Debits / Credits - Transmission	322,556	RB_GUP_EPIS_T	TOTAL	322,556	128,330	57,188	55,517	76,601	960	1,507	929	212	2,647	195	46	425	645
Reg Debits / Credits - Distribution	-	RB_GUP_EPIS_D	TOTAL	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Regulatory Debits/Credits	6,892,340		TOTAL	6,892,340	2,736,075	1,223,712	1,191,460	1,636,265	20,880	32,353	19,953	4,101	56,407	4,180	966	8,951	13,445
Taxes Other Than Income																	
FICA	9,118,117	LABOR_M	TOTAL	9,118,117	4,061,381	1,581,436	1,464,215	1,863,242	25,628	40,680	23,387	4,420	68,486	5,387	1,678	22,239	24,425
Federal Unemployment Tax	44,815	LABOR_M	TOTAL	44,815	19,961	7,773	7,197	9,158	126	200	115	22	337	26	8	109	120
State Unemployment Tax	251,079	LABOR_M	TOTAL	251,079	111,835	43,547	40,319	51,307	706	1,120	644	122	1,886	148	46	612	673
Real & Personal Property Tax	43,372,214	NP	TOTAL	43,372,214	19,139,434	7,910,996	7,129,900	8,124,852	125,041	200,348	104,964	17,984	323,296	27,264	10,357	313,662	267,413
IN PSC Assessment	1,499,400	RSALE	TOTAL	1,499,400	634,037	263,246	253,736	313,828	3,940	7,424	4,261	818	12,503	941	231	9,447	7,490
Sales and Use Taxes	75,459	RB_GUP	TOTAL	75,459	33,001	13,727	12,460	14,481	218	349	186	33	567	47	17	504	436
Gross Receipts Tax	20,715,673	RSALE	TOTAL	20,715,673	8,759,846	3,637,006	3,505,609	4,335,842	54,436	102,564	58,873	11,299	172,737	13,003	3,198	130,521	103,476
Federal Excise Tax	-	PROD_DEMAND	TOTAL	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Business Franchise Tax	-	RB_GUP	TOTAL	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Regis Fee	-	RB_GUP	TOTAL	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Taxes on Capital Leases	602,672	NP	TOTAL	602,672	265,949	109,926	99,072	112,898	1,737	2,784	1,459	250	4,492	379	144	4,358	3,716
Total Taxes Other Than Income	75,679,429		TOTAL	75,679,429	33,025,445	13,567,657	12,512,507	14,825,607	211,833	355,468	193,888	34,948	584,304	47,197	15,680	481,452	407,747
Other O&M Expenses																	
Line of Credit Fees	1,138,539	RATEBASE	TOTAL	1,138,539	499,997	206,979	187,699	216,310	3,281	5,277	2,789	483	8,549	713	266	7,927	6,819
Accretion Expense - Distribution	24,670	RB_GUP_EPIS_D	TOTAL	24,670	12,944	4,750	3,675	2,235	65	111	37	1	149	17	11	467	357
Factoring Expense	8,127,978	RSALE	TOTAL	8,127,978	3,437,003	1,427,012	1,375,457	1,701,206	21,358	40,242	23,099	4,433	67,775	5,102	1,255	51,211	40,600
Accretion Expense - Production	1,302,405	RB_GUP_EPIS_P	TOTAL	1,302,405	516,964	231,254	225,191	309,190	3,949	6,115	3,771	771	10,657	790	182	1,690	2,537
Accretion Expense - Nuclear	-	RB_GUP_EPIS_P	TOTAL	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Other Expenses	10,593,591		TOTAL	10,593,591	4,466,907	1,869,995	1,792,022	2,228,941	28,654	51,745	29,696	5,688	87,130	6,621	1,714	61,295	50,313
Total Operating Expense Before Income Tax	1,198,490,543		TOTAL	1,198,490,543	490,603,641	203,015,216	207,192,938	273,786,832	3,318,804	6,043,646	3,510,026	666,668	10,220,340	687,867	201,251	4,523,360	4,940,293
Gross Operating Income	100,626,292		TOTAL	100,626,292	44,839,562	20,205,555	16,524,174	14,068,381	99,700	551,478	333,632	86,498	971,608	98,013	(11,788)	2,594,174	1,236,913
Interest Expense Factor	1.940000000%																
Interest Expense Synchronized	81,190,104		TOTAL	81,190,104	35,655,148	14,759,857	13,384,972	15,425,205	233,999	376,322	198,852	34,430	609,604	50,825	18,987	565,259	486,249
Net Operating Income Before Income Tax	19,436,189		TOTAL	19,436,189	9,184,414	5,445,699	3,139,203	(1,356,824)	(134,299)	175,156	134,780	52,068	362,004	47,188	(30,775)	2,028,915	750,664
Schedule M Income Adjustments																	
Gross Plant Related	(105,022,704)	RB_GUP	TOTAL	(105,022,704)	(45,930,124)	(19,105,540)	(17,341,868)	(20,154,039)	(304,073)	(485,734)	(258,695)	(45,336)	(789,765)	(65,791)	(24,124)	(701,252)	(606,128)
Property Tax Adjustments	-	NP	TOTAL	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Labor Related	(7,759,304)	LABOR_M	TOTAL	(7,759,304)	(3,456,140)	(1,345,765)	(1,246,013)	(1,585,575)	(21,809)	(34,617)	(19,902)	(3,761)	(58,280)	(4,584)	(1,428)	(18,925)	(20,785)
Production Plant Related	(16,883,451)	RB_GUP_EPIS_P	TOTAL	(16,883,451)	(6,701,551)	(2,997,807)	(2,919,218)	(4,008,122)	(51,192)	(79,271)	(48,888)	(9,995)	(138,154)	(10,240)	(2,365)	(21,911)	(32,893)
Production Demand Related	2,900,290	PROD_DEMAND	TOTAL	2,900,290	1,151,213	514,972	501,472	688,527	8,794	13,617	8,398	1,717	23,732	1,759	406	3,764	5,650
Rate Base Related	703,536	RATEBASE	TOTAL	703,536	308,962	127,898	115,985	133,664	2,028	3,261	1,723	298	5,282	440	165	4,898	4,213
Production Energy Related	16,070,991	PROD_ENERGY	TOTAL	16,070,991	5,370,145	2,390,009	3,168,247	4,784,516	40,717	101,527	62,646	12,546	176,719	7,798	1,455	51,081	80,305
Customer Related	-	EXP_OM_CUSTACCT	TOTAL	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Distribution Related	448,664	RB_GUP_EPIS_D	TOTAL	448,664	235,403	86,391	66,842	40,648	1,183	2,020	678	17	2,715	303	193	8,495	6,492
General Plant Related	(4,042,887)	RB_GUP_EPIS_G	TOTAL	(4,042,887)	(1,800,778)	(701,194)	(649,219)	(826,144)	(11,363)	(18,037)	(10,369)	(1,960)	(30,366)	(2,389)	(744)	(9,860)	(10,830)
Transmission Plant Related	322,556	RB_GUP_EPIS_T	TOTAL	322,556	128,330	57,188	55,517	76,601	960	1,507	929	212	2,647	195	46	425	645
Provision for Uncollectibles	-	RSALE	TOTAL	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Schedule M Income Adjustments	(113,262,309)		TOTAL	(113,262,309)	(50,694,540)	(20,973,847)	(18,248,255)	(20,849,924)	(334,756)	(495,727)	(263,480)	(46,262)	(805,469)				

INDIANA MICHIGAN POWER COMPANY - INDIANA
CLASS COST-OF-SERVICE STUDY
FORECAST TWELVE MONTHS ENDING DECEMBER 31, 2018

Label	Constant	Allocation Factor	Function	Total Retail 1	RS 2	Total GS	Total LGS	Total IP	MS 14	WSS_SEC 15	WSS_PRI 16	WSS_SUB 17	Total WSS	EHG 18	IS 19	OL 20	SL 21
Kentucky Taxable Income	(15,410,494)		TOTAL	(15,410,494)	(7,216,213)	(1,262,920)	(2,160,676)	(7,158,653)	(242,018)	42,104	64,456	39,656	146,216	23,803	(39,159)	1,869,223	629,903
Tax Factor (Tax Rate x Apportionment)	0.0671700%																
Kentucky Tax	(10,351)		TOTAL	(10,351)	(4,847)	(848)	(1,451)	(4,808)	(163)	28	43	27	98	16	(26)	1,256	423
Michigan Taxable Income	(12,497,768)		TOTAL	(12,497,768)	(5,942,376)	(733,042)	(1,679,712)	(6,599,696)	(233,585)	55,576	71,631	40,914	168,120	25,628	(38,490)	1,888,672	646,713
Tax Factor (Tax Rate x Apportionment)	0.8844120%																
Current Michigan Tax	(110,532)		TOTAL	(110,532)	(52,555)	(6,483)	(14,856)	(58,369)	(2,066)	492	634	362	1,487	227	(340)	16,704	5,720
Total Michigan Tax	(110,532)		TOTAL	(110,532)	(52,555)	(6,483)	(14,856)	(58,369)	(2,066)	492	634	362	1,487	227	(340)	16,704	5,720
West Virginia Taxable Income	(93,826,120)		TOTAL	(93,826,120)	(41,510,125)	(15,528,148)	(15,109,052)	(22,206,748)	(469,055)	(320,571)	(128,700)	5,806	(443,465)	(25,320)	(57,171)	1,345,630	177,335
Tax Factor (Tax Rate x Apportionment)	0.1489150%																
West Virginia Tax	(139,721)		TOTAL	(139,721)	(61,815)	(23,124)	(22,500)	(33,069)	(698)	(477)	(192)	9	(660)	(38)	(85)	2,004	264
Other Taxable Income	(71)	RB_GUP	TOTAL	(71)	(31)	(13)	(12)	(14)	(0)	(0)	(0)	(0)	(1)	(0)	(0)	(0)	(0)
Tax Factor (Tax Rate x Apportionment)	69.2280100%																
Other Tax	(49)		TOTAL	(49)	(21)	(9)	(8)	(9)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
Total State Income Tax	(931,266)		TOTAL	(931,266)	(433,452)	(84,813)	(132,688)	(409,436)	(13,537)	1,919	3,330	2,141	7,391	1,254	(2,170)	102,084	34,102
Federal Taxable Income	(92,894,854)		TOTAL	(92,894,854)	(41,076,673)	(15,443,335)	(14,976,364)	(21,797,312)	(455,518)	(322,491)	(132,030)	3,665	(450,856)	(26,574)	(55,001)	1,243,546	143,233
Tax Factor (Tax Rate x Apportionment)	35.00%																
Gross Current FIT	(32,513,199)		TOTAL	(32,513,199)	(14,376,836)	(5,405,167)	(5,241,727)	(7,629,059)	(159,431)	(112,872)	(46,211)	1,283	(157,799)	(9,301)	(19,251)	435,241	50,132
Parent Savings Allocation	(59,276)	RB_GUP	TOTAL	(59,276)	(25,923)	(10,783)	(9,788)	(11,375)	(172)	(274)	(146)	(26)	(446)	(37)	(14)	(396)	(342)
Total Current FIT	(32,572,475)		TOTAL	(32,572,475)	(14,402,759)	(5,415,951)	(5,251,515)	(7,640,434)	(159,603)	(113,146)	(46,357)	1,257	(158,245)	(9,338)	(19,264)	434,845	49,790
Deferred FIT																	
Gross Plant Related	39,249,291	RB_GUP	TOTAL	39,249,291	17,165,096	7,140,160	6,481,037	7,532,007	113,639	181,530	96,680	16,943	295,153	24,588	9,016	262,073	226,523
Net Plant Related	-	NP	TOTAL	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Production Plant	7,249,755	RB_GUP_EPIS_P	TOTAL	7,249,755	2,877,646	1,287,259	1,253,512	1,721,088	21,982	34,039	20,992	4,292	59,323	4,397	1,015	9,408	14,124
Distribution	(157,032)	RB_GUP_EPIS_D	TOTAL	(157,032)	(82,391)	(30,237)	(23,394)	(14,227)	(414)	(707)	(237)	(6)	(950)	(106)	(68)	(2,973)	(2,272)
Labor	2,824,448	LABOR_M	TOTAL	2,824,448	1,258,062	489,869	453,558	577,162	7,939	12,601	7,244	1,369	21,215	1,669	520	6,889	7,566
Rate Base	(246,238)	RATEBASE	TOTAL	(246,238)	(108,137)	(44,765)	(40,595)	(46,782)	(710)	(1,141)	(603)	(104)	(1,849)	(154)	(58)	(1,714)	(1,475)
Energy	(6,492,543)	PROD_ENERGY	TOTAL	(6,492,543)	(2,169,493)	(965,543)	(1,279,945)	(1,932,903)	(16,449)	(41,016)	(25,308)	(5,069)	(71,393)	(3,150)	(588)	(20,636)	(32,443)
Demand	(1,015,101)	PROD_DEMAND	TOTAL	(1,015,101)	(402,924)	(180,240)	(175,515)	(240,984)	(3,078)	(4,766)	(2,939)	(601)	(8,306)	(616)	(142)	(1,317)	(1,978)
Transmission	(127,274)	RB_GUP_EPIS_T	TOTAL	(127,274)	(50,636)	(22,565)	(21,906)	(30,225)	(379)	(595)	(367)	(83)	(1,045)	(77)	(18)	(168)	(255)
Revenue Related	-	RSAL	TOTAL	-	-	-	-	-	-	-	-	-	-	-	-	-	-
General Plant Related	1,415,010	RB_GUP_EPIS_G	TOTAL	1,415,010	630,272	245,418	227,227	289,150	3,977	6,313	3,629	686	10,628	836	260	3,451	3,790
Total Current Year DFIT	42,700,316		TOTAL	42,700,316	19,117,496	7,919,355	6,873,979	7,854,285	126,507	186,257	99,091	17,427	302,775	27,386	9,938	255,013	213,582
Deferred ITC																	
Prior Year Feedback	(2,170,678)	RATEBASE	TOTAL	(2,170,678)	(953,267)	(394,616)	(357,857)	(412,404)	(6,256)	(10,061)	(5,316)	(921)	(16,298)	(1,359)	(508)	(15,113)	(13,000)
Solar Investment Tax Credit	(343,847)	RB_GUP_EPIS_P	TOTAL	(343,847)	(136,483)	(61,053)	(59,453)	(81,629)	(1,043)	(1,614)	(996)	(204)	(2,814)	(209)	(48)	(446)	(670)
Rockport	(2,214,684)	RB_GUP_EPIS_P	TOTAL	(2,214,684)	(879,075)	(393,237)	(382,928)	(525,765)	(6,715)	(10,398)	(6,413)	(1,311)	(18,122)	(1,343)	(310)	(2,874)	(4,315)
Cook Plant Simulator	(39,148)	RB_GUP_EPIS_P	TOTAL	(39,148)	(15,539)	(6,951)	(6,769)	(9,294)	(119)	(184)	(113)	(23)	(320)	(24)	(5)	(51)	(76)
Total Deferred ITC	(4,768,357)		TOTAL	(4,768,357)	(1,984,364)	(855,857)	(807,007)	(1,029,092)	(14,132)	(22,258)	(12,838)	(2,458)	(37,554)	(2,934)	(871)	(18,484)	(18,061)
Total Federal Income Tax	5,359,484		TOTAL	5,359,484	2,730,373	1,647,548	815,457	(815,242)	(47,229)	50,854	39,896	16,225	106,976	15,114	(10,197)	671,374	245,310
Total Income Tax	4,428,218		TOTAL	4,428,218	2,296,920	1,562,735	682,769	(1,224,678)	(60,766)	52,773	43,227	18,367	114,366	16,368	(12,367)	773,458	279,412
Total Expenses	1,202,918,761		TOTAL	1,202,918,761	492,900,562	204,577,950	207,875,708	272,562,154	3,258,039	6,096,419	3,553,253	685,035	10,334,707	704,235	188,883	5,296,818	5,219,705
			PRODUCTION	46,216,536	18,883,989	8,958,985	8,170,604	9,297,976	82,905	248,092	168,613	46,710	463,416	38,848	170	166,674	152,968
			TO_TRAN	16,206,858	6,630,653	3,133,105	2,849,072	3,274,141	28,496	86,468	58,754	18,133	163,355	13,598	61	59,337	55,041
			DISTPRI	15,102,205	6,938,012	2,956,793	2,761,588	2,116,341	22,608	83,001	56,399	-	139,400	12,696	69	78,430	76,270
			DISTSEC	11,025,784	6,483,423	2,207,550	1,728,228	318,138	21,097	63,568	-	-	63,568	12,210	225	97,498	93,847
			ENERGY	1,010,411	350,326	165,472	205,348	255,693	1,527	7,356	5,002	1,357	13,716	685	2	8,996	8,646
			CUSTOMER	6,636,280	3,256,240	1,220,916	126,565	30,769	3,832	10,220	1,637	1,931	13,788	3,608	52	1,409,780	570,730
Net Operating Income	96,198,075		TOTAL	96,198,075	42,542,642	18,642,821	15,841,405	15,293,059	160,465	498,705	290,405	68,131	857,241	81,645	579	1,820,715	957,501
Current Rate of Return	2.30%			2.30%	2.31%	2.45%	2.30%	1.92%	1.33%	2.57%	2.83%	3.84%	2.73%	3.12%	0.06%	6.25%	3.82%
O&M Labor																	
Production Demand	99,551,999	PROD_DEMAND	TOTAL	99,551,999	39,515,189	17,676,344	17,212,947	23,633,591	301,847	467,414	288,264	58,934	814,612	60,378	13,944	129,195	193,951
Production Energy	3,119,758	PROD_ENERGY	TOTAL	3,119,758	1,042,472	463,957	615,031	928,787	7,904	19,709	12,161	2,436	34,305	1,514	282	9,916	15,589
Transmission	7,467,937	TOTBEXP	TOTAL	7,467,937	2,971,140	1,324,039	1,285,358	1,773,503	22,217	34,885	21,509	4,899	61,294	4,526	1,066	9,849	14,944
Distribution	18,346,619	EXP_OM_DIST	TOTAL	18,346,619	9,318,578	3,636,352	2,973,962	1,904,258	50,831	88,101	32,334	649	121,085	12,789	7,819	188,138	132,808
Customer Accounts	7,187,740	EXP_OM_CUSTACCT	TOTAL	7,187,740	6,439,757	643,616	79,537	2,488	4,197	4,819	172	62	5,053	1,814	1,714	-	9,566
Customer Service	2,540,733	EXP_OM_CUSTSERV	TOTAL	2,540,733	2,276,335	227,506	28,115	879	1,484	1,703	61	22	1,786	641	606	-	3,381
Total	138,214,785		TOTAL	138,214,785	61,563,470	23,971,813	22,194,950	28,243,506	388,480	616,631	354,502	67,003	1,038,135	81,661	25,431	337,099	370,240
Production Demand	99,551,999	PROD_DEMAND	TOTAL	99,551,999	39,515,189	17,676,344	17,212,947	23,633,591	301,847	467,414	288,264	58,934	814,612	60,378	13,944	129,195	193,951
Production Energy	3,119,758	PROD_ENERGY	TOTAL	3,119,758	1,042,472	463,957	615,031	928,787	7,904	19,709	12,161	2,436	34,305	1,514	282	9,916	15,589
Total Production	102,671,757		TOTAL	102,671,757	40,557,661	18,140,301	17,827,978	24,562,378	309,751	487,122	300,425	61,370	848,918	61,892	14,226	139,111	209,540