

STATE OF MICHIGAN
BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

In the matter of the application of)
THE DETROIT EDISON COMPANY)
to show cause why its retail rates for the)
sale and distribution of electric energy)
should no be decreased.)

Case No. U-14838

QUALIFICATIONS
AND
DIRECT TESTIMONY
OF
MARK R. WILLIAMSON

THE DETROIT EDISON COMPANY
QUALIFICATIONS OF MARK R. WILLIAMSON

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1 **Q. What is your name and business address, and by whom are you**
2 **employed?**

3 A. My name is Mark R. Williamson. My business address is The Detroit
4 Edison Company, 2000 Second Avenue, Detroit, Michigan 48226. I am
5 employed by The Detroit Edison Company as Manager, Load Research.

6

7 **Q. What is your educational background?**

8 A. I received a Bachelor of Science Degree in Marketing Management from
9 Central Michigan University in 1989. I also received a Master of Business
10 Administration Degree in Operations Management from Lawrence
11 Technological University in 1994.

12

13 **Q. What is your professional experience?**

14 A. I began my employment in 1967 in the Mail Distribution group of the Office
15 Services Department of The Detroit Edison Company (Detroit Edison or
16 Company). In May 1968 I transferred to the Marketing Department and was
17 responsible for electric appliance evaluation. Following my position in
18 Marketing, I accepted several promotions and assignments in Customer
19 Accounting and Customer Service with increasing responsibilities for
20 customer service, billing, and development and design of the Customer
21 Information System. In 1979 I transferred to the Employee Training
22 Department as a Training and Development Specialist responsible for
23 administering training for the Customer Information (CIS) and Material
24 Management Systems (MMS). In January 1981 I was promoted to Senior
25 Training and Development Specialist responsible for directing the activities

Line
No.

1 of the Administrative and Computer Based Training group and the
2 development and administration of training for several of the Company's
3 computer information systems. While in this position I also accepted
4 assignments to be the project leader, or team member, of several special
5 projects including the Residential Conservation Service Task Force,
6 Deferred Fuel Refund Project, Customer Positive Identification Project, and
7 Budget Wise Billing.

8

9 In February 1993, I joined the Regulatory Affairs Department as an Analyst,
10 Policy and Programs with responsibility for developing forecasting models to
11 predict Residential and Commercial electric sales and for developing and
12 implementing statistical sampling programs to evaluate customer class
13 usage characteristics. I was also responsible for the analysis of monthly
14 and annual system load characteristics for use in developing customer class
15 rates, long-term production requirements, and load management strategies.

16

17 In February 1999, I was promoted to Principal Load Research Analyst in the
18 Regulatory Affairs Department and was responsible for directing statistical
19 and economic analysis of load survey data to develop rates, class usage
20 profiles and business strategies. I was also responsible for directing the
21 design of scientific samples for load studies and the creation of load-
22 forecasting models to guide power purchase and load management
23 decisions and for use in customer choice profile services.

24

25 **Q. What is your current position?**

Line
No.

1 A. In March 2003, I was promoted to Manager, Load Research. I am
2 responsible for the design of sampling methods and collection of customer
3 data; the study and analysis of that data; making recommendations
4 associated with all aspects of the evaluation of electric and gas customer
5 usage characteristics; design and development of customer class load
6 profiles; design and evaluation of load management programs; development
7 of class usage allocation schedules; and the development of billing
8 determinants.

9

10 **Q. Are you active in any industry association?**

11 A. Yes. I am a member of the Association of Edison Illuminating Companies
12 Load Research Committee and currently serve as Vice Chairman.

13

14 **Q. Have you received any additional training?**

15 A. Yes. I have completed the Association of Edison Illuminating Companies
16 Intermediate and Advanced Applications in Load Research courses, the
17 Georgia Institute of Technology Sampling Methods and Statistical Analysis
18 in Power Systems Load Research course and the Edison Electric Institute
19 (EEI) sponsored Electric Rate Fundamentals course at Indiana University.

20

21 **Q. What is the extent of your involvement in prior rate cases?**

22 A. I supplied customer usage data used in the development of the cost of
23 service, allocation schedules and rate design billing determinants in Case
24 No. U-13808 and supported the Cost of Service and Rate Design witnesses
25 in their presentation. In Case No. U-14399, I sponsored testimony to the

Line

No.

- 1 Company's development of power supply and distribution allocation
- 2 schedules and to the allocation of Electric Choice load assignments to the
- 3 distribution allocations schedules.
- 4

THE DETROIT EDISON COMPANY
DIRECT TESTIMONY OF MARK R. WILLIAMSON

Line
No.

1 **Q. What is the purpose of your testimony?**

2 A. The purpose of my testimony is: 1) to support and justify the development of
3 the 2005 historic load Allocation Schedules; 2) to support and justify the
4 development of the 2007 Forecast Allocation Schedules; and 3) to support the
5 methodology Detroit Edison used to allocate the Electric Choice sales and
6 loads that are subsequently used to assign distribution system costs to each
7 customer class for both the historic and forecast Distribution Allocation
8 Schedules.

9

10 **Q. Are you supporting any Exhibits in this case?**

11 A. Yes. I am supporting the following Exhibits:

12	<u>Exhibit</u>	<u>Schedule</u>	<u>Title</u>
13	DE-5	E4-1	2005 Energy Allocation Schedule
14	DE-5	E4-2	Detroit Edison Allocation Methodology Diagram
15	DE-5	E4-3	2005 Power Supply Allocation Schedules
16	DE-5	E4-4	2005 Distribution Allocation Schedules
17	DE-13	E10-1	2007 Forecast Energy Allocation Schedule
18	DE-13	E10-2	2007 Power Supply Allocation Schedules
19	DE-13	E10-3	2007 Distribution Allocation Schedules

20

21 **Q. Were these exhibits prepared by you or under your direction?**

22 A. Yes.

23

24 **Q. What is the starting point for the analysis you are presenting in this**
25 **case?**

Line
No.

1 A. The 2005 historical Allocation Schedules (Exhibit DE-5, Schedules E4-3 and
2 E4-4) are based on actual 2005 rate class sales data obtained from customer
3 billing records. These sales levels are shown on Exhibit DE-5, Schedule E4-
4 1. The 2007 Forecast Allocation Schedules are based on the Energy Sales
5 Forecast supported by Mr. Colandrea and the Forecast Billing Determinants
6 supported by Mr. Falletich. These sales levels are shown on Exhibit. DE-13,
7 Schedule E10-1.

8

9 **BACKGROUND AND BASIS FOR ALLOCATION SCHEDULES**

10 **Q. Are there any technical terms used in your testimony that may require**
11 **explanation?**

12 A. Yes. To aid in understanding and to avoid confusion, I use the following terms
13 as defined below throughout my testimony:

14

15 ■ Customer Class or Class of Service – A set of customers with similar
16 characteristics who have been grouped for the purpose of setting an
17 applicable rate for electrical service. Common classifications include
18 residential, commercial, primary service and industrial.

19 ■ Energy – The kilowatt-hours (kWh) supplied to or used by an individual
20 customer, group of customers or class of service.

21 ■ Demand – The rate at which electric energy is used at a given instant or
22 averaged over a designated time interval. Typically demand is expressed in
23 kilowatts (kW) or megawatts (MW), one megawatt equals 1,000 kilowatts.
24 The Company uses average hourly demands in the development of allocation
25 schedules.

Line
No.

- 1 ▪ System Peak Demand – The highest total hourly demand (MW) for all
- 2 customers served on the Detroit Edison distribution system within a specific
- 3 period (day, month, year). Typically referred to as the 'system peak'.
- 4 ▪ Coincident peak demand – the demand of any class within a specific period
- 5 (day, month, year) that occurs at the same time as the system peak demand
- 6 for the same period.
- 7 ▪ MH4CP – Multi-Hour 4 Coincident Peak
- 8 ▪ Coincident MH4CP Demand – the demand value derived by averaging the
- 9 actual demand values for hours beginning 1200 through hour ending 2000
- 10 registered on the monthly peak days for June, July, August and September.
- 11 ▪ Coincident 12 CP Demand – the demand value derived by averaging the
- 12 actual demand values registered on the monthly peak days for January
- 13 through December.
- 14 ▪ Non-coincident peak demand – the maximum demand of any class within a
- 15 specific period but not necessarily occurring at the time of the system peak
- 16 demand for that period.
- 17 ▪ Losses – A term used to define the difference between the electrical energy
- 18 delivered to a customer (or a given point on the electrical distribution system)
- 19 and the amount of electrical energy that must be generated at the power plant
- 20 to serve that customer. In other words, losses refer to the amount of power
- 21 lost in transferring power from the power plant to the point of delivery (often
- 22 referred to as line loss). Line losses will vary by rate class based upon the
- 23 voltage level at which each class is served.
- 24 ▪ Load Factor – The ratio, in percent, of the total energy use over a designated
- 25 period of time to the maximum hourly demand (or demand at time of peak)

Line
No.

1 occurring in that period. Load factor is calculated by the formula:

2
$$LF (\%) = \text{Total Energy} / \text{No. of hours} / \text{Peak Demand}$$

3

4 **Q. What is the purpose of the Allocation Schedules you have developed?**

5 A. Allocation Schedules are developed, using customer class sales, load
6 research samples and quantitative models, to determine the extent
7 (expressed as a percentage) that each customer class uses the various
8 portions of the electrical system. In this case the percentages determined in
9 the Allocation Schedules are used by Mr. Heiser to determine rate class
10 cost responsibility. Because all customer classes do not utilize the full
11 distribution system to take delivery of electrical service, the Allocation
12 Schedules are developed to assign only the portions of the system actually
13 used by each customer class.

14

15 **Q. How did you develop the allocation schedules?**

16 A. There are ten distinct allocation schedules developed for use in cost of
17 service studies. Each schedule was developed to allocate to each customer
18 class its utilization of a particular part of the electrical system, which is the
19 industry standard practice for developing allocation schedules. Two
20 schedules are based on the energy that is produced at the production plant
21 and the remaining schedules, graphically represented on Exhibit DE-5,
22 Schedule E4-2, are based on the demand that a class places on the various
23 portions of the electrical system. The schedule numbers and the associated
24 portion of the electrical system they represent are:

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Line
No.

1	<u>Schedule</u>	<u>Portion of Electrical System</u>	<u>Measurement Basis</u>
2	100	Power Plant Energy Production	Total Energy
3	101	Power Plant Energy Production	On-Peak Energy
4	199	Production System Output	Coincident 12 CP Demand
5	200	Production System Output	Coincident MH4CP Demand
6	201	Input to Transmission Substation	Coincident 12 CP Demand
7	202	Sub Transmission Lines	Non-Coincident and
8			Individual Customer
9			Maximum Demands
10	203	Primary Voltage Substation	Non-Coincident and
11			Individual Customer
12			Maximum Demands
13	204	Primary Lines	Non-Coincident Demand
14	205	Secondary Line Transformers	Non-Coincident Demand
15	300	Secondary Distribution Lines	Individual Customer
16			Maximum Demand

17

18 **Q. Why does the Measurement Basis differ for each allocation schedule?**

19 A. The measurement basis for each allocation schedule is based on the design
 20 and service requirements for each portion of the electrical system. Energy
 21 is used for Power Plant Production (Schedules 100 and 101) as power
 22 plants are designed and built to produce the energy required to serve
 23 customers. As customers use energy they create a demand (rate at which
 24 energy is used and/or delivered) on the system. The output of power plant
 25 production is designed considering the peak demand requirements of the

Line
No.

1 system, measured as the coincident demand, which is the demand at the
2 time of, or coincident with, the system peak. Therefore, production output
3 (Schedules 199 and 200) and the input to the transmission substation
4 (Schedule 201) are measured based on coincident demand. Schedules 202
5 - 205 deal with substations, high voltage lines and transformers which are
6 designed to carry the maximum load required by the customer classes they
7 serve regardless of whether the class maximum occurs at the same time or
8 a different time as the system peak. The maximum demand of any class
9 measured during a period, but not necessarily at the time of the system
10 peak, is the non-coincident demand that is the measurement basis for
11 Schedules 202 - 205. Low voltage secondary lines are designed to serve
12 the absolute maximum demand level for a customer class, and Schedule
13 300 is therefore based upon the sum of the individual customer maximum
14 demands.

15

16 **Q. Is the 'Multi-Hour 4 Coincident Peak (MH4CP) Methodology' used to**
17 **develop the historic allocation schedules?**

18 A. Yes, the hourly rate class demands for the hours of 1200 through 2000 were
19 averaged for the monthly system peak days of June, July, August and
20 September to determine the peak contribution of each rate class. This
21 demand value, titled Coincident MH4CP, is used in the development of
22 Schedule 200. This complies with the Commission's Order in directing
23 Detroit Edison to use the Staff developed MH4CP 25/50/25 methodology in
24 its next rate proceeding (December 22, 2005 Order in Case No. U-14399)
25 and this proceeding (March 23, 2006 Order in Case No. U-14838).

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1

2 **Q. How were the Average Multi-hour 4CP demand contributions of the**
3 **various rate classes determined for development of the 2005 historic**
4 **allocation schedules?**

5 A. Contribution to monthly peak by rate class was obtained through analysis of
6 customer billing records, load research samples and quantitative models.
7 This industry standard load research analysis (referred to as Total System
8 Analysis by the Company) produces the hourly demand for each rate class for
9 every hour of the year the analysis represents (typically, 24 hours * 365 days
10 = 8,760 annual hours). For each rate class the hourly demand values for
11 hours 1200-2000 on the system monthly peak days for June, July, August and
12 September, 2005 were then averaged to create the Multi-Hour 4 Coincident
13 Peak (MH4CP) contribution to peak for each rate class. Additionally, for each
14 rate class, the demand for the hour of the monthly system peak is then
15 identified as the peak hour class demand. The peak hour class demands
16 (coincident) for each peak day are summed, and with the addition of losses,
17 the total is balanced to the peak hour net system output to ensure that the
18 sum of all the class demand values is equal to the amount of the net system
19 output for that hour. Class hourly demands contained in the Total System
20 Analysis data are then reviewed to determine the class non-coincident
21 demand (maximum hourly demand), for the year.

22

23 **Q. Did you develop any historic allocation schedules using the traditional**
24 **12 CP methodology?**

25 A. Yes, as requested by Mr. Heiser to be consistent with Staffs methods as put

Line
No.

1 forth in Case No. U-14399 for cost of service allocation of transmission, I
2 developed the historic Power Supply and Distribution Allocation Schedules
3 199 and 201 shown in Exhibit DE-5, Schedules E4-3 and E4-4 using the
4 traditional 12 CP methodology.

5

6 **Q. How often do you develop historic allocation schedules?**

7 A. With the exception of the year 2000, historic allocation schedules have been
8 developed annually from 1999 to 2005.

9

10 **Q. Have you developed separate allocation schedules for use in**
11 **apportioning power supply and distribution system expenses?**

12 A. Yes. The 2005 Historic Power Supply Allocation Schedules, Exhibit DE-5,
13 Schedule E4-3, were developed to support allocating power supply plant and
14 expenses. These schedules are based on sales and demand data for full
15 service customers of Detroit Edison obtained from customer billing records
16 and the 2005 Total System Analysis.

17

18 Exhibit DE-5, Schedule E4-4, 2005 Historic Distribution Allocation Schedules,
19 were developed to describe the allocations of the distribution plant and
20 expenses. These schedules are based on the demand data for all customers
21 receiving electric distribution service from Detroit Edison regardless of energy
22 supplier. The methodology used to distribute demand data to customer
23 classes for customers taking generation service from suppliers other than
24 Detroit Edison will be described later in my testimony.

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Line
No.

1 Q. Are all the Power Supply and Distribution Allocation Schedules
2 presented in your testimony developed using identical principles and
3 methods?

4 A. Yes. The Power Supply and Distribution Allocation Schedules were
5 developed using the same principles and methods. Only the sales and
6 demands that were used for allocating power supply and distribution differ. As
7 previously stated, only the sales and demands attributed to full service
8 customers of Detroit Edison are included in the Power Supply Allocation
9 Schedules. Demands for all customers receiving distribution service are
10 included in the Distribution Allocation Schedules regardless of energy supplier.

11

12 **HISTORIC POWER SUPPLY ALLOCATION SCHEDULES**

13 Q. Which schedules are used to develop the Historic Power Supply
14 Allocation Schedules shown on Exhibit DE-5, Schedule E4-3?

15 A. Power Supply Allocation is based on determining the percentage of total
16 annual energy production at the power plant level that is required to supply
17 each customer class and also the demand level output by the plants at the
18 time of the monthly coincident peak for each class. Schedule 100 allocates
19 total energy by class, and Schedule 200 allocates demand based on the
20 MH4CP method. Additionally, Schedule 101 allocates on-peak energy by
21 class, and Schedule 199 allocates demand based on the 12 CP.

22

23 Q. How did you develop Power Plant Energy Production Schedule 100?

24 A. Schedule 100 shown on Exhibit DE-5, Schedule E4-3, allocates total power
25 plant energy production to the proportion used by each customer class.

Line
No.

1 Schedule 100 is based on the total sales for each customer class, as obtained
2 from customer billing records, and aggregated to the 2005 Energy schedule
3 as earlier described and shown on Exhibit DE-5, Schedule E4-1. Sales are
4 adjusted by adding back losses, based on service level voltage, to properly
5 convert actual sales at the point of delivery to net generation required to
6 supply each class.

7

8 **Q. How did you develop Production System Output Schedule 200 shown on**
9 **Exhibit DE-5, Schedule E4-3?**

10 A. Schedule 200 uses the Multi-Hour 4 Coincident Peak demand (MH4CP),
11 adjusted for losses, to reflect the class demand at the point of production
12 system output. Demands were reduced to reflect interruptible credits for rate
13 classes with interruptible provisions. This is done because plant capacity is
14 neither planned, nor built, to meet load that may be interrupted. Therefore a
15 percentage of load (based on the percent of interruption typically experienced
16 when interruption occurs at system peak) is removed prior to allocating
17 demand levels to classes serving interruptible rate customers.

18

19 **Q. Why are Schedules 101 and 199 developed for the 2005 Power Supply**
20 **Allocation Schedules?**

21 A. As previously stated Schedule 199, shown on Exhibit DE-5, Schedule E4-3, is
22 developed identically to Schedule 200 except using 12 CP methodology for
23 Production System Output. Additionally, Schedule 101, shown on Exhibit DE-
24 5, Schedule E4-3, is developed identically to Schedule 100 except using On-
25 Peak energy for Power Plant Production. These schedules were developed at

Line
No.

1 the request of Mr. Heiser to support apportioning power supply cost to the
2 individual rate classes in his cost of service study and follow the directives of
3 MPSC Staff for allocation of Production Plant.

4

5 **ALLOCATION OF CHOICE SALES**

6 **Q. Were demands for customers served by suppliers other than Detroit**
7 **Edison included in the 2005 Distribution Schedules?**

8 A. Yes. To account for the total service territory distribution level demands,
9 demands for customers served by suppliers other than Detroit Edison, are
10 included at the point of delivery to the Detroit Edison distribution system. This
11 change begins with Schedule 201 shown on Exhibit DE-5, Schedule E4-4.

12

13 **Q. How were demands for customers served by suppliers other than**
14 **Detroit Edison determined and included in the Distribution allocation**
15 **Schedules?**

16 A. Demands for customers supplied by alternative suppliers were extracted from
17 the Detroit Edison billing systems by rate class and voltage level. The
18 demands for these customers were then assigned to the appropriate Bundled
19 classes of Primary Supply, General Service or Large General Service based
20 upon rate code and voltage level.

21

22 **HISTORIC DISTRIBUTION ALLOCATION SCHEDULES**

23 **Q. Which Schedules were developed for the 2005 Historic Distribution**
24 **Allocation Schedules as shown in Exhibit DE-5, Schedule E4-4?**

25 A. As requested by Mr. Heiser for the purpose of allocating distribution system

Line
No.

1 cost to rate classes, based on their utilization of the distribution system,
2 Schedules 201 through 205 and Schedule 300 were developed for use in the
3 cost of service study. As shown in Exhibit DE-5, Schedule E4-4, these
4 schedules allocate the demand for the Detroit Edison distribution system.
5 Demands for customers supplied by alternative suppliers are included starting
6 with Schedule 201 as this is the point where power supply is delivered to the
7 distribution system. Customer class demands are included in each schedule
8 (201-205 and 300) to the point they take electric supply distribution delivery.
9 Once all the demands for a customer class have been fully allocated to a
10 schedule that measures the point of delivery for that class, their demands are
11 excluded from all schedules that follow. This method assures that customer
12 classes are only allocated, for cost of service purposes, to the portions of the
13 electrical system utilized to serve each class.

14

15 **Q. How was Exhibit DE-5, Schedule E4-4, Input to Transmission Substation**
16 **Schedule 201 developed?**

17 A. Schedule 201, as directed by Staff, uses the 12 CP demand, adjusted for
18 losses, to reflect the class demand input to transmission step down stations.
19 Customer loads delivered directly from the transmission and sub-transmission
20 systems are excluded.

21

22 **Q. How was Exhibit DE-5, Schedule E4-4, Sub-Transmission System 202**
23 **developed?**

24 A. Schedule 202 was developed to allocate loads on the sub-transmission
25 system by customer-owned substations, single-customer substations and

Line
No.

1 joint-use general distribution substations. Customer-owned substations and
2 single-customer substations serve specific industrial or municipal customers
3 only, and therefore the peak loads associated with these substations are
4 assigned to the specific customer rate class. For single-customer, and
5 customer-owned substations, the sum of the individual maximum demands for
6 customers served by these stations are used and adjusted for losses. Joint-
7 use general distribution substations serve multiple classes including small
8 industrial customers served at primary voltages. The joint-use general
9 distribution substation peak loads are allocated to these rate classes on the
10 basis of non-coincident class maximum demand adjusted for losses.
11 Customer demands served at transmission voltage are excluded from this
12 schedule.

13

14 **Q. How was Exhibit DE-5, Schedule E4-4, Primary Voltage Substation**
15 **Schedule 203 developed?**

16 A. Schedule 203, which measures load at the output of the primary voltage
17 substations, includes the non-coincident maximum demands of all customers
18 except bulk power customers served at transmission and sub-transmission
19 voltage. Individual maximum demands are used for the Company's
20 substations serving a single customer. Loads served by customer-owned
21 substations are also excluded because they are assigned directly to the rate
22 class.

23

24 **Q. How were Schedules 204 and 205 shown in Exhibit DE-5, Schedule E4-4,**
25 **developed?**

Line
No.

1 A. Primary Lines Schedule 204 is based on line transformer capacities, contract
2 capacities, and non-coincident class maximum demands and reflects
3 customer loads served by primary voltage distribution lines. Demands are
4 measured at the customer's utilization level and related back to the primary
5 distribution lines adjusting for losses. Secondary Line Transformers Schedule
6 205 is based on non-coincident class maximum demands, and reflects the
7 loads, adjusted for losses, by secondary voltage line transformers.

8

9 **Q. How was Secondary Distribution Lines Schedule 300 shown in Exhibit**
10 **DE-5, Schedule E4-4, developed?**

11 A. Schedule 300 is based on individual customer maximum demands of
12 secondary voltage customers and reflects the loads served by secondary
13 voltage distribution lines.

14

15 **2007 FORECAST ALLOCATION SCHEDULES**

16 **Q. Were historical allocation schedules used to develop the maximum**
17 **demand values determined for the 2007 Forecast Allocation**
18 **Schedules?**

19 A. Yes. The basis for the Forecast Allocation Schedules developed for this case
20 are the forecasted 2007 sales and peak demand values presented in Mr.
21 Colandrea's Exhibit DE-16, Schedule F1-2. However, because Mr.
22 Colandrea's peak demand forecast does not contain the associated rate class
23 level demand values necessary for allocation schedule development it was
24 necessary to develop these corresponding maximum class demand values.
25 This was done based on historic statistics applied to the forecast energy

Line
No.

1 values using industry standard load research principles to derive demand
2 values using energy and load factor. Therefore, 2007 forecast maximum
3 demands were calculated by dividing the 2007 forecast energy values
4 shown on Exhibit No. DE-13, Schedule E10-1, by the product of the historic
5 load factor and annual hours (8,760 hours per year).

6

7 For example, 2005 Residential energy and maximum demand were
8 15,961,826 MWH and 4,285 MW, respectively. This calculates to a load
9 factor of 42.52% ($15,961,826 / 4,285 / 8,760$). Applying the 42.52% load
10 factor to the 2007 forecast energy value produces a demand value of 4,237
11 MW ($15,783,368 / 42.52\% / 8,760$).

12

13 **Q. How were the appropriate historic load factors applied determined?**

14 A. I compared the load factors that underlie the 2005 Historic Allocation
15 schedules, to the equivalent load factors in 2003 and 2004. In most cases
16 the 2005 load factor was reasonably consistent (within +/- 5%) with both the
17 average, and the trend, for years 2003-2005 and I used the 2005 load
18 factor. Every attempt was made to use the historic 2005 demand data as it
19 represents the most recent year of actual data. However, in a few cases,
20 the 2005 load factor appeared to be out of line (greater than +/- 5%).
21 Where this was the case, I used one of three methods; 1) if a well-defined
22 trend was evident for a rate class, and 2005 data was consistent with the
23 trend, I used the 2005 load factor, 2) if not, I used the average load factor of
24 years 2003, 2004, and 2005, or 3) if a rate class did not exist prior to 2005,

Line
No.

1 or the 3 year average percentage variance was greater than the actual 2005
2 variance, I used the 2005 load factor.

3

4 **Q. Why is this approach a reasonable method of determining demand**
5 **values?**

6 A. This approach is reasonable because it utilizes industry standard load
7 research principles that are defined in "The Art of Rate Design", published
8 by the Edison Electric Institute (EEI), taught in the EEI Rate Fundamentals
9 Course, and published in the Association of Edison Illuminating Companies
10 (AEIC) Load Research Manual. Each of these defines the relationship of
11 load factor to demand and the principle of using energy and load factor to
12 calculate demand. Because the 2007 forecasted energy values are based
13 largely on historic energy values it is most reasonable to also use the
14 historic load factors to determine the demand values with emphasis on
15 using the most recent 2005 historic load factors. The exception to this
16 method is when the 2005 value is shown to be inconsistent with the historic
17 trends of a given rate class. In those few cases where the 2005 load factor
18 is inconsistent with historic trends, I believe it is more reasonable to reflect
19 the demand characteristics of a rate class based on the value of a
20 demonstrated trend, if present, or the average of known values if a trend
21 does not exist. In the absence of forecasted 2007 demand values for each
22 rate class in the 2007 Forecast, I believe this is the most accurate
23 representation of demand values.

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Line
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1 **Q. Were coincident demands calculated using the same principles**
2 **described to calculate the maximum demands?**

3 A. Yes. The same methodology was applied but using the historic coincident
4 demand load factors.

5

6 **Q. How did you develop the 2007 Forecast Allocation Schedules?**

7 A. The exact schedules, methods and principles used to develop the 2005
8 schedules were used and applied in developing the 2007 forecast schedules
9 shown in Exhibits DE-13, Schedules E10-2 and E10-3.

10

11 **Q. Were any assumptions changed, or adjustments made, for the 2007**
12 **Forecast Allocation Schedules that differ from the 2005 Historic**
13 **Allocation Schedules?**

14 A. Yes, when calculating the interruption credits for the 2007 schedules I
15 assumed the average number of annual interruptions over the last three
16 years. In addition I used the methodology previously detailed to derive the
17 maximum demands for each rate class. All other assumptions and
18 adjustments remained the same as those used for the 2005 schedules.

19

20 **Q. Are the allocation schedules defined in your testimony developed using**
21 **established principles and methods?**

22 A. Yes. I used the industry recognized and accepted load research principles
23 supported by EEI and AEIC. The methods I used also conform to nationally
24 recognized standards for developing allocation schedules and are consistent
25 with the methods used by the Company in main electric case filings Nos. U-

Line

No.

1 6488, U-7660, U-8789, U-10102, U-13808 and U-14399.

2

3 **Q. Are the allocation factors presented in your exhibits reasonable?**

4 A. Yes. Based on my load research qualifications, experience, training and
5 expertise, I believe these factors are reasonable and an accurate
6 representation of the allocation factors for customers receiving power supply
7 and/or distribution service from Detroit Edison.

8

9 **Q. Does this complete your testimony?**

10 A. Yes, it does.

11