I.   **COST OF SERVICE METHODOLOGY**

Through the application of a cost of service model developed specifically for NorthWestern Energy's South Dakota retail electric operations, it is possible to address the revenue requirement elements of rate base, revenue and operating expense and assign or allocate each element to customer classes. This cost of service process consists of the following three steps:

A.   Functionalization – The assignment and allocation of costs into one of the following major functions:

   – Production
   – Transmission
   – Distribution
   – Customer
   – Energy

   Each of these major functions was also further assigned to sub-functions such as Distribution Primary within the Distribution function, Meter Reading within the Customer function, etc.

B.   Classification – The classification of functional costs into demand, energy and customer components.

C.   Allocation – The allocation of the functionalized and classified costs to customer classes using allocation factors developed for each functionalized cost category.

II.   **FUNCTIONS**

There are five major functions in the cost of service study. Descriptions of the functions, sub-functions and costs that are included in each are as follows:

A.   Production – Costs that relate to the cost of generation and purchased power.

B.   Transmission – Costs that relate to the Transmission lines, substations, and associated facilities that transport power from the Generation source to the Distribution substations.

C.   Distribution – Includes the cost of facilities that transport power from the high voltage side of the Distribution substation to the Primary and Secondary Distribution systems. Distribution costs also include the costs of line transformers.

1. Distribution Substations – The costs of substation transformers and switchgear between the Transmission system and the Primary and Secondary conductor systems.
2. Distribution Primary – The costs associated with Primary conductors and devices.
3. Distribution Secondary – The costs associated with Secondary conductors and devices.
4. Distribution Transformers – The costs associated with Distribution Line Transformers.

D.   Customer – Includes those costs that are directly related to the change in the number of customers.

1. Services – The costs associated with customer service drops.
2. Meters – The costs associated with the fixed cost of metering.
3. Meter Reading – The costs associated with meter reading.
4. Customer Records – The costs associated with customer records, collections, customer service, and information.
5. Customer Other – The costs associated with customer-related Other Operating revenues.
6. Lighting – Costs directly associated with the Lighting customer class

E.   Energy – Includes those costs that are associated with generation fuel costs.

III.   COST CLASSIFICATION

All functional costs are further classified into the following three components:

1. Demand – Costs whose main driver is the customer's demand or time of use (kW).
2. Energy – Costs whose main driver is the use of energy (kWh).
3. Customer – Costs whose main driver is the number of customers.

The classification of functional costs into the component costs is as follows:

A.   Demand

– Production
– Transmission
– Distribution Substations
– Distribution Primary
– Distribution Secondary
– Distribution Transformers

B.   Energy – Generation Fuel Costs

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C. Customer

- Services
- Meters
- Meter Reading
- Customer Records & Information
- Customer Other
- Lighting

IV. FUNCTIONAL ALLOCATION FACTORS

The first step in the cost of service allocation process is the functionalization of costs. All costs are assigned to the functions noted above either directly or by the use of internally developed functional cost allocation factors.

1. Direct Functional Cost Assignment – Certain costs relate solely to one function and can be directly assigned. The categories of costs that contain directly assignable costs are as follows:
    - Plant in Service
    - Accumulated Depreciation
    - Fuel Inventory
    - Fuel Charge Revenues and Costs
    - External Transmission Revenues and Costs
    - Ad Valorem Revenues and Costs
    - Wholesale Revenues and Costs
    - Steam Sales Revenues
    - Yankton Sioux Billing Credits
    - O&M Production Expenses
    - O&M Transmission Expenses
    - Meter Reading Expenses
    - Customer Records Expenses
    - Customer Service & Information Expenses
    - Sales Expenses
    - Depreciation Expense
    - Plant-Related Regulatory Credits
    - North Dakota Coal Tax

2. Internal Functional Allocation – For those costs that do not relate directly to one function, an internal functional allocation factor was developed to allocate the costs. The internal functional allocation factors are the sum of functional costs that have been directly assigned or allocated or both.

The following is a list of the internal functional allocators and the costs they allocate to functions:

FuncLabor – Sum of Total Functionalized Labor Expense
Costs Functionalized:
– General Plant-Related Cost
– Common Plant-Related Cost
– O&M Administrative & General Labor-Related Expense
– Intangible Plant-Related Cost
– Prepaid Insurance
– Allowance for Injuries and Damages
– Regulatory Credits Pension Related
– SD Vehicle Tax
– Payroll Taxes

MeterServices – Sum of Meters & Service Plant Function
Costs Functionalized:
– O&M Distribution Customer Installations Expense
– Customer Deposits

ProdExpXFuel – Sum of O&M Functional Production Expense
Costs Functionalized:
– Production Labor Expense

TransmExp – Sum of O&M Functional Transmission Expense
Costs Functionalized:
– Transmission Labor Expense

DistOpLabXS – Sum of Total Functionalized Distribution Operating Labor Excluding Supervision
Costs Functionalized:
– O&M Distribution Operating Supervision Labor

DistOpSubs – O&M Distribution Operating Substation Expense
Costs Functionalized:
– O&M Distribution Operating Substation Labor

DistOpOHLine – O&M Distribution Overhead Lines Expense
Costs Functionalized:
– O&M Distribution Operating Overhead Lines Labor

DistOpUGLine – O&M Distribution Underground Lines Expense
Costs Functionalized:
– O&M Distribution Operating Underground Lines Labor

DistOpLight – O&M Distribution Operating Lighting Expense
Costs Functionalized:
– O&M Distribution Operating Lighting Labor

DistOpMeter – O&M Distribution Operating Meter Expense
Costs Functionalized:
– O&M Distribution Operating Meters Labor

DistOpCustin – O&M Distribution Operating Customer Installation Expense
Costs Functionalized:
– O&M Distribution Operating Customer Installation Labor

DistOpOth – O&M Distribution Operating Other Expense
Costs Functionalized:
– O&M Distribution Operating Other Labor

DistMnLabXS – Sum of Functionalized Distribution Maintenance Labor Excluding Supervision
Costs Functionalized:
– O&M Distribution Maintenance Supervision Labor

DistMnSubs – O&M Distribution Maintenance Substation Expense
Costs Functionalized:
– O&M Distribution Maintenance Substation Labor

DistMnOHLine – O&M Distribution Maintenance Overhead Lines Expense
Costs Functionalized:
– O&M Distribution Maintenance Overhead Lines Labor

DistMnUGLine – O&M Distribution Maintenance Underground Lines Expense
Costs Functionalized:
– O&M Distribution Maintenance Underground Lines Labor

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DistMnTrans – O&M Distribution Maintenance Line Transformer Expense
Costs Functionalized:
– O&M Distribution Maintenance Line Transformers Labor

DistMnLight – O&M Distribution Maintenance Lighting Expense
Costs Functionalized:
– O&M Distribution Maintenance Lighting Labor

DistMnMeter – O&M Distribution Maintenance Meters Expense
Costs Functionalized:
– O&M Distribution Maintenance Meters Labor

DistMnOther – O&M Distribution Maintenance Other Expense
Costs Functionalized:
– O&M Distribution Maintenance Other Labor Expense

CustMeterRdg – O&M Customer Meter Reading Expense
Costs Functionalized:
– O&M Customer Meter Reading Labor

CustRecExp – O&M Customer Records Expense
Costs Functionalized:
– O&M Customer Records Labor Expense

CustServInfo – O&M Customer Service & Information Expense
Costs Functionalized:
– O&M Customer Service & Information Labor

AGExpLabor – O&M Administration & General Labor-Related Expenses
Costs Functionalized:
– O&M Administration & General Labor Expense

AGExpGeneral – O&M Administrative & General Expense General Plant
Costs Functionalized:
– O&M Administrative & General Labor Expense General Plant

ProdPlant – Sum of Production Plant
Costs Functionalized:
– Production Construction Labor Expense

TransPlant – Total Transmission Plant
Costs Functionalized:
– Transmission Construction Labor Expense

DistrPlant – Sum of Functionalized Distribution Plant Accounts
Costs Functionalized:
– Distribution Construction Labor Expense

PTDCWIPLab – Sum of Functionalized Production, Transmission and Distribution Construction Labor Expenses
Costs Functionalized:
– Contingency Construction Labor Expense

GeneralPlt – Functionalized General Plant
Costs Functionalized:
– Accumulated Depreciation Reserve General Plant
– O&M Administration & General Expenses – General Plant
– Depreciation Expense General Plant

CommonPlt – Functionalized General Plant
Costs Functionalized:
– Accumulated Depreciation Common Plant
– Depreciation Expense General Plant

PTDPlt – Sum of Functionalized Production, Transmission and Distribution Plant
Costs Functionalized:
– Working Capital Materials & Supplies

TotalPlant – Sum of Functionalized Production, Transmission, Distribution, General and Common Plant
Costs Functionalized:
– Other Prepaid Expenses
– Deferred Tax Reserves
– Miscellaneous Service Charges
– Rent Other
– Other Utility Revenues
– O&M Administrative & General Expenses – Plant Related
– Amortization Expense

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ClaimedRev– Sum of Functionalized Revenue Requirement at the Equalized Claimed Rate of Return
<u>Costs Functionalized</u>:
– Rate Case Expenses
– Late Payment Charge Revenues Functionalized on Claimed Revenues
– Uncollectible Accounts Expense Functionalized on Claimed Revenues
– O&M Administrative and General Expense Revenue Related
– Taxes Other Than Income Taxes Delaware Franchise Taxes
– Taxes Other Than Income Taxes SD Gross Receipts Tax and Increase
– Tax Credits and Adjustments

DistOpLab – Sum of Functionalized Distribution Operations Labor
<u>Costs Functionalized</u>:
– O&M Distribution Operating Supervision Expense

DistSubs – Functionalized Distribution Substation Plant
<u>Costs Functionalized</u>:
– O&M Distribution Operating Substation Expense
– O&M Distribution Maintenance Substation Expense

DistOHLine – Sum of Functionalized Distribution Overhead Primary and Secondary Lines Plant
<u>Costs Functionalized</u>:
– O&M Distribution Operating Overhead Lines Expense
– O&M Distribution Maintenance Overhead Lines Expense
– Rent from Poles and Contacts

DistUGLine – Sum of Functionalized Distribution Underground Primary and Secondary Lines Plant
<u>Costs Functionalized</u>:
– O&M Distribution Operating Underground Lines Expense
– O&M Distribution Maintenance Underground Lines Expense

DistLight – Sum of Functionalized Installations on Customer Premises and Street Lighting Plant
<u>Costs Functionalized</u>:
– O&M Distribution Operating Lighting Expense
– O&M Distribution Maintenance Lighting Expense

DistMeters – Functionalized Meters Plant
Costs Functionalized:
– O&M Distribution Operating Meters Expense
– O&M Distribution Maintenance Meters Expense

DistOPExpXS – Sum of Functionalized Distribution Operating Expense excluding Supervision and Other Expenses
Costs Functionalized:
– O&M Distribution Operating Other Expense

DistMnLab – Sum of Functionalized Distribution Maintenance Labor
Costs Functionalized:
– O&M Distribution Maintenance Supervision Expense

DistTransf – Functionalized Distribution Transformer Plant
Costs Functionalized:
– O&M Distribution Maintenance Transformer Expense

DistMnExpXS – Sum of Functionalized Distribution Maintenance Expense excluding Supervision and Other Expenses
Costs Functionalized:
– O&M Distribution Maintenance Other Expense

MetRdgRec – Sum of Functionalized Customer Meter Reading Expense and Customer Records Expense
Costs Functionalized:
– O&M Customer Accounts Expense Miscellaneous Expenses

LatePayment – Direct assignment of Late Payment charges to the customer classes functionalized on Claimed Revenues
Costs Functionalized:
– Late Payment Charges

Uncollectibles – Direct assignment of Uncollectible Accounts expense to the customer classes functionalized on Claimed Revenues
Costs Functionalized:
– Uncollectible Accounts Expense

CashWorkC – Sum of functionalized expenses used in the calculation of cash working capital. Sum of O&M expense, Taxes Other Than Income, Federal Income Taxes, and Interest Expense
Costs Functionalized:
– Cash Working Capital

V.   **CLASS ALLOCATORS**

After all costs have been functionalized, they are then allocated to customer classes using class allocation factors. Below is a listing of the functions and the class allocation factor used for that function.

1.   Production

12CPProd – Average 12 Coincident Peaks
– Used to allocate Production-Related Costs to the customer classes

2.   Transmission

12CPTrans – Average of Class 12 Coincident Peaks
– Used to allocate Transmission Functional Costs to the customer classes

3.   Distribution Substation

NonCP – Non-Coincident Class Peaks
– Used to allocate Distribution Substation Functional Costs to the customer classes

4.   Distribution Primary

NonCPPrimary – Non-Coincident Class Peaks
– Used to allocate Distribution Primary Functional Costs to the customer classes served at Primary voltage level and below

5.   Distribution Secondary

NonCPSecondary – Average of Non-Coincident Class Peaks and Maximum Diversified Demands
– Used to allocate Distribution Secondary Functional Costs to the customer classes served at Secondary voltage level

6.   Distribution Transformers

DemTransf – Average of Non-Coincident Class Peaks and Maximum Diversified Demands
– Used to allocate Distribution Transformer Functional Costs to the customer classes

7. Services

    Services – Maximum Diversified Class Demands
    –   Used to allocate Distribution Services Functional Costs to the
        customer classes

8. Meters

    MeterCost – Direct assignment of Meter Costs to customer classes
    –   Used to allocate Distribution Meter Costs to the customer classes

9. Customer Meter Reading

    MeterRdg – Direct assignment of Meter Reading Costs to customer
        classes
    –   Used to allocate Meter Reading Functional Costs to the customer
        classes

10. Customer Records

    CustRecords – Direct assignment of Customer Records and Billing Costs
        to customer classes
    –   Used to allocate Customer Records Functional Costs to the customer
        classes

11. Customer Other

    Customer – Allocator to customer classes based on the number of
        customers
    –   Used to allocate Other Customer Functional Costs to the customer
        classes

12. Street Lighting

    Lighting – Direct assignment of Lighting Costs to customer classes
    –   Used to assign Lighting Functional Costs to the Lighting classes

13. Energy Related

    Energy – kWh Sales Allocator
    –   Used to allocate Energy Functional Costs to the customer classes

14. Fuel

    Fuel – Direct assignment of offsetting fuel clause costs and revenues to
        customer classes
    –   Used to assign offsetting fuel costs and revenues to the customer
        classes

15. External Transmission

     ExtTransm – Direct assignment of offsetting External Transmission clause costs and revenues to the customer classes
- Used to assign offsetting external transmission costs and revenues to the customer classes

16. Ad Valorem

     AdValorem – Direct assignment of offsetting Ad Valorem clause costs and revenues to the customer classes
- Used to assign offsetting Ad Valorem costs and revenues to the customer classes

VI. CUSTOMER CLASSES

The individual customer classes with rates and grouping categories recognized in the cost of service study are as follows:

Total Residential
     Residential Basic 10
     Residential with Space Heating 11
     Residential Space Heating and Cooling 14
     Residential Dual-Fuel 15

Total Irrigation
     Irrigation Interruptible IRR 16 & 18
     Irrigation IRR 17

Total Commercial
     Commercial General Service 21
     Commercial Separate Metered Space Heating 23
     Commercial Space Heating & Cooling 24
     Commercial All-Inclusive 25

Total Commercial & Industrial
     Commercial & Industrial 33
     Large Commercial & Industrial 34

Total Municipal
     Municipal Pumping 41

Total Lighting
     Lighting Reddy-Guard 19
     Highway Street & Area Lighting 56

<u>Controlled Off-Peak</u>
Controlled Off Peak 70