

**UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION**

ANR Pipeline Company

)

Docket No. RP16 - ____-000

Summary of the Prepared Direct Testimony of Gregory S. Barry

Mr. Barry is a Senior Rate Analyst for TransCanada, U.S. Pipelines. His testimony explains the design of ANR's proposed gathering, transportation, and storage rates, in addition to the classification and allocation of costs used in the design of those rates.

Mr. Barry's testimony is divided into three sections. The first section discusses cost classification, including ANR's transportation and storage costs. The second section discusses cost allocation. Mr. Barry explains that mileage-related transportation costs are allocated across ANR's zones based upon a dekatherm-mile allocation. Following these preliminary allocations, costs associated with gathering, transportation, and storage functions are allocated to ANR's various services based upon projected units of service through various rate design steps. The third section provides an explanation of the rate design for each of ANR's rate schedules.

Docket No. RP16-____-000

Exhibit No. ANR-080

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**PREPARED DIRECT TESTIMONY
OF GREGORY S. BARRY ON BEHALF OF
ANR PIPELINE COMPANY**

January 29, 2016

Glossary of Terms

2HNS	2-Hour Notice Service, a service enhancement under Rate Schedule FTS-3
ADB	Average daily balance
ANR	ANR Pipeline Company
Balancing Service	A service enhancement under Rate Schedule FTS-3
Bcf	Billion cubic feet
Commission	Federal Energy Regulatory Commission
DDS	Rate Schedule DDS (Deferred Delivery Service)
Dth/d	Dekatherms per day
Dth-mile	Dekatherm-mile
ES	Enhancement Service, a rate component associated with service enhancement options under Rate Schedule FTS-3
ETS	Rate Schedule ETS (Enhanced Transportation Service)
FERC	Federal Energy Regulatory Commission
FSS	Rate Schedule FSS (Firm Storage Service)
FTS-1	Rate Schedule FTS-1 (Firm Transportation Service)
FTS-2	Rate Schedule FTS-2 (Firm Transportation Service)
FTS-3	Rate Schedule FTS-3 (Firm Transportation Service)
FTS-4	Rate Schedule FTS-4 (Firm Transportation Service)
FTS-4L	Rate Schedule FTS-4L (Firm Transportation Service)
IPLS	Rate Schedule IPLS (Interruptible Park and Lend Service)
ITS	Rate Schedule ITS (Interruptible Transportation Service)
ITS-3	Rate Schedule ITS-3 (Interruptible Transportation Service)

IWS	Rate Schedule IWS (Interruptible Wheeling Service)
Lebanon Lateral	The jointly-owned lateral extending from Glen Karn, Indiana to Lebanon, Ohio
MBS	Rate Schedule MBS (Market Balancing Service)
MDIQ	Maximum Daily Injection Quantity
MDQ	Maximum Daily Quantity
MDWQ	Maximum Daily Withdrawal Quantity
MHQ	Maximum Hourly Quantity
MSQ	Maximum Storage Quantity
NNS	No-Notice Service, which is available under Rate Schedule NNS (No-Notice Service), Rate Schedule STS (Small Transportation Service), and Rate Schedule MBS (Market Balancing Service)
PTS-1	Rate Schedule PTS-1 (Pooling Transportation Service – Derivative)
PTS-2	Rate Schedule PTS-2 (Pooling Transportation Service – Firm)
PTS-3	Rate Schedule PTS-3 (Pooling Transportation Service – Interruptible)
SE Area	Southeast Area
SE Mainline	Southeast Mainline
STS	Rate Schedule STS (Small Transportation Service)
SW Area	Southwest Area
SW Mainline	Southwest Mainline
Tie Line	A line from Defiance, Ohio to Bridgman, Michigan that connects ANR’s SE and SW Mainlines

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ANR Pipeline Company)

Docket No. RP16 - ___-000

Prepared Direct Testimony of Gregory S. Barry

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

2 A: My name is Gregory S. Barry. My business address is TransCanada Corporation, 700
3 Louisiana Street, Houston, Texas, 77002.

4 **Q: What is your occupation?**

5 A: I am a Senior Rate Analyst for TransCanada, U.S. Pipelines. I am filing testimony on
6 behalf of ANR Pipeline Company (“ANR”).

7 **Q: Please describe your educational background and experience as they are related to**
8 **your testimony in this proceeding.**

9 A: I earned a Bachelor of Business Administration in Economics from New Mexico State
10 University in 2007, and a Master of Arts in Economics specializing in Utility Regulation
11 from New Mexico State University in 2008. I have been employed by TransCanada
12 since 2010 as a rate analyst in the Rates & Tariffs Department. In this role I am
13 responsible for modeling of ANR’s transportation and storage rates.

14 **Q: Have you ever testified before the Federal Energy Regulatory Commission**
15 **(“FERC” or “Commission”) or any other regulatory commission or agency?**

16 A: No, I have not.

17 **Q: What is the purpose of your testimony in this proceeding?**

18 A: The purpose of my testimony is to explain the design of ANR’s gathering, transportation,
19 and storage rates, in addition to the classification and allocation of costs related to the rate
20 design process. I provide this information for both ANR’s Primary Case and Preferred

1 Case, consistent with the rate design and zone structure testimony of ANR witness
2 Roscher.

3 **Q: Are you sponsoring any statements or schedules related to cost allocation and rate**
4 **design?**

5 A: Yes, I am sponsoring the following schedules:

6	Exhibit No. ANR-173	Schedule I-2 – Primary Case (Classification of
7		Cost-of-Service)
8	Exhibit No. ANR-174	Schedule I-2 – Preferred Case (Allocation of Cost-
9		of-Service)
10	Exhibit No. ANR-175	Schedule I-3 – Primary Case (Classification of
11		Cost-of-Service)
12	Exhibit No. ANR-176	Schedule I-3 – Preferred Case (Allocation of Cost-
13		of-Service)
14	Exhibit No. ANR-179	Statement J – Primary Case (Comparison and
15		Reconciliation of Estimated Operating Revenues
16		with Cost-of-Service)
17	Exhibit No. ANR-180	Statement J – Preferred Case (Comparison and
18		Reconciliation of Estimated Operating Revenues
19		with Cost-of-Service)
20	Exhibit No. ANR-181	Schedule J-1 – Primary Case (Summary of Billing
21		Determinants)
22	Exhibit No. ANR-182	Schedule J-1 – Preferred Case (Summary of Billing
23		Determinants)
24	Exhibit No. ANR-183	Schedule J-2 – Primary Case (Derivation of Rates)
25	Exhibit No. ANR-184	Schedule J-2 – Preferred Case (Derivation of Rates)

26 **Cost Classification**

27 **Q: How are costs classified generally?**

28 A: All costs are initially classified as either fixed or variable. Under the Commission's
29 current straight-fixed-variable ("SFV") rate design method, fixed costs are then classified

1 as reservation costs while variable costs are classified as delivery or, in the case of ANR,
2 “commodity” costs. ANR’s variable costs consist of non-labor compression-related
3 operation and maintenance (“O&M”) expenses. All other costs are fixed and
4 consequently classified as reservation. Because ANR employs a distance-sensitive
5 transportation rate design, transportation function fixed costs are further classified as
6 either mileage or non-mileage, while transportation function variable costs are classified
7 as mileage costs.

8 **Q: Which of ANR’s transportation costs are classified as non-mileage?**

9 A: Non-mileage transportation costs include administrative and general (“A&G”) expenses,
10 Account Nos. 850 and 858 expenses, and storage function costs associated with
11 transportation system balancing.

12 **Q: How are storage function costs classified?**

13 A: Consistent with current Commission policy, I have classified ANR’s storage function
14 costs under the Equitable method, whereby 50 percent of fixed costs are classified as
15 deliverability costs and 50 percent as capacity costs. Variable costs are classified as
16 injection/withdrawal costs.

17 **Cost Allocation**

18 **Q: In general, how are functionalized, classified costs allocated to ANR’s various**
19 **services?**

20 A.: As discussed in greater detail below, mileage-related transportation costs are allocated
21 across ANR’s seven rate zones based upon a dekatherm-mile (“Dth-mile”) allocation. In
22 addition, certain storage function costs are allocated to transportation balancing and no-
23 notice service (“NNS”). Once these preliminary allocations have occurred, costs
24 associated with the gathering, transportation and storage functions are further allocated to

1 ANR's various services based upon projected units of service through various rate design
2 steps.

3 **Q.: How are storage function costs associated with balancing allocated to the**
4 **transportation function?**

5 A.: The amount of storage dedicated to transportation system balancing is equal to 5 billion
6 cubic feet ("Bcf") of working gas, 100,000 dekatherms per day ("Dth/d") of Maximum
7 Daily Withdrawal Quantity ("MDWQ"), and 10 Bcf of Maximum Storage Quantity
8 ("MSQ"). Fixed costs associated with the working gas portion are equal to ANR's
9 proposed pre-tax cost of capital times the book value of the 5 Bcf of working gas. Fixed
10 costs associated with the capacity quantities dedicated to system balancing are quantified
11 by deriving ratios of MDWQ, MSQ, and injection/withdrawal associated with balancing
12 to total MDWQ, MSQ, and injection/withdrawal rate design units, respectively. These
13 ratios are then applied to the deliverability, capacity, and injection/withdrawal cost
14 categories of the storage function cost-of-service to determine the costs of storage
15 capacity dedicated to transportation system balancing. Total balancing costs are then
16 included in the non-mileage category of transportation costs as discussed above.

17 **Q: Please explain how storage function costs are allocated to NNS.**

18 A: The amount of storage dedicated to NNS, and derivative rates thereof, is equal to 5 Bcf of
19 working gas and 5 Bcf of MSQ.¹ The fixed cost associated with the working gas portion
20 is equal to ANR's proposed pre-tax cost of capital multiplied by the book value of the 5
21 Bcf of working gas. Unlike the balancing cost allocations described above, fixed storage
22 capacity costs are not separately carved out for NNS. Instead, fixed storage capacity

¹ The MDWQ units imputed for NNS are based upon no-notice entitlements ("NNE").

1 costs are allocated to NNS, and derivative rates thereof, through the design of the firm
2 storage service (“FSS”) rates.

3 **Q: Please explain how mileage-related transportation costs are allocated among ANR’s**
4 **rate zones.**

5 A: Consistent with the testimonies of ANR witnesses Roscher and Word, I first credited
6 ANR’s transportation cost-of-service with revenues generated from transportation service
7 agreements for which ANR is seeking a discount adjustment. Net mileage-related
8 transportation function costs were then allocated to ANR’s rate zones on a Dth-mile
9 basis, making use of Dth-miles attributable to both discounted and undiscounted
10 contracts.

11 **Q: In its Preferred Case, ANR proposes to employ four rate zones, rather than the**
12 **seven zones reflected in the Primary Case. How does the cost allocation differ**
13 **between the two cases?**

14 A: The overall method of cost allocation is the same in both cases. In the Preferred Case,
15 the Southwest Southern Segment and Southwest Area (“SW Area”) become the proposed
16 Supply Zone West; the Southwest Central Segment and Northern Segment become the
17 proposed Market Zone North; the Southeast Central Segment and the Southeast Southern
18 Segment become the proposed Supply Zone East; and the Southeast Area (“SE Area”) is
19 renamed the Market Zone South. A Dth-mile-based allocation is also used in the
20 Preferred Case; however the miles of haul for a given contract in each zone now reflect
21 the proposed four-zone structure.²

² *I.e.*, a hypothetical contract which traverses one hundred miles in the former Southeast Central Segment in addition to one hundred miles in the former Southeast Southern Segment, will then be represented as two hundred miles in the proposed Supply Zone East.

1 **Rate Design**

2 **Q: You stated that the overall method of cost allocation is the same for the Primary and**
3 **Preferred Cases. Are there differences in rate design between the two cases?**

4 A: Generally, no. Unless I state otherwise, ANR's rate design approach is consistent
5 between the Primary and Preferred Cases.

6 **Q: Please provide a general overview of ANR's gathering rate design.**

7 A: ANR's gathering rate design is straightforward. As described above, gathering function
8 costs are classified to reservation and commodity, and reservation and commodity rates
9 are designed based upon projected units of service.

10 **Q: Are ANR's gathering rates discount-adjusted?**

11 A: Yes. I have conducted an iterative discount adjustment in the process of designing
12 ANR's gathering rates. Use of the iterative discount adjustment was necessary in this
13 context because certain discounted gathering rates are higher than the proposed gathering
14 rates. In addition, use of the iterative method in the design of the gathering rates is
15 supported by the fact that the gathering rate design itself is not complex.

16 **Q: Is ANR seeking a discount-type adjustment for any negotiated rate gathering**
17 **contracts?**

18 A: No, ANR has one negotiated rate gathering contract that generates *de minimis* revenues.
19 ANR is not seeking to support a discount-type adjustment for this contract, and I have
20 reflected the contract as a maximum rate contract for rate design purposes.

21 **Q: Please provide a general overview of ANR's transportation rate design.**

22 A: As discussed above, ANR's transportation function costs are classified to three cost
23 categories, including non-mileage reservation, mileage reservation, and mileage
24 commodity. As noted by ANR witness Roscher, ANR credits transportation function
25 costs that are classified as reservation mileage and reservation non-mileage as a means of

1 implementing: (1) a discount adjustment for discounted transportation agreements; and
2 (2) a discount-type adjustment for certain negotiated rate transportation agreements.
3 Non-mileage transportation costs are divided by *system-wide* non-mileage reservation
4 rate design units in order to design a non-mileage rate that applies equally to all affected
5 rate schedules, regardless of contract length-of-haul. As discussed by ANR witness
6 Roscher, this rate design results in an allocation of non-mileage costs to all rate zones.
7 Mileage reservation costs, on the other hand, are allocated to ANR's various rate zones
8 by means of a Dth-mile allocation. Such costs are then divided by associated
9 non-mileage reservation rate design units *in each respective zone* to derive the mileage
10 reservation rate components for each zone. Mileage commodity costs are allocated to
11 ANR's various rate zones by means of a Dth-mile allocation as well, and such costs are
12 then divided by associated non-mileage commodity units *in each respective zone*, to
13 derive the commodity rate components for each zone.

14 **Q: Please provide a general overview of ANR's storage rate design.**

15 A: Storage function costs are classified to three cost categories, as described above,
16 including deliverability reservation, capacity reservation, and injection/withdrawal. In
17 general, deliverability reservation costs are divided by MDWQ rate design units to derive
18 the deliverability reservation rate component for storage. Similarly, capacity reservation
19 and injection/withdrawal costs are divided by MSQ and injection/withdrawal quantities,
20 respectively, to derive the associated rate components. As noted by ANR witness
21 Roscher, ANR makes use of an iterative discount adjustment method when designing
22 storage rates.

23 **Q: Please describe Rate Schedule FTS-1 ("FTS-1").**

24 A: FTS-1 is ANR's standard firm transportation service.

1 **Q: How does ANR design its FTS-1 rates?**

2 A: FTS-1 is the base upon which all other transportation service rates are derived. The
3 FTS-1 rates are comprised of a monthly non-mileage reservation charge, a monthly
4 mileage reservation charge, and a commodity unit rate. Mileage reservation and
5 commodity rate components are designed for each rate zone based upon the
6 mileage-related reservation and commodity costs allocated to each rate zone. The non-
7 mileage reservation charge, or access fee, which does not vary by rate zone, is added to
8 these mileage-based components.

9 **Q: Please describe Rate Schedule ITS (“ITS”).**

10 A: ITS is ANR’s standard interruptible service.

11 **Q: How does ANR design its ITS rates?**

12 A: ITS rates are derived from the FTS-1 rates and are designed as unit rates set equal to the
13 100 percent load factor equivalent of the FTS-1 rates. In order to allocate fixed costs to
14 ITS, daily reservation units are initially imputed by dividing annual ITS commodity units
15 by 365. Monthly FTS-1 mileage and non-mileage reservation rates are converted to daily
16 unit rates and added to the FTS-1 commodity unit rates to derive one-part unit rates
17 applicable to ITS service in ANR’s various rate zones.

18 **Q: Please describe Rate Schedule FTS-2 (“FTS-2”).**

19 A: FTS-2 is a firm transportation service that is subject to interruption up to ten days of the
20 month.

21 **Q: How does ANR design its FTS-2 rates?**

22 A: In order to reflect the possibility of up to ten days of interruption, FTS-2 recovers a
23 portion of fixed costs through the commodity charge so that on days when service is
24 interrupted, the shipper is effectively not subject to a reservation fee. The shifting of

1 fixed costs from the FTS-1 reservation component (collectively mileage and non-mileage
2 components) to the commodity component is accomplished by converting the FTS-1
3 monthly reservation rate into a daily rate (multiplying by 12 then dividing by 365) and
4 then multiplying this unit rate by 20, which represents the number of days per month that
5 FTS-2 service cannot be interrupted. The FTS-2 commodity rate is the sum of (a) the
6 FTS-1 commodity rate and (b) the difference between the FTS-1 reservation rate and the
7 FTS-2 reservation rate. Through this approach, approximately one-third of fixed costs
8 are recovered through the commodity charge.

9 **Q: Please describe Rate Schedule FTS-3 (“FTS-3”).**

10 A: FTS-3 is a firm transportation service designed specifically for power generation
11 shippers. FTS-3 provides shippers the right to non-ratable takes throughout the gas day.
12 An FTS-3 shipper’s contract specifies a Maximum Hourly Quantity (“MHQ”) which is
13 typically greater than $1/24^{\text{th}}$ of Maximum Daily Quantity (“MDQ”), but not in excess of
14 $1/4^{\text{th}}$. FTS-3 also provides three enhancement options, which I discuss below.

15 **Q: How does ANR design its FTS-3 rates?**

16 A: The rate components of the FTS-3 rate are derived from the FTS-1 rate. Under FTS-3,
17 fixed costs are recovered through two types of reservation charges: a deliverability charge
18 and a capacity charge.

19 **Q: Please describe the FTS-3 deliverability charge.**

20 A: The deliverability charge is equal to one-half of the FTS-1 reservation charge, stated as a
21 monthly rate. The deliverability charge is applicable to an FTS-3 shipper’s Billing MHQ,
22 which is the product of each dekatherm of a shipper’s MHQ and 24 (this expresses the
23 MHQ on an MDQ-equivalent basis). Therefore, the deliverability charge reflects a
24 shipper’s higher hourly take to the extent the shipper’s MHQ exceeds $1/24^{\text{th}}$ of the MDQ.

1 **Q: Please describe the capacity charge.**

2 A: The capacity charge is equal to one half of the FTS-1 reservation charge, stated as a daily
3 rate (*i.e.*, multiplied by 12 then divided by 365). The capacity charge is applicable to an
4 FTS-3 shipper's billing MDQ, which is equal to an FTS-3 shipper's MDQ multiplied by
5 365 then divided by 12. Despite the conversion to a daily rate, the capacity charge is
6 designed to recover fixed costs equivalent to one-half of the fixed costs that the FTS-1
7 reservation charge is designed to recover for a given MDQ. The FTS-3 commodity
8 charge is equal to the FTS-1 commodity charge.

9 **Q: Please describe the Rate Schedule FTS-3 service enhancements.**

10 A: ANR offers two service enhancement options to FTS-3 shippers: (a) a 2-Hour Notice
11 Service ("2HNS"); and (b) a Balancing Service. Shippers opting for one or both service
12 enhancements must also pay the Enhancement Service ("ES") rate, which is a third rate
13 component within the service enhancements of FTS-3 that is required if either of the
14 enhancement options is chosen. 2HNS provides shippers the right to start-up and shut-
15 down service upon providing ANR with two (2) hour(s) notice. Balancing Service
16 provides shippers the right to a 25-percent imbalance tolerance between receipts and
17 deliveries, as opposed to ANR's standard 10-percent tolerance for all other services.
18 Both 2HNS and Balancing Service are supported by storage, and the ES rate reflects the
19 need for transportation to and from storage. Storage and transportation are both
20 necessary in order to provide the flexibility each service enhancement requires.

21 **Q: How are the FTS-3 service enhancement rates designed?**

22 A: As with the base reservation rates for FTS-3, the service enhancement reservation rates
23 are likewise composed of both a deliverability and capacity charge. The 2HNS
24 reservation rates are derivatives of the storage component of the NNS reservation rate.

1 The storage component of the NNS reservation rate recovers fixed costs associated with
2 annual unratcheted Firm Storage Service (“FSS”) and a return on working gas. The
3 2HNS deliverability rate is equal to one-half the aforementioned NNS storage
4 component, while the capacity rate is likewise equal to one-half of the NNS storage
5 component. As with the base FTS-3 capacity rate, the 2HNS capacity rate is stated as a
6 daily rate (*i.e.*, multiplied by 12 then divided by 365). The 2HNS commodity rate is
7 similarly equal to the NNS storage component commodity rate, which is in turn equal to
8 the FSS commodity rate.

9 The Balancing Service reservation rates are derivatives of the system balancing
10 component of the access fee applicable to all transportation services on ANR. The
11 derivation of the system balancing component is more fully described below; however
12 this rate component recovers the cost of providing shippers a 10-percent imbalance
13 threshold. FTS-3 shippers not subscribing to the Balancing Service are entitled to this
14 same 10-percent imbalance threshold. The Balancing Service provides a *total* imbalance
15 threshold of 25 percent, meaning an additional 15 percent is provided for FTS-3 shippers
16 subscribing to this service enhancement. This ratio of 15 percent to 10 percent forms the
17 net multiplier for the rate design units used to allocate costs to the Balancing Service.
18 Therefore, costs are allocated to the Balancing Service on the basis of rate design units
19 which have been assigned a net multiplier of one and one-half, as applicable to the cost of
20 system balancing only. The Balancing Service deliverability rate is equal to three-fourths
21 (one and one-half multiplied by one half) of the system balancing component of the
22 access fee – although this is not a separately stated rate in ANR’s tariff. Accordingly, the
23 Balancing Service capacity rate is also equal to three-fourths of the system balancing

1 component of the access fee. The variable costs assigned to system balancing are
2 recovered through ANR's generally applicable mileage-based commodity rates. A small
3 portion of this variable cost is allocated to the Balancing Service on the basis of rate
4 design units which have been assigned a multiplier of one and one-half.

5 The ES deliverability and capacity reservation rates are derivatives of the NNS
6 transportation rate component, which in turn is the Northern Segment FTS-1 reservation
7 rate multiplied by seven-twelfths, which reflects the transportation capacity required for
8 NNS shippers to execute summer (seven months of twelve) injection into storage. The
9 ES deliverability rate is equal to one half the aforementioned NNS transportation
10 component, while the capacity rate is likewise also equal to one half of the NNS
11 transportation component. As with the base FTS-3 capacity rate however, the ES
12 capacity rate is stated as a daily rate (*i.e.*, multiplied by 12 then divided by 365). The ES
13 commodity rate is similarly equal to the NNS transportation component commodity rate,
14 which is in turn equal to the Northern Segment FTS-1 commodity rate.

15 **Q: Please describe Rate Schedule ITS-3 ("ITS-3").**

16 A: ITS-3 is an interruptible service designed for power generation shippers that assumes an
17 MHQ of one-sixth of imputed MDQ. The ITS-3 rate is essentially a 100 percent load
18 factor, bundled, postage stamp version of the FTS-3 rate, including service
19 enhancements.

20 **Q: How does ANR design its ITS-3 rates?**

21 A: ITS-3 bundles three principal rate components including: (a) NNS, representing 2HNS
22 and ES; (b) FTS-1, based on the arithmetic mean of three transportation paths;³ and (c)

³ The three transportation paths are: (a) Northern Segment to Northern Segment, (b) SE Area to Northern Segment, (c) SW Area to Northern Segment.

1 Balancing Service. As with the FTS-3 reservation rates, each ITS-3 deliverability rate
2 component is equal to one-half of the rate from which it is derived. The sum of the
3 monthly deliverability rate components is then stated as a daily rate (*i.e.*, multiplied by 12
4 then divided by 365), and multiplied by the product of one-sixth and twenty-four, the
5 hourly flow multiplier. As with the FTS-3 reservation rates, each ITS-3 capacity rate
6 component is equal to one-half of the rate from which it is derived, although stated as a
7 daily rate (*i.e.*, multiplied by 12 then divided by 365). Each commodity rate component
8 is equal to the commodity rate from which it is derived. The one-part ITS-3 rate is
9 yielded by the sum of (a) the daily deliverability rate, (b) the sum of the daily capacity
10 rate components, and (c) the sum of the commodity rate components.

11 **Q: Please describe Rate Schedules FTS-4 (“FTS-4”) and FTS-4L (“FTS-4L”).**

12 A: FTS-4 and FTS-4L are offsetting firm transportation services designed to promote the
13 efficient use of capacity on ANR given a fully-subscribed segment of capacity on the tie-
14 line from Bridgeman, Michigan, to Defiance, Ohio. FTS-4 and FTS-4L shippers are
15 subject to a “must-flow condition,” thereby allowing ANR to provide service on both
16 sides of the capacity constraint on a firm basis by offsetting each shipper’s respective
17 flows.

18 **Q: How does ANR design its FTS-4 and FTS-4L rates?**

19 A: FTS-4 and FTS-4L rates are designed on an identical basis as FTS-1.

20 **Q: Please describe Rate Schedule ETS (“ETS”).**

21 A: ETS is a firm transportation service designed specifically for local distribution company
22 shippers. ETS service is similar to FTS-1 service, although it provides two additional
23 service enhancements. ETS service provides shippers the ability to aggregate multiple
24 delivery points – often multiple city gates – under a single ETS contract, thus providing

1 an ETS shipper the ability to move delivery point volumes among multiple gate stations.
2 Additionally, ANR's tariff provides ETS shippers the right to deliver up to 1/16th of their
3 MDQ on an hourly basis.

4 **Q: How does ANR design its ETS rates?**

5 A: As more fully explained by ANR witness Roscher, ETS rates reflect a 1.5x multiplier to
6 the mileage reservation charge in the zone of delivery for a given path, with all other rate
7 components being equal to FTS-1 service.

8 **Q: Please describe Rate Schedule PTS-1 ("PTS-1").**

9 A: PTS-1 is a pooling service that is only permitted to deliver gas to a logical pooling point,
10 known as a "Headstation," in either the SE or SW Areas. PTS-1 shippers are not
11 assessed a charge for pooling; rather, downstream shippers that receive gas from PTS-1
12 contracts at a Headstation pay for the costs associated with PTS-1 pooling through either
13 a firm or interruptible contract. Similarly, the priority of PTS-1 service is derived from
14 the downstream shipper nominating from the Headstation. In that regard, transportation
15 service rendered under PTS-1 is firm up to the quantities of firm transportation
16 nominated under the corresponding downstream transportation service contracts. All
17 other PTS-1 quantities are transported on an interruptible basis. The majority of pooling
18 on ANR occurs under PTS-1.

19 **Q: How does ANR allocate costs to the downstream shippers that benefit from PTS-1**
20 **service?**

21 A: As described above, costs associated with PTS-1 activity are recovered through firm and
22 interruptible (*i.e.*, FTS-1, ITS, etc.) contract rates applicable to downstream shippers
23 receiving gas at a Headstation in either of the SE or SW Areas. Rate design units
24 associated with downstream contracts that receive gas at a Headstation are included in the

1 design of the SE and SW Area firm and interruptible rates. Mileage rate design units
2 within the SE and SW Areas are imputed for these downstream contracts and are set
3 equal to the average miles of haul associated with PTS-1 nominations within the
4 respective Areas.

5 **Q: Please describe Rate Schedule PTS-2 (“PTS-2”).**

6 A: PTS-2 is a firm point-to-point pooling service offered for receipt and delivery points
7 within the SE Area and the SW Area.

8 **Q: How does ANR design its PTS-2 rates?**

9 A: As more fully explained by ANR witness Roscher, the PTS-2 rates are equal to either the
10 SE Area FTS-1 mileage rate or the SW Area FTS-1 mileage rate, for both reservation and
11 commodity.

12 **Q: Please describe Rate Schedule PTS-3 (“PTS-3”).**

13 A: PTS-3 is an interruptible point-to-point pooling service offered for receipt and delivery
14 points within the SE Area and the SW Area.

15 **Q: How does ANR design its PTS-3 rates?**

16 A: As more fully explained by ANR witness Roscher, the PTS-3 rate is equal to the mileage
17 component of either the SE Area ITS rate or the SW Area ITS rate.

18 **Q: How, in general, does ANR design its Rate Schedule FSS rates?**

19 A: As discussed earlier in my testimony, ANR applies the Equitable method to the overall
20 storage cost-of-service, net of storage costs directly allocated to system balancing and
21 NNS, when classifying storage function costs for purposes of designing firm storage
22 rates. Under the Equitable method, ANR’s FSS rates are comprised of a deliverability
23 reservation charge, a capacity reservation charge, and a commodity injection/withdrawal
24 rate. The deliverability charge is designed as a monthly charge that is based upon

1 contract MDWQ. The capacity charge is actually designed as an annual charge that is
2 based upon contract MSQ, although customers are billed on a monthly basis.⁴ The
3 commodity charge is based upon a shipper's respective injection and withdrawal
4 quantities.

5 **Q: Please describe the various Rate Schedule FSS service offerings.**

6 A: The FSS service offerings include combinations of the following features:

7 a) Seasonal storage rights: firm injection rights between April 1 and October 31 and
8 firm withdrawal rights between November 1 and March 31;

9 b) Annual storage rights: referred to in the tariff as Flexible Entitlements, these
10 rights allow customers to inject and withdraw gas at any time during the calendar
11 year and to cycle up to approximately 140 percent of a shipper's MSQ;

12 c) Ratcheted storage rights: has a Maximum Daily Injection Quantity ("MDIQ")
13 equal to 1/175th of the MSQ. However, a shipper's MDIQ and MDWQ rights are
14 adjusted (ratcheted) downward at certain thresholds as a shipper's actual quantity
15 of stored gas approaches MSQ limits in either direction (*i.e.*, nearly full and
16 nearly empty).

17 d) Unratcheted storage rights: has an MDIQ equal to 1/200 of the MSQ, and a
18 customer can inject the full MDIQ and withdraw the full MDWQ during the
19 applicable injection and withdrawal periods without being subject to ratchets.

20 FSS service options that make use of these features include: (1) seasonal ratcheted;
21 (2) seasonal unratcheted; (3) annual ratcheted; and (4) annual unratcheted service.

22 **Q: Please describe in general how these various service offerings are distinguished**
23 **through rate design.**

⁴ For billing purposes, FSS shippers' monthly FSS capacity charge is applied to one-twelfth of MSQ.

1 A: As described in greater detail below, the annual storage services receive a greater
2 allocation of fixed storage compression costs than the seasonal storage services,
3 reflecting that the annual service options require greater use of compression in order to
4 allow customers to inject and withdraw gas year-round and cycle gas up to approximately
5 140 percent of MSQ. In addition, the ratcheted storage service deliverability rates are
6 designed at 80 percent of the rate levels applicable to the unratcheted storage service
7 deliverability rates to reflect the fact that unratcheted storage service is a premium service
8 relative to ratcheted storage service.

9 **Q: Please describe how storage compression plant costs are identified.**

10 A: In order to determine fixed compression-related costs from the overall storage cost-of-
11 service, I identify property plant and equipment reflected in FERC Account Nos. 351.2
12 (Storage Compressor Station Structures) and 354 (Storage Compressor Equipment) as
13 compression-related plant, while all other 350 series (*i.e.*, storage function) plant
14 accounts are deemed “wells and laterals.”

15 **Q: How are compression-related costs allocated to the storage services with annual**
16 **“flexible entitlement” rights?**

17 A: First, the cost-of-service is classified under the Equitable method. Second, I calculate the
18 ratio of compression-related gross plant to total storage plant. Third, I apply the resulting
19 percentage to the overall deliverability cost-of-service to determine the compression-
20 related cost allocation. Consistent with historic practice, this compression-related cost
21 allocation is only recovered on a deliverability basis. Fourth, rate design units for annual
22 storage services, in addition to rate design units associated with derivative services NNS
23 and DDS, are expressed as a percentage of *all* storage services, including seasonal service

1 options.⁵ This percentage is then multiplied by the compression-related deliverability
2 costs yielding the allocation to annual (*i.e.*, Flexible Entitlement) storage services.

3 **Q: How does ANR design FSS rates for each of the four service types discussed above?**

4 A: Deliverability reservation costs, net of compression costs allocated to annual services, are
5 divided by total deliverability rate design units for all four service types to arrive at base
6 deliverability charges for each of the four service types. The rate design units associated
7 with the ratcheted FSS service options are subject to a multiplier of eight-tenths,
8 reflecting the reductions to MDIQ and MDWQ due to ratcheting. The rate design units
9 of both unratcheted FSS service options are subject to a multiplier of one, reflecting these
10 services' entitlement to full MDIQ and MDWQ rights, regardless of the associated
11 storage balance. Both annual (or Flexible Entitlement) FSS options are charged a
12 premium deliverability rate component, based upon assigned compression-related costs,
13 in addition to the applicable base deliverability charge. The compression-related
14 deliverability costs associated with the Flexible Entitlement service premium are divided
15 by total Flexible Entitlement service rate design units, yielding the Flexible Entitlement
16 deliverability rate component. The capacity reservation charges do not vary between
17 FSS service types. Capacity reservation costs are divided by the total capacity rate
18 design units, which do not have a ratcheting feature. Similarly, injection/withdrawal
19 charges do not vary between FSS service types. Injection/withdrawal commodity costs
20 are divided by annual injection/withdrawal quantities, which also do not have a ratcheting
21 feature.

⁵ In this calculation, unratcheted equivalents are used (*i.e.*, ratcheted deliverability rate design units are assigned a multiplier of one, rather than eight-tenths) to reflect the fact that only the *base* deliverability charge, not the Flexible Entitlement premium, is reduced for ratcheted service options (refer to testimony below for a discussion of the calculation of the base deliverability charge for ratcheted service).

1 **Q: Please describe Rate Schedule DDS (“DDS”).**

2 A: DDS is an interruptible storage service. DDS agreements specify a contract MSQ,
3 however DDS MDIQ and MDWQ are set forth in ANR’s tariff. DDS MDIQ is fixed at
4 $1/30^{\text{th}}$ of a shipper’s MSQ. MDWQ varies on a monthly basis and is based upon the
5 number of days in the current service month. This effectively defines DDS as a 30.42
6 day service.⁶

7 **Q: How does ANR design its DDS rate?**

8 A: DDS is a one-part rate comprised of a deliverability component, a capacity component,
9 an injection component, and a withdrawal component. A monthly rate is applied to the
10 average dekatherms of gas stored during the month this is referred to as the Average
11 Daily Balance (“ADB”). The deliverability component of the ADB rate is calculated by
12 dividing the monthly annual unratcheted FSS deliverability rate by the tariff-defined
13 30.42 days of service, yielding a monthly rate component that reflects the average
14 monthly days of service for DDS. The capacity component of the ADB rate is calculated
15 by dividing the annual FSS capacity rate by twelve, yielding a monthly rate component.
16 Both the injection rate and the withdrawal rate are equal to the respective FSS rates
17 divided by twelve, reflecting the imputed capacity utilization. Summing the
18 deliverability, capacity, injection, and withdrawal components yields a single monthly
19 ADB rate.

20 **Q: Please describe Rate Schedule NNS (“NNS”).**

21 A: Designed primarily for customers with unpredictable load requirements, NNS is a firm
22 “no-notice” service that provides shippers the flexibility to take more or less gas at a
23 delivery point than the quantity nominated under a transportation agreement. Flexibility

⁶ The average number of days per month is $365 \text{ days} / 12 \text{ months} = 30.42 \text{ days}$.

1 is provided up to a shipper's no-notice entitlement, without advance notification to ANR.
2 NNS is only available to shippers who hold both firm transportation and firm storage
3 agreements.

4 **Q: How does ANR design its NNS rates?**

5 A: NNS is a two-part rate comprised of a monthly reservation charge and a commodity
6 charge. The reservation charge is comprised of four rate components including: (a) an
7 FSS deliverability component; (b) an FSS capacity component; (c) a working gas
8 component; and (d) an FTS-1 transportation component.

9 **Q: Please describe the design of the NNS reservation charge.**

10 A: An annual dollar amount related to NNS's reliance on firm storage is first determined by
11 applying FSS deliverability and capacity charges to NNS no-notice entitlements and
12 capacity dedicated to NNS, respectively. This annual dollar amount is then added to the
13 fixed costs associated with working gas dedicated to NNS, addressed earlier in my
14 testimony. This total dollar amount is then divided by the NNS no-notice entitlements
15 multiplied by 12, to arrive at a monthly charge representing three of the four reservation
16 components. This 3-component monthly charge is then added to a fourth component; the
17 FTS-1 Northern Segment rate multiplied by seven-twelfths (reflecting the number of
18 summer months in the gas year). The result is the monthly reservation rate applicable to
19 NNS.

20 **Q: Please describe the design of the NNS commodity rate.**

21 A: The NNS commodity rate is the sum of the FSS injection/withdrawal rate and the FTS-1
22 Northern Segment commodity rate.

23 **Q: Please describe the design of the NNS overrun rate.**

1 A: The NNS overrun rate is calculated by converting the NNS reservation rate to a daily rate
2 (*i.e.*, multiplied by 12 then divided by 365) then multiplying by one and one-half. The
3 result is then summed with the commodity rate. The overrun rate design methodology
4 comports with Commission findings during ANR's Order No. 636 restructuring
5 proceeding.

6 **Q: Please describe Rate Schedule MBS ("MBS").**

7 A: MBS is an interruptible service designed to allow shippers to manage imbalances. This
8 balancing service is effectuated when ANR either withdraws gas from a shipper's MBS
9 storage account to supplement gas supply or injects excess gas supply into the MBS
10 storage account.

11 **Q: How does ANR design its MBS rates?**

12 A: ANR designs the MBS rate consistent with the historical design that was developed in
13 ANR's restructuring docket. The historical design results in three MBS path rates to and
14 from storage, including the Northern Segment to Northern Segment path, the Northern
15 Segment to Southeast Mainline ("SE Mainline") path, and the Northern Segment to
16 Southwest Mainline ("SW Mainline") path. Each MBS path rate is a three-part rate
17 comprised of a daily deliverability rate, a monthly capacity rate, and a commodity rate.

18 **Q: Please describe the design of the MBS daily deliverability rate.**

19 A: The daily delivery rate is comprised of ITS and FSS components that reflect the
20 transportation of gas from the city-gate to storage, or from storage to the city-gate. To
21 arrive at this rate, the FSS annual unratcheted monthly deliverability rate is converted to a
22 daily rate (*i.e.*, multiply by twelve and divide by 365) and added to components of the
23 ITS rate for the applicable path (50 percent of the ITS access component plus total ITS
24 mileage components less the MBS commodity rate, described below).

1 **Q: Please describe the design of the MBS monthly capacity rate.**

2 A: The MBS capacity rate is the monthly equivalent (*i.e.*, divided by 365) of the FSS
3 capacity rate, which is an annual rate.

4 **Q: Please describe the design of the MBS commodity rate.**

5 A: The commodity rate recovers the variable transportation costs related to MBS and the
6 variable injection/withdrawal charges related to MBS. Thus, the MBS commodity rate is
7 the sum of the applicable ITS minimum rate, multiplied by 50 percent, and the FSS
8 injection/withdrawal rate.

9 **Q: Please describe Rate Schedule IPLS (“IPLS”).**

10 A: IPLS is designed to allow shippers, on an interruptible basis, to park gas on ANR or
11 borrow gas from ANR.

12 **Q: How does ANR design its IPLS rates?**

13 A: The IPLS rate is a one-part rate calculated as the arithmetic mean of three ITS
14 transportation paths, including: (a) the Northern Segment to Northern Segment path; (b)
15 the SE Area to Northern Segment path; and (c) the SW Area to Northern Segment path.

16 **Q: Please describe Rate Schedule IWS (“IWS”).**

17 A: IWS is offered at the Joliet Hub and the Lebanon Hub. It is comprised of short-haul
18 interruptible transportation (wheeling) to and from Joliet Hub points located between
19 ANR's Sandwich, Illinois compressor station and the Crown Point, Indiana
20 interconnection, in addition to Lebanon Hub points along the Lebanon Lateral in Ohio.

21 **Q: How does ANR design its IWS rates?**

1 A: The IWS rate is a one-part rate which equals the ITS rate for the single zone in which the
2 wheeling hub resides.⁷

3 **Q: Please describe Rate Schedule STS (“STS”).**

4 A: STS was created to replace the pre-restructuring SGS-1 service for the benefit of low load
5 factor customers. STS bundles transportation, storage, and no-notice service for
6 customers requiring at most 10,000 Dth/d into a single, one-part commodity rate. Service
7 under STS is provided across three distinct areas of the ANR system, including the SE
8 Mainline (zones ML-2 and ML-3), the SW Mainline (zones ML-5 and ML-6), and the
9 Northern Segment (zone ML-7). STS service does not allow for delivery to the SE or
10 SW Areas.⁸

11 **Q: How does ANR design its STS rates?**

12 A: The STS rate continues to be designed as a one-part, 33 percent load factor rate
13 comprised of an FSS seasonal ratcheted storage service component, an ETS
14 transportation component (reflecting the movement of gas to a shipper’s city-gate and to-
15 and-from storage), and an NNS component. Transportation costs are allocated to STS
16 based upon actual commodity quantities and reservation quantities that are imputed based
17 upon a 33 percent load factor assumption, while storage costs are based upon a fifty day
18 service assumption. STS component rates for each service used to support STS are then
19 added together in order to arrive at STS rates applicable to the various paths noted above.

20 **Q: Does this conclude your testimony?**

21 A: Yes.

⁷ The Lebanon Hub IWS rate equals the Southeast Central Segment ITS rate, and the Joliet Hub IWS rate equals the Northern Segment ITS rate.

⁸ In ANR’s Preferred Case, previously existing STS contracts which provide for deliveries to the former Southwest Southern Segment (included in the proposed Supply Zone West) will continue to receive service, despite this service limitation.

