

BEFORE THE WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

DOCKET NO. UE-08 _____

DIRECT TESTIMONY OF

SCOTT J. KINNEY

REPRESENTING AVISTA CORPORATION

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I. INTRODUCTION

Q. Please state your name, employer and business address.

A. My name is Scott J. Kinney. I am employed by Avista Corporation as the Chief Engineer, System Operations. My business address is 1411 East Mission, Spokane, Washington.

Q. Please briefly describe your education background and professional experience.

A. I graduated from Gonzaga University in 1991 with a B.S. in Electrical Engineering. I am a licensed Professional Engineer in the State of Washington. I joined the Company in 1999 after spending eight years with the Bonneville Power Administration. I have held several different positions in the Transmission Department. I started at Avista as a Senior Transmission Planning Engineer. In 2002, I moved to the System Operations Department as a supervisor and support engineer. In 2004, I was appointed to my current position of Chief Engineer, System Operations.

Q. What is the scope of your testimony?

A. My testimony describes Avista's pro forma period transmission revenues and expenses. I also discuss the Transmission and Distribution expenditures that are part of the capital additions testimony provided by Company witness Mr. Dave DeFelice, as well as the Company's Asset Management Program expenses. Company witness Ms. Andrews incorporates the Washington share of the net transmission expenses, the transmission and distribution capital additions, and the Asset Management Program O&M expenses proposed in this case.

Q. Are you sponsoring any exhibits?

1 A. Yes. I am sponsoring Exhibit No. __ (SJK-2) which provides the transmission pro
2 forma adjustments.

3

4 **II. PRO FORMA TRANSMISSION EXPENSES**

5 **Q. Please describe the pro forma transmission expense revisions included in this**
6 **filing.**

7 A. Adjustments were made in this filing to incorporate updated information for any
8 changes in transmission expenses from the 2007 test year to the 2009 Pro forma period. Each
9 expense item described below is at a system level, with the exception of the \$158,000 Grid West
10 adjustment which is Washington only, and is included in Exhibit No. __ (SJK-2).

11 Northwest Power Pool (NWPP) – Avista pays its share of the NWPP operating costs.
12 The NWPP serves the utilities in the Northwest by providing regional transmission planning,
13 coordinated transmission operations, and Columbia River water coordination. There is no
14 anticipated change in NWPP costs in the pro forma period compared to 2007 actual expense of
15 \$31,000.

16 Colstrip Transmission - Avista is required to pay its portion of the O&M costs associated
17 with the Colstrip transmission system pursuant to the joint Colstrip contract. In accordance with
18 Northwestern Energy’s (NWE) 15 year Colstrip transmission plan provided to the Company,
19 NWE will bill Avista an annual total of \$631,000 (based on 2007 dollars with no inflation
20 adders) for Avista’s share of the Colstrip O&M expense during 2009. This is an increase of
21 \$172,000 over 2007 actual expense of \$459,000. NWE expects 2008 Colstrip O&M costs to be

1 \$519,000. The significant cost increase is a result of implementing cathodic protection measures
2 and the on going anchor bolt replacement program.

3 ColumbiaGrid (RTO Development) - In 2006, Avista elected to fund the ColumbiaGrid
4 RTO development effort. This is a regional organization whose purpose is to enhance
5 transmission system reliability and efficiency, provide cost-effective regional transmission
6 planning, develop and facilitate the implementation of solutions relating to improved use and
7 expansion of the interconnected Northwest transmission system, reduce transmission system
8 congestion, and support effective market monitoring within the Northwest and the entire Western
9 interconnection. Under the amended ColumbiaGrid funding agreement signed September 1,
10 2006, Avista will pay a total of \$518,000, which represents Avista's share of the ColumbiaGrid
11 operating costs from 2006 through Augusts 31, 2008. Prior to the amended agreement, Avista
12 paid \$104,000 of these costs. The remaining balance (\$414,000) is being collected over the
13 remaining 20 months of the agreement. The monthly amount is \$20,720. Avista anticipates that
14 ColumbiaGrid operating costs will continue beyond August 2008 with monthly payments
15 remaining at least \$20,720. Therefore, the ColumbiaGrid cost for the pro forma period is
16 anticipated to be approximately \$249,000 annually based on a monthly fee of \$20,720.

17 ColumbiaGrid Planning - An additional service being provided by ColumbiaGrid is
18 regional planning and expansion. A functional agreement was developed and filed with the
19 Federal Energy Regulatory Commission (FERC) on February 2, 2007 and approved on April 3,
20 2007. The agreement does not have a termination date and funding is on a two-year cycle with
21 provisions to adjust for inflation. Funding is based on a fixed amount, plus a portion is based on
22 Avista's load ratio compared to the other members. Avista believes the planning agreement will

1 be extended beyond the initial 2 year period that ends after December 2008. The Company
2 anticipates that costs to support the ColumbiaGrid planning effort will be equal to at least the
3 current monthly rate of \$10,251. This equates to \$123,000 during the pro forma period, which is
4 \$72,000 over 2007 actual costs. The increase is attributed to the planning agreement being
5 started in the middle of the 2007 operating year.

6 Grid West (WA Direct) - Included in transmission expense is an annual amount of
7 \$158,000 to recover costs associated with Grid West (and its forerunner, RTO West). Avista's
8 total Grid West amount is approximately \$1.2 million including interest through March 31, 2006
9 (or \$796,000 Washington share). This amount is being amortized on a five-year basis from July
10 of 2006 until June 2011 with no interest or carrying costs.

11 Electric Scheduling and Accounting Services - The \$52,000 decrease in the pro forma
12 period compared to actual 2007 expense for electric scheduling and accounting services is a
13 result of continued reductions in services provided by third party vendors. These services are no
14 longer required because of the development of an internal accounting program and the
15 development of a regional transmission interchange tool by the Western Electricity Coordinating
16 Council (WECC). These new applications replace the services provided by third parties.

17 Grant County Agreement - This will be discussed later in conjunction with the Seattle
18 and Tacoma revenues and expenses associated with the Main Canal and Summer Falls Projects.

19 OASIS Expenses - The Open Access Same-Time Information System (OASIS) expenses
20 are associated with travel and training costs for transmission pre-scheduling and OASIS
21 personnel. This travel is required to monitor and adhere to the NERC reliability standards and

1 FERC OASIS requirements. The costs associated with OASIS expenses in the pro forma period
2 is \$4,000 more than the 2007 test year.

3 WECC – System Security Monitor & WECC Administration and Net Operating
4 Committee Systems - The WECC fees have and will continue to increase from year to year.
5 WECC is just beginning to develop its 2009 budget so 2008 actual fees will be used for the pro
6 forma period. WECC System Security Monitor fees in 2008 are \$170,900 compared to 2007 test
7 year fees of \$98,500. Additionally, the WECC Administrative and Net Operating fees have been
8 increased from \$217,100 in 2007 to \$282,000 for 2008. Both changes reflect significant
9 increases in the WECC budget to fund regional reliability initiatives required to meet FERC and
10 NERC mandatory reliability standards.

11 WECC - Loop Flow - Loop Flow charges are spread across all transmission owners in
12 the West to compensate utilities that make system adjustments to eliminate transmission system
13 congestion throughout the operating year. The 2009 pro forma charge is \$26,800 which is a three
14 year average of actual fees, since charges are dependent on transmission system usage and
15 congestion, and can vary from year to year. This is \$2,000 higher than actual 2007 charges.

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17 **III. PRO FORMA TRANSMISSION REVENUES**

18 **Q. Please describe the pro forma transmission revenue revisions included in this**
19 **filing.**

20 A. Adjustments were made in this filing to incorporate updated information for any
21 changes in transmission revenue from the 2007 test year to the 2009 Pro forma period. Each
22 revenue item described below is at a system level and is included in Exhibit No. ___(SJK-2).

1 Borderline Wheeling - The Borderline Wheeling revenue in the pro forma period is set at
2 \$5,218,000, which is an average of the 2006 and 2007 actual revenue levels. Actual 2007 test
3 year revenue was \$5,203,000. Avista typically uses a five year average of actual annual revenue
4 to estimate future Borderline Wheeling revenue. This helps levelize the revenue requirement
5 since it is based on load demand that is sensitive to temperature variation from year to year. For
6 this case Avista is only using a two year average since 2006 and 2007 are the only years
7 operating under new contracts signed with BPA. The new Borderline Wheeling revenue
8 methodology is based on a Load Ratio Share¹, which is quite different than the previous revenue
9 calculation under the old contracts. Under the new contracts, BPA, as the network customer, will
10 pay a monthly demand charge, which will be determined by multiplying its Load Ratio Share
11 times one twelfth (1/12) of the Transmission Provider's annual transmission revenue
12 requirement.

13 Seattle and Tacoma Revenues and Expenses Associated with the Main Canal and
14 Summer Falls Projects - In March of 2006, Seattle and Tacoma purchased interim long-term
15 firm point-to-point transmission service from Avista under the OATT to move their Main Canal
16 and Summer Falls generation to load. These interim point-to-point transmission contracts
17 replaced expired long-term contracts. The transmission was purchased from April 2006 through
18 October 2007. Avista collected \$1,281,000 in 2007 under these contracts and in turn paid
19 \$512,400 (plus \$275,900 in losses) to Grant County PUD for use of its system to transfer the
20 entire output of the Main Canal and Summer Falls projects. The interim contracts were meant to

¹ Load Ratio Share is the ratio of a Transmission Customer's Network Load to the Transmission Provider's total load calculated on a rolling twelve-month basis.

1 give Seattle and Tacoma time to build new transmission facilities to bypass Avista and connect
2 directly to BPA. Pursuant to negotiations among Seattle, Tacoma, Grant County PUD, Grand
3 Coulee Project Hydroelectric Authority and Avista, Seattle and Tacoma have decided not to
4 bypass Avista's transmission system. The parties have agreed instead, to a series of long term
5 agreements with service to commence March 1, 2008. Seattle and Tacoma have signed similar
6 contracts with Grant County PUD so Avista will not incur any of the transmission expenses with
7 Grant County PUD that it did in the 2007 test year. Under the new Main Canal agreement Avista
8 charges Seattle and Tacoma during the eight months the Main Canal project runs (March-
9 October) and only for that output not used for local load service. Under the new Summer Falls
10 agreement, Seattle and Tacoma only use a portion of Avista's Stratford Switching Station and are
11 charged a use-of-facilities fee based upon this limited use. The estimated revenue from Seattle
12 and Tacoma for Main Canal and Summer Falls during the pro forma period is \$120,000.

13 Grand Coulee Project Revenue - The Grand Coulee Project revenue is a result of a new
14 contract signed in March 2006 with the project owner for a fixed dollar amount, replacing the
15 previous contract which expired in October 2005. The new contract results in monthly revenue of
16 \$673 or annual revenue of \$8,100 during the pro forma period, which is the same as the test year.

17 OASIS Non-firm and Short-term firm Wheeling Revenue - OASIS is an acronym for
18 Open Access Same-time Information System. This is the system used by utility transmission
19 departments for purchasing and scheduling available transmission for other utilities and
20 independent generators. OASIS revenues are revenues received from the sale of transmission
21 capacity to third parties, for transmission above and beyond that needed by Avista to serve native

1 load. These revenues are credited back to customers in a rate case, such as this one, to offset a
2 portion of the overall cost of transmission.

3 Because these revenues vary year to year depending on electric energy market conditions,
4 Avista has, in previous rate cases, used the most recent five-year average as being representative
5 of future expectations unless there are known events or factors that occurred during the period
6 that would cause the average to not be representative of future expectations. In 2004, there were
7 some unusual events that caused Avista's OASIS revenues (\$5,475,000) to be significantly
8 higher than the other test years. The BPA had several 500 kV lines out of service for rebuild
9 projects, which resulted in a significant increase in Avista's transmission sales in 2004.
10 Therefore, Avista did not include the 2004 revenue in the calculation of the five-year average
11 revenue. Avista calculated the pro forma OASIS revenue based on years 2003, 2005, 2006, and
12 2007. This is consistent with the approach used and ultimately agreed to in the Company's last
13 GRC proceeding in Docket NO. UE-070804. The resulting four-year revenue average is
14 \$3,354,000, which is \$18,000 higher than the 2007 actual revenue of \$3,336,000. .

15 Dry Gulch Revenue - Dry Gulch revenue has been adjusted to \$276,000 for the pro
16 forma period, which is a \$24,000 increase from the 2007 actual revenue of \$252,000. The
17 current methodology used to forecast Dry Gulch revenue is a five-year average of actual revenue.
18 A five-year average is used since the revenue can vary from year to year. The revenue is
19 calculated using a 12-month rolling ratchet based on monthly peak demands. Load peaks are
20 very sensitive to temperatures, which vary from year to year.

21 PP&L Series Cap – 1978 - PP&L Series Cap revenue was reduced from \$9,000 in the
22 test year to \$5000 in the pro forma period since the 20 year amortization of the original contract

1 expires in June 2009. In 1989 Pacificorp paid the company a lump sum of \$178,222 in lieu of
2 annual payments provided for under the original agreement. The lump sum payment was
3 amortized at \$781 per month from August 1990 through June 2009.

4 Spokane Waste to Energy Plant - No adjustments to Spokane Waste to Energy Plant
5 revenue of \$160,000 were made for the pro forma period compared to the 2007 test year. This
6 revenue is the result of a long-term transmission interconnection agreement with the City of
7 Spokane. The contract expires in February 2011.

8 Vaagen Wheeling - Vaagen Wheeling revenue was increased slightly to \$112,000 for the
9 pro forma period compared to 2007 actual revenue of \$110,000. A five-year average is used to
10 determine the pro forma period revenue since revenue can fluctuate year to year depending upon
11 transmission usage.

12 Northwestern Energy (NWE) - The revenue of \$231,000 from NWE in the 2007 test year
13 was a result of a load following contract that Avista signed in 2005 with NWE. Under the
14 contract Avista provides up to 15 MW of energy to NWE to help them match hourly fluctuations
15 in loads and resources. Firm transmission for this contract was purchased by Avista's Power
16 Resources department from Avista's Transmission department and was included in the contract
17 price paid for by NWE. During the first three years of the contract the transmission revenue was
18 credited to the Avista Transmission Department. Since the transmission revenue from this
19 contract is actually an intra-company exchange of revenue it has been shifted to revenue account
20 447 for the pro forma period and has been included in Mr. Johnson's Power Supply information.

IV. TRANSMISSION AND DISTRIBUTION CAPITAL PROJECTS**Q. Please describe the Company's capital transmission projects in 2008?**

A. The Company has just completed a 5-year (2003-2007) \$130 million transmission upgrade project that significantly improved the infrastructure of the 230 kV transmission system. With the completion of these projects the transmission project focus is shifting to improving the 115 kV transmission system to meet load growth and eliminate thermal loading issues. The major capital transmission costs (system) for projects to be completed in 2008 are approximately \$12.1 million. The major projects scheduled for 2008 completion include:

- Airway Heights to Silver Lake 115 kV Transmission (\$2.0 million)
- Benewah Substation Transformer (\$1.5 million)
- Extension of 115 kV underground in Spokane (\$1.8 million)
- Spokane/Coeur d'Alene area relay upgrade phase 1 (\$1.2 million)

The remaining transmission projects being constructed in 2008 are smaller projects. These projects include normal system replacements due to aging facilities, minor rebuilds, reliability improvements, safety requirements, required line relocations, and smaller construction projects to address overloaded equipment. These smaller projects are required to operate the transmission system safely and reliably.

Q. Please describe the Company's distribution projects in the State of Washington that will be completed in 2008?

A. The major distribution projects scheduled to be completed in 2008 total \$6.7 million for Washington (including transformation). These distribution projects are necessary in order to meet capacity needs of the system. Major distribution projects for 2008 include new substations in Spokane (Indian Trails) and Clarkston (Critchfield) for a total of \$3.9 million.

1 New feeders, feeder reconductoring, substation transformers in plant and major road construction
2 requirements make up the remainder of the \$6.7 million.

3 The total anticipated distribution plant expenditures in the State of Washington for 2008
4 is \$25.5 million, so the excess over \$6.7 million is for minor blankets and various small-scale
5 projects.

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V. AVISTA'S ASSET MANAGEMENT PROGRAM

8 **Q. Please provide additional background to Avista's continuing investment in**
9 **its transmission and distribution systems?**

10 A. Like most U.S. utilities, after World War II, Avista's growth required installing or
11 updating equipment to meet rising electrical demand. Substations were built or modified to meet
12 increasing loads. The transmission system expanded to bring new generating plant output to
13 population centers. Distribution systems grew and voltage levels were increased to meet new
14 housing and industrial needs.

15 Avista's installed equipment is aging, and more components are reaching the end of their
16 life. Equipment has become obsolete, and manufacturers no longer support the aged equipment
17 or produce replacement parts, which makes it impractical to rebuild the equipment. Recognizing
18 the increasing cost of aging equipment failure, Avista launched its Asset Management effort in
19 March 2004.

20 **Q. Please describe the Asset Management mission and process.**

21 A. Avista's Asset Management (AM) program manages key electric transmission and
22 distribution assets throughout their life to provide the best value for our customers. By

1 minimizing life cycle costs and the cost per kilowatt-hour to generate and deliver energy, we're
2 able to maximize system reliability and value for our customers.

3 The Asset Management process combines technology and information in a manner that
4 integrates data from a myriad of sources into a comprehensive plan that maximizes the value of
5 capital assets. The process provides a replacement or maintenance program that minimizes life
6 cycle costs and maximizes system reliability.

7 Technical experts evaluate each asset and develop a comprehensive Asset Management
8 Model. Available data is examined and where it is not available, expert opinion from the team
9 fills in the gaps. Exhibit No. ___(SJK-3) shows the steps in the process for developing an Asset
10 Management Plan. The foundation for the plan involves determining the future failure rates and
11 impacts to the environment, reliability, safety, customers, costs, labor, spare parts, time, and
12 other consequences. The failure model then becomes the baseline to compare all other options.
13 Given this foundation, alternatives can be examined and evaluated to define the optimal asset
14 management plan.

15 **Q. How has Avista implemented and facilitated the Asset Management process?**

16 A. Yes. Avista has assigned two full-time engineers to the formal Asset
17 Management program. These individuals are responsible for gathering information, prioritizing
18 work and executing efforts to best meet the Asset Management mission. The engineers utilize a
19 statistical Reliability Centered Maintenance (RCM) software package to analyze data. This
20 software allows detailed analysis of the impacts of increased or decreased reliability based on
21 system configuration and component reliability.

22 **Q. Have any Avista Asset Management plans been implemented?**

1 A. Yes, several programs have been successfully implemented. Two of the
2 successful programs underway are Underground Cable Replacement and Wood Pole
3 Management.

4 The Underground Cable Replacement program has successfully reduced the number of
5 primary underground distribution cable faults from 250 in 2004 to approximately 180 events in
6 2007. The replacement program eliminated approximately 5,600 hours of outage time for our
7 customers and resulted in avoided costs/savings of \$175,000. The increased emphasis on cable
8 replacement has stabilized the fault rate per mile of cable during the past 3 years. This marks
9 significant progress after a four-fold increase in the fault rate since 1992.

10 The Asset Management team also studied the Wood Pole Maintenance program. After
11 completing an optimization analysis and revenue resource requirement model, the data indicated
12 that distribution poles should be inspected on a 20-year cycle and transmission poles inspected
13 on a 15-year cycle.

14 Under the new Wood Pole maintenance program Avista tested twice as many Distribution
15 poles in 2007 as in 2006. Increased wood pole inspections identified nearly 200 rotten cross-
16 arms that were replaced and also identified additional poles that require replacement. The
17 Operations and Maintenance portion of the Avista rate request to support Wood Pole
18 maintenance work in 2009 totals \$776,000 (system). This represents an increase of \$493,000
19 (system) above the 2007 test year.

20 **Q. What is the Company's request with regards to Asset Management capital**
21 **expenditures and O&M expenses?**

1 A. Asset Management capital projects for 2008 are included in our existing capital
 2 project funding requirement discussed by Company witness Mr. DeFelice. Avista is not asking
 3 for any planned 2009 capital Asset Management additions to be included in this case.

4 For Asset Management projects that require additional O&M, proposed 2009 O&M
 5 expenses are \$3,941,000 (system) compared to 2007 test year expenses of \$1,690,000 (system).
 6 This represents an increase of \$2,251,000 (system) above the 2007 test year included in this rate
 7 case. As shown in Table 1 below, Asset Management O&M additions have been divided into
 8 four major categories: Substation, Distribution, Transmission and Spokane Downtown Network.

Table 1:

Asset Management Operations & Maintenance Amount Above 2007 Test Period (System) Pro forma	
Substation	\$ 453,000
Distribution	\$ 491,000
Transmission	\$ 1,221,000
Network	\$ 86,000
Total Additional Requested	\$ 2,251,000

10

11 **Q. Please describe Avista’s Substation Asset Management Plan.**

12 A. Avista operates 157 transmission and distribution substations. A significant
 13 portion of the equipment and substation structures are more than 40 years old and have operated
 14 beyond normal industry expectations. This older equipment has reached a point in its lifecycle
 15 where planned replacement or maintenance will add value to our customers by improving
 16 reliability and safety, and avoiding outage costs. Costs to support the Substation maintenance

1 work totals approximately \$1,896,000 (system) in the 2009 pro forma period. This is an
2 additional \$453,000 compared to the 2007 test period.

3 The Substation plan includes:

- 4 • Power Transformers: More than 26% of Avista's Substation Transformers are over
5 40 years old. These aging transformers need to be either maintained or replaced
6 depending on condition.
7
- 8 • Circuit Breakers: The Power Circuit Breaker Plan has been an ongoing and
9 successful program maintaining approximately 300 High Voltage Oil Circuit Breakers
10 prior to establishing an Asset Management Program. However, Avista has not yet
11 reached the target of a 10 year Circuit Breaker maintenance cycle and is currently at a
12 15 year cycle. The requested increased funding will allow more Circuit Breaker
13 maintenance each year.
14
- 15 • Circuit Switchers: Avista uses 120 Circuit Switchers to protect substation
16 transformers at smaller Substations. Avista's analysis indicates periodic maintenance
17 based on the age of the Circuit Switcher should extend the life of these devices by
18 25% based on a graduated cycle plan determined by age. It is anticipated that the
19 program will result in approximately \$180,000 of avoided outage related costs to our
20 customers.
21
- 22 • Reclosers: The Recloser/Medium Voltage Circuit Breaker plan covers about 415
23 substation and 145 Line Reclosers/Medium Voltage Circuit Breakers. Our current
24 maintenance practice strives to sustain the Substation Reclosers/Medium Voltage
25 Circuit Breakers on a 10-year cycle and to refurbish any failed or replaced ones to use
26 as spares for future needs.
27
- 28 • Rock and Fence: The Substation Rock and Fence plan covers the maintenance and
29 replacement of Rock and Fence for Avista's 157 substations. Avista anticipates an
30 average of 4 Substations will require repairs to the fence or rock ground cover in
31 order to ensure safety by preventing public access and maintain the required
32 insulating properties of the Substation Rock. O&M funding is increased by a
33 relatively small amount for minor repairs to Rock and Fence above current levels.
34
- 35 • Relays: The Relay plan covers the maintenance and replacement of over 6000
36 separate relay hardware devices that provide protection for Avista's generation,
37 transmission and distribution systems. Regulatory requirements for relay testing and
38 record keeping have increased in recent years as part of new mandatory reliability
39 standards.
40

1 **Q. Please describe Avista's distribution Asset Management Plan.**

2 A. Avista's distribution system includes 324 feeders and over 12,000 miles of
3 conductors, poles, underground cable, distribution transformers, and various other distribution
4 system components. Avista has developed operations and maintenance plans for the distribution
5 system totaling approximately \$648,000 for the 2009 Pro forma period. This amount is \$491,000
6 above that included in the 2007 test period.

7 The distribution plan includes:

- 8 • Animal Guards: Data shows that animals are the second-leading cause of outages at
9 Avista, ranking second only behind weather, and accounting for 19 percent of all
10 outages. Outages caused by squirrels and birds are an increasing, on-going and
11 persistent problem on the distribution system. Statistics indicate that 60 feeders were
12 the subject of almost half of all animal-caused outages. Four of those 60 most
13 vulnerable feeders were recently retrofitted with animal guards. Animal-caused
14 outages have decreased to almost zero on all four feeders, compared to 10 or more per
15 month during warm weather in previous years. Avista has included additional O&M
16 funding to begin implementing a four-year program to install animal guards on the
17 remainder of the 60 most vulnerable feeders.
- 18
- 19 • Underground Cable: Over 6 million feet of unjacketed underground cable was
20 installed prior to 1982; it has been subject to a replacement program since 1984.
21 After 2008, there will be approximately 750,000 feet of pre-1982 cable still left to be
22 replaced. Though primarily a capital intensive program, there is some related
23 maintenance costs associated with underground cable.
- 24
- 25

26 **Q. Please describe Avista's Transmission Asset Management Plan.**

27 A. The Avista transmission system is comprised of over 2500 miles of lines crossing
28 an extreme variety of terrain. The 976 miles of 230kV transmission system is critical to serving
29 Avista's customers and to the stability of transmission resources throughout the region. The
30 115kV system, comprised of 1675 miles, serves Avista customers and neighboring utilities
31 throughout large portions of Eastern Washington and Northern Idaho. Approximately 75% of the

1 transmission system components are over 35 years old. A more rigorous inventory of the 115kV
2 system is underway. Preliminary results of this survey show over 20% of the 115kV system is
3 pre-1930. Avista is requesting \$1,289,000 in Operations and Maintenance funding for support of
4 the transmission system under this proposal. This is an increase of \$1,221,000 above the 2007
5 Operations and Maintenance spending for this area.

6 The transmission plan includes:

- 7 • Compression Sleeve Couplings: The majority of the 230kV system was installed in
8 the late 1950s and early 1960s. A critical component of the conductor system is
9 “compression sleeve couplings” that join together sections of conductor. These
10 couplings are beginning to fail. Technology now exists to test the integrity of the
11 couplings far more reliably than with visual inspections. Avista plans to implement a
12 planned inspection and replacement program and anticipates replacing or repairing
13 15% of the total population.
- 14 • Fire Retardant Coatings for Transmission Poles: Random fires can have a significant
15 impact on the reliability of Avista’s transmission system. During the past five years,
16 Avista has lost at least 60 wooden poles to brush fires. Protective coatings are now
17 available that can protect wood poles for 20 minutes, or more, from close contact with
18 flames. The coating is especially effective against brush fires. A neighboring utility
19 has used the coating and reported 80% survival rate of wood poles in situations where
20 20% survival would have been more typical. Avista proposes a four-year program to
21 apply fire retardant coating to critical transmission lines in high fire areas.
- 22 • Painting of Steel Transmission Structures: The Avista transmission system was
23 primarily built with wood pole structures prior to the 1990s. However, some critical
24 structures were constructed of painted steel and installed in the early 1970s. These
25 structures need more protective paint to prevent corrosion. These older steel poles are
26 different from new steel poles that do not require protective paint because they were
27 designed and built to have a rustic look to improve aesthetics. The first priority is to
28 repaint an important 230kV line known as the Westside Tap located in the northwest
29 part of Spokane. The structures are showing rust over a larger portion of their surface
30 area. It is imperative that these structures be maintained to prevent further corrosion
31 and loss of structural integrity.
- 32 • Steel Tower Base Plate Grout: An important component for structural integrity of
33 steel transmission towers is the interface between the tower and the foundation. Most
34 large steel transmission structures utilize a base plate that requires grout between the
35 steel structure and the foundation to provide solid surface area for transfer of loads to
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1 the foundation. The grout can deteriorate from freeze-thaw cycles and requires
2 periodic maintenance. Avista plans to inspect and repair the grout.
3

4 **Q. Please describe Avista's Network Asset Management Plan.**

5 A. The Network consists of an underground distribution system that feeds the core of
6 downtown Spokane – the region's economic hub – with a very reliable networked distribution
7 system. The Network includes underground vaults, manholes, handholes, substations, network
8 protectors, network transformers, and numerous miles of duct banks and cables. The structural
9 integrity of these vaults, manholes and handholes is vital to public safety because they are
10 typically located under heavily-used streets and sidewalks. Reliability is also essential, because
11 the Network serves the businesses, banks and other critical services located in downtown
12 Spokane. The Operations and Maintenance portion of the Avista rate request to support Network
13 maintenance work totals approximately \$108,000. This represents an increase of \$86,000
14 between the 2009 pro forma period maintenance expenses and the 2007 test year.

15 The Network plan includes inspecting and maintaining an aging system:

- 16 • Vaults: Almost 60% of the vaults are more than 50 years old. Avista plans to add
17 inspection of vacant vaults and additional maintenance activities such as vault
18 cleanings to prevent debris build-up and fire hazards. When necessary an entire vault
19 will need to be replaced with a new one.
20
- 21 • The Manholes/Handholes: Nearly 98% of manholes are approaching 100 years of age.
22 Avista plans to inspect them on a five-year cycle and perform maintenance based on
23 the results of the inspections. Replacement of manholes and handholes may also be
24 required.
25

26 **Q. Has Avista completed all of its Asset Management Plans?**

27 A. No. While Avista has developed multiple Asset Management Plans, some of the
28 plans have not been implemented. Much of the work to date involved development of the
29

1 processes, skills, and expertise needed to develop the plans. As additional data is gathered and
2 analyzed, the plans will continue to be refined to maximize system reliability and cost
3 effectiveness.

4 **Q. Does this complete your pre-filed direct testimony?**

5 A. Yes, it does