

**AVISTA CORP.
RESPONSE TO REQUEST FOR INFORMATION**

JURISDICTION:	Washington	DATE PREPARED:	09/06/2007
CASE NO:	UE-070804 & UG-070805	WITNESS:	Heather Cummins
REQUESTER:	Public Counsel	RESPONDER:	Linda Gervais
TYPE:	Data Request	DEPT:	State and Federal Regulation
REQUEST NO.:	PC - 156	TELEPHONE:	(509) 495-4975

REQUEST:

Re: Testimony of Heather Cummins, page 2 and Response to PC 32 b.

- a. Please provide the requests that Avista filed in Idaho Cases AVU-E-04-1 and AVU-G-04-1.
- b. Please provide Order 29602 from that proceeding.

RESPONSE:

Please see the attached Idaho request AVU-E-04-1, AVU-G-04-1 (PC_DR_156-Attachment A & B) and Idaho Order 29602 (PC_DR_156-Attachment C & D).

PC_DR_156-Attachment A

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BEFORE THE IDAHO PUBLIC UTILITIES COMMISSION

IN THE MATTER OF THE APPLICATION)	CASE NO. AVU-E-04-01
OF AVISTA CORPORATION FOR THE)	CASE NO. AVU-G-04-01
AUTHORITY TO INCREASE ITS RATES)	
AND CHARGES FOR ELECTRIC AND)	
NATURAL GAS SERVICE TO ELECTRIC AND)	DIRECT TESTIMONY
NATURAL GAS CUSTOMERS IN THE STATE)	OF
OF IDAHO)	DAVID D. HOLMES
)	

FOR AVISTA CORPORATION

(ELECTRIC AND NATURAL GAS)

PC_DR_156-Attachment A

1 explains the Company's proposal for the future ratemaking treatment of the costs associated
2 with this program.

3 **Q. Has Avista been following the Commission's recent examination of**
4 **AMR?**

5 **A. Yes.** The Company has been actively monitoring Case No. IPC-E-02-12.
6 While Avista has not submitted written comments in that proceeding, Company
7 representatives attended the Commission's June 5, 2003 technical workshop and participated
8 in the December 2, 2003 workshop via a conference bridge.

9 **Q. Please summarize the Company's perspective on AMR.**

10 **A.** Avista has been following the development of AMR over the past decade, and
11 periodically assessing possible AMR implementation in areas where it is demonstrably cost-
12 effective. The Company has installed a small number of AMR devices on some meter
13 reading routes and customer locations that involve extensive driving, lack of access or have
14 represented a hazard for our personnel.

15 The Company has also monitored development of AMR technology with attention to
16 costs and with an eye to the future. Regarding costs, we have noted that AMR technology
17 has been improving and its costs are generally decreasing. Our plan is to select and install
18 systems that are compatible with existing systems, long-lived, and suitable for later
19 expansion.

20 The cost of manual meter reading continues to increase. Meter reading expenses in
21 Idaho have increased an average of 4.8% per year since 1995, as shown in Exhibit No. 13.
22 Page 1 depicts historical meter reading expenses in Idaho, Washington and Oregon. We

1 believe that the expected continual increases in meter reading expenses and a decline in
2 equipment pricing indicate that now is the time to commit to a broader implementation of
3 AMR technology.

4 **Q. What technology, or type of AMR devices, is the Company proposing to**
5 **install?**

6 **A.** The Company will utilize a combination of AMR technologies in its Idaho
7 service territory. We intend to install radio-based technology in areas with higher meter
8 densities, and a power line carrier (PLC) based technology in areas with lower densities. We
9 will continue to use telephone-based technologies for selected industrial accounts. A number
10 of factors will determine where each technology is utilized including geography, distribution
11 configuration, installation costs and the presence of natural gas. All electric technologies will
12 have the capability to provide hourly or more frequent interval data. Meters utilizing a radio-
13 based technology will initially be read monthly through a mobile device. They will not
14 require modification when a fixed radio communication network is added to collect data in
15 the latter phases of the project.

16 **Q. Will the proposed AMR technology provide such functions as automated**
17 **meter reading, theft detection, accuracy improvement, improved outage monitoring,**
18 **flexible billing schedules, account aggregation, and improved customer service?**

19 **A.** Yes. The equipment we propose to install will provide interval metering data,
20 as well as indications of tampering and information on outage conditions. Data collected
21 from this equipment will enable us to provide flexible billing schedules for our customers.
22 This equipment is not intended to provide aggregated demands for tariff calculations, but it

PC_DR_156-Attachment A

1 will enhance our ability to provide consolidated billing statements for customers with
2 multiple accounts.

3 This system will greatly reduce estimated reads, reduce the volume of phone calls
4 associated with estimated reads and the need for investigations related to such calls.
5 Customer billings will tend to be more accurate because estimates and misreads will be
6 reduced. The actual metering accuracy will not be affected by this automated system and will
7 continue to be monitored through our periodic sampling program.

8 **Q. Will this system provide the capability for future Time-of-Use or critical**
9 **peak pricing?**

10 A. Yes. This technology will allow the remote capture of electric interval meter
11 readings in intervals of one hour or less. The significance of capturing interval readings is
12 that it provides the foundation for later adoption of retail energy pricing that may vary by
13 hour of the day or day of the week. This type of pricing can ultimately be used to provide
14 economic incentives to customers to curtail usage during critical energy periods.

15 Although this project does not include the necessary modifications to our billing
16 system to implement a time of use or critical peak rate structure, this equipment will provide
17 all the field data necessary to support this type of system in the future.

18 **Q. What other AMR systems did the Company review prior to selecting the**
19 **technology it did?**

20 A. Avista has evaluated several advanced metering systems. Avista has installed
21 over 74,000 radio and 350 PLC based AMR devices throughout Washington, Oregon and
22 California including 1,700 within the State of Idaho. Our supplier for radio-based equipment

PC_DR_156-Attachment A

1 has been Itron, based in Spokane, Washington. We have utilized Hunt Technologies for PLC
2 based technology and are currently reviewing Distribution Control System's Incorporated
3 TWACS PLC technologies. We will continue to review vendor technologies to ensure
4 program requirements are met and future technology migration and service is available.

5 **Q. How will you determine the AMR plan for roll out and the most cost-**
6 **effective area to begin implementation?**

7 A. An efficient deployment of AMR systems is based on the specific attributes of
8 each geographic area. Our intent is to begin AMR installations in areas that will free up the
9 most labor, which in turn will be used to accelerate additional installations. These areas tend
10 to be more rural in nature, however, the same attributes that make these meters more costly to
11 read, reflect a generally higher AMR retrofit cost. Efficient utilization of PLC technology is
12 usually accomplished with the conversion of customers served by the same substation. The
13 efficient deployment of radio-based systems tend to be organized by the specific terrain and
14 geographic densities. Specific system design, vendor evaluation and selection will take place
15 in 2004.

16 **Q. What is the projected cost to install this system in Idaho?**

17 A. We estimate the cost of installing this system in Idaho will be approximately
18 \$16,300,000. We propose that this system be installed over a four year time period beginning
19 in 2005, with approximately equal expenditures in each year as shown in Exhibit 13. Page 2
20 is a summary of costs in 2003 dollars associated with the proposed AMR installation. It is
21 important to note that these are initial estimates. The selection of appropriate technologies

PC_DR_156-Attachment A

1 for each location, vendor, evaluation, and selection, as well as a refinement of cost estimates
2 will take place during 2004.

3 **Q. What are your anticipated hard dollar savings?**

4 A. Avista believes that installing a fully networked AMR system on all of Idaho's
5 meters will represent an annual operations savings of approximately \$994,000. The majority
6 of these savings (92%) is achieved through a 91% reduction in meter reading labor and
7 associated expenses. Other savings are represented by efficiencies in customer billing,
8 service, reduced energy diversion and reduced meter maintenance, as shown in Exhibit 13.
9 Page 3 represents estimated savings associated with the installation on Avista's system.

10 **Q. Will the hard dollar savings offset all of the costs, or will this project**
11 **cause an increase in overall net costs?**

12 A. Our current estimates indicate that the costs of this project, as compared to the
13 costs of continuing with the technology and operations that are currently in place, will result
14 in additional annual electric costs of \$188,700. This additional cost represents approximately
15 0.13% of the Company's \$146,000,000 of annual electric revenues.

16 With regard to natural gas, we estimate that the costs of this project, as compared to
17 the costs of continuing with the technology and operations that are currently in place, will
18 result in a decrease in costs of \$63,000 per year. These cost savings represent approximately
19 0.12% of the Company's \$51,000,000 annual natural gas revenues. These values are based on
20 an analysis of costs and benefits over a fifteen-year period. The costs/benefit analyses show
21 higher net costs in the early years, which decline over time. This is shown in Exhibit 13.

PC_DR_156-Attachment A

1 Pages 4, 5, and 6 depict estimated annual costs, savings and net annual revenue requirements
2 for an AMR system, compared to not installing an AMR system over a fifteen-year period.

3 We believe the relatively small levelized costs on the electric side are justified by
4 other benefits associated with this proposed system.

5 **Q. Please describe these additional benefits to the Company and its**
6 **customers.**

7 A. There are a number of benefits to AMR that clearly exist, but for which dollar
8 values are difficult to quantify. For example, information obtained through a networked
9 AMR system will be of value in determining specifications for distribution equipment used to
10 serve our customers. Interval data provided by the system can be utilized for customer load
11 research and rate development programs. A networked AMR system can provide
12 information to help manage operations during outages and may prevent extended customer
13 outages where a traditional outage report may have not been made. There may be
14 opportunities to provide meter-reading services for other utilities. Furthermore, the addition
15 of software in the future, not provided in the scope of this project, would allow customers on-
16 line access to hourly load profile data, which would allow them the opportunity to better
17 manage their electricity consumption.

18 **Q. Does this conclude your prefiled direct testimony?**

19 A. Yes.

PC_DR_156-Attachment B

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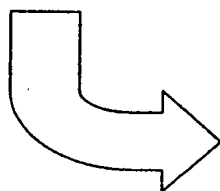
FOR AVISTA CORPORATION

(ELECTRIC AND NATURAL GAS)

PC_DR_156-Attachment B

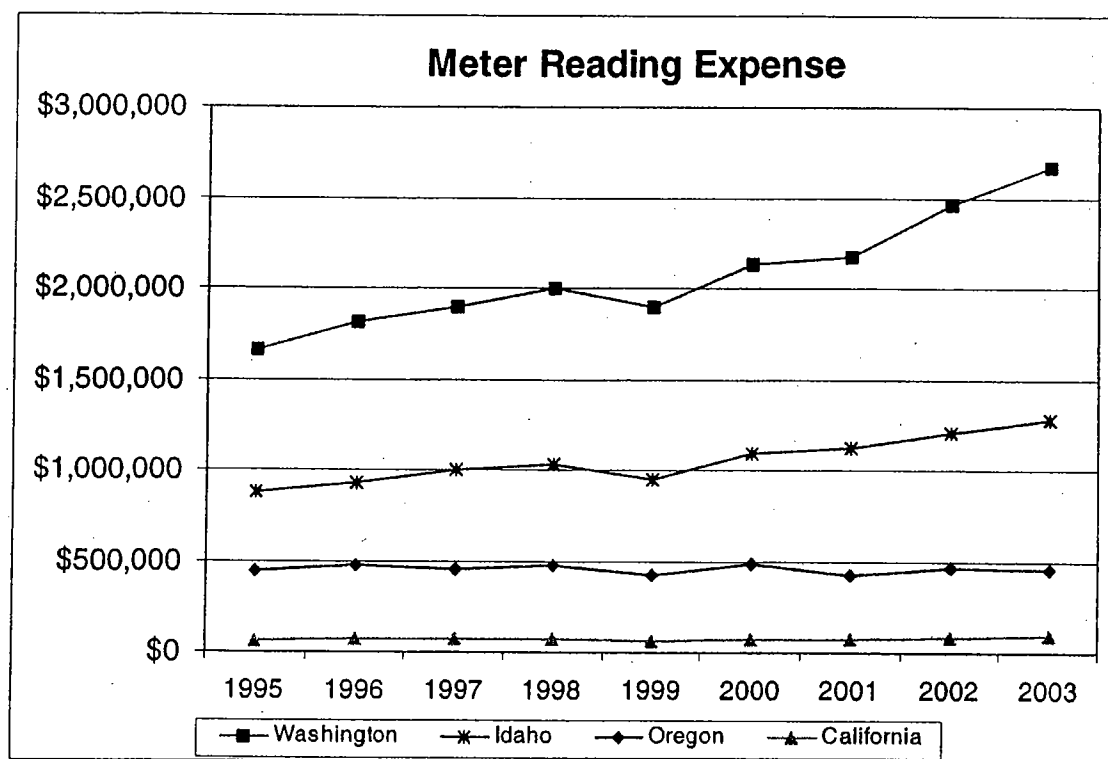
Historical Meter Reading (x902.xx) Costs

	Washington			Idaho			Oregon			California		
	Cost	Cust	\$/mtr	Cost	Cust	\$/mtr	Cost	Cust	\$/mtr	Cost	Cust	\$/mtr
1995	\$1,661,190	293,138	\$5.67	\$879,447	132,368	\$6.64	\$447,346	61,513	\$7.27	\$66,866	17,233	\$3.88
1996	\$1,819,206	300,268	\$6.06	\$927,554	138,495	\$6.70	\$476,603	65,290	\$7.30	\$69,291	17,582	\$3.94
1997	\$1,894,833	307,682	\$6.16	\$1,000,371	143,919	\$6.95	\$451,448	68,623	\$6.58	\$73,587	17,742	\$4.15
1998	\$2,001,076	315,675	\$6.34	\$1,036,070	150,009	\$6.91	\$471,254	72,850	\$6.47	\$76,843	18,107	\$4.24
1999	\$1,898,692	322,862	\$5.88	\$946,753	154,992	\$6.11	\$426,819	74,878	\$5.70	\$59,188	18,002	\$3.29
2000	\$2,132,285	328,163	\$6.50	\$1,093,684	159,269	\$6.87	\$481,281	77,689	\$6.19	\$72,852	17,941	\$4.06
2001	\$2,175,057	346,535	\$6.28	\$1,120,487	162,436	\$6.90	\$424,039	84,981	\$4.99	\$74,243	18,571	\$4.00
2002	\$2,459,379	348,000	\$7.07	\$1,207,072	165,304	\$7.30	\$467,047	86,000	\$5.43	\$80,761	18,600	\$4.34
2003	\$2,668,689	350,571	\$7.61	\$1,283,042	172,745	\$7.43	\$449,604	89,587	\$5.02	\$93,515	18,762	\$4.98



4.8%

Average annual
growth



PC_DR_156-Attachment B

Estimated AMR Installation Cost (nominal 2003 dollars)

Estimated Unit Costs (2003 dollars)

Type	Total	Prior	To Convert	Unit Cost	Meter Cost
Electric Non Demand	79,962	920	79,042	\$62.25	\$4,920,394
Electric Demand	3,332	0	3,332	\$263.25	\$877,088
PLC Non Demand	26,654	169	26,485	\$138.25	\$3,661,573
PLC Demand	1,111	0	1,111	\$263.25	\$292,363
Total Electric	111,059		109,970	\$88.67	\$9,751,419
Total Gas	61,686	601	61,085	\$67.75	\$4,138,509
Total Electric & Gas	172,745	1,690	171,055	\$81.20	\$13,889,928
Meter per point					\$81
Network meters	144,980				
Collector cost	\$2,320		Gas	Electric	Network
Cust/Collector	140		\$857,892	\$1,544,638	\$2,402,530
Communication/mo	\$20				
Network per point					\$17

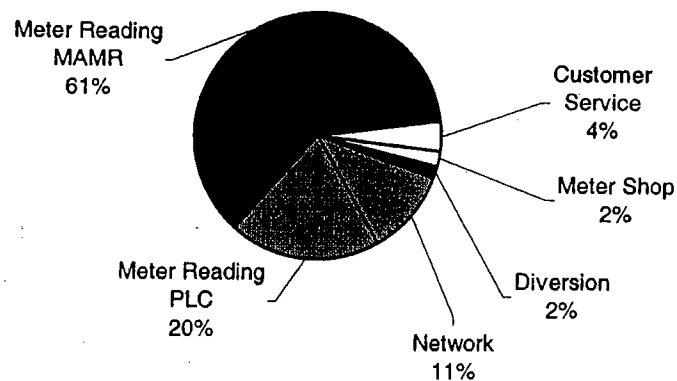
Estimated Project Costs (2003 dollars)

Year	Units Gas	Units Electric	Cost Gas	Cost Electric	Network Gas	Network Electric	Total Gas	Total Electric	Project Total
2004	601	1,089							
2005	18,326	32,991	\$1,241,553	\$2,925,426			\$1,241,553	\$2,925,426	\$4,166,978
2006	18,326	32,991	\$1,241,553	\$2,925,426			\$1,241,553	\$2,925,426	\$4,166,978
2007	12,217	21,994	\$827,702	\$1,950,284	\$514,756	\$926,762	\$1,342,457	\$2,877,046	\$4,219,503
2008	12,217	21,994	\$827,702	\$1,950,284	\$343,170	\$617,841	\$1,170,872	\$2,568,125	\$3,738,997
2009	0	0	\$0	\$0			\$0	\$0	\$0
2010	0	0	\$0	\$0			\$0	\$0	\$0
2011	0	0	\$0	\$0			\$0	\$0	\$0
2012	0	0	\$0	\$0			\$0	\$0	\$0
	61,686	111,059	\$4,138,509	\$9,751,419	\$857,926	\$1,544,604	\$4,996,435	\$11,296,023	\$16,292,458

PC_DR_156-Attachment B

AMR Estimated Savings (nominal 2003 dollars)

Annual Savings		Savings
Meter Reading PLC	- Reduction in Meter reading staff	\$195,908
Meter Reading MAMR*	- Reduction in Meter reading staff	\$613,789
Customer Service	- Call Center, Rebills	\$37,000
Meter Shop	- Meter refurbishment reduction & testing	\$20,000
Diversion	- Tamper reduction	\$18,000
Annual savings from MAMR & PLC system		\$884,697
Additional Meter Reading Savings from Network		\$358,044
Network operation (communication to collectors)		-\$248,538
Network	- Additional net savings from network	\$109,506
Annual AMR savings with fixed network (full implementation)		\$994,203

AMR Savings

* Mobile Advanced Meter Reading (MAMR)

Exhibit No. 13

3 of 6

D. Holmes

Avista Corporation

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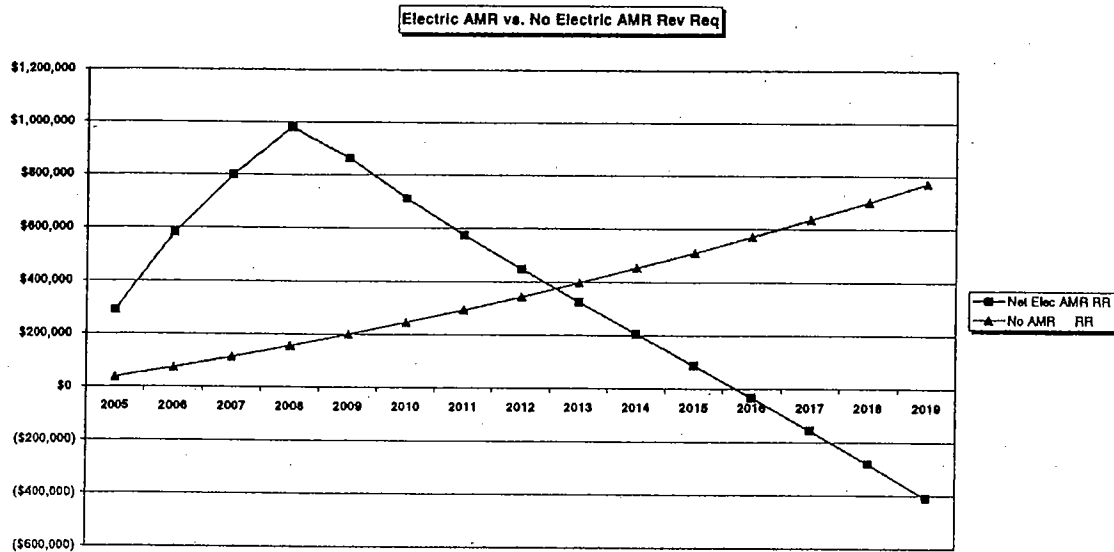
AMR Estimated Rate Impact

Idaho	AMR Levelized Revenue Requirement	No AMR Levelized Revenue Requirement	Incremental Levelized Revenue Requirement
2002 Pro forma Idaho Electric			
Capital Investment	\$ 11,296,023		
Revenue	\$ 146,000,000	\$ 146,000,000	\$ 146,000,000
AMR \$ Impact	\$ 486,567	\$ 297,864	\$ 188,703
AMR %	0.33%	0.20%	0.13%
2002 Pro forma Idaho Gas			
Capital Investment	\$ 4,996,435		
Revenue	\$ 51,000,000	\$ 51,000,000	\$ 51,000,000
AMR \$ Impact	\$ 105,077	\$ 168,136	\$ (63,059)
AMR %	0.21%	0.33%	-0.12%
Notes:			
1. Assumes 15yr book life of AMR			

PC_DR_156-Attachment B

Electric AMR Costs and Savings by year versus No AMR Costs

Year	Elec AMR Costs	Elec AMR Savings	Net Elec AMR RR	No AMR RR
2005	\$449,613	\$160,055	\$289,558	\$36,260
2006	\$942,644	\$362,215	\$580,430	\$74,260
2007	\$1,387,170	\$587,921	\$799,250	\$114,084
2008	\$1,754,795	\$774,288	\$980,506	\$155,820
2009	\$1,699,746	\$836,899	\$862,848	\$199,559
2010	\$1,587,180	\$877,070	\$710,111	\$245,398
2011	\$1,493,217	\$919,169	\$574,048	\$293,437
2012	\$1,409,992	\$963,289	\$446,703	\$343,782
2013	\$1,333,395	\$1,009,527	\$323,868	\$396,543
2014	\$1,263,143	\$1,057,985	\$205,159	\$451,837
2015	\$1,195,945	\$1,108,768	\$87,177	\$509,785
2016	\$1,128,746	\$1,161,989	(\$33,243)	\$570,514
2017	\$1,061,547	\$1,217,764	(\$156,217)	\$634,158
2018	\$994,349	\$1,276,217	(\$281,868)	\$700,858
2019	\$927,150	\$1,337,475	(\$410,325)	\$770,759



PC_DR_156-Attachment B

Gas AMR Costs and Savings by year versus No AMR Costs

Year	Gas AMR Costs	Gas AMR Savings	Net Gas AMR RR	No AMR RR
2005	\$188,284	\$85,843	\$102,441	\$20,330
2006	\$395,904	\$197,990	\$197,914	\$41,635
2007	\$601,763	\$335,587	\$266,176	\$63,963
2008	\$771,236	\$442,458	\$328,778	\$87,363
2009	\$749,071	\$480,274	\$268,797	\$111,886
2010	\$699,986	\$503,328	\$196,658	\$137,587
2011	\$659,137	\$527,487	\$131,649	\$164,521
2012	\$622,859	\$552,807	\$70,053	\$192,747
2013	\$589,461	\$579,341	\$10,120	\$222,329
2014	\$558,926	\$607,150	(\$48,224)	\$253,330
2015	\$529,750	\$636,293	(\$106,543)	\$285,820
2016	\$500,575	\$666,835	(\$166,260)	\$319,869
2017	\$471,399	\$698,843	(\$227,444)	\$355,552
2018	\$442,224	\$732,388	(\$290,164)	\$392,948
2019	\$413,048	\$767,542	(\$354,494)	\$432,140

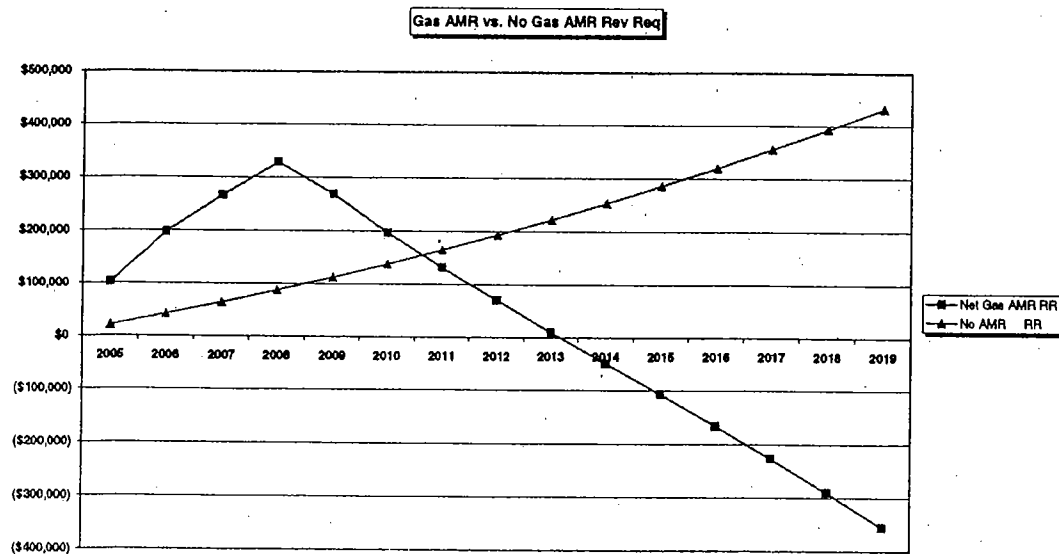


Exhibit No. 13

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D. Holmes

Avista Corporation PC_DR_156-Attachment B

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