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BEFORE THE IDAHO PUBLIC UTILITIES COMMISSION

IN THE MATTER OF THE APPLICATION	)	CASE NO. AVU-E-16-03
OF AVISTA CORPORATION FOR THE	)	
AUTHORITY TO INCREASE ITS RATES	)	
AND CHARGES FOR ELECTRIC SERVICE	)	DIRECT TESTIMONY
TO ELECTRIC CUSTOMERS IN THE	)	OF
STATE OF IDAHO	)	JAMES M. KENSOK
	)	

FOR AVISTA CORPORATION

(ELECTRIC)

I. INTRODUCTION

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

A. My name is James M. Kensok. I am employed by Avista Corporation as the Vice-President and Chief Information and Security Officer (CISO). My business address is 1411 E. Mission Avenue, Spokane, Washington.

Q. Please describe your education and business experience.

A. I am a graduate of Eastern Washington University with a Bachelor of Arts Degree in Business Administration, majoring in Management Information Systems, and a graduate of Washington State University with an Executive MBA. I have experience through direct application and management of Information Services over the course of my 34-year information technology career. I joined the Company in June of 1996. I spent approximately one year in Avista's Internal Audit Department as an Information Systems Auditor with involvement in performing internal information systems compliance and technology audits. I have been in the Information Services Department for approximately 18 years in a variety of management roles directing and leading information technology and systems, planning, operations, system analysis, complex communication networks, cyber

1 security, applications development, outsourcing agreements,

2 contract negotiations, technical support, cost management,

3 data management and strategic development. I was appointed

4 Vice-President and CIO in January of 2007 and Chief Security

5 Officer in January of 2013.

6   **Q.**   **What is the scope of your testimony?**

7   A.   My testimony will describe the costs associated

8 with Avista's Information Service/Information Technology

9 ("IS/IT") programs and projects. These costs include the

10 capital investments for a range of systems used by the

11 Company, including Next Generation Radio Refresh, Technology

12 Refresh to Sustain Business process, Avistautilities.com WEB

13 replacement, and several other applications.

14

15   **II. IS/IT CAPITAL PROJECTS**

16   **Q.**   **Please provide some background regarding Avista's**

17 **Information Services (IS) Department's operating needs.**

18   A.   Avista has been, and continues to be, focused on

19 utilizing cost-effective information and operating

20 technology to meet business and customer needs. Maintaining

21 appropriate levels of information and operating technology

22 funding is increasingly important, and Avista and its

23 customers rely more and more on computer systems and

24 technology to meet day-to-day business operations.

1   Computer hardware, software, networks and related tools

2   are becoming more indispensable, and more complex, as the

3   business environment and customer expectations grow, and

4   more information and transactions flow on-line. There

5   continues to be exponential growth in the use of Avista

6   networks for customers transacting on-line and for Avista to

7   manage its computer system and mobile workforce. For

8   example, electronic bill presentment and electronic payment

9   provides convenience for customers to understand their bill

10   and remit payment electronically, as well as access

11   extensive information from the Company related to areas such

12   as energy efficiency and safety. Mobile dispatch of service

13   crews involves wireless technology in Company field

14   vehicles, and provides improved customer service for

15   construction locates and service work, at lower cost.

16   Without these technologies, Avista could not meet customer

17   and regulatory expectations, nor achieve many of the cost

18   savings we have accomplished through the use of technology.

19   **Q.   What are the primary business needs supported by**

20   **Avista's Information Services Department?**

21   A.   The Information Services department provides the

22   technology support required by all Company operations, both

23   internal as well as customer-facing. Examples include field

24   operations, engineering, transmission and distribution

1   operations, power supply, finance, treasury, legal, human

2   resources, customer solutions, customer services and

3   regulatory functions. Types of support include the design,

4   engineering, implementation, and support of cyber security,

5   computer hardware, application software, data and voice

6   systems and networks, application integration, business

7   continuity and disaster recovery, and data management and

8   mobility. We are moving toward providing customers with

9   more mobile solutions for transacting business with Avista

10 that are available 24 hours per day, in addition to having

11 more data and information about their energy use and tools

12 to manage their consumption of energy.

13   Records management is increasing for both natural gas

14 and electric infrastructure, and Avista is experiencing

15 continued growth in the use of its networks by customers and

16 our employees who are increasingly using mobile, real-time

17 systems to transact business and deliver safe and reliable

18 energy services. These technologies are foundational to

19 Avista's efforts to keep pace with the service expectations

20 of our customers, to fulfill our regulatory requirements,

21 and to achieve cost savings through prudent technology

22 deployments.

23   **Q.   Please discuss the drivers for the Company's IS/IT**

24 **projects that will be completed in 2016 and 2017.**

1   A.   The utility industry is undergoing a period of

2   renewal, calling for technology in all areas of our business.

3   Specific drivers that prompt capital projects during the

4   2016 and 2017 time periods include: (1) a transition from

5   legacy custom-coded applications to commercial off-the-shelf

6   solutions to increase security and reliability (i.e., outage

7   management system), allow flexibility and scalability, and

8   system lifecycle planning, (2) continuous upgrades of

9   Operating System and Database software to maintain vendor

10   maintenance and support, (3) technology infrastructure

11   investment, such as communication equipment on mountain tops

12   and radios in fleet vehicles to increase worker efficiency

13   and safety during unplanned outages and emergency events,

14   and (4) network infrastructure efforts to respond to an ever

15   increasing demand for secure data transfer, sensor

16   technology (i.e., plant intelligent software), reliability

17   and redundancy.

18   **Q.   As   Information   Services   requirements   have**

19   **increased,   has   Avista   focused   on   managing   its   overall**

20   **technology costs for the benefit of its customers?**

21   A.   Yes.   Over the past several years, Avista has

22   focused on managing customer transaction costs through the

23   prudent   deployment   of   technology.   Along   with   meeting

24   customer needs, Avista works continuously to minimize its

1 costs and to maximize employee efficiency through the use of

2 appropriate technology and staffing.

3   As discussed in further detail below, the Avista

4 Facility Maintenance project's purpose is to take advantage

5 of commercial tools that provide improved capabilities,

6 application functions and reliability. As a result, it will

7 enable field workers to provide more accurate information in

8 a timely and more complete fashion, improving the overall

9 customer experience.

10   **Q.   How does Avista's technology department prioritize**

11 **capital projects before they are submitted to the Capital**

12 **Planning Group?**

13   A.   Avista's Information Systems and Technology

14 department uses program steering committees for project

15 identification and prioritization. The steering committees

16 prioritize projects using criteria such as (1) support of

17 operational control, safety and compliance requirements, (2)

18 customer facing and supporting solutions, and (3)

19 maintaining back-office technology. Specifically,

20 technology replacement projects are in alignment with

21 roadmaps for application and technology lifecycles to

22 provide a stable and reliable application and computing

23 platform to allow for the safe and reliable operation of our

24 electric and natural gas infrastructure. Technology

1 expansion efforts anticipate growth in work requirements,

2 strategic initiatives and technology shifts.

3 **Q.   Please provide a brief description of the IS/IT-**

4 **related capital projects that are included in the Company's**

5 **revenue requirement for 2016 and 2017.**

6 A.   As shown in Table No. 1 below, the Company has

7 included IS/IT projects for 2016 and 2017 that total $43.8

8 million and $75.7 million respectively, on a system basis.

9 Details about these technology-related capital projects are

10 discussed below.

TABLE NO. 1		
Enterprise Technology Capital Projects (System)		
	2016	2017
Business Case Name	$ (000's)	$ (000's)
Technology Refresh to Sustain Business Process	$ 18,001	$ 17,250
Mobility in the Field		650
Next Generation Radio Refresh	6,000	375
Enterprise Security	1,360	2,500
Customer Facing Technology	286	4,000
High Voltage Protection for Substations	887	
Avista Facilities Maintenance COTS Migration	3,800	11,500
AvistaUtilities.com Redesign	5,536	
Enterprise Business Continuity Plan	664	450
Technology Expansion to Enable Business Process	2,742	13,700
Microwave Refresh	4,543	4,000
Meter Data Management		21,299
Total Planned Enterprise Technology Capital Projects	$ 43,817	$ 75,724

The following projects are included in the Company's Pro
Forma Study for 2016 and 2017. See Ms. Schuh's Exhibit 10,
Schedule 4 for business cases supporting these projects as
well as additional support for certain projects, filed with
the Company's case:

Technology Refresh to Sustain Business Processes–2016: $18,001,000; 2017: $17,250,000

The Technology Refresh to Sustain Business Processes program is in place to provide for technology refresh of <u>existing</u> technology in alignment with the roadmaps for application and technology lifecycles. Aging technology is the driving factor behind this project. As technology ages, it presents a risk to Avista in the form of increased failure rate, inefficient work practice, and employee/public safety incident due to system failures.

The continuation of technology refresh programs provides benefits by providing a stable and reliable application and computing platform to allow for the safe and reliable operation of our electric and natural gas infrastructures. This program is a collection of sub-programs which are described below:

<u>Distributed Systems</u>
This program is for the replacement of distributed technology beyond the planned life cycle, such as desk top computers, mobile computers, printers, faxes, scanners and multi-purpose devices. It also includes upgrades to operating systems, email systems and standard personal productivity applications. It includes such devices as desktop computers for Customer Service Representatives, rugged mobile computers used by field personnel who respond to service calls and software such as MS Office and other productivity software applications. During this period, the program is replacing its Endpoint Configuration Management System, which has reached end of life. The System Center Configuration Manager (SCCM) is a tool that provides remote control, patch management, software distribution, operating system deployment, network access protection and hardware and software inventory. SCCM requires complex technology architecture and advanced configuration to manage thousands of computers. Additionally, existing rugged mobile computers have also reached end of life and available parts, maintenance and support, thus requiring a full replacement of all rugged mobile computers and their truck mounts, docking stations and cabling in all existing fleet vehicles.

1. Communication Systems
2. This program is for the replacement of
3. communication technology beyond the planned life
4. cycle such as mobile radios, cell phones, desk top
5. phones and supporting systems, communication cable
6. and fiber. It includes PBX phone systems and
7. mobile radios used by field personnel. During this
8. period, Avista's Enterprise Call Recording System,
9. to meet Federal regulatory compliance requirements
10. of a vertically integrated utility, is requiring
11. replacement as the current licenses and recorders
12. are at end of life. The system supports Credit
13. Dispatch, Distribution Dispatch, Power Supply, Gas
14. Supply, System Operations, Generation Control
15. Center, Claims and the Technology Service Center.
16.
17. Network Systems
18. This program is for the replacement of network
19. equipment beyond the planned life cycle, such as
20. routers and switches. It includes networks for
21. moving data between offices, from field devices
22. back to offices and to support data transport for
23. SCADA and other operation systems. Avista
24. leverages various network transports (Campus
25. Network, Data Center, Local Area Network, Wide
26. Area Network and Field Area Network) in its
27. architecture to maximize efficiency, reliability
28. and redundancy. Network equipment replacement
29. aligns with Avista's Enterprise Network
30. Communications Strategy, which outlines the need
31. to meet various use cases across our service
32. territory utility infrastructure, business,
33. operations, and services.
34.
35. Central Systems
36. This program is for the replacement of data center
37. servers and storage equipment beyond the planned
38. life cycle. It includes data processing and
39. storage for such systems as outage management and
40. construction design. Specifically, during this
41. period, a major upgrade was conducted on the
42. Windows Server Operating System, as updates and
43. patches are no longer supported by the vendor, to
44. protect and maintain Avista's data center
45. infrastructure. Additionally, a portion of data
46. center storage equipment was replaced in
47. accordance with life cycle planning.

<u>Environmental System</u>
This program is for the replacement of systems that support multiple other systems. The program covers heating, cooling, systems and back-up generators, and uninterruptable power supply systems that are beyond the planned life cycle. It includes back-up power supply systems in offices to assure that the systems will function during power outages.

<u>Business Application</u>
This program is for upgrading software that has reached the end of the supported version. It includes upgrades to systems such as Outage Management System (OMS), Customer Care and Billing (CC&B), Maximo, Mobile Work Management (MWM) system, energy trading settlement system and financial and operations systems. Regular upgrades, as part of the software life cycle, and required for vendor supplied maintenance and support, including patches, bug fixes, or interim releases.

Mobility in the Field - 2017: $650,000
This program is designed to increase the Company's mobility in the field using mobile devices. A Mobile Road Map Team has documented at least 30 near-term opportunities where mobile technology could be used in the field and provide substantial benefits. These Mobile opportunities are planned to be completed in phases over a five-year period. Phases already complete, include 'Visibility in the Field' which enabled Gas Leak Survey and Gas Service Dispatch that provided spatial maps in the field using mobile devices. Other planned opportunities include, View GIS Layers, Multiple Maps in the Field, Gas Exposed Pipe Report, Capture Facility Data, and Damage Assessment.

The many benefits would include operations improvements to reduce compliance risk, reduce duplicate effort, and more timely entry of data, along with improved tools and information in the field.

Next Generation Radio Refresh – 2016: $6,000,000; 2017: $375,000
This project is refreshing Avista's 20-year-old Land Mobile Radio system. The Company maintains this

private system because no public provider is capable of supporting communications throughout our rural service territory. And, because our systems comprise a portion of our nation's critical infrastructure, Avista is required to have a communication system that will operate in the event of a disaster. This project fulfills a mandate from the Federal Communications Commission that all licensees in the Industrial/Business Radio Pool migrate to spectrum efficient narrowband technology.

Enterprise Security Program – 2016: $1,360,000; 2017: $2,500,000
There are three primary drivers of capital spending for Enterprise Security: cyber security and physical security. Each plays a critical role in supporting our delivery of safe and reliable energy to our customers.

Cyber Security
The security of our electric and natural gas infrastructure is a significant priority at a national and state level, and is of critical importance to Avista. Threats from cyber space, including viruses, phishing, and spyware, continue to test our industry's capabilities. And while these malicious intentions are often unknown, it is clear the methods are becoming more advanced and the attacks more persistent. In addition to these threats, the vulnerabilities of hardware and software systems continue to increase, especially with industrial control systems such as those supporting the delivery of energy. For these reasons, Avista must continue to advance its cyber security program and invest in security controls to prevent, detect, and respond to these increasingly frequent and sophisticated attacks.

Physical Security
While considerable attention is focused on cyber security, physical security also remains a concern for our industry. Physical security encompasses the aspects of employee safety and the protective security of our facilities and critical infrastructure. Acts of theft, vandalism, and sabotage of critical infrastructure not only results in property losses, but can also directly impact our ability to serve customers. Securing

remote unmanned or unmonitored critical infrastructure is difficult, especially when traditional tools such as perimeter fencing by itself are not adequate. In response to these challenges, the Company has focused its resources on additional physical security protection (i.e., lighting and crash barriers), remote detection and response technology, which is creating the need for additional physical security items, expertise and technology.

Customer Facing Technology Program – 2016: $286,000; 2017: $4,000,000

New technologies continue to emerge at a rapid pace. The Company has already funded the development of foundational systems that will better allow us to keep pace with customer expectations and demands, through projects such as Project Compass. Customers continue to demand a more engaging user experience and access to data and tools that are comparable to technology industry leaders. Enhancing customer engagement across digital channels and providing customers with tools and resources to effectively manage their energy use and bill payment and management, makes it easier for them to do business with Avista.

High Voltage Protection Upgrade – 2016: $887,000

Telecommunication facilities, including Phone, Communication Switches, SCADA, and Metering & Monitoring systems, are commonly co-located inside the Company's high voltage substations. This requires communications technicians to work in close association with our high-voltage electrical equipment. The Company has implemented new high-voltage protection & isolation standards designed to lower potential risks to our personnel and equipment. This project will implement the clearance changes required to meet the new standards.

Avista Facility Maintenance COTS Migration – 2016: $3,800,000; 2017: $11,500,000

AFM is an internally developed custom application that was built by Avista to manage the electric and gas facility & equipment data. This tool was created in the early 2000's and has been used by engineering and operations for the last decade to complete construction design, manage outages, plan work, and manage locations

of assets. Originally the Geographical Information System (GIS) was implemented at Avista to manage the location of gas and electric facilities with an electronic mapping system that allowed for centralization. Over time, this system became heavily integrated with the customer system of record (Customer Care and Billing), the Asset system of record, and used to report outage information to customers. At this time 100% of Avista's electric & natural gas distribution systems are mapped in GIS. The existing data is used daily to maintain and operate Avista's infrastructure and to report on system characteristics.

There are technical and business risks associated with the AFM suite that must be addressed by replacing them with new commercial solutions. Some of these risks include the cost of extending current legacy solutions, ongoing support and maintenance of the tools, asset data integrity, and the increasingly complex distribution grid that requires improved IT systems to manage effectively.

This project will take advantage of commercial tools that provide improved application functions, capabilities and reliability. Improvement of customer experience is at the core of the AFM system replacement and enhancements. An upgrade to the mobile workforce management system will also occur improving user experience through improved appointment booking and workforce optimization. These new tools will enable Avista office and field workers to respond to customer requests faster, provide information to customers that will be more accurate, timely, complete, and improve customer experience when they interact with Avista.

AvistaUtilities.com Redesign — 2016: $5,536,000
Like many businesses today, the Company is experiencing continued growth in the use of its customer website, Avistautilities.com. The website was originally built in 2006-2007, but because the technology landscape has advanced so quickly, the site does not meet current web best practices for customer usability and security. This project will update and improve the technology, overall web usability, security and customer satisfaction. The website is part of the Company's strategy to provide customers a more effective channel to meet their expectations for self-service options,

1 including mobile, energy efficiency education, and to
2 drive self-service as a means to lower transaction
3 costs.
4
5 **Enterprise Business Continuity Plan - 2016: $664,000;**
6 **2017: $450,000**
7 Avista has developed and maintains an Enterprise
8 Business Continuity Plan (EBCP) to continually enhance
9 and improve the Company's emergency response, and to
10 ensure the continuity of its critical business systems
11 under crisis conditions. The framework includes the
12 key areas of technology recovery, alternate facilities,
13 and overall business processes. The effort of
14 developing and continuously improving the EBCP ensures
15 the readiness of systems, procedures, processes, and
16 people required to support our customers and our
17 communities any time we are required to operate under
18 critical emergency conditions.
19
20 **Technology Expansion to Enable Business Processes-**
21 **2016: $2,742,000; 2017: $13,700,000**
22 This program facilitates technology growth throughout
23 the Company and is driven by customer and business
24 needs. This includes the expansion of equipment or
25 systems to accommodate staff growth for the entire
26 workforce, automate business process, or enhance
27 customer experience. Some of the subprograms included
28 are described further below:
29
30 Distributed Systems
31 This includes expansion and enhancement of desk
32 top computers, mobile computers, and virtual
33 computers that is required to align hardware
34 specifications with application software
35 requirements.
36
37 Communication Systems
38 This includes equipment such as mobile radios,
39 cell phones, desk top phones and supporting
40 systems, communication cable and fiber. New Call
41 Center technology, Virtual Hold with Call-back
42 Assist, allows options for a customer to hold,
43 when expecting longer than average wait times or
44 have a return call at a later time, maintaining
45 their place in the queue, and allowing them to go

about their business until they reach the front of the queue. Additionally, an Enterprise Mobility Management tool allows for stronger management of ever-growing mobile devices to reduce risk to the Avista network, systems and data.

Network Systems
This equipment such as routers and switches, which are located in offices, poles, substations, power plants and homes, support the expansion of the various transports called by emerging utility use cases demanding new technology architecture, device management, and security requirements.

Business Application Expansion
Expanding and enhancing systems such as Outage Management System (OMS), Customer Care and Billing System(CC&B), Maximo, Mobile Work Management (MWM) system, energy trading settlement system and financial and operations systems. This period included enhancements to business application systems to improve operational functions and in response to changing business requirements.

Other minor applications and projects
Enhancements to the functionality of other business applications not included above such as customer email management system, compliance management system, enterprise voice portal system and engineering design and analysis systems. This category also includes small projects for new software or hardware that are not covered under other programs.

Microwave Refresh – 2016: $4,543,000; 2017: $4,000,000;
The Company manages an ongoing program to systematically-replace aging and obsolete technology under "refresh cycles" that are timed to optimize hardware/software system changes. This project will replace aging microwave communications technology with current technology to provide for high speed data communications. These communication systems support relay and protection schemes of the electrical

1   transmission system. Reducing Avista's risk of failure
2   of these critical communication systems will have a
3   significant impact on Avista's transmission capacity
4   and ability to serve our customers electrical needs.
5
6   **Meter Data Management Hardware/Software/Communication**
7   **– 2017: $21,299,000**
8   The Meter Data Management (MDM) system will replace the
9   customized system that the Company is currently using
10   through Oracle's Customer Care and Billing system to
11   perform similar functions and provide additional
12   benefits. The Meter Data Management system consists of
13   computer hardware and software applications that store,
14   validate, edit, and analyze the interval consumption
15   data for use with Avista's billing system, as well as
16   coordinate specified metering commands. This system
17   will allow consideration of daily meter reads and
18   enable appointment scheduling and optimized routing
19   through integrated modules with Oracle. The MDM
20   implementation will support the collection of data from
21   meters in all of Avista's jurisdictions, including the
22   existing advanced meters (AMR) deployed in Idaho. MDM
23   will also create a platform for the future
24   implementation of advanced metering infrastructure and
25   includes integrations with legacy applications.
26

27   **Q. Does this conclude your pre-filed direct**

28 **testimony?**

29   A. Yes it does.