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BEFORE THE IDAHO PUBLIC UTILITIES COMMISSION

IN THE MATTER OF AVISTA CORPORATION'S APPLICATION TO REVISE TARIFF SCHEDULE 170 – NATURAL GAS RULES AND REGULATIONS	)	**CASE NO. AVU-G-18-07**
	)	**COMMENTS OF THE COMMISSION STAFF**

COMES NOW the Staff of the Idaho Public Utilities Commission, by and through its Attorney of record, Brandon Karpen, Deputy Attorney General, and in response to the Notice of Application, Notice of Modified Procedure and Notice of Comment Deadline issued in Order No. 34167 on October 11, 2018, in Case No. AVU-G-18-07, submits the following comments.

BACKGROUND

On September 19, 2018, Avista Corporation dba Avista Utilities filed an Application requesting that the Commission approve changes to the Company's Tariff Schedule 170 relating to the Company's Natural Gas Rules and Regulations. The proposed changes stem from the Company's effort to comply with Commission Order No. 33953.

Generally, the Company proposes to incorporate pertinent provisions of the Commission's Service Rules for Gas Utilities (IDAPA 31.31.01), including rules for meter testing and accuracy, as well as maintenance of system maps and records. The Company proposes to move these relevant requirements into the Company's tariff.

In July 2008, Staff received an inquiry from Avista regarding an apparent conflict between Commission Gas Service Rule 102 and Commission Safety Rule 202, relating to the

Commission's adoption of the National Fuel Gas Code, the Uniform Mechanical Code, and the International Mechanical Code. After reviewing the issue, the Commission concluded that Gas Service Rule 102 is incompatible with the Commission's Safety Rules 202.02 and 203.02. Order 30625 at 2. Consequently, the Commission suspended Gas Service Rule 102, IDAPA 31.31.01.102. *Id.* at 3. The Commission further directed Staff to work with gas utilities and other interested persons to informally review the Gas Service Rules. *Id.*

Avista provided Staff with proposed changes to IDAPA 31.31.01 in November 2016, consistent with current best practices. Further discussions led to an agreement between Staff and Avista that the integration of these revisions into the Company's tariffs would be beneficial to the Company and the Commission. As such, in the Company's 2017 General Rate Case, the matter of incorporating pertinent provisions from IDAPA 31.31.01 was made part of the ultimate settlement resolving the case.

On December 28, 2017, the Commission issued Order No. 33953, approving the Settlement Stipulation in the rate case. Therein, the parties agreed:

> The Company and interested parties will meet and confer to review the Commission's Service Rules for Gas Utilities (IDAPA 31.31.01) to determine which provisions should be retained and/or modified, and, if the participants agree, incorporate those changes into the Company's tariff. Any changes requiring Commission approval, e.g., tariff revisions, will be submitted by the Company on or before [October 1, 2018].

Stipulation and Settlement Para. 19.

If the underlying Application is approved, the tariff regulations developed with Staff will be incorporated into Avista's Natural Gas Tariff Schedule 170. Approval of the rules will not change rates. The Company requested that the Commission process this Application under Modified Procedure, with an effective date of November 1, 2018. Application at 8.

STAFF ANALYSIS

Staff worked with Avista to determine which provisions of the Commission's Service Rules for Gas Utilities (Gas Service Rules) should be incorporated into its tariff. In its joint review of the rules, some provisions were deemed to be unnecessarily prescriptive. In addition, the rules contain obsolete references and requirements that no longer reflect current best practices for gas utilities in general or Avista's actual practices.

Staff also notes that one existing rule (Rule 102) has caused confusion. Because Rule 102 was suspended in 2008 by the Commission but has not been formally repealed yet, the

similar but conflicting provisions contained in Rules 201 and 202 of the Safety and Accident Reporting Rules has created uncertainty about what code requirements the Commission has officially adopted.

Staff appreciates the Company's willingness to collaborate with Staff, review and evaluate the existing Gas Service Rules, and ultimately create tariff provisions that are relevant and meet the needs of the Company and its customers. Attachment 1 compares the text of the existing rules with the Company's proposed tariff provision that corresponds to each rule. Rule provisions that were not incorporated into Avista's proposed tariff and substantive deviations from the existing rules are addressed below.

Maps and Records of Facilities

Rule 101.03 of the Gas Service Rules prescribes in detail the maps and records that need to be maintained for each gas manufacturing plant, mixing plant, compressor station, and storage facility.

The Company's proposed tariff does not include a similar provision for these types of facilities or equipment specifically. Instead, the Company's proposal includes a more general provision for maintaining maps and records, and Staff agrees that this is sufficient.

Meter Provers

Rule 153.02 requires the utility to install additional meter proving stations when and where found necessary by the Commission. Rule 153.03 requires each gas utility using orifice meters, high pressure meters, proportional meters, or other large capacity meters to own and maintain testing apparatus of a type approved by the Commission. Rule 153.04 allows the Commission to oversee the accuracy of all meter provers and methods of operation. It requires the Company to report alterations, accidents, or repairs that might affect the accuracy of any meter prover, or the method of operating it, to the Commission. Rule 155.01 requires all tests to determine the accuracy of registrations of gas meters to be made with a suitable meter prover or testing equipment and prescribes how such tests should be conducted.

Each of these rule provisions presume that the Commission will oversee and approve the Company's meter provers and meter testing equipment and practices. However, it does not

appear that Staff has performed these tasks in the past. The Company proposes to use the Avista Utilities Gas Standards Manual which outlines prover calibration intervals for the different types of provers the Company currently employs. Staff maintains that the Company and its employees, not the Commission or its Staff, has the requisite knowledge to determine the appropriate number of proving stations, oversee the accuracy of its provers and maintain the appropriate meter provers to test meters. Staff agrees with Avista that these rule provisions should not be incorporated into Avista's proposed tariff.

Meter Testing Standards

Rule 152.01 covers the testing of smaller capacity meters. All meters with capacities up to and including four hundred (400) cubic feet per hour (CFH) that have been in service ten (10) or more years as established by last set date shall be tested within a prescribed sample size as determined in accordance with military standard 105D.

The Company proposes continuing the practice of sampling smaller capacity meters (1,000 CFH or less) that have been in service for ten years. Additionally, the Company proposes to use sample sizes consistent with the American National Standards Institute (ANSI)/American Society for Quality (ASQ) Standard Z1.9 and other generally accepted inspection standards. Military Standard 105 was cancelled by the Defense Standardization Program on February 6, 2008. *See* Attachment 2. Staff supports using the ANSI/ASQ Standard Z9 for determining sample sizes.

Rule 152.02 addresses testing of larger capacity meters. It requires all meters from four hundred one (401) to three thousand (3,000) CFH that have been in service ten (10) years as established by last set date to be replaced or field tested.

The Company proposes to use the prescribed inspection schedule for all meters over 1,000 CFH as found in the Avista Utilities Gas Standards Manual. The Company's manual dictates testing intervals for meters based on CFH as well as by meter type. The rule assumes that the Company is using diaphragm meters exclusively, but this is not always the case. The Company's manual also covers testing of rotary and turbine meters as well. *See* Attachment 3. Staff supports the use of the testing schedule as set forth in the Avista Utilities Gas Standards Manual.

Rule 155.02 prescribes the rate of flow to be used in testing meters of various capacities. The Company's proposed tariff does not include the detailed requirements

contained in this rule. Instead, the Company proposes to use its New Meter and Installed Meters testing programs consistent with current Company practices.

Staff agrees that it is not necessary to prescribe the rate of flow for testing meters in Avista's tariff. Staff maintains that Avista's meter testing program relies on acceptable accuracy tolerances and inspection intervals as specified in the Avista Utilities Gas Meter Measurement Performance Program (PMC Program). See Attachment 4.

Staff further recommends the Company include a provision in its tariff that states the Company will furnish an electronic copy of the Company's current version of its Gas Standards Manual and the Standard Operating Procedures for the Gas Meter Measurement Performance Program (SOP) used by Avista's Gas Meter Shop to the Commission upon request or whenever substantive changes are made to either document. The SOP is an abbreviated reference document used by Avista employees that compiles information contained in the Company's 700+ page gas service manual into a 14 page document. Both documents would be helpful reference tools for Staff.

Meter Tests Requested by Customers

Rule 157 allows the Commission to establish reasonable fees for testing meters. The Company proposes providing one meter test upon request by any customer in a twelve-month period without charge. If a customer requests more than one meter test in a twelve-month period and the meter is found to register within 2% of accepted tolerance, the customer will be required to pay the actual cost to perform the meter test. Customers will not be rebilled if a meter is found to be registering less than 2% in error on average. The Company's proposed tariff does not specify what amount customers will be charged for multiple meter tests. Staff intends to continue to work with the Company to see if an appropriate charge can be determined.

SUMMARY

Staff has reviewed the Company's proposed tariff provisions and believes that it complies with Commission Order No. 33953. Staff recommends one addition to the proposed tariff at this time that the Company furnish an electronic copy of the Company's current version of its Gas Standards Manual and the Standard Operating Procedures for the Gas Meter Measurement Performance Program (SOP) used by Avista's Gas Meter Shop to the Commission upon request or whenever substantive changes are made to either document.

STAFF RECOMMENDATION

Staff recommends the Commission:

1. Order the Company to add a provision to its tariff that states the Company will furnish an electronic copy of the Company's current version of its Gas Standards Manual and the Standard Operating Procedures for the Gas Meter Measurement Performance Program used by Avista's Gas Meter Shop to the Commission upon request or whenever substantive changes are made to either document; and
2. With the addition of this provision, approve the Company's proposed additions to Schedule 170, Idaho Rules and Regulations, with an effective date of November 1, 2018.

Respectfully submitted this 24th day of October 2018.

Brandon Karpen
Deputy Attorney General

Technical Staff: Johnathan Farley
Johan Kalala-Kasanda
Kevin Keyt
Michael Morrison

i:umisc/comments/avug18.7bkkskjfjkmm comments

Rule	Gas Service Rule IDAPA 31.01.01	Avista Proposed Tariff
101.01 Maps, Plans, and Records	Gas corporations must maintain maps, plans, and records as prescribed by this rule. A suitable map or maps shall be kept on file in the principal office of each division or district. The maps shall at all times show the size, character, and location of each street main, district regulator, street valve and drip, and when practicable, each service connection in the corresponding territory served. In lieu of showing date of installation and service locations on maps, a card record or other suitable means may be used.	Maps and records shall be kept on file or available electronically in the principal office of each division or district. The maps shall show the size, character, and location of each street main, district regulator, street valve, and when practicable, each service connection in the corresponding territory served. In lieu of showing the date of installation and service location on maps, a separate record may be maintained. (Avista Regulation No. 26)
101.02 Distribution Records in District Offices	In each division or district office there shall be available information about the distribution system that will enable the local representatives at all times to furnish necessary information regarding rendering of service to existing and prospective customers.	Each division or district office shall maintain records of the gas distribution system that will enable the Company to furnish information regarding the provision of service to Applicants and Customers. (Avista Regulation No. 26)
101.03 Maps of Manufacturing, Mixing, Compressor, and Storage Facilities	Each gas manufacturing or mixing plant and each compressor station and storage facility shall be provided with an accurate ground plan drawn to a suitable scale, showing the entire layout of the plant or station, the location, size, and character of plant, equipment, major pipelines, connections, valves, and other facilities used for the production and delivery of gas, all properly identified.	Intentionally Omitted
101.04 Inspection of Facilities	In determining whether these rules are being complied with, the Commission may inspect facilities and records as necessary, as provided in section 61-521, Idaho Code.	The Commission may inspect facilities and records as necessary as provided in section 61-521, Idaho Code. (Avista Regulation No. 26)

102 Inspection of Customer's Facilities	The gas corporation shall inspect the customer's installation before the connection of a meter to ascertain that the installation conforms to the provisions contained in the National Fuel Gas Code and the Uniform Mechanical Code, as adopted by the Commission. If the installation on the customer's premises does not meet these requirements, the Company shall refuse to connect the meter and shall advise the customer in writing the reasons for such refusal. See Customer Relations Rule 3.03.a, IDAPA 31.21.01.303.a; see Safety and Accident Reporting Rules 201 and 202, IDAPA 31.11.01.201 and 31.11.01.202.	Suspended per Commission Order No. 30625
151 Standard for Service	Service to the customer shall assure the customer of adequate pressure, a definite heat content, and accurate measurement of gas.	The Company shall ensure that customers receive service with adequate pressure, heat content, and accurate measurement of gas consumption. (Avista Regulation No. 24)
152.01 Testing of Smaller Capacity Meters	All meters with capacities up to and including four hundred (400) cubic feet per hour (cfh) that have been in service ten (10) or more years as established by last set date shall be tested within a prescribed sample size as determined in accordance with military standard 105D.	The methodology for sample sizes and analysis for the installed meter testing program is derived from the American National Standards Institute (ANSI) / American Society for Quality (ASQ) Standard Z1.9 (Standard Z1.9) and other generally accepted inspection standards. i. For diaphragm meters 1000 CFH and smaller, a random sample of meters shall be selected, tested within a prescribed sample size, and analysis conducted using Standard Z1.9. The random sampling program shall begin during the 10th year after meter installation, as established by last set date. (Avista Regulation No. 25.C.2.c.i)
152.02 Testing of Larger Capacity Meters	All meters from four hundred one (401) to three thousand (3,000) cfh that have been in service ten (10) years as established by last set date shall be replaced or field tested.	Larger capacity meters shall be tested per the Avista Utilities Gas Standards Manual. (Avista Regulation No. 25.C.2.c.ii)

153.01 Meter Proving	Each gas corporation shall own at least one meter prover of a type approved by the Commission and shall maintain such equipment in proper adjustment and so calibrated that the error of indication shall not exceed one-half (½) percent. No meter prover shall be so placed as to subject it to excessive temperature variation and each meter prover shall be equipped with suitable thermometers and other necessary accessories.	All tests to determine the accuracy of registrations of gas service meters shall be made with a suitable meter prover or testing equipment. (Avista Regulation No. 25.C)
153.02 Additional Meter Proving Stations	Additional meter proving stations shall be installed when and where found necessary by the Commission.	Intentionally Omitted
153.03 Testing Apparatus for Large Capacity Meters	Each gas utility using orifice meters, high pressure meters, proportional meters, or other large capacity meters shall own and maintain testing apparatus of a type approved by the Commission	Intentionally Omitted
153.04 Accuracy of Meter Provers and Testers	The accuracy of all provers and methods of operation may be established from time to time by a representative of the Commission. Any alterations, accidents, or repairs that might affect the accuracy of any meter prover, or the method of operating it, shall be promptly reported in writing to the Commission.	Intentionally Omitted
154.01 Accuracy of Meters	A new gas meter installed for the use of any customer shall not be more than two (2) percent slow and not more than one (1) percent fast. Every meter removed from service when opened for repairs shall be adjusted to be not more than two (2) percent slow and not more than one (1) percent fast before being reset; and if not opened for repairs may be reset without adjustment if found to be not more than two (2) percent in error fast or slow, when passing as in both instances at the test rates provided for in Rule 155 (Customer Meter Test Loads).	A new gas meter installed for the use of any customer shall not be more than one (1) percent slow and not more than one (1) percent fast. Any meter removed from service for testing or repair shall be adjusted to the tolerance prescribed by the Avista Utilities Gas Standards Manual prior to being reinstalled. (Avista Regulation No. 24)

154.02 Removal of Defective Meters from Service	Removal of Defective Meters from Service. No meter that is mechanically defective shall be placed in service or allowed to remain in service after the defect has been discovered. When any gas meter is not connected in service, the inlet and outlet shall be capped to prevent the drying out of the diaphragms.	No meter that is mechanically defective shall be placed in service or allowed to remain in service after a defect has been discovered. (Avista Regulation No. 24)
155.01 Testing of Meters	All tests to determine the accuracy of registrations of gas service meters shall be made with a suitable meter prover or testing equipment. Unless exempted by order of the Commission, at least two test runs shall be made on each bellows type displacement meter, the results of which shall agree with each other within one-half of one percent.	Intentionally Omitted
155.02 Gas Flows During Testing	The rate of flow to be used in testing meters having capacities up to and including three thousand (3,000) cubic feet per hour shall be twenty (20) percent and one hundred (100) percent of the rated capacity. The one hundred (100) percent capacity or open run test shall not be taken into consideration in arriving at the accuracy of these meters. Meters having capacities of above three thousand (3,000) cubic feet per hour, except orifice meters, shall be tested both at twenty (20) percent and one hundred (100) percent of their capacity. For the purpose of determining the accuracy of these meters, the average of twenty (20) percent and one hundred (100) percent tests shall be used.	New Meter Testing Program. a. New meters shall be factory tested and certified to meet accuracy criteria as specified herein. b. Acceptance testing shall be performed by the Company prior to installation of new meters per the Avista Utilities Gas Standards Manual. Installed Meters Testing Program. a. Installed meters shall be inspected and tested against metering tolerance prescribed herein and per the Avista Utilities Gas Standards Manual. b. Meters found to be outside the prescribed tolerances shall be immediately adjusted or replaced. No meter shall be reinstalled if found to be more than two (2) percent slow or fast when tested at the prescribed rate(s) of flow. (Avista Regulation No. 25.C)

156.01 Records of Meter Tests	Each gas corporation shall keep records of tests of the accuracy of each of its meters, until superseded by a later test, but not less than two years. These records shall give: a. sufficient information to identify the meter, b. the reason for the test, c. the date of the test and reading of the meter, d. the name of the person making the test, and e. the accuracy as found and as left, together with enough of the data taken at the time of the test to permit the convenient checking of the methods employed and the calculations.	Meter history records shall be maintained until superseded by a later test, but not less than two years. These records shall give: 1. sufficient information to identify the meter, 2. the reason for the test, 3. the date of the test and reading of the meter, 4. the name of the person making the test, and 5. the accuracy as found and as left, together with enough of the data taken at the time of the test to permit the convenient checking of the methods employed and the calculations. (Avista Regulation No. 25.B)
156.02 Results of Meter Tests	Each gas utility shall annually make tabulations of the results of all meter accuracy tests required by these rules.	After December 31st of each year, results of the installed meter testing program will be summarized, analyzed, and made available at the request of the Commission. (Avista Regulation No. 25.A)
157 Meter Tests Requested by Customers	Section 61-522, Idaho Code, states: Consumer may have commodity or appliance tested. Any consumer or user of any product, commodity, or service of a public utility may have any appliance used in the measurement thereof tested upon paying the fees fixed by the commission. The commission shall establish and fix reasonable fees to be paid for testing such appliances on the request of the consumer or user, the fee to be paid by the consumer or user at the time of his request, but to be paid by the public utility and repaid to the consumer or user if the appliance is found defective or incorrect to the disadvantage of the consumer or user under such rules and regulations as may be prescribed by the commission.	The Company will, without charge, test the accuracy of registration of a meter upon request of a Customer, provided that the Customer does not request such a test more frequently than once in a 12-month period. If a Customer requests more than one meter test within any 12-month period, the Company shall inform the Customer, prior to the test, that if the meter is found to register within the 2 percent accepted tolerance standard, under normal operating conditions, the Customer shall be required to pay the actual cost to perform the meter test. No billing adjustment shall be required if the test results show an average registration error of less than 2 percent. (Avista Regulation No. 25.D)

NOTICE OF CANCELLATION

NOT MEASUREMENT SENSITIVE

MIL-STD-105E
NOTICE 3
06 February 2008
SUPERSEDING
NOTICE 2
26 March 2001

MILITARY STANDARD

SAMPLING PROCEDURES AND TABLES FOR INSPECTION BY ATTRIBUTES

MIL-STD-105E, dated 10 May 1989, is hereby canceled. Future acquisitions may refer to: MIL-STD-1916, "DoD Preferred Methods for Acceptance of Product", or ANSI/ASQ Z1.4, "Sampling Procedures and Tables for Inspection by Attributes".

Users are cautioned to evaluate these documents for their particular application before citing it as a replacement document.

(Copies of MIL-STD-1916 are available online at http://assist.daps.dla.mil or from the Standardization Document Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094.)

(Copies of ANSI/ASQ Z1.4 are available online at www.asq.org or ASQ Distribution Center, 5131 S. Third Street, Milwaukee, Wisconsin 53207-6028.)

Custodians:
Army – AR
Navy – OS
Air Force – 10

Preparing activity:
Army – AR

(Project QCIC-2008-001)

Note: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST online database at http://assist.daps.dla.mil

ASMC N/A

AREA QCIC

DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.

Small-capacity meters up to 1000 CFH are grouped into "families" based on the state in which they are installed, the manufacturing date, and the type and make of the meter. For example, all American AC250TC meters manufactured in the year 1980 and set in the state of Idaho constitute one family. A statistical sampling of meters to be tested in each family is generated at the beginning of the year. The number of meters to be tested is determined by the size of the family and the past performance of that family.

For all other meter sizes, eligible meters are selected based on their type, age, and the last test date.

Meters that are eligible for PMC may be pulled either through a dedicated PMC service order or when meter sites are visited for other purposes. The following table lists the requirements by meter type and size.

Meter Type and Size	Test Frequency
Diaphragm, 250-1000 CFH	Statistical sampling
Diaphragm, between 1000 and 3000 CFH	Every 10 years
Diaphragm, 3000 and greater CFH	Every 5 years
Rotary, all sizes	Differential test every 5 years
Turbine, all sizes	Spin test annually and proof tested every 10 years

Prover Calibration Interval

Meter Provers	Calibration Interval
SNAP Prover or Bell Prover	Every Second Calendar Year
Transfer Prover	Every Second Calendar Year

AVISTA UTILITIES

GAS METER MEASUREMENT PERFORMANCE PROGRAM

(PMC PROGRAM)

Attachment 4
Case No. AVU-G-18-07
Staff Comments
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CONTENTS

SCOPE

This procedure covers the methodology, testing requirements, and annual reporting guidelines for Avista's gas meter measurement performance testing program (PMC Program) for new and in-service meters.

Deviations or changes to this SOP (Standard Operating Procedure) shall be approved by the Gas Measurement Manager. Material changes require concurrence with the governing commission. Non-material changes shall be submitted to the commissions in conjunction with annual meter performance statistics.

GENERAL

COMPLIANCE

Oregon: Gas meter testing requirements for Avista are promulgated by Oregon Administrative Rules, Chapter 860, Division 023 "Service Standards", Section 0015 (Testing Gas and Electric Meters). It is the intent that this program is in accordance with the aforementioned Oregon Administrative Rules.

Idaho: Gas meter testing requirements for Avista are promulgated by Title 31, Chapter 1, "Service Rules for Gas Utilities", IDAPA 31.31.01.000, Rules 151-200 (Standards for service). Avista gas meter testing program is completed in accordance with IDAPA 31.31.01.0000* and Avista Gas Meter Testing Program dated 1/1/2012.

*(Rule 152 – Avista's random sampling program is completed for meters 0-1000 CFH and in accordance with ANSI/ASQ Z1.9, Inspection by Variables. The IDAPA rule refers to the obsolete military standard 105D, Inspection by Attributes.)

Washington: Gas meter testing requirements for Avista are promulgated by Washington Administrative Code, Chapter 480-90 "Gas companies - operations", Section 333 (Initial accuracy of meters), Section 338 (Metering tolerance), Section 343 (Statement of meter test procedures), and Section 348 (Frequency of periodic meter tests. Avista gas tariff Rule No. 170, Section 20, effective November 30, 2011, has been approved and is in compliance with the requirements of WAC 480-90 and prescribes the minimum inspection and testing requirements. It is the intent that this program is in accordance with WAC 480-90.

HISTORY

Avista's current random meter measurement performance program is in accordance with ANSI Z1.9 (Inspection by Variables). Random sampling and testing is completed for all domestic meters 1000 CFH and smaller. The program was revised and upgraded in 2009. The prior program was in accordance with inspection standard ANSI Z1.4 (Inspection by Attributes). The change in inspection standard and programmatic changes were completed in order to enhance the quality and accuracy of the measurement performance program.

In 2011 the gas meter testing program was enhanced as follows:

- Random sampling program - Redefined a meter population. Previously a meter population was defined as meters of the same model, installed in the same State jurisdiction, and purchased in the same year. The revised definition for a meter population now includes meters of the same model, size, and manufactured in the same year. The new definition removes the criteria to test meters by state. A statistical analysis of meter testing results for all three (3) states revealed that the mean accuracy and standard deviation of accuracy about the mean are similar for all three states and that any difference is not statistically significant, indicating that state test results can be combined. Random sampling gas meter testing requirements for 2012 were developed using the revised meter population definition.

- Installed turbine Meters: Changes were made to expand turbine testing requirements to include both single rotor and dual rotor auto adjust meters.

- Installed rotary meters: Changes were made to provide clarification regarding necessary test requirements for rotary meters.

I. Tests of Customer Meters

a. Avista shall maintain a quality control program to verify performance accuracy of new meters and installed meters.

b. Testing of Small Capacity Meters. All meters with capacities up to and including one thousand (1,000) cubic feet per hour (cfh) at ½" differential pressure that have been in service ten (10) or more years as established by either the last install date or manufacture date shall be tested through annual random sampling using sample size methods in accordance with ANSI/ASQ-Z1.9 or other generally accepted statistical method that conforms to the requirements of the applicable sections of ANSI B.109.1 and B109.2 measuring in-service performance of diaphragm type gas meters.

c. Testing of Larger Capacity Meters. All meters with capacities greater than one thousand (1,000) cfh that have been in service ten (10) years as established by either last install or manufacture date shall be replaced or field tested based on a periodic schedule. Diaphragm type meters shall be tested in accordance with applicable sections of ANSI B109.1 and B109.2. Rotary type meters shall be tested in accordance with applicable sections of ANSI B109.3.

II. Customer Meter Accuracy

a. Accuracy of Meters
   i. Pressure Differential (Diaphragm) Meters:
      1. A new gas meter installed for the use of any customer shall not be more than one (1) percent slow or fast.
      2. Every meter removed from service and opened for repair shall have the meter tolerance adjusted to 100% plus or minus 0.5%, with no greater spread than 0.7% between the check and open prior to being reinstalled.
      3. Meters not opened for repairs may be reinstalled without adjustment if found to be not more than two (2) percent in error fast or slow, when passing as in both instances at the test rates provided for in Section E (Customer Meter Test Loads).
   ii. Rotary Meters
      1. A new gas meter installed for the use of any customer shall not be more than one (1) percent slow or fast.
      2. Meters inspected by differential testing shall confirm that the meter is performing within 150% of the manufacturer's specification for differential pressure at the operating pressure.
      3. Every meter tested by proving shall be adjusted to be not more than two (2) percent slow or fast before being reinstalled.
   iii. Turbine Meters
      1. A new gas meter installed for the use of any customer shall not be more than one (1) percent slow or fast.

2. Meters inspected by spin testing shall confirm that the meter is performing within the manufactures limits.
3. Every meter tested by proving shall be adjusted to be not more than two (2) percent slow or fast before being reinstalled.

b. Removal of Defective Meters from Service. No meter that is mechanically defective shall be placed in service or allowed to remain in service after the defect has been discovered. When any gas meter is not connected and in service, the inlet and outlet shall be capped to prevent the drying out of diaphragms. The exception shall be when stored indoors during the testing and/or repair process.

III. Customer Meter Test Loads

a. Testing of Meters, Test Equipment. All tests to determine the accuracy of registrations of gas service meters shall be made with a suitable meter prover or testing equipment as detailed in this standard.

b. Gas Flows During Testing. The rate of flow to be used in testing meters, except orifice type meters and high volume meters with capacity in excess of test equipment capability, shall be tested both at twenty (20) percent (Check) and one hundred (100) percent (Open) of their capacity. For the purpose of determining the accuracy of these meters, the average of the two flow volume tests shall be used.

c. High Volume Meters. Turbine and rotary meters that have rated capacities in excess of the mechanical limits of the proving equipment shall be tested at a minimum of two points of flow with each at or above a minimum of 15% of the rated capacity of the meter. For purposes of the test the two tests shall be averaged and shall conform to the standards set forth in Section II (customer meter accuracy).

IV. Meter Test Procedures and Test Records

a. Reporting
   i. After December 31 of each year, meter test results will be summarized, analyzed and forwarded to the Commission. Retention and filing of records will be in accordance with the appropriate Commission requirements.

b. Test Records
   i. After December 31 of each year, meter test results will be summarized and analyzed. Each gas utility shall annually make tabulations of the results of all meter accuracy tests required by these rules. Retention of records will be in accordance with the appropriate Commission as follows:
      1. Idaho: IDAPA 31.31.01.156
      2. Oregon: OAR 860-023-0015(4)
      3. Washington: WAC 480-90-353

ii. Each gas corporation shall keep records of tests of the accuracy of each of its meters, which may be superseded by a later test, but shall be maintained for not less than two years. These records shall give:

1. sufficient information to identify the meter,
2. the reason for the test,
3. the date of the test and reading of the meter,
4. an identification of the person making the test, and
5. accuracy, as found and as left, together with enough of the data taken at the time of the test to permit the convenient checking of the methods employed and the calculations.

c. Technical Standard. Technical performance requirements for diaphragm natural gas meters shall be per the current versions of ANSI B109.1 and ANSI B109.2. Technical performance requirements for rotary type natural gas meters shall be per the current versions of ANSI B109.3.

d. Uniquely Defective Test. An individual meter test result within a random sample of more than 10% error shall be declared a uniquely defective test and disregarded. A substitute test will be made with meter selected from within the same test family. Subject meter shall be adjusted or replaced.

V. New Meters

a. New meters shall be factory tested and certified to meet accuracy criteria specified by Section D.

i. Manufacturers shall provide results of new meter testing that conforms to generally accepted practice for meter accuracy and performance. Diaphragm meters shall meet the standards set forth in ANSI B109.1 and ANSI B.109.2. Rotary meters shall meet the standards set forth in ANSI B109.3.

b. Inspection and acceptance testing by the Utility prior to installation of new meters.

i. Each meter shipment will be inspected for physical damage. Meters found to be damaged or in damaged packaging will be tested, repaired and/or calibrated or returned to the manufacturer as described herein. All costs for tests, return shipping and/or calibration to meters described in this section shall be borne by the manufacturer.

ii. Normal acceptance testing described herein, not associated with physical damage found on arrival of the shipment, will be performed by the Utility at the Utility's expense for all meters not factory tested prior to shipment. Expanded testing beyond normal test quantities for shipments found to be non-conforming through acceptance testing will be paid for by the manufacturer or the shipment returned to the manufacturer per negotiations between the Utility and the manufacturer.

c. New diaphragm type meters, less than or equal to 1000 CFH:

i. The methodology for the random sampling of new meters is derived from ANSI/ASQ Z1.9 or other generally accepted statistical method that conforms to the requirements of the applicable sections of ANSI B.109.1 and B109.2.

1. The lot size to determine random sample quantity shall be the size of the shipment
2. Acceptable Quality Limit (AQL) for analysis of new meters will equal 1.5.

ii. Sample size:

1. Normal inspection is the default inspection level.
2. Sample size for meter types with five (5) test histories are eligible for application of switching rules in general accordance with the guidelines contained within the Standard as modified below.
3. Switching Rules:

a. Normal to tightened: Switching rules for transition from normal to tightened inspection shall be applied if 2 out of 5 lots have been rejected on original inspection. Testing beyond the sample size for normal inspection level will be paid for by the manufacturer.
b. Tightened to Normal: Switching rules for transition from tightened to normal inspection may be applied when testing has been at the tightened level and 5 consecutive batches have been acceptable on original inspection
c. Normal to Reduced: Switching rules for transition from normal to reduced inspection (inspection level II to inspection level III) may be applied if:

i. Preceding 5 lots have been on normal inspection and none have been rejected, AND
ii. Meter model has been in steady production without major design modifications (as determined by the Company).

d. Reduced to Normal: Switching rules for transition from reduced to normal (inspection level III to inspection level II) shall be applied if:

i. A batch is rejected under reduced inspection, OR
ii. Meter model has not been in steady production or a major design modification has occurred (as determined by the Company).

4. Random sampling per the Standard shall be discontinued if 5 consecutive lots under tightened inspection are not accepted. Acceptance procedures

as detailed herein shall not be resumed until corrective action has been taken. At that time, tightened inspection procedures shall be used.

d. New diaphragm meters, greater than 1000 CFH.

   i. New large capacity diaphragm meters shall be tested against metering tolerance of Section D.
   ii. Meters found to be outside of tolerance shall be adjusted per section D. If the meter cannot be adjusted within these standards, it shall be returned to the manufacturer.

e. New rotary meters.

   i. Rotary meters shall meet the accuracy requirements as specified in Section D and appropriate requirements of ANSI B109.3.

f. New turbine meters.

   i. New turbine meters shall meet the accuracy requirements as specified in Section D and shall be spin tested at installation to verify they will operate within the accuracy limits as specified by the manufacture.

VI. Installed meter testing program

a. General: Meters shall be inspected and tested against metering tolerance prescribed in Section D. Meters found to be outside the tolerances shall be immediately adjusted or replaced.

b. Domestic meters, diaphragm type 1000 CFH and smaller, randomly sampled: A random sample of domestic meters shall be selected, tested against tolerances prescribed by Section D.1, and analysis conducted using the Standard. The annual random sampling program shall begin during the 10th year after meter manufacture date. The methodology for sample sizes and analysis for the meter testing program is derived from ANSI/ASQ Z1.9 (hereafter may be referred to as the Standard) or other generally accepted statistical method that conforms to the requirements of the applicable sections of ANSI B.109.1 and B109.2 measuring in-service performance of gas meters.

   i. The lot size to determine random sample quantity shall be the size of the meter population. A meter population should include randomly sampled meters in approximate proportion to the number of meters installed in each operating area.
   ii. A meter population is defined as meters of the same model, size, and manufactured year.

      1. Meter population is synonymous with the term lot as used in the Standard.
      2. Major design changes to a meter model within a single year shall be a new population for sampling

iii. Random sample of meters to be tested within a population will be identified at the beginning of a calendar year. The year's random sample may be modified as described below. Meters shall be chosen at random and in sufficient quantities to meet the guidelines for sampling as detailed in the standard.

1. Every meter in a population will be considered eligible for testing. If service work brings a service person to a meter that was not chosen via the beginning of year random sample, and the required test quota of meters has not yet been completed, the meter located at the service work site will be eligible for substitution into the test sample of the meter population for that year.
2. A meter in the beginning of year random sample list for the year will then be removed from the scheduled test list.
3. Meter populations 50 or fewer units are subject to modified sample size. Sample quantity shall be set to avoid repeat testing of a meter more than once every ten years.

iv. Inspection Levels, Sample Size and Test result analysis:

1. General: Analysis of population sample results shall conform to the guidelines contained in the Standard. Acceptable Quality Limit (AQL) for analysis will equal 10.0.
2. Normal inspection is the default level of inspection.
3. Inspection levels for meter types with 5 year test histories are eligible for application of switching rules.
4. Switching rules:

    a. Normal to tightened: Switching rules for transition from normal to tightened inspection shall be applied if 2 out of 5 lots have been rejected.
    b. Tightened to Normal: Switching rules for transition from tightened to normal inspection may be applied when testing has been at the tightened level and 5 consecutive batches have been acceptable.
    c. Normal to Reduced: Switching rules for transition from normal to reduced inspection may be applied if:

        i. Preceding 5 lots have been on normal inspection and none have been rejected.

    d. Reduced to Normal: Switching rules for transition from reduced to normal shall be applied if:

        i. A batch is rejected.

5. Discontinue random sampling, failure of meter population. A meter population shall be declared defective and removed from service when:

a. 3 consecutive yearly inspections for a population under tightened inspection are not accepted based on AQL of 10.0 for overall performance (double specification limit).

6. Removal of failed meter population: Removal of a meter population of less than 2500 units during the year following having failed 2 consecutive years of testing under tightened test criteria. Removal of meter population of more than 2500 units may take place over 2 years. Removal of meter population of more than 5000 units may take place over 3 years. Removal of meter population of more than 7500 units may take place over 4 years.

c. Installed diaphragm meters, greater than 1000 CFH, periodic test.

i. 1001 CFH through 3000 CFH: Inspected and proved every ten (10) years or sooner.
ii. Larger than 3000 CFH: Inspected and proved every five (5) years or sooner.
iii. All meters shall be tested against metering tolerance of Section D.
iv. Meters found to be outside of tolerance shall be adjusted to within the tolerances as specified in Section D.

d. Installed rotary meters, periodic test.

i. Testing of installed rotary meters will be done using either a portable transfer prover or differential testing device. A differential test shall confirm a minimum of 2 points. Results of a differential test or prover test shall show that the meter is performing within the accuracy as detail in Section D.
ii. Meters shall be inspected and tested every five (5) years or sooner.

e. Installed turbine meters, periodic test.

i. Installed single rotor turbine meters shall be inspected and spin tested annually and determined to be within the manufactures acceptability limits. Turbine meters failing the spin test shall be removed from the field and repaired prior to any subsequent installation.
ii. Installed auto adjust meters shall be inspected annually and determined to be operating within the manufactures acceptability limits. Meter Delta A (ΔA), the difference between the main and sensing rotor pulses, that exceed the manufactures recommended operating parameters shall be repaired or replaced.
iii. All turbine meters will be transfer proven at a maximum interval of every ten years. Meters that are tested using a prover shall meet or exceed the meter accuracy requirements of Section D.

VII. Meter Test Equipment and Application

a. Meter test equipment

i. Transfer Prover. The accuracy of the testing equipment is ascertained through:

1. Monthly, in-house self testing procedures
2. Sending of Standard Meter Module to the manufacturer for periodic calibration. The period between factory calibrations shall not exceed five (5) years.

b. Sonic Nozzle Prover and Bell Prover.

i. The accuracy of the testing equipment is ascertained through an automatic test diagnostic. The diagnostic is completed each time the prover is powered on.

ii. The test equipment shall be factory calibrated every two (2) years.

c. Meters shall be tested on either: Sonic Nozzle, Bell Prover, or Transfer Prover.

APPENDIX – COMPLIANCE STANDARDS

- IDAPA 31.31.01.000, "Service Rules for Gas Utilities", Rules 151-200 (Standards for service)
- Avista OR Gas Tariff Rule No. 18, effective dates April 1, 2008 thru January 1, 2012
- OAR 860-023 (Public Utility Commission)
- Avista gas tariff Rule No. 170, Section 20, effective November 30, 2011
- WAC 480-90 "Gas companies - operations", Section 333, 338, 343, & 348

CERTIFICATE OF SERVICE

I HEREBY CERTIFY THAT I HAVE THIS 24TH DAY OF OCTOBER 2018, SERVED THE FOREGOING **COMMENTS OF THE COMMISSION STAFF,** IN CASE NO. AVU-G-18-07, BY MAILING A COPY THEREOF, POSTAGE PREPAID, TO THE FOLLOWING:

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