Agenda Date: 3/29/2019
Agenda Item: 6A

STATE OF NEW JERSEY

Board of Public Utilities
44 South Clinton Avenue, 3rd Floor, Suite 314
Post Office Box 350
Trenton, New Jersey 08625-0350
www.nj.gov/bpu/

RELIABILITY & SECURITY

IN THE MATTER OF THE JOINT PETITION OF THE GAS DISTRIBUTION COMPANIES FOR APPROVAL OF A METER SELECTIVE SAMPLING PROGRAM	)))	DECISION AND ORDER DOCKET NO. GO18101190

Parties of Record:

Justin Incardone, Esq., Public Service Electric and Gas Company
Marc Stubel, Elizabethtown Gas Company
Andrew Dembia, Esq., New Jersey Natural Gas Company
Stacey Mitchell, Esq., South Jersey Gas Company

BY THE BOARD:

The New Jersey Board of Public Utilities ("Board") has jurisdiction to oversee the gas meter sampling program pursuant to N.J.A.C. 14:6-4.1, Testing of Gas Meters. The primary purpose of this regulation is to establish a meter sampling program to ensure gas meter accuracy. The four (4) regulated gas distribution companies in the State of New Jersey are Public Service Electric and Gas Company, New Jersey Natural Gas Company, Elizabethtown Gas Company and South Jersey Gas Company, ("GDCs"). The role of Board Staff ("Staff") is to monitor the GDCs' meter testing programs.

N.J.A.C. 14:6-4.2(a) and (b), Periodic Meter Testing, requires gas meters to be tested on a ten (10) year schedule or by a Board approved sampling program established in accordance with American National Standards Institute ("ANSI") B109.[1] ANSI B109 is the basic standard of manufacturing and construction of gas meters and outlines that a sound statistical sampling technique should be utilized. ANSI B109 further states that "a statistical sampling program for testing gas meters should conform to the general provisions set forth in this section and shall be based on accepted principles of statistical sampling."[2] Meter testing results must be within the adjustment limits in accordance with ANSI B109. Staff initiated a process to review meter sampling data to evaluate current meter sampling programs. Staff reviewed six (6) years of data from each GDC's meter sampling programs. In March 2016, Staff began meeting with the GDCs to evaluate current meter sampling practices as well as review a uniform standard across the GDCs. Following the evaluation, Staff was able to draw several conclusions. First and

[1] ANSI B109 is available online at www.ansi.org.
[2] ANSI B109.1.4.3.2.1-2000, AGA. XQ0010 (June 2000).

foremost, a uniform protocol is not utilized by the GDCs across the industry to evaluate gas meter accuracy results. Specifically, the percentage of meters tested by each of the GDCs varies. Staff further determined that a national standard consistent with ANSI B109 guidelines should be adopted. Staff held multiple meetings with the GDCs to discuss updating the sampling techniques, to agree upon a uniform methodology that would be consistent with national guidelines, and to reach a consensus on a single plan which would benefit the public. Because the Rules state that a sampling plan must be consistent with ANSI B109, and ANSI B109 states the basic rules of what must be included in a statistical sampling plan, it was important for the GDCs to agree upon one nationally recognized standard. The standard that was agreed upon and is most relevant to gas meters is the ANSI Z1.4 Sampling Procedures and Tables for Inspection by Attributes. Utilizing Z1.4 staff and the GDCs have an agreed upon protocol that is outlined in the attached instructions that create a uniform set of sampling procedures.

Following the meetings with staff, on October 23rd, 2018 the GDCs filed a joint petition seeking Board approval of an updated meter sampling program applying the Z1.4 standard.

On February 22, 2019, Rate Counsel indicated that it did not object to the plan so long as no special rate treatment will be accorded to the GDCs.

DISCUSSION AND FINDINGS

The Board's rules at N.J.A.C. 14:6-4.2 provide that no gas utility shall permit a meter to remain in service for more than ten years unless a meter sampling program has been approved by the Board. By and through their Petition, the GDCs seek Board approval of an updated meter sampling program.

The Board notes that ANSI Z1.4 is a statistical sampling technique published by The Statistics Subcommittee of the Accredited Standards Committee Z1 on Quality Environment, Dependability and Statistics. This publication is peer reviewed and utilizes current statistical models. The utilization of this testing protocol by all of the GDCs will provide uniformity and more certainty with regard to the testing of meters as required by the Board's regulations. This protocol is a comprehensive sampling program with clear guidelines which can be referenced and monitored, allowing for more precise and consistent reports. Additionally, the updated reports and forms will provide staff with appropriate information to continue to review and monitor GDC meter sampling.

The Board **FINDS** that, based on the record in this matter, Staff has generated quarterly data reporting forms and concise instructions derived from ANSI Z1.4. The Board also **FINDS** that the newly adopted standard will hold meter accuracy to a stricter, nationally recognized standard that will be updated periodically and groups of nonconforming meters will more easily be identified and repaired or replaced. As a result, the Gas Utilities Meter Sampling Program will produce statistically sound results which are not only inclusive of all four (4) GDCs, but also provide a positive benefit in serving the public interest.

Accordingly, and consistent with N.J.A.C. 14:6-4.2 the Board **HEREBY ORDERS** that the GDCs shall use a Meter Sampling Program implementing ANSI Z1.4 as outlined in the joint petition and the forms and instructions derived by Staff to report quarterly meter testing results. The quarterly reporting forms are attached to this Order and shall be used as guidelines for the approved gas meter sampling program.

After consideration of the matters, the Board **FURTHER FINDS** these revisions to be reasonable and in the public interest and **HEREBY ACCEPTS** these revisions. The revised meter sampling program shall be implemented on January 1, 2020, to allow the industry time to update their meter sampling programs.

This Order shall be effective on April 8, 2019.

DATED: 3/29/19

BOARD OF PUBLIC UTILITIES
BY:

JOSEPH L. FIORDALISO
PRESIDENT

MARY-ANNA HOLDEN
COMMISSIONER

DIANNE SOLOMON
COMMISSIONER

UPENDRA J. CHIVUKULA
COMMISSIONER

ROBERT M. GORDON
COMMISSIONER

ATTEST:

AIDA CAMACHO-WELCH
SECRETARY

I HEREBY CERTIFY that the within document is a true copy of the original in the files of the Board of Public Utilities.

IN THE MATTER OF THE JOINT PETITION OF THE GAS DISTRIBUTION COMPANIES FOR APPROVAL OF A METER SELECTIVE SAMPLING PROGRAM
DOCKET NO. GO18101190

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GAS METER SAMPLING RETURN COVER SHEET
IN CONJUNCTION WITH ANSI Z1.4

INSTRUCTIONS: THIS COVER SHEET SHALL BE FILLED OUT AND RETURNED WITH THE GAS METER TEST RESULTS

FROM: **COMPANY:**
RESPONSIBLE PERSON:
ADDRESS:
ADDRESS:
ADDRESS:

TESTING PERIOD:

TO: **THE NEW JERSEY BOARD OF PUBLIC UTILITIES**
44 SOUTH CLINTON AVE.
P.O. Box 350
TRENTON, NJ 08625

PLEASE FILL IN THE APPROPRIATE INFORMATION BELOW.

I,
Position/Title:
Company:

Do hereby certify that the within report consisting of this sheet and supplementary sheets have been prepared under my direction, that I have examined the said report and to the best of my knowledge and belief, the information contained herein is a correct report of all meter tests made by the Company during the period stated.

Signature:

Date:

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P.O. BOX 350
TRENTON, NJ 08625-0350

TABLE I, PAGE ONE
GAS METER TESTING DATA
COMPANY:_______________
YEAR/QUARTER:_______________

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
GROUP DESIGNATION I	GROUP DESIGNATION II	# IN SERVICE	NORMAL OR TIGHTENED (N/T)	# TESTS DUE PER CODE LETTER	# METERS TESTED 1ST QUARTER	# METERS TESTED 2ND QUARTER	# METERS TESTED 3RD QUARTER	# METERS TESTED 4TH QUARTER	# METERS TESTED (YTD)	# SLOW METERS (YTD)	# ACCURATE METERS (YTD)	# FAST METERS (YTD)	# FAULTY METERS	ACCEPTED (AC) OR REJECTED (RE)	COMMENTS

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TABLE 1, PAGE TWO
GAS METER TESTING DATA
COMPANY:_____
YEAR/QUARTER:_____

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
GROUP DESIGNATION	GROUP DESCRIPTION	YEAR IN SERVICE	NORMAL OR TIGHTENED (N/T)	# TESTS DUE PER TEST CODE LETTER	# METERS TESTED 1ST QUARTER	# METERS TESTED 2ND QUARTER	# METERS TESTED 3RD QUARTER	# METERS TESTED 4TH QUARTER	# METERS TESTED (YTD)	# SLOW METERS (YTD)	# ACCURATE METERS (YTD)	# FAST METERS (YTD)	# FAULTY METERS	ACCEPTED (A) OR REJECTED (R)	COMMENTS

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TABLE I, PAGE THREE
GAS METER TESTING DATA
COMPANY:__________
YEAR/QUARTER:__________

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
GROUP DESIGNATION I	GROUP DESIGNATION II	# IN SERVICE	NORMAL OR TIGHTENED (N/T)	# TESTS DUE PER CODE LETTER	# METERS TESTED 1ST QUARTER	# METERS TESTED 2ND QUARTER	# METERS TESTED 3RD QUARTER	# METERS TESTED 4TH QUARTER	# METERS TESTED (YTD)	# SLOW METERS (YTD)	# ACCURATE METERS (YTD)	# FAST METERS (YTD)	# FAULTY METERS	ACCEPTED (AC) OR REJECTED (RE)	COMMENTS

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TABLE II
PERIODIC METERS TEST DATA
COMPANY:____________
YEAR/QUARTER:__________

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
GROUP DESIGNATION I	GROUP DESIGNATION II	NUMBER IN SERVICE 1ST OF YEAR	# METERS DUE FOR TESTING THIS YEAR	METER TESTING CYCLE (YEARS)	# METERS TESTED (1ST QUARTER)	# METERS TESTED (2ND QUARTER)	# METERS TESTED (THIRD QUARTER)	# METERS TESTED (FOURTH QUARTER)	YTD # METERS TESTED	# SLOW METERS (YTD)	# ACCURATE METERS (YTD)	# FAST METERS (YTD)	FAULTY/DNR METERS (YTD)	COMMENTS

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TABLE III
TALLY OF METERS TESTS DUE TO "CUSTOMER COMPLAINTS" AND "OTHER REASONS"
COMPANY: _____
YEAR/QUARTER: _____

	1ST QUARTER	2ND QUARTER	3RD QUARTER	4TH QUARTER		
	# METER TESTS PERFORMED	# METER TESTS PERFORMED	# METER TESTS PERFORMED	# METER TESTS PERFORMED	YTD TOTAL	COMMENTS
CUSTOMER COMPLAINTS & OTHER REASONS						

G

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TABLE IV
REJECTED METER DATA
COMPANY:_______________
YEAR/QUARTER: _________

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
				YEAR 0		YEAR 1		YEAR 2		YEAR 3		YEAR 4		YEAR 5	
GROUP DESIGNATION I	GROUP DESIGNATION II	REJECTION DATE	TOTAL # REJECTED METERS	# METERS REPLACED	REMAINING # METERS IN SERVICE	# METERS REPLACED	REMAINING # METERS IN SERVICE	# METERS REPLACED	REMAINING # METERS IN SERVICE	# METERS REPLACED	REMAINING # METERS IN SERVICE	# METERS REPLACED	REMAINING # METERS IN SERVICE	# DELIQUENT METERS	REJECTION RATIONALE

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GAS METERS GENERAL INFORMATION AND DATA COMPILATION USING ANSI Z1.4

PREAMBLE

ANSI/ASQ Z1.4-2003 (R2013), Sampling Procedures and Table for Inspection by Attributes is used as a reference in this document. This sampling Plan is kept constant and dictates how many meters shall be tested. A conforming meter is a meter that has an accuracy of 98% to 102%. A non-conforming meter(s) is a meter that that was able to be tested for accuracy but failed, i.e. Its' accuracy is outside of the aforementioned range of 98% to 102%. The premise for ANSI Z1.4 is that the number of meters that pass must be greater than that fail. These numbers are derived by ANSI Z1.4.

A. REGULATIONS

The following regulations shall be adhered to:
N.J.A.C. 14:3 4.4 Testing of Utility Meter Testing Equipment
N.J.A.C. 14:3-4.7 Meter test reports and records
N.J.A.C. 14:6-4.1 Testing of Gas Meters
N.J.A.C. 14:6-4.2 Periodic Meter Testing
N.J.A.C. 14-6-4.3 Determination of Gas Meter Accuracy

B. DATA SHEETS

The attached data spread sheets shall be used to report gas meter tests results to the New Jersey Board of Public Utilities ("The Board"). The four spread sheets are:

Cover Sheet
Table I – Gas Meters Testing Data Per ANSI Z1.4 (3 copies)
Table II – Periodic Meters Data Sheet
Table III - Customer Complaint and "Other Reasons" Data Sheet
Table IV – Rejected Meter Data Sheet

The meter testing information shall be entered correctly and submitted to The Board on schedule (see section J below) to satisfy N.J.A.C. *14:3-4.7*.

C. REQUIRED PROTOCOL(S)

ANSI/ASQ Z1.4-2003 (R2013) is required to analyze meter test data results.

D. TESTING PROCEDURES CONSTANT PARAMETERS

PHASE ONE METERS: NEWLY PURCHASED METERS

1. Assurance Quality Limit (AQL): kept constant at 10.0
2. Inspection Level: kept constant at Level I.
3. All refurbished and rebuilt meters shall be tested before being placed back into service.

PHASE TWO METERS: AT FIVE YEARS OF SERVICE

1. Assurance Quality Limit (AQL): kept constant at 10.0
2. Inspection Level: kept constant at Level I.

PHASE THREE METERS: AT TEN YEARS OF SERVICE

1. Assurance Quality Limit (AQL): kept constant at 10.0
2. Inspection Level: Level II unless tightened inspection is required.

The above parameters shall not be changed.

E. DETERMINE SAMPLE GROUP CODE LETTER, SAMPLE SIZE AND AC/RE VALUES FROM ANSI Z1.4

1. Go to *Table I – "Sample Size Code Letters"* (p10).
   Coordinate the "Lot or batch size" and "General Inspection Level II" and select the letter that Coincides with the size of the group to be tested.

2. Go to *Table II-A "Single sampling plans for normal inspection (Master table)"*, (p11).
   Find the sample size code letter determined in #1 above. The sample size (number of meters) to be tested is listed in the column titled "sample size". In the AQL = 10.0 column extrapolate the Ac and Re values. The Ac and Re parameters dictate if a model is accepted or rejected.

3. The number of required meter tests for the year can be distributed over four quarters. After the meter tests for the type are completed for the year, tally the number of non-conforming meters. If the number of non-conforming meters is equal to or less than the acceptance number, the group will be accepted. If the number of non-conforming meters is equal to or greater than the rejection number, the lot shall be rejected.

F. TESTING SCHEMES

Scheme 1: A Group is tested and is accepted. Testing is continued under the normal inspection protocol the following calendar year.

Scheme 2: A Group is tested and is not accepted. If the error can be isolated to a specific subgroup, isolate and test the subgroup. This change in group must be clearly noted in the report for the period in which the change occurred. The parent group will need to be re-tested the following year to show that the error was removed and cured. If the error cannot be isolated, then the entire population is rejected. If the group is rejected, move to tightened inspection the following year.
See 2A, 2B and 2C below.

Scheme 2A: Utilizing the tightened protocol: if five consecutive random samples (five consecutive calendar years) are accepted, the type is returned to the normal protocol.

Scheme 2B: Utilizing the tightened protocol: if two consecutive random samples, the type is rejected. The entire Group is replaced in five years. See item K below.

Scheme 2C: Utilizing the tightened protocol: if two of five consecutive random samples fail, the group is rejected. The entire type is replaced in five years. See item K below.

G. FIVE YEAR REPLACEMENT PROTOCOL FOR REJECTED MODELS

All rejected Groups shall have all meters replaced by the end of five years: year 0 being the year of discovery plus four years for removal. All data shall be recorded in Table IV of this document. If it is apparent that the utility may not be able to satisfy this requirement the Board shall be notified. Enter the delinquent number of meters in column O.

H. TEST RESULTS

The categories for test results are:

1) Slow = <98% accurate
2) Accurate = 98%-102% accurate
3) Fast = > 102% accurate
4) Does Not Pass Gas (DNPG)
5) Does Not Register (DNR)
6) Indeterminate Meter Results (IND)

I. ADJUSTMENT OF NUMBER OF METERS TO BE TESTED DUE TO FAULTY METERS (DNPG, DNR AND INDETERMINATE METERS)

Meters that did not register ("DNR"), did not pass gas ("DNPG") or registered with indeterminate accuracy (IND), are considered faulty and cannot be tested for accuracy. Meters with these characteristics ***cannot*** be incorporated into the sampling population. Additional random samples must be removed to satisfy the original meter testing requirement.

For example: if a type requires 158 samples and 158 samples are pulled. And, it is discovered that 42 of the samples "do not pass gas", "do not register" or are "indeterminate", 42 additional meters shall be pulled to satisfy the 158 sample number requirement. Faulty meters are listed in Table 1, Column N.

J. TEST COMPLETION AND DUE DATES

All sampling and periodic meter tests are to be completed by the end of the years the tests are due. If they ae not completed the Board shall be contacted.

Pursuant to *N.J.A.C. 14:3-4.7*: "Each utility shall provide the Board with summaries of all meter tests. Each utility have 500 or more meters shall report quarterly. Utilities having less than 500 meters shall report annually."

The quarterly reports are due: 1st quarter: May 31
2nd quarter: August 31
3rd quarter: November 30
4th quarter: March 31

K. ANNUAL REPORT: *N.J.A.C. 14:3-4.4(b)*

One of the following must be satisfied:

a. Pursuant to ***N.J.A.C. 14:3-4.4 (b)*** to comply with ***N.J.A.C. 14:3-4.4*** **(a)** utility "must have its meter testing equipment tested and sealed by NJ Weights and Measures"

or

b. Both of the following requirements must be met:

1. "Have its meter testing equipment tested and certified by a laboratory approved and recognized by National Institute of Standards and Technology (NIST) with testing equipment traceable to NIST." In addition:

   a. Supporting documents shall be supplied to NJBPU staff each year.
   b. Attach to a quarterly report on a cyclic yearly basis.

2. "Prior to utilizing the equipment for compliance with this subchapter, submit to the Board a written approval, issued by the Superintendent of NJ Weights and Measures, accepting the laboratory that performed the certification for purposes of compliance with this subchapter."

To be done once, unless there is a change in the laboratory doing the certification.

L. RETENTION OF TEST DATA

Beginning on the program start date of January 1st 2020, the last meter test data results shall be retained.

TABLE I: GAS METER TESTING DATA PER ANSI Z1.4

Meter Population Grouping and Sub-Groups

Meter populations are grouped by: Group Designation I (Column A) and Group Designation II (Column B). Grouping entails using like significant characteristics or similar characteristics of operation.

Large Group Designations may be subdivided into smaller groups for testing based on significant like characteristic(s) or similar characteristic(s) of operation. In addition it may be necessary to create a subgroup when an error is identified. This change in group must be clearly noted in the report for the period in which the change occurred.

When a group's population becomes too low to reasonably sample, it may be necessary to combine two or more groups with significant like characteristics or similar characteristics of operation. This change in group must be clearly noted in the report for the period in which the change occurred.

An example of meters with "like" characteristics: a utility purchased a model AC250 meter over a several year period. It was set in 1995 in three locations, A, B and C. The number of meters set in each location is 7062, 4473 and 9825, respectively. In addition, 675 were set in 2004 and 38 were set in 1956, each in a different location. Each group may be independent of each other.

The chart would resemble such:

AC250 Group	# METERS IN SERVICE (see item B below)
AC250-A	7062
AC250-B	4473
AC250-C	9825
AC250-2004	675
AC250-1956	38

Each is referred to as a "line item". It is satisfactory to use the term families, but families do not exist with respect to determining the number of meters to be tested.

COLUMN A: GROUP DESIGNATION I

Designate a characteristic for each group. If additional characteristics are required, use Column B.

COLUMN B: GROUP DESIGNATION II

List any additional characteristics for the Group in Column A.

Note: Column A and Colum B are where the groups are clearly broken into populations for random sampling. These groups shall not change unless clearly noted in the report for the period in which the change occurred.

COLUMN C: # IN SERVICE

Column B requires a tally of the total number of meters in service per Group.
Each meter in service must satisfy the two parameters below:

1. Stationed on customers' premises, in use, recording customer usage.
   OR
2. Generates revenue for the utility.

COLUMN D: NORMAL OR TIGHTENED (N/T)

Enter N or T depending upon whether or not the normal or tightened protocol is used, respectively.

COLUMN E: # TESTS DUE PER CODE LETTER

Enter the number of meter tests due per the ANSI code letter code as derived from *Table I-Sample size code letters*.

COLUMN F THRU I: THE NUMBER OF METERS TESTED FOR EACH QUARTER

This is the number of meters tested for each quarter for each "line item". At the fourth quarter, the year-to-date total number of meters tested shall be equal to the number of meter tests required for the entire year.

COLUMN J: # METERS TESTED (YTD)

Enter the number of meters tested year-to-date. This value changes every quarter.

COLUMN K: # SLOW METERS (YTD)

Enter the number of slow meters, i.e. have an accuracy of <98%. Enter the number of slow meters for the current quarter.

COLUMN L: # ACCURATE METERS (YTD)

Enter the number of meters that are accurate, i.e. have an accuracy of 98-102%. Enter the number of slow meters for the current quarter.

COLUMN M: # FAST METERS (YTD)

Enter the number of meters that are fast, i.e. have an accuracy of >102%. Enter the number of fast meters for the current quarter.

COLUMN N: #FAULTY METERS

Faulty meter are meters that DNPG, DNR or are IND.

COLUMN O: ACCEPTED (AC) OR REJECTED (RE)

Do not fill in this information until the required number of meters are tested.

Once testing is complete, i.e. all of the required number of meters are tested, determine if the type is accepted (AC) or rejected (RE). Enter the appropriate conclusion.

COLUMN P: COMMENTS

Enter any pertinent comment(s).

TABLE II: PERIODIC METERS TEST DATA

Table II is used to tally periodic meters test results. That the meters are periodic, 100% of the meters with tests due shall be tested by the end of the cycle year.

COLUMN A: GROUP DESIGNATION I
Designate a characteristic for each group. If additional characteristics are required, use Column B.

COLUMN B: GROUP DESIGNATION II
List any additional characteristics for the Group in Column A.

COLUMN C: NUMBER IN SERVICE FIRST OF YEAR
List the number of meters in service first of the year for each model.

COLUMN D: TOTAL NUMBER OF METERS DUE FOR TESTING
Tally the number of meters in service per each meter model.
Each meter in service must satisfy the two parameters below:

1. Stationed on customers' premises, in use, recording customer usage.
2. Concurrently generates revenue for the utility.

COLUMN E: METER TESTING CYCLE: PER *N.J.A.C. 14:6-4.2*
Enter the appropriate cycle (in years) for the meter model.

COLUMN F THRU I: NUMBER OF METERS TESTED (FOR EACH QUARTER)
This is the number of meters tested for each quarter. When entering the data for the fourth quarter, the year-to-date information shall be equal to the number of meters tested for the entire year.

COLUMN J: YTD # METERS TESTED
Enter the number of meters tested year-to-date, i.e. cumulative. Hence the value will change with every quarter.

COLUMN K: # METERS THAT ARE SLOW (YTD)
Enter the number of meters that are slow.

COLUMN L: # METERS THAT ARE ACCURATE (YTD)
Enter the number of meters that are accurate.

COLUMN M: # METERS THAT ARE FAST (YTD)
Enter the number of meters that are fast.

COLUMN N: FAULTY/DNR/DNPG METERS (YTD)
Enter the number of meters that DNPG, DNR or are faulty.

COLUMN O: COMMENTS
Enter any pertinent comments.

TABLE III

TALLY OF TEST RESULTS DUE TO CUSTOMER COMPLAINTS AND "OTHER REASONS" (COMBINED)

Table III is used to tally all meter test results that are generated due to "customer complaints" and "other reasons". Each quarter combine both totals for each category and enter in the table.

TABLE IV – REJECTED METERS

Table IV chronologically tallies the removal of rejected meters. A rejected meter is a meter removed from "in-service" due to individual or model accuracy flaws. Meters are logged into the table when they are first rejected, noting the reason for the rejection. Every quarter post-rejection, for four years, the meters are added to the tally to highlight how many meters are removed and how many meters are remaining "in-service". All meters to be removed within four years after discovery of the flaw. If all meters are not removed at the end of five years, enter the number of meters remaining in service in the column labeled "delinquent groups".

COLUMN A: GROUP DESIGNATION I
Designate a characteristic for each Group. If additional characteristics are required, use Column B.

COLUMN B: GROUP DESIGNATION II
List any additional characteristics for the Group in Column A.

COLUMN C: REJECTION DATE
List the month and year of rejection. A utility may have identical meter models with different rejection dates, and hence shall be independently listed.

COLUMN D: # TOTAL NUMBER OF REJECTED METERS
This is the number of in-service meters that are rejected, i.e. the entire number of meters in the rejected group.

COLUMN E: # METERS REPLACED
This is the number of rejected meters replaced at year 0, reported quarterly.

COLUMN F: # METERS IN SERVICE AT THE END OF YEAR 0
This is number of rejected meters remaining at the end of each quarter for year 0.

COLUMNS G: # METERS REPLACED DURING YEAR 1
This is the number of meters in the rejected group that are removed during year 1, one year post rejection.

COLUMN H: # METERS IN SERVICE AT THE END OF YEAR 1
After meters are removed one year post rejection, this is the number of meters remaining.

COLUMN I: # METERS REPLACED DURING YEAR 2
This is the number of meters in the rejected group that are removed two years post rejection.

COLUMN J: # METERS IN SERVICE AT THE END OF YEAR 2
This is the number of meters remaining at the end of year two after meter removal.

COLUMN K: # METERS REPLACED DURING YEAR 3
This is the number of meters in the rejected group that are removed three years post rejection.

COLUMN L: # METERS IN SERVICE AT THE END OF YEAR 3
This is the number of meters remaining at the end of year three after meter removal.

COLUMN M: METERS REPLACED DURING YEAR 4

This is the number of meters in the rejected group that are removed four years post rejection.

COLUMN N: METERS IN-SERVICE AT THE END OF YEAR 4

This is the number of meters remaining at the end of year four after meter removal. All rejected meters shall be removed by the end of this year.

COLUMN O: DELIQUENT GROUPS

This is the number of meters remaining in-service after the fifth year of meter removal. Hence, enter the number of meters that could not be removed by the end of the five year cycle.

COLUMN P: REJECTION RATIONALE

Note why the meter type(s) was rejected. This shall be entered Year 0.