

EXECUTIVE OFFICES

**INTERMOUNTAIN GAS COMPANY**

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IDAHO PUBLIC  
UTILITIES COMMISSION

April 30, 2009

Ms. Jean Jewell  
Idaho Public Utilities Commission  
472 W. Washington St.  
P.O. Box 83720  
Boise, ID 83720-0074

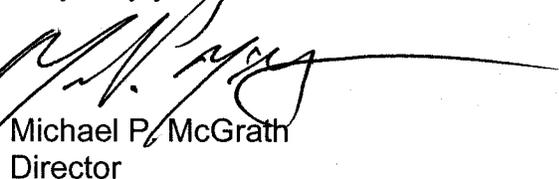
RE: Intermountain Gas Company's Quarterly Report pertaining to Lost and  
Unaccounted for Gas  
Case No. INT-G-08-03

Dear Ms. Jewell:

Attached for filing with the Idaho Public Utilities Commission are the original and seven  
copies of Intermountain Gas Company's Quarterly Report pertaining to Lost and  
Unaccounted for Gas.

If there are any questions regarding the attached, please contact me at (208) 377-6168.

Very truly yours,



Michael P. McGrath  
Director  
Gas Supply and Regulatory Affairs

MPM/sc

Enclosures

cc: K. F. Morehouse  
E. N. Book  
S. W. Madison

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## INTERMOUNTAIN GAS COMPANY

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### Responses to IPUC LUAF Gas Questions

**Question No. 1:** *Address LUAF. Does this team still meet? If not, why not? If so, who is on the team and what is it currently working on? What processes has it "identified, employed and evaluated that address the recovery of lost gas"? What informational source or statistics does the Company use to conclude that it has one of the lowest levels of LUAF in the natural gas distribution industry?*

**Response:** There is a working team at Intermountain comprised of a lead person from the departments of Billing Audit, Engineering, Accounting, Gas Supply, Gas Control, Meters and Information Technology. The processes identified and evaluated that address the recovery of lost gas are included herein as well as earlier reports sent to the Commission. A project currently underway that emerged consequent to the joint efforts of this team involves an audit of the Company's commercial AL1000 meter sets. Given the magnitude of the billing error than can occur on these larger meters due to the annual throughput on a typical AL100 meter, and, given the manageable size of this meter population, all 5,000 of these meters are being included as part of a current audit process. An update of the findings of this audit will be included in the next Lost Gas report to the Commission. In conjunction with queries made to other local utilities as well as statistics provided by Southern Connecticut Gas based on a 2004 DOT Report, Intermountain believes it has one of the lowest LUAF levels in the natural gas distribution industry.

**Question No. 2:** *You state that the Company conducts billing audits utilizing "variance reports whereby an auditor reviews billed consumption as compared to some standard." What is the standard? How many of these audits were conducted in 2007 and 2008? Please provide examples of these audits and how the "Low Usage Reports" have trended over time. Please provide any information developed by the Company showing how variance reports have trended over time.*

**Response:** The "standard" depends upon the type of audit being conducted as more fully outlined on the Company's report dated January 30, 2009. There are two main usage audits performed with each billing cycle – Low Usage and Zero Usage. The desired outcome of these audits is to discover any inaccurate billings due to the malfunctioning of the customer's meter. Although close to 200,000 billing audits are performed by the computer annually, only a very small percentage of these audits warrant further attention as outlined as part of the response to Question No. 3 below.

The "low usage" report analyzes each meter read in every cycle. It calculates the current measured usage and compares this usage/consumption to the previous year, same period for each premise. If the disparity is greater than 60% variance, the account appears on the report with the current usage (in CCF), the previous year – same period usage along with the usage from the previous month as a frame of reference. The analyst then reviews the account usage history to determine if the disparity is not in line with historical usage. Based on their personal judgment, the account is flagged for either a courtesy phone call to determine if there is valid reason for the lower-than-normal usage, or a check-

for-dead order is generated for the following day and a service technician is dispatched to field test the meter for functionality.

The standard used for 'zero usage' accounts is, again, the customer's consumption history and any relevant notes made on the account by the Customer Service Center. An account that is documented as "off" by the system, does not appear on this report. Only those accounts that there would be some expected consumption appear on this report. Again, personal judgment based on historical usage and any relevant information that can be gleaned from any notes is utilized. Based on the outcome of this analysis, a 'check for dead' order may be generated.

As previously stated in the LUAF report, the standard utilized is the customer's own historical consumption at that premise, or in the event the customer has not occupied the premise for a period of time that would allude to 'typical' usage, the historical usage on the premise is used as the determinant.

**Question No. 3:** *Please provide any information developed by the Company that shows how "correlated audits" that look at the "correlation between the customers' billed volumes and the size of the meter installed to serve that customer" have trended over time in terms of malfunctioning meters and programming problems ("foot drive error"). How many billing audits were completed in 2007 and 2008? How often has this type of audit determined that customers may have too large or small of meters?*

**Response:** Since 2007, Intermountain had provided the IPUC with Excel formatted Meter Adjustment Reports that contain the data necessary to evaluate trends in malfunctioning meters.

In 2007 Intermountain performed 7,382 "check for dead" billing audits; 520 or 7% of these meters were determined to have been dead. 2008 audits yielded 5,088 "check for dead orders" and 708, or 13%, were found to be dead.

Drive rate errors have decreased 39% (from 43 to 26 in 2007 and 2008 respectively). Pressure errors are down approximately 9% between these two years while the total dollar adjustments for errors of this type have decreased a total of 56%.

**Question No. 4:** *In relation to billing audits, how often are the "regular comparisons made between the natural gas delivered onto Intermountain's distribution system according to the interstate pipeline vs. those same volumes as measured by the Company's Gas Control Department?" Please provide any information developed by the Company showing how these regular comparisons have trended over time.*

**Response:** Intermountain compares its telemetered usage vs. the metered usage that Northwest Pipeline (NWP) records on a daily and monthly basis. These frequent comparisons enable Intermountain to find any material measurement variances with NWP's figures.

Intermountain's Gas Control department keeps historical telemetry records and variance-to-pipeline calculations. These records indicate the typical monthly variance for all compared telemetered gates is

0.5 % making trending unnecessary. If a measurement error were to occur, such an error will typically throw the daily comparisons off by approximately 5% or more, thus raising a red flag which will lead to further investigation.

**Question No. 5:** *How often does Intermountain Gas conduct “regular meter sampling whereby meters are pulled from the field and tested in a laboratory for accuracy”? What “multitude of measures” do meter audits include? How does Intermountain Gas sample? Please provide any information developed by the Company showing how identified meter accuracy resulting from this sampling has trended over time.*

**Response:** Intermountain Gas Company conducts continuing sampling of our residential meter population throughout the year, with a sample year beginning on June 1<sup>st</sup> and ending May 30<sup>th</sup> of following year. A rotation plan is developed by applying the MIL105D standard for sampling to the eligible families of company meters in service. These meters are then pulled from the field in the lot quantities assigned to respective years and brought to the meter shop for testing. The results of this testing is evaluated by meter family to determine the pass/fail of a family based on sampling procedure allowable defects.

During testing, meters are checked for registration accuracy and consistency of measurement between the mechanical meter index and the ERT unit.

No trends that affect the Company’s testing program have been discovered through the use of data records from meter testing program.

**Question No. 6:** *How often does Intermountain Gas conduct audits to determine which industrial customers may be consuming gas differently than they were a decade ago and therefore have meters that may have been warranted in the past and are no longer applicable today? Please provide any information developed by the Company summarizing the results of meter adequacy audits and how audit results have trended over time.*

**Response:** Monitoring of industrial customer loads is ongoing and equipment relevancy is evaluated annually. If an industrial customer requests a change in their deliverable volumes, this request would also warrant an evaluation of the customer’s existing meter size/set. In addition, on-site changes to customer facilities initiate a review of current metering packages to determine if changes in equipment are warranted. Any material differences in the customer’s therm consumption are investigated as they become apparent. Any necessary meter equipment changes are handled by each applicable district in conjunction with its Meter Department.

During the bi-annual Integrated Resource Plan process, Industrial customers are asked to fill out a survey which provides information relating to plans for facility changes and estimates of natural gas usage for the next five-year period. This forecast data is then compared to monthly, annual and longer-term trends in actual therm use which may then warrant potential changes to a customer’s meter set.

**Question No. 7:** *How many and what percentage of commercial and industrial customers have "Scada?" Are there plans to install more?*

**Response:** Intermountain has installed SCADA on 89 of our 110 Industrial customers (81%). These 89 tele-metered Industrials typically account for the vast majority of industrial usage. For example, the tele-metered customers used 97% (2,233,375 Dth) of the total 2,304,983 Dth billed in January 2009.

Intermountain continues to work towards installing SCADA at the facilities of its un-tele-metered customers. Two additional Industrial accounts should be converted to SCADA in 2009 and per paragraph 6.2 of Section D of Intermountain's General Service Provisions, all new contract (i.e. Large Volume) accounts are required to have telemetry installed prior to initiation of Large Volume service.

**Question No. 8:** *Please specify what steps have been taken by Intermountain to improve billing accuracy and quality control of installed meters. Please provide the technician dispatch schedule and a description of other field review methodology use to provide additional "eyes on" or "double checking" to assure billing determinates are properly assigned to meters.*

**Response:** A process is now in place to create auto-dispatch orders to audit any meter that has other than a one-foot drive that delivers ounces of pressure to the customer. These are generated and worked within the first two weeks of any new meter set or change in equipment and/or pressure at a customer location in order to rectify and correct billing parameters from the initial meter data entry.

This Meter Audit process is for all meters larger than 400 CFH and meters smaller than 400 CFH if they have pounds delivery or a 2 foot drive. The process calls for a different Service Tech than the one who installed the meter to perform an audit of the delivery pressure and drive rate as it relates to the customer and meter manufacturer requirements. If there is a correction, the timing allows Intermountain to make any correction prior to the first bill going out. The audit order is created 10 days after a meter is set and must be completed by 30 days after the initial meter set.

**Question No. 9:** *On what basis did the Company select the location of "field labs"? Please provide the results for 2007 and 2008 of the field lab comparisons of main feed throughput and metered end use consumption.*

**Response:** The field labs were identified based on system constraints and the goal of the testing. The goal of one test was to compare Williams meter measurement with IGC turbine/rotary measurement with a population of domestic meters. For this we needed to identify a community that was only being fed by one Williams/IGC tap. Four towns were identified and based on customer count and time to read meters. Inkom, Id was selected for this test.

The second test was intended to compare a rotary and turbine meter in low flow conditions to validate turbine meter manufacturer's data suggesting that turbine meters begin to lose measurement when operating at 15% or less of meter capacity. We were able to isolate a subdivision adjacent to the company and set up the meter run on our property.

We learned through the first test that our domestic meters compared to Intermountain's larger meters compared to Williams' measurement was accurate.

We validated through the second test that turbine meters do in fact lose measurement when operating near the 15% capacity and lower.

**Question No. 10:** *Please provide the "regular and programmed basis" schedule that Intermountain technicians follow to detect leaks in the entire distribution system. Please provide monthly leak detection results for the years 2007 and 2008.*

**Response:** IGC conducts leak survey of our distribution system per PHMSA code section 192.723, which requires the operator to conduct leak survey in business districts annually not to exceed 15 months, and outside business districts every 5 years not to exceed 63 months. Additionally, anytime we receive an odor call from a customer, we respond as an emergency. The results of these tests are being collected and will be reported under separate cover.

**Question No. 11:** *How is the estimate made of the escaped gas when human error leads to unintentional damage to the distribution system by an outside contractor or homeowner? Please provide the number of situations occurring in 2007 and 2008 and the amount of "found" gas estimated as a result of these situations.*

**Response:**

Gas loss, as it is commonly referred to, is calculated based on the line pressure, the size of hole in the line, size of the line and amount of time natural gas escaped. A summary of findings for 2007 and 2008 is shown below:

2007 - 656 occurrences	254,455 therms of gas loss calculated.
2008 - 495 occurrences	182,920 therms of gas loss calculated.

**Question No. 12:** *What is the calculation for converting metered cubic feet to billable therms and has Intermountain Gas found errors in its conversion due to pressure, temperature, and BTU readings? What are some examples that illustrate the "great care" Intermountain Gas takes in accurately determining these billing determinants? How has human error been a cause of calculating or determining the accurate billing determinants? What was the impact in 2007 and 2008 of conversion calculation error on lost gas totals?*

Natural gas meters measures the flows of gas that moves through its plenum in terms of a volumetric measurement recorded in cubic feet. The calculation for converting cubic feet to an energy or thermal value (i.e. Therm) (as previously demonstrated to the Staff by Staff member David Schunke), is based on a simple multiplication of three parameters: the average temperature, the Btu factor, and atmospheric pressure. There were no errors found in the billing of these three parameters. There was, however, refinements made to the each of the parameters as discussed below.

Daily temperatures are derived from NOAA's certified weather sites or sites defined by DTN/Weatherlogics when NOAA data is not available. Whenever there is a missed observed temperature, DTN provides data from an alternative weather site that is within a close weather proximity to the station with missed data. Temperature information is interfaced into our billing system through an automated process.

Btu factors are provided by Northwest Pipeline and are internally reviewed by our Gas Control department. Btu factors are also interfaced into the Billing System through an automated process. Both Temperature and Btu factor integration processes are reviewed by our internal data control group before they are approved to be used for billing.

Because Intermountain's service territory is widespread with diverse meteorological conditions, the Company increased the number of locations where daily temperature data is used to better match the weather experienced by our customers across a wide geographic service territory.

We also matched the altitude of our cities to the altitude provided by the US Geological Survey organization for that city. Every altitude has a corresponding atmospheric pressure. Prior to automated interfaces, manual entry was used. Automating with human verification reduced the potential for error.

The above refinements to the billing metrics, the Company believes, contribute towards a more accurate billing system and therefore a mitigation of any lost gas which may have been present absent these refinements.

**Question No. 13:** *What additional measures used by other companies in their efforts toward remediating LUAF has Intermountain Gas found to have merit and therefore adopted? Which measures has Intermountain Gas investigated and found not to have merit. What other companies has intermountain contact regarding LUAF?*

**Response:** Although Intermountain chose on its own accord to more closely evaluate and, when necessary, enhance the billing determinants used in its billing process (see Q12 above), the Company also subsequently determined that other companies had also performed similar audits to their billing metrics to increase the billing accuracy of their own billing systems. Intermountain has also found that the types of regular meter/billing audits in-use by the Company are also being used by other companies as well. By way of contrast, "older" companies have in place older infrastructure (cast iron and in some cases even wood piping) requiring much more aggressive infrastructure upgrades to help mitigate any lost gas. The problem of theft is also more prevalent in more populated areas of the mid-west and east and some companies have chosen to dedicate full-time attention to remediate gas theft on their distribution systems. In addition to phone calls made to local distribution companies, Intermountain held a meeting with Michigan Consolidated Gas Company to discuss their lost gas efforts and also acquired lost gas studies performed by both Southern Connecticut Gas and Southwest Gas. As well, the aforementioned team members endeavor to share their efforts to remediate lost gas with others as they attend industry related events.