UG-102065-SI

CASCADE NATURAL GAS CORPORATION
A Subsidiary of MDU Resources Group, Inc.

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December 21, 2010

David Danner
Secretary and Executive Director
Washington Utilities and
Transportation Commission
1300 South Evergreen Park Drive SW
Olympia, WA 98504-8002

Mr. Danner:

Enclosed is Cascade's Summary of Meter Performance for year 2010 for all residential and small commercial meters in service as of October 1, 2010. These meters fall within the scope of the company's Statistical Sample Program (dated August 18, 1995), while all larger meters in service were tested according to their required periodic schedule.

The annual summary is divided into the following sections:

Section 1 - Year-end report detailing the status of each family in the program.

Section 2 - Key to the report provided in section 1, a brief explanation of the column headings and other general information.

Section 3 - Summary of meter families not meeting the program's performance criteria and any remedial action necessary to bring the families back into compliance.

Section 4 - Review of sample deficiencies and corrective actions to be taken.

Section 5 – Status of meter families scheduled for removal in the prior year.

Section 6 - Reference copy of the Statistical Sample Program.

The total number of meters in service in Washington as of October 2010 was 198,971.

Also, please note that a change will be made to the 2011 sample program. Effective January 1, 2011, the program will be revised to coincide with the calendar year and the company's fiscal year. This change is also required to accommodate the new data systems being implemented across the company's utilities.

Sincerely,

Lanny Wilkin

Lanny Wilkin
Supervisor, Measurement

c: Kathie Barnard, Regulatory Affairs, CNG
Steve Kessie, Operation Services, CNG

Cascade Natural Gas Corporation

Summary of Meter Performance for Program Year 2010

Residential and Small Commercial Meters

Summary of Meter Performance for Year 2010

Abstract

On September 30, 2010 Cascade completed its 2010 program year for the performance based Statistical Sample Program for residential and small commercial meters as described in the document under the same name dated August 18, 1995 (ref. section 6).

Following is a synopsis of meters in both Washington and Oregon:

Beginning of the program year	261,430
End of the program year	264,536
Total meters removed during year	4,813
Meters removed "for cause"	3,918
Meters removed to provide statistically valid sample	895
Meters qualifying for samples	4,006

Meters were randomly selected as needed to provide a statistically valid sample of each family in service ten years or more. Test results of the sample meters were used to determine the actual proportion of each sample that met both the "accuracy" and "not fast" criteria as stipulated by the program.[1] The overall performance of each family was then established (with 90% confidence) to be the same as its representative sample.

All families were determined to be acceptable or were depleted during the course of the program year.

[1] The list of all meters removed (including the test results) is on file and is available upon request.

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Section 1

Program Status Report
For Year 2010

Cascade Natural Gas Corp.

2010 METER SAMPLING PROGRAM

YEAR-END STATUS REPORT

FAMILY STATISTICS				SAMPLE STATISTICS			'ACCURACY' TEST RESULTS					NOT FAST' TEST RESULTS					FURTHER ACTION OR STATUS	
YEAR	MAKE	CLS	SIZE	MAX. SAMP	NO. RMVD	SAMP. CNT	OK. CNT	PCT. OK	OK. LMT	MIN. SAMP	CTL. RGN	NF. CNT	PCT. NF	NF. LMT	MIN. SAMP	CTL. RGN	ADD. REQ	DISP. OF FAMILY
1981	ROCKW	1	37	37	16	15	15	100	13	9	I	15	100	10	15	I	0	ACCEPTABLE
1981	SPRAG	1	47	40	16	16	16	100	14	9	I	16	100	10	16	I	0	ACCEPTABLE
1982	ROCKW	1	137	60	24	23	23	100	13	10	I	23	100	9	21	I	0	ACCEPTABLE
1982	SPRAG	1	167	70	26	21	21	100	13	10	I	21	100	10	21	I	0	ACCEPTABLE
1983	SPRAG	1	473	80	28	26	26	100	13	11	I	26	100	9	23	I	0	ACCEPTABLE
1985	ROCKW	1	57	40	41	39	38	97	6	12	I	39	100	4	17	I	0	ACCEPTABLE
1986	AMERI	1	776	90	30	26	26	100	13	11	I	26	100	10	24	I	0	ACCEPTABLE
1986	ROCKW	1	1823	100	34	32	32	100	12	11	I	32	100	9	24	I	0	ACCEPTABLE
1986	SPRAG	1	1197	90	34	28	28	100	12	11	I	28	100	9	24	I	0	ACCEPTABLE
1987	AMERI	1	2585	100	45	35	35	100	11	11	I	35	100	8	24	I	0	ACCEPTABLE
1987	ROCKW	1	3012	100	58	54	54	100	9	11	I	54	100	7	24	I	0	ACCEPTABLE
1987	SPRAG	1	1290	100	44	31	31	100	12	11	I	31	100	9	24	I	0	ACCEPTABLE
1988	AMERI	1	3484	125	52	35	35	100	11	11	I	35	100	8	24	I	0	ACCEPTABLE
1988	ROCKW	1	2613	100	48	39	38	97	10	15	I	39	100	8	24	I	0	ACCEPTABLE
1988	SPRAG	1	2062	100	49	36	36	100	11	11	I	36	100	8	24	I	0	ACCEPTABLE
1989	AMERI	1	5402	125	82	61	61	100	8	11	I	61	100	6	24	I	0	ACCEPTABLE
1989	ROCKW	1	5195	125	79	66	66	100	8	11	I	66	100	6	24	I	0	ACCEPTABLE
1989	SPRAG	1	3397	125	65	37	37	100	11	11	I	37	100	8	24	I	0	ACCEPTABLE
1990	AMERI	1	4010	125	58	49	49	100	9	11	I	49	100	7	24	I	0	ACCEPTABLE
1990	ROCKW	1	5824	125	261	246	246	100	4	11	I	246	100	3	24	I	0	ACCEPTABLE
1990	SPRAG	1	2837	100	57	39	39	100	10	11	I	39	100	8	24	I	0	ACCEPTABLE

Cascade Natural Gas Corp.

2010 METER SAMPLING PROGRAM

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FAMILY STATISTICS				SAMPLE STATISTICS			'ACCURACY' TEST RESULTS					NOT FAST' TEST RESULTS					FURTHER ACTION OR STATUS	
YEAR	MAKE	CLS	SIZE	MAX. SAMP	NO. RMVD	SAMP. CNT	OK. CNT	PCT. OK	OK. LMT	MIN. SAMP	CTL. RGN	NF. CNT	PCT. NF	NF. LMT	MIN. SAMP	CTL. RGN	ADD. REQ	DISP. OF FAMILY
1991	AMERI	1	4696	125	54	41	41	100	10	11	I	41	100	8	24	I	0	ACCEPTABLE
1991	ROCKW	1	3458	125	55	44	44	100	10	11	I	44	100	7	24	I	0	ACCEPTABLE
1991	SPRAG	1	2378	100	49	29	29	100	12	11	I	29	100	9	24	I	0	ACCEPTABLE
1992	AMERI	1	3195	100	61	52	52	100	9	11	I	52	100	7	24	I	0	ACCEPTABLE
1992	AMERI	3	13	13	10	10	10	100	10	6	I	10	100	8	9	I	0	ACCEPTABLE
1992	ROCKW	1	8277	125	87	73	73	100	8	11	I	73	100	6	24	I	0	ACCEPTABLE
1992	ROCKW	2	66	50	21	18	18	100	13	9	I	18	100	10	18	I	0	ACCEPTABLE
1992	SPRAG	1	1893	100	50	29	29	100	12	11	I	29	100	9	24	I	0	ACCEPTABLE
1993	AMERI	1	3527	125	49	41	41	100	10	11	I	41	100	8	24	I	0	ACCEPTABLE
1993	AMERI	3	94	50	21	21	21	100	13	10	I	21	100	10	20	I	0	ACCEPTABLE
1993	ROCKW	1	5927	125	64	55	55	100	9	11	I	55	100	7	24	I	0	ACCEPTABLE
1993	ROCKW	2	129	60	22	21	21	100	13	10	I	21	100	10	21	I	0	ACCEPTABLE
1993	SPRAG	1	6236	125	89	69	69	100	8	11	I	69	100	6	24	I	0	ACCEPTABLE
1994	AMERI	1	5704	125	81	69	69	100	8	11	I	69	100	6	24	I	0	ACCEPTABLE
1994	AMERI	3	123	60	20	20	20	100	14	10	I	20	100	10	20	I	0	ACCEPTABLE
1994	ROCKW	1	4307	125	67	63	63	100	8	11	I	63	100	6	24	I	0	ACCEPTABLE
1994	ROCKW	2	23	23	15	15	15	100	10	8	I	15	100	8	12	I	0	ACCEPTABLE
1994	SPRAG	1	6106	125	72	45	45	100	10	11	I	45	100	7	24	I	0	ACCEPTABLE
1994	SPRAG	3	1	1	1	1	1	100	0	1	I	1	100	0	1	I	0	FAMILY DEPLETED
1995	AMERI	1	3357	125	46	36	36	100	11	11	I	36	100	8	24	I	0	ACCEPTABLE
1995	AMERI	3	113	60	23	22	22	100	13	10	I	22	100	9	20	I	0	ACCEPTABLE

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YEAR	MAKE	CLS	SIZE	MAX. SAMP	NO. RMVD	SAMP. CNT	OK. CNT	PCT. OK	OK. LMT	MIN. SAMP	CTL. RGN	NF. CNT	PCT. NF	NF. LMT	MIN. SAMP	CTL. RGN	ADD. REQ	DISP. OF FAMILY
1995	ROCKW	1	2731	100	51	45	45	100	10	11	I	45	100	7	24	I	0	ACCEPTABLE
1995	ROCKW	2	140	60	25	22	22	100	13	10	I	22	100	10	21	I	0	ACCEPTABLE
1995	SPRAG	1	10678	200	126	100	100	100	7	11	I	100	100	5	24	I	0	ACCEPTABLE
1996	AMERI	1	526	90	30	25	25	100	13	11	I	25	100	10	23	I	0	ACCEPTABLE
1996	AMERI	3	133	60	23	23	23	100	13	10	I	23	100	9	21	I	0	ACCEPTABLE
1996	ROCKW	1	1104	90	29	25	25	100	13	11	I	25	100	10	24	I	0	ACCEPTABLE
1996	ROCKW	2	144	60	22	22	22	100	13	10	I	22	100	10	21	I	0	ACCEPTABLE
1996	SPRAG	1	4638	125	73	50	50	100	9	11	I	50	100	7	24	I	0	ACCEPTABLE
1997	AMERI	1	213	70	28	23	23	100	13	10	I	23	100	10	22	I	0	ACCEPTABLE
1997	AMERI	3	197	70	24	24	24	100	13	10	I	24	100	9	22	I	0	ACCEPTABLE
1997	ROCKW	1	594	90	30	25	25	100	13	11	I	25	100	10	23	I	0	ACCEPTABLE
1997	ROCKW	2	192	70	25	22	22	100	13	10	I	22	100	10	22	I	0	ACCEPTABLE
1997	SPRAG	1	7234	125	89	70	70	100	8	11	I	70	100	6	24	I	0	ACCEPTABLE
1997	SPRAG	3	35	35	17	15	15	100	13	8	I	15	100	10	15	I	0	ACCEPTABLE
1998	AMERI	1	643	90	35	29	29	100	12	11	I	29	100	9	23	I	0	ACCEPTABLE
1998	AMERI	3	95	50	20	20	20	100	13	10	I	20	100	10	20	I	0	ACCEPTABLE
1998	ROCKW	1	7829	125	97	86	86	100	7	11	I	86	100	5	24	I	0	ACCEPTABLE
1998	ROCKW	2	339	80	29	25	25	100	13	11	I	25	100	10	23	I	0	ACCEPTABLE
1998	SPRAG	1	917	90	35	28	28	100	12	11	I	28	100	9	24	I	0	ACCEPTABLE
1998	SPRAG	2	1	1	1	1	1	100	0	1	I	1	100	0	1	I	0	FAMILY DEPLETED
1998	SPRAG	3	22	22	16	12	12	100	13	7	I	12	100	10	12	I	0	ACCEPTABLE

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YEAR	MAKE	CLS	SIZE	MAX. SAMP	NO. RMVD	SAMP. CNT	OK. CNT	PCT. OK	OK. LMT	MIN. SAMP	CTL. RGN	NF. CNT	PCT. NF	NF. LMT	MIN. SAMP	CTL. RGN	ADD. REQ	DISP. OF FAMILY
1999	AMERI	1	7436	125	86	76	76	100	8	11	I	76	100	6	24	I	0	ACCEPTABLE
1999	AMERI	3	294	80	26	23	23	100	13	10	I	23	100	10	23	I	0	ACCEPTABLE
1999	ROCKW	1	653	90	31	27	27	100	12	11	I	27	100	9	24	I	0	ACCEPTABLE
1999	ROCKW	2	246	70	25	23	23	100	13	10	I	23	100	10	22	I	0	ACCEPTABLE
1999	SPRAG	1	623	90	30	24	24	100	13	11	I	24	100	10	23	I	0	ACCEPTABLE
1999	SPRAG	3	34	34	16	14	14	100	14	8	I	14	100	10	14	I	0	ACCEPTABLE
2000	AMERI	1	8617	125	104	92	92	100	7	11	I	92	100	5	24	I	0	ACCEPTABLE
2000	AMERI	3	294	80	26	23	23	100	13	10	I	23	100	10	23	I	0	ACCEPTABLE
2000	ROCKW	1	1087	90	31	28	28	100	12	11	I	28	100	9	24	I	0	ACCEPTABLE
2000	ROCKW	2	339	80	27	24	24	100	13	11	I	24	100	10	23	I	0	ACCEPTABLE
2000	SPRAG	1	202	70	29	28	28	100	12	10	I	28	100	9	22	I	0	ACCEPTABLE
2000	SPRAG	2	25	25	13	13	13	100	13	8	I	13	100	10	13	I	0	ACCEPTABLE
2000	SPRAG	3	95	50	23	22	22	100	12	10	I	22	100	9	20	I	0	ACCEPTABLE
2001	AMERI	1	6843	125	75	63	63	100	8	11	I	63	100	6	24	I	0	ACCEPTABLE
2001	AMERI	3	403	80	4	3	3	100	<<>>	11	IV	3	100	<<>>	23	IV	0	ACCEPTABLE
2001	ROCKW	1	274	70	2	2	2	100	<<>>	10	IV	2	100	<<>>	22	IV	0	ACCEPTABLE
2001	ROCKW	2	376	80	8	6	6	100	<<>>	11	IV	6	100	<<>>	23	IV	0	ACCEPTABLE
2001	SPRAG	1	1329	100	16	13	13	100	18	11	I	13	100	<<>>	24	IV	0	ACCEPTABLE
2001	SPRAG	2	33	33	0	0	0	NaN	N/A	17	IV	0	NaN	N/A	17	IV	0	ACCEPTABLE
2001	SPRAG	3	111	60	0	0	0	NaN	N/A	30	IV	0	NaN	N/A	30	IV	0	ACCEPTABLE
2002	ACTAR	1	994	90	17	10	10	100	<<>>	11	IV	10	100	<<>>	24	IV	0	ACCEPTABLE

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YEAR	MAKE	CLS	SIZE	MAX. SAMP	NO. RMVD	SAMP. CNT	OK. CNT	PCT. OK	OK. LMT	MIN. SAMP	CTL. RGN	NF. CNT	PCT. NF	NF. LMT	MIN. SAMP	CTL. RGN	ADD. REQ	DISP. OF FAMILY
2002	AMERI	1	8217	125	102	92	92	100	7	11	I	92	100	5	24	I	0	ACCEPTABLE
2002	AMERI	3	282	80	3	2	2	100	<<>>	10	IV	2	100	<<>>	22	IV	0	ACCEPTABLE
2002	ROCKW	1	859	90	17	13	13	100	18	11	I	13	100	<<>>	24	IV	0	ACCEPTABLE
2002	ROCKW	2	558	90	13	10	10	100	<<>>	11	IV	10	100	<<>>	23	IV	0	ACCEPTABLE
2002	ROMET	3	1	1	0	0	0	NaN	N/A	1	N/A	0	NaN	N/A	1	N/A	0	ACCEPTABLE
2002	SPRAG	1	539	90	7	6	6	100	<<>>	11	IV	6	100	<<>>	23	IV	0	ACCEPTABLE
2002	SPRAG	2	16	16	1	0	0	NaN	N/A	8	IV	0	NaN	N/A	8	IV	0	ACCEPTABLE
2002	SPRAG	3	25	25	1	0	0	NaN	N/A	13	IV	0	NaN	N/A	13	IV	0	ACCEPTABLE
2003	AMERI	1	9950	125	124	103	103	100	6	11	I	103	100	5	24	I	0	ACCEPTABLE
2003	AMERI	3	486	80	4	2	2	100	<<>>	11	IV	2	100	<<>>	23	IV	0	ACCEPTABLE
2003	ROCKW	1	407	80	6	5	5	100	<<>>	11	IV	5	100	<<>>	23	IV	0	ACCEPTABLE
2003	ROCKW	2	256	70	8	7	7	100	<<>>	10	IV	7	100	<<>>	22	IV	0	ACCEPTABLE
2003	SPRAG	1	759	90	12	9	9	100	<<>>	11	IV	9	100	<<>>	24	IV	0	ACCEPTABLE
2003	SPRAG	2	30	30	1	0	0	NaN	N/A	15	IV	0	NaN	N/A	15	IV	0	ACCEPTABLE
2003	SPRAG	3	4	4	0	0	0	NaN	N/A	2	N/A	0	NaN	N/A	2	N/A	0	ACCEPTABLE
2004	ACTAR	1	14	14	1	1	1	100	<<>>	6	IV	1	100	<<>>	9	IV	0	ACCEPTABLE
2004	AMERI	1	14087	200	178	138	138	100	6	11	I	138	100	4	24	I	0	ACCEPTABLE
2004	AMERI	3	375	80	3	3	3	100	<<>>	11	IV	3	100	<<>>	23	IV	0	ACCEPTABLE
2004	ROCKW	1	411	80	5	4	4	100	<<>>	11	IV	4	100	<<>>	23	IV	0	ACCEPTABLE
2004	ROCKW	2	388	80	12	8	8	100	<<>>	11	IV	8	100	<<>>	23	IV	0	ACCEPTABLE
2004	ROOTS	3	6	6	0	0	0	NaN	N/A	3	N/A	0	NaN	N/A	3	N/A	0	ACCEPTABLE

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YEAR	MAKE	CLS	SIZE	MAX. SAMP	NO. RMVD	SAMP. CNT	OK. CNT	PCT. OK	OK. LMT	MIN. SAMP	CTL. RGN	NF. CNT	PCT. NF	NF. LMT	MIN. SAMP	CTL. RGN	ADD. REQ	DISP. OF FAMILY
2004	SPRAG	1	130	60	1	1	1	100	<<>>	10	IV	1	100	<<>>	21	IV	0	ACCEPTABLE
2004	SPRAG	2	18	18	1	1	1	100	<<>>	7	IV	1	100	<<>>	11	IV	0	ACCEPTABLE
2004	SPRAG	3	113	60	0	0	0	NaN	N/A	30	IV	0	NaN	N/A	30	IV	0	ACCEPTABLE
2005	ACTAR	1	4	4	2	1	1	100	N/A	4	N/A	1	100	N/A	4	N/A	0	ACCEPTABLE
2005	AMERI	1	14199	200	198	167	167	100	5	11	I	167	100	4	24	I	0	ACCEPTABLE
2005	AMERI	3	309	80	8	8	8	100	<<>>	10	IV	8	100	<<>>	23	IV	0	ACCEPTABLE
2005	ROCKW	1	267	70	10	9	9	100	<<>>	10	IV	9	100	<<>>	22	IV	0	ACCEPTABLE
2005	ROCKW	2	547	90	12	9	9	100	<<>>	11	IV	9	100	<<>>	23	IV	0	ACCEPTABLE
2005	SPRAG	1	260	70	7	7	7	100	<<>>	10	IV	7	100	<<>>	22	IV	0	ACCEPTABLE
2005	SPRAG	2	29	29	0	0	0	NaN	N/A	15	IV	0	NaN	N/A	15	IV	0	ACCEPTABLE
2005	SPRAG	3	56	40	2	1	1	100	<<>>	9	IV	1	100	<<>>	17	IV	0	ACCEPTABLE
2006	ACTAR	1	1	1	1	1	1	100	0	1	I	1	100	0	1	I	0	FAMILY DEPLETED
2006	AMERI	1	13782	200	219	196	196	100	5	11	I	196	100	3	24	I	0	ACCEPTABLE
2006	AMERI	3	462	80	4	4	4	100	<<>>	11	IV	4	100	<<>>	23	IV	0	ACCEPTABLE
2006	ROCKW	1	159	70	11	8	8	100	<<>>	10	IV	8	100	<<>>	21	IV	0	ACCEPTABLE
2006	ROCKW	2	559	90	10	7	7	100	<<>>	11	IV	7	100	<<>>	23	IV	0	ACCEPTABLE
2006	SPRAG	1	194	70	11	11	11	100	19	10	I	11	100	<<>>	22	IV	0	ACCEPTABLE
2006	SPRAG	2	17	17	0	0	0	NaN	N/A	9	IV	0	NaN	N/A	9	IV	0	ACCEPTABLE
2006	SPRAG	3	274	70	7	5	5	100	<<>>	10	IV	5	100	<<>>	22	IV	0	ACCEPTABLE
2007	ACTAR	1	16	16	1	1	1	100	<<>>	7	IV	1	100	<<>>	10	IV	0	ACCEPTABLE
2007	AMERI	1	2733	100	65	61	61	100	8	11	I	61	100	6	24	I	0	ACCEPTABLE

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FAMILY STATISTICS				SAMPLE STATISTICS			'ACCURACY' TEST RESULTS					NOT FAST' TEST RESULTS					FURTHER ACTION OR STATUS	
YEAR	MAKE	CLS	SIZE	MAX. SAMP	NO. RMVD	SAMP. CNT	OK. CNT	PCT. OK	OK. LMT	MIN. SAMP	CTL. RGN	NF. CNT	PCT. NF	NF. LMT	MIN. SAMP	CTL. RGN	ADD. REQ	DISP. OF FAMILY
2007	AMERI	3	228	70	3	2	2	100	<<>>	10	IV	2	100	<<>>	22	IV	0	ACCEPTABLE
2007	ROCKW	1	325	80	5	5	5	100	<<>>	11	IV	5	100	<<>>	23	IV	0	ACCEPTABLE
2007	ROCKW	2	396	80	6	5	5	100	<<>>	11	IV	5	100	<<>>	23	IV	0	ACCEPTABLE
2007	ROOTS	3	1	1	0	0	0	NaN	N/A	1	N/A	0	NaN	N/A	1	N/A	0	ACCEPTABLE
2007	SPRAG	1	322	80	6	3	3	100	<<>>	11	IV	3	100	<<>>	23	IV	0	ACCEPTABLE
2007	SPRAG	2	30	30	1	1	1	100	<<>>	8	IV	1	100	<<>>	14	IV	0	ACCEPTABLE
2007	SPRAG	3	60	40	2	1	1	100	<<>>	9	IV	1	100	<<>>	18	IV	0	ACCEPTABLE
2008	ACTAR	1	3	3	0	0	0	NaN	N/A	2	N/A	0	NaN	N/A	2	N/A	0	ACCEPTABLE
2008	AMERI	1	12528	200	119	93	93	100	7	11	I	93	100	5	24	I	0	ACCEPTABLE
2008	AMERI	3	664	90	6	5	5	100	<<>>	11	IV	5	100	<<>>	24	IV	0	ACCEPTABLE
2008	ROCKW	1	255	70	3	3	3	100	<<>>	10	IV	3	100	<<>>	22	IV	0	ACCEPTABLE
2008	ROCKW	2	712	90	5	5	5	100	<<>>	11	IV	5	100	<<>>	24	IV	0	ACCEPTABLE
2008	ROOTS	3	2	2	0	0	0	NaN	N/A	1	N/A	0	NaN	N/A	1	N/A	0	ACCEPTABLE
2008	SPRAG	1	95	50	0	0	0	NaN	N/A	25	IV	0	NaN	N/A	25	IV	0	ACCEPTABLE
2008	SPRAG	2	25	25	0	0	0	NaN	N/A	13	IV	0	NaN	N/A	13	IV	0	ACCEPTABLE
2008	SPRAG	3	44	40	0	0	0	NaN	N/A	20	IV	0	NaN	N/A	20	IV	0	ACCEPTABLE
2009	ACTAR	1	2	2	0	0	0	NaN	N/A	1	N/A	0	NaN	N/A	1	N/A	0	ACCEPTABLE
2009	AMERI	1	2741	100	50	35	35	100	11	11	I	35	100	8	24	I	0	ACCEPTABLE
2009	AMERI	3	404	80	3	2	2	100	<<>>	11	IV	2	100	<<>>	23	IV	0	ACCEPTABLE
2009	ROCKW	1	318	80	1	1	1	100	<<>>	11	IV	1	100	<<>>	23	IV	0	ACCEPTABLE
2009	ROCKW	2	599	90	11	8	8	100	<<>>	11	IV	8	100	<<>>	23	IV	0	ACCEPTABLE

Cascade Natural Gas Corp.

2010 METER SAMPLING PROGRAM

YEAR-END STATUS REPORT

FAMILY STATISTICS				SAMPLE STATISTICS			'ACCURACY' TEST RESULTS					NOT FAST' TEST RESULTS					FURTHER ACTION OR STATUS	
YEAR	MAKE	CLS	SIZE	MAX. SAMP	NO. RMVD	SAMP. CNT	OK. CNT	PCT. OK	OK. LMT	MIN. SAMP	CTL. RGN	NF. CNT	PCT. NF	NF. LMT	MIN. SAMP	CTL. RGN	ADD. REQ	DISP. OF FAMILY
2009	SPRAG	1	387	80	4	1	1	100	<<>>	11	IV	1	100	<<>>	23	IV	0	ACCEPTABLE
2009	SPRAG	2	19	19	0	0	0	NaN	N/A	10	IV	0	NaN	N/A	10	IV	0	ACCEPTABLE
2009	SPRAG	3	60	40	2	1	1	100	<<>>	9	IV	1	100	<<>>	18	IV	0	ACCEPTABLE
GRAND TOTALS			266780		4813	4006	4004					4006					0	

Section 2

Key to Status Report

Key to Status Report and Column Headings

Overview

The year-end status report provided in the next section gives a thorough and concise recap of the 2010 Meter Sampling Program. It lists the pertinent statistics on all meter families in service along with the statistics on the representative sample drawn from each family. In addition, it summarizes the results of the "accuracy" and "not fast" tests performed on each sample, and specifies each family's status going into the 2010 program year.

The performance of each family was characterized by the regions on the control chart according to the following table (ref. program document):

	Meter Family < 10 years	Meter Family ≥ 10 years
Region I	Satisfactory	Satisfactory
Region II a	Satisfactory	Satisfactory
Region II b	Satisfactory	Satisfactory
Region III	At/Below Limits	At/Below Limits
Region IV	Satisfactory	Insufficient Sample

Column Headings

Following provides a brief explanation of each of the column headings in the status report:

FAMILY STATISTICS	**Statistics pertaining to each family.**
METER FAMILY (CLS)	Meter Families sorted by class. Each family is comprised of all meters of similar size and capacity, made by a single manufacturer, and last tested in same year. (e.g. 1982 Rockwell 250, 1982 Rockwell 275, and 1982 Rockwell 310)
SIZE	Total number of meters in each family at the beginning of the program year.

SAMPLE STATISTICS	**Statistics pertaining to representative sample taken from each family.**
MAX.SAMP	Maximum number of meters that would be required in a sample in order to make a valid determination of the family's future disposition.
NO.RMVD	Number of meters in the family removed during the course of the plan year.
SAMP.CNT	Number of meters used in the sample. Meters determined to be uniquely defective are excluded
'ACCURACY	**Compilation of test results to determine the**

TEST' RESULTS	proportion of the sample meeting the "accuracy" test (i.e. 98.0 to 102.0 percent accurate).
OK.CNT	Number of meters in the sample found 98.0 to 102.0 percent accurate.
PCT.OK	Percent or proportion of the sample found "accurate".
OK.LMT	The control limits above or below the 80% proportion threshold established for each family as determined by the following equation (ref. program document): $P_{.90} = p_t \pm 1.645\ [p_t(1- p_t)/n]^{.5} * [(N-n)/(N-1)]^{.5}$
MIN.SAMP	The minimum number of meters required in each sample to provide statistically valid results (i.e. sample falls in regions I, IIa, IIb, or III on the "meters accurate" control chart).
CTL.RGN	Control region in which the sample is determined to be on the "meters accurate" control chart.

'NOT FAST' TEST RESULTS	Compilation of test results to determine the proportion of the sample meeting the "not fast" test (i.e. not more than 102.0 percent accurate).
NF.CNT	Number of meters in the sample found not exceeding 102.0 percent accurate.
PCT.NF	Percent or proportion of sample found "not fast".
NF.LMT	The control limits above and below the 90% proportion threshold established for each family as determined by the following equation (ref. program document): $P_{.90} = p_t \pm 1.645\ [p_t(1- p_t)/n]^{.5} * [(N-n)/(N-1)]^{.5}$
MIN.SAMP	The minimum number of meters required in each sample to provide statistically valid results (i.e. sample falls in regions I, IIa, IIb, or III on the "meters not fast" control chart).
CTL.RGN	Control region in which the sample is determined to be on the "meters not fast" control chart.

FURTHER ACTION OR STATUS	Further action(s) that may be necessary to ensure the sample is of sufficient size and the family remains in compliance with program guidelines.
ADD.REQ	Additional number of meters that were required to meet or exceed minimum sample size.
DISP. OF FAMILY	Future disposition or status of each family as determined by the decision tree provided in the program document.

Section 3

Meter Families Found Below The Acceptable Performance Threshold (Regions IIb or III)

Meter Families Found Below Acceptable Performance Thresholds during the 2010 Program Year

No meter families were found below acceptable limits.

Section 4

Unanticipated Sample Deficiencies (Region IV)

Unanticipated Sample Deficiencies

No families were found to be deficient at the end of the plan year:

Section 5

Status of Meter Families Previously Scheduled For Removal

Status of Meters Previously Scheduled for Removal

No meter families were scheduled for removal in the 2010 plan year.

Section 6

Statistical Sample Program
(August 18, 1995)

Cascade Natural Gas Corporation
Statistical Sample Program
August 18, 1995

Program Description

Using knowledge of the operating histories of similar meters, the company may elect to keep particular meters in service for intervals beyond those specified in applicable state regulations, provided the meter performance meets the criteria of the company's Statistical Sample Program. Eligible meters are diaphragm type meters with a rated capacity of up to 3,000 ft^3/hr.

The maximum permissible error in the registration of meters placed in service is ±2.0% at both the open and check rates. For the purposes of the Statistical Sample Program, the definition of a meter registering with an error of -2.0% is one that registers 98.0% of accuracy and a meter registering with a +2.0% error is one that registers 102.0% of accuracy. A meter, therefore, must register between 98.0% and 102.0% of accuracy at each test rate, before being placed in service.

Each meter in the Statistical Sample Program will be assigned to a meter group or "family" according to its manufacturer, meter size, meter type, and test year. At the option of the company, meters in any family may be further subdivided according to location, age, or other factors that may be disclosed by test data to have an effect on the performance of the meters. Subsequently, meter families may be modified or combined as justified by the performance records.

The program year shall begin on 1 October and end on 30 September of the following year.

Sample Selection and Evaluation

The performance evaluation of each meter family will be based on an evaluation of test results from random sampling of the family. Sample data collected during a given program year will be analyzed, and a decision regarding meter family disposition will be made in the first quarter of the following calendar year. The performance and status, including disposition, of each meter family will be reported to the regulatory commissions as part of the annual meter report.

The random sample for each family will include meters which are removed from service on a routine basis, e.g. meters not in use, too large, too small, damaged index cover, service relocation or replacement, etc. If more meters are required for testing than have been removed from service for routine purposes, a random sample of meters within that family will be removed from service and included in the sample.

All non-contaminated, testable meters will be tested in accordance with ANSI B109.1, and B109.2, using an average of the open and check in-test results to evaluate each meter's performance. For purposes of evaluating the performance of each meter family, the analysis of the test results will exclude data on meters which are damaged, meters which do not register, meters which do not pass gas, and meters which measure either less than 90.0 percent accurate or more than 110.0 percent accurate.

A meter family will be considered to be acceptable if the sample of the family indicates:

a) a minimum proportion of .80 of the family measures between 98.0 percent and 102.0 percent accurate ("accuracy" requirement); and

b) a minimum proportion of .90 of the family measures no more than 102.0 percent accurate ("not fast" requirement).

To determine the significance of the proportions measured from sampling, the test results will be compared with threshold proportions and control limits on a control chart. The control limits will be defined as follows:

$$P_{.90} = p_t \pm 1.645 * [p_t(1-p_t)/n]^{.5} * [(N-n)/(N-1)]^{.5}$$

where:

$P_{.90}$ is the upper and lower proportion corresponding with an interval which will have a 90 percent probability of including the proportion from a random sample of size n (drawn without replacement) from a population of size N and a proportion equal to p_t. p_t is the threshold proportion, equal to the minimum acceptable proportion of the meter family and is:

= .80 for meters registering between 98.0% and 102% accurate, or

= .90 for meters registering no more than 102% accurate.

n is the sample size.

N is the meter family size prior to sampling.

1.645 is the factor necessary to provide the interval estimate associated with the threshold proportion, such that, nine times out of ten, the sample proportion will be included within that interval.

Each proportion measured from sampling will specify a particular region (I, II, III, or IV) on the control chart within which the sample data would plot. The regions (I, IIa, IIb, III, and IV) are outlined by the control limits and the threshold proportions, and will be as defined by figures 1 and 2. The vertical line between the regions II(a and b) and IV on the control chart will be established according to the following schedule:

Remaining Family Size			Division line between Regions II(a and b) and IV on the Control Chart
1	to	65	40 (or family size if less)
66	to	100	50
101	to	150	60
151	to	280	70
281	to	500	80
501	to	1200	90
1201	to	3200	100
3201	to	10000	125
10001 and over			200

The performance of each family will be characterized by the regions on the control chart according to the following table:

	Meter Family < 10 yrs old	Meter Family ≥ 10 yrs old
Region I	Satisfactory	Satisfactory
Region II a	Satisfactory	Satisfactory
Region II b	Satisfactory	Satisfactory
Region III	At/below Limits	At/below Limits
Region IV	Satisfactory	Insufficient Sample

Meter Family Disposition

Meter family disposition will be determined according to the following steps:

a. The proportion of the meters in the sample that measure between 98.0 percent and 102.0 percent accurate will be calculated, and the respective region on the "Accuracy" control chart determined.

b. The proportion of the meters in the sample which measure not more than 102.0 percent accurate will be calculated, and the respective region on the "Not Fast" control chart determined.

c. If the region is determined to be "IV" on either the "Accuracy" control chart or "Not Fast" control chart, an additional random sample will be obtained sufficient so the region determined from the combined sample data is not "IV".

d. The results from steps 1 and 2 (provided neither are region "IV") will be applied to the conditions outlined in the decision tree, shown in figures 3a and 3b.

e. Meters in families determined to be acceptable will be allowed to remain in service, subject to sample testing and review in succeeding years.

f. Meters in families that are subject to change-out at the company's option will be reviewed and a decision on whether they are to be removed will be made based on economic and operating factors. If the meters remain in service, they will be subject to sample testing and review in succeeding years.

g. Meters in families determined to require change-out will be changed by October of the second year following determination of the need for change-out (i.e. two years following the program year when the samples were taken.) However, if in any given year the total number of meters required for change-out exceeds four percent of the number of meters in the Statistical Sample Program, the company may, at its option and with Commission approval, extend the change-out schedule so that each meter family is changed within a maximum of four years from determination that change-out is required (i.e. four years following the program year when the samples were taken).

Decision Tree for Meter Families in Meter Sample Program

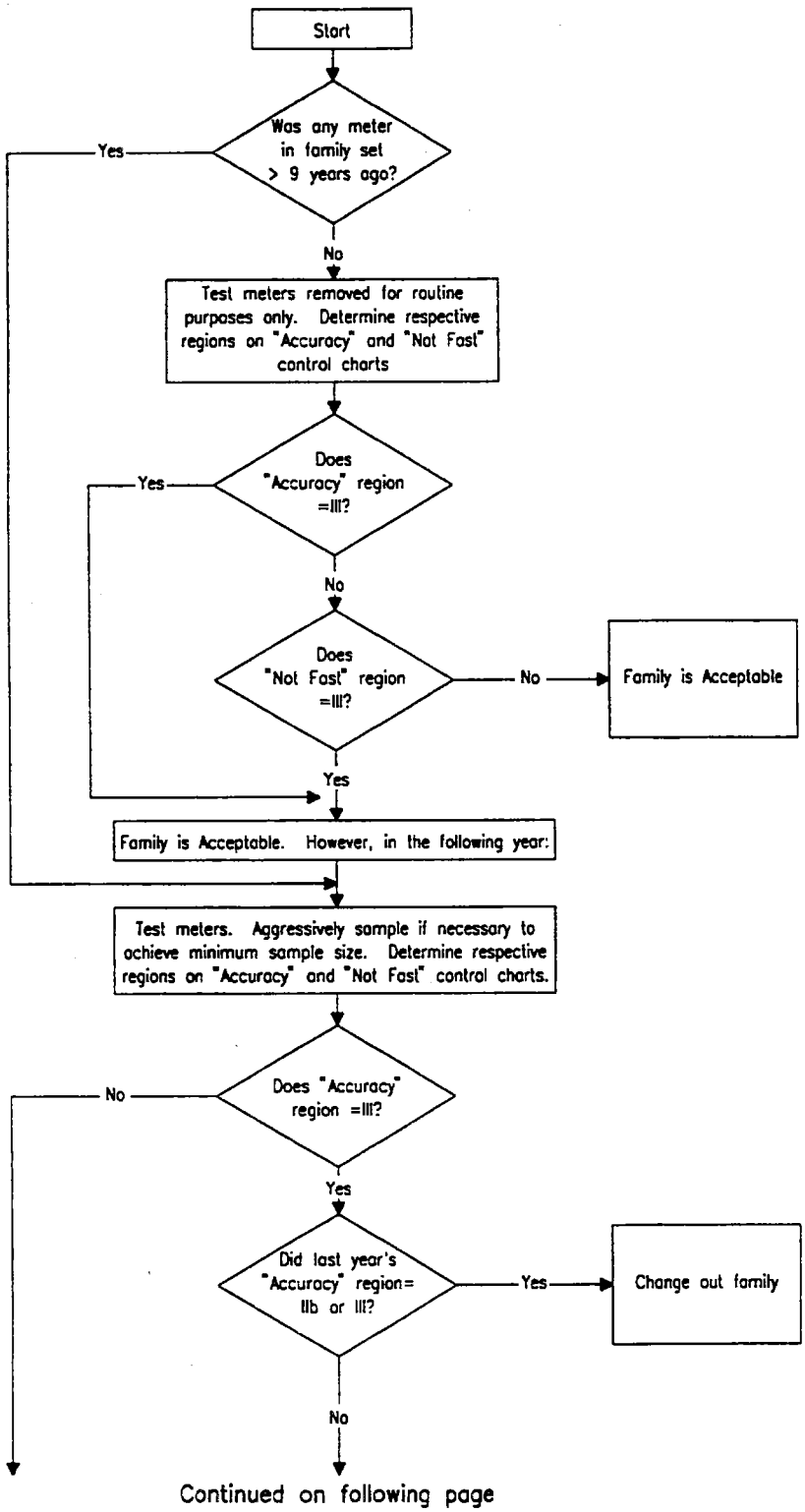


Figure 3.a.

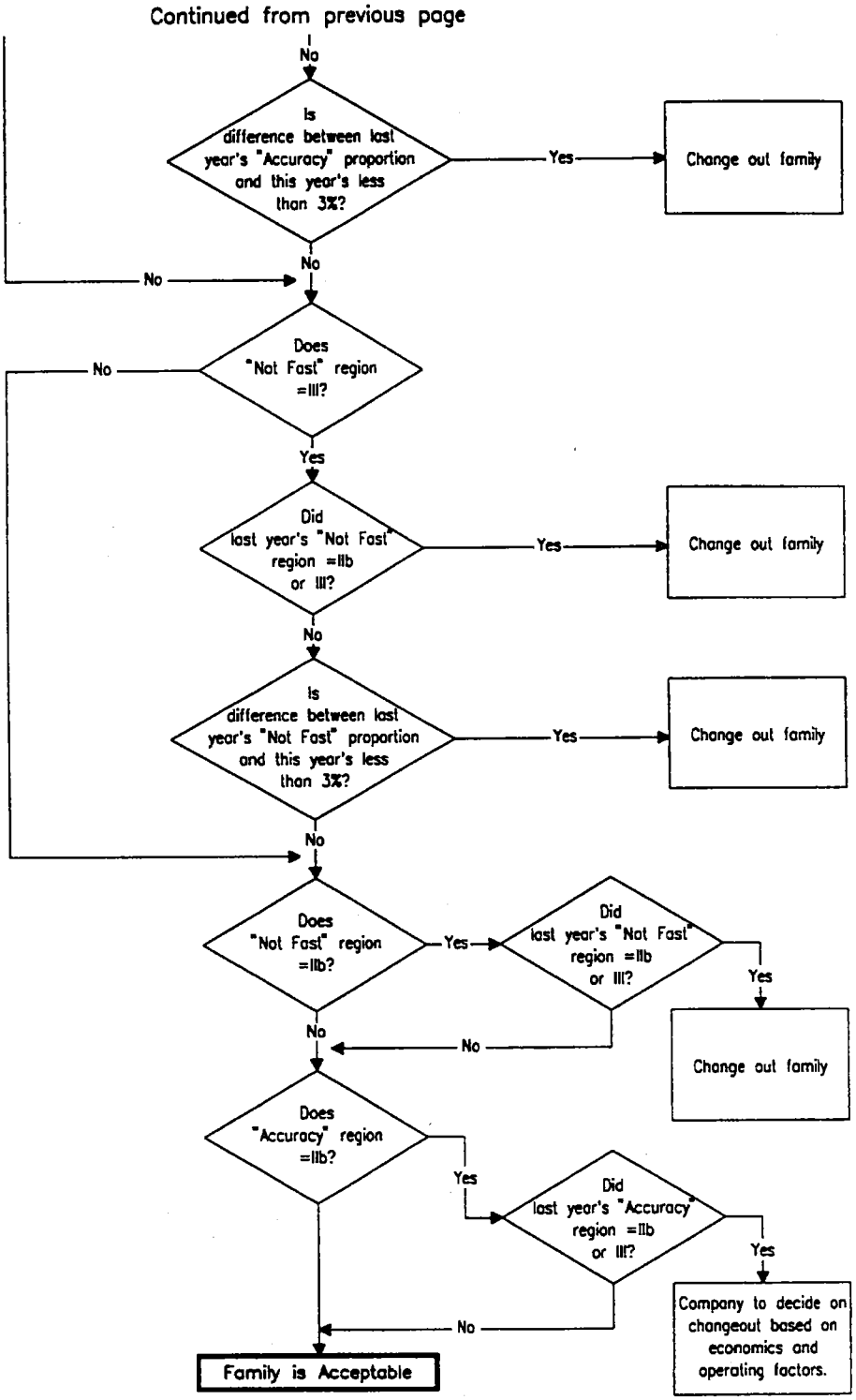

Continued from previous page
No
Is difference between last year's "Accuracy" proportion and this year's less than 3%?
Yes
Change out family
No
No
Does "Not Fast" region =III?
Yes
Yes
Did last year's "Not Fast" region =IIb or III?
Yes
Change out family
No
Is difference between last year's "Not Fast" proportion and this year's less than 3%?
Yes
Change out family
No
Does "Not Fast" region =IIb?
Yes
Did last year's "Not Fast" region =IIb or III?
Yes
Change out family
No
No
Does "Accuracy" region =IIb?
Yes
Did last year's "Accuracy" region =IIb or III?
Yes
Company to decide on changeout based on economics and operating factors.
No
Family is Acceptable

Figure 3.b.

Meter Performance Control Charts

Figure 1. For Meters Accurate

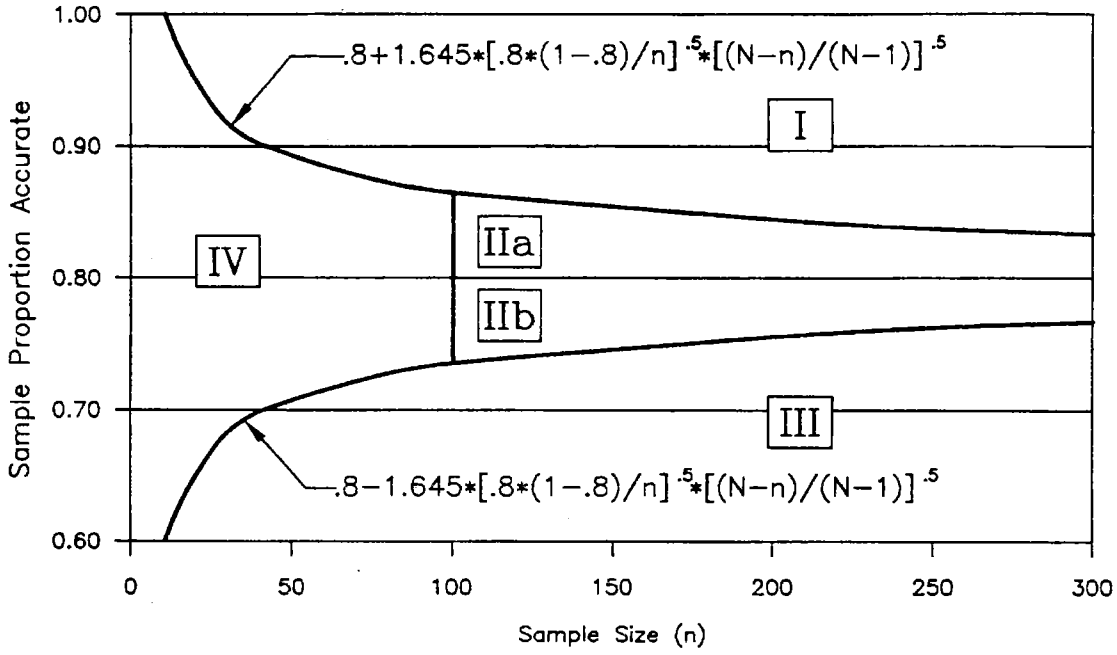
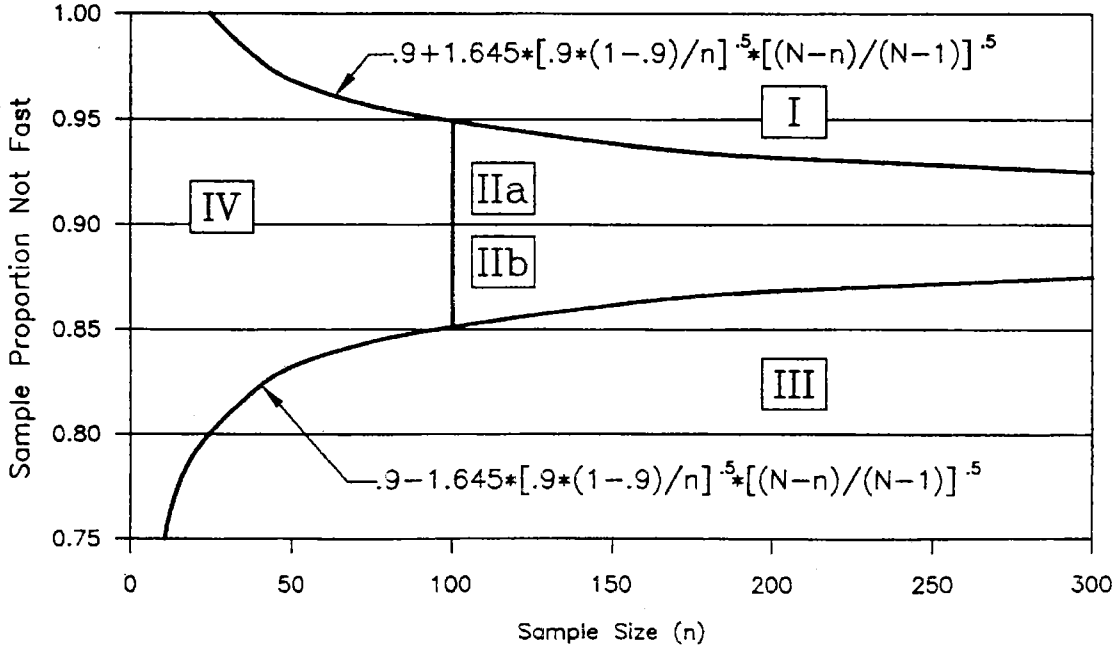


Figure 2. For Meters Not Fast



*Example where family size (N) = 3000