Louisville Gas & Electric

2009 Gas Meter Performance Control Plan

2009 Regulator Inspection & Replacement

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an E.ON company

Mr. Jeff DeRouen
Executive Director
Kentucky Public Service Commission
211 Sower Boulevard
Frankfort, Kentucky 40602-0615

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April 1, 2010

RE: ***The Application of Louisville Gas and Electric Company for Approval of a Permanent Statistical Meter Sampling Plan***
Case No. 2000-00278
and
The Application of Louisville Gas and Electric Company to Implement a Gas Regulator Inspection and Replacement Program
Case No. 2002-00262

Dear Mr. DeRouen:

Enclosed please find five copies of Louisville Gas and Electric Company's 2009 Gas Meter Performance Control Plan and the 2009 Regulator Inspection and Replacement Report pursuant to the Commission's Order in the above mentioned proceedings.

Should you have any questions concerning the enclosed, please contact me at your convenience.

Sincerely,

Rick E. Lovekamp

Rick E. Lovekamp

Enclosure

Louisville Gas & Electric

Gas Meter Performance
Control Plan Year 2009

Year 2009 Gas Meter Sampling Plan Results

I. Introduction

The 2009 LG&E Gas Meter Performance Control Program required 7,848 gas meters within 143 control groups be tested and their accuracy performance documented.

There are four (4) remaining residential and commercial gas meter classified as a prior meters which consist of gas meters installed prior to 1985 or sample meters from prior years that are in groups that otherwise were exhausted. These meters are located in vacant structures which LG&E has no access to and continuing attempts will be made to gain access to and remove the meters.

Any sampled meter which proof tested beyond +/- 2% (fast or slow) was considered to be a failed meter. The control groups sampled during 2009 performed extremely well and no control groups failed the sampling criteria. This report summarizes the results of the 2009 LG&E Gas Meter Sampling Program.

II. Meter Performance

The meter groups were separated into three capacity classifications. Meters with capacities up to and including 500 CFH, which primarily represent residential meters, represented the largest group with ninety (90) control groups and 7,023 meters. Meters with capacities which range from 501 CFH to 1500 CFH (Commercial), represented the second largest group with forty-five (45) control groups and 720 meters. Meters with capacities 1501 CFH (Industrial) and above comprised the balance of the sampling with eight (8) control groups and 105 meters.

A summary of each control group, along with statistical analysis data, is shown in appendix A. The definitions of selected statistical categories are included, and the sample groups are arranged from low to high capacity.

All 143 control groups passed the sampling criteria in 2009. A total of ten (10) control groups had their remaining population removed through the sampling program in 2009.

A. Residential Class - Up to and including 500 cfh

1. Strong Performing Groups - Reduced Sampling

The strongest performing meter groups in this capacity continue to be the American AL175, AL250, AC250, and AL425. Of the 1,584 meters in the Twenty-four (24) control groups of AL175 meters, only seventeen (17) individual meters failed the sampling criteria, a 1.07 percent failure rate. The twenty (20) AC250 control groups had a total of six (6) failures out of the 1,336 meters tested, a 0.45 percent failure rate. The eleven (11) AL425 control groups totaling 352 meters experienced one (1) failure, a 0.28 percent failure rate.

The American Meter Company AL175 and AC250 residential models were the primary types of gas meters LG&E either purchased new or had remanufactured and placed back into the system, which continues to improve the overall accuracy of the installed meter population.

Test results from year 2009 were analyzed for the below groups to verify each model did not exceed the Limit Numbers For Reduced Inspection, Table VIII, under the American Standard – Sampling Procedures and Tables For Inspection By Attributes guidelines. Additionally, none of the control groups on Reduced Sampling exceeded their specific acceptance number under reduced sampling.

Model – American AL175 CFH (033 and 33A Grouping)
Last 10 Control Groups Tested = 842 Meters Tested
Limit Number For Reduced Testing - 42
Actual Deviate Meters – 9

Model – American AL425CFH
Last 10 Control Groups Tested = 320 Meters Tested
Limit Number For Reduced Testing – 14
Actual Deviate Meters - 1

Model – American AC250 CFH
Last 10 Control Groups Tested = 566 Meters Tested
Limit Number For Reduced Testing - 25
Actual Deviate Meters – 4

The below models will remain on Reduced Sampling in year 2010.
American Model AL175 Model Code 033 and 33A
American Model AL425 Model Code 015
American Model AC250 Model Code 078

2. Weak Performing Residential Group

The one (1) American AL250 control group totaling thirty-two (32) meters experienced two (2) failures, for a 6.25 percent failure rate. This model is being phased out as the meters are removed due to the small number of this model installed.

The older models of Rockwell residential class 250 CFH meters continue to be one of the poorest performing control groups. Of the two (2) Rockwell R250 Code 057 control groups still in service at the beginning of 2009, consisting of a total of 570 meters, of the 82 meters sampled this year, six (6) of the individual meters failed the sampling criteria for a 7.32 percent failure rate.

Rockwell R250 gas meters removed from the system are being replaced by the better performing models of the American AL175 and AC250 gas meter.

The Rockwell 175 CFH meters continue to be one of the weaker performing control groups. Of the nineteen (19) Rockwell R175 control groups consisting of 2,960 meters sampled this year, one hundred eighteen (117) of the individual meters failed the sampling criteria for a 3.95 percent failure rate.

B. Commercial Class - 501 cfh up to and including 1500 cfh

Forty-five (45) control groups in the Commercial Meter Class were tested in 2009 and there were no control group failures.

The strongest performing meters in this class among the larger groups were the American AL800 meter which experienced two (2) individual meter failures within the seven (7) control groups tested, the American AL1400 which experienced zero (0) individual meter failures within the eight (8) control groups tested, and the Rockwell 3 Emco which experienced zero (0) individual meter failures within the eight (8) control groups tested.

The Rockwell R750 class meter consisting of eight (8) control groups performed extremely well with only nine (9) individual meter failures within the 242 meter tested.

The American AL1000 meter consisting of eight (8) control groups demonstrated acceptable performance with fourteen (14) individual meter failures within the 255 meters tested.

Beginning in the 2003 test year, all Commercial Class Control Groups, regardless of whether they meet the Limit Numbers For Reduced Inspection, Table VIII, under the American Standard – Sampling Procedures and Tables For Inspection By Attributes guidelines, have been placed on the Single Sampling Plan For Normal Inspection due to the small volume of meters in the Commercial Class Control Groups.

C. Industrial Class - Over 1500 cfh

The eight (8) control groups in this capacity range performed extremely well, with no individual meters failing the sampling criteria. Two of the control groups were exhausted by the 2009 Sampling Program.

Beginning in 2003 test year, all Industrial Class control groups, regardless of whether they meet the Limit Numbers For Reduced Inspection, Table VIII, under the American Standard – Sampling Procedures and Tables For Inspection By Attributes guidelines, have been placed on the Single Sampling Plan For Normal Inspection due to the small volume of meters in the Industrial Class control groups.

D. 2007 Failed Group Summary

The remainders of the 2007 test year Failed Control Groups, which had to be removed within an 18 month time period beginning January 1st 2008, were removed in 2009.

2007 Failed Meter Groups To Be Removed By June 2009

Manufacturer	Model	Type	Installed Year	Beginning Population	Remaining Population
Rockwell	R250	057	1988	78	0
Rockwell	R250	057	1989	48	0

III. Safety

As part of the LG&E Meter Sampling change-out activities, safety inspections were performed and "red-tags" were issued when deficiencies were found which resulted in a customers appliance being left off or the customers gas service partially or fully suspended until the deficiency was corrected by the customer. The results of these safety inspections directly associated with LG&E's Meter Sampling Program are summarized in Table 2 below.

Table 2: Year 2009 Safety Inspection Results

Type of Problem/Appliance	# of "Red Tags"
Water Heater Not Vented Correctly	4
Houseline Leak	7
Uncoated Brass Connector On Water Heater	15
Uncoated Brass Connector Through Furnace Wall	66
Uncoated Brass Connector On Stove	1

Uncoated Brass Connector On Dryer	1
Bare Electrical Wire In Furnace	1
H/L Leak To Stove	1
H/L Leak To Dryer	1
Rusted Boiler Vent	1
Water Heater Vent Rusted	1
Furnace Vent Rusted	1

Additionally, 1,089 Customer Surveillance Notices were issued to customers to correct outside deficiencies on their meter loop or exposed outside gas piping.

Table 3: Year 2009 Customer Surveillance Notices Issued

Type Of Customer Notice Issued	Number Issued
Corrosion / Rust On Outside Meter Loop & Associated Piping	899
Tree / Shrubbery Growing Inside / Against Meter Loop	18
Gas Piping Not Properly Supported	111
Meter Loop Too Low - In Contact With Soil / Pavement	4
Meter Not Protected From Vehicular Damage	54
Other	3

IV. Year 2009 Residential Meter Sampling Savings

Table 4, which highlights the estimated savings between a periodic change schedule and the LG&E Gas Meter Performance Control Program for the purchase of new/remanufactured residential class gas meters, is included on the next page.

Table 4: **2009 Residential Class Meter Sampling Program Estimated Savings**

Metering Savings: Residential Gas Meters Only	
Periodic Program Costs (10-year Program):	
Number of Meters under Periodic Program [1]	31,403
Unit Remanufacture Cost – Average Blended Cost	$ 23.31
Residential Meter Costs Under Periodic Program	$732,004
Sampling Program Costs: [2]	
Number of Meters under Sampling Program	7,023
Number of poor performing meters scrapped	791
Number of Meters for Remanufacture	6,232
Remanufactured Meters	6,232
Average Unit Remanufacture Cost – All Models	$23.31
Remanufactured Meter Costs	$145,268
Replacement Meters (including FST Replacements)	917
Average Replacement Meter Cost (per unit)	$ 38.33
Replacement Meter Costs	$35,149
Total Meter Costs Under 2009 Program	$180,417
Meter Cost Savings From 2009 Program	$551,587

Administrative and Development Costs:	
Programming Development Costs: [3]	
Number of Hours in Programming	60
Pay Rate with Overheads	$ 65.00
Development Costs	$ 3,900
Additional Administrative Costs (Supervisory): [4]	
Total Hours (based on 10 hrs/week)	520
Pay Rate with Overheads	$ 52.98
Additional Admin. Costs	$27,550
Total Administrative & Development Costs	$31,450

Net 2009 Residential Meter Cost Savings	$520,137

[1] Residential meters on line end of year
[2] Includes 2009 sample meters and failed meter groups.
[3] Development time for revisions to an Access Database.
[4] Estimated Hours Spent Specific On Administration & Reporting Functions

APPENDIX A

Control Group Data/Analysis

Control Group Test Data Range

Frequency Histograms (Examples)

Statistical Definitions

MEDIAN

The median is the number in the middle of a set of numbers; that is, half the numbers have values that are greater than the median and half have values that are less.

STANDARD DEVIATION

The standard deviation is a measure of how widely values are dispersed from the average value (the mean).

SKEWNESS

Skewness characterizes the degree of asymmetry of a distribution around its mean. Positive skewness indicates a distribution with an asymmetric tail extending towards more positive values. Negative skewness indicates a distribution with an asymmetric tail extending tc ·ds more negative values.

CONFIDENCE

The confidence interval is a range on either side of a sample mean. For example, if you order a product through the mail, you can determine, with a particular level of confidence, the earliest and latest the product should arrive.

American AL425	Test Year 2009										
425 CFH	Control Group-Installed Year										
Code: 015	1994	1995	1996	1997	1998	1999	2000	2001	2003	2005	2007
Sample Plan	Reduced	Reduced	Reduced	Reduced	Reduced	Reduced	Reduced	Reduced	Reduced	Reduced	Reduced
Sample Size	32	32	32	32	32	32	32	32	32	32	32
Original Population	33	142	504	413	556	428	450	575	342	527	532
# of Slow Failures	0	0	0	0	0	0	0	0	0	1	0
# of Fast Failures	0	0	0	0	0	0	0	0	0	0	0
Total Failures:	0	0	0	0	0	0	0	0	0	1	0
Accept Level	5	5	5	5	5	5	5	5	5	5	5
Reject Level	8	8	8	8	8	8	8	8	8	8	8
Pass/ Fail?	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
If Failed - Remove By:	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Statistical Data:											
Mean (Average Proof)	0.084375	-0.24219	-0.65781	-0.39688	-0.15781	-0.36719	-0.27969	-0.09688	-0.53125	-0.46094	-0.14063
Median	-0.025	-0.225	-0.625	-0.5	-0.35	-0.5	-0.175	-0.1	-0.525	-0.4	-0.075
Standard Deviation	0.640997	0.531144	0.509445	0.660027	0.709851	0.531524	0.616946	0.468515	0.472596	0.643044	0.475774
Sample Variance	0.410877	0.282114	0.259534	0.435635	0.503889	0.282518	0.380622	0.219506	0.223347	0.413506	0.226361
Skewness	0.471365	-0.3757	-0.12382	1.043414	0.712777	0.866918	-0.01636	0.773947	0.153646	-0.74461	-0.57442
Minimum	-1	-1.7	-1.75	-1.4	-1.3	-1.3	-1.8	-0.75	-1.4	-2.1	-1.15
Maximum	1.5	0.95	0.4	1.35	1.55	1.2	1.3	1.25	0.45	0.5	0.5
Count	32	32	32	32	32	32	32	32	32	32	32
Confidence Level(95.0%)	0.231104	0.191498	0.183674	0.237965	0.255929	0.191635	0.222433	0.168918	0.170389	0.231842	0.171535

Year 2009

Meter Code 015 American AL 425

Code & Year:	1994
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	0
-1.2 to -.4	7
-.4 to .4	16
.4 to 1.2	8
1.2 to 2.0	1
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	32

Code & Year:	1995
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	1
-1.2 to -.4	9
-.4 to .4	19
.4 to 1.2	3
1.2 to 2.0	0
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	32

Code & Year:	1996
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	5
-1.2 to -.4	17
-.4 to .4	10
.4 to 1.2	0
1.2 to 2.0	0
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	32

Code & Year:	1997
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	2
-1.2 to -.4	17
-.4 to .4	10
.4 to 1.2	1
1.2 to 2.0	2
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	32

Code & Year:	1998
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	1
-1.2 to -.4	13
-.4 to .4	12
.4 to 1.2	4
1.2 to 2.0	2
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	32

Code & Year:	1999
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	1
-1.2 to -.4	16
-.4 to .4	13
.4 to 1.2	2
1.2 to 2.0	0
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	32

Code & Year:	2000
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	2
-1.2 to -.4	9
-.4 to .4	18
.4 to 1.2	2
1.2 to 2.0	1
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	32

Code & Year:	2001
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	0
-1.2 to -.4	10
-.4 to .4	18
.4 to 1.2	3
1.2 to 2.0	1
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	32

Code & Year:	2003
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	1
-1.2 to -.4	18
-.4 to .4	12
.4 to 1.2	1
1.2 to 2.0	0
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	32

Code & Year:	2005
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	1
-.2 to -1.2	2
-1.2 to -.4	12
-.4 to .4	16
.4 to 1.2	1
1.2 to 2.0	0
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	32

Year 2009

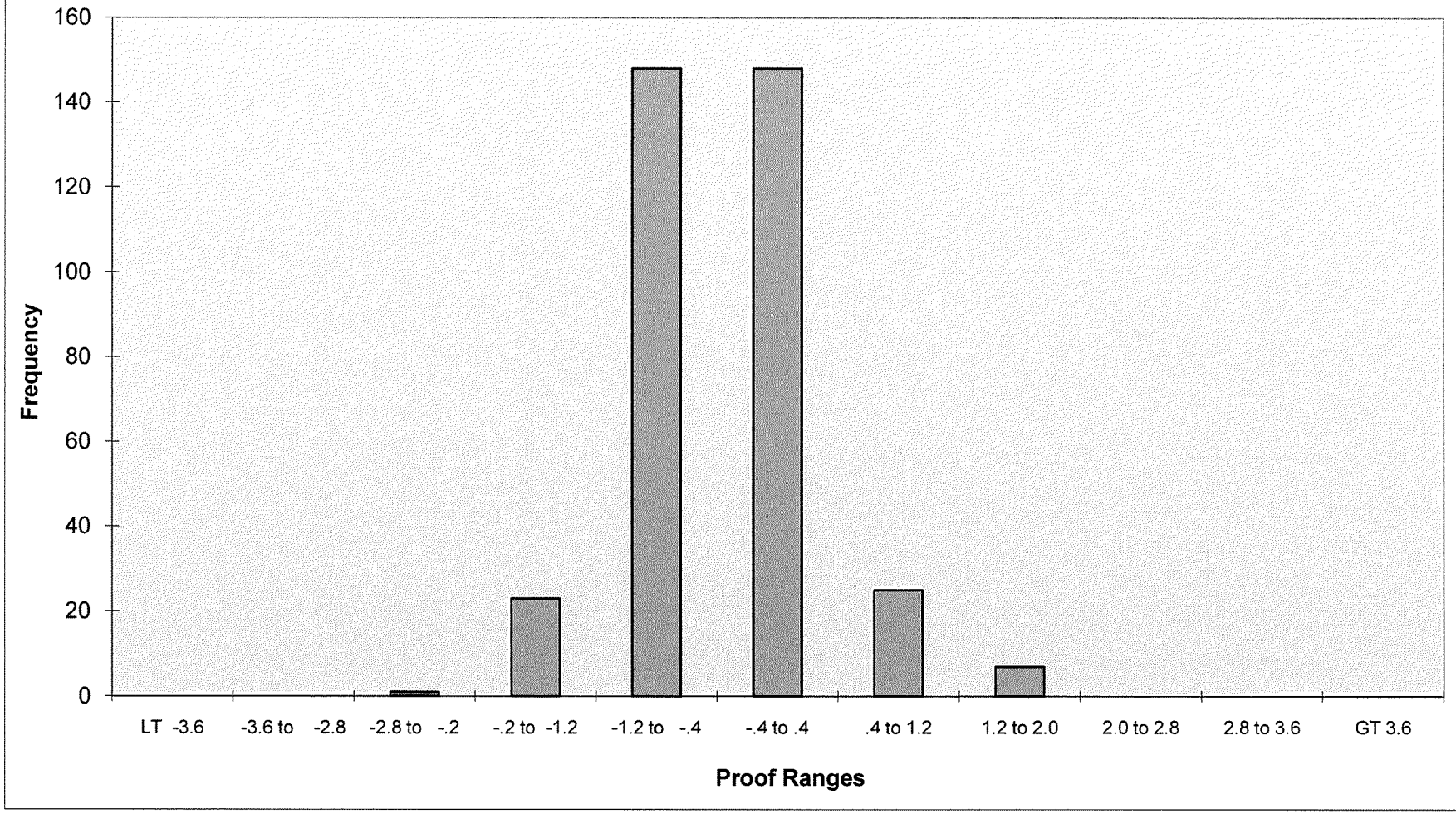
Meter Code 015 American AL 425

Code & Year:	2007
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	8
-1.2 to -.4	20
-.4 to .4	4
.4 to 1.2	0
1.2 to 2.0	0
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	32

Code & Year:	Total
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	1
-.2 to -1.2	23
-1.2 to -.4	148
-.4 to .4	148
.4 to 1.2	25
1.2 to 2.0	7
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	352

American AL425 Distribution Profile - 015

(1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2003, 2005, 2007)



Metris 250
250 CFH
Code: 018

Test Year 2009

	Control Group-Installed Year								
	2000	2001	2003	2005					
Sample Plan	Single	Single	Single	Single					
Sample Size	125	80	200	8*					
Original Population	1362	817	5244	21					
# of Slow Failures	1	0	11	0					
# of Fast Failures	1	0	0	0					
Total Failures:	2	0	11	0					
Accept Level	14	10	21	1					
Reject Level	15	11	22	2					
Pass / Fail?	Pass	Pass	Pass	Pass					
If Failed - Remove By:	NA	NA	NA	Exhaust					
Statistical Data:									
Mean (Average Proof)	0.1772	0.074375	-0.67	-0.9					
Median	0.15	0.05	-0.63	-0.775					
Standard Deviation	0.783949	0.582335	0.91	0.64365					
Sample Variance	0.614577	0.339114	0.83	0.414286					
Skewness	-0.79669	-0.33672	-0.34	-0.94236					
Minimum	-3.7	-1.65	-4.00	-1.95					
Maximum	2.05	1.2	1.75	-0.2					
Count	125	80	200	8					
Confidence Level(95.0%)	0.138784	0.129592	0.13	0.538105					

* Population less than required 32 minimum sample size - all meters to be changed - Single Sampling Plan for Normal Inspection used to obtain sample size to determine if control group passed or failed.

Year 2009 Meter Code 018 Metris 250

Code & Year:	2000
Data Range	Number
LT -3.6	1
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	3
-1.2 to -.4	18
-.4 to .4	57
.4 to 1.2	34
1.2 to 2.0	11
2.0 to 2.8	1
2.8 to 3.6	0
GT 3.6	0
Total	125

Code & Year:	2001
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	1
-1.2 to -.4	11
-.4 to .4	47
.4 to 1.2	21
1.2 to 2.0	0
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	80

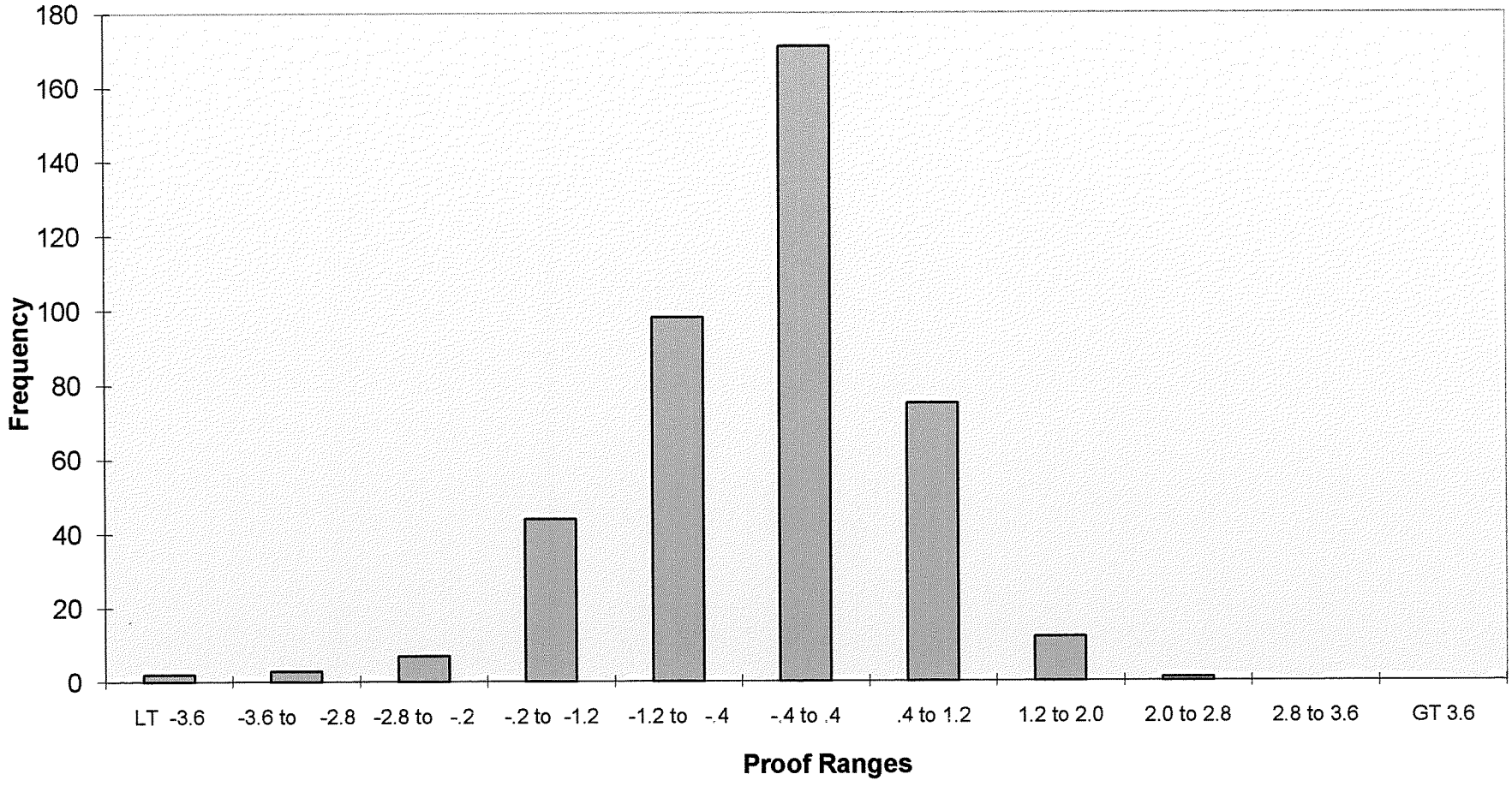
Code & Year:	2003
Data Range	Number
LT -3.6	1
-3.6 to -2.8	3
-2.8 to -.2	7
-.2 to -1.2	38
-1.2 to -.4	65
-.4 to .4	65
.4 to 1.2	20
1.2 to 2.0	1
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	200

Code & Year:	2005
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	2
-1.2 to -.4	4
-.4 to .4	2
.4 to 1.2	0
1.2 to 2.0	0
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	8

Code & Year:	Total
Data Range	Number
LT -3.6	2
-3.6 to -2.8	3
-2.8 to -.2	7
-.2 to -1.2	44
-1.2 to -.4	98
-.4 to .4	171
.4 to 1.2	75
1.2 to 2.0	12
2.0 to 2.8	1
2.8 to 3.6	0
GT 3.6	0
Total	413

Metris 250 Distribution Profile - 018

(2000, 2001, 2003, 2005)



Rockwell R175	Test Year 2009									
175 CFH	Control Group-Installed Year									
Code: 024	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
Sample Plan	Single	Single	Single	Single	Single	Single	Single	Single	Single	Single
Sample Size	200	200	125	200	125	200	200	200	200	200
Original Population	4172	3963	2787	4094	3361	3912	4451	4700	3389	3212
# of Slow Failures	11	8	5	5	2	5	7	11	3	4
# of Fast Failures	2	6	3	1	2	9	3	6	2	2
Total Failures:	13	14	8	6	4	14	10	17	5	6
Accept Level	21	21	14	21	14	21	21	21	21	21
Reject Level	22	22	15	22	15	22	22	22	22	22
Pass / Fail?	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
If Failed - Remove By:	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Statistical Data:										
Mean (Average Proof)	0.06225	-0.0185	-0.0692	0.0225	-0.092	0.34175	-0.13775	-0.16225	0.01025	-0.064
Median	0.225	0.1	-0.05	0.1	-0.15	0.4	0	-0.075	0.1	0.05
Standard Deviation	1.144953	1.368116	0.937778	0.867862	0.966232	1.053682	1.009832	1.039309	0.919011	1.011767
Sample Variance	1.310917	1.871741	0.879427	0.753185	0.933605	1.110246	1.019761	1.080163	0.84458	1.023672
Skewness	-1.57122	-2.04681	-0.28169	-0.97167	0.016931	-0.60059	-0.23058	-0.14948	-0.03019	-1.09785
Minimum	-6.5	-10.05	-3	-3.6	-2.85	-3.65	-3.85	-3.25	-2.5	-5.05
Maximum	2.85	6.15	2.75	2.45	2.35	3.2	2.9	2.95	3.45	2.8
Count	200	200	125	200	125	200	200	200	200	200
Confidence Level(95.0%)	0.15965	0.190768	0.166017	0.121013	0.171054	0.146924	0.140809	0.14492	0.128145	0.141079

Rockwell R175	Test Year 2009								
175 CFH	Control Group-Installed Year								
Code: 024	1996	1997	1998	1999	2000	2001	2003	2005	2007
Sample Plan	Single	Single	Single	Single	Single	Single	Single	Single	Single
Sample Size	125	80	80	125	125	125	125	200	125
Original Population	1497	712	1145	1968	1249	1350	2455	3596	2935
# of Slow Failures	1	1	0	5	1	4	3	1	0
# of Fast Failures	0	1	0	3	0	0	0	0	0
Total Failures:	1	2	0	8	1	4	3	1	0
Accept Level	14	10	10	14	14	14	14	21	14
Reject Level	15	11	11	15	15	15	15	22	15
Pass / Fail?	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
If Failed - Remove By:	NA	NA	NA	NA	NA	NA	NA	NA	NA
Statistical Data:									
Mean (Average Proof)	-0.246	-0.15813	-0.27375	-0.1788	-0.26	-0.29	-0.172	0.02725	-0.108
Median	-0.2	-0.1	-0.275	-0.15	-0.25	-0.2	-0.1	0	-0.1
Standard Deviation	0.707779	0.798949	0.736566	0.992883	0.71651	0.873351	0.860125	0.666269	0.606663
Sample Variance	0.500952	0.638319	0.54253	0.985817	0.513387	0.762742	0.739815	0.443915	0.36804
Skewness	-0.39313	-0.10288	0.243197	-0.38113	-0.55341	-1.53797	-1.681	0.008261	-0.15312
Minimum	-2.65	-2.45	-1.9	-4.3	-3.25	-4.95	-5.1	-2.05	-1.9
Maximum	1.6	2.05	1.7	2.55	1.25	1.6	1.9	1.75	1.45
Count	125	80	80	125	125	125	125	200	125
Confidence Level(95.0%)	0.1253	0.177797	0.163915	0.175772	0.126845	0.154611	0.15227	0.092903	0.107399

Year 2009 Meter Code 024 Rockwell R175

Code & Year:	1986
Data Range	Number
LT -3.6	2
-3.6 to -2.8	1
-2.8 to -.2	8
-.2 to -1.2	9
-1.2 to -.4	34
-.4 to .4	62
.4 to 1.2	63
1.2 to 2.0	19
2.0 to 2.8	1
2.8 to 3.6	1
GT 3.6	0
Total	200

Code & Year:	1987
Data Range	Number
LT -3.6	2
-3.6 to -2.8	1
-2.8 to -.2	5
-.2 to -1.2	13
-1.2 to -.4	39
-.4 to .4	75
.4 to 1.2	44
1.2 to 2.0	15
2.0 to 2.8	5
2.8 to 3.6	0
GT 3.6	1
Total	200

Code & Year:	1988
Data Range	Number
LT -3.6	0
-3.6 to -2.8	1
-2.8 to -.2	4
-.2 to -1.2	9
-1.2 to -.4	22
-.4 to .4	53
.4 to 1.2	27
1.2 to 2.0	6
2.0 to 2.8	3
2.8 to 3.6	0
GT 3.6	0
Total	125

Code & Year:	1989
Data Range	Number
LT -3.6	0
-3.6 to -2.8	4
-2.8 to -.2	1
-.2 to -1.2	7
-1.2 to -.4	42
-.4 to .4	82
.4 to 1.2	52
1.2 to 2.0	11
2.0 to 2.8	1
2.8 to 3.6	0
GT 3.6	0
Total	200

Code & Year:	1990
Data Range	Number
LT -3.6	0
-3.6 to -2.8	1
-2.8 to -.2	1
-.2 to -1.2	15
-1.2 to -.4	27
-.4 to .4	44
.4 to 1.2	26
1.2 to 2.0	9
2.0 to 2.8	2
2.8 to 3.6	0
GT 3.6	0
Total	125

Code & Year:	1991
Data Range	Number
LT -3.6	1
-3.6 to -2.8	2
-2.8 to -.2	2
-.2 to -1.2	6
-1.2 to -.4	24
-.4 to .4	71
.4 to 1.2	59
1.2 to 2.0	26
2.0 to 2.8	8
2.8 to 3.6	1
GT 3.6	0
Total	200

Code & Year:	1992
Data Range	Number
LT -3.6	1
-3.6 to -2.8	0
-2.8 to -.2	6
-.2 to -1.2	19
-1.2 to -.4	48
-.4 to .4	72
.4 to 1.2	39
1.2 to 2.0	12
2.0 to 2.8	2
2.8 to 3.6	1
GT 3.6	0
Total	200

Code & Year:	1993
Data Range	Number
LT -3.6	0
-3.6 to -2.8	2
-2.8 to -.2	9
-.2 to -1.2	22
-1.2 to -.4	40
-.4 to .4	75
.4 to 1.2	42
1.2 to 2.0	4
2.0 to 2.8	5
2.8 to 3.6	1
GT 3.6	0
Total	200

Code & Year:	1994
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	3
-.2 to -1.2	16
-1.2 to -.4	40
-.4 to .4	76
.4 to 1.2	52
1.2 to 2.0	11
2.0 to 2.8	1
2.8 to 3.6	1
GT 3.6	0
Total	200

Code & Year:	1995
Data Range	Number
LT -3.6	2
-3.6 to -2.8	0
-2.8 to -.2	2
-.2 to -1.2	16
-1.2 to -.4	45
-.4 to .4	79
.4 to 1.2	41
1.2 to 2.0	13
2.0 to 2.8	2
2.8 to 3.6	0
GT 3.6	0
Total	200

Year 2009 Meter Code 024 Rockwell R175

Code & Year:	1996
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	1
-.2 to -1.2	11
-1.2 to -.4	33
-.4 to .4	56
.4 to 1.2	22
1.2 to 2.0	2
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	125

Code & Year:	1997
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	1
-.2 to -1.2	9
-1.2 to -.4	13
-.4 to .4	40
.4 to 1.2	14
1.2 to 2.0	2
2.0 to 2.8	1
2.8 to 3.6	0
GT 3.6	0
Total	80

Code & Year:	1998
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	10
-1.2 to -.4	21
-.4 to .4	37
.4 to 1.2	10
1.2 to 2.0	2
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	80

Code & Year:	1999
Data Range	Number
LT -3.6	1
-3.6 to -2.8	0
-2.8 to -.2	4
-.2 to -1.2	11
-1.2 to -.4	28
-.4 to .4	52
.4 to 1.2	19
1.2 to 2.0	7
2.0 to 2.8	3
2.8 to 3.6	0
GT 3.6	0
Total	125

Code & Year:	2000
Data Range	Number
LT -3.6	0
-3.6 to -2.8	1
-2.8 to -.2	0
-.2 to -1.2	7
-1.2 to -.4	43
-.4 to .4	51
.4 to 1.2	22
1.2 to 2.0	1
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	125

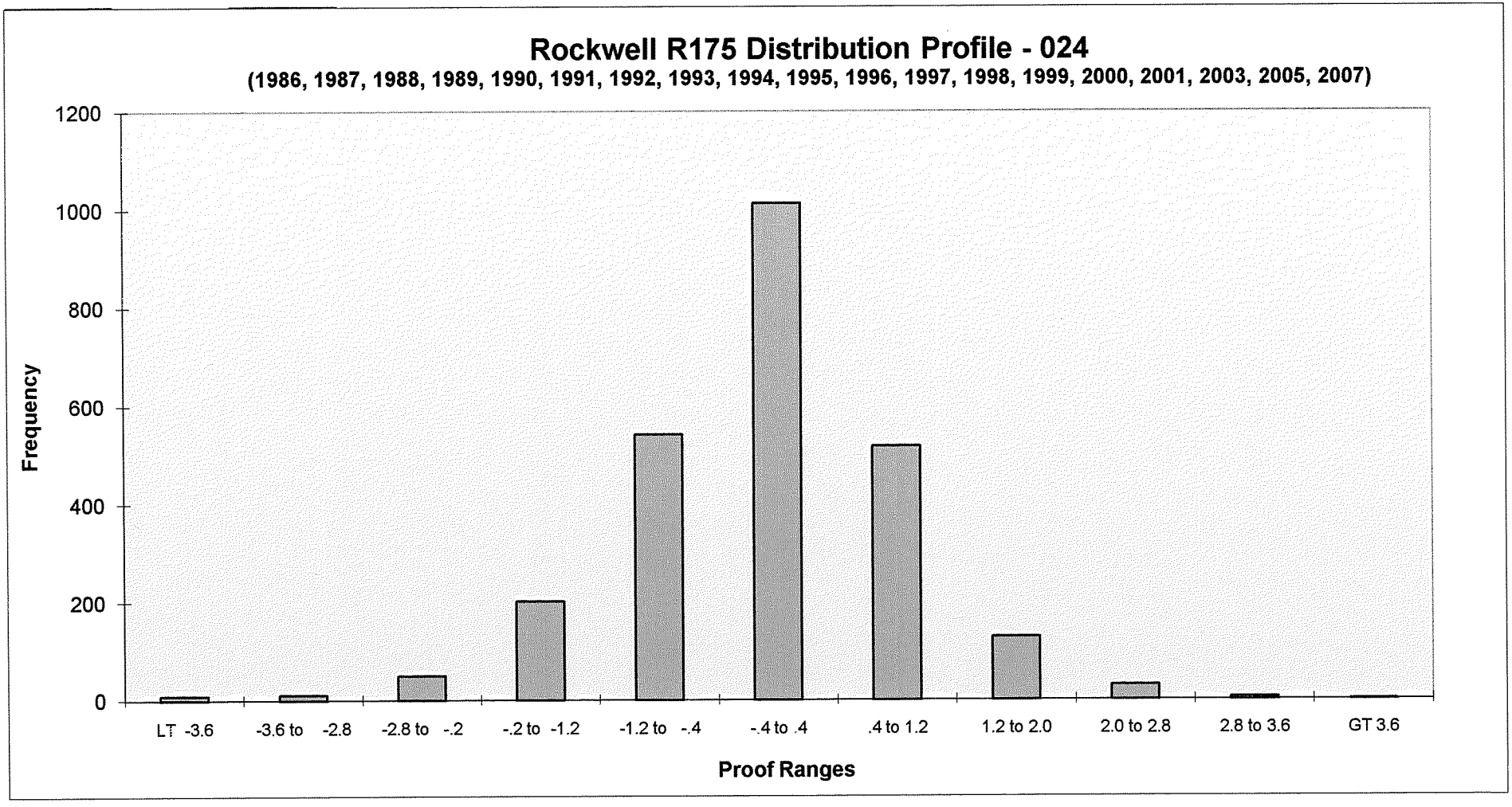
Code & Year:	2001
Data Range	Number
LT -3.6	1
-3.6 to -2.8	0
-2.8 to -.2	3
-.2 to -1.2	9
-1.2 to -.4	35
-.4 to .4	58
.4 to 1.2	18
1.2 to 2.0	1
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	125

Code & Year:	2003
Data Range	Number
LT -3.6	1
-3.6 to -2.8	0
-2.8 to -.2	2
-.2 to -1.2	41
-1.2 to -.4	56
-.4 to .4	23
.4 to 1.2	2
1.2 to 2.0	0
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	125

Code & Year:	2005
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	1
-.2 to -1.2	7
-1.2 to -.4	33
-.4 to .4	114
.4 to 1.2	36
1.2 to 2.0	9
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	200

Code & Year:	2007
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	3
-1.2 to -.4	34
-.4 to .4	67
.4 to 1.2	19
1.2 to 2.0	2
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	125

Code & Year:	Total
Data Range	Number
LT -3.6	9
-3.6 to -2.8	11
-2.8 to -.2	50
-.2 to -1.2	202
-1.2 to -.4	542
-.4 to .4	1013
.4 to 1.2	518
1.2 to 2.0	129
2.0 to 2.8	30
2.8 to 3.6	5
GT 3.6	1
Total	2510


Rockwell R175 Distribution Profile - 024
(1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2003, 2005, 2007)
Frequency
1200
1000
800
600
400
200
0
LT -3.6
-3.6 to -2.8
-2.8 to -.2
-.2 to -1.2
-1.2 to -.4
-.4 to .4
.4 to 1.2
1.2 to 2.0
2.0 to 2.8
2.8 to 3.6
GT 3.6
Proof Ranges

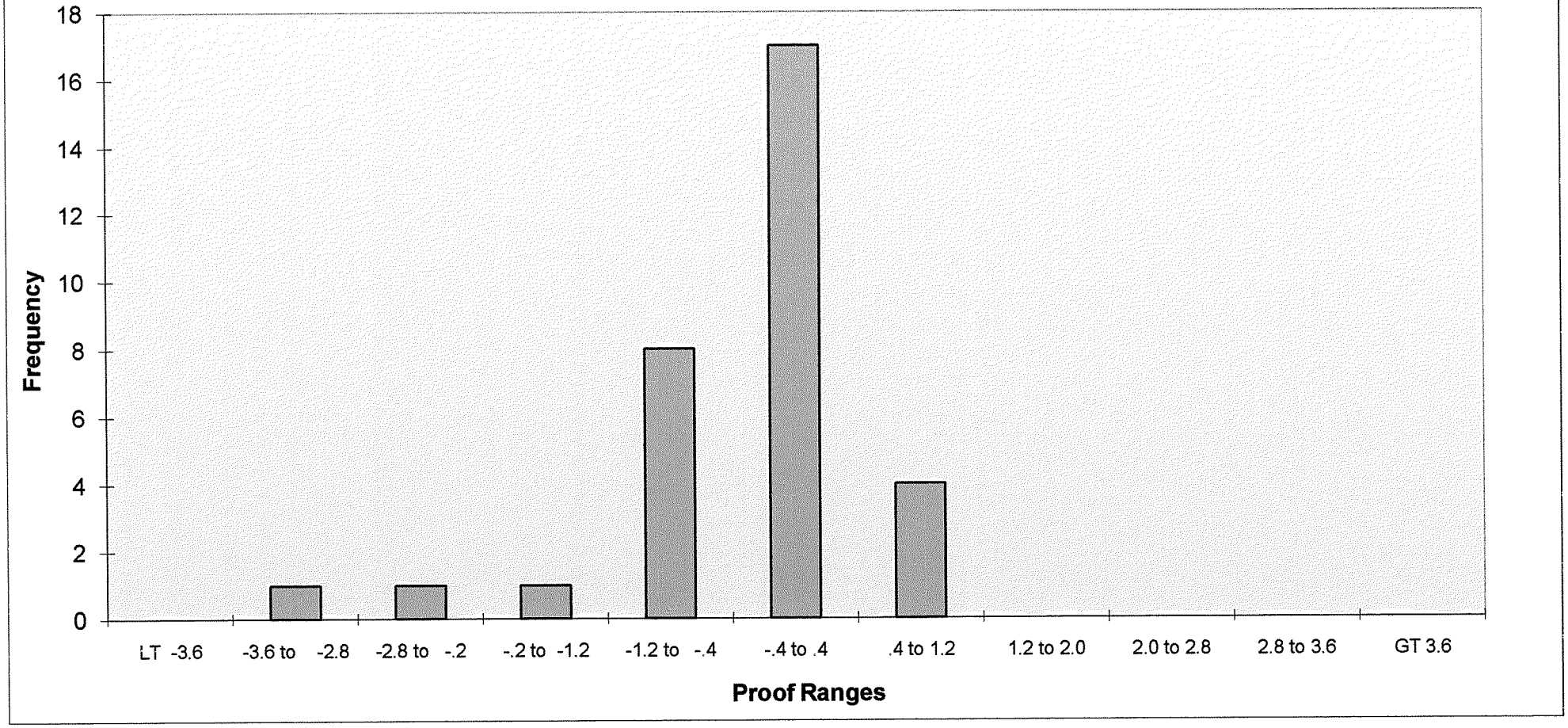
American AL 250	Test Year 2009								
250 CFH	Control Group-Installed Year								
Code: 030	1992								
Sampling Plan	Single								
Sample Size	32								
Original Population	92								
# of Slow Failures	2								
# of Fast Failures	0								
Total Failures:	2								
Accept Level	5								
Reject Level	6								
Pass/ Fail?	Pass								
If Failed - Remove By:	NA								
Statistical Data:									
Mean (Average Proof)	-0.33438								
Median	-0.2								
Standard Deviation	0.82251								
Sample Variance	0.676522								
Skewness	-1.53839								
Minimum	-3.25								
Maximum	1.15								
Count	32								
Confidence Level(95.0%)	0.296546								

Year 2009 Meter Code 030 American AL250

Code & Year:	1992
Data Range	Number
LT -3.6	0
-3.6 to -2.8	1
-2.8 to -.2	1
-.2 to -1.2	1
-1.2 to -.4	8
-.4 to .4	17
.4 to 1.2	4
1.2 to 2.0	0
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	32

Code & Year:	Total
Data Range	Number
LT -3.6	0
-3.6 to -2.8	1
-2.8 to -.2	1
-.2 to -1.2	1
-1.2 to -.4	8
-.4 to .4	17
.4 to 1.2	4
1.2 to 2.0	0
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	32

American AL250 Distribution Profile - 030
(1992)



American AL175	Test Year 2009									
175 CFH	Control Group-Installed Year									
Code: 033	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
Sample Plan	Reduced	Reduced	Reduced	Reduced	Reduced	Reduced	Reduced	Reduced	Reduced	Reduced
Sample Size	50	50	32	80	50	80	80	80	80	80
Original Population	1229	1879	885	3712	2264	6570	8006	7771	7854	8121
# of Slow Failures	0	2	0	0	0	0	0	0	0	2
# of Fast Failures	0	1	0	1	0	0	1	1	0	0
Total Failures:	0	3	0	1	0	0	1	1	0	2
Accept Level	7	7	5	10	7	10	10	10	10	10
Reject Level	10	10	8	13	10	13	13	13	13	13
Pass / Fail?	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
If Failed - Remove By:	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Statistical Data:										
Mean (Average Proof)	0.127	0.001	-0.01875	0.098125	0.143	0.08625	0.57875	0.1475	0.088125	-0.14625
Median	0.1	0.025	-0.125	0	0.15	-0.05	0.55	0.175	0.025	-0.05
Standard Deviation	0.649977	1.166168	0.704336	0.765285	0.566137	0.66213	0.831872	0.702703	0.592583	0.77422
Sample Variance	0.42247	1.359948	0.496089	0.585661	0.320511	0.438416	0.692011	0.493791	0.351155	0.599416
Skewness	0.375463	-1.60937	-0.02765	2.501299	-0.64112	0.28161	2.291889	-0.72934	0.716202	-1.98645
Minimum	-1.25	-4.85	-1.95	-1.7	-1.85	-1.45	-1.35	-2.45	-1.15	-3.5
Maximum	1.75	3.7	1.5	4.65	1.2	1.7	5.4	2.25	2	1.75
Count	50	50	32	80	50	80	80	80	80	80
Confidence Level(95.0%)	0.184721	0.331421	0.25394	0.170306	0.160894	0.14735	0.185124	0.156379	0.131873	0.172294

American AL175
175 CFH
Code: 033

Test Year 2009

	Control Group-Installed Year									
	1995	1996	1997	1998	1999	2000	2001	2003	2005	2007
Sample Plan	Reduced	Reduced	Reduced	Reduced	Reduced	Reduced	Reduced	Reduced	Reduced	Reduced
Sample Size	80	80	80	80	80	80	80	50	50	80
Original Population	8095	5241	9531	5762	8525	7812	4598	2805	2305	3451
# of Slow Failures	1	0	0	1	0	0	0	0	2	0
# of Fast Failures	0	0	3	0	1	0	0	0	0	0
Total Failures:	1	0	3	1	1	0	0	0	2	0
Accept Level	10	10	10	10	10	10	10	7	7	10
Reject Level	13	13	13	13	13	13	13	10	10	13
Pass / Fail?	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
If Failed - Remove By:	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Statistical Data:										
Mean (Average Proof)	-0.02688	-0.28875	0.088125	-0.43938	-0.03813	-0.07375	-0.30313	-0.43	-0.617	-0.12625
Median	0	-0.3	-0.05	-0.375	-0.075	-0.1	-0.25	-0.5	-0.525	-0.15
Standard Deviation	0.672514	0.551062	0.792179	0.584813	0.671351	0.565964	0.598222	0.442165	1.138994	0.458394
Sample Variance	0.452275	0.303669	0.627547	0.342006	0.450712	0.320315	0.35787	0.19551	1.297307	0.210125
Skewness	-0.57131	-0.04869	1.338471	-0.33463	0.969788	0.494951	-0.24289	0.536406	-3.57528	-0.35726
Minimum	-2.6	-1.75	-1.3	-2.05	-1.25	-1.4	-1.9	-1.15	-6.95	-1.35
Maximum	1.75	1.1	2.95	1.05	2.5	1.8	1	0.7	1.15	0.85
Count	80	80	80	80	80	80	80	50	50	80
Confidence Level(95.0%)	0.149661	0.122633	0.176291	0.130144	0.149402	0.125949	0.133128	0.125662	0.323698	0.102011

Year 2009

Meter Code 033 American AL175

Code & Year:	1985
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	1
-1.2 to -.4	7
-.4 to .4	31
.4 to 1.2	8
1.2 to 2.0	3
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	50

Code & Year:	1986
Data Range	Number
LT -3.6	2
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	1
-1.2 to -.4	5
-.4 to .4	28
.4 to 1.2	11
1.2 to 2.0	2
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	1
Total	50

Code & Year:	1987
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	1
-1.2 to -.4	9
-.4 to .4	13
.4 to 1.2	7
1.2 to 2.0	2
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	32

Code & Year:	1988
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	1
-1.2 to -.4	12
-.4 to .4	47
.4 to 1.2	17
1.2 to 2.0	2
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	1
Total	80

Code & Year:	1989
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	1
-1.2 to -.4	5
-.4 to .4	30
.4 to 1.2	14
1.2 to 2.0	0
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	50

Code & Year:	1990
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	3
-1.2 to -.4	13
-.4 to .4	43
.4 to 1.2	16
1.2 to 2.0	5
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	80

Code & Year:	1991
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	1
-1.2 to -.4	3
-.4 to .4	30
.4 to 1.2	35
1.2 to 2.0	10
2.0 to 2.8	1
2.8 to 3.6	0
GT 3.6	0
Total	80

Code & Year:	1992
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	2
-.2 to -1.2	1
-1.2 to -.4	11
-.4 to .4	37
.4 to 1.2	27
1.2 to 2.0	1
2.0 to 2.8	1
2.8 to 3.6	0
GT 3.6	0
Total	80

Code & Year:	1993
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	0
-1.2 to -.4	12
-.4 to .4	52
.4 to 1.2	12
1.2 to 2.0	4
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	80

Code & Year:	1994
Data Range	Number
LT -3.6	0
-3.6 to -2.8	2
-2.8 to -.2	0
-.2 to -1.2	3
-1.2 to -.4	13
-.4 to .4	52
.4 to 1.2	9
1.2 to 2.0	1
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	80

Year 2009

Meter Code 033 American AL175

Code & Year:	1995
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	1
-.2 to -1.2	3
-1.2 to -.4	15
-.4 to .4	43
.4 to 1.2	17
1.2 to 2.0	1
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	80

Code & Year:	1996
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	4
-1.2 to -.4	25
-.4 to .4	42
.4 to 1.2	9
1.2 to 2.0	0
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	80

Code & Year:	1997
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	1
-1.2 to -.4	19
-.4 to .4	39
.4 to 1.2	17
1.2 to 2.0	1
2.0 to 2.8	1
2.8 to 3.6	2
GT 3.6	0
Total	80

Code & Year:	1998
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	1
-.2 to -1.2	7
-1.2 to -.4	29
-.4 to .4	40
.4 to 1.2	3
1.2 to 2.0	0
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	80

Code & Year:	1999
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	2
-1.2 to -.4	23
-.4 to .4	40
.4 to 1.2	10
1.2 to 2.0	4
2.0 to 2.8	1
2.8 to 3.6	0
GT 3.6	0
Total	80

Code & Year:	2000
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	1
-1.2 to -.4	20
-.4 to .4	44
.4 to 1.2	13
1.2 to 2.0	2
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	80

Code & Year:	2001
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	5
-1.2 to -.4	27
-.4 to .4	39
.4 to 1.2	9
1.2 to 2.0	0
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	80

Code & Year:	2003
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	0
-1.2 to -.4	28
-.4 to .4	18
.4 to 1.2	4
1.2 to 2.0	0
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	50

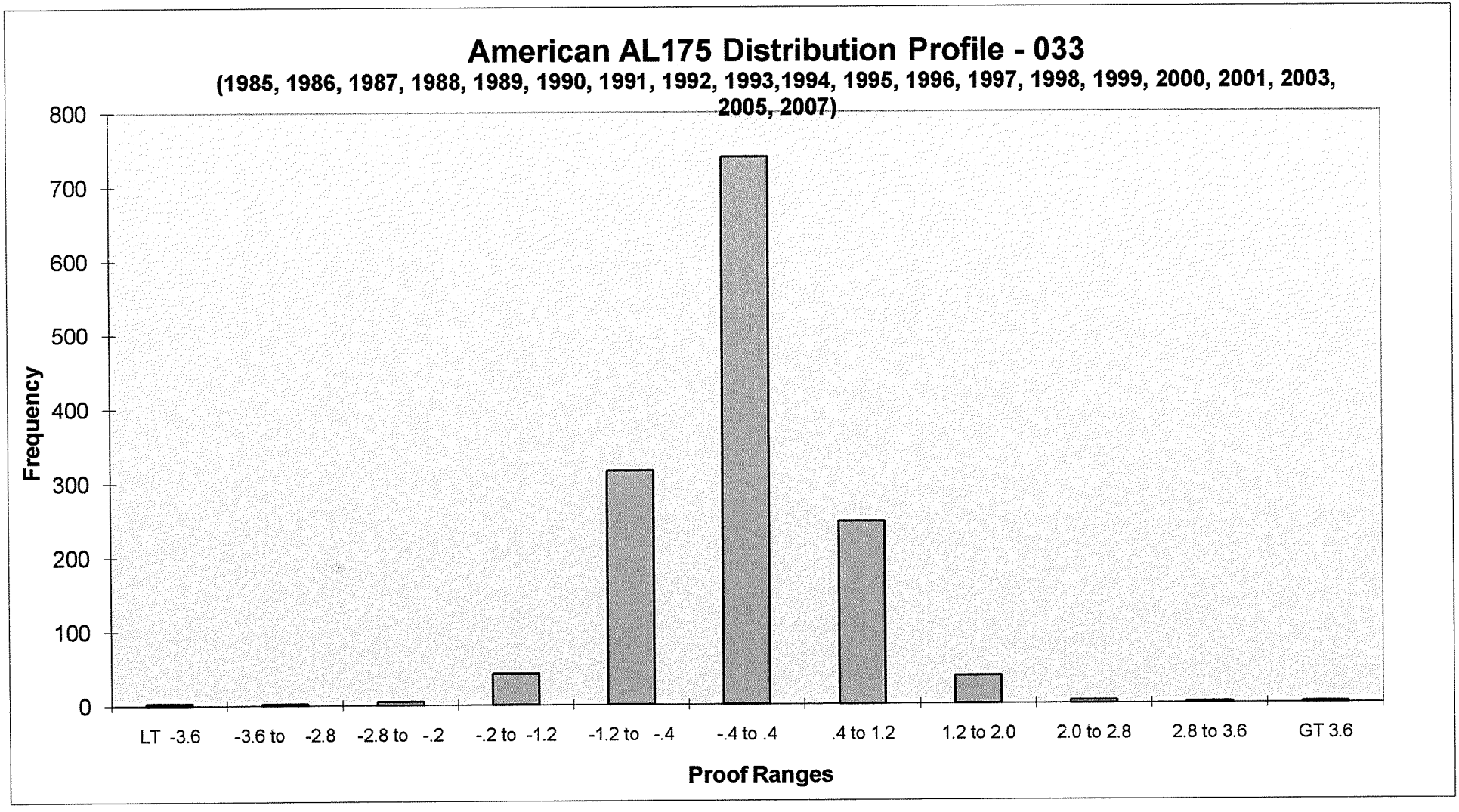
Code & Year:	2005
Data Range	Number
LT -3.6	1
-3.6 to -2.8	0
-2.8 to -.2	1
-.2 to -1.2	6
-1.2 to -.4	20
-.4 to .4	20
.4 to 1.2	2
1.2 to 2.0	0
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	50

Code & Year:	2007
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	1
-1.2 to -.4	20
-.4 to .4	52
.4 to 1.2	7
1.2 to 2.0	0
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	80

Year 2009

Meter Code 033 American AL175

Code & Year:	Total
Data Range	Number
LT -3.6	3
-3.6 to -2.8	2
-2.8 to -.2	5
-.2 to -1.2	43
-1.2 to -.4	316
-.4 to .4	740
.4 to 1.2	247
1.2 to 2.0	38
2.0 to 2.8	4
2.8 to 3.6	2
GT 3.6	2
Total	1402


American AL175 Distribution Profile - 033
(1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993,1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2003, 2005, 2007)
Frequency
800
700
600
500
400
300
200
100
0
LT -3.6
-3.6 to -2.8
-2.8 to -.2
-.2 to -1.2
-1.2 to -.4
-.4 to .4
.4 to 1.2
1.2 to 2.0
2.0 to 2.8
2.8 to 3.6
GT 3.6
Proof Ranges

American AL175	Test Year 2009								
175 CFH	Control Group-Installed Year								
Code: 33A	**1992**	**1993**	**1994**	**1997**					
Sample Plan	Reduced	Reduced	Reduced	Reduced					
Sample Size	80	50	50	2*					
Original Population	5167	2066	2680	8					
# of Slow Failures	0	0	0	0					
# of Fast Failures	0	0	1	0					
Total Failures:	0	0	1	0					
Accept Level	10	7	7	0					
Reject Level	13	10	10	1					
Pass / Fail?	Pass	Pass	Pass	Pass					
If Failed - Remove By:	NA	NA	NA	Exhaust					
Statistical Data:									
Mean (Average Proof)	0.184375	0.044	0.114	0.8					
Median	0.15	0.15	0.025	0.8					
Standard Deviation	0.598711	0.607575	0.748471	1.272792					
Sample Variance	0.358455	0.369147	0.560208	1.62					
Skewness	-0.17553	-0.67511	3.137331	NA					
Minimum	-1.45	-1.5	-1.2	-0.1					
Maximum	1.95	1.1	4.1	1.7					
Count	80	50	50	2					
Confidence Level(95.0%)	0.133237	0.172671	0.212713	11.43558					

* Population less than required 32 minimum sample size - all meters to be changed - Single Sampling Plan for Normal Inspection used to obtain sample size to determine if control group passed or failed.

Year 2009 Meter Code 33A American AL175

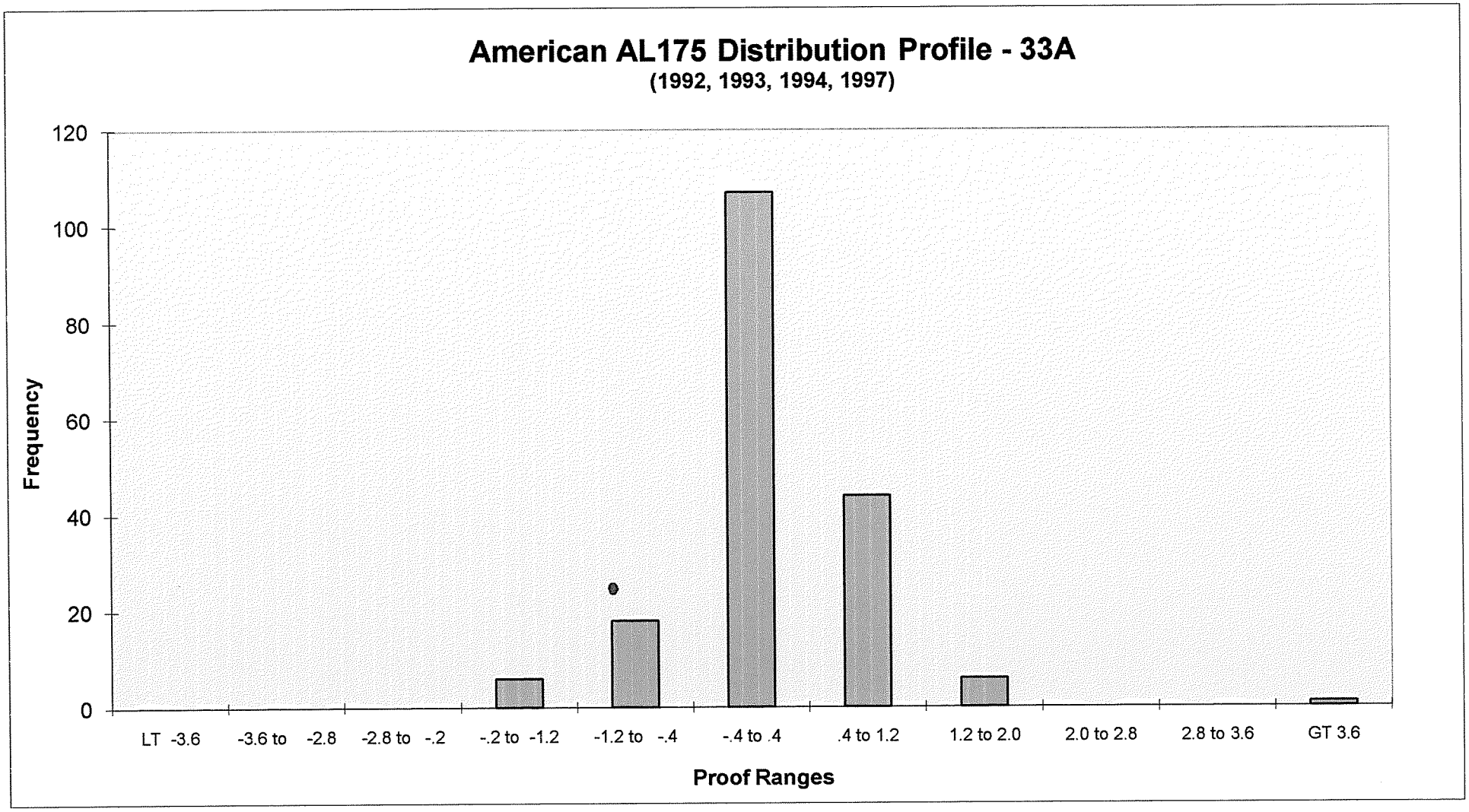
Code & Year:	1992
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	3
-1.2 to -.4	6
-.4 to .4	43
.4 to 1.2	25
1.2 to 2.0	3
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	80

Code & Year:	1993
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	3
-1.2 to -.4	7
-.4 to .4	28
.4 to 1.2	12
1.2 to 2.0	0
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	50

Code & Year:	1994
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	0
-1.2 to -.4	5
-.4 to .4	35
.4 to 1.2	7
1.2 to 2.0	2
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	1
Total	50

Code & Year:	1997
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	0
-1.2 to -.4	0
-.4 to .4	1
.4 to 1.2	0
1.2 to 2.0	1
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	2

Code & Year:	Total
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	6
-1.2 to -.4	18
-.4 to .4	107
.4 to 1.2	44
1.2 to 2.0	6
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	1
Total	182


American AL175 Distribution Profile - 33A
(1992, 1993, 1994, 1997)
120
100
80
60
40
20
0
Frequency
LT -3.6
-3.6 to -2.8
-2.8 to -.2
-.2 to -1.2
-1.2 to -.4
-.4 to .4
.4 to 1.2
1.2 to 2.0
2.0 to 2.8
2.8 to 3.6
GT 3.6
Proof Ranges

American 5B225
225 CFH
Code: 041

Test Year 2009

	Control Group-Installed Year							
	1986	1987	1988	1989	1990	1995	1996	
Sample Plan	Single	Single	Single	Single	Single	Single	Single	
Sample Size	32	8*	32	32	32	32	32	
Original Population	85	24	34	65	45	175	268	
# of Slow Failures	3	0	1	2	1	0	0	
# of Fast Failures	0	0	2	0	0	0	1	
Total Failures:	3	0	3	2	1	0	1	
Accept Level	5	1	5	5	5	5	5	
Reject Level	6	2	6	6	6	6	6	
Pass / Fail?	Pass	Pass	Pass	Pass	Pass	Pass	Pass	
If Failed - Remove By:	NA	Exhaust	NA	NA	NA	NA	NA	
Statistical Data:								
Mean (Average Proof)	-0.265625	-0.26875	-2.47188	-0.175	-0.425	0.085938	0.164063	
Median	-0.25	-0.6	0.65	0.05	0.05	0.075	-0.1	
Standard Deviation	1.1352446	1.079331	17.79638	1.395731	2.221377	0.537052	1.539283	
Sample Variance	1.2887802	1.164955	316.7113	1.948065	4.934516	0.288425	2.369393	
Skewness	-0.541614	0.590821	-5.63872	-1.94615	-4.88297	0.216009	4.040183	
Minimum	-2.95	-1.8	-99.9	-5.65	-12.05	-0.9	-1.35	
Maximum	1.55	1.45	2.85	1.9	1.75	1.1	7.75	
Count	32	8	32	32	32	32	32	
Confidence Level(95.0%)	0.4092993	0.902343	6.416281	0.503215	0.800892	0.193628	0.554971	

* Population less than required 32 minimum sample size - all meters to be changed - Single Sampling Plan for Normal Inspection used to obtain sample size to determine if control group passed or failed.

Year 2009

Meter Code 041 American 5B-225

Code & Year:	1986
Data Range	Number
LT -3.6	0
-3.6 to -2.8	1
-2.8 to -.2	2
-.2 to -1.2	3
-1.2 to -.4	6
-.4 to .4	10
.4 to 1.2	8
1.2 to 2.0	2
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	32

Code & Year:	1987
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	1
-1.2 to -.4	4
-.4 to .4	1
.4 to 1.2	1
1.2 to 2.0	1
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	8

Code & Year:	1988
Data Range	Number
LT -3.6	1
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	0
-1.2 to -.4	2
-.4 to .4	10
.4 to 1.2	12
1.2 to 2.0	5
2.0 to 2.8	1
2.8 to 3.6	1
GT 3.6	0
Total	32

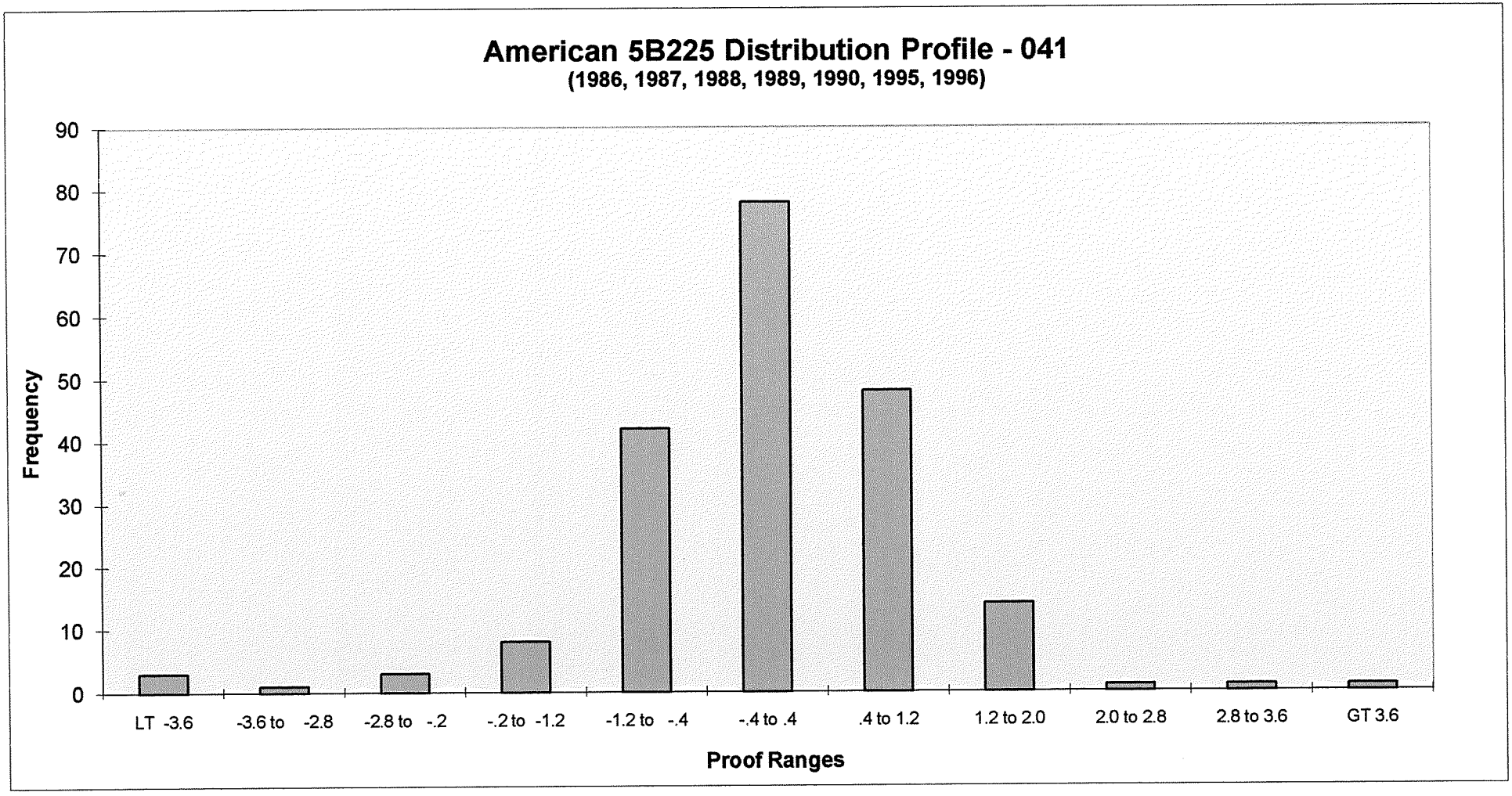
Code & Year:	1989
Data Range	Number
LT -3.6	1
-3.6 to -2.8	0
-2.8 to -.2	1
-.2 to -1.2	2
-1.2 to -.4	7
-.4 to .4	10
.4 to 1.2	8
1.2 to 2.0	3
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	32

Code & Year:	1990
Data Range	Number
LT -3.6	1
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	1
-1.2 to -.4	7
-.4 to .4	17
.4 to 1.2	5
1.2 to 2.0	1
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	32

Code & Year:	1995
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	0
-1.2 to -.4	6
-.4 to .4	18
.4 to 1.2	8
1.2 to 2.0	0
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	32

Code & Year:	1996
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	1
-1.2 to -.4	10
-.4 to .4	12
.4 to 1.2	6
1.2 to 2.0	2
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	1
Total	32

Code & Year:	Total
Data Range	Number
LT -3.6	3
-3.6 to -2.8	1
-2.8 to -.2	3
-.2 to -1.2	8
-1.2 to -.4	42
-.4 to .4	78
.4 to 1.2	48
1.2 to 2.0	14
2.0 to 2.8	1
2.8 to 3.6	1
GT 3.6	1
Total	200


American 5B225 Distribution Profile - 041
(1986, 1987, 1988, 1989, 1990, 1995, 1996)
Frequency
90
80
70
60
50
40
30
20
10
0
LT -3.6
-3.6 to -2.8
-2.8 to -.2
-.2 to -1.2
-1.2 to -.4
-.4 to .4
.4 to 1.2
1.2 to 2.0
2.0 to 2.8
2.8 to 3.6
GT 3.6
Proof Ranges

Rockwell R250	Test Date 2009								
250 CFH	Control Group-Installed Year								
Code: 057	1990	1995							
Sample Plan	Single	Single							
Sample Size	50	32							
Original Population	382	188							
# of Slow Failures	5	1							
# of Fast Failures	0	0							
Total Failures:	5	1							
Accept Level	7	5							
Reject Level	8	6							
Pass / Fail?	Pass	Pass							
If Failed - Remove By:	NA	NA							
Statistical Data:									
Mean (Average Proof)	-0.522	-0.2625							
Median	-0.175	-0.325							
Standard Deviation	1.26802	1.119836							
Sample Variance	1.607873	1.254032							
Skewness	-1.3459	-0.64058							
Minimum	-4.75	-3.55							
Maximum	1.3	1.3							
Count	50	32							
Confidence Level(95.0%)	0.360367	0.403744							

Year 2009

Meter Code 057 Rockwell R250

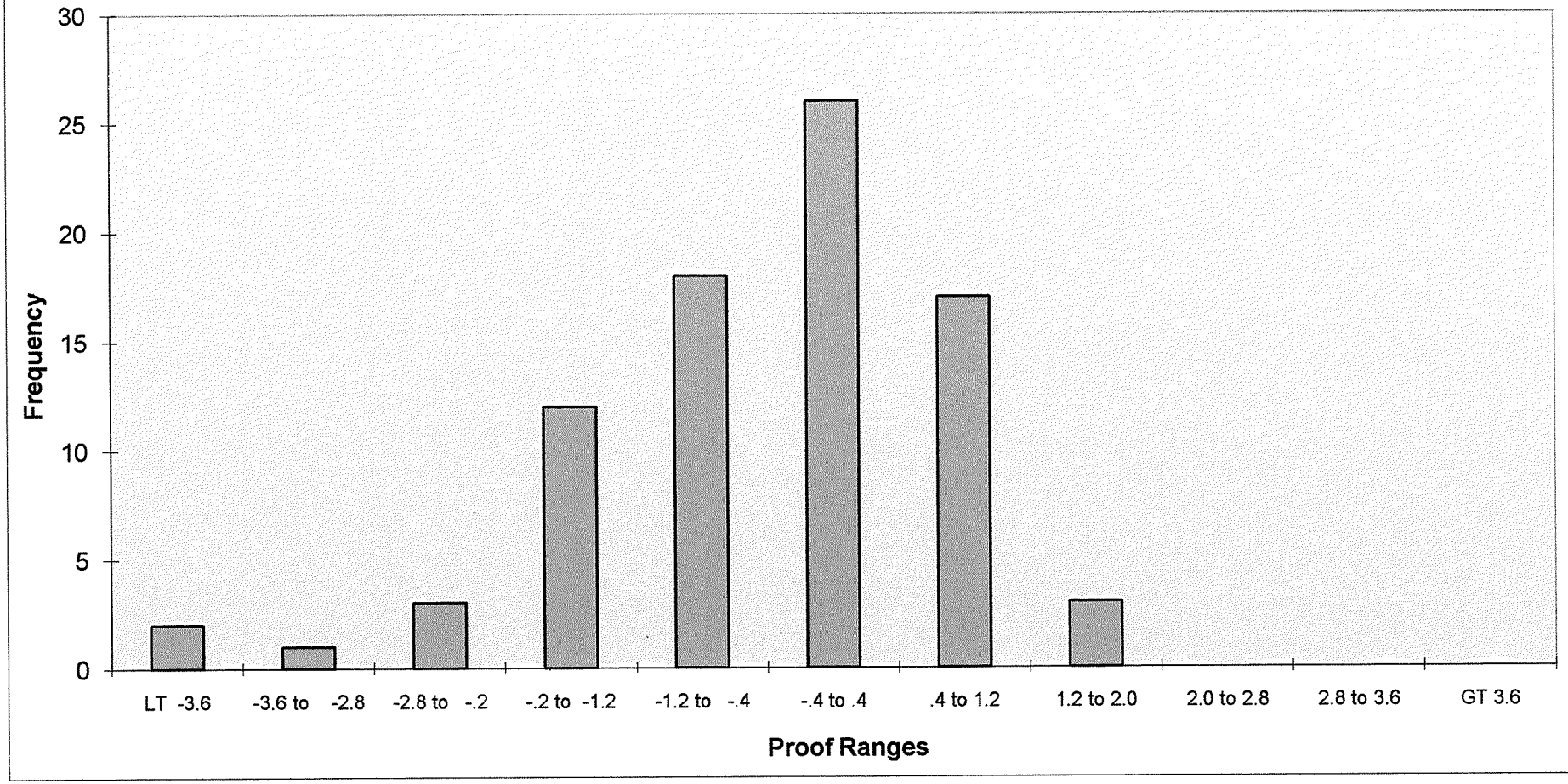
Code & Year:	1990
Data Range	Number
LT -3.6	2
-3.6 to -2.8	0
-2.8 to -.2	3
-.2 to -1.2	7
-1.2 to -.4	9
-.4 to .4	19
.4 to 1.2	9
1.2 to 2.0	1
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	50

Code & Year:	1995
Data Range	Number
LT -3.6	0
-3.6 to -2.8	1
-2.8 to -.2	0
-.2 to -1.2	5
-1.2 to -.4	9
-.4 to .4	7
.4 to 1.2	8
1.2 to 2.0	2
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	32

Code & Year:	Total
Data Range	Number
LT -3.6	2
-3.6 to -2.8	1
-2.8 to -.2	3
-.2 to -1.2	12
-1.2 to -.4	18
-.4 to .4	26
.4 to 1.2	17
1.2 to 2.0	3
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	82

Rockwell R250 Distribution Profile - 057

(1990, 1995)



American AC250	Test Year 2009									
250 CFH	Control Group-Installed Year									
Code: 078	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
Sample Plan	Reduced	Reduced	Reduced	Reduced	Reduced	Reduced	Reduced	Reduced	Reduced	Reduced
Sample Size	32	80	80	80	50	80	50	32	32	50
Original Population	938	4189	3598	4172	3180	4533	2730	74	652	2368
# of Slow Failures	0	0	0	0	1	1	0	0	0	0
# of Fast Failures	0	2	0	0	0	0	0	0	0	0
Total Failures:	0	2	0	0	1	1	0	0	0	0
Accept Level	5	10	10	10	7	10	7	5	5	7
Reject Level	8	13	13	13	10	13	10	8	8	10
Pass / Fail?	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
If Failed - Remove By:	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Statistical Data:										
Mean (Average Proof)	0.30625	0.226875	-0.285	-0.16438	-0.587	-0.095	-0.566	-0.08906	0.339063	0.045
Median	0.325	0.2	-0.3	-0.2	-0.475	-0.075	-0.575	-0.175	0.425	0.075
Standard Deviation	0.430819	0.847593	0.53275	0.452992	0.810065	0.74954	0.636592	0.730635	0.472422	0.345119
Sample Variance	0.185605	0.718414	0.283823	0.205202	0.656205	0.56181	0.405249	0.533828	0.223183	0.119107
Skewness	0.180025	2.5824	-0.12587	0.065953	-3.62745	-0.79604	0.050337	0.265989	-0.11465	-0.19824
Minimum	-0.55	-1.3	-1.6	-1.35	-5.1	-3.35	-2	-1.4	-0.55	-0.75
Maximum	1.2	5.05	0.85	0.95	0.75	1.65	0.6	1.5	1.15	0.9
Count	32	80	80	80	50	80	50	32	32	50
Confidence Level(95.0%)	0.155327	0.188623	0.118558	0.100809	0.230218	0.166802	0.180917	0.263422	0.170326	0.098082

American AC250
250 CFH
Code: 078

Test Year 2009

	Control Group-Installed Year									
	1995	1996	1997	1998	1999	2000	2001	2003	2005	2007
Sample Plan	Reduced	Reduced	Reduced	Reduced	Reduced	Reduced	Reduced	Reduced	Reduced	Reduced
Sample Size	80	80	80	80	80	80	80	50	80	80
Original Population	4491	9439	8720	6607	4808	5712	5514	2180	7439	5451
# of Slow Failures	0	0	1	1	0	0	0	0	0	0
# of Fast Failures	0	0	0	0	0	0	0	0	0	0
Total Failures:	0	0	1	1	0	0	0	0	0	0
Accept Level	10	10	10	10	10	10	10	7	10	10
Reject Level	13	13	13	13	13	13	13	10	13	13
Pass / Fail?	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
If Failed - Remove By:	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Statistical Data:										
Mean (Average Proof)	0.19875	-0.06625	0.22	0.0325	0.053125	0.181875	0.150625	0.09	0.409375	0.3425
Median	0.15	-0.075	0.3	0.175	0.075	0.1	0.1	0.1	0.425	0.35
Standard Deviation	0.460666	0.471852	0.812388	0.76618	0.442042	0.567319	0.465757	0.472941	0.580217	0.468035
Sample Variance	0.212214	0.222644	0.659975	0.587032	0.195402	0.321851	0.21693	0.223673	0.336652	0.219057
Skewness	0.674955	-0.31973	-4.8952	-3.18242	0.168065	0.914036	0.375496	-0.17306	-0.00548	-1.1045
Minimum	-1.1	-1.7	-5.65	-4.85	-1.05	-1.05	-0.9	-1.1	-0.95	-1.8
Maximum	1.95	0.85	1.1	2.15	1.5	1.95	1.7	1.05	1.9	1.3
Count	80	80	80	80	80	80	80	50	80	80
Confidence Level(95.0%)	0.102516	0.105005	0.180788	0.170505	0.098372	0.126251	0.103649	0.134408	0.129121	0.104156

Year 2009

Meter Code 078 American AC250

Code & Year:	1985
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	0
-1.2 to -.4	1
-.4 to .4	19
.4 to 1.2	12
1.2 to 2.0	0
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	32

Code & Year:	1986
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	1
-1.2 to -.4	15
-.4 to .4	37
.4 to 1.2	22
1.2 to 2.0	3
2.0 to 2.8	1
2.8 to 3.6	0
GT 3.6	1
Total	80

Code & Year:	1987
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	3
-1.2 to -.4	28
-.4 to .4	41
.4 to 1.2	8
1.2 to 2.0	0
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	80

Code & Year:	1988
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	2
-1.2 to -.4	19
-.4 to .4	48
.4 to 1.2	11
1.2 to 2.0	0
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	80

Code & Year:	1989
Data Range	Number
LT -3.6	1
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	4
-1.2 to -.4	22
-.4 to .4	22
.4 to 1.2	1
1.2 to 2.0	0
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	50

Code & Year:	1990
Data Range	Number
LT -3.6	0
-3.6 to -2.8	1
-2.8 to -.2	0
-.2 to -1.2	2
-1.2 to -.4	18
-.4 to .4	45
.4 to 1.2	11
1.2 to 2.0	3
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	80

Code & Year:	1991
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	6
-1.2 to -.4	26
-.4 to .4	14
.4 to 1.2	4
1.2 to 2.0	0
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	50

Code & Year:	1992
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	3
-1.2 to -.4	5
-.4 to .4	17
.4 to 1.2	5
1.2 to 2.0	2
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	32

Code & Year:	1993
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	0
-1.2 to -.4	1
-.4 to .4	15
.4 to 1.2	16
1.2 to 2.0	0
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	32

Code & Year:	1994
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	0
-1.2 to -.4	6
-.4 to .4	38
.4 to 1.2	6
1.2 to 2.0	0
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	50

Year 2009

Meter Code 078 American AC250

Code & Year:	1995
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	0
-1.2 to -.4	5
-.4 to .4	55
.4 to 1.2	18
1.2 to 2.0	2
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	80

Code & Year:	1996
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	1
-1.2 to -.4	16
-.4 to .4	50
.4 to 1.2	13
1.2 to 2.0	0
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	80

Code & Year:	1997
Data Range	Number
LT -3.6	1
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	0
-1.2 to -.4	8
-.4 to .4	36
.4 to 1.2	35
1.2 to 2.0	0
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	80

Code & Year:	1998
Data Range	Number
LT -3.6	1
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	1
-1.2 to -.4	13
-.4 to .4	48
.4 to 1.2	16
1.2 to 2.0	1
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	80

Code & Year:	1999
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	0
-1.2 to -.4	10
-.4 to .4	56
.4 to 1.2	13
1.2 to 2.0	1
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	80

Code & Year:	2000
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	0
-1.2 to -.4	10
-.4 to .4	51
.4 to 1.2	16
1.2 to 2.0	3
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	80

Code & Year:	2001
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	0
-1.2 to -.4	8
-.4 to .4	52
.4 to 1.2	19
1.2 to 2.0	1
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	80

Code & Year:	2003
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	0
-1.2 to -.4	7
-.4 to .4	31
.4 to 1.2	12
1.2 to 2.0	0
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	50

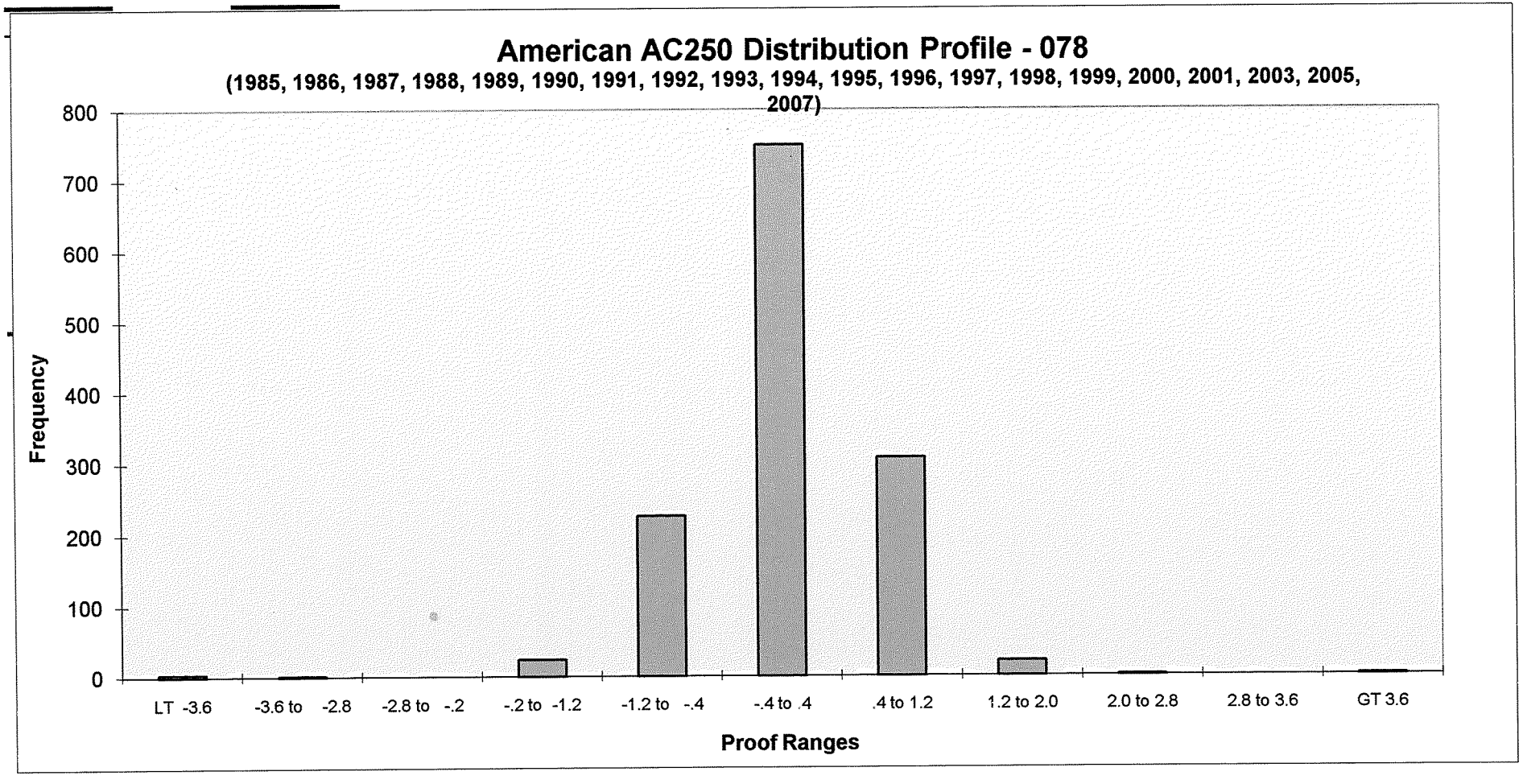
Code & Year:	2005
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	0
-1.2 to -.4	7
-.4 to .4	33
.4 to 1.2	36
1.2 to 2.0	4
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	80

Code & Year:	2007
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	1
-1.2 to -.4	2
-.4 to .4	42
.4 to 1.2	34
1.2 to 2.0	1
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	80

Year 2009

Meter Code 078 American AC250

Code & Year:	Total
Data Range	Number
LT -3.6	3
-3.6 to -2.8	1
-2.8 to -.2	0
-.2 to -1.2	24
-1.2 to -.4	227
-.4 to .4	750
.4 to 1.2	308
1.2 to 2.0	21
2.0 to 2.8	1
2.8 to 3.6	0
GT 3.6	1
Total	1336


American AC250 Distribution Profile - 078
(1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2003, 2005, 2007)
Frequency
800
700
600
500
400
300
200
100
0
LT -3.6
-3.6 to -2.8
-2.8 to -.2
-.2 to -1.2
-1.2 to -.4
-.4 to .4
.4 to 1.2
1.2 to 2.0
2.0 to 2.8
2.8 to 3.6
GT 3.6
Proof Ranges

Rockwell R200	Test Year 2009								
200 CFH	Control Group-Installed Year								
Code: 079	1985	1996							
Sample Plan	Single	Single							
Sample Size	32	32							
Original Population	209	183							
# of Slow Failures	0	1							
# of Fast Failures	1	1							
Total Failures:	1	2							
Accept Level	5	5							
Reject Level	6	6							
Pass/ Fail?	Pass	Pass							
If Failed - Remove By:	NA	NA							
Statistical Data:									
Mean (Average Proof)	0.5125	0.0375							
Median	0.55	-0.175							
Standard Deviation	0.821682	0.941687							
Sample Variance	0.675161	0.886774							
Skewness	0.098094	0.62358							
Minimum	-1.1	-2.35							
Maximum	2.35	2.4							
Count	32	32							
Confidence Level(95.0%)	0.296248	0.339514							

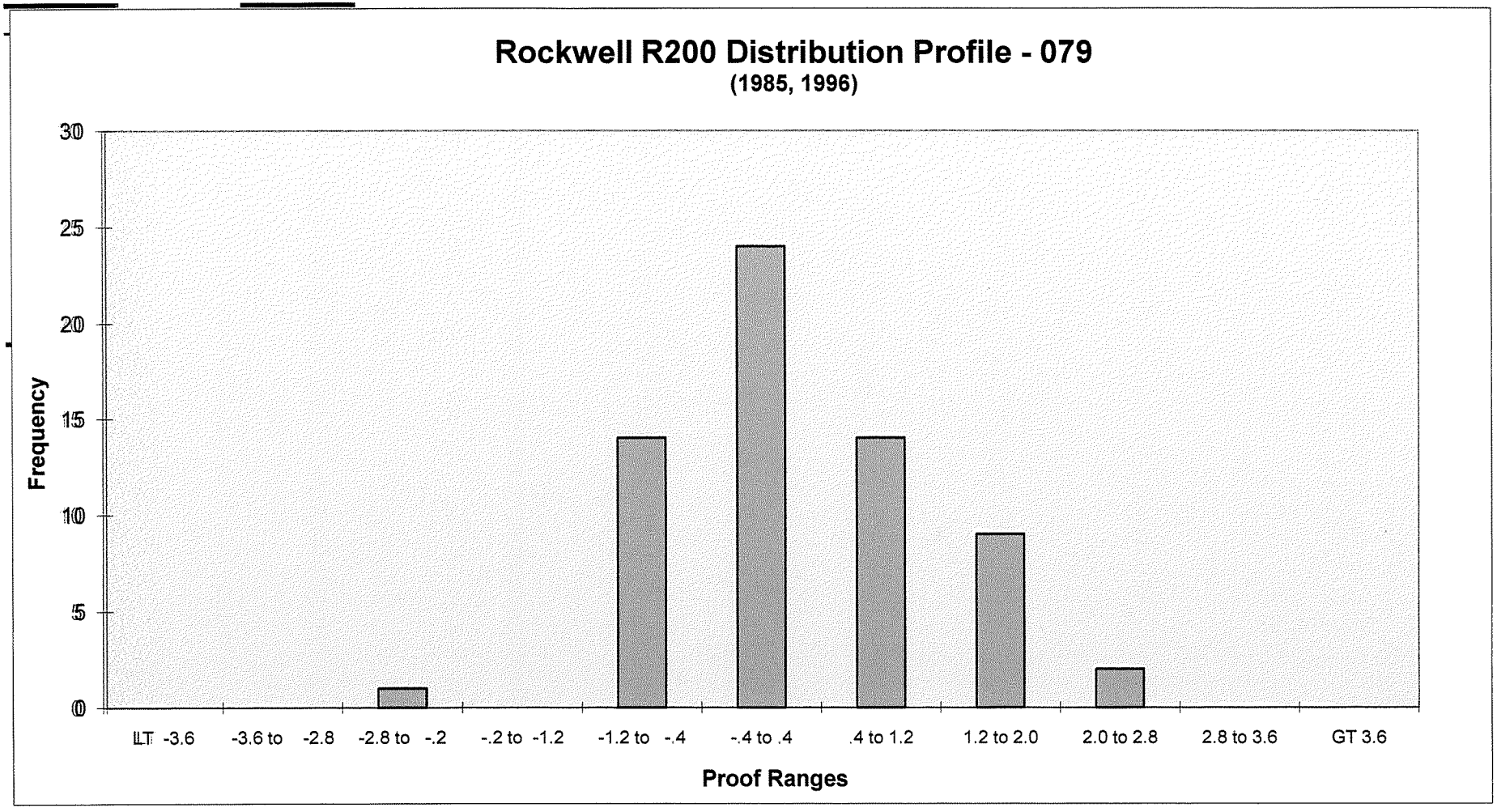
Year 2009

Meter Code 079 Rockwell R200

Code & Year:	1985
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	0
-1.2 to -.4	5
-.4 to .4	8
.4 to 1.2	13
1.2 to 2.0	5
2.0 to 2.8	1
2.8 to 3.6	0
GT 3.6	0
Total	32

Code & Year:	1996
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	1
-.2 to -1.2	0
-1.2 to -.4	9
-.4 to .4	16
.4 to 1.2	1
1.2 to 2.0	4
2.0 to 2.8	1
2.8 to 3.6	0
GT 3.6	0
Total	32

Code & Year:	Total
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	1
-.2 to -1.2	0
-1.2 to -.4	14
-.4 to .4	24
.4 to 1.2	14
1.2 to 2.0	9
2.0 to 2.8	2
2.8 to 3.6	0
GT 3.6	0
Total	64


Rockwell R200 Distribution Profile - 079
(1985, 1996)
Frequency
30
25
20
15
10
5
0
LT -3.6
-3.6 to -2.8
-2.8 to -.2
-.2 to -1.2
-1.2 to -.4
-.4 to .4
.4 to 1.2
1.2 to 2.0
2.0 to 2.8
2.8 to 3.6
GT 3.6
Proof Ranges

American AL1000
1000 CFH
Code: 014

Test Year 2009

	Control Group-Installed Year								
	1999	2000	2001	2002	2003	2004	2005	2007	
Sample Plan	Single	Single	Single	Single	Single	Single	Single	Single	
Sample Size	13*	20	32	8	32	50	50	50	
Original Population	69	119	180	36	190	336	418	406	
# of Slow Failures	1	1	0	2	3	2	4	0	
# of Fast Failures	1	0	0	0	0	0	0	0	
Total Failures:	2	1	0	2	3	2	4	0	
Accept Level	2	3	5	1	5	7	7	7	
Reject Level	3	4	6	2	6	8	8	8	
Pass / Fail?	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	
If Failed - Remove By:	Exhaust	NA	NA	NA	NA	NA	NA	NA	
Statistical Data:									
Mean (Average Proof)	-0.67692	-0.6225	-0.02969	-1.1875	-1.15938	-0.678	-0.9	-0.114	
Median	-0.7	-0.6	-0.075	-1.075	-1.025	-0.65	-0.75	-0.15	
Standard Deviation	1.338627	0.803852	0.728881	1.363753	0.913822	0.764797	0.812341	0.615119	
Sample Variance	1.791923	0.646178	0.531268	1.859821	0.835071	0.584914	0.659898	0.378371	
Skewness	0.678458	-0.29597	0.099278	-0.1115	-1.10598	-0.19939	-1.09447	-0.29244	
Minimum	-2.6	-2.3	-1.65	-3.1	-3.7	-2.65	-3.5	-1.75	
Maximum	2.3	0.65	1.7	0.6	0.6	1	0.8	1.3	
Count	13	20	32	8	32	50	50	50	
Confidence Level(95.0%)	0.808924	0.376214	0.26279	1.140126	0.329468	0.217353	0.230865	0.174815	

* Control group in 10th year of service - maximum service period - all meters to be removed/tested. Sample size based on population was used to determine if group passed/failed in it's last year of service.

Year 2009

Meter Code 014 American AL1000

Code & Year:	1999
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	1
-.2 to -1.2	5
-1.2 to -.4	1
-.4 to .4	5
.4 to 1.2	0
1.2 to 2.0	0
2.0 to 2.8	1
2.8 to 3.6	0
GT 3.6	0
Total	13

Code & Year:	2000
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	1
-.2 to -1.2	3
-1.2 to -.4	8
-.4 to .4	7
.4 to 1.2	1
1.2 to 2.0	0
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	20

Code & Year:	2001
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	1
-1.2 to -.4	8
-.4 to .4	14
.4 to 1.2	8
1.2 to 2.0	1
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	32

Code & Year:	2002
Data Range	Number
LT -3.6	0
-3.6 to -2.8	1
-2.8 to -.2	1
-.2 to -1.2	2
-1.2 to -.4	1
-.4 to .4	2
.4 to 1.2	1
1.2 to 2.0	0
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	8

Code & Year:	2003
Data Range	Number
LT -3.6	1
-3.6 to -2.8	2
-2.8 to -.2	0
-.2 to -1.2	11
-1.2 to -.4	11
-.4 to .4	6
.4 to 1.2	1
1.2 to 2.0	0
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	32

Code & Year:	2004
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	2
-.2 to -1.2	10
-1.2 to -.4	22
-.4 to .4	12
.4 to 1.2	4
1.2 to 2.0	0
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	50

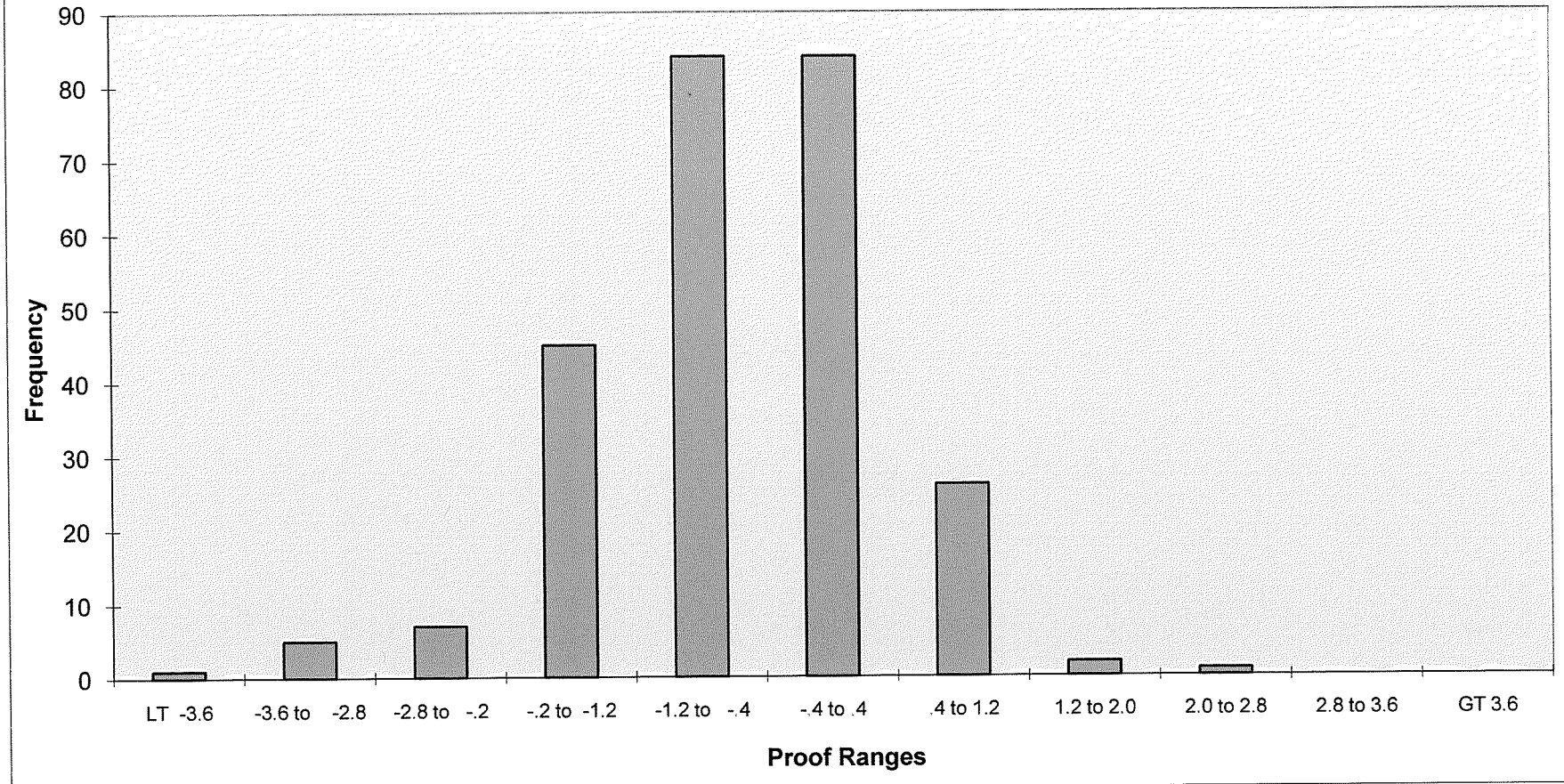
Code & Year:	2005
Data Range	Number
LT -3.6	0
-3.6 to -2.8	2
-2.8 to -.2	2
-.2 to -1.2	10
-1.2 to -.4	21
-.4 to .4	13
.4 to 1.2	2
1.2 to 2.0	0
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	50

Code & Year:	2007
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	3
-1.2 to -.4	12
-.4 to .4	25
.4 to 1.2	9
1.2 to 2.0	1
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	50

Code & Year:	Total
Data Range	Number
LT -3.6	1
-3.6 to -2.8	5
-2.8 to -.2	7
-.2 to -1.2	45
-1.2 to -.4	84
-.4 to .4	84
.4 to 1.2	26
1.2 to 2.0	2
2.0 to 2.8	1
2.8 to 3.6	0
GT 3.6	0
Total	255

American AL1000 Distribution Profile - 014

(1999, 2000, 2001, 2002, 2003, 2004, 2005, 2007)



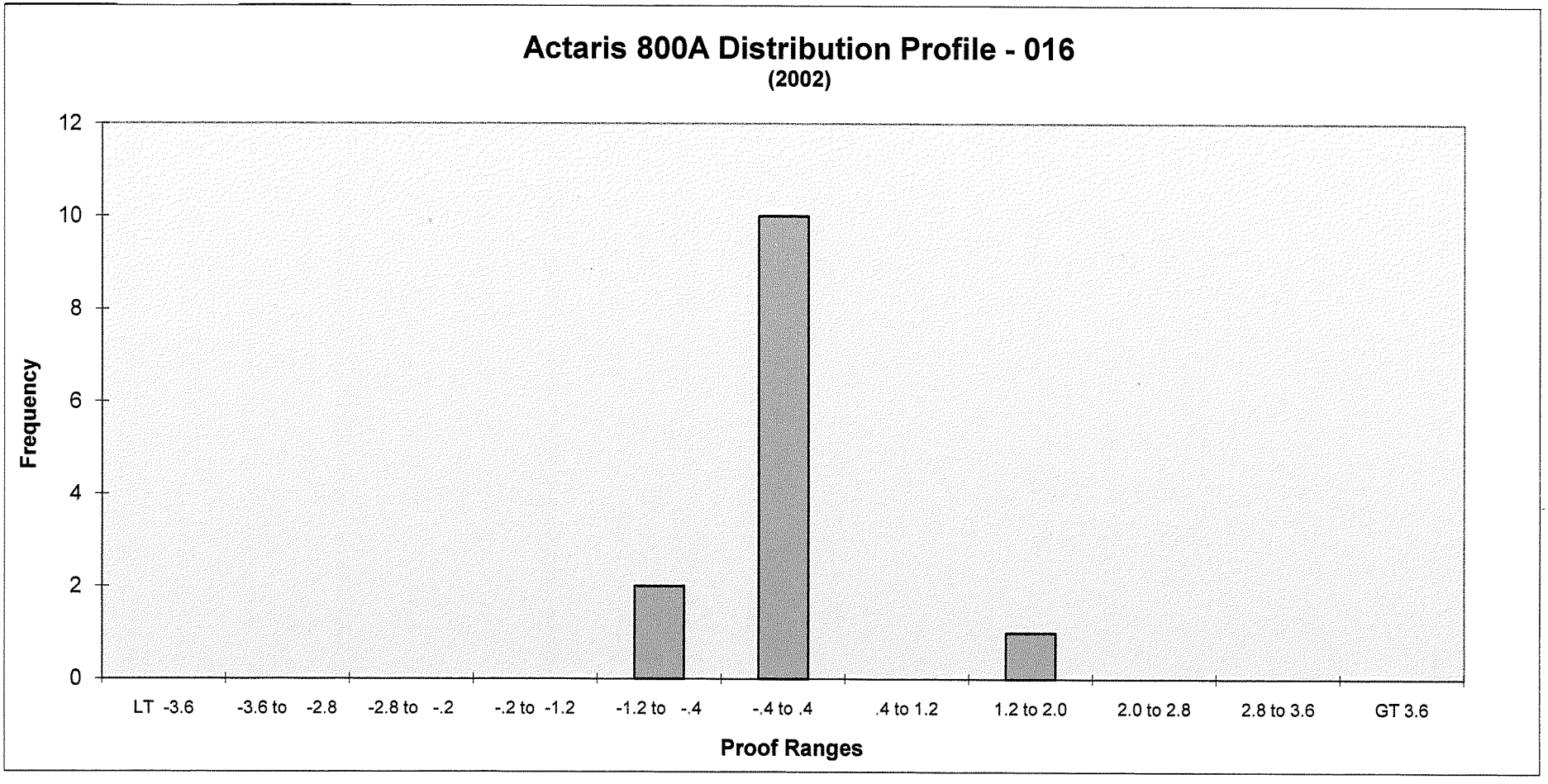
Actaris 800A	Test Year 2009								
800 CFH	Control Group-Installed Year								
Code 016	2002								
Sample Plan	Single								
Sample Size	13								
Original Population	63								
# of Slow Failures	0								
# of Fast Failures	0								
Total Failures:	0								
Acept Level	2								
Reject Level	3								
Pass / Fail ?	Pass								
If Failed - Remove By:	NA								
Statistical Data:									
Mean (Average Proof)	0.034615								
Median	0								
Standard Deviation	0.566195								
Sample Variance	0.320577								
Skewness	1.358018								
Minimum	-0.9								
Maximum	1.55								
Count	13								
Confidence Level(95.0%)	0.342148								

Year 2009

Meter Code 016 Actaris 800A

Code & Year:	2002
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	0
-1.2 to -.4	2
-.4 to .4	10
.4 to 1.2	0
1.2 to 2.0	1
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	13

Code & Year:	Total
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	0
-1.2 to -.4	2
-.4 to .4	10
.4 to 1.2	0
1.2 to 2.0	1
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	13


Actaris 800A Distribution Profile - 016
(2002)
Frequency
12
10
8
6
4
2
0
LT -3.6
-3.6 to -2.8
-2.8 to -.2
-.2 to -1.2
-1.2 to -.4
-.4 to .4
.4 to 1.2
1.2 to 2.0
2.0 to 2.8
2.8 to 3.6
GT 3.6
Proof Ranges

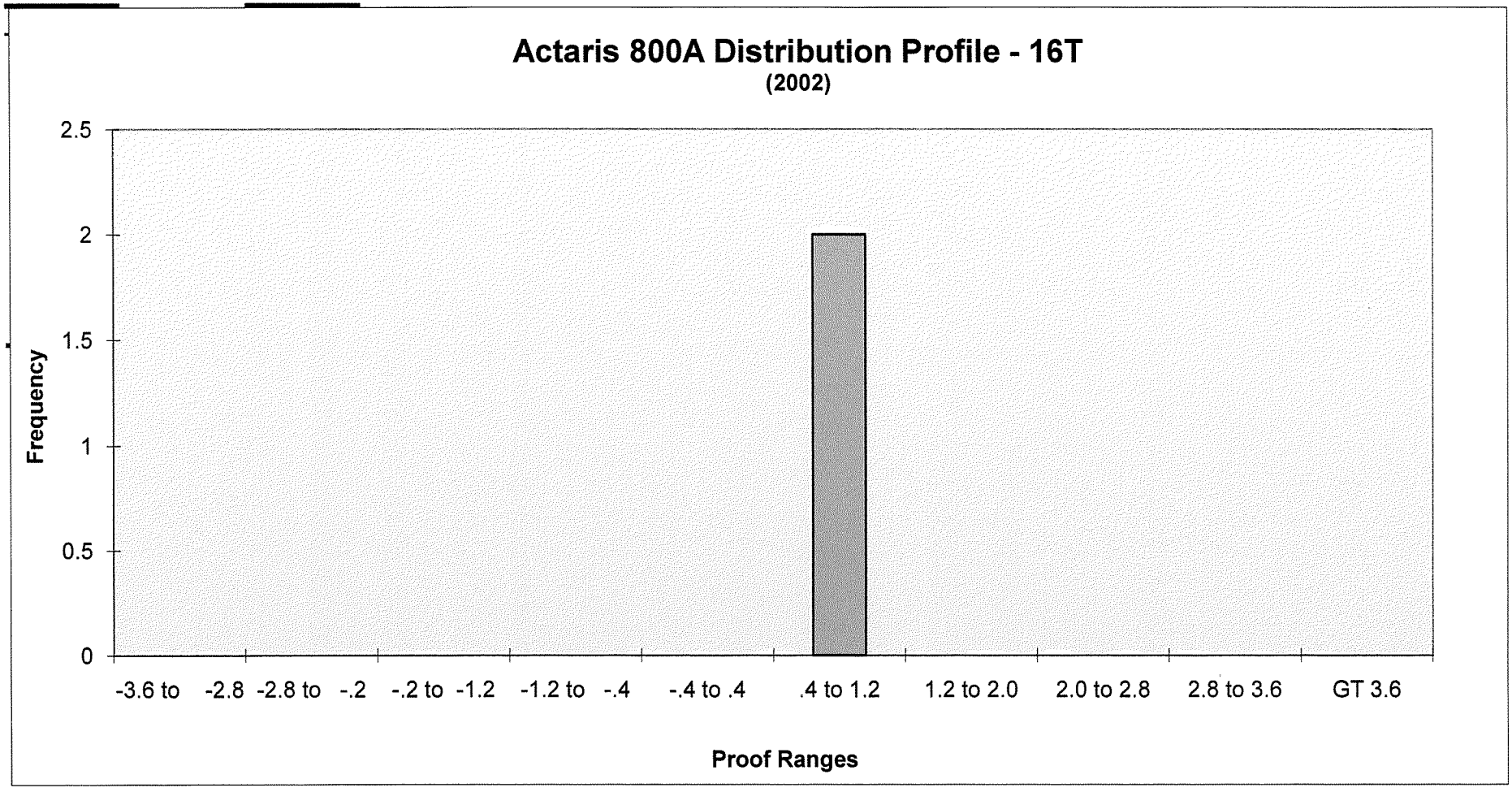
Actaris 800A	Test Year 2009								
800 CFH	Control Group-Installed Year								
Code 16T	2002								
Sample Plan	Single								
Sample Size	2								
Original Population	4								
# of Slow Failures	0								
# of Fast Failures	0								
Total Failures:	0								
Acept Level	0								
Reject Level	1								
Pass / Fail ?	Pass								
If Failed - Remove By:	NA								
Statistical Data:									
Mean (Average Proof)	0.725								
Median	0.725								
Standard Deviation	0.035355								
Sample Variance	0.00125								
Skewness	NA								
Minimum	0.7								
Maximum	0.75								
Count	2								
Confidence Level(95.0%)	0.317655								

Year 2009

Meter Code 16T Actaris 800A

Code & Year:	2002
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	0
-1.2 to -.4	0
-.4 to .4	0
.4 to 1.2	2
1.2 to 2.0	0
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	2

Code & Year:	Total
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	0
-1.2 to -.4	0
-.4 to .4	0
.4 to 1.2	2
1.2 to 2.0	0
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	2


Actaris 800A Distribution Profile - 16T
(2002)
Frequency
2.5
2
1.5
1
0.5
0
-3.6 to -2.8
-2.8 to -.2
-.2 to -1.2
-1.2 to -.4
-.4 to .4
.4 to 1.2
1.2 to 2.0
2.0 to 2.8
2.8 to 3.6
GT 3.6
Proof Ranges

Actaris 1000A	Test Year 2009								
1000 CFH	Control Group-Installed Year								
Code 017	2002	2003							
Sample Plan	Single	Single							
Sample Size	13	2							
Original Population	70	9							
# of Slow Failures	1	0							
# of Fast Failures	0	0							
Total Failures:	1	0							
Accept Level	2	0							
Reject Level	3	1							
Pass / Fail ?	**Pass**	**Pass**							
If Failed - Remove By:	NA	NA							
Statistical Data:									
Mean (Average Proof)	-0.53077	0.2							
Median	-0.35	0.2							
Standard Deviation	0.692982	0.070711							
Sample Variance	0.480224	0.005							
Skewness	-1.56868	NA							
Minimum	-2.35	0.15							
Maximum	0.3	0.25							
Count	13	2							
Confidence Level(95.0%)	0.418765	0.63531							

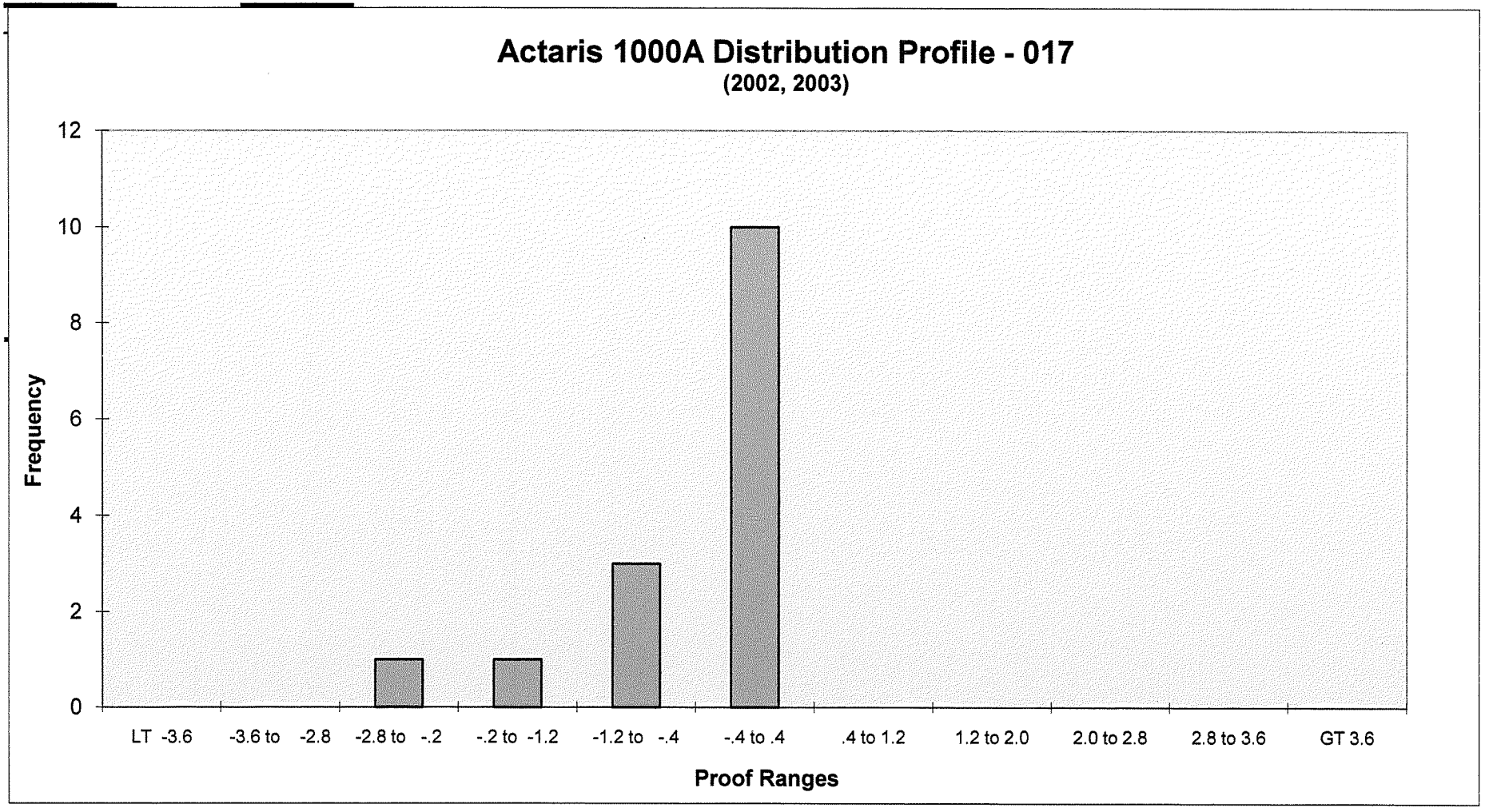
Year 2009

Meter Code 017 Actaris 1000A

Code & Year:	2003
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	1
-.2 to -1.2	1
-1.2 to -.4	3
-.4 to .4	8
.4 to 1.2	0
1.2 to 2.0	0
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	13

Code & Year:	2003
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	0
-1.2 to -.4	0
-.4 to .4	2
.4 to 1.2	0
1.2 to 2.0	0
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	2

Code & Year:	Total
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	1
-.2 to -1.2	1
-1.2 to -.4	3
-.4 to .4	10
.4 to 1.2	0
1.2 to 2.0	0
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	15


Actaris 1000A Distribution Profile - 017
(2002, 2003)
Frequency
12
10
8
6
4
2
0
LT -3.6
-3.6 to -2.8
-2.8 to -.2
-.2 to -1.2
-1.2 to -.4
-.4 to .4
.4 to 1.2
1.2 to 2.0
2.0 to 2.8
2.8 to 3.6
GT 3.6
Proof Ranges

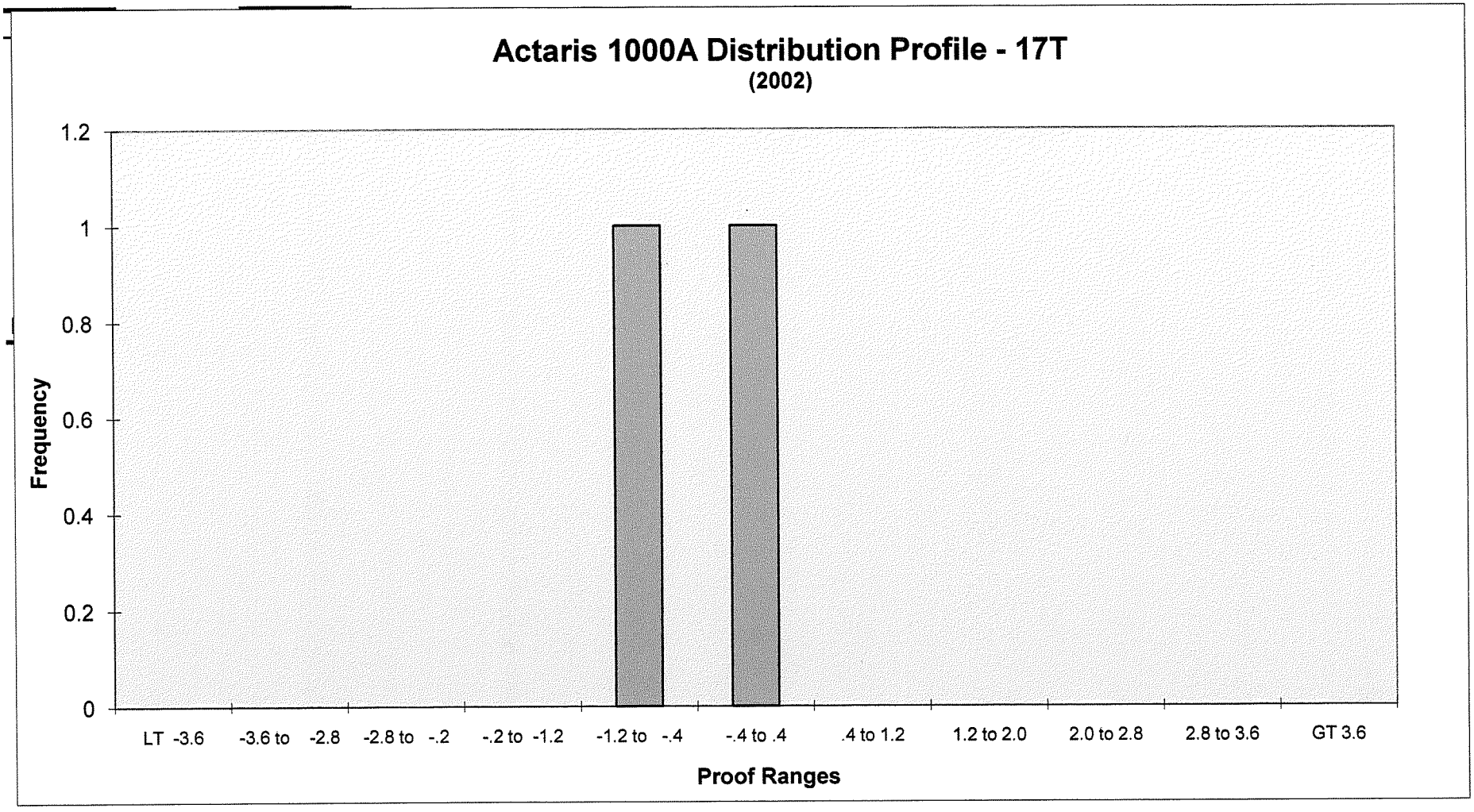
Actaris 1000A	Test Year 2009								
1000 CFH	Control Group-Installed Year								
Code 17T	2002								
Sample Plan	Single								
Sample Size	2								
Original Population	3								
# of Slow Failures	0								
# of Fast Failures	0								
Total Failures:	0								
Accept Level	0								
Reject Level	1								
Pass / Fail ?	Pass								
If Failed - Remove By:	NA								
Statistical Data:									
Mean (Average Proof)	-0.375								
Median	-0.375								
Standard Deviation	0.176777								
Sample Variance	0.03125								
Skewness	NA								
Minimum	-0.5								
Maximum	-0.25								
Count	2								
Confidence Level(95.0%)	1.588276								

Year 2009

Meter Code 17T Actaris 1000A

Code & Year:	2002
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	0
-1.2 to -.4	1
-.4 to .4	1
.4 to 1.2	0
1.2 to 2.0	0
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	2

Code & Year:	Total
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	0
-1.2 to -.4	1
-.4 to .4	1
.4 to 1.2	0
1.2 to 2.0	0
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	2


Actaris 1000A Distribution Profile - 17T
(2002)
Frequency
1.2
1
0.8
0.6
0.4
0.2
0
LT -3.6
-3.6 to -2.8
-2.8 to -.2
-.2 to -1.2
-1.2 to -.4
-.4 to .4
.4 to 1.2
1.2 to 2.0
2.0 to 2.8
2.8 to 3.6
GT 3.6
Proof Ranges

American AL 1400	Test Year 2009								
1400 CFH	Control Group-Installed Y Year 2009								
Code: 019	1999	2000	2001	2002	2003	2004	2005	2007	
Sample Plan	Single	Single	Single	Single	Single	Single	Single	Single	
Sample Size	1*	2	2	2	2	8	8	8	
Original Population	1	3	5	6	10	22	32	42	
# of Slow Failures	0	0	0	0	0	0	0	0	
# of Fast Failures	0	0	0	0	0	0	0	0	
Total Failures:	0	0	0	0	0	0	0	0	
Accept Level	0	0	0	0	0	1	1	1	
Reject Level	0	1	1	1	1	2	2	2	
Pass / Fail?	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	
If Failed - Remove By:	Exhaust	NA	NA	NA	NA	NA	NA	NA	
Statistical Data:									
Mean (Average Proof)	-1.85	-1.025	-0.5	-1.45	-0.725	-0.675	-0.96875	-0.875	
Median	-1.85	-1.025	-0.5	-1.45	-0.725	-0.8	-1.125	-1.125	
Standard Deviation	NA	1.025305	1.484924	0.777817	0.53033	0.764853	0.672913	0.956556	
Sample Variance	NA	1.05125	2.205	0.605	0.28125	0.585	0.452813	0.915	
Skewness	NA	NA	NA	NA	NA	0.518506	1.577785	0.536011	
Minimum	-1.85	-1.75	-1.55	-2	-1.1	-1.75	-1.8	-1.9	
Maximum	-1.85	-0.3	0.55	-0.9	-0.35	0.6	0.5	0.65	
Count	1	2	2	2	2	8	8	8	
Confidence Level(95.0%)	NA	9.211998	13.34151	6.988413	4.764827	0.639433	0.56257	0.799701	

* Control group in 10th year of service - maximum service period - all meters to be removed/tested. Sample size based on population was used to determine if group passed/failed in it's last year of service.

Year 2009 Meter Code 019 American AL 1400

Code & Year:	1999
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	1
-1.2 to -.4	0
-.4 to .4	0
.4 to 1.2	0
1.2 to 2.0	0
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	1

Code & Year:	2000
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	1
-1.2 to -.4	0
-.4 to .4	1
.4 to 1.2	0
1.2 to 2.0	0
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	2

Code & Year:	2001
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	1
-1.2 to -.4	0
-.4 to .4	0
.4 to 1.2	1
1.2 to 2.0	0
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	2

Code & Year:	2002
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	1
-1.2 to -.4	1
-.4 to .4	0
.4 to 1.2	0
1.2 to 2.0	0
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	2

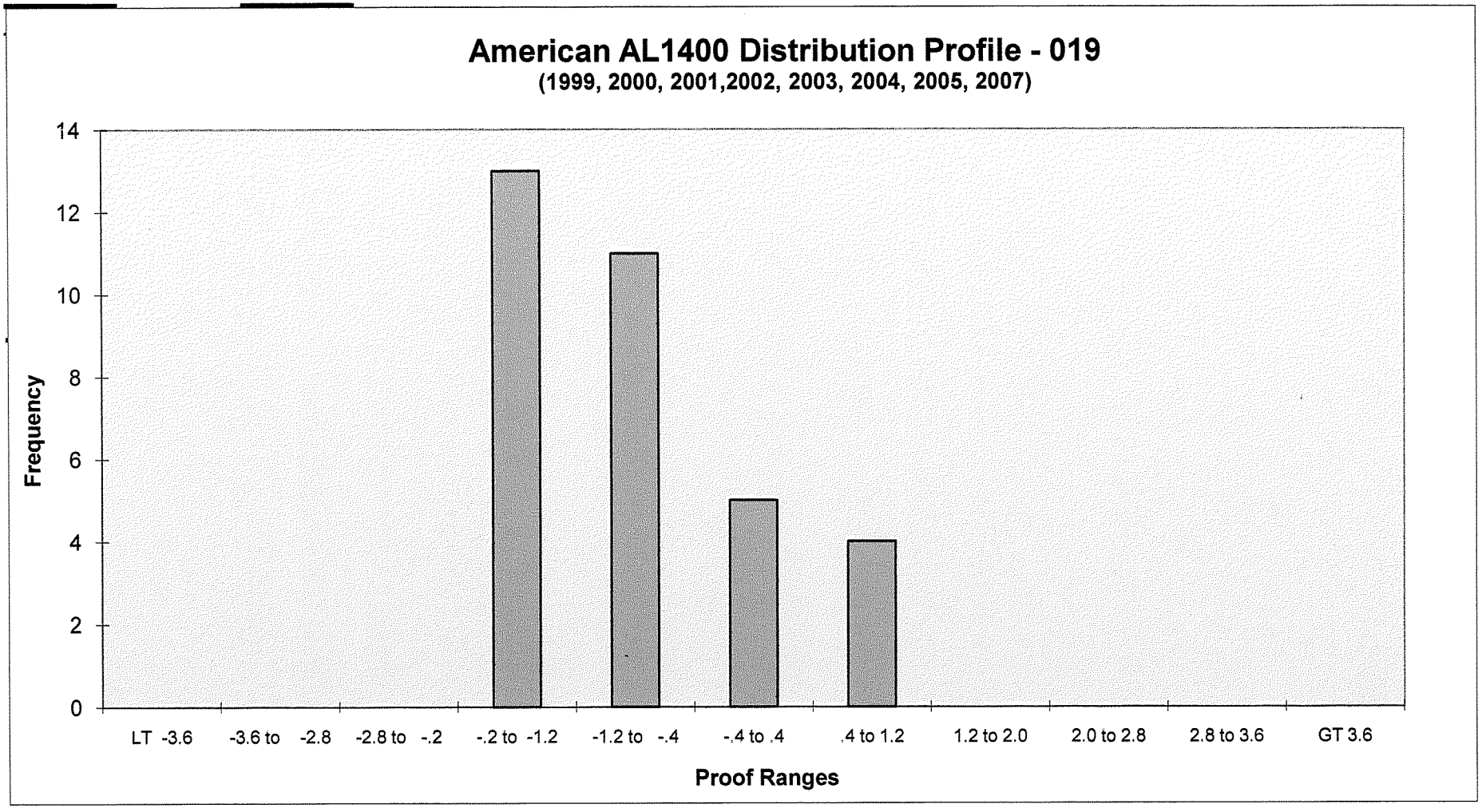
Code & Year:	2003
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	0
-1.2 to -.4	1
-.4 to .4	1
.4 to 1.2	0
1.2 to 2.0	0
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	2

Code & Year:	2004
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	2
-1.2 to -.4	4
-.4 to .4	1
.4 to 1.2	1
1.2 to 2.0	0
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	8

Code & Year:	2005
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	4
-1.2 to -.4	3
-.4 to .4	0
.4 to 1.2	1
1.2 to 2.0	0
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	8

Code & Year:	2007
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	3
-1.2 to -.4	2
-.4 to .4	2
.4 to 1.2	1
1.2 to 2.0	0
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	8

Code & Year:	Total
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	13
-1.2 to -.4	11
-.4 to .4	5
.4 to 1.2	4
1.2 to 2.0	0
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	33


American AL1400 Distribution Profile - 019
(1999, 2000, 2001,2002, 2003, 2004, 2005, 2007)
Frequency
14
12
10
8
6
4
2
0
LT -3.6
-3.6 to -2.8
-2.8 to -.2
-.2 to -1.2
-1.2 to -.4
-.4 to .4
.4 to 1.2
1.2 to 2.0
2.0 to 2.8
2.8 to 3.6
GT 3.6
Proof Ranges

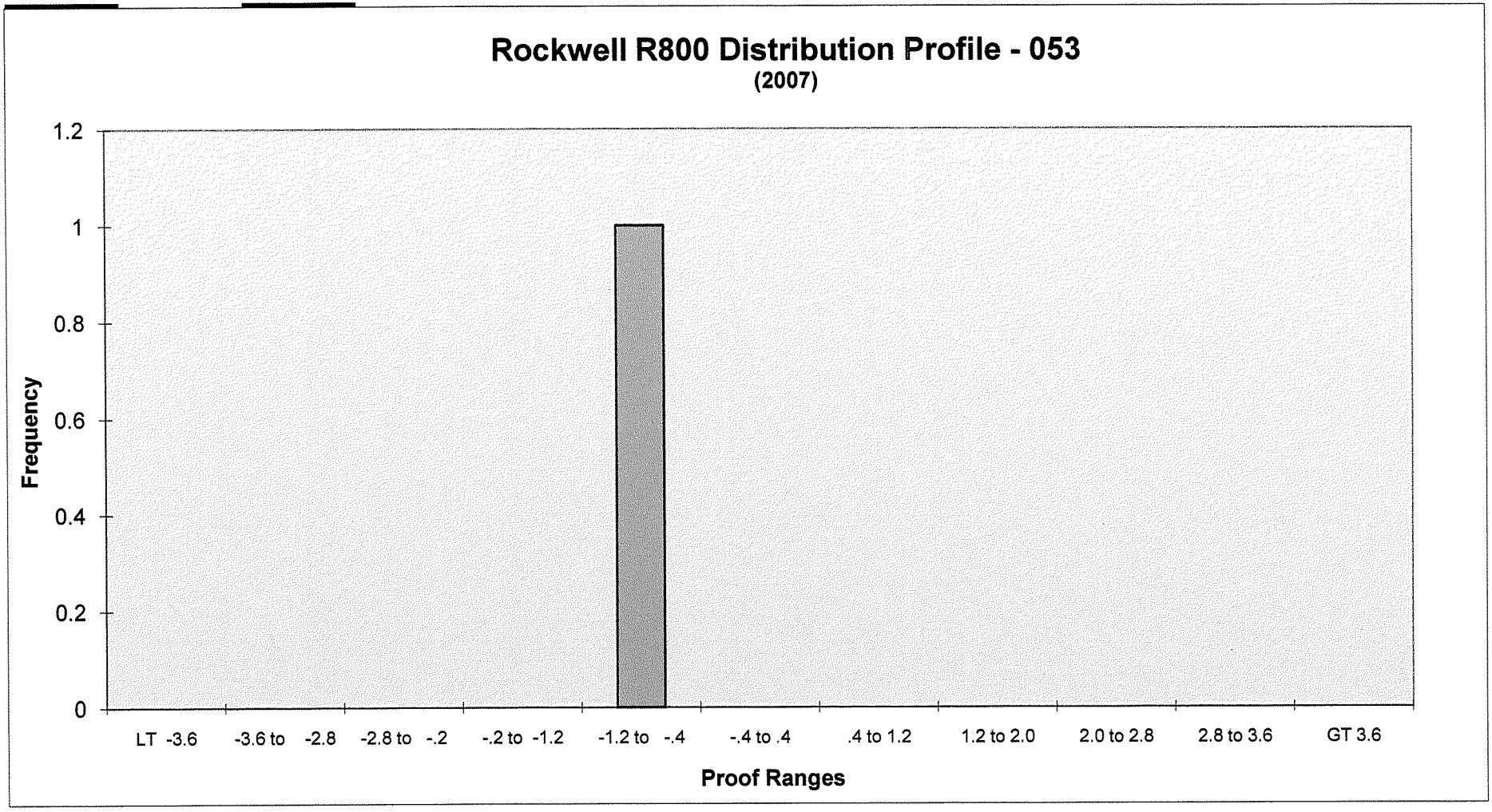
Rockwell R800	Test Year 2009								
800 CFH	Control Group-Installed Year								
Code: 053	2007								
Sample Plan	Single								
Sample Size	1								
Original Population	1								
# of Slow Failures	0								
# of Fast Failures	0								
Total Failures:	0								
Accept Level	0								
Reject Level	0								
Pass / Fail?	Pass								
If Failed - Remove By:	Exhaust								
Statistical Data:									
Mean (Average Proof)	-1.1								
Median	-1.1								
Standard Deviation	NA								
Sample Variance	NA								
Skewness	NA								
Minimum	-1.1								
Maximum	-1.1								
Count	1								
Confidence Level(95.0%)	NA								

Year 2009

Meter Code 053 Rockwell R800

Code & Year:	2007
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	0
-1.2 to -.4	1
-.4 to .4	0
.4 to 1.2	0
1.2 to 2.0	0
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	1

Code & Year:	Total
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	0
-1.2 to -.4	1
-.4 to .4	0
.4 to 1.2	0
1.2 to 2.0	0
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	1


Rockwell R800 Distribution Profile - 053
(2007)
Frequency
1.2
1
0.8
0.6
0.4
0.2
0
LT -3.6
-3.6 to -2.8
-2.8 to -.2
-.2 to -1.2
-1.2 to -.4
-.4 to .4
.4 to 1.2
1.2 to 2.0
2.0 to 2.8
2.8 to 3.6
GT 3.6
Proof Ranges

Rockwell #3 Emco	Test Year 2009								
1200 CFH	Control Group-Installed Year								
Code: 056	1999	2000	2001	2002	2003	2004	2005	2007	
Sample Plan	Single	Single	Single	Single	Single	Single	Single	Single	
Sample Size	8*	8	8	8	8	13	13	13	
Original Population	24	28	23	30	37	86	63	75	
# of Slow Failures	0	0	0	0	0	0	0	0	
# of Fast Failures	0	0	0	0	0	0	0	0	
Total Failures:	0	0	0	0	0	0	0	0	
Accept Level	1	1	1	1	1	2	2	2	
Reject Level	2	2	2	2	2	3	3	3	
Pass / Fail?	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	
If Failed - Remove By:	Exhaust	NA	NA	NA	NA	NA	NA	NA	
Statistical Data:									
Mean (Average Proof)	-0.40625	-1.35	-0.95	-0.6125	-0.43125	-0.93462	-0.55769	-0.48462	
Median	-0.475	-1.425	-1.7	-0.425	-0.75	-1	-0.9	-0.55	
Standard Deviation	1.047595	0.564421	1.457248	0.725923	1.121522	1.261841	1.180192	1.04251	
Sample Variance	1.097455	0.318571	2.123571	0.526964	1.257813	1.592244	1.392853	1.086827	
Skewness	0.253098	1.414203	1.338197	-0.66618	1.065564	1.16146	0.774072	0.645331	
Minimum	-1.95	-2	-2	-1.85	-1.85	-2	-2	-1.95	
Maximum	1.2	-0.15	1.65	0.2	1.65	1.95	2	1.95	
Count	8	8	8	8	8	13	13	13	
Confidence Level(95.0%)	0.875811	0.471868	1.21829	0.606887	0.937616	0.762523	0.713183	0.629982	

* Control group in 10th year of service - maximum service period - all meters to be removed/tested. Sample size based on population was used to determine if group passed/failed in it's last year of service.

Year 2009 Meter Code 056 Rockwell #3 Emco

Code & Year:	1999
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	2
-1.2 to -.4	3
-.4 to .4	1
.4 to 1.2	2
1.2 to 2.0	0
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	8

Code & Year:	2000
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	6
-1.2 to -.4	1
-.4 to .4	1
.4 to 1.2	0
1.2 to 2.0	0
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	8

Code & Year:	2001
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	5
-1.2 to -.4	1
-.4 to .4	0
.4 to 1.2	1
1.2 to 2.0	1
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	8

Code & Year:	2002
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	2
-1.2 to -.4	2
-.4 to .4	4
.4 to 1.2	0
1.2 to 2.0	0
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	8

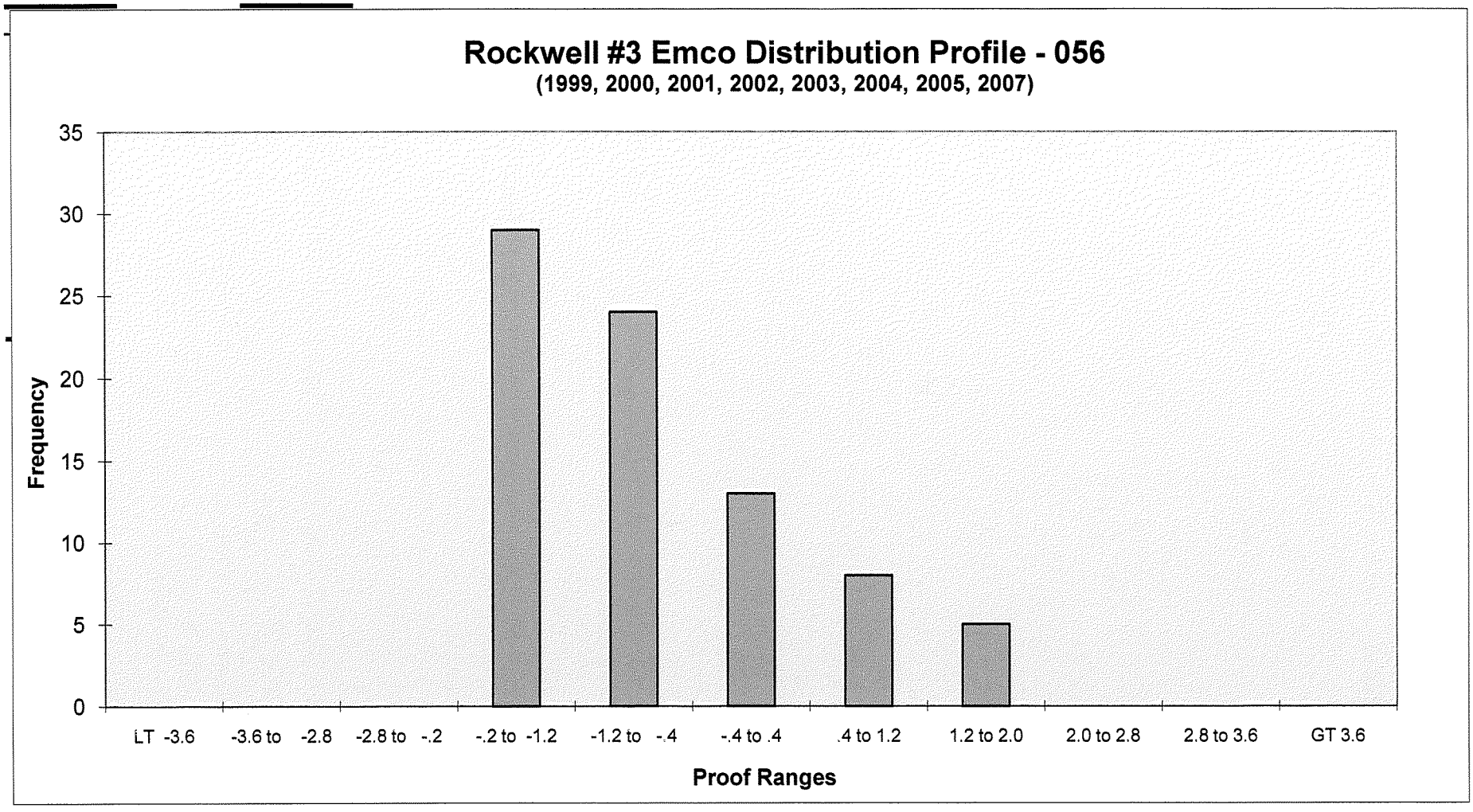
Code & Year:	2003
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	1
-1.2 to -.4	5
-.4 to .4	0
.4 to 1.2	1
1.2 to 2.0	1
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	8

Code & Year:	2004
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	6
-1.2 to -.4	4
-.4 to .4	0
.4 to 1.2	2
1.2 to 2.0	1
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	13

Code & Year:	2005
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	4
-1.2 to -.4	3
-.4 to .4	3
.4 to 1.2	2
1.2 to 2.0	1
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	13

Code & Year:	2007
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	3
-1.2 to -.4	5
-.4 to .4	4
.4 to 1.2	0
1.2 to 2.0	1
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	13

Code & Year:	Total
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	29
-1.2 to -.4	24
-.4 to .4	13
.4 to 1.2	8
1.2 to 2.0	5
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	79


Rockwell #3 Emco Distribution Profile - 056
(1999, 2000, 2001, 2002, 2003, 2004, 2005, 2007)
Frequency
35
30
25
20
15
10
5
0
LT -3.6
-3.6 to -2.8
-2.8 to -.2
-.2 to -1.2
-1.2 to -.4
-.4 to .4
.4 to 1.2
1.2 to 2.0
2.0 to 2.8
2.8 to 3.6
GT 3.6
Proof Ranges

Rockwell R750	Test Year 2009								
750 CFH	Control Group-Installed Year								
Code: 058	1999	2000	2001	2002	2003	2004	2005	2007	
Sample Plan	Single	Single	Single	Single	Single	Single	Single	Single	
Sample Size	13*	20	32	13	32	32	50	50	
Original Population	76	112	204	83	186	248	432	437	
# of Slow Failures	0	2	1	0	0	1	0	0	
# of Fast Failures	0	1	0	0	3	1	0	0	
Total Failures:	0	3	1	0	3	2	0	0	
Accept Level	2	3	5	2	5	5	7	7	
Reject Level	3	4	6	3	6	6	8	8	
Pass / Fail?	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	
If Failed - Remove By:	Exhaust	NA	NA	NA	NA	NA	NA	NA	
Statistical Data:									
Mean (Average Proof)	-0.17308	0.055	0.00625	0.346154	0.460938	0.095313	-0.095	0.076	
Median	0	0.15	0.1	0.8	0.3	0.025	-0.2	0.1	
Standard Deviation	0.957561	1.205022	1.441927	0.911378	0.950614	1.152722	0.739018	0.597037	
Sample Variance	0.916923	1.452079	2.079153	0.830609	0.903667	1.328768	0.546148	0.356453	
Skewness	0.031958	-0.80324	-3.54919	-0.71013	0.630127	-1.58504	0.579452	-0.50355	
Minimum	-1.8	-3.1	-6.85	-1.25	-1.55	-4.3	-1.35	-1.65	
Maximum	1.65	2.7	2	1.5	2.95	2.4	1.85	1.5	
Count	13	20	32	13	32	32	50	50	
Confidence Level(95.0%)	0.578648	0.563968	0.51987	0.55074	0.342733	0.415601	0.210027	0.169676	

* Control group in 10th year of service - maximum service period - all meters to be removed/tested. Sample size based on population was used to determine if group passed/failed in it's last year of service.

Year 2009 Meter Code 058 Rockwell R750

Code & Year:	1999
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	3
-1.2 to -.4	2
-.4 to .4	5
.4 to 1.2	2
1.2 to 2.0	1
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	13

Code & Year:	2000
Data Range	Number
LT -3.6	0
-3.6 to -2.8	1
-2.8 to -.2	1
-.2 to -1.2	0
-1.2 to -.4	1
-.4 to .4	11
.4 to 1.2	4
1.2 to 2.0	1
2.0 to 2.8	1
2.8 to 3.6	0
GT 3.6	0
Total	20

Code & Year:	2001
Data Range	Number
LT -3.6	1
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	1
-1.2 to -.4	2
-.4 to .4	19
.4 to 1.2	5
1.2 to 2.0	4
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	32

Code & Year:	2002
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	1
-1.2 to -.4	2
-.4 to .4	2
.4 to 1.2	7
1.2 to 2.0	1
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	13

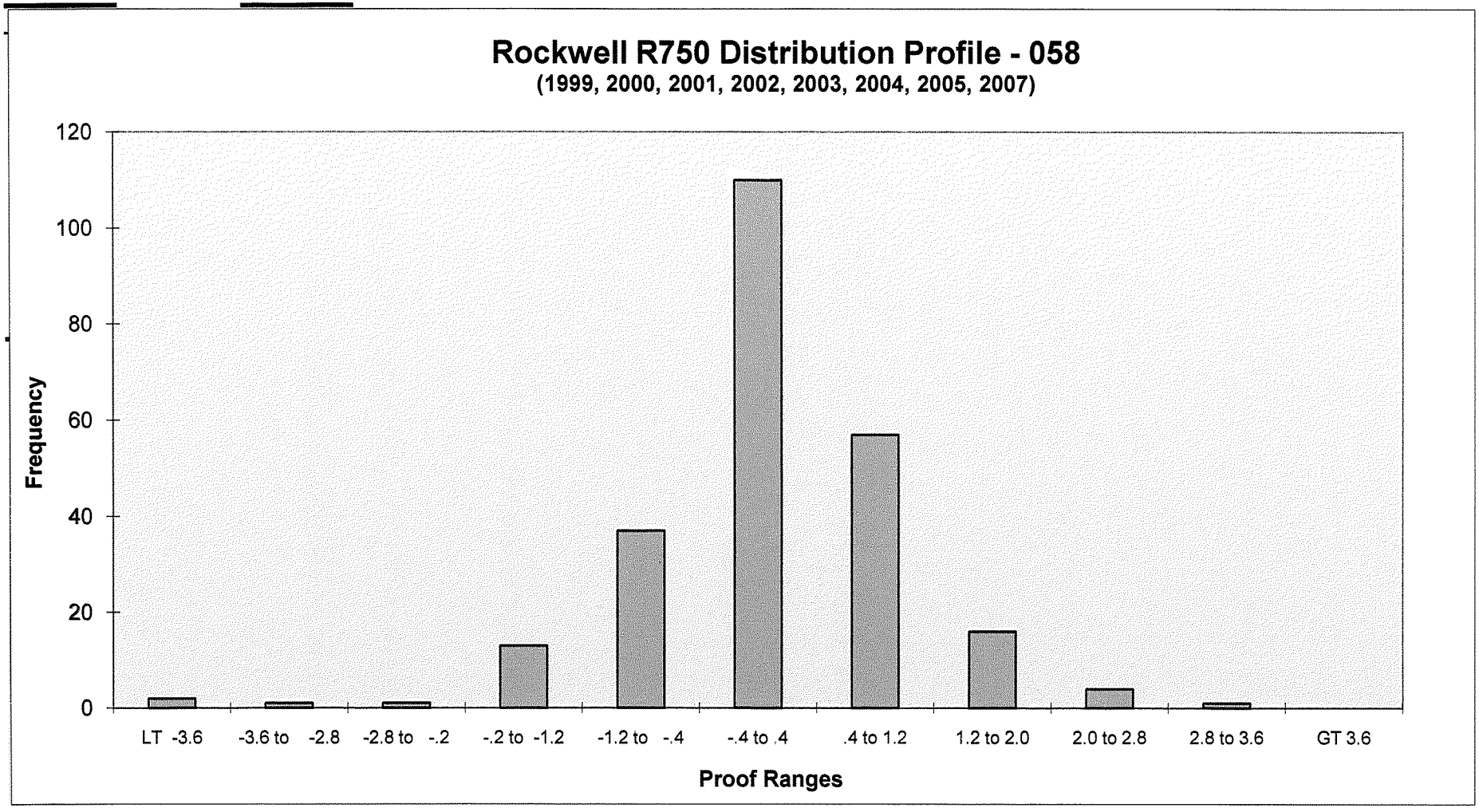
Code & Year:	2003
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	1
-1.2 to -.4	3
-.4 to .4	13
.4 to 1.2	10
1.2 to 2.0	2
2.0 to 2.8	2
2.8 to 3.6	1
GT 3.6	0
Total	32

Code & Year:	2004
Data Range	Number
LT -3.6	1
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	2
-1.2 to -.4	5
-.4 to .4	10
.4 to 1.2	10
1.2 to 2.0	3
2.0 to 2.8	1
2.8 to 3.6	0
GT 3.6	0
Total	32

Code & Year:	2005
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	3
-1.2 to -.4	15
-.4 to .4	22
.4 to 1.2	7
1.2 to 2.0	3
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	50

Code & Year:	2007
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	2
-1.2 to -.4	7
-.4 to .4	28
.4 to 1.2	12
1.2 to 2.0	1
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	50

Code & Year:	Total
Data Range	Number
LT -3.6	2
-3.6 to -2.8	1
-2.8 to -.2	1
-.2 to -1.2	13
-1.2 to -.4	37
-.4 to .4	110
.4 to 1.2	57
1.2 to 2.0	16
2.0 to 2.8	4
2.8 to 3.6	1
GT 3.6	0
Total	242


Rockwell R750 Distribution Profile - 058
(1999, 2000, 2001, 2002, 2003, 2004, 2005, 2007)
Frequency
120
100
80
60
40
20
0
LT -3.6
-3.6 to -2.8
-2.8 to -.2
-.2 to -1.2
-1.2 to -.4
-.4 to .4
.4 to 1.2
1.2 to 2.0
2.0 to 2.8
2.8 to 3.6
GT 3.6
Proof Ranges

American AL 800	Test Year 2009						
800 CFH	Control Group-Installed Year						
Code: 076	2000	2001	2002	2003	2004	2005	2007
Sample Plan	Single	Single	Single	Single	Single	Single	Single
Sample Size	8	8	8	13	20	8	13
Original Population	16	38	18	77	119	39	82
# of Slow Failures	1	0	0	1	0	0	0
# of Fast Failures	0	0	0	0	0	0	0
Total Failures:	1	0	0	1	0	0	0
Accept Level	1	1	1	2	3	1	2
Reject Level	2	2	2	3	4	2	3
Pass / Fail?	Pass	Pass	Pass	Pass	Pass	Pass	Pass
If Failed - Remove By:	NA	NA	NA	NA	NA	NA	NA
Statistical Data:							
Mean (Average Proof)	-0.64375	-0.09375	-0.75	-0.70769	-0.575	-0.76875	-0.09231
Median	-0.675	-0.15	-0.725	-0.65	-0.95	-0.725	-0.25
Standard Deviation	0.910431	0.489488	0.568205	0.858498	0.817168	0.381667	0.518751
Sample Variance	0.828884	0.239598	0.322857	0.737019	0.667763	0.14567	0.269103
Skewness	-1.13089	-0.30302	-0.98198	-0.38841	0.806542	0.388115	0.141785
Minimum	-2.5	-0.9	-1.9	-2.25	-1.55	-1.3	-1.05
Maximum	0.45	0.5	0.05	0.75	1.2	-0.1	0.85
Count	8	8	8	13	20	8	13
Confidence Level(95.0%)	0.761139	0.409222	0.475031	0.518785	0.382446	0.319082	0.313478

Year 2005 Test 2009 Meter Code 076 American AL800

Code & Year:	1996
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	0
-1.2 to -.4	0
-.4 to .4	3
.4 to 1.2	4
1.2 to 2.0	1
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	8

Code & Year:	2000
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	1
-.2 to -1.2	0
-1.2 to -.4	4
-.4 to .4	2
.4 to 1.2	1
1.2 to 2.0	0
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	8

Code & Year:	2001
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	0
-1.2 to -.4	2
-.4 to .4	5
.4 to 1.2	1
1.2 to 2.0	0
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	8

Code & Year:	2002
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	1
-1.2 to -.4	5
-.4 to .4	2
.4 to 1.2	0
1.2 to 2.0	0
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	8

Code & Year:	2003
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	1
-.2 to -1.2	2
-1.2 to -.4	4
-.4 to .4	5
.4 to 1.2	1
1.2 to 2.0	0
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	13

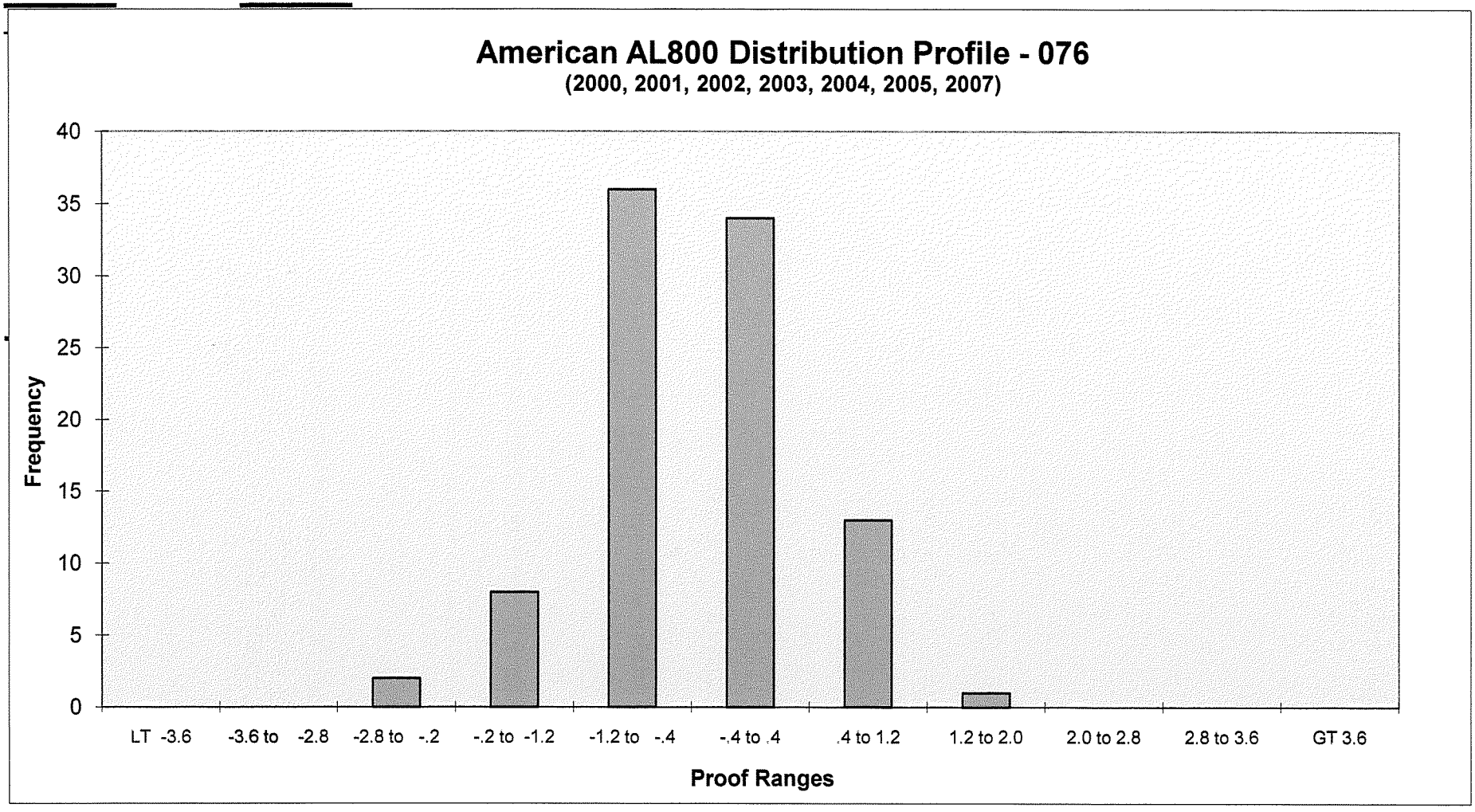
Code & Year:	2001
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	0
-1.2 to -.4	2
-.4 to .4	5
.4 to 1.2	1
1.2 to 2.0	0
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	8

Code & Year:	2004
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	4
-1.2 to -.4	9
-.4 to .4	4
.4 to 1.2	3
1.2 to 2.0	0
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	20

Code & Year:	2005
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	1
-1.2 to -.4	6
-.4 to .4	1
.4 to 1.2	0
1.2 to 2.0	0
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	8

Code & Year:	2007
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	0
-1.2 to -.4	4
-.4 to .4	7
.4 to 1.2	2
1.2 to 2.0	0
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	13

Code & Year:	Total
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	2
-.2 to -1.2	8
-1.2 to -.4	36
-.4 to .4	34
.4 to 1.2	13
1.2 to 2.0	1
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	94


American AL800 Distribution Profile - 076
(2000, 2001, 2002, 2003, 2004, 2005, 2007)
Frequency
40
35
30
25
20
15
10
5
0
LT -3.6
-3.6 to -2.8
-2.8 to -.2
-.2 to -1.2
-1.2 to -.4
-.4 to .4
.4 to 1.2
1.2 to 2.0
2.0 to 2.8
2.8 to 3.6
GT 3.6
Proof Ranges

Rockwell #4 Emco	Test Year 2009								
2250 CFH	Control Group-Installed Year								
Code: 028	2004	2005	2006	2007					
Sample Plan	Single	Single	Single	Single					
Sample Size	20*	13	20	20					
Original Population	117	75	101	126					
# of Slow Failures	0	0	0	0					
# of Fast Failures	0	0	0	0					
Total Failures:	0	0	0	0					
Accept Level	3	2	3	3					
Reject Level	4	3	4	4					
Pass / Fail?	Pass	Pass	Pass	Pass					
If Failed - Remove By:	Exhaust	NA	NA	NA					
Statistical Data:									
Mean (Average Proof)	-0.65	-0.97308	-0.3525	-0.62					
Median	-0.65	-0.9	-0.4	-0.425					
Standard Deviation	0.940884	0.655939	1.153653	0.701014					
Sample Variance	0.885263	0.430256	1.330914	0.491421					
Skewness	0.355962	-0.12097	0.18938	-0.67416					
Minimum	-1.95	-1.95	-1.95	-1.85					
Maximum	0.9	0.05	1.95	0.4					
Count	20	13	20	20					
Confidence Level(95.0%)	0.440347	0.39638	0.539926	0.328085					

* Control group in 5th year of service - maximum service period - all meters to be removed/tested. Sample size based on population was used to dertermine if group passed/failed in it's last year of service.

Year 2009 Meter Code 028 Rockwell #4 Emco

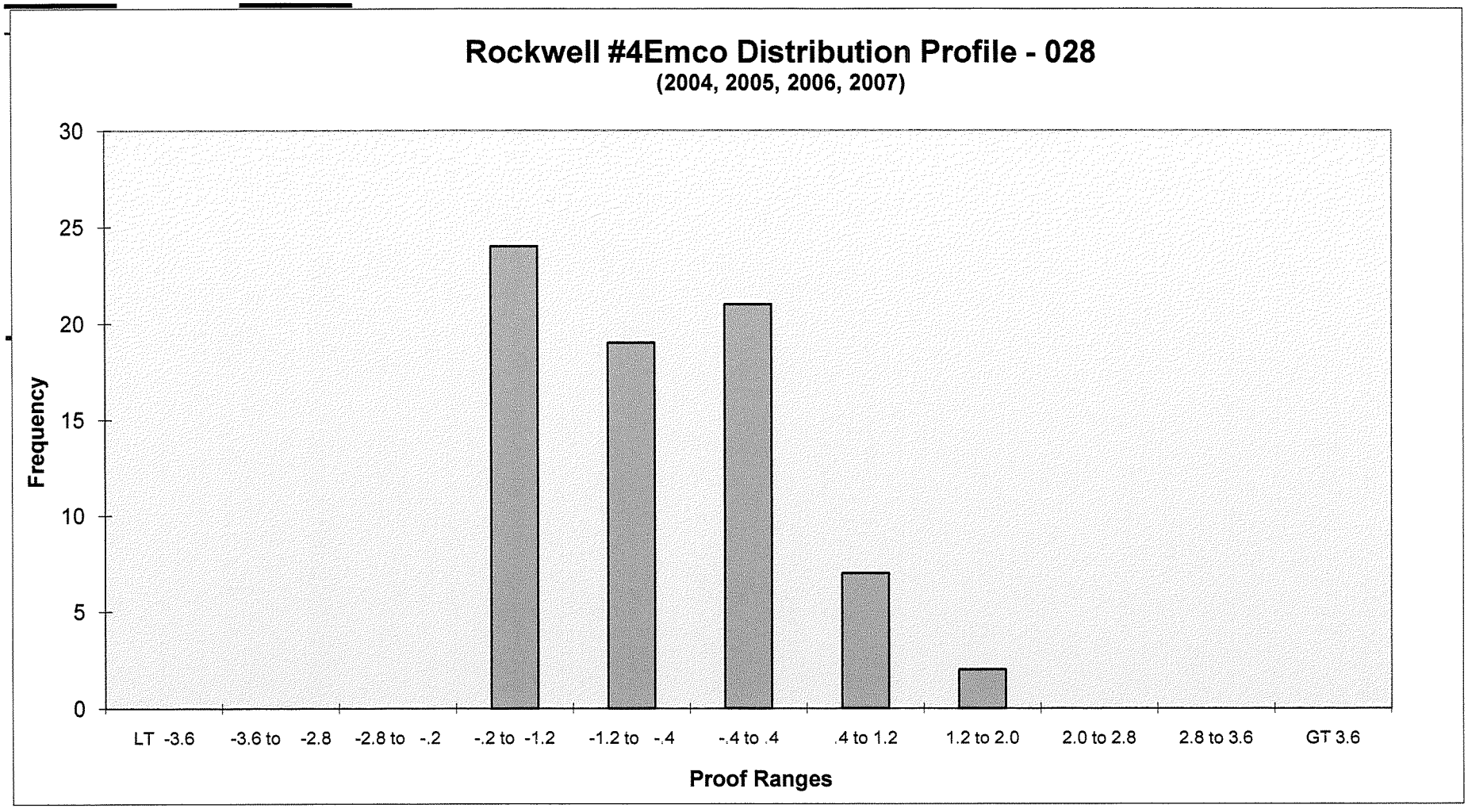
Code & Year:	2004
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	7
-1.2 to -.4	7
-.4 to .4	2
.4 to 1.2	4
1.2 to 2.0	0
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	20

Code & Year:	2005
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	6
-1.2 to -.4	3
-.4 to .4	4
.4 to 1.2	0
1.2 to 2.0	0
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	13

Code & Year:	2006
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	6
-1.2 to -.4	4
-.4 to .4	5
.4 to 1.2	3
1.2 to 2.0	2
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	20

Code & Year:	2007
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	5
-1.2 to -.4	5
-.4 to .4	10
.4 to 1.2	0
1.2 to 2.0	0
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	20

Code & Year:	Total
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	24
-1.2 to -.4	19
-.4 to .4	21
.4 to 1.2	7
1.2 to 2.0	2
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	73


Rockwell #4Emco Distribution Profile - 028
(2004, 2005, 2006, 2007)
Frequency
30
25
20
15
10
5
0
LT -3.6
-3.6 to -2.8
-2.8 to -.2
-.2 to -1.2
-1.2 to -.4
-.4 to .4
.4 to 1.2
1.2 to 2.0
2.0 to 2.8
2.8 to 3.6
GT 3.6
Proof Ranges

Rockwell 10Emco	Test Year 2009								
5000 CFH	Control Group-Installed Year								
Code: 061	2004	2005	2006	2007					
Sample Plan	Single	Single	Single	Single					
Sample Size	8*	8	8	8					
Original Population	17	39	35	46					
# of Slow Failures	0	0	0	0					
# of Fast Failures	0	0	0	0					
Total Failures:	0	0	0	0					
Accept Level	1	1	1	1					
Reject Level	2	2	2	2					
Pass / Fail?	Pass	Pass	Pass	Pass					
If Failed - Remove By:	Exhaust	NA	NA	NA					
Statistical Data:									
Mean (Average Proof)	-0.80625	-0.80625	-0.3375	-0.275					
Median	-0.85	-0.7	-0.45	0.025					
Standard Deviation	0.916296	0.669455	1.019016	0.921567					
Sample Variance	0.839598	0.44817	1.038393	0.849286					
Skewness	0.178593	-0.606	1.314826	-0.3614					
Minimum	-2	-2	-1.4	-1.5					
Maximum	0.7	0.1	1.75	0.9					
Count	8	8	8	8					
Confidence Level(95.0%)	0.766043	0.559678	0.851918	0.770449					

* Control group in 5th year of service - maximum service period - all meters to be removed/tested. Sample size based on population was used to dertermine if group passed/failed in it's last year of service.

Year 2009

Meter Code 061 Rockwell 10M Emco

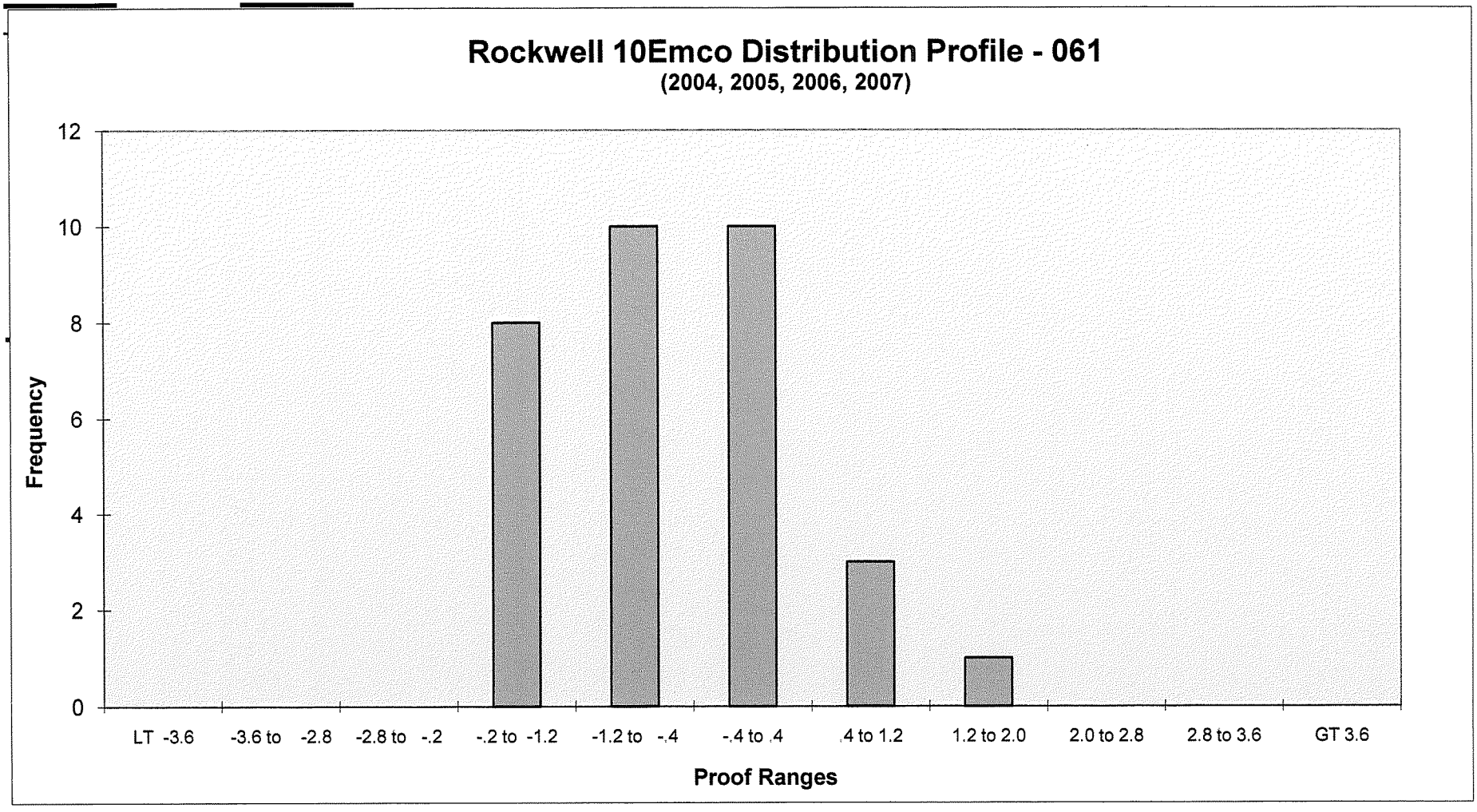
Code & Year:	2004
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	2
-1.2 to -.4	3
-.4 to .4	2
.4 to 1.2	1
1.2 to 2.0	0
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	8

Code & Year:	2005
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	2
-1.2 to -.4	4
-.4 to .4	2
.4 to 1.2	0
1.2 to 2.0	0
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	8

Code & Year:	2006
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	2
-1.2 to -.4	2
-.4 to .4	3
.4 to 1.2	0
1.2 to 2.0	1
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	8

Code & Year:	2007
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	2
-1.2 to -.4	1
-.4 to .4	3
.4 to 1.2	2
1.2 to 2.0	0
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	8

Code & Year:	Totals
Data Range	Number
LT -3.6	0
-3.6 to -2.8	0
-2.8 to -.2	0
-.2 to -1.2	8
-1.2 to -.4	10
-.4 to .4	10
.4 to 1.2	3
1.2 to 2.0	1
2.0 to 2.8	0
2.8 to 3.6	0
GT 3.6	0
Total	32


Rockwell 10Emco Distribution Profile - 061
(2004, 2005, 2006, 2007)
Frequency
12
10
8
6
4
2
0
LT -3.6
-3.6 to -2.8
-2.8 to -.2
-.2 to -1.2
-1.2 to -.4
-.4 to .4
.4 to 1.2
1.2 to 2.0
2.0 to 2.8
2.8 to 3.6
GT 3.6
Proof Ranges

Louisville Gas & Electric

Regulator Inspection and Replacement Program Report 2009

Year 2009 Regulator Inspection and Replacement Program

I. Progress Summary

During 2009, LG&E replaced a total of 22,451 gas pressure regulators as part of LG&E's regulator inspection and upgrade program. An additional 1,789 regulators were replaced for other reasons such as improper function of the regulator, damage/vandalism, service line replacement, or meter loop repairs. The distribution of the reasons for these regulator replacements is shown in Table 1 below.

Table 1: Year 2009 Regulator Change Reasons

Reason	Quantity
Regulator Replacement Program	22,451
Failed Lockup Test	50
Vent Leaking	134
Leak on Regulator	9
Routine Change During Meter Loop Repair	799
Could Not Adjust Pressure	14
Damage/Vandalism	19
Routine Change During Service Renewal	762
Test Site	2
Total	**24,240**

For the time period of 2002 – 2009, a total of 135,511 regulator replacements have been made. This total represents 71% of the approximately 190,554 residential regulators that are expected to be replaced over the ten year period of the regulator replacement program. On the 2007 report, an addition error was made in calculating the cumulative number of regulator replacements from 2002 – 2007. The correct number was 86,187. That error was carried forward onto the 2008 report. The correct cumulative number of regulator replacements from 2002 – 2008 was 111,271.

A total of 13,821 existing approved gas pressure regulators were inspected in 2009 and remain in service.

II. Safety

As part of LG&E's regulator replacement activities, safety inspections were performed and "red-tags" were issued when deficiencies were found. The results of these safety inspections directly associated with LG&E's regulator replacement program are summarized in Table 2 below.

Table 2: Year 2009 Safety Inspection Results

Reason	Quantity
Houseline Leak (includes lines to gas grills, pool heaters, appliance flexible hook-up lines, fireplace, etc.)	43
Furnace Problem (internal leak, not burning correctly)	6
Leak or Not Venting Properly (dryer,range,water heater)	27
Flex Lines/Brass Connectors	99
Other Leaks (leaks on space heater, etc.)	3
Total	**178**

Additionally, the following Customer Surveillance Notices were issued to customers to correct outside deficiencies on their meter loop or exposed outside gas piping. The results of these safety inspections directly associated with LG&E's regulator replacement program, are summarized in Table 3 below.

Table 3: Year 2009 Customer Surveillance Notices Issued

Reason	Quantity
Corrosion / Rust On Outside Meter Loop & Associated Piping	4,846
Gas Meter In Contact With Soil / Pavement	20
Meter partially buried	23
Asphalt or Concrete Paving in Contact With Piping Entering Ground	109
Gas Piping Not Properly Supported	202
Meter Not Protected From Vehicular Damage	48
Customer Built Over Service Line / Around Meter	23
Tree / Shrubbery Growing Inside / Against Meter Loop	29
Total	**5,300**