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Report of Test on

SEISMIC VIBRATION TESTING OF
ONE (1) HYDROGEN ANALYZER ASSEMBLY
GENERAL ELECTRIC SPACE SYSTEMS
VALLEY FORGE SPACE CENTER
UNDER PURCHASE ORDER NO. A28000A10155

Date October 17, 1979

	Prepared	Checked	Approved
By	B.Esposito	R.Gilfoy	M.L.Tolf
Signed	Bruce Esposito	R. Gilfoy	M. L. Tolf
Date	October 18, 1979	18 Oct. 79	10/18/79

BE/hmf

S023-508-17-18-0

Administrative Data

1.0 Purpose of Test: To subject one hydrogen analyzer assembly to seismic vibration testing.

2.0 Manufacturer: General Electric
Valley Forge Space Center
Space Division

3.0 Manufacturer's Type or Model No: P/N 47E240609

4.0 Drawing, Specification or Exhibit: AETC Test Procedure No. 14950 Rev 0 dated July 3, 1979.

5.0 Quantity of Items Tested: Refer to section 1.0 below.

6.0 Security Classification of Items: Unclassified

7.0 Date Test Completed: October 3, 1979

8.0 Test Conducted By: C.Pilotte
P.McDermott

9.0 Disposition of Specimens: Returned to General Electric.

10.0 Abstract: Refer to the results section below.

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ENVIRONMENTAL TESTING ACTON

1.0 TEST ITEM

One (1) Hydrogen Analyzer Assembly P/N 47E240609 consisting of one (1) free standing enclosure approximately 72-1/16" X 25-1/6" X 31-9/16" containing signal conditioning for hydrogen analyzers, one (1) hydrogen sensor and one (1) pressure transducer with a total weight of approximately 660 lbs was submitted by General Electric Space Systems, Valley Forge Space Center, for seismic vibration testing at Acton Environmental Testing Corporation (AETC).

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2.0 TEST REQUIREMENTS

The purpose of this test was to subject the assembly specified in section 1.0 above to the seismic vibration test specified in section 3.0 below to determine its ability to withstand such vibration without evidence of mechanical damage, deterioration, or loss of its ability to operate properly during or after the simulated seismic event.

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3.0 TEST PROCEDURES

3.1 Test Mounting

The enclosure specified in section 1.0 above was bolted to a 1-1/2" thick steel plate test fixture. The sensor and the transmitter were mounted to brackets supplied by General Electric. The brackets were bolted to the steel plate test fixture. The test fixture was then securely attached to the small 45° biaxial table of the AETC seismic test facility. The use of the 45° biaxial table results in equal horizontal and vertical components.

3.2 Test Monitoring

The hydrogen analyzer assembly was monitored with accelerometers to determine its mechanical response during the resonance survey and multiple frequency tests specified in sections 3.4 and 3.5 below. The eleven (11) monitoring accelerometers and one (1) control accelerometer were located as follows:

ACCELEROMETER NO.	AXIS SENSING ORIENTATION	LOCATION*
1	Vertical	On upper right front corner of cabinet
2	In-axis Horizontal	
3	Vertical	On lower right intermediate panel above ATB1 & ATB2
4	In-axis Horizontal	
5	Vertical	On backside of train B Gas calibration panel
6**	In-axis Horizontal	
7	Vertical	On backside of train A Gas calibration switch panel
8***	In-axis Horizontal	
9	Vertical	On lower right front corner of cabinet
10	In-axis Horizontal	
11	In-axis Horizontal	On test table Control is #12
12	Vertical	

During the resonance survey, data from all twelve (12) accelerometers through appropriate signal conditioning was recorded onto visicorder recording paper included with this test report and onto magnetic tape.

* Refer to the included photographs
** 6A for tests 2, 3 & 5
*** 8A for tests 2, 3 & 5

During the multiple frequency test specified in section 3.5 below, data from all twelve (12) accelerometers, through appropriate signal conditioning was recorded onto magnetic tape. Data from the control accelerometer was also analyzed on line by a Spectral Dynamics SD321 Shock Spectrum Analyzer and the X-Y plots of the Test Response Spectra (TRS) of the control accelerometer are included as part of this test report.

The hydrogen analyzer assembly was visually monitored for any evidence of mechanical damage or deterioration.

General Electric personnel monitored the hydrogen analyzer assembly performance. General Electric supplied the required performance monitoring equipment including gas. AETC supplied two (2) channels of brush recording for the following:

CHANNEL NO.	CHANNEL DESCRIPTION
1	Analyzer output A
2	Analyzer output B

The Brush Recordings were retained by General Electric personnel at the completion of testing.

3.3 Test Conditions

The hydrogen analyzer assembly was tested at room temperature.

During the resonance survey specified in section 3.4, the hydrogen analyzer assembly was not operational.

During the multiple frequency test specified in section 3.5 below, the hydrogen analyzer assembly was operational. All electrical and operating test conditions were set and controlled by General Electric personnel.

3.4 Resonance Survey

The resonance survey consisted of a biaxial sinusoidal input with peak horizontal and vertical accelerations of 0 [illegible] at frequencies from 1.0 through 35.0 Hz. The resonance survey was performed at a sweep rate of 1/2 octave/minute. The input was applied in two (2) biaxial directions of excitation as follows:

TEST	BIAXIAL DIRECTION OF EXCITATION*
1,1A,1B,1C	Front-to-back & Vertical
2	Right-to-left & Vertical

*Refer to the included photographs.

3.5 Multiple Frequency Test

A biaxial multiple frequency excitation was applied. The test input had been recorded on a 14-channel tape recorder, each track having discrete frequency sine beats recorded at a different frequency and delay between beats. All frequencies were recorded at maximum levels.

The input was played back through a 14-channel tape recorder. The outputs of the 14 channels were then combined in a 14-channel mixer which resulted in a multiple frequency output.

The individual mixer channels had gain controls so that the level of each output tape channel passing through the mixer could be controlled. In this manner, the required test spectrum could be shaped by controlling the level of individual frequencies.

Qualification tests, consisting of biaxial periodic pseudo-random excitation, were performed. The level of the periodic pseudo-random excitation was such that the Test Response Spectra (TRS), from the control accelerometer would envelop the appropriate Required Response Spectra (RRS) shown in Figure 1, except where limited by AETC shaker table capabilities.

The input was applied six (6) times in each of four (4) biaxial directions of excitations as follows:

TEST NO.	BIAXIAL DIRECTION OF EXCITATION*
3	Right-to-left & Vertical
4	Front-to-back & Vertical
5	Left-to-right & Vertical
6	Back-to-front & Vertical

The test duration for each input was thirty (30) seconds.

The level of the first five (5) inputs in each biaxial direction was such that the TRS from the control accelerometer computed at Q=10 (5% damping) would envelop the OBE RRS shown in Figure 1, except where limited by AETC shaker table capabilities. The level of the sixth input in each biaxial direction was such that the TRS computed at Q=10 (5% damping) would envelop the SSE RRS shown in Figure 1, except where limited by AETC shaker table capabilities.

*Refer to the included photographs.

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Figure 1 is a composite curve of Revisions A of Sketches S023-SK-S-655, S023-SK-S-656, S023-SK-S-633, S023-SK-S-634, S023-SK-S-739, S023-SK-S-725, S023-SK-737 and S023-SK-S-701 of Revision 1 of Appendix 4F "Criteria for Seismic Qualification of Seismic Class 1 Equipment", dated July 20, 1973.

4.0 TEST RESULTS

4.1 Resonance Survey Test Results

During test 1, resonances were detected at 23.0, 30.75 and 33.75 Hz. Accelerometers 7 and 8 fell off during the test at the 30.75 Hz resonance. Because the readout of accelerometer 8 was high, accelerometers 5, 6*, 7 and 8* were replaced to lighter model accelerometers to reduce the effect of the mass of the accelerometers on the panels' response.

Test 1A was the same as test 1 except the lighter accelerometers were used. During test 1A data from accelerometer 6 was lost.

Test 1B was a rerun of test 1A to gain the lost data from accelerometer 6.

Resonances were detected at 23 and 33-35 Hz during test 1B. The train A gas calibration switch panel was then removed and a 3/4" X 3/4" X 17" aluminum angle stiffener was bolted to the backside of the panel with five (5) 10-32 screws.

Test1C was the same as test 1B except the stiffener was used. Resonances were audible from 31 to 35 Hz on panels that were not monitored with accelerometers and accelerometer #8 still showed resonances at 23 Hz.

Resonances were detected from 22 to 26 Hz during test 2. The added stiffener was used for test 2.

4.2 Multiple Frequency Test Results

Due to AETC shaker table limitations, the Test Response Spectra (TRS) of the SSE tests did not envelop the Required Response Spectra (RRS), Figure 1, at frequencies below 1.2 Hz.

The added stiffener was used for all the multiple frequency tests.

There was no evidence of mechanical damage or deterioration of the hydrogen analyzer assembly as a result of the multiple frequency test specified in section 3.5 above. The operating conditions were set and controlled by General Electric personnel, who retained the brush recording charts of the analyzers' output.

*and 6A and 8A when used.

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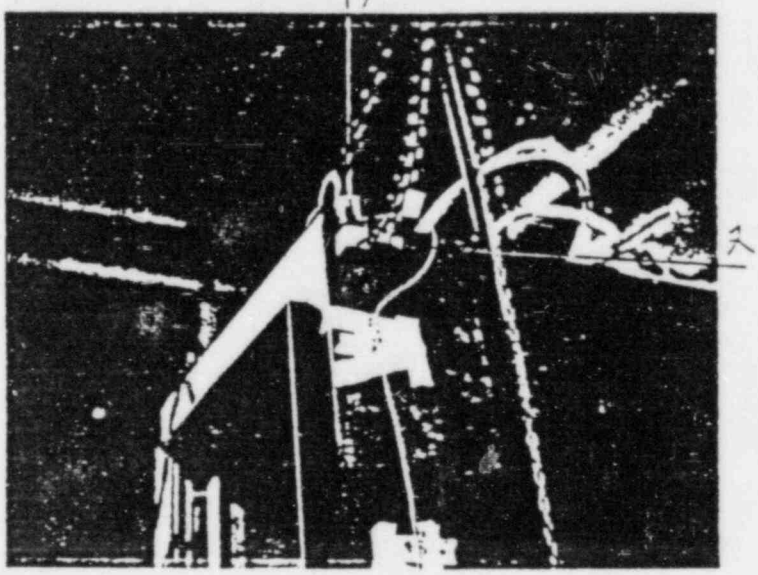
TEST EQUIPMENT LIST

NAME	MFGR.	MODEL	SER.NO.	RANGE	ACCURACY	INV.#	CAL.FREQ.
Accelerometer	PCB	302A	695	0.25 Hz - 5 KHz	±5%	AC385	3 months
"	"	"	2853	1 Hz - 5 KHz	"	AC395	" "
"	"	308B	3017	1 - 3000 Hz	"	AC398	" "
"	"	"	982	"	"	AC400	" "
"	"	"	983	"	"	AC401	" "
"	"	"	1068	"	"	AC402	" "
"	"	"	1070	"	"	AC404	" "
"	"	"	1071	"	"	AC405	" "
"	"	"	989	"	"	AC407	" "
"	"	"	990	"	"	AC408	" "
"	"	"	1073	"	"	AC409	" "
"	"	302A	1773	1 Hz - 5 KHz	"	AC416	" "
"	"	"	1775	"	"	AC418	" "
"	"	"	1813	"	"	AC431	" "
"	"	"	1815	"	"	AC433	" "
"	"	308B	1782	1 Hz - 3 KHz	"	AC447	" "
"	"	"	1783	"	"	AC448	" "
"	"	"	1784	"	"	AC449	" "
"	"	"	1785	"	"	AC450	" "
Filter-Dual	Ithaco	4302	35207	10-1 MHz	±3%	AM346	6 months
Scope	Tektronix	T912	T912-B011852	DC-10 MHz Storage	4%	OS302	3 months
Power Supply	Bubr	506/16	322	±15 VDC, 1 ADC	0.5%	PD372	6 months
Function Generator	MTS	410.41	140	0-10 VDC 0-5 KHz Sq.Sine Trigger	0.1%V 0.1%F	PE310	6 months

TEST EQUIPMENT LIST

NAME	MFGR.	MODEL	SER.NO.	RANGE	ACCURACY	INV.#	CAL.FREQ.
Hydraulic Actuator	MTS	204.63S		DC-300 Hz, 25K force lbs. 25" DA max.	±2%F ±5%A		
Controller	MTS	443.115		DC to 2000 Hz	±1%	PE367	6 months
Shock Spectrum Analyzer	Spec.Dyn.	SD321	18	Input: 0.1 Hz - 10 KHz Sens. 31.6 MV - 100V F.S.	±0.5db	PE381	6 months
Power Supply & Amplifier	PCB	483M23	288	12 channel X1 & X5 gain filter freq. 50 Hz	N/A	PE384	6 months
Temp Recorder	Brush	280	1132	0.5 mv/div	±2%	RE302	3 months
Recorder X-Y	MFE	715E	42167	Input:1-10-100 MV 1-10V both channels	±0.5%	RE340	3 months
Recorder Tape	Honeywell	5600E	01410CE76	1" tape 7 speeds 14 channel	N/A	RE345	3 months
Visicorder	Honeywell	1508	161715R	12 channel-metric	±1db	RE347	3 months
"	"	"	15-419	12 channels 8" paper	"	RE349	" "
Recorder	Honeywell	5700E	Electro Rent #73377				



ACCELEROMETER LOCATIONS

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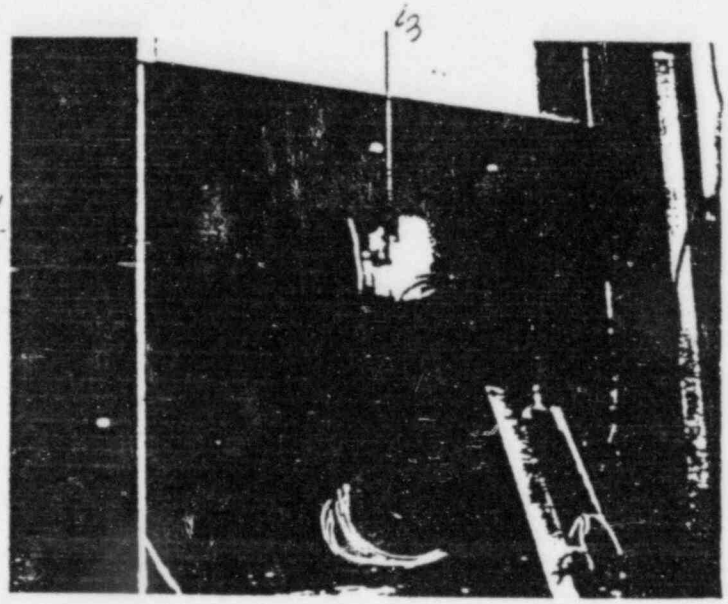

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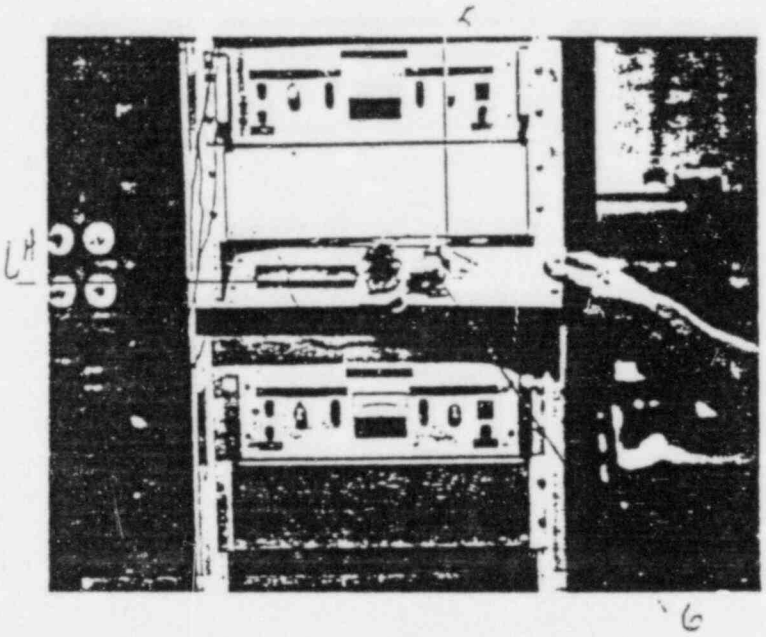

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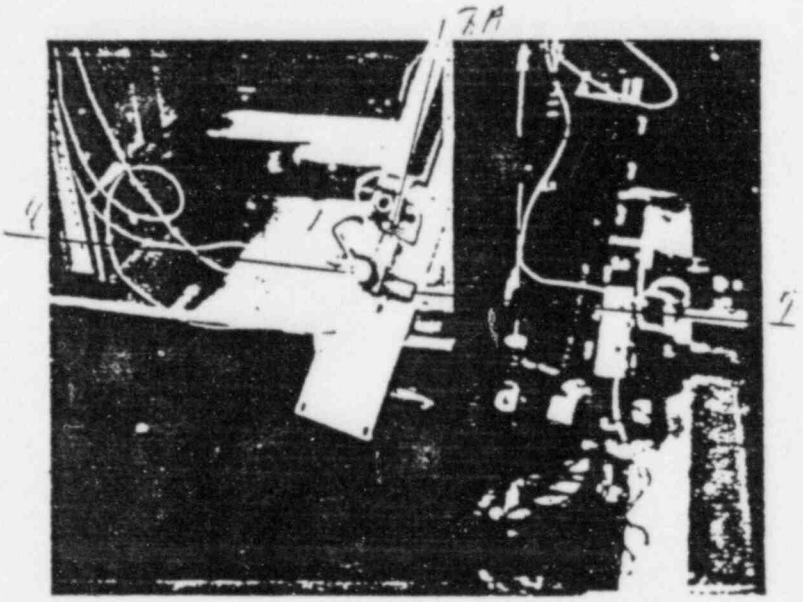

ACCELEROMETER LOCATIONS

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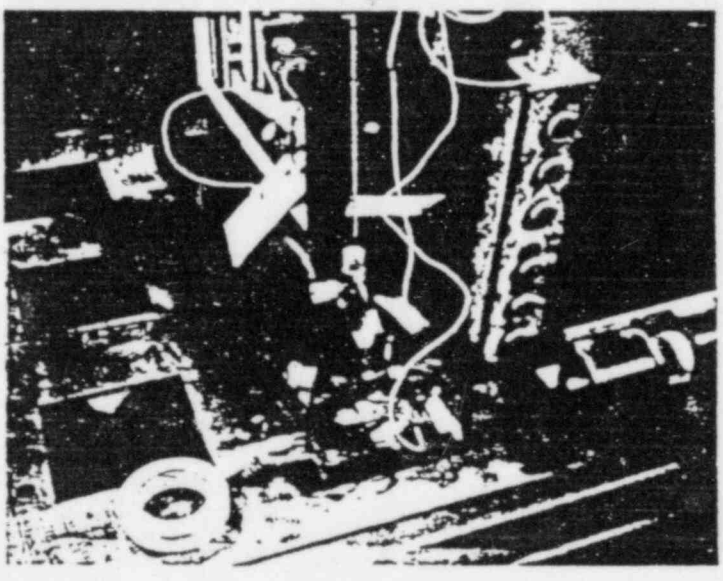

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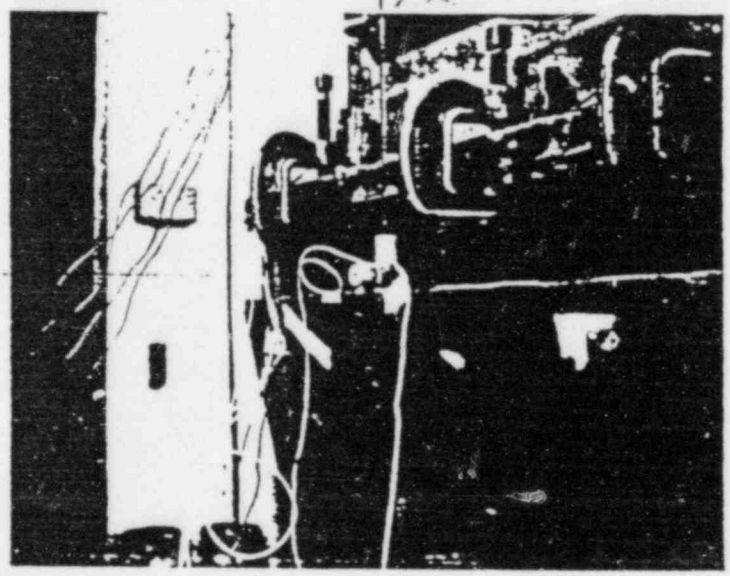

ACCELEROMETER LOCATIONS

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ACTON ENVIRONMENTAL TESTING CORPORATION

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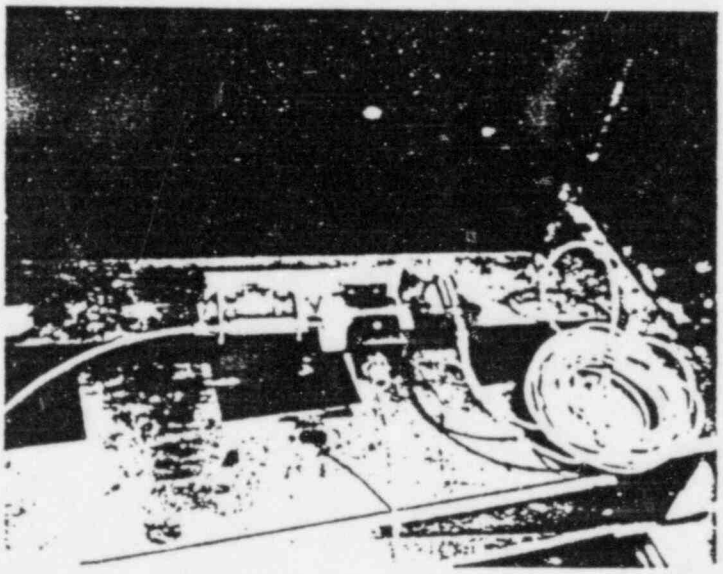
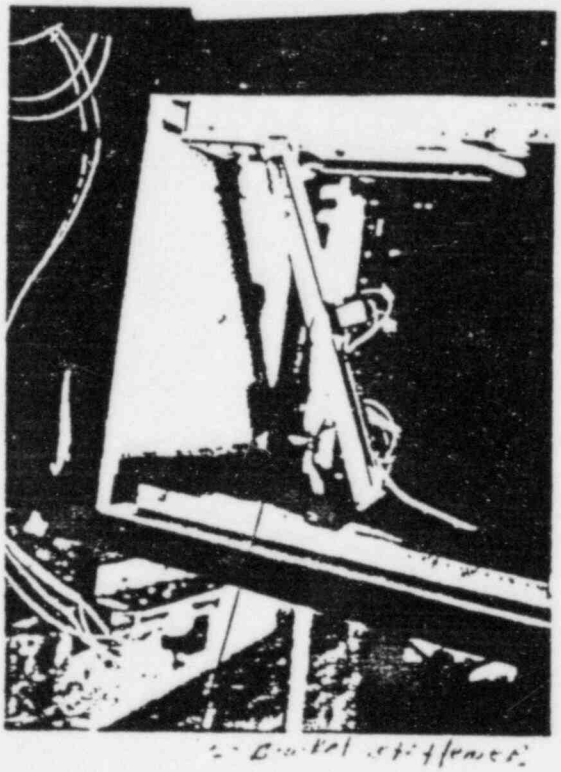


SENSOR & TRANSDUCER MOUNTING

Report No. 14950



ADDED STIFFENER

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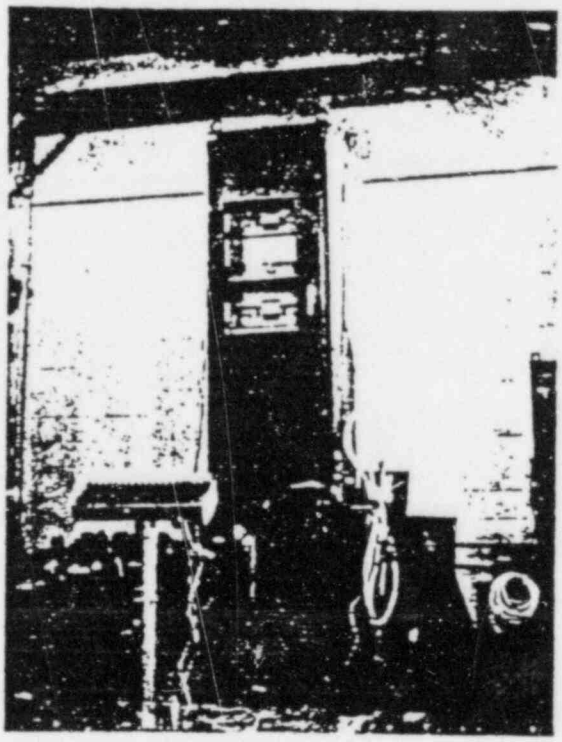

FRONT-TO-BACK & VERTICAL
BIAXIAL DIRECTION OF EXCITATION
TESTS 1, 1A, 1B, 1C & 4

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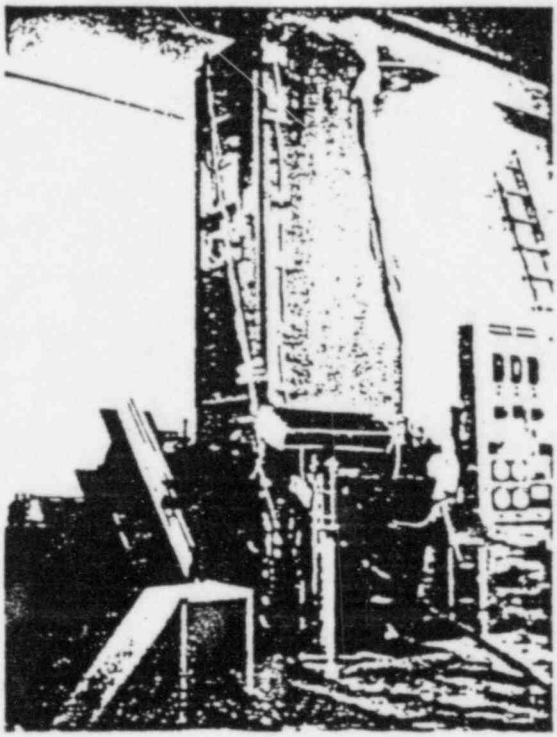
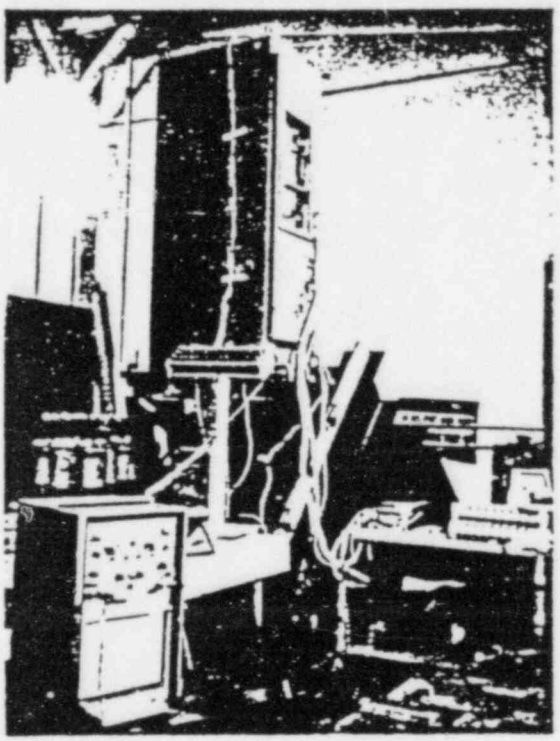


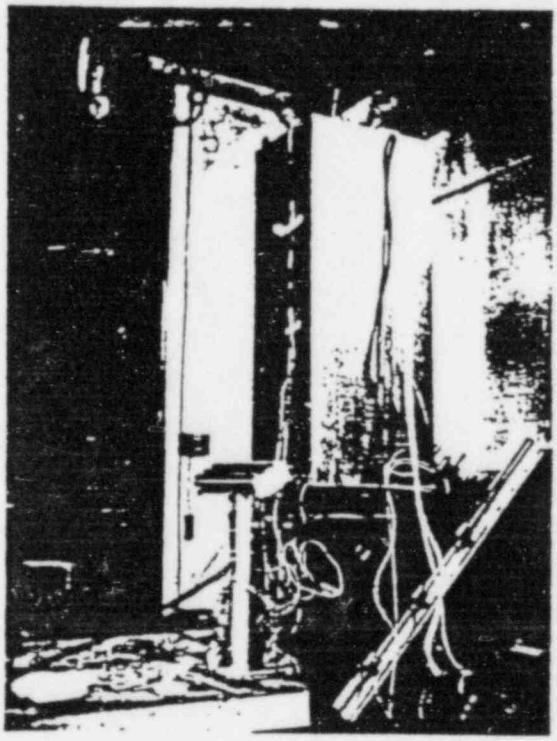
RIGHT-TO-LEFT & VERTICAL
BIAXIAL DIRECTION OF EXCITATION
TESTS 2 & 3

Report No. 14950



LEFT-TO-RIGHT & VERTICAL
BIAXIAL DIRECTION OF EXCITATION
TEST 5

Report No. 14950



BACK-TO-FRONT & VERTICAL
BIAXIAL DIRECTION OF EXCITATION
TEST 6

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ACTON ENVIRONMENTAL TESTING CORPORATION

REQUIRED RESPONSE SPECTRA (RRS) Q=10 (5% DAMPING)

Test No. RRS
Date 7/6/79
Customer GE 14950
Test Item P/N
Test Item S/N
Type of Test M.E. BIAXIAL
Spec. No.
Para. No.
Conditions
Temperature ROOM
Period of Test 30 SEC
Control Axis VERTICAL
Pick-up No. CONTROL
Pick-up Axis VERTICAL
Operator
Test Engr. T. ESPOSITO
GRMS

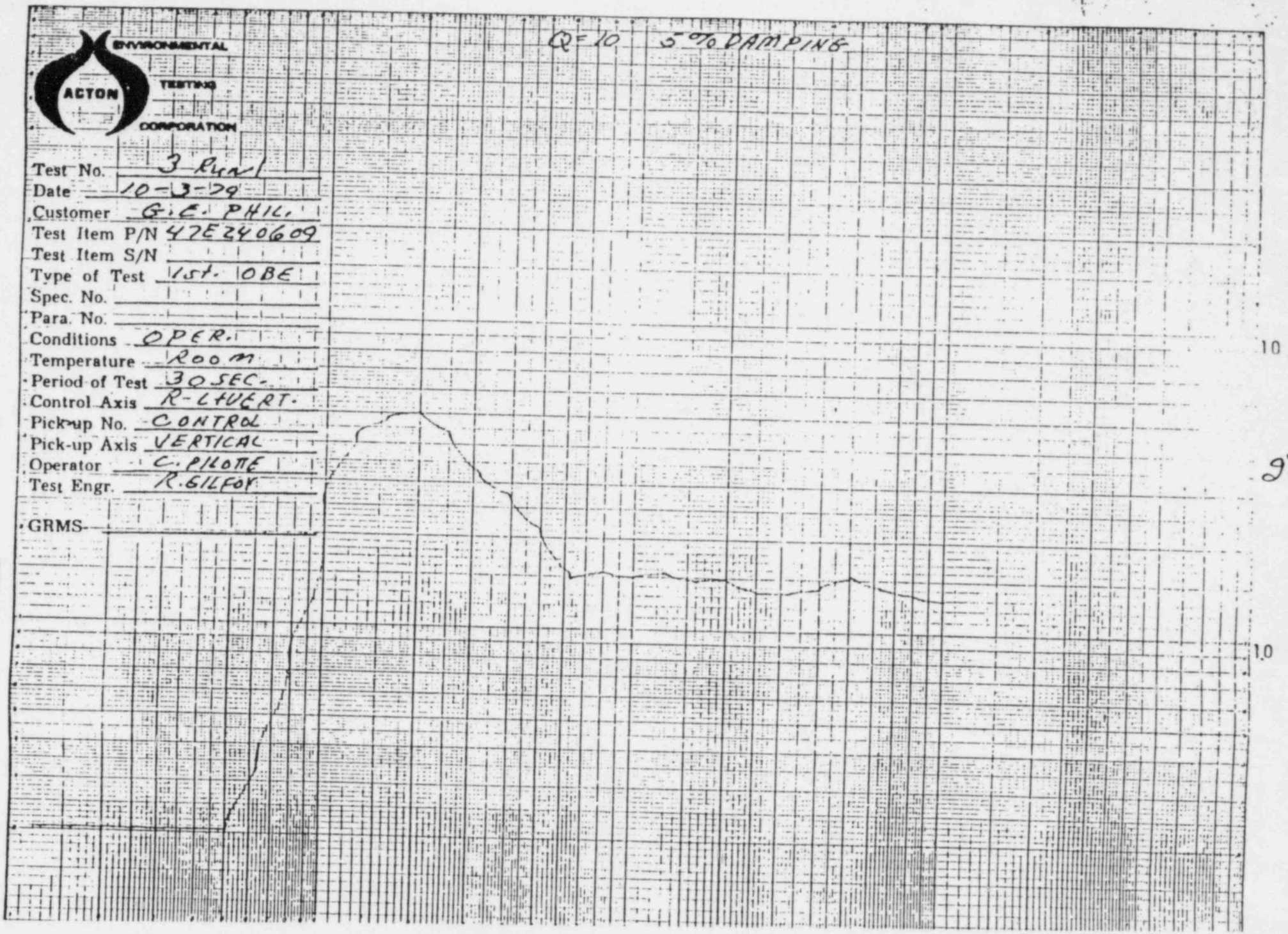
DBE RS A COMPOSITE dF°

5023-SK-S-634	5%	REV A
5023-SK-S-633	5%	REV A
5023-SK-S-701	5%	REV A
5023-SK-737	5%	REV A

OBE RS A COMPOSITE dF°

5023-SK-S-656	5%	REV A
5023-SK-S-655	5%	REV A
5023-SK-S-725	5%	REV A
5023-SK-S-739	5%	REV A

FIGURE 1


ACTON ENVIRONMENTAL TESTING CORPORATION
Q=10 5% DAMPING
Test No. 3 Rqvl
Date 10-3-79
Customer G.E. PHIL.
Test Item P/N 47E240609
Test Item S/N
Type of Test 1st. OBE
Spec. No.
Para. No.
Conditions OPER.
Temperature ROOM
Period of Test 30 SEC.
Control Axis R-VERT.
Pick-up No. CONTROL
Pick-up Axis VERTICAL
Operator C. PILOTE
Test Engr. R. GILFOY
GRMS
10.
9.
1.0

E-62

ENVIRONMENTAL TESTING CORPORATION
ACTON

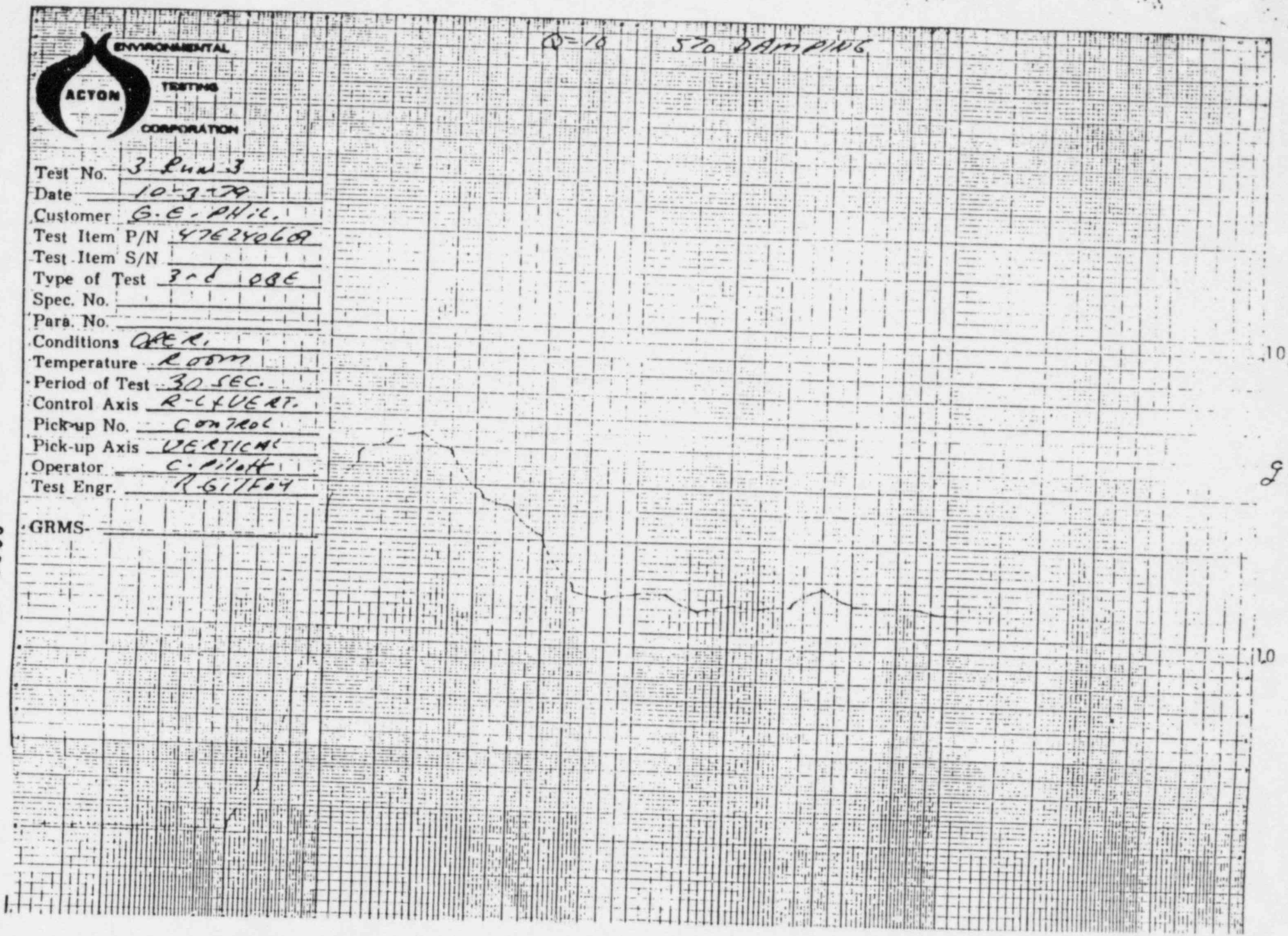
Q=10 5% DAMP. LIG

Test No. 3 RUN-2
Date 10-3-79
Customer G.E. PHIL.
Test Item P/N 47E240609
Test Item S/N
Type of Test RANDOM 3rd OBE
Spec. No.
Para. No.
Conditions OPER.
Temperature ROOM
Period of Test 30SEC.
Control Axis R-L VERT.
Pick-up No. CONTROL
Pick-up Axis VERTICAL
Operator C. PUGH
Test Engr. R. GILFOY
GRMS

10

.5

10



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ENVIRONMENTAL TESTING CORPORATION
ACTON

Q = 10 5% DAMPING

Test No. 3 4th Run
Date 10-3-79
Customer B.E. PH.C
Test Item P/N 47E274609
Test Item S/N
Type of Test 4th OBE
Spec. No.
Para. No.
Conditions OPER.
Temperature Room.
Period of Test 30SEC.
Control Axis R-L VERT.
Pick-up No. CONTROL
Pick-up Axis VERTICAL
Operator C. Pilotti
Test Engr. R. GILFOY
GRMS

10.

6;

10

ACTON ENVIRONMENTAL TESTING CORPORATION

Q=10 5% DAMPING

Test No. 3 RUN 5
Date 10-5-79
Customer G.E. PH.I.
Test Item P/N 47E270609
Test Item S/N
Type of Test 5TH DBE
Spec. No.
Para. No.
Conditions OPER.
Temperature ROOM
Period of Test 30 SEC.
Control Axis R-L VERT.
Pick-up No. CONTROL
Pick-up Axis VERTICAL
Operator C. PILOTTE
Test Engr. R. GILFOY
GRMS

10.

5's

1.0

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E-66

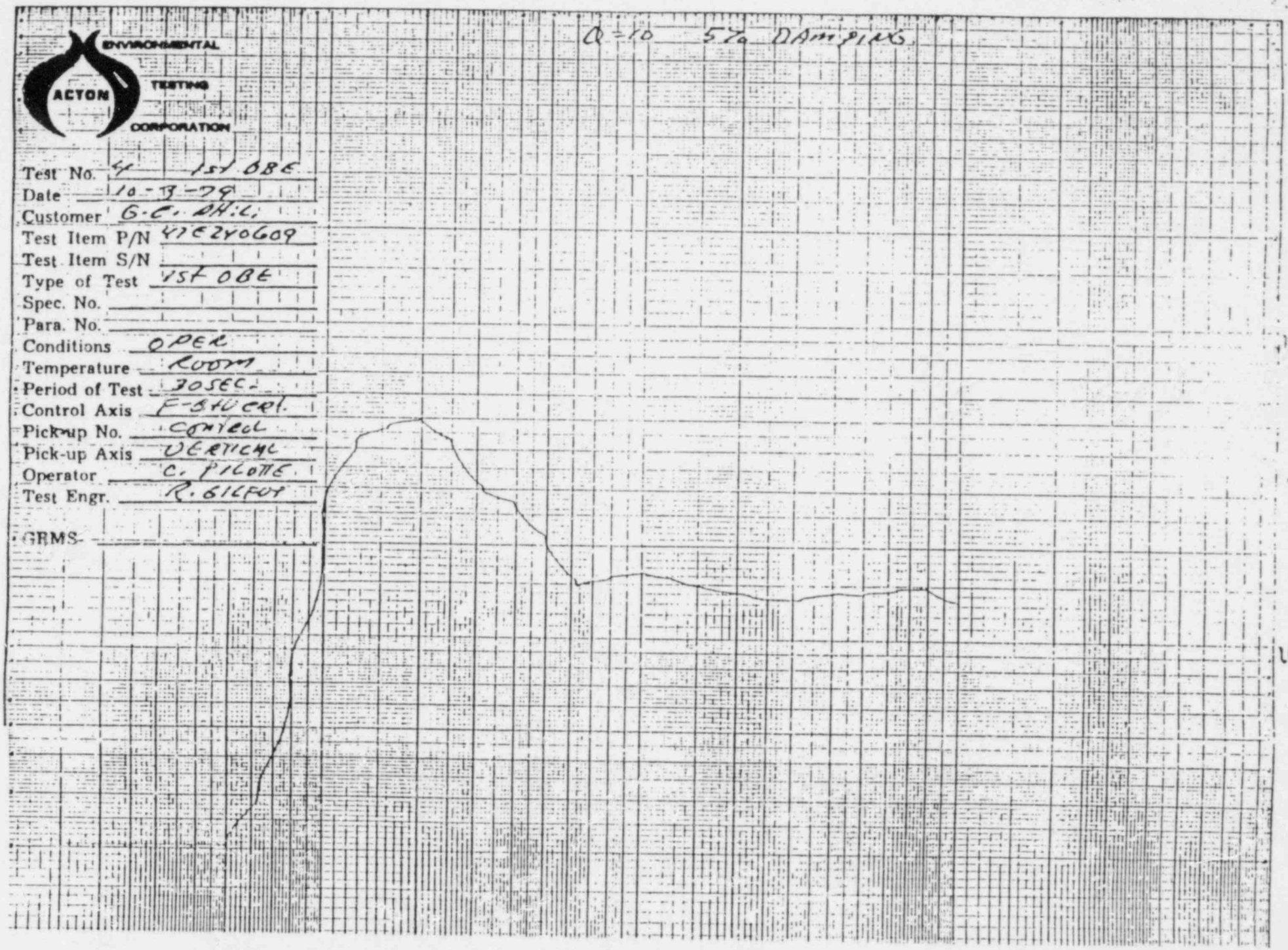
ENVIRONMENTAL TESTING CORPORATION
ACTON

Q=10 5% DAMPING

Test No. 3 R4 L
Date 10-3-79
Customer G.E. PHIL.
Test Item P/N 47E240609
Test Item S/N
Type of Test SSE
Spec. No.
Para. No.
Conditions OPER.
Temperature ROOM
Period of Test 30 SEC.
Control Axis R-L VERT.
Pick-up No. CONTROL
Pick-up Axis VERTICAL
Operator E. PILOTE
Test Engr. R. GILFOY
GRMS

10.

10



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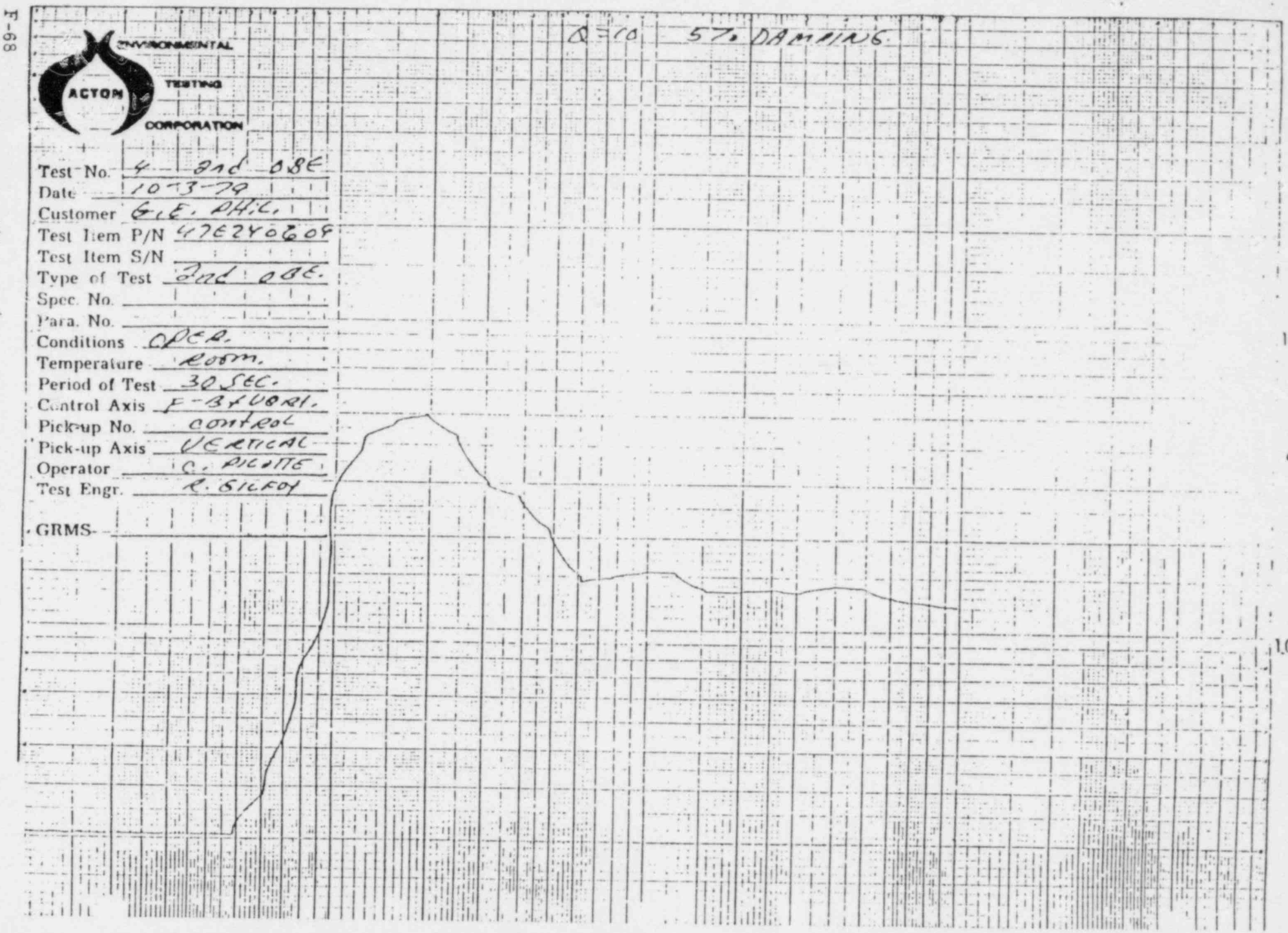
ACTON ENVIRONMENTAL TESTING CORPORATION
Q=10 5% DAMPING
Test No. 4 2nd OBE
Date 10-3-79
Customer G.E. PHIL.
Test Item P/N 47E2406 09
Test Item S/N
Type of Test 2nd OBE.
Spec. No.
Para. No.
Conditions OPER.
Temperature Room.
Period of Test 30 SEC.
Control Axis E-W HORI.
Pick-up No. CONTROL
Pick-up Axis VERTICAL
Operator C. PICOTTE
Test Engr. R. GILFOY
GRMS
10
1.0

ENVIRONMENTAL TESTING CORPORATION
ACTON

Q=10 5% DAMPING

Test No. 4 3rd Rqlw
Date 10-3-79
Customer B.E. PHIL.
Test Item P/N 47E240609
Test Item S/N
Type of Test Random 3rd OBE
Spec. No.
Para. No.
Conditions OPER.
Temperature ROOM
Period of Test 30SEC.
Control Axis F-B+VERT.
Pick-up No. CONTROL
Pick-up Axis VERTICAL
Operator C. PILOTT
Test Engr. R. GILFOY
GRMS

10
8's
1.0

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ACTON ENVIRONMENTAL TESTING CORPORATION

Q = 10 5% DAMPING

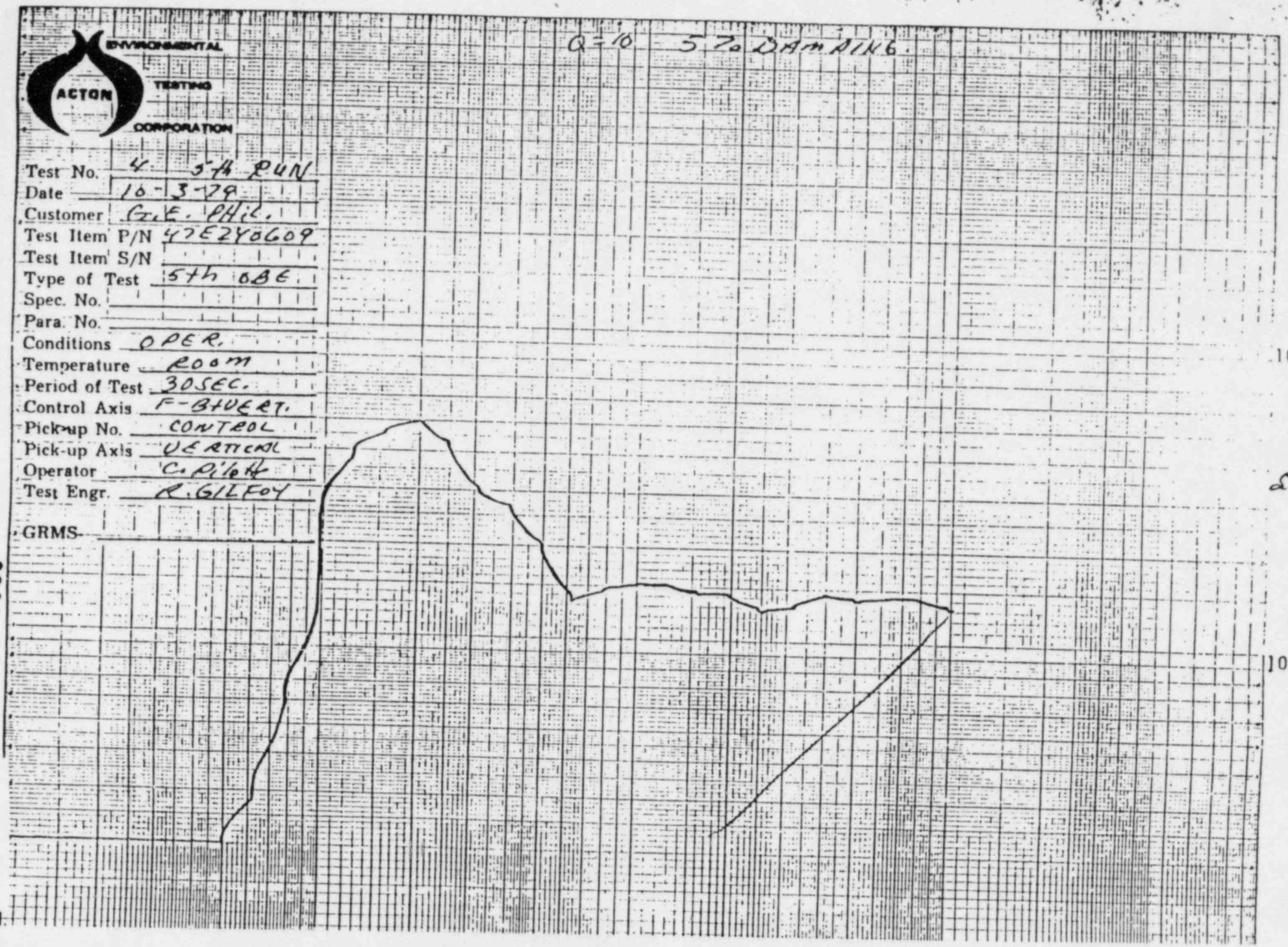
Test No. 4 RUN 4
Date 10-3-79
Customer G.E. PHIL.
Test Item P/N 47E240609
Test Item S/N
Type of Test 4TH OBE
Spec. No.
Para. No.
Conditions OPER.
Temperature ROOM
Period of Test 30SEC.
Control Axis F-BIVERT.
Pick-up No. CONTROL
Pick-up Axis VERTICAL
Operator C. PILOTE
Test Engr. R. GILLEY

GRMS-

10

8's

10


ACTON ENVIRONMENTAL TESTING CORPORATION
Q=10 5% DAMPING
Test No. 4 5th RUN
Date 10-3-79
Customer G.E. PHIL.
Test Item P/N 47E2Y0609
Test Item S/N
Type of Test 5th OBE
Spec. No.
Para. No.
Conditions OPER.
Temperature ROOM
Period of Test 30SEC.
Control Axis F-BIVERT.
Pick-up No. CONTROL
Pick-up Axis VERTICAL
Operator C. PILETT
Test Engr. R. GILFOY
GRMS
10
10
G's
SO23-508-17-13-0 F-71

ACTON ENVIRONMENTAL TESTING CORPORATION

Q = 10 5% DAMPING

Test No. 4 BRGW
Date 10-3-79
Customer B.E PAIL.
Test Item P/N 4M E240609
Test Item S/N
Type of Test SSE
Spec. No.
Para. No.
Conditions OPER.
Temperature Room
Period of Test 30SEC.
Control Axis F-BUCKET
Pick-up No. CONTROL
Pick-up Axis VERTICAL
Operator C.P.WOLFE
Test Engr. R.GILFOY

GRMS

10

10

8.5

ENVIRONMENTAL TESTING CORPORATION

ACTON

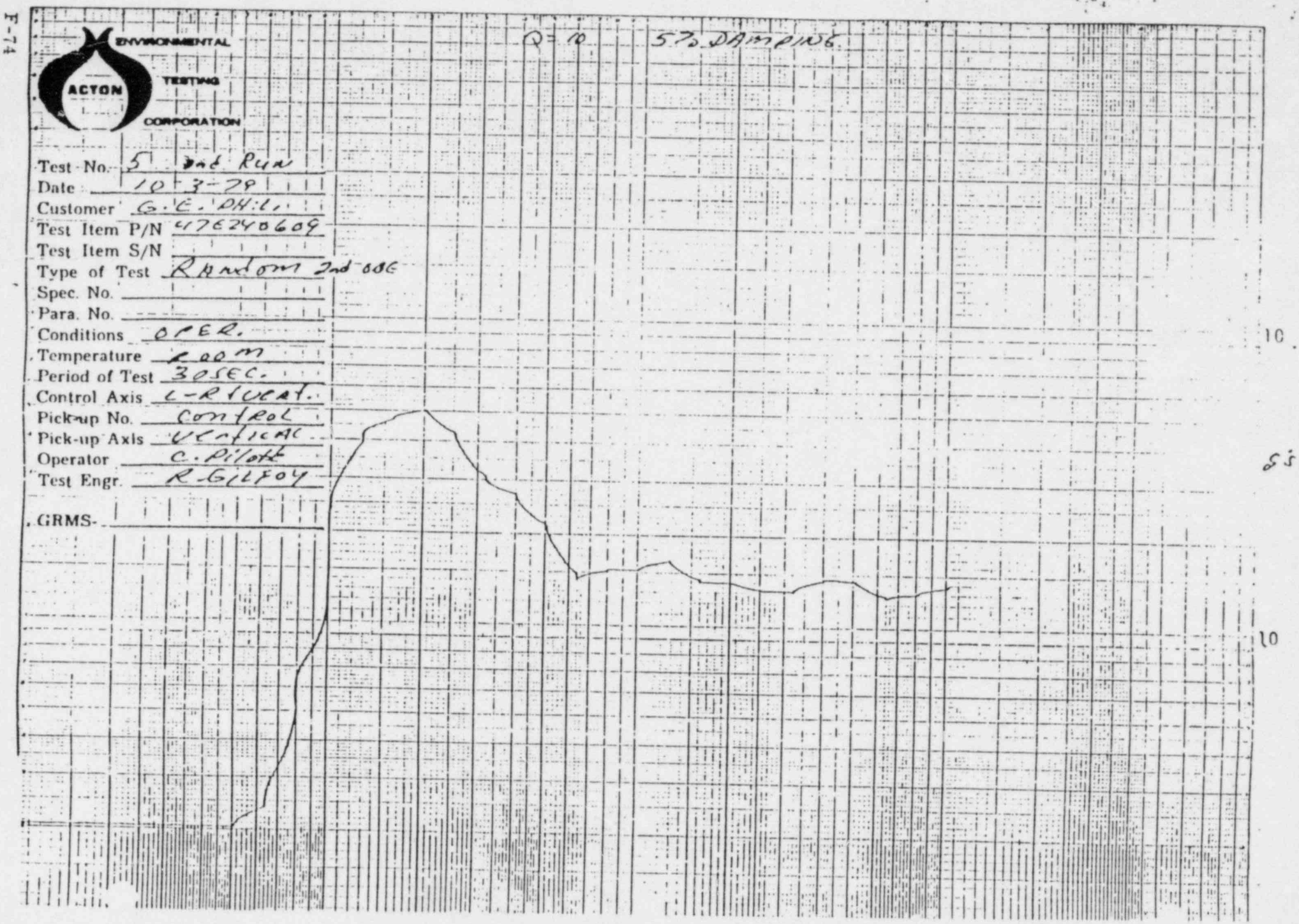
Q = 10 5% DAMPING

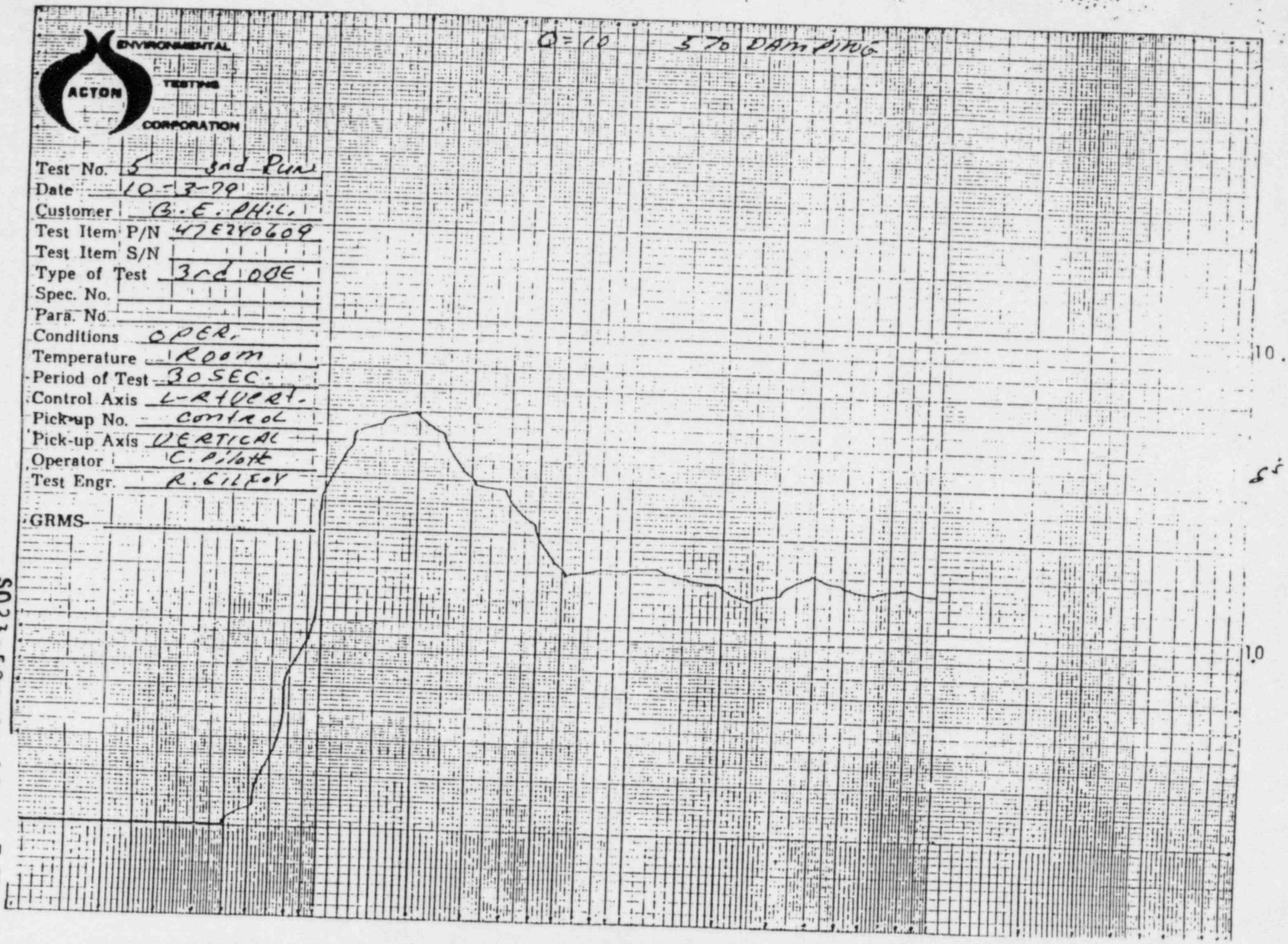
Test No. 5 1st RUN
Date 10-3-79
Customer G.E. PHIL
Test Item P/N 47E240609
Test Item S/N
Type of Test 1ST OBE
Spec. No.
Para. No.
Conditions OPER.
Temperature ROOM
Period of Test 30 SEC.
Control Axis L-R + VERT.
Pick-up No. CONTROL
Pick-up Axis VERTICAL
Operator C. PILOTTE
Test Engr. R. GILFOY
GRMS

10

1.0

SO23-506-17-1 F-73


ENVIRONMENTAL
ACTON
TESTING
CORPORATION
Test No. 5 2nd Run
Date 10-3-79
Customer G.E. PHILA.
Test Item P/N 47E240609
Test Item S/N
Type of Test Random 2nd ODE
Spec. No.
Para. No.
Conditions OPER.
Temperature Room
Period of Test 30SEC.
Control Axis L-R HEAT.
Pick-up No. CONTROL
Pick-up Axis VERTICAL
Operator C. Pilott
Test Engr. R. GILFOY
GRMS
Q = 10
5% DAMPING
10
10


ACTON ENVIRONMENTAL TESTING CORPORATION
Q = 10 5% DAMPING
Test No. 5 3rd Run
Date 10-3-79
Customer G.E. PHIL.
Test Item P/N 47E270609
Test Item S/N
Type of Test 3rd OBE
Spec. No.
Para. No.
Conditions OPER.
Temperature ROOM
Period of Test 30 SEC.
Control Axis L-R VERT.
Pick-up No. CONTROL
Pick-up Axis VERTICAL
Operator C. PILOTT
Test Engr. R. GILEOV
GRMS
10.
1.0
S023-508-17-18-0 F-75

ENVIRONMENTAL TESTING CORPORATION
ACTON

Q=10 5% DAMPING

Test No. 5 4th RUN
Date 10-31-79
Customer G.E. PHIL.
Test Item P/N 47E2406 09
Test Item S/N
Type of Test 4th OBE
Spec. No.
Para. No.
Conditions OPER.
Temperature ROOM
Period of Test 30 SEC.
Control Axis L-RADIAL
Pick-up No. CONTROL
Pick-up Axis VERTICAL
Operator C. DiIorio
Test Engr. R. GILFOY
GRMS

10
5
1.0

NO. 31,266 LOGARITHMIC FOUR BY THREE 2½ INCH CYCLES GRAPH PAPER

Q=10 5% DAMPING

ENVIRONMENTAL ACTON TESTING CORPORATION

Test No. 5 5th Pull
Date 10-3-79
Customer G.E. PHIL.
Test Item P/N 47E240609
Test Item S/N
Type of Test 5th OBE
Spec. No.
Para. No.
Conditions OPER.
Temperature ROOM
Period of Test 30SEC.
Control Axis C-RVERT.
Pick-up No. CONTROL
Pick-up Axis VERTICAL
Operator C. Pilott
Test Engr. R. SILFOV

GRMS

10.

1.0

SQ23-508-17-18-0

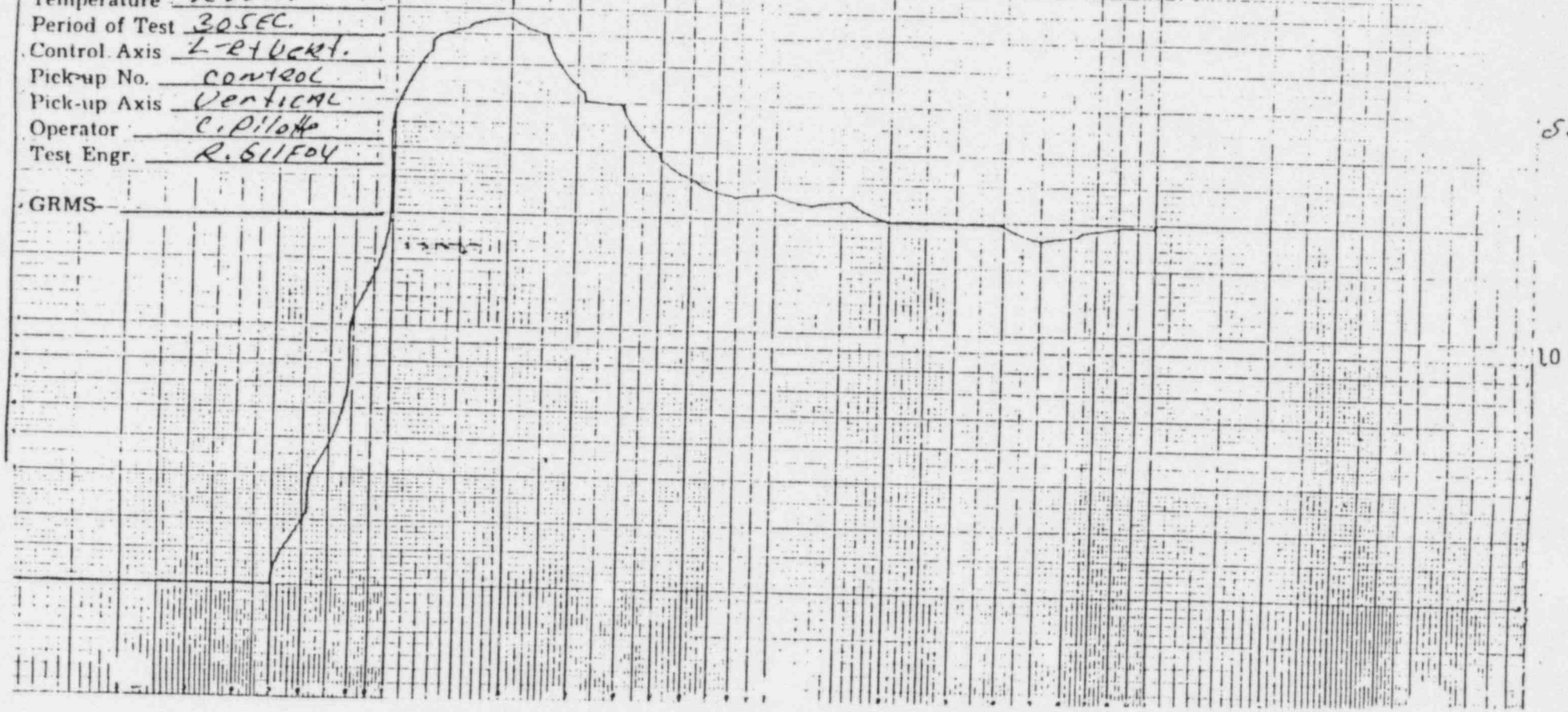
F-77

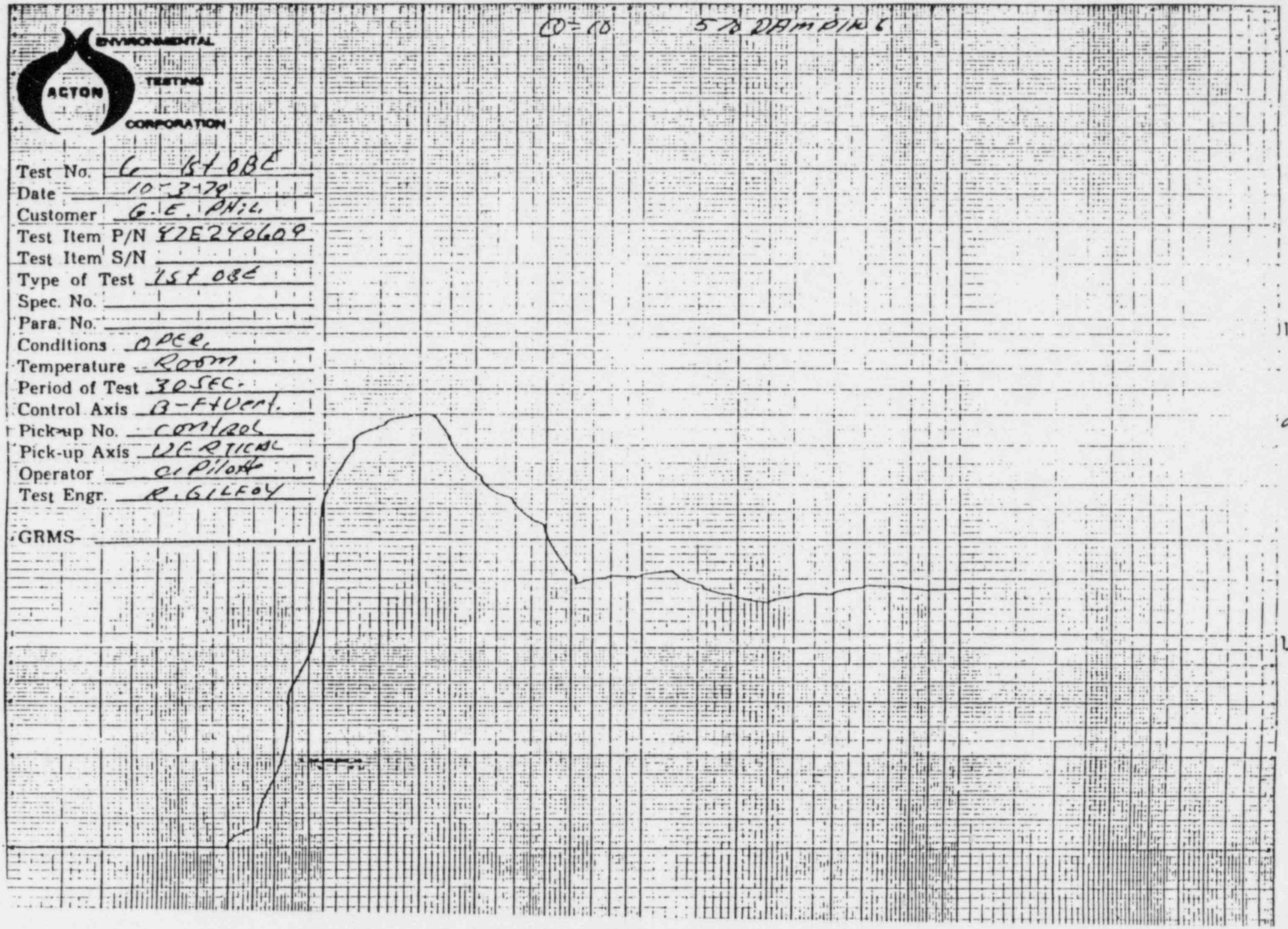
E-78

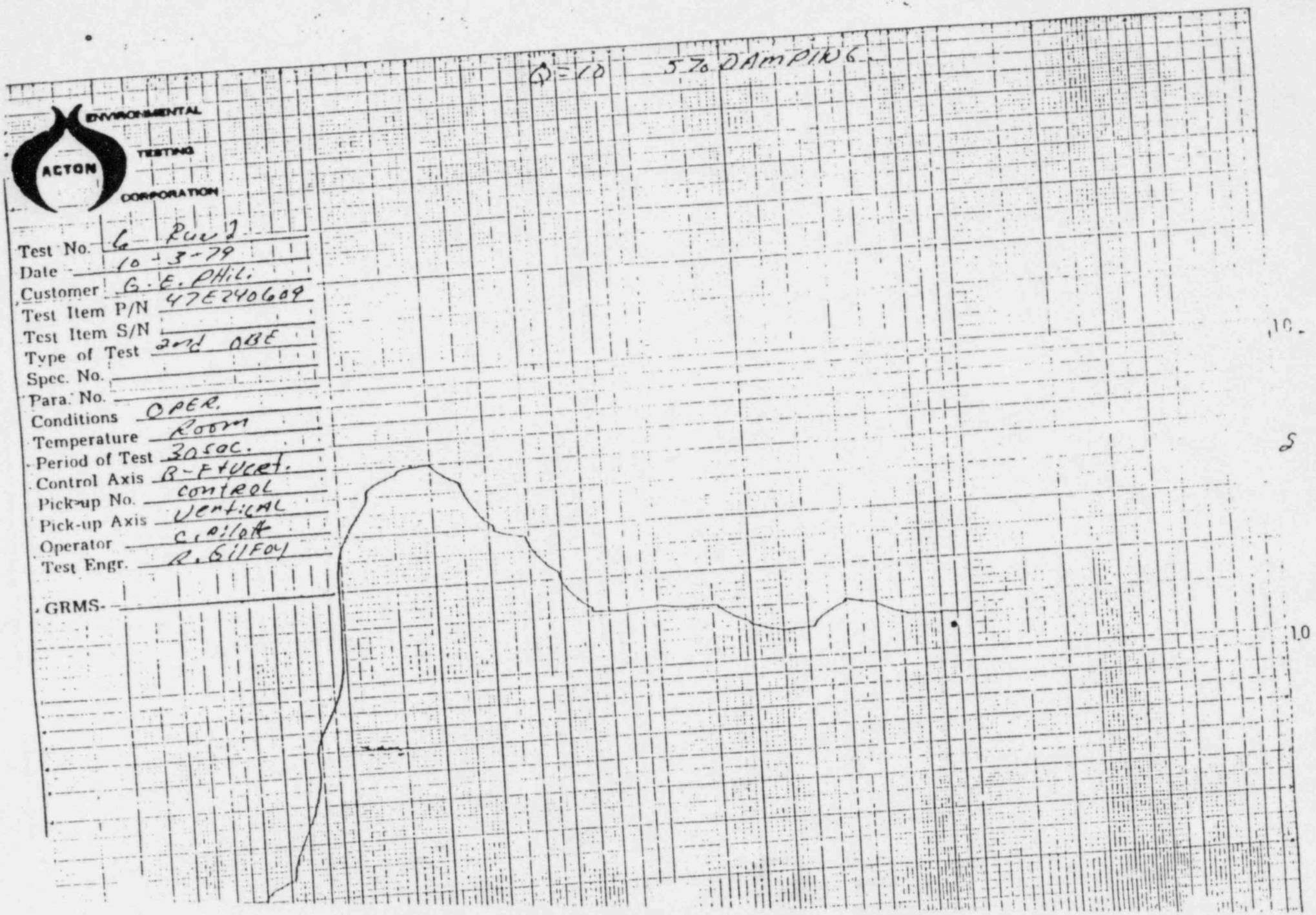
ACTON ENVIRONMENTAL TESTING CORPORATION

Q=10 5% DAMPING

Test No. 3 of 4 PWR
Date 10-3-79
Customer G.E. PHIL.
Test Item P/N 47E240609
Test Item S/N
Type of Test SSE
Spec. No.
Para. No.
Conditions OPER.
Temperature ROOM
Period of Test 30 SEC.
Control Axis L-R HORIZ.
Pick-up No. CONTROL
Pick-up Axis VERTICAL
Operator C. PILOTTE
Test Engr. R. GUIDY
GRMS



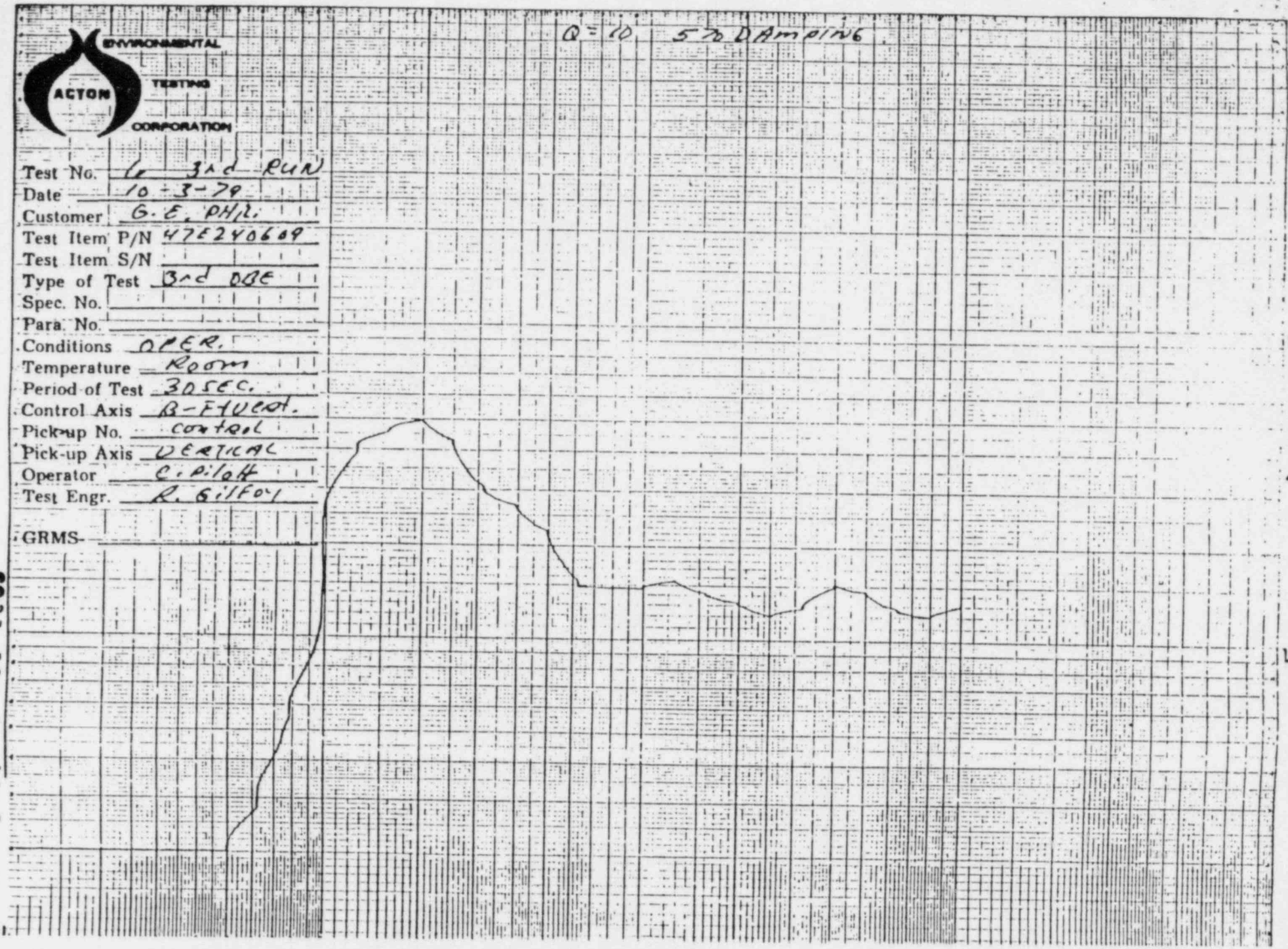

ENVIRONMENTAL
ACTON
TESTING
CORPORATION
Test No. 6 1ST OBE
Date 10-3-79
Customer G.E. PHIL.
Test Item P/N 47E270609
Test Item S/N
Type of Test 1ST OBE
Spec. No.
Para. No.
Conditions OPER.
Temperature ROOM
Period of Test 30 SEC.
Control Axis B-F+VERT.
Pick-up No. CONTROL
Pick-up Axis VERTICAL
Operator O. PILOTA
Test Engr. R. GILFOY
GRMS
CO=10
5% DAMPING
10.
g's
10
SO23-508-17-18-0
F-75


Q=10 5% DAMPING
ACTON ENVIRONMENTAL TESTING CORPORATION
Test No. 6 Run 1
Date 10-3-79
Customer G.E. PHIL.
Test Item P/N 47E240609
Test Item S/N
Type of Test 2nd OBE
Spec. No.
Para. No.
Conditions OPER.
Temperature Room
Period of Test 30sec.
Control Axis B-F+VERT.
Pick-up No. control
Pick-up Axis Vertical
Operator C. Pilat
Test Engr. R. GILFOY
GRMS
10
5
1.0

ACTON ENVIRONMENTAL TESTING CORPORATION

Q = 10 5% DAMPING

Test No. 6 3rd RUN
Date 10-3-79
Customer G.E. PHIL.
Test Item P/N 47E240609
Test Item S/N
Type of Test 3rd OBE
Spec. No.
Para. No.
Conditions OPER.
Temperature ROOM
Period of Test 30 SEC.
Control Axis B-FWD/AFT.
Pick-up No. CONTROL
Pick-up Axis VERTICAL
Operator C. PILOTT
Test Engr. R. GILFOY
GRMS



8023-506-17-18-0 F-81

ENVIRONMENTAL
TESTING
CORPORATION

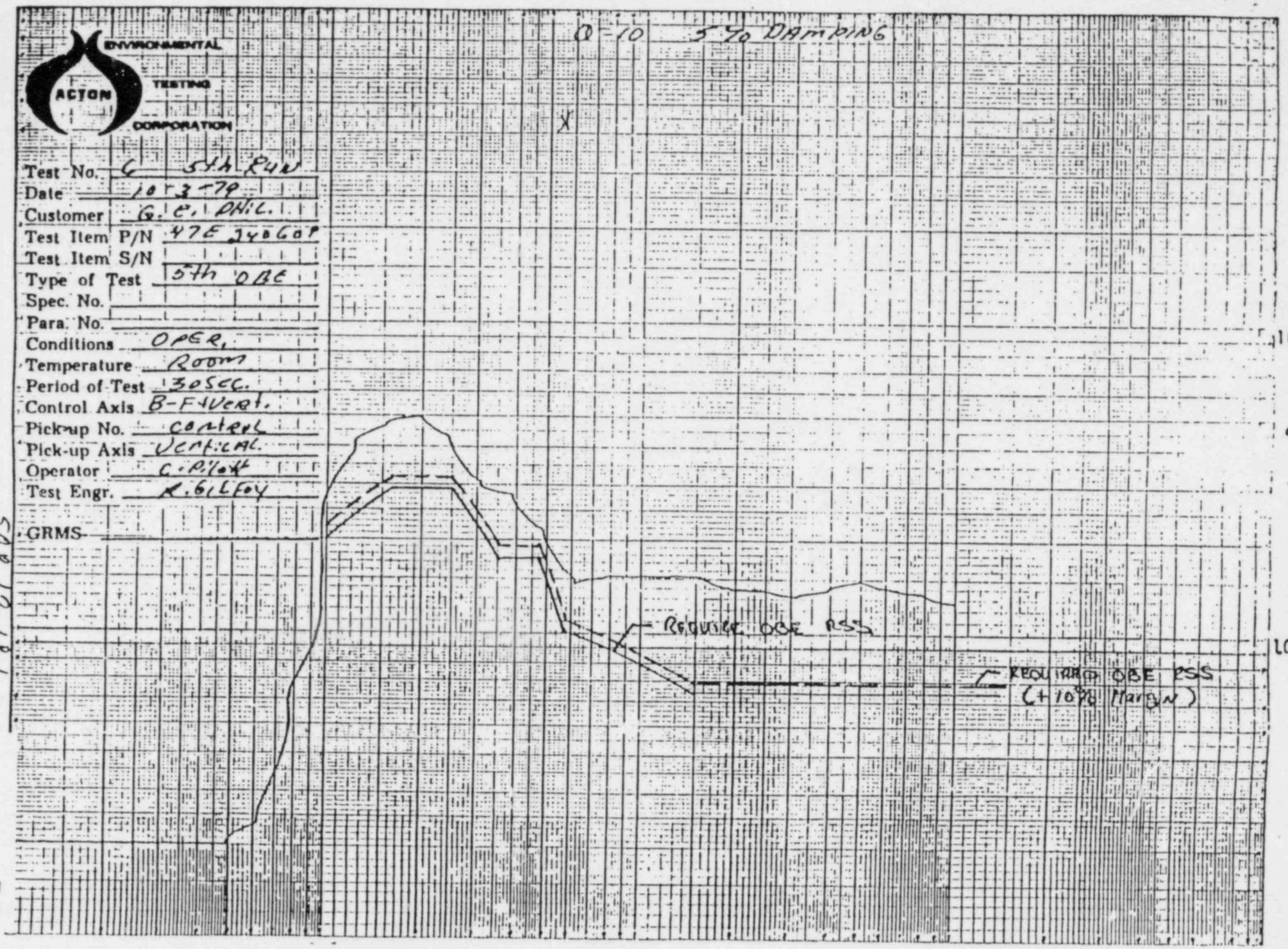
Q = 10 5% DAMPING

10.

5's

1.0

No.	6e 4th PLN
	10-3-79
mer	G.E. PHIL
Item P/N	47E2406-09
Item S/N	4th UNIT
e of Test	
c. No.	
ra. No.	
nditions	OPER.
emperature	Room
eriod of Test	30 sec.
Control Axis	B-FIXED.
Pick-up No.	Control
Pick-up Axis	Vertical
Operator	C.D.Hall
Test Engr.	R. GILROY
-GRMS-	


ENVIRONMENTAL
ACTON
TESTING
CORPORATION
Q=10 5% DAMPING
Test No. 6 5th OBE
Date 10-3-79
Customer G.E. PHIL.
Test Item P/N 47E 340601
Test Item S/N
Type of Test 5th OBE
Spec. No.
Para. No.
Conditions OPER.
Temperature Room
Period of Test 30SEC.
Control Axis B-F Vert.
Pick-up No. control
Pick-up Axis Vertical
Operator C. Pilott
Test Engr. R. GILFOY
GRMS
10
5
1.0
REQUIRED OBE RSS
REQUIRED OBE RSS
(+10% MARGIN)
508-79-18-1
F-83

F84

ACTON ENVIRONMENTAL TESTING CORPORATION

Q = 10 3% DAMPING

Test No. 6 6th Run
Date 10-3-79
Customer B & E PHIL.
Test Item P/N 41E240609
Test Item S/N
Type of Test RANDOM SS6
Spec. No.
Para. No.
Conditions OPER.
Temperature ROOM
Period of Test 30 SEC.
Control Axis B-F/VERT.
Pick-up No. 2
Pick-up Axis VERTICAL
Operator C. PIOTTI
Test Engr. R. GILFOY
GRMS

REQUIRED SBE RSS

10

5

1.0

SB-10-18-1