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NRC-87-0137

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D. C. 20555

Reference: Fermi 2
NRC Docket No. 50-341
NRC License No. NPF-43

Subject: Submittal of Safety/Relief Valve In-Plant Testing Results

Pursuant to Section 2.C(4) of the Fermi 2 Operating License, Detroit Edison is hereby submitting the results of a series of in-plant tests of the safety/relief valves (SRVs) which were conducted on March 11-12, 1987. The attached analysis, demonstrated that the acceptance criteria as stated in License Condition 2.C(4) were met. These acceptance criteria, are also contained in Section 2.13.9, "SRV Load Assessment by In-Plant Tests," of NUREG-0661, "NRC Acceptance Criteria for the Mark I Containment Long-Term Program." By copy of this letter, Detroit Edison considers its actions required by Operating License Section 2.C(4) complete.

If you have any questions regarding this submittal, please contact Mr. G. D. Ohlemacher at (313) 586-4275.

Sincerely,

B Ralph Sylvia

Enclosure

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August 1987
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Revision 0
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FOR INFORMATION ONLY

FINAL TEST REPORT
IN-PLANT SAFETY RELIEF VALVE DISCHARGE TEST
ENRICO FERMI ATOMIC POWER PLANT UNIT 2

VOLUME 1

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6.1, 6.2	0	JRB 8-17-87	IDM 8/17/87		
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ABSTRACT

A safety relief valve (SRV) test program was conducted at the Enrico Fermi Atomic Power Plant Unit 2 (Fermi 2) on March 11 and 12, 1987. The purpose of the Fermi 2 in-plant SRV discharge test program was to confirm that the measured SRV discharge hydrodynamic loads and their effects on containment structures are bounded by those analytically predicted in the plant unique analysis.

This report describes the test instrumentation, test program, and data reduction, and presents the results of the Fermi 2 in-plant SRV discharge test. Major conclusions drawn from the reduction of the data recorded during the Fermi 2 in-plant SRV discharge test are as follows:

- The measured peak pressures during the cold pipe single valve actuation (SVA) and the hot pipe consecutive valve actuation (CVA) are well below the Fermi 2 values predicted using the plant unique analysis (PUA) methodology, applied at test conditions.

- The measured bubble frequencies were within the limits of the PUA analytical predictions.

- The measured torus shell, support structure, T-Quencher supports and submerged structure strains are considerably less than predicted by the PUA methodology.

- The peak measured accelerations and torus shell membrane stresses are well below the values predicted using the PUA methodology at test conditions.

Based on the above, it is concluded that the effects of SRV discharge hydrodynamic loads have been adequately addressed in the Fermi 2 PUA and that there are substantial containment design margins for SRV discharge loads.

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VOLUME I

1.0 INTRODUCTION

1.1 Test Program

The in-plant safety relief valve (SRV) discharge test for the Enrico Fermi Atomic Power Plant, Unit 2 (Fermi 2) was conducted on March 12, 1987. The test was preceded by a shakedown test which was performed on March 11, 1987. The test matrix consisted of two shakedown tests, four single valve actuations (SVA) and four consecutive valve actuations (CVA), as shown in Table 1-1. The Fermi 2 test conforms to the guidelines specified in the U.S. Nuclear Regulatory Commission (USNRC) documents NUREG-0763 (Reference 1) and NUREG-0661 (Reference 2). This report includes an overview of the Fermi 2 in-plant SRV discharge test program objectives, instrumentation, sensor specifications, data reduction, test results, and reconciliation of the remaining plant unique analysis (PUA) licensing commitments. The test plan, NUTECH report DET-01-315 (Reference 3), provides additional details on the Fermi 2 test program.

Prior to beginning the Fermi 2 startup program, the suppression chamber segment corresponding to safety relief valve SRV-2064 was instrumented for the in-plant SRV discharge test program. During the plant startup program, this SRV has demonstrated a history of high tailpipe temperatures. Based on subsequent review of the data it was concluded that any steam weeping past the SRV had a negligible effect on the SRV discharge pressure loads.

1.2 Test Objectives and Scope

The objective of the Fermi 2 in-plant SRV discharge test was to confirm the methodologies used in the PUA and demonstrate that the loads and structural responses, documented in the Fermi 2 Plant Unique Analysis Report (PUAR) (Reference 4), for SRV discharge related loads are conservative, compared to the loadings and structural responses measured during the in-plant test.

The geometric characteristics of the T-Quencher device used at Fermi 2 are similar to those of standard T-Quencher devices used in other Mark I plants, and tested at the Monticello Nuclear Generating Plant. However, the Fermi 2 T-Quencher was specifically designed to more effectively mitigate the SRV discharge air bubble loads than the standard T-Quencher. The Fermi 2 T-Quencher was developed through a series of small scale tests and analytical evaluations to maximize the load reduction benefits. The small scale test results (Reference 6) showed load reductions for the Fermi T-Quencher in the range of 1.5 to 2.5 compared with the standard T-Quencher. The PUA for Fermi 2 was performed using the Mark I program SRV discharge load methodology which is based on the standard T-Quencher. The differences between the Fermi 2 and standard T-Quenchers were modeled as closely as possible within the limitations of the computer programs. The analytical results showed a smaller reduction in loads (about 20%) than the small scale test results.

As part of the Fermi 2 PUA, the suppression chamber structural analysis for the SRV discharge loads was performed using the alternate methodology defined by NUREG-0661, which uses calibration factors to be confirmed by plant unique SRV discharge tests. Therefore, the scope of the Fermi 2 in-plant SRV discharge test program includes the confirmation of the calibration factors used in the Fermi 2 PUA.

The Fermi 2 in-plant SRV discharge test program focused on measurement of the following:

1. Peak suppression pool boundary pressures during SRV discharge line (SRVDL) air clearing and steam discharge due to a single SRV actuation (normal water leg, cold and hot pipe).

2. Pressure magnitude and frequency content of the T-Quencher air bubble pressure transients.

3. Water and air clearing reaction loads on the SRVDL and T-Quencher supports

4. Suppression chamber structural response including torus shell membrane stresses due to a single SRV discharge (cold and hot pipe)

The methodology utilized in the Fermi 2 PUA and the remaining NUREG-0661 commitments for Fermi 2 are satisfied by confirmation of these items.

Conservative analytical techniques were utilized in the Fermi 2 PUA to demonstrate that the response of torus attached piping and submerged structues to SRV discharge loads complies with the NUREG-0661 acceptance criteria. Section 2.13.9 of Appendix A of NUREG-0661 stipulates that in cases where conservative analytical techniques are utilized in the analysis, confirmatory test measurements are not needed. Therefore, the Fermi

2 in-plant SRV discharge test program did not include confirmation of submerged structure or torus attached piping response to SRV discharge loads.

The SRV discharge loads methodology used in the Fermi 2 PUA utilizes generically developed conservative methods, as defined by NUREG-0661, for determining line clearing reaction loads on the SRVDL and T-Quencher supports, spatial variations in T-Quencher air bubble loads, load superposition methods for evaluating multiple valve actuations, load changes that accompany consecutive valve actuations, and shifts in bubble frequencies that result from variations in back pressure during air clearing. Therefore, these methods did not require confirmation by in-plant testing. Similarly, suppression pool thermal mixing tests were not conducted since the evaluation of pool temperature response to SRV transients referenced in the PUAR complies with the NRC acceptance criteria.

1.3 Quick Look Sensors and Acceptance Criteria

During each of the matrix tests, data from all sensors were recorded on the General Electric Transient Analysis Recording System (GETARS). After each CVA approximately 25% of the recorded sensor time histories were reviewed as quick look sensors. These consisted of:

- Pressure sensors P2 and P3 which measured the peak T-Quencher bubble pressure; P5, P7, P8, and P11 which measured torus shell pressures; P15 which measured internal T-Quencher pressures and P20 which measured SRVDL pressure

- Twenty seven strain gauges located on the torus shell, torus support columns and internal structure supports
- Two temperature sensors at the lower end of the SRVDL

The maximum measured response from each quick look sensor was compared to the associated acceptance criteria for each sensor. For pressure sensors P2 and P3 the mean measured T-Quencher bubble pressure was calculated for the four sets of tests (MT1 to MT8) plus the shakedown tests (SD1 and SD2), and statistically adjusted using a 90-90 confidence band; i.e., 90% confidence that 90% of all pressures will be bounded by the calculated value. The measured 90-90 peak T-Quencher bubble pressures were then compared to the analytically predicted pressures at test conditions (Level 2 acceptance criteria).

The acceptance criteria were developed using the PUAR methodology at test conditions, to ensure that plant safety would not be compromised during the SRV discharge testing. The acceptance criteria were developed for a reactor pressure of 1000 psig. Actual test pressures, Table 1-1, varied from a low of 992 psig to a high of 1023 psig. This variation in pressure produces less than one percent variation in steam flow rate and is within the calculational accuracy of the analytical results presented in Section 5.0. Level 1 acceptance criteria correspond to the ASME Code allowables for the suppression chamber materials while Level 2 acceptance criteria correspond to calculated values expected at actual test conditions. Exceedences of Level 2 acceptance criteria served as a warning threshold, but did not require that testing be halted. Had any of the measured results exceeded Level 1 acceptance criteria, testing would have been halted until investigation of the measured data ensured that continued testing would not compromise plant safety.

1.4 Summary of Final Test Data Results

The Fermi 2 SRV in-plant test data and the conclusions documented in this report are based on data collected by 124 sensor channels. Representative plots of the data, in engineering units, are presented in Appendices B through D, and the maximum/minimum values for each channel are presented in Appendix E. The test data demonstrates that the Fermi 2 primary containment structures, and piping are adequate for hydrodynamic loads resulting from the actuation of a SRV. The peak suppression pool boundary pressures analytically predicted during SRVDL air clearing and steam discharge for a single SRV actuation conservatively bound the measured results. The measured T-Quencher oscillating air bubble dominant frequency is in good agreement with the analytically predicted frequency. Similarly, measured clearing reaction loads on the SRVDL and T-Quencher supports are conservatively bounded by the analytical predictions.

Table 1-1

TEST MATRIX

Test No.	Test Type	Valve Actuated	Initial Conditions						Valve Closure Time Prior to CVA (Sec)	Reactor Pressure (psig)
			SRVDL Water Level (1)	SRVDL Tailpipe Temp (°F)	Torus Water (2) Level (in)	Pool (3) Temp (°F)	Power Level (%)	Discharge Duration (Sec)		
SD1	SVA	SRV-2064	-0.1	213	-0.8	77	49.6	10	N/A	999
SD2	CVA	SRV-2064	-0.1	345	-0.8	77	49.6	10	60	999
MT1	SVA	SRV-2064	-0.1	166	-0.5	78	38.1	10	N/A	1023
MT2	CVA	SRV-2064	-0.1	349	-0.5	79	38.1	10	60	1023
MT3	SVA	SRV-2064	-0.1	208	-0.5	80	38.0	10	N/A	992
MT4	CVA	SRV-2064	-0.1	365	-0.5	80	38.0	10	60	992
MT5	SVA	SRV-2064	-0.1	213	+0.1	80	37.6	10	N/A	999
MT6	CVA	SRV-2064	-0.1	336	+0.1	80	37.6	10	60	999
MT7	SVA	SRV-2064	-0.1	213	+0.2	82	38.1	10	N/A	997
MT8	CVA	SRV-2064	-0.1	355	+0.2	82	38.1	10	60	997

NOTES:
1. SRVDL Water Level is the differential pressure between wetwell and drywell in inches of water, as measured on Instrument No. T48-R808 Panel H11-P817.
2. Torus Water Level is measured by Instrument G51-R402 on Panel H11-P807 as plus or minus from normal water level.
3. Pool temperature is the average torus water temperature as measured on the Torus Water Temperature Leg.

Abbreviations:
CVA - Consecutive Valve Actuation
SVA - Single Valve Actuation

2.0 INSTRUMENTATION SUMMARY

Four types of instrumentation were utilized to obtain the measurements necessary to achieve the test objectives including: pressure transducers, strain gauges, accelerometers, resistance temperature detectors (RTD's) and existing plant system thermocouples. A list of test sensors is provided in Table 2-1. The sensor locations are shown in Figures 2.1 through 2.18. Section 3.0 provides a description of the signal conditioning equipment and the data acquisition system used to process and record data signals from the sensors installed on the containment. Appendix A provides a description of the operational characteristics of the individual pressure transducers, strain gauges, accelerometers, and RTD's used for the Fermi 2 SRV discharge test. The data acquisition system and instrumentation used to record the Fermi 2 SRV discharge test data has been qualified by use in similar SRV test programs. The sensor components that make up the instrumentation scheme have also been qualified individually.

2.1 Instrumentation

Twenty pressure transducers were installed to measure torus shell, SRVDL, and T-Quencher air bubble and internal pressures. The individual pressure transducer locations are shown in Figures 2.1 through 2.3. Pressure transducers P1 through P4 were located on either side of both T-Quencher arms, near the centroid of the T-Quencher arm hole pattern. These sensors were used to measure the SRV discharge loads source pressure from the T-Quencher. Pressure transducers P5 through P14 were located on the inside surface of the torus shell and were used to measure torus shell pressures.

Transducers P5 through P12 were located in the same vertical plane as P1 to P4 and were used to measure circumferential pressure attenuation. The locations of transducers P7, P8, P11, and P12 were based on small scale Fermi 2 T-Quencher test results and were used to measure peak torus shell pressures and the occurrence of any asymmetrical T-Quencher air clearing effects. P13 and P14 provide a check of longitudinal torus shell pressure attenuation. T-Quencher internal pressure was monitored by P15 and P16 mounted on the T-Quencher arms as shown in Figures 2.1 and 2.2.

A SRVDL air bleed system installed inside the drywell, was used to equalize the pressure between the test SRVDL and drywell air space prior to SRV actuation. A schematic of this system is shown in Figure 2.3. Pressure equalization ensures that a constant SRVDL water leg height is maintained between tests and assures repeatability of test conditions. The air bleed system was manually activated from the main control room prior to all SVA and CVA tests. Two low range pressure sensors P17 and P18, were installed in this system, as shown in Figure 2.3, to provide an indication of water level height within the SRVDL following valve closure.

The SRV back-pressures which occur during an SRV discharge were measured by P19 and P20, shown in Figure 2.3. P19 and P20 were located in the longest straight section of the SRVDL (elevation 587'-4") to avoid entrance and exit effects on the measured pressures due to pipe bends.

Ninety-eight strain gauges were installed on the containment, submerged structures and piping to measure representative strain data during the matrix tests. The strain gauge locations are shown in Figures 2.4 through 2.16. Strain rosettes SR1 through SR12 are shown in Figure 2.4. They were located on the inside and outside surface of the torus shell and provided circumferential and longitudinal normal stress, components, and shear stresses at the extreme fibers of the torus shell. Strain rosettes, SR1 through SR4 and SR7 through SR10, were located at midcylinder of the test bay and measured the circumferential torus shell stress variation. Rosettes SR6 and SR12 were used to measure asymmetrical T-Quencher air clearing effects, should they occur.

Strain gauges SG1 through SG30 were located on the torus support saddles and columns in the test bay and the two adjacent bays, as shown in Figure 2.5 through 2.7. These strain gauges measured suppression chamber support loads, basemat reaction loads, and provided a means of obtaining longitudinal load attenuation. As shown by Figures 2.8 through 2.12, strain gauges SG31 through SG45 were located on submerged structures in the vicinity of the test bay. SG31 through SG34 were located on the pinned-end horizontal T-Quencher support members, and SG35 and SG36 on a vertical T-Quencher support member. SG37 through SG39 were located on the vent header vertical support column and SG40 through SG43 on the T-Quencher pedestal support. SG44 and SG45 were located on the RCIC exhaust line support in the suppression pool.

SG46 through SG50, SG52, and SG53 were located on the RCIC turbine exhaust line, inside and outside the torus shell, near the penetration as shown in Figures 2.12 and 2.13. SG51 was omitted due to the penetration configuration. Measurements from these strain gauges were used to determine the hydrodynamic load effects acting on the submerged portion of the torus attached piping as well as suppression chamber motions at the penetration locations. SG54 and SG55 were located on a downcomer bracing rod to measure downcomer lateral load effects. SG56 through SG59 were located on the SRVDL near the vent line penetration, as shown in Figures 2.14 and 2.15, to determine the effects of SRVDL water clearing thrust loads on the wetwell portion of the SRV piping. SG60 through SG63 were located on the inside downcomer at midbay of the non-vent test bay to measure SRV discharge submerged structure loads on the downcomers, and the dynamic characteristics of the downcomers and vent system.

Four accelerometers were installed to measure torus shell and torus attached piping response to SRV discharge loads. Accelerometers A1 and A2 (Figure 2.13) measured accelerations of the RCIC turbine exhaust line valve located outside the torus. Accelerometer A3 (Figure 2.17) measured the coupled torus/piping system radial accelerations of the suppression chamber at the RCIC turbine exhaust torus penetration locations. Accelerometer A4 (Figure 2.17) was located symmetrically to accelerometer A3 on the opposite side of the mitered joint in the test bay, and measured the "clean shell" radial acceleration of the suppression chamber.

Seventeen temperature sensors were originally installed in the suppression chamber to provide thermal mixing data during an extended SRV discharge. Prior to the test, the NRC approved the PUAR pool thermal mixing methodology and hence these sensors were not utilized. Temperature sensors T5 and T6 (Figure 2.18) were used to monitor the SRVDL vent line penetration and wetwell SRVDL temperature. The outer surface temperature of the penetration reinforcement sleeve was monitored by sensor T5. The outer surface temperature of the SRVDL near the vent line penetration was monitored by sensor T6.

2.2 Data Acquisition System

The General Electric Transient Analysis Recording System (GETARS) was used for data acquisition during the shake-down and each test in the SRV discharge test matrix. Figure 2.19 provides a schematic of the data acquisition system. GETARS sampled a total of 274 channels of which 124 were utilized for SRV discharge test instrumentation, plus the four additional channels used for the SRV initiation signal. The remaining 146 channels provided plant operational data for uses other than the SRV test. A sampling rate of 1000 samples per second per channel was used. Data was originally recorded using pulse code modulation (PCM) tape and later transferred onto magnetic tapes for subsequent data reduction and analysis. Data from approximately 25% of the 124 SRV discharge test sensors were reviewed immediately following each test to confirm that the acceptance criteria were not exceeded. A total of five magnetic tapes were needed to accommodate data from the two shakedown and eight matrix tests (four SVA and four CVA tests). These magnetic tapes were used for subsequent off-line data processing.

2.3 Accuracy of Instrumentation

The total end-to-end accuracy (from the sensing element to data recorder) of each sensor group used in the Fermi 2 in-plant SRV discharge test was analyzed to confirm that the instrumentation system was compatible with the range of expected test results. As described in

Appendix A, the following sensor types were used to measure data:

1) Bell & Howell pressure transducers

2) Endevco Accelerometers

3) Ailtech and Micro-Measurements strain gauges

4) Medtherm resistance temperature detectors

Data from these sensors were recorded by GETARS on magnetic tapes. Table 2-3 lists the accuracy of the recording system for each sensor. Table 2-4 summarizes the results of the data accuracy analysis.

An estimate of the sensor accuracy can be determined if the following characteristics are known for the data and the data acquisition system:

1) The individual accuracies of the data acquisition system components, from sensing element to recording of the data, and the appropriate conditions with which to apply these accuracies.

2) The characteristics of the data recorded, such as magnitude and frequency.

3) The test conditions which influence the data. These can include noise, vibration, and temperature effects.

The resolution of the data acquisition system, including multiplexers and computers, is 5 mV. Using this resolution and instrument calibration factors, the data system accuracies for pressure transducers, strain gauges, accelerometers and resistance temperature detectors were calculated as shown in Table 2-3.

The Validyne Signal Conditioner Model CD-173 accuracy is estimated to be 2.8% of the peak measured value.

The Validyne Signal Conditioner Model PA-375 accuracy for accelerometer signal conditioning is estimated to be 0.1% of the peak measured value.

In determining the accuracy of the Fermi 2 in-plant SRV discharge test data, the maximum recorded values were chosen for each sensor group. The following sections discuss the accuracy of data obtained for each sensor group.

2.3.1 Pressure Transducers

Pressure transducers used in the Fermi 2 in-plant SRV discharge test were the normal operating temperature Bell & Howell/CEC-1000-0207 (0 to 100 psia), and the high temperature Bell & Howell/CEC-1000-0208 (0 to 1000 psia). The CEC-1000-0207 transducers were used to measure suppression pool pressures, while the CEC-1000-0208 transducers were used to measure SRVDL and internal T-Quencher pressures.

As shown in Table 2-4, the total accuracies for the pressure data are influenced by three components in the data gathering system:

1) Bell & Howell pressure transducer
2) Validyne Model CD173 signal conditioner
3) Data Acquisition System (GETARS)

The Bell & Howell pressure transducers have a maximum error of ±0.20% of full range output (FRO) for the 0 to 100 psia transducers, and ±0.22% for the 0 to 1000 psia transducers. These errors are primarily affected by non-linearity, hysteresis, non-repeatability, and thermal effects.

The accuracy of data acquisition system and Validyne Signal Conditioner Model (CD-173) is discussed in Section 2.3.

As shown in Table 2-4, the overall accuracy of the pressure transducers is 5% of the peak measured pressures for all pressure transducers except P17 and P18 which have an overall accuracy of 11%.

2.3.2 Accelerometers

The accelerometers utilized for the Fermi 2 in-plant SRV discharge test were Endevco 7717-200 isoshear piezoelectric devices. The 7717-200 accelerometers (0.003 to 500 g's) were installed on the torus shell and the RCIC turbine exhaust valve operator.

As shown in Table 2-4, the total error for the accelerometer data is affected by relative errors of the three components in the data recording system:

1) Endevco accelerometer
2) Validyne Signal Conditioner - Model PA-375
3) Data Acquisition System (GETARS)

The maximum error of the Endevco accelerometers is based on a linear deviation of ±5% from 1 Hz to 4 kHz and a transverse sensitivity of ±3%.

As stated previously, the accuracy of Validyne Signal Conditioning Model PA-375 is 0.1% of the peak measured value, and the accuracy of data acquisition system is 5 mV.

As shown in Table 2-4, the overall accuracy of the accelerometer data is 5% of the peak measured accelerations.

2.3.3 Strain Gauges

Ailtech Model MG125 weldable gauges were used to measure strain data on the internal torus shell, SRV piping, internal and external torus attached piping, and piping support struts. Micro-Measurements Model EA06-125RS-350 (Rosettes) and Model 125AC-350 (uniaxial) strain gauges were used to measure strain data on torus external shell and supports. These gauges have rated strain levels of ±20,000 μin/in.

The Ailtech and Micro-Measurements gauge factor maximum error is ±3%. The accuracy of the data acquisition system and the Validyne Signal Conditioner Model CD173 has been previously discussed in Section 2.3.

As shown by Table 2-4, the overall strain gauge data accuracy is 5% of the peak measured strains for all strain gauges except SG10 through SG16 which have an overall accuracy of 11%.

2.3.4 Resistance Temperature Detector (RTD)

Medtherm Model PRT-50-250-10387 RTD's were used to measure SRVDL and vent line penetration temperatures. The operating range for these RTD's is 50°F to 600°F.

The accuracy of these RTD's specified by the manufacturer is ±0.5°F. The accuracy of Validyne Signal Conditioner Model CD173 has been previously discussed in Section 2.3.

As shown in Table 2-4, the overall accuracy of the temperature measurements is 0.4%.

2.3.5 Summary

Many of the readings taken during the SRV discharge tests were of small magnitude compared to the capabilities of the measuring devices. The instrumentation provided data accurate to within 5% for all sensors except pressure transducers P17 and P18 and strain gauges SG10 through SG16 which have accuracies of 11%. This is well within acceptable accuracy limits.

2.4 Failed or Suspect Sensors

Failure or erratic performance of some instrumentation is inherent when conducting in-plant tests. Upon reviewing the reduced data, sensors which failed or behaved erratically were identified. Table 2-5 lists these sensors and includes remarks on the effect of their failure with respect to the overall objectives of the test program. Results from all sensors listed in Table 2-5 were ignored in this test report for each test in which they failed or were suspect. The failure of strain gauges SR2B and SG58 was known prior to the test. Even though data from these gauges were recorded during the tests, it was not transferred to magnetic tape for subsequent data processing. Some strain gauges measured strains comparable to the noise levels (2 to 4 μ in/in). These strain gauge results were used for subsequent data processing because the recorded signals produced readable data.

Table 2-1

SRV TEST PROGRAM INSTRUMENTATION

	Sensor Number	Description
*	P1	Quencher Arm
	P2	Quencher Arm
	P3	Quencher Arm
	P4	Quencher Arm
	P5	Torus Shell
	P6	Torus Shell
	P7	Torus Shell
	P8	Torus Shell
	P9	Torus Shell
	P10	Torus Shell
	P11	Torus Shell
	P12	Torus Shell
	P13	Torus Shell
	P14	Torus Shell
	P15	Quencher Arm
	P16	Quencher Arm
	P17	SRVDL Air Bleed
	P18	SRVDL Air Bleed
	P19	SRVDL High Range
	P20	SRVDL High Range
**	T5	SRV Discharge Line
	T6	SRV Discharge Line
***	A1	RCIC Turbine Exhaust Line Outside
	A2	RCIC Turbine Exhaust Line Outside
	A3	Torus Shell Outside
	A4	Torus Shell Outside

* Pressure Transducer
** Temperature Sensor
*** Accelerometer

Table 2-1

SRV TEST PROGRAM INSTRUMENTATION
(Continued)

Sensor Number	Description
* SR1A	Inside Surface Torus Shell
SR1B	Inside Surface Torus Shell
SR1C	Inside Surface Torus Shell
SR2A	Inside Surface Torus Shell
SR2B	Inside Surface Torus Shell
SR2C	Inside Surface Torus Shell
SR3A	Inside Surface Torus Shell
SR3B	Inside Surface Torus Shell
SR3C	Inside Surface Torus Shell
SR4A	Inside Surface Torus Shell
SR4B	Inside Surface Torus Shell
SR4C	Inside Surface Torus Shell
SR5A	Inside Surface Torus Shell
SR5B	Inside Surface Torus Shell
SR5C	Inside Surface Torus Shell
SR6A	Inside Surface Torus Shell
SR6B	Inside Surface Torus Shell
SR6C	Inside Surface Torus Shell
SR7A	Outside Surface Torus Shell
SR7B	Outside Surface Torus Shell
SR7C	Outside Surface Torus Shell
SR8A	Outside Surface Torus Shell
SR8B	Outside Surface Torus Shell
SR8C	Outside Surface Torus Shell
SR9A	Outside Surface Torus Shell
SR9B	Outside Surface Torus Shell
SR9C	Outside Surface Torus Shell
SR10A	Outside Surface Torus Shell
SR10B	Outside Surface Torus Shell
SR10C	Outside Surface Torus Shell
SR11A	Outside Surface Torus Shell
SR11B	Outside Surface Torus Shell
SR11C	Outside Surface Torus Shell
SR12A	Outside Surface Torus Shell
SR12B	Outside Surface Torus Shell
SR12C	Outside Surface Torus Shell

* SR = Strain Gauge Rosettes

Table 2-1

SRV TEST PROGRAM INSTRUMENTATION
(Continued)

Sensor Number	Description
** SG1	Torus Support Column Outside
SG2	Torus Support Column Outside
SG3	Torus Support Saddle Outside
SG4	Torus Support Saddle Outside
SG5	Torus Support Saddle Outside
SG6	Torus Support Saddle Outside
SG7	Torus Support Saddle Outside
SG8	Torus Support Saddle Outside
SG9	Torus Support Saddle Outside
SG10	Torus Support Saddle Outside
SG11	Torus Support Saddle Outside
SG12	Torus Support Saddle Outside
SG13	Torus Support Saddle Outside
SG14	Torus Support Saddle Outside
SG15	Torus Support Saddle Outside
SG16	Torus Support Saddle Outside
SG17	Torus Support Saddle Outside
SG18	Torus Support Saddle Outside
SG19	Torus Support Saddle Outside
SG20	Torus Support Saddle Outside
SG21	Torus Support Saddle Outside
SG22	Torus Support Saddle Outside
SG23	Torus Support Saddle Outside
SG24	Torus Support Saddle Outside
SG26	Torus Support Saddle Outside
SG27	Torus Support Saddle Outside
SG28	Torus Support Saddle Outside
SG29	Torus Support Saddle Outside
SG30	Torus Support Saddle Outside
SG31	Horizontal Quencher Support Member
SG32	Horizontal Quencher Support Member
SG33	Horizontal Quencher Support Member
SG34	Horizontal Quencher Support Member
SG35	Vertical Quencher Support Beam
SG36	Vertical Quencher Support Beam
SG37	Vent System Support Column
SG38	Vent System Support Column
SG39	Vent System Support Column

** SG = Strain Gauge

Table 2-1

SRV TEST PROGRAM INSTRUMENTATION
(Concluded)

Sensor Number	Description
** SG40	T-Quencher Support
SG41	T-Quencher Support
SG42	T-Quencher Support
SG43	T-Quencher Support
SG44	RCIC Exhaust Line Support Inside
SG45	RCIC Exhaust Line Support Inside
SG46	RCIC Exhaust Line Inside
SG47	RCIC Exhaust Line Inside
SG48	RCIC Exhaust Line Inside
SG49	RCIC Exhaust Line Inside
SG50	RCIC Exhaust Line Outside
SG52	RCIC Exhaust Line Outside
SG53	RCIC Exhaust Line Outside
SG54	Downcomer Bracing Rod
SG55	Downcomer Bracing Rod
SG56	SRV Discharge Line
SG57	SRV Discharge Line
SG58	SRV Discharge Line
SG59	SRV Discharge Line
SG60	Downcomer
SG61	Downcomer
SG62	Downcomer
SG63	Downcomer

** SG = Strain Gauge

Table 2-2

QUICK LOOK SENSORS

Type of Sensor	Sensor No.	Description
Pressure Transducers:	P2, P3	T-Quencher bubble pressure
	P5, P7, P8, P11	Torus shell pressures
	P15	T-Quencher body internal pressure
	P20	SRVDL internal pressure
Strain Gauges:	SR1A, SR1C, SR7A, SR7C	Torus shell 60° above bottom dead center (BDC) towards reactor
	SR2A, SR2C SR8A, SR8C	Torus shell 12° above BDC towards reactor
	SR3A, SR3C SR9A, SR9C	Torus shell 12° above BDC away from reactor
	S1, S2, S23, S24	Miter joint columns in test bay
	S27, S28	Miter joint column adjacent to test bay
	S31, S32, S35, S36	T-Quencher support beams
	S37 to S39	Vent system support column
	S54, S55	Downcomer bracing rod
Resistance Temperature Detectors	T5	Outer wall of SRVDL vent line penetration
	T6	SRVDL torus temperature

Table 2-3

DATA ACQUISITION SYSTEM ACCURACY

Data Acquisition System Accuracy ± 5.00 mV		
Sensor	Calibration	Accuracy
P1 to P14	48 mV/psi	0.11 psi
P15, P16, P19 and P20	4 mV/psi	1.25 psi
P17, P18	41 mV/psi	0.12 psi
SR7 to SR12 SG1 to 9, SG18 to 39 SG44, 45, SG54 to 63	11 to 14 mV/ μin/in	0.46 μin/in
SR1 to SR6 SG40 to 43, SG46 to 53	30 to 31 mV/ μin/in	0.17 μin/in
SG10 to SG16	1 mV/ μin/in	5.00 μin/in
A1 to A4	3125 mV/g	0.002 g
T5, T6	8.19 mV/°F	0.61°F

Table 2-4

SENSOR ACCURACY (±)

Sensor Type	Peak Reading	Sensor Error	Signal Conditioner Error	Data Recorder Error	SRSS Total Error	Percent Error
P1 to P14	6.10 psid	0.20 psid	0.17 psid	0.11 psid	0.28 psid	5
P15, 16, 19, 20	220.0 psid	2.20% psid	6.16 psid	1.25 psid	6.66 psid	3
P17, 18	2.10 psid	0.20 psid	0.06 psid	0.12 psid	0.24 psid	11
SR 7 to SR12 SG1-9, 18-39 SG44-45, 54-63	16.40 μin/in	0.49 μin/in	0.47 μin/in	0.46 μin/in	0.82 μin/in	5
SR1 to SR6 SG40-43, 46-53	13.70 μin/in	0.41 μin/in	0.38 μin/in	0.17 μin/in	0.58 μin/in	4
SG10-16	51.60 μin/in	1.55 μin/in	1.44 μin/in	5.0 μin/in	5.43 μin/in	11
A1 to A4	0.91 g	0.05 g	0.001 g	0.002 g	0.05 g	5
T5, T6	215°F	0.5°F	0.5°F	0.61°F	0.93°F	4

Table 2-5

FAILED OR SUSPECT SENSORS

Sensor Type	Sensor ID	Affected Test	Remarks
Pressure Transducer	P1	All	P2, P3, P4 provides similar data
	P12	All	P7, P8, P11 provides similar data
Strain Gauges	SR2B	All	Principal stresses cannot be computed as SR2B is 45° leg of rosette SR2
	SG58	All	SG56, 57 and 59 provide backup

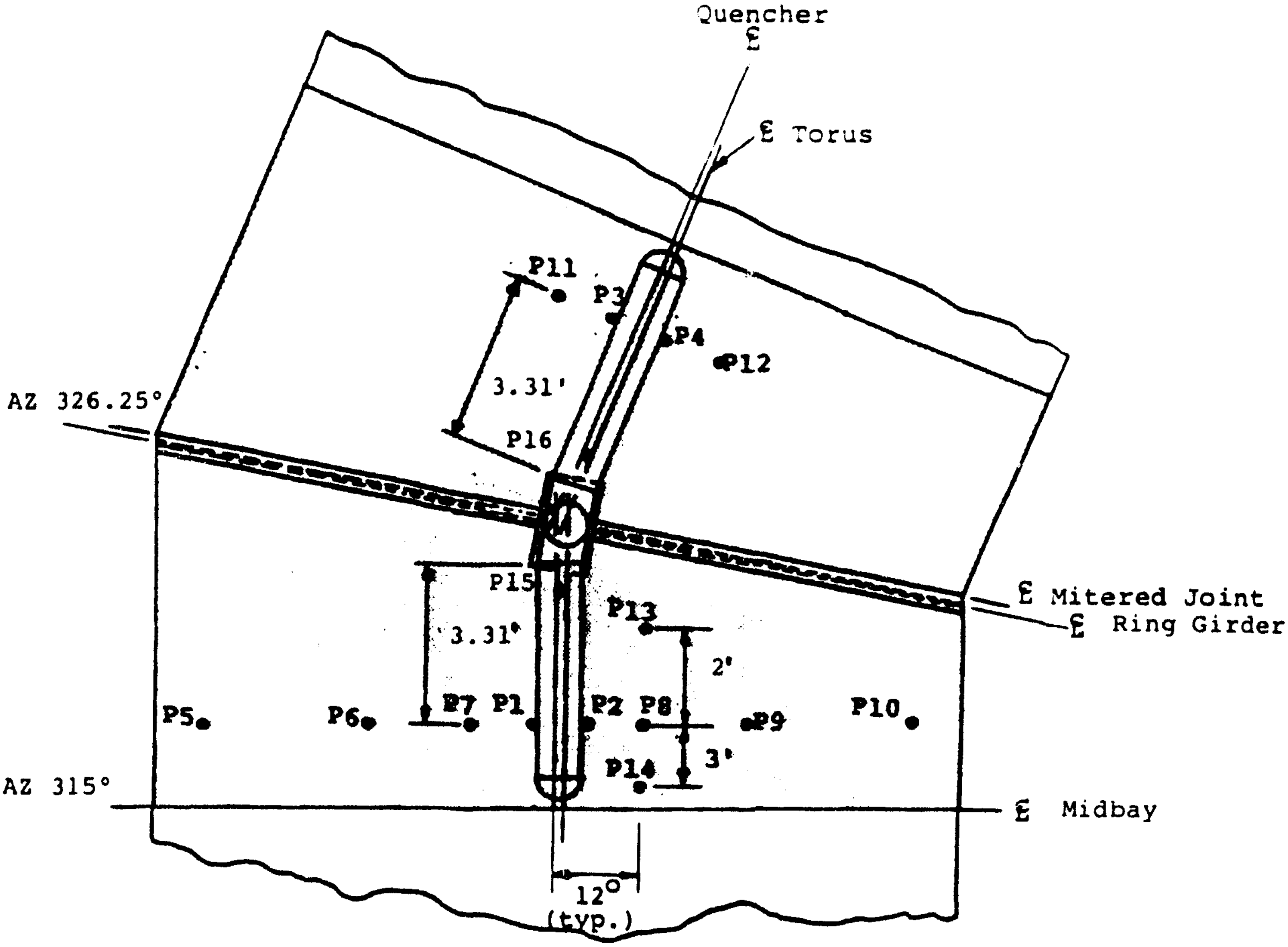


Figure 2.1

TORUS SHELL AND QUENCHER ARM PRESSURE

TRANSDUCERS IN TEST BAY - PLAN VIEW

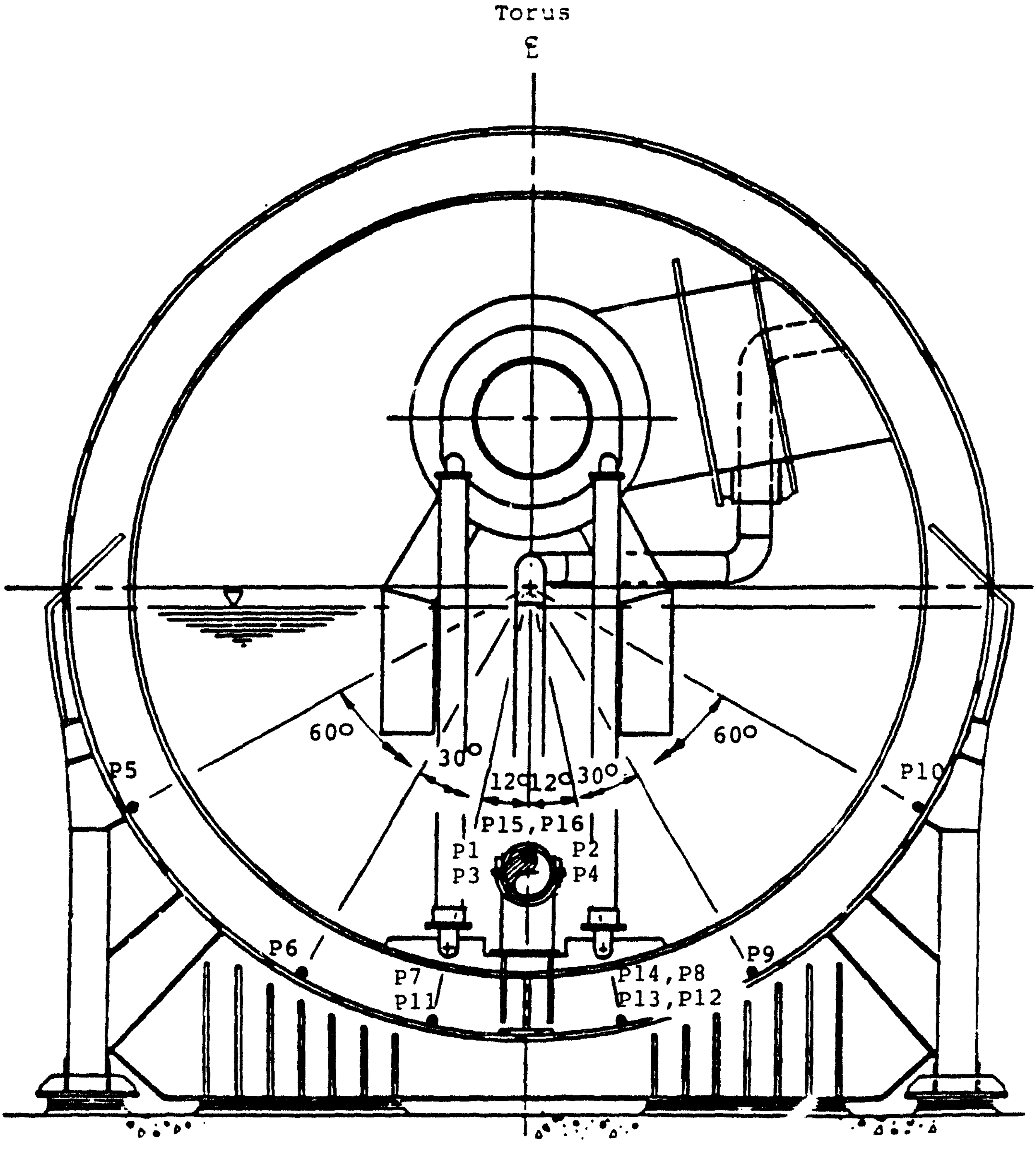


Figure 2.2

TORUS SHELL AND QUENCHER ARM PRESSURE TRANSDUCERS IN TEST BAY - ELEVATION VIEW

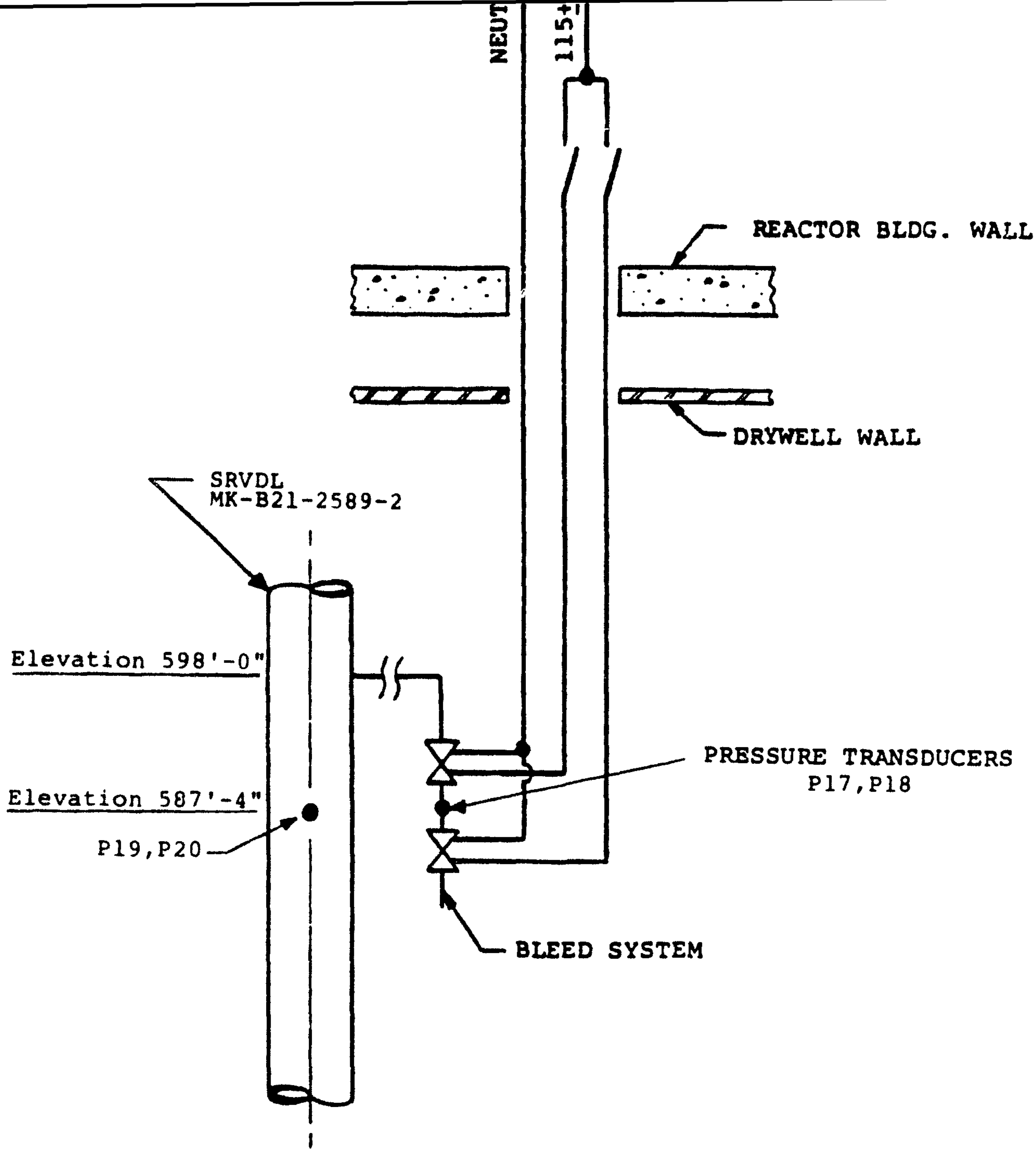


Figure 2.3

PRESSURE SENSORS ON SRVDL AND LOW RANGE PRESSURE SENSORS ON THE AIR BLEED SYSTEM - SCHEMATIC DIAGRAM

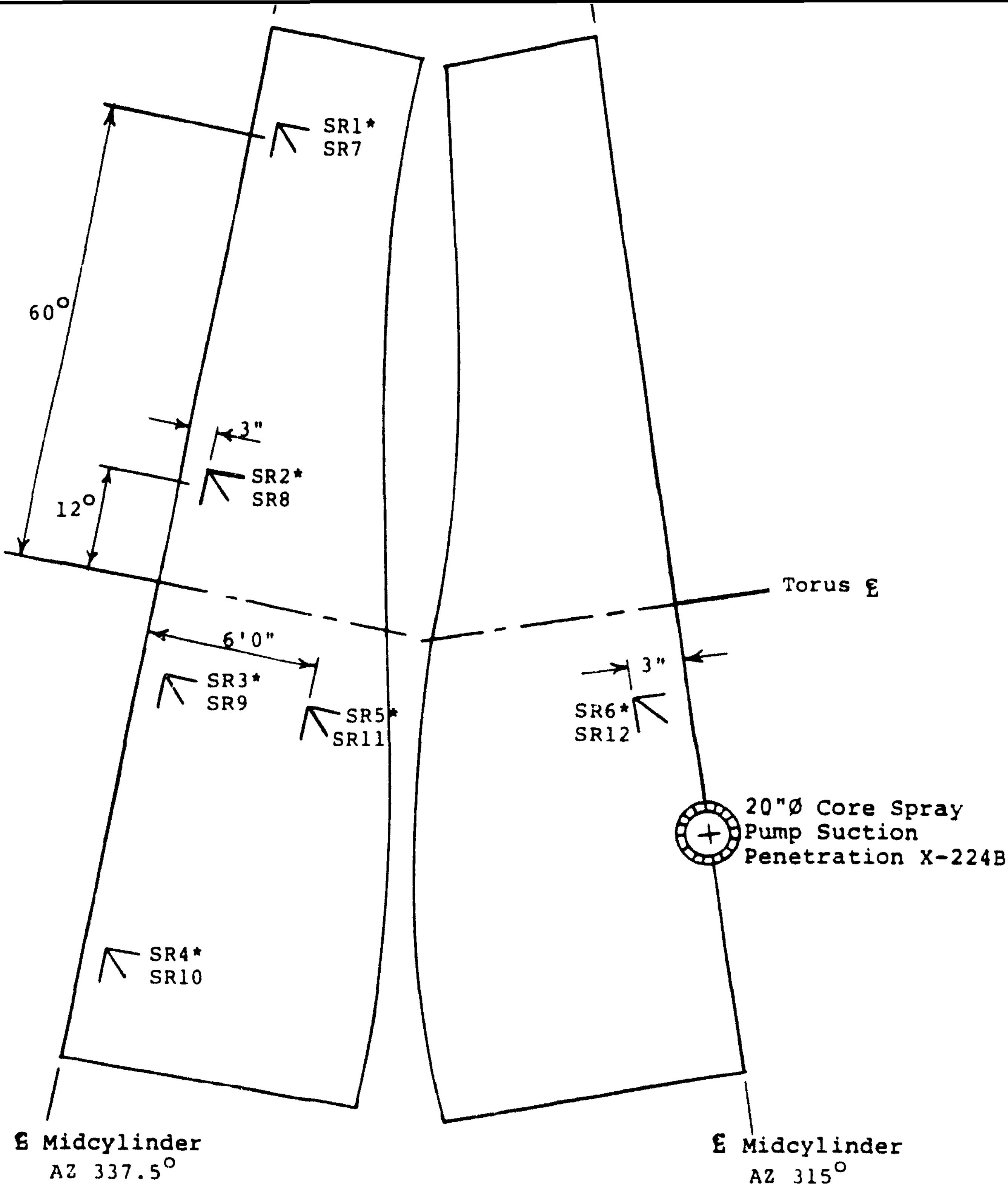
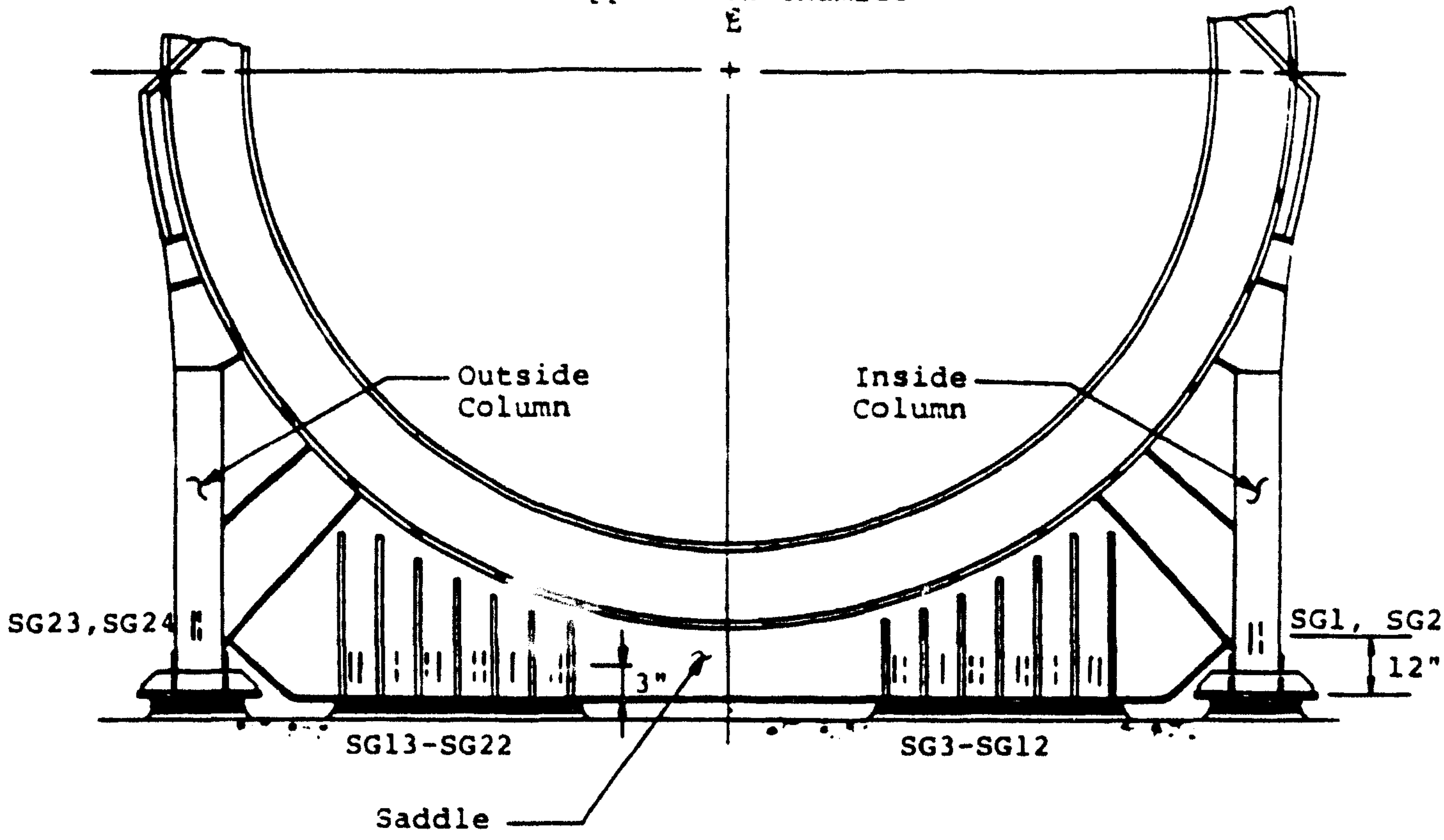
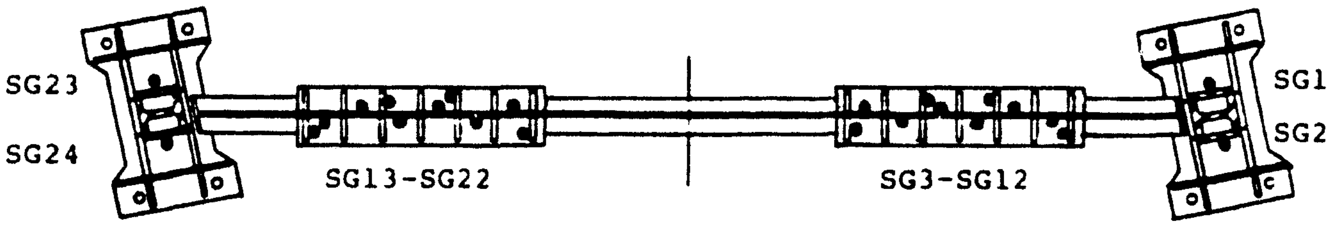


Figure 2.4

STRAIN ROSETTES ON TORUS SHELL IN TEST BAY - LOWER HALF DEVELOPED VIEW



Elevation View

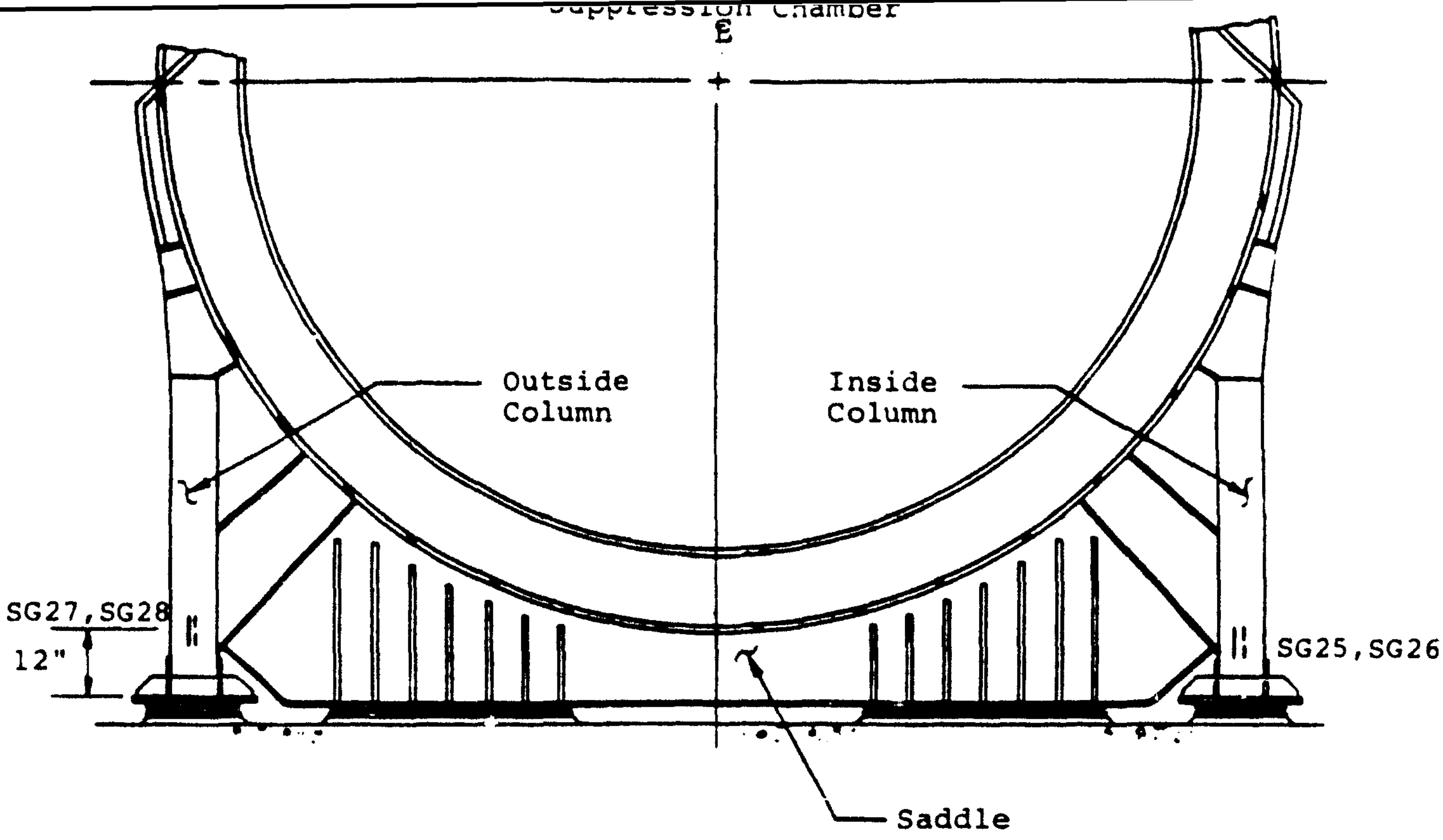


Plan View

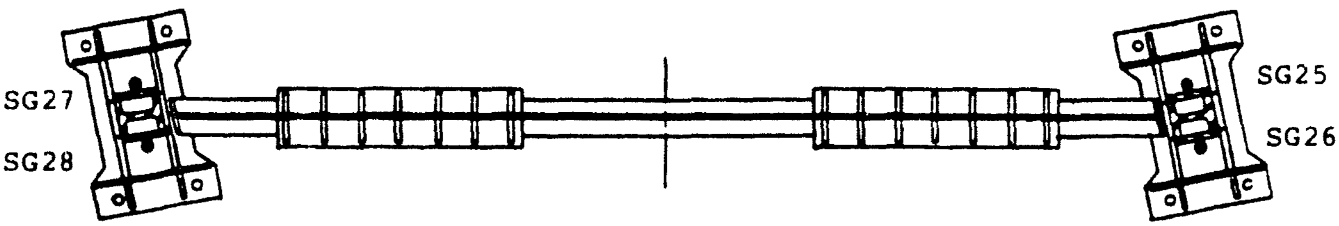
Figure 2.5

STRAIN ROSETTES ON TORUS SHELL IN TEST BAY -

LOWER HALF DEVELOPED VIEW



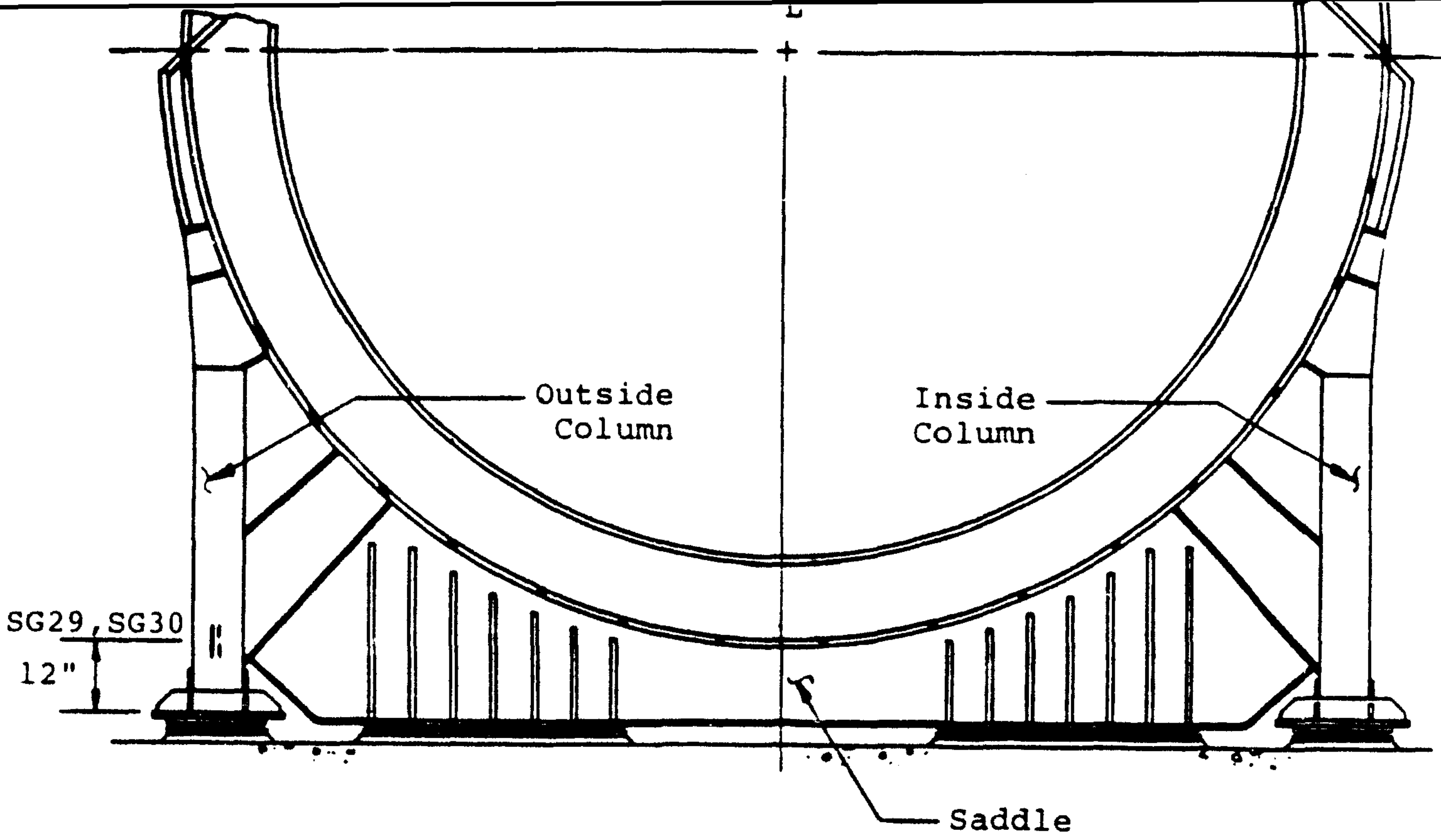
Elevation View



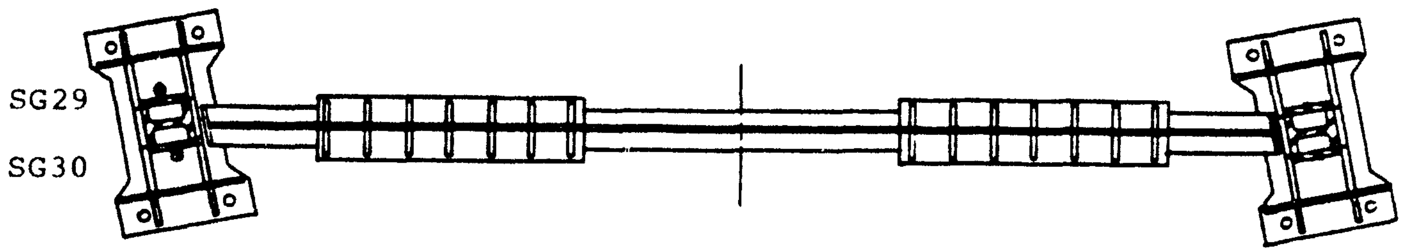
Plan View

Figure 2.6

STRAIN GAUGES ON SUPPRESSION CHAMBER SUPPORTS
AT MITERED JOINT IN TEST BAY - AZIMUTH 303.75°



Elevation View



Plan View

Figure 2.7

STRAIN GAUGES ON SUPPRESSION CHAMBER SUPPORTS AT MITERED JOINT ADJACENT TO TEST BAY - AZIMUTH 281.15°

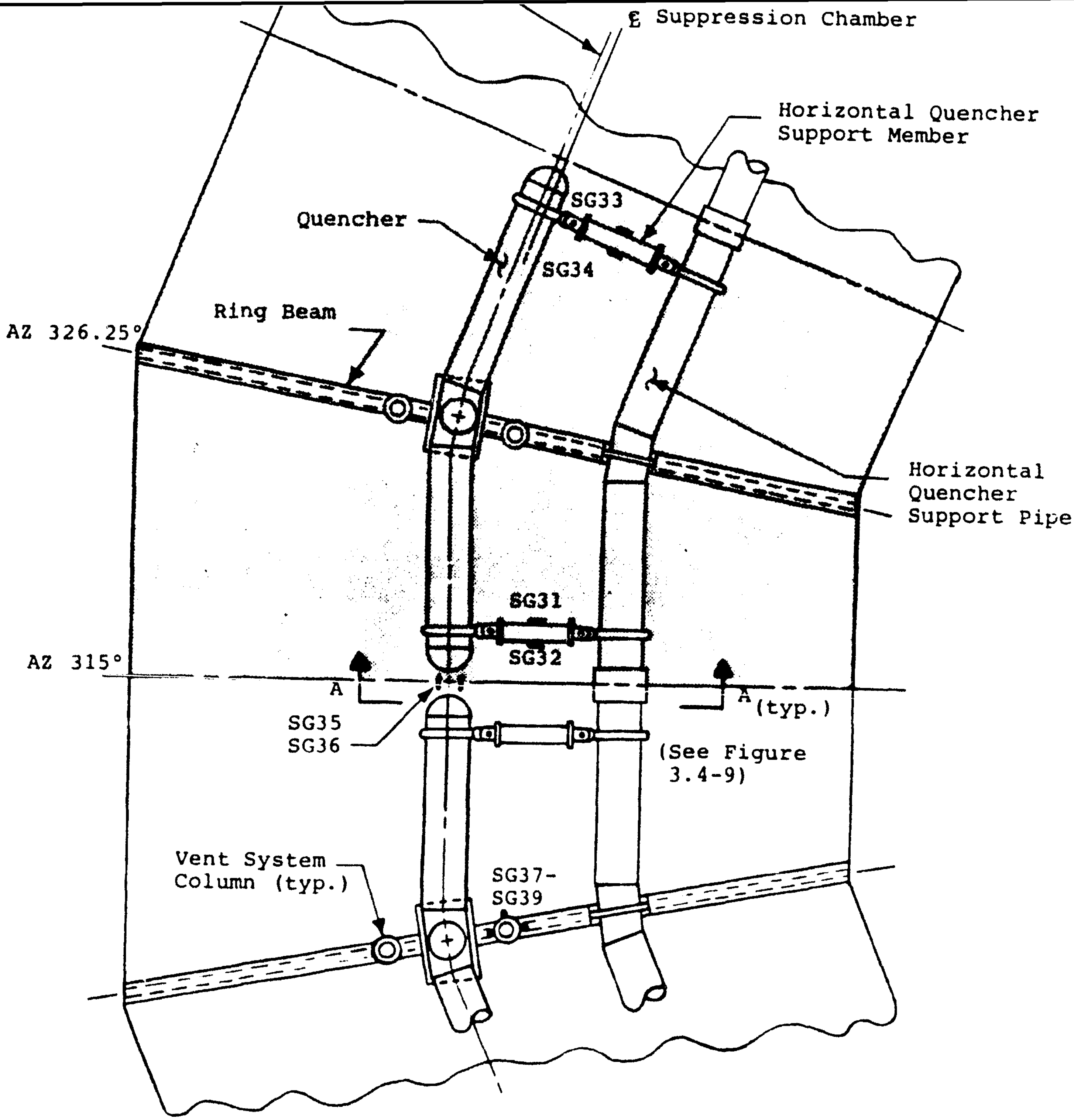
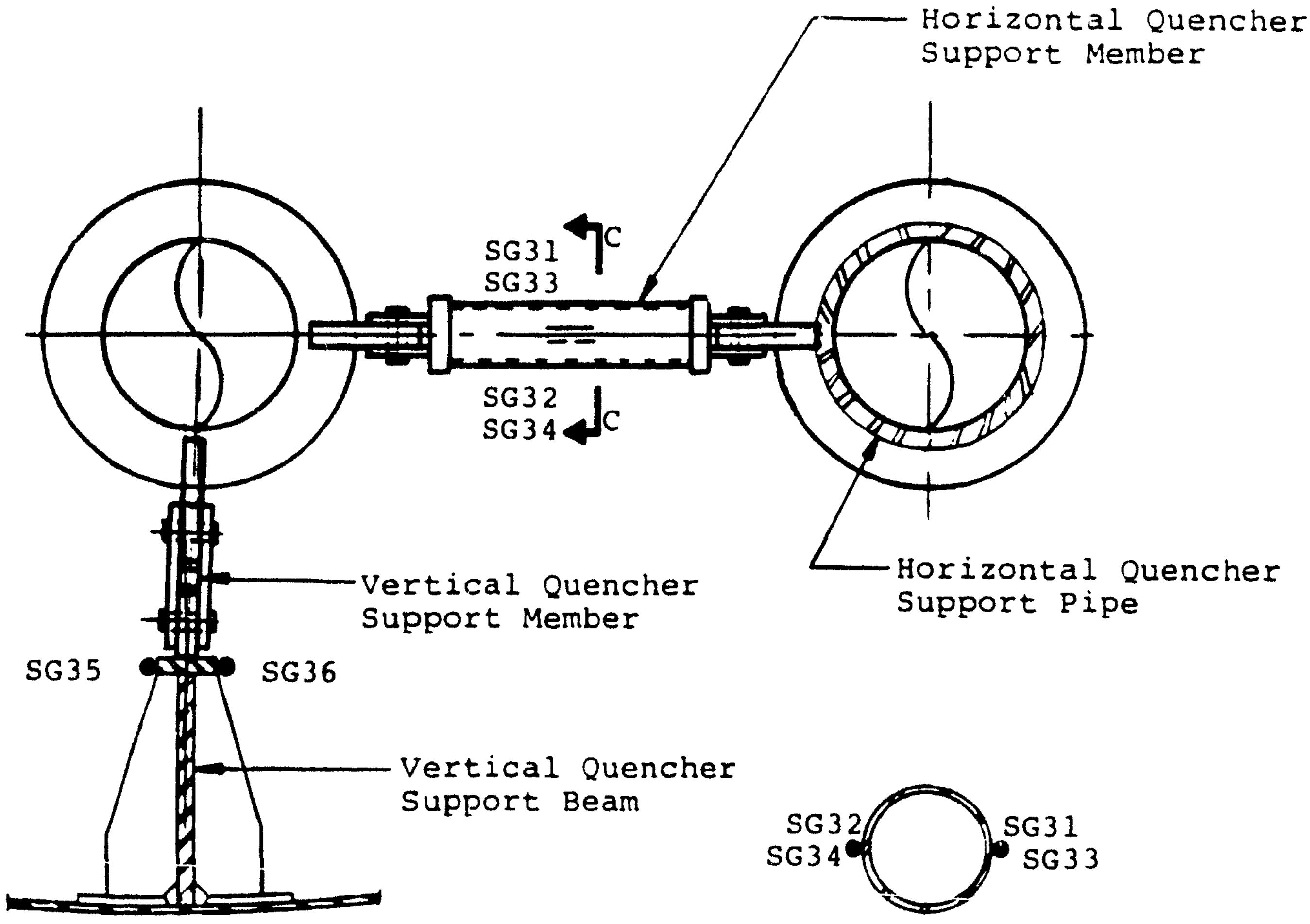


Figure 2.8

STRAIN GAUGES ON QUENCHER SUPPORTS AND RING GIRDERS - PLAN VIEW



Section A-A

Section C-C

Figure 2.9

STRAIN GAUGES ON QUENCHER SUPPORTS - ELEVATION VIEW MIDCYLINDER

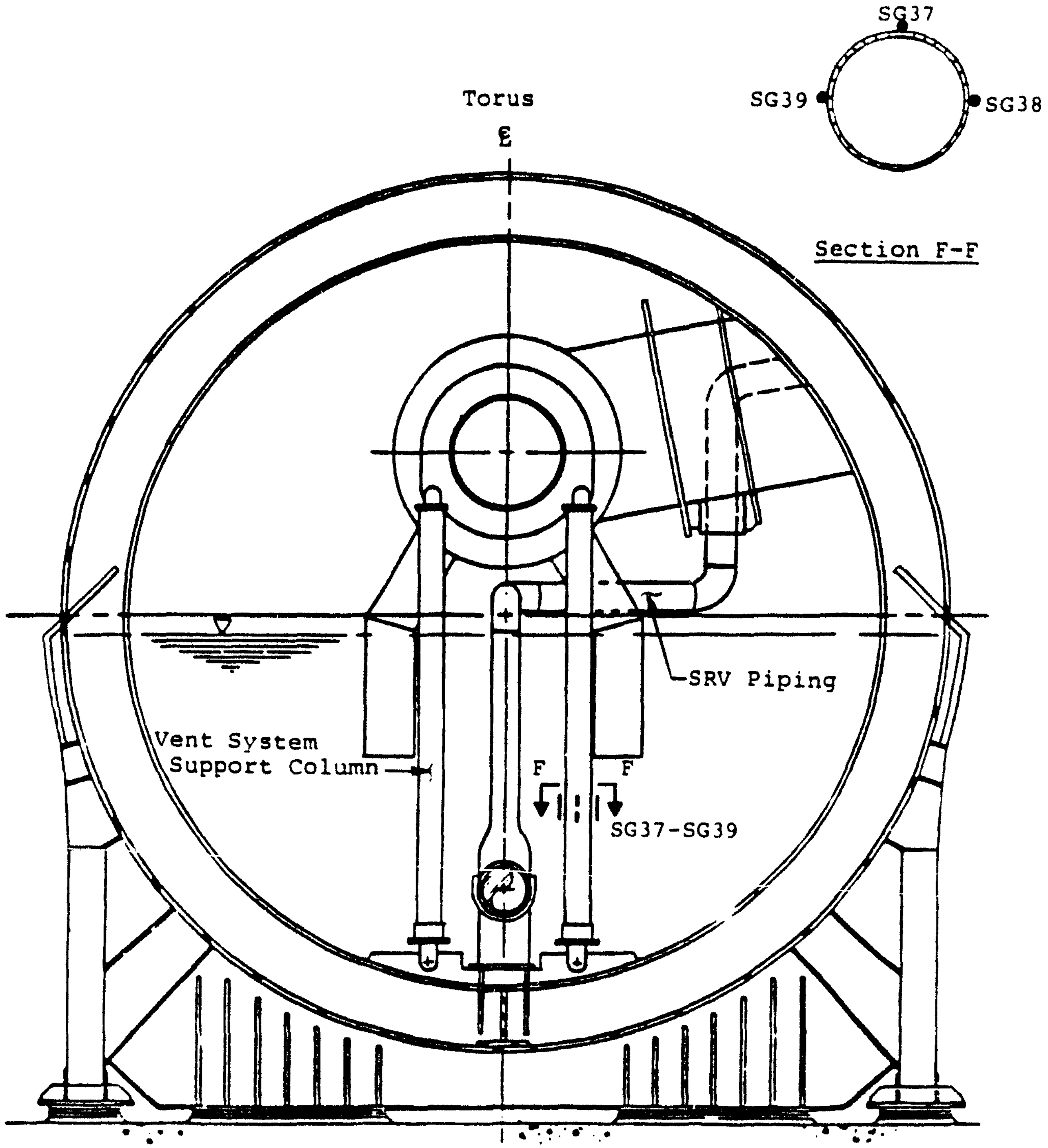


Figure 2.10

STRAIN GAUGES ON SUPPORT COLUMNS AT

AZIMUTH 303.75° - ELEVATION VIEW

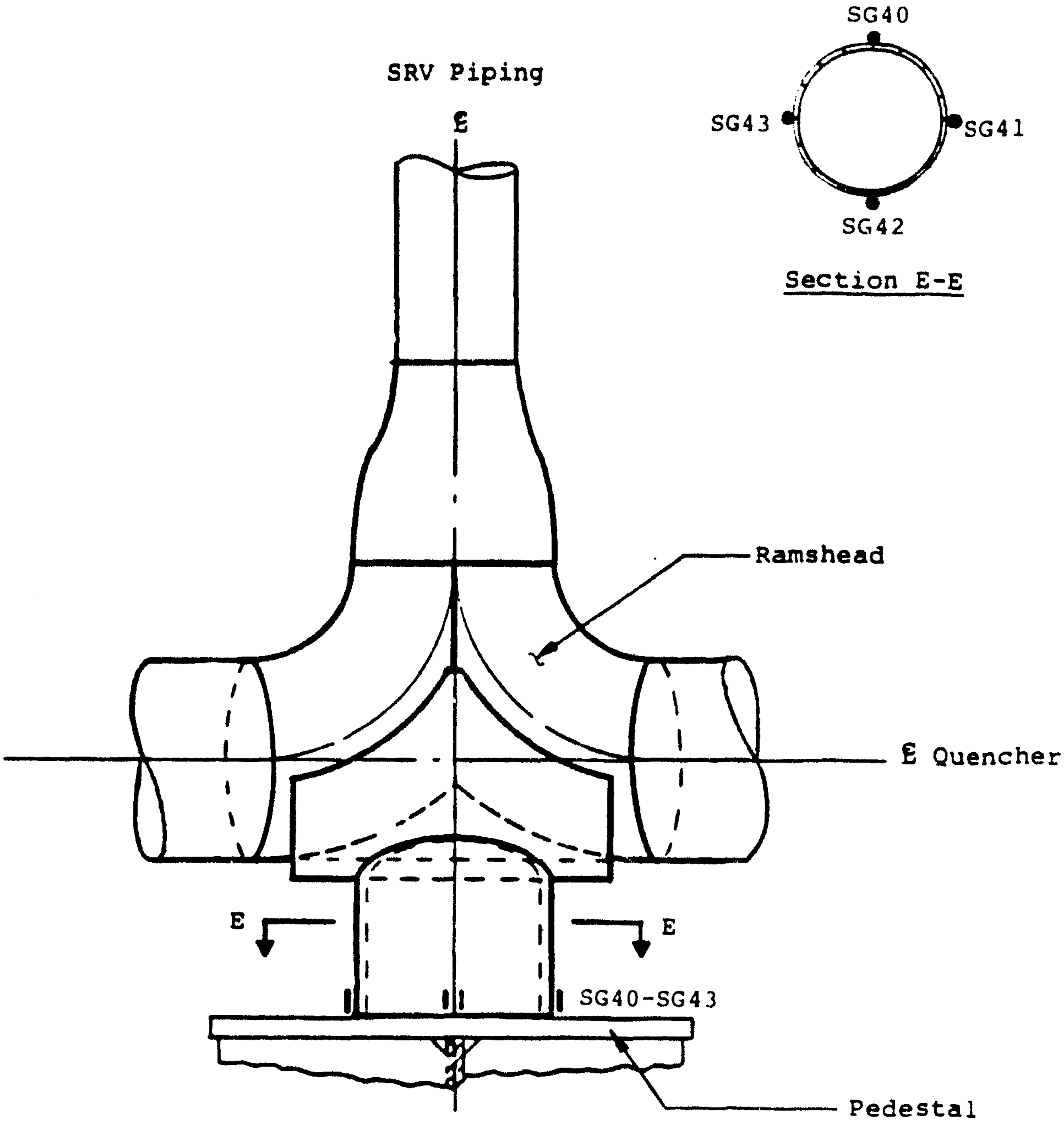


Figure 2.11

STRAIN GAUGES ON QUENCHER RAMSHEAD SUPPORT - ELEVATION VIEW

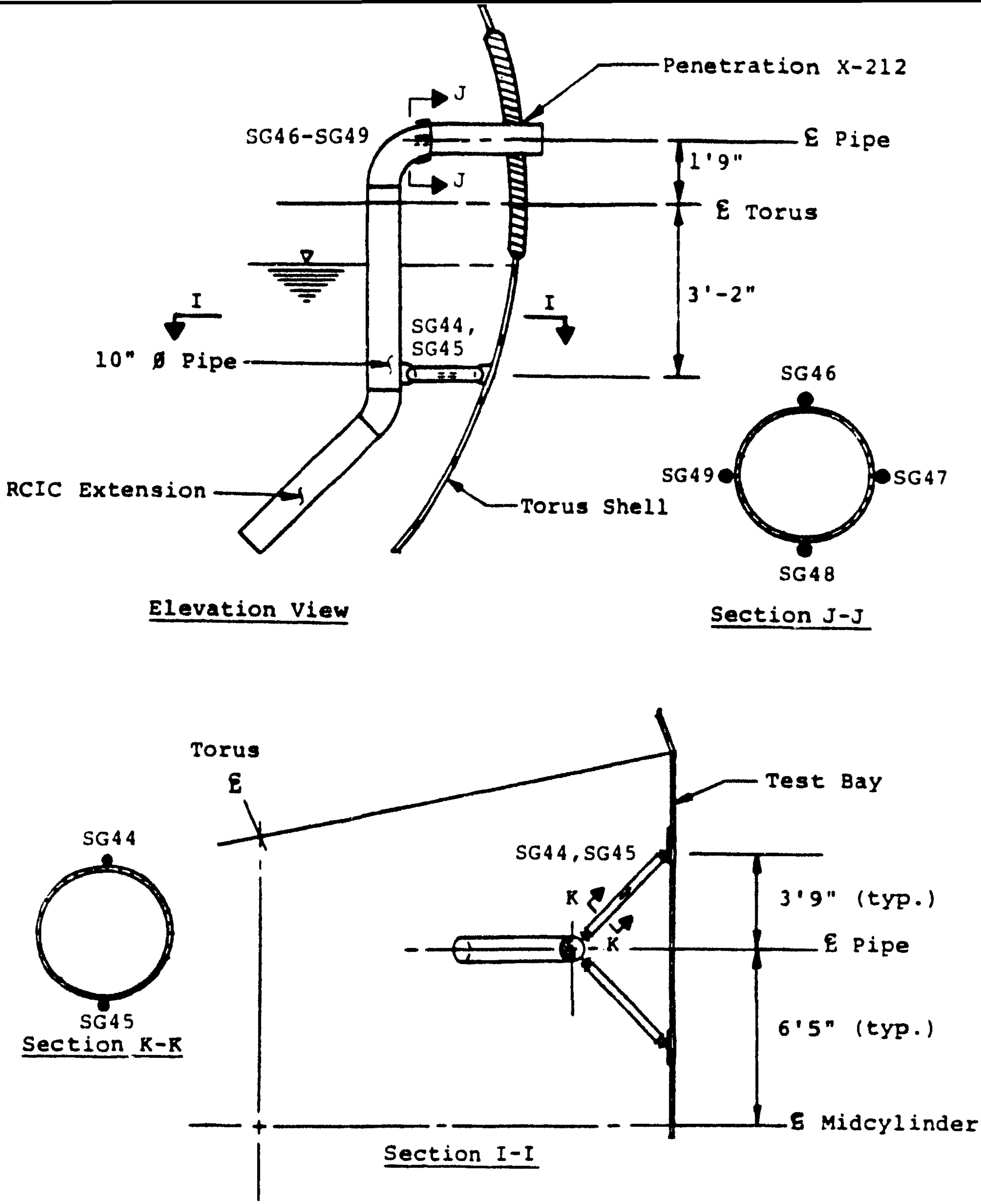
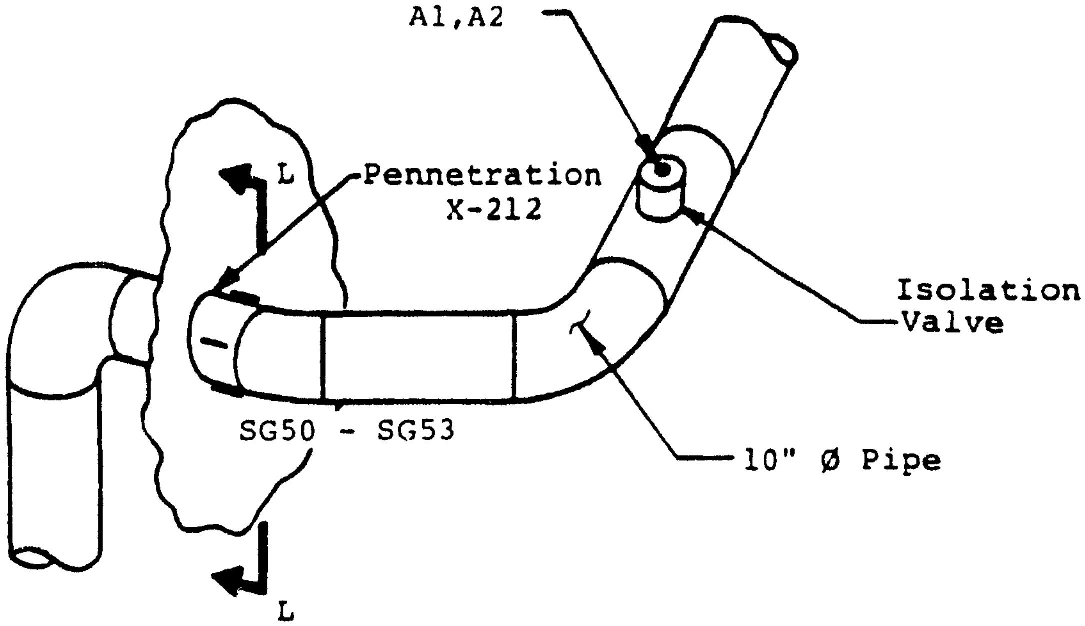
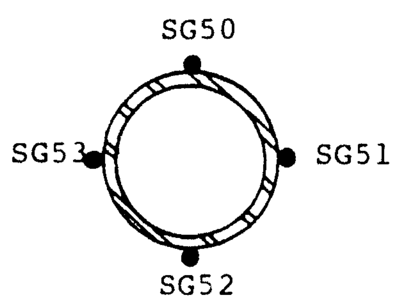


Figure 2.12

STRAIN GAUGES ON RCIC TURBINE EXHAUST LINE AND SUPPORTS INSIDE THE SUPPRESSION CHAMBER



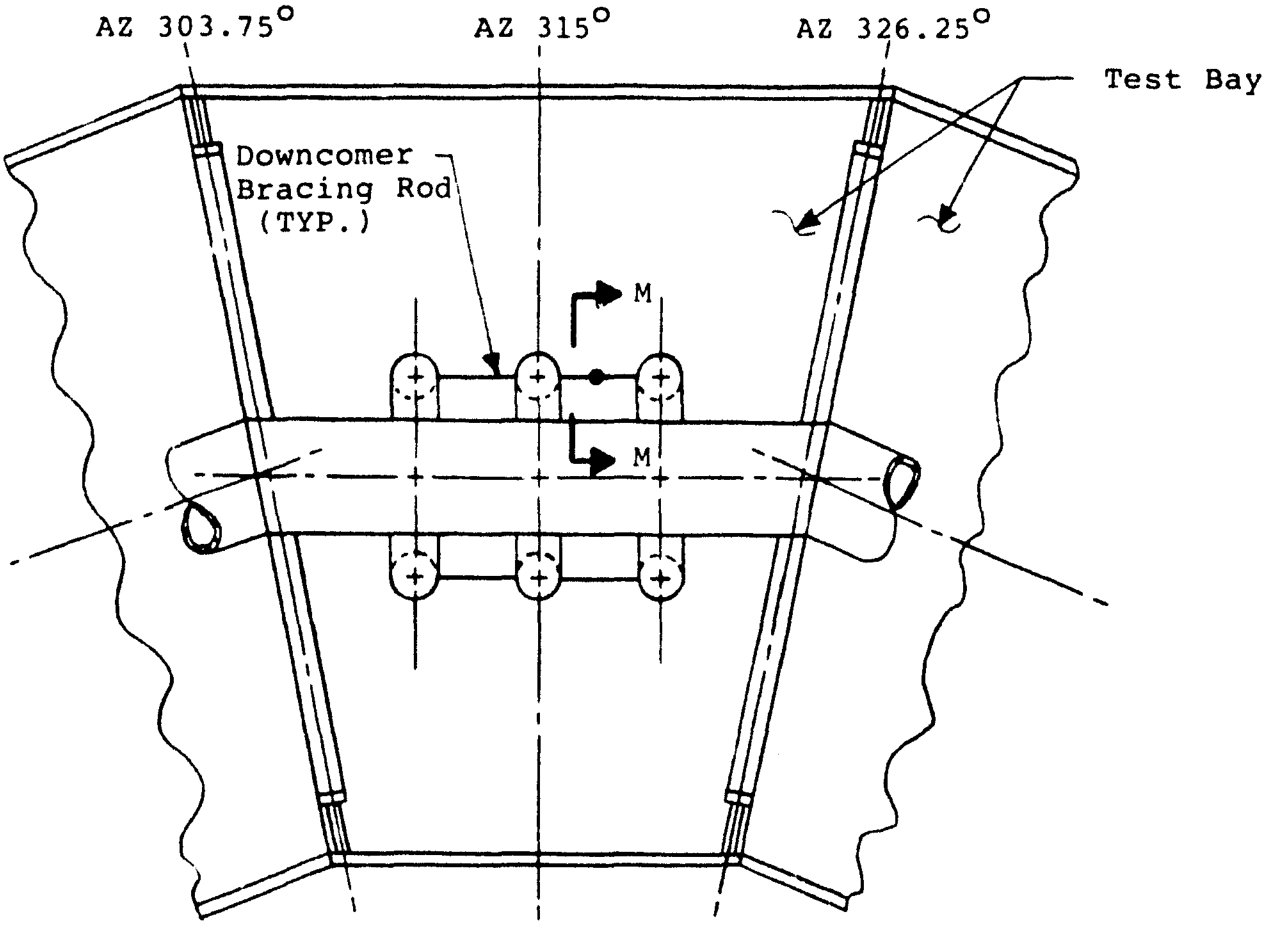
Isometric View

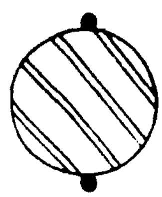


Section L-L

Figure 2.13

STRAIN GAUGE AND ACCELEROMETERS ON RCIC TURBINE EXHAUST LINE OUTSIDE THE SUPPRESSION CHAMBER





Section M-M

Figure 2.14

STRAIN GAUGES ON DOWNCOMER BRACING ROD NEAR AZIMUTH 315° - PLAN VIEW

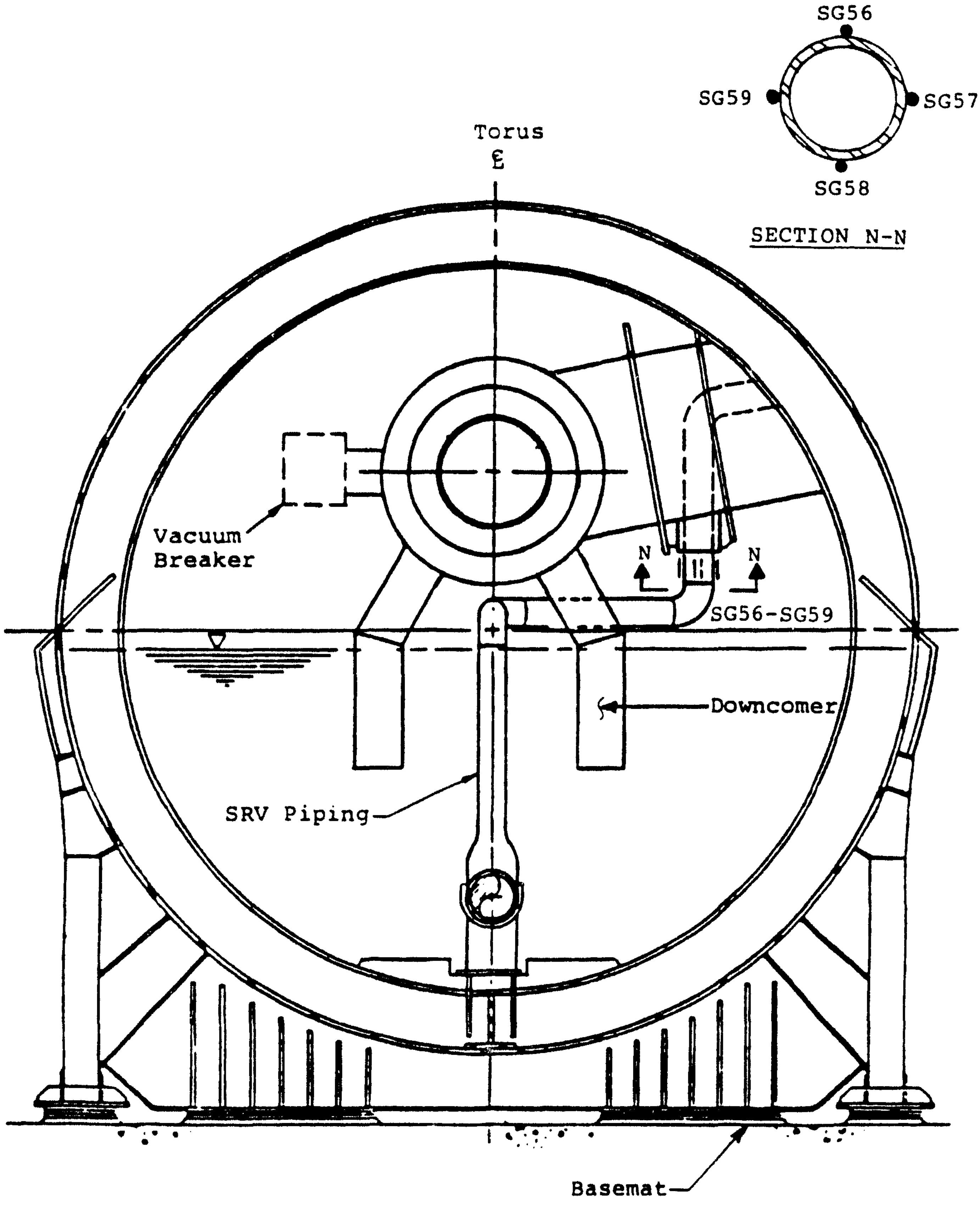


Figure 2.15

STRAIN GAUGES ON SRV DISCHARGE LINE AT AZIMUTH 337.5° - ELEVATION VIEW

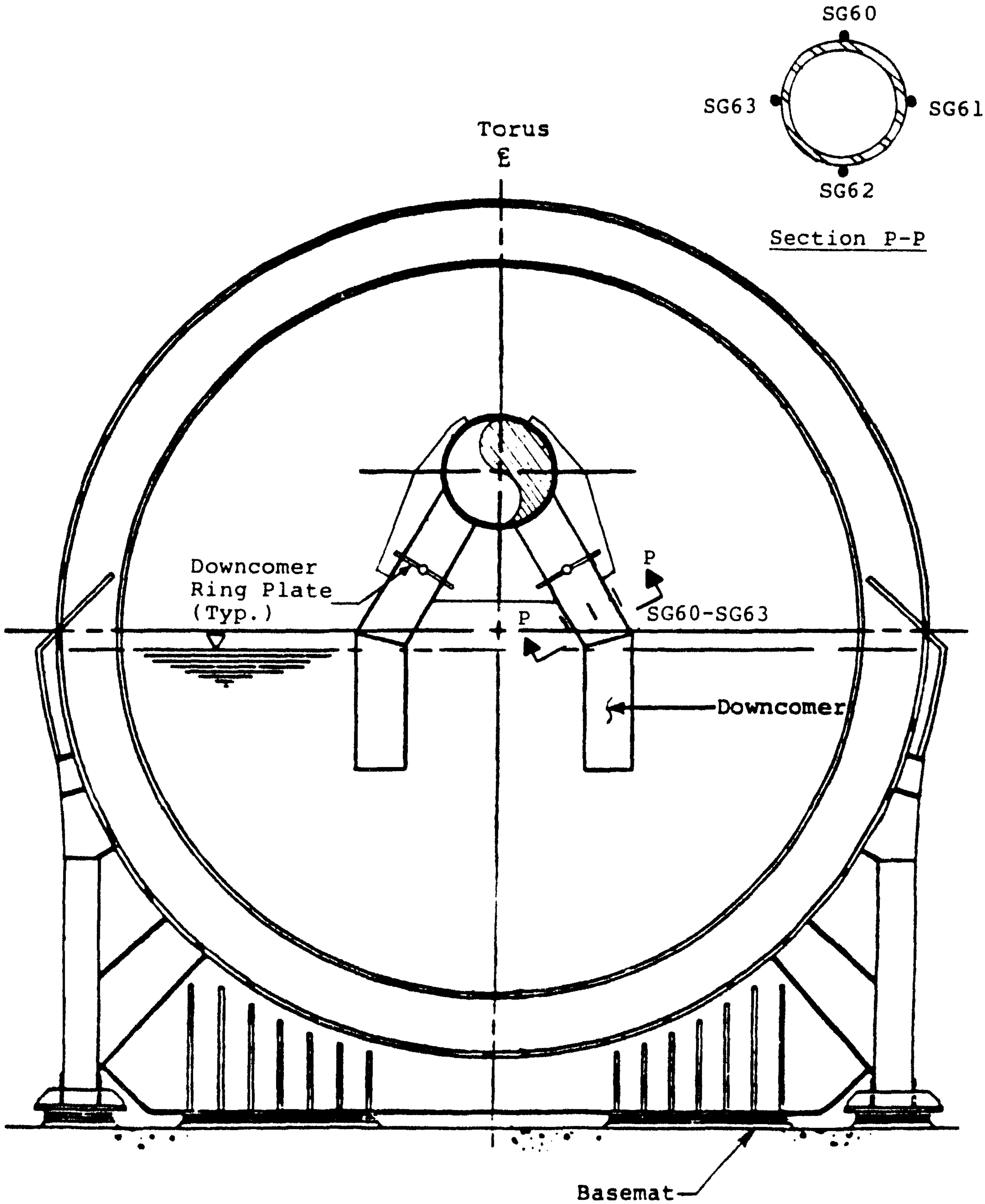


Figure 2.16

STRAIN GAUGES ON DOWNCOMER AT AZIMUTH 315° -
ELEVATION VIEW

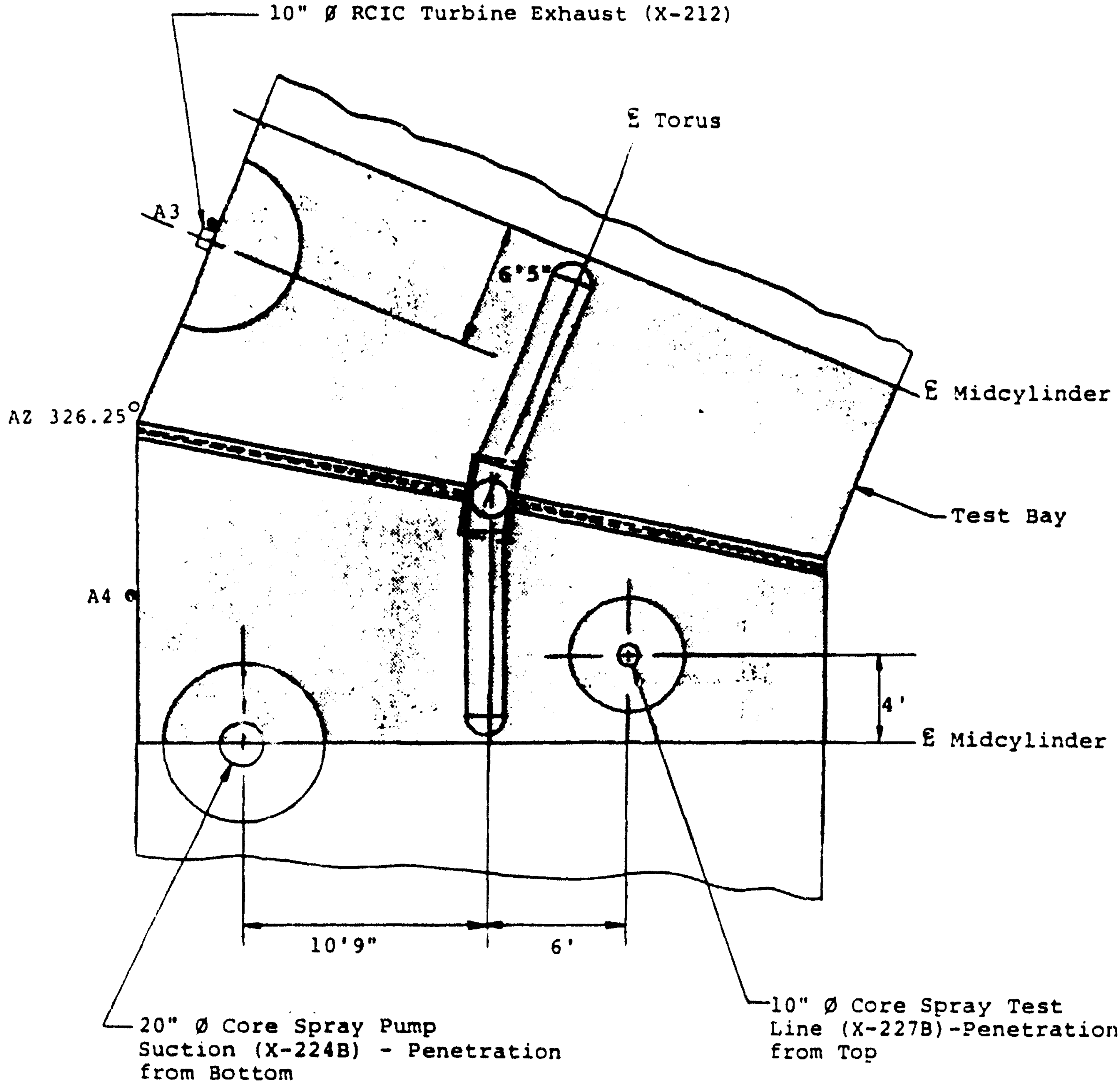


Figure 2.17

ACCELEROMETERS ON TORUS ATTACHED PIPING PENETRATIONS AND TORUS SHELL - PLAN VIEW

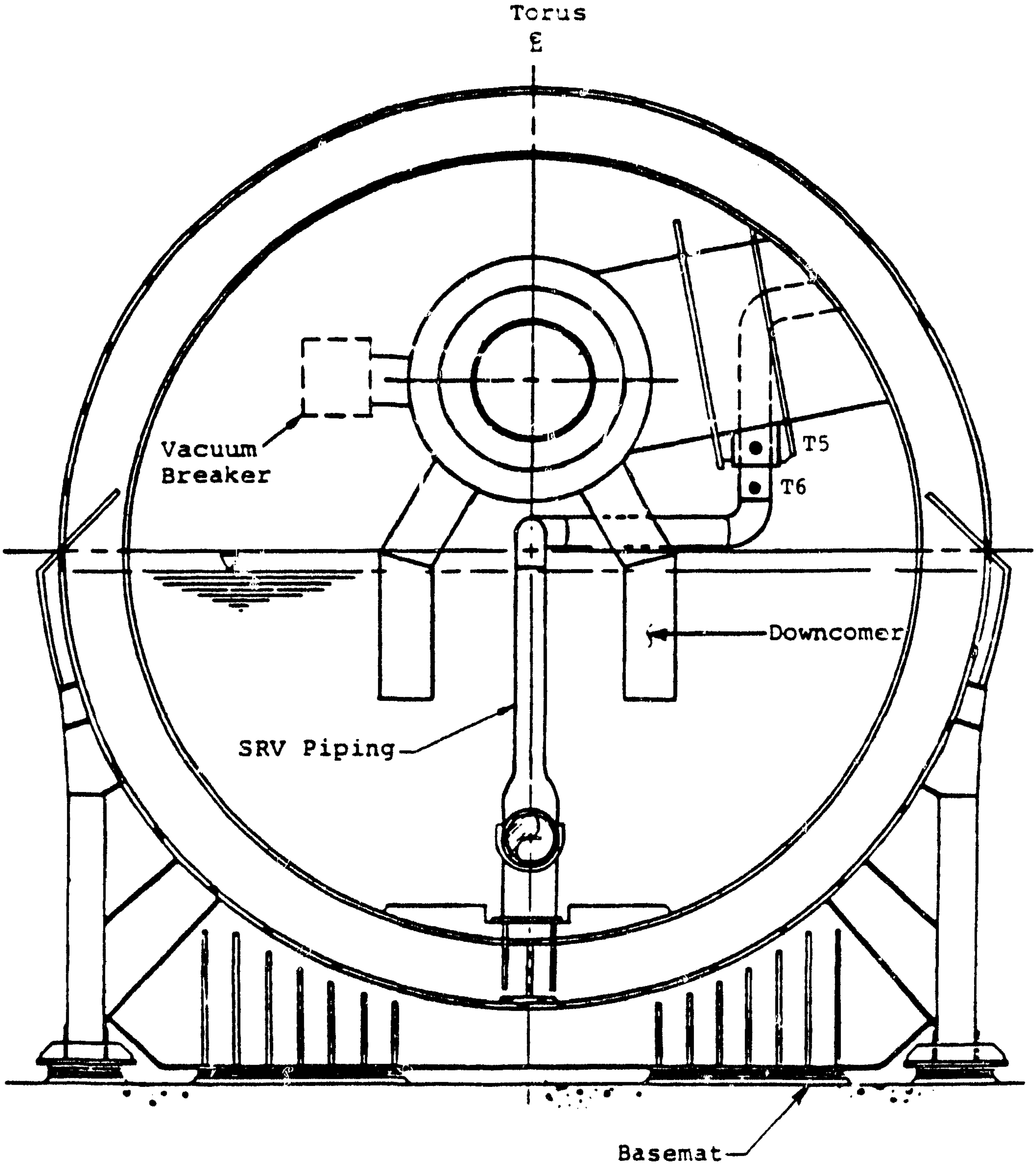


Figure 2.18

TEMPERATURE SENSORS ON SRV DISCHARGE LINE AT

AZIMUTH 337.5° - ELEVATION VIEW

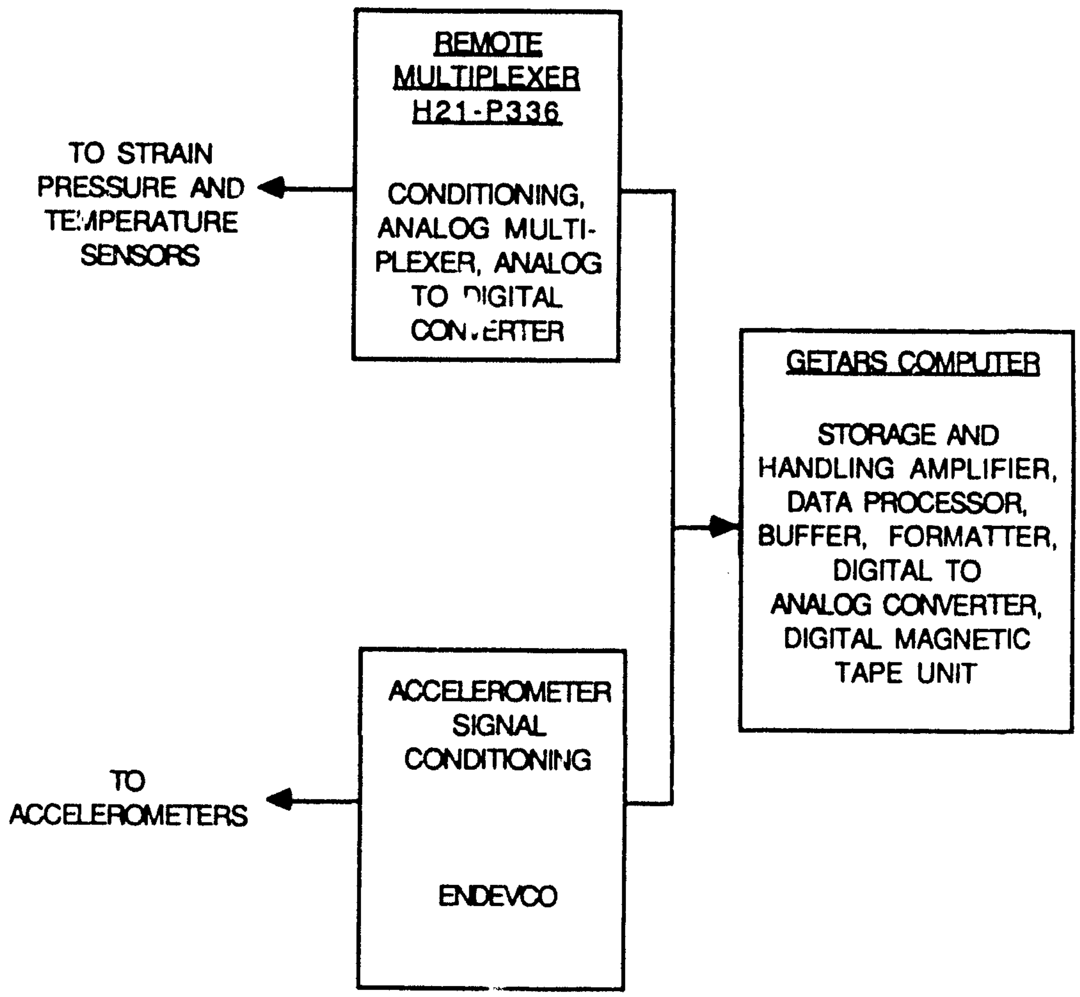


Figure 2.19

SCHEMATIC OF DATA ACQUISITION SYSTEM

3.0 DATA REDUCTION

3.1 Introduction

The measured time-histories for each of the 124 instrumentation channels were recorded by GETARS on magnetic tape for off-line processing. On completion of each test, real time data were compared against the test acceptance criteria.

The data processing and reduction of raw data was performed using the software package, REDUCE, Version 1.4.0. REDUCE is a compilation of NUTECH proprietary codes developed for this purpose. The data reduction was performed on a CYBER-730 system.

3.2 Data Tape Information

As detailed in Table 3-1, a total of five magnetic tapes were used to store the data recorded during the in-plant SRV discharge test program. Each data sample is represented by a 16-bit word, and the data acquisition was performed with a sampling rate of 1000 samples per second per channel.

3.3 Standard Processing Approach

The following processing and data reduction steps were performed on all sensors:

- Convert the binary digit stream on the data tape to decimal voltage values.

- Demultiplex the data for each channel and convert the signal to engineering units by dividing the voltage values by the sensor's calibration factor.

- Remove unwanted D.C. offset, transducer bias or thermal drift from the data to obtain the dynamic portion by the transient.

- Low pass filter the data at 100 Hz to remove unwanted high frequency noise.

- Perform frequency analysis and calculate the power spectral densities (PSD).

3.4 Pressure Transducer Analysis

The maximum and minimum values of the filtered pressure time-histories were tabulated for each pressure transducer. A frequency analysis was performed, and PSDs developed for each pressure transducer.

3.5 Strain Gauge Analysis

The maximum and minimum peak values and the time at which the peak occurred was calculated for each strain, gauge. A frequency analysis was performed and the PSDs were computed for each strain gauge. Principal stress, shear stress and stress intensity time histories were calculated for each rosette. Axial and bending stress components were calculated for each group of uniaxial gauges. A combined total force time history was calculated for the two groups of ten strain gauges installed on the miter joint saddle supports.

3.6 Accelerometer Analysis

In addition to tabulation of maximum and minimum values, PSD's and acceleration response spectra were developed for each sensor from the filtered time-histories. Envelope response spectra were computed at one percent of critical damping for the torus shell mounted accelerometers (A3 and A4).

3.7 Channels Analyzed

Data reduction analyses were performed for the following sensor channels as part of the Fermi 2 in-plant SRV discharge test program:

Type	Number
Strain	98
Pressure	20
Accelerometers	4
Temperature	2

In addition, four channels were monitored to provide SRV actuation signals for a total of 128 sampled data channels related to the SRV discharge test. Additionally, 146 channels providing plant operational data for other uses not related to the SRV test were sampled by GETARS. These data channels were not transferred to magnetic tape and do not form part of this report.

Table 3-1

DATA TAPE INFORMATION

SRV Test Number	GETARS Data Tape Number	File Number on Tape	Channel Numbers Recorded on the Data Tape	Number of Time Steps Per Record	Time Delay Before Start of Data Reduction (sec)	Number of Pre-test Data Records Skipped Before Data Reduction Started
SD-1	121	2	Ch: 1-55,125,139, 142,180 & 185	51	45.0	885
	122	2	Ch: 1-4,56-125,139, 142,180,185, 273 & 274	38	38.0	1000
SD-2	121	2	Ch: 1-55,125,139, 142,180 & 185	51	115.0	2250
	122	2	Ch: 1-4,56-125,139, 142,180,185, 273 & 274	38	106.4	2800
MT-1	125	2	Ch: 25-123 & 185	31	6.5	210
		3	Ch: 1-24,125,139, 142,185,273 & 274	102	5.8	57
MT-2	125	4	Ch: 25-123 & 185	31	4.3	138
		5	Ch: 1-24,125,139, 142,185,273 & 274	102	7.0	68
MT-3	127	2	Ch: 25-123 & 185	31	5.0	161
		4	Ch: 1-24,125,139, 142,185, 273 & 274	102	27.2	266
MT-4	127	3	Ch: 25-123 & 185	31	0.0	10
		6	Ch: 1-24,125,139, 142,185, 273 & 274	102	3.2	30

Table 3.1

DATA TAPE INFORMATION

(Concluded)

SRV Test Number	GETARS Data Tape Number	File Number on Tape	Channel Numbers Recorded on the Data Tape	Number of Time Steps Per Record	Time Delay Before Start of Data Reduction (sec)	Number of Pre-test Data Records Skipped Before Data Reduction Started
MT-5	129	2	Ch: 25-123 & 185	31	12.6	406
		4	Ch: 1-24,125,139, 142,185, 273 & 274	102	12.6	123
MT-6	129	3	Ch: 25-123 & 185	31	4.2	135
		5	Ch: 1-24,125,139, 142,185, 273 & 274	102	6.7	66
MT-7	129	6	Ch: 25-123 & 185	31	6.5	150
		8	Ch: 1-24,125,139, 142,185, 273 & 274	102	12.7	50
MT-8	129	7	Ch: 25-123 & 185	31	8.3	267
		9	Ch: 1-24,125,139, 142,185, 273 & 274	102	9.5	93

4.0 DISCUSSION OF RESULTS

This section provides a review of the data recorded during the test, and tabulated in Tables 4-1 through 4-6 and Appendix E. Typical time histories and PSD's for each group of sensors are provided in Appendices B through D. Each discussion highlights the major observations derived from data, with comparisons of the measured results with analytically predicted values for single and consecutive valve actuations.

The measured tailpipe temperature prior to shakedown test SD1 was 213°F, which is indicative of a weeping valve. An elevated SRVDL temperature is sometimes accompanied by an increase in SRVDL pressure, which leads to a depressed water leg. Temperatures measured by sensors T5 and T6, located on the SRVDL within the torus air space, were reviewed and showed torus ambient temperature. It was judged that the leak was small and the airbleed system would equalize the water leg, and the pressure buildup was slow enough so that test results would not be significantly affected. The shakedown test was performed with a tailpipe temperature of 213°F. The SRV reseated following SD2 and the tailpipe temperature reduced to 167°F for MT1. For all subsequent tests, the tailpipe temperatures were approximately 212°F and the SRV was assumed to be weeping.

4.1 Pressure Data

The pressure sensor data indicates that the Fermi 2 T-Quencher design performs better than anticipated, with measured peak T-Quencher bubble pressures less than 50% of predicted values. The data substantiates the Fermi 2 small scale T-Quencher test load reductions (Reference 6) and implies that the Mark I methodology for predicting SRV discharge related loads is conservative for the Fermi 2 T-Quencher design. Similarly, measured torus shell pressures are less than half of the predicted pressures.

Data were recorded for twenty pressure sensors for each test. Off-line data for eight of the twenty pressure sensors were reviewed following each test to assure that the test predictions were not exceeded. The preliminary results for these eight pressure sensors were reported in the quick look report (Reference 5). This section of the report presents the final reduced pressure data for eighteen pressure sensors. As discussed in Section 2.3, two sensors (P1 and P12) did not provide usable data.

As noted above, all SVA discharge tests, except MT1, were performed with an elevated (212°F) SRV tailpipe temperature. Review of the measured pressure data shown in Tables 4-1 through 4-4 shows only minor differences in pressure amplitudes between test SD1, MT1 and the other SVA tests. The only measurable difference between MT1 and the other SVA tests is a shift in T-Quencher dominant bubble frequency ranging from 7 Hz up to 11 Hz. This frequency shift tends to move the dominant bubble frequency closer to the fundamental frequencies of the suppression chamber and results in a more conservative comparison of measured results with analytical values. Because of these facts, it was concluded that any steam weeping past the SRV had a negligible effect on the results. Therefore, tests SD1 and MT1 were included in the statistical sample to calculate the 90-90 pressure amplitudes; i.e., 90% confidence that 90% of measured results will be less than this pressure.

Appendix B provides typical pressure time histories and PSD's from each test.

4.1.1 SRVDL and T-Quencher Internal Pressure Data

As described in Section 2.1, sensors P19 and P20 were located in a straight section of the SRVDL, sensors P15 and P16 were located inside the T-Quencher arms, and sensors P17 and P18 between the air bleed valves to provide pressure time histories for the SRVDL and T-Quencher.

As shown in Table 4-1, the measured SRVDL peak SVA internal pressure was 220 psig, and 216 psig for a CVA. The calculated line losses, at test conditions, from the SRV to sensors P19 and P20 is 25 psig resulting in a peak SRV back pressure of 245 psig. This is less than the analytically predicted SVA and CVA back pressures of 322 and 381 psig, respectively.

As shown in Table 4-1, the peak measured T-Quencher internal pressure was 216 psig for a SVA and 139 psig for a CVA. These values compare to pretest analytically predicted values of 231 and 287 psig for the SVA and CVA, respectively. Table 4-1 also shows that the T-Quencher water clearing from the two T-Quencher arms was symmetrical, as the difference in internal arm pressures was typically less than 3 psid with a maximum of 15 psid.

Following closure of the SRV, steam pressure in the SRVDL decreases rapidly as the steam flows out into the suppression pool. At a sufficiently low steam pressure, pool water will re-enter the SRVDL, causing rapid depressurization as the steam in the line is condensed by the inflowing water which causes the SRVDL vacuum breakers to open, and drywell air to fill the line. The T-Quencher discharge tests conducted at the Monticello Nuclear Generating Plant showed that the SRVDL waterleg stabilized to a position below that of the normal water leg, usually within ten seconds of SRV closure. Pressure transducers P17 and P18, between the air bleed valves, were used to determine the approximate water leg height. The inner air bleed valve was opened ten seconds after SRV closure. The test results indicated that the residual SRVDL pressure had stabilized at 2 to 2.5 psid. This is equivalent to a depressed water leg of about 5.8 feet. The outboard air bleed valve was opened ten seconds later and the SRVDL pressure immediately dropped to drywell ambient. The pressure remained steady until both air bleed valves were closed ten seconds prior to the consecutive valve actuation.

4.1.2 T-Quencher Bubble Pressure Data

As shown in Figures 2.1 and 2.2, sensors P1 through P4 were installed on the center line of the T-Quencher arms to record the peak T-Quencher air bubble pressures. As discussed in Section 2.4, sensor P1 failed prior to conducting the test program and, therefore, the evaluations and conclusions are based on the measured data for P2 to P4. The peak measured T-Quencher bubble pressure for each sensor is presented in Table 4-2. P3 consistently recorded the highest T-Quencher bubble pressures, while data from P2 and P4 were significantly less. As discussed in Section 4.1.3, the higher T-Quencher bubble pressures, measured by P3, do not appear to have a significant affect on the corresponding suppression pool boundary pressures.

The peak measured T-Quencher bubble pressures for the SVA tests, adjusted to provide a 90-90 confidence band, are +5.3 psid, -5.7 psid compared with the predicted values at test conditions of +12.04 psid, -10.38 psid. For the CVA test series the measured pressure including the 90-90 confidence band are +2.9 psid, -3.5 psid compared with predicted values of +13.35 psid, -10.15 psid. The measured SVA T-Quencher dominant bubble frequencies varied from 7.0 Hz for MT1 to 11.0 Hz for MT5 with an average of 8.6 Hz, compared to the predicted frequency of 6.4 Hz. The higher T-Quencher dominant bubble frequencies measured for MT5 and MT7 are indicative of steam in the SRVDL, and it is possible that valve leakage was somewhat larger for these tests than SD1 (8.7 Hz) and MT^ (8.2 Hz). There are no significant differences in torus shell pressures for the SVA tests. The CVA T-Quencher dominant bubble frequencies varied from 9 Hz to 11 Hz, with an average value of 9.5 Hz compared to the predicted frequency of 6.8 Hz.

4.1.3 Suppression Pool Boundary Pressure Data

The peak torus shell pressures measured during the Fermi 2 in-plant SRV discharge test series were recorded for sensor P8 at 12° above bottom dead center. This is consistent with the test measurements observed at the Monticello Nuclear Generating Plant. Pressure sensors P5 through P14 were utilized to provide longitudinal pressure attenuation with distance along the torus shell. Sensor P12 failed to provide consistent data and was not included in the analysis.

The peak measured torus shell pressures are presented in Tables 4-3 and 4-4, with typical pressure time histories presented in Appendix B. The SVA measured torus shell peak pressures, with a 90-90 confidence band, were +1.8 psid, -2.2 psid compared with the predicted values of +7.84 psid, -8.82 psid respectively. The measured peak CVA torus shell pressures, with a 90-90 confidence band, were +1.9 psid, -2.4 psid compared to the predicted values of +6.87 psid, -7.99 psid, respectively. A review of the data presented in Tables 4-3 shows that the peak measured suppression pool boundary pressures for MT1 are similar to those for all other tests. And, as discussed in Section 4.1.2, the only discernable difference between MT1 and the other SVA tests is a shift in measured T-Quencher dominant bubble frequency from 7 Hz to 11 Hz. The measured torus shell bubble frequencies are similar to those reported in Section 4.1.2, 8.6 Hz average for the SVA tests and 9.5 Hz for the CVA tests.

Figures 4-1 through 4-3 show the T-Quencher bubble pressure attenuation. The torus shell pressure distribution is similar to that predicted by the Fermi 2 PUAR methodology, with measured pressure about 30% of the predicted pressure magnitudes. There is no evidence of asymmetric loads resulting from oscillating T-Quencher air bubbles.

The measured torus shell pressures are less than 30% of the predicted values and demonstrate that the T-Quencher design is performing better than predicted by the NUREG-0661 analytical models. The T-Quencher behavior is similar to that predicted by the 1/12th scale Fermi 2 T-Quencher tests performed in 1978 and 1982 (Reference 6).

4.2 Strain Data

As described in Section 2.1, twelve strain rosettes and sixty-three uniaxial strain gauges were installed on the torus shell, torus support structures, internal structures, and piping to measure the SRV discharge load structural response. Table 4-5 provides the maximum measured torus mitered joint support loads at azimuth 326.25°. Appendix C provides typical strain and load response time histories. Appendix E provides the maximum and minimum strains recorded for each gauge by test.

4.2.1 Torus Support Saddle and Column Loads

Twenty-four strain gauges were located on the columns (two each) and saddles (ten each) supporting the torus at the miter joint of the test bay (azimuth 326.25°). The measured saddle strain data were processed to provide the total force time history for both saddle base plates for each test. The maximum measured upward and downward saddle and column loads are provided in Table 4-5. The total miter joint vertical load was calculated by summing the maximum measured saddle and column reactions regardless of time of occurrence.

The maximum mitered joint SVA vertical load, adjusted to include a 90-90 confidence band, is 116 kips upward and 126 kips downwards, compared to the analytically predicted values of 422 kips upward and 481 kips downward. For the CVA test, the total adjusted 90-90 confidence band vertical load for the mitered joint was 137 kips upward and 125 kips downward, compared to analytically predicted CVA values of 343 kips upward and 417 kips downward. The dominant frequency of the column and saddle loads was similar to those of the torus shell and T-Quencher bubble at 8.6 Hz and 9.5 Hz for SVA and CVA, respectively.

The five torus support columns, instrumented with strain gauges, include columns at azimuths 281.25°, 303.75° and 326.25°. The recorded strains for these columns were very small typically 1 μin/in, with no obvious attenuation of the load. The maximum strain measurements for each gauge are given in Appendix E. As shown by Table 4-5, over 90% of the total support reaction load induced by an SRV discharge is carried by the saddles.

4.2.2 Torus Shell Membrane Stress Intensities

The maximum extreme fiber stress intensities were calculated from time-phased torus shell strain data using the rosette strain components, and are tabulated in Appendix E for SVA and CVA load cases. Membrane stress intensities were calculated as the average of the inner and outer extreme fiber values. As described in Section 2.4, the diagonal leg of rosette SR2 failed prior to the test and could not be replaced due to its location. Therefore, the membrane stress intensities at 12° inboard of bottom dead center (BDC) were calculated using the measured data from the other two gauges in the rosette and SR8 located on the exterior surface.

The peak membrane SVA stress intensity was estimated to be 0.7 ksi located 12° inboard of BDC. The maximum extreme fiber stress intensity was 0.7 ksi, also located 12° inboard of BDC. The peak stresses 12° outboard of BDC were approximately 0.4 ksi, reducing to 0.2 ksi at

60° above BDC. These values compare to the analytically predicted stresses of 2.25 ksi at 12° and 1.13 ksi at 60° above BDC.

The measured CVA stresses show a similar pattern, with the maximum calculated membrane stress intensity of 0.5 ksi at 12° and 0.4 ksi at 60° above BDC compared to the analytically predicted results of 2.0 ksi and 1.0 ksi, respectively.

The dominant frequency of the torus shell strains is similar to the torus shell pressures, with average values of 8.6 Hz for the SVA and 9.5 Hz for CVA tests.

4.2.3 Internal Structures and Piping

Thirty three strain gauges were installed in eleven groups on internal structues and piping. The measured strain data for each group of gauges was processed to develop an axial and a bending stress time history for the component. The maximum measured strains for each strain gauge, and the maximum axial, bending and extreme fibre stresses for each group of strain gauges are presented in Appendix E.

The maximum measured stress for the internal structures, including the 90-90 confidence band limits, occurred on the quencher support, and was 0.46 ksi for the SVA and 0.45 ksi for the CVA. These values are much less than the analytically predicted stresses of 2.2 ksi for SVA and 2.4 ksi for CVA. The measured stresses for other internal structures and components were much smaller, varying from 0.03 ksi to 0.17 ksi. Table 5-2 shows comparisons of the maximum measured stresses, including the 90-90 confidence band limits, with analytically predicted results for each group of strain gauges.

4.3 Accelerometer Data

As described in Section 2.1, accelerometers were installed on the torus shell and the RCIC turbine exhaust valve operator as a check on the affects of SRV discharge loads. The peak measured values for each accelerometer are given in Table 4-6. The torus shell envelope response spectra for the SVA and CVA tests are shown in Figures 4.4 and 4.5.

The peak SVA acceleration (A4) for the "clean torus shell" measured was 0.65g, compared to 0.38g for the coupled torus shell/piping system acceleration (A3). The analytically predicted accelerations, at test conditions, were 1.9g and 1.3g for A4 and A3, respectively. The coupling affects of the RCIC turbine exhaust piping with the torus compared with the clean torus shell acceleration is shown by the envelope response spectra in Figures 4.4 and 4.5. It is evident that the coupled shell/piping system acts as a filter to reduce the torus attached piping response. The calculated response at 24 Hz is the same for A3 and A4, however, at all other frequencies the clean shell spectra envelopes that of the coupled shell/ piping system. This difference is most obvious in the higher frequencies where the clean shell response is as much as six times that of the coupled shell/ piping system.

The measured CVA response is similar to that described above for the SVA case. The peak measured clean torus shell response (A4) was 0.91g compared to 0.26g for the coupled shell/piping response (A3). The analytically predicted accelerations were 2.0g and 1.4g for A4 and A3, respectively. The CVA clean shell (A4) response spectra are typically much greater than the coupled shell/piping spectra (A3), except at a frequency of 24 Hz where both have the same value.

The peak measured SRV discharge load accelerations for the RCIC turbine exhaust valve operator were all less than 1.0g, with an amplification factor of about two to four between the measured coupled shell/piping system response (A3) and the valve operator (A1). These low levels of acceleration are much less than the analytically predicted response of 1.7 g.

Table 4-1

PEAK SRVDL AND T-QUENCHER INTERNAL PRESSURES (PSID)

		SVA					CVA				
		SD1	MT1	MT3	MT5	MT7	SD2	MT2	MT4	MT6	MT8
T-Quencher Internal	P15.	188.	211.	196.	215.	141.	121.	149.	135.	131.	131.
Peak Pressure	P16.	191.	216.	198.	209.	147.	123.	134.	133.	133.	130.
SRVDL Peak	P19.	202.	213.	201.	220.	190.	197.	209.	186.	186.	195.
Pressure	P20.	185.	191.	181.	194.	166.	216.	205.	179.	197.	181.

Table 4-2

PEAK T-QUENCHER BUBBLE PRESSURES (PSID)

	SVA						CVA					
	SD1	MT1	MT3	MT5	MT7	P_{90-90}	SD2	MT2	MT4	MT6	MT8	P_{90-90}
P2	+2.00 -2.06	+1.55 -2.65	+1.96 -3.10	+2.17 -2.95	+2.84 -3.84	+2.55 -3.36	+2.74 -3.41	+2.07 -3.43	+1.40 -2.34	+2.17 -2.97	+2.16 -2.61	+2.56 -3.41
P3	+4.18 -2.71	+3.73 -5.64	+3.72 -5.96	+3.86 -3.64	+6.08 -3.77	+5.27 -5.67	+2.45 -3.13	+1.61 -2.04	+2.35 -2.84	+3.28 -3.16	+1.72 -3.61	+2.92 -3.51
P4	+2.63 -2.97	+1.53 -3.11	+3.36 -4.07	+1.38 -2.50	+2.10 -2.05	+2.98 -3.66	+2.42 -2.86	+2.60 -2.46	+1.77 -3.07	+2.48 -2.42	+2.88 -2.92	+2.82 -3.02

Table 4-3

PEAK TORUS SHELL SVA PRESSURES (PSID)

	SD1	MT1	MT3	MT5	MT7	P_{90-90}
P5	+1.09 -0.66	+0.92 -0.40	+0.74 -0.59	+0.72 -0.60	+1.00 -0.78	+1.05 -0.78
P6	+1.28 -1.42	+1.30 -1.29	+0.76 -1.15	+0.56 -0.94	+1.21 -1.38	+1.34 -1.43
P7	+1.40 -1.54	+1.25 -2.13	+0.92 -1.45	+0.70 -1.10	+1.20 -1.40	+1.36 -1.88
P8	+1.95 -1.71	+1.16 -2.05	+0.81 -1.34	+0.65 -1.68	+1.72 -2.24	+1.80 -2.13
P9	+1.50 -1.72	+1.02 -0.94	+1.27 -0.90	+0.84 -0.92	+1.10 -1.36	+1.39 -1.51
P10	+0.76 -0.74	+0.72 -0.56	+0.61 -0.57	+0.48 -0.58	+0.64 -0.84	+0.75 -0.78
P11	+0.88 -1.22	+0.86 -1.92	+1.19 -1.51	+0.81 -1.82	+1.06 -1.54	+1.11 -1.87
P13	+1.81 -1.70	+1.04 -1.85	+0.82 -1.19	+0.71 -1.39	+1.40 -1.84	+1.59 -1.87
P14	+1.77 -1.76	+0.80 -2.10	+0.68 -1.18	+0.81 -1.51	+1.71 -2.38	+1.67 -2.24

Table 4-4

PEAK TORUS SHELL CVA PRESSURE (PSID)

	SD2	MT2	MT4	MT6	MT8	P_{90-90}
P5	+0.90 -0.74	+1.04 -1.03	+0.66 -0.50	+0.72 -0.90	+0.68 -0.58	+0.96 -0.96
P6	+1.40 -1.90	+0.84 -1.11	+0.94 -1.22	+1.12 -1.43	+0.80 -1.19	+1.26 -1.68
P7	+1.94 -2.70	+1.20 -1.72	+1.08 -1.61	+1.26 -1.44	+1.19 -1.56	+1.66 -2.29
P8	+2.24 -2.64	+0.97 -1.27	+1.27 -2.04	+1.21 -1.87	+1.23 -1.60	+1.85 -2.37
P9	+1.34 -1.60	+0.91 -0.85	+1.11 -1.26	+1.04 -1.42	+0.69 -1.09	+1.25 -1.52
P10	+0.69 -0.91	+0.53 -0.73	+0.61 -0.63	+0.60 -0.78	+0.65 -0.61	+0.67 -0.85
P11	+0.96 -1.81	+0.88 -1.41	+0.86 -1.64	+1.41 -1.34	+1.13 -1.46	+1.26 -1.71
P13	+2.20 -2.51	+0.91 -1.36	+1.02 -1.83	+1.21 -1.72	+1.30 -1.62	+1.82 -2.22
P14	+1.63 -2.10	+0.94 -1.29	+1.20 -2.05	+1.22 -1.57	+0.81 -1.56	+1.47 -2.04

Table 4-5

MAXIMUM MITERED JOINT LOADS (KIPS)
AZIMUTH 326.25°

		SVA					CVA				
		SD1	MT1	MT3	MT5	MT7	SD2	MT2	MT4	MT6	MT8
Inside Column	Upward Downward	4 3	3 3	3 3	4 4	3 3	3 4	4 3	3 3	3 3	2 3
Outside Column	Upward Downward	4 3	3 5	4 3	3 3	2 3	4 4	3 4	3 3	3 3	3 4
Inside Saddle	Upward Downward	59 48	37 55	39 33	32 33	41 23	75 54	35 45	34 44	38 48	39 39
Outside Saddle	Upward Downward	62 62	48 73	52 58	43 43	51 30	86 73	46 47	39 55	46 60	37 46
Total Mitered Joint Load(1)	Upward Downward	129 116	91 136	98 97	82 83	97 59	168 135	88 99	79 105	90 114	81 92

(1) Total mitered joint loads are calculated by summing the maximum saddle and column loads regardless of time.

Table 4-6

PEAK MEASURED ACCELERATIONS (g)

	SVA					CVA				
	SD1	MT1	MT3	MT5	MT7	SD2	MT2	MT4	MT6	MT8
A1	0.58	0.68	0.82	0.91	0.83	0.88	0.77	0.55	0.80	0.61
A2	0.36	0.62	0.65	0.54	0.57	0.76	0.83	0.59	0.75	0.64
A3	0.21	0.19	0.38	0.21	0.25	0.26	0.22	0.21	0.22	0.22
A4	0.63	0.58	0.46	0.50	0.65	0.63	0.78	0.54	0.91	0.76

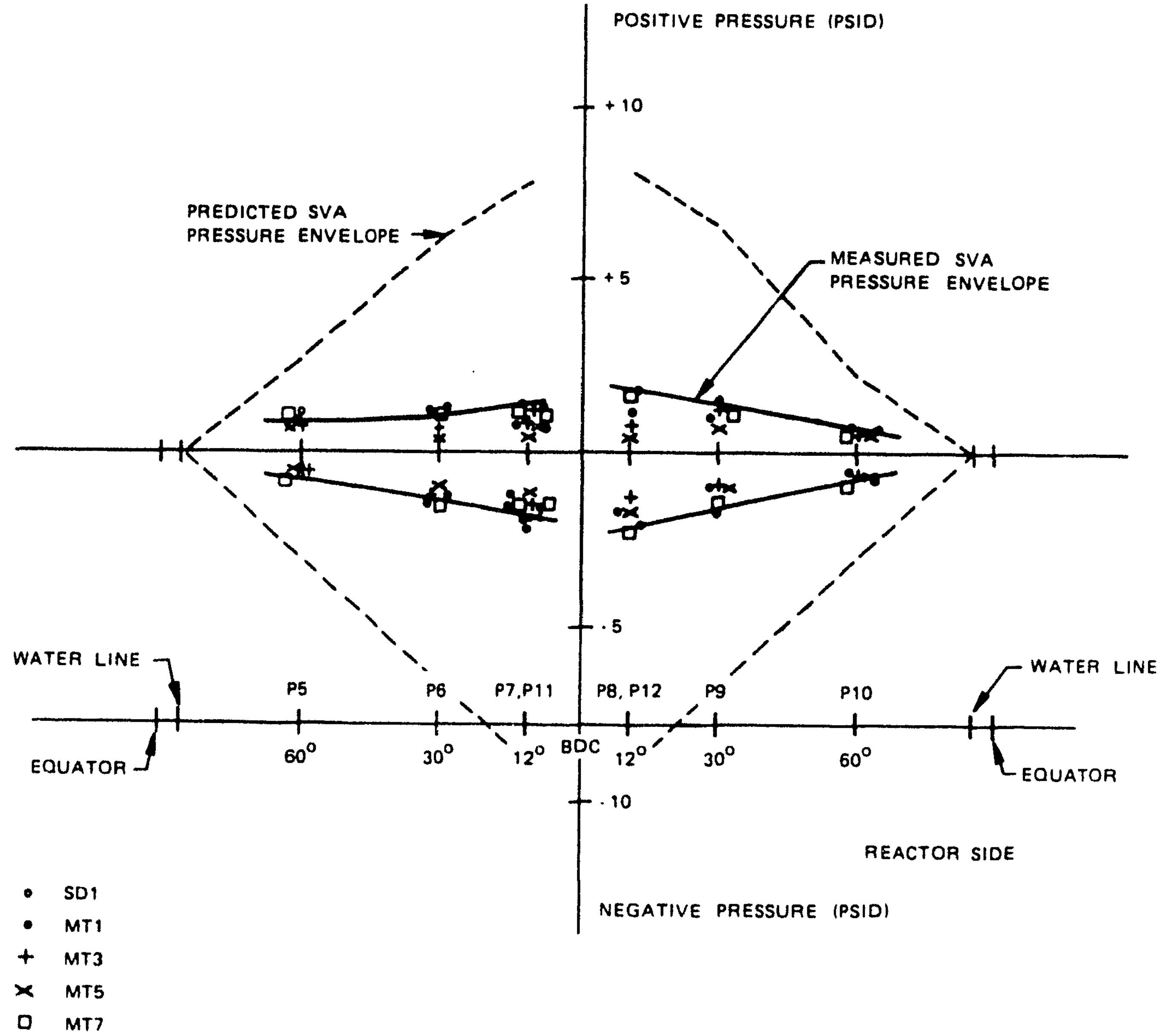


Figure 4.1

SVA CIRCUMFERENTIAL PRESSURE ATTENUATION

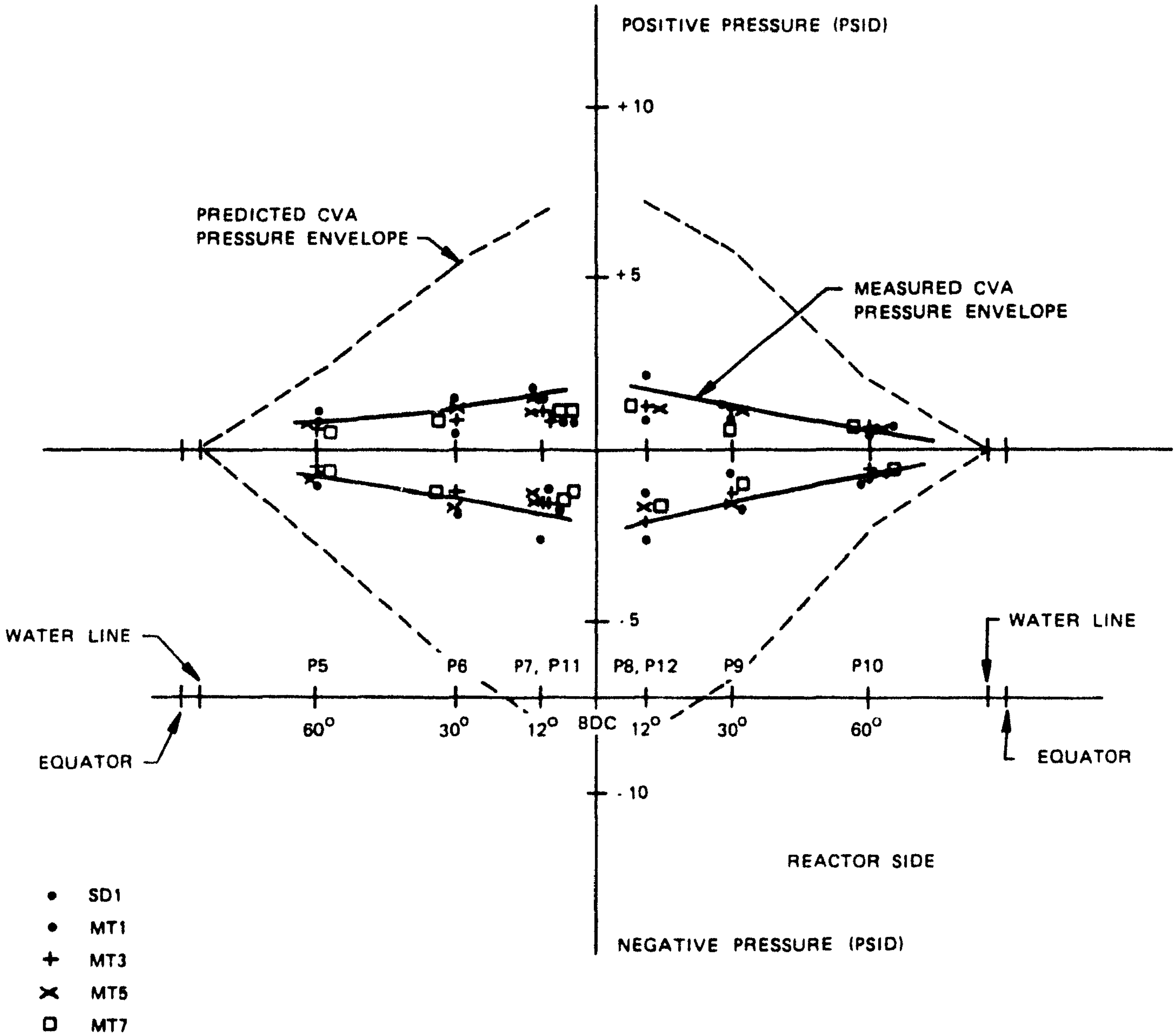


Figure 4.2

CVA CIRCUMFERENTIAL PRESSURE ATTENUATION

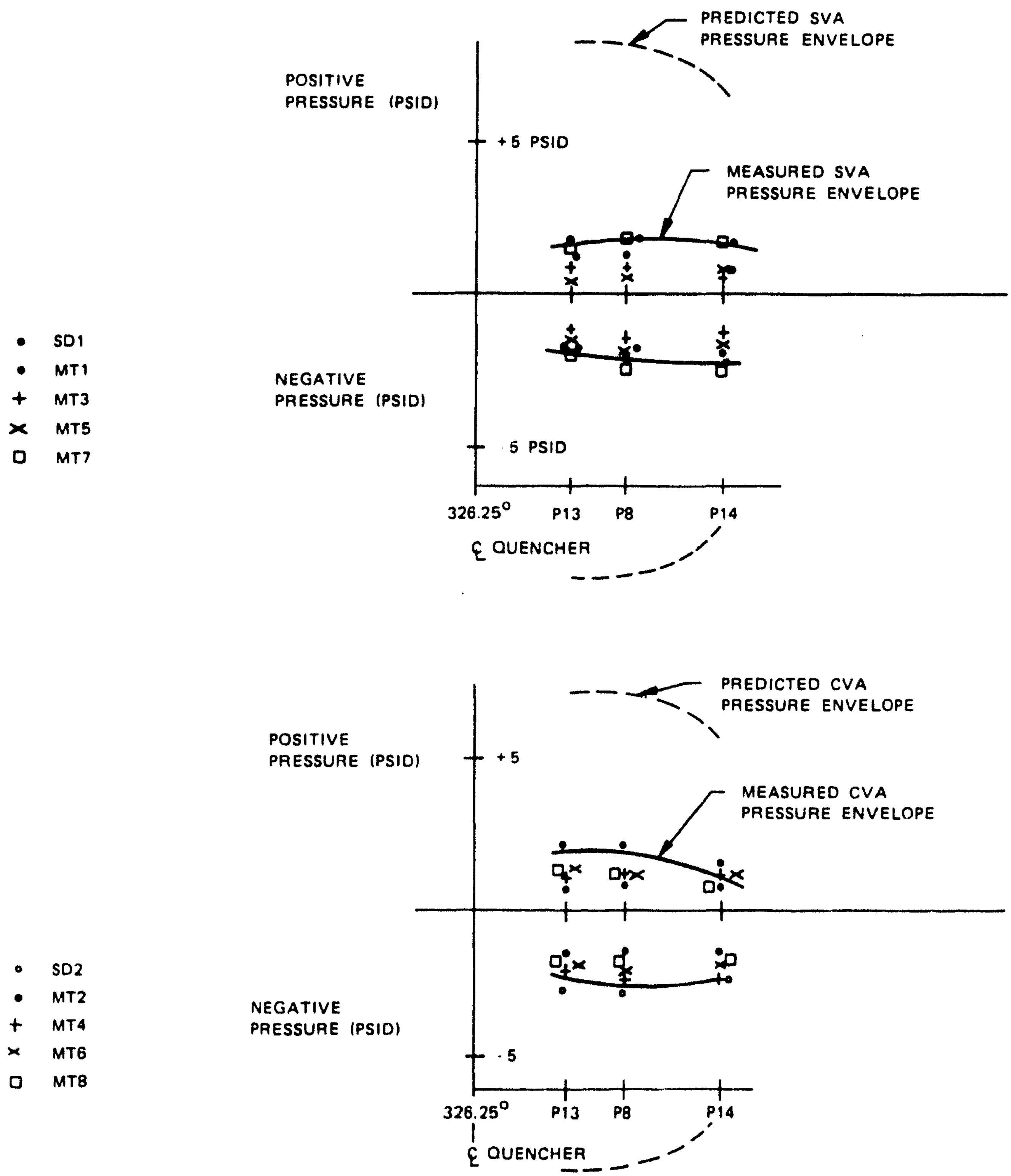


Figure 4.3

LONGITUDINAL PRESSURE ATTENUATION

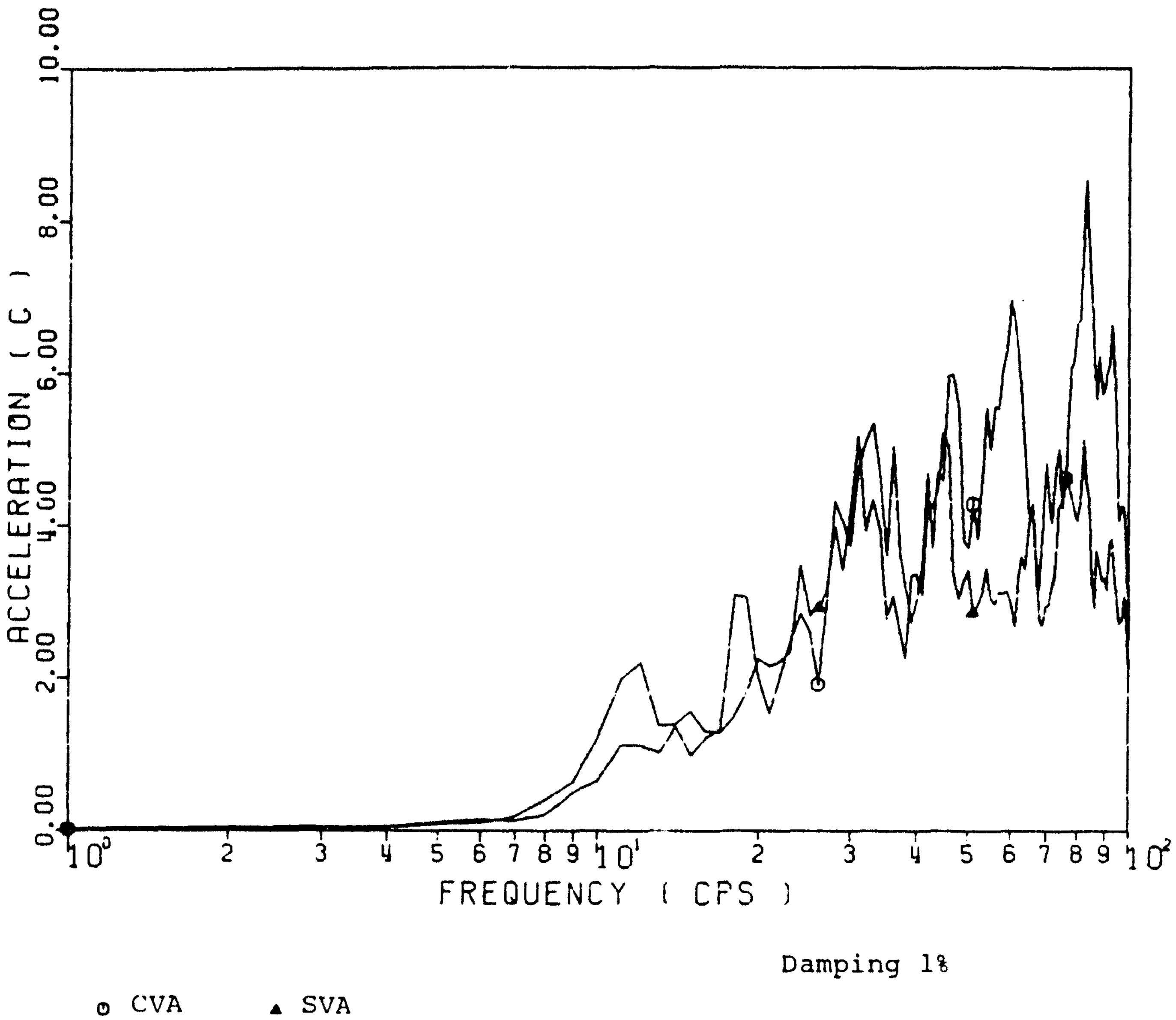


Figure 4.4

CLEAN SHELL ENVELOPE

ACCELERATION RESPONSE SPECTRA

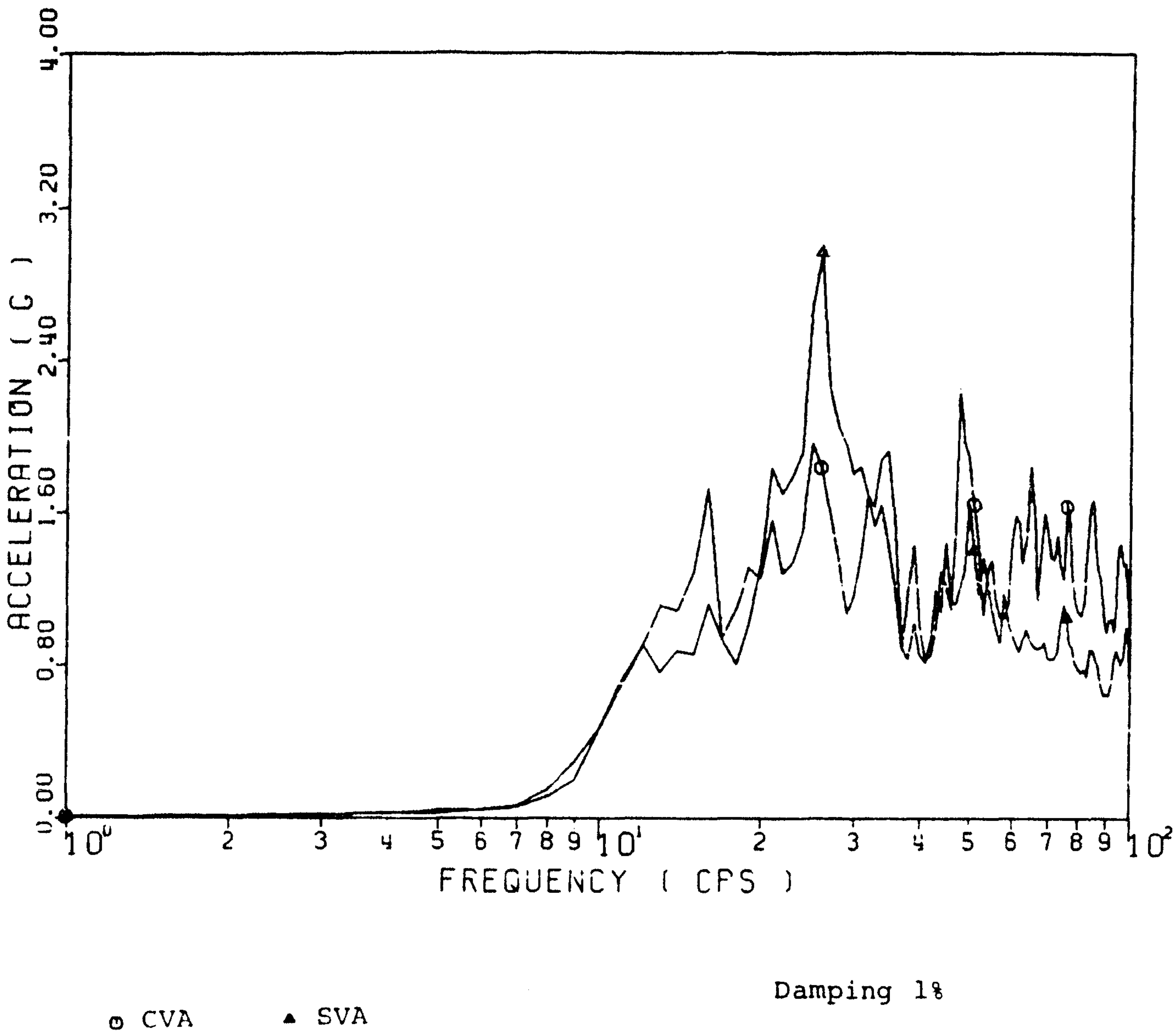


Figure 4.5

COUPLED SHELL/PIPING ENVELOPE
ACCELERATION RESPONSE SPECTRA

5.0 RECONCILIATION OF PUA RESULTS

The confirmation of the Fermi 2 PUAR SRV discharge methodology discussed in Section 1.2, has been performed by selecting key parameters which can be reliably measured and analytically predicted. The measured values of these parameters, described in Section 4.0, were compared to the analytically predicted values of the same parameters, obtained by applying the Fermi 2 PUA SRV discharge methodology at test conditions. The conclusions presented in this section demonstrate that the Fermi 2 PUA methodology predicts conservative analytical results for SRV discharge loads.

The data presented in Tables 5-1 and 5-2 demonstrates that the Fermi 2 T-Quencher design, which is similar to the standard Mark I T-Quencher design, is very effective at mitigating loads; with measured peak bubble pressures less than 50% of the analytically predicted values. The data substantiates the additional load reduction capability of the Fermi 2 T-Quencher compared with the standard Mark I T-Quencher, and indicates that the NUREG-0661 methodology for predicting SRV loads is more conservative for Fermi 2. The measured T-Quencher bubble frequency content indicates good correlation with the analytically predicted frequency. Measured torus shell pressures are less than half of the pressures analytically predicted using the PUA methodology. The measured shell and torus support column strains are consistent with the measured pressure data, and range from 10% to 40% of the analytically predicted values. The measured accelerations range from 25% to 65% of analytically predicted values. These results confirm that the calibration factors used in the Fermi 2 PUAR for SRV discharge analysis have been conservatively applied.

Volume 2 of the Fermi 2 PUAR (Reference 4) describes the individual design basis loads considered in the analysis of the torus shell and support structures. These loads are combined into a series of controlling design load combinations, reported in Tables 2-2.2-11 through 2-2.2-13 of Reference 4, with the stresses for critical components reported in Tables 2-2.5-1 through 2-2.5-8. The PUAR SRV discharge loads are reported for single valve, ADS and fifteen valve load cases. As described in Reference 4, the SRV discharge loads at design conditions represent a major portion of the total response in most of the load combinations. Reductions in the analytically derived SRV discharge loads would result in a corresponding increase in the calculated design margins documented in the PUAR.

An assessment to determine the estimated reduction in the analytically predicted SRV discharge loads in the PUAR was made using the test data reported in Section 4.0 and Tables 5-1 and 5-2 of this report. The SRV discharge loads and stresses for the torus shell and support structures given in Tables 2-2.5-1 and 2-2.5-2 of the PUAR (Reference 4) were conservatively reduced using the minimum analysis/test ratios developed in Table 5-2. The suppression chamber stresses for the controlling load combinations reported in Table 2-2.5-3 were reduced in accordance with the estimated decrease in the design basis SRV discharge load stresses included in the load combination. A proportional reduction in the SRV discharge loads increases the design margins (calculated/allowable) values reported in Table 2-2.5-3 (Reference 4) from 0.99 to approximately 0.9 for the torus shell, and from 0.76 to approximately 0.4 for the torus support components. Reducing the SRV discharge loads will also increase the weld stress design margins reported in the PUAR.

The maximum vertical support reaction design margins, provided in Table 2-2.5-4 of the PUAR (Reference 4), will increase from the reported value of 0.82 to approximately 0.4. Similarly, the reported torus shell design margin for lateral loads, given in Table 2-2.5-7, would show a small increase from 0.99 to 0.93. The effect of reducing the calculated design basis SRV discharge load induced stresses will be most pronounced in the fatigue evaluation reported in Table 2-2.5-8 of the PUAR (Reference 4). Reducing the primary plus secondary stress range induced by design basis SRV discharge loads from the 39.54 ksi reported in Table 2-2.5-1 to an estimated 16 ksi reduces the torus shell maximum cumulative fatigue usage factor from 0.87 to approximately 0.5.

Based on the conservative estimates discussed above, reductions in the design basis SRV discharge load induced stresses would increase in the torus shell design margins by about 10%. Similarly, the maximum cumulative fatigue usage factor for the torus shell is estimated to decrease by a factor of 2. It should be noted that a more detailed re-examination of the Fermi 2 PUA calculation packages would be required in order to confirm the estimated increases in the containment design margins discussed above. That is, each containment component, piping system, support member, or attachment weld would require re-examination on a case-by-case basis. It is judged that a more detailed re-examination of the PUA calculations would result in even greater containment design margins.

Table 5-1

COMPARISON OF MEASURED AND ANALYTICAL RESULTS

Loading Comparison							
		Analytical Value		Measured Value (1)		Analytical / Measured	
Parameter		First Act.	Subs. Act.	First Act.	Subs. Act.	First Act.	Subs. Act.
Bubble Pressure (psid)	Positive	12.0	13.4	5.3	3.0	2.0	4.5
	Negative	10.4	10.2	5.7	3.6	1.8	2.9
Shell Pressure (psid)	Positive	8.6	7.5	1.8	1.9	4.8	3.9
	Negative	9.7	8.8	2.1	2.4	4.6	3.7
Dominant Load Frequency (Hz)	Bubble	6.4	6.8	8.6	9.5	-	-
	Shell	20.4	20.4	9.2	9.9	-	-

Note: (1) Measured values are statistically adjusted 90-90 values for all matrix tests.

Table 5-2

COMPARISON OF MEASURED AND ANALYTICAL RESULTS

Response Comparison								
			Analytical Value		Measured Value(1)		Analytical / Measured	
Parameter			First Act.	Subs. Act.	First Act.	Subs. Act.	First Act.	Subs. Act.
Maximum Column Load (kips)	Inside	Upward	66.	50.	4.	3.	17.	17.
		Downward	75.	64.	4.	4.	19.	16.
	Outside	Upward	63.	46.	4.	4.	16.	12.
		Downward	64.	55.	4.	4.	16.	14.
Maximum Saddle Load (kips)	Inside	Upward	137.	117.	51.	61	2.7	1.9
		Downward	148.	127.	51.	51	2.9	2.5
	Outside	Upward	156.	130.	58.	70.	2.7	1.9
		Downward	194.	171.	70.	67.	2.8	2.5
Maximum Total Vert. Reaction Load (kips)		Upward	422.	343.	116.	137.	3.6	2.5
		Downward	481.	417.	126.	125.	3.8	3.3
Max. Torus Shell Primary Membrane Stress (ksi)		12° from BDC	2.3	2.0	0.7	0.5	3.2	4.0
		60° from BDC	1.1	1.0	0.3	0.4	3.8	2.5
Quencher Supt. Load (kips)			13.	14.	2.7	2.6	4.8	5.4
Ramshead Supt. Load (kips)			24.	25.	4.4	4.9	5.6	5.1

Table 5-2

COMPARISON OF MEASURED AND ANALYTICAL RESULTS

Response Comparison (Concluded)								
Parameter			Analytical Value		Measured Value (1)		Analytical / Measured	
			First Act.	Subs. Act.	First Act.	Subs. Act.	First Act.	Subs. Act.
Max. Downcomer Stress (ksi)			1.50	1.56	0.05	0.06	30.0	26.0
DC Bracing Rod Load (kips, in-kips)		Axial	1.50	1.56	0.26	0.25	6.3	6.2
		Bending	45.1	46.8	0	0	-	-
Vent System Column		Stress (ksi)	0.20	0.20	0.07	0.08	2.9	2.5
RCIC Turbine Exhaust	Max. S.C. Accel. (g's)	Penetration	1.3	1.4	0.3	0.2	4.3	7.0
		Clean Shell	1.9	2.0	0.6	0.9	3.2	2.2
	Maximum Nozzle Str. (ksi)	Inside	1.31	1.35	0.05	0.06	26.0	23.0
		Outside	1.89	1.96	0.15	0.17	13.0	12.0
	Max. Supt. Load (kips)		3.36	3.48	0.5	0.5	6.7	7.0
	Maximum Valve Acc. (g's)	N-S	1.14	1.18	0.7	0.8	1.6	1.5
		E-W	1.25	1.29	0.9	0.9	1.4	1.4
Vent Line/ SRVDL Penetration	SRV DL Max. Temp (°F)		205.	N.A.	106.	N.A.	-	N.A.
	Sleeve Max. Temp. (°F)		95.	N.A.	84.	N.A.	-	N.A.
	Nozzle Stress (ksi)		2.03	2.11	0.16	0.14	13.0	15.0

Note: (1) Measured values are statistically adjusted 90-90 values for all test in the test matrix.

6.0 CONCLUSIONS

The evaluation of the data collected during the Fermi 2 SRV tests demonstrates that the objectives of the test program have been met. The major conclusions drawn from the test data review are:

- The measured peak pressures for SVA and CVA are much lower than the analytically predicted values using PUA methodology, and very much lower than the Fermi 2 PUAR design review values.

- The measured SVA T-Quencher bubble frequencies ranged from 7.0 to 11.0 Hz, with a average value of 8.6 Hz. The 7.0 Hz frequency was measured for the non-weeping test (MT1) and shows good correlation with the predicted value of 6.4 Hz. Other SVA tests had a small amount of steam in the line which affected the frequency content resulting in increase amplification. The measured CVA T-Quencher average bubble frequency was 9.5 Hz, compared with the predicted frequency of 6.8 Hz.

- The clearing reactions loads on the SRV discharge line and T-Quencher supports were typically less than 20% of the analytically predicted values at test conditions.

- The measured strains on the torus shell, torus support structures, internal structures and piping typically range from 10% to 40% of analytically predicted values.

- The peak measured zero period accelerations (zpa) are well below the analytically predicted response at each location. The coupled torus shell/piping systems accelerations are less than half of the clean shell response.

It is concluded that the PUA methodology used for Fermi 2 and documented in Reference 4, is conservative and that considerable additional primary containment system design margin exists for SRV discharge loads.

7.0 REFERENCES

7.1 "Guidelines for Confirmatory In-Plant Tests of Safety Relief Valve Discharges for BWR Plant," US Nuclear Regulatory Commission, NUREG-0763, May 1981.

7.2 "Safety Evaluation Report, Mark I Containment Long-Term Program," US Nuclear Regulatory Commission, NUREG-0661, July 1980.

7.3 "Test Plan for In-Plant Safety Relief Valve Discharge Test Enrico Fermi Atomic Power Plant Unit 2", NUTECH Report No. DET-01-315, Revision 4, July 1986.

7.4 "Enrico Fermi Atomic Power Plant Unit 2 Plant Unique Analysis Report," NUTECH Report No. DET-04-028, Revision 1, November 1983, Volumes 1 through 5.

7.5 "Quick Look Test Report In-plant Safety Relief Valve Discharge Test Enrico Fermi Atomic Power Plant Unit 2," NUTECH Report No. DET-22-102, Revision 0, April 1987.

7.6 "Small Scale SRV Quencher Development Tests for Fermi 2 Atomic Power Plant," NUTECH Report No. DET-22-002, Revision 0, July 1982.

APPENDIX A

SENSOR SPECIFICATIONS

SENSOR SPECIFICATION

Type of Sensor: Pressure Transducer

Sensor Identification(s): P1 to P14, P17 and P18

Location: Suppression Pool and Air Bleed System

Expected Response: 10-35 psia

Frequency Range: 0 Hz to 200 Hz

Environmental Conditions:

Atmosphere:	Water, Air, Steam
Temperature:	50°F to 270°F
Pressure (psia):	50

Manufacturer/Model: Bell & Howell/CEC-1000-0207

Operating Range/Accuracy: 0 to 100/ ±2% of Full Range Output (F.R.O.)

Additional Information:

Sensors were supplied with special 1/2" thread and six electrical brazed terminal cups to replace standard electrical connector. Sensors had 100' of steel sheath cabling. Extension cabling was P/N 6XFT 24-1936-XTF, Tefzel wire, overall stranded shield with Tefzel tape jacket. All wires met the fire protection guidelines of NFPA-803 and IEEE 383-1974. Signal conditioning was supplied via Validyne Model CD173.

SENSOR SPECIFICATION

Type of Sensor: Pressure Transducer

Sensor Identification(s): P15, P16, P19 and P20

Location: SRV Discharge Line and Quencher

Expected Response: 0 to 700 psia

Frequency Range: 0 Hz to 200 Hz

Environmental Conditions:

Atmosphere:	Water, Air, Steam
Temperature:	400°F
Pressure (psia):	700

Manufacturer/Model: Bell & Howell/CEC-1000-208

Operating Range/Accuracy: 0 to 1000 psia/$\pm$0.22% of F.R.O.

Additional Information:

Sensors were supplied with special 1/2" thread and six electrical brazed terminal cups to replace standard electrical connector. Sensors had 100' of steel sheath cabling. Extension cabling was P/N 6XFT 24-1936-XTF, Tefzel wire, overall stranded shield with Tefzel tape jacket. All wires met the fire protection guidelines of NFPA-803 and IEEE 383-1974. Signal conditioning was supplied via Validyne Model CD173.

SENSOR SPECIFICATION

Type of Sensor: Strain Gauge

Sensor Identification(s): SR1 to SR6
SG31 to SG63

Location: Internal Torus Shell, SRV Piping, Support Struts, Internal and External Torus Attached Piping

Expected Response: Varies from 0 to 200)in/in

Frequency Range: 0 Hz to 200 Hz

Environmental Conditions:

Atmosphere: Water, Air, Steam
Temperature: 50°F to 270°F
Pressure (psia): 50

Manufacturer/Model: Ailtech/MG125/31-01HV-50*

Operating Range/Accuracy: .020 in/in/±3%

Additional Information:

Sensors had 50 feet of 1/16" O.D. steel sheath cable with three open leads. Sensors were hydrostatically tested to 2500 psig and 500°F prior to shipment by the vendor.

Extension wire was P/N 3XFT 24-1936-XTF Tefzel wire with stranded shield and Tefzel jacket. All wires met the fire protection guidelines NFPA803 and IEEE 383-1974. Signal conditioning was supplied via Validyne Model CD173.

* Temperature compensation was based on the material type to which the sensor was attached.

SR1 - SR6	SA516, Gr. 70
SG31 - SG34	SA106, Gr C
SG35 - SG36	SA240, Ty. 304L
SG37 - SG43	SA106, Gr. B
SG44 - G49	SA53
SG54, SG55	SA36
SG56 - SG59	SA106, Gr. B
SG60 - SG63	SA56, Gr. 70

SENSOR SPECIFICATION

Type of Sensor: Strain Gauge

Sensor Identification(s): SR7 to SR12
SG1 to SG30

Location: Torus external shell and supports

Expected Response: 0 to 200)in/in

Frequency Range: 0 Hz to 200 Hz

Environmental Conditions:

Atmosphere: Air
Temperature: 50°F to 100°F
Pressure (psia): 14.7

Manufacturer/Model: Micro-Measurements/EA06-125RS-350 (SR7 to SR12)
EA06-125AC-350 (SG1 to SG30)

Operating Range/Accuracy: .020 in/in/±3%

Additional Information:

Extension wire was P/N 3XFT 24-1936-XTF Tefzel wire with stranded shield and Tefzel jacket. All wires met the fire protection guidelines NFPA803 and IEEE 383-1974. Signal conditioning shall be supplied via Validyne Model CD173.

SENSOR SPECIFICATION

Type of Sensor: Accelerometer

Sensor Identification(s): A1 to A4

Location: RCIC Isolation Valve and Torus Shell

Expected Response: .005 to 2g

Frequency Range: 1 Hz to 200 Hz

Environmental Conditions:

Atmosphere: Air, 50% R. H.
Temperature: 80°F
Pressure (psia) 14.7

Manufacturer/Model: Endevco/7717-200 or equivalent

Operating Range/Accuracy: .003 to 500g*/±5% full scale

Additional Information:

Extension wire was P/N 2XFT 24-1936-XTF Tefzel wire with stranded shield and Tefzel jacket. Wire met fire protection guidelines NFPA803 and IEEE 383-1974. Additional equipment to be used in conjunction with the above accelerometers will be an Endevco remote charge converter Model 2652M11 and Validyne signal conditioning.

* The accelerometer full scale ranges were set for the test by adjusting the gain of the Validyne signal conditioning to values appropriate for the expected peak accelerations.

SENSOR SPECIFICATION

Type of Sensor: Resistance Temperature Detector

Sensor Identification(s): T5 and T6

Location: SRV Discharge Line and Vent Line Penetration

Expected Response: 50°F to 400°F

Frequency Range: 0 Hz to 1 Hz

Environmental Conditions:

Atmosphere: Water, Air, Steam
Temperature: 50°F to 200°F
Pressure (psia) 30

Manufacturer/Model: Medtherm/PRT-50-250-10387

Operating Range/Accuracy: 50°F to 600°F/±0.5°F

Additional Information:

Sensors were platinum thin film resistance thermometer detector (RTD) with 10 feet of steel sheath cable. Extension cable was P/N 4 XFT 24-1936-XTF Tefzel wire, stranded shield with Tefzel jacket. Wire met fire protection guidelines NFPA-803 and IEEE 383-1974. Signal conditioning shall be supplied via AGM Validyne Model CD173.

August 1987
DET-22-103
Revision 0
50.2222.0103

FOR INFORMATION ONLY

FINAL TEST REPORT
IN-PLANT SAFETY RELIEF VALVE
DISCHARGE TEST
ENRICO FERMI ATOMIC POWER PLANT
UNIT 2

VOLUME 2

Prepared for:
Detroit Edison Company

Prepared by:
NUTECH Engineers
San Jose, California

nutech ENGINEERS

TABLE OF CONTENTS
VOLUME II

APPENDIX B

PRESSURE DATA PLOTS

(24 Sheets)

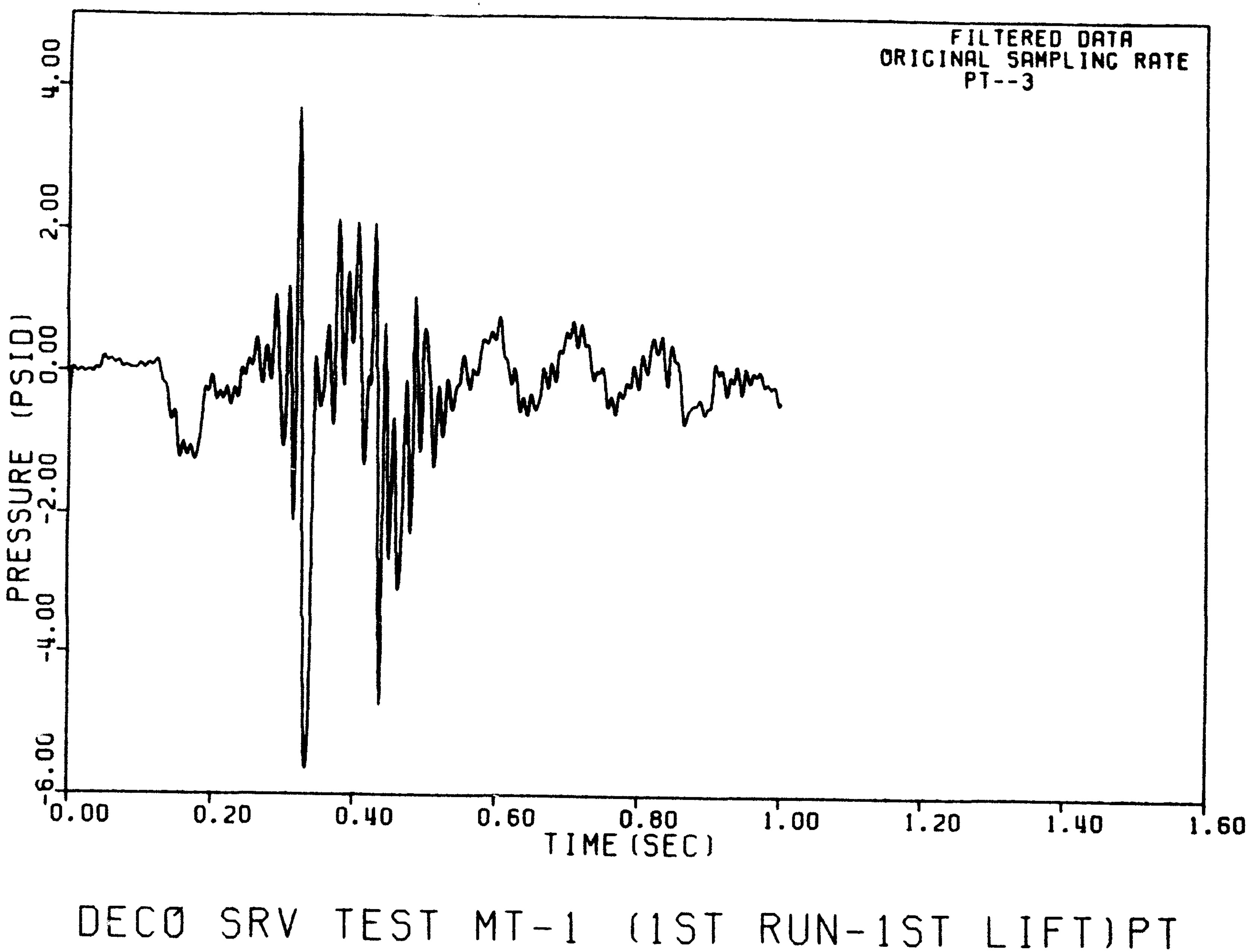
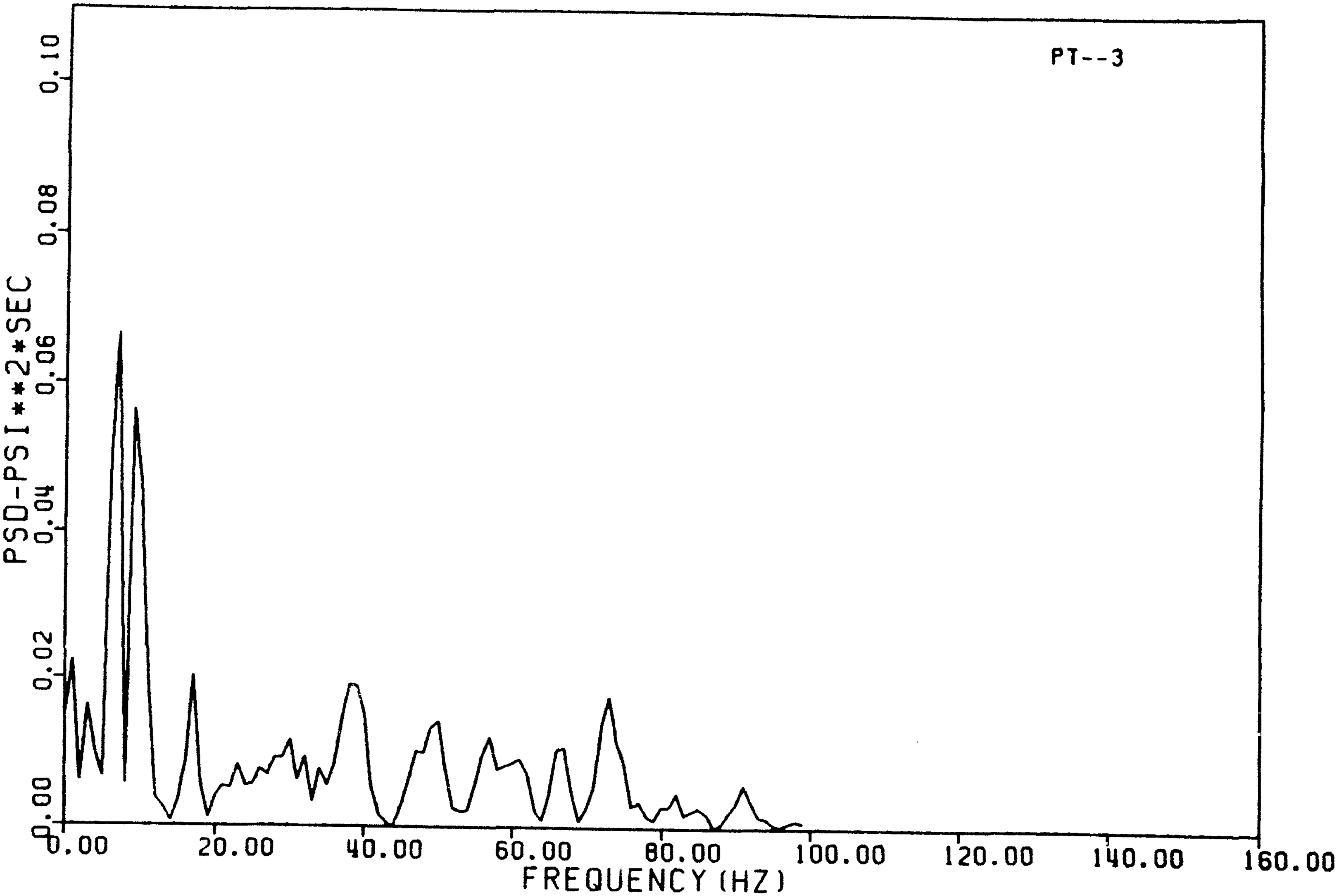
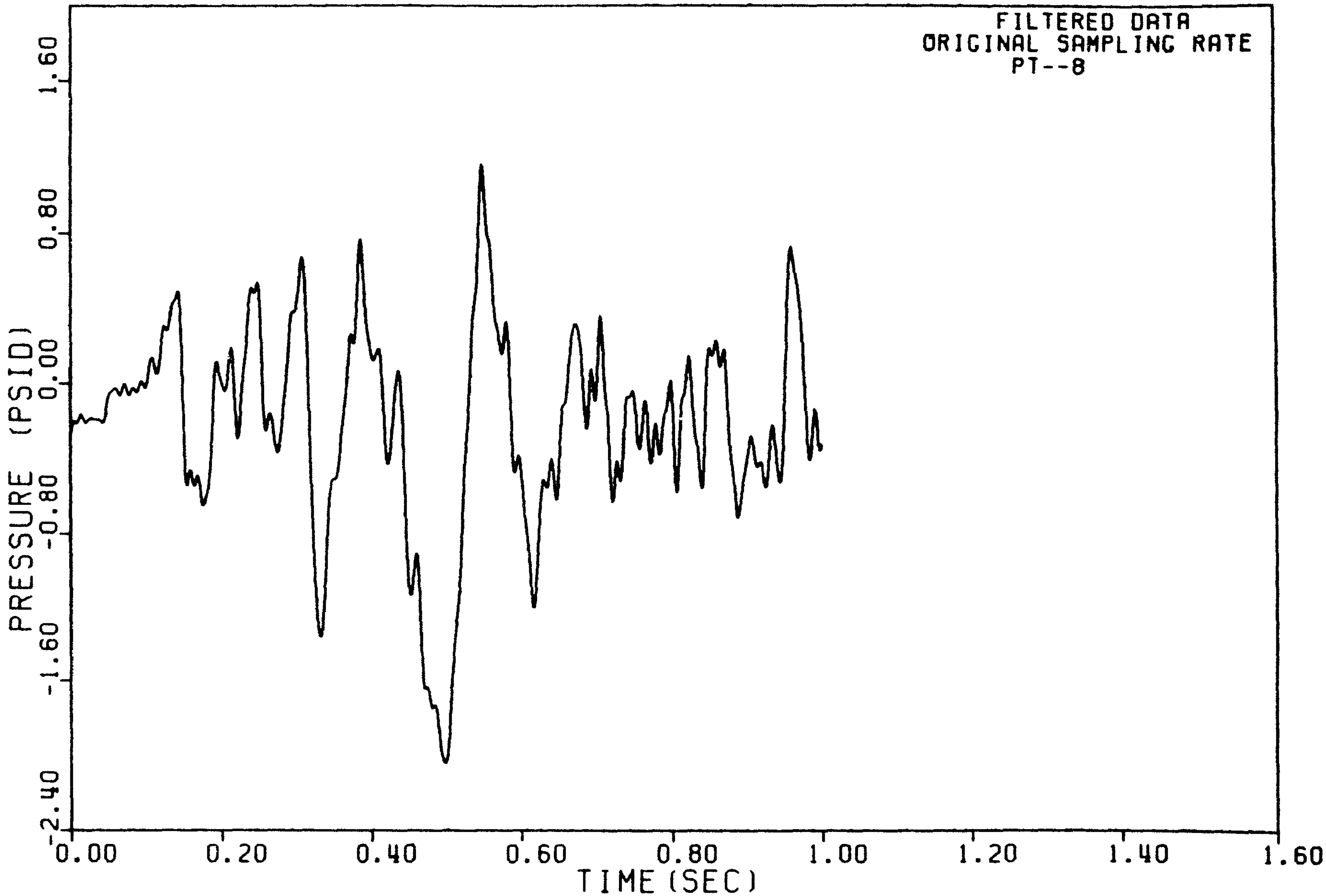


Figure B.1 TYPICAL SVA T-QUENCHER BUBBLE PRESSURE TIME HISTORY



DECO SRV TEST MT-1 (1ST RUN-1ST LIFT)PT

Figure B.2 TYPICAL SVA T-QUENCHER BUBBLE PRESSURE PSD



DECO SRV TEST MT-1 (1ST RUN-1ST LIFT)PT

Figure B.3 TYPICAL SVA TORUS SHELL PRESSURE TIME HISTORY

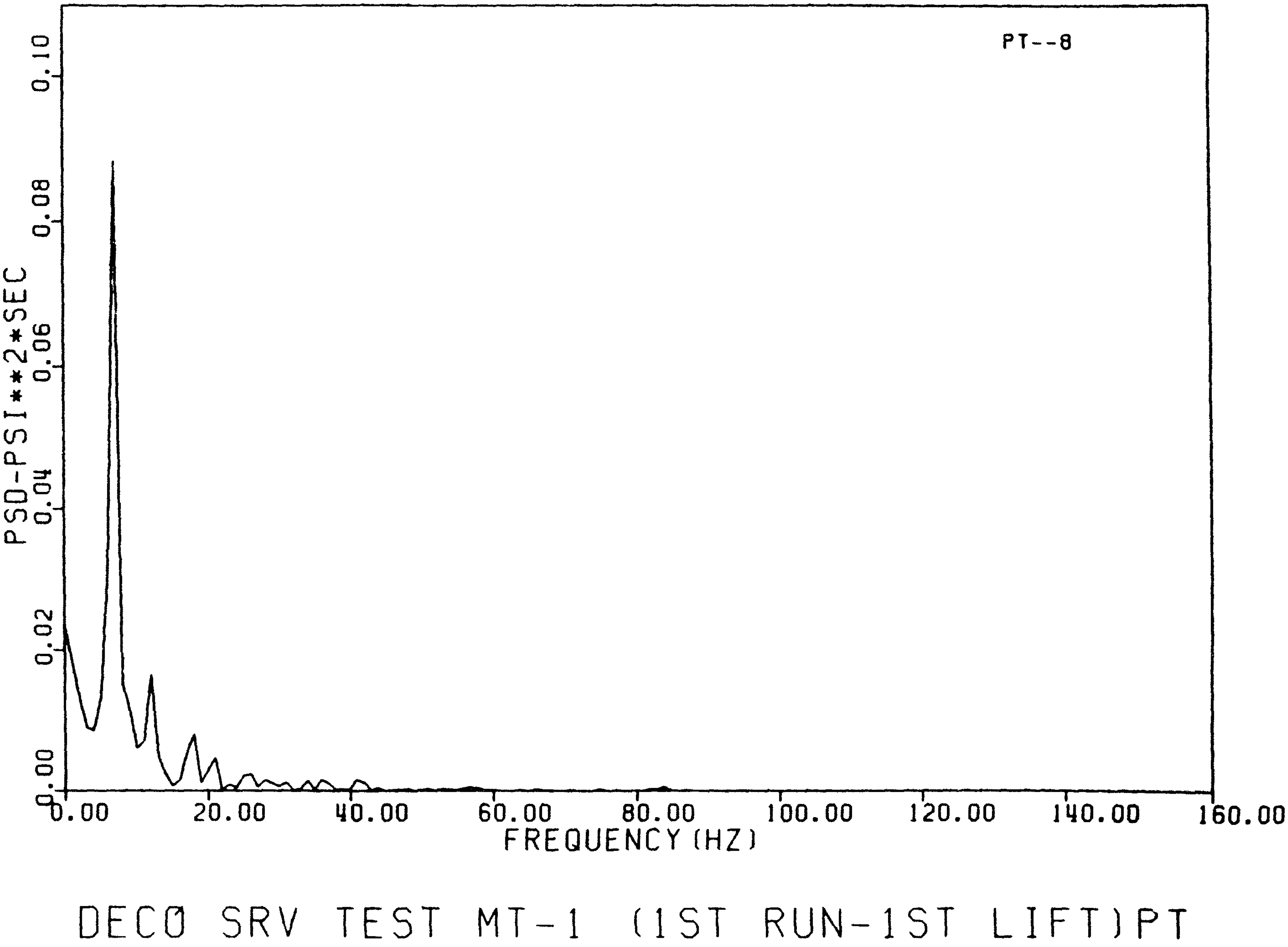
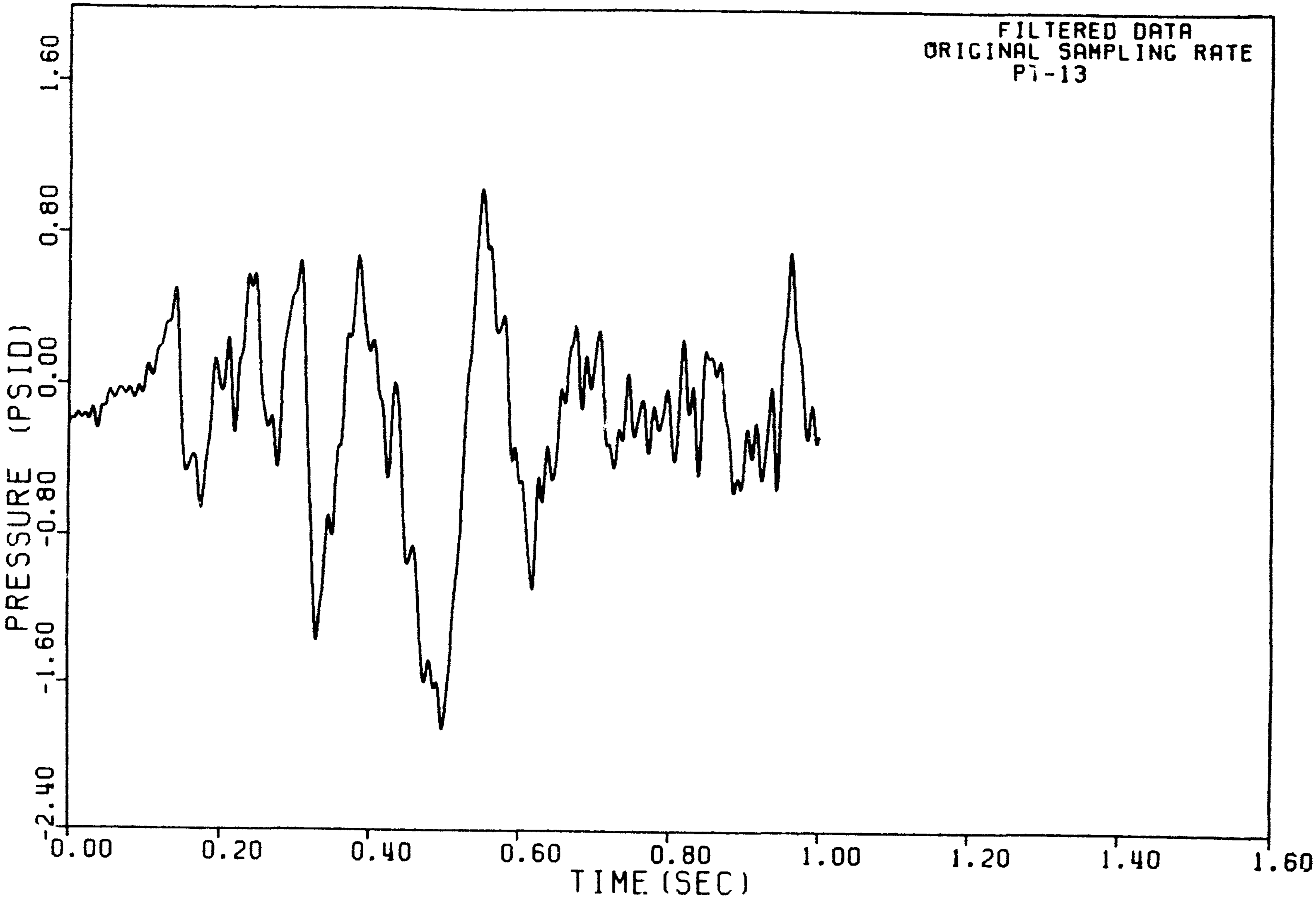


Figure B.4 TYPICAL SVA TORUS SHELL PRESSURE PSD



DECO SRV TEST MT-1 (1ST RUN-1ST LIFT)PT

Figure B.5 TYPICAL SVA TORUS SHELL PRESSURE TIME HISTORY

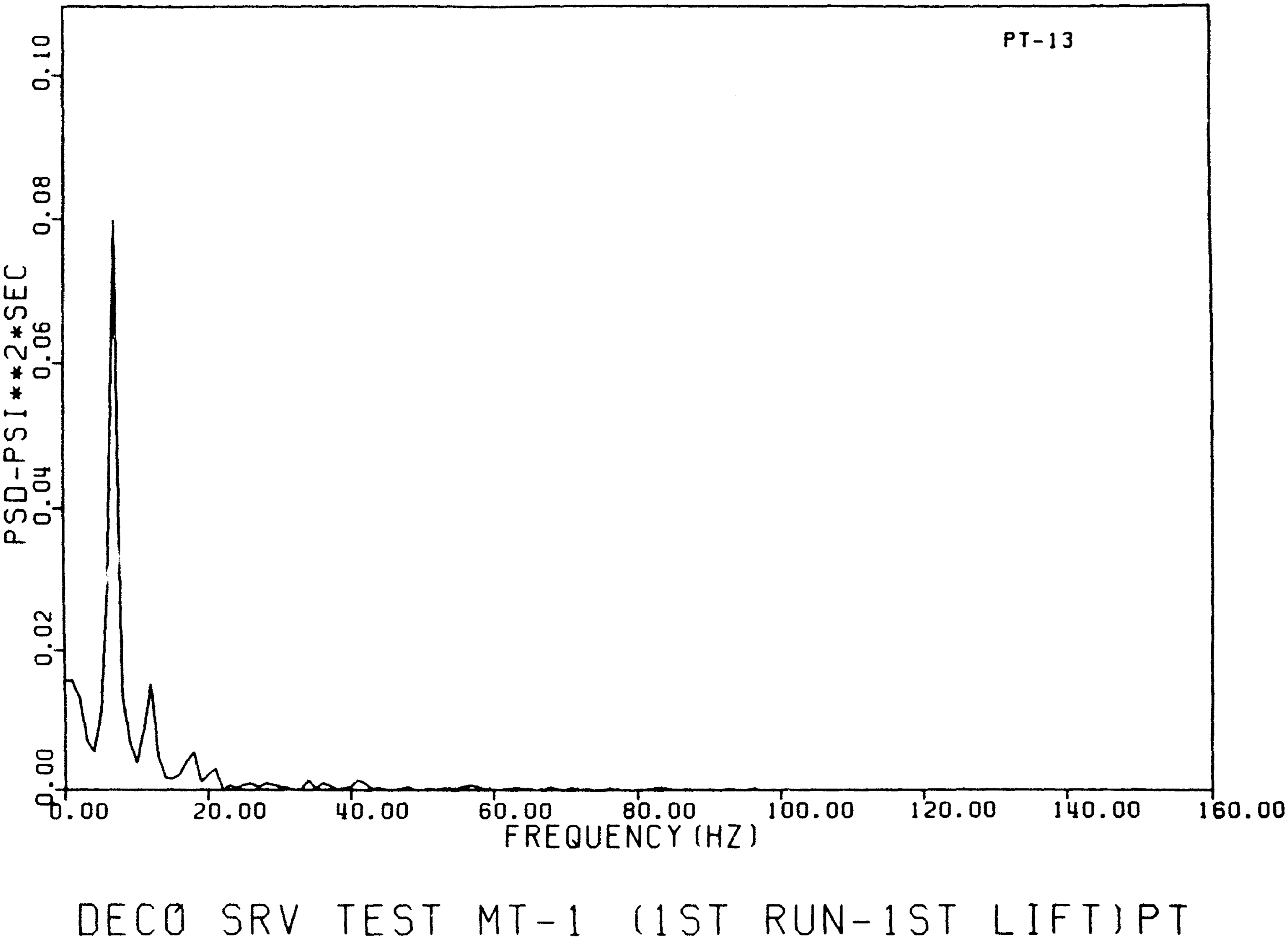
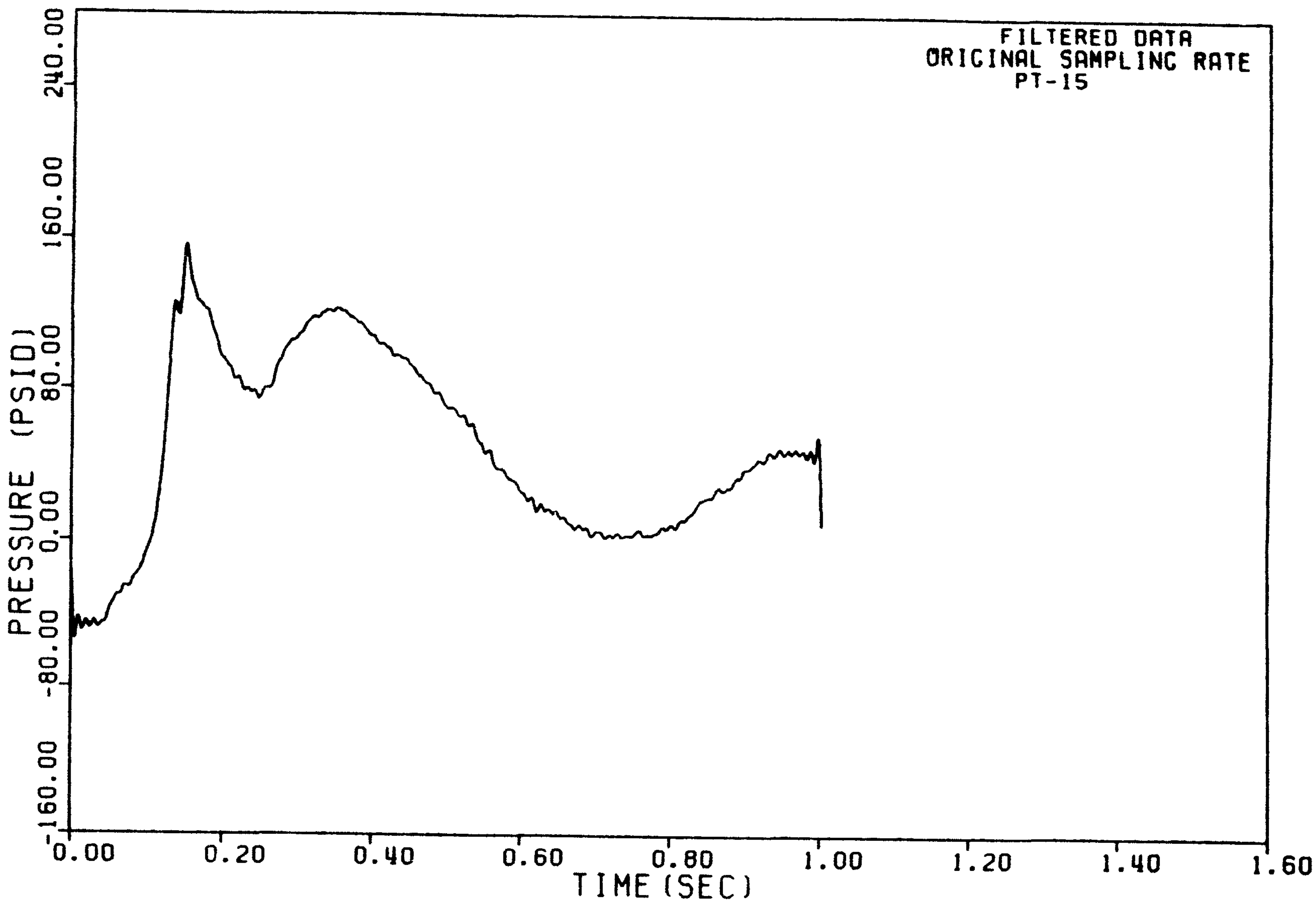
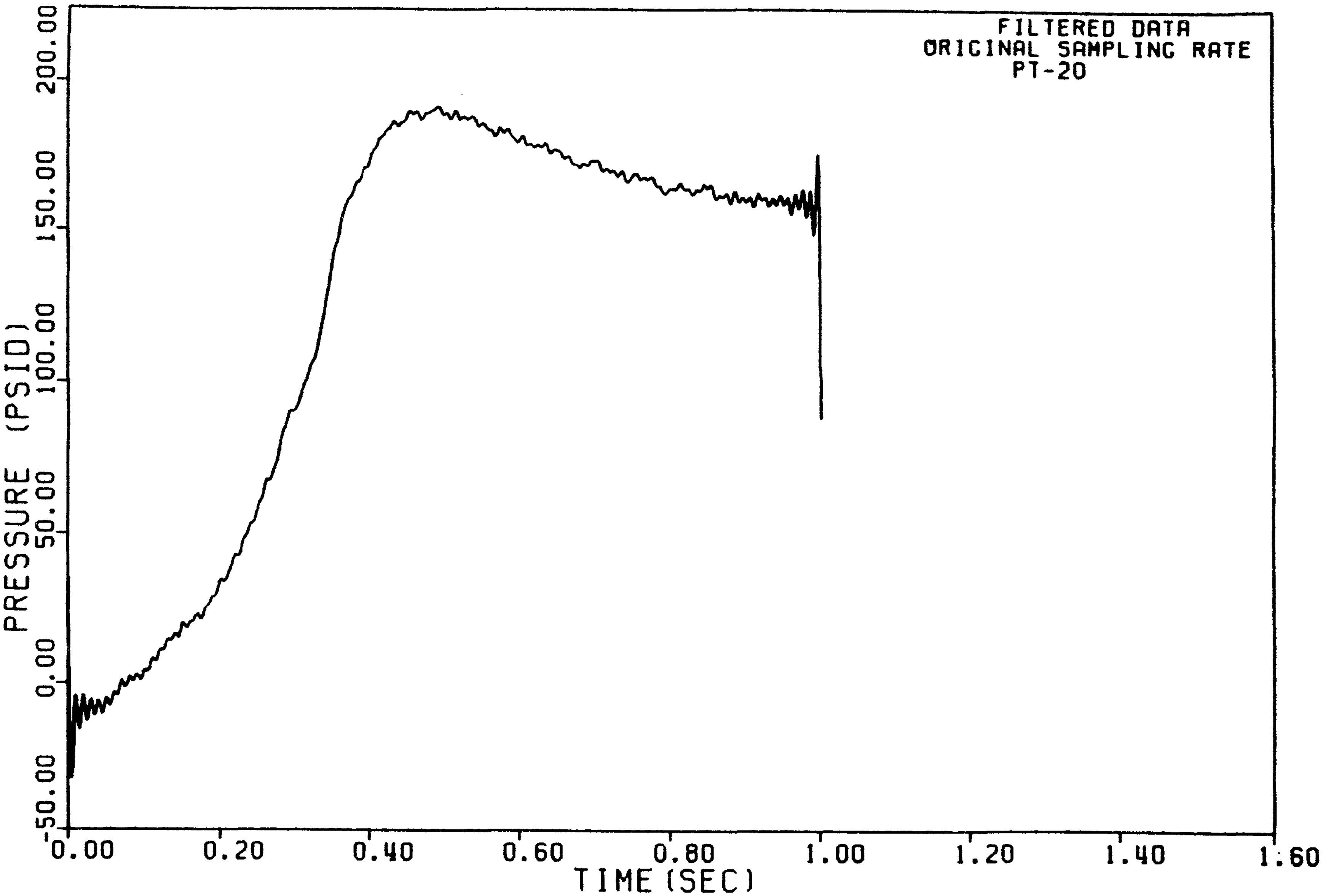


Figure B.6 TYPICAL SVA TORUS SHELL PRESSURE PSD



DECO SRV TEST MT-1 (1ST RUN-1ST LIFT)PT

Figure B.7 TYPICAL SVA T-QUENCHER INTERNAL PRESSURE TIME HISTORY



DECO SRV TEST MT-1 (1ST RUN-1ST LIFT)PT

Figure B.8 TYPICAL SVA SRVDL INTERNAL PRESSURE TIME HISTORY

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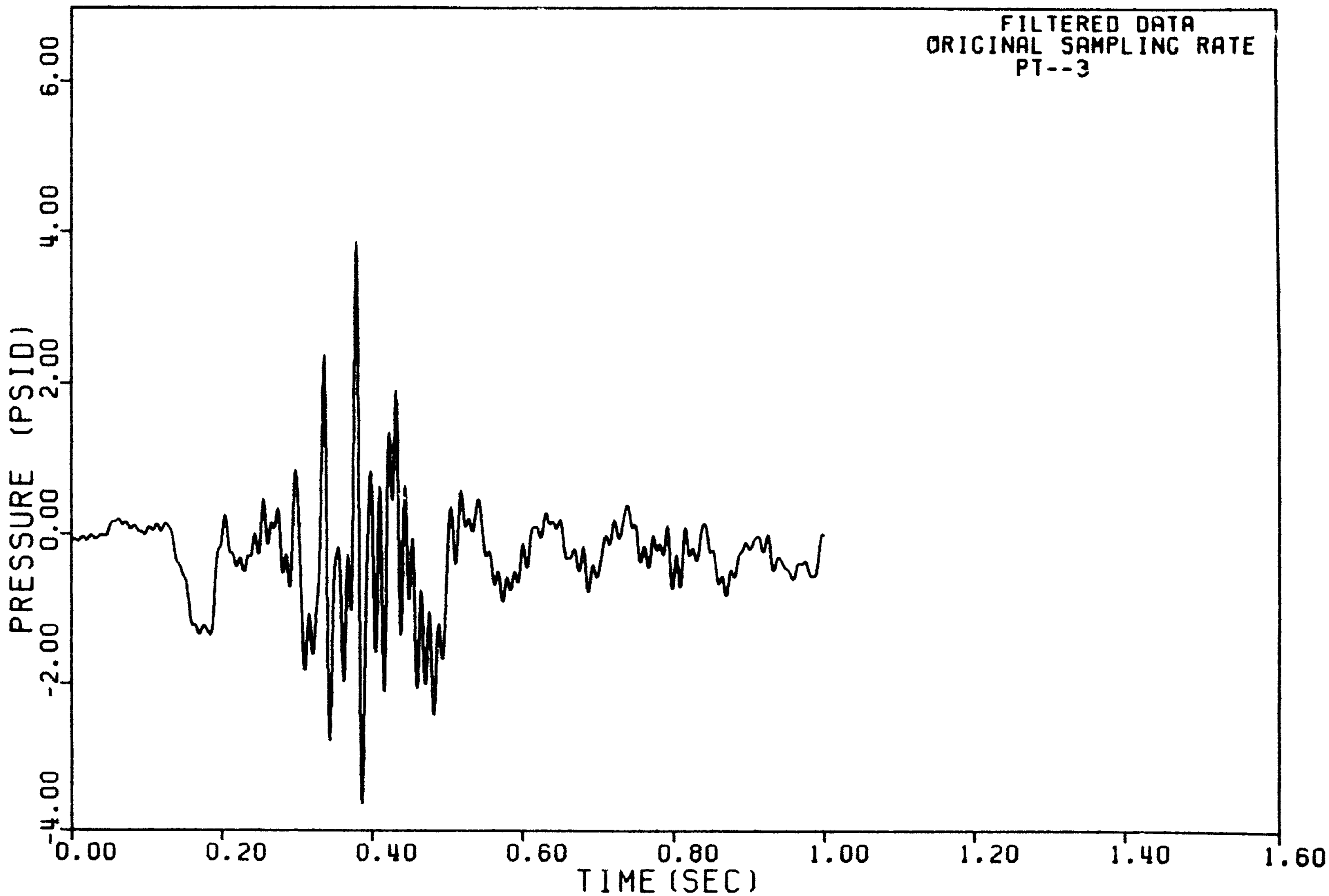
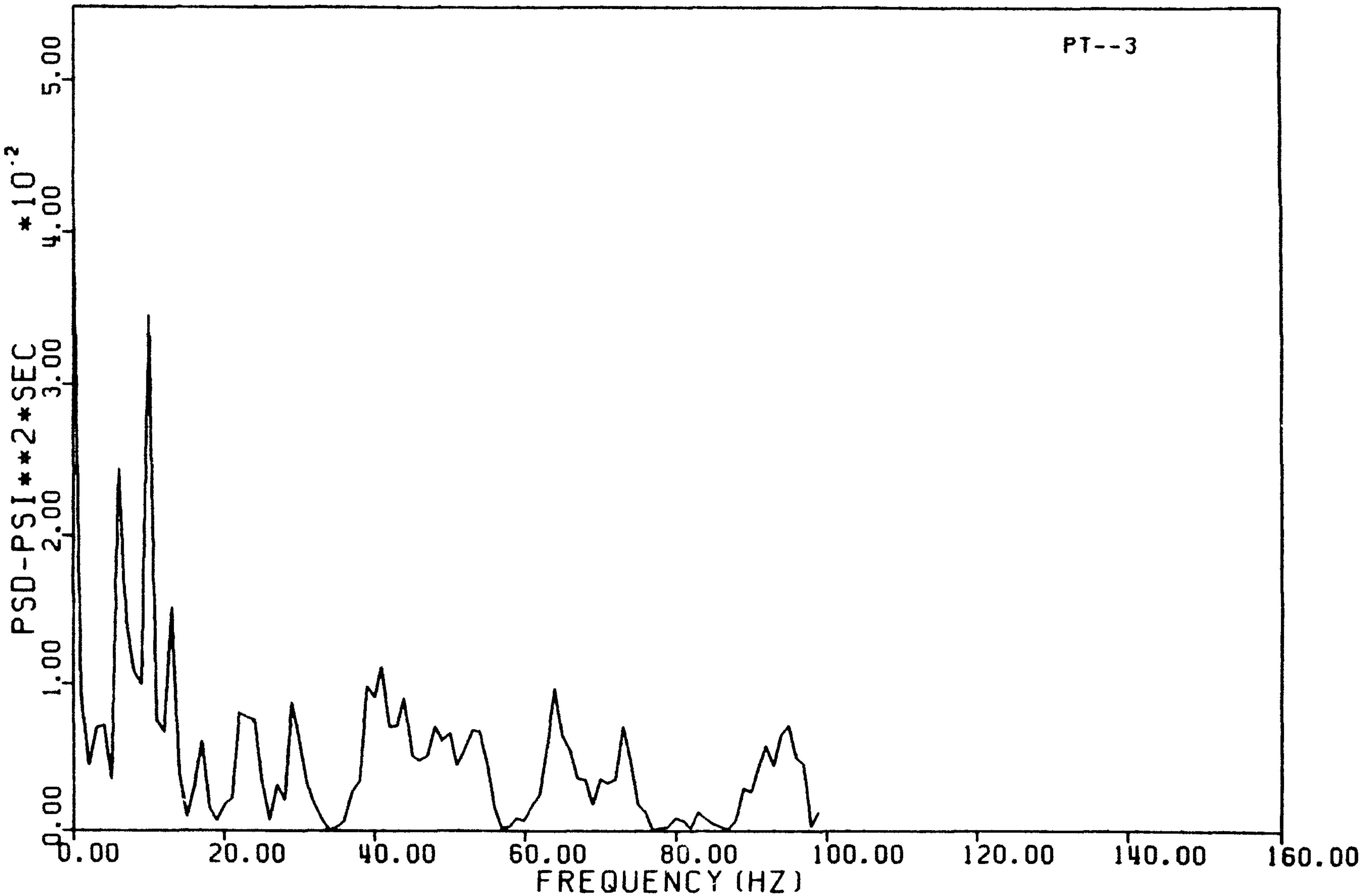


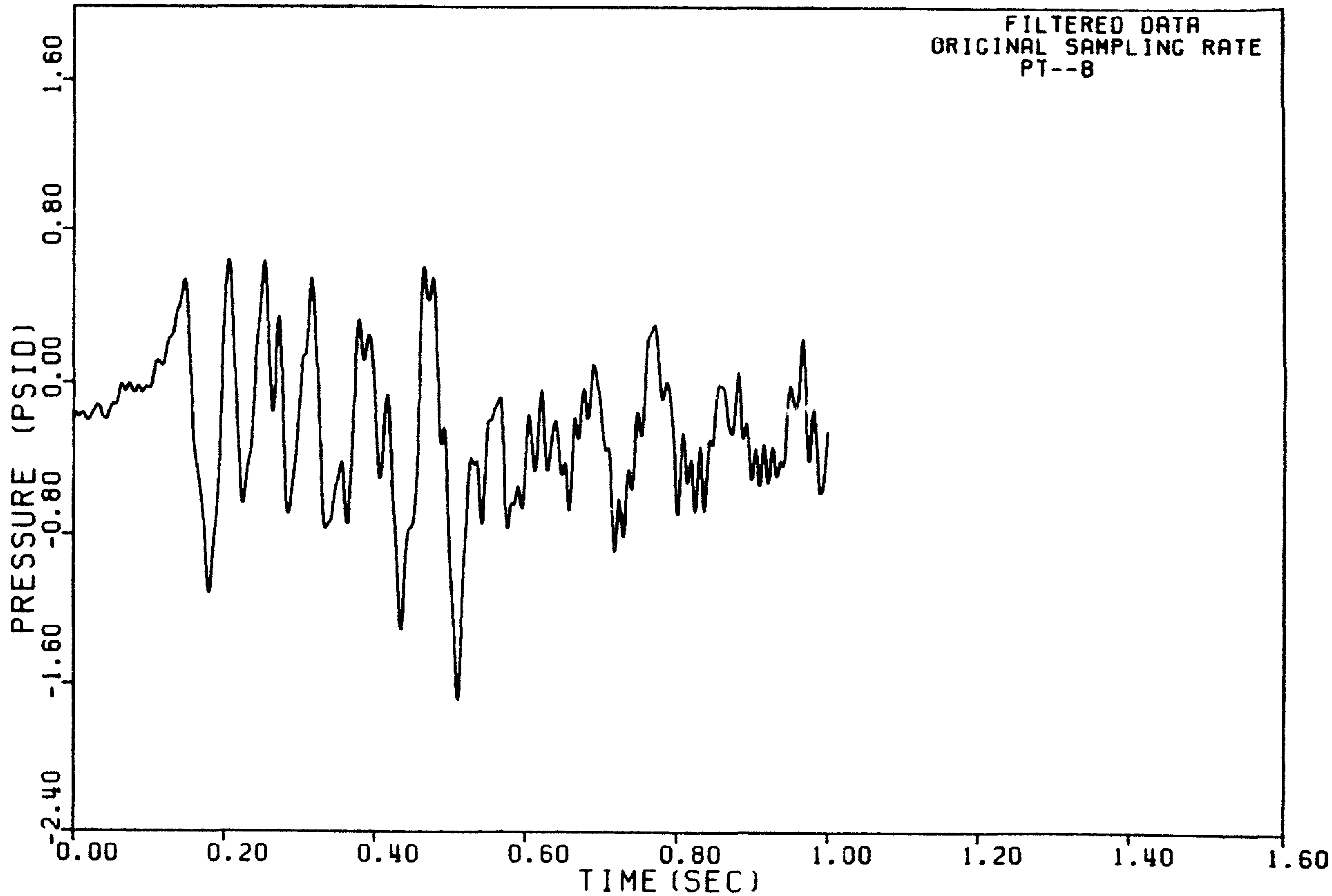
DECO SRV TEST MT-5 (3RD RUN-1ST LIFT)PT

Figure B.9 TYPICAL SVA T-QUENCHER BUBBLE PRESSURE TIME HISTORY



DECO SRV TEST MT-5 (3RD RUN-1ST LIFT)PT

Figure B.10 <u>TYPICAL SVA T-QUENCHER BUBBLE PRESSURE PSD</u>



DECO SRV TEST MT-5 (3RD RUN-1ST LIFT)PT

Figure B.11 TYPICAL SVA TORUS SHELL PRESSURE TIME HISTORY

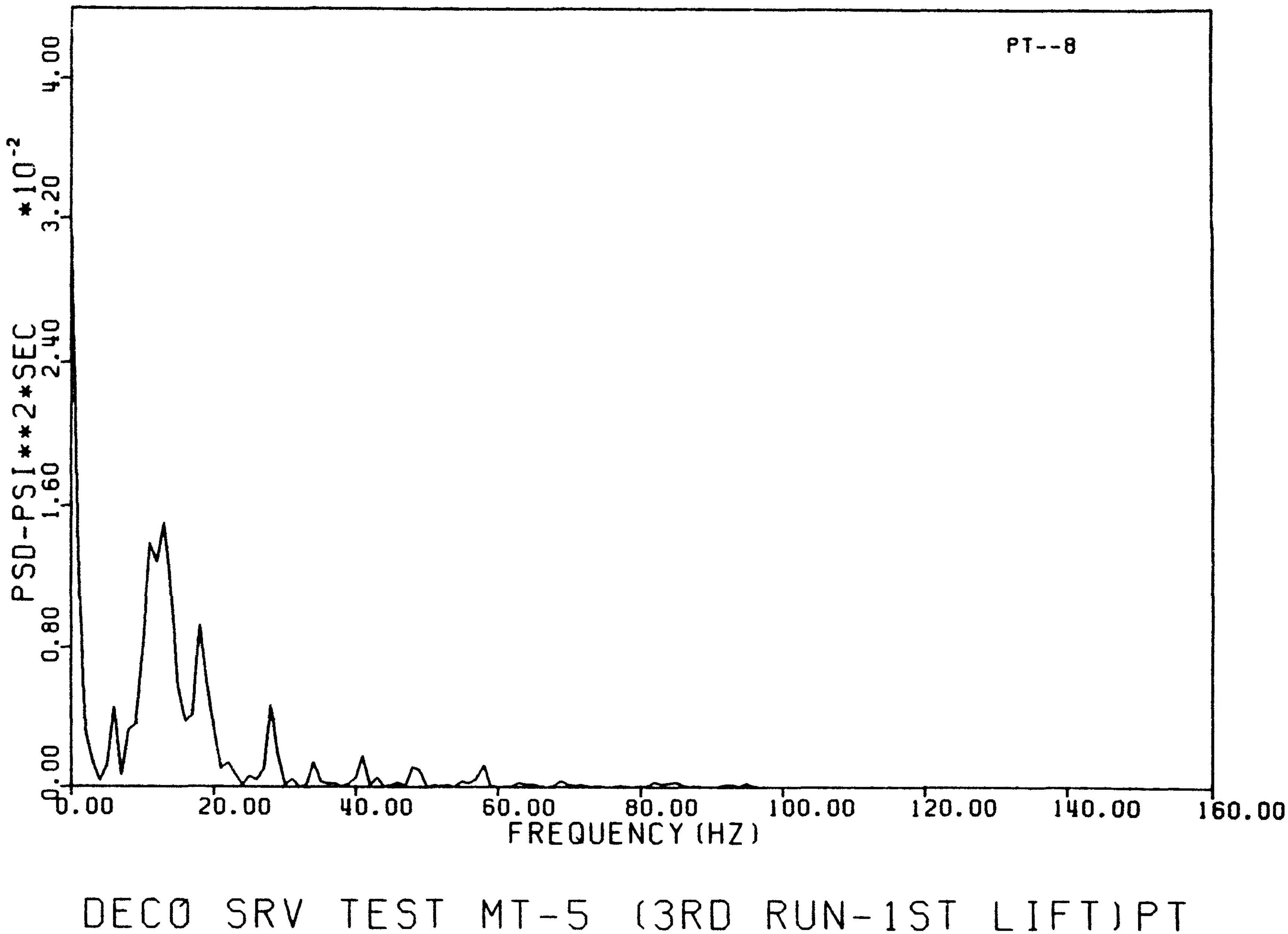
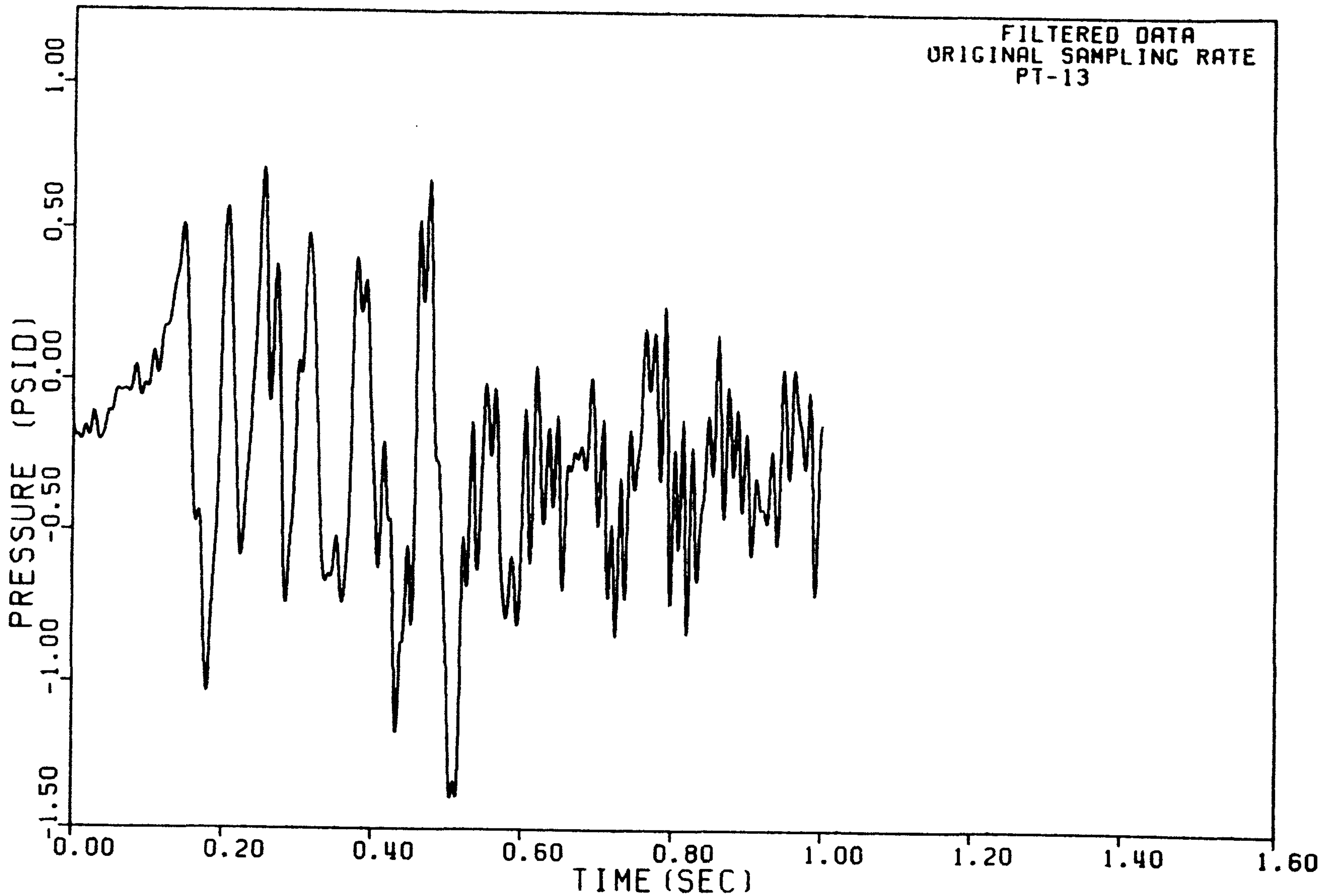


Figure B.12 <u>TYPICAL SVA TORUS SHELL PRESSURE PSD</u>



DECO SRV TEST MT-5 (3RD RUN-1ST LIFT)PT

Figure B.13 TYPICAL SVA TORUS SHELL PRESSURE TIME HISTORY

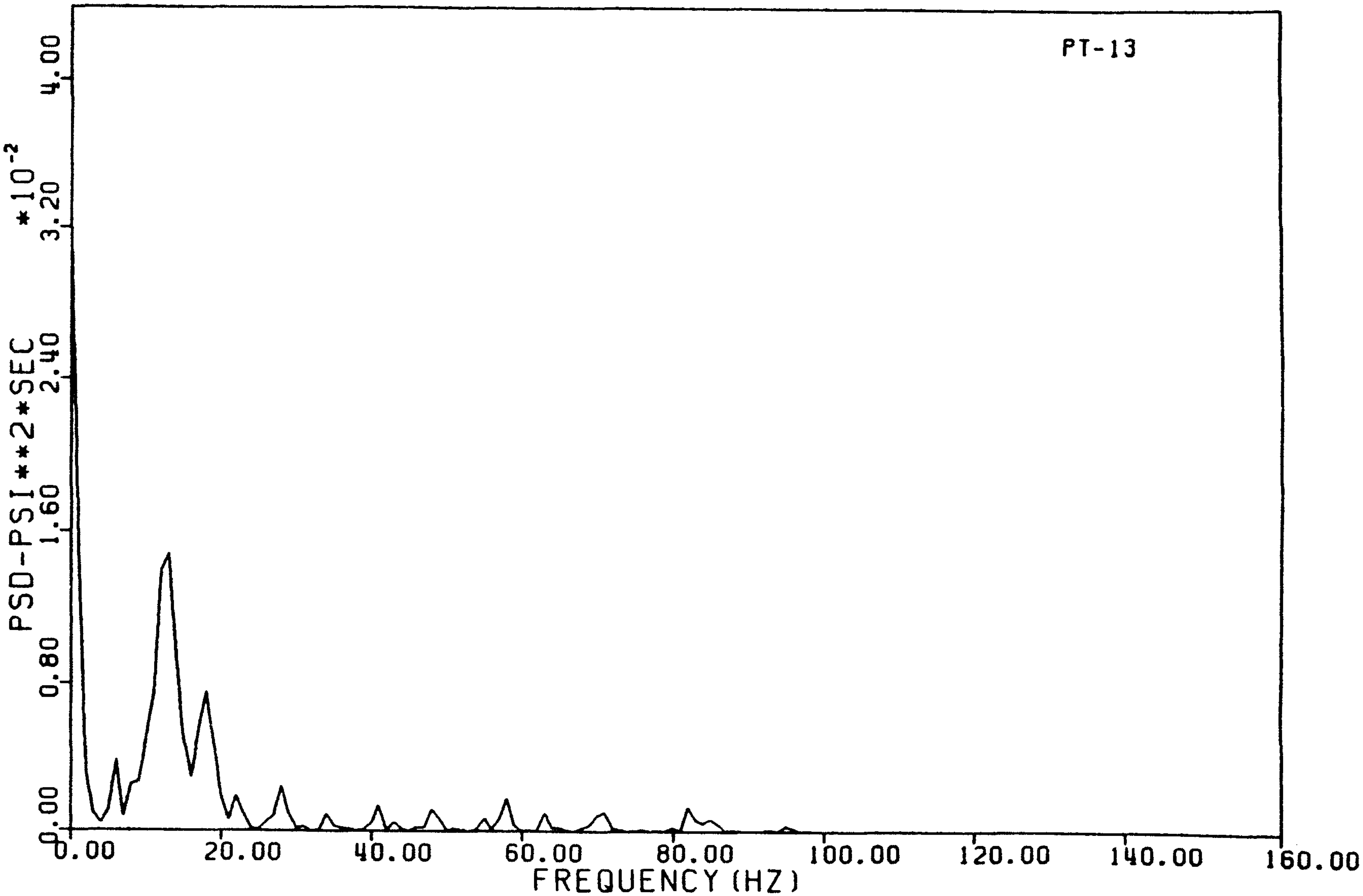


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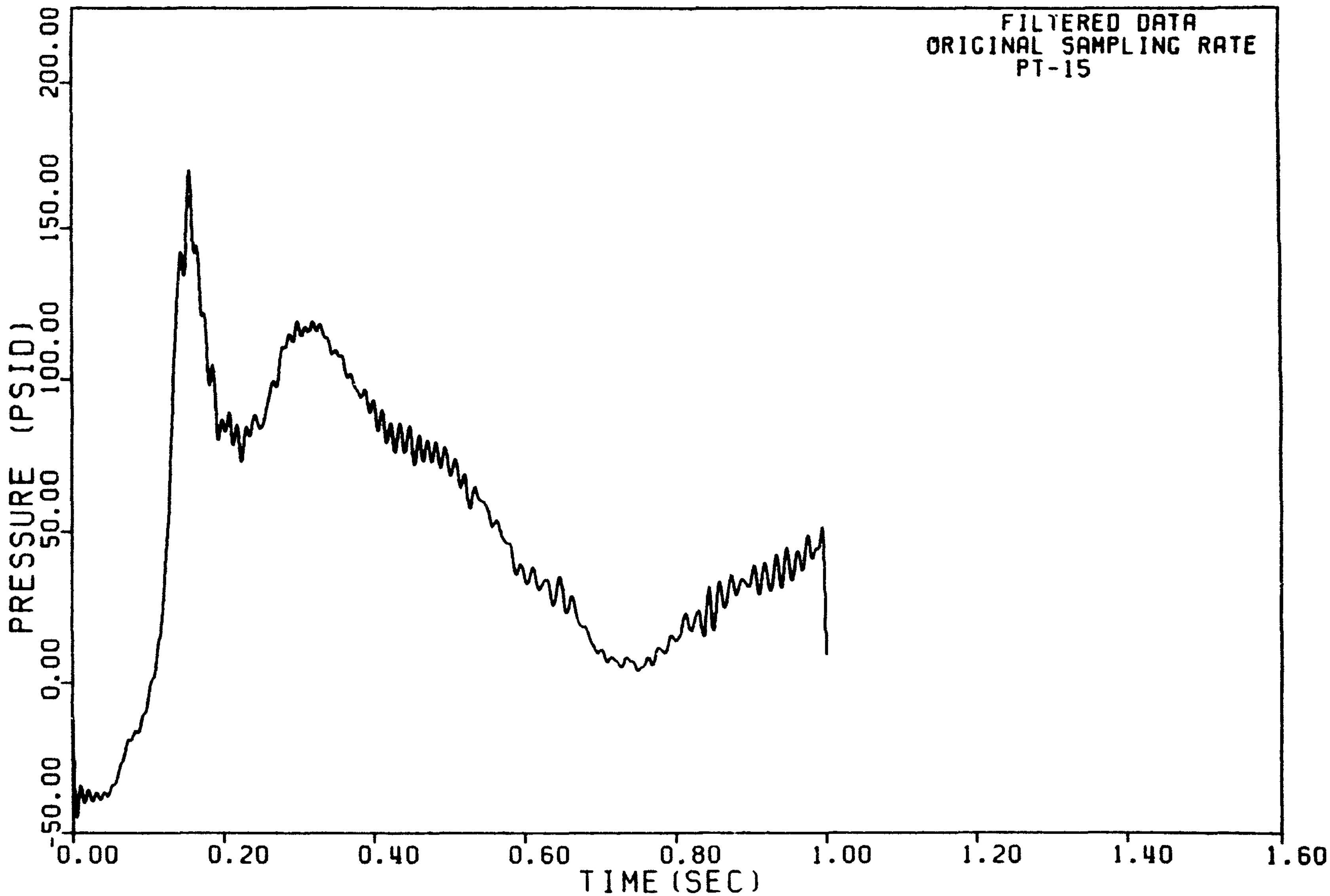
Figure B.14 TYPICAL SVA TORUS SHELL PRESSURE PSD



DECO SRV TEST MT-5 (3RD RUN-1ST LIFT)PT

Figure B.15 TYPICAL SVA T-QUENCHER INTERNAL PRESSURE TIME HISTORY

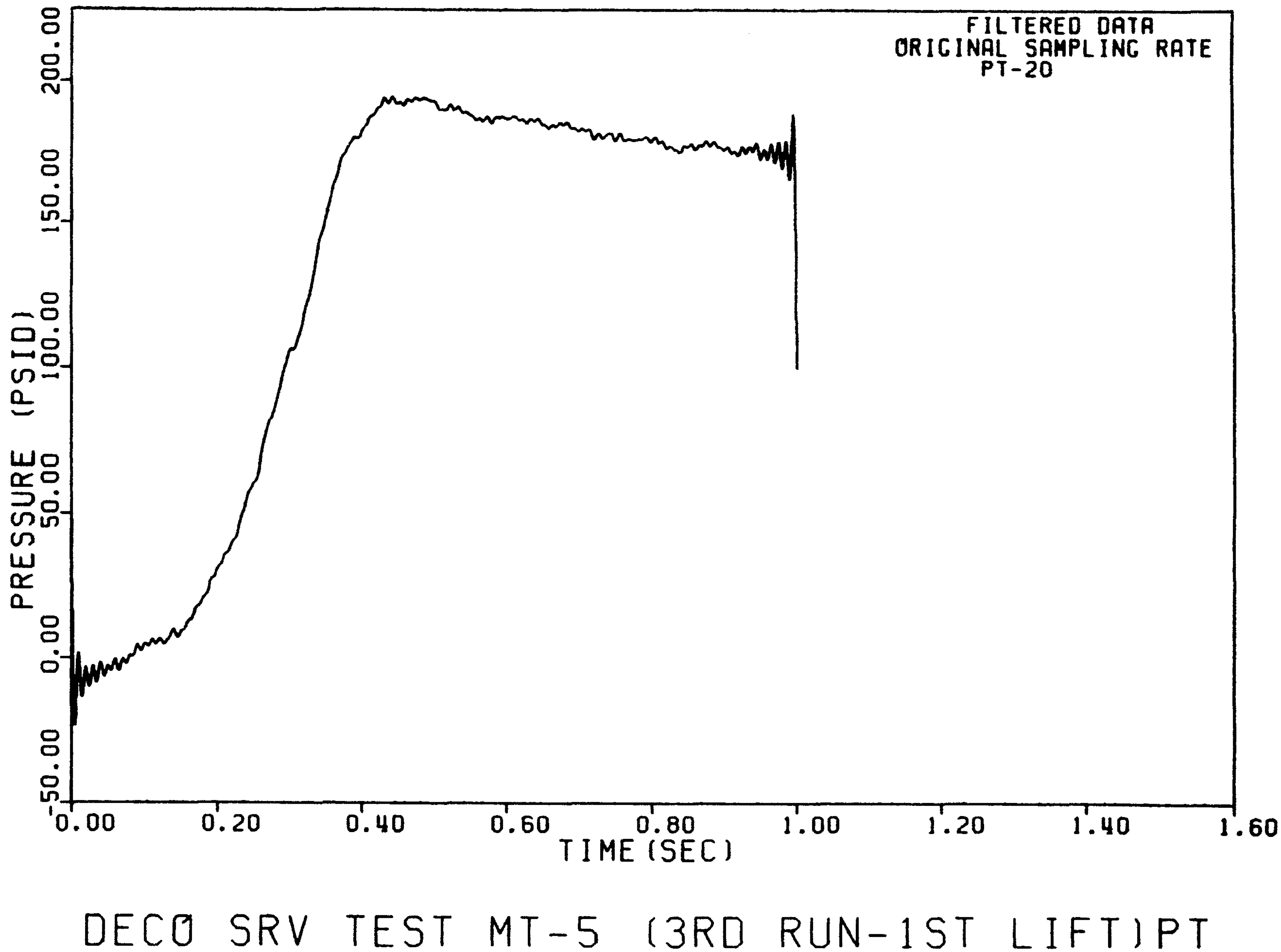
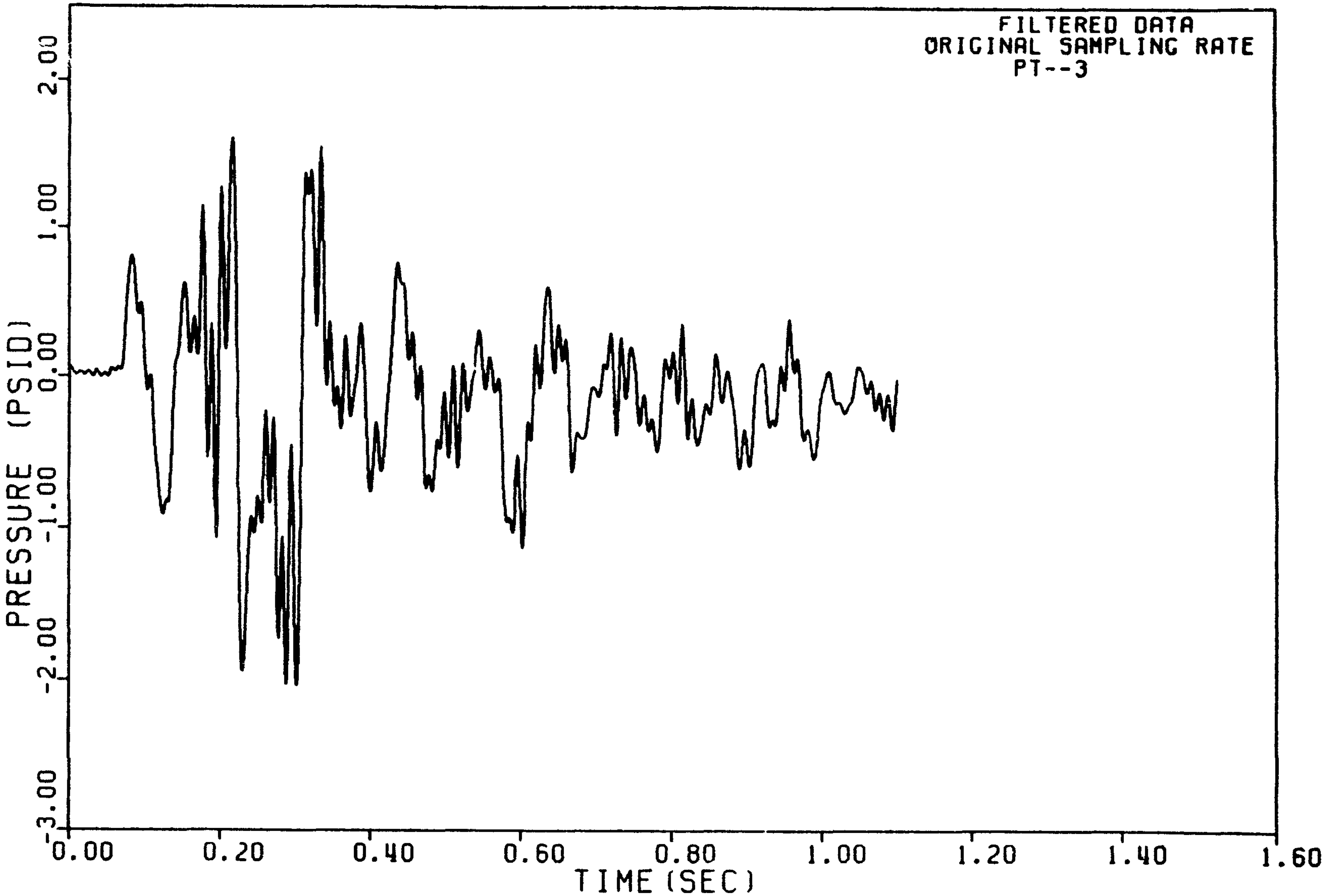


Figure B.16 TYPICAL SVA SRVDL INTERNAL PRESSURE TIME HISTORY



DECO SRV TEST MT-2 (1ST RUN-2ND LIFT)PT

Figure B.17 TYPICAL CVA T-QUENCHER BUBBLE PRESSURE TIME HISTORY

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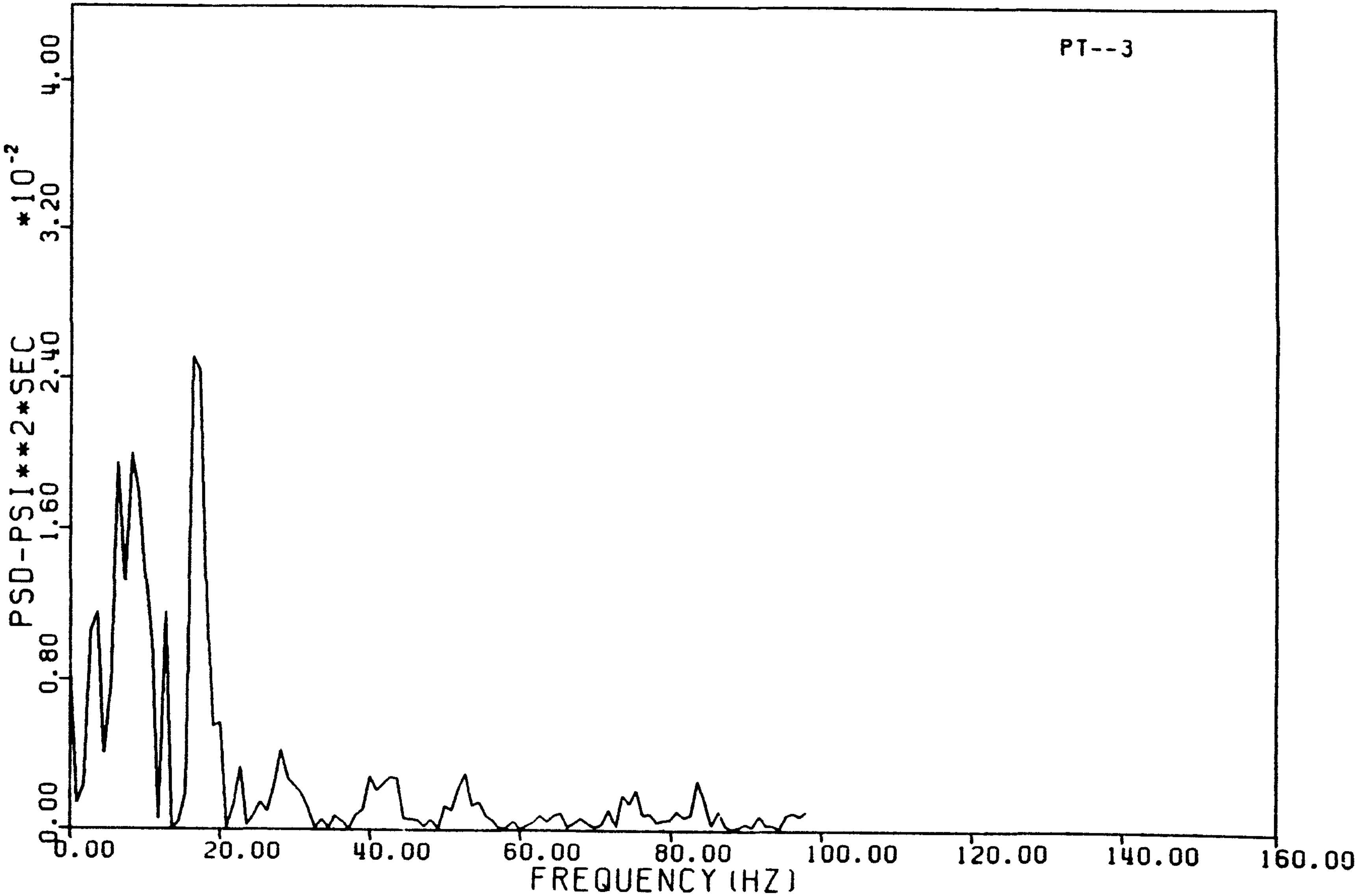

DECO SRV TEST MT-2 (1ST RUN-2ND LIFT)PT

Figure B.18 TYPICAL CVA T-QUENCHER BUBBLE PRESSURE PSD

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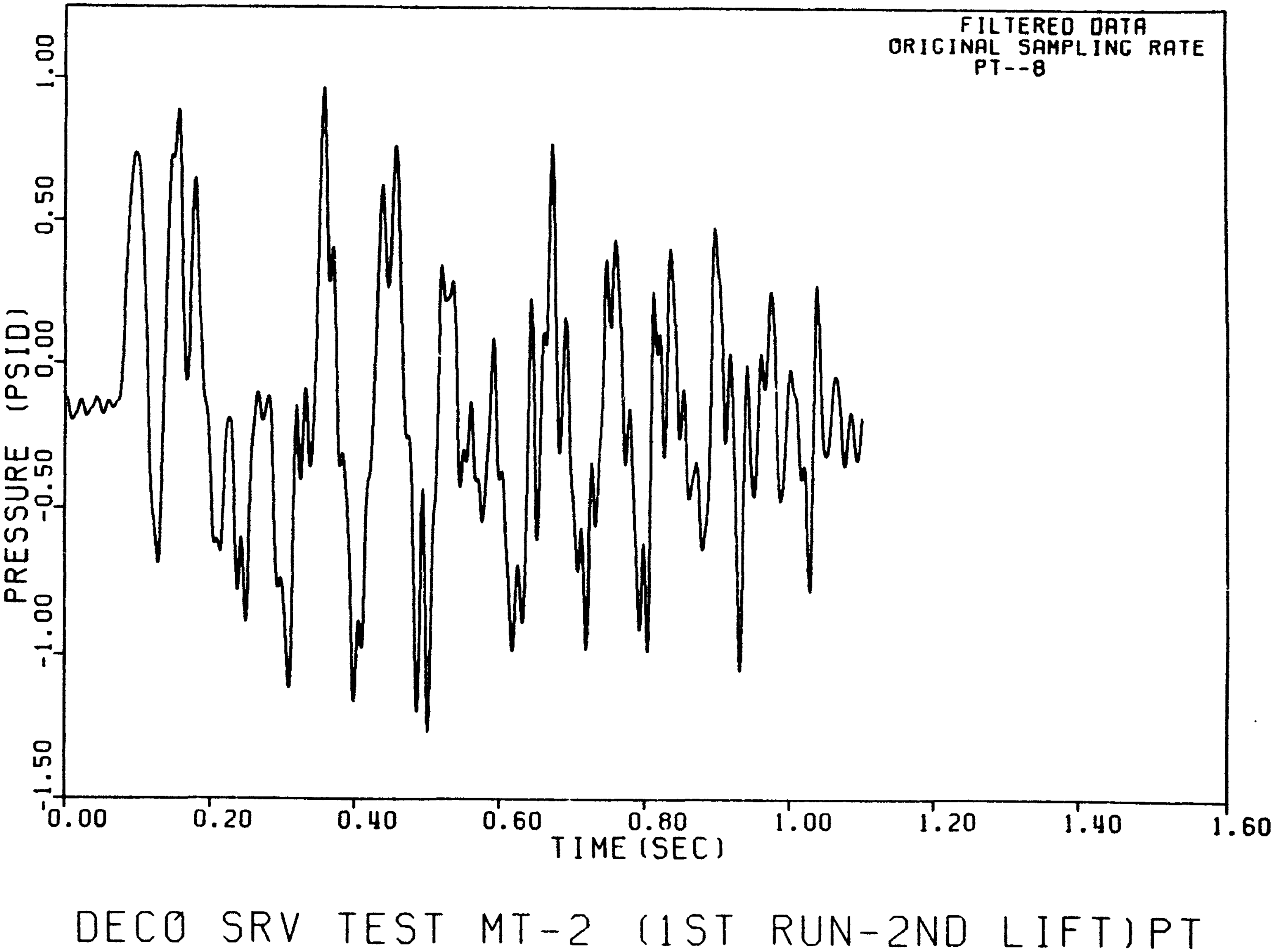


Figure B.19 TYPICAL CVA TORUS SHELL PRESSURE TIME HISTORY

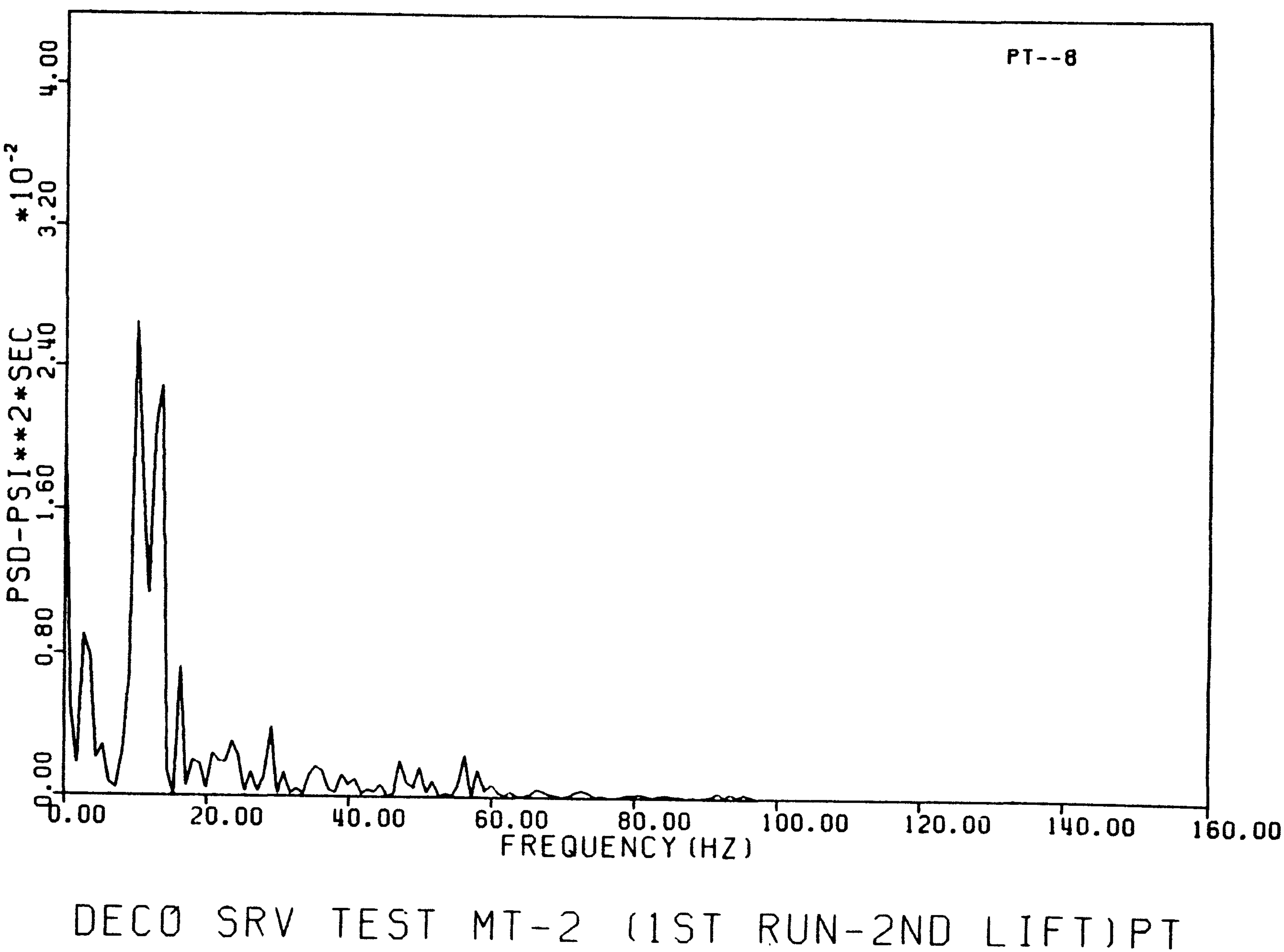
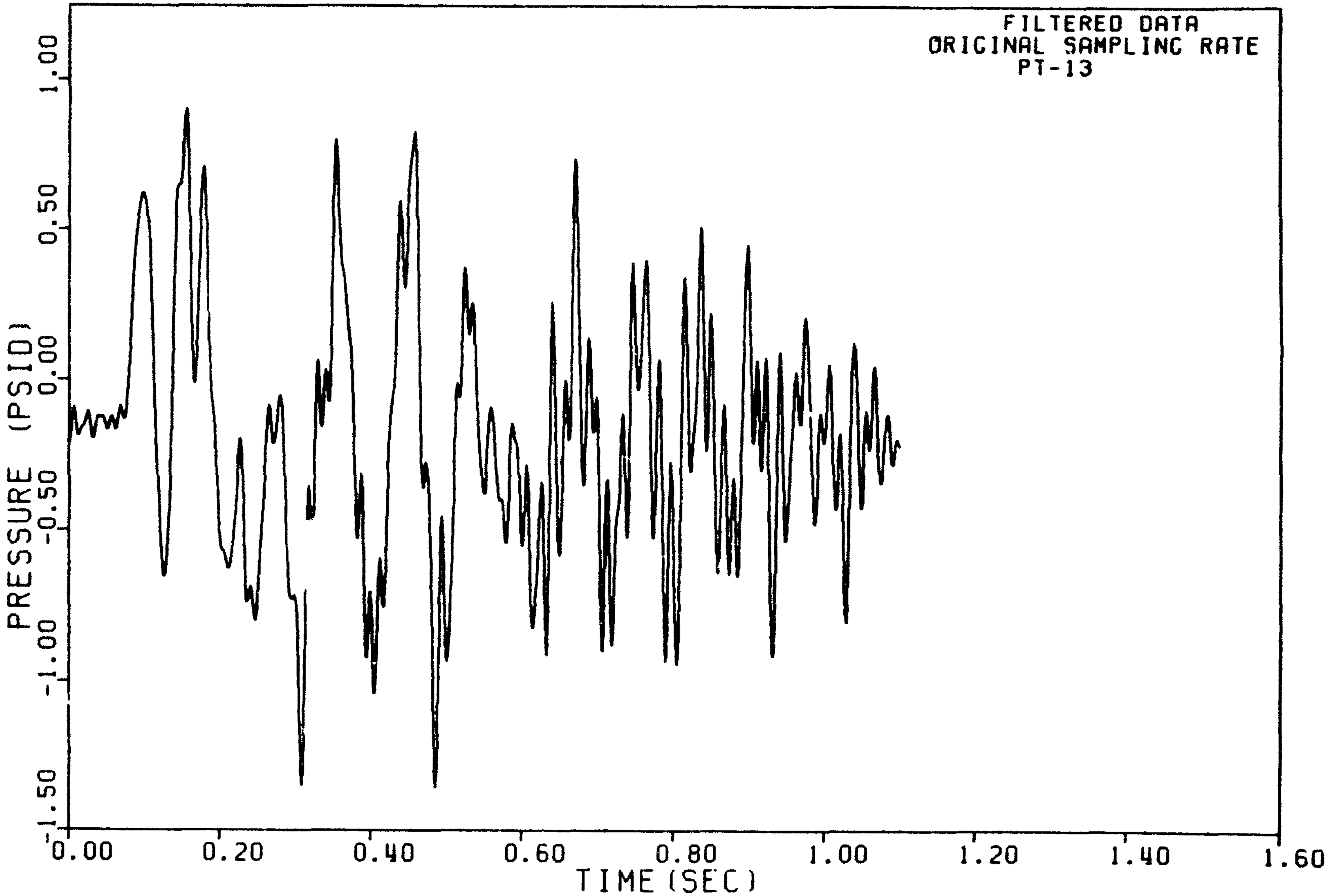


Figure B.20 TYPICAL CVA TORUS SHELL PRESSURE PSD



DECO SRV TEST MT-2 (1ST RUN-2ND LIFT)PT

Figure B.21 TYPICAL CVA TORUS SHELL PRESSURE TIME HISTORY

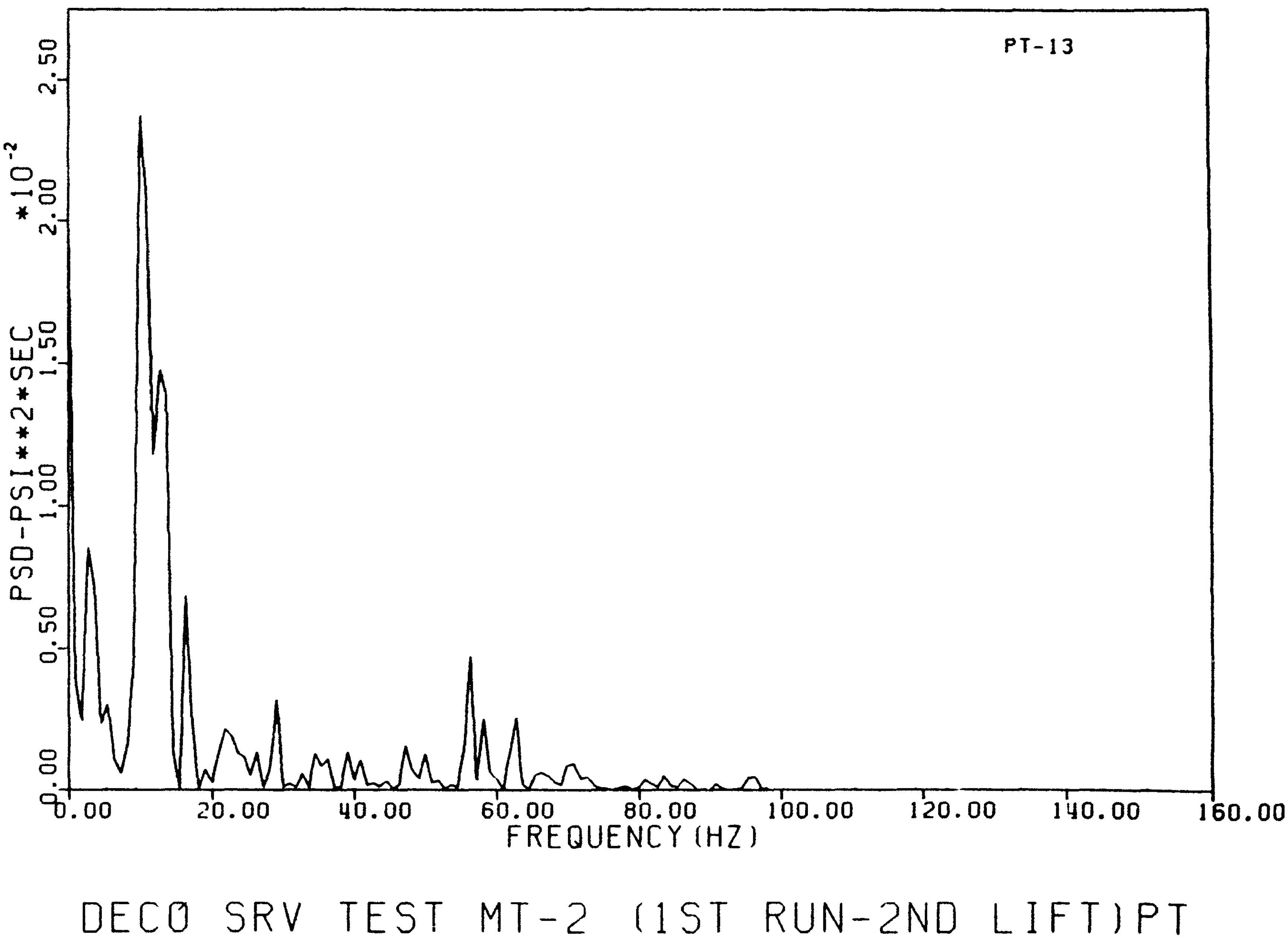
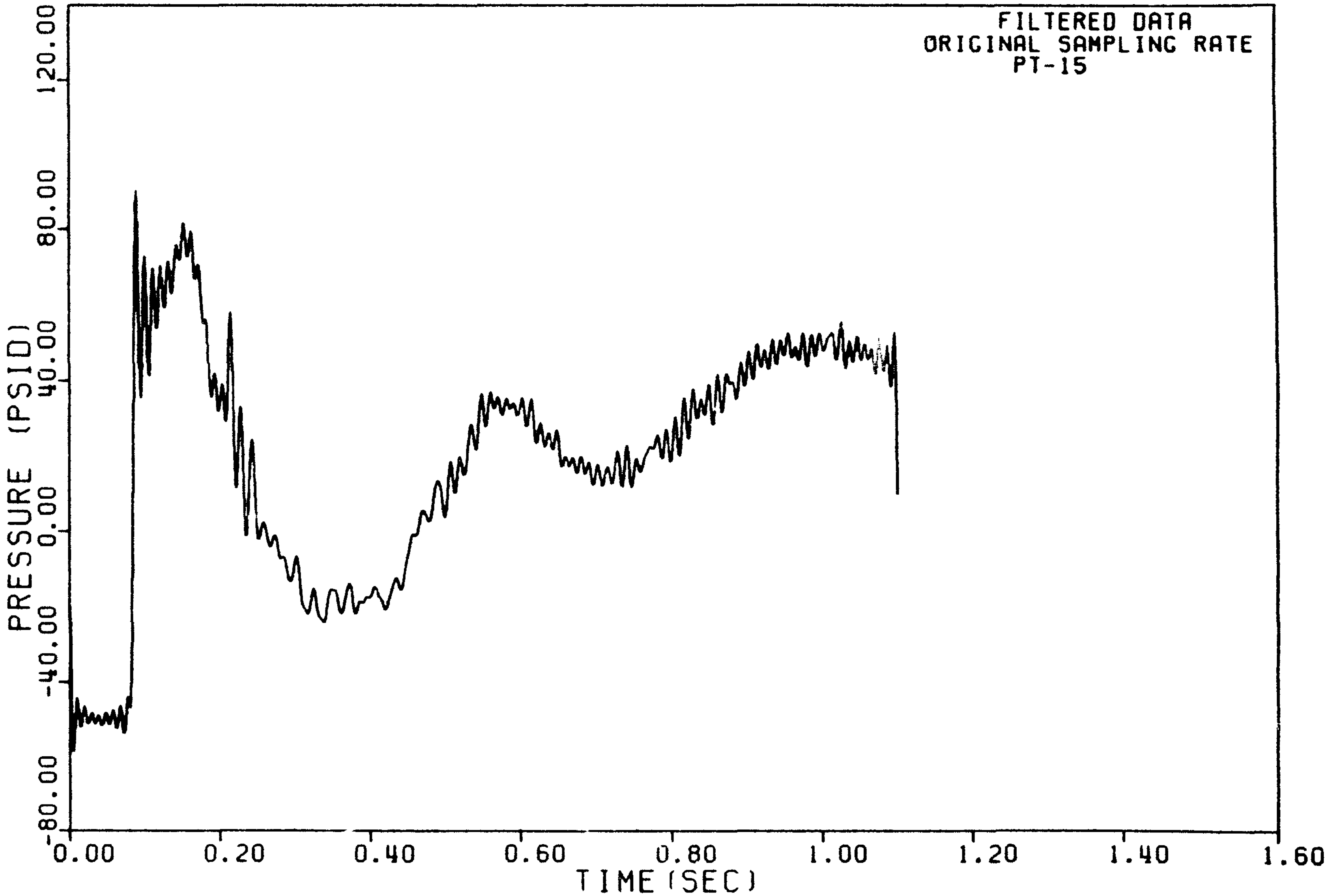


Figure B.22 <u>TYPICAL CVA TORUS SHELL PRESSURE PSD</u>



DECO SRV TEST MT-2 (1ST RUN-2ND LIFT)PT

Figure B.23 TYPICAL CVA T-QUENCHER INTERNAL PRESSURE TIME HISTORY

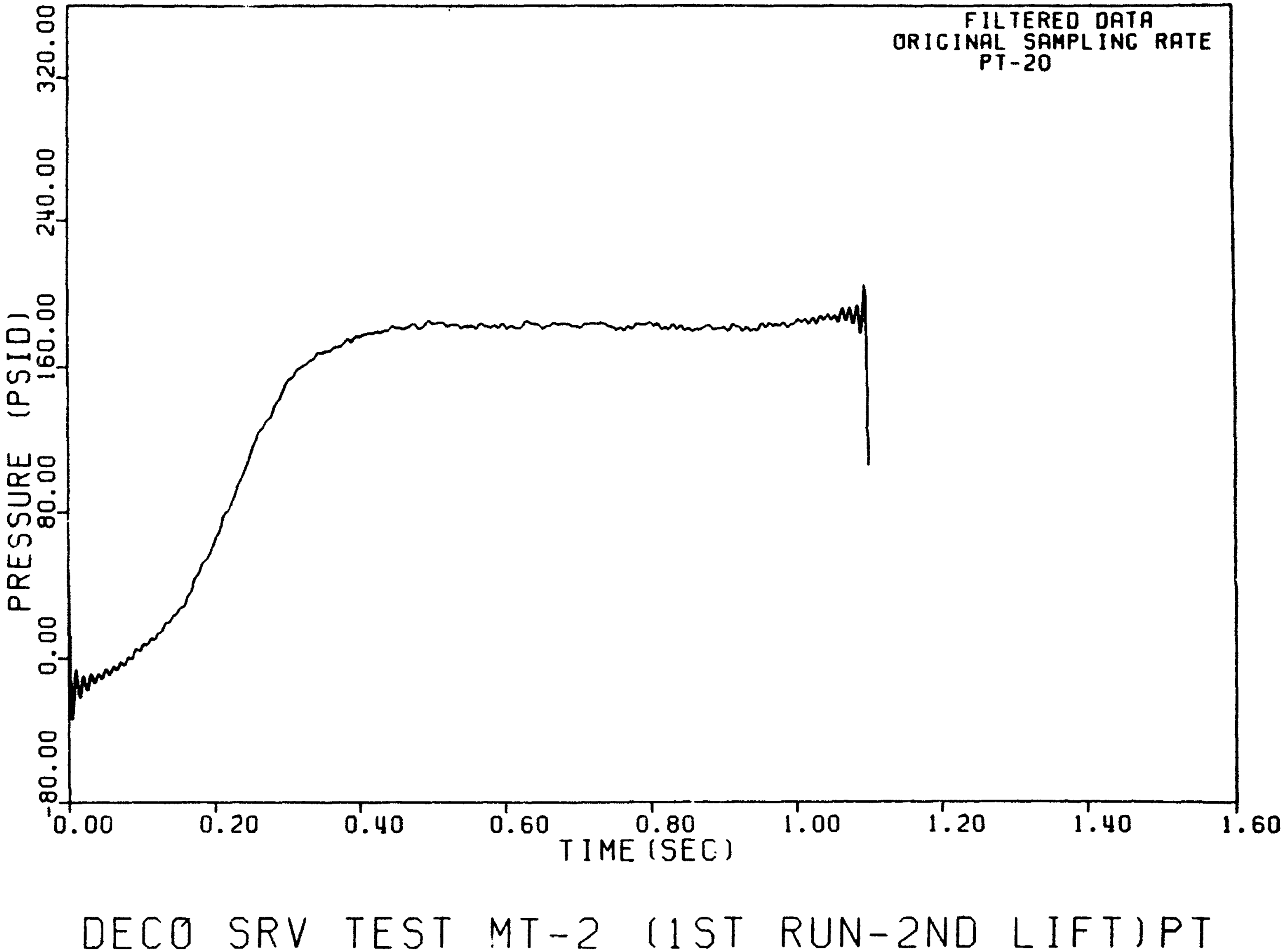
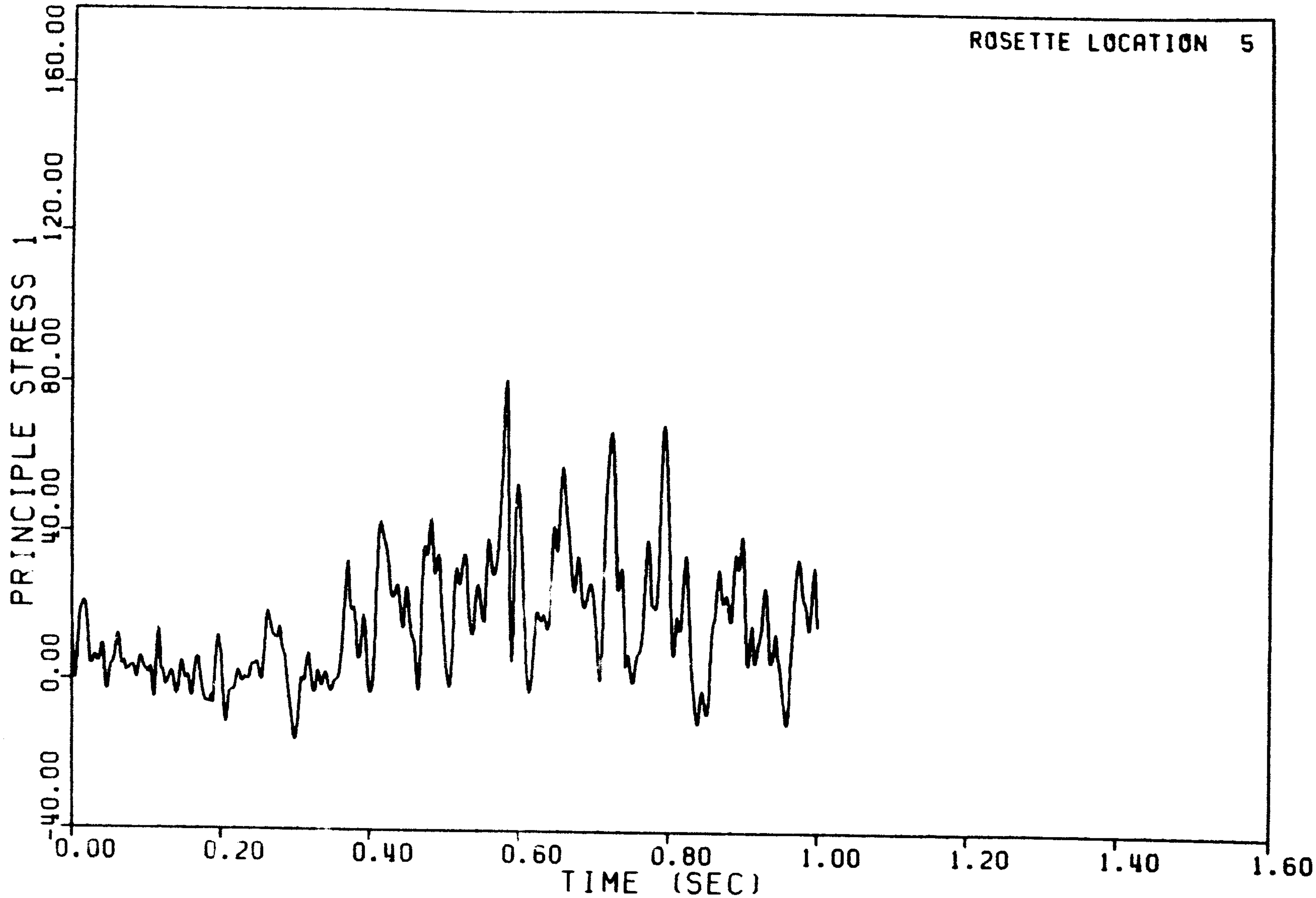


Figure B.24 TYPICAL CVA SRVDL INTERNAL PRESSURE TIME HISTORY

APPENDIX C

STRESS TIME HISTORIES

(108 Sheets)



DECO SRV TEST MT1 (1ST RUN-1ST LIFT)SC

Figure C.1 TYPICAL SVA PRINCIPAL STRESS TIME HISTORY

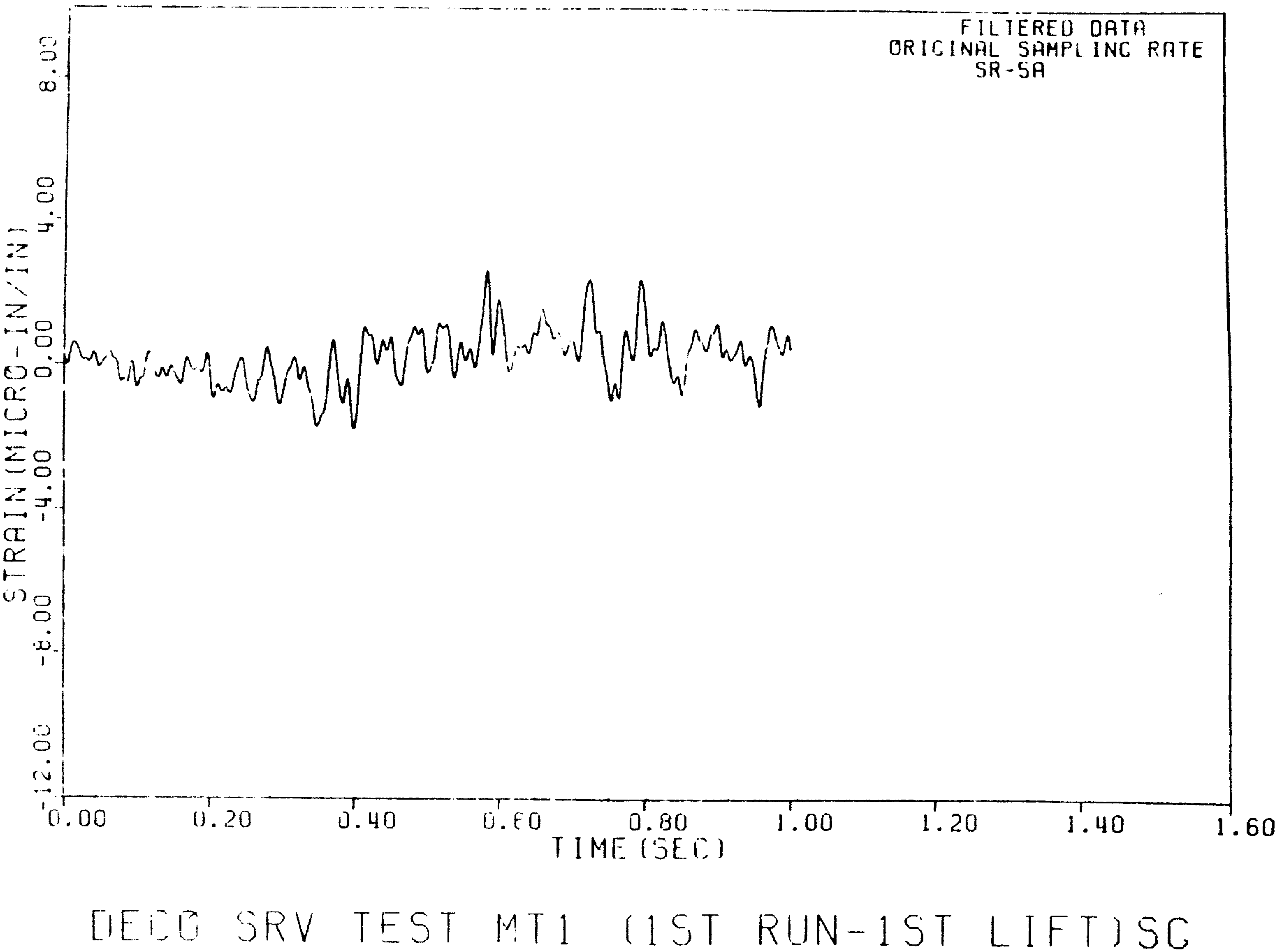
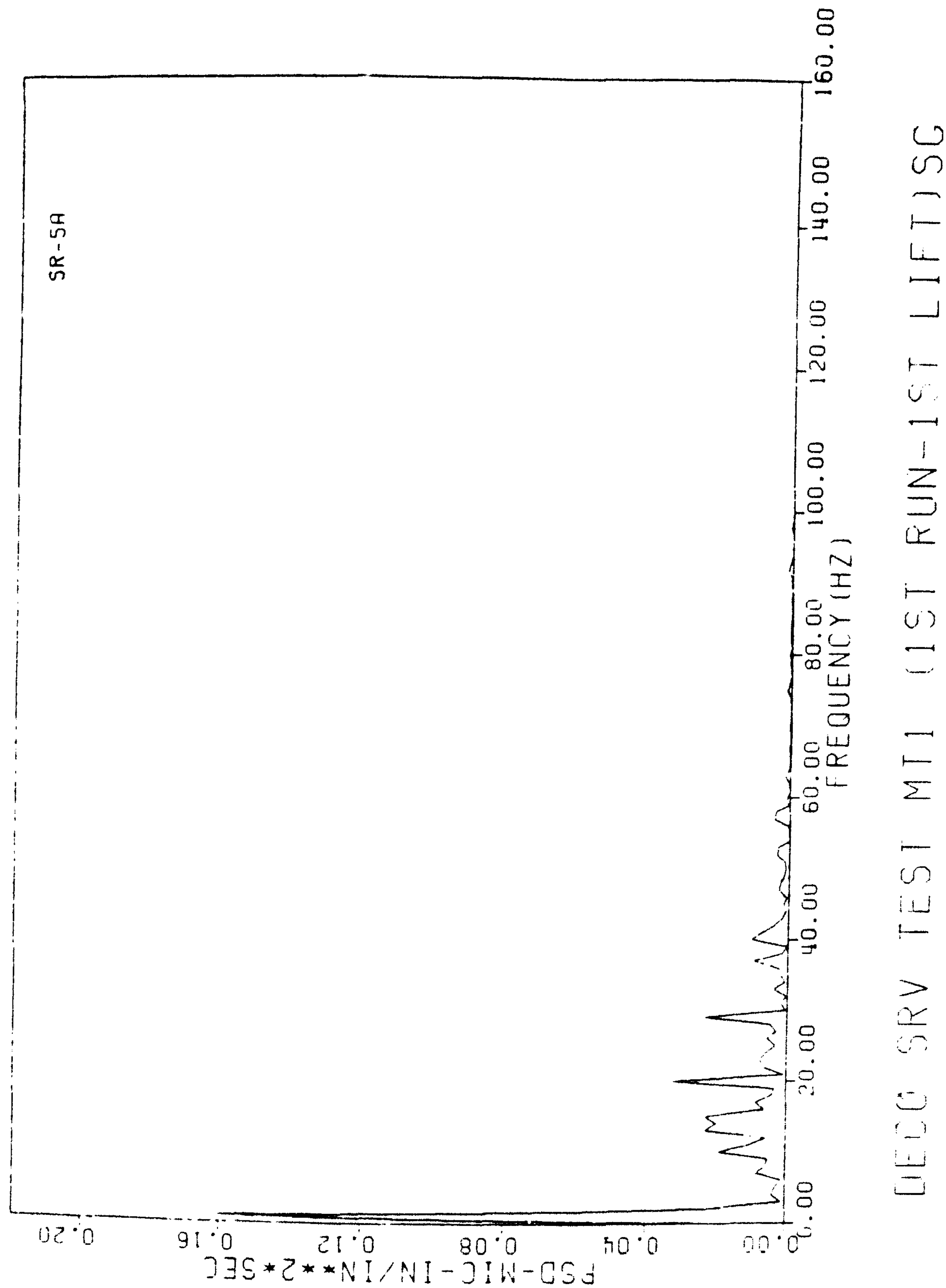


Figure C.2 TYPICAL SVA STRAIN TIME HISTORY



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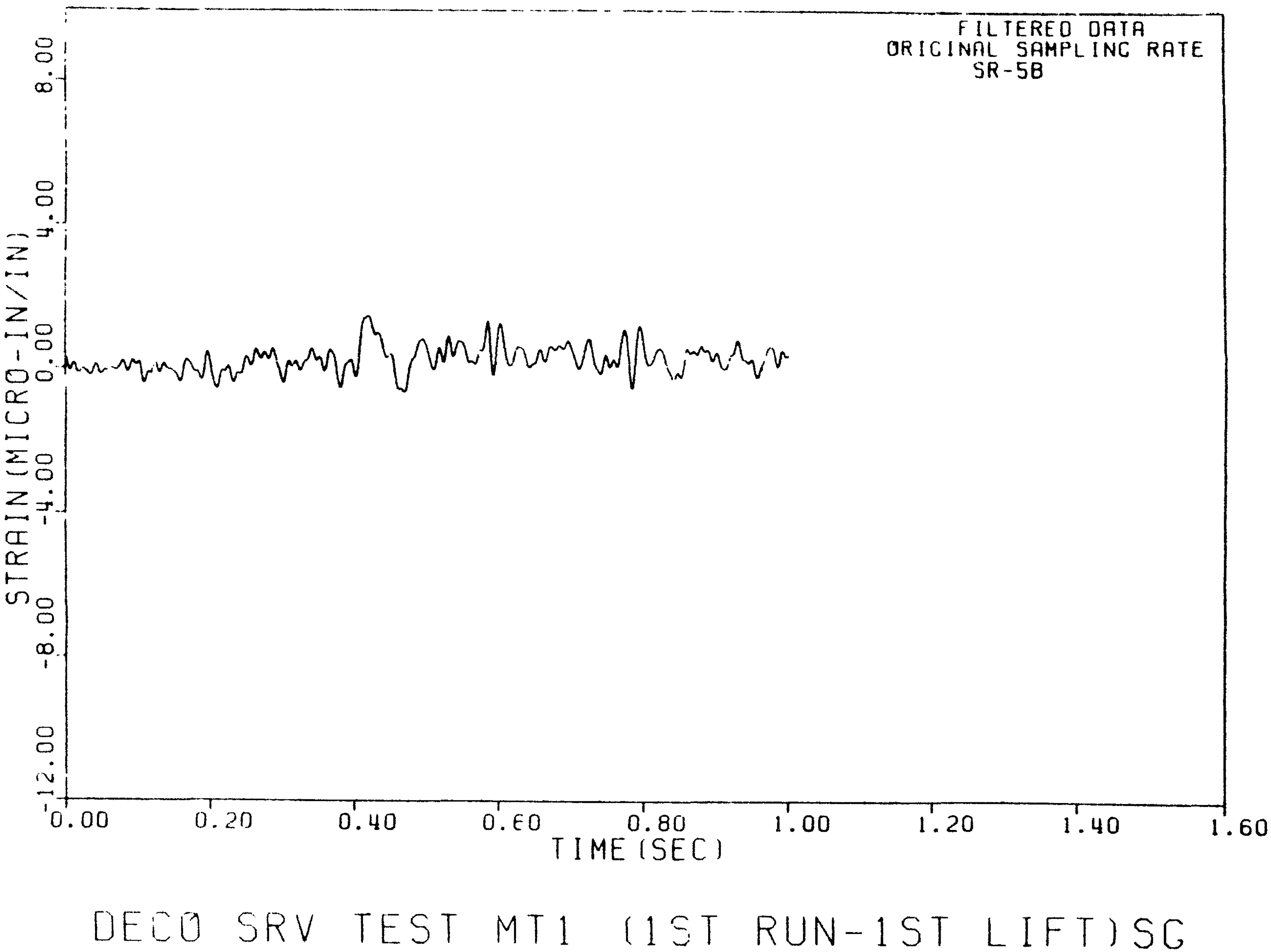

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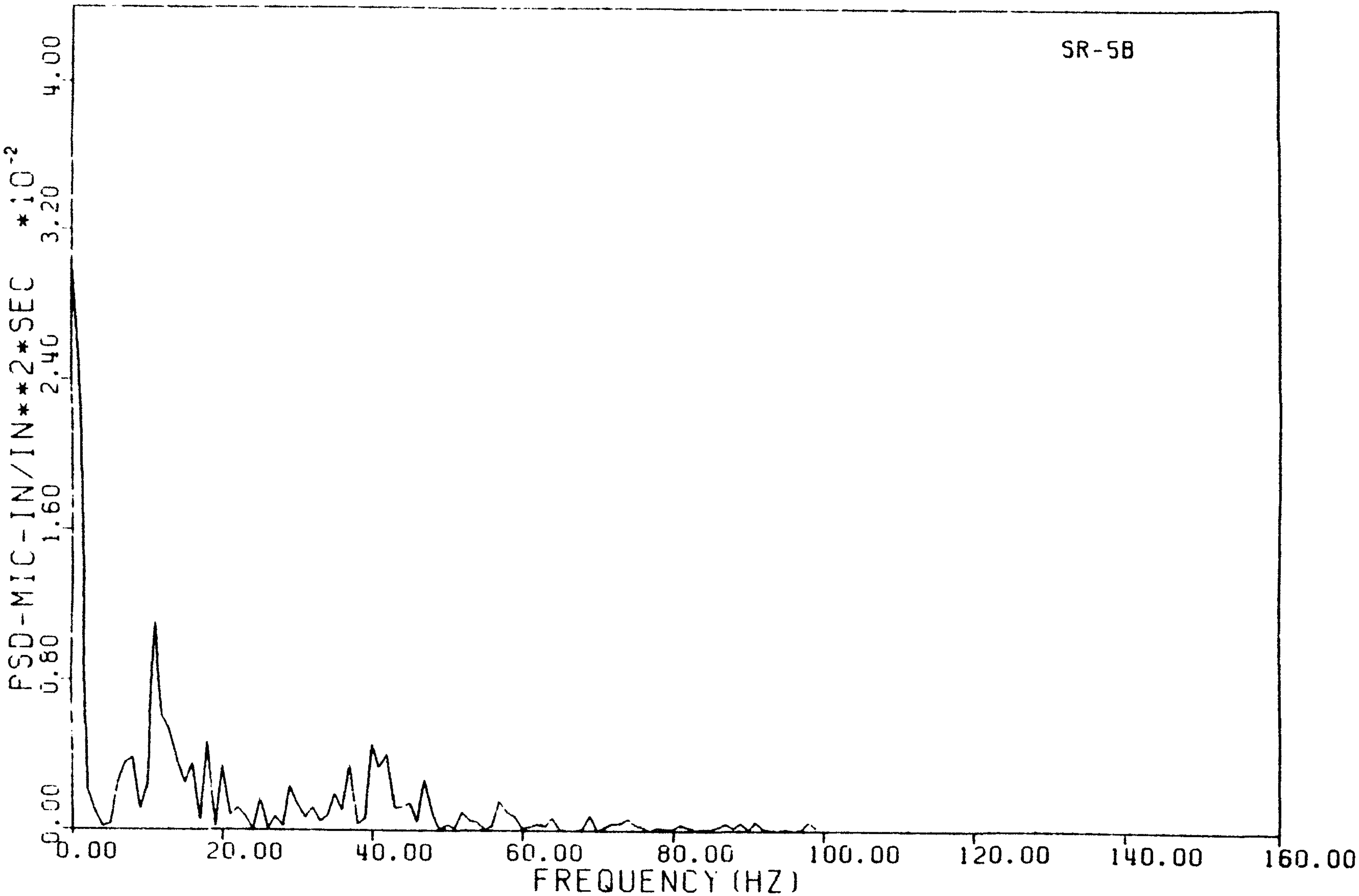


DECO SRV TEST MT1 (1ST RUN-1ST LIFT)SG

Figure C.5 TYPICAL SVA STRAIN PSD

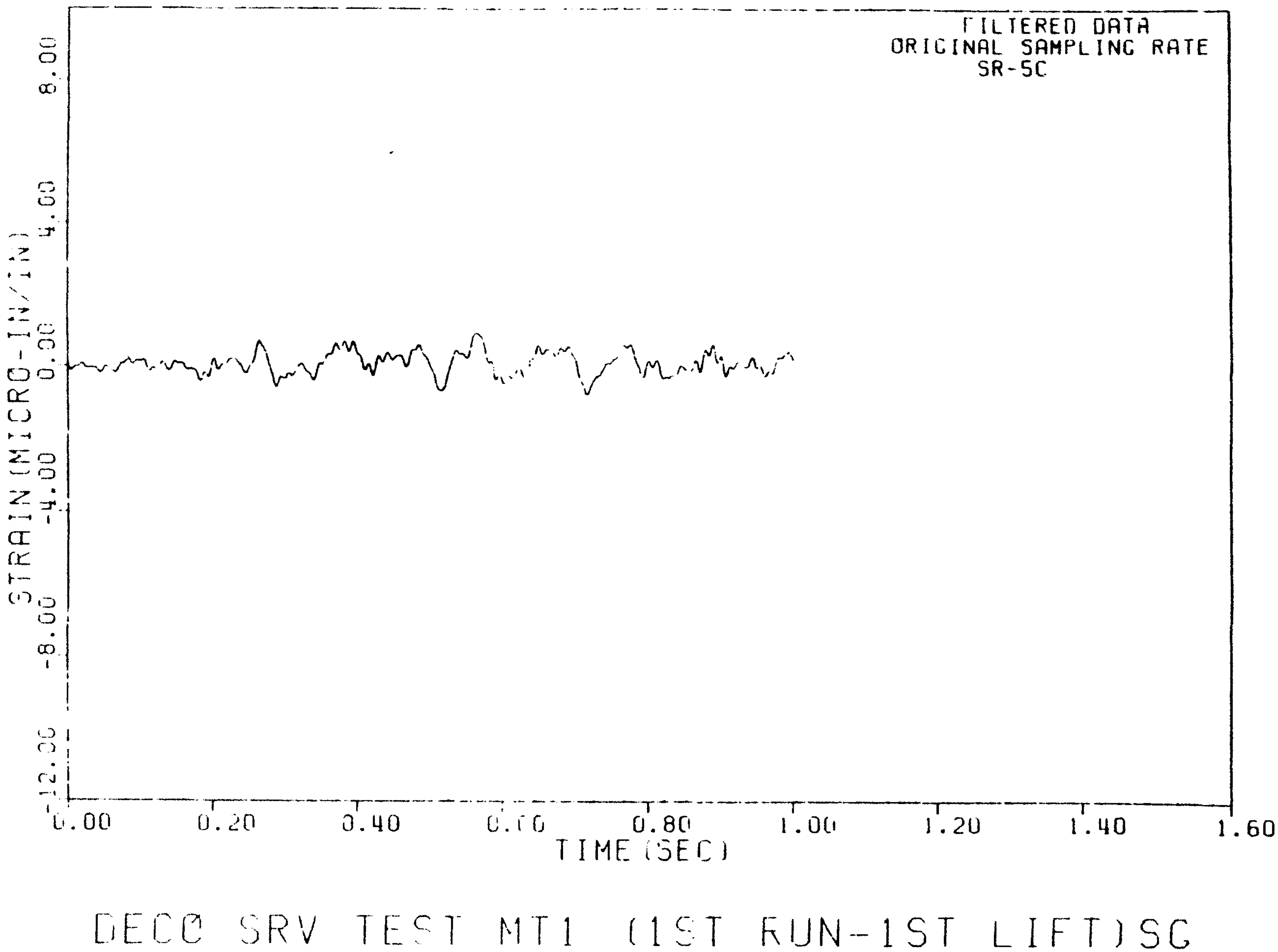


Figure C.6 TYPICAL SVA STRAIN TIME HISTORY

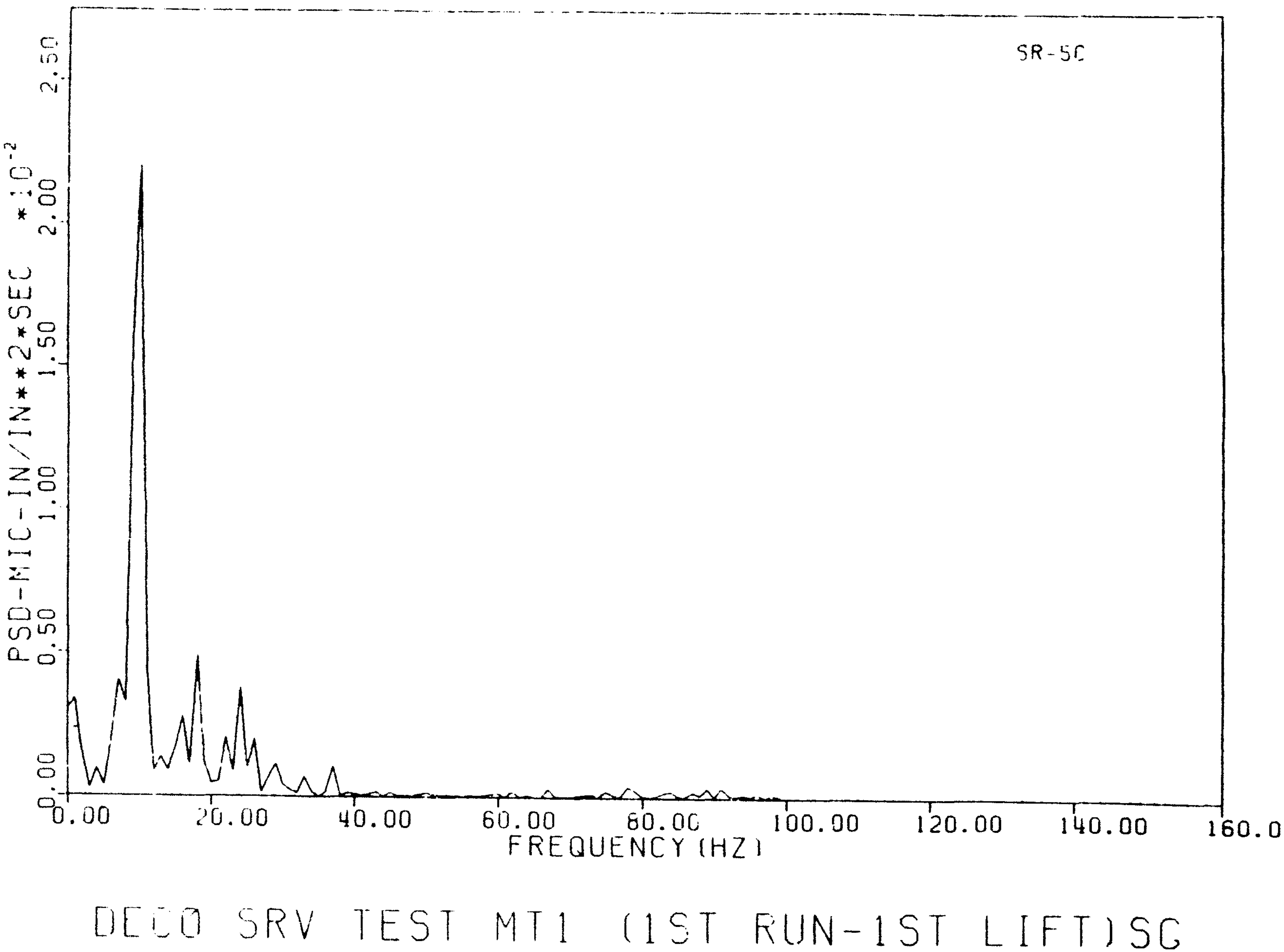
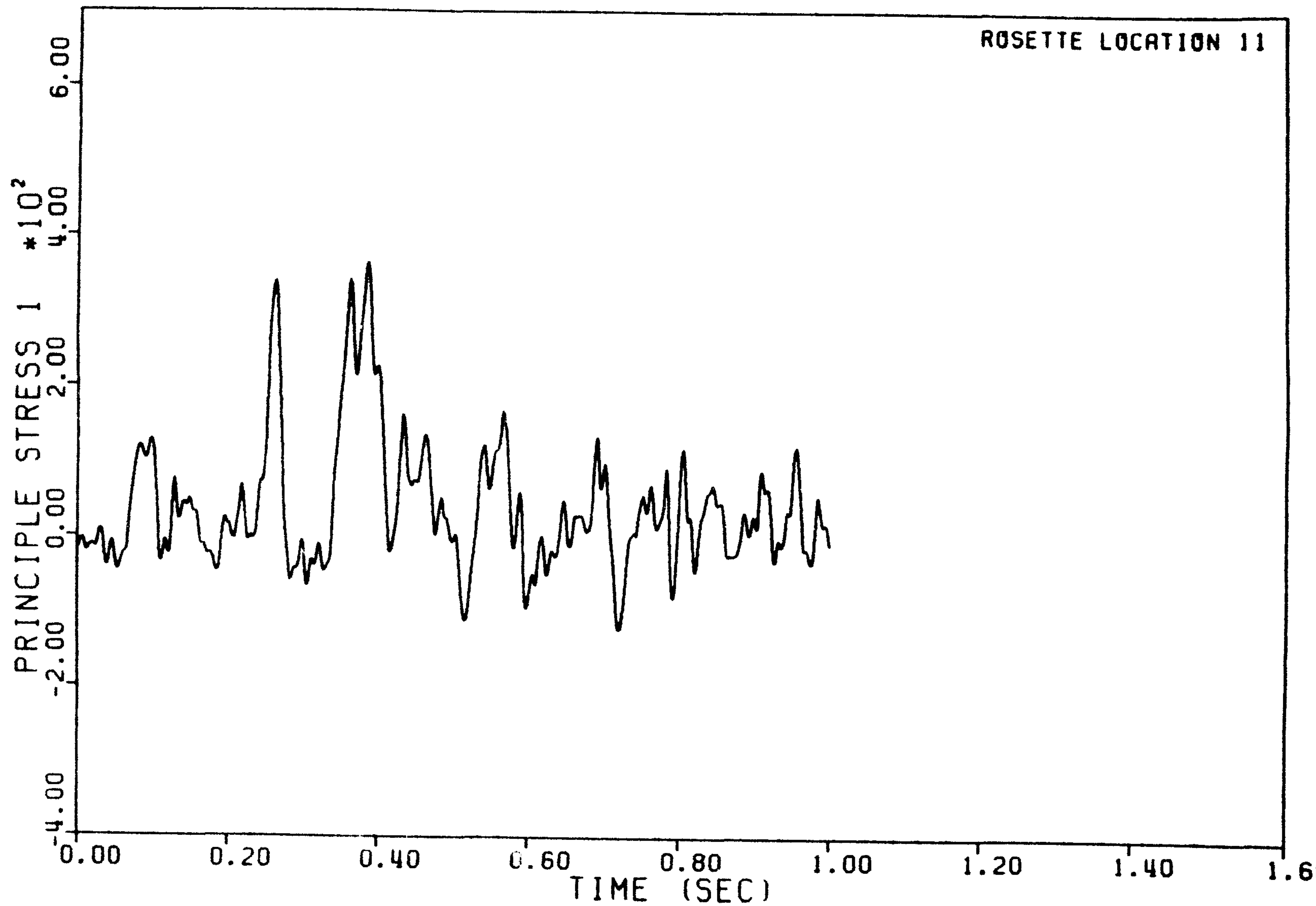


Figure C.7 <u>TYPICAL SVA STRAIN PSD</u>



DECO SRV TEST MT1 (1ST RUN-1ST LIFT)SC

Figure C.8 <u>TYPICAL SVA PRINCIPAL STRESS TIME HISTORY</u>

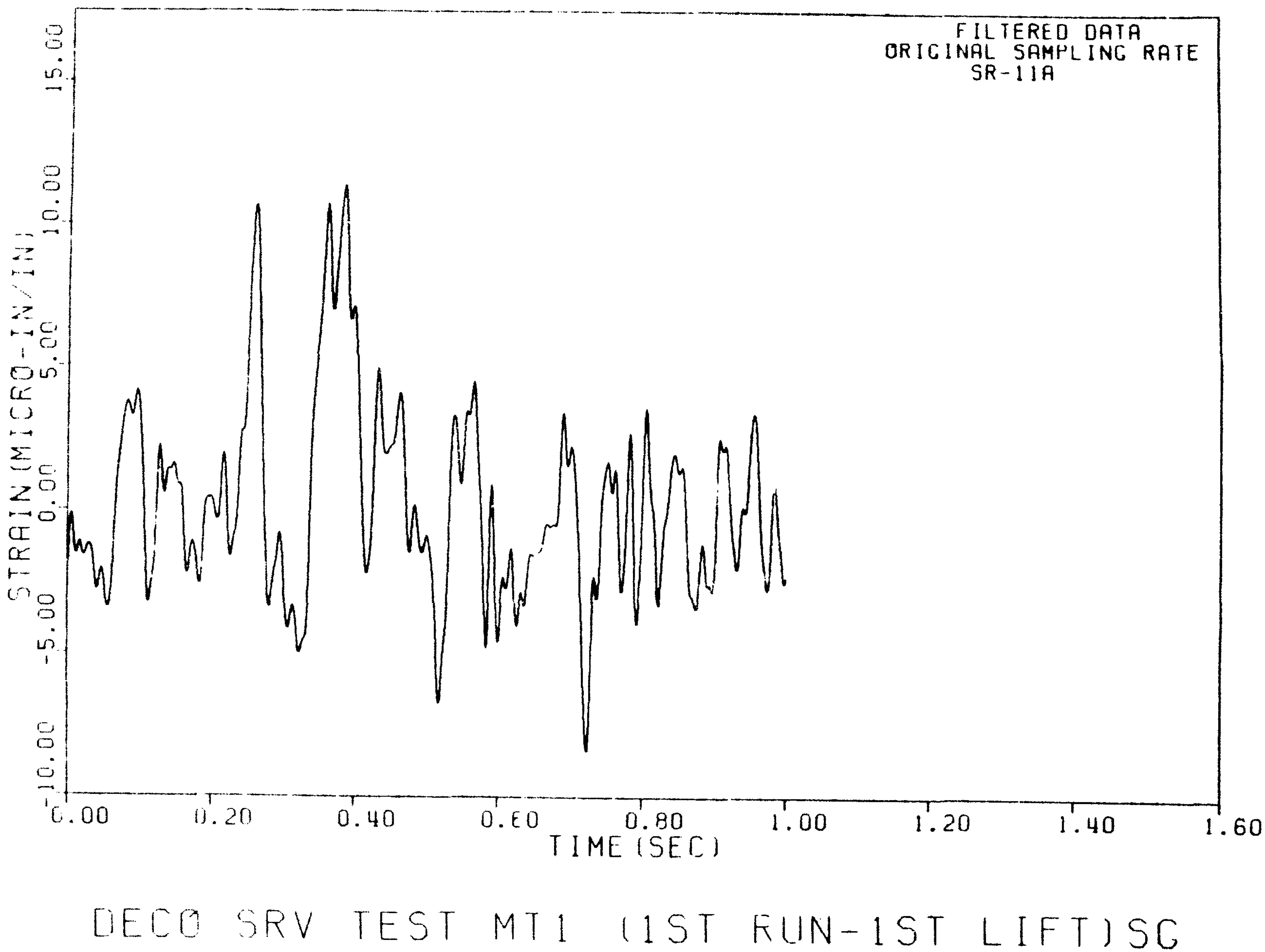


Figure C.9 TYPICAL SVA STRAIN TIME HISTORY

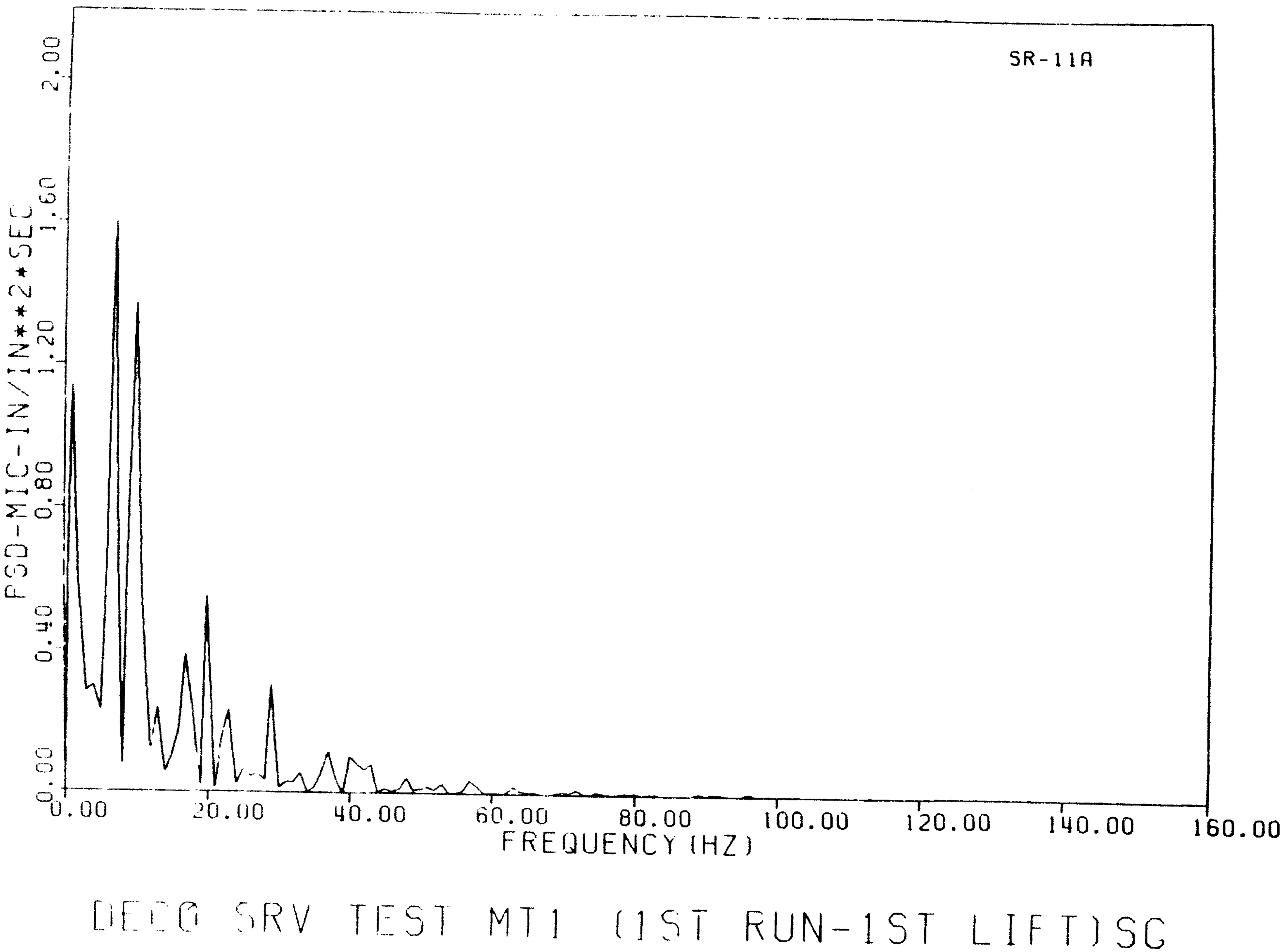
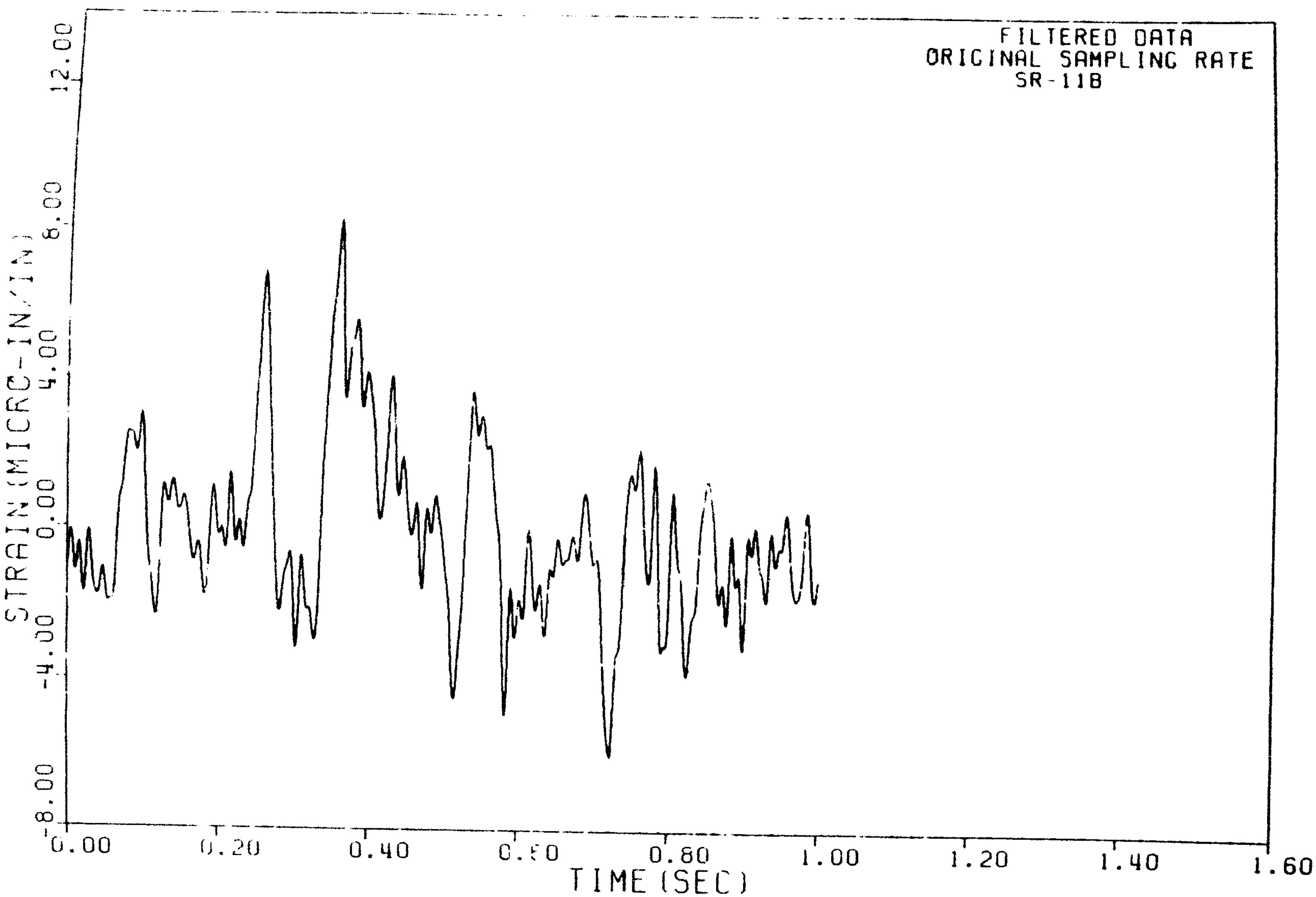


Figure C.10 TYPICAL SVA STRAIN PSD



DECO SRV TEST MT1 (1ST RUN-1ST LIFT)SG

Figure C.11 TYPICAL SVA STRAIN TIME HISTORY

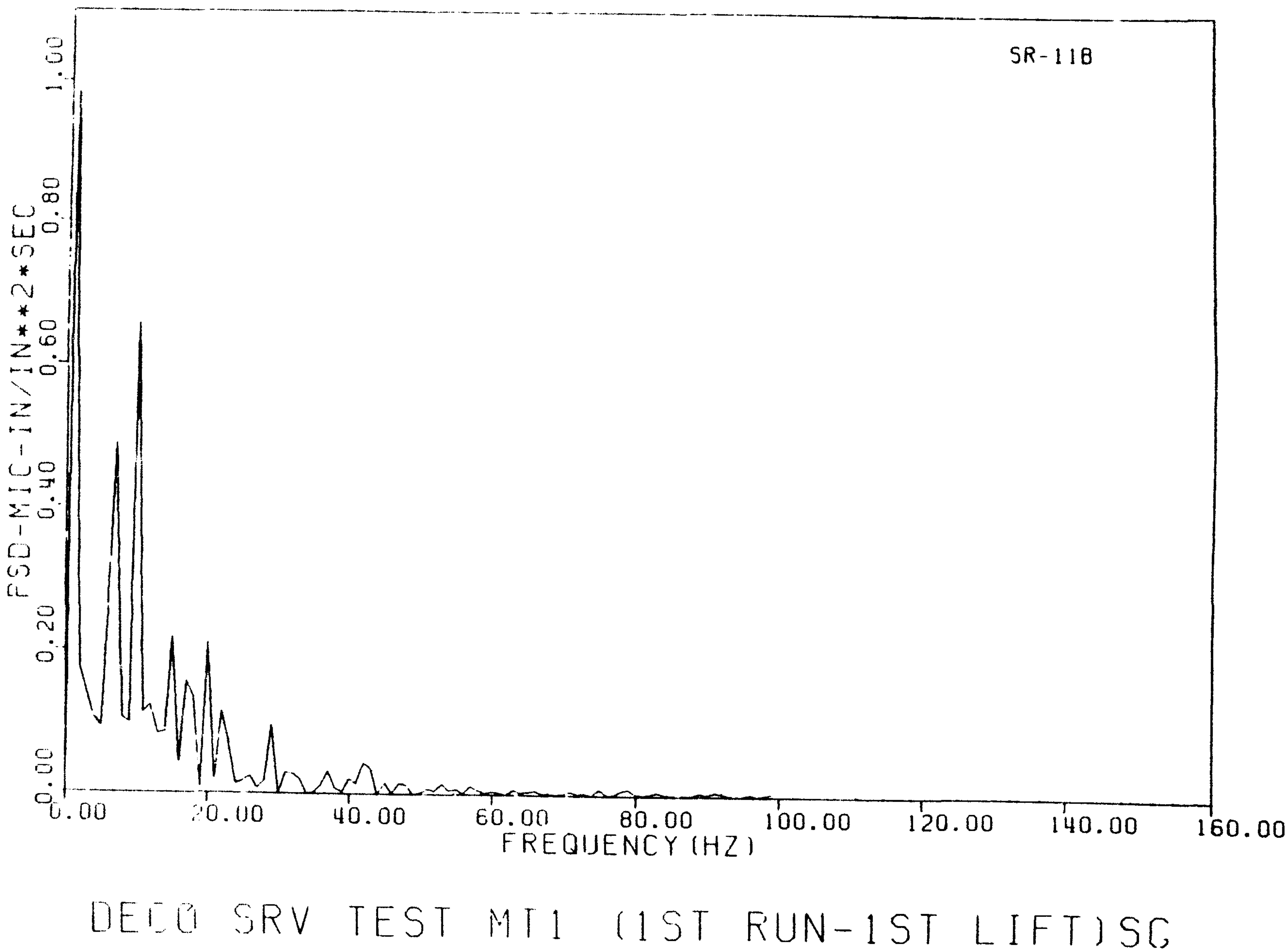
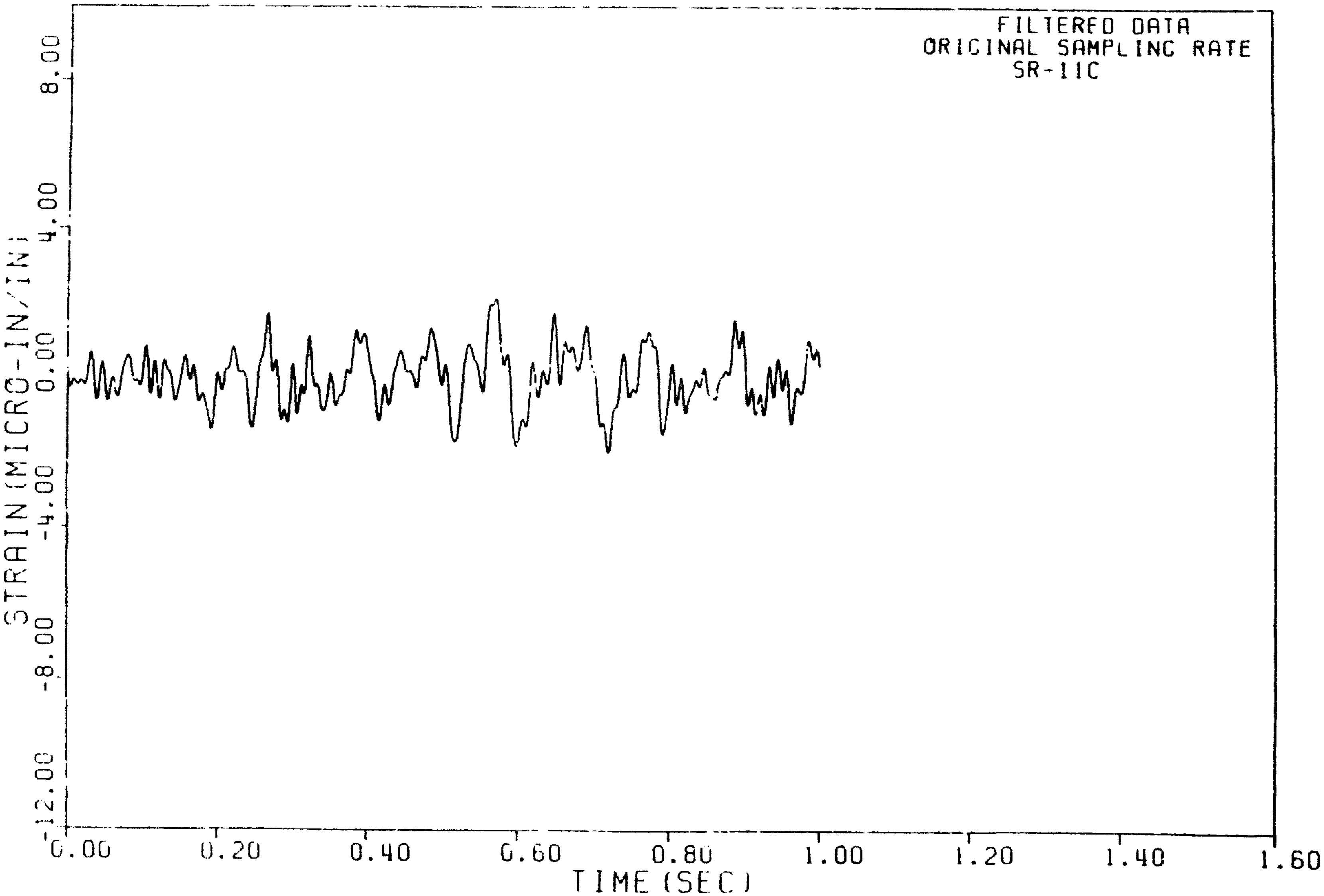


Figure C.12 TYPICAL SVA STRAIN PSD



DECO SRV TEST MT1 (1ST RUN-1ST LIFT)SG

Figure C.13 TYPICAL SVA STRAIN TIME HISTORY

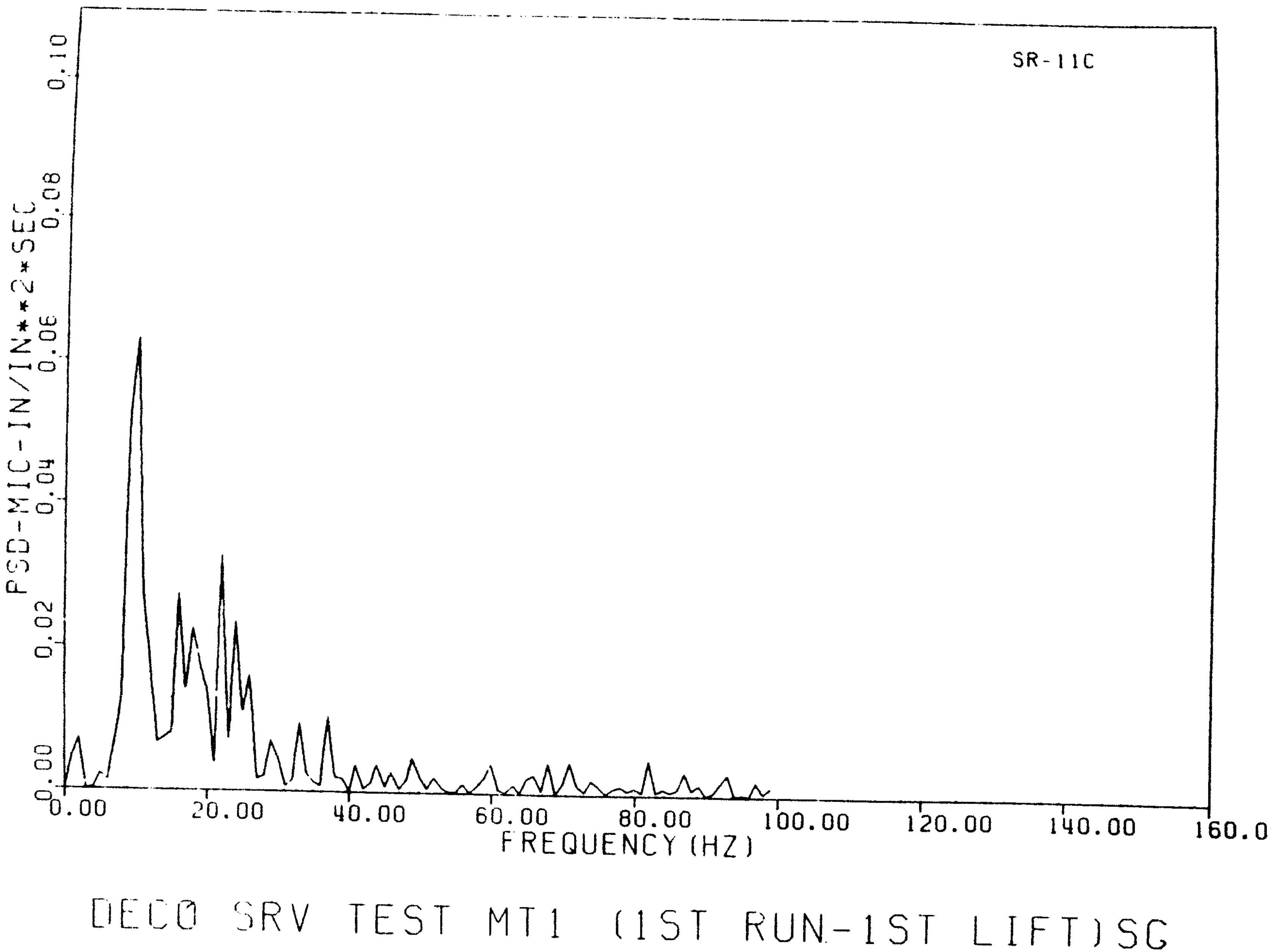
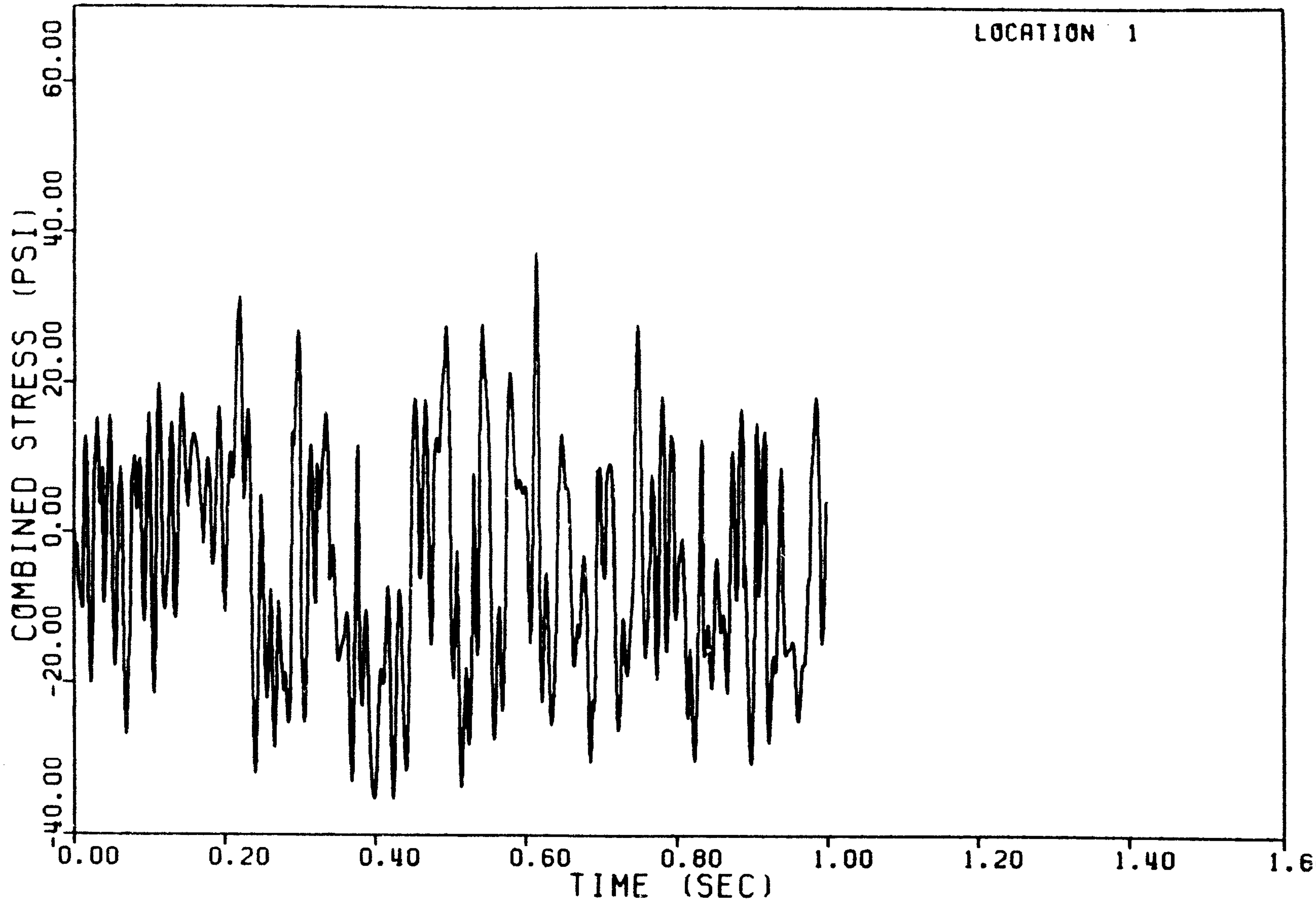
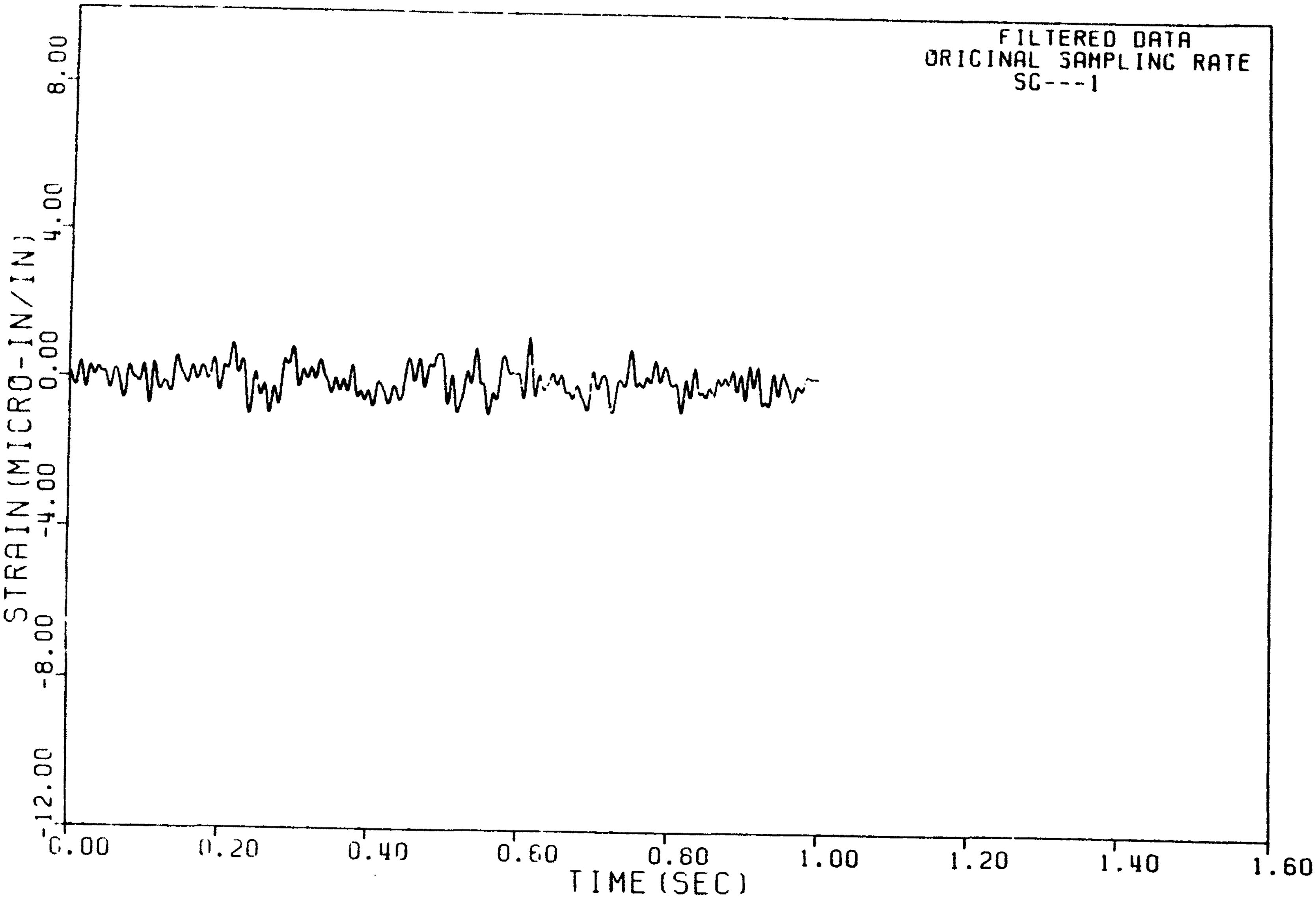


Figure C.14 TYPICAL SVA STRAIN PSD



DECO SRV TEST MT1 (1ST RUN-1ST LIFT)SG

Figure C.15 TYPICAL SVA COMBINED STRESS TIME HISTORY



DECO SRV TEST MT1 (1ST RUN-1ST LIFT)SG

Figure C.16 <u>TYPICAL SVA STRAIN TIME HISTORY</u>

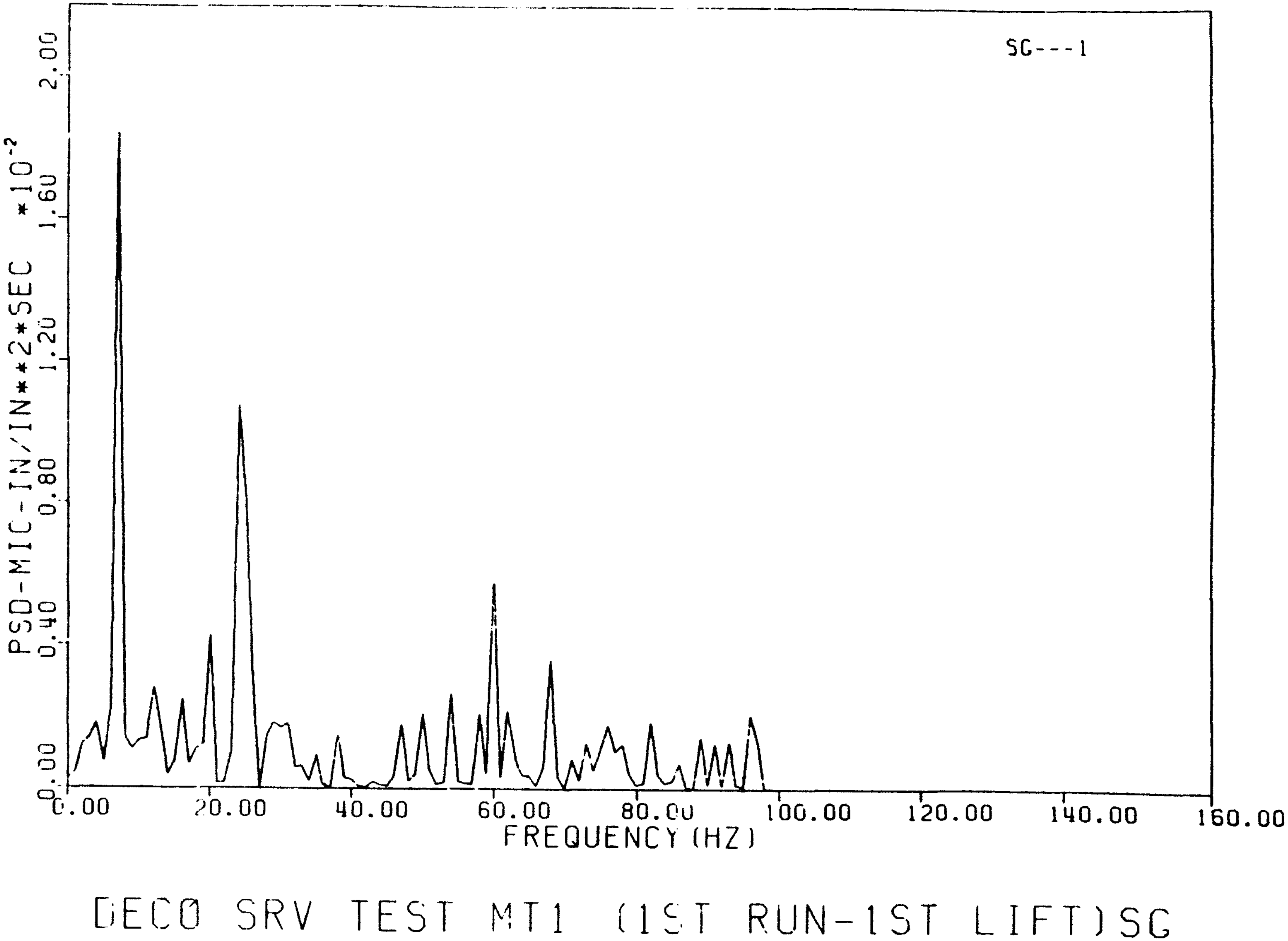


Figure C.17 TYPICAL SVA STRAIN PSD

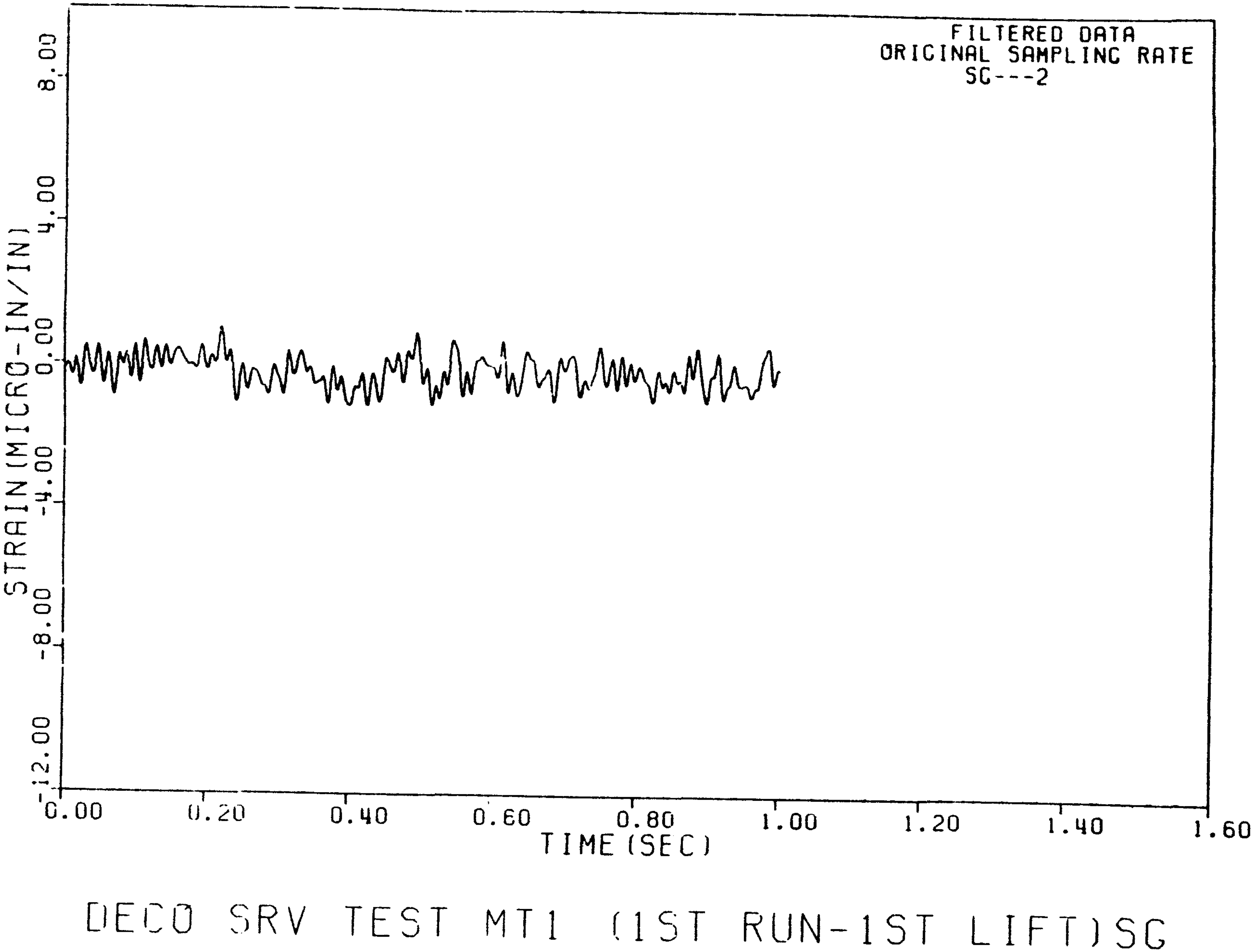
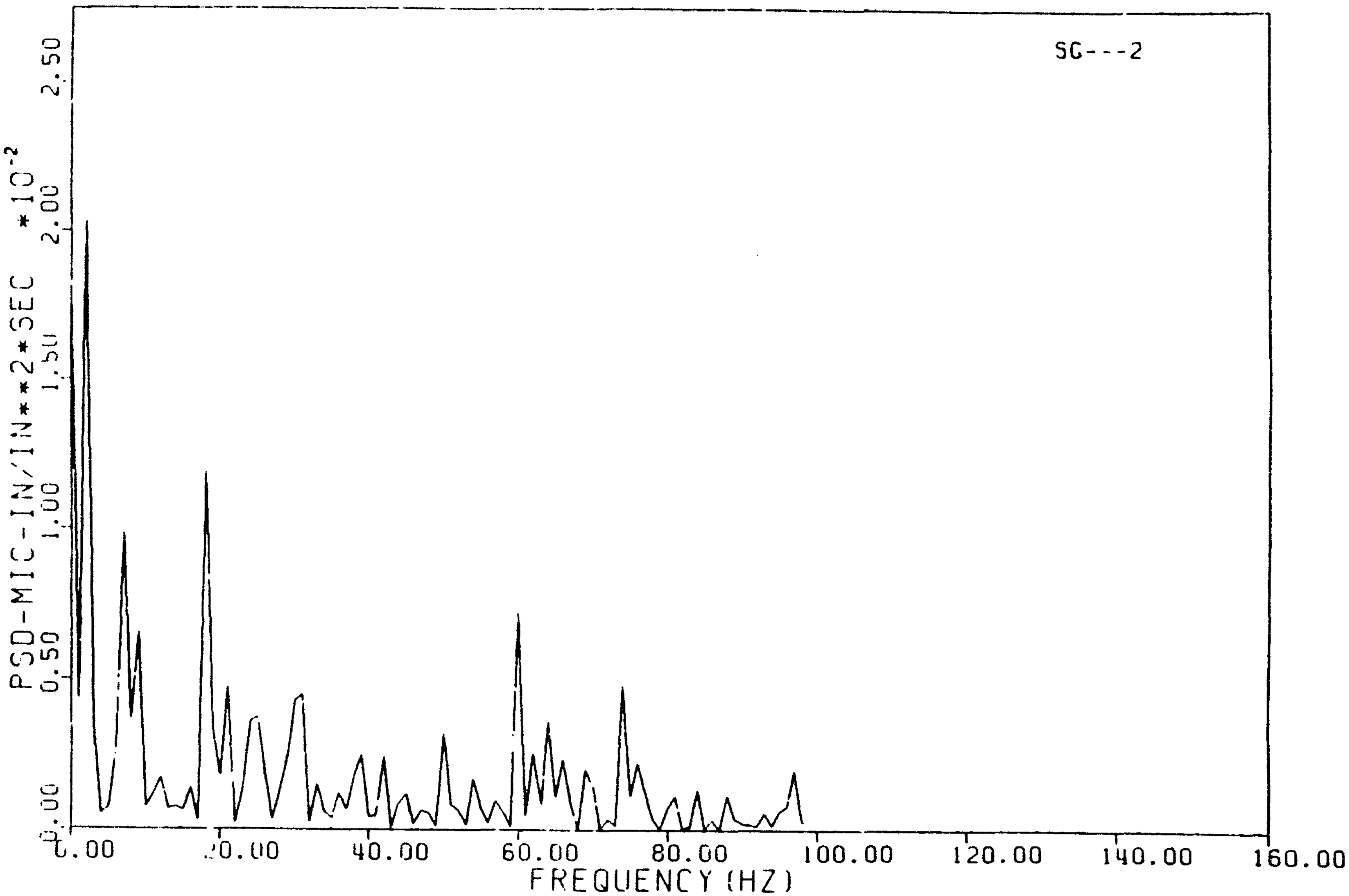


Figure C.18 TYPICAL SVA STRAIN TIME HISTORY



DECO SRV TEST MT1 (1ST RUN-1ST LIFT)SG

Figure C.19 <u>TYPICAL SVA STRAIN PSD</u>

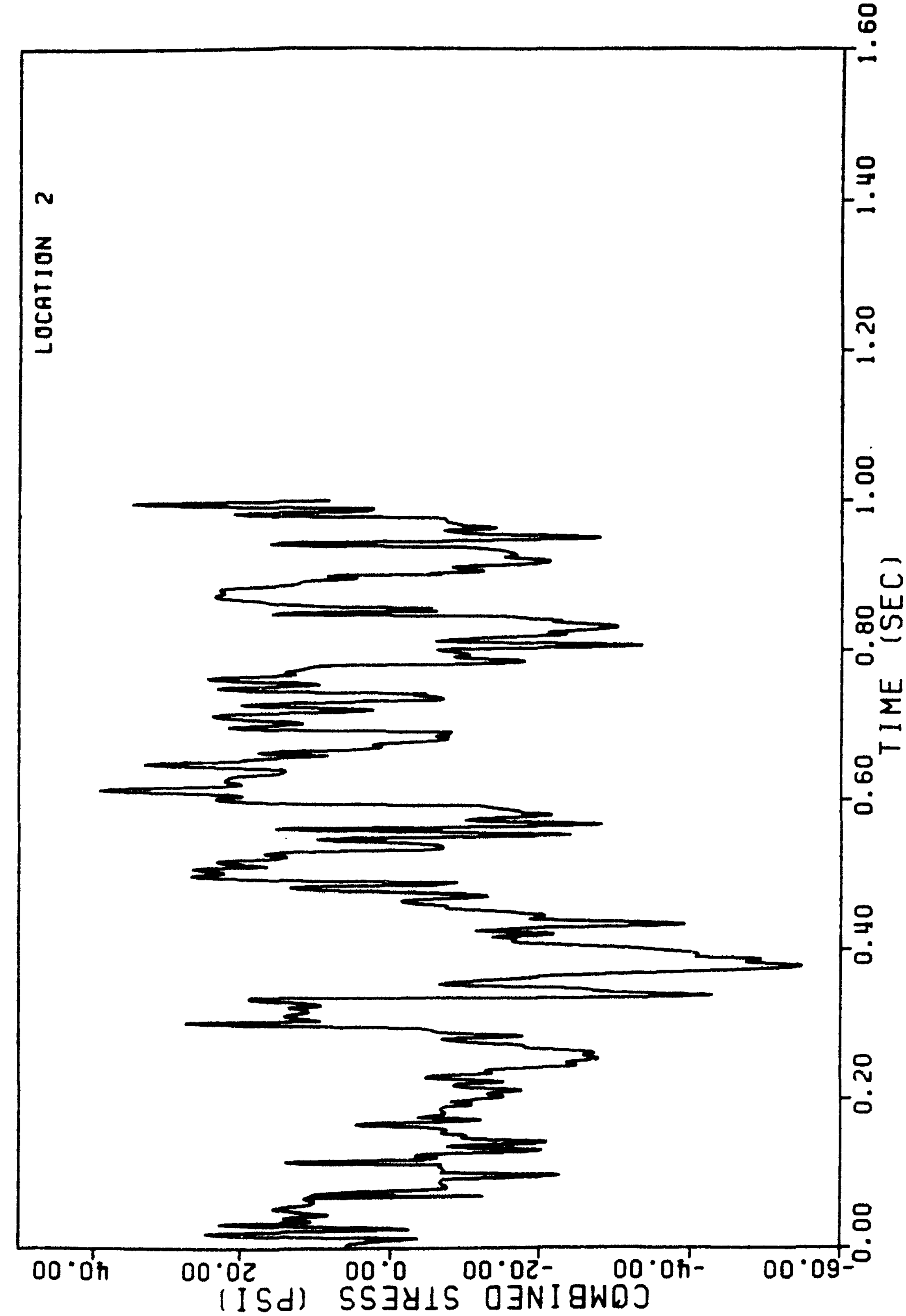


Figure C.20 TYPICAL SVA COMBINED STRESS TIME HISTORY

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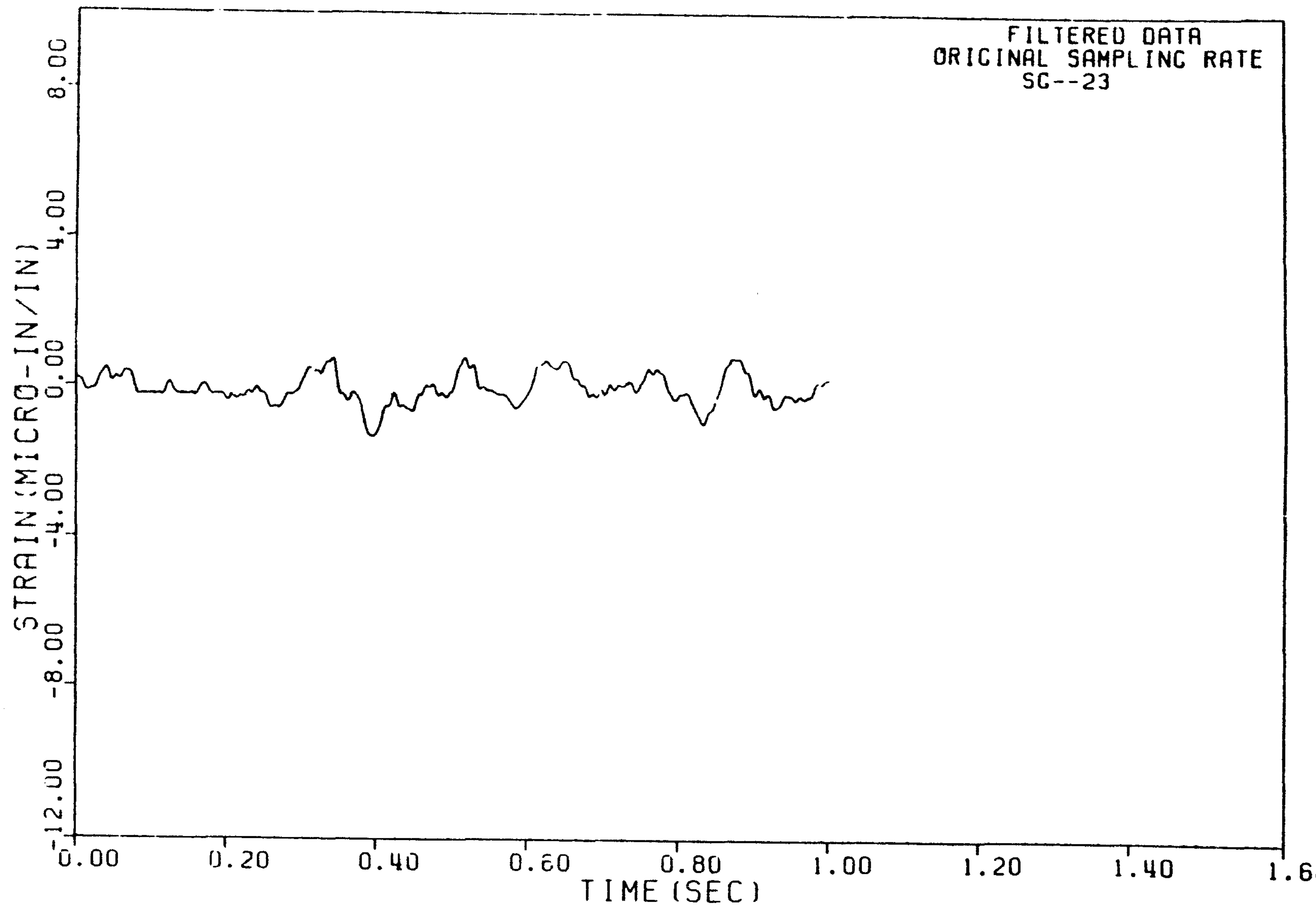


DECO SRV TEST MT1 (1ST RUN-1ST LIFT)SG

Figure C.21 TYPICAL SVA STRAIN TIME HISTORY

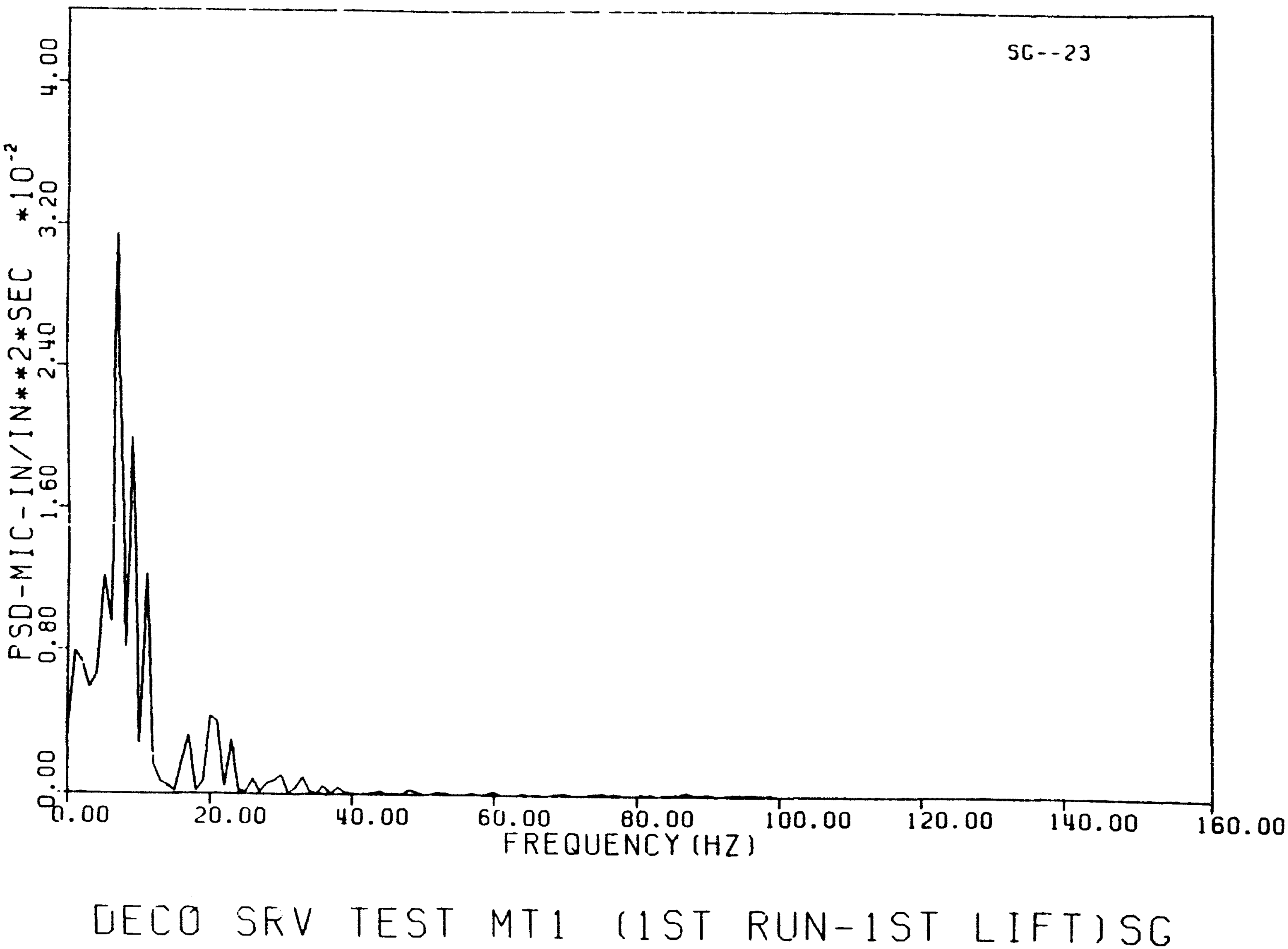
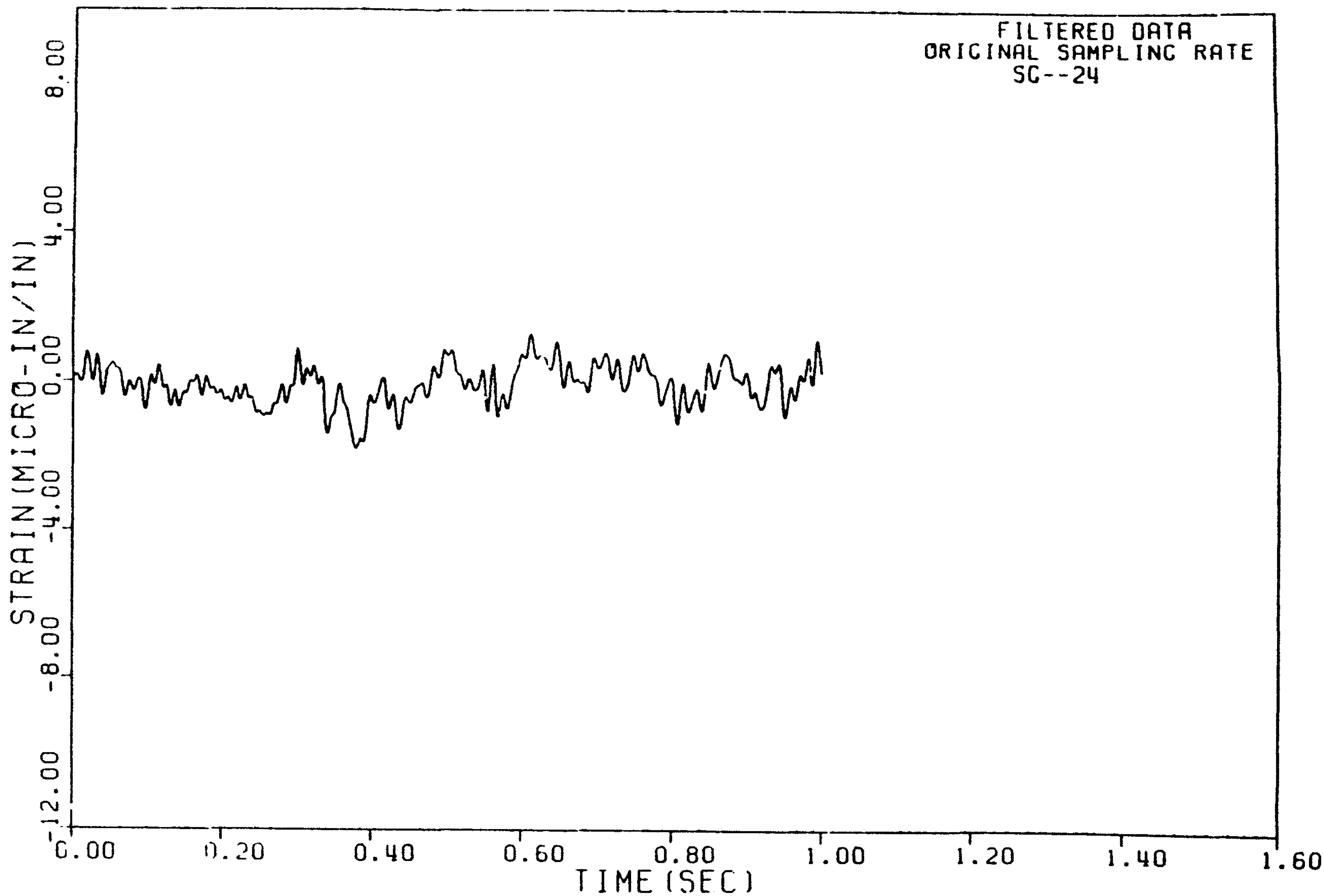


Figure C.22 TYPICAL SVA STRAIN PSD



DECO SRV TEST MT1 (1ST RUN-1ST LIFT)SG

Figure C.23 <u>TYPICAL SVA STRAIN TIME HISTORY</u>

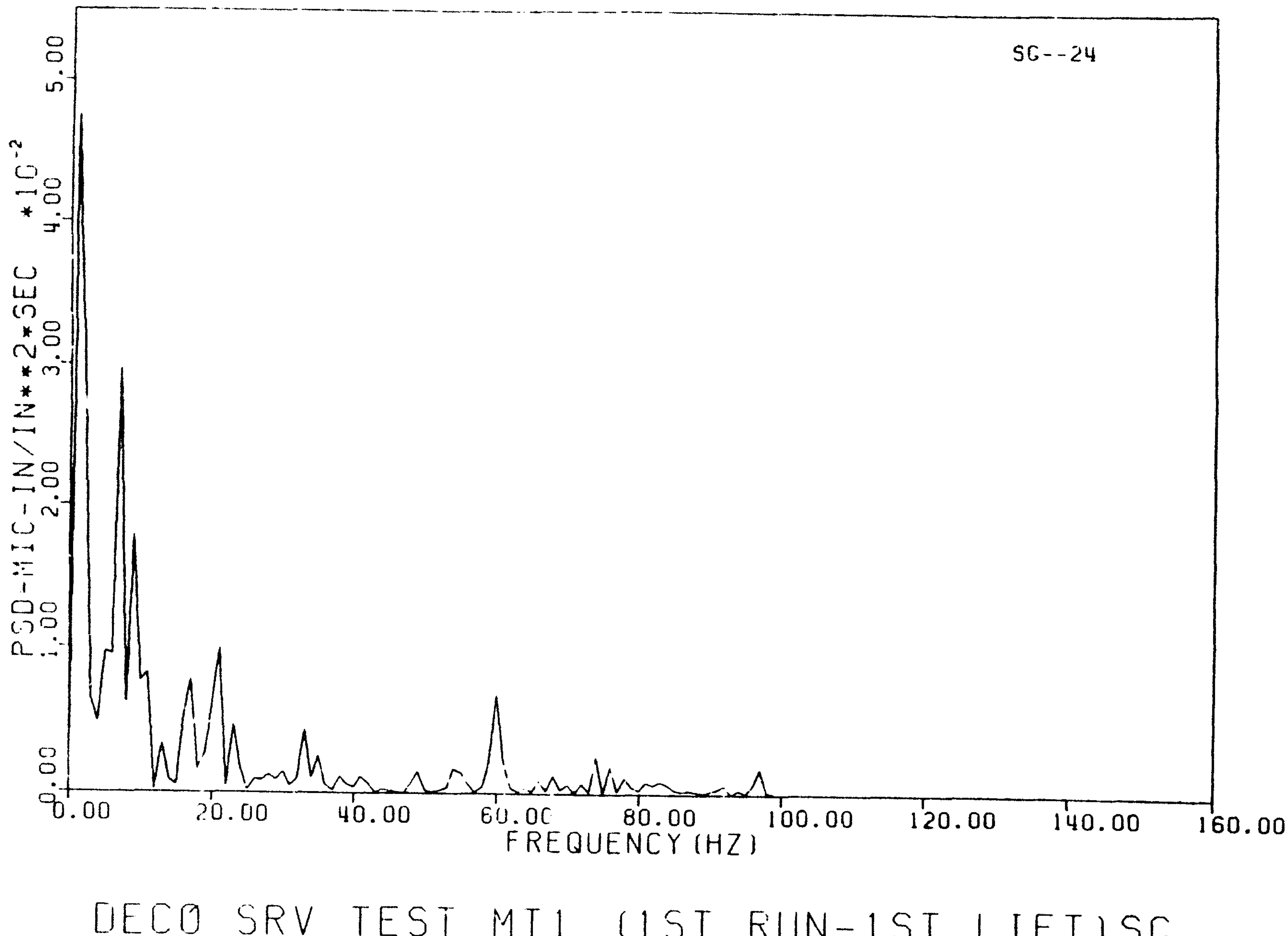
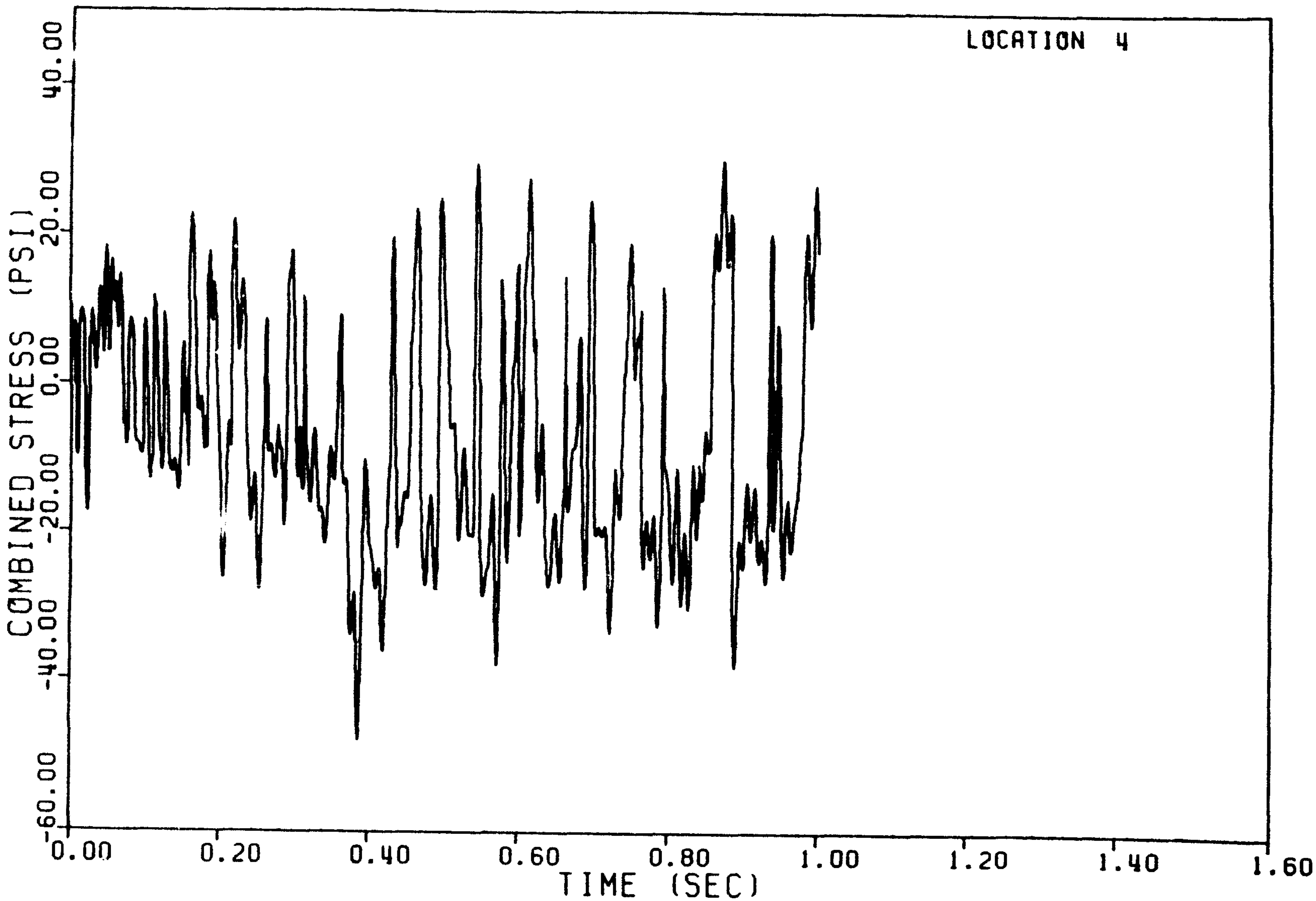


Figure C.24 TYPICAL SVA STRAIN PSD



DECO SRV TEST MT1 (1ST RUN-1ST LIFT)SC

Figure C.25 <u>TYPICAL SVA COMBINED STRESS TIME HISTORY</u>

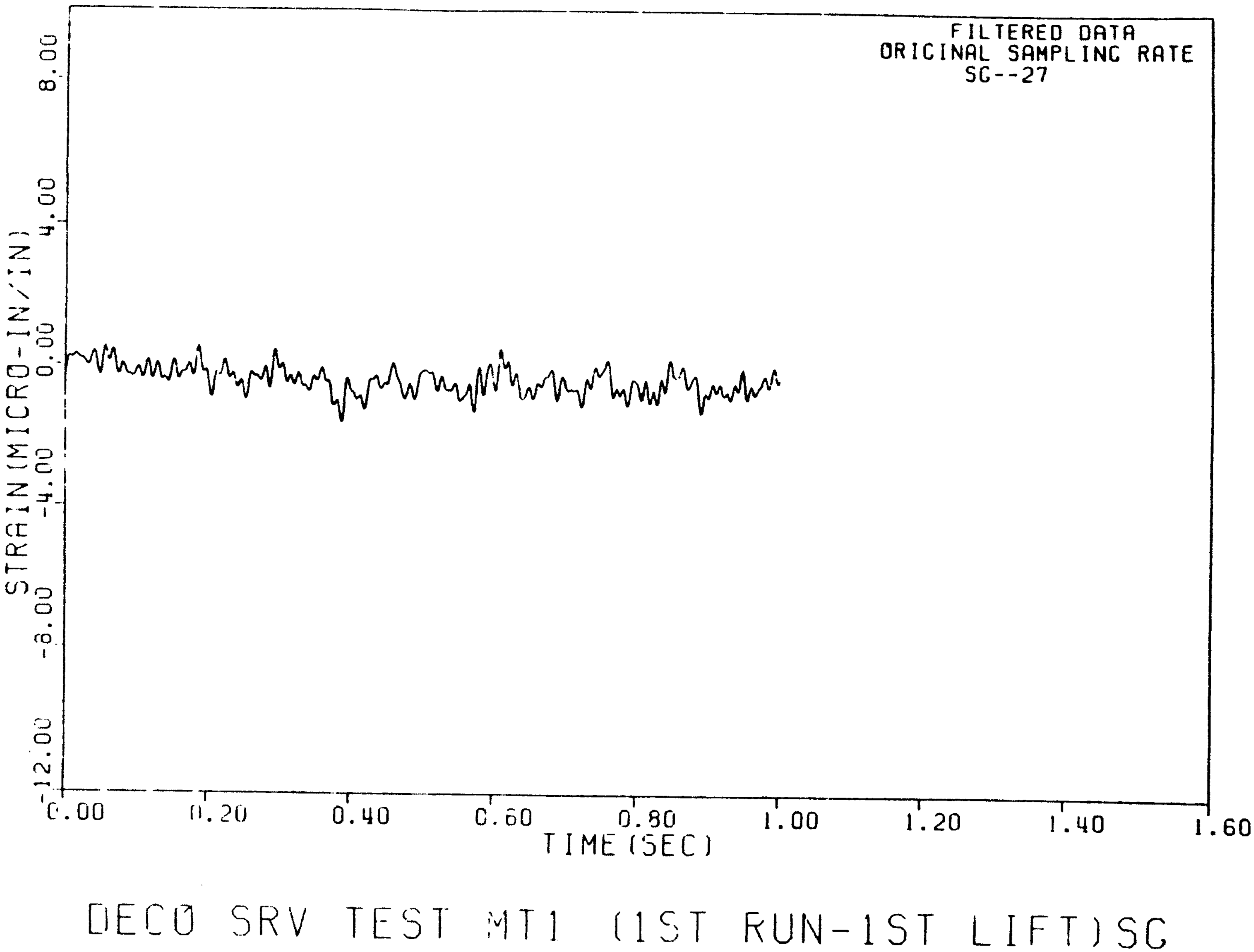


Figure C.26 TYPICAL SVA STRAIN TIME HISTORY

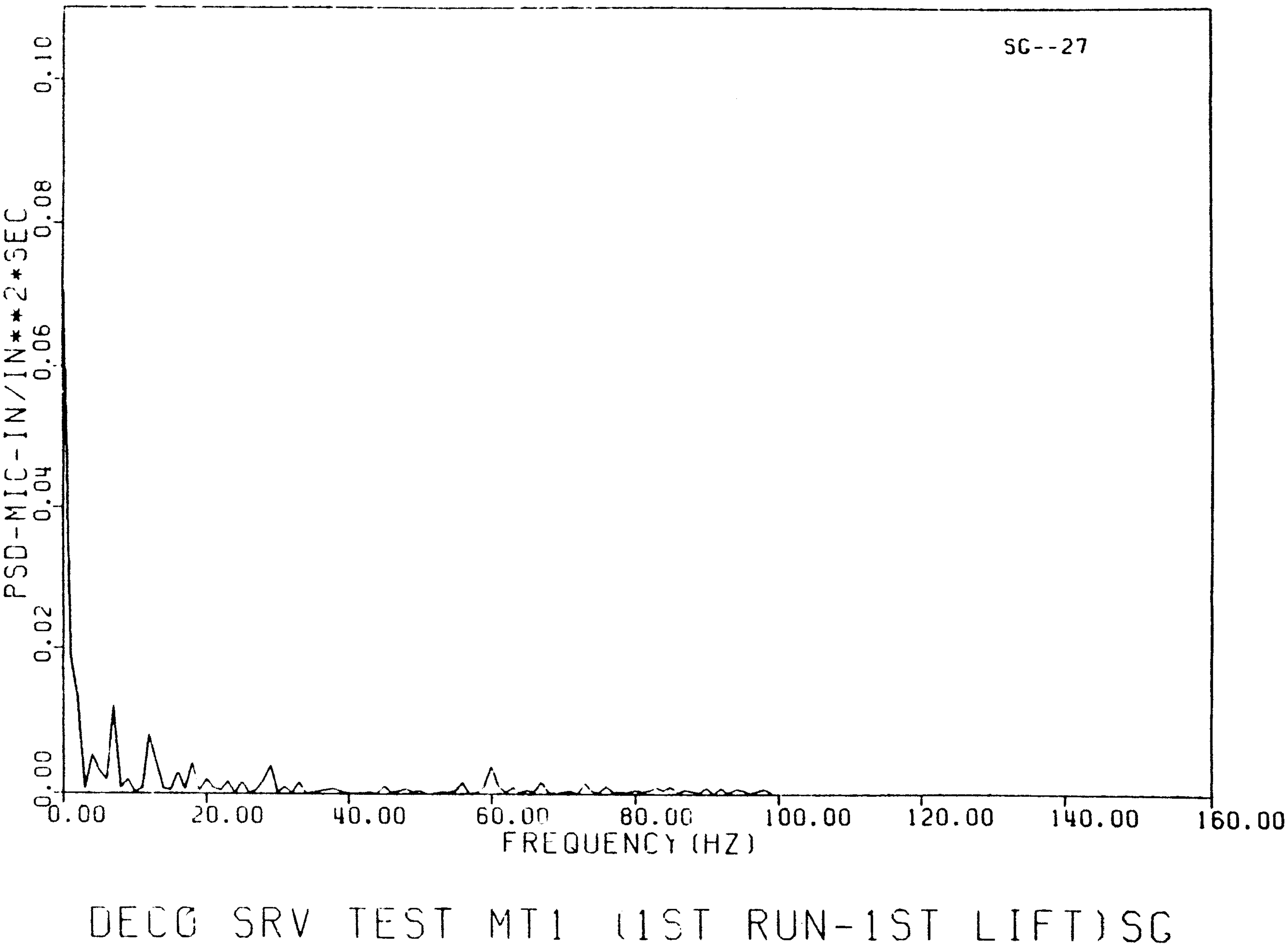
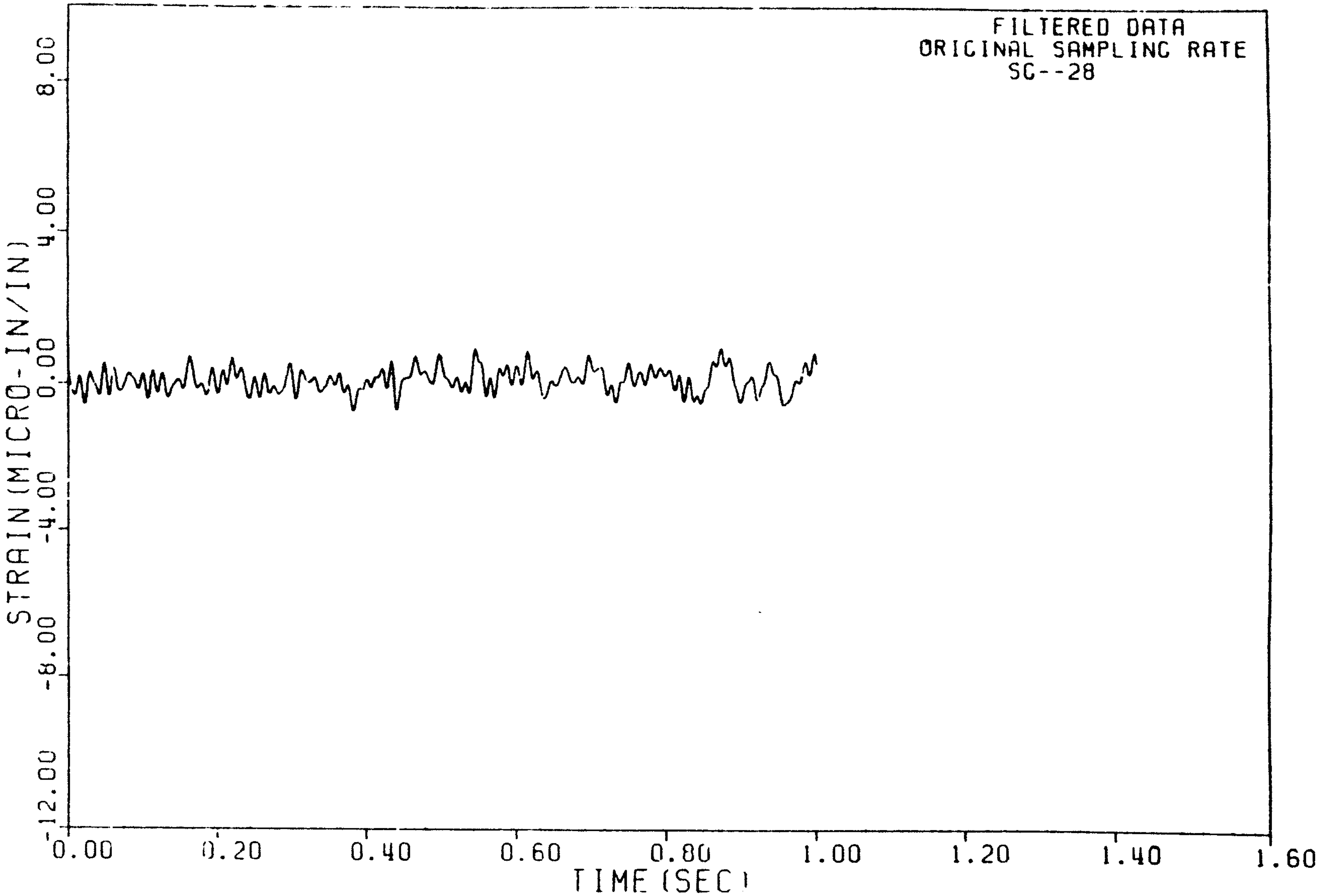


Figure C.27 TYPICAL SVA STRAIN PSD



DECO SRV TEST MT1 (1ST RUN-1ST LIFT)SG

Figure C.28 TYPICAL SVA STRAIN TIME HISTORY

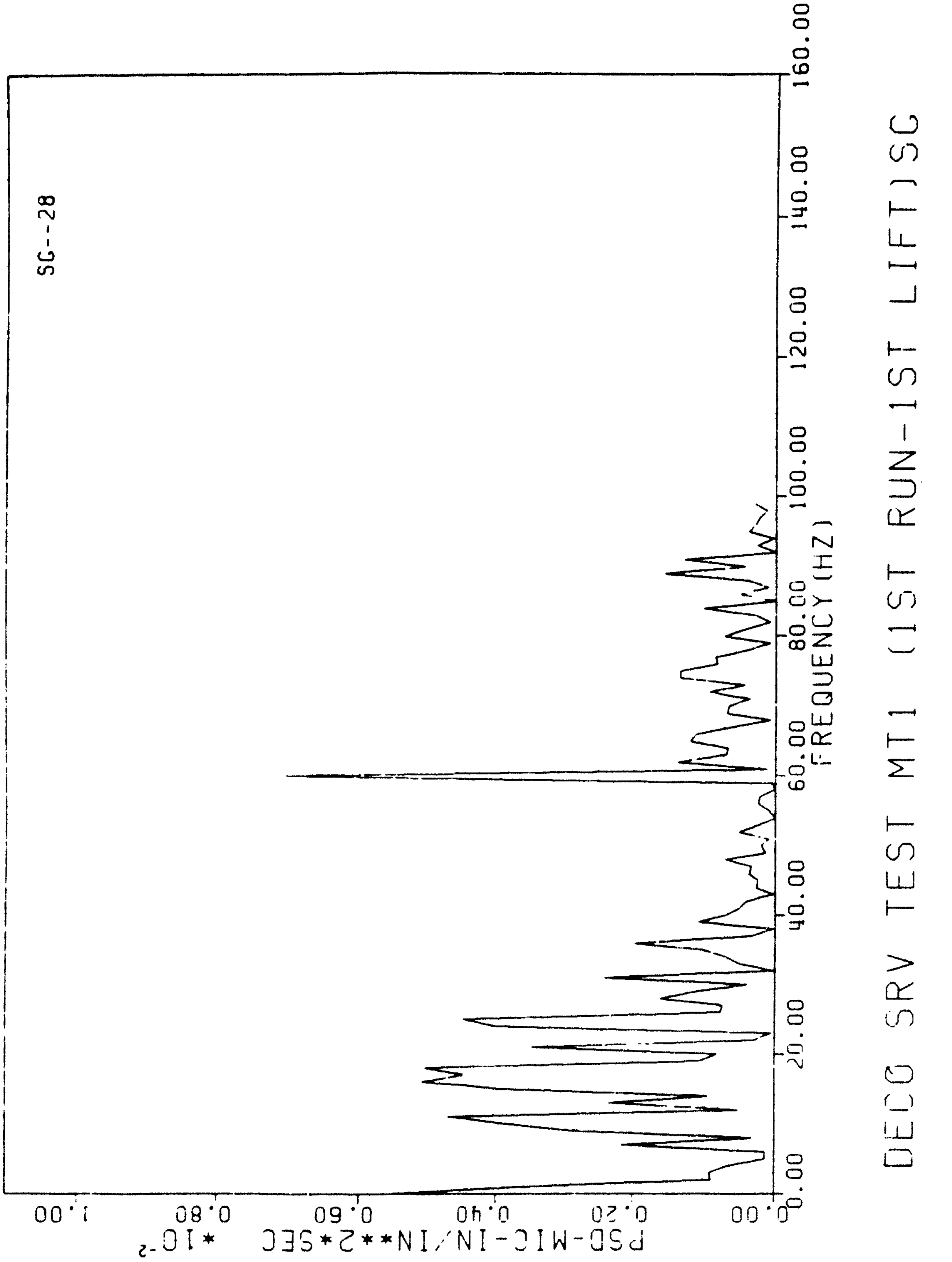
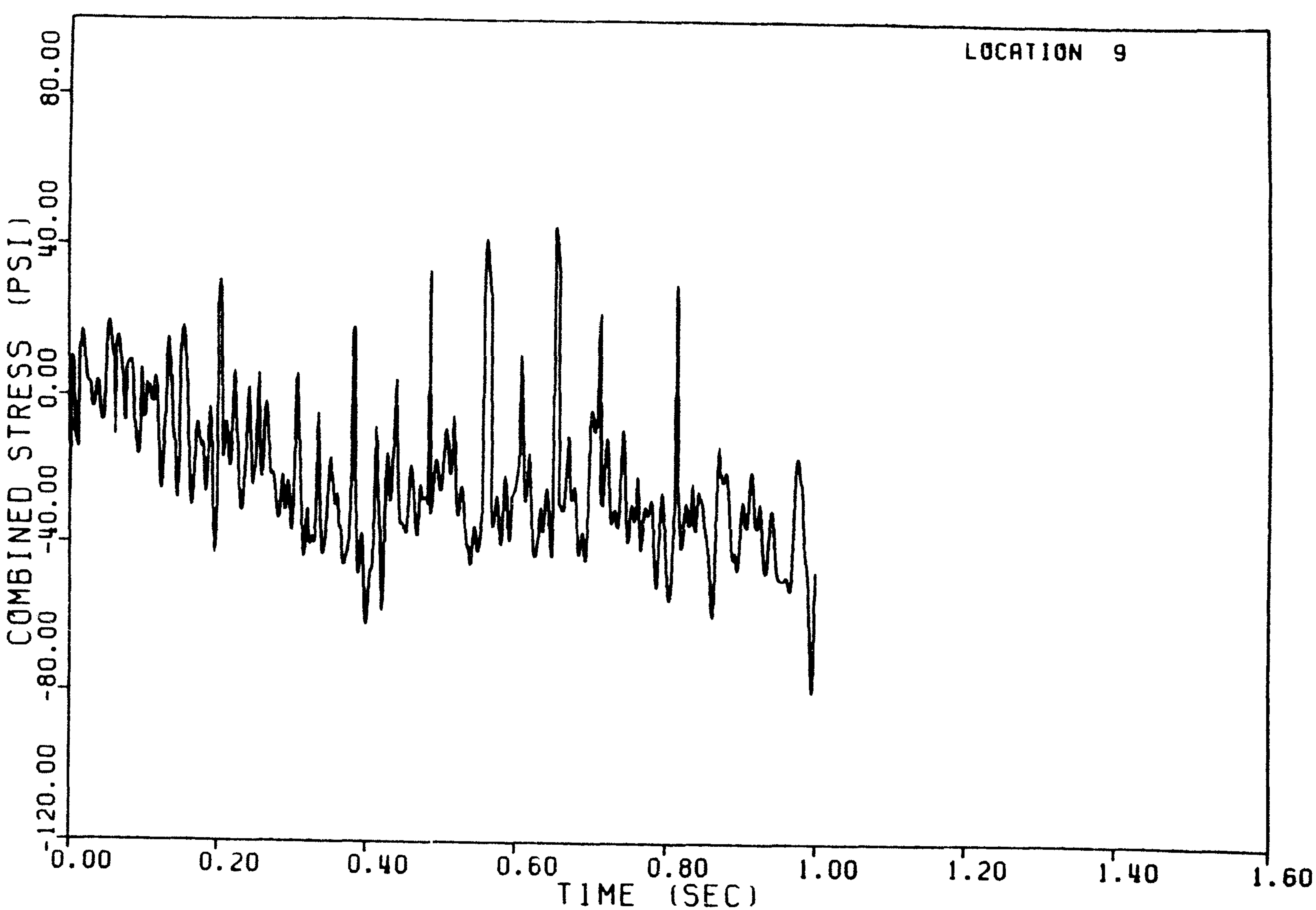


Figure C.29 TYPICAL SVA STRAIN PSD



DECO SRV TEST MT1 (1ST RUN-1ST LIFT)SG

Figure C.30 <u>TYPICAL SVA COMBINED STRESS TIME HISTORY</u>

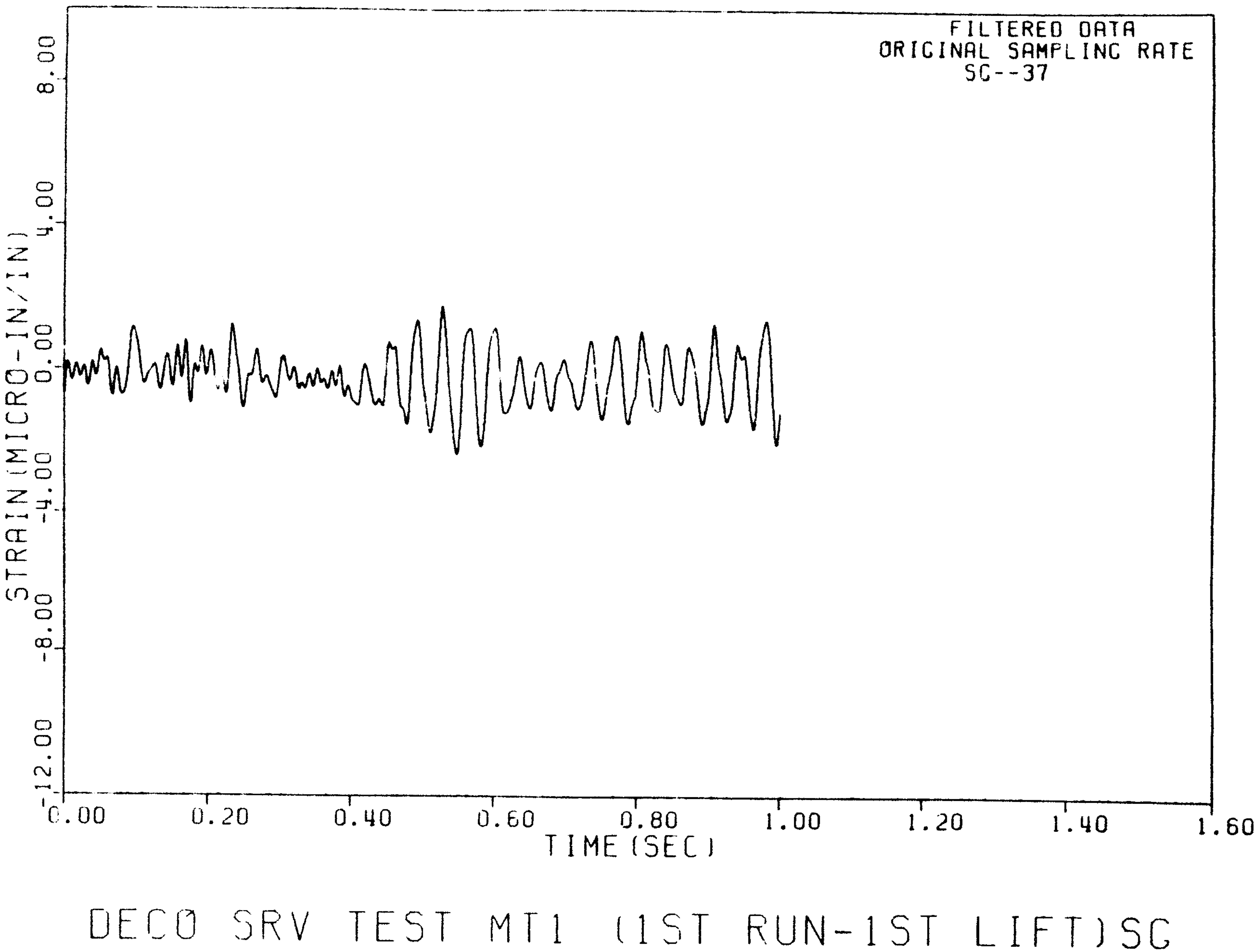


Figure C.31 TYPICAL SVA STRAIN TIME HISTORY

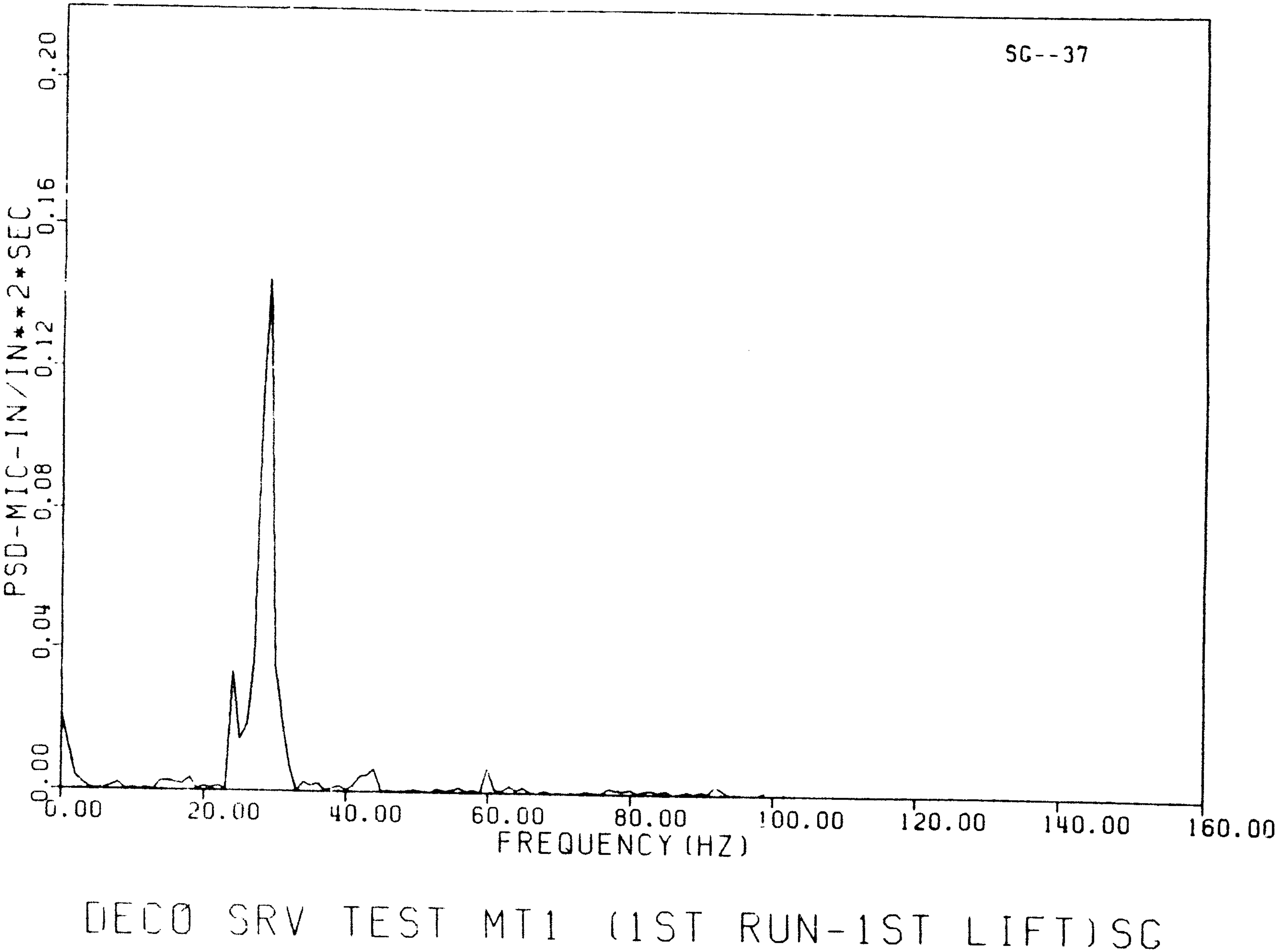
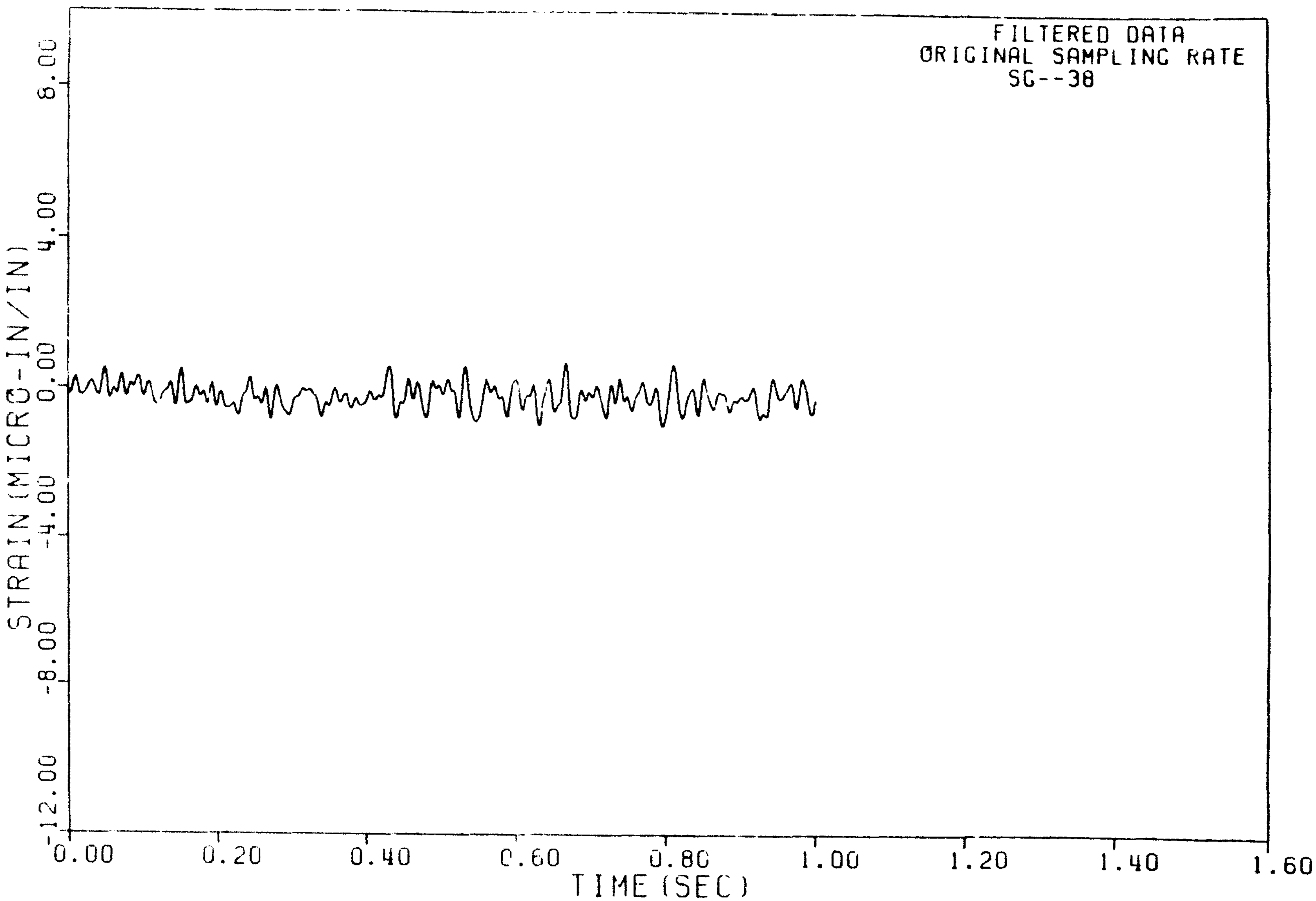


Figure C.32 TYPICAL SVA STRAIN PSD



DECO SRV TEST MT1 (1ST RUN-1ST LIFT)SG

Figure C.33 TYPICAL SVA STRAIN TIME HISTORY

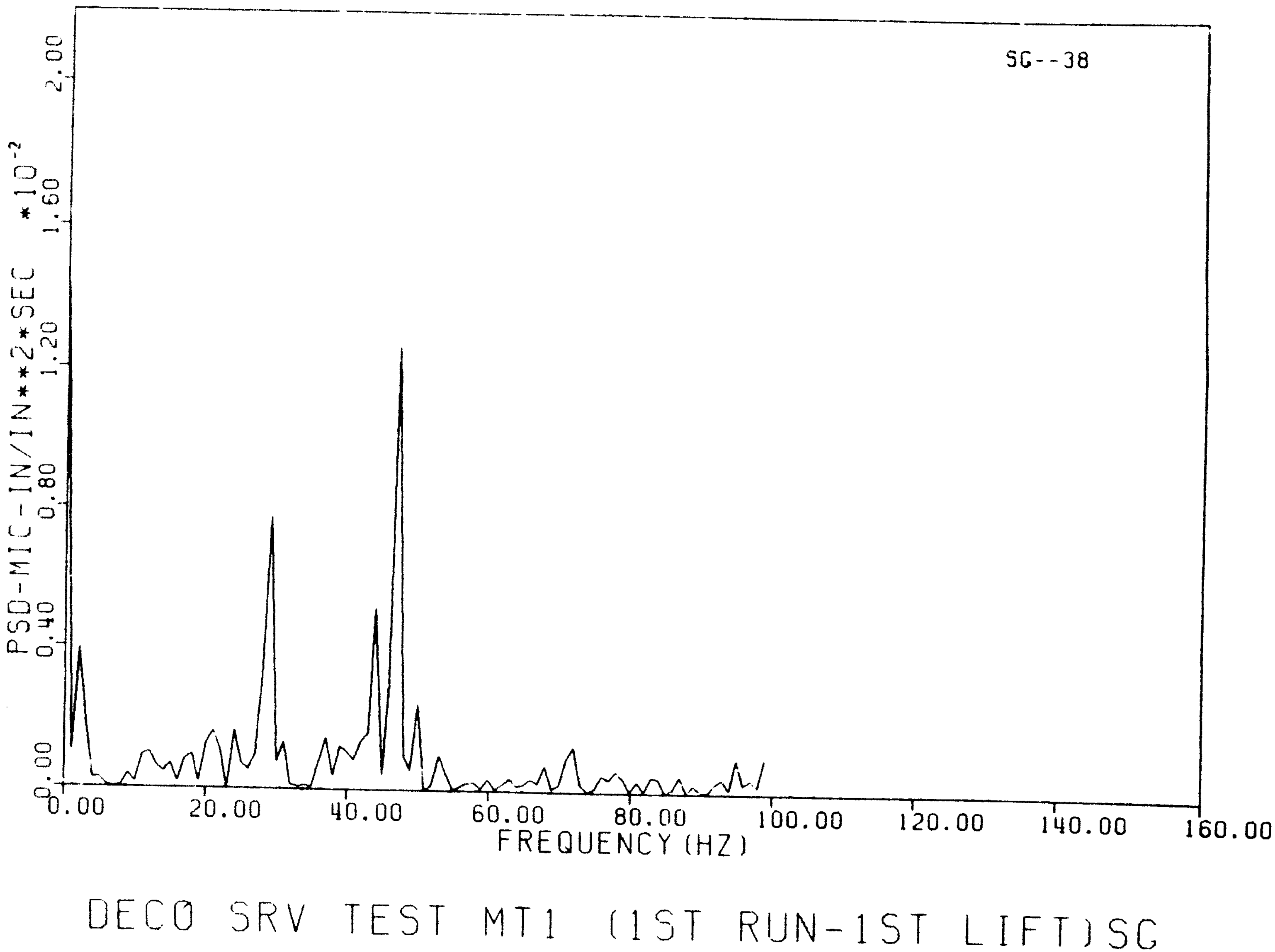


Figure C.34 <u>TYPICAL SVA STRAIN PSD</u>

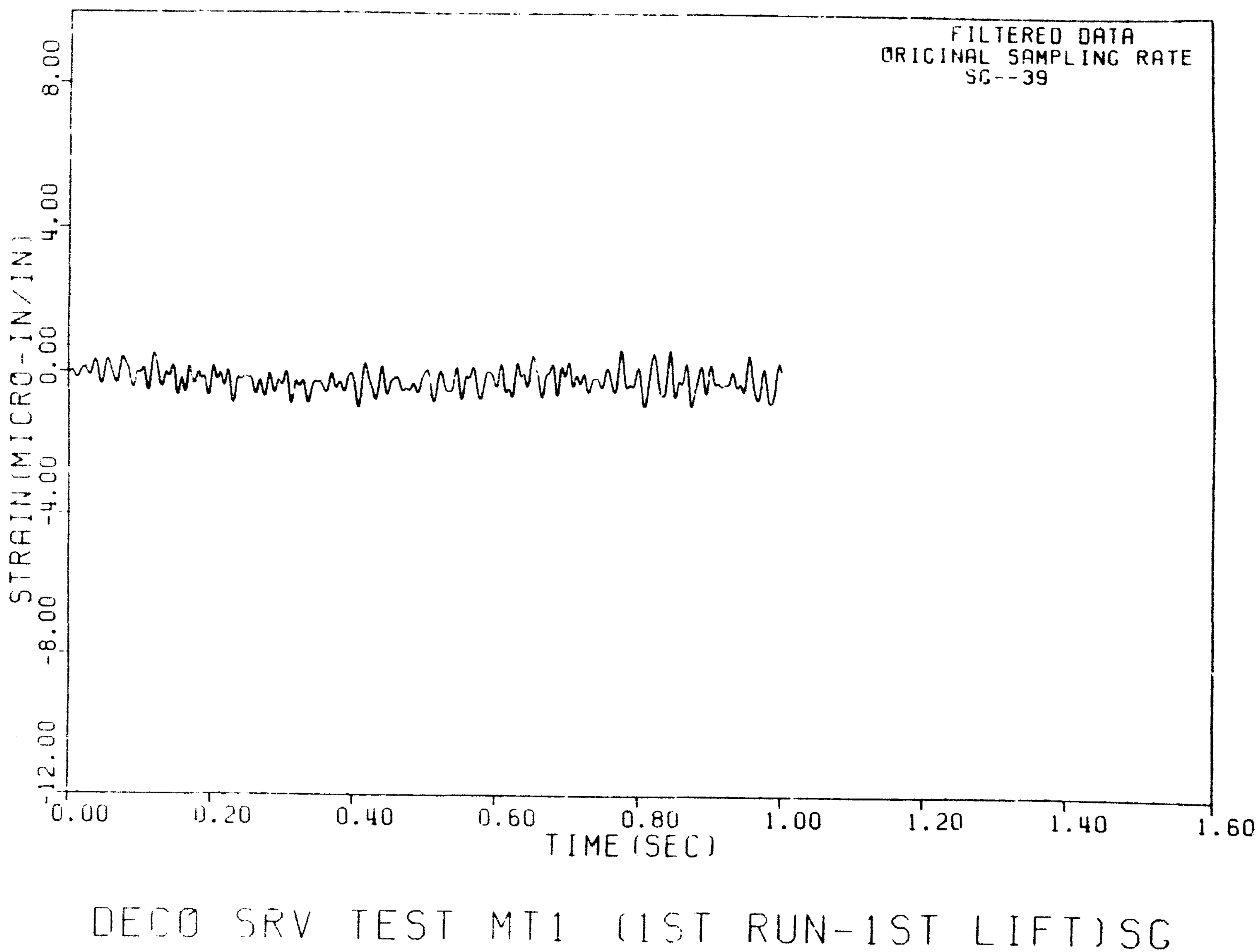


Figure C.35 TYPICAL SVA STRAIN TIME HISTORY

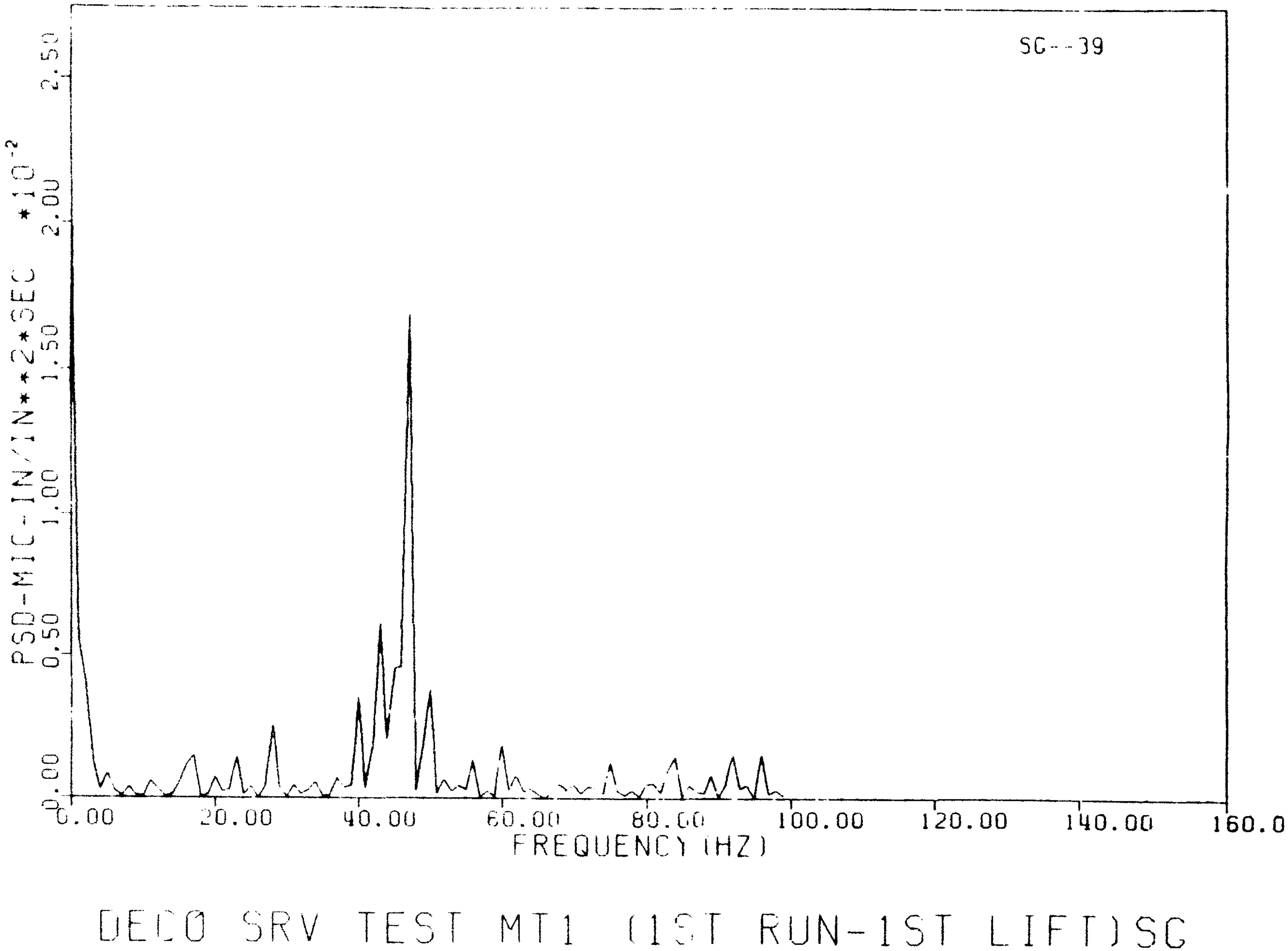
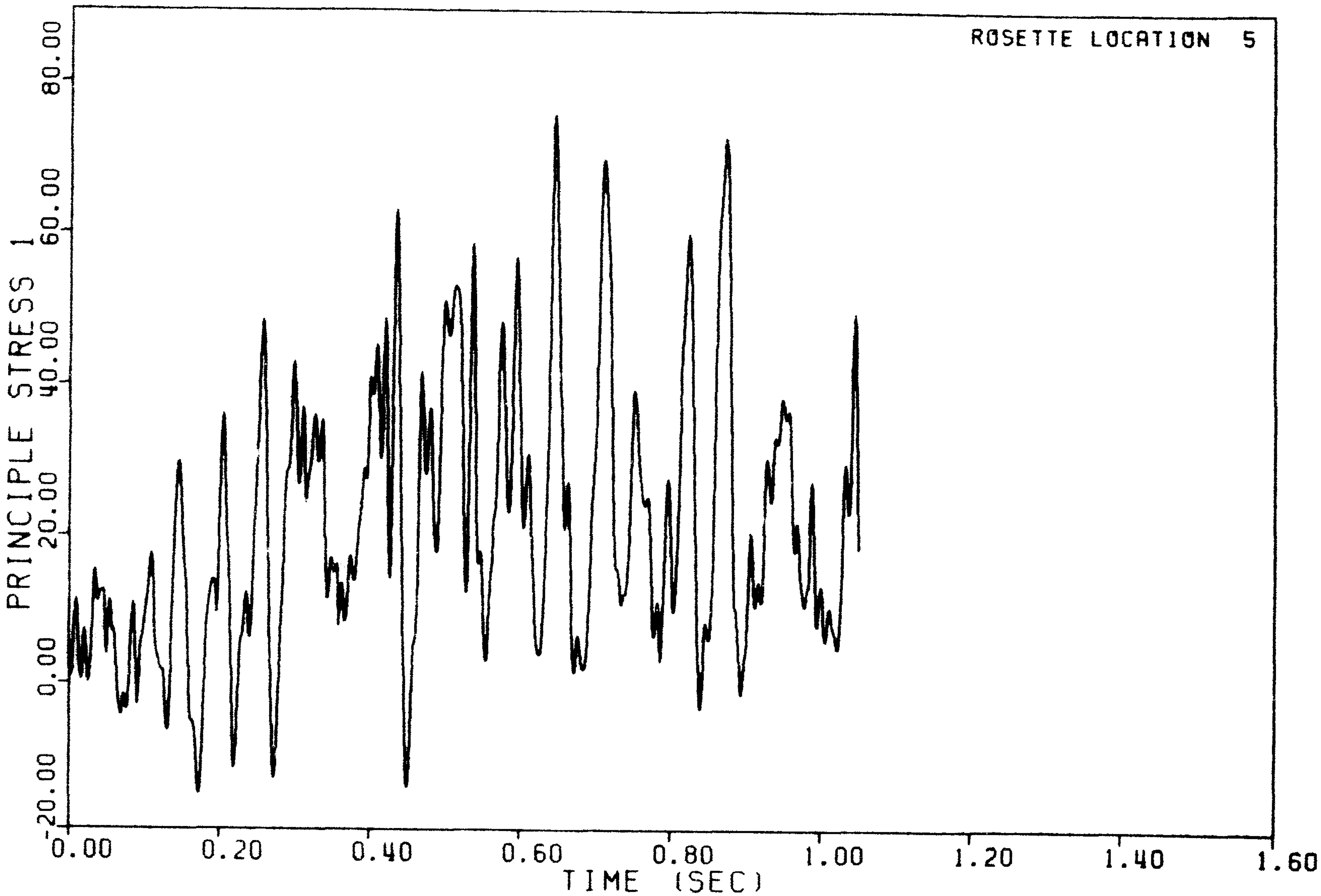


Figure C.36 <u>TYPICAL SVA STRAIN PSD</u>



DECO SRV TEST MTS (3RD RUN-1ST LIFT)SC

Figure C.37 TYPICAL SVA PRINCIPAL STRESS TIME HISTORY

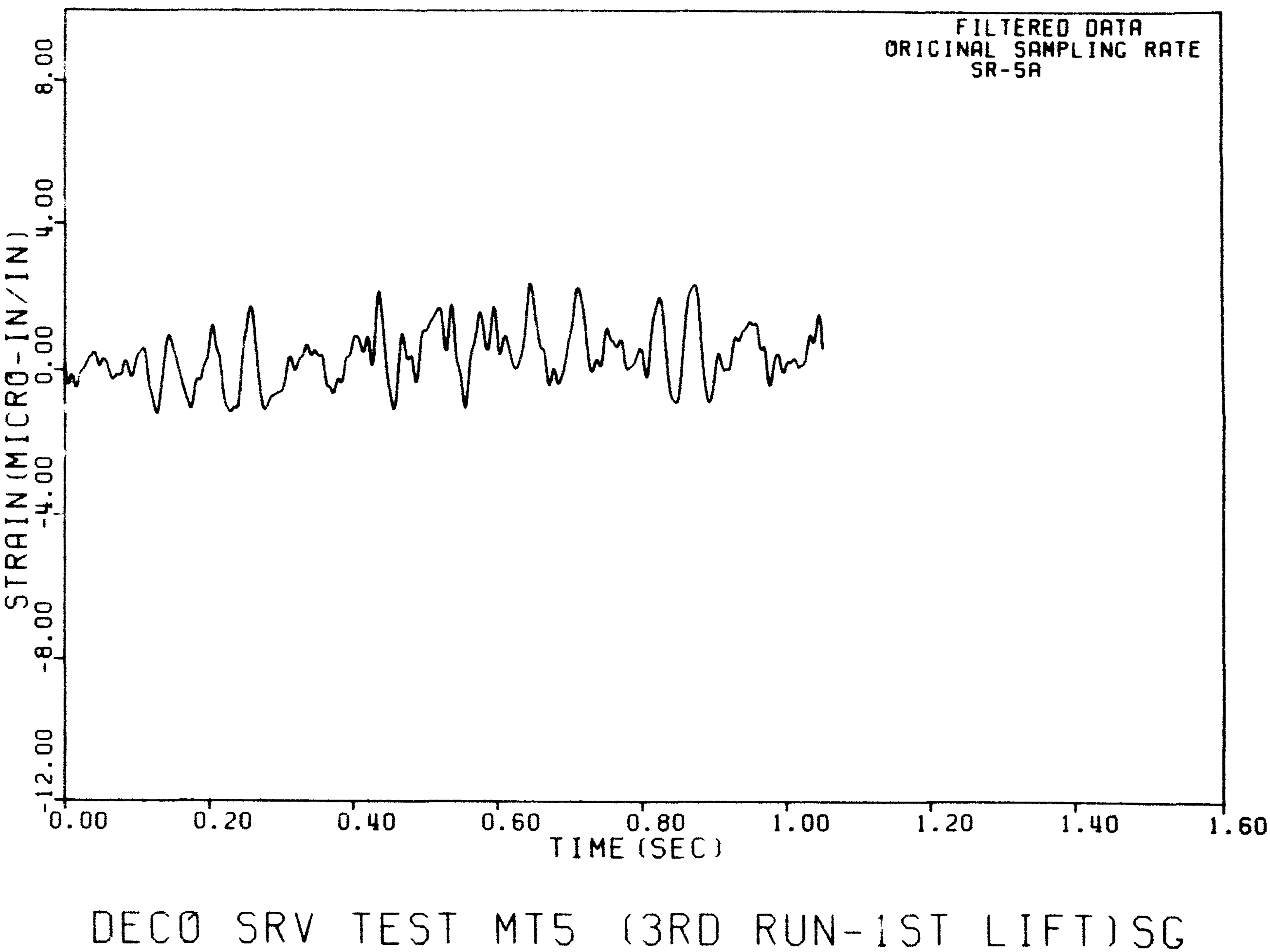
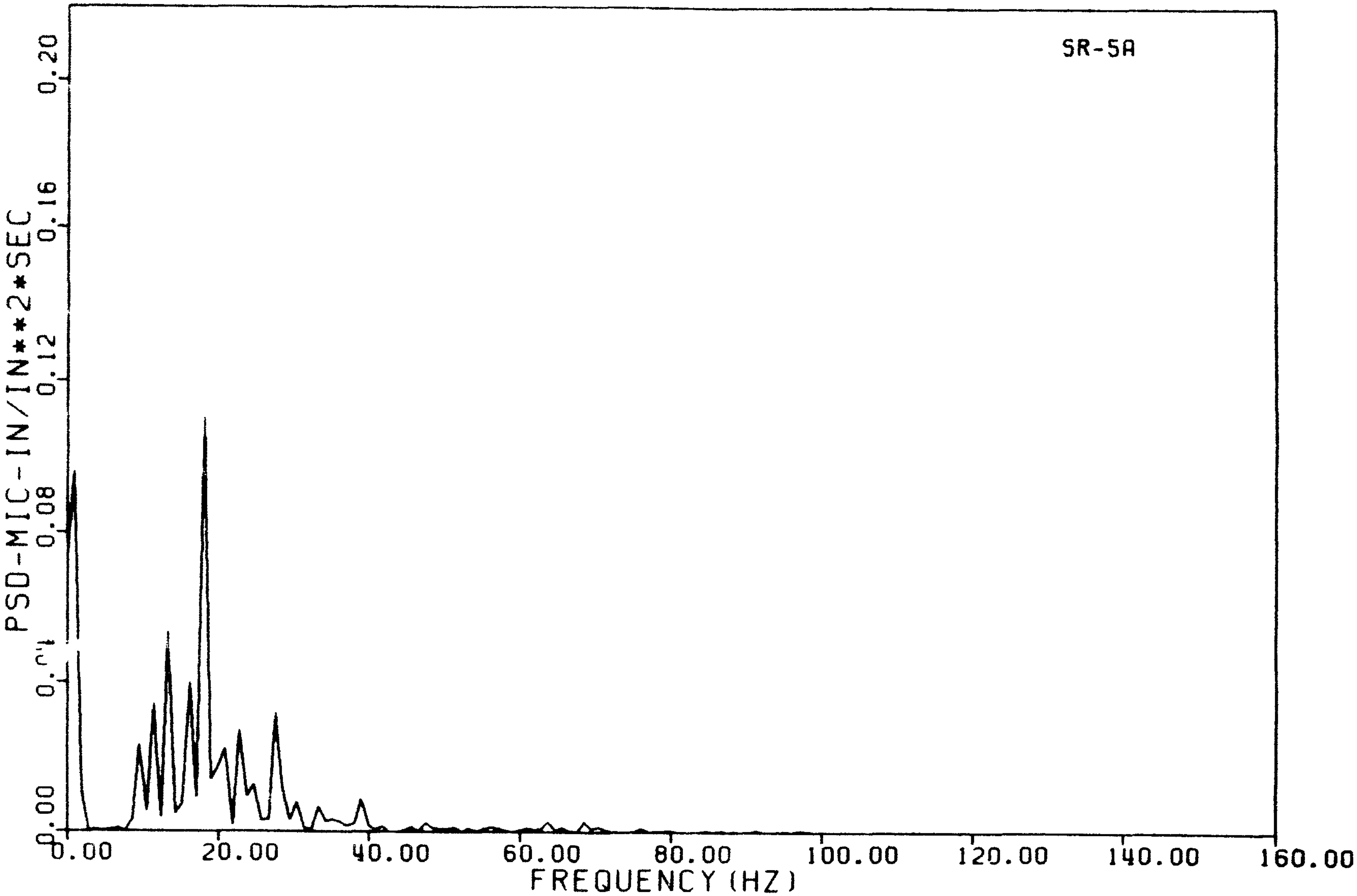


Figure C.38 TYPICAL SVA STRAIN TIME HISTORY



DECO SRV TEST MT5 (3RD RUN-1ST LIFT)SG

Figure C.39 TYPICAL SVA STRAIN PSD

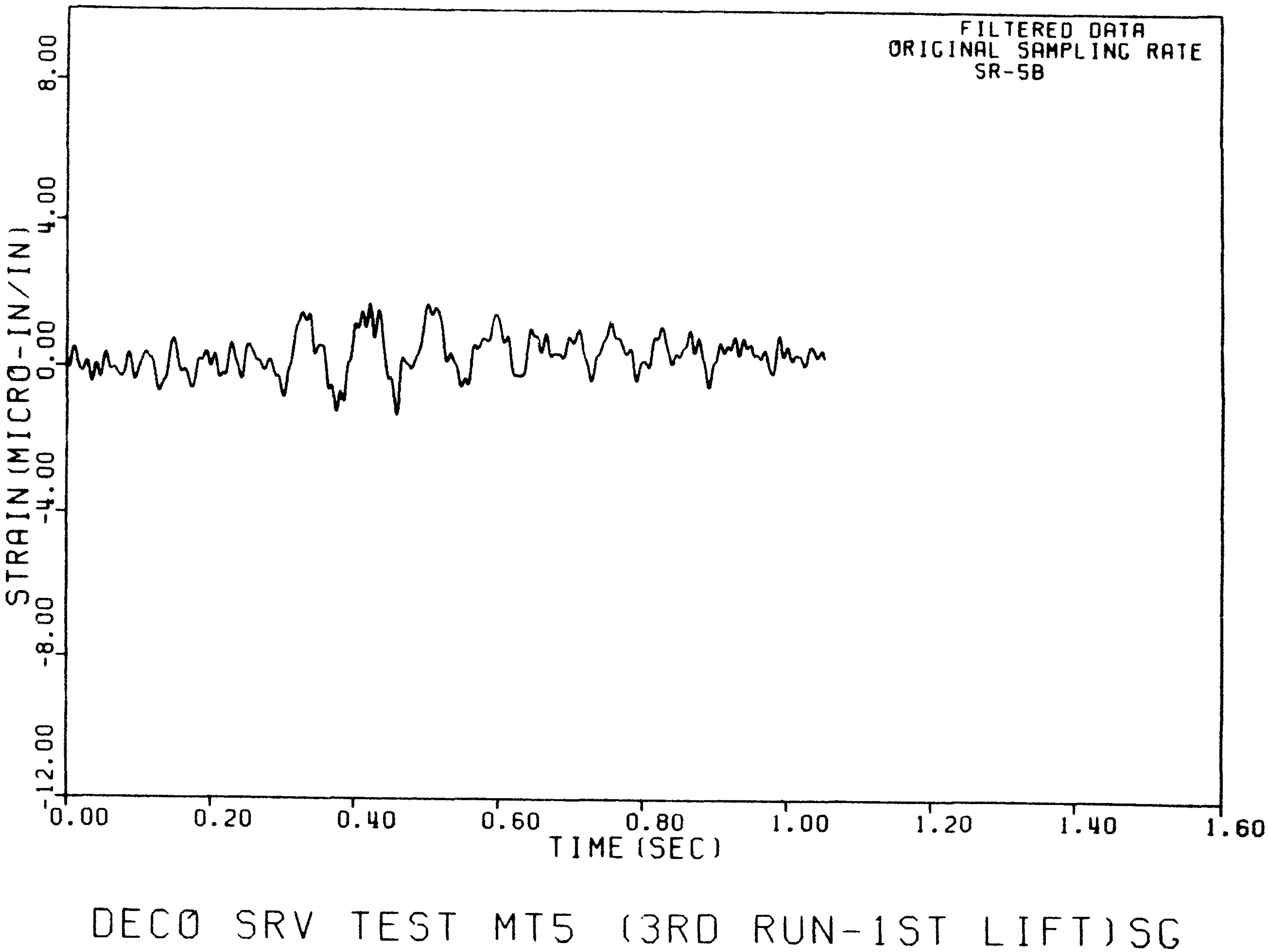


Figure C.40 TYPICAL SVA STRAIN TIME HISTORY

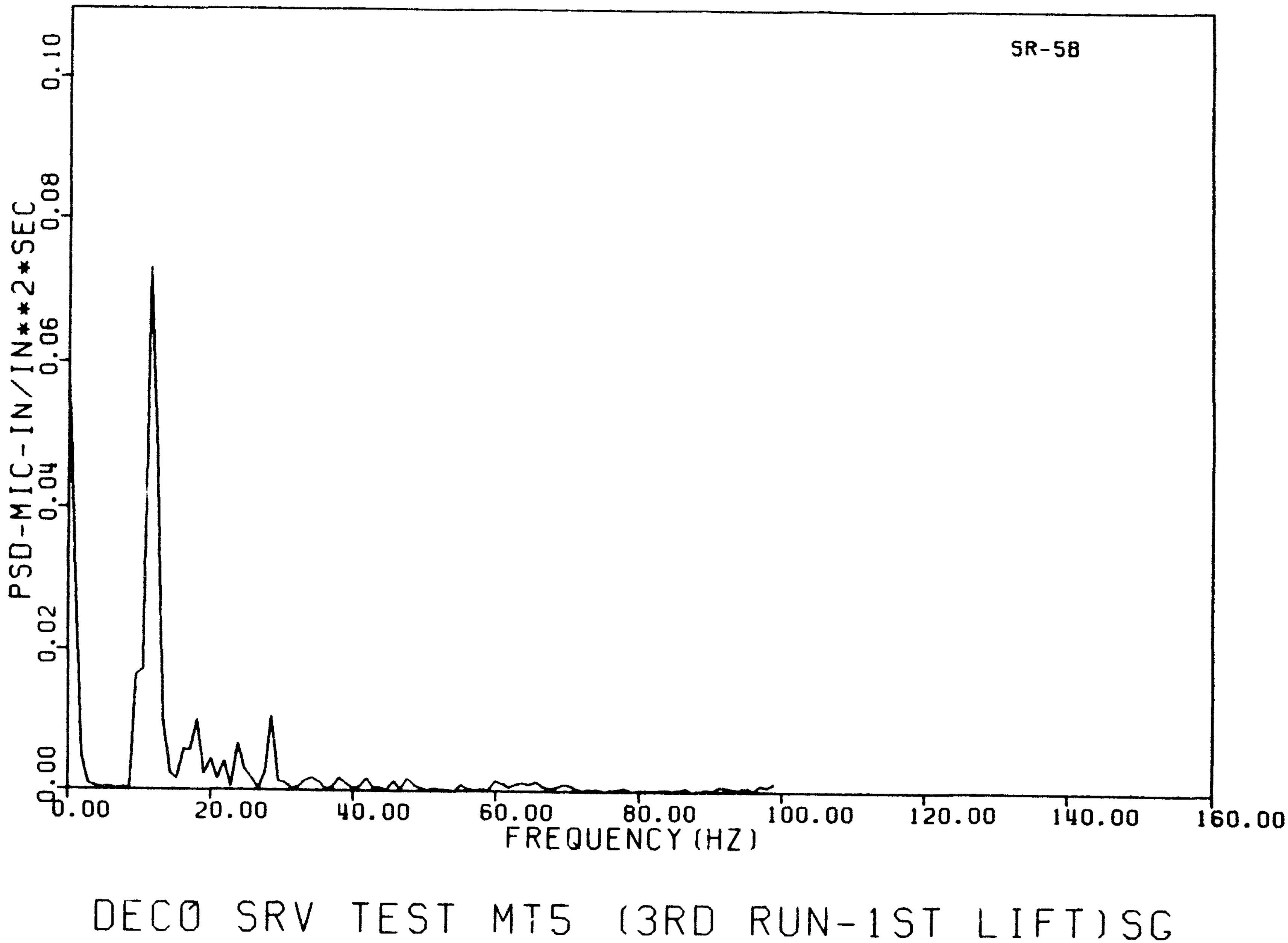
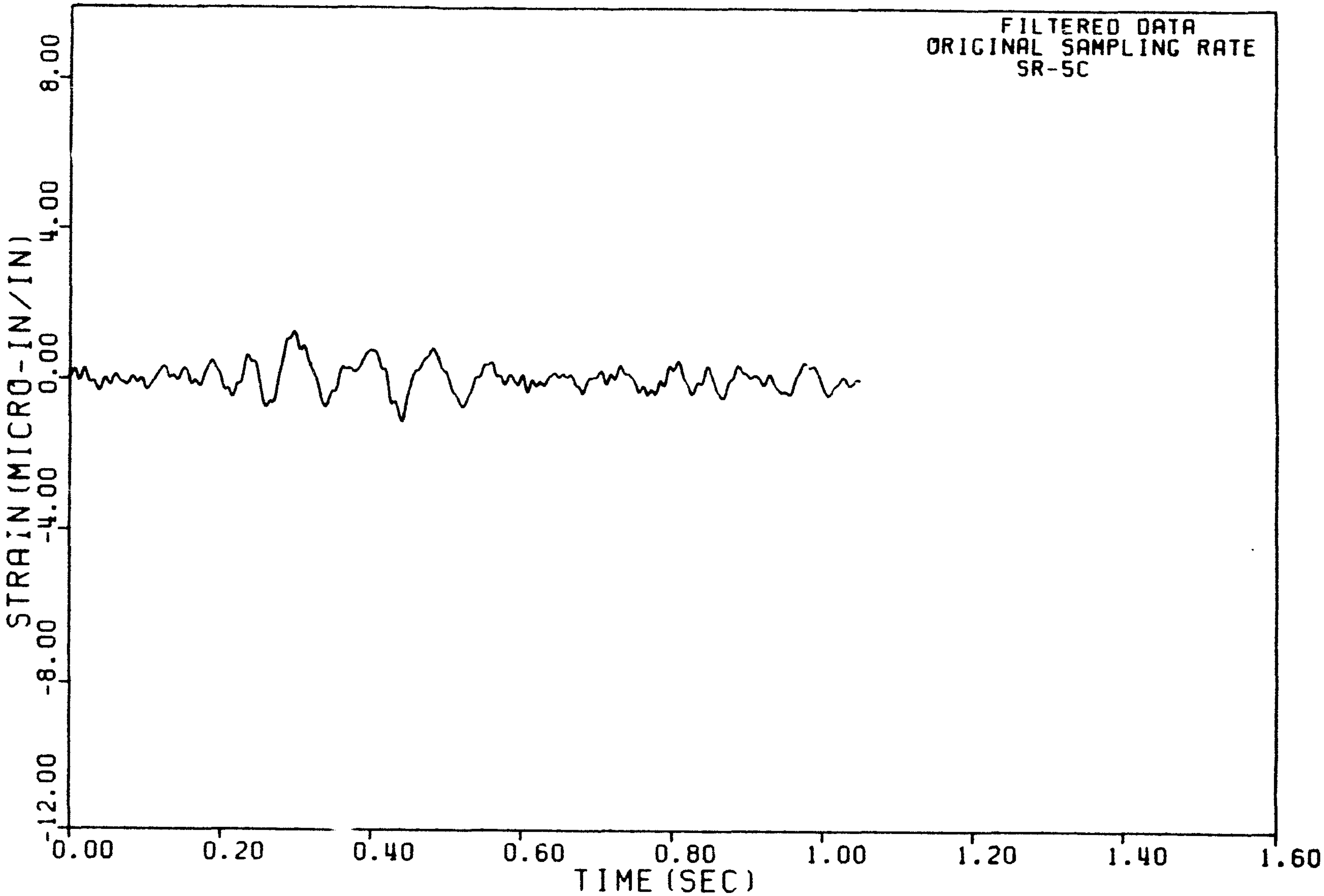


Figure C.40 <u>TYPICAL SVA STRAIN PSD</u>



DECO SRV TEST MT5 (3RD RUN-1ST LIFT)SG

Figure C.42 TYPICAL SVA STRAIN TIME HISTORY

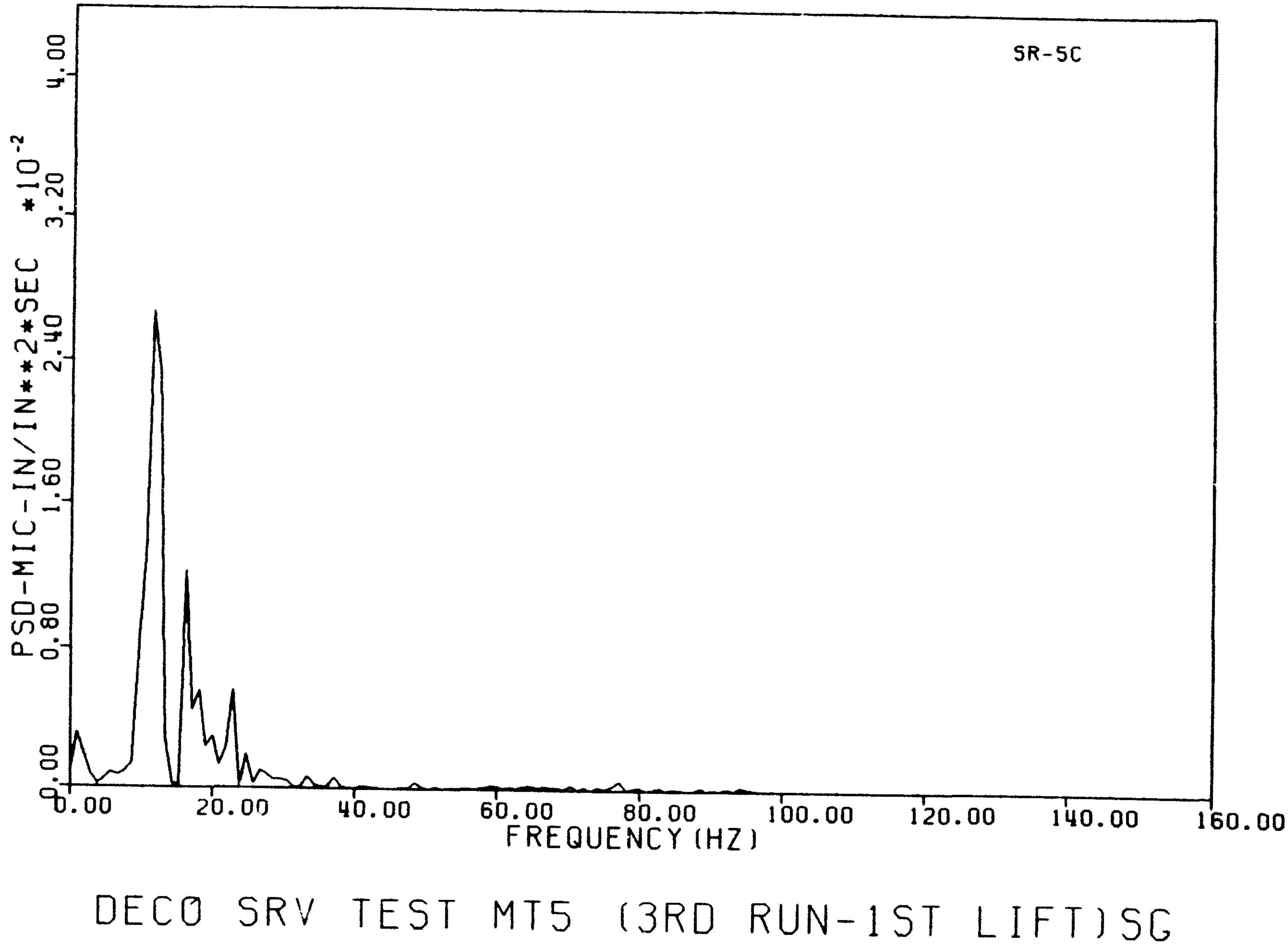
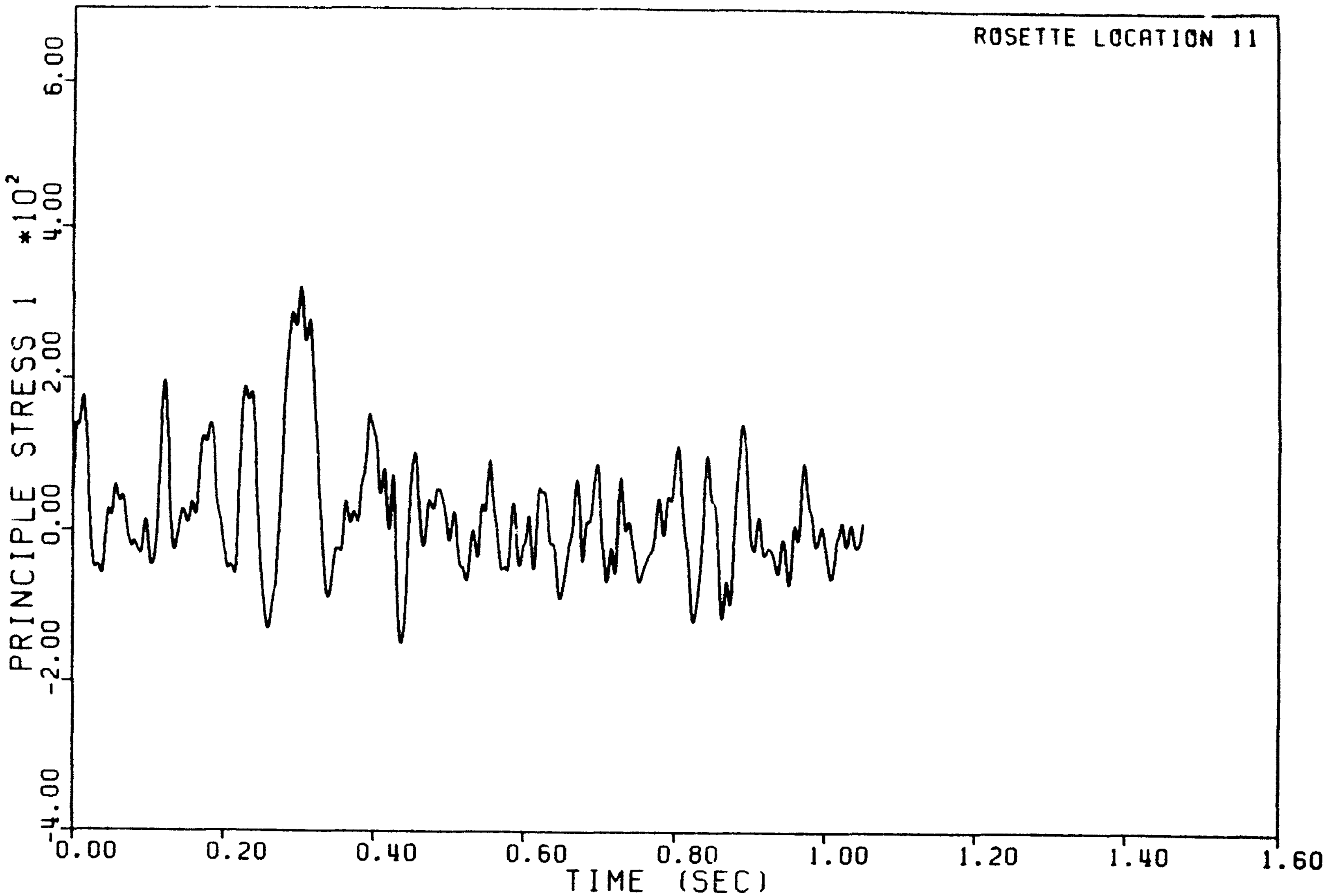


Figure C.43 TYPICAL SVA STRAIN PSD



DECO SRV TEST MTS (3RD RUN-1ST LIFT)SC

Figure C.44 <u>TYPICAL SVA PRINCIPAL STRESS TIME HISTORY</u>

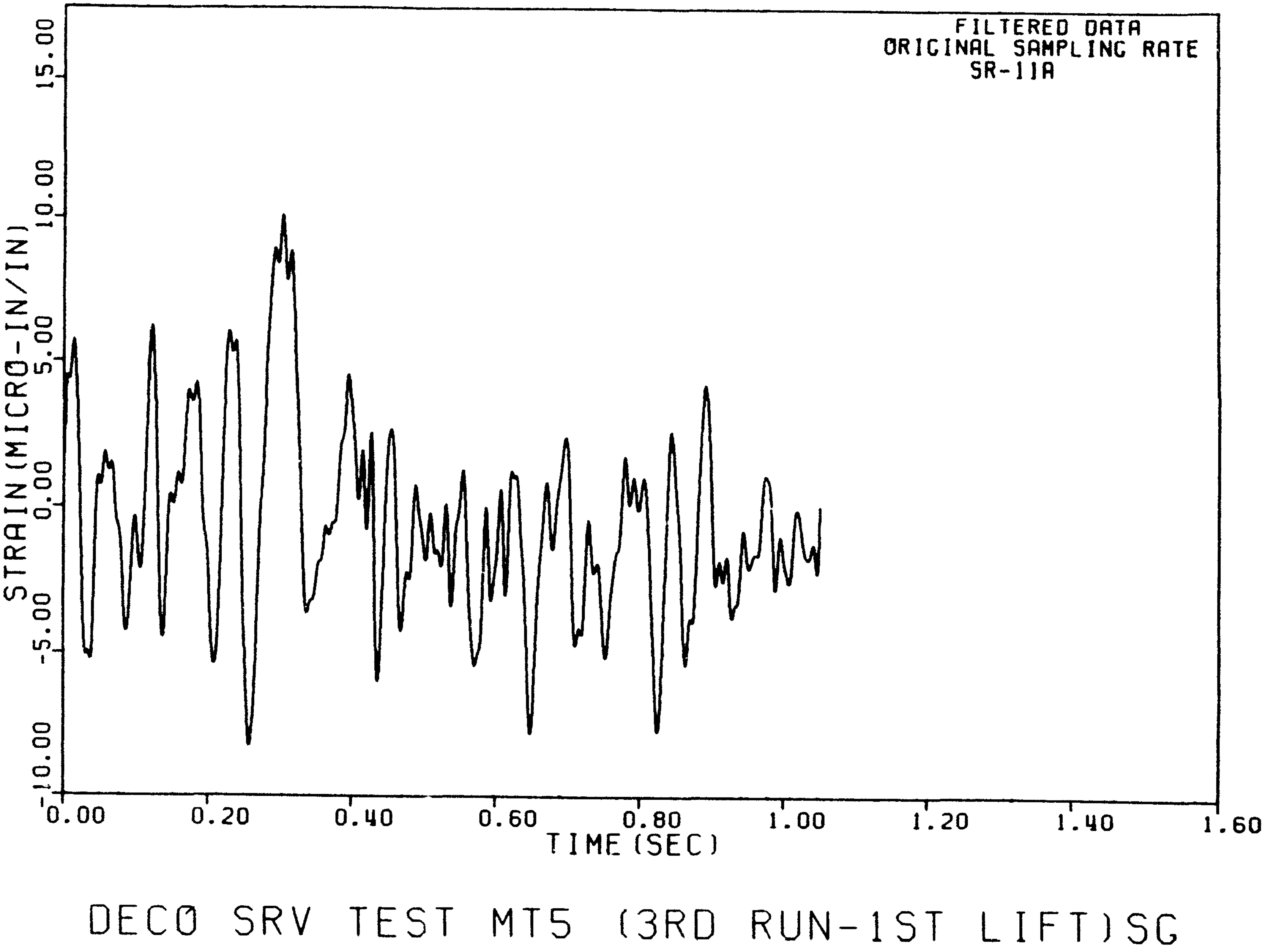


Figure C.45 TYPICAL SVA STRAIN TIME HISTORY

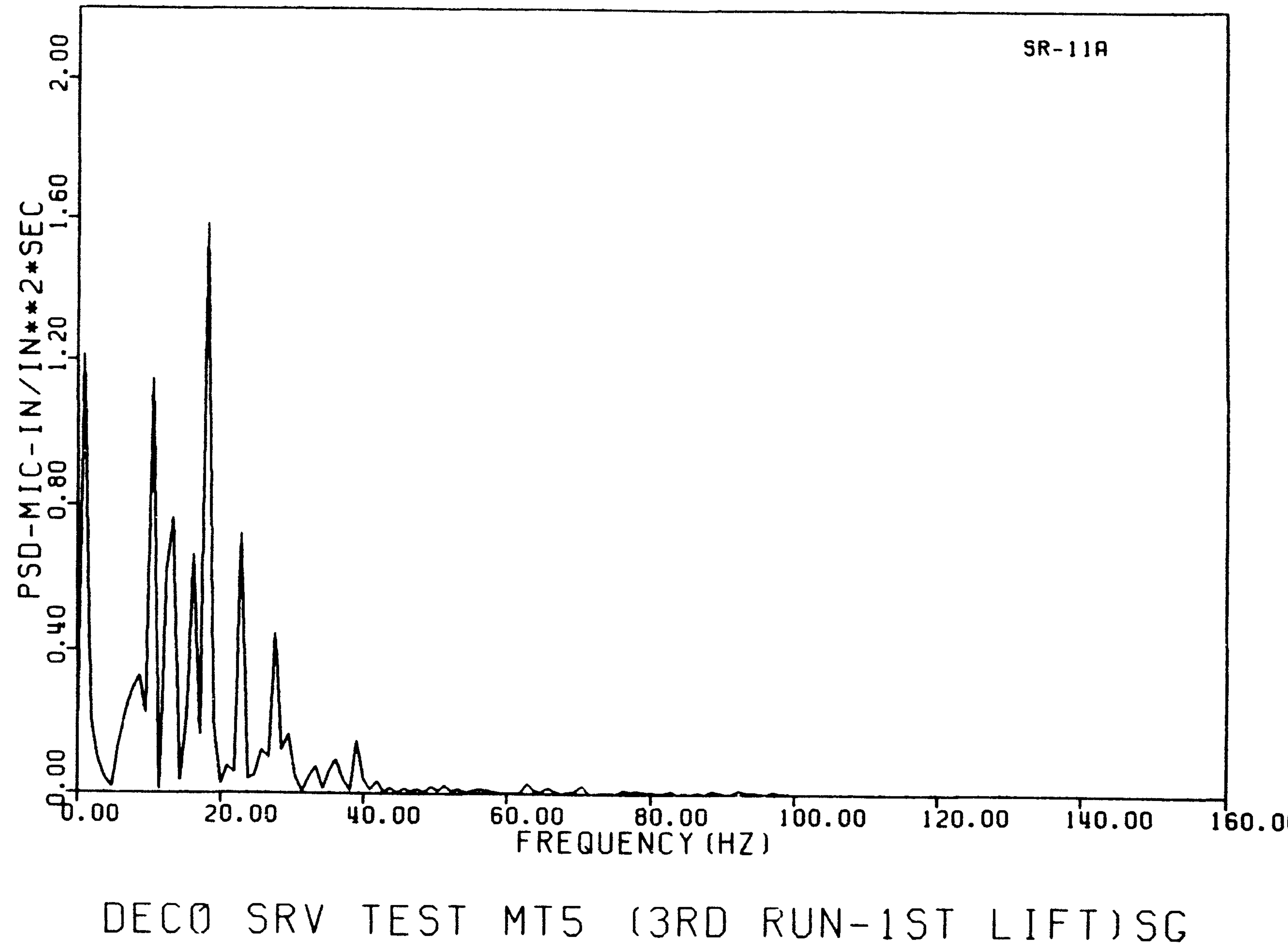
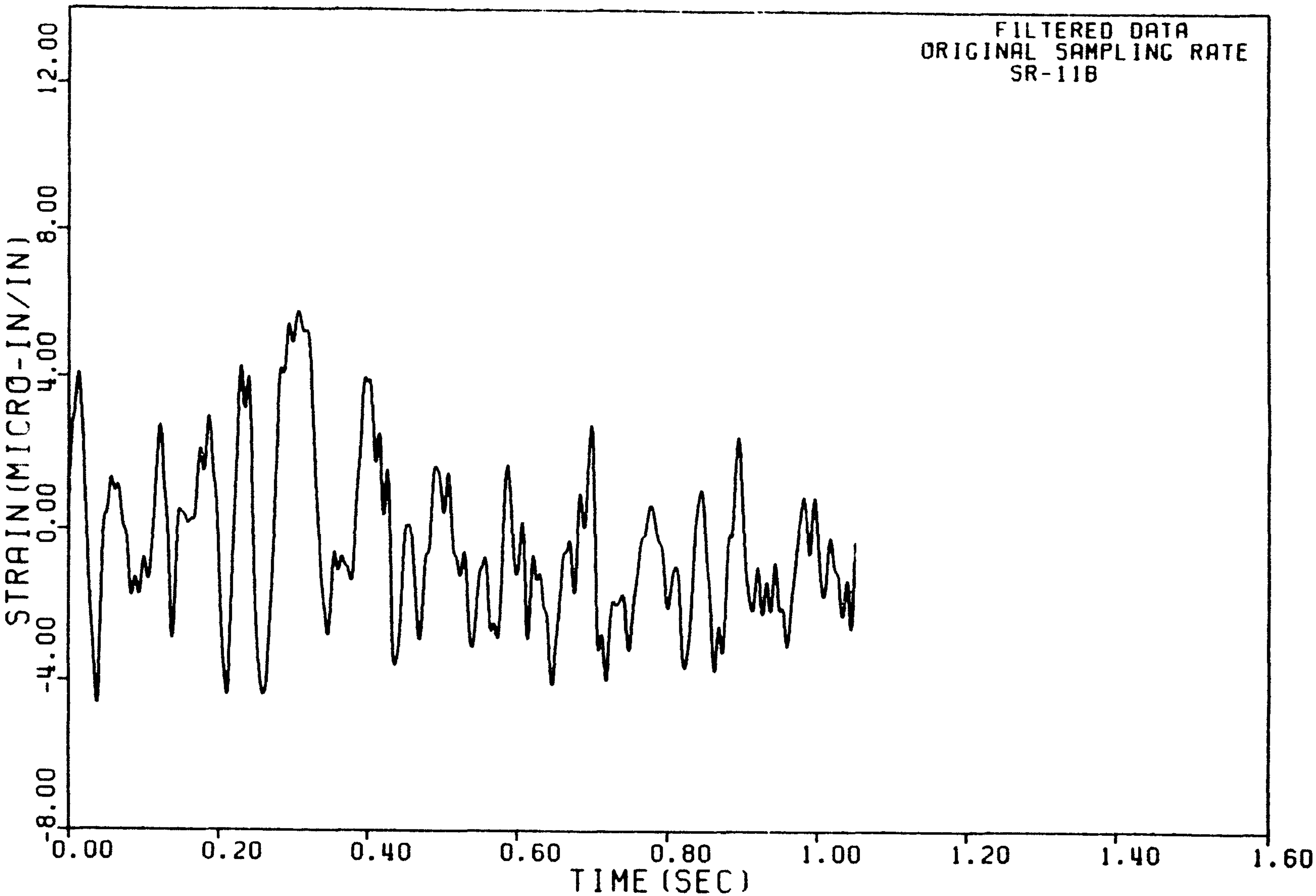


Figure C.46 TYPICAL SVA STRAIN PSD



DECO SRV TEST MT5 (3RD RUN-1ST LIFT)SG

Figure C.47 TYPICAL SVA STRAIN TIME HISTORY

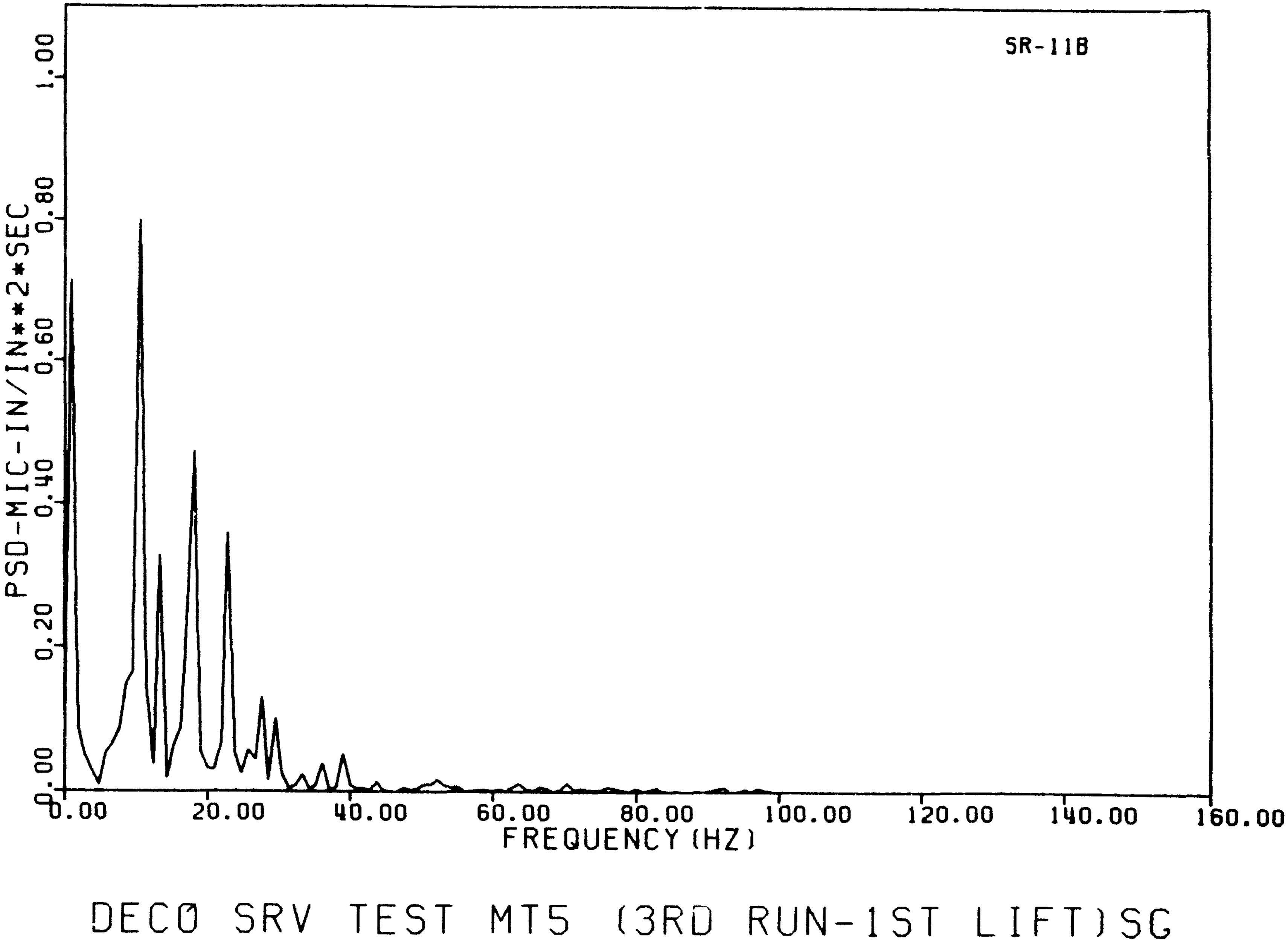
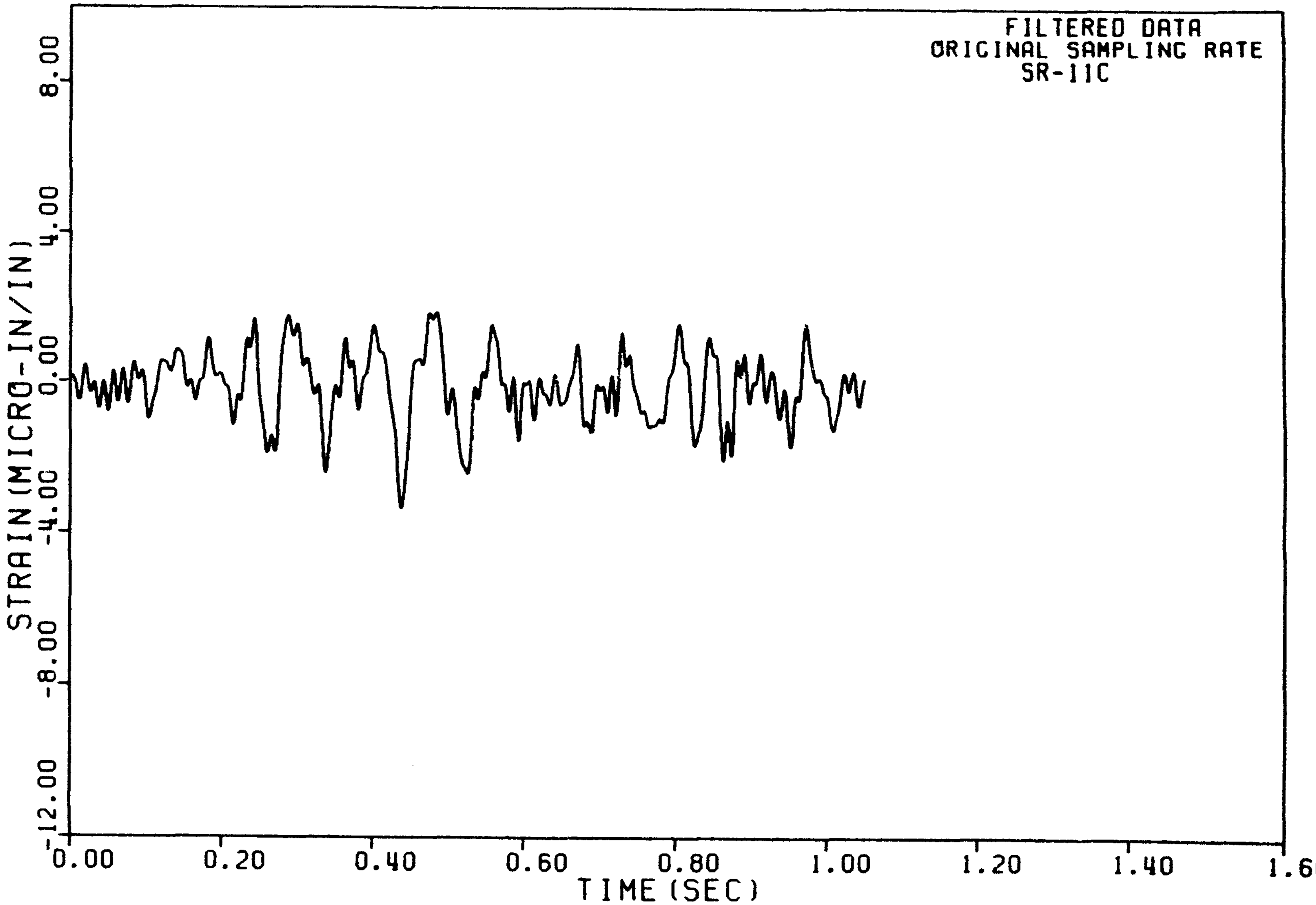


Figure C.48 TYPICAL SVA STRAIN PSD



DECO SRV TEST MT5 (3RD RUN-1ST LIFT) SG

Figure C.49 TYPICAL SVA STRAIN TIME HISTORY

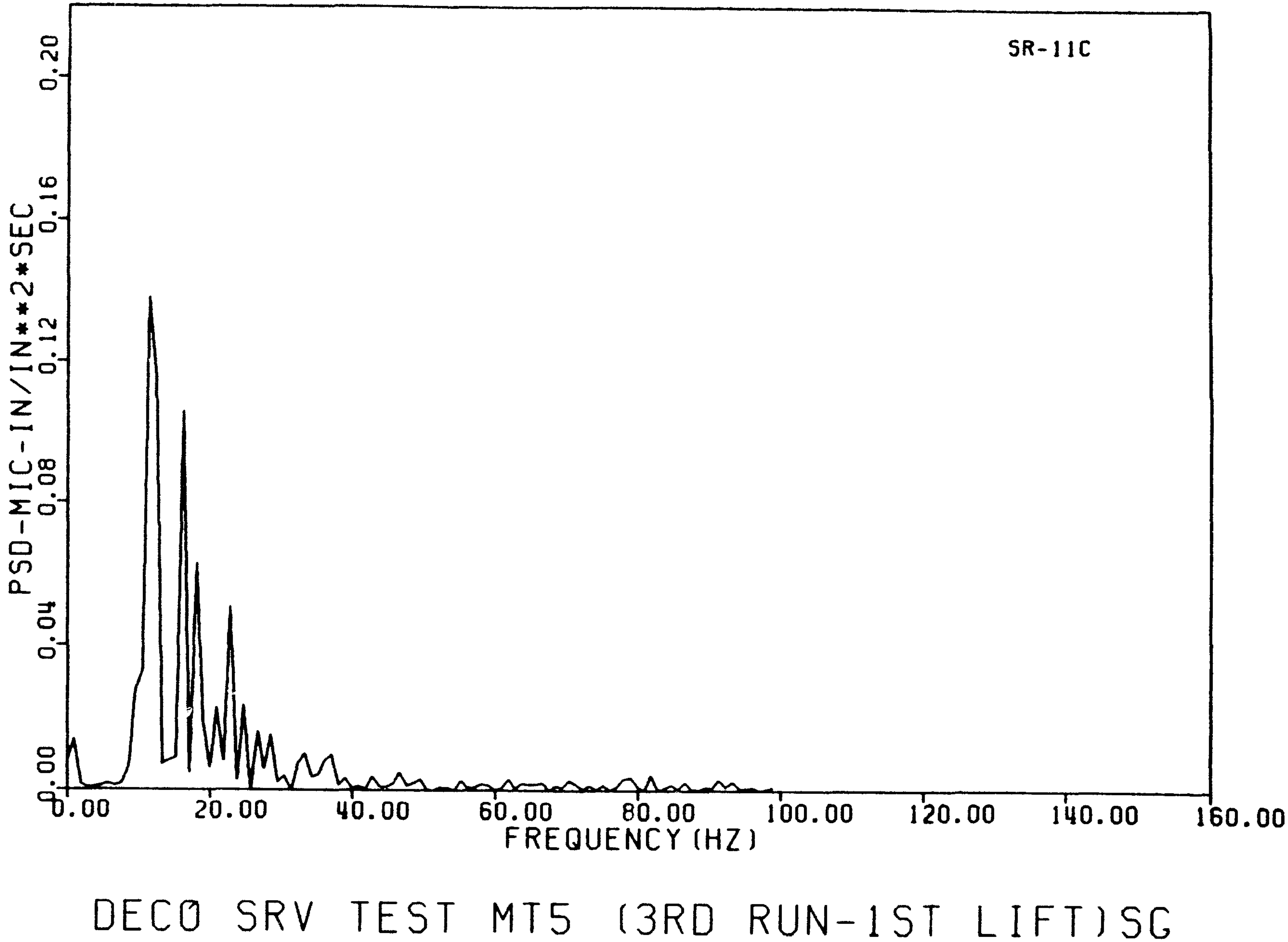


Figure C.50 TYPICAL SVA STRAIN PSD

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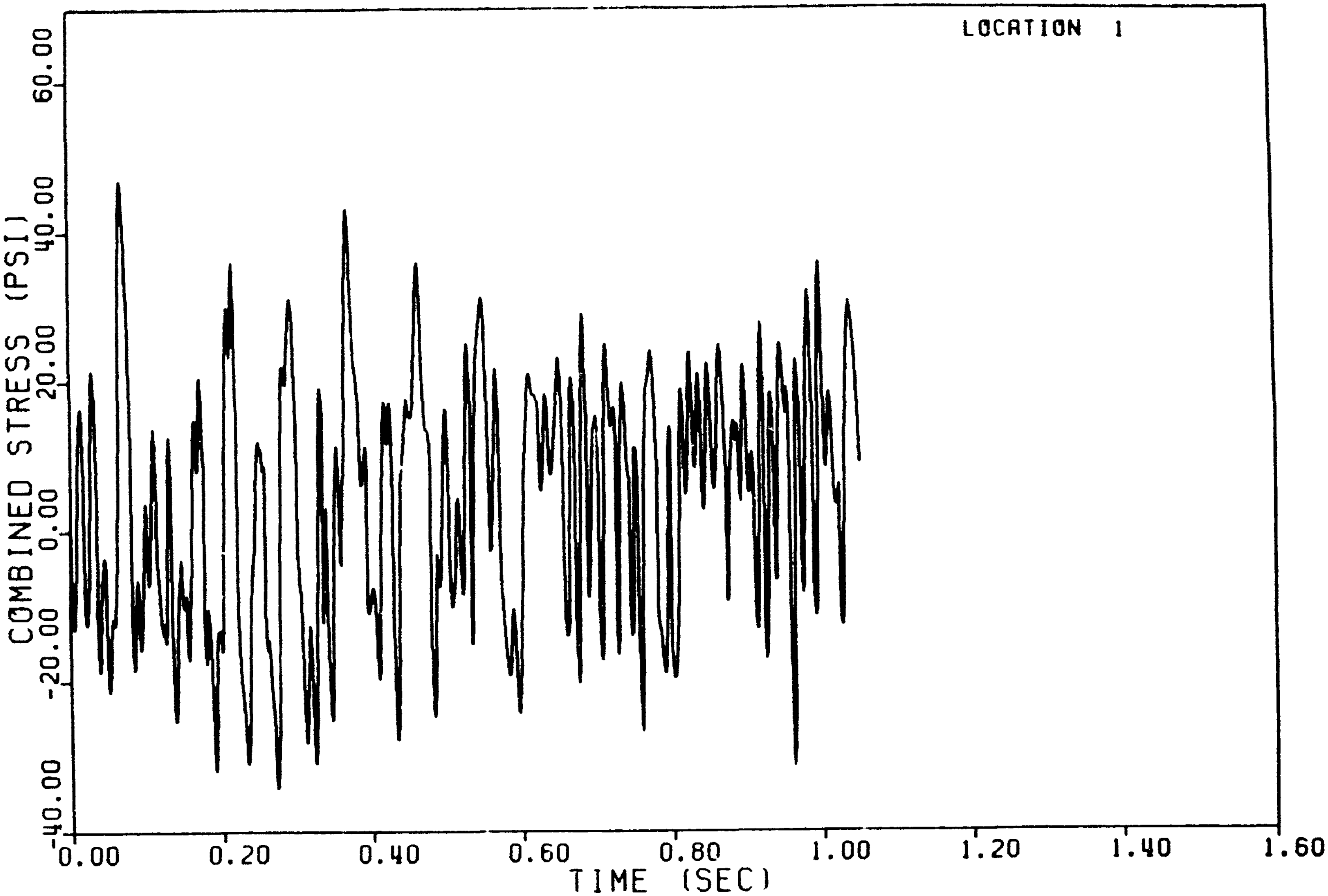
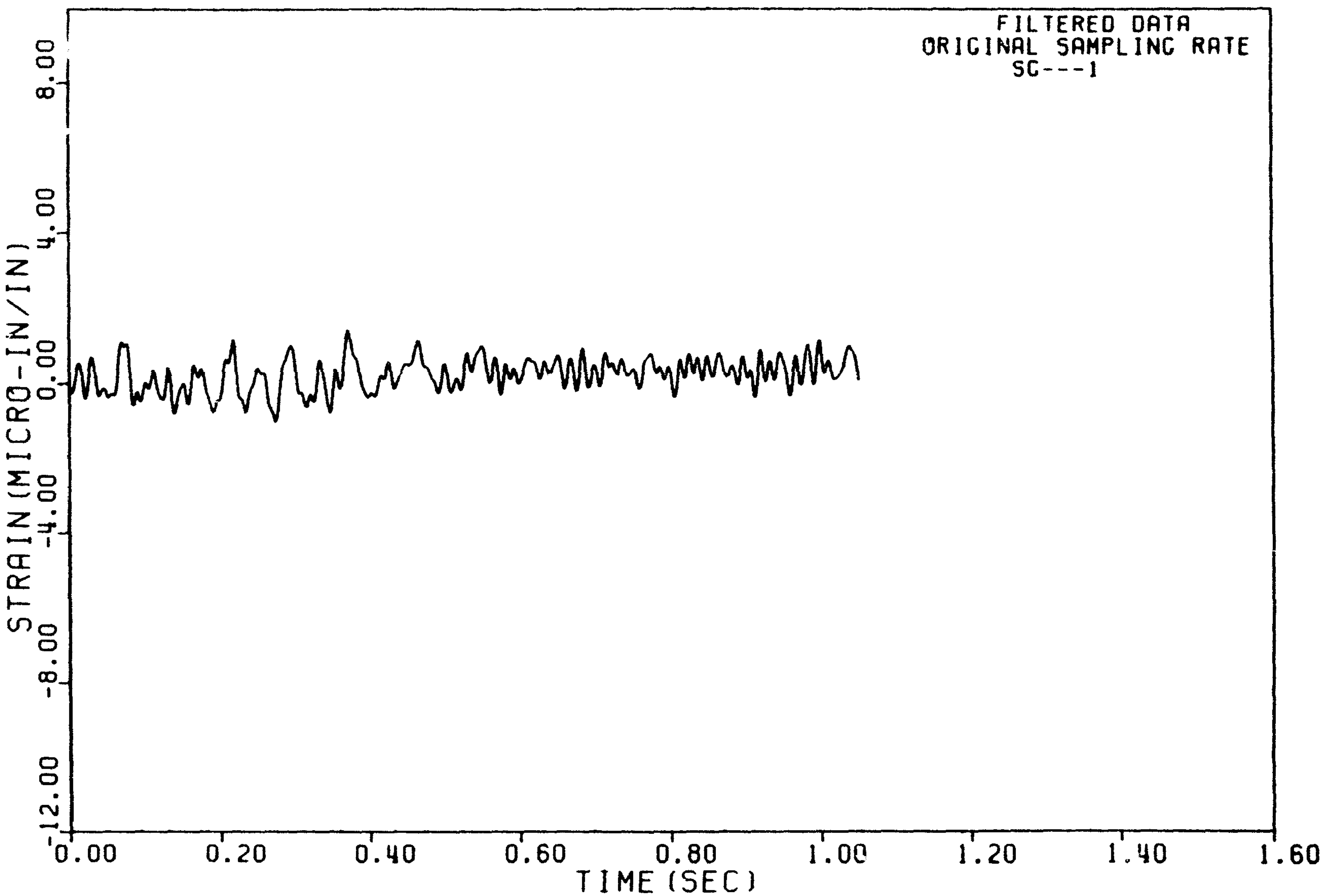


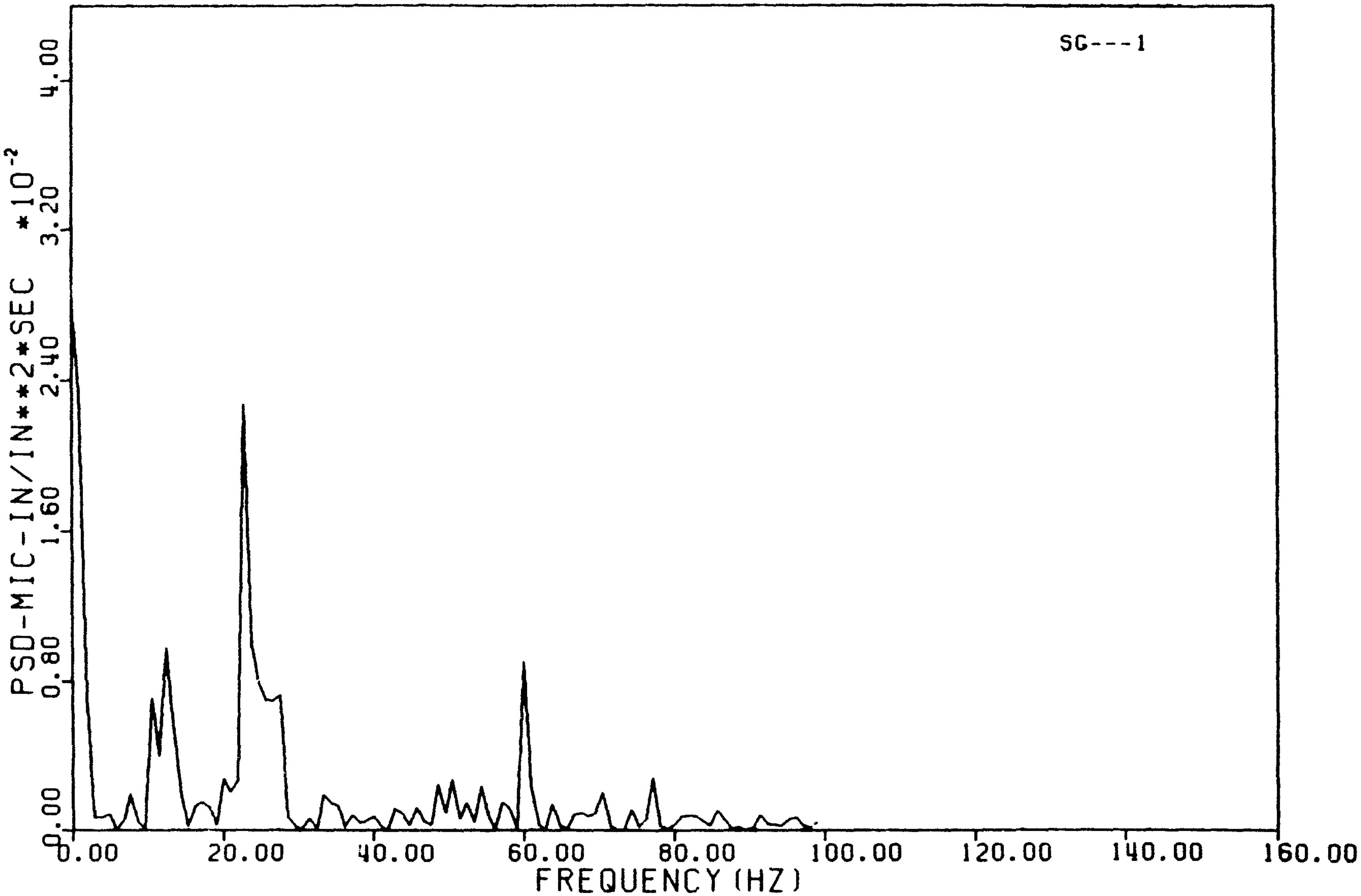
DECO SRV TEST MT5 (3RD RUN-1ST LIFT)SC

Figure C.51 <u>TYPICAL SVA COMBINED STRESS TIME HISTORY</u>



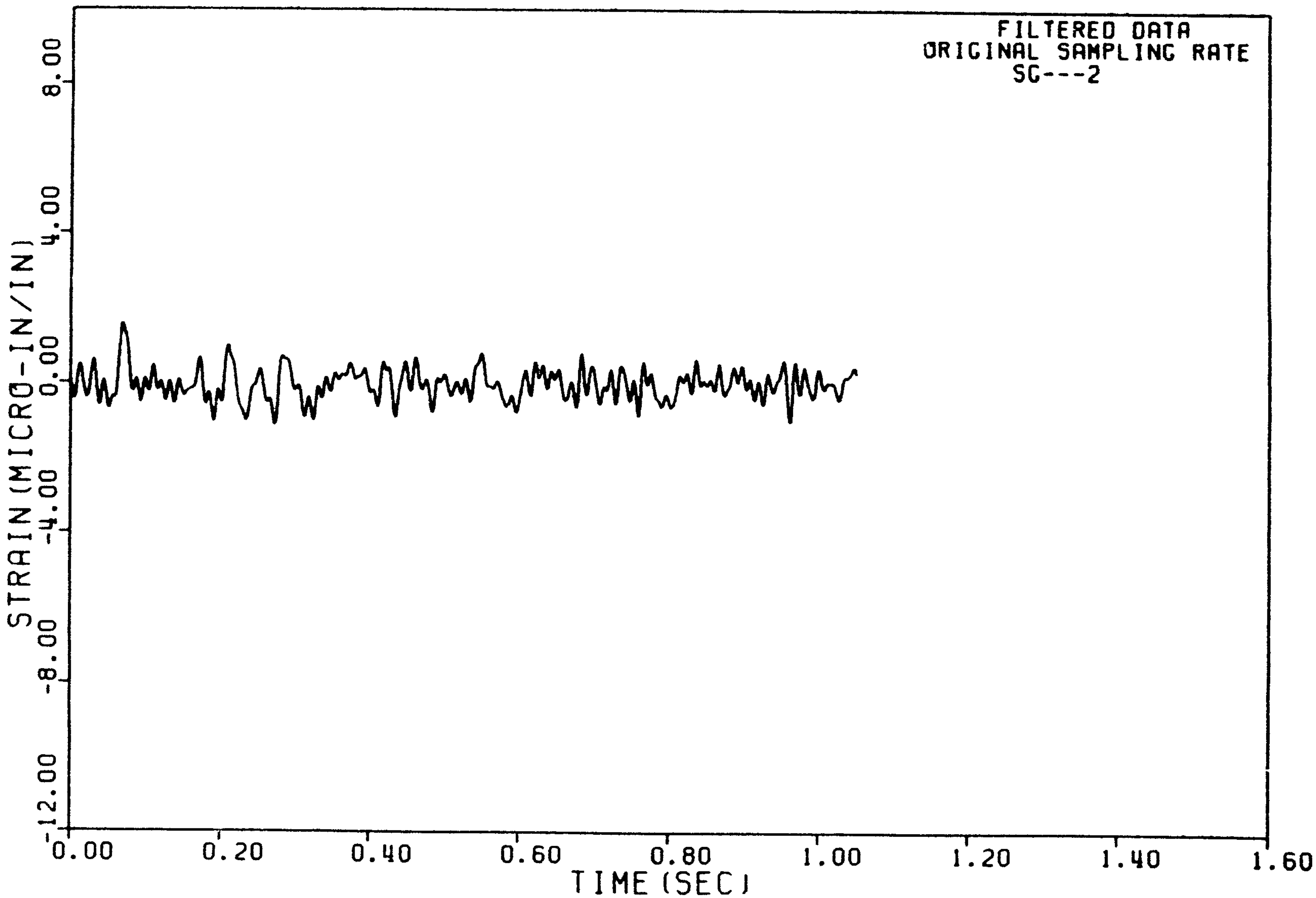
DECO SRV TEST MT5 (3RD RUN-1ST LIFT)SG

Figure C.52 TYPICAL SVA STRAIN TIME HISTORY



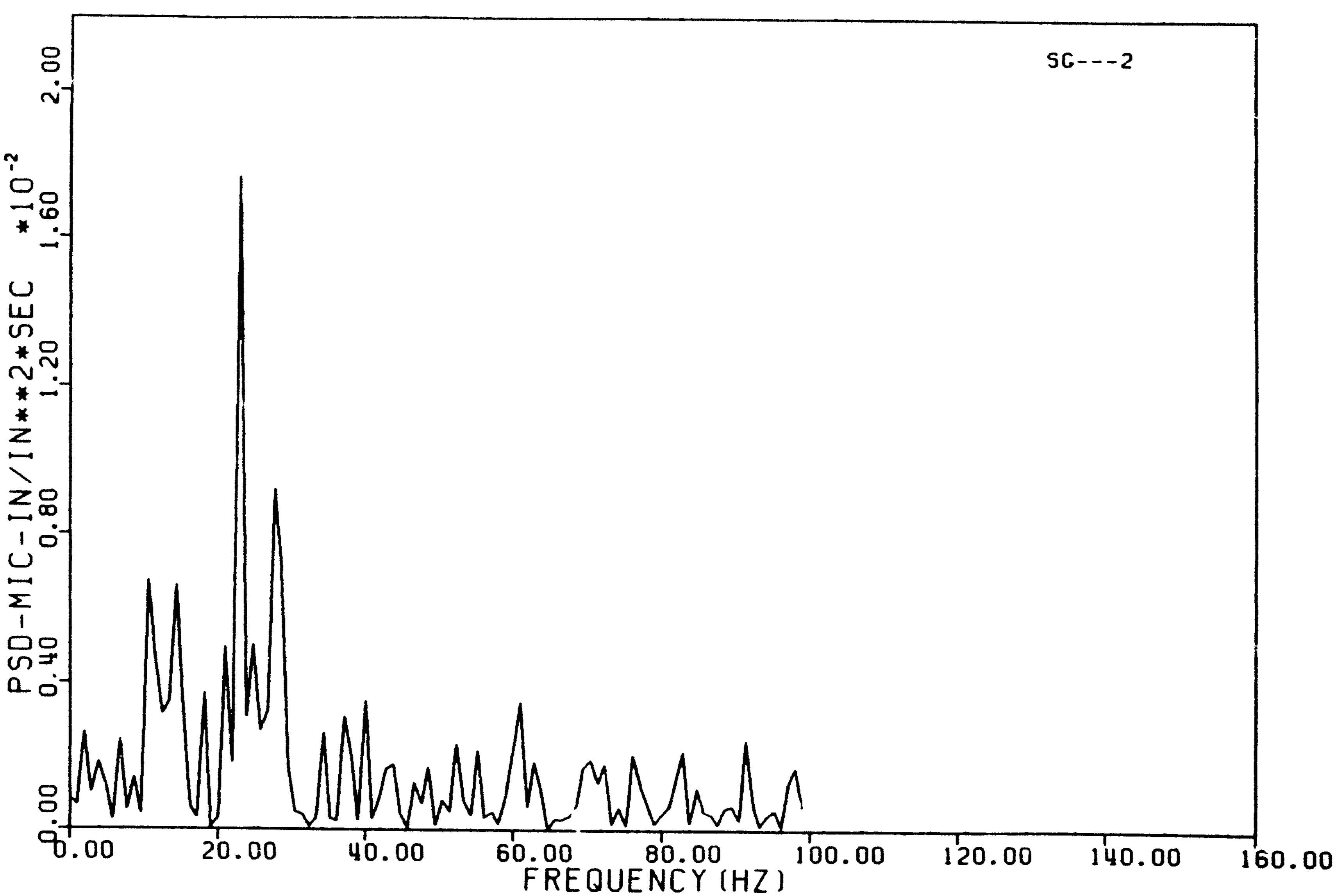
DECO SRV TEST MT5 (3RD RUN-1ST LIFT)SG

Figure C.53 TYPICAL SVA STRAIN PSD



DECO SRV TEST MT5 (3RD RUN-1ST LIFT)SG

Figure C.54 TYPICAL SVA STRAIN TIME HISTORY



DECO SRV TEST MT5 (3RD RUN-1ST LIFT)SG

Figure C.55 TYPICAL SVA STRAIN PSD

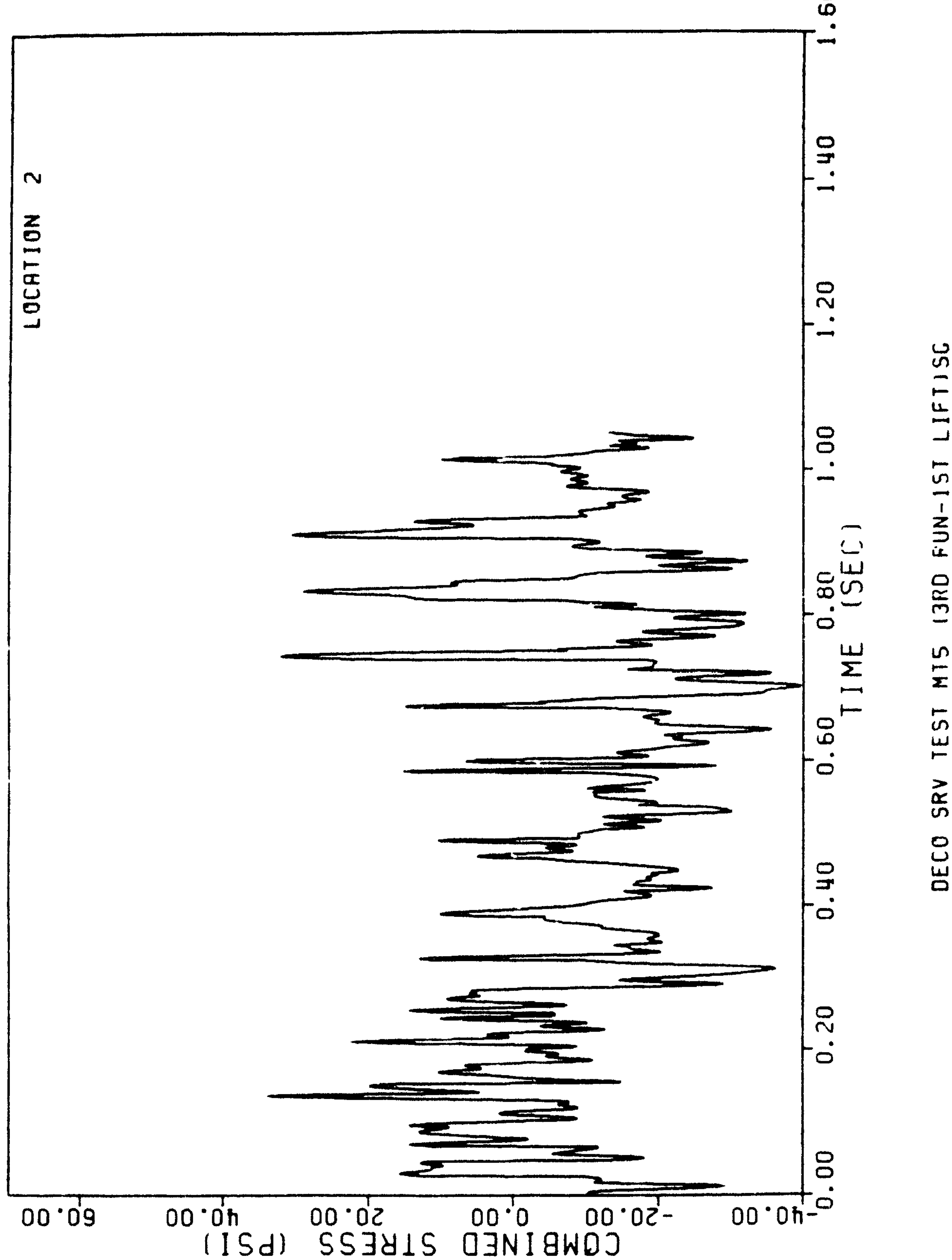
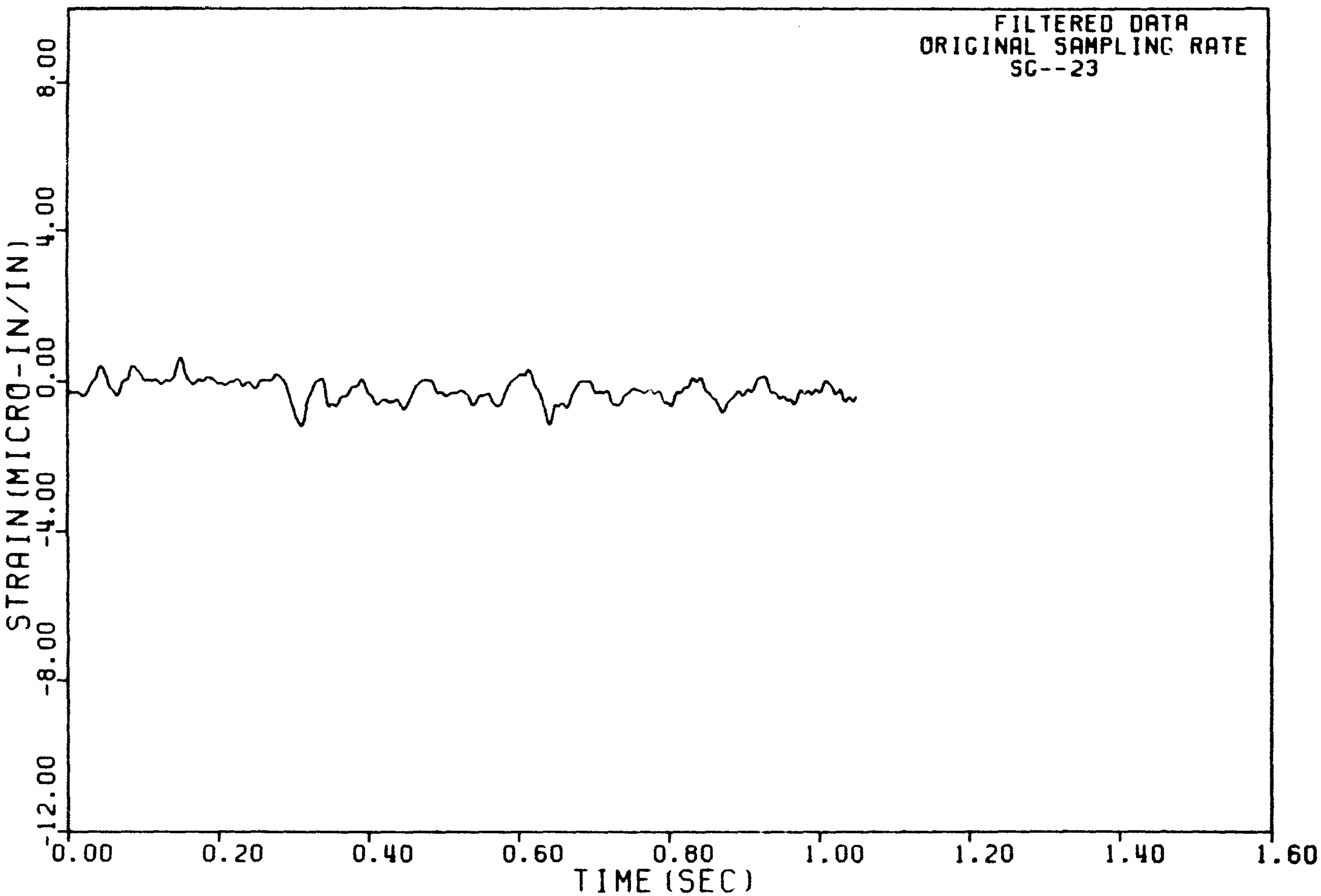


Figure C.56 TYPICAL SVA COMBINED STRESS TIME HISTORY



DECO SRV TEST MT5 (3RD RUN-1ST LIFT)SG

Figure C.57 TYPICAL SVA STRAIN TIME HISTORY

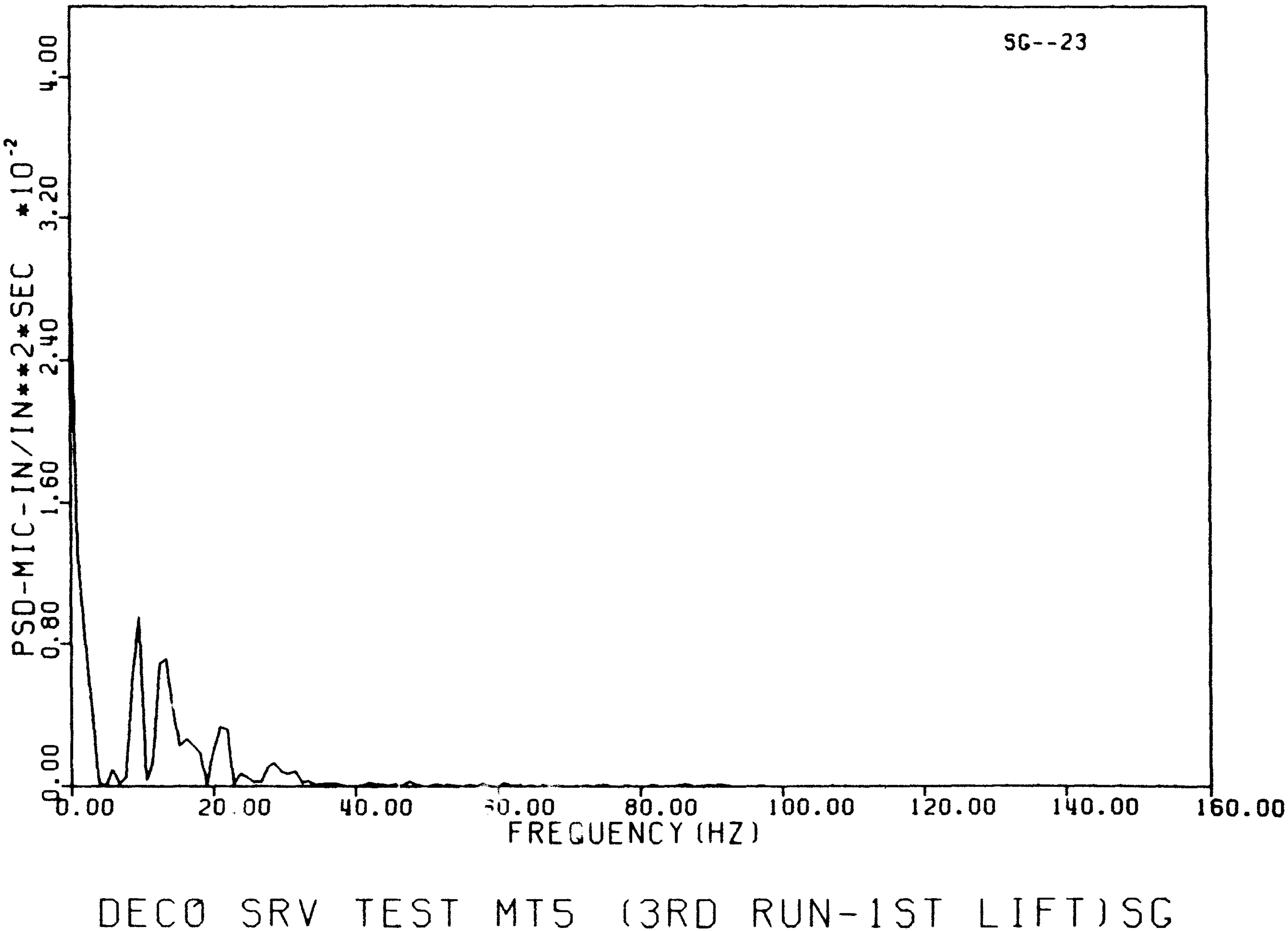
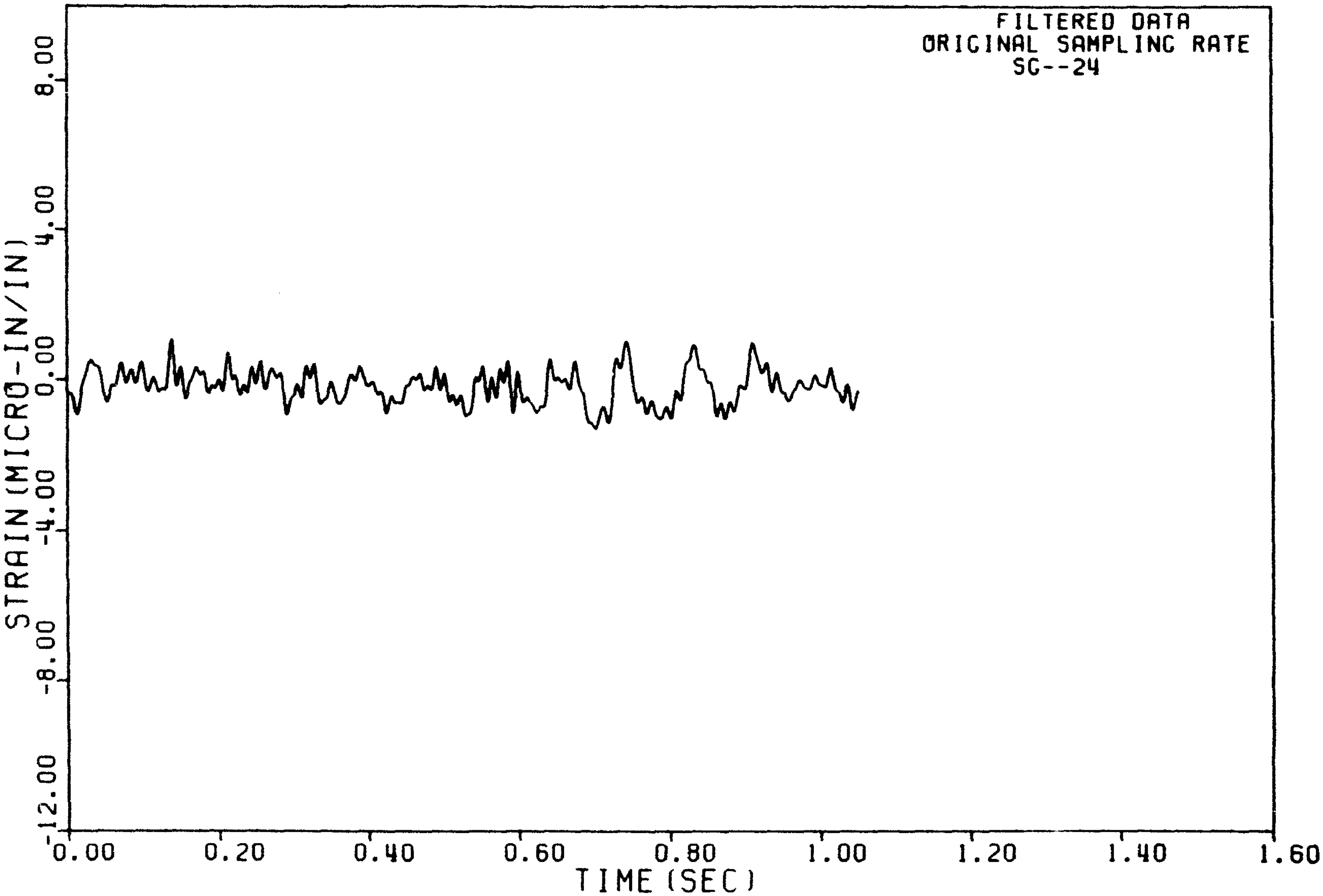
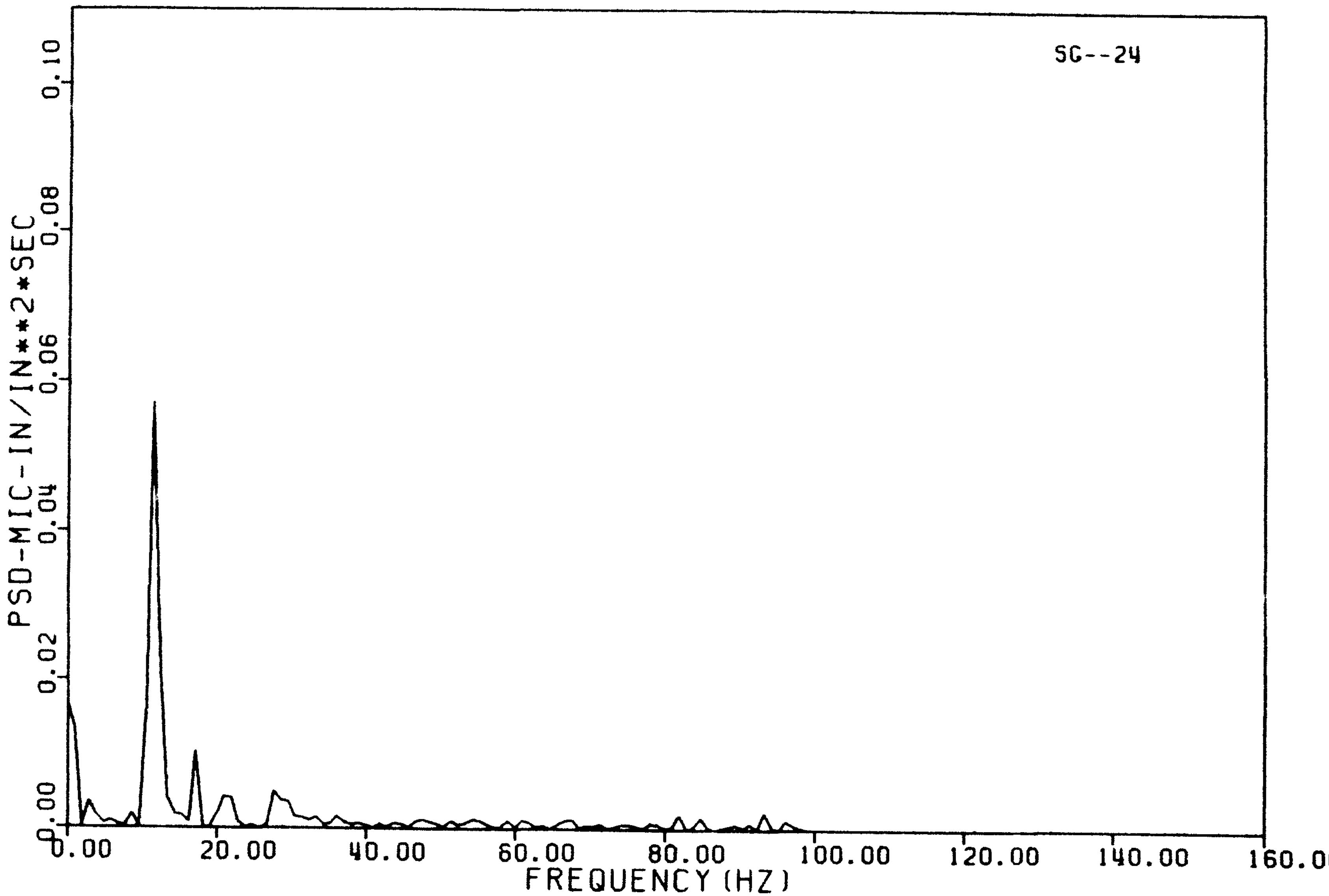


Figure C.58 TYPICAL SVA STRAIN PSD



DECO SRV TEST MT5 (3RD RUN-1ST LIFT)SG

Figure C.59 TYPICAL SVA STRAIN TIME HISTORY



DECO SRV TEST MT5 (3RD RUN-1ST LIFT)SG

Figure C.60 TYPICAL SVA STRAIN PSD

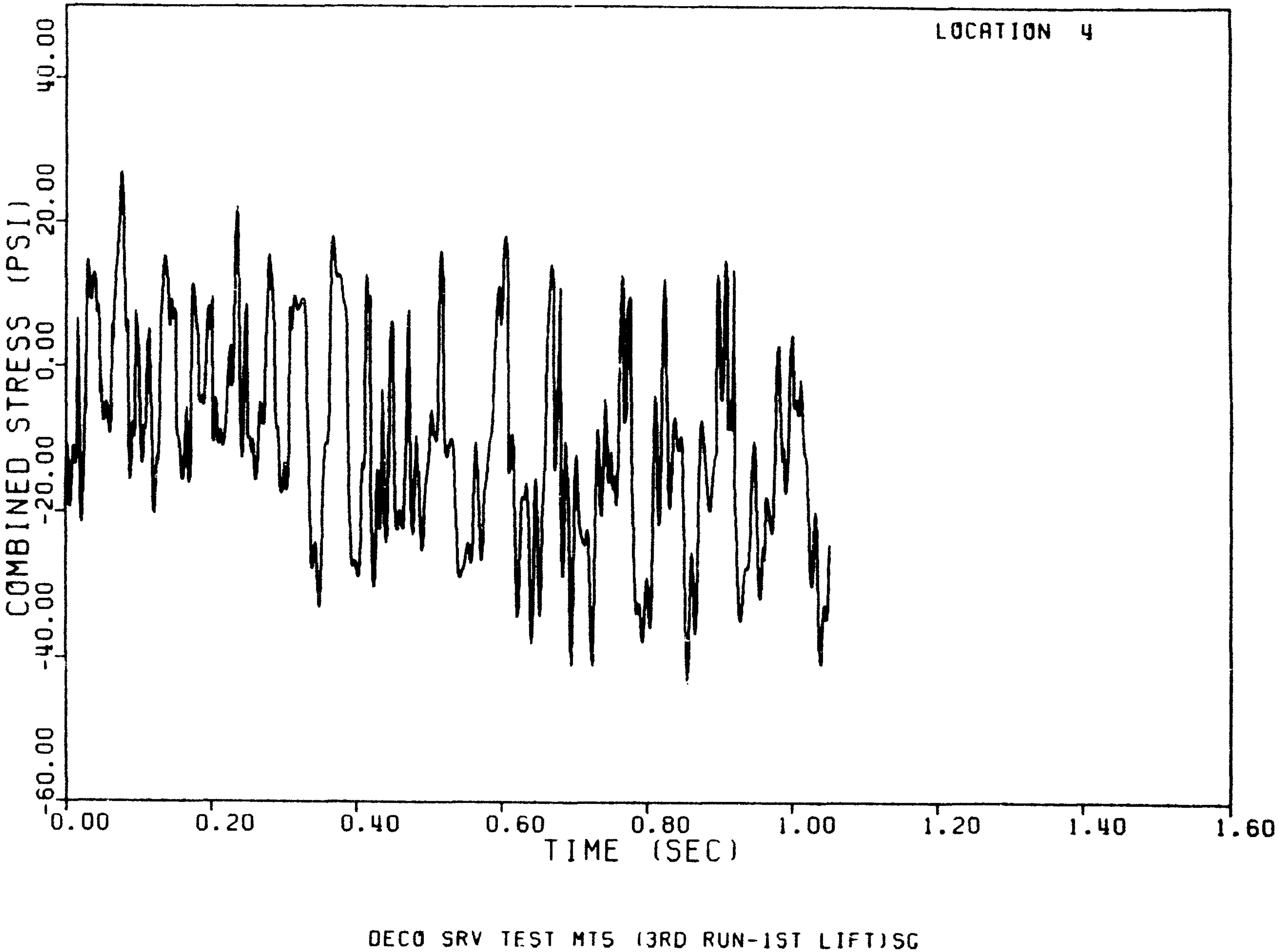
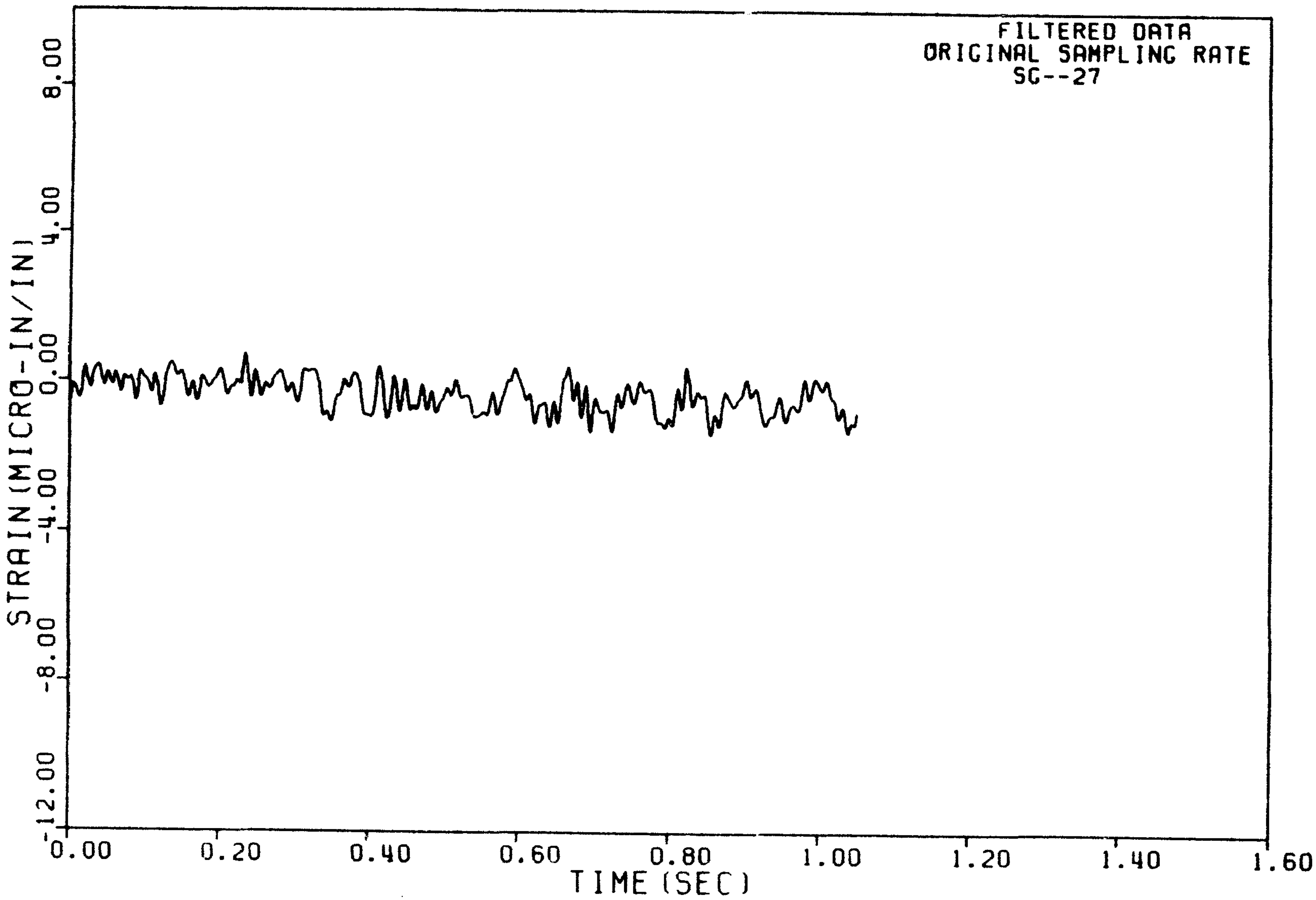


Figure C.61 TYPICAL SVA COMBINED STRESS TIME HISTORY



DECO SRV TEST MT5 (3RD RUN-1ST LIFT) SG

Figure C.62 TYPICAL SVA STRAIN TIME HISTORY

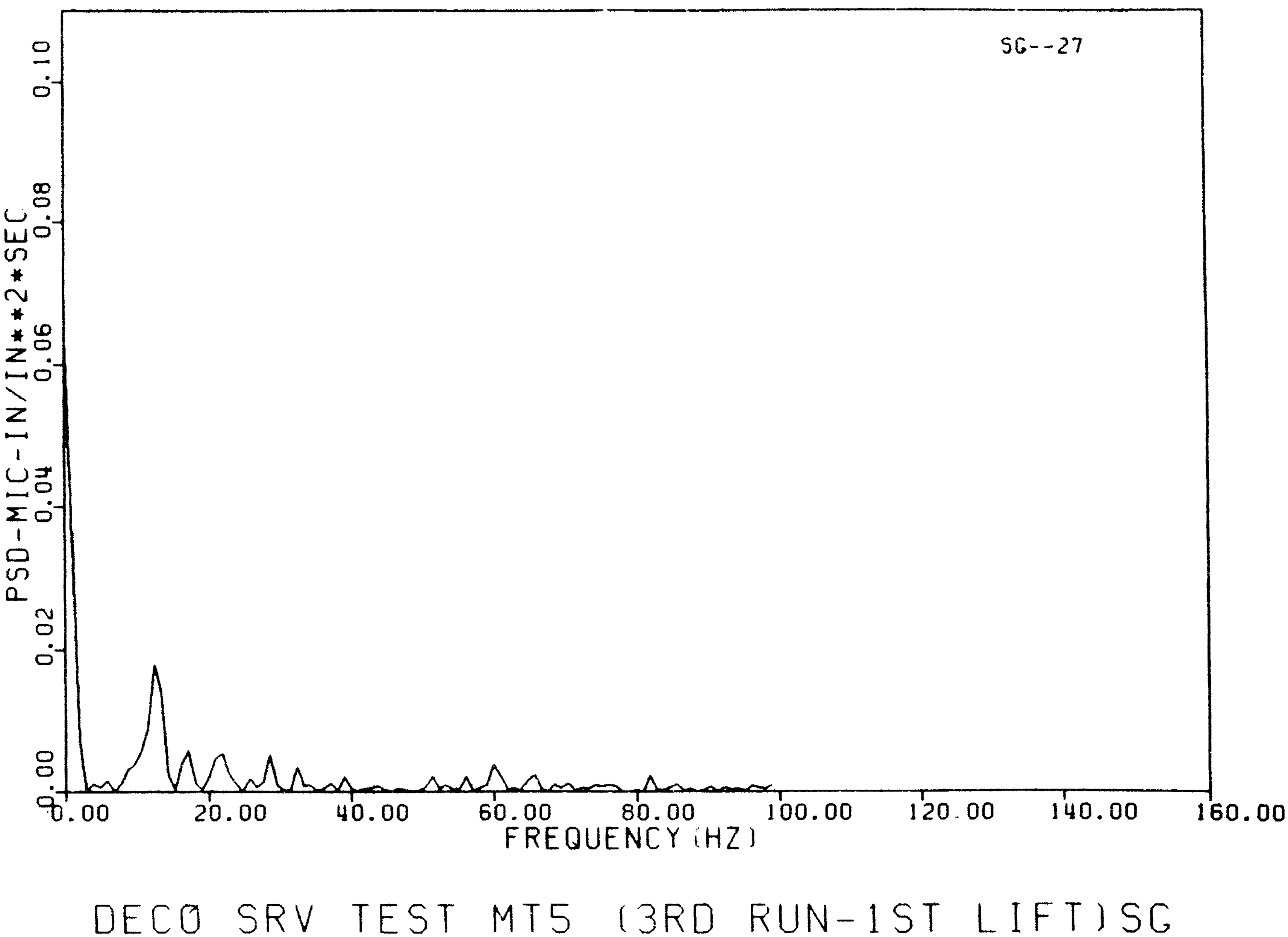
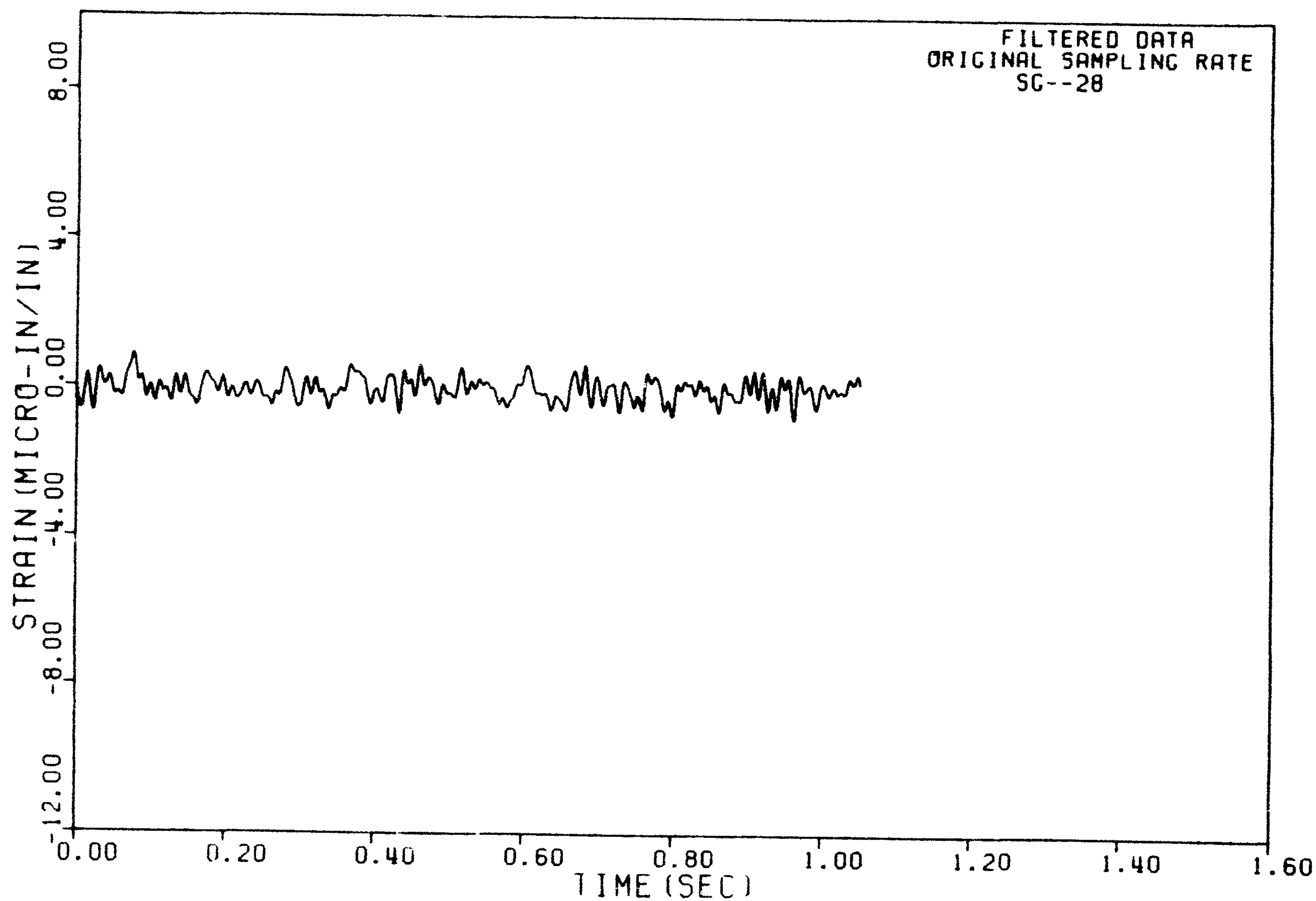
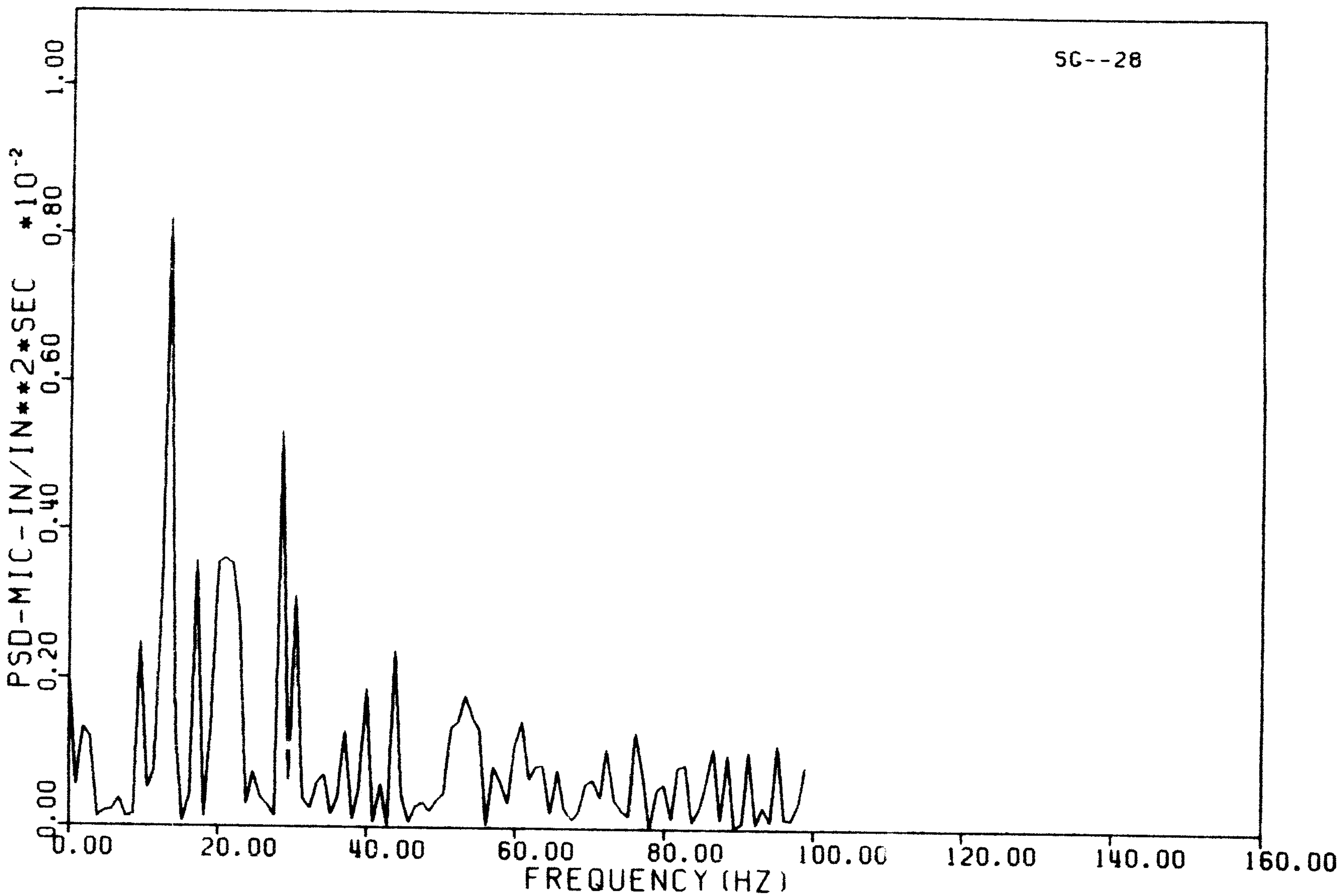


Figure C.63 TYPICAL SVA STRAIN PSD



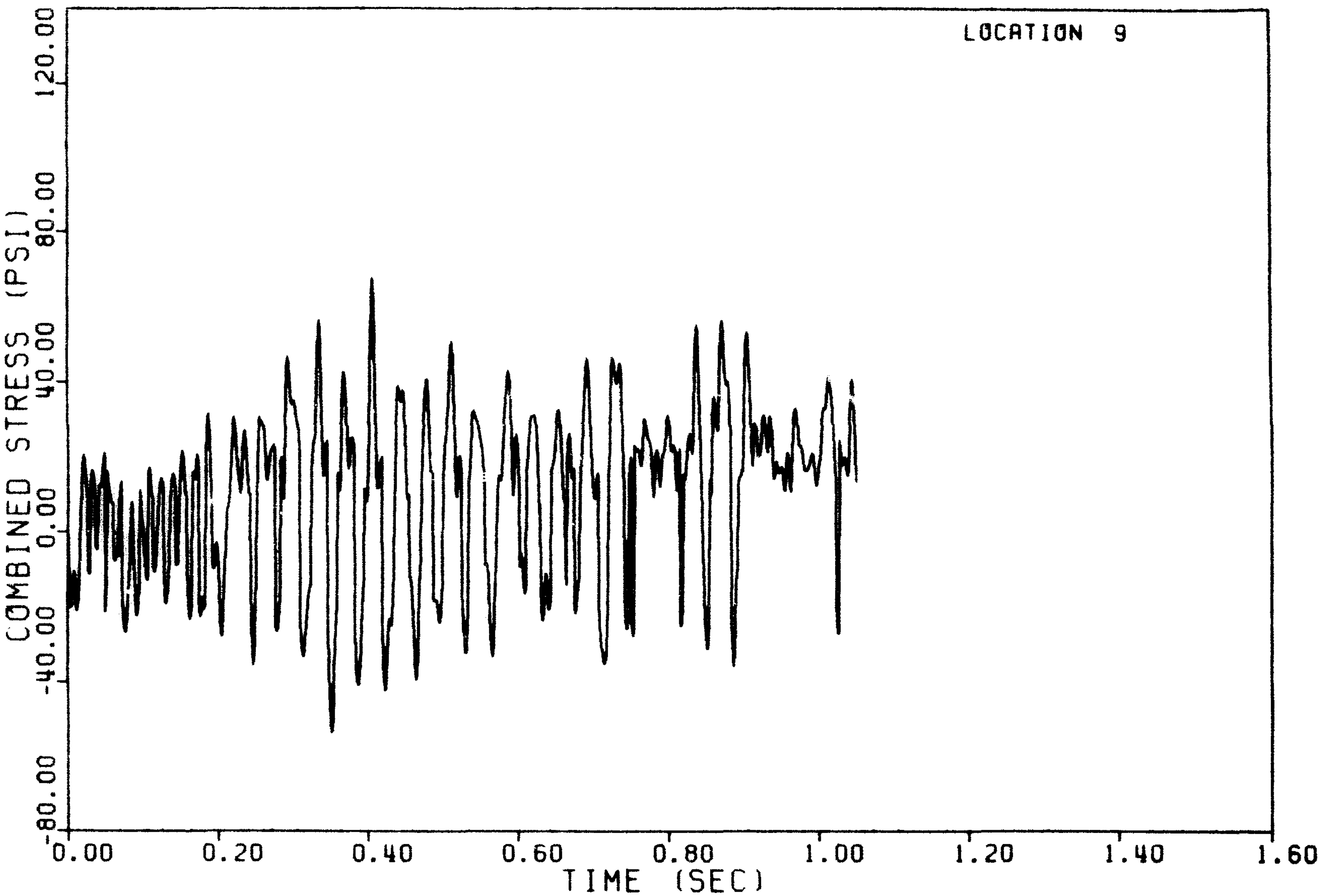
DECO SRV TEST MT5 (3RD RUN-1ST LIFT)SG

Figure C.64 TYPICAL SVA STRAIN TIME HISTORY



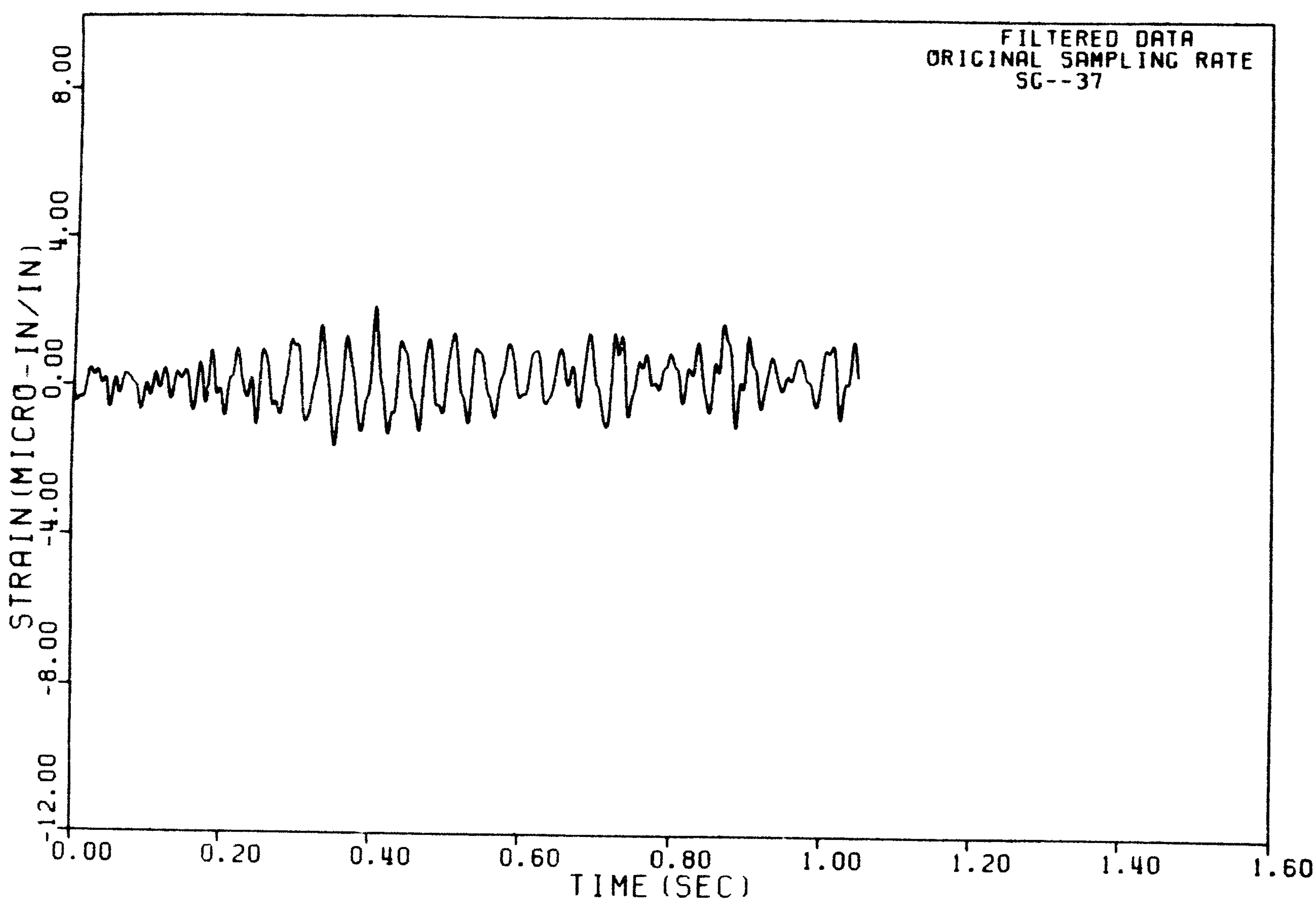
DECO SRV TEST MT5 (3RD RUN-1ST LIFT)SG

Figure C.65 <u>TYPICAL SVA STRAIN PSD</u>



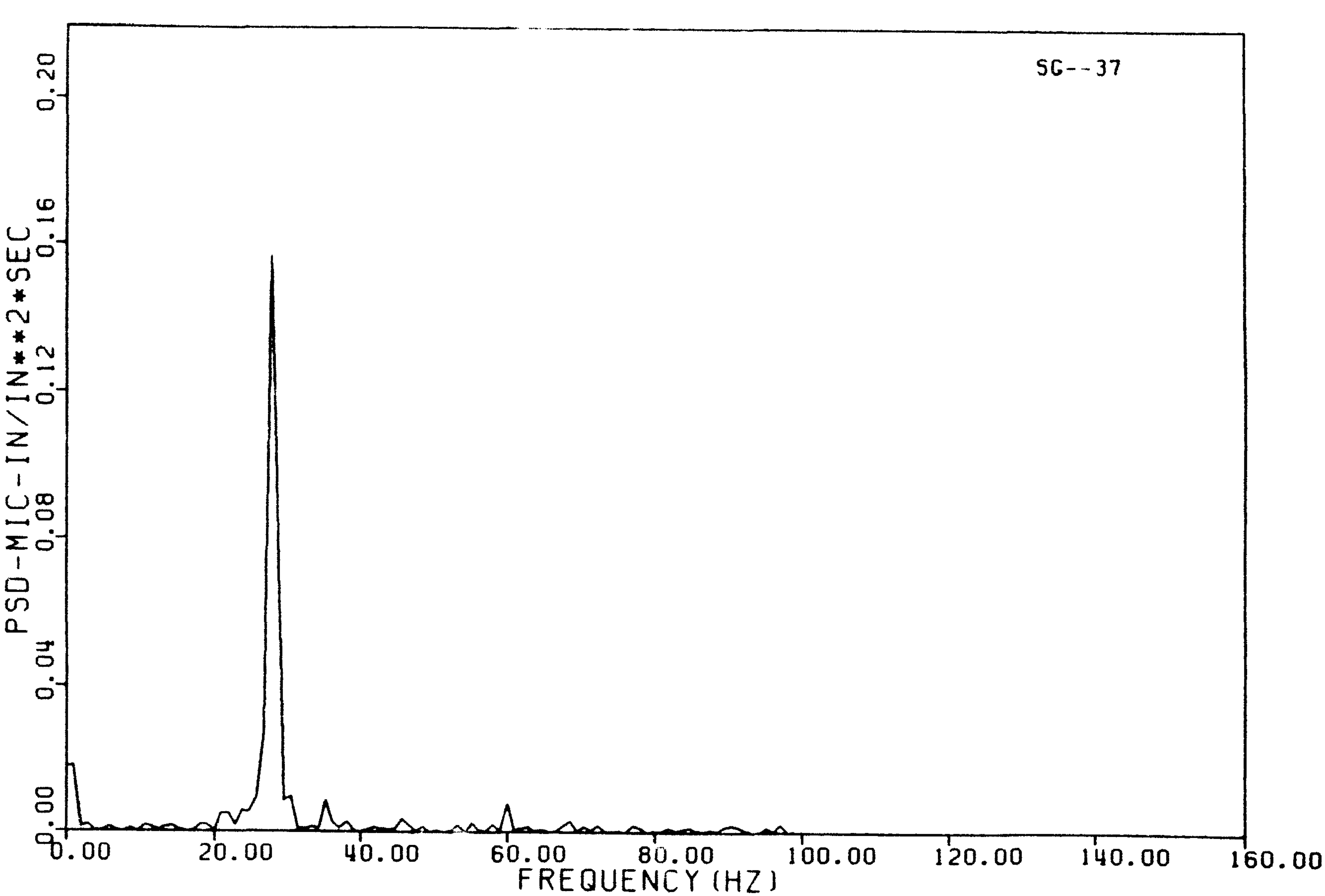
DECO SRV TEST MT5 (3RD RUN-1ST LIFT)SG

Figure C.66 TYPICAL SVA COMBINED STRESS TIME HISTORY



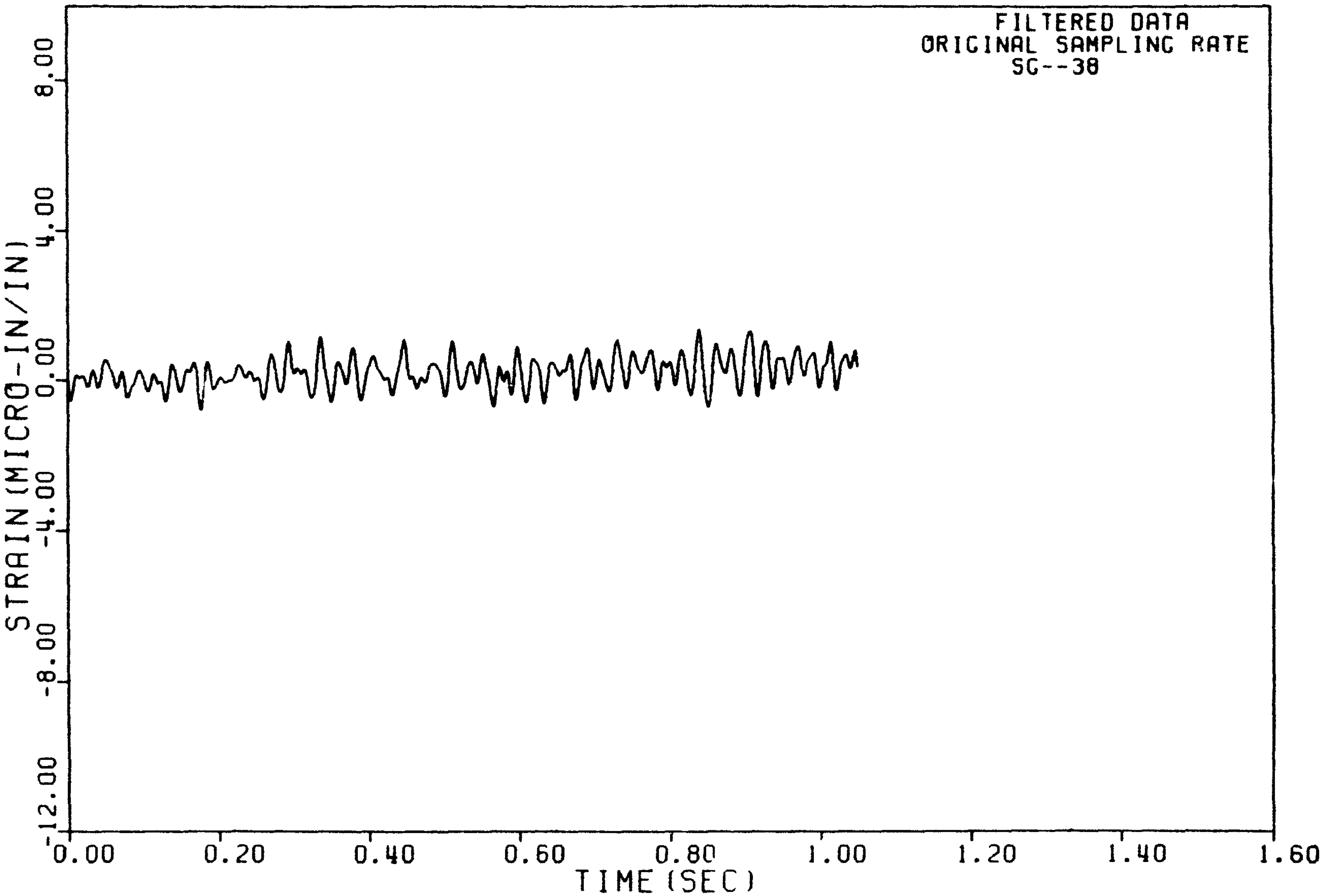
DECO SRV TEST MT5 (3RD RUN-1ST LIFT)SG

Figure C.67 TYPICAL SVA STRAIN TIME HISTORY



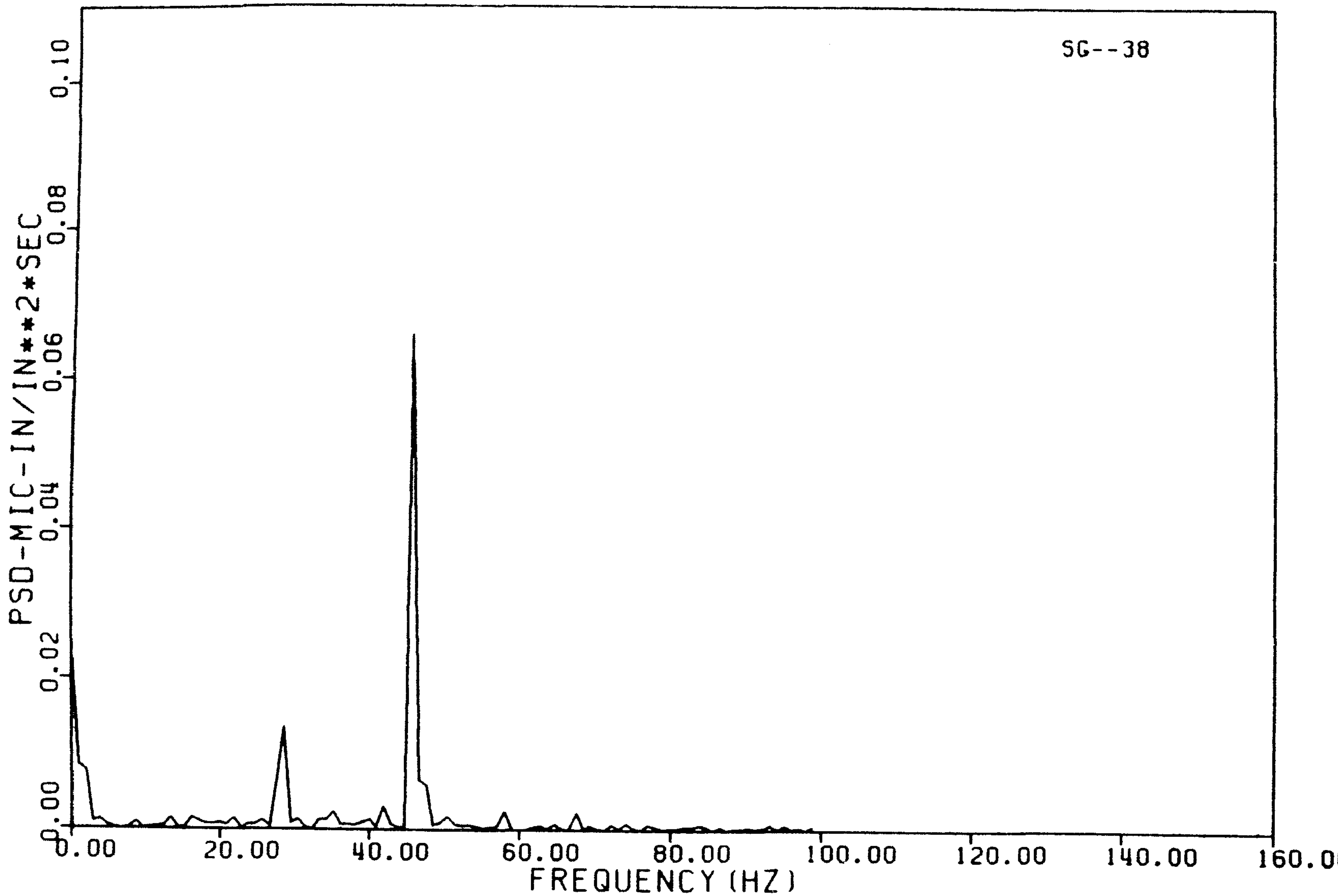
DECO SRV TEST MT5 (3RD RUN-1ST LIFT)SG

Figure C.68 TYPICAL SVA STRAIN PSD



DECO SRV TEST MT5 (3RD RUN-1ST LIFT)SG

Figure C.69 TYPICAL SVA STRAIN TIME HISTORY



DECO SRV TEST MT5 (3RD RUN-1ST LIFT) SG

Figure C.70 <u>TYPICAL SVA STRAIN PSD</u>

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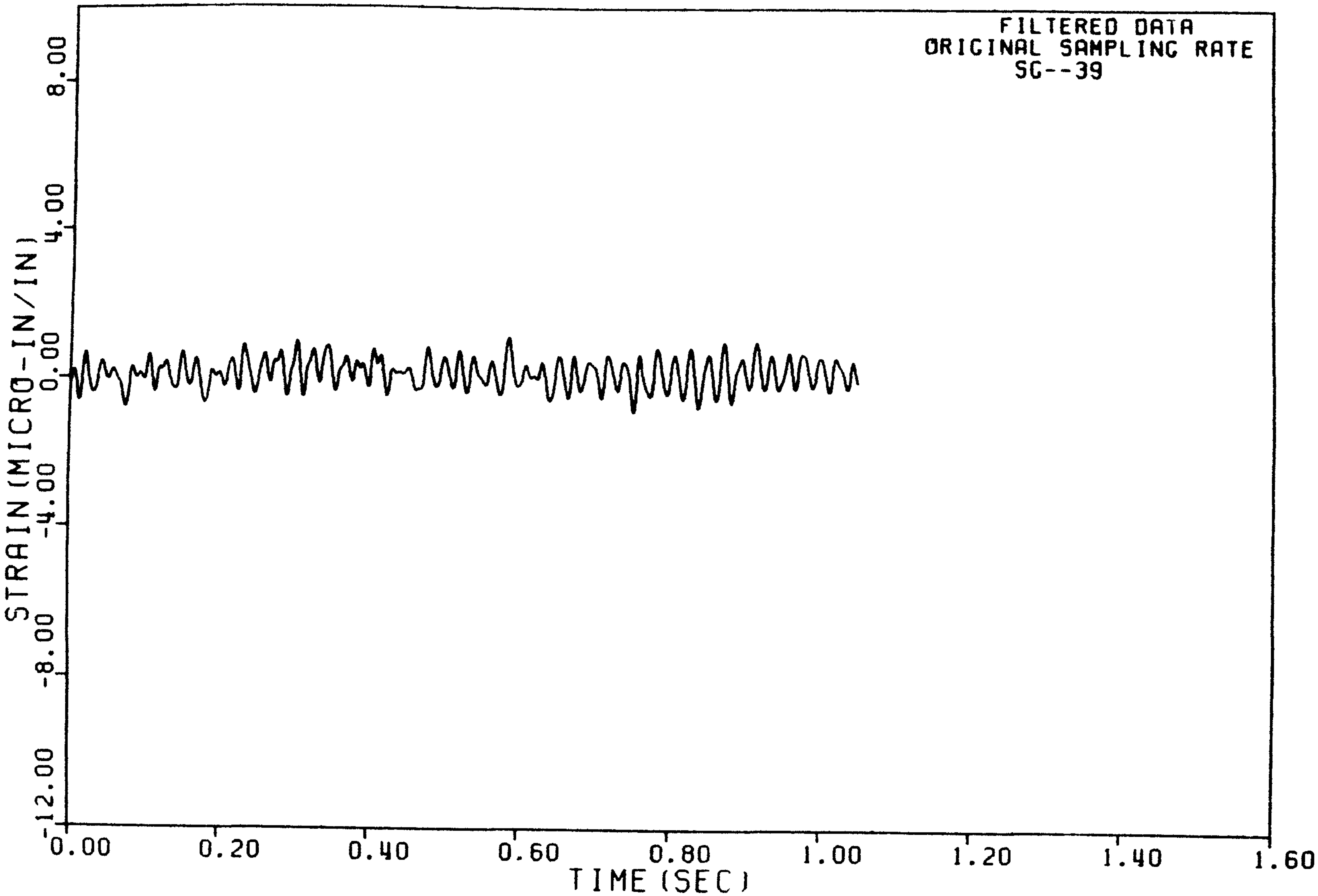
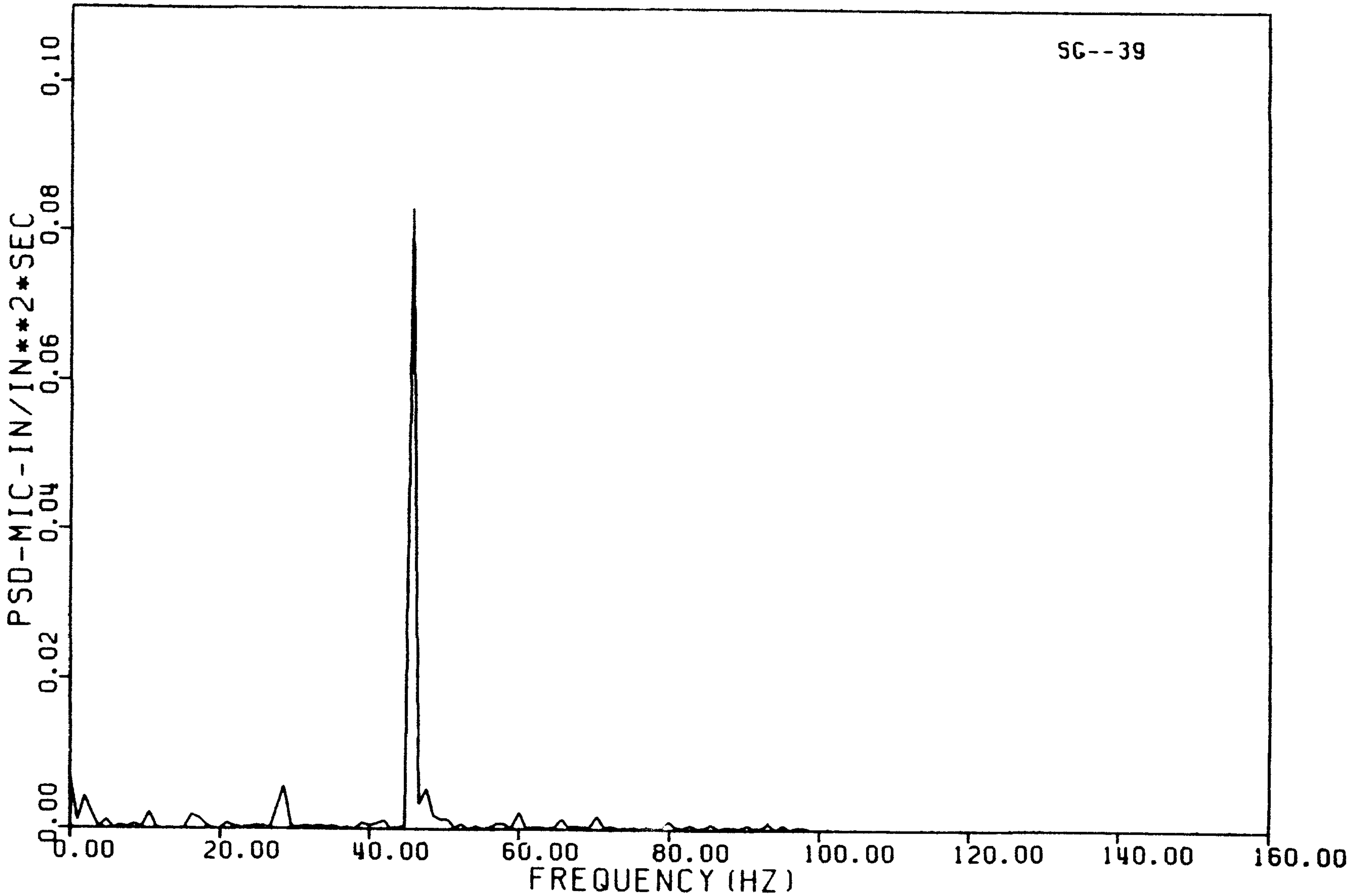


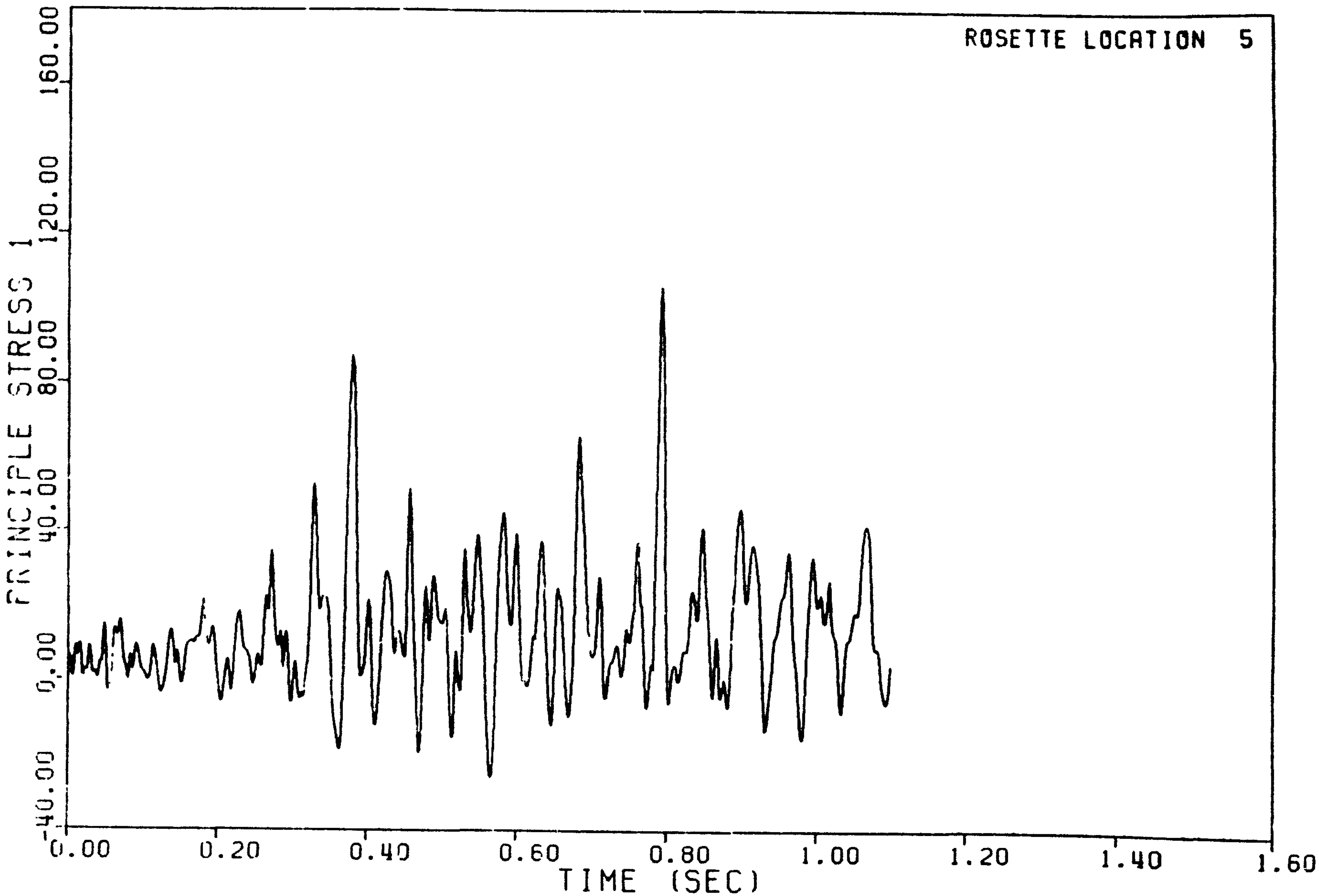
DECØ SRV TEST MT5 (3RD RUN-1ST LIFT)SG

Figure C.71 TYPICAL SVA STRAIN TIME HISTORY



DECO SRV TEST MT5 (3RD RUN-1ST LIFT)SG

Figure C.72 TYPICAL SVA STRAIN PSD



DECO SRV TEST MT6 (3RD RUN-2ND LIFT)SC

Figure C.73 TYPICAL CVA PRINCIPAL STRESS TIME HISTORY

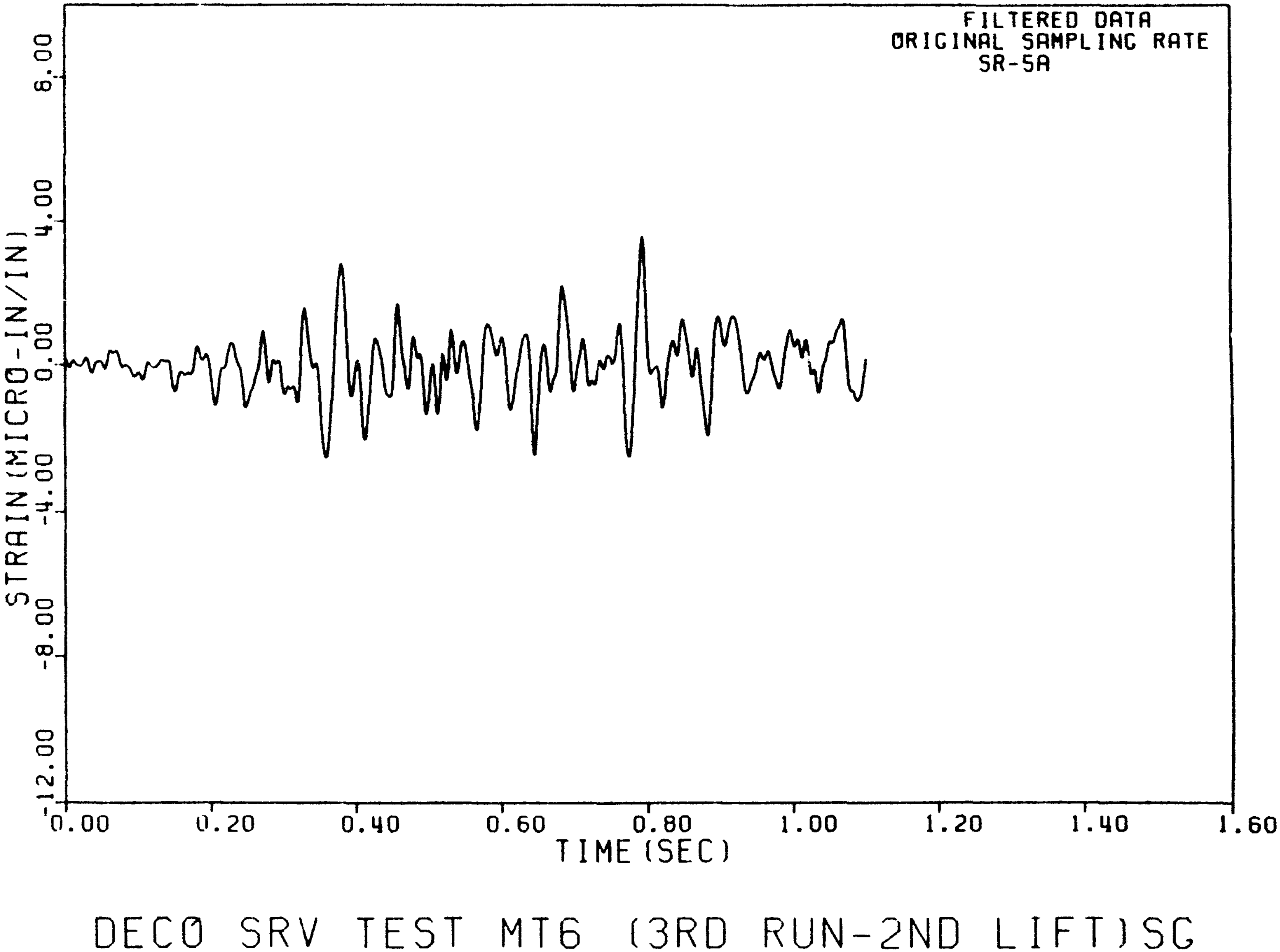


Figure C.74 TYPICAL CVA STRAIN TIME HISTORY

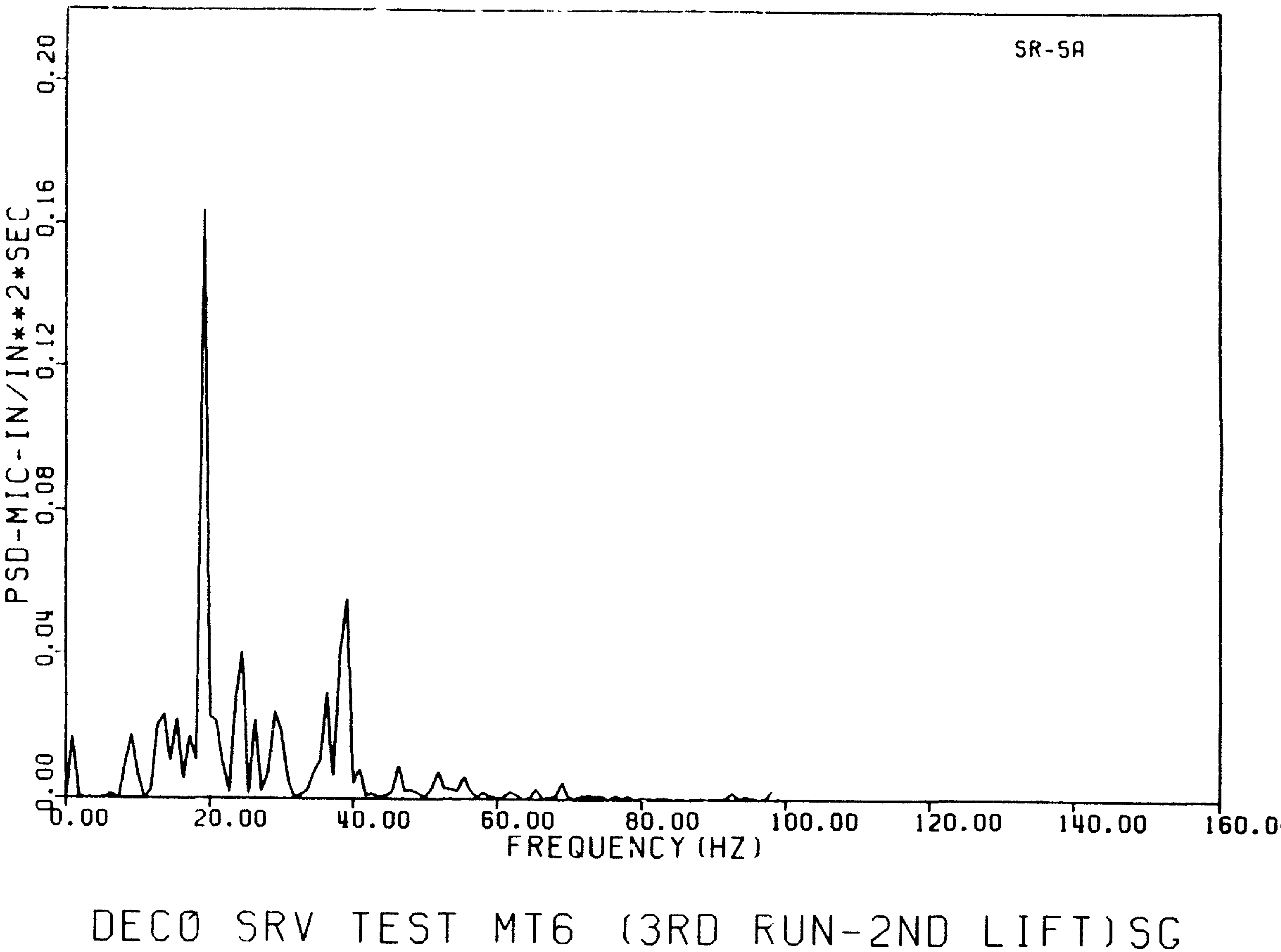
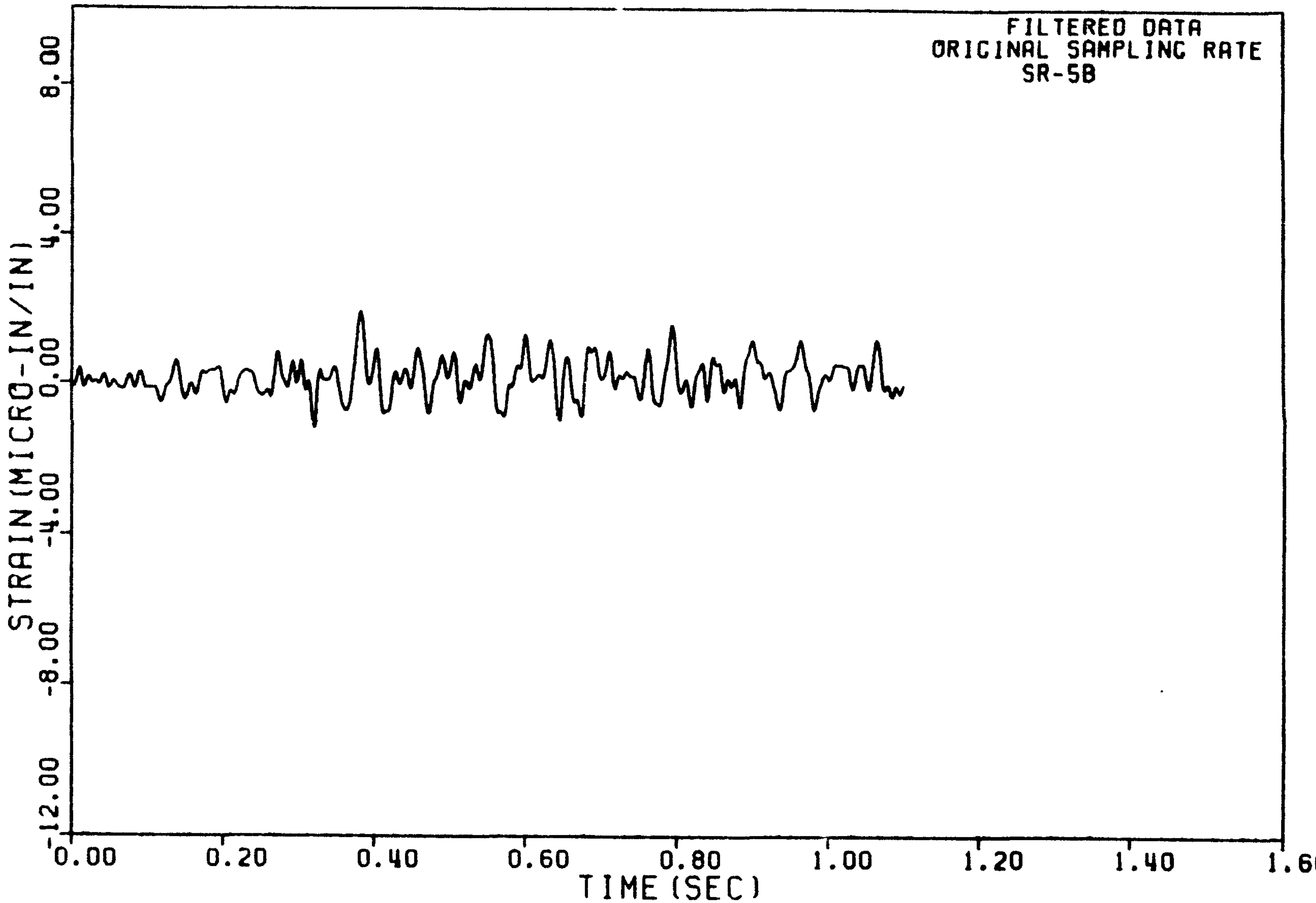


Figure C.75 <u>TYPICAL CVA STRAIN PSD</u>



DECO SRV TEST MT6 (3RD RUN-2ND LIFT)SG

Figure C.76 TYPICAL CVA STRAIN TIME HISTORY

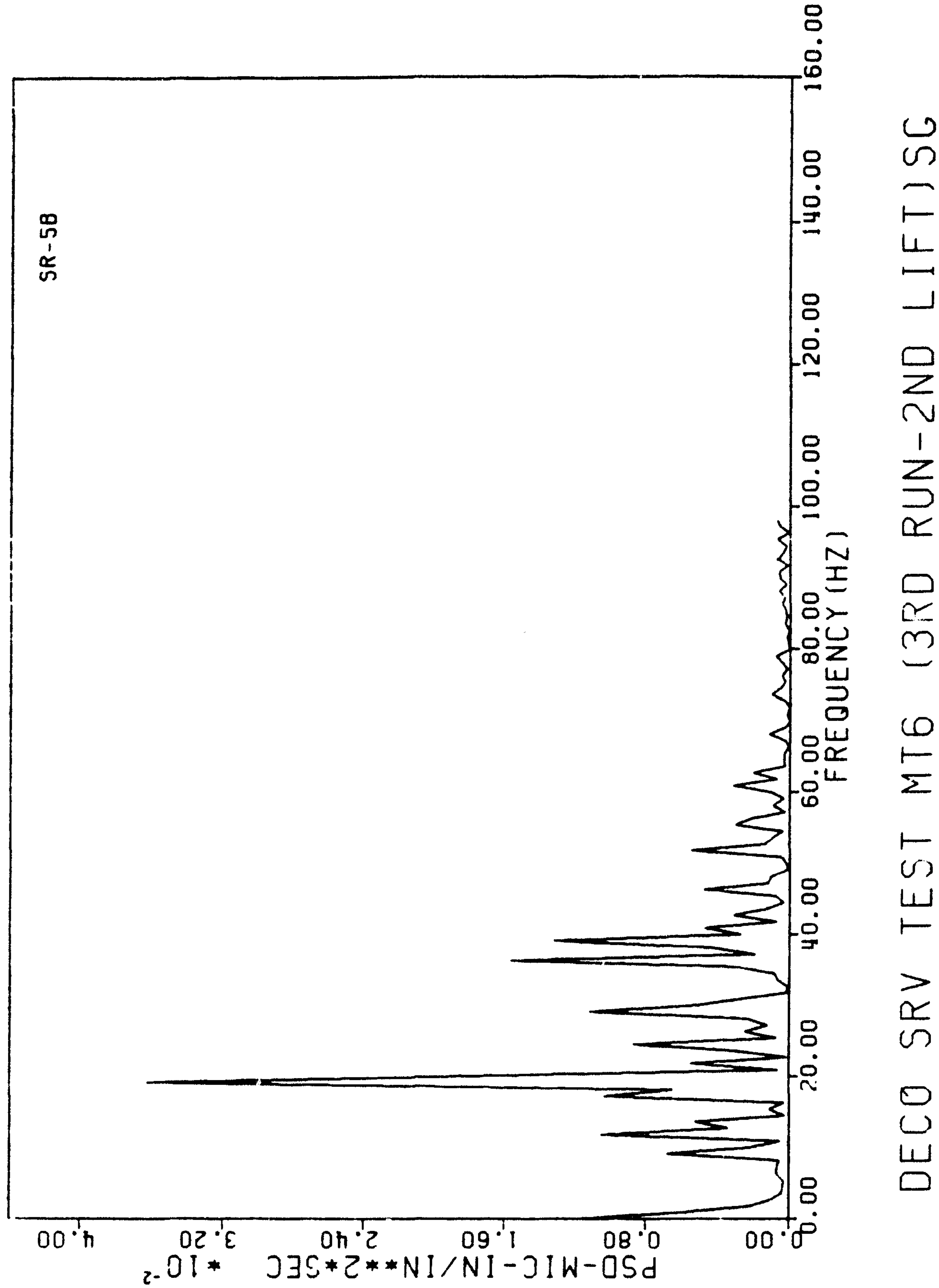
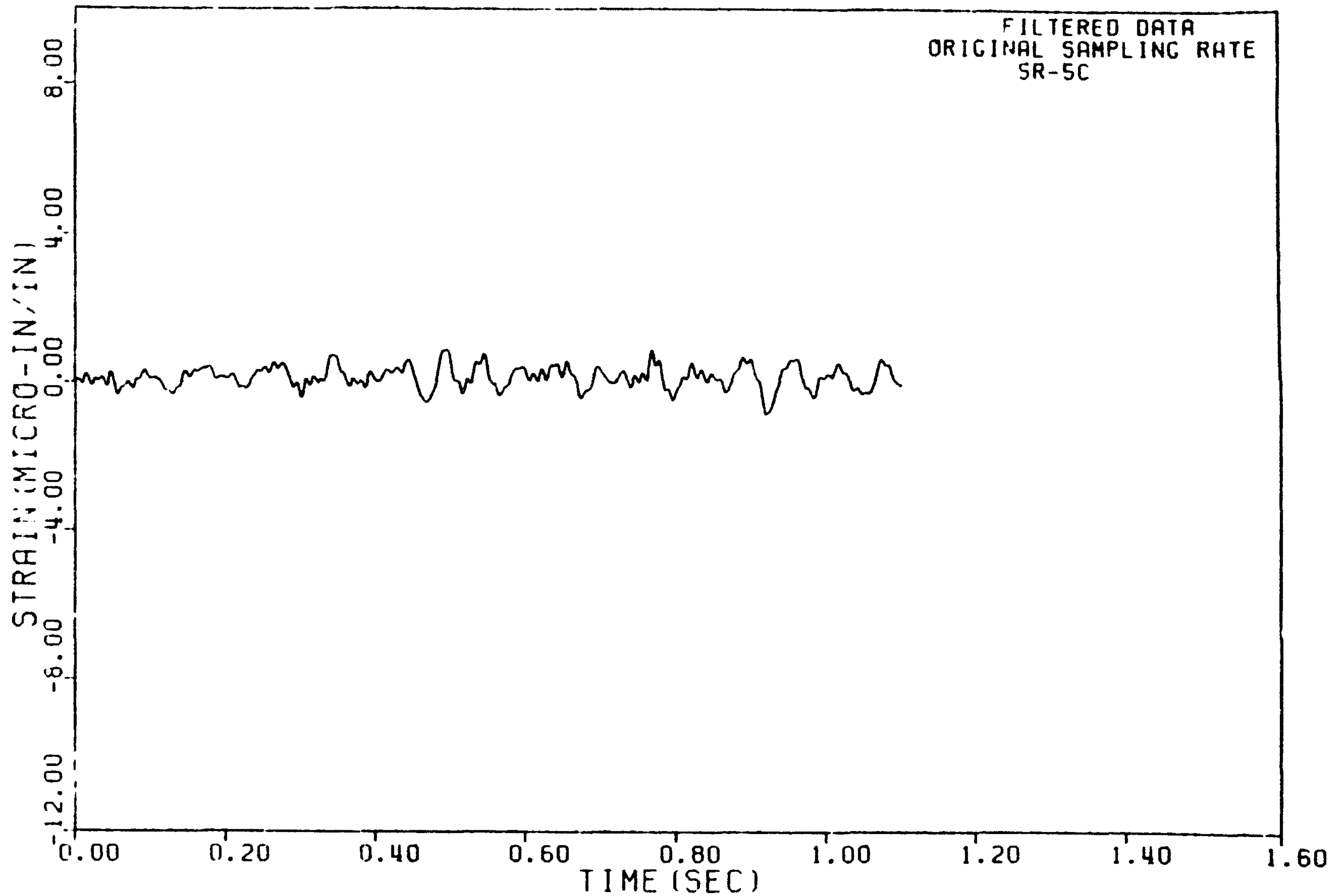
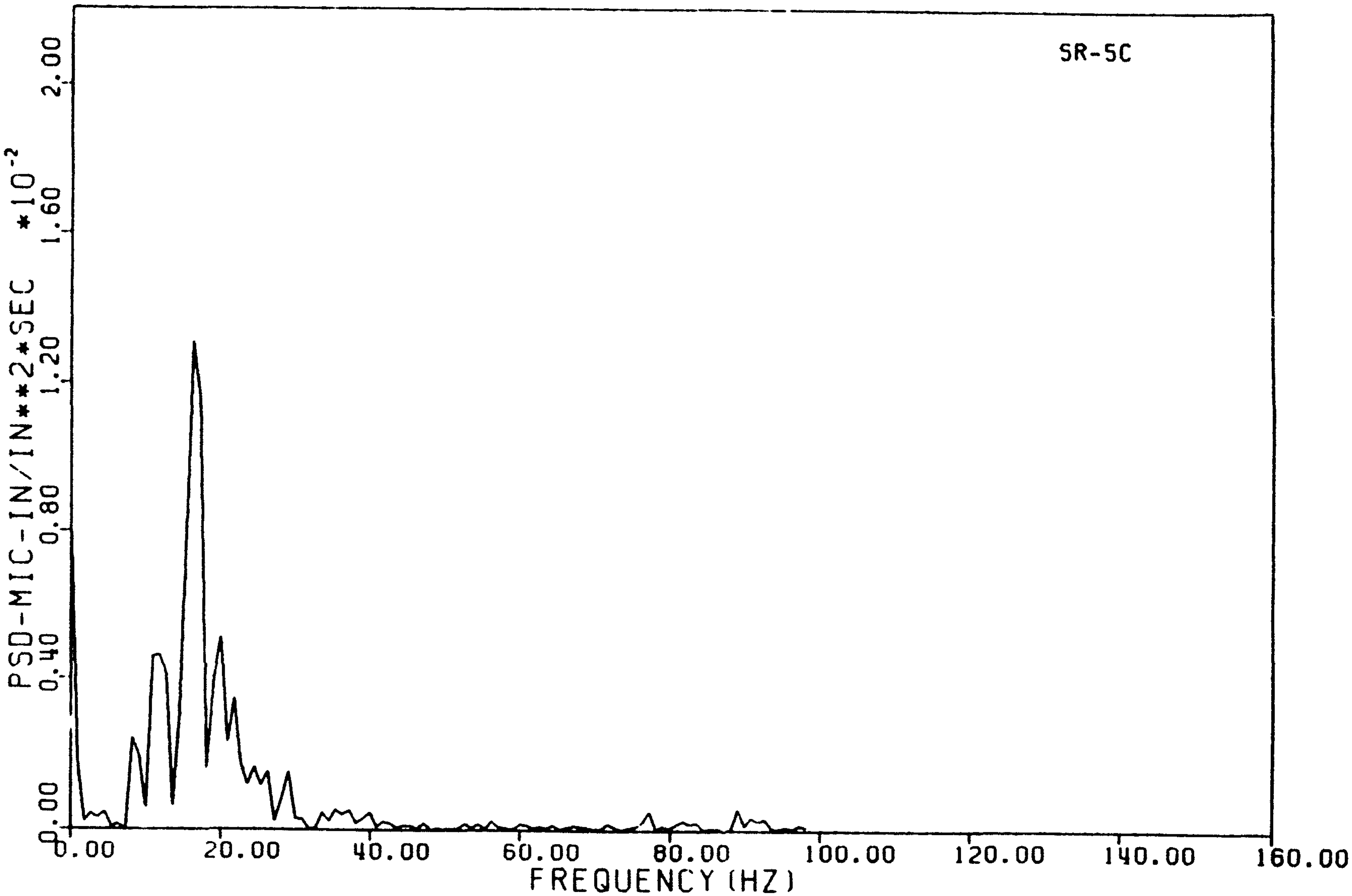


Figure C.77 TYPICAL CVA STRAIN PSD



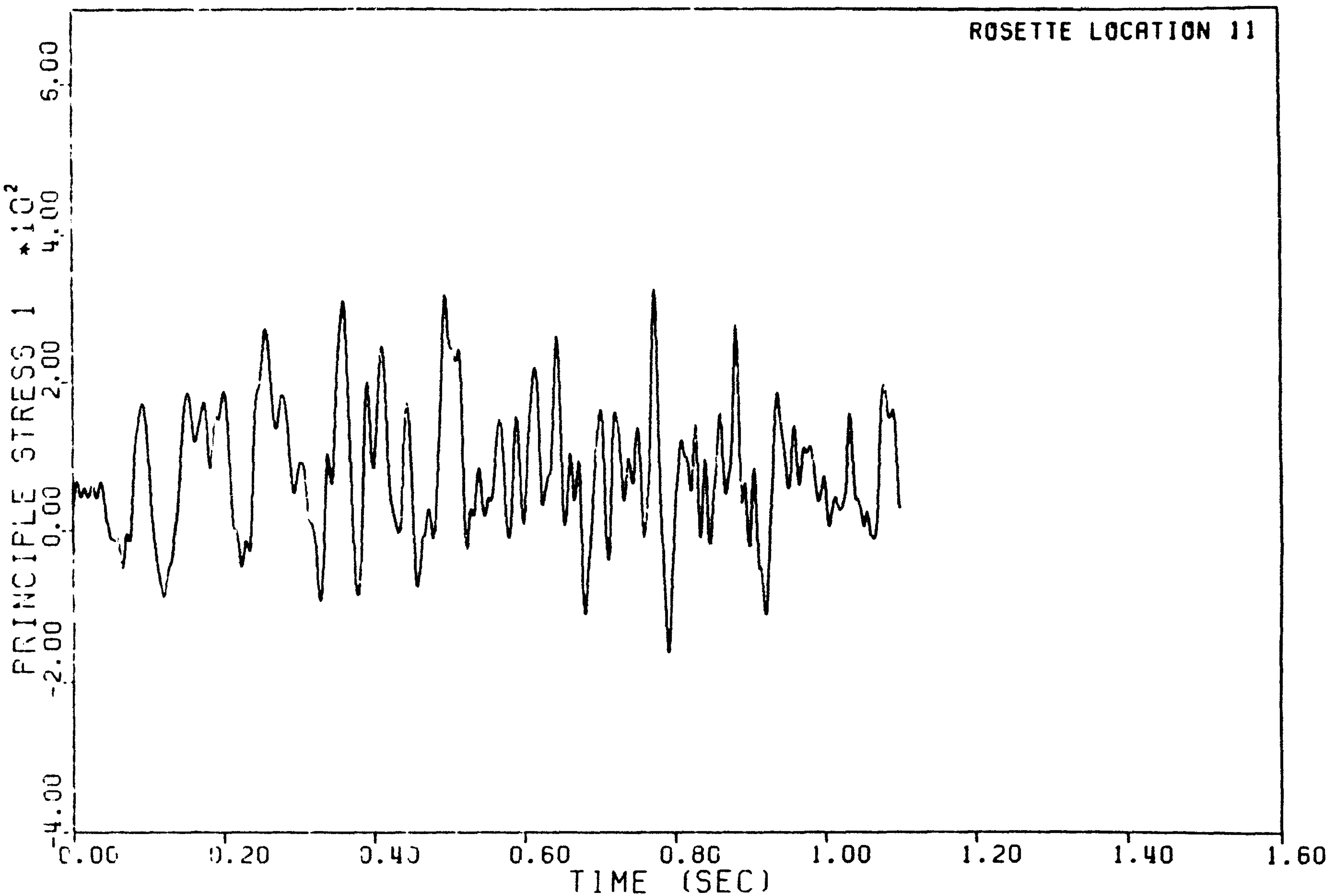
DECO SRV TEST MT6 (3RD RUN-2ND LIFT)SG

Figure C.78 TYPICAL CVA STRAIN TIME HISTORY

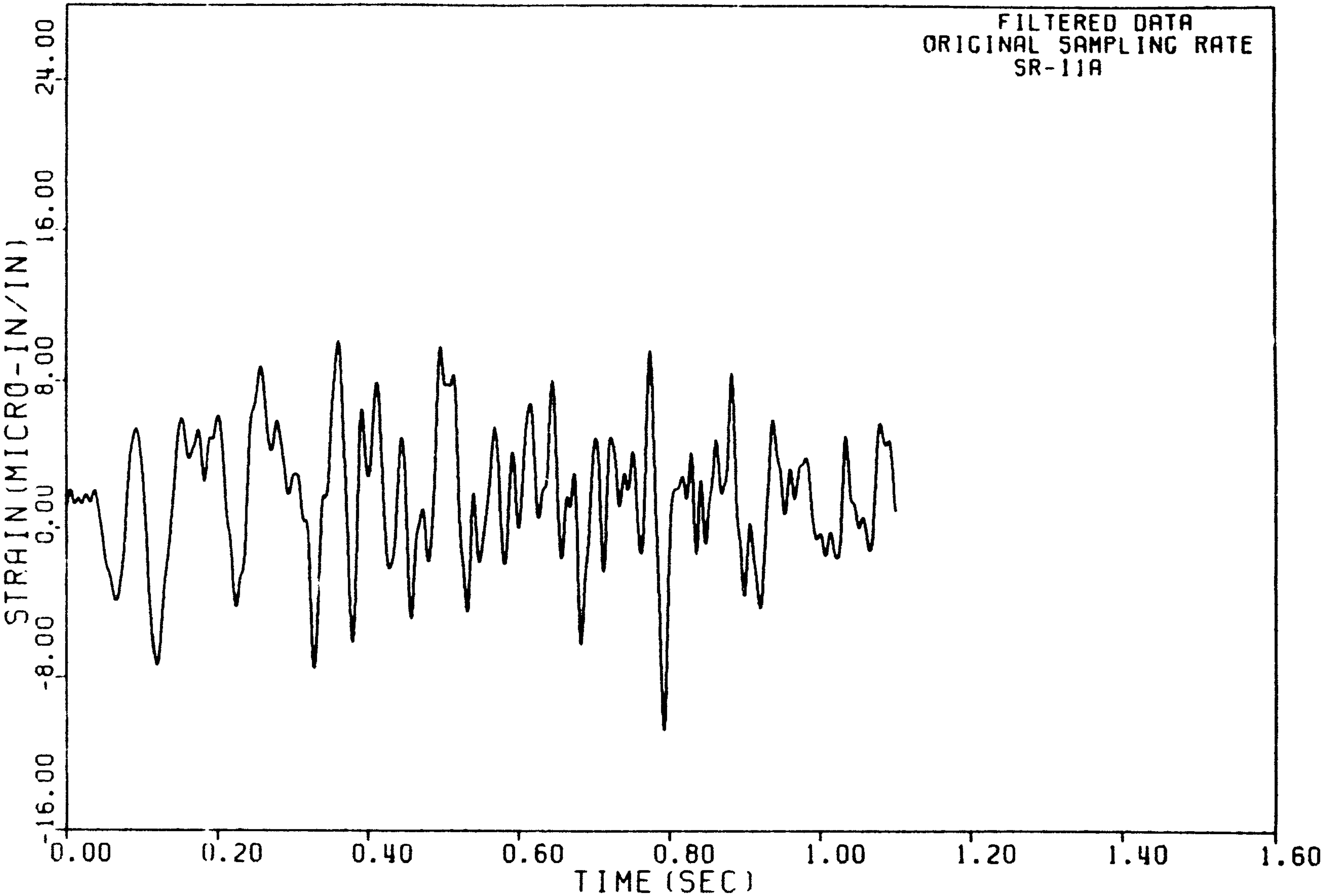


DECO SRV TEST MT6 (3RD RUN-2ND LIFT)SG

Figure C.79 TYPICAL CVA STRAIN PSD



DECO SRV TEST MT6 (3RD RUN-2ND LIFT)SC
Figure C.80 TYPICAL CVA PRINCIPAL STRESS TIME HISTORY



DECO SRV TEST MT6 (3RD RUN-2ND LIFT)SG

Figure C.81 TYPICAL CVA STRAIN TIME HISTORY

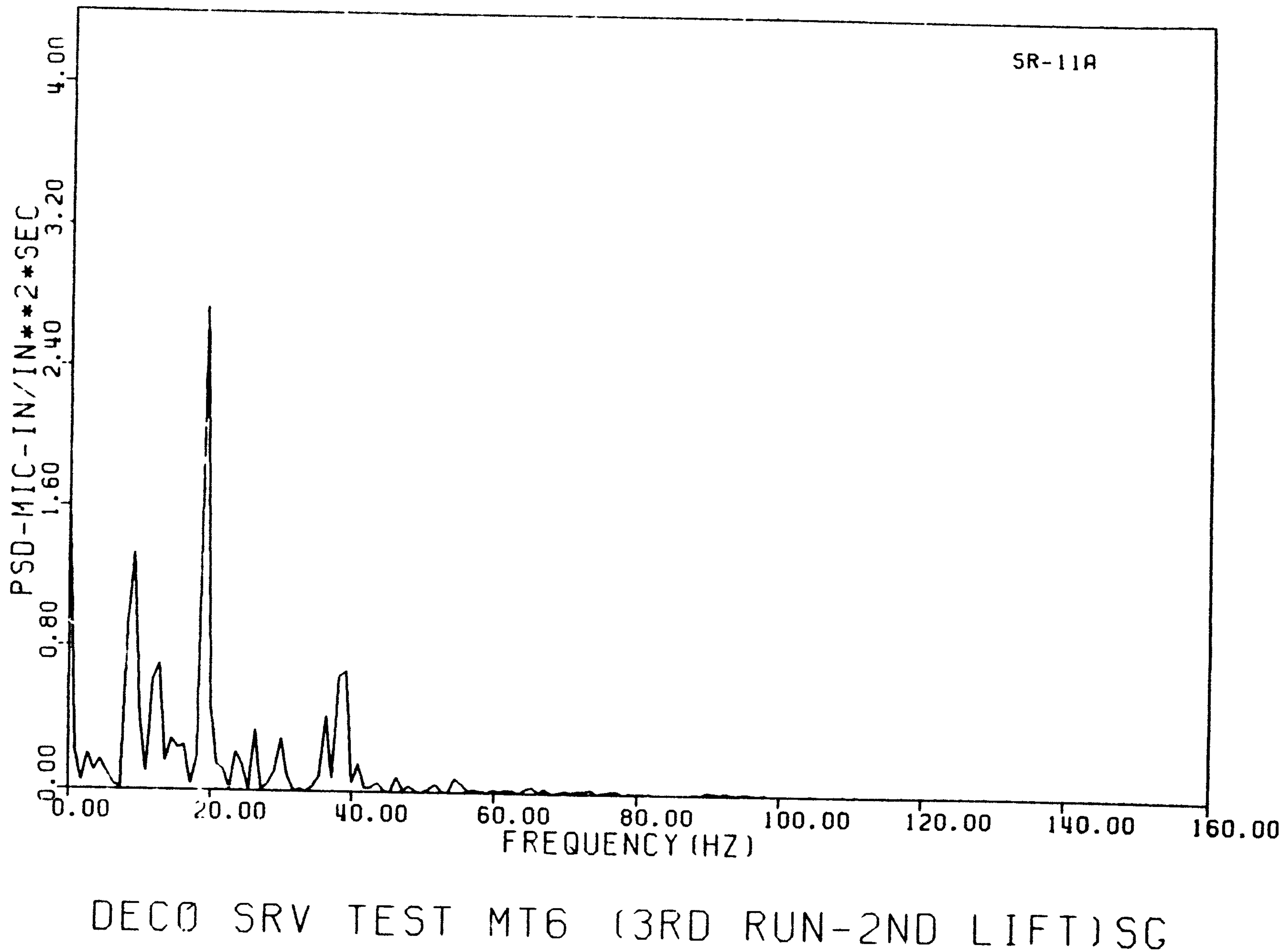


Figure C.82 TYPICAL CVA STRAIN PSD

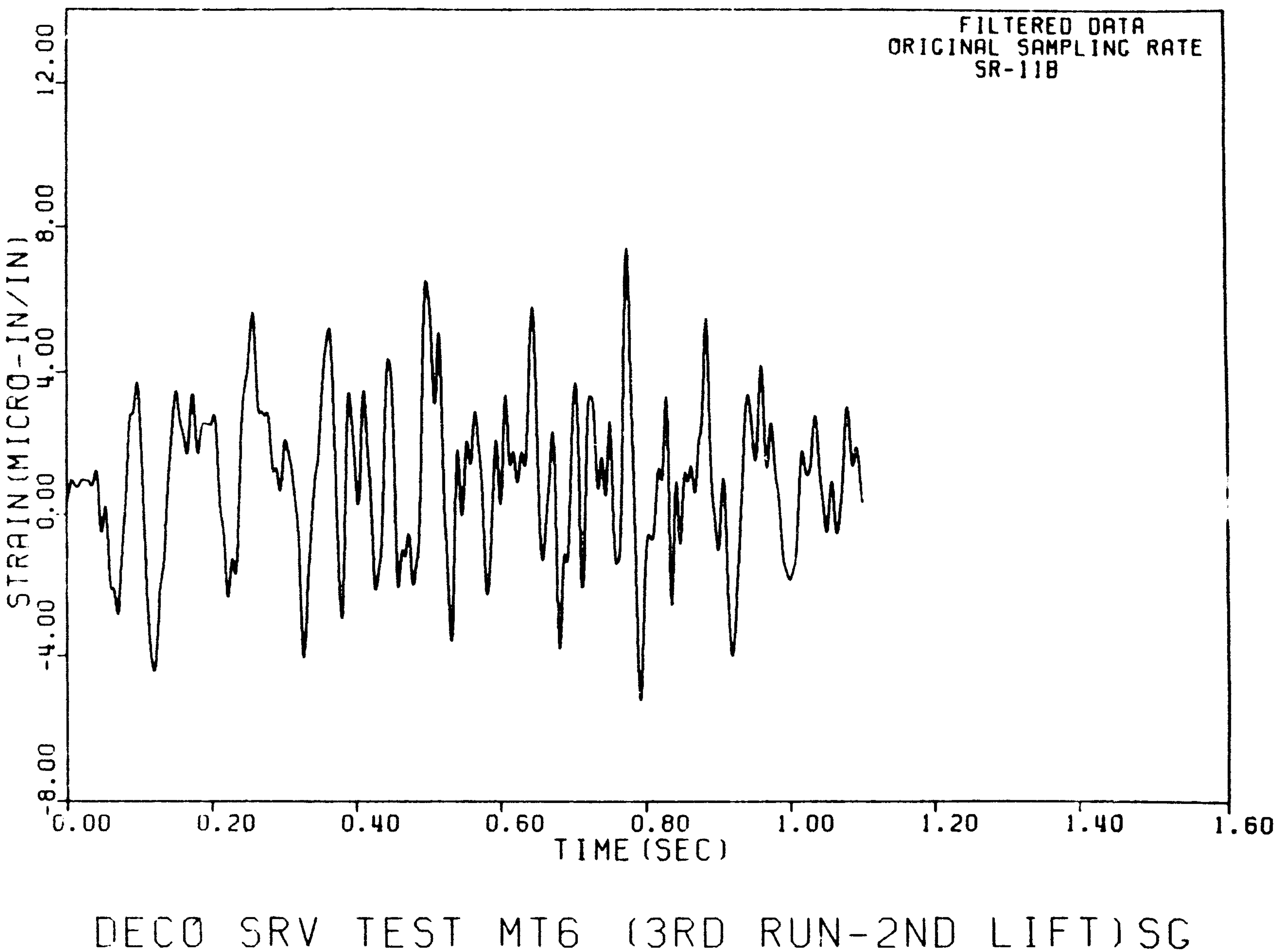
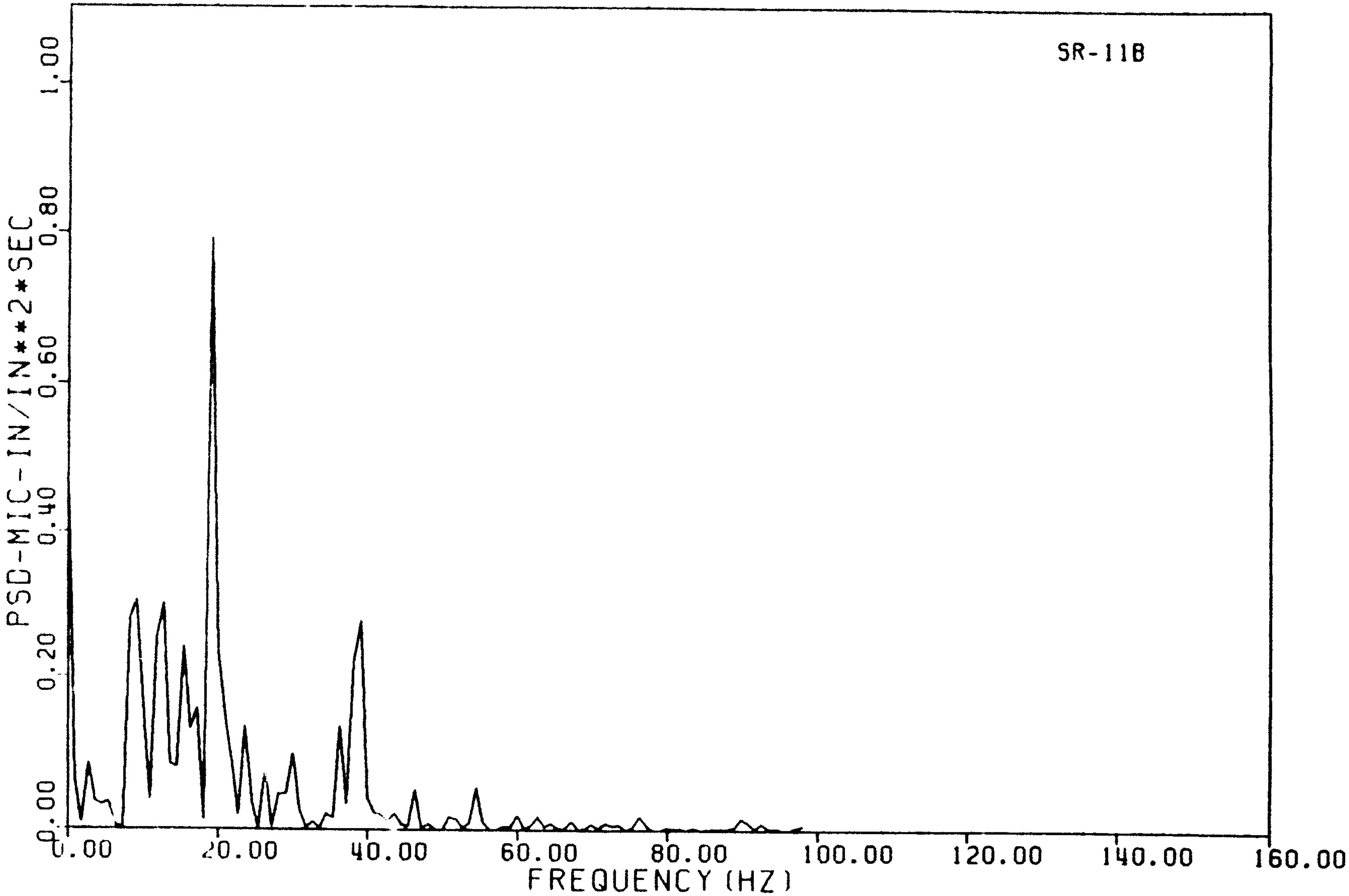


Figure C.83 TYPICAL CVA STRAIN TIME HISTORY



DECO SRV TEST MT6 (3RD RUN-2ND LIFT)SG

Figure C.84 TYPICAL CVA STRAIN PSD

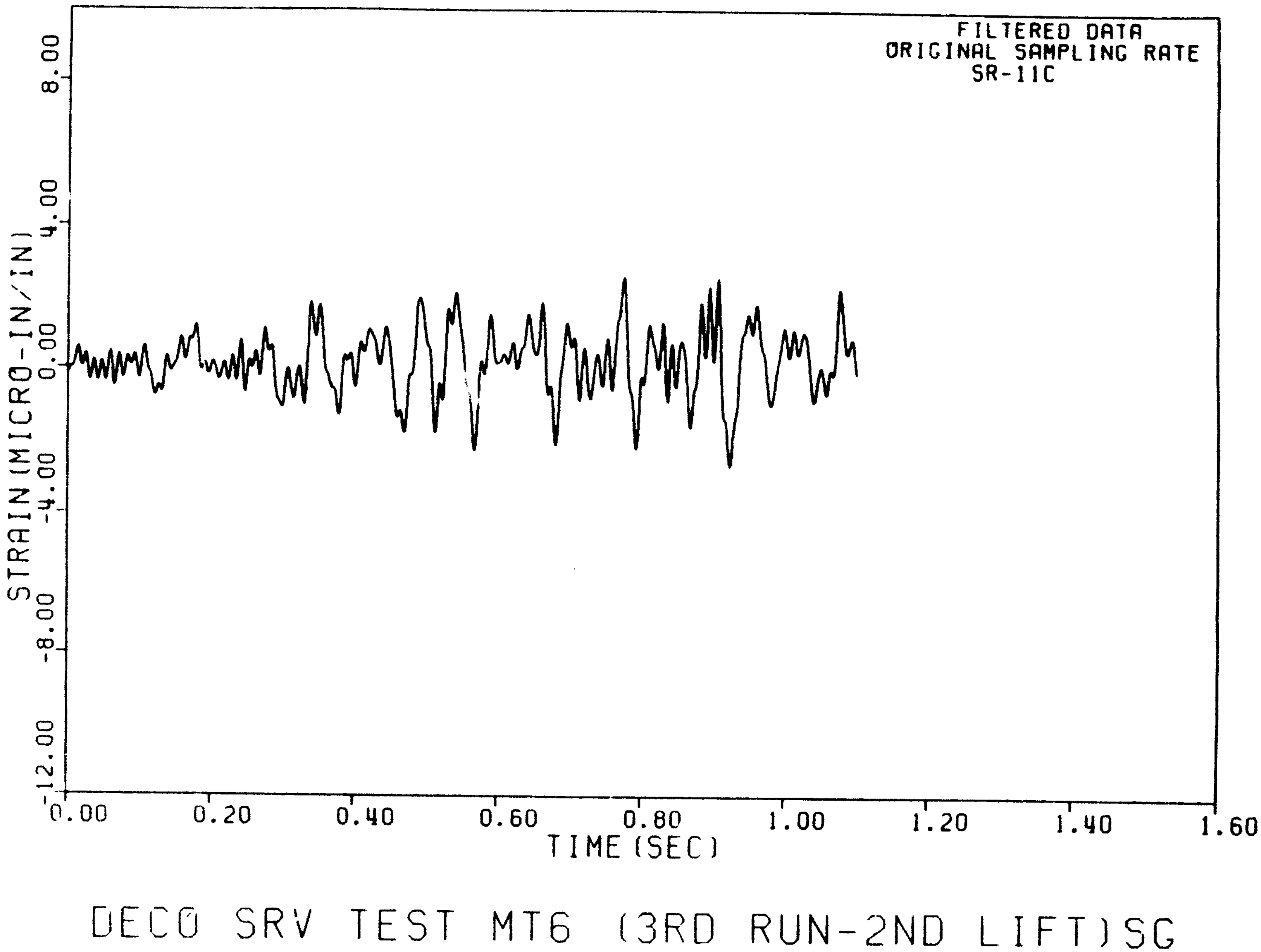
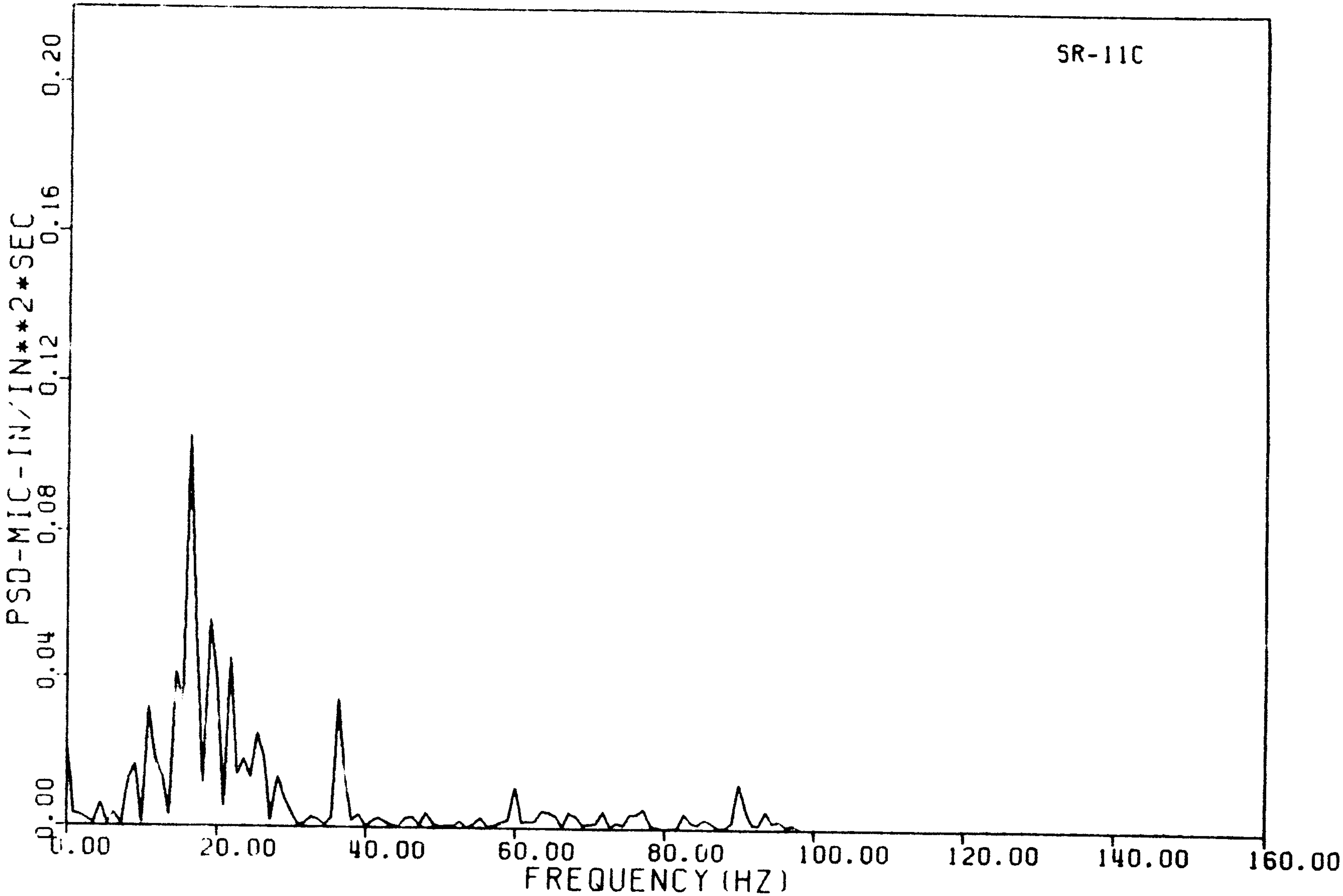
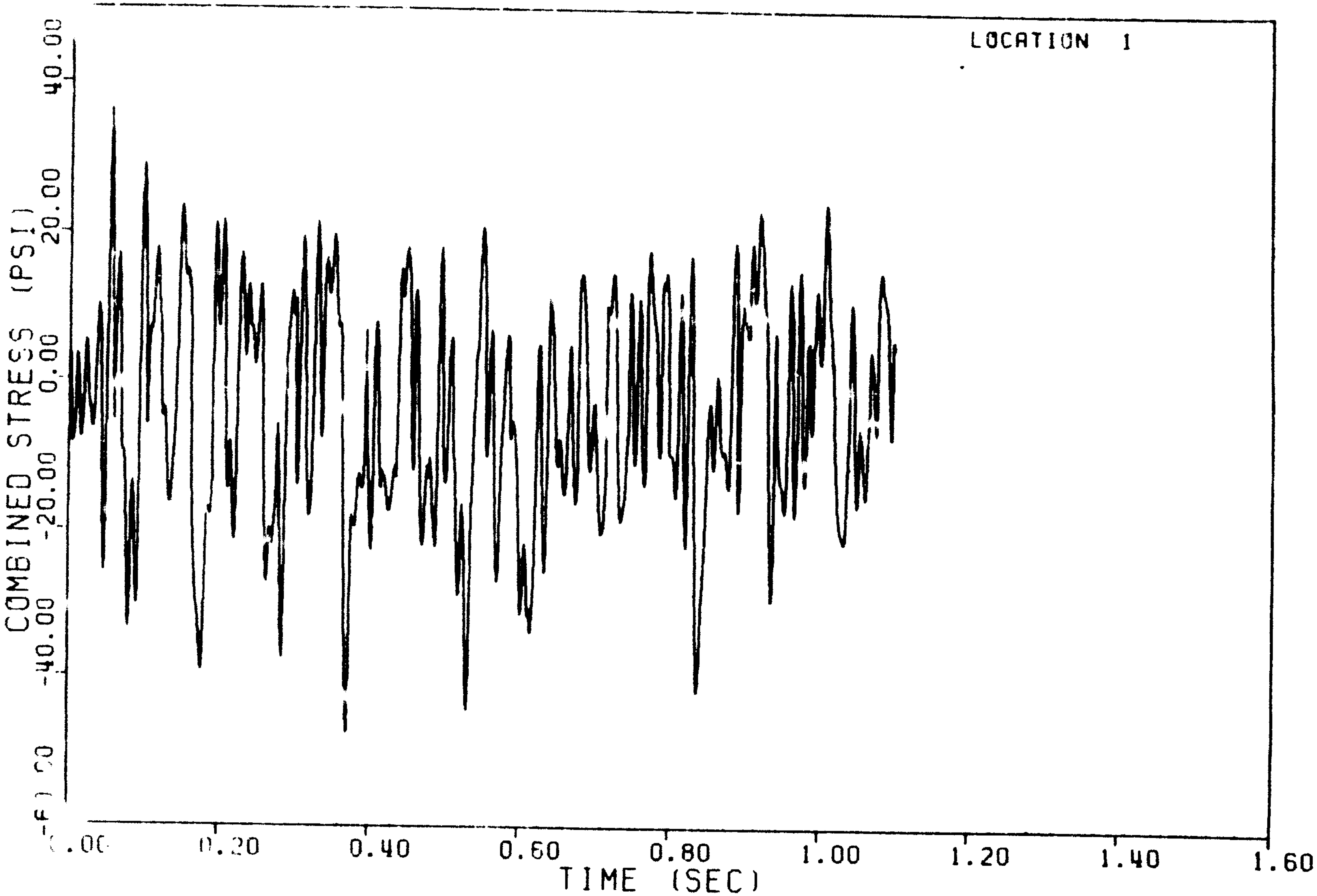


Figure C.85 TYPICAL CVA STRAIN TIME HISTORY



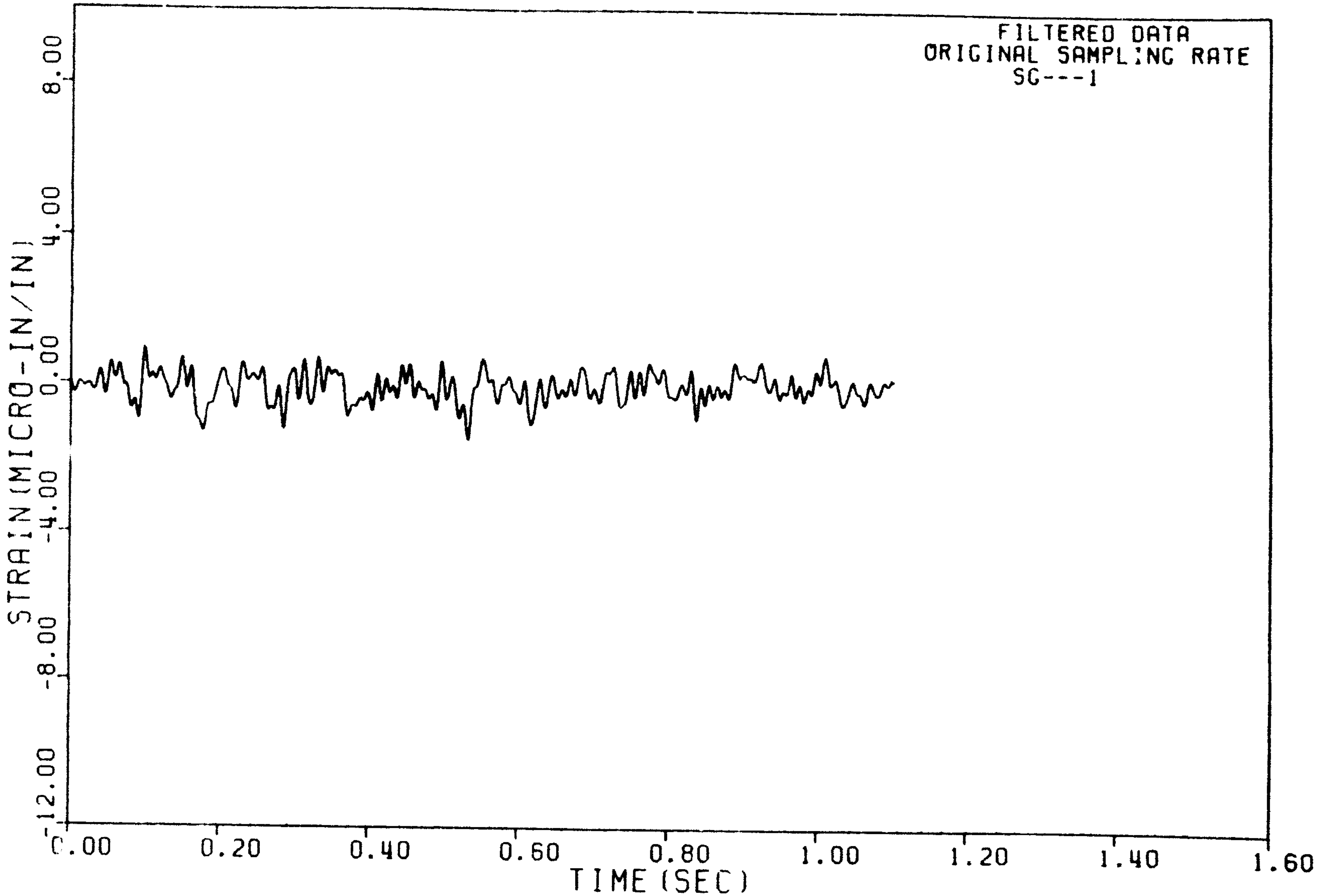
DECC SRV TEST MT6 (3RD RUN-2ND LIFT) SG

Figure C.86 TYPICAL CVA STRAIN PSD



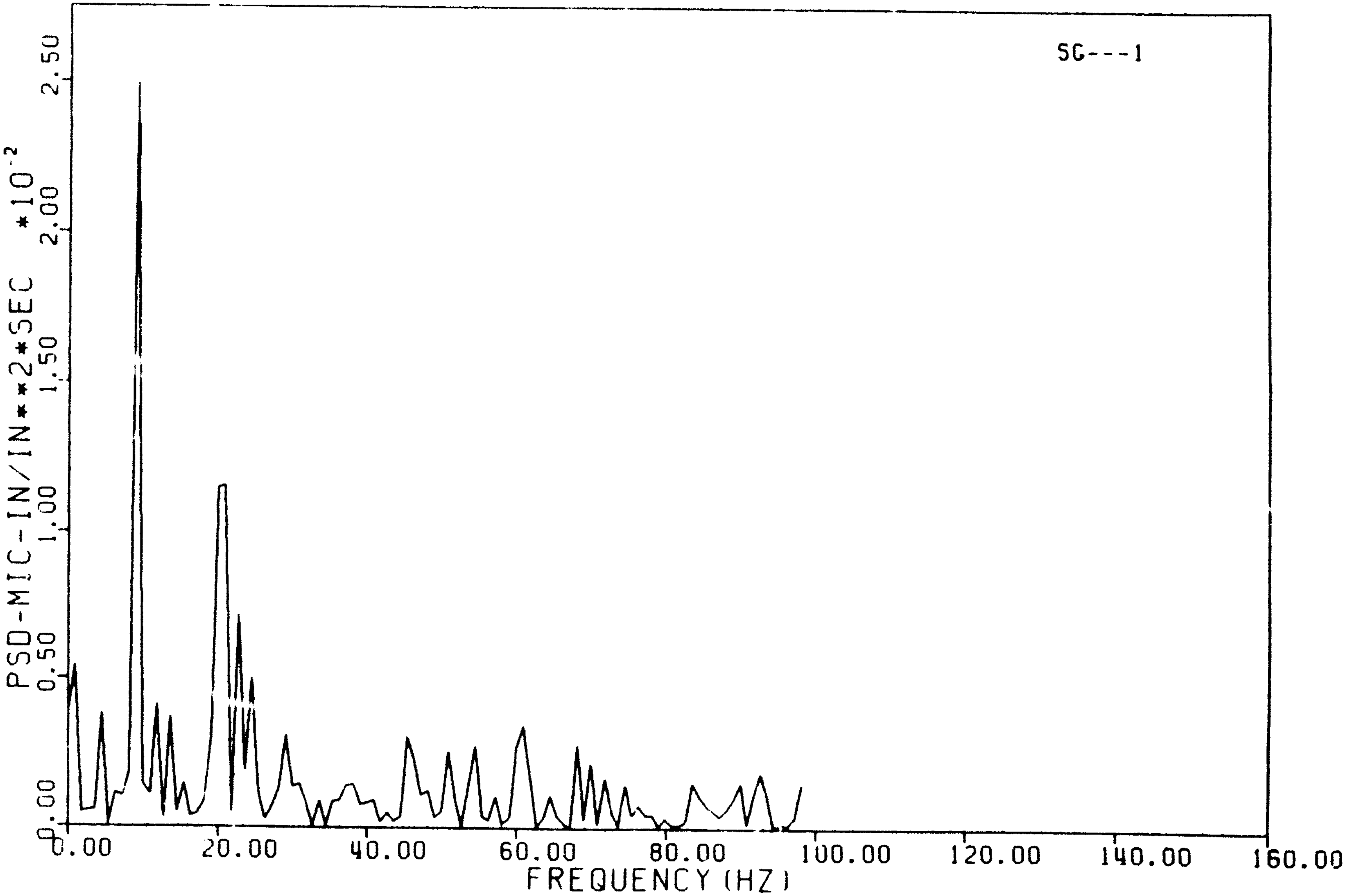
DECO SRV TEST MT6 (3RD RUN-2ND LIFT)SG

Figure C.87 TYPICAL CVA COMBINED STRESS TIME HISTORY



DECO SRV TEST MT6 (3RD RUN-2ND LIFT)SG

Figure C.88 TYPICAL CVA STRAIN TIME HISTORY



DECO SRV TEST MT6 (3RD RUN-2ND LIFT)SG

Figure C.89 TYPICAL CVA STRAIN PSD

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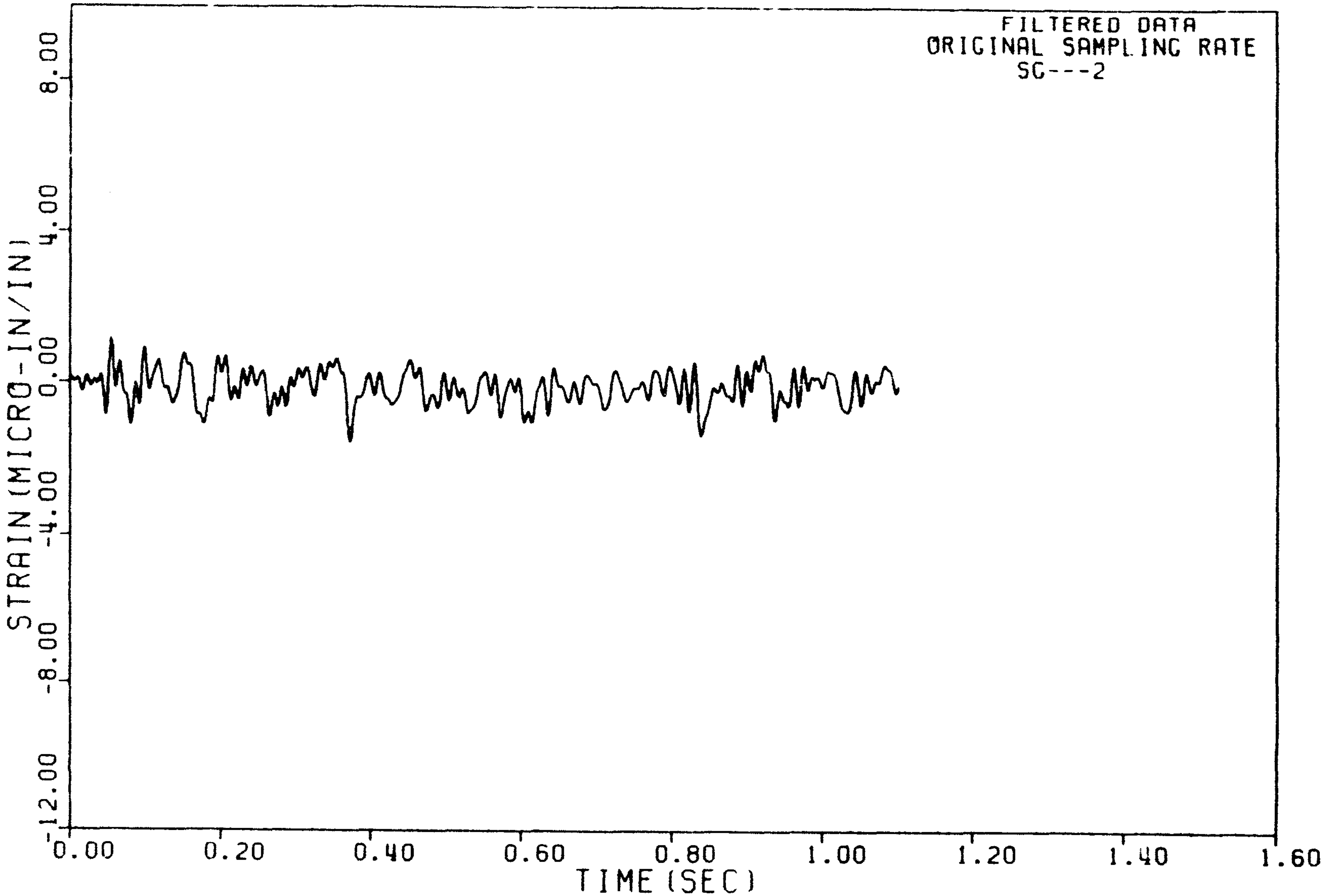

DECO SRV TEST MT6 (3RD RUN-2ND LIFT)SG

Figure C.90 TYPICAL CVA STRAIN TIME HISTORY

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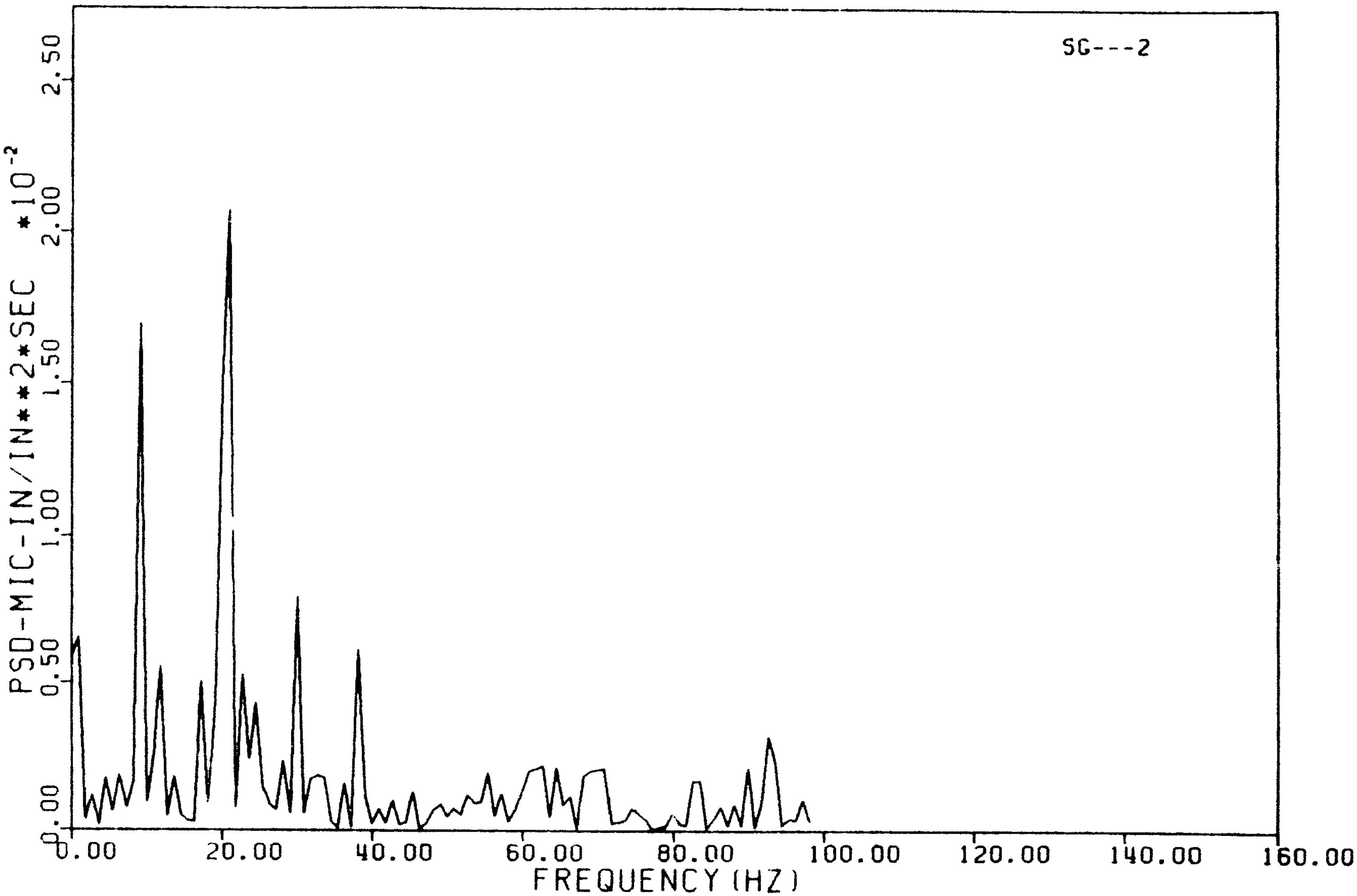


DECO SRV TEST MT6 (3RD RUN-2ND LIFT)SG

Figure C.91 TYPICAL CVA STRAIN PSD

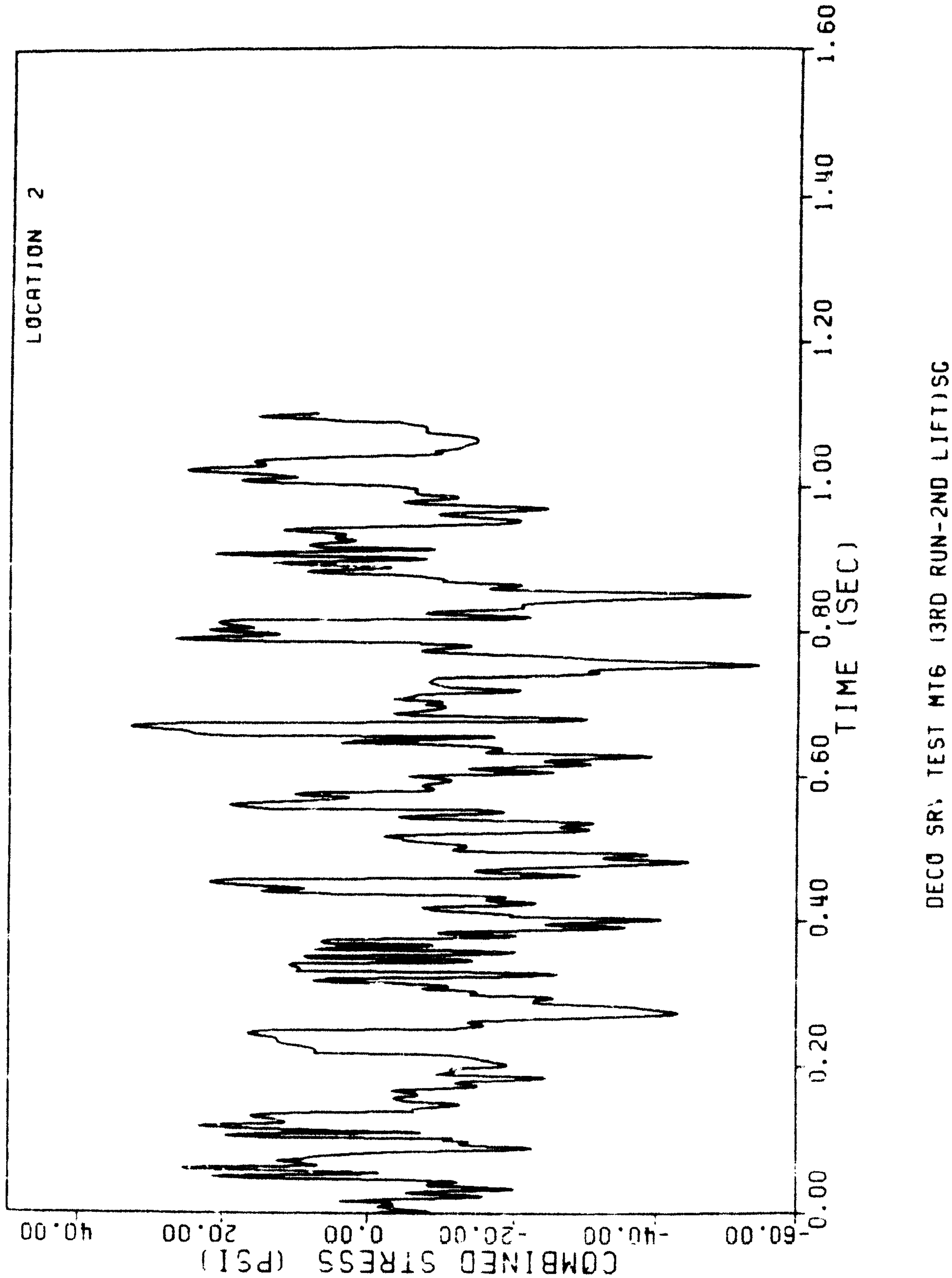
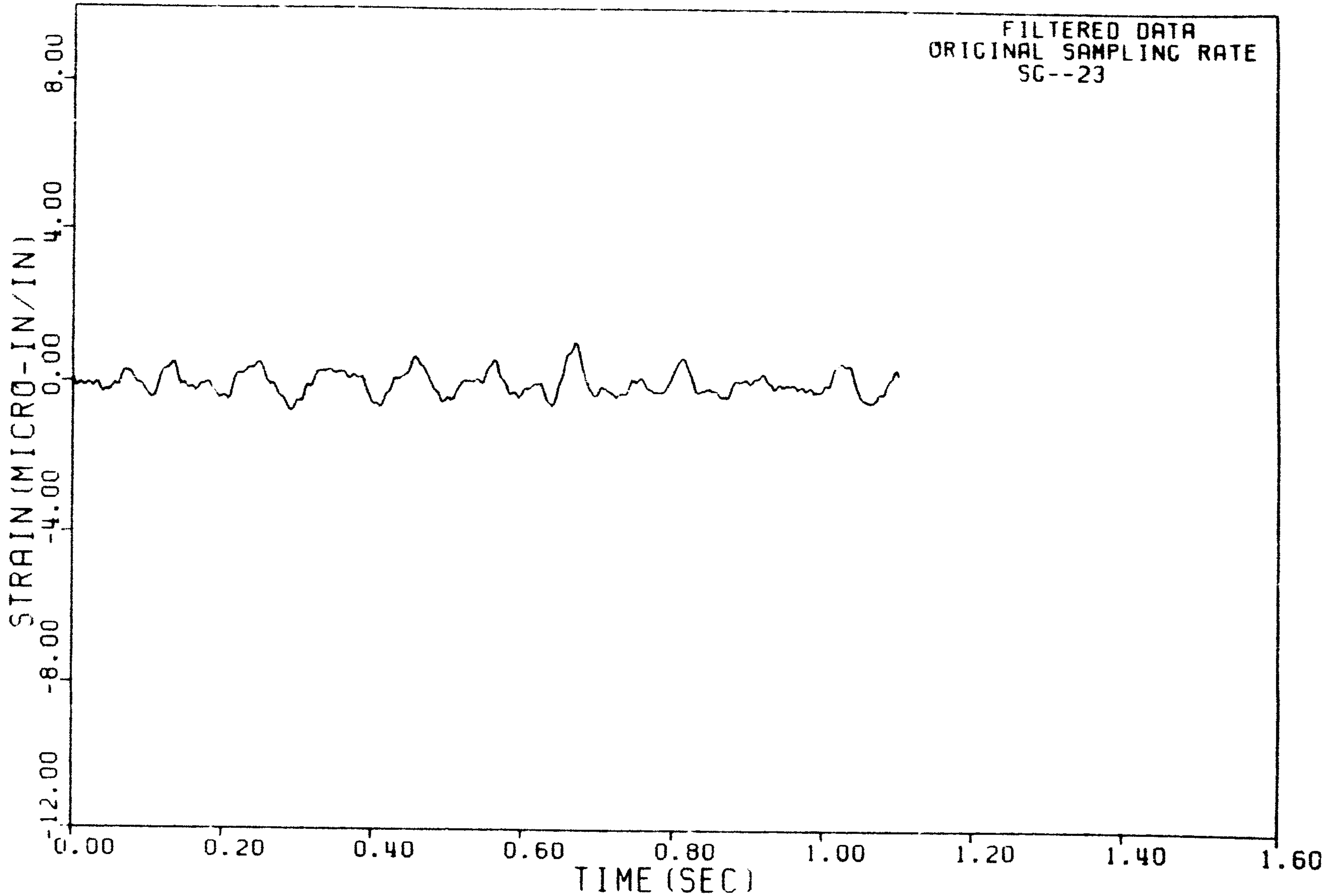


Figure C.92 TYPICAL CVA COMBINED STRESS TIME HISTORY



DECO SRV TEST MT6 (3RD RUN-2ND LIFT) SG

Figure C.93 TYPICAL CVA STRAIN TIME HISTORY

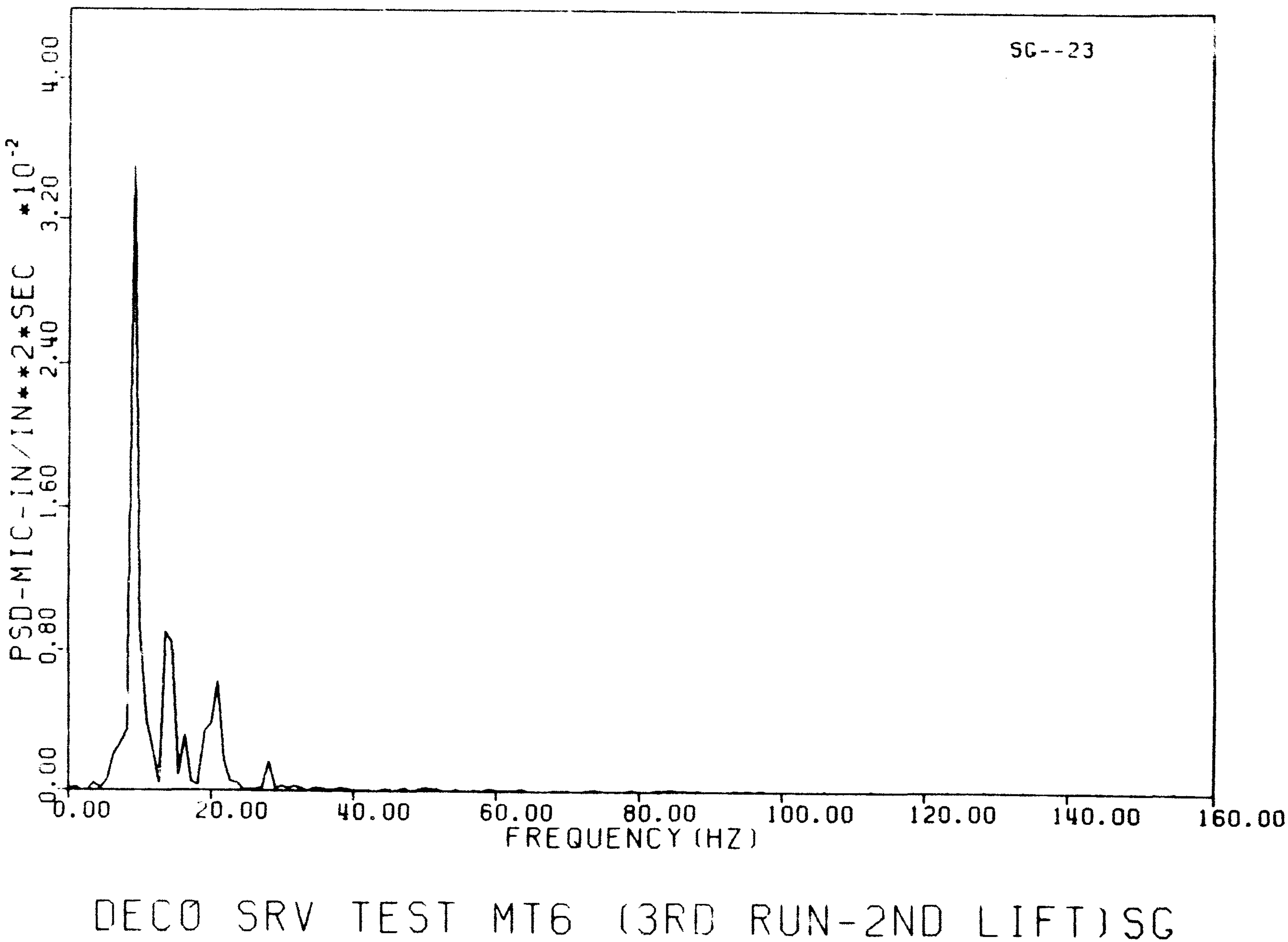
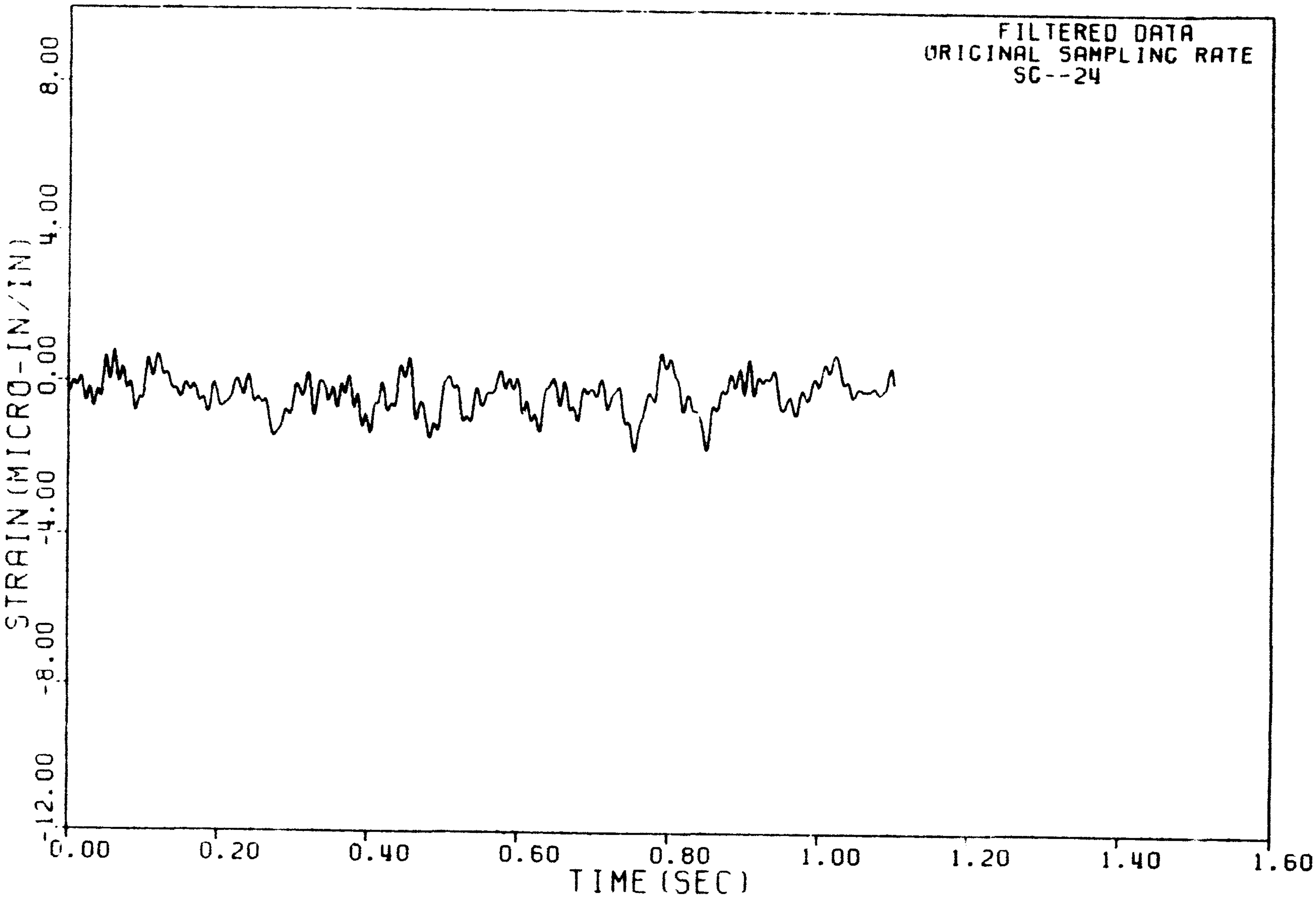


Figure C.94 TYPICAL CVA STRAIN PSD



DECO SRV TEST MT6 (3RD RUN-2ND LIFT)SG

Figure C.95 <u>TYPICAL CVA STRAIN TIME HISTORY</u>

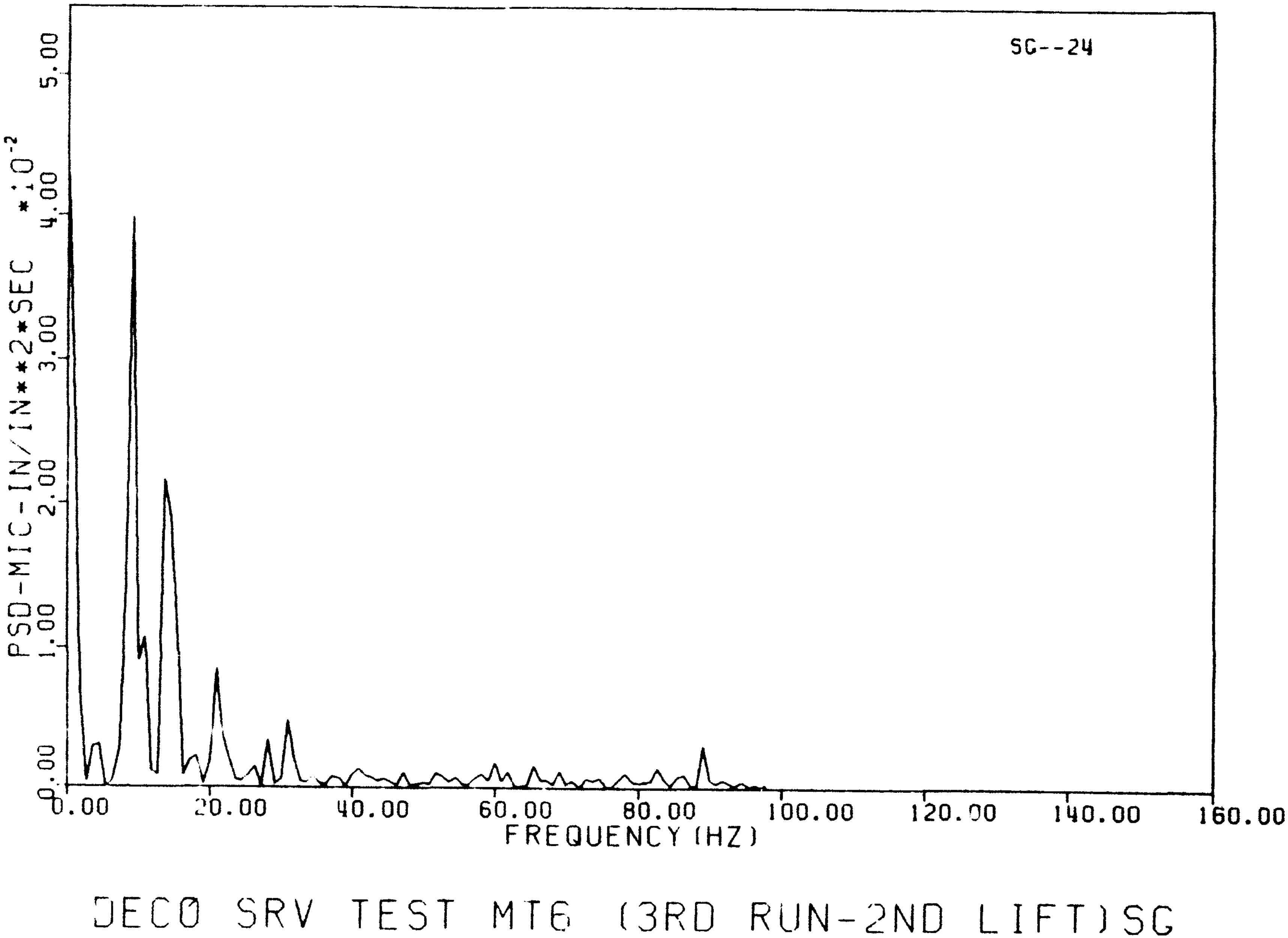


Figure C.96 TYPICAL CVA STRAIN PSD

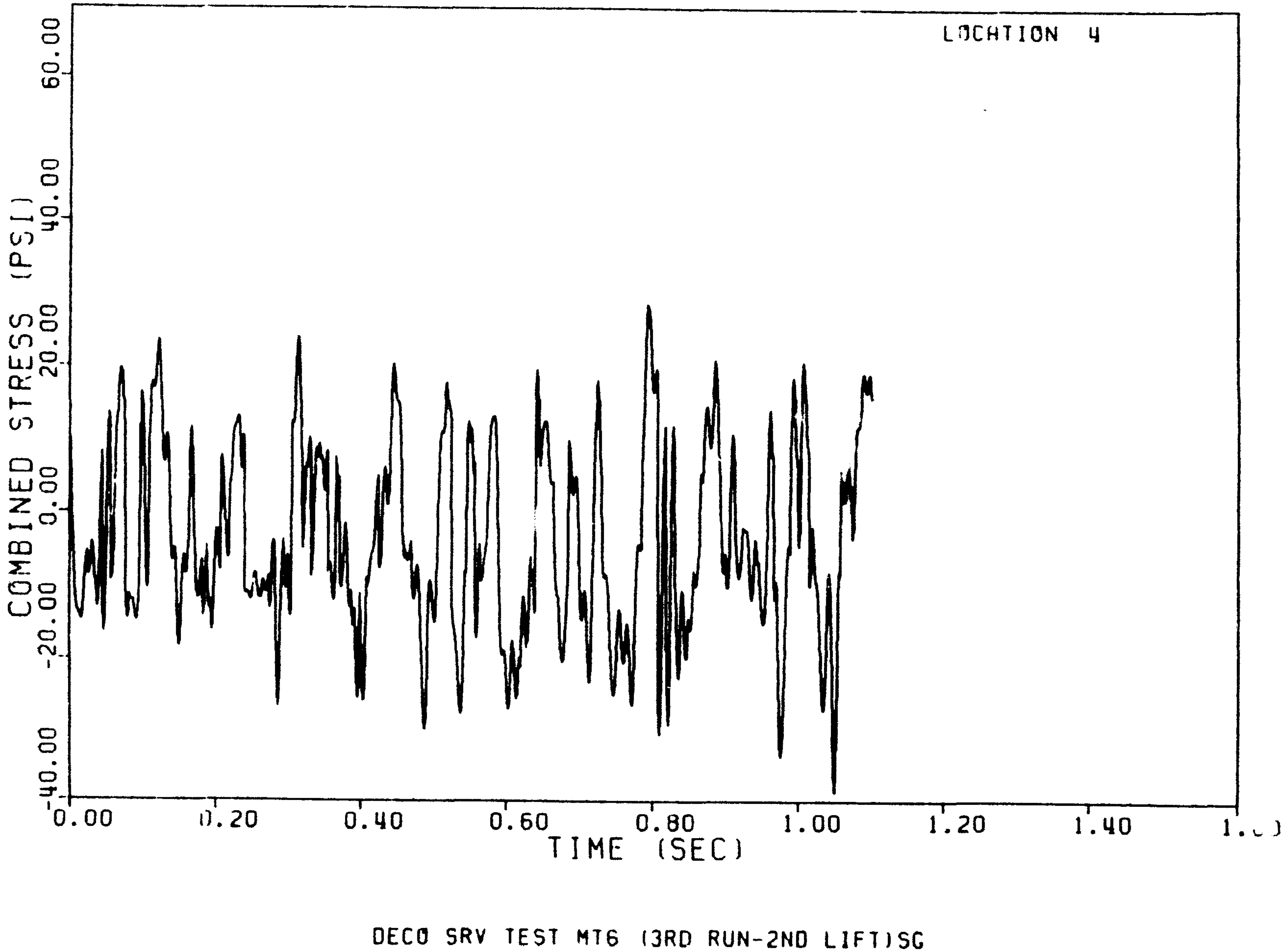
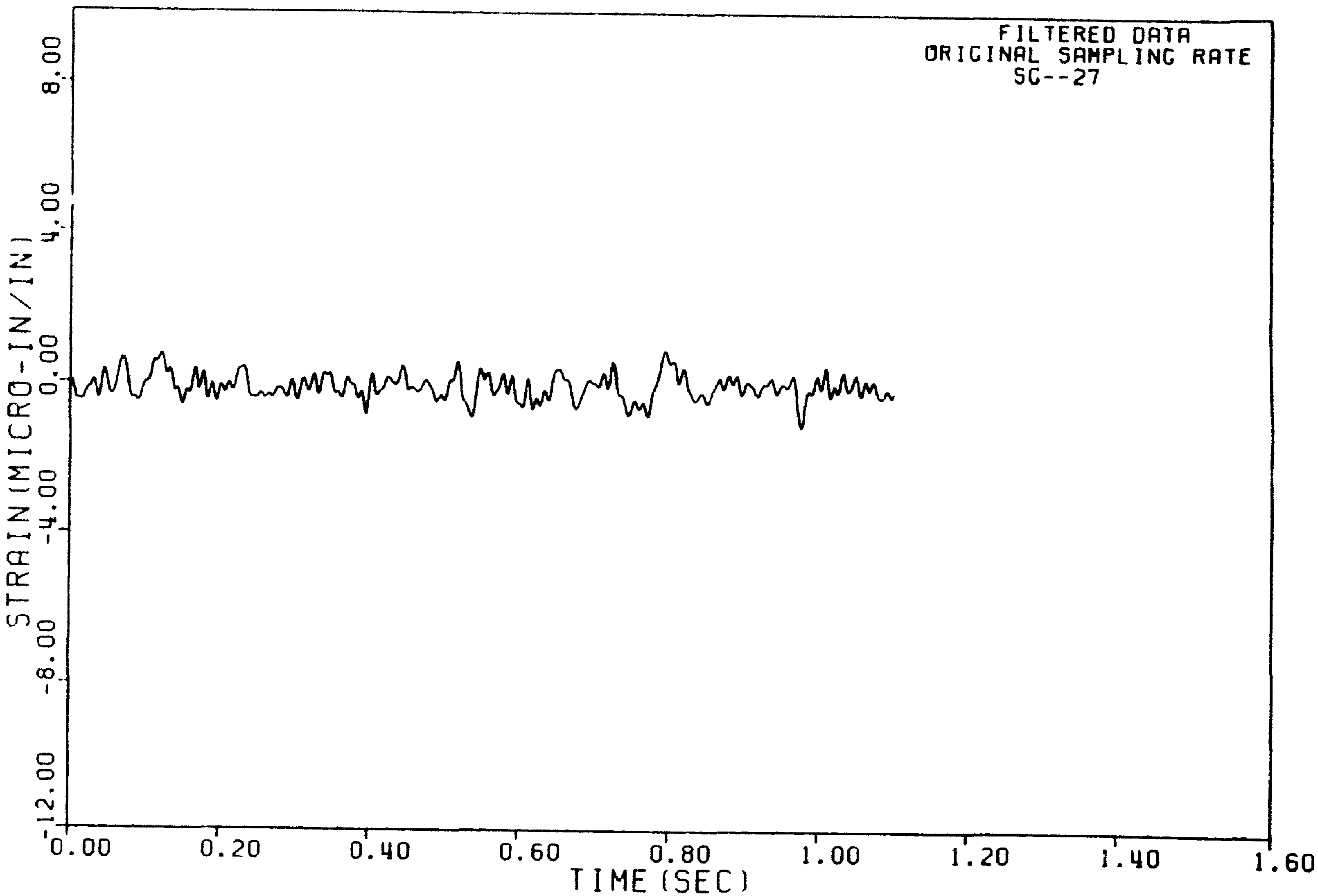
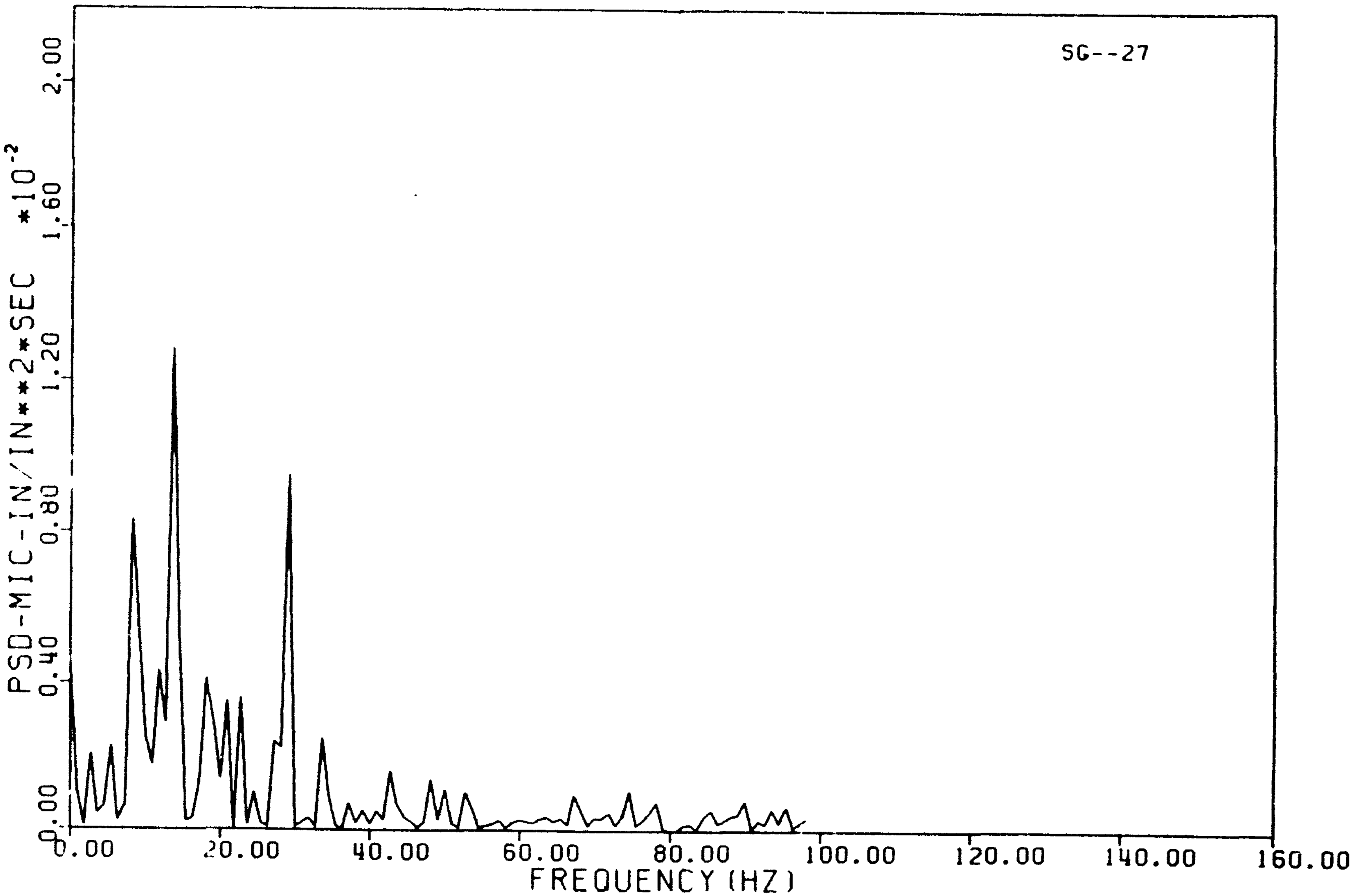


Figure C.97 TYPICAL CVA COMBINED STRESS TIME HISTORY



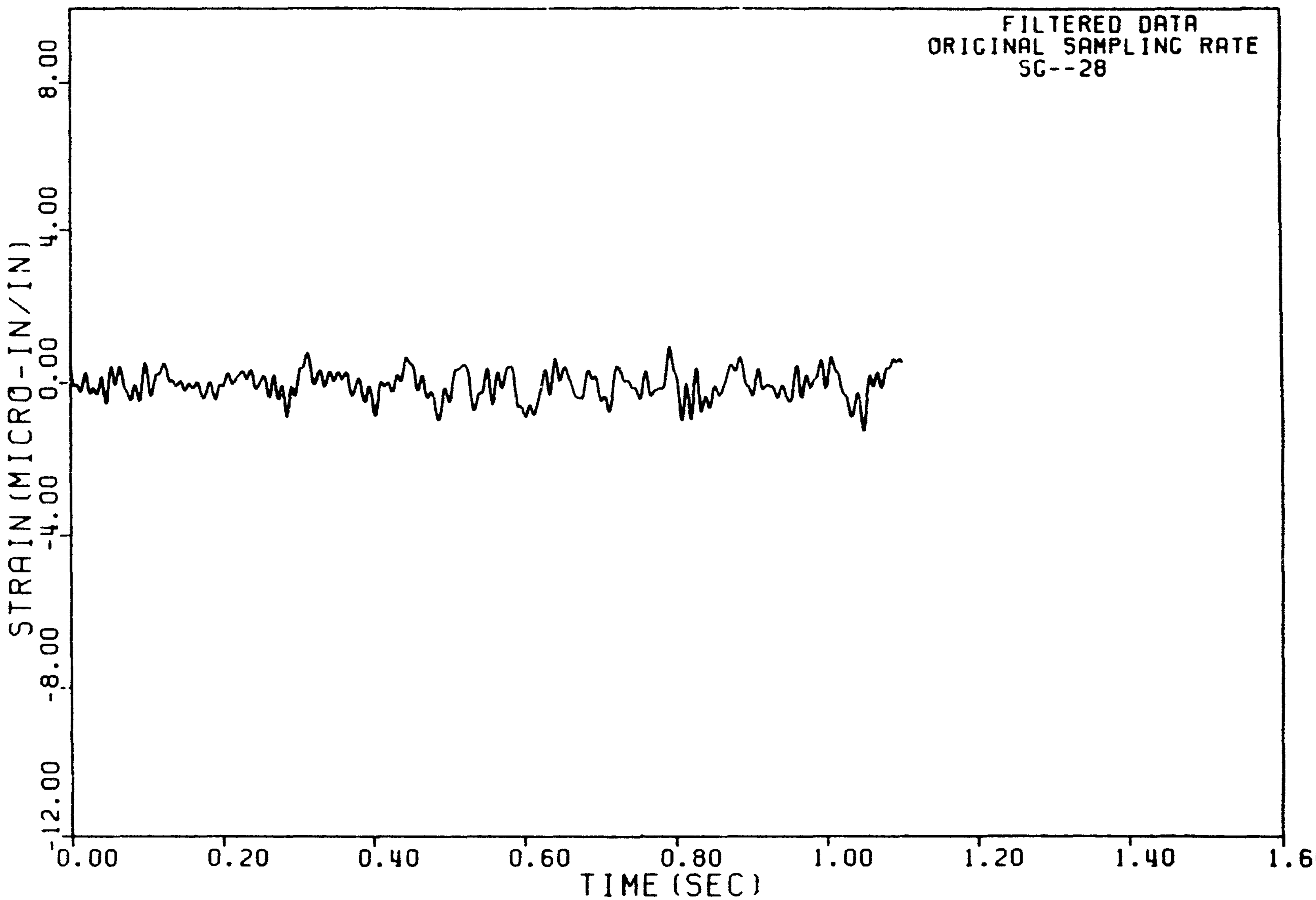
DECO SRV TEST MT6 (3RD RUN-2ND LIFT)SG

Figure C.98 TYPICAL CVA STRAIN TIME HISTORY



DECO SRV TEST MT6 (3RD RUN-2ND LIFT)SG

Figure C.99 TYPICAL CVA STRAIN PSD



DECO SRV TEST MT6 (3RD RUN-2ND LIFT)SG

Figure C.100 TYPICAL CVA STRAIN TIME HISTORY

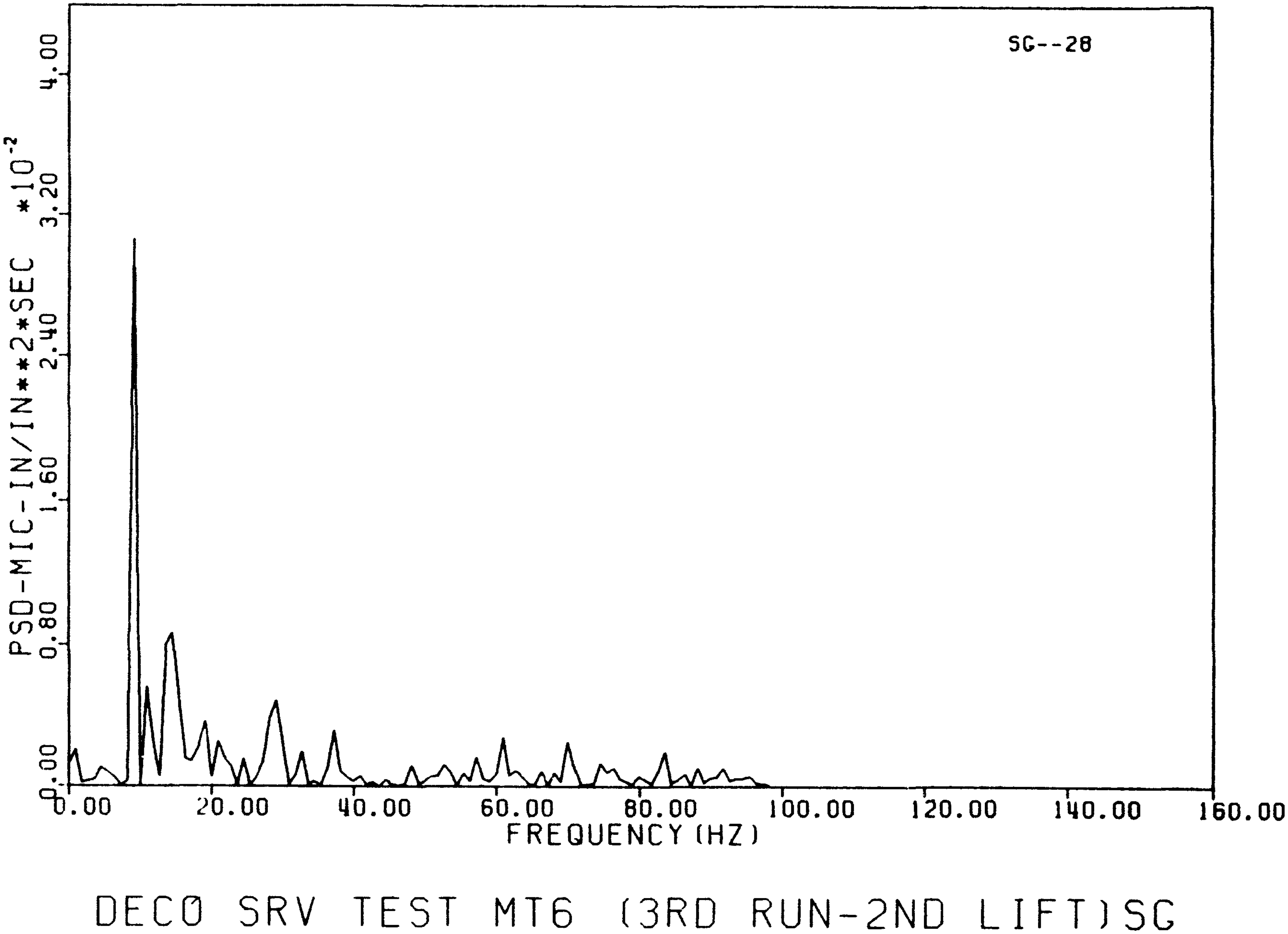
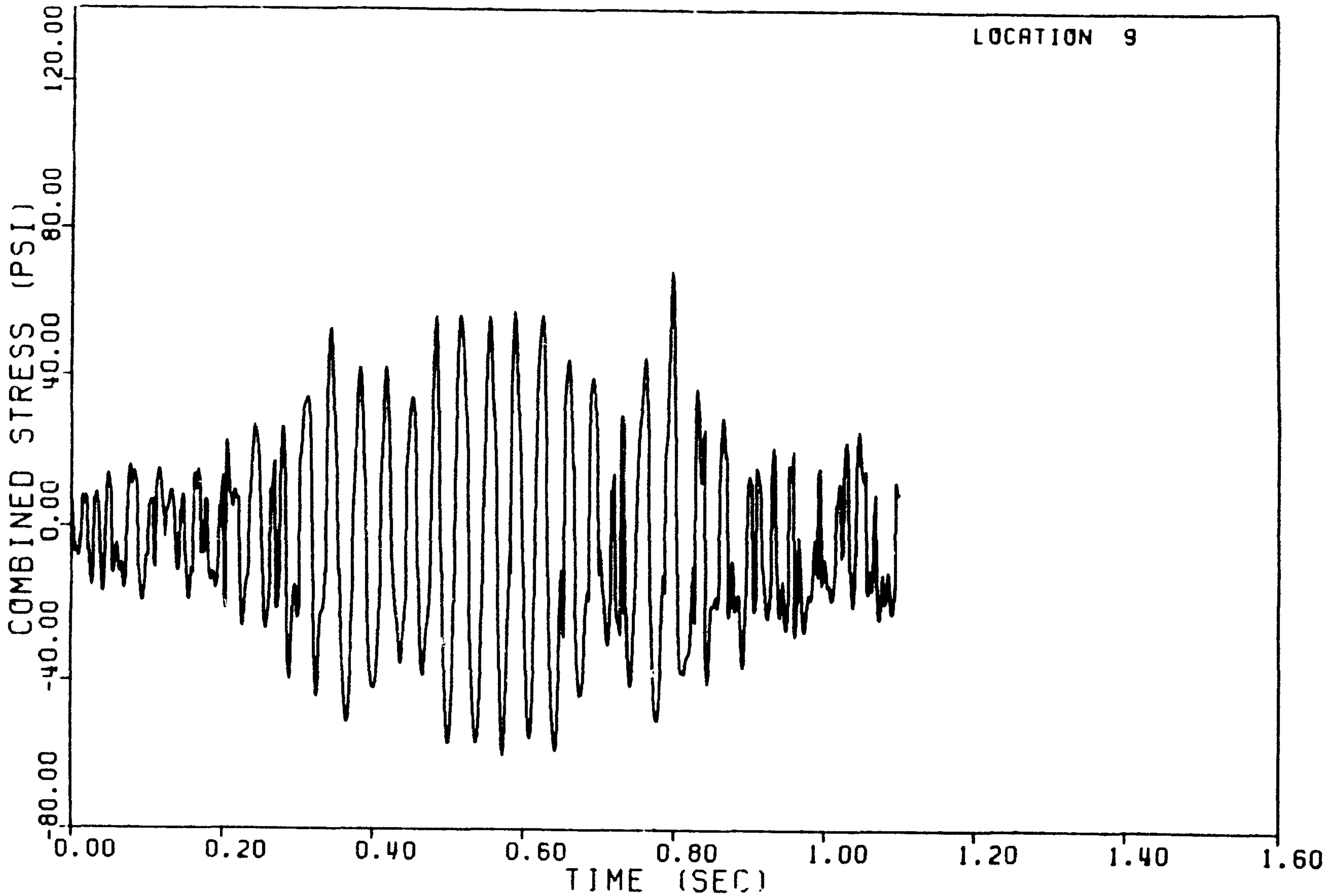
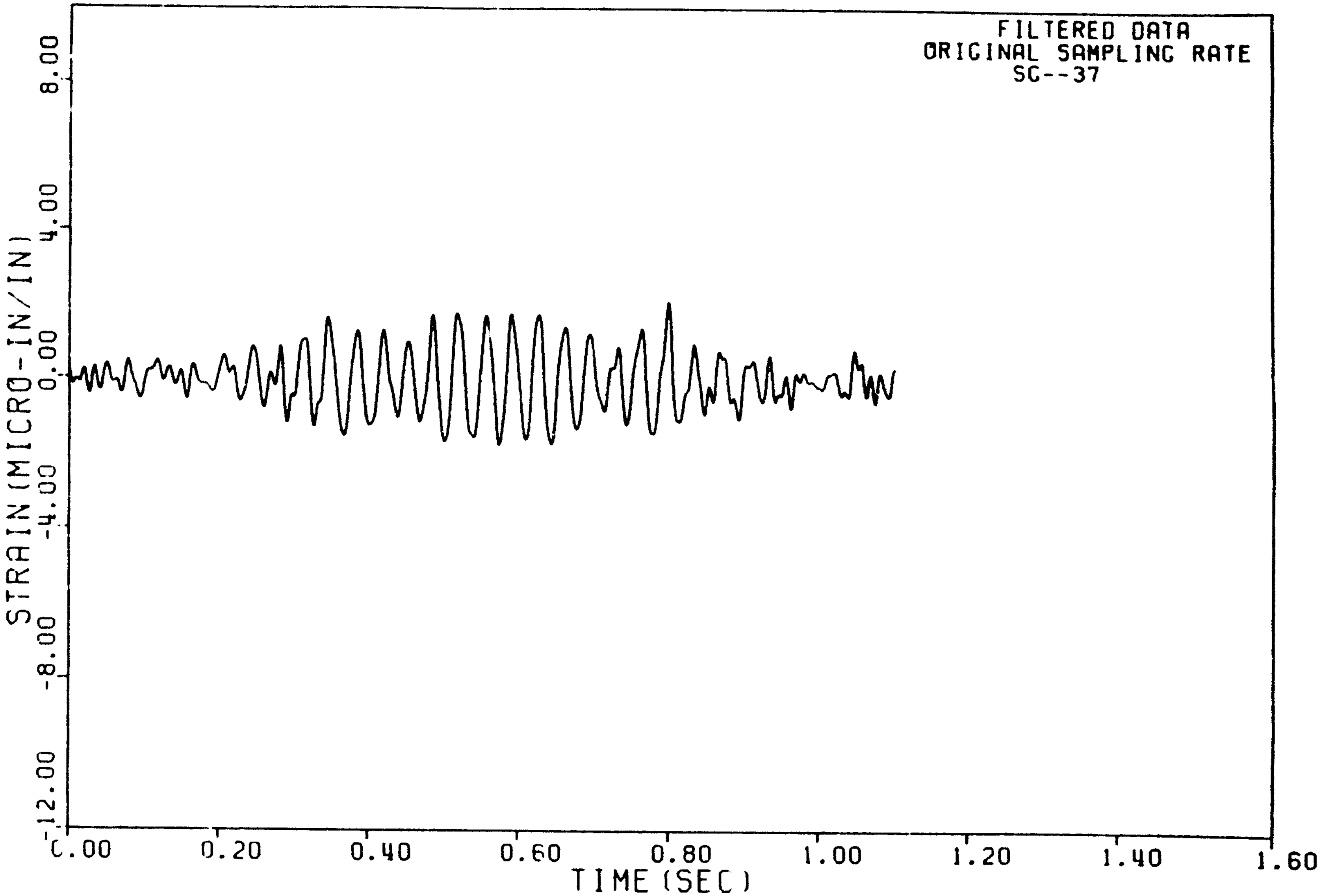


Figure C.101 TYPICAL CVA STRAIN PSD



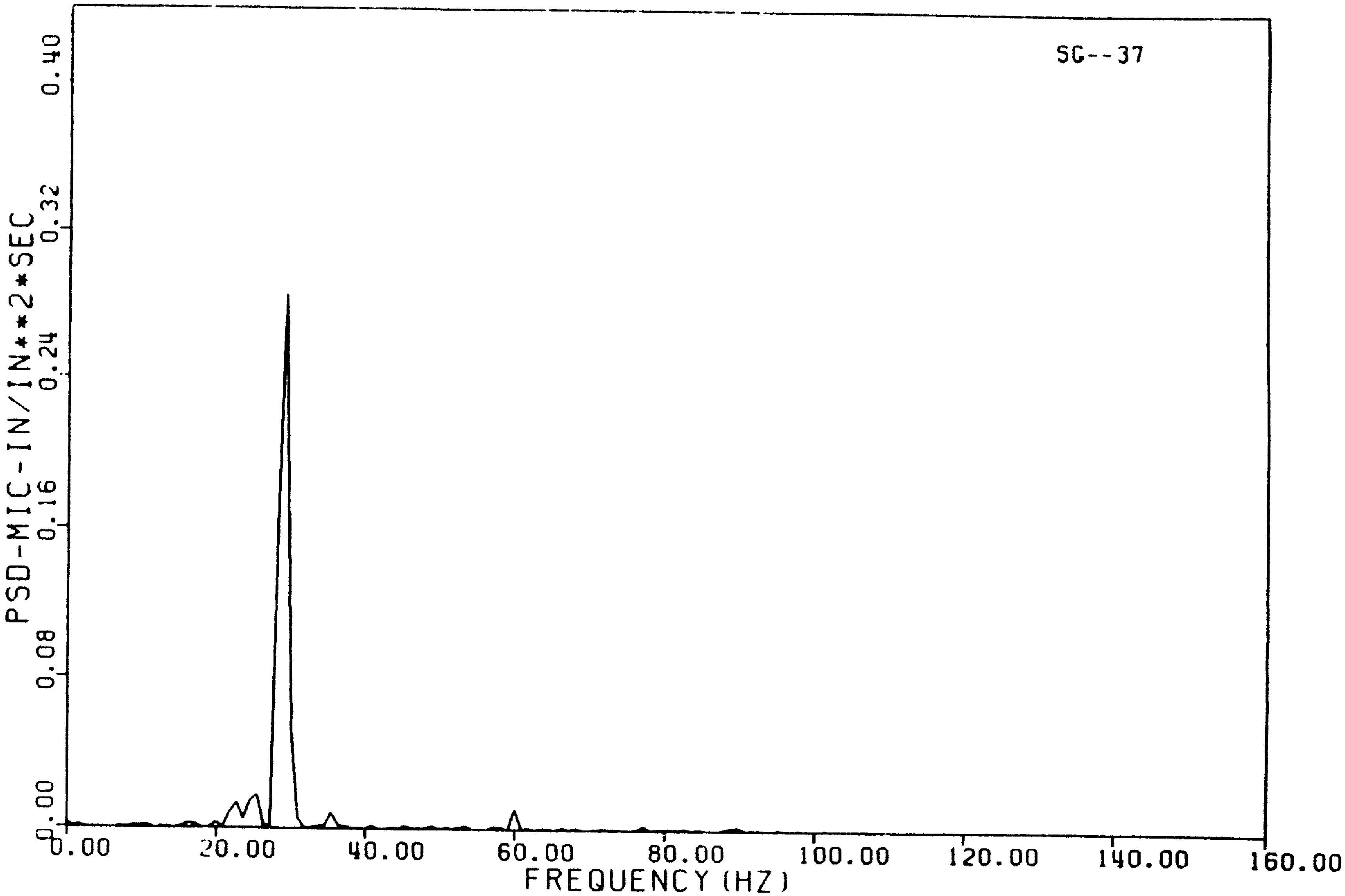
DECO SRV TEST MT6 (3RD RUN-2ND LIFT)SG

Figure C.102 TYPICAL CVA COMBINED STRESS TIME HISTORY



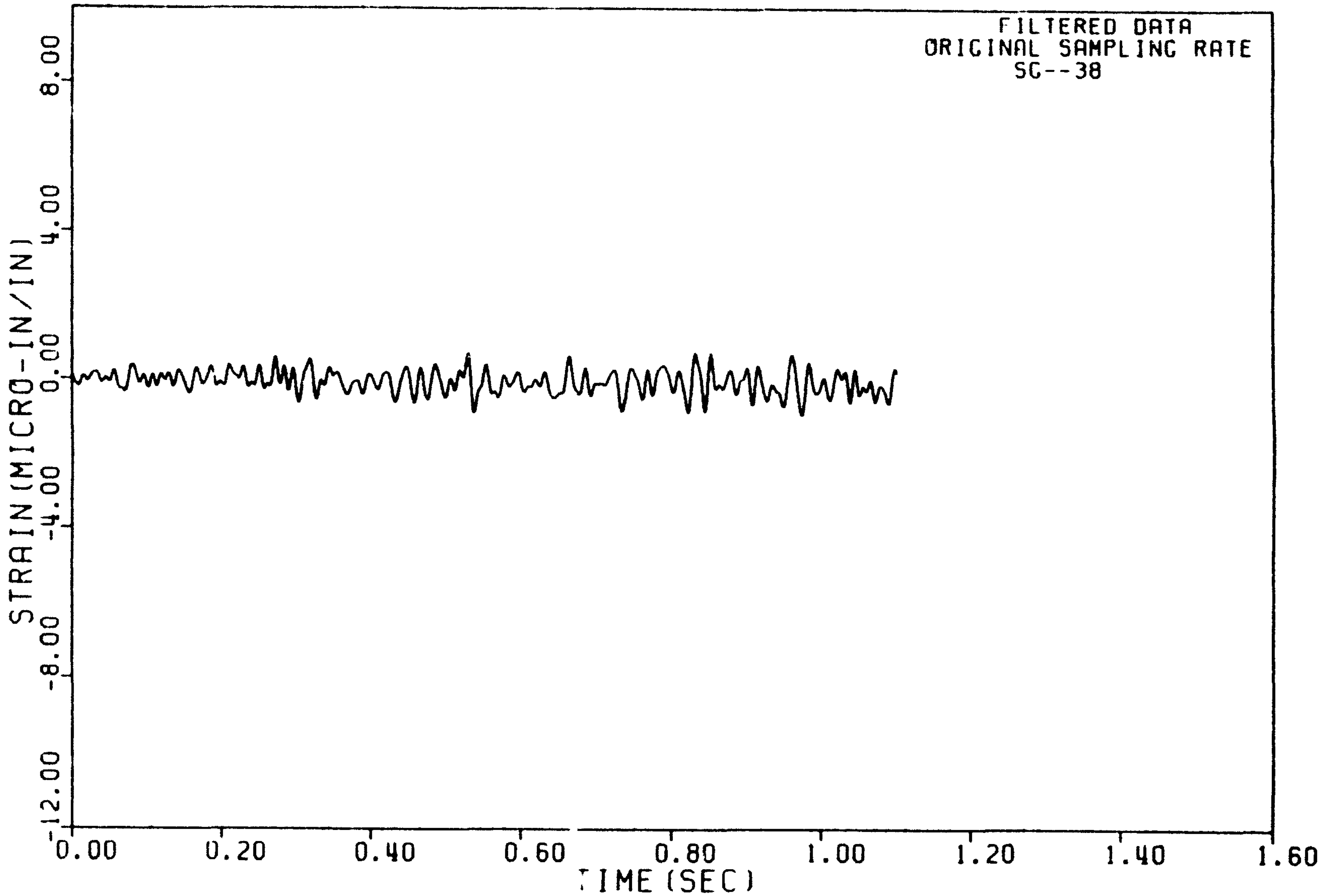
DECO SRV TEST MT6 (3RD RUN-2ND LIFT)SC

Figure C.103 <u>TYPICAL CVA STRAIN TIME HISTORY</u>



DECO SRV TEST MT6 (3RD RUN-2ND LIFT)SG

Figure C.104 TYPIC. L CVA STRAIN PSD



DECO SRV TEST MT6 (3RD RUN-2ND LIFT)SG

Figure C.105 TYPICAL CVA STRAIN TIME HISTORY

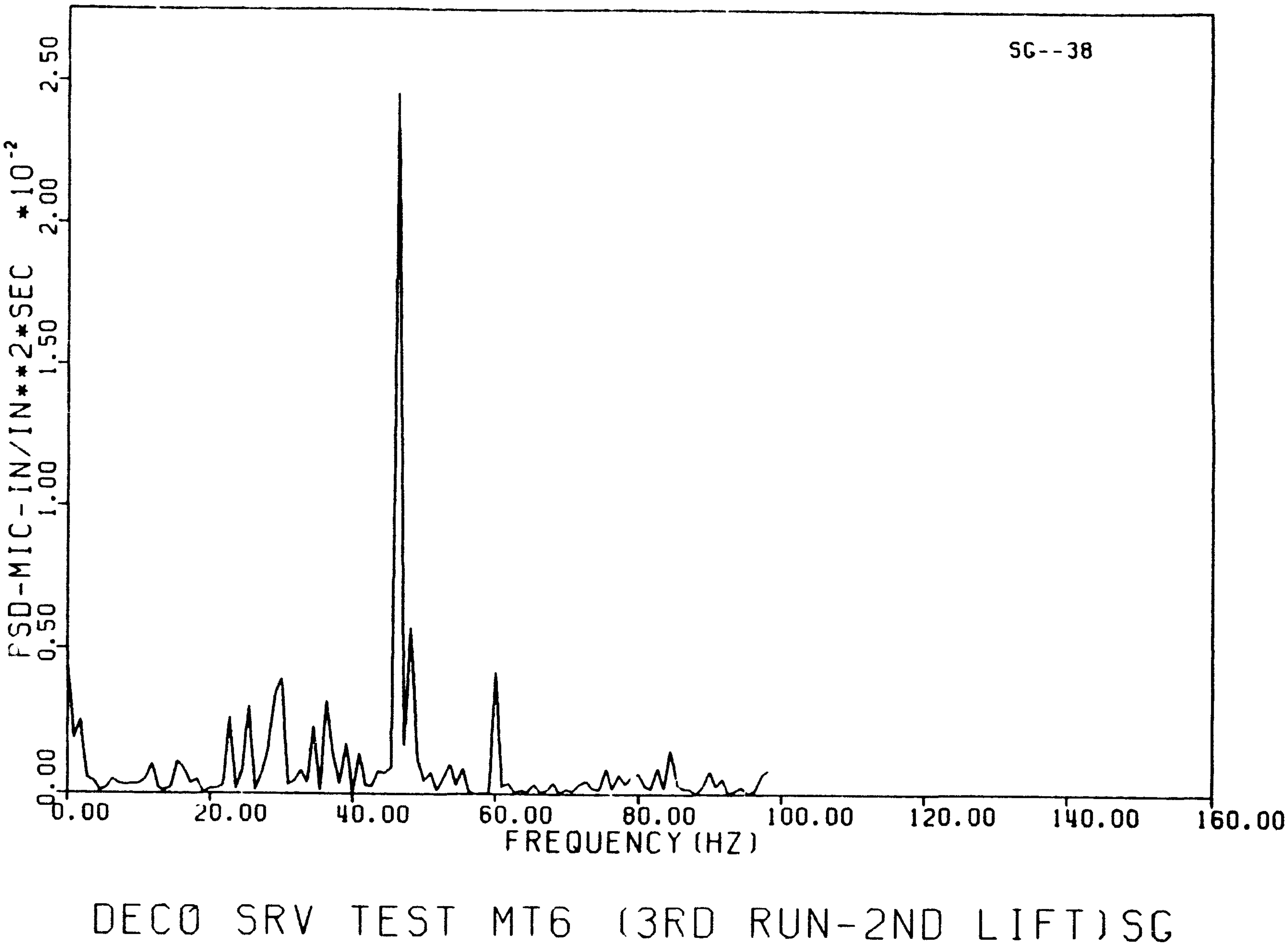


Figure C.106 TYPICAL CVA STRAIN PSD

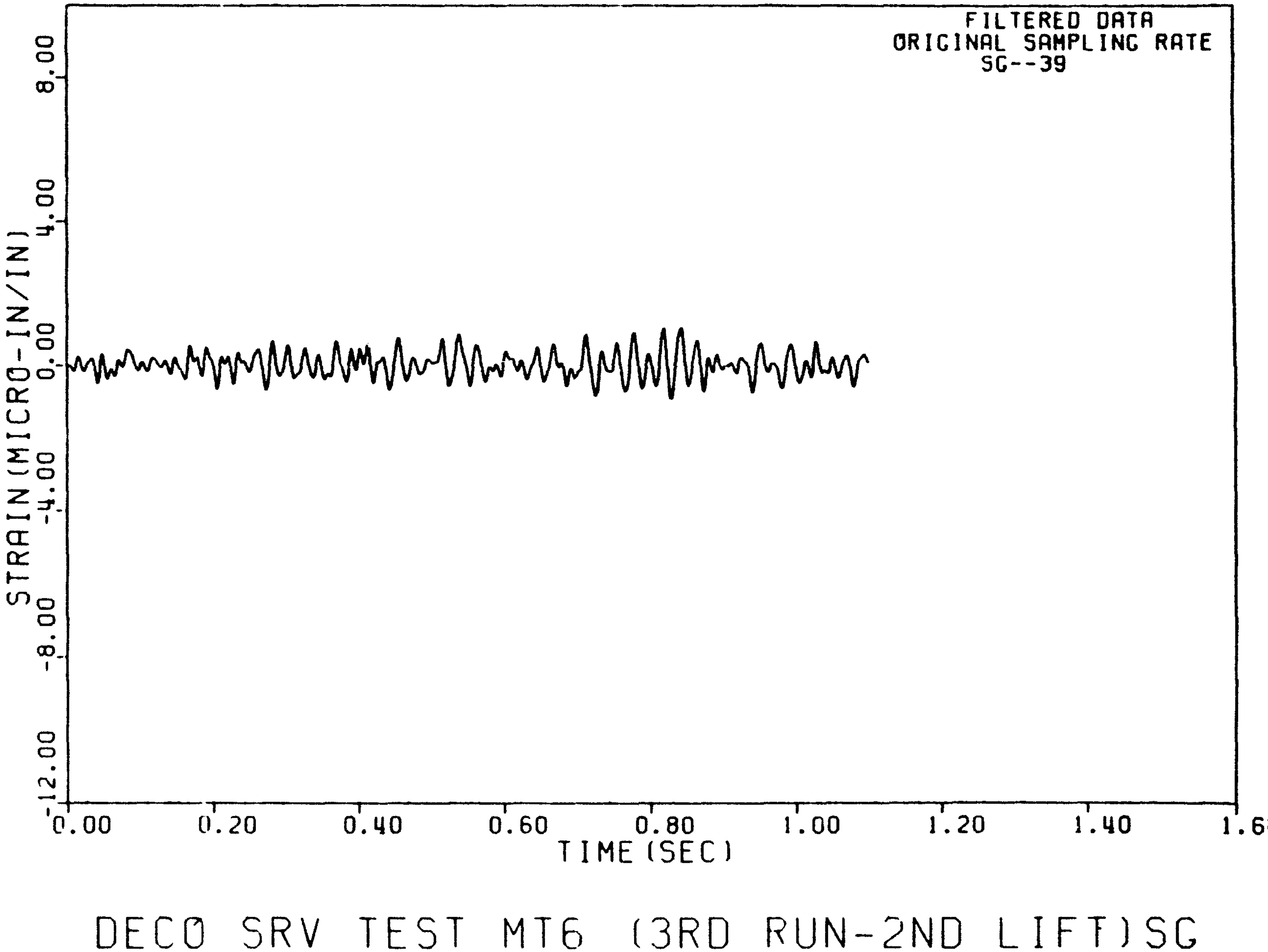


Figure C.107 TYPICAL CVA STRAIN TIME HISTORY

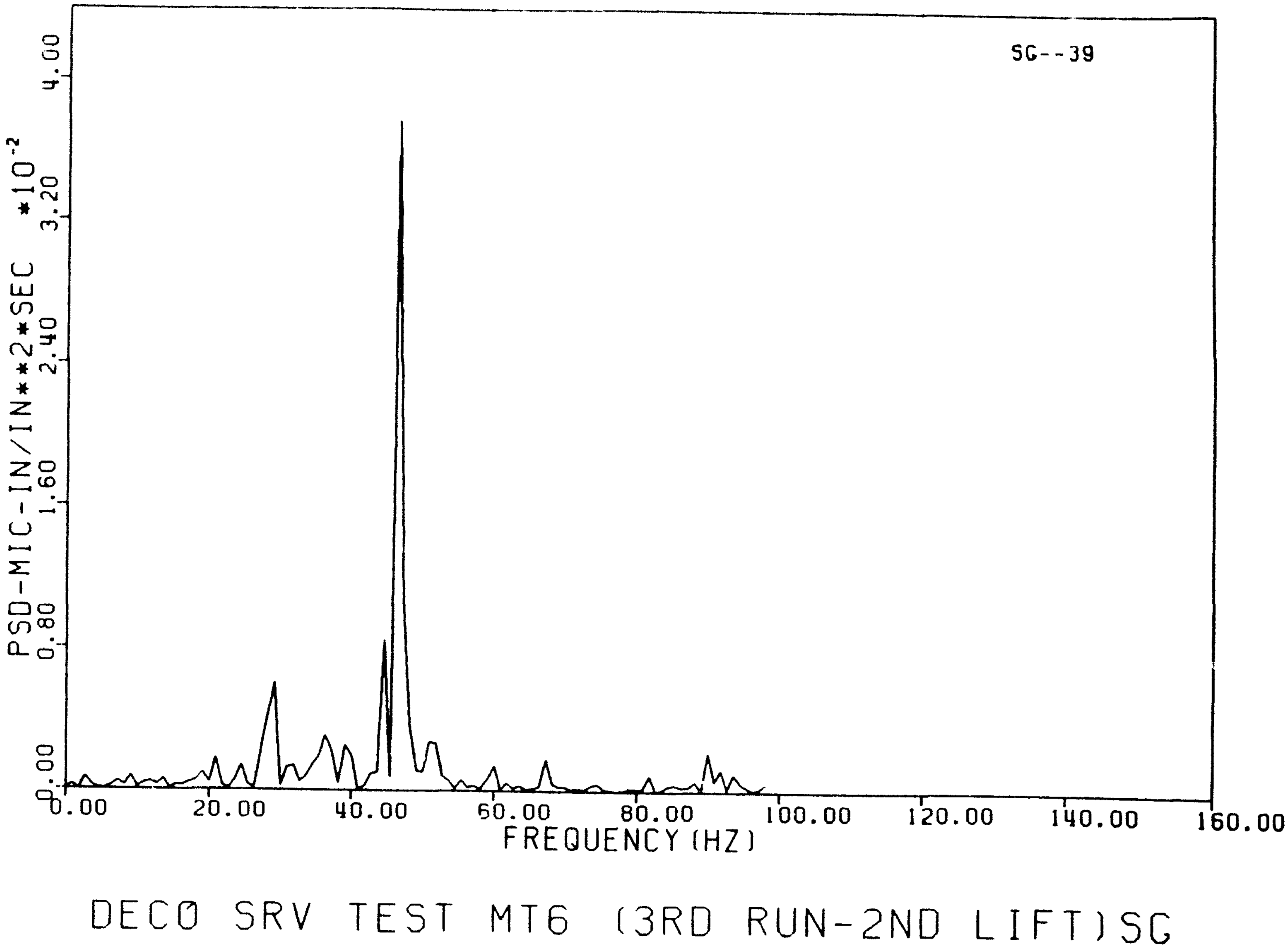
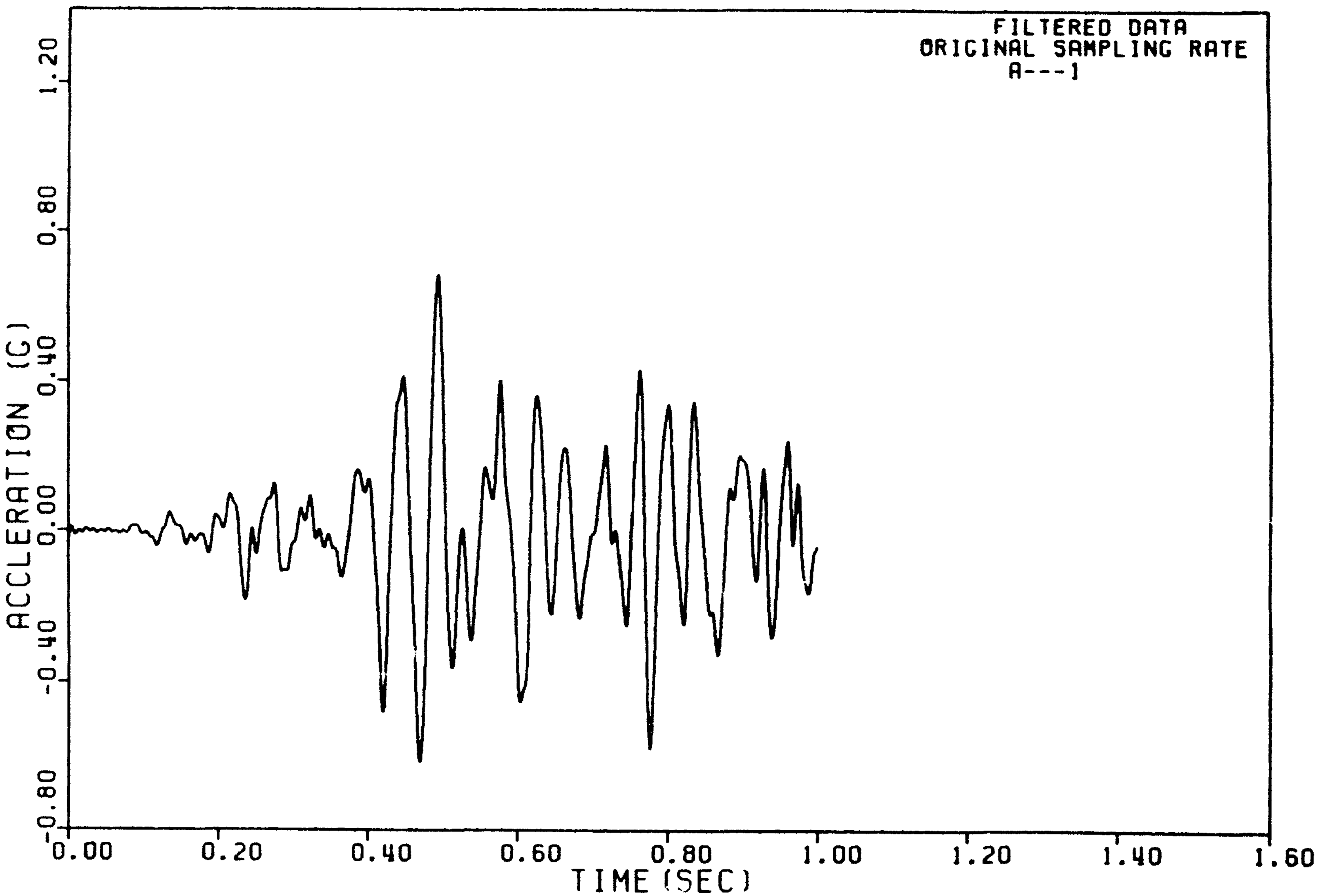


Figure C.108 TYPICAL CVA STRAIN PSD

APPENDIX D

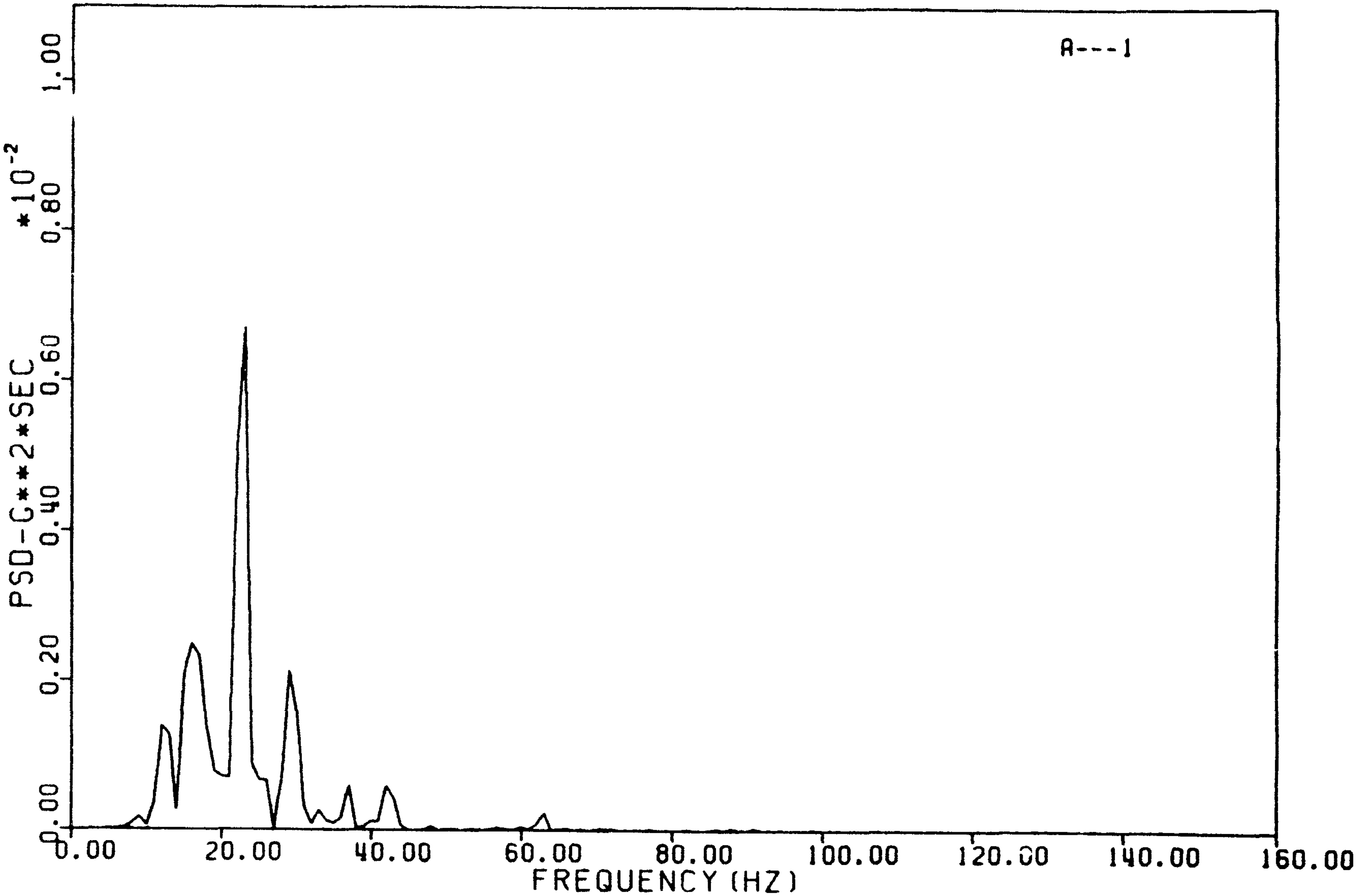
ACCELERATION DATA PLOTS

(24 Sheets)



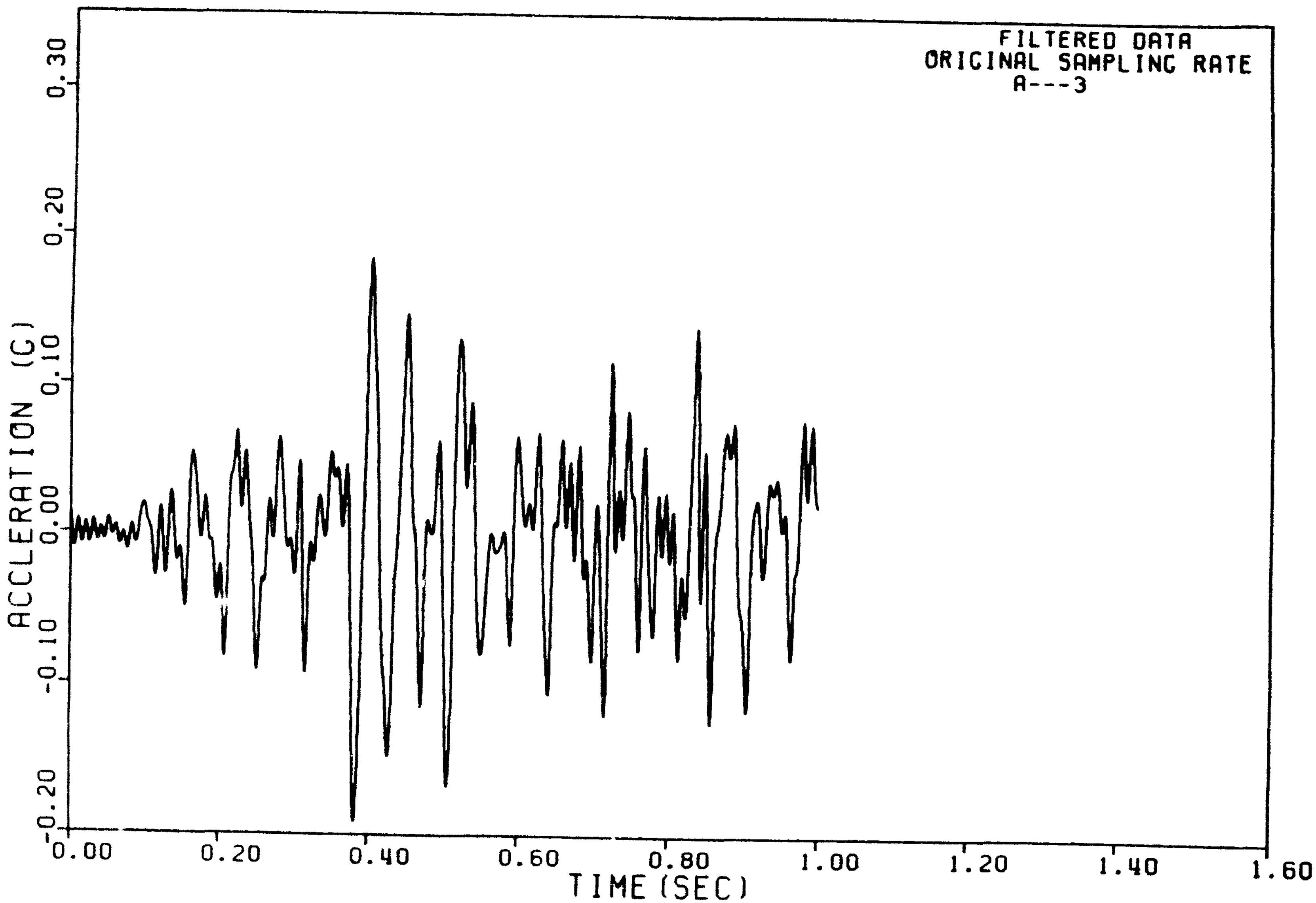
DECO SRV TEST MT-1 (1ST RUN-1ST LIFT)PT

Figure D.1 TYPICAL SVA ACCELERATION TIME HISTORY



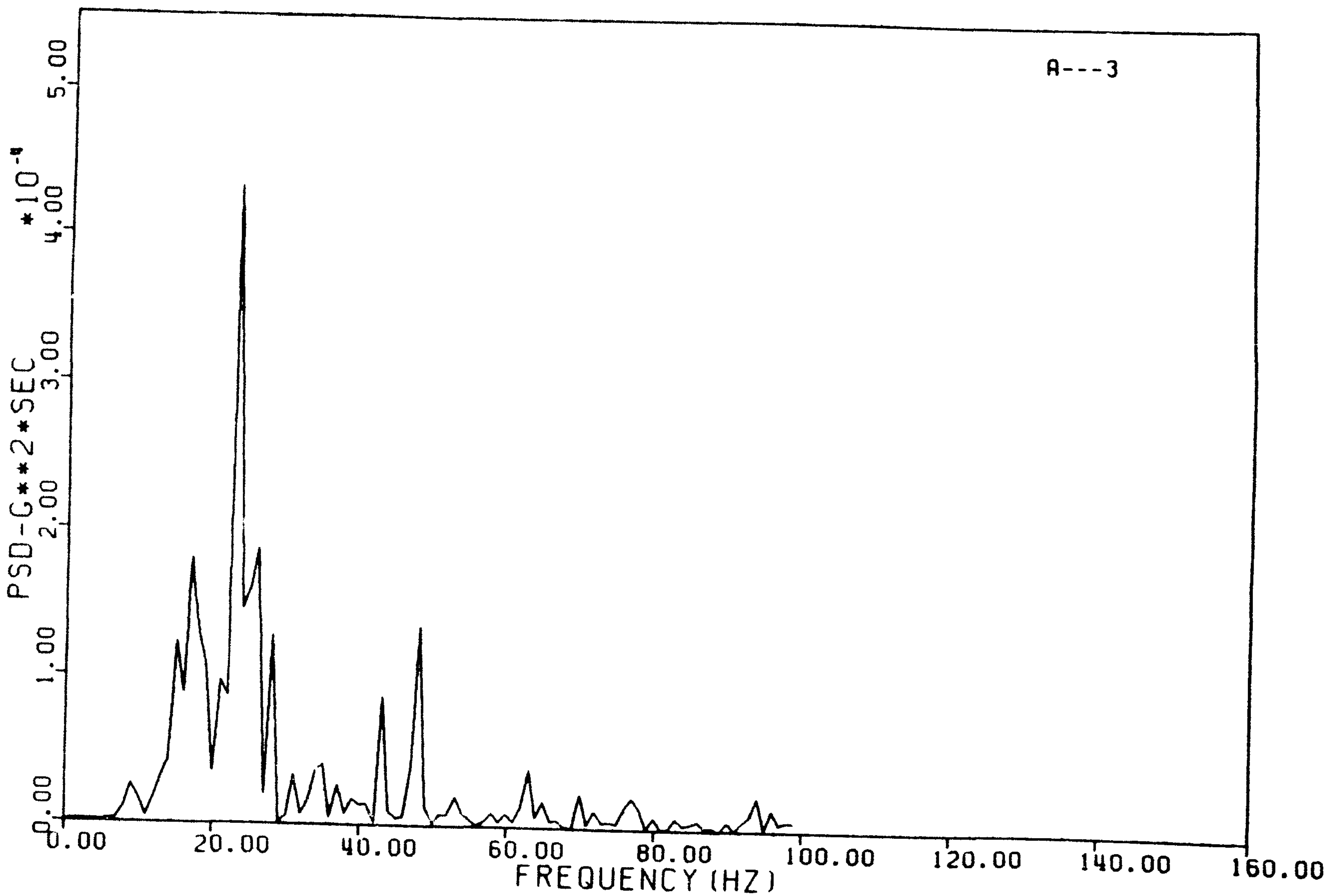
DECO SRV TEST MT-1 (1ST RUN-1ST LIFT)PT

Figure D.2 TYPICAL SVA ACCELERATION PSD



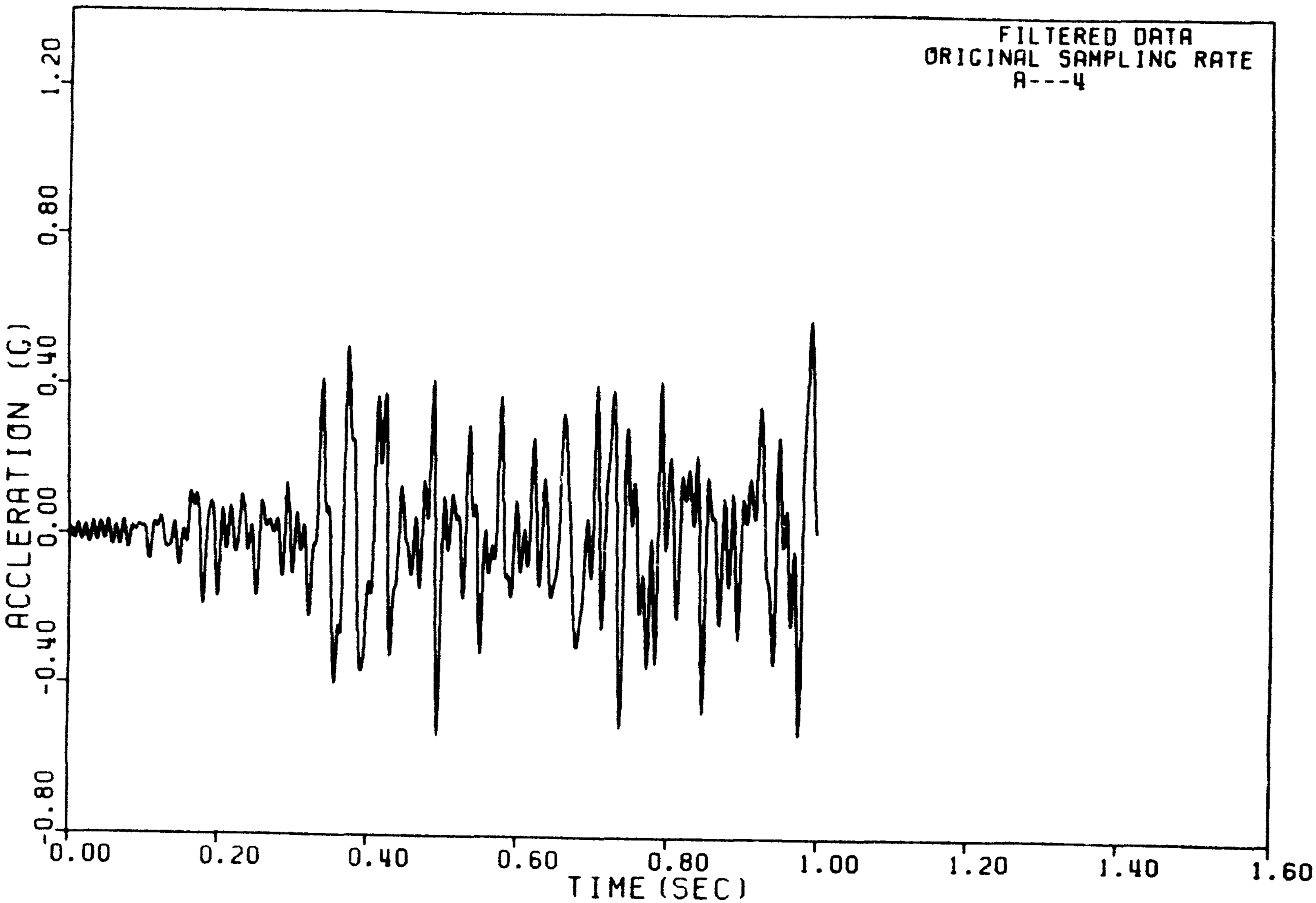
DECO SRV TEST MT-1 (1ST RUN-1ST LIFT)PT

Figure D.3 TYPICAL SVA ACCELERATION TIME HISTORY



DECO SRV TEST MT-1 (1ST RUN-1ST LIFT)PT

Figure D.4 TYPICAL SVA ACCELERATION PSD



DECO SRV TEST MT-1 (1ST RUN-1ST LIFT)PT

Figure D.5 TYPICAL SVA ACCELERATION TIME HISTORY

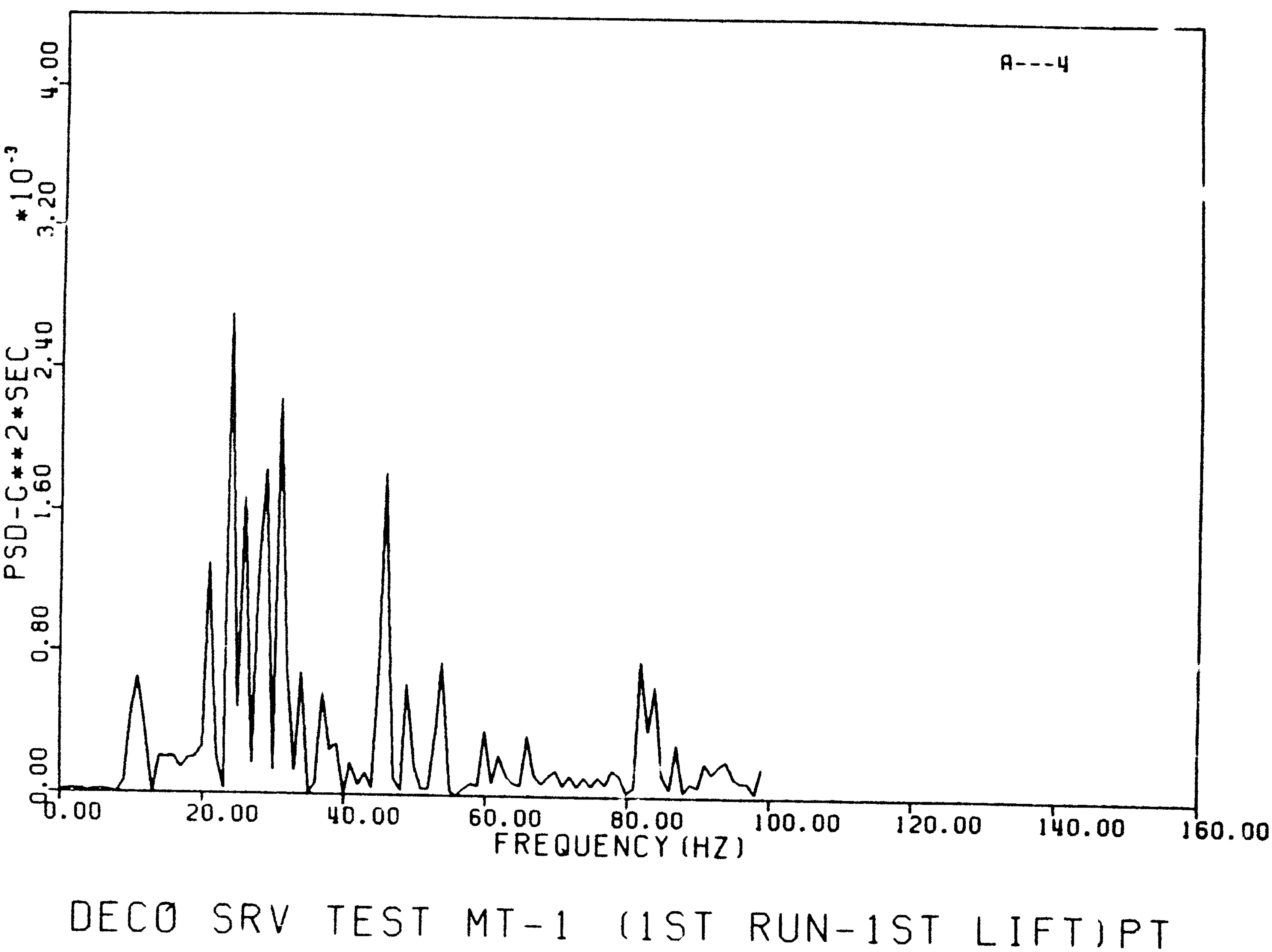
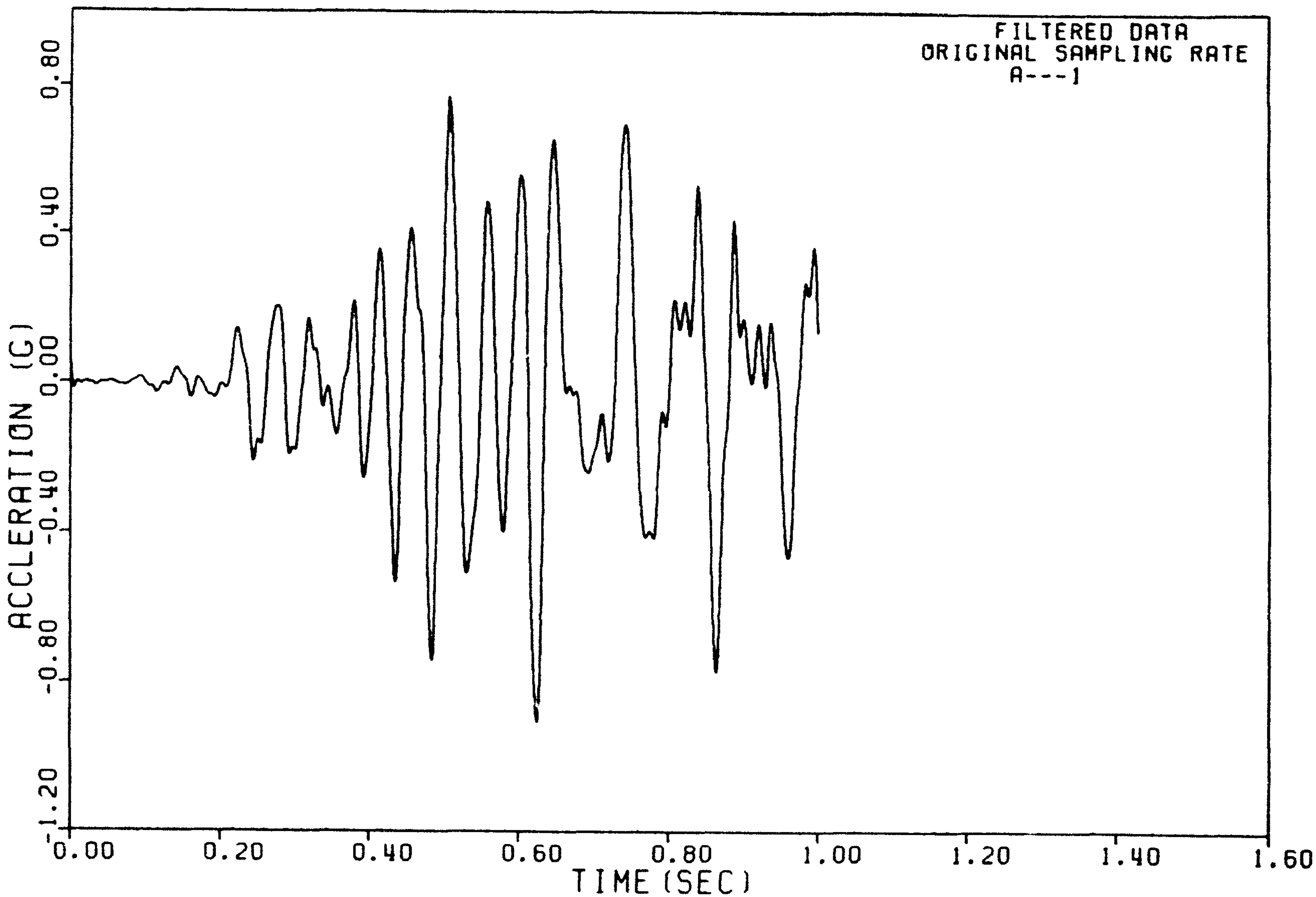
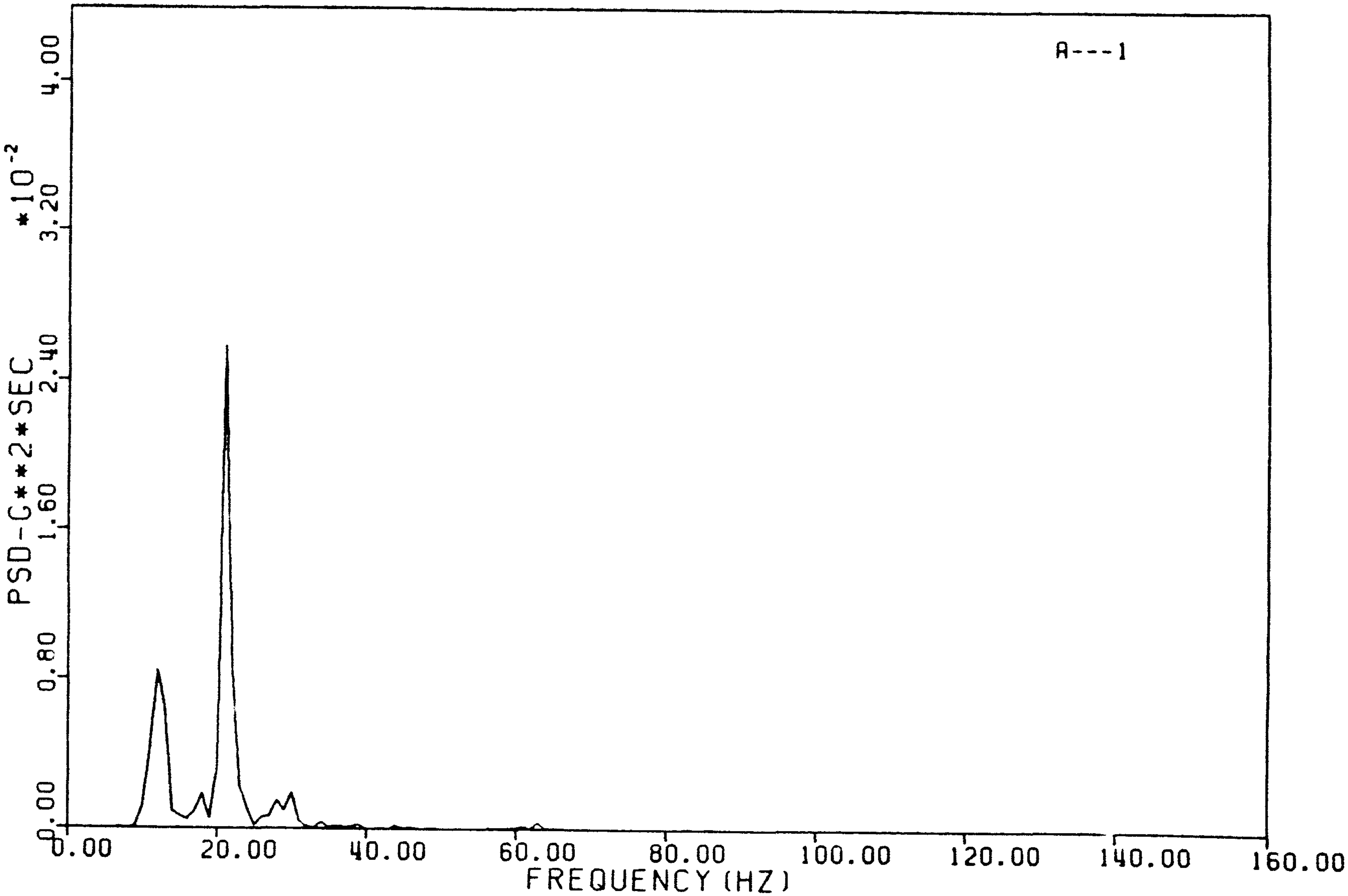


Figure D.6 <u>TYPICAL SVA ACCELERATION PSD</u>



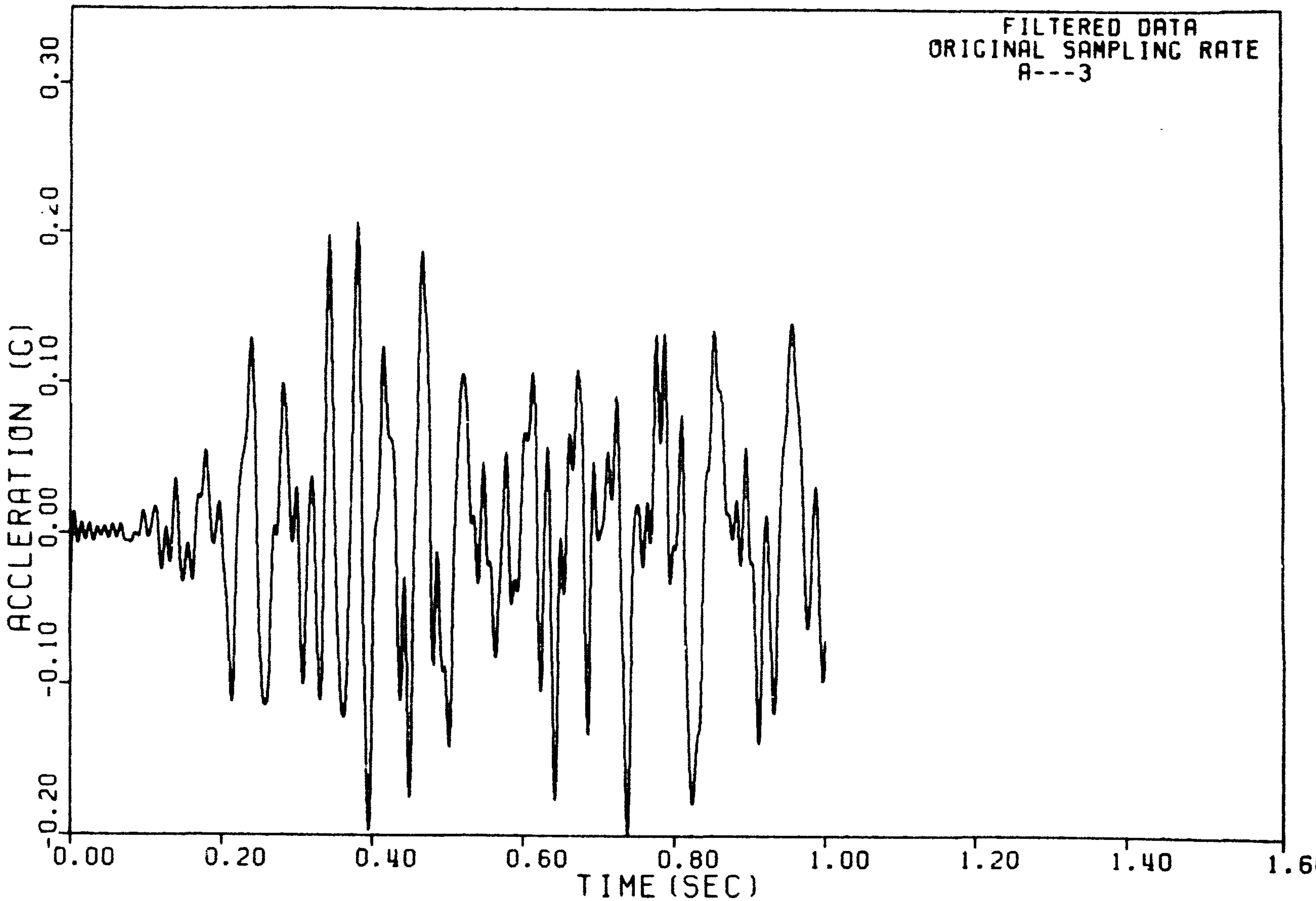
DECO SRV TEST MT-5 (3RD RUN-1ST LIFT)PT

Figure D.7 TYPICAL SVA ACCELERATION TIME HISTORY



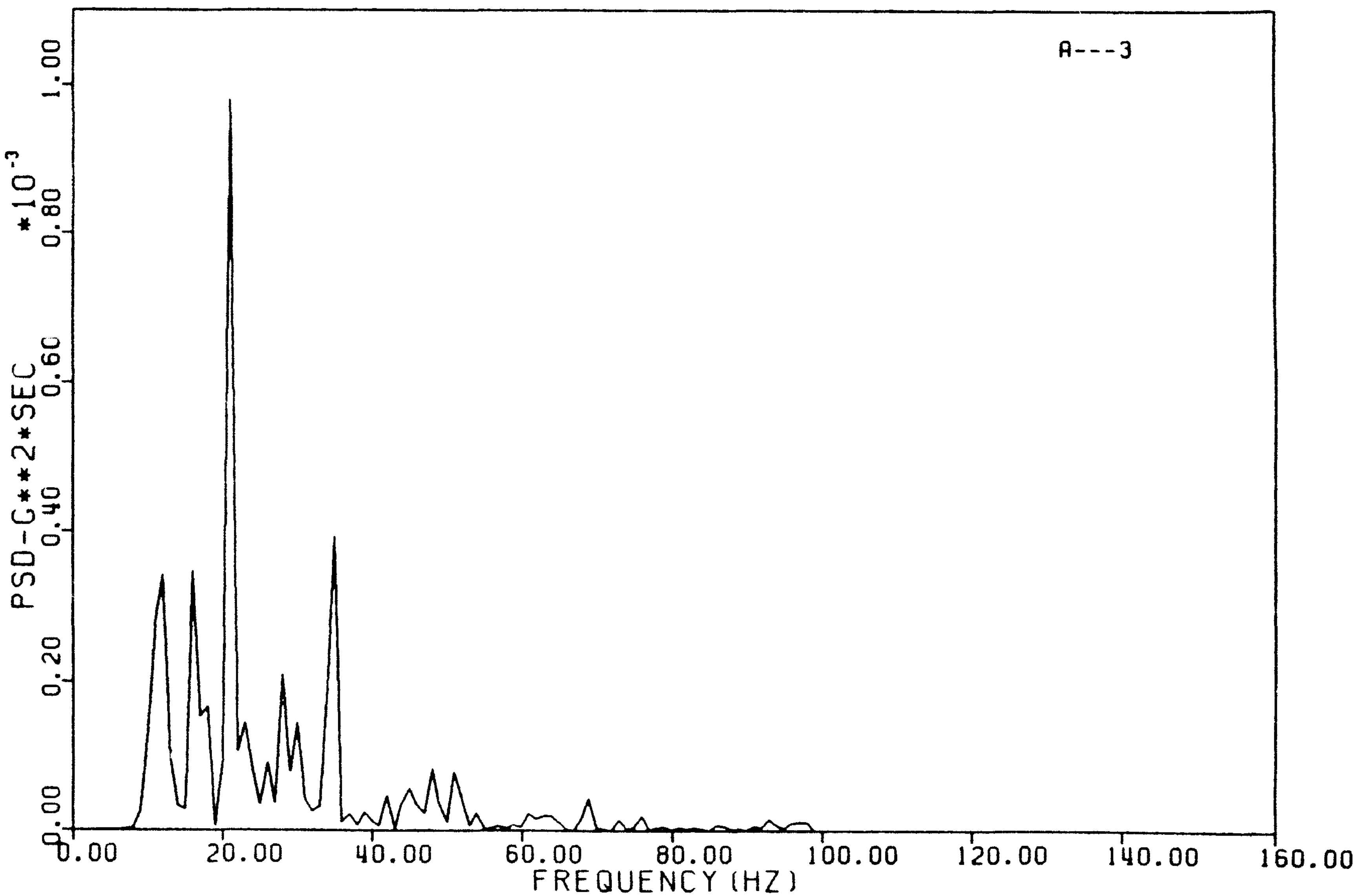
DECO SRV TEST MT-5 (3RD RUN-1ST LIFT)PT

Figure D.8 TYPICAL SVA ACCLERATION PSD



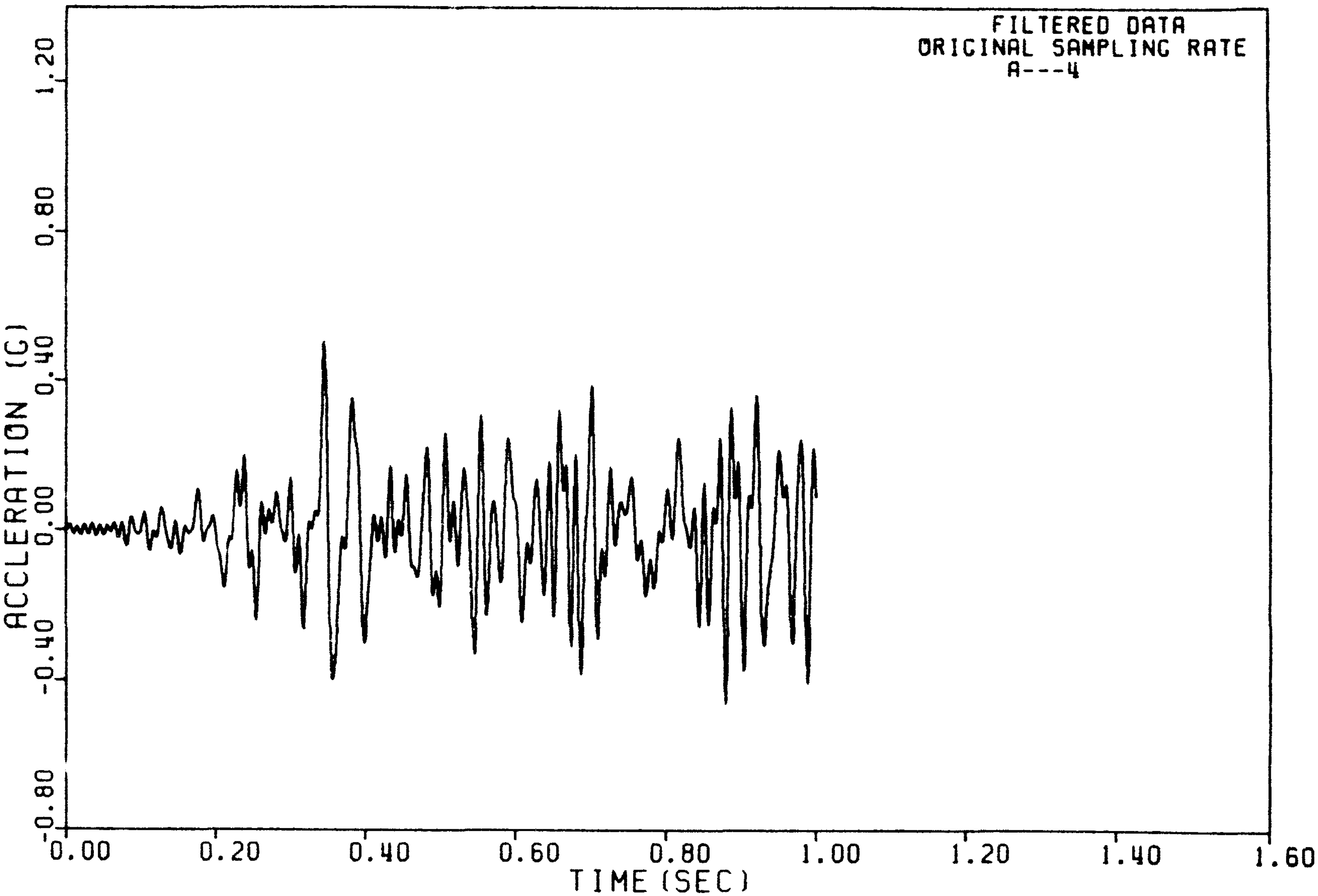
DECO SRV TEST MT-5 (3RD RUN-1ST LIFT)PT

Figure D.9 TYPICAL SVA ACCELERATION TIME HISTORY



DECO SRV TEST MT-5 (3RD RUN-1ST LIFT)PT

Figure D.10 TYPICAL SVA ACCELERATION PSD



DECO SRV TEST MT-5 (3RD RUN-1ST LIFT)PT

Figure D.11 TYPICAL SVA ACCELERATION TIME HISTORY

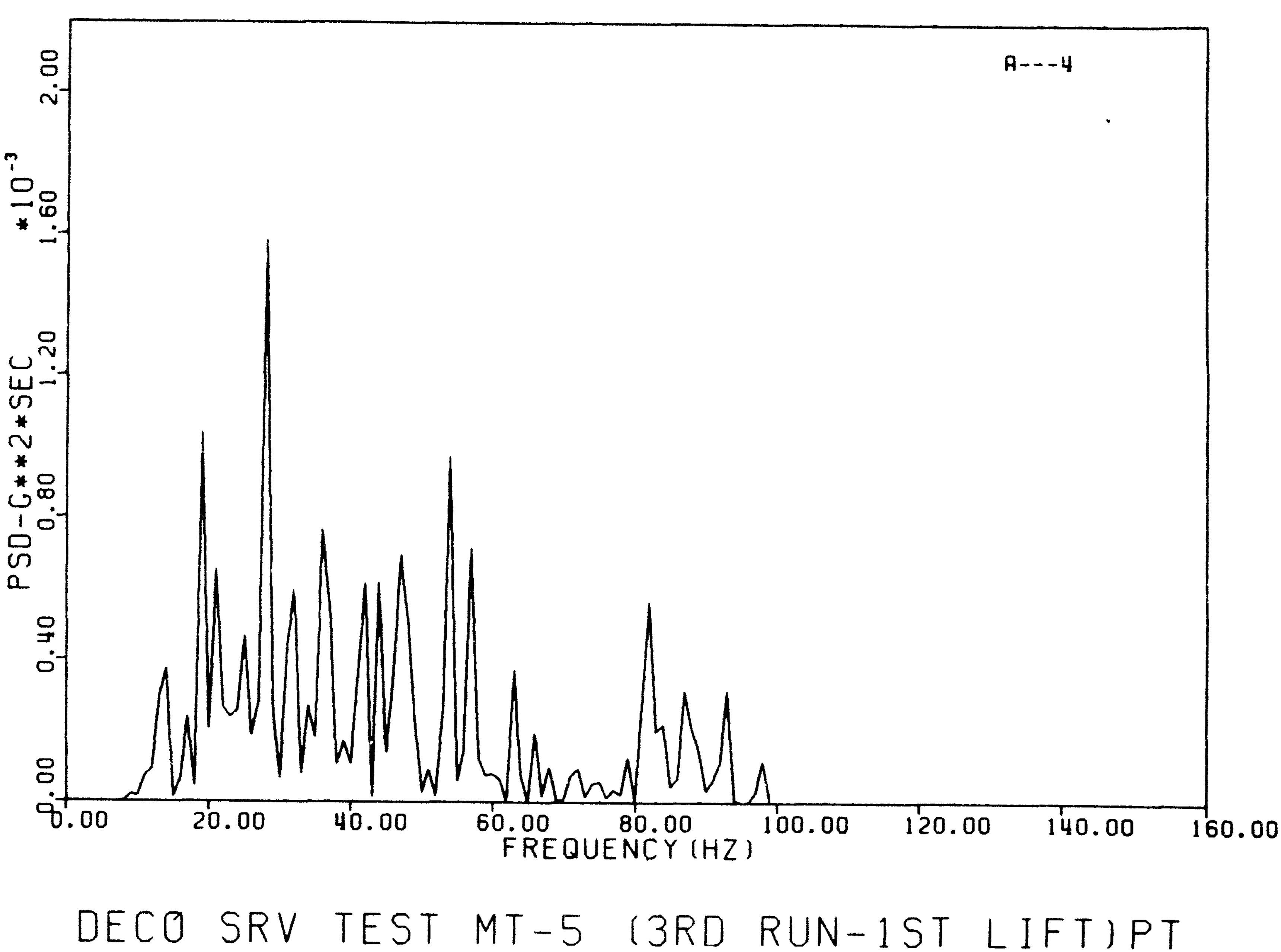


Figure D.12 TYPICAL SVA ACCELERATION PSD

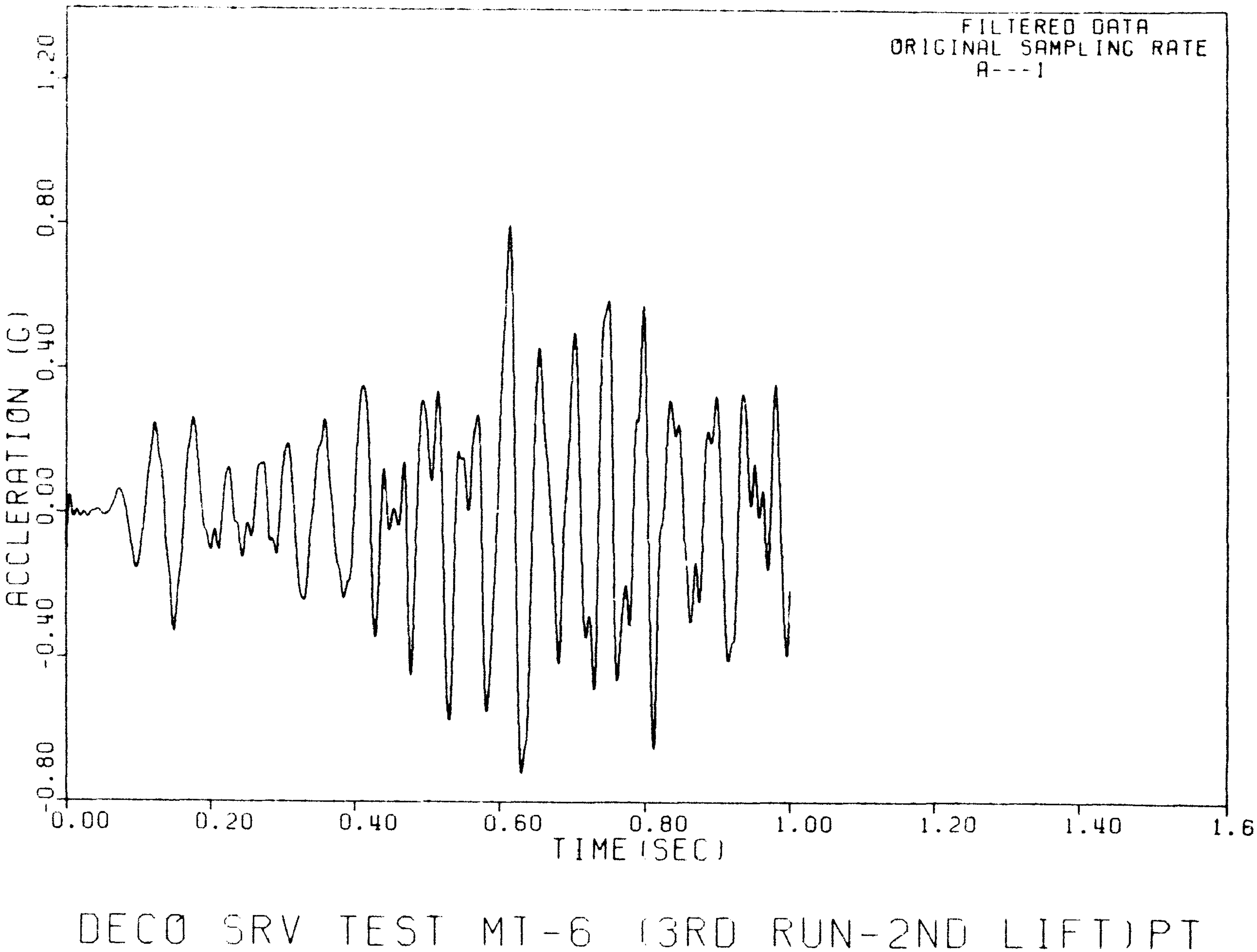


Figure D.13 TYPICAL CVA ACCELERATION TIME HISTORY

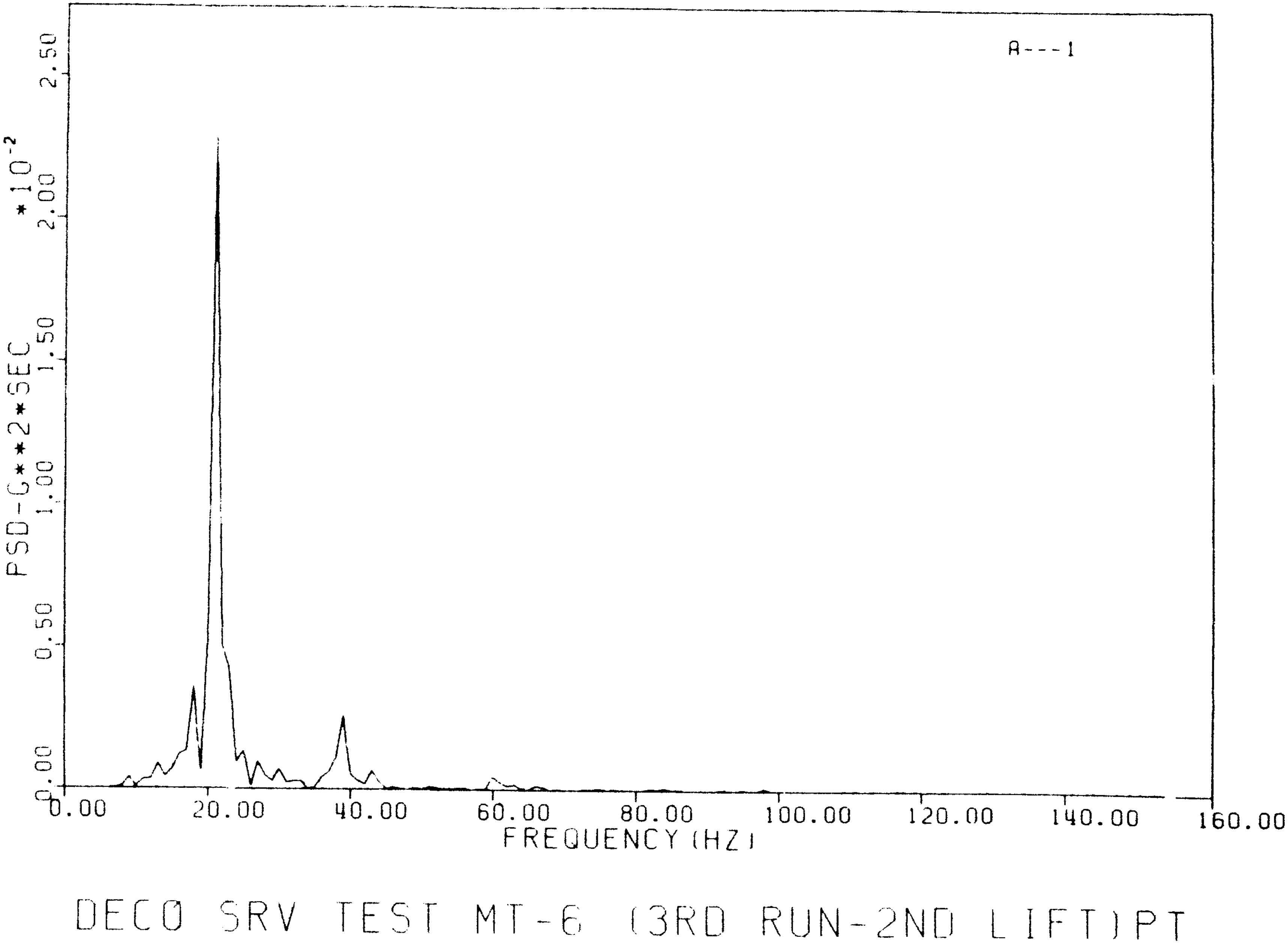


Figure D.14 TYPICAL CVA ACCELERATION PSD

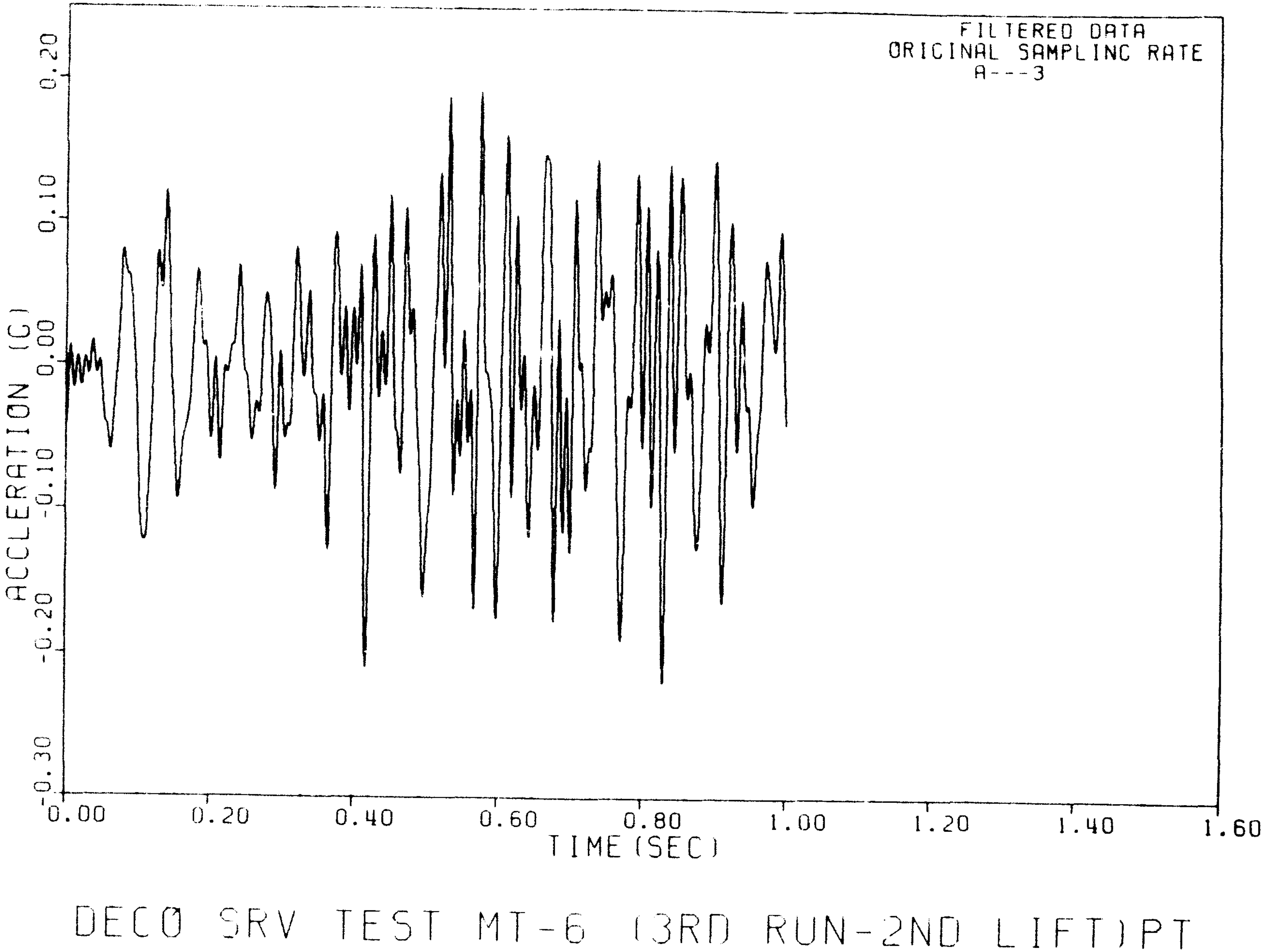


Figure D.15 <u>TYPICAL CVA ACCELERATION TIME HISTORY</u>

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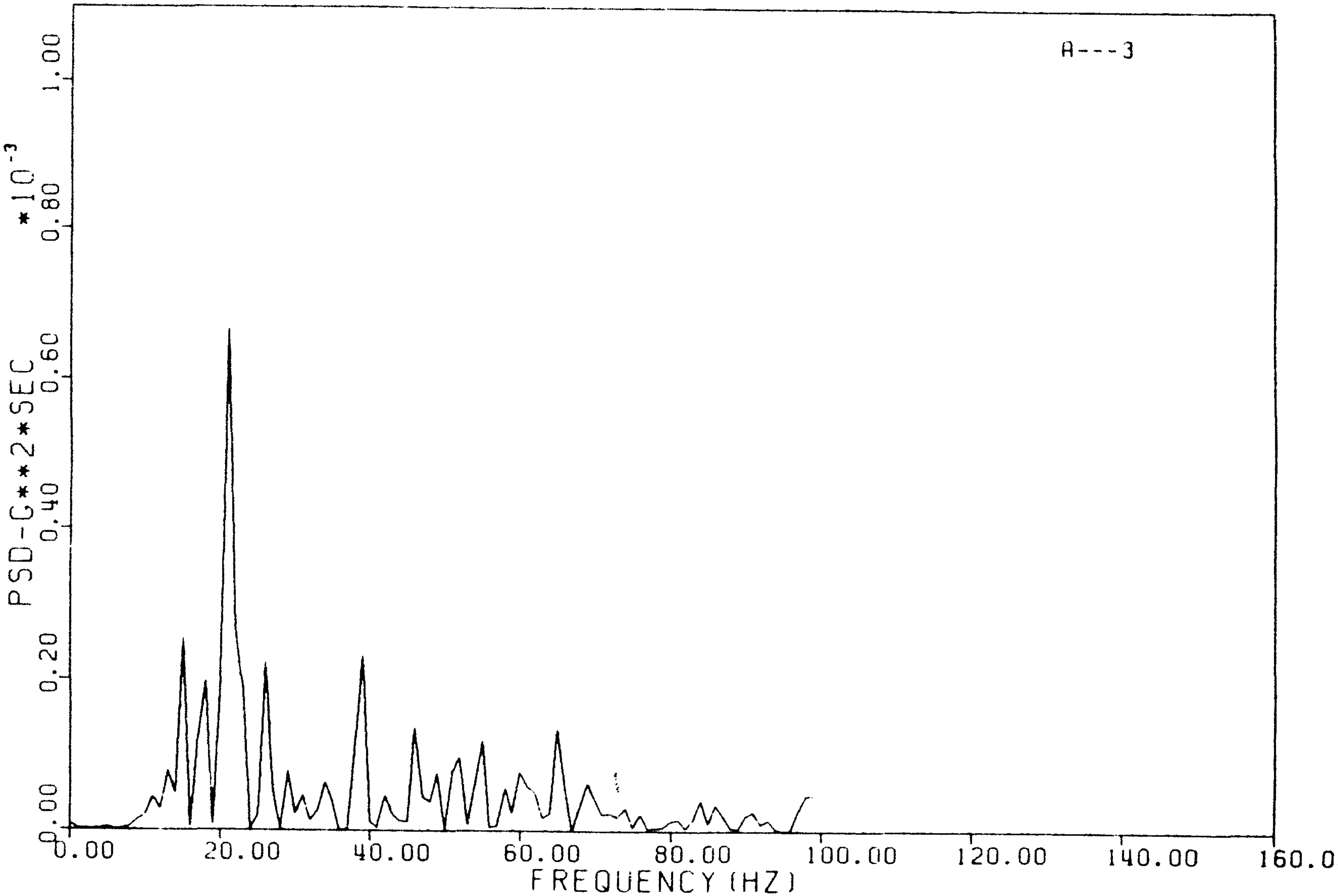
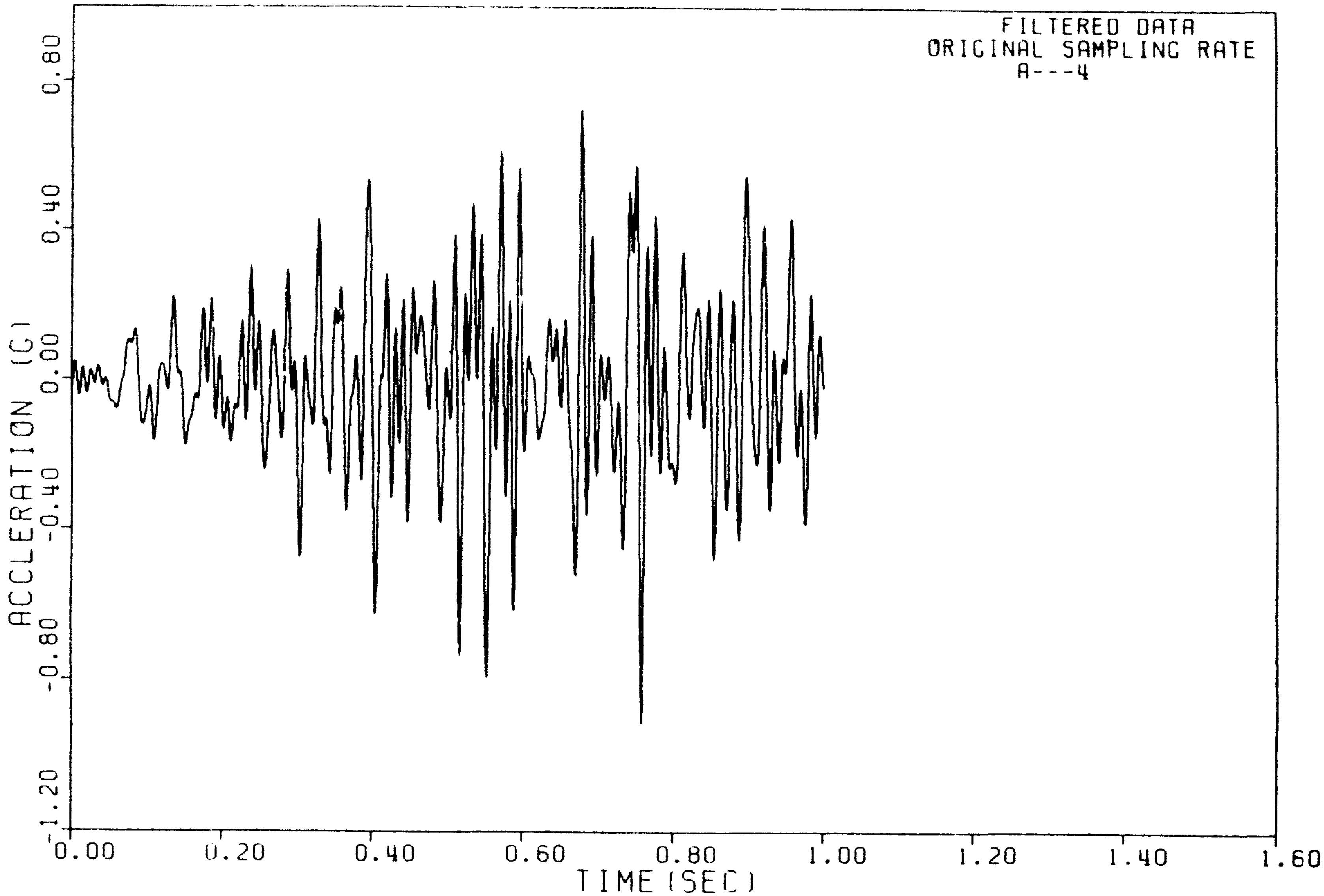
Revision 0



DECO SRV TEST MT-6 (3RD RUN-2ND LIFT)PT

Figure D.16 TYPICAL CVA ACCELERATION PSD



DECO SRV TEST MT-6 (3RD RUN-2ND LIFT)PT

Figure D.17 TYPICAL CVA ACCELERATION TIME HISTORY

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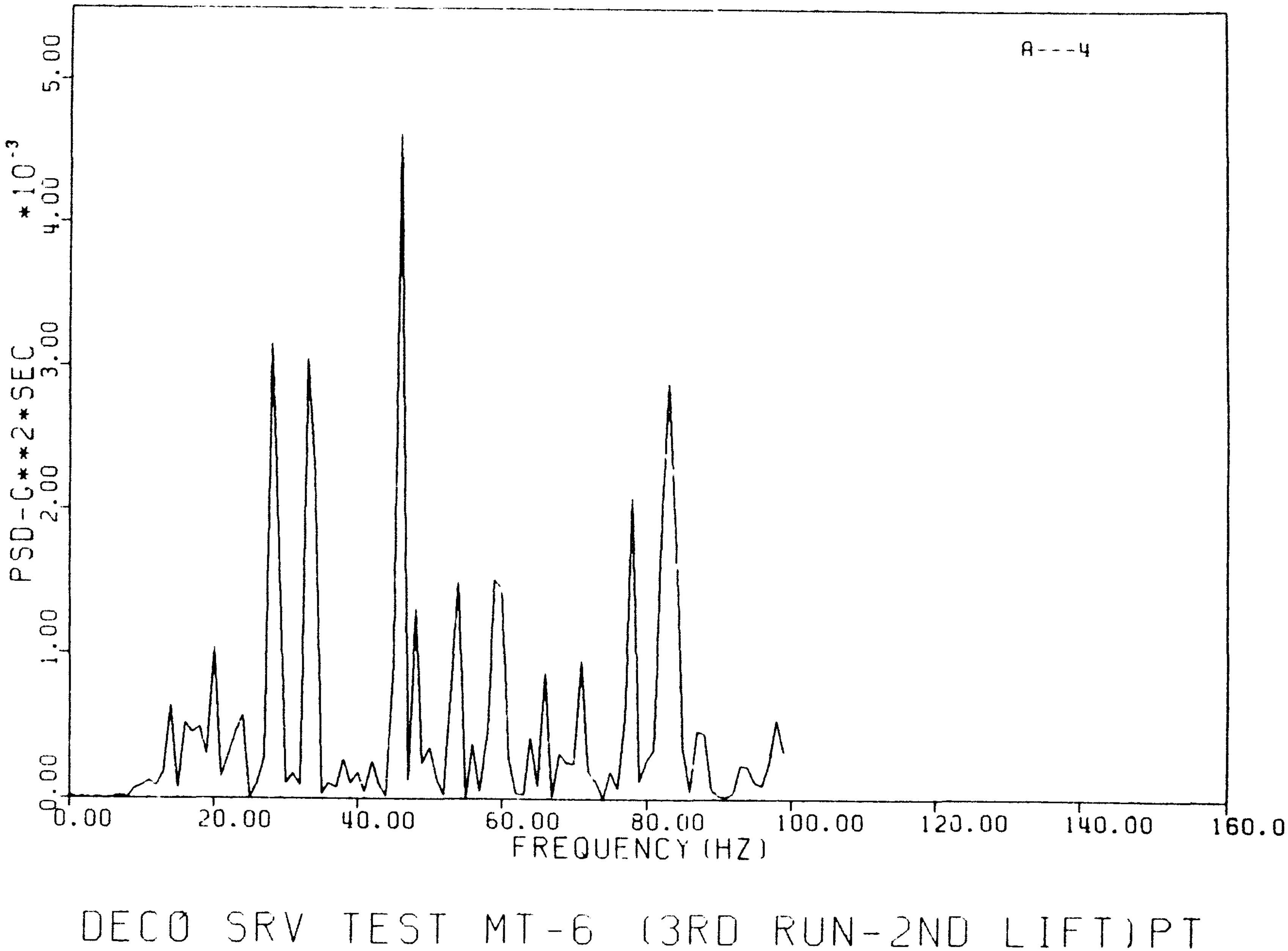

Figure D.18 TYPICAL CVA ACCELERATION PSD

nutech ENGINEERS

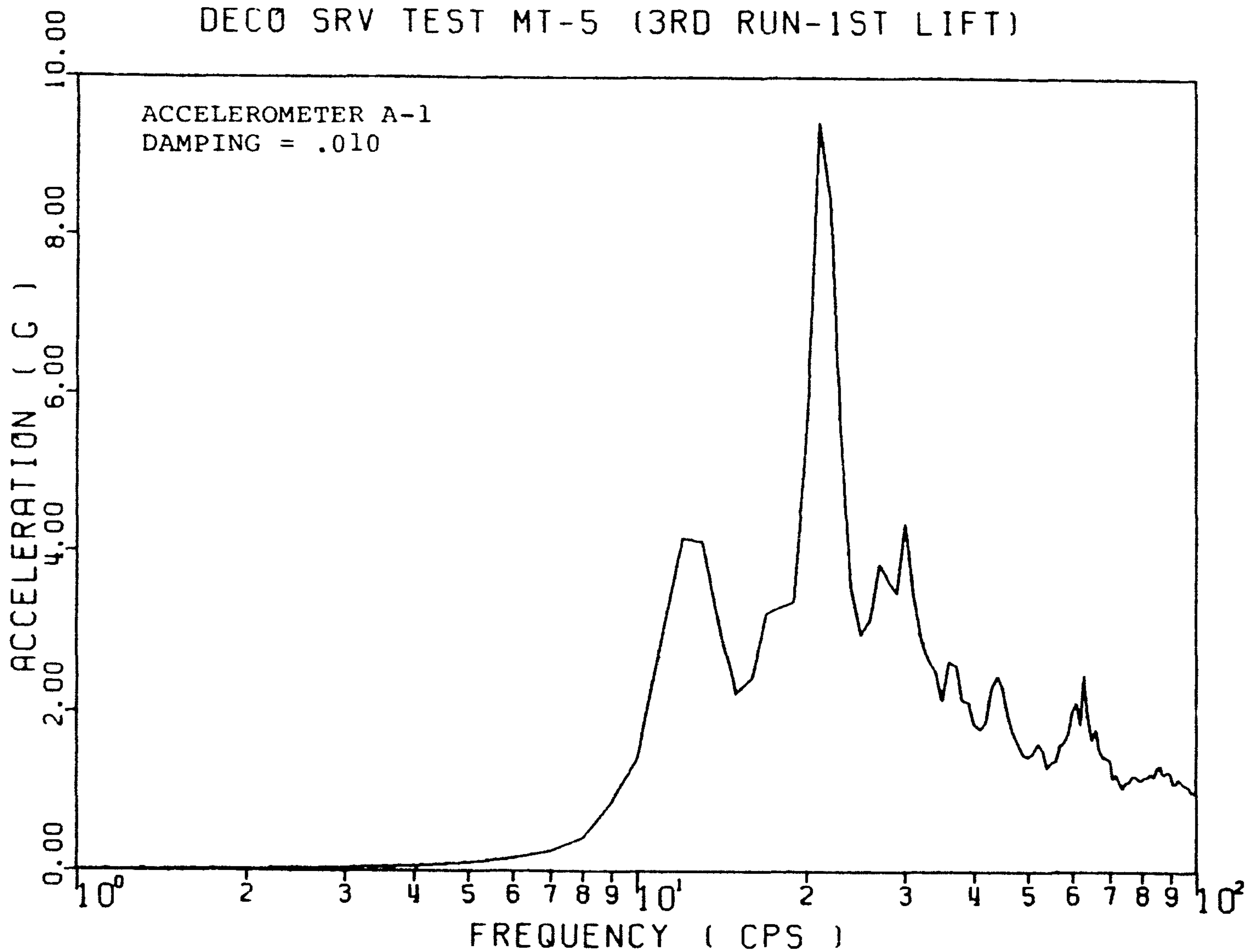

Figure D.19 TYPICAL SVA RESPONSE SPECTRA

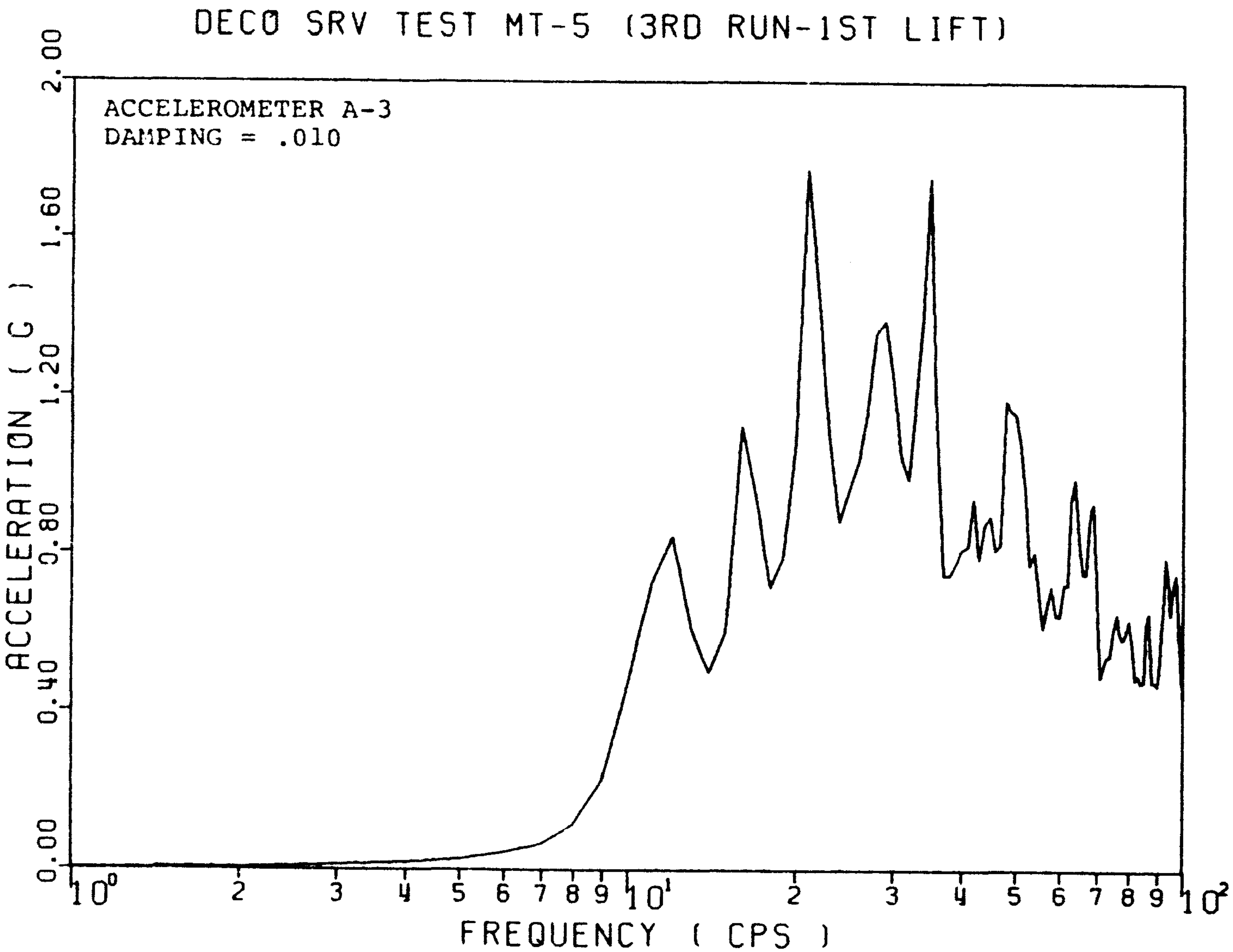

Figure D.20 TYPICAL SVA RESPONSE SPECTRA

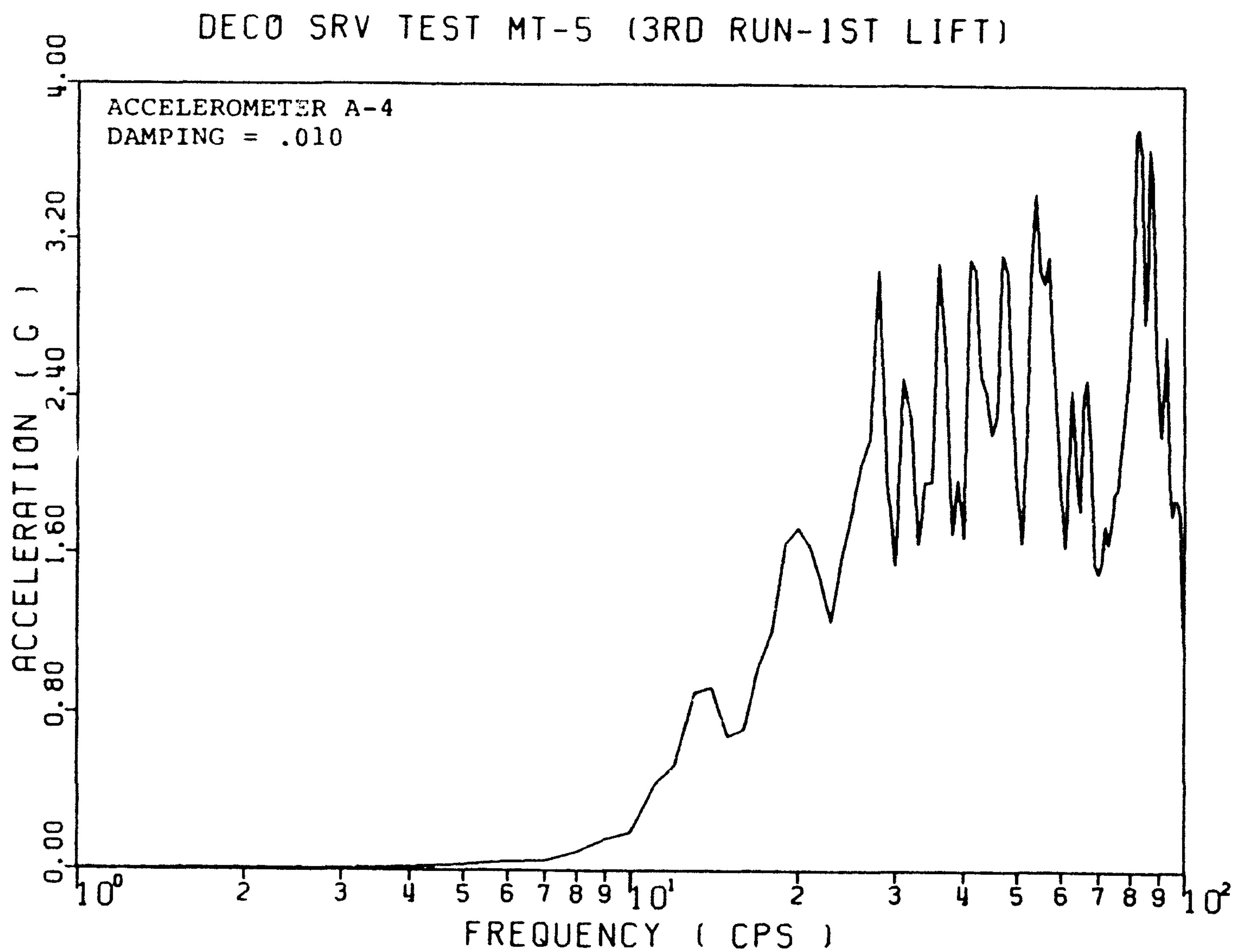

Figure D.21 TYPICAL SVA RESPONSE SPECTRA

nutech ENGINEERS

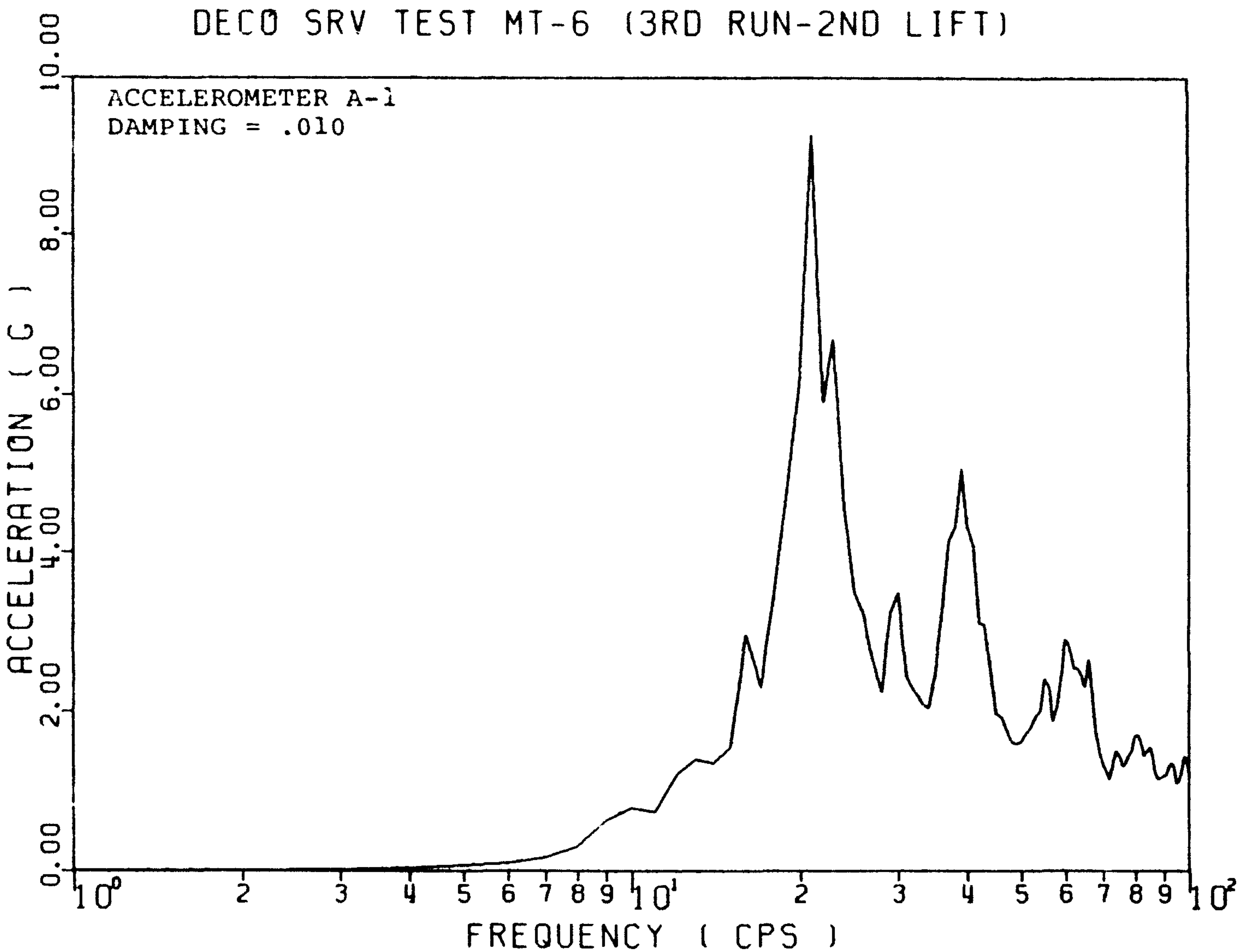

Figure D.22 TYPICAL CVA RESPONSE SPECTRA

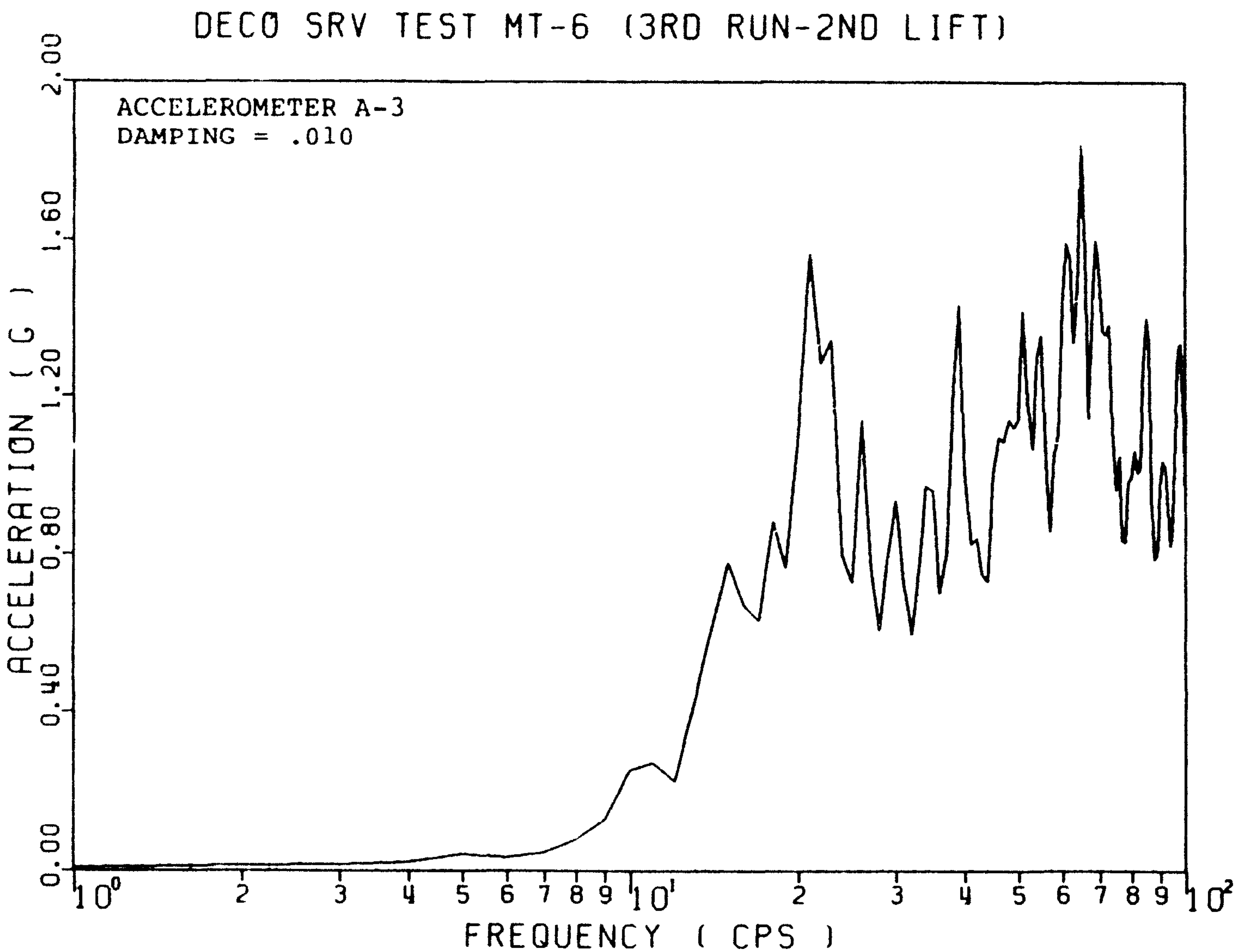

Figure D.23 TYPICAL CVA RESPONSE SPECTRA

nutech ENGINEERS

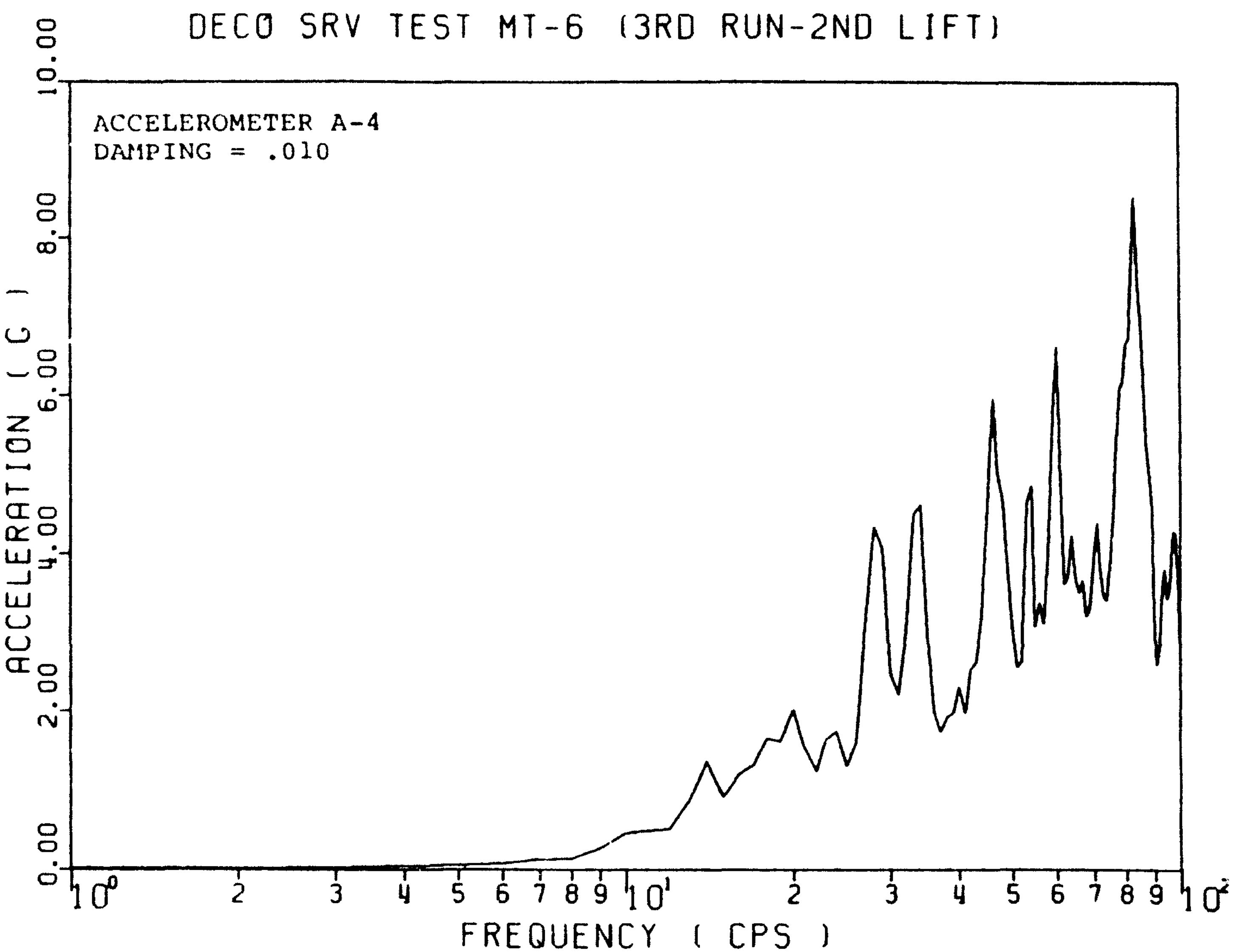

Figure D.24 TYPICAL CVA RESPONSE SPECTRA

APPENDIX E

MAXIMUM - MINIMUM TEST DATA

(60 Sheets)

TEST SD1

SENSOR ID	MAX VALUE				MIN VALUE			
PT-17	.130E+00	AT	.721	SEC	-.152E+00	AT	.490	SEC
PT-18	.749E-01	AT	.164	SEC	-.830E-01	AT	.158	SEC
PT-19	.202E+03	AT	.383	SEC	-.336E+02	AT	.005	SEC
PT-20	.185E+03	AT	.407	SEC	-.311E+02	AT	.005	SEC
A---1	.480E+00	AT	1.120	SEC	-.583E+00	AT	.735	SEC
A---2	.338E+00	AT	.809	SEC	-.362E+00	AT	.587	SEC
A---3	.193E+00	AT	.792	SEC	-.213E+00	AT	1.009	SEC
A---4	.531E+00	AT	.446	SEC	-.568E+00	AT	.677	SEC
PT--2	.200E+01	AT	.334	SEC	-.206E+01	AT	.315	SEC
PT--3	.418E+01	AT	.318	SEC	-.271E+01	AT	.264	SEC
PT--4	.263E+01	AT	.405	SEC	-.297E+01	AT	.419	SEC
PT--5	.909E+00	AT	.718	SEC	-.617E+00	AT	.516	SEC
PT--6	.128E+01	AT	.715	SEC	-.142E+01	AT	.655	SEC
PT--7	.140E+01	AT	.712	SEC	-.154E+01	AT	.539	SEC
PT--8	[illegible]	AT	.606	SEC	-.171E+01	AT	.551	SEC
PT--9	.150E+01	AT	.507	SEC	-.172E+01	AT	.556	SEC
PT-10	.763E+00	AT	.612	SEC	-.744E+00	AT	.656	SEC
PT-11	.880E+00	AT	.709	SEC	-.122E+01	AT	.521	SEC
PT-12	.572E-01	AT	.029	SEC	-.560E-01	AT	.118	SEC
PT-13	.181E+01	AT	.609	SEC	-.170E+01	AT	.550	SEC
PT-14	.177E+01	AT	.604	SEC	-.176E+01	AT	.542	SEC
PT-15	.943E+02	AT	.112	SEC	-.934E+02	AT	.004	SEC
PT-16	.969E+02	AT	.112	SEC	-.946E+02	AT	.004	SEC
SR-1A	.343E+01	AT	.519	SEC	-.395E+01	AT	.658	SEC
SR-1B	.222E+01	AT	.521	SEC	-.276E+01	AT	.600	SEC
SR-1C	.879E+00	AT	.718	SEC	-.437E+00	AT	.689	SEC
SR-2A	.419E+01	AT	.598	SEC	-.338E+01	AT	.625	SEC
SR-2C	.702E+00	AT	.842	SEC	-.651E+00	AT	.527	SEC
SR-3A	.111E+02	AT	1.072	SEC	-.105E+02	AT	.592	SEC
SR-3B	.189E+01	AT	1.071	SEC	-.129E+01	AT	.441	SEC
SR-3C	.132E+01	AT	.944	SEC	-.128E+01	AT	.988	SEC
SR-4A	.352E+01	AT	.893	SEC	-.406E+01	AT	1.022	SEC
SR-4B	.123E+01	AT	.285	SEC	-.116E+01	AT	.778	SEC
SR-4C	.111E+01	AT	1.130	SEC	-.150E+01	AT	1.082	SEC
SR-5A	.223E+01	AT	1.048	SEC	-.220E+01	AT	1.028	SEC
SR-5B	.146E+01	AT	.628	SEC	-.174E+01	AT	.602	SEC
SR-5C	.112E+01	AT	1.038	SEC	-.752E+00	AT	.633	SEC
SR-6A	.288E+01	AT	.650	SEC	-.220E+01	AT	.636	SEC
SR-6B	.207E+01	AT	.649	SEC	-.129E+01	AT	.581	SEC
SR-6C	.120E+01	AT	.743	SEC	-.111E+01	AT	.792	SEC
SR-7A	.103E+02	AT	.658	SEC	-.891E+01	AT	.691	SEC
SR-7B	.856E+01	AT	.714	SEC	-.947E+01	AT	.691	SEC
SR-7C	.829E+01	AT	.719	SEC	-.849E+01	AT	.692	SEC
SR-8A	.974E+01	AT	[illegible]	SEC	-.154E+02	AT	.599	SEC
SR-8B	.811E+01	AT	.638	SEC	-.113E+02	AT	.603	SEC
SR-8C	.820E+01	AT	.638	SEC	-.104E+02	AT	.601	SEC
SR-9A	.818E+01	AT	.401	SEC	-.896E+01	AT	.612	SEC
SR-9B	.480E+01	AT	.599	SEC	-.487E+01	AT	1.071	SEC
SR-9C	.434E+01	AT	.939	SEC	-.311E+01	AT	.888	SEC
SR-10A	.100E+02	AT	1.022	SEC	-.746E+01	AT	.974	SEC
SR-10B	.612E+01	AT	.921	SEC	-.538E+01	AT	.974	SEC
SR-10C	.395E+01	AT	1.135	SEC	-.392E+01	AT	1.078	SEC
SR-11A	.667E+01	AT	.403	SEC	-.866E+01	AT	.464	SEC

TEST SD1

GAUGE ID	MAX VALUE				MIN VALUE			
SG-116	.703E+01	AT	.364	SEC	-.365E+01	AT	1.027	SEC
SG-118	.254E+01	AT	1.233	SEC	-.246E+01	AT	.593	SEC
SG-122	.805E+01	AT	.738	SEC	-.960E+01	AT	.561	SEC
SG-128	.689E+01	AT	.433	SEC	-.604E+01	AT	.659	SEC
SG-120	.361E+01	AT	.770	SEC	-.407E+01	AT	.876	SEC
SG---1	.143E+01	AT	.914	SEC	-.943E+00	AT	.609	SEC
SG---2	.134E+01	AT	.451	SEC	-.110E+01	AT	.519	SEC
SG---3	.226E+01	AT	.573	SEC	-.239E+01	AT	.518	SEC
SG---4	.128E+01	AT	.543	SEC	-.753E+00	AT	.629	SEC
SG---5	.166E+01	AT	.543	SEC	-.250E+01	AT	.508	SEC
SG---6	.151E+01	AT	.444	SEC	-.154E+01	AT	.605	SEC
SG---7	.298E+01	AT	.567	SEC	-.318E+01	AT	.604	SEC
SG---8	.123E+01	AT	.061	SEC	-.170E+01	AT	.596	SEC
SG---9	.210E+01	AT	.557	SEC	-.272E+01	AT	.604	SEC
SG--10	.770E+01	AT	.967	SEC	-.895E+01	AT	.913	SEC
SG--11	.363E+02	AT	.552	SEC	-.277E+02	AT	.513	SEC
SG--12	.217E+02	AT	.060	SEC	-.167E+02	AT	.508	SEC
SG--13	.248E+02	AT	.558	SEC	-.318E+02	AT	.494	SEC
SG--14	.400E+02	AT	.054	SEC	-.320E+02	AT	.486	SEC
SG--15	.191E+02	AT	.553	SEC	-.129E+02	AT	.955	SEC
SG--16	.140E+02	AT	.557	SEC	-.148E+02	AT	.489	SEC
SG--17	.167E+01	AT	.899	SEC	-.171E+01	AT	.081	SEC
SG--19	.183E+01	AT	.455	SEC	-.177E+01	AT	.487	SEC
SG--20	.101E+01	AT	.782	SEC	-.115E+01	AT	.624	SEC
SG--21	.197E+01	AT	.692	SEC	-.197E+01	AT	.627	SEC
SG--22	.207E+01	AT	.681	SEC	-.200E+01	AT	.739	SEC
SG--23	.120E+01	AT	.698	SEC	-.124E+01	AT	.639	SEC
SG--24	.133E+01	AT	.561	SEC	-.157E+01	AT	.509	SEC
SG--25	.135E+01	AT	1.078	SEC	-.142E+01	AT	.404	SEC
SG--26	.121E+01	AT	.798	SEC	-.120E+01	AT	.610	SEC
SG--27	.102E+01	AT	.695	SEC	-.870E+00	AT	.531	SEC
SG--28	.969E+00	AT	1.218	SEC	-.983E+00	AT	.391	SEC
SG--29	.968E+00	AT	1.033	SEC	-.894E+00	AT	.831	SEC
SG--30	.652E+00	AT	.950	SEC	-.967E+00	AT	1.112	SEC
SG--31	.385E+01	AT	1.295	SEC	-.569E+00	AT	.217	SEC
SG--32	.490E+01	AT	1.258	SEC	-.887E+00	AT	.364	SEC
SG--33	.139E+02	AT	1.295	SEC	-.308E+01	AT	.456	SEC
SG--34	.160E+01	AT	1.255	SEC	-.223E+01	AT	.451	SEC
SG--35	.341E+01	AT	.723	SEC	-.387E+01	AT	.327	SEC
SG--36	.247E+01	AT	.883	SEC	-.275E+01	AT	.521	SEC
SG--37	.183E+01	AT	1.135	SEC	-.229E+01	AT	1.219	SEC
SG--38	.828E+00	AT	.857	SEC	-.124E+01	AT	.938	SEC
SG--39	.747E+00	AT	1.029	SEC	-.732E+00	AT	1.039	SEC
SG--40	.231E+01	AT	.063	SEC	-.155E+01	AT	.004	SEC
SG--41	.469E+00	AT	.953	SEC	-.435E+00	AT	.928	SEC
SG--42	.287E+01	AT	.054	SEC	-.175E+01	AT	.423	SEC
SG--43	.572E+00	AT	.479	SEC	-.634E+00	AT	.462	SEC
SG--44	.148E+01	AT	1.030	SEC	-.223E+01	AT	.990	SEC
SG--45	.210E+01	AT	.934	SEC	-.205E+01	AT	.685	SEC
SG--46	.944E+00	AT	.898	SEC	-.761E+00	AT	1.076	SEC
SG--47	.804E+00	AT	1.181	SEC	-.108E+01	AT	1.126	SEC
SG--48	.174E+01	AT	1.090	SEC	-.128E+01	AT	.392	SEC
SG--49	.158E+01	AT	1.130	SEC	-.915E+00	AT	.638	SEC
SG--50	.250E+01	AT	.990	SEC	-.264E+01	AT	1.015	SEC
SG--52	.282E+01	AT	.773	SEC	-.222E+01	AT	.983	SEC
SG--53	.117E+01	AT	.970	SEC	-.875E+00	AT	1.247	SEC
SG--54	.188E+01	AT	.447	SEC	-.193E+01	AT	.506	SEC
SG--55	.207E+01	AT	.447	SEC	-.202E+01	AT	.436	SEC
SG--56	.341E+01	AT	.005	SEC	-.374E+01	AT	.154	SEC
SG--57	.450E+01	AT	.004	SEC	-.424E+01	AT	.143	SEC
SG--59	.343E+01	AT	.005	SEC	-.370E+01	AT	.157	SEC
SG--60	.102E+01	AT	.181	SEC	-.733E+00	AT	.443	SEC
SG--61	.128E+01	AT	.354	SEC	-.725E+00	AT	.353	SEC
SG--62	.895E+00	AT	.350	SEC	-.102E+01	AT	.272	SEC
SG--63	.537E+00	AT	.373	SEC	-.809E+00	AT	.437	SEC

TEST SD1

STRESSES

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LOCATION        CHANNELS

   1           10 (SG---1     )      MAX COMBINED STRESS =  4.377E+01     AT TIME =  9.140E-01
                0 (NOT AVAIL.)       MAX HOOP STRESS     =  1.180E+01     AT TIME =  9.130E-01
               11 (SG---2     )      MAX AXIAL STRESS    =  3.934E+01     AT TIME =  9.130E-01
                0 (NOT AVAIL.)       MAX BENDING STRESS  =  1.536E+01     AT TIME =  6.040E-01
                0 (NOT AVAIL.)

LOCATION        CHANNELS

   2           32 (SG--23     )      MAX COMBINED STRESS = -4.820E+01     AT TIME =  5.090E-01
                0 (NOT AVAIL.)       MAX HOOP STRESS     = -9.443E+00     AT TIME =  7.520E-01
               33 (SG--24     )      MAX AXIAL STRESS    = -3.148E+01     AT TIME =  7.520E-01
                0 (NOT AVAIL.)       MAX BENDING STRESS  =  2.057E+01     AT TIME =  5.100E-01
                0 (NOT AVAIL.)

LOCATION        CHANNELS

   3           34 (SG--25     )      MAX COMBINED STRESS = -4.343E+01     AT TIME =  4.040E-01
                0 (NOT AVAIL.)       MAX HOOP STRESS     = -8.971E+00     AT TIME =  7.100E-01
               35 (SG--26     )      MAX AXIAL STRESS    = -2.990E+01     AT TIME =  7.100E-01
                0 (NOT AVAIL.)       MAX BENDING STRESS  =  2.791E+01     AT TIME =  1.030E+00
                0 (NOT AVAIL.)

LOCATION        CHANNELS

   4           36 (SG--27     )      MAX COMBINED STRESS =  3.137E+01     AT TIME =  6.950E-01
                0 (NOT AVAIL.)       MAX HOOP STRESS     = -7.075E+00     AT TIME =  3.920E-01
               37 (SG--28     )      MAX AXIAL STRESS    = -2.358E+01     AT TIME =  3.920E-01
                0 (NOT AVAIL.)       MAX BENDING STRESS  =  2.320E+01     AT TIME =  7.640E-01
                0 (NOT AVAIL.)

LOCATION        CHANNELS

   5           38 (SG--29     )      MAX COMBINED STRESS = -2.965E+01     AT TIME =  1.112E+00
                0 (NOT AVAIL.)       MAX HOOP STRESS     =  5.236E+00     AT TIME =  3.680E-01
               39 (SG--30     )      MAX AXIAL STRESS    =  1.745E+01     AT TIME =  3.680E-01
                0 (NOT AVAIL.)       MAX BENDING STRESS  =  2.694E+01     AT TIME =  1.099E+00
                0 (NOT AVAIL.)

LOCATION        CHANNELS

   6            0 (NOT AVAIL.)       MAX COMBINED STRESS =  1.502E+02     AT TIME =  1.258E+00
               40 (SG--31     )      MAX HOOP STRESS     =  3.992E+01     AT TIME =  1.295E+00
                0 (NOT AVAIL.)       MAX AXIAL STRESS    =  1.331E+02     AT TIME =  1.295E+00
               41 (SG--32     )      MAX BENDING STRESS  =  4.625E+01     AT TIME =  7.880E-01
                0 (NOT AVAIL.)

LOCATION        CHANNELS

   7            0 (NOT AVAIL.)       MAX COMBINED STRESS =  4.260E+02     AT TIME =  1.295E+00
               42 (SG--33     )      MAX HOOP STRESS     =  7.114E+01     AT TIME =  1.296E+00
                0 (NOT AVAIL.)       MAX AXIAL STRESS    =  2.371E+02     AT TIME =  1.296E+00
               43 (SG--34     )      MAX BENDING STRESS  =  1.896E+02     AT TIME =  1.295E+00
                0 (NOT AVAIL.)

LOCATION        CHANNELS

   8            0 (NOT AVAIL.)       MAX COMBINED STRESS = -1.186E+02     AT TIME =  3.270E-01
               44 (SG--35     )      MAX HOOP STRESS     =  2.303E+01     AT TIME =  4.230E-01
                0 (NOT AVAIL.)       MAX AXIAL STRESS    =  7.678E+01     AT TIME =  4.230E-01
               45 (SG--36     )      MAX BENDING STRESS  =  8.211E+01     AT TIME =  8.820E-01
                0 (NOT AVAIL.)

LOCATION        CHANNELS

   9           46 (SG--37     )      MAX COMBINED STRESS = -7.542E+01     AT TIME =  1.219E+00
               47 (SG--38     )      MAX HOOP STRESS     = -8.232E+00     AT TIME =  9.390E-01
                0 (NOT AVAIL.)       MAX AXIAL STRESS    = -2.744E+01     AT TIME =  9.390E-01
               48 (SG--39     )      MAX BENDING STRESS  =  5.308E+01     AT TIME =  1.219E+00
                0 (NOT AVAIL.)
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TEST SD1

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LOCATION      CHANNELS

   10          49 (SG--40      )     MAX COMBINED STRESS =   6.994E+01    AT TIME =   5.300E-02
               50 (SG--41      )     MAX HOOP STRESS     =   7.834E+00    AT TIME =   5.300E-02
               51 (SG--42      )     MAX AXIAL STRESS    =   2.611E+01    AT TIME =   5.300E-02
               52 (SG--43      )     MAX BENDING STRESS  =   5.001E+01    AT TIME =   4.230E-01
                0 (NOT AVAIL.)

LOCATION      CHANNELS

   11          53 (SG--44      )     MAX COMBINED STRESS =  -6.828E+01    AT TIME =   9.900E-01
                0 (NOT AVAIL.)       MAX HOOP STRESS     =  -1.141E+01    AT TIME =   6.880E-01
               54 (SG--45      )     MAX AXIAL STRESS    =  -3.802E+01    AT TIME =   6.880E-01
                0 (NOT AVAIL.)       MAX BENDING STRESS  =   5.907E+01    AT TIME =   9.900E-01
                0 (NOT AVAIL.)

LOCATION      CHANNELS

   12          55 (SG--46      )     MAX COMBINED STRESS =   4.812E+01    AT TIME =   1.130E+00
               56 (SG--47      )     MAX HOOP STRESS     =   3.196E+00    AT TIME =   6.820E-01
               57 (SG--48      )     MAX AXIAL STRESS    =   1.065E+01    AT TIME =   6.820E-01
               58 (SG--49      )     MAX BENDING STRESS  =   4.116E+01    AT TIME =   1.079E+00
                0 (NOT AVAIL.)

LOCATION      CHANNELS

   13          59 (SG--50      )     MAX COMBINED STRESS =   9.014E+01    AT TIME =   7.730E-01
                0 (NOT AVAIL.)       MAX HOOP STRESS     =   6.957E+00    AT TIME =   9.700E-01
               61 (SG--52      )     MAX AXIAL STRESS    =   2.319E+01    AT TIME =   9.700E-01
               62 (SG--53      )     MAX BENDING STRESS  =   8.290E+01    AT TIME =   1.015E+00
                0 (NOT AVAIL.)

LOCATION      CHANNELS

   14          63 (SG--54      )     MAX COMBINED STRESS =   6.334E+01    AT TIME =   4.470E-01
                0 (NOT AVAIL.)       MAX HOOP STRESS     =   1.813E+01    AT TIME =   4.470E-01
               64 (SG--55      )     MAX AXIAL STRESS    =   6.042E+01    AT TIME =   4.470E-01
                0 (NOT AVAIL.)       MAX BENDING STRESS  =   1.447E+01    AT TIME =   4.930E-01
                0 (NOT AVAIL.)

LOCATION      CHANNELS

   15          65 (SG--56      )     MAX COMBINED STRESS =   1.360E+02    AT TIME =   4.000E-03
               66 (SG--57      )     MAX HOOP STRESS     =  -3.495E+01    AT TIME =   1.560E-01
                0 (NOT AVAIL.)       MAX AXIAL STRESS    =  -1.165E+02    AT TIME =   1.560E-01
               68 (SG--59      )     MAX BENDING STRESS  =   2.333E+01    AT TIME =   1.430E-01
                0 (NOT AVAIL.)

LOCATION      CHANNELS

   16          69 (SG--60      )     MAX COMBINED STRESS =   3.242E+01    AT TIME =   3.640E-01
               70 (SG--61      )     MAX HOOP STRESS     =   3.870E+00    AT TIME =   1.249E+00
               71 (SG--62      )     MAX AXIAL STRESS    =   1.290E+01    AT TIME =   1.249E+00
               72 (SG--63      )     MAX BENDING STRESS  =   2.868E+01    AT TIME =   3.630E-01
                0 (NOT AVAIL.)
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ROSETTES

ROSETTE	CHANNELS	PRINCIPLE STRESS MIN	PRINCIPLE STRESS MAX	SHEAR STRESS MIN	SHEAR STRESS MAX	STRESS INTENSITY MIN	STRESS INTENSITY MAX
1	25 (SR-1A) 26 (SR-1B) 27 (SR-1C)	-1.163E+02	1.075E+02	4.191E-01	4.662E+01	1.564E+00	1.163E+02
2	28 (SR-2A) 0 (NOT AVAIL.) 30 (SR-2C)	** ROSETTE COMPONENT NOT AVAILABLE **					
3	31 (SR-3A) 32 (SR-3B) 33 (SR-3C)	-3.403E+02	3.607E+02	3.575E-01	1.514E+02	1.014E+00	3.607E+02
4	34 (SR-4A) 35 (SR-4B) 36 (SR-4C)	-1.365E+02	1.176E+02	7.447E-02	6.293E+01	3.040E+00	1.365E+02
5	37 (SR-5A) 38 (SR-5B) 39 (SR-5C)	-6.027E+01	6.866E+01	2.899E-01	3.522E+01	7.561E-01	7.044E+01
6	40 (SR-6A) 41 (SR-6B) 42 (SR-6C)	-6.400E+01	9.251E+01	2.849E-01	3.233E+01	1.290E+00	9.251E+01
7	43 (SR-7A) 44 (SR-7B) 45 (SR-7C)	-3.637E+02	3.774E+02	6.209E-01	6.040E+01	2.161E+00	3.774E+02
8	46 (SR-8A) 47 (SR-8B) 48 (SR-8C)	-6.104E+02	3.299E+02	7.228E-01	9.927E+01	3.653E+00	6.104E+02
9	49 (SR-9A) 50 (SR-9B) 51 (SR-9C)	-2.705E+02	2.894E+02	3.336E-01	1.076E+02	4.551E+00	2.894E+02
10	52 (SR-10A) 53 (SR-10B) 54 (SR-10C)	-2.540E+02	3.241E+02	4.246E-01	9.947E+01	3.603E+00	3.241E+02
11	55 (SR-11A) 0 (NOT AVAIL.) 0 (NOT AVAIL.)	** ROSETTE COMPONENT NOT AVAILABLE **					

ROSETTES

ROSETTE	CHANNELS	PRINCIPLE STRESS MIN	PRINCIPLE STRESS MAX	SHEAR STRESS MIN	SHEAR STRESS MAX	STRESS INTENSITY MIN	STRESS INTENSITY MAX
1	0 (NOT AVAIL.)						
	5 (SR-11B)	** ROSETTE COMPONENT NOT AVAILABLE **					
	6 (SR-11C)						

ROSETTE	CHANNELS	PRINCIPLE STRESS MIN	PRINCIPLE STRESS MAX	SHEAR STRESS MIN	SHEAR STRESS MAX	STRESS INTENSITY MIN	STRESS INTENSITY MAX
2	7 (SR-12A)						
	8 (SR-12B)	-2.807E+02	2.744E+02	1.894E-01	1.051E+02	5.400E+00	2.807E+02
	9 (SR-12C)						

TEST MT1

SENSOR ID	MAX VALUE				MIN VALUE			
PT-17	.199E+00	AT	.878	SEC	-.149E+00	AT	.420	SEC
PT-18	.178E+00	AT	.975	SEC	-.619E-01	AT	.215	SEC
PT-19	.213E+03	AT	.491	SEC	-.354E+02	AT	.004	SEC
PT-20	.191E+03	AT	.471	SEC	-.329E+02	AT	.004	SEC
A---1	.662E+00	AT	.494	SEC	-.616E+00	AT	.470	SEC
A---2	.622E+00	AT	.734	SEC	-.450E+00	AT	.722	SEC
A---3	.184E+00	AT	.402	SEC	-.192E+00	AT	.382	SEC
A---4	.578E+00	AT	.992	SEC	-.533E+00	AT	.495	SEC
PT--2	.155E+01	AT	.394	SEC	-.265E+01	AT	.477	SEC
PT--3	.373E+01	AT	.322	SEC	-.564E+01	AT	.333	SEC
PT--4	.153E+01	AT	.376	SEC	-.311E+01	AT	.341	SEC
PT--6	.130E+01	AT	.395	SEC	-.129E+01	AT	.469	SEC
PT--7	.125E+01	AT	.399	SEC	-.213E+01	AT	.468	SEC
PT--8	.116E+01	AT	.543	SEC	-.205E+01	AT	.459	SEC
PT--9	.102E+01	AT	.388	SEC	-.937E+00	AT	.500	SEC
PT-10	.718E+00	AT	.671	SEC	-.542E+00	AT	.487	SEC
PT-11	.860E+00	AT	.413	SEC	-.192E+01	AT	.469	SEC
PT-12	.113E+00	AT	.749	SEC	-.548E-01	AT	.180	SEC
PT-13	.104E+01	AT	.551	SEC	-.185E+01	AT	.498	SEC
PT-14	.804E+00	AT	.543	SEC	-.210E+01	AT	.495	SEC
PT-15	.157E+03	AT	.151	SEC	-.540E+02	AT	.005	SEC
PT-16	.162E+03	AT	.150	SEC	-.539E+02	AT	.005	SEC
SRVIN	.256E-08	AT	.530	SEC	0.	AT	0.000	SEC

SENSOR ID	MAX VALUE	MIN VALUE
SR-1A	.222E+01 AT .875 SEC	-.295E+01 AT .621 SEC
SR-1B	.139E+01 AT .876 SEC	-.176E+01 AT .728 SEC
SR-1C	.523E+00 AT .613 SEC	-.676E+00 AT .357 SEC
SR-2A	.350E+01 AT .559 SEC	-.264E+01 AT .591 SEC
SR-2C	.721E+00 AT .559 SEC	-.835E+00 AT .378 SEC
SR-3A	.979E+01 AT .729 SEC	-.759E+01 AT .359 SEC
SR-3B	.199E+01 AT .578 SEC	-.933E+00 AT .957 SEC
SR-3C	.989E+00 AT .381 SEC	-.831E+00 AT .831 SEC
SR-4A	.382E+01 AT .699 SEC	-.272E+01 AT .643 SEC
SR-4B	.112E+01 AT .310 SEC	-.111E+01 AT .304 SEC
SR-4C	.510E+00 AT .305 SEC	-.147E+01 AT .704 SEC
SR-5A	.259E+01 AT .583 SEC	-.179E+01 AT .400 SEC
SR-5B	.144E+01 AT .419 SEC	-.641E+00 AT .469 SEC
SR-5C	.934E+00 AT .563 SEC	-.761E+00 AT .717 SEC
SR-6A	.440E+01 AT .877 SEC	-.340E+01 AT .907 SEC
SR-6B	.219E+01 AT .878 SEC	-.181E+01 AT .909 SEC
SR-6C	.980E+00 AT .637 SEC	-.993E+00 AT .885 SEC
SR-7A	.746E+01 AT .621 SEC	-.636E+01 AT .645 SEC
SR-7B	.718E+01 AT .621 SEC	-.621E+01 A .648 SEC
SR-7C	.642E+01 AT .621 SEC	-.558E+01 AT .651 SEC
SR-8A	.710E+01 AT .429 SEC	-.756E+01 AT .508 SEC
SR-8B	.777E+01 AT .430 SEC	-.486E+01 AT .784 SEC
SR-8C	.639E+01 AT .429 SEC	-.393E+01 AT .466 SEC
SR-9A	.113E+02 AT .381 SEC	-.760E+01 AT .727 SEC
SR-9B	.713E+01 AT .380 SEC	-.520E+01 AT .727 SEC
SR-9C	.420E+01 AT .379 SEC	-.206E+01 AT .716 SEC
SR-10A	.603E+01 AT .647 SEC	-.950E+01 AT .611 SEC
SR-10B	.366E+01 AT .647 SEC	-.572E+01 AT .700 SEC
SR-10C	.225E+01 AT .648 SEC	-.384E+01 AT .803 SEC
SR-11A	.114E+02 AT .384 SEC	-.836E+01 AT .724 SEC
SR-11B	.823E+01 AT .362 SEC	-.601E+01 AT .724 SEC
SR-11C	.211E+01 AT .571 SEC	-.201E+01 AT .719 SEC
SR-12A	.111E+02 AT .907 SEC	-.145E+02 AT .878 SEC
SR-12B	.702E+01 AT .376 SEC	-.101E+02 AT .878 SEC
SR-12C	.336E+01 AT .448 SEC	-.461E+01 AT .767 SEC
SG---1	.121E+01 AT .613 SEC	-.956E+00 AT .240 SEC
SG---2	.102E+01 AT .219 SEC	-.115E+01 AT .424 SEC
SG---3	.124E+01 AT .452 SEC	-.191E+01 AT .407 SEC
SG---4	.104E+01 AT .231 SEC	-.113E+01 AT .676 SEC
SG---5	.142E+01 AT .613 SEC	-.187E+01 AT .407 SEC
SG---6	.111E+01 AT .880 SEC	-.137E+01 AT .416 SEC
SG---7	.187E+01 AT .301 SEC	-.253E+01 AT .371 SEC
SG---8	.109E+01 AT .304 SEC	-.186E+01 AT .389 SEC
SG---9	.147E+01 AT .304 SEC	-.257E+01 AT .418 SEC
SG--10	.105E+02 AT .502 SEC	-.944E+01 AT .451 SEC
SG--11	.265E+02 AT .302 SEC	-.262E+02 AT .247 SEC
SG--12	.147E+02 AT .300 SEC	-.156E+02 AT .245 SEC
SG--13	.176E+02 AT .054 SEC	-.205E+02 AT .247 SEC
SG--14	.420E+02 AT .053 SEC	-.358E+02 AT .374 SEC
SG--15	.133E+02 AT .756 SEC	-.149E+02 AT .244 SEC
SG--16	.133E+02 AT .298 SEC	-.191E+02 AT .370 SEC
SG--17	.305E+01 AT .300 SEC	-.151E+01 AT .093 SEC
SG--18	.864E+00 AT .020 SEC	-.151E+01 AT .807 SEC
SG--19	.174E+01 AT .614 SEC	-.170E+01 AT .371 SEC
SG--20	.120E+01 AT .305 SEC	-.104E+01 AT .375 SEC
SG--21	.244E+01 AT .766 SEC	-.127E+01 AT .243 SEC
SG--22	.136E+01 AT .511 SEC	-.168E+01 AT .370 SEC
SG--23	.763E+00 AT .516 SEC	-.134E+01 AT .394 SEC
SG--24	.128E+01 AT .611 SEC	-.179E+01 AT .378 SEC
SG--25	.154E+01 AT .304 SEC	-.864E+00 AT .818 SEC
SG--26	.200E+01 AT .653 SEC	-.576E+00 AT .115 SEC

SG--27	.580E+00 AT .186 SEC	-.156E+01 AT .387 SEC
SG--28	.983E+00 AT .872 SEC	-.755E+00 AT .382 SEC
SG--29	.442E+00 AT .573 SEC	-.993E+00 AT .942 SEC
SG--30	.102E+01 AT .861 SEC	-.766E+00 AT .723 SEC
SG--31	.415E+01 AT .995 SEC	-.154E+01 AT .388 SEC
SG--32	.558E+01 AT .996 SEC	-.448E+00 AT .005 SEC
SG--33	.101E+02 AT .996 SEC	-.260E+01 AT .361 SEC
SG--34	.134E+01 AT .995 SEC	-.160E+01 AT .356 SEC
SG--35	.377E+01 AT .734 SEC	-.364E+01 AT .763 SEC
SG--36	.296E+01 AT .882 SEC	-.429E+01 AT .366 SEC
SG--37	.175E+01 AT .528 SEC	-.237E+01 AT .549 SEC
SG--38	.707E+00 AT .665 SEC	-.923E+00 AT .795 SEC
SG--39	.676E+00 AT .843 SEC	-.980E+00 AT .407 SEC
SG--40	.189E+01 AT .283 SEC	-.204E+01 AT .016 SEC
SG--41	.749E+00 AT .607 SEC	-.587E+00 AT .340 SEC
SG--42	.218E+01 AT .049 SEC	-.251E+01 AT .411 SEC
SG--43	.313E+00 AT .052 SEC	-.829E+00 AT .972 SEC
SG--44	.626E+00 AT .054 SEC	-.204E+01 AT .399 SEC
SG--45	.147E+01 AT .651 SEC	-.262E+01 AT .996 SEC
SG--46	.559E+00 AT .649 SEC	-.120E+01 AT .996 SEC
SG--47	.474E+00 AT .933 SEC	-.848E+00 AT .570 SEC
SG--48	.199E+01 AT .996 SEC	-.112E+01 AT .655 SEC
SG--49	.706E+00 AT .648 SEC	-.983E+00 AT .933 SEC
SG--50	.256E+01 AT .486 SEC	-.279E+01 AT .777 SEC
SG--52	.297E+01 AT .777 SEC	-.302E+01 AT .960 SEC
SG--53	.117E+01 AT .391 SEC	-.126E+01 AT .365 SEC
SG--54	.232E+01 AT .254 SEC	-.276E+01 AT .312 SEC
SG--55	.299E+01 AT .254 SEC	-.312E+01 AT .267 SEC
SG--56	.334E+01 AT .004 SEC	-.373E+01 AT .156 SEC
SG--57	.478E+01 AT .004 SEC	-.441E+01 AT .142 SEC
SG--59	.391E+01 AT .004 SEC	-.381E+01 AT .155 SEC
SG--60	.143E+01 AT .647 SEC	-.956E+00 AT .256 SEC
SG--61	.111E+01 AT .852 SEC	-.183E+01 AT .838 SEC
SG--62	.143E+01 AT .254 SEC	-.148E+01 AT .693 SEC
SG--63	.780E+00 AT .859 SEC	-.134E+01 AT .586 SEC
SGVINI	.256E-08 AT .500 SEC	0. AT 0.000 SEC

TEST MT1

S T R E S S E S

LOCATION	CHANNELS			
1	36 (SG---1)	MAX COMBINED STRESS	= 3.717E+01	AT TIME = 6.130E-01
	0 (NOT AVAIL.)	MAX HOOP STRESS	= -9.186E+00	AT TIME = 2.400E-01
	37 (SG---2)	MAX AXIAL STRESS	= -3.063E+01	AT TIME = 2.400E-01
	0 (NOT AVAIL.)	MAX BENDING STRESS	= 2.006E+01	AT TIME = 2.860E-01
	0 (NOT AVAIL.)			

LOCATION	CHANNELS			
2	58 (SG--23)	MAX COMBINED STRESS	= -5.480E+01	AT TIME = 3.780E-01
	0 (NOT AVAIL.)	MAX HOOP STRESS	= -1.324E+01	AT TIME = 3.680E-01
	59 (SG--24)	MAX AXIAL STRESS	= -4.413E+01	AT TIME = 3.880E-01
	0 (NOT AVAIL.)	MAX BENDING STRESS	= 3.265E+01	AT TIME = 3.400E-01
	0 (NOT AVAIL.)			

LOCATION	CHANNELS			
3	60 (SG--25)	MAX COMBINED STRESS	= 6.123E+01	AT TIME = 6.530E-01
	0 (NOT AVAIL.)	MAX HOOP STRESS	= 1.173E+01	AT TIME = 3.030E-01
	61 (SG--26)	MAX AXIAL STRESS	= 3.911E+01	AT TIME = 3.030E-01
	0 (NOT AVAIL.)	MAX BENDING STRESS	= 3.439E+01	AT TIME = 6.520E-01
	0 (NOT AVAIL.)			

LOCATION	CHANNELS			
4	62 (SG--27)	MAX COMBINED STRESS	= -4.774E+01	AT TIME = 3.870E-01
	0 (NOT AVAIL.)	MAX HOOP STRESS	= -8.394E+00	AT TIME = 3.850E-01
	63 (SG--28)	MAX AXIAL STRESS	= -2.798E+01	AT TIME = 3.850E-01
	0 (NOT AVAIL.)	MAX BENDING STRESS	= 2.469E+01	AT TIME = 4.200E-01
	0 (NOT AVAIL.)			

LOCATION	CHANNELS			
5	64 (SG--29)	MAX COMBINED STRESS	= 3.126E+01	AT TIME = 8.610E-01
	0 (NOT AVAIL.)	MAX HOOP STRESS	= -5.611E+00	AT TIME = 9.710E-01
	65 (SG--30)	MAX AXIAL STRESS	= -1.870E+01	AT TIME = 9.710E-01
	0 (NOT AVAIL.)	MAX BENDING STRESS	= 1.816E+01	AT TIME = 7.560E-01
	0 (NOT AVAIL.)			

LOCATION	CHANNELS			
6	0 (NOT AVAIL.)	MAX COMBINED STRESS	= -1.314E+02	AT TIME = 3.660E-01
	71 (SG--36)	MAX HOOP STRESS	= 2.441E+01	AT TIME = 8.770E-01
	0 (NOT AVAIL.)	MAX AXIAL STRESS	= 8.137E+01	AT TIME = 8.770E-01
	70 (SG--35)	MAX BENDING STRESS	= 9.371E+01	AT TIME = 7.620E-01
	0 (NOT AVAIL.)			

TEST MT1

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LOCATION        CHANNELS

   7            72 (SG--37     )     MAX COMBINED STRESS = -7.694E+01    AT TIME =  5.440E-01
                73 (SG--38     )     MAX HOOP STRESS     = -1.055E+01    AT TIME =  5.490E-01
                 0 (NOT AVAIL.)      MAX AXIAL STRESS    = -3.650E+01    AT TIME =  5.430E-01
                74 (SG--39     )     MAX BENDING STRESS  =  4.449E+01    AT TIME =  9.960E-01
                 0 (NOT AVAIL.)

LOCATION        CHANNELS

   8            75 (SG--40     )     MAX COMBINED STRESS = -7.313E+01    AT TIME =  4.110E-01
                76 (SG--41     )     MAX HOOP STRESS     =  8.413E+00    AT TIME =  6.600E-02
                77 (SG--42     )     MAX AXIAL STRESS    =  2.604E+01    AT TIME =  6.600E-02
                78 (SG--43     )     MAX BENDING STRESS  =  6.605E+01    AT TIME =  4.110E-01
                 0 (NOT AVAIL.)

LOCATION        CHANNELS

   9            79 (SG--44     )     MAX COMBINED STRESS = -8.020E+01    AT TIME =  9.960E-01
                 0 (NOT AVAIL.)      MAX HOOP STRESS     = -1.465E+01    AT TIME =  4.210E-01
                80 (SG--45     )     MAX AXIAL STRESS    = -4.997E+01    AT TIME =  4.210E-01
                 0 (NOT AVAIL.)      MAX BENDING STRESS  =  4.949E+01    AT TIME =  4.010E-01
                 0 (NOT AVAIL.)

LOCATION        CHANNELS

  10            81 (SG--46     )     MAX COMBINED STRESS = -5.070E+01    AT TIME =  9.960E-01
                82 (SG--47     )     MAX HOOP STRESS     = -2.283E+00    AT TIME =  8.090E-01
                83 (SG--48     )     MAX AXIAL STRESS    = -7.609E+00    AT TIME =  8.090E-01
                84 (SG--49     )     MAX BENDING STRESS  =  5.040E+01    AT TIME =  9.960E-01
                 0 (NOT AVAIL.)

LOCATION        CHANNELS

  11            85 (SG--50     )     MAX COMBINED STRESS = -9.418E+01    AT TIME =  9.600E-01
                 0 (NOT AVAIL.)      MAX HOOP STRESS     = -6.224E+00    AT TIME =  3.660E-01
                86 (SG--52     )     MAX AXIAL STRESS    = -2.075E+01    AT TIME =  3.660E-01
                87 (SG--53     )     MAX BENDING STRESS  =  8.840E+01    AT TIME =  7.770E-01
                 0 (NOT AVAIL.)

LOCATION        CHANNELS

  12            88 (SG--54     )     MAX COMBINED STRESS = -9.579E+01    AT TIME =  2.670E-01
                 0 (NOT AVAIL.)      MAX HOOP STRESS     = -2.598E+01    AT TIME =  2.670E-01
                89 (SG--55     )     MAX AXIAL STRESS    = -8.660E+01    AT TIME =  2.670E-01
                 0 (NOT AVAIL.)      MAX BENDING STRESS  =  1.600E+01    AT TIME =  2.430E-01
                 0 (NOT AVAIL.)

LOCATION        CHANNELS

  13            94 (SG--60     )     MAX COMBINED STRESS = -4.837E+01    AT TIME =  8.390E-01
                95 (SG--61     )     MAX HOOP STRESS     = -4.517E+00    AT TIME =  5.860E-01
                96 (SG--62     )     MAX AXIAL STRESS    = -1.500E+01    AT TIME =  5.860E-01
                97 (SG--63     )     MAX BENDING STRESS  =  3.992E+01    AT TIME =  8.390E-01
                 0 (NOT AVAIL.)

                                        S T R E S S E S
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LOCATION        CHANNELS

   1            46 (SG--11     )     MAX COMBINED STRESS =  1.178E+01    AT TIME =  5.300E-02
                47 (SG--12     )     MAX HOOP STRESS     =  2.101E+02    AT TIME =  5.400E-02
                48 (SG--13     )     MAX AXIAL STRESS    =  7.004E+02    AT TIME =  5.400E-02
                49 (SG--14     )     MAX BENDING STRESS  =  4.831E+02    AT TIME =  5.300E-02
                 0 (NOT AVAIL.)

LOCATION        CHANNELS

   2            90 (SG--56     )     MAX COMBINED STRESS =  1.447E+02    AT TIME =  4.000E-03
                91 (SG--57     )     MAX HOOP STRESS     =  3.844E+01    AT TIME =  4.000E-03
                 0 (NOT AVAIL.)      MAX AXIAL STRESS    =  1.281E+02    AT TIME =  4.000E-03
                93 (SG--59     )     MAX BENDING STRESS  =  1.940E+01    AT TIME =  1.960E-01
                 0 (NOT AVAIL.)
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ROSETTES

ROSETTE	CHANNELS	PRINCIPLE STRESS MIN	PRINCIPLE STRESS MAX	SHEAR STRESS MIN	SHEAR STRESS MAX	STRESS INTENSITY MIN	STRESS INTENSITY MAX
1	1 (SR-1A) 2 (SR-1B) 3 (SR-1C)	-9.201E+01	[illegible]	2.207E-01	[illegible]	7.648E-01	9.201E+01
2	4 (SR-2A) 0 (NOT AVAIL.) 5 (SR-2C)	** ROSETTE COMPONENT NOT AVAILABLE **					
3	6 (SR-3A) 7 (SR-3B) 8 (SR-3C)	-2.[illegible]12E+02	3.167E+02	7.236E-01	[illegible]	1.776E+00	3.167E+02
4	9 (SR-4A) 10 (SR-4B) 11 (SR-4C)	-1.056E+02	1.197E+02	3.979E-01	[illegible]	1.813E+00	1.310E+02
5	12 (SR-5A) 13 (SR-5B) 14 (SR-5C)	-6.325E+01	8.087E+01	4.802E-01	3.057E+01	2.326E+00	8.087E+01
6	15 (SR-6A) 16 (SR-6B) 17 (SR-6C)	-1.027E+02	1.295E+02	1.598E-01	9.479E+01	2.301E+00	1.295E+02
7	18 (SR-7A) 19 (SR-7B) 20 (SR-7C)	-2.379E+02	2.689E+02	1.630E-01	[illegible]	2.276E+00	2.689E+02
8	21 (SR-8A) 22 (SR-8B) 23 (SR-8C)	-2.402E+02	[illegible]	[illegible].180E-01	[illegible]	1.629E+00	2.907E+02
9	24 (SR-9A) 25 (SR-9B) 26 (SR-9C)	[illegible]	3.828E+02	7.637E-01	[illegible]	6.469E+00	3.828E+02
10	27 (SR-10A) 28 (SR-10B) 29 (SR-10C)	-3.123E+02	[illegible]	3.024E-01	[illegible]	6.617E+00	3.123E+02
11	30 (SR-11A) 31 (SR-11B) 32 (SR-11C)	-2.722E+02	3.635E+02	6.426E-01	[illegible]	5.987E+00	3.635E+02
12	33 (SR-12A) 34 (SR-12B) 35 (SR-12C)	-4.795E+02	[illegible]	4.749E-01	[illegible]	2.611E+00	4.795E+02

SENSOR ID	MAX VALUE	MIN VALUE
PT-17	.835E+00 AT .846 SEC	-.795E-01 AT .119 SEC
PT-18	.766E+00 AT .617 SEC	-.519E-01 AT .138 SEC
PT-19	.201E+03 AT .478 SEC	-.318E+02 AT .005 SEC
PT-20	.181E+03 AT 1.095 SEC	-.304E+02 AT .005 SEC
A---1	.822E+00 AT .934 SEC	-.651E+00 AT .958 SEC
A---2	.647E+00 AT .530 SEC	-.625E+00 AT .729 SEC
A---3	.313E+00 AT .377 SEC	-.381E+00 AT .391 SEC
A---4	.461E+00 AT 1.016 SEC	-.424E+00 AT 1.058 SEC
PT--2	.196E+01 AT .464 SEC	-.310E+01 AT .471 SEC
PT--3	.372E+01 AT .334 SEC	-.596E+01 AT .314 SEC
PT--4	.336E+01 AT .483 SEC	-.407E+01 AT .395 SEC
PT--6	.761E+00 AT .632 SEC	-.115E+01 AT .525 SEC
PT--7	.917E+00 AT .359 SEC	-.145E+01 AT .427 SEC
PT--8	.813E+00 AT .298 SEC	-.134E+01 AT .590 SEC
PT--9	.127E+01 AT .989 SEC	-.897E+00 AT 1.020 SEC
PT-10	.609E+00 AT .996 SEC	-.568E+00 AT 1.024 SEC
PT-11	.119E+01 AT .495 SEC	-.151E+01 AT .591 SEC
PT-12	.663E-01 AT .294 SEC	-.558E-01 AT .868 SEC
PT-13	.824E+00 AT .297 SEC	-.119E+01 AT .418 SEC
PT-14	.678E+00 AT .984 SEC	-.118E+01 AT .585 SEC
PT-15	.152E+03 AT .158 SEC	-.435E+02 AT .005 SEC
PT-16	.153E+03 AT .158 SEC	-.446E+02 AT .004 SEC

TEST MT3

SENSOR ID	MAX VALUE				MIN VALUE			
SR-1A	.369E+01	AT	.721	SEC	-.394E+01	AT	.755	SEC
SR-1B	.229E+01	AT	.270	SEC	-.215E+01	AT	.426	SEC
SR-1C	.617E+00	AT	.749	SEC	-.902E+00	AT	.783	SEC
SR-2A	.444E+01	AT	.548	SEC	-.381E+01	AT	.516	SEC
SR-2C	.719E+00	AT	.942	SEC	-.880E+00	AT	.904	SEC
SR-3A	.131E+02	AT	1.040	SEC	-.922E+01	AT	.467	SEC
SR-3B	.163E+01	AT	1.041	SEC	-.115E+01	AT	.860	SEC
SR-3C	.148E+01	AT	.553	SEC	-.139E+01	AT	.845	SEC
SR-4A	.387E+01	AT	.592	SEC	-.345E+01	AT	.897	SEC
SR-4B	.104E+01	AT	.787	SEC	-.103E+01	AT	.794	SEC
SR-4C	.101E+01	AT	.241	SEC	-.156E+01	AT	.804	SEC
SR-5A	.274E+01	AT	.985	SEC	-.235E+01	AT	.324	SEC
SR-5B	.189E+01	AT	.589	SEC	-.121E+01	AT	.639	SEC
SR-5C	.105E+01	AT	.467	SEC	-.104E+01	AT	.770	SEC
SR-6A	.330E+01	AT	.738	SEC	-.251E+01	AT	.771	SEC
SR-6B	.151E+01	AT	1.088	SEC	-.161E+01	AT	1.047	SEC
SR-6C	.102E+01	AT	.576	SEC	-.920E+00	AT	.549	SEC
SR-7A	.925E+01	AT	.756	SEC	-.990E+01	AT	.780	SEC
SR-7B	.941E+01	AT	.755	SEC	-.964E+01	AT	.780	SEC
SR-7C	.967E+01	AT	.753	SEC	-.113E+02	AT	.780	SEC
SR-8A	.108E+02	AT	.515	SEC	-.159E+02	AT	.637	SEC
SR-8B	.102E+02	AT	.515	SEC	-.117E+02	AT	.637	SEC
SR-8C	.865E+01	AT	.515	SEC	-.102E+02	AT	.639	SEC
SR-9A	.104E+02	AT	.467	SEC	-.934E+01	AT	.377	SEC
SR-9B	.720E+01	AT	.467	SEC	-.636E+01	AT	.513	SEC
SR-9C	.655E+01	AT	.553	SEC	-.436E+01	AT	.846	SEC
SR-10A	.883E+01	AT	.897	SEC	-.915E+01	AT	.591	SEC
SR-10B	.447E+01	AT	.431	SEC	-.504E+01	AT	.593	SEC
SR-10C	.263E+01	AT	.359	SEC	-.435E+01	AT	.876	SEC
SR-11A	.109E+02	AT	.474	SEC	-.903E+01	AT	.371	SEC
SR-11B	.689E+01	AT	.474	SEC	-.591E+01	AT	.840	SEC
SR-11C	.279E+01	AT	.738	SEC	-.252E+01	AT	.527	SEC
SR-12A	.923E+01	AT	.572	SEC	-.790E+01	AT	.852	SEC
SR-12B	.744E+01	AT	.572	SEC	-.572E+01	AT	1.083	SEC
SR-12C	.387E+01	AT	.573	SEC	-.384E+01	AT	.546	SEC
SG---1	.114E+01	AT	.875	SEC	-.124E+01	AT	.330	SEC
SG---2	.139E+01	AT	.222	SEC	-.124E+01	AT	.428	SEC
SG---3	.137E+01	AT	.753	SEC	-.161E+01	AT	.563	SEC
SG---4	.836E+00	AT	.657	SEC	-.112E+01	AT	.059	SEC
SG---5	.127E+01	AT	.187	SEC	-.167E+01	AT	.565	SEC
SG---6	.114E+01	AT	.238	SEC	-.132E+01	AT	.477	SEC
SG---7	.158E+01	AT	.635	SEC	-.240E+01	AT	.204	SEC
SG---8	.138E+01	AT	.032	SEC	-.194E+01	AT	.577	SEC
SG---9	.139E+01	AT	.033	SEC	-.209E+01	AT	.478	SEC
SG--10	.824E+01	AT	1.045	SEC	-.796E+01	AT	.188	SEC
SG--11	.212E+02	AT	.031	SEC	-.221E+02	AT	.207	SEC
SG--12	.147E+02	AT	.029	SEC	-.135E+02	AT	.614	SEC
SG--13	.230E+02	AT	.029	SEC	-.217E+02	AT	.479	SEC
SG--14	.458E+02	AT	.028	SEC	-.516E+02	AT	.477	SEC
SG--15	.753E+01	AT	.536	SEC	-.131E+02	AT	.416	SEC
SG--16	.836E+01	AT	.232	SEC	-.150E+02	AT	.819	SEC
SG--17	.169E+01	AT	.375	SEC	-.172E+01	AT	.734	SEC
SG--18	.123E+01	AT	.519	SEC	-.110E+01	AT	.481	SEC
SG--19	.155E+01	AT	.376	SEC	-.180E+01	AT	.415	SEC
SG--20	.798E+00	AT	.381	SEC	-.101E+01	AT	.567	SEC
SG--21	.151E+01	AT	.525	SEC	-.172E+01	AT	.820	SEC
SG--22	.167E+01	AT	.379	SEC	-.148E+01	AT	.415	SEC
SG--23	.972E+00	AT	.883	SEC	-.102E+01	AT	1.068	SEC
SG--24	.129E+01	AT	.873	SEC	-.932E+00	AT	1.051	SEC
SG--25	.941E+00	AT	.518	SEC	-.118E+01	AT	.293	SEC
SG--26	.121E+01	AT	1.054	SEC	-.112E+01	AT	.454	SEC

SG--27	.104E+01 AT .942 SEC	-.714E+00 AT .919 SEC
SG--28	.112E+01 AT .525 SEC	-.845E+00 AT .821 SEC
SG--29	.631E+00 AT .688 SEC	-.811E+00 AT .632 SEC
SG--30	.972E+00 AT .259 SEC	-.936E+00 AT .884 SEC
SG--31	.451E+01 AT 1.095 SEC	-.629E+00 AT .387 SEC
SG--32	.581E+01 AT 1.095 SEC	-.768E+00 AT .475 SEC
SG--33	.140E+02 AT 1.001 SEC	-.326E+01 AT .433 SEC
SG--34	.157E+01 AT 1.054 SEC	-.222E+01 AT .427 SEC
SG--35	.409E+01 AT .717 SEC	-.396E+01 AT .736 SEC
SG--36	.367E+01 AT .846 SEC	-.397E+01 AT .765 SEC
SG--37	.161E+01 AT .585 SEC	-.150E+01 AT .642 SEC
SG--38	.975E+00 AT .588 SEC	-.926E+00 AT 1.089 SEC
SG--39	.981E+00 AT .558 SEC	-.739E+00 AT .387 SEC
SG--40	.238E+01 AT .212 SEC	-.256E+01 AT .840 SEC
SG--41	.576E+00 AT .441 SEC	-.592E+00 AT .496 SEC
SG--42	.247E+01 AT .026 SEC	-.320E+01 AT .823 SEC
SG--43	.681E+00 AT .315 SEC	-.558E+00 AT .874 SEC
SG--44	.837E+00 AT 1.001 SEC	-.260E+01 AT 1.051 SEC
SG--45	.227E+01 AT 1.048 SEC	-.255E+01 AT 1.016 SEC
SG--46	.118E+01 AT .911 SEC	-.118E+01 AT .948 SEC
SG--47	.927E+00 AT .441 SEC	-.124E+01 AT .993 SEC
SG--48	.186E+01 AT .951 SEC	-.188E+01 AT .913 SEC
SG--49	.953E+00 AT .642 SEC	-.108E+01 AT .622 SEC
SG--50	.470E+01 AT 1.053 SEC	-.359E+01 AT 1.023 SEC
SG--52	.356E+01 AT .935 SEC	-.486E+01 AT 1.054 SEC
SG--53	.144E+01 AT .277 SEC	-.170E+01 AT .260 SEC
SG--54	.186E+01 AT 1.021 SEC	-.227E+01 AT .668 SEC
SG--55	.245E+01 AT .612 SEC	-.292E+01 AT .668 SEC
SG--56	.379E+01 AT .005 SEC	-.336E+01 AT .142 SEC
SG--57	.387E+01 AT .005 SEC	-.344E+01 AT .157 SEC
SG--59	.422E+01 AT .005 SEC	-.366E+01 AT .143 SEC
SG--60	.138E+01 AT 1.092 SEC	-.930E+00 AT .800 SEC
SG--61	.137E+01 AT .705 SEC	-.159E+01 AT .817 SEC
SG--62	.148E+01 AT .685 SEC	-.149E+01 AT .245 SEC
SG--63	.953E+00 AT .533 SEC	-.709E+00 AT .548 SEC

S T R E S S E S

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LOCATION        CHANNELS

   1          36 (SG---1      )      MAX COMBINED STRESS =  4.258E+01    AT TIME =  2.220E-01
               0 (NOT AVAIL.)        MAX HOOP STRESS     =  1.020E+01    AT TIME =  5.250E-01
              37 (SG---2      )      MAX AXIAL STRESS    =  3.400E+01    AT TIME =  5.250E-01
               0 (NOT AVAIL.)        MAX BENDING STRESS  =  1.846E+01    AT TIME =  9.030E-01
               0 (NOT AVAIL.)

LOCATION        CHANNELS

   2          58 (SG--23      )      MAX COMBINED STRESS =  3.940E+01    AT TIME =  8.730E-01
               0 (NOT AVAIL.)        MAX HOOP STRESS     =  9.960E+00    AT TIME =  8.840E-01
              59 (SG--24      )      MAX AXIAL STRESS    =  3.320E+01    AT TIME =  8.840E-01
               0 (NOT AVAIL.)        MAX BENDING STRESS  =  2.504E+01    AT TIME =  1.069E+00
               0 (NOT AVAIL.)

LOCATION        CHANNELS

   3          60 (SG--25      )      MAX COMBINED STRESS =  3.696E+01    AT TIME =  1.054E+00
               0 (NOT AVAIL.)        MAX HOOP STRESS     = -8.612E+00    AT TIME =  4.560E-01
              61 (SG--26      )      MAX AXIAL STRESS    = -2.871E+01    AT TIME =  4.560E-01
               0 (NOT AVAIL.)        MAX BENDING STRESS  =  2.096E+01    AT TIME =  8.750E-01
               0 (NOT AVAIL.)

LOCATION        CHANNELS

   4          62 (SG--27      )      MAX COMBINED STRESS =  3.427E+01    AT TIME =  5.250E-01
               0 (NOT AVAIL.)        MAX HOOP STRESS     =  7.799E+00    AT TIME =  5.260E-01
              63 (SG--28      )      MAX AXIAL STRESS    =  2.600E+01    AT TIME =  5.260E-01
               0 (NOT AVAIL.)        MAX BENDING STRESS  =  1.780E+01    AT TIME =  4.280E-01
               0 (NOT AVAIL.)

LOCATION        CHANNELS

   5          64 (SG--29      )      MAX COMBINED STRESS =  2.981E+01    AT TIME =  2.590E-01
               0 (NOT AVAIL.)        MAX HOOP STRESS     = -6.087E+00    AT TIME =  8.830E-01
              65 (SG--30      )      MAX AXIAL STRESS    = -2.029E+01    AT TIME =  8.830E-01
               0 (NOT AVAIL.)        MAX BENDING STRESS  =  1.723E+01    AT TIME =  4.280E-01
               0 (NOT AVAIL.)

LOCATION        CHANNELS

   6           0 (NOT AVAIL.)        MAX COMBINED STRESS =  1.780E+02    AT TIME =  1.095E+00
              66 (SG--31      )      MAX HOOP STRESS     =  4.745E+01    AT TIME =  1.095E+00
               0 (NOT AVAIL.)        MAX AXIAL STRESS    =  1.582E+02    AT TIME =  1.095E+00
              67 (SG--32      )      MAX BENDING STRESS  =  2.894E+01    AT TIME =  6.890E-01
               0 (NOT AVAIL.)

LOCATION        CHANNELS

   7           0 (NOT AVAIL.)        MAX COMBINED STRESS =  4.301E+02    AT TIME =  1.001E+00
              68 (SG--33      )      MAX HOOP STRESS     =  6.937E+01    AT TIME =  9.880E-01
               0 (NOT AVAIL.)        MAX AXIAL STRESS    =  2.312E+02    AT TIME =  9.880E-01
              69 (SG--34      )      MAX BENDING STRESS  =  2.051E+02    AT TIME =  1.001E+00
               0 (NOT AVAIL.)

LOCATION        CHANNELS

   8           0 (NOT AVAIL.)        MAX COMBINED STRESS =  1.255E+02    AT TIME =  7.170E-01
              71 (SG--36      )      MAX HOOP STRESS     =  1.861E+01    AT TIME =  9.830E-01
               0 (NOT AVAIL.)        MAX AXIAL STRESS    =  6.204E+01    AT TIME =  9.830E-01
              70 (SG--35      )      MAX BENDING STRESS  =  1.049E+02    AT TIME =  7.690E-01
               0 (NOT AVAIL.)

LOCATION        CHANNELS

   9          72 (SG--37      )      MAX COMBINED STRESS =  5.261E+01    AT TIME =  5.860E-01
              73 (SG--38      )      MAX HOOP STRESS     =  6.954E+00    AT TIME =  5.860E-01
               0 (NOT AVAIL.)        MAX AXIAL STRESS    =  2.318E+01    AT TIME =  5.860E-01
              74 (SG--39      )      MAX BENDING STRESS  =  3.282E+01    AT TIME =  9.930E-01
               0 (NOT AVAIL.)
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LOCATION	CHANNELS				
10	75 (SG--40)	MAX COMBINED STRESS	= -8.554E+01	AT TIME =	8.230E-01
	76 (SG--41)	MAX HOOP STRESS	= 6.746E+00	AT TIME =	2.700E-02
	77 (SG--42)	MAX AXIAL STRESS	= 2.249E+01	AT TIME =	2.700E-02
	78 (SG--43)	MAX BENDING STRESS	= 7.760E+01	AT TIME =	2.130E-01
	0 (NOT AVAIL.)				

LOCATION	CHANNELS				
11	79 (SG--44)	MAX COMBINED STRESS	= -7.985E+01	AT TIME =	1.091E+00
	0 (NOT AVAIL.)	MAX HOOP STRESS	= -2.000E+01	AT TIME =	1.019E+00
	80 (SG--45)	MAX AXIAL STRESS	= -6.667E+01	AT TIME =	1.019E+00
	0 (NOT AVAIL.)	MAX BENDING STRESS	= 7.020E+01	AT TIME =	1.090E+00
	0 (NOT AVAIL.)				

LOCATION	CHANNELS				
12	81 (SG--46)	MAX COMBINED STRESS	= 5.032E+01	AT TIME =	9.110E-01
	82 (SG--47)	MAX HOOP STRESS	= -2.077E+00	AT TIME =	1.051E+00
	83 (SG--48)	MAX AXIAL STRESS	= -6.923E+00	AT TIME =	1.051E+00
	84 (SG--49)	MAX BENDING STRESS	= 4.831E+01	AT TIME =	9.120E-01
	0 (NOT AVAIL.)				

LOCATION	CHANNELS				
13	85 (SG--50)	MAX COMBINED STRESS	= 1.523E+02	AT TIME =	1.053E+00
	0 (NOT AVAIL.)	MAX HOOP STRESS	= -9.972E+00	AT TIME =	2.610E-01
	86 (SG--52)	MAX AXIAL STRESS	= -3.324E+01	AT TIME =	2.610E-01
	87 (SG--53)	MAX BENDING STRESS	= 1.467E+02	AT TIME =	1.053E+00
	0 (NOT AVAIL.)				

LOCATION	CHANNELS				
14	88 (SG--54)	MAX COMBINED STRESS	= -8.961E+01	AT TIME =	6.680E-01
	0 (NOT AVAIL.)	MAX HOOP STRESS	= -2.389E+01	AT TIME =	6.680E-01
	89 (SG--55)	MAX AXIAL STRESS	= -7.964E+01	AT TIME =	6.680E-01
	0 (NOT AVAIL.)	MAX BENDING STRESS	= 1.483E+01	AT TIME =	5.800E-01
	0 (NOT AVAIL.)				

LOCATION	CHANNELS				
15	90 (SG--56)	MAX COMBINED STRESS	= 1.289E+02	AT TIME =	5.000E-03
	91 (SG--57)	MAX HOOP STRESS	= 3.641E+01	AT TIME =	5.000E-03
	0 (NOT AVAIL.)	MAX AXIAL STRESS	= 1.214E+02	AT TIME =	5.000E-03
	93 (SG--59)	MAX BENDING STRESS	= 1.925E+01	AT TIME =	2.150E-01
	0 (NOT AVAIL.)				

LOCATION	CHANNELS				
16	94 (SG--60)	MAX COMBINED STRESS	= -4.408E+01	AT TIME =	8.320E-01
	95 (SG--61)	MAX HOOP STRESS	= -2.824E+00	AT TIME =	8.960E-01
	96 (SG--62)	MAX AXIAL STRESS	= -9.413E+00	AT TIME =	8.960E-01
	97 (SG--63)	MAX BENDING STRESS	= 4.367E+01	AT TIME =	8.320E-01
	0 (NOT AVAIL.)				

ROSETTES

TEST MT3

ROSETTE	CHANNELS	PRINCIPLE STRESS MIN	PRINCIPLE STRESS MAX	SHEAR STRESS MIN	SHEAR STRESS MAX	STRESS INTENSITY MIN	STRESS INTENSITY MAX
1	1 (SR-1A) 2 (SR-1B) 3 (SR-1C)	-1.172E+02	1.113E+02	4.871E-01	4.609E+01	2.673E+00	1.172E+02
2	4 (SR-2A) 0 (NOT AVAIL.) 5 (SR-2C)	** ROSETTE COMPONENT NOT AVAILABLE **					
3	6 (SR-3A) 7 (SR-3B) 8 (SR-3C)	-3.060E+02	4.281E+02	8.430E-01	1.787E+02	2.779E+00	4.281E+02
4	9 (SR-4A) 10 (SR-4B) 11 (SR-4C)	-1.299E+02	1.428E+02	1.230E-01	6.159E+01	2.600E+00	1.428E+02
5	12 (SR-5A) 13 (SR-5B) 14 (SR-5C)	-7.023E+01	8.648E+01	1.359E+00	4.009E+01	3.997E+00	8.648E+01
6	15 (SR-6A) 16 (SR-6B) 17 (SR-6C)	-7.293E+01	9.619E+01	9.839E-02	4.165E+01	1.570E+00	9.619E+01
7	18 (SR-7A) 19 (SR-7B) 20 (SR-7C)	-4.496E+02	3.727E+02	2.733E-01	6.280E+01	4.243E+00	4.496E+02
8	21 (SR-8A) 22 (SR-8B) 23 (SR-8C)	-5.822E+02	4.119E+02	6.874E-01	7.286E+01	1.087E+01	5.822E+02
9	24 (SR-9A) 25 (SR-9B) 26 (SR-9C)	-3.071E+02	3.487E+02	2.334E-01	8.519E+01	5.504E+00	3.487E+02
10	27 (SR-10A) 28 (SR-10B) 29 (SR-10C)	-2.886E+02	2.710E+02	2.662E-01	1.040E+02	1.432E+00	2.886E+02
11	30 (SR-11A) 31 (SR-11B) 32 (SR-11C)	-2.880E+02	3.546E+02	1.503E+00	9.689E+01	1.120E+01	3.546E+02
12	33 (SR-12A) 34 (SR-12B) 35 (SR-12C)	-2.644E+02	3.206E+02	5.386E-01	7.909E+01	8.186E+00	3.206E+02

TEST MT5

SENSOR ID	MAX VALUE		MIN VALUE	
PT-17	.160E+00 AT	.748 SEC	-.145E+00 AT	.859 SEC
PT-18	.110E+00 AT	.762 SEC	-.507E-01 AT	.343 SEC
PT-19	.220E+03 AT	.464 SEC	-.246E+02 AT	.005 SEC
PT-20	.194E+03 AT	.442 SEC	-.234E+02 AT	.005 SEC
A---1	.771E+00 AT	.506 SEC	-.909E+00 AT	.625 SEC
A---2	.539E+00 AT	.620 SEC	-.527E+00 AT	.460 SEC
A---3	.207E+00 AT	.380 SEC	-.199E+00 AT	.738 SEC
A---4	.504E+00 AT	.345 SEC	-.461E+00 AT	.879 SEC
PT--2	.217E+01 AT	.482 SEC	-.295E+01 AT	.348 SEC
PT--3	.386E+01 AT	.379 SEC	-.364E+01 AT	.387 SEC
PT--4	.138E+01 AT	.449 SEC	-.250E+01 AT	.487 SEC
PT--6	.565E+00 AT	.303 SEC	-.939E+00 AT	.705 SEC
PT--7	.701E+00 AT	.208 SEC	-.110E+01 AT	.331 SEC
PT--8	.645E+00 AT	.206 SEC	-.168E+01 AT	.510 SEC
PT--9	.634E+00 AT	.253 SEC	-.917E+00 AT	.410 SEC
PT-10	.477E+00 AT	.386 SEC	-.584E+00 AT	.516 SEC
PT-11	.807E+00 AT	.431 SEC	-.182E+01 AT	.480 SEC
PT-12	.861E-01 AT	.325 SEC	-.702E-01 AT	.849 SEC
PT-13	.709E+00 AT	.253 SEC	-.139E+01 AT	.506 SEC
PT-14	.809E+00 AT	.468 SEC	-.151E+01 AT	.508 SEC
PT-15	.170E+03 AT	.155 SEC	-.450E+02 AT	.005 SEC
PT-16	.162E+03 AT	.156 SEC	-.465E+02 AT	.004 SEC

SENSOR ID	MAX VALUE				MIN VALUE			
SR-1A	.359E+01	AT	.397	SEC	-.283E+01	AT	.601	SEC
SR-1B	.212E+01	AT	.398	SEC	-.158E+01	AT	.788	SEC
SR-1C	.722E+00	AT	.368	SEC	-.636E+00	AT	.507	SEC
SR-2A	.337E+01	AT	.485	SEC	-.239E+01	AT	.285	SEC
SR-2C	.785E+00	AT	.590	SEC	-.839E+00	AT	.289	SEC
SR-3A	.940E+01	AT	.513	SEC	-.875E+01	AT	.306	SEC
SR-3B	.168E+01	AT	.648	SEC	-.888E+00	AT	.223	SEC
SR-3C	.173E+01	AT	.309	SEC	-.117E+01	AT	.428	SEC
SR-4A	.281E+01	AT	.538	SEC	-.237E+01	AT	.271	SEC
SR-4B	.121E+01	AT	.128	SEC	-.912E+00	AT	.122	SEC
SR-4C	.796E+00	AT	.686	SEC	-.174E+01	AT	.833	SEC
SR-5A	.239E+01	AT	.645	SEC	-.121E+01	AT	.128	SEC
SR-5B	.174E+01	AT	.500	SEC	-.132E+01	AT	.457	SEC
SR-5C	.129E+01	AT	.298	SEC	-.111E+01	AT	.441	SEC
SR-6A	.298E+01	AT	.697	SEC	-.144E+01	AT	.509	SEC
SR-6B	.171E+01	AT	.698	SEC	-.129E+01	AT	.506	SEC
SR-6C	.124E+01	AT	.447	SEC	-.108E+01	AT	.478	SEC
SR-7A	.735E+01	AT	.428	SEC	-.952E+01	AT	.452	SEC
SR-7B	.576E+01	AT	.428	SEC	-.763E+01	AT	.452	SEC
SR-7C	.510E+01	AT	.145	SEC	-.641E+01	AT	.399	SEC
SR-8A	.107E+02	AT	.333	SEC	-.862E+01	AT	.543	SEC
SR-8B	.821E+01	AT	.512	SEC	-.717E+01	AT	.726	SEC
SR-9B	.954E+01	AT	.303	SEC	-.472E+01	AT	.143	SEC
SR-9C	.646E+01	AT	.302	SEC	-.412E+01	AT	.431	SEC
SR-10A	.772E+01	AT	.804	SEC	-.580E+01	AT	.943	SEC
SR-10B	.499E+01	AT	.805	SEC	-.459E+01	AT	.824	SEC
SR-10C	.304E+01	AT	.690	SEC	-.436E+01	AT	.823	SEC
SR-11A	.101E+02	AT	.303	SEC	-.825E+01	AT	.257	SEC
SR-11B	.578E+01	AT	.306	SEC	-.462E+01	AT	.038	SEC
SR-11C	.189E+01	AT	.484	SEC	-.336E+01	AT	.438	SEC
SR-12A	.703E+01	AT	.164	SEC	-.813E+01	AT	.487	SEC
SR-12B	.606E+01	AT	.164	SEC	-.591E+01	AT	.487	SEC
SR-12C	.427E+01	AT	.525	SEC	-.399E+01	AT	.486	SEC
SG---1	.141E+01	AT	.371	SEC	-.102E+01	AT	.274	SEC
SG---2	.153E+01	AT	.069	SEC	-.111E+01	AT	.272	SEC
SG---3	.155E+01	AT	.073	SEC	-.121E+01	AT	.433	SEC
SG---4	.132E+01	AT	.302	SEC	-.996E+00	AT	.987	SEC
SG---5	.139E+01	AT	.375	SEC	-.118E+01	AT	.016	SEC
SG---6	.132E+01	AT	.848	SEC	-.126E+01	AT	.058	SEC
SG---7	.193E+01	AT	.217	SEC	-.205E+01	AT	.329	SEC
SG---8	.984E+00	AT	.032	SEC	-.168E+01	AT	.425	SEC
SG---9	.155E+01	AT	.038	SEC	-.156E+01	AT	.328	SEC
SG--10	.991E+01	AT	.800	SEC	-.851E+01	AT	.519	SEC
SG--11	.201E+02	AT	.037	SEC	-.194E+02	AT	.011	SEC
SG--12	.933E+01	AT	.033	SEC	-.970E+01	AT	.052	SEC
SG--13	.183E+02	AT	.035	SEC	-.154E+02	AT	.008	SEC
SG--14	.297E+02	AT	.033	SEC	-.428E+02	AT	.311	SEC
SG--15	.999E+01	AT	.139	SEC	-.130E+02	AT	.053	SEC
SG--16	.893E+01	AT	.034	SEC	-.127E+02	AT	.309	SEC
SG--17	.184E+01	AT	.140	SEC	-.159E+01	AT	.012	SEC
SG--18	.917E+00	AT	.139	SEC	-.143E+01	AT	.528	SEC
SG--19	.159E+01	AT	.030	SEC	-.128E+01	AT	.308	SEC
SG--20	.898E+00	AT	.038	SEC	-.143E+01	AT	.441	SEC
SG--21	.121E+01	AT	.035	SEC	-.125E+01	AT	1.027	SEC
SG--22	.101E+01	AT	.139	SEC	-.168E+01	AT	.722	SEC
SG--23	.647E+00	AT	.151	SEC	-.118E+01	AT	.311	SEC
SG--24	.110E+01	AT	.137	SEC	-.129E+01	AT	.701	SEC
SG--25	.124E+01	AT	.578	SEC	-.762E+00	AT	.282	SEC
SG--26	.163E+01	AT	.379	SEC	-.800E+00	AT	.314	SEC
SG--27	.727E+00	AT	.235	SEC	-.143E+01	AT	.855	SEC
SG--28	.881E+00	AT	.076	SEC	-.869E+00	AT	.961	SEC

SG--29	.977E+00	AT	.589	SEC	-.658E+00	AT	.352	SEC
SG--30	.687E+00	AT	.901	SEC	-.115E+01	AT	.855	SEC
SG--31	.375E+01	AT	1.046	SEC	-.581E+00	AT	.014	SEC
SG--32	.474E+01	AT	1.046	SEC	-.589E+00	AT	.024	SEC
SG--33	.128E+02	AT	1.046	SEC	-.132E+01	AT	.431	SEC
SG--34	.254E+01	AT	1.007	SEC	-.772E+00	AT	.192	SEC
SG--35	.331E+01	AT	.637	SEC	-.373E+01	AT	.488	SEC
SG--36	.308E+01	AT	.416	SEC	-.398E+01	AT	.447	SEC
SG--37	.210E+01	AT	.406	SEC	-.161E+01	AT	.352	SEC
SG--38	.137E+01	AT	.839	SEC	-.770E+00	AT	.177	SEC
SG--39	.109E+01	AT	.588	SEC	-.945E+00	AT	.753	SEC
SG--40	.130E+01	AT	.256	SEC	-.196E+01	AT	.787	SEC
SG--41	.508E+00	AT	.588	SEC	-.456E+00	AT	.425	SEC
SG--42	.142E+01	AT	.274	SEC	-.182E+01	AT	.774	SEC
SG--43	.474E+00	AT	.018	SEC	-.591E+00	AT	.641	SEC
SG--44	.971E+00	AT	.305	SEC	-.161E+01	AT	.557	SEC
SG--45	.141E+01	AT	.483	SEC	-.274E+01	AT	.520	SEC
SG--46	.586E+00	AT	.487	SEC	-.106E+01	AT	.464	SEC
SG--47	.729E+00	AT	.570	SEC	-.114E+01	AT	.591	SEC
SG--48	.141E+01	AT	.462	SEC	-.169E+01	AT	.486	SEC
SG--49	.121E+01	AT	.491	SEC	-.924E+00	AT	.649	SEC
SG--50	.416E+01	AT	.566	SEC	-.434E+01	AT	.600	SEC
SG--52	.443E+01	AT	.601	SEC	-.394E+01	AT	.489	SEC
SG--53	.156E+01	AT	.427	SEC	-.180E+01	AT	.405	SEC
SG--54	.206E+01	AT	.273	SEC	-.166E+01	AT	.594	SEC
SG--55	.239E+01	AT	.204	SEC	-.239E+01	AT	.690	SEC
SG--56	.288E+01	AT	.004	SEC	-.288E+01	AT	.141	SEC
SG--57	.350E+01	AT	.004	SEC	-.292E+01	AT	.142	SEC
SG--59	.412E+01	AT	.005	SEC	-.324E+01	AT	.156	SEC
SG--60	.143E+01	AT	.715	SEC	-.882E+00	AT	.178	SEC
SG--61	.118E+01	AT	.178	SEC	-.113E+01	AT	.716	SEC
SG--62	.175E+01	AT	.676	SEC	-.115E+01	AT	.187	SEC
SG--63	.760E+00	AT	.185	SEC	-.119E+01	AT	.503	SEC

STRESSES

LOCATION	CHANNELS				
1	36 (SG---1)	MAX COMBINED STRESS =	4.702E+01	AT TIME =	6.900E-02
	0 (NOT AVAIL.)	MAX HOOP STRESS =	1.213E+01	AT TIME =	6.900E-02
	37 (SG---2)	MAX AXIAL STRESS =	4.043E+01	AT TIME =	6.900E-02
	0 (NOT AVAIL.)	MAX BENDING STRESS =	1.714E+01	AT TIME =	5.820E-01
	0 (NOT AVAIL.)				
2	58 (SG--23)	MAX COMBINED STRESS =	-3.960E+01	AT TIME =	7.010E-01
	0 (NOT AVAIL.)	MAX HOOP STRESS =	-8.922E+00	AT TIME =	8.730E-01
	59 (SG--24)	MAX AXIAL STRESS =	-2.841E+01	AT TIME =	8.730E-01
	0 (NOT AVAIL.)	MAX BENDING STRESS =	2.599E+01	AT TIME =	6.410E-01
	0 (NOT AVAIL.)				
3	60 (SG--25)	MAX COMBINED STRESS =	4.994E+01	AT TIME =	3.790E-01
	0 (NOT AVAIL.)	MAX HOOP STRESS =	8.629E+00	AT TIME =	3.790E-01
	61 (SG--26)	MAX AXIAL STRESS =	2.876E+01	AT TIME =	3.790E-01
	0 (NOT AVAIL.)	MAX BENDING STRESS =	2.175E+01	AT TIME =	3.780E-01
	0 (NOT AVAIL.)				
4	62 (SG--27)	MAX COMBINED STRESS =	-4.376E+01	AT TIME =	8.550E-01
	0 (NOT AVAIL.)	MAX HOOP STRESS =	-8.041E+00	AT TIME =	7.260E-01
	63 (SG--28)	MAX AXIAL STRESS =	-2.680E+01	AT TIME =	7.260E-01
	0 (NOT AVAIL.)	MAX BENDING STRESS =	2.456E+01	AT TIME =	1.037E+00
	0 (NOT AVAIL.)				
5	64 (SG--29)	MAX COMBINED STRESS =	-3.520E+01	AT TIME =	8.550E-01
	0 (NOT AVAIL.)	MAX HOOP STRESS =	6.850E+00	AT TIME =	5.890E-01
	65 (SG--30)	MAX AXIAL STRESS =	2.203E+01	AT TIME =	5.890E-01
	0 (NOT AVAIL.)	MAX BENDING STRESS =	2.420E+01	AT TIME =	9.550E-01
	0 (NOT AVAIL.)				
6	0 (NOT AVAIL.)	MAX COMBINED STRESS =	1.453E+02	AT TIME =	1.046E+00
	66 (SG--31)	MAX HOOP STRESS =	3.905E+01	AT TIME =	1.046E+00
	0 (NOT AVAIL.)	MAX AXIAL STRESS =	1.302E+02	AT TIME =	1.046E+00
	67 (SG--32)	MAX BENDING STRESS =	2.232E+01	AT TIME =	7.070E-01
	0 (NOT AVAIL.)				
7	0 (NOT AVAIL.)	MAX COMBINED STRESS =	3.913E+02	AT TIME =	1.046E+00
	68 (SG--33)	MAX HOOP STRESS =	6.961E+01	AT TIME =	1.045E+00
	0 (NOT AVAIL.)	MAX AXIAL STRESS =	2.320E+02	AT TIME =	1.045E+00
	69 (SG--34)	MAX BENDING STRESS =	1.620E+02	AT TIME =	8.890E-01
	0 (NOT AVAIL.)				
8	0 (NOT AVAIL.)	MAX COMBINED STRESS =	-1.221E+02	AT TIME =	4.470E-01
	71 (SG--36)	MAX HOOP STRESS =	2.139E+01	AT TIME =	4.710E-01
	0 (NOT AVAIL.)	MAX AXIAL STRESS =	7.130E+01	AT TIME =	4.710E-01
	70 (SG--35)	MAX BENDING STRESS =	9.670E+01	AT TIME =	4.880E-01
	0 (NOT AVAIL.)				
9	72 (SG--37)	MAX COMBINED STRESS =	6.785E+01	AT TIME =	4.060E-01
	73 (SG--38)	MAX HOOP STRESS =	1.059E+01	AT TIME =	4.070E-01
	0 (NOT AVAIL.)	MAX AXIAL STRESS =	3.929E+01	AT TIME =	4.070E-01
	74 (SG--39)	MAX BENDING STRESS =	3.809E+01	AT TIME =	8.380E-01
	0 (NOT AVAIL.)				

TEST MT5

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LOCATION      CHANNELS

   10         75 (SG--40     )    MAX COMBINED STRESS = -5.683E+01   AT TIME =  7.870E-01
              76 (SG--41     )    MAX HOOP STRESS     = -4.045E+00   AT TIME =  6.410E-01
              77 (SG--42     )    MAX AXIAL STRESS    = -1.348E+01   AT TIME =  6.410E-01
              78 (SG--43     )    MAX BENDING STRESS  =  5.080E+01   AT TIME =  7.880E-01
               0 (NOT AVAIL.)

LOCATION      CHANNELS

   11         79 (SG--44     )    MAX COMBINED STRESS = -8.405E+01   AT TIME =  5.200E-01
               0 (NOT AVAIL.)     MAX HOOP STRESS     = -1.412E+01   AT TIME =  5.200E-01
              80 (SG--45     )    MAX AXIAL STRESS    = -4.707E+01   AT TIME =  5.200E-01
               0 (NOT AVAIL.)     MAX BENDING STRESS  =  3.880E+01   AT TIME =  4.850E-01
               0 (NOT AVAIL.)

LOCATION      CHANNELS

   12         81 (SG--46     )    MAX COMBINED STRESS = -4.487E+01   AT TIME =  4.870E-01
              82 (SG--47     )    MAX HOOP STRESS     = -1.920E+00   AT TIME =  7.960E-01
              83 (SG--48     )    MAX AXIAL STRESS    = -6.401E+00   AT TIME =  7.960E-01
              84 (SG--49     )    MAX BENDING STRESS  =  4.163E+01   AT TIME =  4.880E-01
               0 (NOT AVAIL.)

LOCATION      CHANNELS

   13         85 (SG--50     )    MAX COMBINED STRESS = -1.382E+02   AT TIME =  5.990E-01
               0 (NOT AVAIL.)     MAX HOOP STRESS     = -1.012E+01   AT TIME =  4.070E-01
              86 (SG--52     )    MAX AXIAL STRESS    = -3.375E+01   AT TIME =  4.070E-01
              87 (SG--53     )    MAX BENDING STRESS  =  1.344E+02   AT TIME =  6.000E-01
               0 (NOT AVAIL.)

LOCATION      CHANNELS

   14         88 (SG--54     )    MAX COMBINED STRESS =  7.325E+01   AT TIME =  2.040E-01
               0 (NOT AVAIL.)     MAX HOOP STRESS     =  1.990E+01   AT TIME =  2.040E-01
              89 (SG--55     )    MAX AXIAL STRESS    =  6.632E+01   AT TIME =  2.040E-01
               0 (NOT AVAIL.)     MAX BENDING STRESS  =  2.247E+01   AT TIME =  7.290E-01
               0 (NOT AVAIL.)

LOCATION      CHANNELS

   15         90 (SG--56     )    MAX COMBINED STRESS =  1.280E+02   AT TIME =  4.000E-03
              91 (SG--57     )    MAX HOOP STRESS     =  3.210E+01   AT TIME =  4.000E-03
               0 (NOT AVAIL.)     MAX AXIAL STRESS    =  1.070E+02   AT TIME =  4.000E-03
              93 (SG--59     )    MAX BENDING STRESS  =  2.151E+01   AT TIME =  5.000E-03
               0 (NOT AVAIL.)

LOCATION      CHANNELS

   16         94 (SG--60     )    MAX COMBINED STRESS =  5.418E+01   AT TIME =  7.150E-01
              95 (SG--61     )    MAX HOOP STRESS     =  4.759E+00   AT TIME =  8.450E-01
              96 (SG--62     )    MAX AXIAL STRESS    =  1.586E+01   AT TIME =  8.450E-01
              97 (SG--63     )    MAX BENDING STRESS  =  4.619E+01   AT TIME =  7.160E-01
               0 (NOT AVAIL.)
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TEST MT5

ROSETTES

ROSETTE	CHANNELS	PRINCIPLE STRESS MIN	PRINCIPLE STRESS MAX	SHEAR STRESS MIN	SHEAR STRESS MAX	STRESS INTENSITY MIN	STRESS INTENSITY MAX
1	1 (SR-1A) 2 (SR-1B) 3 (SR-1C)	-9.041E+01	1.080E+02	3.761E-01	4.247E+01	1.689E+00	1.080E+02
2	4 (SR-2A) 0 (NOT AVAIL.) 5 (SR-2C)	** ROSETTE COMPONENT NOT AVAILABLE **					
3	6 (SR-3A) 7 (SR-3B) 8 (SR-3C)	-2.802E+02	3.104E+02	4.929E-01	1.385E+02	2.529E+00	3.104E+02
4	9 (SR-4A) 10 (SR-4B) 11 (SR-4C)	-9.203E+01	9.924E+01	4.998E-01	5.390E+01	2.098E+00	1.078E+02
5	12 (SR-5A) 13 (SR-5B) 14 (SR-5C)	-5.282E+01	7.583E+01	2.243E-01	3.393E+01	1.793E+00	7.583E+01
6	15 (SR-6A) 16 (SR-6B) 17 (SR-6C)	-4.741E+01	9.118E+01	1.063E-01	4.207E+01	1.974E+00	9.118E+01
7	18 (SR-7A) 19 (SR-7B) 20 (SR-7C)	-3.366E+02	2.593E+02	2.456E-01	5.731E+01	5.218E+00	3.366E+02
8	21 (SR-8A) 22 (SR-8B) 23 (NOT FOUND)	** ROSETTE COMPONENT NOT AVAILABLE **					
9	24 (NOT FOUND) 25 (SR-9B) 26 (SR-9C)	** ROSETTE COMPONENT NOT AVAILABLE **					
10	27 (SR-10A) 28 (SR-10B) 29 (SR-10C)	-2.114E+02	2.584E+02	9.179E-01	6.285E+01	3.897E+00	2.584E+02
11	30 (SR-11A) 31 (SR-11B) 32 (SR-11C)	-2.679E+02	3.211E+02	9.986E-01	9.563E+01	4.265E+00	3.211E+02
12	33 (SR-12A) 34 (SR-12B) 35 (SR-12C)	-2.853E+02	2.490E+02	3.945E-02	6.133E+01	3.549E+00	2.853E+02

TEST MT7

SENSOR ID	MAX VALUE	MIN VALUE
PT-17	.208E+00 AT .608 SEC	-.698E-01 AT .296 SEC
PT-18	.213E+00 AT .515 SEC	-.116E+00 AT .010 SEC
PT-19	.190E+03 AT .354 SEC	-.411E+02 AT .005 SEC
PT-20	.166E+03 AT .401 SEC	-.355E+02 AT .005 SEC
A---1	.756E+00 AT .800 SEC	-.827E+00 AT .824 SEC
A---2	.530E+00 AT .626 SEC	-.572E+00 AT .729 SEC
A---3	.189E+00 AT .437 SEC	-.251E+00 AT .307 SEC
A---4	.645E+00 AT .712 SEC	-.616E+00 AT .850 SEC
PT--2	.284E+01 AT .242 SEC	-.348E+01 AT .350 SEC
PT--3	.603E+01 AT .240 SEC	-.377E+01 AT .233 SEC
PT--4	.210E+01 AT .180 SEC	-.205E+01 AT .187 SEC
PT--6	.121E+01 AT .522 SEC	-.138E+01 AT .561 SEC
PT--7	.120E+01 AT .606 SEC	-.140E+01 AT .340 SEC
PT--8	.172E+01 AT .397 SEC	-.224E+01 AT .451 SEC
PT--9	.110E+01 AT .397 SEC	-.136E+01 AT .451 SEC
PT-10	.641E+00 AT .502 SEC	-.840E+00 AT .451 SEC
PT-11	.106E+01 AT .253 SEC	-.154E+01 AT .273 SEC
PT-12	.411E-01 AT .203 SEC	-.660E-01 AT .576 SEC
PT-13	.140E+01 AT .400 SEC	-.184E+01 AT .448 SEC
PT-14	.171E+01 AT .401 SEC	-.238E+01 AT .450 SEC
PT-15	.444E+02 AT .047 SEC	-.968E+02 AT .637 SEC
PT-16	.513E+02 AT .046 SEC	-.954E+02 AT .619 SEC

TEST MT7

SENSOR ID	MAX VALUE	MIN VALUE
SR-1A	.278E+01 AT .826 SEC	-.413E+01 AT .846 SEC
SR-1B	.131E+01 AT 1.097 SEC	-.220E+01 AT .845 SEC
SR-1C	.741E+00 AT .857 SEC	-.868E+00 AT .586 SEC
SR-2A	.468E+01 AT .732 SEC	-.342E+01 AT .707 SEC
SR-2C	.784E+00 AT .537 SEC	-.678E+00 AT .649 SEC
SR-3A	.755E+01 AT 1.079 SEC	-.112E+02 AT .647 SEC
SR-3B	.106E+01 AT .851 SEC	-.940E+00 AT 1.041 SEC
SR-3C	.115E+01 AT .837 SEC	-.136E+01 AT .786 SEC
SR-4A	.290E+01 AT .782 SEC	-.407E+01 AT .845 SEC
SR-4B	.980E+00 AT .996 SEC	-.105E+01 AT .272 SEC
SR-4C	.895E+00 AT .948 SEC	-.135E+01 AT .674 SEC
SR-5A	.244E+01 AT .628 SEC	-.203E+01 AT .647 SEC
SR-5B	.186E+01 AT .627 SEC	-.833E+00 AT .662 SEC
SR-5C	.143E+01 AT .569 SEC	-.633E+00 AT .870 SEC
SR-6A	.321E+01 AT .833 SEC	-.220E+01 AT .534 SEC
SR-6B	.193E+01 AT .557 SEC	-.151E+01 AT .799 SEC
SR-6C	.136E+01 AT .950 SEC	-.158E+01 AT .910 SEC
SR-7A	.986E+01 AT .845 SEC	-.656E+01 AT .644 SEC
SR-7B	.965E+01 AT .846 SEC	-.638E+01 AT .821 SEC
SR-7C	.716E+01 AT .846 SEC	-.751E+01 AT .816 SEC
SR-8A	.119E+02 AT .704 SEC	-.150E+02 AT .733 SEC
SR-8B	.105E+02 AT .702 SEC	-.108E+02 AT .734 SEC
SR-8C	.878E+01 AT .703 SEC	-.869E+01 AT .736 SEC
SR-9A	.801E+01 AT .398 SEC	-.790E+01 AT .856 SEC
SR-9B	.537E+01 AT .397 SEC	-.483E+01 AT .783 SEC
SR-9C	.465E+01 AT .832 SEC	-.375E+01 AT .782 SEC
SR-10A	.862E+01 AT .844 SEC	-.696E+01 AT .783 SEC
SR-10B	.452E+01 AT .842 SEC	-.512E+01 AT 1.110 SEC
SR-10C	.347E+01 AT .952 SEC	-.214E+01 AT 1.109 SEC
SR-11A	.114E+02 AT .391 SEC	-.708E+01 AT .626 SEC
SR-11B	.647E+01 AT .390 SEC	-.434E+01 AT .956 SEC
SR-11C	.263E+01 AT .567 SEC	-.242E+01 AT .869 SEC
SR-12A	.952E+01 AT .470 SEC	-.822E+01 AT 1.070 SEC
SR-12B	.695E+01 AT .469 SEC	-.669E+01 AT .902 SEC
SR-12C	.501E+01 AT .945 SEC	-.487E+01 AT .905 SEC
SG---1	.109E+01 AT .934 SEC	-.135E+01 AT .568 SEC
SG---2	.133E+01 AT .934 SEC	-.108E+01 AT 1.124 SEC
SG---3	.126E+01 AT .308 SEC	-.112E+01 AT .572 SEC
SG---4	.105E+01 AT .351 SEC	-.767E+00 AT .873 SEC
SG---5	.173E+01 AT .515 SEC	-.168E+01 AT .486 SEC
SG---6	.106E+01 AT .518 SEC	-.983E+00 AT .323 SEC
SG---7	.204E+01 AT .304 SEC	-.205E+01 AT .488 SEC
SG---8	.126E+01 AT .364 SEC	-.974E+00 AT .538 SEC
SG---9	.151E+01 AT .517 SEC	-.130E+01 AT .488 SEC
SG--10	.843E+01 AT .248 SEC	-.102E+02 AT .785 SEC
SG--11	.324E+02 AT .519 SEC	-.168E+02 AT .482 SEC
SG--12	.130E+02 AT .151 SEC	-.105E+02 AT .575 SEC
SG--13	.270E+02 AT .152 SEC	-.227E+02 AT .457 SEC
SG--14	.303E+02 AT .150 SEC	-.259E+02 AT .391 SEC
SG--15	.143E+02 AT .918 SEC	-.112E+02 AT .173 SEC
SG--16	.122E+02 AT .521 SEC	-.899E+01 AT 1.008 SEC
SG--17	.179E+01 AT .509 SEC	-.132E+01 AT 1.112 SEC
SG--18	.980E+00 AT .364 SEC	-.123E+01 AT .463 SEC
SG--19	.173E+01 AT .148 SEC	-.104E+01 AT .580 SEC
SG--20	.812E+00 AT .620 SEC	-.936E+00 AT .575 SEC
SG--21	.131E+01 AT .797 SEC	-.135E+01 AT .173 SEC
SG--22	.162E+01 AT .632 SEC	-.103E+01 AT .904 SEC
SG--23	.924E+00 AT .636 SEC	-.687E+00 AT .601 SEC
SG--24	.104E+01 AT 1.002 SEC	-.104E+01 AT .776 SEC
SG--25	.133E+01 AT .517 SEC	-.889E+00 AT 1.133 SEC
SG--26	.153E+01 AT .537 SEC	-.136E+01 AT 1.122 SEC

SG--27	.104E+01 AT .905 SEC	-.981E+00 AT .864 SEC
SG--28	.122E+01 AT .717 SEC	-.104E+01 AT .674 SEC
SG--29	.996E+00 AT .153 SEC	-.709E+00 AT 1.191 SEC
SG--30	.776E+00 AT 1.007 SEC	-.837E+00 AT .336 SEC
SG--31	.426E+01 AT 1.196 SEC	-.675E+00 AT .292 SEC
SG--32	.573E+01 AT 1.129 SEC	-.790E+00 AT .005 SEC
SG--33	.152E+02 AT 1.195 SEC	-.263E+01 AT .549 SEC
SG--34	.182E+01 AT 1.149 SEC	-.112E+01 AT .544 SEC
SG--35	.627E+01 AT .670 SEC	-.450E+01 AT .651 SEC
SG--36	.276E+01 AT .511 SEC	-.352E+01 AT .402 SEC
SG--37	.237E+01 AT .736 SEC	-.165E+01 AT .680 SEC
SG--38	.863E+00 AT .522 SEC	-.734E+00 AT .510 SEC
SG--39	.600E+00 AT .490 SEC	-.997E+00 AT 1.048 SEC
SG--40	.143E+01 AT .160 SEC	-.162E+01 AT .439 SEC
SG--41	.606E+00 AT .652 SEC	-.634E+00 AT .520 SEC
SG--42	.277E+01 AT .151 SEC	-.165E+01 AT .538 SEC
SG--43	.442E+00 AT .760 SEC	-.437E+00 AT .784 SEC
SG--44	.159E+01 AT .469 SEC	-.191E+01 AT .929 SEC
SG--45	.163E+01 AT .650 SEC	-.144E+01 AT .783 SEC
SG--46	.925E+00 AT 1.150 SEC	-.870E+00 AT .752 SEC
SG--47	.889E+00 AT .730 SEC	-.103E+01 AT .753 SEC
SG--48	.124E+01 AT .682 SEC	-.156E+01 AT 1.149 SEC
SG--49	.909E+00 AT .712 SEC	-.790E+00 AT .810 SEC
SG--50	.366E+01 AT .918 SEC	-.316E+01 AT .616 SEC
SG--52	.358E+01 AT .618 SEC	-.416E+01 AT .921 SEC
SG--53	.111E+01 AT .473 SEC	-.139E+01 AT .604 SEC
SG--54	.221E+01 AT .769 SEC	-.129E+01 AT .922 SEC
SG--55	.224E+01 AT .451 SEC	-.269E+01 AT .781 SEC
SG--56	.153E+01 AT .052 SEC	-.316E+01 AT .072 SEC
SG--57	.616E+00 AT .278 SEC	-.131E+01 AT .072 SEC
SG--59	.683E+00 AT .191 SEC	-.120E+01 AT .068 SEC
SG--60	.110E+01 AT .215 SEC	-.868E+00 AT .590 SEC
SG--61	.105E+01 AT .301 SEC	-.108E+01 AT .285 SEC
SG--62	.134E+01 AT .315 SEC	-.104E+01 AT .690 SEC
SG--63	.962E+00 AT .368 SEC	-.827E+00 AT .781 SEC

TEST MT7

S T R E S S E S

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LOCATION          CHANNELS

    1          35 (SG---1      )     MAX COMBINED STRESS = -4.143E+01    AT TIME =  5.680E-01
                0 (NOT AVAIL.)       MAX HOOP STRESS     =  1.113E+01    AT TIME =  9.340E-01
               37 (SG---2      )     MAX AXIAL STRESS    =  3.710E+01    AT TIME =  9.340E-01
                0 (NOT AVAIL.)       MAX BENDING STRESS  =  1.746E+01    AT TIME =  5.690E-01
                0 (NOT AVAIL.)

LOCATION          CHANNELS

    2          58 (SG--23      )     MAX COMBINED STRESS =  3.203E+01    AT TIME =  1.002E+00
                0 (NOT AVAIL.)       MAX HOOP STRESS     =  5.791E+00    AT TIME =  8.950E-01
               59 (SG--24      )     MAX AXIAL STRESS    =  1.930E+01    AT TIME =  8.950E-01
                0 (NOT AVAIL.)       MAX BENDING STRESS  =  1.820E+01    AT TIME =  1.002E+00
                0 (NOT AVAIL.)

LOCATION          CHANNELS

    3          60 (SG--25      )     MAX COMBINED STRESS =  4.691E+01    AT TIME =  5.370E-01
                0 (NOT AVAIL.)       MAX HOOP STRESS     =  1.068E+01    AT TIME =  5.160E-01
               61 (SG--26      )     MAX AXIAL STRESS    =  3.559E+01    AT TIME =  5.160E-01
                0 (NOT AVAIL.)       MAX BENDING STRESS  =  2.340E+01    AT TIME =  1.092E+00
                0 (NOT AVAIL.)

LOCATION          CHANNELS

    4          62 (SG--27      )     MAX COMBINED STRESS =  3.727E+01    AT TIME =  7.170E-01
                0 (NOT AVAIL.)       MAX HOOP STRESS     =  7.362E+00    AT TIME =  1.166E+00
               63 (SG--28      )     MAX AXIAL STRESS    =  2.454E+01    AT TIME =  1.166E+00
                0 (NOT AVAIL.)       MAX BENDING STRESS  =  2.003E+01    AT TIME =  7.190E-01
                0 (NOT AVAIL.)

LOCATION          CHANNELS

    5          64 (SG--29      )     MAX COMBINED STRESS =  3.054E+01    AT TIME =  1.530E-01
                0 (NOT AVAIL.)       MAX HOOP STRESS     =  5.504E+00    AT TIME =  1.080E+00
               65 (SG--30      )     MAX AXIAL STRESS    =  1.835E+01    AT TIME =  1.080E+00
                0 (NOT AVAIL.)       MAX BENDING STRESS  =  2.184E+01    AT TIME =  7.250E-01
                0 (NOT AVAIL.)

LOCATION          CHANNELS

    6           0 (NOT AVAIL.)       MAX COMBINED STRESS =  1.758E+02    AT TIME =  1.129E+00
               66 (SG--31      )     MAX HOOP STRESS     =  4.460E+01    AT TIME =  1.128E+00
                0 (NOT AVAIL.)       MAX AXIAL STRESS    =  1.487E+02    AT TIME =  1.128E+00
               67 (SG--32      )     MAX BENDING STRESS  =  4.260E+01    AT TIME =  4.620E-01
                0 (NOT AVAIL.)

    7           0 (NOT AVAIL.)       MAX COMBINED STRESS =  4.650E+02    AT TIME =  1.195E+00
               68 (SG--33      )     MAX HOOP STRESS     =  7.701E+01    AT TIME =  1.195E+00
                0 (NOT AVAIL.)       MAX AXIAL STRESS    =  2.567E+02    AT TIME =  1.195E+00
               69 (SG--34      )     MAX BENDING STRESS  =  2.094E+02    AT TIME =  1.196E+00
                0 (NOT AVAIL.)

LOCATION          CHANNELS

    8           0 (NOT AVAIL.)       MAX COMBINED STRESS =  1.921E+02    AT TIME =  6.700E-01
               71 (SG--36      )     MAX HOOP STRESS     =  2.721E+01    AT TIME =  6.720E-01
                0 (NOT AVAIL.)       MAX AXIAL STRESS    =  9.071E+01    AT TIME =  6.720E-01
               70 (SG--35      )     MAX BENDING STRESS  =  1.104E+02    AT TIME =  6.700E-01
                0 (NOT AVAIL.)

LOCATION          CHANNELS

    9          72 (SG--37      )     MAX COMBINED STRESS =  7.760E+01    AT TIME =  7.360E-01
               73 (SG--38      )     MAX HOOP STRESS     =  9.121E+00    AT TIME =  6.960E-01
                0 (NOT AVAIL.)       MAX AXIAL STRESS    =  3.040E+01    AT TIME =  6.960E-01
               74 (SG--39      )     MAX BENDING STRESS  =  4.739E+01    AT TIME =  7.360E-01
                0 (NOT AVAIL.)
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TEST MT7

LOCATION	CHANNELS				
10	75 (SG--40)	MAX COMBINED STRESS	= 6.832E+01	AT TIME =	1.510E-01
	76 (SG--41)	MAX HOOP STRESS	= 7.321E+00	AT TIME =	1.460E-01
	77 (SG--42)	MAX AXIAL STRESS	= 2.440E+01	AT TIME =	1.460E-01
	78 (SG--43)	MAX BENDING STRESS	= 4.679E+01	AT TIME =	4.400E-01
	0 (NOT AVAIL.)				

LOCATION	CHANNELS				
11	79 (SG--44)	MAX COMBINED STRESS	= -5.869E+01	AT TIME =	9.290E-01
	0 (NOT AVAIL.)	MAX HOOP STRESS	= 9.890E+00	AT TIME =	4.140E-01
	80 (SG--45)	MAX AXIAL STRESS	= 3.297E+01	AT TIME =	4.140E-01
	0 (NOT AVAIL.)	MAX BENDING STRESS	= 5.327E+01	AT TIME =	9.290E-01
	0 (NOT AVAIL.)				

LOCATION	CHANNELS				
12	81 (SG--46)	MAX COMBINED STRESS	= -3.986E+01	AT TIME =	7.520E-01
	82 (SG--47)	MAX HOOP STRESS	= -1.984E+00	AT TIME =	1.100E-01
	83 (SG--48)	MAX AXIAL STRESS	= -6.612E+00	AT TIME =	1.100E-01
	84 (SG--49)	MAX BENDING STRESS	= 3.905E+01	AT TIME =	1.149E+00
	0 (NOT AVAIL.)				

LOCATION	CHANNELS				
13	85 (SG--50)	MAX COMBINED STRESS	= -1.271E+02	AT TIME =	9.210E-01
	0 (NOT AVAIL.)	MAX HOOP STRESS	= -7.816E+00	AT TIME =	6.050E-01
	86 (SG--52)	MAX AXIAL STRESS	= -2.605E+01	AT TIME =	6.050E-01
	87 (SG--53)	MAX BENDING STRESS	= 1.182E+02	AT TIME =	9.190E-01
	0 (NOT AVAIL.)				

LOCATION	CHANNELS				
14	88 (SG--54)	MAX COMBINED STRESS	= -8.246E+01	AT TIME =	7.810E-01
	0 (NOT AVAIL.)	MAX HOOP STRESS	= 1.901E+01	AT TIME =	4.510E-01
	89 (SG--55)	MAX AXIAL STRESS	= 6.504E+01	AT TIME =	4.510E-01
	0 (NOT AVAIL.)	MAX BENDING STRESS	= 2.541E+01	AT TIME =	6.350E-01
	0 (NOT AVAIL.)				

LOCATION	CHANNELS				
15	90 (SG--56)	MAX COMBINED STRESS	= -1.017E+02	AT TIME =	7.200E-02
	91 (SG--57)	MAX HOOP STRESS	= -1.680E+01	AT TIME =	7.200E-02
	0 (NOT AVAIL.)	MAX AXIAL STRESS	= -5.600E+01	AT TIME =	7.200E-02
	93 (SG--59)	MAX BENDING STRESS	= 4.573E+01	AT TIME =	7.200E-02
	0 (NOT AVAIL.)				

LOCATION	CHANNELS				
16	94 (SG--60)	MAX COMBINED STRESS	= 3.594E+01	AT TIME =	3.150E-01
	95 (SG--61)	MAX HOOP STRESS	= 4.072E+00	AT TIME =	3.340E-01
	96 (SG--62)	MAX AXIAL STRESS	= 1.357E+01	AT TIME =	3.340E-01
	97 (SG--63)	MAX BENDING STRESS	= 3.262E+01	AT TIME =	3.150E-01
	0 (NOT AVAIL.)				

ROSETTE	CHANNELS	PRINCIPLE STRESS MIN	PRINCIPLE STRESS MAX	SHEAR STRESS MIN	SHEAR STRESS MAX	STRESS INTENSITY MIN	STRESS INTENSITY MAX
1	1 (SR-1A) 2 (SR-1B) 3 (SR-1C)	-1.247E+02	8.393E+01	7.356E-02	4.778E+01	5.067E-01	1.247E+0
2	4 (SR-2A) 0 (NOT AVAIL.) 5 (SR-2C)	** ROSETTE COMPONENT NOT AVAILABLE **					
3	6 (SR-3A) 7 (SR-3B) 8 (SR-3C)	-3.713E+02	2.533E+02	1.970E-01	1.623E+02	2.271E+00	3.713E+0
4	9 (SR-4A) 10 (SR-4B) 11 (SR-4C)	-1.521E+02	8.810E+01	2.804E-01	6.799E+01	1.743E+00	1.521E+0
5	12 (SR-5A) 13 (SR-5B) 14 (SR-5C)	-5.905E+01	7.764E+01	2.135E-01	2.925E+01	1.052E+00	7.764E+0
6	15 (SR-6A) 16 (SR-6B) 17 (SR-6C)	-6.901E+01	9.379E+01	1.797E-01	4.274E+01	3.666E-01	9.379E+01
7	18 (SR-7A) 19 (SR-7B) 20 (SR-7C)	-2.742E+02	3.762E+02	6.621E-01	6.282E+01	4.769E+00	3.762E+02
8	21 (SR-8A) 22 (SR-8B) 23 (SR-8C)	-5.394E+02	4.441E+02	2.418E-01	7.521E+01	1.838E+00	5.394E+02
9	24 (SR-9A) 25 (SR-9B) 26 (SR-9C)	-2.522E+02	2.868E+02	2.478E-01	8.689E+01	1.661E+00	2.868E+0
10	27 (SR-10A) 28 (SR-10B) 29 (SR-10C)	-2.221E+02	2.728E+02	3.904E-01	8.460E+01	2.562E+00	2.728E+0
11	30 (SR-11A) 31 (SR-11B) 32 (SR-11C)	-2.336E+02	3.620E+02	4.765E-01	1.061E+02	1.211E+00	3.620E+0
12	33 (SR-12A) 34 (SR-12B) 35 (SR-12C)	-2.909E+02	3.182E+02	5.866E-01	9.068E+01	3.130E+00	3.182E+0

SENSOR ID	MAX VALUE	MIN VALUE
PT-17	.687E+00 AT 1.159 SEC	-.912E-01 AT .389 SEC
PT-18	.699E+00 AT 1.170 SEC	-.808E-01 AT .325 SEC
PT-19	.197E+03 AT 1.170 SEC	-.524E+02 AT .005 SEC
PT-20	.216E+03 AT 1.170 SEC	-.548E+02 AT .005 SEC
A---1	.884E+00 AT .506 SEC	-.831E+00 AT .951 SEC
A---2	.550E+00 AT .959 SEC	-.762E+00 AT .972 SEC
A---3	.260E+00 AT .604 SEC	-.231E+00 AT 1.062 SEC
PT--2	.274E+01 AT .310 SEC	-.341E+01 AT .269 SEC
PT--3	.245E+01 AT .130 SEC	-.313E+01 AT .151 SEC
PT--4	.242E+01 AT .125 SEC	-.286E+01 AT .265 SEC
PT--5	.735E+00 AT .439 SEC	-.791E+00 AT .478 SEC
PT--6	.140E+01 AT .320 SEC	-.190E+01 AT .250 SEC
PT--7	.194E+01 AT .314 SEC	-.270E+01 AT .258 SEC
PT--8	.224E+01 AT .323 SEC	-.264E+01 AT .268 SEC
PT--9	.134E+01 AT .425 SEC	-.160E+01 AT .267 SEC
PT-10	.689E+00 AT .335 SEC	-.907E+00 AT .363 SEC
PT-11	.958E+00 AT .220 SEC	-.181E+01 AT .260 SEC
PT-12	.781E-01 AT .437 SEC	-.732E-01 AT .615 SEC
PT-13	.220E+01 AT .319 SEC	-.251E+01 AT .265 SEC
PT-14	.163E+01 AT .323 SEC	-.210E+01 AT .271 SEC
PT-15	.422E+02 AT .118 SEC	-.792E+02 AT .004 SEC
PT-16	.425E+02 AT .114 SEC	-.604E+02 AT .005 SEC
SR-1A	.510E+01 AT 1.004 SEC	-.663E+01 AT .980 SEC
SR-1B	.305E+01 AT 1.004 SEC	-.406E+01 AT .981 SEC
SR-1C	.556E+00 AT .315 SEC	-.808E+00 AT .344 SEC
SR-2A	.414E+01 AT .921 SEC	-.430E+01 AT .948 SEC
SR-2C	.892E+00 AT .969 SEC	-.931E+00 AT .481 SEC
SR-3A	.973E+01 AT .459 SEC	-.137E+02 AT .489 SEC
SR-3B	.131E+01 AT .594 SEC	-.160E+01 AT .485 SEC
SR-3C	.139E+01 AT .419 SEC	-.946E+00 AT .457 SEC
SR-4A	.343E+01 AT .782 SEC	-.399E+01 AT .832 SEC
SR-4B	.945E+00 AT 1.031 SEC	-.113E+01 AT .240 SEC
SR-4C	.152E+01 AT .625 SEC	-.140E+01 AT .590 SEC
SR-5A	.242E+01 AT .688 SEC	-.219E+01 AT .502 SEC
SR-5B	.199E+01 AT .604 SEC	-.130E+01 AT .331 SEC
SR-5C	.129E+01 AT .499 SEC	-.850E+00 AT .459 SEC
SR-6A	.230E+01 AT 1.172 SEC	-.314E+01 AT .396 SEC
SR-6B	.128E+01 AT .930 SEC	-.193E+01 AT .400 SEC
SR-6C	.146E+01 AT .568 SEC	-.900E+00 AT .983 SEC
SR-7A	.147E+02 AT .979 SEC	-.107E+02 AT 1.008 SEC
SR-7B	.131E+02 AT .979 SEC	-.100E+02 AT 1.007 SEC
SR-7C	.122E+02 AT .980 SEC	-.980E+01 AT 1.008 SEC
SR-8A	.135E+02 AT .949 SEC	-.107E+02 AT .923 SEC
SR-8B	.987E+01 AT .949 SEC	-.925E+01 AT .923 SEC
SR-8C	.659E+01 AT .950 SEC	-.678E+01 AT .417 SEC
SR-9A	.139E+02 AT .486 SEC	-.102E+02 AT .460 SEC
SR-9B	.846E+01 AT .495 SEC	-.660E+01 AT .459 SEC
SR-9C	.431E+01 AT .652 SEC	-.424E+01 AT 1.056 SEC
SR-10A	.104E+02 AT .633 SEC	-.901E+01 AT .783 SEC
SR-10B	.602E+01 AT .833 SEC	-.683E+01 AT .495 SEC
SR-10C	.416E+01 AT .535 SEC	-.442E+01 AT .492 SEC
SR-11A	.104E+02 AT .250 SEC	-.763E+01 AT .221 SEC

SENSOR ID	MAX VALUE	MIN VALUE
A---4	.609E+00 AT 1.023 SEC	-.634E+00 AT .812 SEC

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SENSOR ID	MAX VALUE	MIN VALUE
SR-11B	.705E+01 AT .477 SEC	-.472E+01 AT .655 SEC
SR-11C	.346E+01 AT .393 SEC	-.329E+01 AT .415 SEC
SR-12A	.111E+02 AT .371 SEC	-.928E+01 AT .403 SEC
SR-12B	.716E+01 AT .556 SEC	-.625E+01 AT .290 SEC
SR-12C	.468E+01 AT .311 SEC	-.479E+01 AT .575 SEC
SG---1	.107E+01 AT .292 SEC	-.129E+01 AT .246 SEC
SG---2	.877E+00 AT .293 SEC	-.139E+01 AT .341 SEC
SG---3	.200E+01 AT .295 SEC	-.247E+01 AT .339 SEC
SG---4	.108E+01 AT .293 SEC	-.127E+01 AT .431 SEC
SG---5	.220E+01 AT .294 SEC	-.252E+01 AT .235 SEC
SG---6	.156E+01 AT .290 SEC	-.196E+01 AT .346 SEC
SG---7	.246E+01 AT .299 SEC	-.375E+01 AT .347 SEC
SG---8	.204E+01 AT .301 SEC	-.149E+01 AT .232 SEC
SG---9	.332E+01 AT .297 SEC	-.295E+01 AT .348 SEC
SG--10	.985E+01 AT .181 SEC	-.138E+02 AT .499 SEC
SG--11	.403E+02 AT .292 SEC	-.338E+02 AT .348 SEC
SG--12	.278E+02 AT .293 SEC	-.162E+02 AT .238 SEC
SG--13	.369E+02 AT .294 SEC	-.309E+02 AT .234 SEC
SG--14	.413E+02 AT .292 SEC	-.485E+02 AT .246 SEC
SG--15	.206E+02 AT .292 SEC	-.147E+02 AT .338 SEC
SG--16	.152E+02 AT .293 SEC	-.131E+02 AT .239 SEC
SG--17	.165E+01 AT .284 SEC	-.164E+01 AT .459 SEC
SG--19	.245E+01 AT .291 SEC	-.241E+01 AT .237 SEC
SG--20	.134E+01 AT .406 SEC	-.143E+01 AT .232 SEC
SG--21	.228E+01 AT .295 SEC	-.189E+01 AT .464 SEC
SG--22	.206E+01 AT .408 SEC	-.181E+01 AT .465 SEC
SG--23	.990E+00 AT .427 SEC	-.994E+00 AT .243 SEC
SG--24	.164E+01 AT .878 SEC	-.145E+01 AT .818 SEC
SG--25	.115E+01 AT .203 SEC	-.130E+01 AT .253 SEC
SG--26	.113E+01 AT .315 SEC	-.116E+01 AT .902 SEC
SG--27	.104E+01 AT .429 SEC	-.117E+01 AT .713 SEC
SG--28	.109E+01 AT .292 SEC	-.115E+01 AT .342 SEC
SG--29	.750E+00 AT .480 SEC	-.791E+00 AT .899 SEC
SG--30	.673E+00 AT .895 SEC	-.980E+00 AT .488 SEC
SG--31	.434E+01 AT 1.095 SEC	-.496E+00 AT .264 SEC
SG--32	.444E+01 AT 1.095 SEC	-.794E+00 AT .405 SEC
SG--33	.136E+02 AT .846 SEC	-.217E+01 AT .353 SEC
SG--34	.174E+01 AT 1.094 SEC	-.177E+01 AT .353 SEC
SG--35	.532E+01 AT .304 SEC	-.726E+01 AT .375 SEC
SG--36	.483E+01 AT .470 SEC	-.541E+01 AT .368 SEC
SG--37	.155E+01 AT .652 SEC	-.197E+01 AT .635 SEC
SG--38	.102E+01 AT .549 SEC	-.115E+01 AT .604 SEC
SG--39	.927E+00 AT .558 SEC	-.897E+00 AT .504 SEC
SG--40	.280E+01 AT .259 SEC	-.240E+01 AT .308 SEC
SG--41	.747E+00 AT .251 SEC	-.719E+00 AT .273 SEC
SG--42	.230E+01 AT .309 SEC	-.296E+01 AT .258 SEC
SG--43	.841E+00 AT .178 SEC	-.570E+00 AT .180 SEC
SG--44	.186E+01 AT 1.096 SEC	-.152E+01 AT 1.039 SEC
SG--45	.194E+01 AT .577 SEC	-.269E+01 AT .761 SEC
SG--46	.905E+00 AT .795 SEC	-.128E+01 AT .768 SEC
SG--47	.108E+01 AT .506 SEC	-.106E+01 AT .532 SEC
SG--48	.207E+01 AT .768 SEC	-.150E+01 AT .799 SEC
SG--49	.120E+01 AT .822 SEC	-.105E+01 AT .552 SEC
SG--50	.532E+01 AT .803 SEC	-.494E+01 AT .921 SEC
SG--52	.480E+01 AT .921 SEC	-.522E+01 AT .479 SEC
SG--53	.153E+01 AT .805 SEC	-.146E+01 AT .779 SEC
SG--54	.275E+01 AT .593 SEC	-.193E+01 AT .606 SEC
SG--55	.238E+01 AT .592 SEC	-.270E+01 AT .605 SEC
SG--56	.402E+01 AT .004 SEC	-.239E+01 AT .153 SEC
SG--57	.181E+01 AT .004 SEC	-.224E+01 AT .154 SEC
SG--59	.151E+01 AT .004 SEC	-.184E+01 AT .134 SEC
SG--60	.134E+01 AT 1.095 SEC	-.701E+00 AT .641 SEC
SG--61	.156E+01 AT .745 SEC	-.143E+01 AT .595 SEC
SG--62	.146E+01 AT .231 SEC	-.104E+01 AT .537 SEC
SG--63	.107E+01 AT .508 SEC	-.743E+00 AT .005 SEC

S T R E S S E S

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LOCATION        CHANNELS

    1           10 (SG---1      )      MAX COMBINED STRESS = -4.279E+01    AT TIME =  3.410E-01
                 0 (NOT AVAIL.)        MAX HOOP STRESS     = -1.214E+01    AT TIME =  3.400E-01
                11 (SG---2      )      MAX AXIAL STRESS    = -4.046E+01    AT TIME =  3.400E-01
                 0 (NOT AVAIL.)        MAX BENDING STRESS  =  1.540E+01    AT TIME =  7.000E-03
                 0 (NOT AVAIL.)

LOCATION        CHANNELS

    2           32 (SG--23      )      MAX COMBINED STRESS =  5.024E+01    AT TIME =  8.780E-01
                 0 (NOT AVAIL.)        MAX HOOP STRESS     = -1.022E+01    AT TIME =  2.410E-01
                33 (SG--24      )      MAX AXIAL STRESS    = -3.407E+01    AT TIME =  2.410E-01
                 0 (NOT AVAIL.)        MAX BENDING STRESS  =  2.127E+01    AT TIME =  4.710E-01
                 0 (NOT AVAIL.)

LOCATION        CHANNELS

    3           34 (SG--25      )      MAX COMBINED STRESS = -3.973E+01    AT TIME =  2.530E-01
                 0 (NOT AVAIL.)        MAX HOOP STRESS     = -9.458E+00    AT TIME =  2.530E-01
                35 (SG--26      )      MAX AXIAL STRESS    = -3.153E+01    AT TIME =  2.530E-01
                 0 (NOT AVAIL.)        MAX BENDING STRESS  =  2.537E+01    AT TIME =  9.860E-01
                 0 (NOT AVAIL.)

LOCATION        CHANNELS

    4           36 (SG--27      )      MAX COMBINED STRESS = -3.584E+01    AT TIME =  7.130E-01
                 0 (NOT AVAIL.)        MAX HOOP STRESS     =  8.384E+00    AT TIME =  2.910E-01
                37 (SG--28      )      MAX AXIAL STRESS    =  2.795E+01    AT TIME =  2.910E-01
                 0 (NOT AVAIL.)        MAX BENDING STRESS  =  2.292E+01    AT TIME =  9.940E-01
                 0 (NOT AVAIL.)

LOCATION        CHANNELS

    5           38 (SG--29      )      MAX COMBINED STRESS = -3.004E+01    AT TIME =  4.880E-01
                 0 (NOT AVAIL.)        MAX HOOP STRESS     = -5.972E+00    AT TIME =  2.490E-01
                39 (SG--30      )      MAX AXIAL STRESS    = -1.991E+01    AT TIME =  2.490E-01
                 0 (NOT AVAIL.)        MAX BENDING STRESS  =  2.068E+01    AT TIME =  8.960E-01
                 0 (NOT AVAIL.)

LOCATION        CHANNELS

    6            0 (NOT AVAIL.)        MAX COMBINED STRESS =  1.360E+02    AT TIME =  1.095E+00
                40 (SG--31      )      MAX HOOP STRESS     =  4.036E+01    AT TIME =  1.095E+00
                 0 (NOT AVAIL.)        MAX AXIAL STRESS    =  1.345E+02    AT TIME =  1.095E+00
                41 (SG--32      )      MAX BENDING STRESS  =  2.783E+01    AT TIME =  4.050E-01
                 0 (NOT AVAIL.)

LOCATION        CHANNELS

    7            0 (NOT AVAIL.)        MAX COMBINED STRESS =  4.157E+02    AT TIME =  8.460E-01
                42 (SG--33      )      MAX HOOP STRESS     =  6.409E+01    AT TIME =  8.440E-01
                 0 (NOT AVAIL.)        MAX AXIAL STRESS    =  2.136E+02    AT TIME =  8.440E-01
                43 (SG--34      )      MAX BENDING STRESS  =  2.088E+02    AT TIME =  8.470E-01
                 0 (NOT AVAIL.)

LOCATION        CHANNELS

    8            0 (NOT AVAIL.)        MAX COMBINED STRESS = -2.224E+02    AT TIME =  3.750E-01
                44 (SG--35      )      MAX HOOP STRESS     = -4.480E+01    AT TIME =  3.730E-01
                 0 (NOT AVAIL.)        MAX AXIAL STRESS    = -1.493E+02    AT TIME =  3.730E-01
                45 (SG--36      )      MAX BENDING STRESS  =  1.131E+02    AT TIME =  5.710E-01
                 0 (NOT AVAIL.)

LOCATION        CHANNELS

    9           46 (SG--37      )      MAX COMBINED STRESS = -6.590E+01    AT TIME =  6.350E-01
                47 (SG--38      )      MAX HOOP STRESS     = -7.240E+00    AT TIME =  6.700E-01
                 0 (NOT AVAIL.)        MAX AXIAL STRESS    = -2.413E+01    AT TIME =  6.700E-01
                48 (SG--39      )      MAX BENDING STRESS  =  5.088E+01    AT TIME =  6.340E-01
                 0 (NOT AVAIL.)
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LOCATION        CHANNELS

   10           49 (SG--40      )     MAX COMBINED STRESS =  8.887E+01    AT TIME =  2.590E-01
                50 (SG--41      )     MAX HOOP STRESS     = -2.986E+00    AT TIME =  1.820E-01
                51 (SG--42      )     MAX AXIAL STRESS    = -9.955E+00    AT TIME =  1.820E-01
                52 (SG--43      )     MAX BENDING STRESS  =  8.780E+01    AT TIME =  2.580E-01
                 0 (NOT AVAIL.)

LOCATION        CHANNELS

   11           53 (SG--44      )     MAX COMBINED STRESS = -8.240E+01    AT TIME =  7.610E-01
                 0 (NOT AVAIL.)       MAX HOOP STRESS     = -1.180E+01    AT TIME =  1.003E+00
                54 (SG--45      )     MAX AXIAL STRESS    = -3.935E+01    AT TIME =  1.003E+00
                 0 (NOT AVAIL.)       MAX BENDING STRESS  =  5.852E+01    AT TIME =  7.630E-01
                 0 (NOT AVAIL.)

LOCATION        CHANNELS

   12           55 (SG--46      )     MAX COMBINED STRESS = -5.301E+01    AT TIME =  7.680E-01
                56 (SG--47      )     MAX HOOP STRESS     = -1.595E+00    AT TIME =  3.170E-01
                57 (SG--48      )     MAX AXIAL STRESS    = -5.317E+00    AT TIME =  3.170E-01
                58 (SG--49      )     MAX BENDING STRESS  =  5.279E+01    AT TIME =  7.680E-01
                 0 (NOT AVAIL.)

LOCATION        CHANNELS

   13           59 (SG--50      )     MAX COMBINED STRESS =  1.743E+02    AT TIME =  8.030E-01
                 0 (NOT AVAIL.)       MAX HOOP STRESS     = -8.344E+00    AT TIME =  1.018E+00
                61 (SG--52      )     MAX AXIAL STRESS    = -2.781E+01    AT TIME =  1.018E+00
                62 (SG--53      )     MAX BENDING STRESS  =  1.605E+02    AT TIME =  4.790E-01
                 0 (NOT AVAIL.)

LOCATION        CHANNELS

   14           63 (SG--54      )     MAX COMBINED STRESS =  8.418E+01    AT TIME =  5.930E-01
                 0 (NOT AVAIL.)       MAX HOOP STRESS     =  2.343E+01    AT TIME =  5.930E-01
                64 (SG--55      )     MAX AXIAL STRESS    =  7.808E+01    AT TIME =  5.930E-01
                 0 (NOT AVAIL.)       MAX BENDING STRESS  =  2.014E+01    AT TIME =  3.290E-01
                 0 (NOT AVAIL.)

LOCATION        CHANNELS

   15           65 (SG--56      )     MAX COMBINED STRESS =  1.289E+02    AT TIME =  4.000E-03
                66 (SG--57      )     MAX HOOP STRESS     =  2.248E+01    AT TIME =  4.000E-03
                 0 (NOT AVAIL.)       MAX AXIAL STRESS    =  7.492E+01    AT TIME =  4.000E-03
                68 (SG--59      )     MAX BENDING STRESS  =  5.394E+01    AT TIME =  4.000E-03
                 0 (NOT AVAIL.)

LOCATION        CHANNELS

   16           69 (SG--60      )     MAX COMBINED STRESS =  4.738E+01    AT TIME =  1.095E+00
                70 (SG--61      )     MAX HOOP STRESS     =  3.682E+00    AT TIME =  8.420E-01
                71 (SG--62      )     MAX AXIAL STRESS    =  1.227E+01    AT TIME =  8.420E-01
                72 (SG--63      )     MAX BENDING STRESS  =  4.233E+01    AT TIME =  1.095E+00
                 0 (NOT AVAIL.)
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TEST SD2

R O S E T T E S

Rosette	Channels	Principle Stress Min	Principle Stress Max	Shear Stress Min	Shear Stress Max	Stress Intensity Min	Stress Intensity Max
1	25 (SR-1A)						
	26 (SR-1B)	-2.051E+02	1.560E+02	8.259E-02	7.188E+01	1.399E+00	2.051E+02
	27 (SR-1C)						
2	28 (SR-2A)						
	0 (NOT AVAIL.)	** ROSETTE COMPONENT NOT AVAILABLE **					
	30 (SR-2C)						
3	31 (SR-3A)						
	32 (SR-3B)	-4.402E+02	3.123E+02	9.427E-01	1.951E+02	2.285E+00	4.402E+02
	33 (SR-3C)						
4	34 (SR-4A)						
	35 (SR-4B)	-1.413E+02	1.068E+02	7.469E-02	6.673E+01	2.043E+00	1.413E+02
	36 (SR-4C)						
5	37 (SR-5A)						
	38 (SR-5B)	-5.649E+01	7.182E+01	2.737E-01	3.617E+01	1.397E+00	7.234E+01
	39 (SR-5C)						
6	40 (SR-6A)						
	41 (SR-6B)	-9.708E+01	7.121E+01	2.568E-01	4.051E+01	8.193E-01	9.708E+01
	42 (SR-6C)						
7	43 (SR-7A)						
	44 (SR-7B)	-4.206E+02	5.611E+02	7.043E-01	5.347E+01	3.412E+00	5.611E+02
	45 (SR-7C)						
8	46 (SR-8A)						
	47 (SR-8B)	-3.895E+02	4.730E+02	3.750E-01	8.455E+01	4.969E+00	4.730E+02
	48 (SR-8C)						
9	49 (SR-9A)						
	50 (SR-9B)	-3.438E+02	4.587E+02	8.450E-01	1.119E+02	3.951E+00	4.587E+02
	51 (SR-9C)						
10	52 (SR-10A)						
	53 (SR-10B)	-3.068E+02	3.418E+02	8.140E-01	8.427E+01	3.758E+00	3.418E+02
	54 (SR-10C)						
11	55 (SR-11A)						
	0 (NOT AVAIL.)	** ROSETTE COMPONENT NOT AVAILABLE **					
	0 (NOT AVAIL.)						

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R O S E T T E S

ROSETTE	CHANNELS	PRINCIPLE STRESS		SHEAR STRESS		STRESS INTENSITY	
		MIN	MAX	MIN	MAX	MIN	MAX
1	0 (NOT AVAIL.)						
	5 (SR-11B)	** ROSETTE COMPONENT NOT AVAILABLE **					
	6 (SR-11C)						

ROSETTE	CHANNELS	PRINCIPLE STRESS		SHEAR STRESS		STRESS INTENSITY	
		MIN	MAX	MIN	MAX	MIN	MAX
2	7 (SR-12A)						
	8 (SR-12B)	-3.105E+02	3.522E+02	8.314E-01	1.076E+02	3.418E+00	3.522E+02
	9 (SR-12C)						

SENSOR ID	MAX VALUE	MIN VALUE
PT-17	.202E+01 AT 1.095 SEC	-.128E+00 AT .005 SEC
PT-18	.202E+01 AT 1.096 SEC	-.181E+00 AT .005 SEC
PT-19	.209E+03 AT 1.095 SEC	-.369E+02 AT .005 SEC
PT-20	.205E+03 AT 1.095 SEC	-.338E+02 AT .005 SEC
A---1	.767E+00 AT .724 SEC	-.708E+00 AT .746 SEC
A---2	.826E+00 AT .753 SEC	-.589E+00 AT .519 SEC
A---3	.219E+00 AT .846 SEC	-.225E+00 AT .537 SEC
A---4	.779E+00 AT .683 SEC	-.647E+00 AT .756 SEC
PT--2	.207E+01 AT .176 SEC	-.343E+01 AT .416 SEC
PT--3	.161E+01 AT .217 SEC	-.204E+01 AT .302 SEC
PT--4	.260E+01 AT .173 SEC	-.246E+01 AT .304 SEC
PT--6	.836E+00 AT .154 SEC	-.111E+01 AT .295 SEC
PT--7	.120E+01 AT .154 SEC	-.172E+01 AT .306 SEC
PT--8	.966E+00 AT .357 SEC	-.127E+01 AT .501 SEC
PT--9	.905E+00 AT .664 SEC	-.847E+00 AT .486 SEC
PT-10	.526E+00 AT .750 SEC	-.728E+00 AT .595 SEC
PT-11	.878E+00 AT .150 SEC	-.141E+01 AT .286 SEC
PT-12	.527E-01 AT .963 SEC	-.612E-01 AT .639 SEC
PT-13	.906E+00 AT .155 SEC	-.136E+01 AT .486 SEC
PT-14	.943E+00 AT .359 SEC	-.129E+01 AT .797 SEC
PT-15	.903E+02 AT .089 SEC	-.588E+02 AT .004 SEC
PT-16	.769E+02 AT .161 SEC	-.566E+02 AT .005 SEC

SENSOR ID	MAX VALUE	MIN VALUE
SR-1A	.511E+01 AT .369 SEC	-.463E+01 AT .349 SEC
SR-1B	.259E+01 AT .367 SEC	-.284E+01 AT .351 SEC
SR-1C	.867E+00 AT .961 SEC	-.703E+00 AT .991 SEC
SR-2A	.398E+01 AT 1.004 SEC	-.388E+01 AT .478 SEC
SR-2C	.109E+01 AT .934 SEC	-.726E+00 AT .687 SEC
SR-3A	.884E+01 AT .764 SEC	-.963E+01 AT .578 SEC
SR-3B	.149E+01 AT .758 SEC	-.150E+01 AT .780 SEC
SR-3C	.111E+01 AT .585 SEC	-.685E+00 AT .630 SEC
SR-4A	.274E+01 AT .727 SEC	-.288E+01 AT .775 SEC
SR-4B	.124E+01 AT .565 SEC	-.112E+01 AT .422 SEC
SR-4C	.145E+01 AT .971 SEC	-.120E+01 AT .807 SEC
SR-5A	.258E+01 AT .763 SEC	-.270E+01 AT .785 SEC
SR-5B	.193E+01 AT .564 SEC	-.120E+01 AT .578 SEC
SR-5C	.112E+01 AT .536 SEC	-.890E+00 AT .511 SEC
SR-6A	.374E+01 AT .603 SEC	-.329E+01 AT .508 SEC
SR-6B	.177E+01 AT .603 SEC	-.181E+01 AT .346 SEC
SR-6C	.110E+01 AT .517 SEC	-.118E+01 AT .539 SEC
SR-7A	.128E+02 AT .408 SEC	-.115E+02 AT .367 SEC
SR-7B	.117E+02 AT .408 SEC	-.109E+02 AT .368 SEC
SR-7C	.107E+02 AT .409 SEC	-.907E+01 AT .498 SEC
SR-8A	.139E+02 AT .480 SEC	-.904E+01 AT .361 SEC
SR-8B	.101E+02 AT .481 SEC	-.685E+01 AT .529 SEC
SR-8C	.738E+01 AT .492 SEC	-.642E+01 AT .527 SEC
SR-9A	.911E+01 AT .578 SEC	-.646E+01 AT .005 SEC
SR-9B	.462E+01 AT .671 SEC	-.532E+01 AT .845 SEC
SR-9C	.391E+01 AT .589 SEC	-.298E+01 AT .845 SEC
SR-10A	.714E+01 AT .966 SEC	-.770E+01 AT .627 SEC
SR-10B	.593E+01 AT .968 SEC	-.541E+01 AT .627 SEC
SR-10C	.307E+01 AT .965 SEC	-.385E+01 AT .627 SEC
SR-11A	.105E+02 AT .193 SEC	-.788E+01 AT .696 SEC
SR-11B	.711E+01 AT .194 SEC	-.460E+01 AT .696 SEC
SR-11C	.443E+01 AT .535 SEC	-.235E+01 AT .694 SEC
SR-12A	.116E+02 AT .513 SEC	-.108E+02 AT .603 SEC
SR-12B	.854E+01 AT .513 SEC	-.642E+01 AT .907 SEC
SR-12C	.440E+01 AT .513 SEC	-.436E+01 AT .907 SEC
SG---1	.123E+01 AT .571 SEC	-.111E+01 AT .109 SEC
SG---2	.148E+01 AT .436 SEC	-.131E+01 AT .111 SEC
SG---3	.130E+01 AT .437 SEC	-.132E+01 AT .033 SEC
SG---4	.894E+00 AT .013 SEC	-.121E+01 AT .243 SEC
SG---5	.150E+01 AT .060 SEC	-.160E+01 AT .291 SEC
SG---6	.120E+01 AT .066 SEC	-.103E+01 AT .508 SEC
SG---7	.195E+01 AT .062 SEC	-.209E+01 AT .486 SEC
SG---8	.124E+01 AT .345 SEC	-.126E+01 AT .205 SEC
SG---9	.185E+01 AT .064 SEC	-.153E+01 AT .211 SEC
SG--10	.101E+02 AT .291 SEC	-.938E+01 AT .567 SEC
SG--11	.216E+02 AT .059 SEC	-.232E+02 AT .305 SEC
SG--12	.111E+02 AT .015 SEC	-.163E+02 AT .208 SEC
SG--13	.214E+02 AT .005 SEC	-.218E+02 AT .213 SEC
SG--14	.311E+0[illegible] AT .005 SEC	-.305E+02 AT .211 SEC
SG--15	.841E+01 AT .334 SEC	-.131E+02 AT .415 SEC
SG--16	.915E+01 AT .004 SEC	-.137E+02 AT .207 SEC
SG--17	.163E+01 AT 1.040 SEC	-.203E+01 AT .514 SEC
SG--18	.939E+00 AT .302 SEC	-.983E+00 AT .213 SEC
SG--19	.155E+01 AT .005 SEC	-.158E+01 AT .210 SEC
SG--20	.919E+00 AT .235 SEC	-.113E+01 AT .622 SEC
SG--21	.159E+01 AT .067 SEC	-.197E+01 AT .207 SEC
SG--22	.103E+01 AT .013 SEC	-.158E+01 AT .416 SEC
SG--23	.684E+00 AT 1.095 SEC	-.106E+01 AT .218 SEC
SG--24	.127E+01 AT 1.003 SEC	-.170E+01 AT .205 SEC
SG--25	.101E+01 AT .560 SEC	-.147E+01 AT .537 SEC
SG--26	.864E+00 AT .065 SEC	-.152E+01 AT .991 SEC

SG--27	.120E+01	AT	.736	SEC	-.101E+01	AT	.778	SEC
SG--28	.102E+01	AT	.733	SEC	-.725E+00	AT	.713	SEC
SG--29	.866E+00	AT	.942	SEC	-.664E+00	AT	.960	SEC
SG--30	.863E+00	AT	.861	SEC	-.633E+00	AT	.543	SEC
SG--31	.424E+01	AT	1.095	SEC	-.533E+00	AT	.069	SEC
SG--32	.491E+01	AT	1.095	SEC	-.101E+01	AT	.425	SEC
SG--33	.111E+02	AT	.881	SEC	-.260E+01	AT	.306	SEC
SG--34	.217E+01	AT	1.083	SEC	-.236E+01	AT	.303	SEC
SG--35	.608E+01	AT	.537	SEC	-.763E+01	AT	.545	SEC
SG--36	.663E+01	AT	.531	SEC	-.542E+01	AT	.579	SEC
SG--37	.258E+01	AT	.808	SEC	-.186E+01	AT	.724	SEC
SG--38	.101E+01	AT	.605	SEC	-.971E+00	AT	.615	SEC
SG--39	.100E+01	AT	.973	SEC	-.545E+00	AT	.068	SEC
SG--40	.276E+01	AT	.540	SEC	-.261E+01	AT	.551	SEC
SG--41	.146E+01	AT	.310	SEC	-.665E+00	AT	.280	SEC
SG--42	.261E+01	AT	.551	SEC	-.306E+01	AT	.313	SEC
SG--43	.800E+00	AT	.282	SEC	-.824E+00	AT	.310	SEC
SG--44	.161E+01	AT	.502	SEC	-.155E+01	AT	.977	SEC
SG--45	.224E+01	AT	.536	SEC	-.207E+01	AT	.810	SEC
SG--46	.955E+00	AT	.913	SEC	-.106E+01	AT	1.011	SEC
SG--47	.676E+00	AT	.770	SEC	-.108E+01	AT	.794	SEC
SG--48	.174E+01	AT	1.014	SEC	-.143E+01	AT	.402	SEC
SG--49	.130E+01	AT	.471	SEC	-.757E+00	AT	.817	SEC
SG--50	.458E+01	AT	.632	SEC	-.266E+01	AT	1.093	SEC
SG--52	.278E+01	AT	1.092	SEC	-.530E+01	AT	.632	SEC
SG--53	.175E+01	AT	.345	SEC	-.144E+01	AT	.318	SEC
SG--54	.193E+01	AT	.830	SEC	-.194E+01	AT	.814	SEC
SG--55	.261E+01	AT	.902	SEC	-.222E+01	AT	.814	SEC
SG--56	.166E+01	AT	.555	SEC	-.170E+01	AT	.140	SEC
SG--57	.252E+01	AT	.015	SEC	-.162E+01	AT	.171	SEC
SG--59	.148E+01	AT	.003	SEC	-.158E+01	AT	.138	SEC
SG--60	.126E+01	AT	1.070	SEC	-.139E+01	AT	.647	SEC
SG--61	.200E+01	AT	1.018	SEC	-.174E+01	AT	.904	SEC
SG--62	.136E+01	AT	.702	SEC	-.207E+01	AT	.979	SEC
SG--63	.126E+01	AT	.782	SEC	-.753E+00	AT	.765	SEC

S T R E S S E S

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LOCATION     CHANNELS

   1          36 (SG---1      )    MAX COMBINED STRESS =  4.527E+01    AT TIME =  4.360E-01
               0 (NOT AVAIL.)      MAX HOOP STRESS     = -1.1C3E+01    AT TIME =  1.100E-01
              37 (SG---2      )    MAX AXIAL STRESS    = -3.676E+01    AT TIME =  1.100E-01
               0 (NOT AVAIL.)      MAX BENDING STRESS  =  1.675E+01    AT TIME =  5.050E-01
               0 (NOT AVAIL.)

LOCATION     CHANNELS

   2          58 (SG--23      )    MAX COMBINED STRESS = -5.204E+01    AT TIME =  2.050E-01
               0 (NOT AVAIL.)      MAX HOOP STRESS     = -1.047E+01    AT TIME =  2.160E-01
              59 (SG--24      )    MAX AXIAL STRESS    = -3.492E+01    AT TIME =  2.160E-01
               0 (NOT AVAIL.)      MAX BENDING STRESS  =  2.516E+01    AT TIME =  4.260E-01
               0 (NOT AVAIL.)

LOCATION     CHANNELS

   3          60 (SG--25      )    MAX COMBINED STRESS = -4.662E+01    AT TIME =  9.910E-01
               0 (NOT AVAIL.)      MAX HOOP STRESS     = -9.911E+00    AT TIME =  7.880E-01
              61 (SG--26      )    MAX AXIAL STRESS    = -3.304E+01    AT TIME =  7.880E-01
               0 (NOT AVAIL.)      MAX BENDING STRESS  =  3.081E+01    AT TIME =  5.580E-01
               0 (NOT AVAIL.)

LOCATION     CHANNELS

   4          62 (SG--27      )    MAX COMBINED STRESS =  3.679E+01    AT TIME =  7.360E-01
               0 (NOT AVAIL.)      MAX HOOP STRESS     =  9.834E+00    AT TIME =  7.340E-01
              63 (SG--28      )    MAX AXIAL STRESS    =  3.278E+01    AT TIME =  7.340E-01
               0 (NOT AVAIL.)      MAX BENDING STRESS  =  1.969E+01    AT TIME =  1.076E+00
               0 (NOT AVAIL.)

LOCATION     CHANNELS

   5          64 (SG--29      )    MAX COMBINED STRESS =  2.654E+01    AT TIME =  9.420E-01
               0 (NOT AVAIL.)      MAX HOOP STRESS     =  5.041E+00    AT TIME =  6.460E-01
              65 (SG--30      )    MAX AXIAL STRESS    =  1.680E+01    AT TIME =  6.460E-01
               0 (NOT AVAIL.)      MAX BENDING STRESS  =  2.101E+01    AT TIME =  6.880E-01
               0 (NOT AVAIL.)

LOCATION     CHANNELS

   6           0 (NOT AVAIL.)      MAX COMBINED STRESS =  1.506E+02    AT TIME =  1.095E+00
              66 (SG--31      )    MAX HOOP STRESS     =  4.210E+01    AT TIME =  1.095E+00
               0 (NOT AVAIL.)      MAX AXIAL STRESS    =  1.403E+02    AT TIME =  1.095E+00
              67 (SG--32      )    MAX BENDING STRESS  =  4.386E+01    AT TIME =  5.530E-01
               0 (NOT AVAIL.)

LOCATION     CHANNELS

   7           0 (NOT AVAIL.)      MAX COMBINED STRESS =  3.392E+02    AT TIME =  8.810E-01
              68 (SG--33      )    MAX HOOP STRESS     =  5.798E+01    AT TIME =  8.720E-01
               0 (NOT AVAIL.)      MAX AXIAL STRESS    =  1.933E+02    AT TIME =  8.720E-01
              69 (SG--34      )    MAX BENDING STRESS  =  1.554E+02    AT TIME =  8.470E-01
               0 (NOT AVAIL.)

LOCATION     CHANNELS

   8           0 (NOT AVAIL.)      MAX COMBINED STRESS = -2.330E+02    AT TIME =  5.450E-01
              71 (SG--36      )    MAX HOOP STRESS     = -3.686E+01    AT TIME =  3.390E-01
               0 (NOT AVAIL.)      MAX AXIAL STRESS    = -1.229E+02    AT TIME =  3.390E-01
              70 (SG--35      )    MAX BENDING STRESS  =  1.914E+02    AT TIME =  5.450E-01
               0 (NOT AVAIL.)

LOCATION     CHANNELS

   9          72 (SG--37      )    MAX COMBINED STRESS =  8.397E+01    AT TIME =  8.080E-01
              73 (SG--38      )    MAX HOOP STRESS     =  1.103E+01    AT TIME =  8.080E-01
               0 (NOT AVAIL.)      MAX AXIAL STRESS    =  3.678E+01    AT TIME =  8.080E-01
              74 (SG--39      )    MAX BENDING STRESS  =  4.719E+01    AT TIME =  8.080E-01
               0 (NOT AVAIL.)
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LOCATION          CHANNELS

   10           75 (SG--40      )     MAX COMBINED STRESS =  9.254E+01    AT TIME =  3.130E-01
                76 (SG--41      )     MAX HOOP STRESS     =  3.892E+00    AT TIME =  1.900E-01
                77 (SG--42      )     MAX AXIAL STRESS    =  1.297E+01    AT TIME =  1.900E-01
                78 (SG--43      )     MAX BENDING STRESS  =  9.154E+01    AT TIME =  3.130E-01
                 0 (NOT AVAIL.)

LOCATION          CHANNELS

   11           79 (SG--44      )     MAX COMBINED STRESS =  6.879E+01    AT TIME =  5.360E-01
                 0 (NOT AVAIL.)       MAX HOOP STRESS     = -9.421E+00    AT TIME =  8.110E-01
                80 (SG--45      )     MAX AXIAL STRESS    = -3.140E+01    AT TIME =  8.110E-01
                 0 (NOT AVAIL.)       MAX BENDING STRESS  =  5.607E+01    AT TIME =  9.770E-01
                 0 (NOT AVAIL.)

LOCATION          CHANNELS

   12           81 (SG--46      )     MAX COMBINED STRESS =  4.760E+01    AT TIME =  1.013E+00
                82 (SG--47      )     MAX HOOP STRESS     =  2.073E+00    AT TIME =  5.160E-01
                83 (SG--48      )     MAX AXIAL STRESS    =  6.909E+00    AT TIME =  5.160E-01
                84 (SG--49      )     MAX BENDING STRESS  =  4.398E+01    AT TIME =  1.012E+00
                 0 (NOT AVAIL.)

LOCATION          CHANNELS

   13           85 (SG--50      )     MAX COMBINED STRESS = -1.724E+02    AT TIME =  6.320E-01
                 0 (NOT AVAIL.)       MAX HOOP STRESS     =  8.739E+00    AT TIME =  3.440E-01
                86 (SG--52      )     MAX AXIAL STRESS    =  2.913E+01    AT TIME =  3.440E-01
                87 (SG--53      )     MAX BENDING STRESS  =  1.526E+02    AT TIME =  6.320E-01
                 0 (NOT AVAIL.)

LOCATION          CHANNELS


   14           88 (SG--54      )     MAX COMBINED STRESS =  8.002E+01    AT TIME =  9.020E-01
                 0 (NOT AVAIL.)       MAX HOOP STRESS     = -1.916E+01    AT TIME =  8.140E-01
                89 (SG--55      )     MAX AXIAL STRESS    = -6.388E+01    AT TIME =  8.140E-01
                 0 (NOT AVAIL.)       MAX BENDING STRESS  =  1.720E+01    AT TIME =  9.020E-01
                 0 (NOT AVAIL.)

LOCATION          CHANNELS

   15           90 (SG--56      )     MAX COMBINED STRESS =  7.427E+01    AT TIME =  1.500E-02
                91 (SG--57      )     MAX HOOP STRESS     =  1.437E+01    AT TIME =  1.500E-02
                 0 (NOT AVAIL.)       MAX AXIAL STRESS    =  4.790E+01    AT TIME =  1.500E-02
                93 (SG--59      )     MAX BENDING STRESS  =  3.767E+01    AT TIME =  5.550E-01
                 0 (NOT AVAIL.)

LOCATION          CHANNELS

   16           94 (SG--60      )     MAX COMBINED STRESS = -5.267E+01    AT TIME =  9.800E-01
                95 (SG--61      )     MAX HOOP STRESS     =  4.008E+00    AT TIME =  1.065E+00
                96 (SG--62      )     MAX AXIAL STRESS    =  1.336E+01    AT TIME =  1.065E+00
                97 (SG--63      )     MAX BENDING STRESS  =  4.972E+01    AT TIME =  9.800E-01
                 0 (NOT AVAIL.)
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TEST MT2

ROSETTES

ROSETTE	CHANNELS	PRINCIPLE STRESS MIN	PRINCIPLE STRESS MAX	SHEAR STRESS MIN	SHEAR STRESS MAX	STRESS INTENSITY MIN	STRESS INTENSITY MAX
1	1 (SR-1A) 2 (SR-1B) 3 (SR-1C)	-1.442E+02	1.563E+02	1.676E-01	5.603E+01	8.374E-01	1.563E+02
2	4 (SR-2A) 0 (NOT AVAIL.) 5 (SR-2C)	** ROSETTE COMPONENT NOT AVAILABLE **					
3	6 (SR-3A) 7 (SR-3B) 8 (SR-3C)	-3.165E+02	2.973E+02	3.339E-01	1.319E+02	1.843E+00	3.165E+02
4	9 (SR-4A) 10 (SR-4B) 11 (SR-4C)	-9.193E+01	8.895E+01	4.751E-01	5.210E+01	4.347E+00	1.042E+02
5	12 (SR-5A) 13 (SR-5B) 14 (SR-5C)	-8.348E+01	8.312E+01	2.662E-01	3.629E+01	2.290E+00	8.348E+01
6	15 (SR-6A) 16 (SR-6B) 17 (SR-6C)	-9.139E+01	1.110E+02	4.771E-01	4.963E+01	1.649E+00	1.110E+02
7	18 (SR-7A) 19 (SR-7B) 20 (SR-7C)	-4.364E+02	4.897E+02	5.168E-01	7.374E+01	6.928E+00	4.897E+02
8	21 (SR-8A) 22 (SR-8B) 23 (SR-8C)	-3.432E+02	4.874E+02	7.187E-01	8.374E+01	3.831E+00	4.874E+02
9	24 (SR-9A) 25 (SR-9B) 26 (SR-9C)	-2.100E+02	3.123E+02	2.683E-01	7.9[illegible]E+01	9.961E+00	3.123E+02
10	27 (SR-10A) 28 (SR-10B) 29 (SR-10C)	-2.722E+02	2.495E+02	8.392E-01	7.025E+01	8.005E+00	2.722E+02
11	30 (SR-11A) 31 (SR-11B) 32 (SR-11C)	-2.614E+02	3.311E+02	5.305E-01	1.203E+02	6.856E+00	3.311E+02
12	33 (SR-12A) 34 (SR-12B) 35 (SR-12C)	-3.534E+02	3.980E+02	4.012E-01	9.396E+01	8.159E+00	3.980E+02

SENSOR ID	MAX VALUE	MIN VALUE
PT-17	.130E+01 AT .812 SEC	-.146E+00 AT .005 SEC
PT-18	.131E+01 AT .714 SEC	-.127E+00 AT .004 SEC
PT-19	.186E+03 AT .995 SEC	-.485E+02 AT .005 SEC
PT-20	.179E+03 AT .995 SEC	-.452E+02 AT .004 SEC
A---1	.551E+00 AT .680 SEC	-.543E+00 AT .898 SEC
A---2	.432E+00 AT .852 SEC	-.593E+00 AT .681 SEC
A---3	.204E+00 AT .662 SEC	-.207E+00 AT .491 SEC
A---4	.536E+00 AT .440 SEC	-.486E+00 AT .896 SEC
PT--2	.140E+01 AT .133 SEC	-.234E+01 AT .254 SEC
PT--3	.235E+01 AT .125 SEC	-.284E+01 AT .225 SEC
PT--4	.177E+01 AT .121 SEC	-.307E+01 AT .266 SEC
PT--6	.936E+00 AT .671 SEC	-.122E+01 AT .239 SEC
PT--7	.108E+01 AT .107 SEC	-.161E+01 AT .239 SEC
PT--8	.127E+01 AT .560 SEC	-.204E+01 AT .513 SEC
PT--9	.111E+01 AT .555 SEC	-.126E+01 AT .516 SEC
PT-10	.612E+00 AT .554 SEC	-.633E+00 AT .375 SEC
PT-11	.861E+00 AT .813 SEC	-.164E+01 AT .250 SEC
PT-12	.663E-01 AT .964 SEC	-.45[illegible]E-01 AT .801 SEC
PT-13	.102E+01 AT .559 SEC	-.183E+01 AT .512 SEC
PT-14	.120E+01 AT .557 SEC	-.205E+01 AT .518 SEC
PT-15	.425E+02 AT .101 SEC	-.920E+02 AT .005 SEC
PT-16	.402E+02 AT .111 SEC	-.926E+02 AT .004 SEC

SENSOR ID	MAX VALUE				MIN VALUE			
SR-1A	.333E+01	AT	.937	SEC	-.346E+01	AT	.968	SEC
SR-1B	.176E+01	AT	.934	SEC	-.197E+01	AT	.434	SEC
SR-1C	.541E+00	AT	.515	SEC	-.673E+00	AT	.694	SEC
SR-2A	.346E+01	AT	.693	SEC	-.336E+01	AT	.576	SEC
SR-2C	.897E+00	AT	.965	SEC	-.859E+00	AT	.781	SEC
SR-3A	.105E+02	AT	.800	SEC	-.988E+01	AT	.841	SEC
SR-3B	.123E+01	AT	.870	SEC	-.143E+01	AT	.914	SEC
SR-3C	.157E+01	AT	.772	SEC	-.140E+01	AT	.809	SEC
SR-4A	.288E+01	AT	.901	SEC	-.353E+01	AT	.949	SEC
SR-4B	.104E+01	AT	.731	SEC	-.938E+00	AT	.791	SEC
SR-4C	.693E+00	AT	.521	SEC	-.131E+01	AT	.770	SEC
SR-5A	.286E+01	AT	.807	SEC	-.239E+01	AT	.439	SEC
SR-5B	.138E+01	AT	.810	SEC	-.122E+01	AT	.602	SEC
SR-5C	.114E+01	AT	.768	SEC	-.132E+01	AT	.809	SEC
SR-6A	.222E+01	AT	.605	SEC	-.203E+01	AT	.943	SEC
SR-6B	.189E+01	AT	.912	SEC	-.127E+01	AT	.940	SEC
SR-6C	.127E+01	AT	.809	SEC	-.126E+01	AT	.849	SEC
SR-7A	.794E+01	AT	.371	SEC	-.791E+01	AT	.937	SEC
SR-7B	.750E+01	AT	.433	SEC	-.663E+01	AT	.938	SEC
SR-7C	.625E+01	AT	.969	SEC	-.662E+01	AT	.936	SEC
SR-8A	.944E+01	AT	.342	SEC	-.856E+01	AT	.692	SEC
SR-8B	.785E+01	AT	.732	SEC	-.720E+01	AT	.693	SEC
SR-8C	.624E+01	AT	.821	SEC	-.578E+01	AT	.772	SEC
SR-9A	.796E+01	AT	.916	SEC	-.712E+01	AT	.796	SEC
SP-9B	.554E+01	AT	.775	SEC	-.550E+01	AT	.802	SEC
SR-9C	.608E+01	AT	.774	SEC	-.465E+01	AT	.816	SEC
SR-10A	.103E+02	AT	.951	SEC	-.729E+01	AT	.899	SEC
SR-10B	.515E+01	AT	.953	SEC	-.468E+01	AT	.547	SEC
SR-10C	.196E+01	AT	.589	SEC	-.310E+01	AT	.765	SEC
SR-11A	.100E+02	AT	.440	SEC	-.874E+01	AT	.807	SEC
SR-11B	.669E+01	AT	.227	SEC	-.580E+01	AT	.724	SEC
SR-11C	.306E+01	AT	.766	SEC	-.419E+01	AT	.807	SEC
SR-12A	.622E+01	AT	.489	SEC	-.710E+01	AT	.856	SEC
SR-12B	.605E+01	AT	.814	SEC	-.613E+01	AT	.856	SEC
SR-12C	.497E+01	AT	.813	SEC	-.532E+01	AT	.856	SEC
SG---1	.118E+01	AT	.134	SEC	-.106E+01	AT	.456	SEC
SG---2	.107E+01	AT	1.062	SEC	-.135E+01	AT	.724	SEC
SG---3	.131E+01	AT	.398	SEC	-.168E+01	AT	.500	SEC
SG---4	.845E+00	AT	.039	SEC	-.106E+01	AT	1.011	SEC
SG---5	.133E+01	AT	.102	SEC	-.228E+01	AT	.242	SEC
SG---6	.105E+01	AT	.100	SEC	-.132E+01	AT	.224	SEC
SG---7	.195E+01	AT	.099	SEC	-.278E+01	AT	.236	SEC
SG---8	.102E+01	AT	.265	SEC	-.102E+01	AT	.227	SEC
SG---9	.145E+01	AT	.101	SEC	-.215E+01	AT	.238	SEC
SG--10	.998E+01	AT	.453	SEC	-.104E+02	AT	.805	SEC
SG--11	.180E+02	AT	.539	SEC	-.292E+02	AT	.247	SEC
SG--12	.112E+02	AT	.098	SEC	-.147E+02	AT	.239	SEC
SG--13	.189E+02	AT	.101	SEC	-.221E+02	AT	.242	SEC
SG--14	.261E+02	AT	.047	SEC	-.493E+02	AT	.248	SEC
SG--15	.104E+02	AT	.668	SEC	-.139E+02	AT	.907	SEC
SG--16	.921E+01	AT	.389	SEC	-.124E+02	AT	.681	SEC
SG--17	.165E+01	AT	.540	SEC	-.232E+01	AT	.234	SEC
SG--18	.987E+00	AT	.265	SEC	-.127E+01	AT	.607	SEC
SG--19	.183E+01	AT	.100	SEC	-.182E+01	AT	.237	SEC
SG--20	.101E+01	AT	.104	SEC	-.106E+01	AT	.226	SEC
SG--21	.129E+01	AT	.101	SEC	-.144E+01	AT	.702	SEC
SG--22	.126E+01	AT	.051	SEC	-.144E+01	AT	.142	SEC
SG--23	.579E+00	AT	.562	SEC	-.719E+00	AT	.251	SEC
SG--24	.149E+01	AT	.182	SEC	-.124E+01	AT	.240	SEC
SG--25	.104E+01	AT	.451	SEC	-.152E+01	AT	.978	SEC
SG--26	.863E+00	AT	.290	SEC	-.104E+01	AT	.310	SEC

SG--27	.745E+00 AT .267 SEC	-.862E+00 AT 1.092 SEC
SG--28	.970E+00 AT 1.066 SEC	-.868E+00 AT 1.027 SEC
SG--29	.862E+00 AT .772 SEC	-.694E+00 AT .950 SEC
SG--30	.946E+00 AT .836 SEC	-.967E+00 AT .728 SEC
SG--31	.401E+01 AT 1.096 SEC	-.519E+00 AT .014 SEC
SG--32	.558E+01 AT 1.095 SEC	-.120E+01 AT .478 SEC
SG--33	.130E+02 AT 1.096 SEC	-.119E+01 AT .005 SEC
SG--34	.182E+01 AT .800 SEC	-.192E+01 AT .793 SEC
SG--35	.378E+01 AT .809 SEC	-.413E+01 AT .851 SEC
SG--36	.395E+01 AT .788 SEC	-.456E+01 AT .808 SEC
SG--37	.207E+01 AT 1.098 SEC	-.241E+01 AT 1.083 SEC
SG--38	.919E+00 AT .123 SEC	-.825E+00 AT .911 SEC
SG--39	.722E+00 AT .639 SEC	-.744E+00 AT .630 SEC
SG--40	.247E+01 AT .336 SEC	-.162E+01 AT .041 SEC
SG--41	.874E+00 AT .339 SEC	-.674E+00 AT .310 SEC
SG--42	.169E+01 AT .045 SEC	-.265E+01 AT .257 SEC
SG--43	.523E+00 AT .276 SEC	-.690E+00 AT .558 SEC
SG--44	.147E+01 AT .976 SEC	-.207E+01 AT 1.024 SEC
SG--45	.216E+01 AT .960 SEC	-.203E+01 AT .991 SEC
SG--46	.772E+00 AT .881 SEC	-.986E+00 AT .989 SEC
SG--47	.616E+00 AT .722 SEC	-.117E+01 AT .977 SEC
SG--48	.232E+01 AT .987 SEC	-.127E+01 AT .646 SEC
SG--49	.888E+00 AT .651 SEC	-.110E+01 AT .827 SEC
SG--50	.331E+01 AT .870 SEC	-.270E+01 AT .910 SEC
SG--52	.336E+01 AT .990 SEC	-.414E+01 AT .873 SEC
SG--53	.173E+01 AT .591 SEC	-.157E+01 AT .568 SEC
SG--54	.216E+01 AT .455 SEC	-.224E+01 AT .847 SEC
SG--55	.204E+01 AT .284 SEC	-.250E+01 AT .471 SEC
SG--56	.383E+01 AT .010 SEC	-.236E+01 AT .160 SEC
SG--57	.234E+01 AT .004 SEC	-.246E+01 AT .158 SEC
SG--59	.185E+01 AT .004 SEC	-.196E+01 AT .140 SEC
SG--60	.921E+00 AT .251 SEC	-.972E+00 AT .141 SEC
SG--61	.121E+01 AT .268 SEC	-.931E+00 AT .693 SEC
SG--62	.118E+01 AT .831 SEC	-.102E+01 AT .298 SEC
SG--63	.102E+01 AT .299 SEC	-.931E+00 AT .574 SEC

STRESSES

LOCATION	CHANNELS				
1	36 (SG---1)	MAX COMBINED STRESS	= -4.125E+01	AT TIME =	7.240E-01
	0 (NOT AVAIL.)	MAX HOOP STRESS	= -1.037E+01	AT TIME =	7.240E-01
	37 (SG---2)	MAX AXIAL STRESS	= -3.456E+01	AT TIME =	7.240E-01
	0 (NOT AVAIL.)	MAX BENDING STRESS	= 1.605E+01	AT TIME =	8.280E-01
	0 (NOT AVAIL.)				
2	58 (SG--23)	MAX COMBINED STRESS	= 4.569E+01	AT TIME =	1.820E-01
	0 (NOT AVAIL.)	MAX HOOP STRESS	= 8.026E+00	AT TIME =	1.820E-01
	59 (SG--24)	MAX AXIAL STRESS	= 2.942E+01	AT TIME =	1.820E-01
	0 (NOT AVAIL.)	MAX BENDING STRESS	= 1.869E+01	AT TIME =	1.092E+00
	0 (NOT AVAIL.)				
3	60 (SG--25)	MAX COMBINED STRESS	= -4.667E+01	AT TIME =	9.780E-01
	0 (NOT AVAIL.)	MAX HOOP STRESS	= 8.000E+00	AT TIME =	4.510E-01
	61 (SG--26)	MAX AXIAL STRESS	= 2.667E+01	AT TIME =	4.510E-01
	0 (NOT AVAIL.)	MAX BENDING STRESS	= 2.637E+01	AT TIME =	9.780E-01
	0 (NOT AVAIL.)				
4	62 (SG--27)	MAX COMBINED STRESS	= 2.973E+01	AT TIME =	1.066E+00
	0 (NOT AVAIL.)	MAX HOOP STRESS	= -5.920E+00	AT TIME =	1.091E+00
	63 (SG--28)	MAX AXIAL STRESS	= -1.973E+01	AT TIME =	1.091E+00
	0 (NOT AVAIL.)	MAX BENDING STRESS	= 2.190E+01	AT TIME =	1.066E+00
	0 (NOT AVAIL.)				
5	64 (SG--29)	MAX COMBINED STRESS	= -2.966E+01	AT TIME =	7.280E-01
	0 (NOT AVAIL.)	MAX HOOP STRESS	= 6.191E+00	AT TIME =	8.360E-01
	65 (SG--30)	MAX AXIAL STRESS	= 2.064E+01	AT TIME =	8.360E-01
	0 (NOT AVAIL.)	MAX BENDING STRESS	= 2.116E+01	AT TIME =	7.280E-01
	0 (NOT AVAIL.)				
6	0 (NOT AVAIL.)	MAX COMBINED STRESS	= 1.711E+02	AT TIME =	1.095E+00
	66 (SG--31)	MAX HOOP STRESS	= 4.382E+01	AT TIME =	1.096E+00
	0 (NOT AVAIL.)	MAX AXIAL STRESS	= 1.461E+02	AT TIME =	1.096E+00
	67 (SG--32)	MAX BENDING STRESS	= 4.501E+01	AT TIME =	8.900E-01
	0 (NOT AVAIL.)				
7	0 (NOT AVAIL.)	MAX COMBINED STRESS	= 3.976E+02	AT TIME =	1.096E+00
	68 (SG--33)	MAX HOOP STRESS	= 6.466E+01	AT TIME =	1.096E+00
	0 (NOT AVAIL.)	MAX AXIAL STRESS	= 2.155E+02	AT TIME =	1.096E+00
	69 (SG--34)	MAX BENDING STRESS	= 1.821E+02	AT TIME =	1.096E+00
	0 (NOT AVAIL.)				
8	0 (NOT AVAIL.)	MAX COMBINED STRESS	= -1.398E+02	AT TIME =	8.080E-01
	71 (SG--36)	MAX HOOP STRESS	= -2.017E+01	AT TIME =	5.540E-01
	0 (NOT AVAIL.)	MAX AXIAL STRESS	= -6.722E+01	AT TIME =	5.540E-01
	70 (SG--35)	MAX BENDING STRESS	= 1.261E+02	AT TIME =	8.090E-01
	0 (NOT AVAIL.)				
9	72 (SG--37)	MAX COMBINED STRESS	= -8.004E+01	AT TIME =	1.083E+00
	73 (SG--38)	MAX HOOP STRESS	= -8.036E+00	AT TIME =	1.046E+00
	0 (NOT AVAIL.)	MAX AXIAL STRESS	= -2.679E+01	AT TIME =	1.046E+00
	74 (SG--39)	MAX BENDING STRESS	= 5.829E+01	AT TIME =	1.082E+00
	0 (NOT AVAIL.)				

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LOCATION     CHANNELS

   10        75 (SG--40     )    MAX COMBINED STRESS =  8.257E+01    AT TIME =  3.370E-01
             76 (SG--41     )    MAX HOOP STRESS     =  3.577E+00    AT TIME =  2.330E-01
             77 (SG--42     )    MAX AXIAL STRESS    =  1.192E+01    AT TIME =  2.330E-01
             78 (SG--43     )    MAX BENDING STRESS  =  7.796E+01    AT TIME =  3.370E-01
              0 (NOT AVAIL.)

LOCATION     CHANNELS

   11        79 (SG--44     )    MAX COMBINED STRESS =  6.621E+01    AT TIME =  9.600E-01
              0 (NOT AVAIL.)     MAX HOOP STRESS     = -1.696E+01    AT TIME =  9.940E-01
             80 (SG--45     )    MAX AXIAL STRESS    = -5.654E+01    AT TIME =  9.940E-01
              0 (NOT AVAIL.)     MAX BENDING STRESS  =  6.208E+01    AT TIME =  9.600E-01
              0 (NOT AVAIL.)

LOCATION     CHANNELS

   12        81 (SG--46     )    MAX COMBINED STRESS =  5.773E+01    AT TIME =  9.870E-01
             82 (SG--47     )    MAX HOOP STRESS     = -1.869E+00    AT TIME =  6.440E-01
             83 (SG--48     )    MAX AXIAL STRESS    = -6.229E+00    AT TIME =  6.440E-01
             84 (SG--49     )    MAX BENDING STRESS  =  5.269E+01    AT TIME =  9.870E-01
              0 (NOT AVAIL.)

LOCATION     CHANNELS

   13        85 (SG--50     )    MAX COMBINED STRESS = -1.280E+02    AT TIME =  8.720E-01
              0 (NOT AVAIL.)     MAX HOOP STRESS     =  9.234E+00    AT TIME =  5.920E-01
             86 (SG--52     )    MAX AXIAL STRESS    =  3.078E+01    AT TIME =  5.920E-01
             87 (SG--53     )    MAX BENDING STRESS  =  1.122E+02    AT TIME =  8.710E-01
              0 (NOT AVAIL.)

LOCATION     CHANNELS

   14        88 (SG--54     )    MAX COMBINED STRESS = -7.665E+01    AT TIME =  4.710E-01
              0 (NOT AVAIL.)     MAX HOOP STRESS     = -1.994E+01    AT TIME =  4.[illegible]0E-01
             89 (SG--55     )    MAX AXIAL STRESS    = -6.648E+01    AT TIME =  4.[illegible]01
              0 (NOT AVAIL.)     MAX BENDING STRESS  =  1.433E+01    AT TIME =  8.610[illegible]-01
              0 (NOT AVAIL.)

LOCATION     CHANNELS

   15        90 (SG--56     )    MAX COMBINED STRESS =  1.237E+02    AT TIME =  1.000E-02
             91 (SG--57     )    MAX HOOP STRESS     =  2.373E+01    AT TIME =  5.000E-03
              0 (NOT AVAIL.)     MAX AXIAL STRESS    =  7.910E+01    AT TIME =  5.000E-03
             93 (SG--59     )    MAX BENDING STRESS  =  5.799E+01    AT TIME =  1.000E-02
              0 (NOT AVAIL.)

LOCATION     CHANNELS

   16        94 (SG--60     )    MAX COMBINED STRESS =  3.522E+01    AT TIME =  2.990E-01
             95 (SG--61     )    MAX HOOP STRESS     =  3.266E+00    AT TIME =  1.016E+00
             96 (SG--62     )    MAX AXIAL STRESS    =  1.089E+01    AT TIME =  1.016E+00
             97 (SG--63     )    MAX BENDING STRESS  =  2.877E+01    AT TIME =  2.820E-01
              0 (NOT AVAIL.)
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R O S E T T E S

ROSETTE	CHANNELS	PRINCIPLE STRESS MIN	PRINCIPLE STRESS MAX	SHEAR STRESS MIN	SHEAR STRESS MAX	STRESS INTENSITY MIN	STRESS INTENSITY MAX
1	1 (SR-1A) 2 (SR-1B) 3 (SR-1C)	-1.075E+02	1.027E+02	9.997E-02	3.836E+01	9.800E-01	1.075E+02
2	4 (SR-2A) 0 (NOT AVAIL.) 5 (SR-2C)	** ROSETTE COMPONENT NOT AVAILABLE **					
3	6 (SR-3A) 7 (SR-3B) 8 (SR-3C)	-3.266E+02	3.420E+02	4.732E-01	1.511E+02	3.230E+00	3.420E+02
4	9 (SR-4A) 10 (SR-4B) 11 (SR-4C)	-1.257E+02	9.319E+01	2.844E-01	6.067E+01	3.153E+00	1.257E+02
5	12 (SR-5A) 13 (SR-5B) 14 (SR-5C)	-6.003E+01	7.677E+01	2.890E-01	4.562E+01	8.750E-01	9.124E+01
6	15 (SR-6A) 16 (SR-6B) 17 (SR-6C)	-6.579E+01	6.964E+01	2.632E-01	3.178E+01	1.390E+00	6.964E+01
7	18 (SR-7A) 19 (SR-7B) 20 (SR-7C)	-3.098E+02	2.982E+02	3.328E-01	5.533E+01	4.871E+00	3.098E+02
8	21 (SR-8A) 22 (SR-8B) 23 (SR-8C)	-3.084E+02	3.295E+02	4.625E-01	6.421E+01	3.424E+00	3.295E+02
9	24 (SR-9A) 25 (SR-9B) 26 (SR-9C)	-2.512E+02	2.587E+02	3.866E-01	7.549E+01	4.408E+00	2.587E+02
10	27 (SR-10A) 28 (SR-10B) 29 (SR-10C)	-2.264E+02	3.340E+02	1.801E-01	9.696E+01	2.502E+00	3.340E+02
11	30 (SR-11A) 31 (SR-11B) 32 (SR-11C .	-3.122E+02	3.289E+02	2.102E-01	1.040E+02	7.409E+00	3.289E+02
12	33 (SR-12A) 34 (SR-12B) 35 (SR-12C)	-2.667E+02	2.380E+02	7.172E-01	7.567E+01	3.964E+00	2.667E+02

SENSOR ID	MAX VALUE				MIN VALUE			
PT-17	.163E+00	AT	.880	SEC	-.751E-01	AT	.470	SEC
PT-18	.115E+00	AT	.376	SEC	-.910E-01	AT	.516	SEC
PT-19	.186E+03	AT	.995	SEC	-.512E+02	AT	.004	SEC
PT-20	.197E+03	AT	.995	SEC	-.472E+02	AT	.004	SEC
A---1	.798E+00	AT	.613	SEC	-.721E+00	AT	.630	SEC
A---2	.723E+00	AT	.768	SEC	-.754E+00	AT	.502	SEC
A---3	.192E+00	AT	.575	SEC	-.219E+00	AT	.829	SEC
A---4	.727E+00	AT	.679	SEC	-.913E+00	AT	.758	SEC
PT--2	.217E+01	AT	.324	SEC	-.297E+01	AT	.364	SEC
PT--3	.328E+01	AT	.103	SEC	-.316E+01	AT	.236	SEC
PT--4	.248E+01	AT	.433	SEC	-.242E+01	AT	.385	SEC
PT--6	.112E+01	AT	.787	SEC	-.143E+01	AT	.941	SEC
PT--7	.126E+01	AT	.107	SEC	-.144E+01	AT	.383	SEC
PT--8	.121E+01	AT	.106	SEC	-.187E+01	AT	.371	SEC
PT--9	.104E+01	AT	.334	SEC	-.142E+01	AT	.356	SEC
PT-10	.600E+00	AT	.536	SEC	-.781E+00	AT	.514	SEC
PT-11	.141E+01	AT	.105	SEC	-.134E+01	AT	.246	SEC
PT-12	.610E-01	AT	.583	SEC	-.569E-01	AT	.142	SEC
PT-13	.121E+01	AT	.105	SEC	-.172E+01	AT	.369	SEC
PT-14	.122E+01	AT	.326	SEC	-.157E+01	AT	.377	SEC
PT-15	.413E+02	AT	.102	SEC	-.898E+02	AT	.004	SEC
PT-16	.410E+02	AT	.100	SEC	-.919E+02	AT	.004	SEC

TEST MT6

S T R E S S E S

LOCATION	CHANNELS			
1	36 (SG---1)	MAX COMBINED STRESS	= -4.752E+01	AT TIME = 3.710E-01
	0 (NOT AVAIL.)	MAX HOOP STRESS	= -1.128E+01	AT TIME = 3.710E-01
	37 (SG---2)	MAX AXIAL STRESS	= -3.758E+01	AT TIME = 3.710E-01
	0 (NOT AVAIL.)	MAX BENDING STRESS	= 1.511E+01	AT TIME = 8.420E-01
	0 (NOT AVAIL.)			

LOCATION	CHANNELS			
2	58 (SG--23)	MAX COMBINED STRESS	= -5.410E+01	AT TIME = 7.530E-01
	0 (NOT AVAIL.)	MAX HOOP STRESS	= -8.727E+00	AT TIME = 8.500E-01
	59 (SG--24)	MAX AXIAL STRESS	= -2.909E+01	AT TIME = 8.500E-01
	0 (NOT AVAIL.)	MAX BENDING STRESS	= 2.869E+01	AT TIME = 7.540E-01
	0 (NOT AVAIL.)			

LOCATION	CHANNELS			
3	60 (SG--25)	MAX COMBINED STRESS	= -4.403E+01	AT TIME = 5.300E-01
	0 (NOT AVAIL.)	MAX HOOP STRESS	= -9.478E+00	AT TIME = 5.290E-01
	61 (SG--26)	MAX AXIAL STRESS	= -3.159E+01	AT TIME = 5.290E-01
	0 (NOT AVAIL.)	MAX BENDING STRESS	= 2.946E+01	AT TIME = 8.090E-01
	0 (NOT AVAIL.)			

LOCATION	CHANNELS			
4	62 (SG--27)	MAX COMBINED STRESS	= -3.876E+01	AT TIME = 1.050E+00
	0 (NOT AVAIL.)	MAX HOOP STRESS	= 8.298E+00	AT TIME = 7.930E-01
	63 (SG--28)	MAX AXIAL STRESS	= 2.766E+01	AT TIME = 7.930E-01
	0 (NOT AVAIL.)	MAX BENDING STRESS	= 2.369E+01	AT TIME = 1.049E+00
	0 (NOT AVAIL.)			

LOCATION	CHANNELS			
5	64 (SG--29)	MAX COMBINED STRESS	= 2.622E+01	AT TIME = 7.400E-02
	0 (NOT AVAIL.)	MAX HOOP STRESS	= -4.406E+00	AT TIME = 1.950E-01
	65 (SG--30)	MAX AXIAL STRESS	= -1.469E+01	AT TIME = 1.950E-01
	0 (NOT AVAIL.)	MAX BENDING STRESS	= 1.592E+01	AT TIME = 1.037E+00
	0 (NOT AVAIL.)			

LOCATION	CHANNELS			
6	0 (NOT AVAIL.)	MAX COMBINED STRESS	= 1.737E+02	AT TIME = 1.057E+00
	66 (SG--31)	MAX HOOP STRESS	= 4.515E+01	AT TIME = 1.095E+00
	0 (NOT AVAIL.)	MAX AXIAL STRESS	= 1.565E+02	AT TIME = 1.095E+00
	67 (SG--32)	MAX BENDING STRESS	= 2.809E+01	AT TIME = 3.750E-01
	0 (NOT AVAIL.)			

LOCATION	CHANNELS			
7	0 (NOT AVAIL.)	MAX COMBINED STRESS	= 4.566E+02	AT TIME = 8.410E-01
	68 (SG--33)	MAX HOOP STRESS	= 7.187E+01	AT TIME = 8.300E-01
	0 (NOT AVAIL.)	MAX AXIAL STRESS	= 2.396E+02	AT TIME = 8.300E-01
	69 (SG--34)	MAX BENDING STRESS	= 2.211E+02	AT TIME = 8.150E-01
	0 (NOT AVAIL.)			

LOCATION	CHANNELS			
8	0 (NOT AVAIL.)	MAX COMBINED STRESS	= 1.554E+02	AT TIME = 8.900E-01
	71 (SG--36)	MAX HOOP STRESS	= -3.613E+01	AT TIME = 5.080E-01
	0 (NOT AVAIL.)	MAX AXIAL STRESS	= -1.204E+02	AT TIME = 5.080E-01
	70 (SG--35)	MAX BENDING STRESS	= 1.110E+02	AT TIME = 7.590E-01
	0 (NOT AVAIL.)			

LOCATION	CHANNELS			
9	72 (SG--37)	MAX COMBINED STRESS	= 6.843E+01	AT TIME = 7.980E-01
	73 (SG--38)	MAX HOOP STRESS	= 8.265E+00	AT TIME = 5.170E-01
	0 (NOT AVAIL.)	MAX AXIAL STRESS	= 2.755E+01	AT TIME = 5.170E-01
	74 (SG--39)	MAX BENDING STRESS	= 4.549E+01	AT TIME = 7.980E-01
	0 (NOT AVAIL.)			

TEST MT6

LOCATION	CHANNELS				
10	75 (SG--40)	MAX COMBINED STRESS	= -1.088E+02	AT TIME =	3.360E-01
	76 (SG--41)	MAX HOOP STRESS	= -2.881E+00	AT TIME =	2.050E-01
	77 (SG--42)	MAX AXIAL STRESS	= -9.603E+00	AT TIME =	2.050E-01
	78 (SG--43)	MAX BENDING STRESS	= 1.072E+02	AT TIME =	3.360E-01
	0 (NOT AVAIL.)				

LOCATION	CHANNELS				
11	79 (SG--44)	MAX COMBINED STRESS	= -6.383E+01	AT TIME =	7.440E-01
	0 (NOT AVAIL.)	MAX HOOP STRESS	= -1.469E+01	AT TIME =	6.500E-01
	80 (SG--45)	MAX AXIAL STRESS	= -4.897E+01	AT TIME =	6.[illegible]0E-01
	0 (NOT AVAIL.)	MAX BENDING STRESS	= 5.029E+01	AT TIME =	6.[illegible]0E-01
	0 (NOT AVAIL.)				

LOCATION	CHANNELS				
12	81 (SG--46)	MAX COMBINED STRESS	= -5.816E+01	AT TIME =	6.720E-01
	82 (SG--47)	MAX HOOP STRESS	= -1.666E+00	AT TIME =	8.220E-01
	83 (SG--48)	MAX AXIAL STRESS	= -5.553E+00	AT TIME =	8.220E-01
	84 (SG--49)	MAX BENDING STRESS	= 5.729E+01	AT TIME =	6.700E-01
	0 (NOT AVAIL.)				

LOCATION	CHANNELS				
13	85 (SG--50)	MAX COMBINED STRESS	= 1.334E+02	AT TIME =	7.580E-01
	0 (NOT AVAIL.)	MAX HOOP STRESS	= -9.610E+00	AT TIME =	9.170E-01
	86 (SG--52)	MAX AXIAL STRESS	= -3.203E+01	AT TIME =	9.170E-01
	87 (SG--53)	MAX BENDING STRESS	= 1.250E+02	AT TIME =	7.580E-01
	0 (NOT AVAIL.)				

LOCATION	CHANNELS				
14	[illegible]8 (SG--54)	MAX COMBINED STRESS	= -6.992E+01	AT TIME =	9.010E-01
	0 (NOT AVAIL.)	MAX HOOP STRESS	= -2.546E+01	AT TIME =	1.079E+00
	[illegible]9 (SG--55)	MAX AXIAL STRESS	= -6.488E+01	AT TIME =	1.079E+00
	0 (NOT AVAIL.)	MAX BENDING STRESS	= 1.824E+01	AT TIME =	8.000E-01
	0 (NOT AVAIL.)				

LOCATION	CHANNELS				
15	90 (SG--56)	MAX COMBINED STRESS	= 1.147E+02	AT TIME =	2.700E-02
	91 (SG--57)	MAX HOOP STRESS	= -2.095E+01	AT TIME =	1.550E-01
	0 (NOT AVAIL.)	MAX AXIAL STRESS	= -6.984E+01	AT TIME =	1.550E-01
	93 (SG--59)	MAX BENDING STRESS	= 5.404E+01	AT TIME =	2.800E-02
	0 (NOT AVAIL.)				

LOCATION	CHANNELS				
16	94 (SG--60)	MAX COMBINED STRESS	= 5.504E+01	AT TIME =	8.750E-01
	95 (SG--61)	MAX HOOP STRESS	= 3.006E+00	AT TIME =	9.600E-01
	96 (SG--62)	MAX AXIAL STRESS	= 1.003E+01	AT TIME =	9.600E-01
	97 (SG--63)	MAX BENDING STRESS	= 5.126E+01	AT TIME =	9.050E-01
	0 (NOT AVAIL.)				

TEST MT6

SENSOR ID	MAX VALUE	MIN VALUE
SR-1A	.398E+01 AT .593 SEC	-.445E+01 AT .770 SEC
SR-1B	.229E+01 AT .791 SEC	-.228E+01 AT .640 SEC
SR-1C	.843E+00 AT .430 SEC	-.856E+00 AT .504 SEC
SR-2A	.415E+01 AT .627 SEC	-.356E+01 AT .739 SEC
SR-2C	.829E+00 AT .491 SEC	-.117E+01 AT .741 SEC
SR-3A	.115E+02 AT .382 SEC	-.107E+02 AT .504 SEC
SR-3B	.130E+01 AT .793 SEC	-.145E+01 AT .411 SEC
SR-3C	.884E+00 AT .263 SEC	-.661E+00 AT .302 SEC
SR-4A	.252E+01 AT .413 SEC	-.379E+01 AT .542 SEC
SR-4B	.103E+01 AT .541 SEC	-.112E+01 AT .548 SEC
SR-4C	.784E+00 AT .845 SEC	-.120E+01 AT .505 SEC
SR-5A	.355E+01 AT .793 SEC	-.253E+01 AT .358 SEC
SR-5B	.193E+01 AT .382 SEC	-.118E+01 AT .320 SEC
SR-5C	.877E+00 AT .496 SEC	-.867E+00 AT .920 SEC
SR-6A	.528E+01 AT 1.015 SEC	-.491E+01 AT 1.047 SEC
SR-6B	.303E+01 AT 1.015 SEC	-.241E+01 AT .984 SEC
SR-6C	.135E+01 AT .930 SEC	-.156E+01 AT .888 SEC
SR-7A	.103E+02 AT .639 SEC	-.967E+01 AT .592 SEC
SR-7B	.763E+01 AT .639 SEC	-.758E+01 AT .786 SEC
SR-7C	.623E+01 AT .472 SEC	-.639E+01 AT .853 SEC
SR-8A	.145E+02 AT .602 SEC	-.107E+02 AT .760 SEC
SR-8B	.113E+02 AT .601 SEC	-.822E+01 AT .760 SEC
SR-8C	.728E+01 AT .602 SEC	-.496E+01 AT .761 SEC
SR-9A	.135E+02 AT .504 SEC	-.623E+01 AT .121 SEC
SR-9B	.923E+01 AT .504 SEC	-.498E+01 AT .537 SEC
SR-9C	.352E+01 AT .762 SEC	-.230E+01 AT .537 SEC
SR-10A	.843E+01 AT .542 SEC	-.705E+01 AT .827 SEC
SR-10B	.687E+01 AT .542 SEC	-.535E+01 AT .825 SEC
SR-10C	.313E+01 AT .543 SEC	-.404E+01 AT .718 SEC
SR-11A	.101E+02 AT .360 SEC	-.107E+02 AT .792 SEC
SR-11B	.742E+01 AT .773 SEC	-.521E+01 AT .792 SEC
SR-11C	.256E+01 AT .774 SEC	-.266E+01 AT .922 SEC
SR-12A	.147E+02 AT 1.046 SEC	-.139E+02 AT 1.016 SEC
SR-12B	.103E+02 AT 1.047 SEC	-.956E+01 AT 1.016 SEC
SR-12C	.667E+01 AT .927 SEC	-.607E+01 AT .888 SEC
SG---1	.936E+00 AT .099 SEC	-.146E+01 AT .532 SEC
SG---2	.119E+01 AT .054 SEC	-.155E+01 AT .371 SEC
SG---3	.169E+01 AT .117 SEC	-.210E+01 AT .603 SEC
SG---4	.877E+00 AT .059 SEC	-.124E+01 AT .602 SEC
SG---5	.199E+01 AT .117 SEC	-.185E+01 AT .286 SEC
SG---6	.136E+01 AT .120 SEC	-.162E+01 AT .504 SEC
SG---7	.268E+01 AT .120 SEC	-.302E+01 AT .504 SEC
SG---8	.137E+01 AT .124 SEC	-.173E+01 AT .498 SEC
SG---9	.225E+01 AT .122 SEC	-.246E+01 AT .187 SEC
SG--10	.101E+02 AT .809 SEC	-.917E+01 AT .217 SEC
SG--11	.238E+02 AT .123 SEC	-.263E+02 AT .185 SEC
SG--12	.124E+02 AT .120 SEC	-.157E+02 AT .186 SEC
SG--13	.249E+02 AT .117 SEC	-.296E+02 AT .504 SEC
SG--14	.373E+02 AT .123 SEC	-.314E+02 AT .505 SEC
SG--15	.117E+02 AT .225 SEC	-.160E+02 AT .402 SEC
SG--16	.881E+01 AT .226 SEC	-.140E+02 AT .504 SEC
SG--17	.152E+01 AT .231 SEC	-.175E+01 AT .390 SEC
SG--18	.115E+01 AT .125 SEC	-.141E+01 AT .270 SEC
SG--19	.193E+01 AT .119 SEC	-.225E+01 AT .505 SEC
SG--20	.143E+01 AT .124 SEC	-.107E+01 AT .498 SEC
SG--21	.183E+01 AT .118 SEC	-.191E+01 AT .505 SEC
SG--22	.107E+01 AT .059 SEC	-.157E+01 AT .402 SEC
SG--23	.106E+01 AT .670 SEC	-.753E+00 AT .291 SEC
SG--24	.867E+00 AT .790 SEC	-.176E+01 AT .753 SEC
SG--25	.982E+00 AT .546 SEC	-.106E+01 AT .485 SEC
SG--26	.107E+01 AT .549 SEC	-.144E+01 AT .530 SEC

SG--27	.907E+00	AT	.794	SEC	-.110E+01	AT	.976	SEC
SG--28	.924E+00	AT	.792	SEC	-.126E+01	AT	1.050	SEC
SG--29	.730E+00	AT	.646	SEC	-.597E+00	AT	.913	SEC
SG--30	.855E+00	AT	.074	SEC	-.727E+00	AT	.853	SEC
SG--31	.458E+01	AT	1.096	SEC	-.964E+00	AT	.300	SEC
SG--32	.567E+01	AT	1.057	SEC	-.718E+00	AT	.005	SEC
SG--33	.149E+02	AT	.841	SEC	-.323E+01	AT	.367	SEC
SG--34	.228E+01	AT	1.074	SEC	-.299E+01	AT	.365	SEC
SG--35	.482E+01	AT	.656	SEC	-.455E+01	AT	.508	SEC
SG--36	.507E+01	AT	.890	SEC	-.448E+01	AT	.571	SEC
SG--37	.208E+01	AT	.798	SEC	-.193E+01	AT	.573	SEC
SG--38	.696E+00	AT	.851	SEC	-.959E+00	AT	.973	SEC
SG--39	.102E+01	AT	.843	SEC	-.947E+00	AT	.829	SEC
SG--40	.277E+01	AT	.379	SEC	-.330E+01	AT	.336	SEC
SG--41	.996E+00	AT	.495	SEC	-.766E+00	AT	.642	SEC
SG--42	.368E+01	AT	.336	SEC	-.327E+01	AT	.378	SEC
SG--43	.721E+00	AT	.428	SEC	-.699E+00	AT	.495	SEC
SG--44	.119E+01	AT	.839	SEC	-.209E+01	AT	.744	SEC
SG--45	.202E+01	AT	.413	SEC	-.186E+01	AT	.581	SEC
SG--46	.780E+00	AT	.752	SEC	-.103E+01	AT	.579	SEC
SG--47	.853E+00	AT	.648	SEC	-.187E+01	AT	.673	SEC
SG--48	.203E+01	AT	.580	SEC	-.158E+01	AT	.753	SEC
SG--49	.134E+01	AT	.673	SEC	-.914E+00	AT	.649	SEC
SG--50	.413E+01	AT	.757	SEC	-.348E+01	AT	.785	SEC
SG--52	.296E+01	AT	.652	SEC	-.399E+01	AT	.758	SEC
SG--53	.143E+01	AT	.662	SEC	-.159E+01	AT	.916	SEC
SG--54	.203E+01	AT	.549	SEC	-.283E+01	AT	1.079	SEC
SG--55	.238E+01	AT	.888	SEC	-.293E+01	AT	.801	SEC
SG--56	.356E+01	AT	.027	SEC	-.257E+01	AT	.156	SEC
SG--57	.197E+01	AT	.004	SEC	-.216E+01	AT	.154	SEC
SG--59	.132E+01	AT	.006	SEC	-.213E+01	AT	.155	SEC
SG--60	.116E+01	AT	1.056	SEC	-.922E+00	AT	.552	SEC
SG--61	.160E+01	AT	.975	SEC	-.151E+01	AT	.757	SEC
SG--62	.170E+01	AT	.827	SEC	-.160E+01	AT	.771	SEC
SG--63	.147E+01	AT	.843	SEC	-.109E+01	AT	1.026	SEC

TEST MT6

R O S E T T E S

ROSETTE	CHANNELS	PRINCIPLE STRESS MIN	PRINCIPLE STRESS MAX	SHEAR STRESS MIN	SHEAR STRESS MAX	STRESS INTENSITY MIN	STRESS INTENSITY MAX
1	1 (SR-1A)						
	2 (SR-1B)	-1.398E+02	1.253E+02	3.693E-01	4.468E+01	2.489E+00	1.398E+0
	3 (SR-1C)						
2	4 (SR-2A)						
	0 (NOT AVAIL.)	** ROSETTE COMPONENT NOT AVAILABLE **					
	5 (SR-2C)						
3	6 (SR-3A)						
	7 (SR-3B)	-3.557E+02	3.786E+02	2.789E-01	1.581E+02	2.832E+00	3.786E+0
	8 (SR-3C)						
4	9 (SR-4A)						
	10 (SR-4B)	-1.360E+02	9.948E+01	2.293E-01	7.311E+01	5.627E-01	1.462E+0
	11 (SR-4C)						
5	12 (SR-5A)						
	13 (SR-5B)	-7.807E+01	1.058E+02	1.495E-01	4.223E+01	1.707E+00	1.058E+0
	14 (SR-5C)						
6	15 (SR-6A)						
	16 (SR-6B)	-1.427E+02	1.596E+02	1.455E-01	6.592E+01	4.519E-01	1.596E+0
	17 (SR-6C)						
7	18 (SR-7A)						
	19 (SR-7B)	-3.396E+02	3.663E+02	7.232E-01	7.274E+01	2.759E+00	3.663E+0
	20 (SR-7C)						
8	21 (SR-8A)						
	22 (SR-8B)	-3.745E+02	5.128E+02	9.203E-01	9.208E+01	7.084E+00	5.128E+02
	23 (SR-8C)						
9	24 (SR-9A)						
	25 (SR-9B)	-2.035E+02	4.432E+02	7.314E-01	1.161E+02	4.353E+00	4.432E+02
	26 (SR-9C)						
10	27 (SR-10A)						
	28 (SR-10B)	-2.427E+02	2.917E+02	5.570E-01	7.757E+01	3.394E+00	2.917E+02
	29 (SR-10C)						
11	30 (SR-11A)						
	31 (SR-11B)	-3.521E+02	3.236E+02	1.144E+00	1.108E+02	6.543E+00	3.521E+02
	32 (SR-11C)						
12	33 (SR-12A)						
	34 (SR-12B)	-4.580E+02	5.090E+02	6.192E-01	1.176E+02	5.748E+00	5.090E+02
	35 (SR-12C)						

TEST MT8

SENSOR ID	MAX VALUE				MIN VALUE			
PT-17	.178E+01	AT	.995	SEC	-.160E+00	AT	.005	SEC
PT-18	.170E+01	AT	.995	SEC	-.116E+00	AT	.004	SEC
PT-19	.195E+03	AT	.995	SEC	-.446E+02	AT	.004	SEC
PT-20	.181E+03	AT	.995	SEC	-.387E+02	AT	.005	SEC
A---1	.608E+00	AT	.679	SEC	-.590E+00	AT	.706	SEC
A---2	.627E+00	AT	.953	SEC	-.642E+00	AT	.731	SEC
A---3	.217E+00	AT	.588	SEC	-.213E+00	AT	.603	SEC
A---4	.618E+00	AT	.839	SEC	-.764E+00	AT	.643	SEC
PT--2	.216E+01	AT	.221	SEC	-.261E+01	AT	.371	SEC
PT--3	.172E+01	AT	.125	SEC	-.361E+01	AT	.251	SEC
PT--4	.288E+01	AT	.317	SEC	-.292E+01	AT	.387	SEC
PT--6	.796E+00	AT	.122	SEC	-.119E+01	AT	.282	SEC
PT--7	.119E+01	AT	.122	SEC	-.156E+01	AT	.272	SEC
PT--8	.123E+01	AT	.123	SEC	-.160E+01	AT	.604	SEC
PT--9	.698E+00	AT	.123	SEC	-.109E+01	AT	.379	SEC
PT-10	.651E+00	AT	.871	SEC	-.612E+00	AT	.559	SEC
PT-11	.113E+01	AT	.128	SEC	-.146E+01	AT	.507	SEC
PT-12	.477E-01	AT	.155	SEC	-.117E+00	AT	.532	SEC
PT-13	.130E+01	AT	.122	SEC	-.162E+01	AT	.604	SEC
PT-14	.805E+00	AT	.125	SEC	-.156E+01	AT	.374	SEC
PT-15	.472E+02	AT	.120	SEC	-.842E+02	AT	.005	SEC
PT-16	.462E+02	AT	.119	SEC	-.839E+02	AT	.005	SEC

TEST MT8

SENSOR ID	MAX VALUE	MIN VALUE
SR-1A	.466E+01 AT .692 SEC	-.410E+01 AT .540 SEC
SR-1B	.267E+01 AT .467 SEC	-.253E+01 AT .485 SEC
SR-1C	.698E+00 AT .987 SEC	-.942E+00 AT .535 SEC
SR-2A	.317E+01 AT .690 SEC	-.384E+01 AT .583 SEC
SR-2C	.802E+00 AT .879 SEC	-.109E+01 AT .636 SEC
SR-3A	.104E+02 AT .641 SEC	-.120E+02 AT .382 SEC
SR-3B	.146E+01 AT .639 SEC	-.164E+01 AT .377 SEC
SR-3C	.750E+00 AT .553 SEC	-.717E+00 AT .593 SEC
SR-4A	.268E+01 AT .679 SEC	-.247E+01 AT .414 SEC
SR-4B	.925E+00 AT .986 SEC	-.942E+00 AT .094 SEC
SR-4C	.761E+00 AT .522 SEC	-.109E+01 AT .567 SEC
SR-5A	.277E+01 AT .698 SEC	-.331E+01 AT .379 SEC
SR-5B	.143E+01 AT .796 SEC	-.164E+01 AT .380 SEC
SR-5C	.913E+00 AT .993 SEC	-.810E+00 AT .887 SEC
SR-6A	.475E+01 AT .927 SEC	-.494E+01 AT .894 SEC
SR-6B	.209E+01 AT .855 SEC	-.228E+01 AT .892 SEC
SR-6C	.124E+01 AT .544 SEC	-.111E+01 AT .498 SEC
SR-7A	.994E+01 AT .485 SEC	-.124E+02 AT .466 SEC
SR-7B	.678E+01 AT 1.042 SEC	-.110E+02 AT .692 SEC
SR-7C	.711E+01 AT 1.040 SEC	-.892E+01 AT .692 SEC
SR-8A	.124E+02 AT .593 SEC	-.702E+01 AT .311 SEC
SR-8B	.941E+01 AT .533 SEC	-.528E+01 AT .311 SEC
SR-8C	.597E+01 AT .353 SEC	-.491E+01 AT .311 SEC
SR-9A	.108E+02 AT .379 SEC	-.707E+01 AT .416 SEC
SR-9B	.660E+01 AT .607 SEC	-.451E+01 AT .873 SEC
SR-9C	.331E+01 AT .338 SEC	-.285E+01 AT .588 SEC
SR-10A	.726E+01 AT .411 SEC	-.704E+01 AT .559 SEC
SR-10B	.396E+01 AT .697 SEC	-.625E+01 AT .560 SEC
SR-10C	.237E+01 AT .517 SEC	-.410E+01 AT .562 SEC
SR-11A	.123E+02 AT .378 SEC	-.796E+01 AT .642 SEC
SR-11B	.551E+01 AT .504 SEC	-.461E+01 AT .643 SEC
SR-11C	.325E+01 AT .998 SEC	-.278E+01 AT .885 SEC
SR-12A	.132E+02 AT .891 SEC	-.115E+02 AT .807 SEC
SR-12B	.946E+01 AT .891 SEC	-.789E+01 AT .987 SEC
SR-12C	.468E+01 AT .957 SEC	-.428E+01 AT .496 SEC
SG---1	.101E+01 AT 1.055 SEC	-.992E+00 AT .499 SEC
SG---2	.128E+01 AT .856 SEC	-.949E+00 AT .248 SEC
SG---3	.111E+01 AT .204 SEC	-.152E+01 AT .587 SEC
SG---4	.698E+00 AT .092 SEC	-.104E+01 AT .831 SEC
SG---5	.137E+01 AT .097 SEC	-.171E+01 AT .590 SEC
SG---6	.105E+01 AT .089 SEC	-.114E+01 AT .352 SEC
SG---7	.210E+01 AT .087 SEC	-.260E+01 AT .343 SEC
SG---8	.119E+01 AT .305 SEC	-.134E+01 AT .377 SEC
SG---9	.160E+01 AT .097 SEC	-.215E+01 AT .350 SEC
SG--10	.107E+02 AT .550 SEC	-.795E+01 AT .182 SEC
SG--11	.243E+02 AT .091 SEC	-.252E+02 AT .235 SEC
SG--12	.135E+02 AT .300 SEC	-.121E+02 AT .245 SEC
SG--13	.145E+02 AT .096 SEC	-.209E+02 AT .261 SEC
SG--14	.301E+02 AT .304 SEC	-.310E+02 AT .473 SEC
SG--15	.947E+01 AT .044 SEC	-.155E+02 AT .550 SEC
SG--16	.106E+02 AT .308 SEC	-.108E+02 AT .248 SEC

TEST MT8

SG--17	.128E+01	AT	.137	SEC	-.173E+01	AT	.621	SEC
SG--18	.104E+01	AT	.100	SEC	-.165E+01	AT	.697	SEC
SG--19	.144E+01	AT	.091	SEC	-.171E+01	AT	.798	SEC
SG--20	.894E+00	AT	.521	SEC	-.107E+01	AT	.368	SEC
SG--21	.140E+01	AT	.237	SEC	-.210E+01	AT	.480	SEC
SG--22	.117E+01	AT	.033	SEC	-.185E+01	AT	.468	SEC
SG--23	.850E+00	AT	1.091	SEC	-.757E+00	AT	.256	SEC
SG--24	.857E+00	AT	.093	SEC	-.195E+01	AT	.556	SEC
SG--25	.819E+00	AT	.605	SEC	-.907E+00	AT	.748	SEC
SG--26	.142E+01	AT	.613	SEC	-.971E+00	AT	.750	SEC

SG--27	.794E+00	AT	1.006	SEC	-.103E+01	AT	.495	SEC
SG--28	.776E+00	AT	.856	SEC	-.861E+00	AT	.781	SEC
SG--29	.742E+00	AT	.410	SEC	-.701E+00	AT	.072	SEC
SG--30	.106E+01	AT	1.003	SEC	-.109E+01	AT	.946	SEC
SG--31	.436E+01	AT	1.095	SEC	-.522E+00	AT	.212	SEC
SG--32	.481E+01	AT	1.035	SEC	-.465E+00	AT	.148	SEC
SG--33	.137E+02	AT	1.095	SEC	-.165E+01	AT	.294	SEC
SG--34	.189E+01	AT	1.034	SEC	-.153E+01	AT	.625	SEC
SG--35	.603E+01	AT	.553	SEC	-.374E+01	AT	.483	SEC
SG--36	.424E+01	AT	.561	SEC	-.817E+01	AT	.640	SEC
SG--37	.150E+01	AT	.766	SEC	-.194E+01	AT	.715	SEC
SG--38	.947E+00	AT	.978	SEC	-.116E+01	AT	.988	SEC
SG--39	.778E+00	AT	.923	SEC	-.300E+00	AT	1.043	SEC
SG--40	.150E+01	AT	.829	SEC	-.188E+01	AT	.621	SEC
SG--41	.568E+00	AT	.336	SEC	-.545E+00	AT	.360	SEC
SG--42	.180E+01	AT	.031	SEC	-.207E+01	AT	.828	SEC
SG--43	.729E+00	AT	.604	SEC	-.545E+00	AT	.616	SEC
SG--44	.109E+01	AT	.349	SEC	-.147E+01	AT	.709	SEC
SG--45	.190E+01	AT	.716	SEC	-.157E+01	AT	.775	SEC
SG--46	.639E+00	AT	.717	SEC	-.841E+00	AT	.690	SEC
SG--47	.534E+00	AT	.932	SEC	-.864E+00	AT	.514	SEC
SG--48	.163E+01	AT	.690	SEC	-.151E+01	AT	.717	SEC
SG--49	.804E+00	AT	.990	SEC	-.786E+00	AT	.464	SEC
SG--50	.231E+01	AT	.494	SEC	-.266E+01	AT	.615	SEC
SG--52	.292E+01	AT	.675	SEC	-.255E+01	AT	.563	SEC
SG--53	.108E+01	AT	.451	SEC	-.105E+01	AT	.648	SEC
SG--54	.157E+01	AT	1.003	SEC	-.222E+01	AT	1.017	SEC
SG--55	.247E+01	AT	1.033	SEC	-.200E+01	AT	1.051	SEC
SG--56	.443E+01	AT	.034	SEC	-.221E+01	AT	.167	SEC
SG--57	.210E+01	AT	.035	SEC	-.229E+01	AT	.141	SEC
SG--59	.205E+01	AT	.035	SEC	-.190E+01	AT	.177	SEC
SG--60	.125E+01	AT	1.032	SEC	-.859E+00	AT	1.054	SEC
SG--61	.145E+01	AT	1.049	SEC	-.139E+01	AT	1.033	SEC
SG--62	.141E+01	AT	.866	SEC	-.147E+01	AT	.883	SEC
SG--63	.123E+01	AT	.892	SEC	-.962E+00	AT	1.041	SEC

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LOCATION          CHANNELS

   1            36 (SG---1     )       MAX COMBINED STRESS =  3.921E+01    AT TIME =  8.560E-01
                 0 (NOT AVAIL.)        MAX HOOP STRESS     =  7.932E+00    AT TIME =  8.560E-01
                37 (SG---2     )       MAX AXIAL STRESS    =  2.644E+01    AT TIME =  8.560E-01
                 0 (NOT AVAIL.)        MAX BENDING STRESS  =  1.851E+01    AT TIME =  1.001E+00
                 0 (NOT AVAIL.)

LOCATION          CHANNELS

   2            58 (SG--23     )       MAX COMBINED STRESS = -5.994E+01    AT TIME =  5.960E-01
                 0 (NOT AVAIL.)        MAX HOOP STRESS     = -9.932E+00    AT TIME =  5.960E-01
                59 (SG--24     )       MAX AXIAL STRESS    = -3.311E+01    AT TIME =  5.960E-01
                 0 (NOT AVAIL.)        MAX BENDING STRESS  =  3.104E+01    AT TIME =  6.490E-01
                 0 (NOT AVAIL.)

LOCATION          CHANNELS

   3            60 (SG--25     )       MAX COMBINED STRESS =  4.368E+01    AT TIME =  6.130E-01
                 0 (NOT AVAIL.)        MAX HOOP STRESS     = -7.869E+00    AT TIME =  7.500E-01
                61 (SG--26     )       MAX AXIAL STRESS    = -2.623E+01    AT TIME =  7.500E-01
                 0 (NOT AVAIL.)        MAX BENDING STRESS  =  2.916E+01    AT TIME =  6.130E-01
                 0 (NOT AVAIL.)

LOCATION          CHANNELS

   4            62 (SG--27     )       MAX COMBINED STRESS = -3.154E+01    AT TIME =  4.950E-01
                 0 (NOT AVAIL.)        MAX HOOP STRESS     = -6.002E+00    AT TIME =  5.850E-01
                63 (SG--28     )       MAX AXIAL STRESS    = -2.001E+01    AT TIME =  5.850E-01
                 0 (NOT AVAIL.)        MAX BENDING STRESS  =  2.045E+01    AT TIME =  4.940E-01
                 0 (NOT AVAIL.)

LOCATION          CHANNELS

   5            64 (SG--29     )       MAX COMBINED STRESS = -3.354E+01    AT TIME =  9.460E-01
                 0 (NOT AVAIL.)        MAX HOOP STRESS     =  5.138E+00    AT TIME =  1.005E+00
                65 (SG--30     )       MAX AXIAL STRESS    =  1.713E+01    AT TIME =  1.005E+00
                 0 (NOT AVAIL.)        MAX BENDING STRESS  =  2.073E+01    AT TIME =  9.460E-01
                 0 (NOT AVAIL.)

LOCATION          CHANNELS

   6             0 (NOT AVAIL.)        MAX COMBINED STRESS =  1.475E+02    AT TIME =  1.095E+00
                66 (SG--31     )       MAX HOOP STRESS     =  4.218E+01    AT TIME =  1.095E+00
                 0 (NOT AVAIL.)        MAX AXIAL STRESS    =  1.406E+02    AT TIME =  1.095E+00
                67 (SG--32     )       MAX BENDING STRESS  =  2.537E+01    AT TIME =  3.790E-01
                 0 (NOT AVAIL.)

LOCATION          CHANNELS

   [illegible]   0 (NOT AVAIL.)        MAX COMBINED STRESS =  4.207E+02    AT TIME =  1.095E+00
       [illegible] (SG--33     )       MAX HOOP STRESS     =  7.179E+01    AT TIME =  1.095E+00
                 0 (NOT AVAIL.)        MAX AXIAL STRESS    =  2.393E+02    AT TIME =  1.095E+00
       [illegible] (SG--34     )       MAX BENDING STRESS  =  1.986E+02    AT TIME =  9.210E-01
       [illegible] (NOT AVAIL.)

LOCATION          CHANNELS

   [illegible]   0 (NOT AVAIL.)        MAX COMBINED STRESS =  1.850E+02    AT TIME =  5.530E-01
                71 (SG--36     )       MAX HOOP STRESS     =  2.936E+01    AT TIME =  5.580E-01
                 0 (NOT AVAIL.)        MAX AXIAL STRESS    =  9.788E+01    AT TIME =  5.580E-01
                70 (SG--35     )       MAX BENDING STRESS  =  1.303E+02    AT TIME =  6.400E-01
                 0 (NOT AVAIL.)

LOCATION          CHANNELS

   9            72 (SG--37     )       MAX COMBINED STRESS = -6.432E+01    AT TIME =  7.150E-01
                73 (SG--38     )       MAX HOOP STRESS     = -6.870E+00    AT TIME =  7.150E-01
                 0 (NOT AVAIL.)        MAX AXIAL STRESS    = -2.290E+01    AT TIME =  7.150E-01
                74 (SG--39     )       MAX BENDING STRESS  =  4.142E+01    AT TIME =  7.150E-01
                 0 (NOT AVAIL.)
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ROSETTE	CHANNELS	PRINCIPLE STRESS MIN	PRINCIPLE STRESS MAX	SHEAR STRESS MIN	SHEAR STRESS MAX	STRESS INTENSITY MIN	STRESS INTENSITY MAX
1	1 (SR-1A) 2 (SR-1B) 3 (SR-1C)	-1.273E+02	1.455E+02	7.810E-02	4.623E+01	8.328E-01	1.455E+02
2	4 (SR-2A) 0 (NOT AVAIL.) 5 (SR-2C)			** ROSETTE COMPONENT NOT AVAILABLE **			
3	6 (SR-3A) 7 (SR-3B) 8 (SR-3C)	-3.969E+02	3.433E+02	4.323E-01	1.703E+02	2.152E+00	3.969E+02
4	9 (SR-4A) 10 (SR-4B) 11 (SR-4C)	-1.159E+02	9.058E+01	2.582E-01	5.069E+01	3.200E+00	1.159E+02
5	12 (SR-5A) 13 (SR-5B) 14 (SR-5C)	-9.870E+01	9.681E+01	2.250E-01	3.912E+01	1.572E+00	9.870E+01
6	15 (SR-6A) 16 (SR-6B) 17 (SR-6C)	-1.430E+02	1.374E+02	1.218E-01	6.317E+01	1.600E+00	1.430E+02
7	18 (SR-7A) 19 (SR-7B) 20 (SR-7C)	-4.618E+02	3.654E+02	1.127E+00	6.654E+01	4.710E+00	4.618E+02
8	21 (SR-8A) 22 (SR-8B) 23 (SR-8C)	-2.649E+02	4.303E+02	7.134E-01	7.888E+01	4.313E+00	4.303E+02
9	24 (SR-9A) 25 (SR-9B) 26 (SR-9C)	-2.274E+02	3.546E+02	1.359E+00	9.121E+01	8.268E+00	3.546E+02
10	27 (SR-10A) 28 (SR-10B) 29 (SR-10C)	-2.543E+02	2.315E+02	5.931E-01	7.134E+01	4.371E+00	2.543E+02
11	30 (SR-11A) 31 (SR-11B) 32 (SR-11C)	-2.454E+02	3.879E+02	1.657E-01	1.265E+02	9.353E+00	3.879E+02
12	33 (SR-12A) 34 (SR-12B) 35 (SR-12C)	-3.88[illegible]E+02	4.428E+02	5.408E-01	9.991E+01	4.744E+00	4.428E+02

LOCATION	CHANNELS			
10	75 (SG--40)	MAX COMBINED STRESS	= -5.776E+01	AT TIME = 3.340E-01
	76 (SG--41)	MAX HOOP STRESS	= -3.302E+00	AT TIME = 1.042E+00
	77 (SG--42)	MAX AXIAL STRESS	= -1.101E+01	AT TIME = 1.042E+00
	78 (SG--43)	MAX BENDING STRESS	= 5.463E+01	AT TIME = 8.280E-01
	0 (NOT AVAIL.)			

LOCATION	CHANNELS			
11	79 (SG--44)	MAX COMBINED STRESS	= 5.827E+01	AT TIME = 7.160E-01
	0 (NOT AVAIL.)	MAX HOOP STRESS	= -8.462E+00	AT TIME = 4.470E-01
	80 (SG--45)	MAX AXIAL STRESS	= -2.821E+01	AT TIME = 4.470E-01
	0 (NOT AVAIL.)	MAX BENDING STRESS	= 4.832E+01	AT TIME = 7.150E-01
	0 (NOT AVAIL.)			

LOCATION	CHANNELS			
12	81 (SG--46)	MAX COMBINED STRESS	= 4.125E+01	AT TIME = 6.900E-01
	82 (SG--47)	MAX HOOP STRESS	= -2.355E+00	AT TIME = 1.043E+00
	83 (SG--48)	MAX AXIAL STRESS	= -7.850E+00	AT TIME = 1.043E+00
	84 (SG--49)	MAX BENDING STRESS	= 3.925E+01	AT TIME = 6.900E-01
	0 (NOT AVAIL.)			

LOCATION	CHANNELS			
13	85 (SG--50)	MAX COMBINED STRESS	= 9.746E+01	AT TIME = 6.760E-01
	0 (NOT AVAIL.)	MAX HOOP STRESS	= 5.659E+00	AT TIME = 6.750E-01
	86 (SG--52)	MAX AXIAL STRESS	= 1.886E+01	AT TIME = 6.750E-01
	87 (SG--53)	MAX BENDING STRESS	= 8.075E+01	AT TIME = 6.770E-01
	0 (NOT AVAIL.)			

LOCATION	CHANNELS			
14	88 (SG--54)	MAX COMBINED STRESS	= -8.899E+01	AT TIME = 1.091E+00
	0 (NOT AVAIL.)	MAX HOOP STRESS	= -2.314E+01	AT TIME = 1.091E+00
	89 (SG--55)	MAX AXIAL STRESS	= -7.714E+01	AT TIME = 1.091E+00
	0 (NOT AVAIL.)	MAX BENDING STRESS	= 1.809E+01	AT TIME = 1.079E+00
	0 (NOT AVAIL.)			

LOCATION	CHANNELS			
15	90 (SG--56)	MAX COMBINED STRESS	= 1.417E+02	AT TIME = 4.000E-03
	91 (SG--57)	MAX HOOP STRESS	= 2.612E+01	AT TIME = 4.000E-03
	0 (NOT AVAIL.)	MAX AXIAL STRESS	= 8.706E+01	AT TIME = 4.000E-03
	93 (SG--59)	MAX BENDING STRESS	= 5.462E+01	AT TIME = 4.000E-03
	0 (NOT AVAIL.)			

LOCATION	CHANNELS			
16	94 (SG--60)	MAX COMBINED STRESS	= 4.410E+01	AT TIME = 8.830E-01
	95 (SG--61)	MAX HOOP STRESS	= -2.662E+00	AT TIME = 5.460E-01
	96 (SG--62)	MAX AXIAL STRESS	= -8.874E+00	AT TIME = 5.460E-01
	97 (SG--63)	MAX BENDING STRESS	= 4.369E+01	AT TIME = 9.160E-01
	0 (NOT AVAIL.)			