Enclosure (B)

CERTIFICATION

OF

DESIGN SPECIFICATION DS-1201

REACTOR COOLANT SYSTEM PIPING COMPONENTS

FOR

SAN ONOFRE NUCLEAR GENERATING STATION, UNITS 2 & 3

SOUTHERN CALIFORNIA EDISON COMPANY

ROSEMEAD, CALIFORNIA

PREPARED BY

BECHTEL POWER CORPORATION
ENGINEERS-CONSTRUCTORS
NORWALK, CALIFORNIA 90650

I, Don L. Kinnsch certify that this Design Specification satisfies the requirements by the ASME Boiler and Pressure Vessel Code, Section III, 1974 Edition with Addenda through Summer 1974, Subsection NA-3250.

Don L. Kinnsch 1/31/80
Signature Date

Stamp

REGISTERED PROFESSIONAL ENGINEER
DON L. KINNSCH
NO. 13352
MECHANICAL
STATE OF CALIFORNIA

Don L. Kinnsch

8006230 574

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DESIGN SPECIFICATION REVISION RECORD

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3

REVISION NUMBER	REVISION DATE	P.E. APPROVAL/ DATE	PAGES AFFECTED
0	3-14-77		Issue complete design specification: Title Page, Pages i, ii, iii, and Pages 1 thru 4. Appendices A, B, C and D
1	11-17-77	[illegible] / 1-27-78	Title Page, Page i, ii, iii, and Pages 1, 3, 4, and 5.
2	5-10-79		Title Page, Pages i, ii, iii, and Pages 1, 2, 3, 4 and 5.
3	1-31-80		Title Page, Pages i, ii, iii, and Pages 3, 4, and 5, Appendix D, and New Appendix E. Incorporate SCN DS-07 dated 12-5-79, and SCN DS-06 dated 6-20-79

PF-919.1 (10079) 6/75

ASME CODE, SECTION III

DESIGN SPECIFICATION DS-1201

SONGS UNITS 2 & 3

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ASME CODE, SECTION III

DESIGN SPECIFICATION DS-1201

SONGS UNITS 2 & 3

This Design Specification, including Appendices A, B, and C consists of design information as prescribed by Section III of the ASME B&PV Code, 1974 Edition through Summer '74 Addenda, Subsection NA-3252.

1. Functions of the components or appurtenances including any dimensions upon which the functional performance depends.

   The major components of the Reactor Coolant System are a reactor vessel, two parallel heat transfer loops, each containing one steam generator and two reactor coolant pumps, and a pressurizer connected to one of the reactor vessel outlet pipes. A quench tank is provided to receive and condense discharges from the pressurizer safety valves. All components are located inside the containment building.

   The specific functions of the Reactor Coolant System Piping are as follows:

   a. To transfer high pressure and high temperature water between the reactor vessel and the steam generators for the purpose of transferring fission energy.

   b. To transfer water under high pressure and high temperature between the reactor coolant loops and the pressurizer to accommodate expansion and contraction of the primary coolant, and for the purpose of controlling system pressure.

   c. To serve as a barrier to the release of fission products from the reactor core to the environment.

   Listing of Project Class C and D instruments including applicable sensing line routing configurations are defined on Drawing No. 56288. 2

2. Mechanical operational loadings including vibration and shock.

   The design pressures and temperatures for the reactor coolant system piping components are defined in the Line Designation List included as part of this Design Specification for the various portions of the piping system.

   Allowable material stress intensities and stress values to be used for the design of piping systems are given in the ASME Code, Subsection NA, Appendix I for acceptable materials at various temperatures. 2

The components of the reactor coolant system covered by this Design Specification are Seismic Category I. Combustion Engineering (CE) Response Spectra for the tributary piping nozzles are included in Appendix B. The Instructure Response Spectra for this piping are
2 included as part of this specification in Appendix B.

The loading combinations for Code Class 1 and 2 and transients for the Code Class 1 portions of the Reactor Coolant System are included in Appendix C as part of this Design Specification.

Nozzle displacements due to thermal, dead weight, seismic and pipe rupture loadings are included in this specification as Appendix D.

2 Code Case 1606-1 applies to this piping system.

3. Environmental conditions including radiation.

The reactor coolant system piping may be subject to an atmosphere with relative humidity varying from 0 percent to 100 percent and ambient temperatures of 34F to 300F depending on location. Specific temperatures for locations are defined as follows:

Area	Design Temperatures (FDB)	
	Summer	Winter (minimum)
Auxiliary Bldg. - Penetration	100	36
Containment	120 (300 FDB emergency)	50
Safety Equipment Bldg.	100 (104 FDB emergency)	NA

The reactor coolant system will be subject to a design integrated radiation dose over 40 years which is not to exceed 5×10^7 rads.

During the unlikely event of a LOCA condition, portions of piping and instrument sensing lines located inside the containment structure will be subjected to containment spray having the following composition:

- Boron $\leq$ 2150 ppm as boric acid
- NaOH buffered to $8.0 \leq pH < 10.0$

4. Code classifications of the items covered.

The reactor coolant system contains Project Class A and C piping. Project Classification A requires design, fabrication, examination and testing in accordance with the requirements of the ASME B&PV Code, Section III, Subsection NB for Code Class 1 piping systems. Project Class C relates similarly to Subsection NC for Code Class 2 piping systems. Those portions of the piping system connecting the containment penetration assemblies to the isolation valves shall be Code Class 2. Instrument sensing lines connected to Code Class 1 piping systems are project Class C, and complies with the rules of Subsection NC between the root valve/restriction and the fitting connection at the instrument. Instrument sensing lines connected to Code Class 2 piping systems are Project Class C or D, and comply with the rules of Subsection NC and ND, respectively between the root valve/restriction and the fitting connection. 3

5. Definitions of the Piping System Component boundaries.

The boundaries and pertinent dimensions of the Reactor Coolant system piping are defined in the following P&ID's:

P&ID's

40111 Reactor Coolant System

40112 Safety Injection System

40113 Safety Injection System

40123 Coolant Chemical and Volume Control System

40124 Coolant Chemical and Volume Control System

40130 Reactor Coolant Pumps

The boundaries of individual components are also identified on the Line Designation List, Appendix A.

System Piping Components are comprised of individual, interconnected piping system subassemblies grouped together according to design pressure, design temperature and ASME Code Class. These groups are determined from data described in the Line Designation List, Appendix A.

The piping design shall include the following as a part of the system piping:

- Vent and drain lines through the first root valve.

- All connection welds at interfaces between piping and components.

- Expansion joints and instrument piping connections through the first root valve.

Instrument sensing lines for Quality Class I and II instrumentation shall be Project Class C or Project Class D between the piping root valve/restriction and through the instrument fitting connection.
3 Instrument sensing lines connected to Code Class 1 equipment (pressurizer) are listed in Appendix E.

6. Material requirements, including impact tests where applicable.

Piping materials for the system are defined in the Piping Material Classification and the line class is shown on the P&IDs and the Line Designation List by line number.

Project Class C and D instrument sensing line material shall be ASME SA-213 Grade 316 stainless steel.

Material for Class 1 piping will be impact tested in accordance with the requirements of NB-2300 of the ASME Code Section III.

Material for piping attached to containment penetration assemblies extending to the valves required to provide a pressure boundary for the containment function (isolation valves) shall be impact tested in accordance with the requirements and limitations specified in NC-2300 at 40 F.

Impact testing is not required for other material.

The corrosion/erosion allowance used in the design of carbon steel piping is .0625 inch thickness. No corrosion/erosion allowance is used in stainless steel pipe design.

7. Code stamping requirements

The piping system will be stamped with the appropriate N-type symbol at the fabrication site after all Code requirements have been met.
3 The N-5 data report, for the Code Class 2 instrument sensing lines listed in Appendix E, will cross reference the N-5 data report for process piping systems of the same pressure, temperature and hydrostatic testing requirements.

Design, fabrication, examination and testing will be in accordance with the ASME B&PV Code, 1974 Edition including addenda through Summer 1974, except Class 1 nominal pipe size 1 inch and smaller will be designed and analyzed to the requirements of the 1975 Summer Addenda, Section III, Subparagraph NB-3630(d).

Code Case 1745 (N-122) applies.

Permanent attachments, such as but not limited to pipe stanchions, shear lugs, and pipe sleeves, shall be attached to the piping pressure boundary by either a full penetration or partial penetration weld in accordance with Paragraph NC/ND-4433 of the ASME B&PV Code 1974 Edition, Winter 1974 Addendum for Code Class 2 and Code Class 3 piping. For Code Class 1 piping, welding of attachments will be in accordance with Paragraph NB-4430 of the above Code.

Permanent attachments meeting the requirements of NB-4433 and temporary or minor permanent attachments meeting the requirements of NB-4435 may be welded to the piping system in accordance with NB-4436 of the ASME B&PV Code 1974 Edition, Summer 1976 Addendum, after performance of the pressure test provided that:

a. The welds do not require PWHT under NB-4622-7;

b. The cross-sectional area of the material attached shall not exceed 6 square inches (3870 mm^2) at the surface of the pressure boundary material; 3

c. Welds shall be restricted to fillet welds not exceeding 3/8 inch (10 mm) throat thickness and to full penetration welds attaching materials not exceeding 1/2 inch (13 mm) in thickness;

d. Welds shall be examined as required by NB-5000.

For Code Class 2 and Code Class 3 piping, Paragraph NC/ND-4436 shall be used for the installation of piping attachments after hydrostatic/pneumatic testing.

The connection between instrument tubing and the instrument will be verified for leak integrity during operational testing of the system to satisfy Code requirements for pressure boundary integrity.

APPENDIX A

LINE DESIGNATION LIST

The data presented in the Line Designation List is subject to periodic revision.

In using this specification, designers should verify that the information included herein corresponds with the latest controlled revision.

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REPORT NO: NM121-50-R1                          LINE DESIGNATION        MASTERFILE                         REPORT DATE:
SEQ: 1-10-04  DESC: TAG SYS/PROJ CLS LE I       SAN ONOFRE NUCLEAR GENERATING STATION                      PAGE: BRK-   1  RPT-   1
MSTR VERSION: 22A  LIST VERSION: 22A
PGE-BRK-DESC: TAG SYSTEM NO.

                                                         PIPE   MATL  PIPE WALL  CLN PROJ INSULATION 2" PP I  DESIGN     OPERATION
  LINE       M  * DESCRIPTION FROM *  *  DESCRIPTION TO  *  SIZE   CLS  SCHED THICK CLS CLS  THICK TYPE COON  S PRES TEMP PRES TEMP
  NUMBER     S                                                                                               I
             D
                                                       *  P & ID  *     CODE OF     SYSTEM   M A T E R I A L    ACCESS
 (SHORT TAG)                                           DRAWING COORD REV  ACCOUNT    ENG  S-U                     DATE

 S21201ML001   REACTOR VESSEL          STEAM GENERATOR       42.00  N/A   N/A          B  A     3.5 CHC  BW    X 2485 0650 2235 0611
000 S2RC00100000         V001 SYS 110100        E089 SYS 13010 40111   0 C60   0 2X6A,6023  0 2BBB 000 N/A        00001AU78000000
 S31201ML001   REACTOR VESSEL          STEAM GENERATOR       42.00  N/A   N/A          B  A     3.5 CHC  BW    X 2485 0650 2235 0611
   S3RC001               V001 SYS 1101          E089 SYS 1301  40111         C6     3X6A,6023                N/A          01AU78
 S21201ML002   REACTOR VESSEL          STEAM GENERATOR       42.00  N/A   N/A          B  A     3.5 CHC  BW    X 2485 0650 2235 0611
   S2RC002               V001 SYS 1101          E088 SYS 1301  40111         C3     2X6A,6023     2BBB       N/A          01AU78
 S31201ML002   REACTOR VESSEL          STEAM GENERATOR       42.00  N/A   N/A          B  A     3.5 CHC  BW    X 2485 0650 2235 0611
   S3RC002               V001 SYS 1101          E088 SYS 1301  40111         C3     3X6A,6023     3BBB       N/A          27AP79
 S21201ML003   STEAM GENERATOR         REACTOR COOLANT       30.00  N/A   N/A          B  A     3.5 CHC  BW    X 2485 0650 2235 0553
   S2RC003               E089 SYS 1301  PUMP   P001 SYS 1201  40111         C8     2X6A,6323     2BBA       N/A          01AU78
 S31201ML003   STEAM GENERATOR         REACTOR COOLANT       30.00  N/A   N/A          B  A     3.5 CHC  BW    X 2485 0650 2235 0553
   S3RC003               E089 SYS 1301  PUMP   P001 SYS 1201  40111         C8     3X6A,6323     3BBA       N/A          27AP79
 S21201ML004   STEAM GENERATOR         REACTOR COOLANT       30.00  N/A   N/A          B  A     3.5 CHC  BW    X 2485 0650 2235 0553
   S2RC004               E088 SYS 1301  PUMP   P004 SYS 1201  40111         C2     2X6A,6323     2BBA       N/A          01AU78
 S31201ML004   STEAM GENERATOR         REACTOR COOLANT       30.00  N/A   N/A          B  A     3.5 CHC  BW    X 2485 0650 2235 0553
   S3RC004               E088 SYS 1301  PUMP   P004 SYS 1201  40111         C2     3X6A,6323     3BBA       N/A          27AP79
 S21201ML005   STEAM GENERATOR         REACTOR COOLANT       30.00  N/A   N/A          B  A     3.5 CHC  BW    X 2485 0650 2235 0553
   S2RC005               E089 SYS 1301  PUMP   P003 SYS 1201  40111         D8     2X6A,6323     2BBA       N/A          01AU78
 S31201ML005   STEAM GENERATOR         REACTOR COOLANT       30.00  N/A   N/A          B  A     3.5 CHC  BW    X 2485 0650 2235 0553
   S3RC005               E089 SYS 1301  PUMP   P003 SYS 1201  40111         D8     3X6A,6323     3BBA       N/A          27AP79
 S21201ML006   STEAM GENERATOR         REACTOR COOLANT       30.00  N/A   N/A          B  A     3.5 CHC  BW    X 2485 0650 2235 0553
   S2RC006               E088 SYS 1301  PUMP   P002 SYS 1201  40111         C2     2X6A,6323     2BBA       N/A          01AU78
 S31201ML006   STEAM GENERATOR         REACTOR COOLANT       30.00  N/A   N/A          B  A     3.5 CHC  BW    X 2485 0650 2235 0553
   S3RC006               E088 SYS 1301  PUMP   P002 SYS 1201  40111         C2     3X6A,6323     3BBA       N/A          27AP79
 S21201ML007   REACTOR COOLANT         REACTOR VESSEL        30.00  N/A   N/A          B  A     3.5 CHC  BW    X 2485 0650 2235 0553
   S2RC007     PUMP   P001 SYS 1201             V001 SYS 1101  40111         B6     2X6A,6323     2BBB       N/A          01AU78
 S31201ML007   REACTOR COOLANT         REACTOR VESSEL        30.00  N/A   N/A          B  A     3.5 CHC  BW    X 2485 0650 2235 0553
   S3RC007     PUMP   P001 SYS 1201             V001 SYS 1101  40111         B6     3X6A,6323     3BBB       N/A          27AP79
 S21201ML008   REACTOR COOLANT         REACTOR VESSEL        30.00  N/A   N/A          B  A     3.5 CHC  BW    X 2485 0650 2235 0553
   S2RC008     PUMP   P004 SYS 1201             V001 SYS 1101  40111         D4     2X6A,6323     2BBB       N/A          01AU78
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REPORT NO: NM121-50-R1
SEQ: 1-10-04 DESC: TAG SYS/PROJ CLS LE I
MSTR VERSION: 22A LIST VERSION: 22B
PGE-BRK-DESC: TAG SYSTEM NO.

LINE DESIGNATION LIST - MASTERFILE
SAN ONOFRE NUCLEAR GENERATING STATION

REPORT DATE: 11/MY/79
PAGE: BRK- 2 RPT- 2

LINE NUMBER / (SHORT TAG)	M S D	* DESCRIPTION FROM *	* DESCRIPTION TO *	PIPE SIZE / * P & ID DRAWING	MATL CLS / COORD	PIPE SCHED / REV	WALL THICK	CLN CLS	PROJ CLS / CODE OF ACCOUNT	INSULATION THICK	TYPE / SYSTEM ENG	2" PP CONN / S-U MATERIAL	I S I	DESIGN PRES	DESIGN TEMP	OPERATION PRES	OPERATION TEMP / ACCESS DATE
S31201ML008		REACTOR COOLANT	REACTOR VESSEL	30.00	N/A	N/A		B	A	3.5	CHC	BW	X	2485	0650	2235	0553
S3RC008		PUMP P004 SYS 1201	V001 SYS 1101	40111	D4				3X64.6323		3BBB	N/A					27AP79
S21201ML009		REACTOR COOLANT	REACTOR VESSEL	30.00	N/A	N/A		B	A	3.5	CHC	BW	X	2485	0650	2235	0553
S2RC009		PUMP P003 SYS 1201	V001 SYS 1101	40111	D5				2X64.6323		2BBB	N/A					01AU78
S31201ML009		REACTOR COOLANT	REACTOR VESSEL	30.00	N/A	N/A		B	A	3.5	CHC	BW	X	2485	0650	2235	0553
S3RC009		PUMP P003 SYS 1201	V001 SYS 1101	40111	D5				3X64.6323		3BBB	N/A					27AP79
S21201ML010		REACTOR COOLANT	REACTOR VESSEL	30.00	N/A	N/A		B	A	3.5	CHC	BW	X	2485	0650	2235	0553
S2RC010		PUMP P002 SYS 1201	V001 SYS 1101	40111	B4				2X64.6323		2BBB	N/A					01AU78
S31201ML010		REACTOR COOLANT	REACTOR VESSEL	30.00	N/A	N/A		B	A	3.5	CHC	BW	X	2485	0650	2235	0553
S3RC010		PUMP P002 SYS 1201	V001 SYS 1101	40111	B4				3X64.6323		3BBB	N/A					27AP79
S21201ML011A		LINE 007 RC COLD	SPRAY CONTROL VALVE	3.00	FEO	160		B	A	4.0	CHC	BW		2485	0650	2235	0553
S2RC011		LOOP 1A SYS 1201	2PV 0100ASYS 1201	40111	C4						2BBB	ASMESA376GRT316					13FE78
S31201ML011A		LINE 007 RC COLD	SPRAY CONTROL VALVE	3.00	FEO	160		B	A	4.0	CHC	BW		2485	0650	2235	0553
S3RC011		LOOP 1A SYS 1201	3PV 0100ASYS 1201	40111	C4						3BBB	ASMESA376GRT316					27AP79
S21201ML011B		LINE 007 RC COLD	SPRAY CONTROL VALVE	4.00	FEO	120		B	A	4.5	CHC	BW		2485	0650	2235	0553
S2RC011		LOOP 1A SYS 1201	2PV 0100ASYS 1201	40111	C4						2BBB	ASMESA376GRT316					20MR79
S31201ML011B		LINE 007 RC COLD	SPRAY CONTROL VALVE	4.00	FEO	120		B	A	4.5	CHC	BW		2485	0650	2235	0553
S3RC011		LOOP 1A SYS 1201	3PV 0100ASYS 1201	40111	C4						3BBB	ASMESA376GRT316					27AP79
S21201ML012A		SPRAY LOOP 1A VALVE	PRESSURIZER ASSEMBLY	0.75	FEO	160		B	A	4.0	CHC	BW		2485	0650	2235	0553
S2RC012		2PV 0100ASYS 1201	E087 SYS 1201	40111	F4				2X64.1822		2BBB	ASMESA376GRT316					01AU78
S31201ML012A		SPRAY LOOP 1A VALVE	PRESSURIZER ASSEMBLY	0.75	FEO	160		B	A	4.0	CHC	BW		2485	0650	2235	0553
S3RC012		3PV 0100ASYS 1201	E087 SYS 1201	40111	F4				3X64.1822		3BBB	ASMESA376GRT316					27AP79
S21201ML012B		SPRAY LOOP 1A VALVE	PRESSURIZER ASSEMBLY	4.00	FEO	120		B	A	4.5	CHC	BW	X	2485	0650	2235	0553
S2RC012		2PV 0100ASYS 1201	E087 SYS 1201	40111	F4				2X64.1822		2BBB	ASMESA376GRT316					01AU78
S31201ML012B		SPRAY LOOP 1A VALVE	PRESSURIZER ASSEMBLY	4.00	FEO	120		B	A	4.5	CHC	BW	X	2485	0650	2235	0553
S3RC012		3PV 0100ASYS 1201	E087 SYS 1201	40111	F4				3X64.1822		3BBB	ASMESA376GRT316					27AP79
S21201ML013A		LINE 009 RC COLD	SPRAY VALVE	4.00	FEO	120		B	A	4.5	CHC	BW	X	2485	0650	2235	0553
S2RC013		LOOP 1B SYS 1201	2PV 0100B SYS 1201	40111	D4				2X64.1822		2BBB	ASMESA376GRT316					20MR79
S31201ML013A		LINE 009 RC COLD	SPRAY VALVE	4.00	FEO	120		B	A	4.5	CHC	BW	X	2485	0650	2235	0553
S3RC013		LOOP 1B SYS 1201	3PV 0100B SYS 1201	40111	D4				3X64.1822		3BBB	ASMESA376GRT316					27AP79

REPORT NO 1-50-R1 — LINE DESIGNATI[illegible] - MASTERFILE — REPORT DATE: [illegible]79
SEQ: 1-10-04 DESC: TAG SYS/PROJ CLS LE 1 — SAN ONOFRE NUCLEAR [illegible]NERATING STATION — PAGE: BRK- 3 RPT [illegible]
MSTR VERSION: 228 LIST VERSION: 228
PGE-BRK-DESC: TAG SYSTEM NO.

LINE NUMBER (SHORT TAG)	M S D	DESCRIPTION FROM	DESCRIPTION TO	PIPE SIZE	MATL CLS	PIPE SCHED	P & ID DRAWING	COORD	REV	CLN CLS	PROJ CLS	CODE OF ACCOUNT	INSULATION THICK	TYPE	CONN	2" PP	DESIGN PRES	DESIGN TEMP	OPERATION PRES	OPERATION TEMP	SYSTEM ENG S-U	MATERIAL	ACCESS DATE
S21201ML013B S2RC013		LINE 009 RC COLD LOOP 1B SYS 1201	SPRAY VALVE 2PV 0100B SYS 1201	3.00	FEO	160	00111		D5	S	A	2X6A,1822	4.0	CHC	BW	X	2485	0650	2235	0553	2BBB	ASME SA376GRT316	20MR79
S31201ML013B S3RC013		LINE 009 RC COLD LOOP 1B SYS 1201	SPRAY VALVE 3PV 0100B SYS 1201	3.00	FEO	160	00111		D5	S	A	3X6A,1822	4.0	CHC	BW	X	2485	0650	2235	0553	3BBB	ASME SA376GRT316	27AP79
S21201ML014A S2RC014		LINE 013 - VALVE 043 LOOP 1B SYS 1201	LINE 012 PRESSURIZER EOR7 SYS 1201	0.75	FEO	160	00111		E3	S	A	2X6H,2722	4.0	CHC	BW		2485	0650	2235	0553	2BBB	ASME SA376GRT316	01AU78
S31201ML014A S3RC014		LINE 013 - VALVE 043 LOOP 1B SYS 1201	LINE 012 PRESSURIZER EOR7 SYS 1201	0.75	FEO	160	00111		E3	S	A	3X6H,2722	4.0	CHC	BW		2485	0650	2235	0553	3BBB	ASME SA376GRT316	27AP79
S21201ML014B S2RC014		LINE 013 - VALVE 043 LOOP 1B SYS 1201	LINE 012 PRESSURIZER EOR7 SYS 1201	4.00	FEO	120	00111		E3	S	A	2X6A,1822	4.5	CHC	BW	X	2485	0650	2235	0553	2BBB	ASME SA376GRT316	01AU78
S31201ML014B S3RC014		LINE 013 - VALVE 043 LOOP 1B SYS 1201	LINE 012 PRESSURIZER EOR7 SYS 1201	4.00	FEO	120	00111		E3	S	A	3X6A,1822	4.5	CHC	BW	X	2485	0650	2235	0553	3BBB	ASME SA376GRT316	27AP79
S21201ML015 S2RC015		LINE 001 RC HOT LOOP SYS 1201	PRESSURIZER ASSEMBLY EOR7 SYS 1201	12.00	FEO	160	00111		E6	S	A	2X6A,3822	4.5	CHC	BW	X	2485	0700	2235	0653	2BBB	ASME SA376GRT316	20MR79
S31201ML015 S3RC015		LINE 001 RC HOT LOOP SYS 1201	PRESSURIZER ASSEMBLY EOR7 SYS 1201	12.00	FEO	160	00111		E6	S	A	3X6A,3822	4.5	CHC	BW	X	2485	0700	2235	0653	3BBB	ASME SA376GRT316	27AP79
S21201ML016A S2RC016		LINE 002 RC HOT LOOP SYS 1201	LINE 017 - 2HV 9337 SYS 1201	16.00	FEO	160	00111		C4	S	A	2X6A,48252	3.5	CHC	BW	X	2485	0650	2235	0611	2BBB	ASME SA376GRT316	05SE78
S31201ML016A S3RC016		LINE 002 RC HOT LOOP SYS 1201	LINE 017 - 3HV 9337 SYS 1201	16.00	FEO	160	00111		C4	S	A	3X6A,48252	3.5	CHC	BW	X	2485	0650	2235	0611	3BBB	ASME SA376GRT316	27AP79
S21201ML016B S2RC016		LINE 002 RC HOT LOOP SYS 1201	LINE 017 - 2HV 9337 SYS 1201	18.00	FEO	160	00111		C4	S	A	2X6A,48252	3.5	CHC	BW	X	2485	0650	2235	0611	2BBB	ASME SA376GRT316	01AU78
S31201ML016B S3RC016		LINE 002 RC HOT LOOP SYS 1201	LINE 017 - 3HV 9337 SYS 1201	18.00	FEO	160	00111		C4	S	A	3X6A,48252	3.5	CHC	BW	X	2485	0650	2235	0611	3BBB	ASME SA376GRT316	27AP79
S21201ML017A S2RC017		LINE 016 - VALVE 2HV 9337 SYS 1201	SI PUMPS LN 032 SYS 1204 VA 015 SYS 1201	18.00	KEO	20	00113		E5	S	C	2X6A,47252	3.0	CPP	BW	X	0835	0400	0361	0350	2BHA	SA358GRT304CL1	05SE78
S31201ML017A S3RC017		LINE 016 - VALVE 3HV 9337 SYS 1201	SI PUMPS LN 032 SYS 1204 VA 015 SYS 1201	18.00	KEO	20	00113		E5	S	C	3X6A,47252	3.0	CPP	BW	X	0835	0400	0361	0350	3BHA	SA358GRT304CL1	27AP79
S21201ML017B S2RC017		LINE 016 - VALVE 2HV 9337 SYS 1201	SI PUMPS LN 032 SYS 1204 VA 015 SYS 1201	16.00	KEO	20	00113		E6	S	C	2X6A,46252	3.0	CPP	BW	X	0835	0400	0361	0350	2BHA	SA358GRT304CL1	05SE78

REPORT NO: NM121-50-R1 LINE DESIGNATION LIST - MASTERFILE REPORT DATE: 11/MY/79
SEQ: 1-10-04 DESC: TAG SYS/PROJ CLS LE I SAN ONOFRE NUCLEAR GENERATING STATION PAGE: BRK- 4 RPT- 4
MSTR VERSION: 228 LIST VERSION: 228
PGE-BRK-DESC: TAG SYSTEM NO.

LINE NUMBER (SHORT TAB)	M S D * DESCRIPTION FROM *	* DESCRIPTION TO *	PIPE SIZE / * DRAWING	MATL CLS / P & ID COORD	PIPE SCHED / * REV	WALL THICK CLN CLS PROJ CLS / CODE OF ACCOUNT	INSULATION THICK TYPE / SYSTEM ENG S-U	2" PP CONN I S I DESIGN PRES TEMP OPERATION PRES TEMP / M A T E R I A L ACCESS DATE
S31201ML017B	LINE 016 * VALVE	SI PUMPS LN 032 SYS	16.00	KEO	20	B C	3.0 CPP	BW X 0435 0400 0361 0350
S3RC017	3HV 9337 SYS 1201	1204 VA 015 SYS 1201	40113	E6		2X6A,46252	3RHA	SA358GRT304CL1 27AP79
S21201ML017C	LINE 016 * VALVE	SI PUMPS LN 032 SYS	14.00	KEO	20	B C	1.5 APP	BW X 0835 0400 0361 0350
S2RC017	2HV 9337 SYS 1201	1204 VA 015 SYS 1201	40112	F6		2X6A,36252	2RHA	SA358GRT304CL1 05SE78
S31201ML017C	LINE 016 * VALVE	SI PUMPS LN 032 SYS	14.00	KEO	20	B C	1.5 APP	BW X 0435 0400 0361 0350
S3RC017	3HV 9337 SYS 1201	1204 VA 015 SYS 1201	40112	F6		2X6A,36252	3RHA	SA358GRT304CL1 27AP79
S21201ML017D	LINE 016 * VALVE	SI PUMPS LN 032 SYS	12.00	KEO	20	B C	1.5 APP	BW X 0835 0400 0361 0350
S2RC017	2HV 9337 SYS 1201	1204 VA 015 SYS 1201	40113	D6		2X6A,36252	2RHA	SA358GRT304CL1A 05SE78
S31201ML017D	LINE 016 * VALVE	SI PUMPS LN 032 SYS	12.00	KEO	20	B C	1.5 APP	BW X 0835 0400 0361 0350
S3RC017	3HV 9337 SYS 1201	1204 VA 015 SYS 1201	40113	D6		2X6A,36252	3RHA	SA358GRT304CL1A 27AP79
S21201ML017E	LINE 016 * VALVE	SI PUMPS LN 032 SYS	8.00	KEO	20	B C	1.5 APP	BW X 0835 0400 0361 0350
S2RC017	2HV 9337 SYS 1201	1204 VA 015 SYS 1201	40113	E7			2RHA	SA358GRT304CL1 05SE78
S31201ML017E	LINE 016 * VALVE	SI PUMPS LN 032 SYS	8.00	KEO	20	B C	1.5 APP	BW X 0835 0400 0361 0350
S3RC017	3HV 9337 SYS 1201	1204 VA 015 SYS 1201	40113	E7			3RHA	SA358GRT304CL1 27AP79
S21201ML017F	LINE 016 * VALVE	SI PUMPS LN 032 SYS	1.00	KEO	40S	B C	1.0 DPP	BW 0835 0400 0361 0350
S2RC017	2HV 9337 SYS 1201	1204 VA 015 SYS 1201	40113	E7			2RHA	ASMESA376GRT304 05SE78
S31201ML017F	LINE 016 * VALVE	SI PUMPS LN 032 SYS	1.00	KEO	40S	B C	1.0 DPP	BW 0835 0400 0361 0350
S3RC017	3HV 9337 SYS 1201	1204 VA 015 SYS 1201	40113	E7			3RHA	ASMESA376GRT304 27AP79
S21201ML018	LINE 001 RC HOT	LINE 295 SYS 1901 *	2.00	FEO	160	B A	3.0 CHC	BW X 2485 0650 2235 0611
S2RC018	LOOP SYS 1201	VALVE 001 SYS 1201	40111	C6		226H,27211	2RBA	ASMESA376GRT316 01AU78
S31201ML018	LINE 001 RC HOT	LINE 295 SYS 1901 *	2.00	FEO	160	B A	3.0 CHC	BW X 2485 0650 2235 0611
S3RC018	LOOP SYS 1201	VALVE 001 SYS 1201	40111	C6		326H,27211	3RBA	ASMESA376GRT316 27AP79
S21201ML019	LINE 003 RC COLD	LINE 001 SYS 1901 *	2.00	FEO	160	B A	3.0 CHC	BW X 2485 0650 2235 0553
S2RC019	LOOP 1A SYS 1201	VALVE 002 SYS 1201	40111	C8		226H,27211	2RBA	ASMESA376GRT316 01AU78
S31201ML019	LINE 003 RC COLD	LINE 001 SYS 1901 *	2.00	FEO	160	B A	3.0 CHC	BW X 2485 0650 2235 0553
S3RC019	LOOP 1A SYS 1201	VALVE 002 SYS 1201	40111	C8		326H,27211	3RBA	ASMESA376GRT316 27AP79
S21201ML020	LINE 004 RC COLD	LINE 300 SYS 1901 *	2.00	FEO	160	B A	3.0 CHC	BW X 2485 0650 2235 0553
S2RC020	LOOP 2A SYS 1201	VALVE 003 SYS 1201	40111	D1		226H,27211	2RBA	ASMESA376GRT316 01AU78
S31201ML020	LINE 004 RC COLD	LINE 300 SYS 1901 *	2.00	FEO	160	B A	3.0 CHC	BW X 2485 0650 2235 0553
S3RC020	LOOP 2A SYS 1201	VALVE 003 SYS 1201	40111	D1		326H,27211	3RBA	ASMESA376GRT316 27AP79

REPORT NO: NM121-50-R1
SEQ: 1-10-00 DESC: TAG SYS/PROJ CLS LE I
MSTR VERSION: 228 LIST VERSION: 228
PGE-BRK-DESC: TAG SYSTEM NO.

LINE DESIGNATION L... MASTERFILE
SAN ONOFRE NUCLEAR GENERATING STATION

REPORT DATE:
PAGE: BRK- 5 RPT- 5

LINE NUMBER (SHORT TAG)	MSD	DESCRIPTION FROM	DESCRIPTION TO	PIPE SIZE / P & ID DRAWING	MATL CLS / COORD	PIPE SCHED / REV	WALL THICK	CLN CLS / PROJ CLS / CODE OF ACCOUNT	INSULATION THICK TYPE / SYSTEM ENG S-U	CONN / MATERIAL	2" PP I	DESIGN PRES TEMP / OPERATION PRES TEMP / ACCESS DATE
S21201ML021 S2RC021		LINE 022 RC COLD LOOP 1B SYS 1201	LINE 293 SYS 1901 @ VALVE 004 SYS 1201	2.00 40111	FEO D8	160		B A 2X6H,27211	3.0 CHC 2RSA	BW ASMESA376GRT316	X	2485 0650 2235 0553 01AU78
S31201ML021 S3RC021		LINE 022 RC COLD LOOP 1B SYS 1201	LINE 293 SYS 1901 @ VALVE 004 SYS 1201	2.00 40111	FEO D8	160		B A 3X6H,27211	3.0 CHC 3RSA	BW ASMESA376GRT316	X	2485 0650 2235 0553 27AP79
S21201ML022 S2RC022		LINE 005 RC COLD LOOP 1B SYS 1201	REGENERATIVE HEAT EXCH E063 SYS 1208	2.00 40111	FEO E8	160		B A 2X6H,27241	3.0 CHC 2RSA	BW ASMESA376GRT316	X	2485 0650 2235 0553 01AU78
S31201ML022 S3RC022		LINE 005 RC COLD LOOP 1B SYS 1201	REGENERATIVE HEAT EXCH E063 SYS 1208	2.00 40111	FEO E8	160		B A 3X6H,27241	3.0 CHC 3RSA	BW ASMESA376GRT316	X	2485 0650 2235 0553 27AP79
S21201ML023 S2RC023		LINE 001 RC LOOP 1A LOOP SYS 1201	LINE 030 SYS 1212 @ VALVE 006 SYS 1201	0.75 40111	FEO C5	160		B A 2X6L,616	3.0 CHC 2RRB	BW ASMESA376GRT316		2485 0650 2235 0611 01AU78
S31201ML023 S3RC023		LINE 001 RC LOOP 1A LOOP SYS 1201	LINE 030 SYS 1212 @ VALVE 006 SYS 1201	0.75 40111	FEO C5	160		B A 3X6L,616	3.0 CHC 3RRB	BW ASMESA376GRT316		2485 0650 2235 0611 27AP79
S21201ML025 S2RC025		LINE 036 LPSI PUMP DISCH HDR SYS 1204	LINE 017 @ 2HV 9359 & 2HV 9353 SYS 1201	8.00 40112	KE1 E1	20		B C 2X6A,26252	1.5 APP 2SHA	BW ASMESA376GRT304	X	0615 0400 0600 0400 20MR79
S31201ML025 S3RC025		LINE 036 LPSI PUMP DISCH HDR SYS 1204	LINE 017 @ 3HV 9359 & 3HV 9353 SYS 1201	8.00 40112	KE1 E1	20		B C 3X6A,26252	1.5 APP 3SHA	BW ASMESA376GRT304	X	0615 0400 0615 0400 27AP79
S21201ML027 S2RC027		CVCS LN 098 SYS 1208 @ VA 031 SYS 1201	SHUTDOWN COOLING LINE 017 SYS 1201	3.00 40112	KEO F5	40S		B C 2X6A,17241	1.5 DPP 2SHA	BW ASMESA376GRT304		0435 0400 0361 0350 05SE78
S31201ML027 S3RC027		CVCS LN 098 SYS 1208 @ VA 031 SYS 1201	SHUTDOWN COOLING LINE 017 SYS 1201	3.00 40112	KEO F5	40S		B C 3X6A,17241	1.5 DPP 3SHA	BW ASMESA376GRT304		0435 0400 0361 0350 27AP79
S21201ML028 S2RC028		LINE 018 RC HOT LOOP SYS 1201	REFUELING LEVEL INDICATOR SYS 1201	0.75 40111	FEO C6	160		B A 2X6H,27293	3.0 CHC 2RRB	BW ASMESA376GRT316		2485 0650 2235 0611 01AU78
S31201ML028 S3RC028		LINE 018 RC HOT LOOP SYS 1201	REFUELING LEVEL INDICATOR SYS 1201	0.75 40111	FEO C6	160		B A 3X6H,27293	3.0 CHC 3RRB	BW ASMESA376GRT316		2485 0650 2235 0611 27AP79
S21201ML030 S2RC030		REACTOR VESSEL V001 SYS 1101	LINE 058 SYS 1201	0.75 40111	N/A D5	N/A		B A 2X6H,27293	3.0 CHC 2RRB	BW N/A		2485 0650 2235 0611 20MR79
S31201ML030 S3RC030		REACTOR VESSEL V001 SYS 1101	LINE 058 SYS 1201	0.75 40111	N/A D5	N/A		B A 3X6H,27293	3.0 CHC 3RRB	BW N/A		2485 0650 2235 0611 27AP79
S21201ML031 S2RC031		LINE 006 RC COLD LOOP 2A SYS 1201	LINE 298 SYS 1901 @ VALVE 005 SYS 1201	2.00 40111	FEO C2	160		B A 2X6H,27211	3.0 CHC 2RSA	BW ASMESA376GRT316	X	2485 0650 2235 0553 01AU78

REPORT NO: NM121-50-R1 | LINE DESIGNATION LIST - MASTERFILE | REPORT DATE: 11/MY/79
SEQ: 1-10-04 DESC: TAG SYS/PROJ CLS LE I | SAN ONOFRE NUCLEAR GENERATING STATION | PAGE: BRK- 6 RPT- 6
MSTR VERSION: 228 LIST VERSION: 228
PGE-BRK-DESC: TAG SYSTEM NO.

LINE NUMBER / (SHORT TAG)	M S D	* DESCRIPTION FROM *	* DESCRIPTION TO *	PIPE SIZE / * DRAWING	MATL CLS / P & ID COORD	PIPE SCHED / REV *	WALL THICK	CLN CLS / CODE OF ACCOUNT	PROJ CLS	INSULATION THICK / SYSTEM ENG	INSULATION TYPE / S-U	2ND PP CONN / M A T E R I A L	I S I	DESIGN PRES	DESIGN TEMP	OPERATION PRES	OPERATION TEMP / ACCESS DATE
S31201ML031		LINE 006 RC COLD	LINE 298 SYS 1901 *	2.00	FEO	160		B	A	3.0	CHC	BW	X	2485	0650	2235	0553
S3RC031		LOOP 2B SYS 1201	VALVE 005 SYS 1201	40111	C2			326M,27211		3BBA		ASMESA376GRT316					27AP79
S21201ML032		PRESSURIZER ASSEMBLY	VALVE	6.00	EEO	160		B	A	4.5	CHC	BW	X	2485	0700	2235	0653
S2RC032		E087 SYS 1201	2PSV 0200 SYS 1201	40111	G6			2X6A,2822		2BBB		ASMESA376GRT316					05SE78
S31201ML032		PRESSURIZER ASSEMBLY	VALVE	6.00	EEO	160		B	A	4.5	CHC	BW	X	2485	0700	2235	0653
S3RC032		E087 SYS 1201	3PSV 0200 SYS 1201	40111	G6			3X6A,2822		3BBB		ASMESA376GRT316					27AP79
S21201ML033		PRESSURIZER ASSEMBLY	VALVE	6.00	EEO	160		B	A	4.5	CHC	BW	X	2485	0700	2235	0653
S2RC033		E087 SYS 1201	2PSV 0201 SYS 1201	40111	G6			2X6A,2822		2BBB		ASMESA376GRT316					01AU78
S31201ML033		PRESSURIZER ASSEMBLY	VALVE	6.00	EEO	160		B	A	4.5	CHC	BW	X	2485	0700	2235	0653
S3RC033		E087 SYS 1201	3PSV 0201 SYS 1201	40111	G6			3X6A,2822		3BBB		ASMESA376GRT316					27AP79
S21201ML034		LINE 032 & 033 CROSS	LINE 036 SYS 1212 *	0.75	EEO	160		B	A	4.0	CHC	BW		2485	0700	2235	0653
S2RC034		TIE SYS 1201	VALVE 010 SYS 1201	40111	H6			2X6L,616		2BBA		ASMESA376GRT316					01AU78
S31201ML034		LINE 032 & 033 CROSS	LINE 036 SYS 1212 *	0.75	EEO	160		B	A	4.0	CHC	BW		2485	0700	2235	0653
S3RC034		TIE SYS 1201	VALVE 010 SYS 1201	40111	H6			3X6L,616		3BBA		ASMESA376GRT316					27AP79
S21201ML040A		REACTOR COOLANT	LINE 053 SYS 1201	1.50	FEO	160		B	C	N/A		SW		2485	0650	0150	0150
S2RC040		PUMP P001 SYS 1201	T077 SYS 1208	40130	C6					2BBA		ASMESA376GRT316					05SE78
S31201ML040A		REACTOR COOLANT	LINE 053 SYS 1201	1.50	FEO	160		B	C	N/A		SW		2485	0650	0150	0150
S3RC040		PUMP P001 SYS 1201	T077 SYS 1208	40130	C6					3BBA		ASMESA376GRT316					27AP79
S21201ML040B		REACTOR COOLANT	LINE 053 SYS 1201	0.75	FEO	160		B	C	1.5	CPP	SW		2485	0650	0150	0150
S2RC040		PUMP P001 SYS 1201	T077 SYS 1208	40111	B8					2BBA		ASMESA376GRT316					05SE78
S31201ML040B		REACTOR COOLANT	LINE 053 SYS 1201	0.75	FEO	160		B	C	1.5	CPP	SW		2485	0650	0150	0150
S3RC040		PUMP P001 SYS 1201	T077 SYS 1208	40111	B8					3BBA		ASMESA376GRT316					27AP79
S21201ML041A		REACTOR COOLANT	LINE 053 SYS 1201	1.50	FEO	160		B	C	1.5	CPP	SW		2485	0650	0150	0150
S2RC041		PUMP P002 SYS 1201	T077 SYS 1208	40130	C6					2BBA		ASMESA376GRT316					05SE78
S31201ML041A		REACTOR COOLANT	LINE 053 SYS 1201	1.50	FEO	160		B	C	1.5	CPP	SW		2485	0650	0150	0150
S3RC041		PUMP P002 SYS 1201	T077 SYS 1208	40130	C6					3BBA		ASMESA376GRT316					27AP79
S21201ML041B		REACTOR COOLANT	LINE 053 SYS 1201	0.75	FEO	160		B	C	1.5	CPP	SW		2485	0650	0150	0150
S2RC041		PUMP P002 SYS 1201	T077 SYS 1208	40111	B3					2BBA		ASMESA376GRT316					05SE78
S31201ML041B		REACTOR COOLANT	LINE 053 SYS 1201	0.75	FEO	160		B	C	1.5	CPP	SW		2485	0650	0150	0150
S3RC041		PUMP P002 SYS 1201	T077 SYS 1208	40111	B3					3BBA		ASMESA376GRT316					27AP79

REPORT NO: ...1-50-R1
SEQ: 1-10-04 DESC: TAG SYS/PROJ CLS LE I
MSTR VERSION: 22A LIST VERSION: 22A
PGE-BRK-DESC: TAG SYSTEM NO.

LINE DESIGNATION ... MASTERFILE
SAN ONOFRE NUCLEAR GENERATING STATION

REPORT DATE:
PAGE: BRK- 7 RPT- 7

LINE NUMBER (SHORT TAG)	M S D	* DESCRIPTION FROM *	* DESCRIPTION TO *	PIPE SIZE / * DRAWING	MATL CLS / P & ID COORD	PIPE WALL SCHED THICK / * REV	CODE OF ACCOUNT	CLN CLS	PROJ CLS	INSULATION THICK TYPE / SYSTEM ENG S-U	2" PP CONN / M A T E R I A L	I S I	DESIGN PRES TEMP / OPERATION PRES TEMP / ACCESS DATE
S21201ML042A		REACTOR COOLANT	LINE 053 SYS 1201	1.50	FEO	160		A	C	1.5 CPP SW			2485 0650 0150 0150
S2RC042		PUMP P004 SYS 1201	T077 SYS 1208	00130		C6				2RRA	ASMESA376GRT316		05SE78
S31201ML042A		REACTOR COOLANT	LINE 053 SYS 1201	1.50	FEO	160		B	C	1.5 CPP SW			2485 0650 0150 0150
S3RC042		PUMP P004 SYS 1201	T077 SYS 1208	00130		C6				3RRA	ASMESA376GRT316		27AP79
S21201ML042B		REACTOR COOLANT	LINE 053 SYS 1201	0.75	FEO	160		A	C	1.5 CPP SW			2485 0650 0150 0150
S2RC042		PUMP P004 SYS 1201	T077 SYS 1208	00111		D2				2RRA	ASMESA376GRT316		05SE78
S31201ML042B		REACTOR COOLANT	LINE 053 SYS 1201	0.75	FEO	160		A	C	1.5 CPP SW			2485 0650 0150 0150
S3RC042		PUMP P004 SYS 1201	T077 SYS 1208	00111		D2				3RRA	ASMESA376GRT316		27AP79
S21201ML043A		REACTOR COOLANT	LINE 053 SYS 1201	1.50	FEO	160		B	C	1.5 CPP SW			2485 0650 0150 0150
S2RC043		PUMP P003 SYS 1201	T077 SYS 1208	00130		C6				2RRA	ASMESA376GRT316		05SE78
S31201ML043A		REACTOR COOLANT	LINE 053 SYS 1201	1.50	FEO	160		B	C	1.5 CPP SW			2485 0650 0150 0150
S3RC043		PUMP P003 SYS 1201	T077 SYS 1208	00130		C6				3RRA	ASMESA376GRT316		27AP79
S21201ML043B		REACTOR COOLANT	LINE 053 SYS 1201	0.75	FEO	160		B	C	1.5 CPP SW			2485 0650 0150 0150
S2RC043		PUMP P003 SYS 1201	T077 SYS 1208	00111		E8				2RRA	ASMESA376GRT316		05SE78
S31201ML043B		REACTOR COOLANT	LINE 053 SYS 1201	0.75	FEO	160		B	C	1.5 CPP SW			2485 0650 0150 0150
S3RC043		PUMP P003 SYS 1201	T077 SYS 1208	00111		E8				3RRA	ASMESA376GRT316		27AP79
S21201ML045		SHUTDOWN COOLING	LN 172 VA 017 SAMPLE	1.00	KEO	40S		A	C	1.5 DPP RW			0435 0000 0361 0350
S2RC045		LINE 017 SYS 1201	SYSTEM SYS 1212	00112		05	2X6M,26			2RHA	ASMESA376GRT304		20MR79
S31201ML045		SHUTDOWN COOLING	LN 172 VA 017 SAMPLE	1.00	KEO	40S		B	C	1.5 DPP SW			0435 0400 0361 0350
S3RC045		LINE 017 SYS 1201	SYSTEM SYS 1212	00112		05	3X6M,26			3RHA	ASMESA376GRT304		27AP79
S21201ML049		LINE 015 RC HOT	LINE 042 SYS 1212 *	0.75	EEO	160		A	A	4.0 CHC RW			2485 0700 2235 0653
S2RC049		LEG SYS 1201	VALVE 012 SYS 1201	00111		D6	2X6M,27			2RRR	ASMESA376GRT316		01AU78
S31201ML049		LINE 015 RC HOT	LINE 042 SYS 1212 *	0.75	EEO	160		B	A	4.0 CHC RW			2485 0700 2235 0653
S3RC049		LEG SYS 1201	VALVE 012 SYS 1201	00111		D6	2X6M,27			3RRR	ASMESA376GRT316		27AP79
S21201ML050A		LINE 017 SHUTDOWN	LINE 033 * VALVE 018	16.00	KEO	20		A	C	1.5 APP RW		X	0435 0400 0361 0350
S2RC050		COOL LINE SYS 1201	PUMP P016 SYS 1204	00112		F6	2X6A,07252			2SHA	SA358GRT304CL1		05SE78
S31201ML050A		LINE 017 SHUTDOWN	LINE 033 * VALVE 018	16.00	KEO	20		A	C	1.5 APP RW		X	0435 0400 0361 0350
S3RC050		COOL LINE SYS 1201	PUMP P016 SYS 1204	00112		F6	3X6A,07252			3SHA	SA358GRT304CL1		27AP79
S21201ML050B		LINE 017 SHUTDOWN	LINE 033 * VALVE 018	14.00	KEO	20		A	C	1.5 APP RW		X	0435 0400 0361 0350
S2RC050		COOL LINE SYS 1201	PUMP P016 SYS 1204	00112		F6	2X6A,36252			2RHA	SA358GRT304CL1		05SE78

REPORT NO: NM121-50-R1
SEQ: 1-10-04 DESC: TAG SYS/PROJ CLS LE I
MSTR VERSION: 228 LIST VERSION: 228
PGE-BRK-DESC: TAG SYSTEM NO.

LINE DESIGNATION LIST - MASTERFILE
SAN ONOFRE NUCLEAR GENERATING STATION

REPORT DATE: 11/MY/79
PAGE: BRK- A RPT- A

LINE NUMBER (SHORT TAG)	MSD	DESCRIPTION FROM	DESCRIPTION TO	PIPE SIZE	MATL CLS	PIPE SCHED	P & ID DRAWING	COORD REV	CLN CLS	PROJ CLS	CODE OF ACCOUNT	INSULATION THICK	INSULATION TYPE	2" PP CONN	ISI	DESIGN PRES	DESIGN TEMP	OPERATION PRES	OPERATION TEMP	SYSTEM ENG S-U	MATERIAL	ACCESS DATE
S31201ML050B S3RC050		LINE 017 SHUTDOWN COOL LINE SYS 1201	LINE 033 - VALVE 018 PUMP P016 SYS 1204	14.00	KFO	20	40112	F6	A	C	3X6A,36252	1.5	APP	RW	X	0435	0400	0361	0350	3RHA	SA358GRT304CL1	27AP79
S21201ML051 S2RC051		LINE 072 - VALVE 048 SYS 1201	BLEED CONNECTION SYS 1201	0.75	FEO	160	40113	D4	B	C			N/A	RW		2485	0650	2235	0611	2RHA	ASMESA376GRT316	21JN78
S31201ML051 S3RC051		LINE 072 - VALVE 048 SYS 1201	BLEED CONNECTION SYS 1201	0.75	FEO	160	40113	D4	B	C			N/A	RW		2485	0650	2235	0611	3RHA	ASMESA376GRT316	27AP79
S21201ML052 S2RC052		LINE 053 - VALVE 2HV 9217 SYS 1201	LN 069 SYS 1208 - VA 2HV 9218 SYS 1201	0.75	FFO	160	40124	G5	B	C	2X6H,27241	1.5	CPP	RW		2485	0650	0150	0150	2RRA	ASMESA376GRT316	05SE78
S31201ML052 S3RC052		LINE 053 - VALVE 3HV 9217 SYS 1201	LN 069 SYS 1208 - VA 2HV 9218 SYS 1201	0.75	FEO	160	40124	G5	A	C	3X6H,27241	1.5	CPP	RW		2485	0650	0150	0150	3RRA	ASMESA376GRT316	27AP79
S21201ML053 S2RC053		LINE 040-043 REACTOR COOL PUMPS SYS 1201	LINE 052 SYS 1208	0.75	FEO	160	40124	G5	B	C	2X6H,27241	1.5	CPP	RW		2485	0650	0150	0150	2RRA	ASMESA376GRT316	05SE78
S31201ML053 S3RC053		LINE 040-043 REACTOR COOL PUMPS SYS 1201	LINE 052 SYS 1208	0.75	FEO	160	40124	G5	B	C	3X6H,27241	1.5	CPP	RW		2485	0650	0150	0150	3RRA	ASMESA376GRT316	27AP79
S21201ML055 S2RC055		LINE 016 - VALVE 035 SYS 1201	BLEED CONNECTION SYS 1201	0.75	FEO	160	40113	E4	B	C			N/A	RW		2485	0650	2235	0611	2RHA	ASMESA376GRT316	21JN78
S31201ML055 S3RC055		LINE 016 - VALVE 035 SYS 1201	BLEED CONNECTION SYS 1201	0.75	FEO	160	40113	E4	A	C			N/A	RW		2485	0650	2235	0611	3RHA	ASMESA376GRT316	27AP79
S21201ML056 S2RC056		LINE 046 SYS 1208 - 2XCV 9219 SYS 1201	LINE 063 - VALVE 107 SYS 1201	2.00	EFO	160	40123	B7	B	A		2.5	CHC	RW		2735	0650	2235	0070	2RGA	ASMESA376GRT316	05SE78
S31201ML056 S3RC056		LINE 046 SYS 1208 - 3XCV 9219 SYS 1201	LINE 063 - VALVE 107 SYS 1201	2.00	EEO	160	40123	B7	B	A		2.5	CHC	RW		2735	0650	2235	0070	3RGA	ASMESA376GRT316	27AP79
S21201ML057 S2RC057		LINE 053 SYS 1201	LINE 054 - VALVE 2PSV 9215 SYS 1201	0.75	FEO	160	40124	G5	B	C		1.0	DPP	RW		2485	0650	0150	0150	2HBA	ASMESA376GRT316	05SE78
S31201ML057 S3RC057		LINE 053 SYS 1201	LINE 054 - VALVE 3PSV 9215 SYS 1201	0.75	FEO	160	40124	G5	B	C		1.0	DPP	RW		2485	0650	0150	0150	3RRA	ASMESA376GRT316	27AP79
S21201ML058 S2RC058		LINE 030 V001 SYS 1301	LINE 048 - VALVE 108 SYS 1201	0.75	FFO	160	40111	D5	B	A		2.0	CHC	RW		2485	0650	2235	0611	2RRB	ASMESA376GRT316	20MR79
S31201ML058 S3RC058		LINE 030 V001 SYS 1301	LINE 048 - VALVE 108 SYS 1201	0.75	FEO	160	40111	D5	B	A		2.0	CHC	RW		2485	0650	2235	0611	3RRB	ASMESA376GRT316	27AP79

REPORT NO -50-R1 LINE DESIGNATIO MASTERFILE REPORT DATE:
SEQ: 1-10-04 DESC: TAG SYS/PROJ CLS LE I SAN ONOFRE NUCLEAR -ATING STATION PAGE: RRK- 9 RPT-
MSTR VERSION: 228 LIST VERSION: 228
PGE-RRK-DESC: TAG SYSTEM NO.

LINE NUMBER (SHORT TAG)	M S D	* DESCRIPTION FROM *	* DESCRIPTION TO *	PIPE SIZE / * DRAWING	MATL CLS	PIPE SCHED / REV	P&ID COORD	CODE OF ACCOUNT	CLN CLS	PROJ CLS	INSULATION THICK	INSULATION TYPE	CONN	2" PP I S I	DESIGN PRES	DESIGN TEMP	OPERATION PRES	OPERATION TEMP	SYSTEM ENG S-U	MATERIAL	ACCESS DATE
S21201ML059 S2RC059		LINE 022 @ VALVE 110 SYS 1201	BLIND FLANGE SYS 1201	0.75 40123	FEO	160	D7		B	C	3.0	CPP	AW		2485	0650	2235	0553	2BGA	ASMESA376GRT316	13FE78
S31201ML059 S3RC059		LINE 022 @ VALVE 110 SYS 1201	BLIND FLANGE SYS 1201	0.75 40123	FEO	160	D7		B	C	3.0	CPP	AW		2485	0650	2235	0553	3BGA	ASMESA376GRT316	27AP79
S21201ML060 S2RC060		LINE 011 @ VALVE 2HV 9201 SYS 1208	LINE 012 REACTOR COOLANT SYS 1201	2.00 40123	FEO	160	C7	2X6H,27241	B	A	4.0	CHC	AW	X	2485	0650	2235	0553	2BBB	ASMESA376GRT316	05SE78
S31201ML060 S3RC060		LINE 011 @ VALVE 3HV 9201 SYS 1208	LINE 012 REACTOR COOLANT SYS 1201	2.00 40123	FEO	160	C7	3X6H,27241	B	A	4.0	CHC	AW	X	2485	0650	2235	0553	3BBB	ASMESA376GRT316	27AP79
S21201ML061 S2RC061		LINE 010 SYS 1208 @ 2HV 9202 SYS 1201	LINE 008 REACT COOL LOOP 2A SYS 1201	2.00 40123	FEO	160	C7	2X6H,27241	B	A	3.0	CHC	AW	X	2485	0650	2235	0553	2BBB	ASMESA376GRT316	01AU78
S31201ML061 S3RC061		LINE 010 SYS 1208 @ 3HV 9202 SYS 1201	LINE 008 REACT COOL LOOP 2A SYS 1201	2.00 40123	FEO	160	C7	3X6H,27241	B	A	3.0	CHC	AW	X	2485	0650	2235	0553	3BBB	ASMESA376GRT316	27AP79
S21201ML062 S2RC062		LINE 009 SYS 1208 @ 2HV 9203 SYS 1201	LINE 007 REACT COOL LOOP 1A SYS 1201	2.00 40123	FEO	160	B7	2X6H,27241	B	A	3.0	CHC	BW	X	2485	0650	2235	0553	2BBB	ASMESA376GRT316	01AU78
S31201ML062 S3RC062		LINE 009 SYS 1208 @ 3HV 9203 SYS 1201	LINE 007 REACT COOL LOOP 1A SYS 1201	2.00 40123	FEO	160	B7	3X6H,27241	B	A	3.0	CHC	BW	X	2485	0650	2235	0553	3BBH	ASMESA376GRT316	27AP79
S21201ML063 S2RC063		LINE 056 @ VALVE 107 SYS 1201	LINE 062 REACT COOL LOOP 1A SYS 1201	2.00 40123	FEO	160	B7	2X6H,27241	B	A	3.0	CHC	AW	X	2485	0650	2235	0553	2BBB	ASMESA376GRT316	01AU78
S31201ML063 S3RC063		LINE 056 @ VALVE 107 SYS 1201	LINE 062 REACT COOL LOOP 1A SYS 1201	2.00 40123	FEO	160	B7	3X6H,27241	B	A	3.0	CHC	AW	X	2485	0650	2235	0553	3BBB	ASMESA376GRT316	27AP79
S21201ML064 S2RC064		REACTOR VESSEL V001 SYS 1201	LINE 073 @ VALVE 044 SYS 1201	0.75 40111	FEO	160	D5	226H,27211	B	C	3.0	CHC	AW		2485	0650	2235	0611	2BBH	ASMESA376GRT316	05SE78
S31201ML064 S3RC064		REACTOR VESSEL V001 SYS 1201	LINE 073 @ VALVE 044 SYS 1201	0.75 40111	FEO	160	D5	326H,27211	B	C	3.0	CHC	AW		2485	0650	2235	0611	3BBB	ASMESA376GRT316	27AP79
S21201ML065 S2RC065		LINE 002 RC HOT LOOP SYS 1201	LINE 167 SYS 1212 @ VALVE 034 SYS 1201	0.75 40111	FEO	160	C4	2X6L,612	B	A	3.0	CHC	BW		2485	0650	2235	0611	2BBB	ASMESA376GRT316	01AU78
S31201ML065 S3RC065		LINE 002 RC HOT LOOP SYS 1201	LINE 167 SYS 1212 @ VALVE 034 SYS 1201	0.75 40111	FEO	160	C4	3X6L,612	B	A	3.0	CHC	BW		2485	0650	2235	0611	3BBB	ASMESA376GRT316	27AP79
S21201ML071 S2RC071		LINE 072 RC HOT LOOP 2 SYS 1201	LINE 017 LPSI PUMP P015 SYS 1201	10.00 40113	KEO	20	D4	226A,36262	B	C	2.5	CPP	AW	X	0035	0400	0361	0350	2BHA	ASMESA358GRT304	05SE78

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REPORT NO: NM121-50-R1                          LINE DESIGNATION LIST - MASTERFILE                            REPORT DATE: 11/MY/79
SEQ: 1-10-04  DESC: TAG SYS/PROJ CLS LE I      SAN ONOFRE NUCLEAR GENERATING STATION                     PAGE: BRK- 10  RPT- 10
MSTR VERSION: 228  LIST VERSION: 228
PGE-BRK-DESC: TAG SYSTEM NO.

   LINE      M  * DESCRIPTION FROM *  *  DESCRIPTION TO  *   PIPE   MATL  PIPE WALL  CLN PROJ INSULATION 2" PP I  DESIGN   OPERATION
  NUMBER     S                                               SIZE   CLS  SCHED THICK CLS CLS  THICK TYPE CONN  S PRES TEMP PRES TEMP
             D                                                                                                 I

 (SHORT TAG)                                                *     P & ID    *   CODE OF     SYSTEM   M A T E R I A L   ACCESS
                                                            DRAWING  COORD REV   ACCOUNT    ENG  S-U                    DATE

 S31201ML071   LINE 072 RC HOT        LINE 017 LPSI          10.00  KEO    20           B  C       2.5 CPP  BW     X 0435.0400 0361 0350
  S3RC071      LOOP   2    SYS 1201   PUMP   P015 SYS 1201   40113        D4     3264,36262    3BHA     ASMESA358GRTP304    27AP79

 S21201ML072   LINE 016 RC HOT        LINE 071 & VALVE       10.00  FEO   140           B  A       3.5 CHC  BW     X 2485 0650 2235 0611
  S2RC072      LOOP   2    SYS 1201   2HV    9377 SYS 1201   40113        D3     2264,36262    2BHA     ASMESA376GRT316     01AU78

 S31201ML072   LINE 016 RC HOT        LINE 071 & VALVE       10.00  FEO   140           B  A       3.5 CHC  BW     X 2485 0650 2235 0611
  S3RC072      LOOP   2    SYS 1201   3HV    9377 SYS 1201   40113        D3     3264,36262    3BHA     ASMESA376GRT316     27AP79

 S21201ML073   REACTOR VESSEL         LINE 543 & VALVE 755    0.75  FEO   160           B  C       3.0 CHC  BW       2485 0650 2235 0611
  S2RC073                V001 SYS 1201  2HV-9418             40111        C5     2X6H,27211    2BBB     ASMESA376GRT316     05SE78

 S31201ML073   REACTOR VESSEL         LINE 543 & VALVE 755    0.75  FEO   160           B  C       3.0 CHC  BW       2485 0650 2235 0611
  S3RC073                V001 SYS 1201  3HV-9418             40111        C5     3X6H,27211    3BBB     ASMESA376GRT316     27AP79

 S21201ML079   LINE 071               DRAIN                   2.00  KEO   408           B  C            N/A  BW       0435 0400 0435 0400
  S2RC079                   SYS 1201               SYS 1201  40113        D4                   2B       ASMESA376GRT304     20FE79

 S31201ML079   LINE 071               DRAIN                   2.00  KEO   405           B  C            N/A  BW       0435 0400 0435 0400
  S3RC079                   SYS 1201               SYS 1201  40113        D4                   3B       ASMESA376GRT304     27AP79

 S21201ML134   LINE 007 SYS 1219 &    LINE 017 LP SI PUMPS   10.00  KEO    20           B  C       1.5 APP  BW     X 0435 0400 0361 0350
  S2RC134      SPEC BLIND  SYS 1201   P015 & P016 SYS 1204   40112        F5     2X6A,36253    2BHA     SA358GRT304CL1      05SE78

 S31201ML134   LINE 007 SYS 1219 &    LINE 017 LP SI PUMPS   10.00  KEO    20           B  C       1.5 APP  BW     X 0435 0400 0361 0350
  S3RC134      SPEC BLIND  SYS 1201   P015 & P016 SYS 1204   40112        F5     3X6A,36253    3BHA     SA358GRT304CL1      27AP79

 S21201ML135   UPPER SEAL CAVITY      VENT TO ATMOSPHERE &    0.75  FEO   160           B  C            N/A  BW       2485 0650 0060 0110
  S2RC135      PUMP    P001 SYS 1201  2PT    0152 SYS 1201   40130        C5     2X6H,27293    2BBA     ASMESA376GRT316     30JN78

 S31201ML135   UPPER SEAL CAVITY      VENT TO ATMOSPHERE &    0.75  FEO   160           B  C            N/A  BW       2485 0650 0060 0110
  S3RC135      PUMP    P001 SYS 1201  3PT    0152 SYS 1201   40130        C5     3X6H,27293    3BBA     ASMESA376GRT316     27AP79

 S21201ML136   UPPER SEAL CAVITY      VENT TO ATMOSPHERE &    0.75  FEO   160           B  C            N/A  BW       2485 0650 0060 0110
  S2RC136      PUMP    P002 SYS 1201  2PT    0182 SYS 1201   40130        C5     2X6H,27293    2BBA     ASMESA376GRT316     02FE79

 S31201ML136   UPPER SEAL CAVITY      VENT TO ATMOSPHERE &    0.75  FEO   160           B  C            N/A  BW       2485 0650 0060 0110
  S3RC136      PUMP    P002 SYS 1201  3PT    0182 SYS 1201   40130        C5     3X6H,27293    3BBA     ASMESA376GRT316     27AP79

 S21201ML137   UPPER SEAL CAVITY      VENT TO ATMOSPHERE &    0.75  FEO   160           B  C            N/A  BW       2485 0650 0060 0110
  S2RC137      PUMP    P003 SYS 1201  2PT    0162 SYS 1201   40130        C5     2X6H,27293    2BBA     ASMESA376GRT316     02FE79

 S31201ML137   UPPER SEAL CAVITY      VENT TO ATMOSPHERE &    0.75  FEO   160           B  C            N/A  BW       2485 0650 0060 0110
  S3RC137      PUMP    P003 SYS 1201  3PT    0162 SYS 1201   40130        C5     3X6H,27293    3BBA     ASMESA376GRT316     27AP79
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REPORT NO: [illegible]-50-R1
SEQ: 1-10-04 DESC: TAG SYS/PROJ CLS LE I
MSTR VERSION: 228 LIST VERSION: 228
PGE-BRK-DESC: TAG SYSTEM NO.

LINE DESIGNATION MASTERFILE
SAN ONOFRE NUCLEAR GENERATING STATION

REPORT DATE:
PAGE: BRK- 11 RPT-

LINE NUMBER (SHORT TAG)	M S D	* DESCRIPTION FROM *	* DESCRIPTION TO *	PIPE SIZE / * DRAWING	MATL CLS / P & ID COORD	PIPE SCHED / REV *	WALL THICK / CLN CLS / PROJ CLS / CODE OF ACCOUNT	SYSTEM ENG	INSULATION THICK TYPE / 2" PP CONN / I S I	MATERIAL	DESIGN PRES TEMP / OPERATION PRES TEMP	ACCESS DATE
S21201ML138 S2RC138		UPPER SEAL CAVITY PUMP P004 SYS 1201	VENT TO ATMOSPHERE & 2PT 0172 SYS 1201	0.75 40130	FEO CS	160	B C 2X6H,27293	2BBA	N/A BW	ASMESA376GRT316	2485 0650 0060 0110	02FE79
S31201ML138 S3RC138		UPPER SEAL CAVITY PUMP P004 SYS 1201	VENT TO ATMOSPHERE & 3PT 0172 SYS 1201	0.75 40130	FEO CS	160	B C 3X6H,27293	3BBA	N/A BW	ASMESA376GRT316	2485 0650 0060 0110	27AP79
S21201ML139 S2RC139		MIDDLE SEAL CAVITY PUMP P001 SYS 1201	VENT TO ATMOSPHERE & 2PT 0151 SYS 1201	0.75 40130	FEO CS	160	B C 2X6H,27293	2BBA	N/A BW	ASMESA376GRT316	2485 0650 0060 0110	30JN78
S31201ML139 S3RC139		MIDDLE SEAL CAVITY PUMP P001 SYS 1201	VENT TO ATMOSPHERE & 3PT 0151 SYS 1201	0.75 40130	FEO CS	160	B C 3X6H,27293	3BBA	N/A BW	ASMESA376GRT316	2485 0650 0060 0110	27AP79
S21201ML140 S2RC140		MIDDLE SEAL CAVITY PUMP P002 SYS 1201	VENT TO ATMOSPHERE & 2PT 0181 SYS 1201	0.75 40130	FEO CS	160	B C 2X6H,27293	2BBA	N/A BW	ASMESA376GRT316	2485 0650 0060 0110	02FE79
S31201ML140 S3RC140		MIDDLE SEAL CAVITY PUMP P002 SYS 1201	VENT TO ATMOSPHERE & 3PT 0181 SYS 1201	0.75 40130	FEO CS	160	B C 3X6H,27293	3BBA	N/A BW	ASMESA376GRT316	2485 0650 0060 0110	27AP79
S21201ML141 S2RC141		MIDDLE SEAL CAVITY PUMP P003 SYS 1201	VENT TO ATMOSPHERE & 2PT 0161 SYS 1201	0.75 40130	FEO CS	160	B C 2X6H,27293	2BBA	N/A BW	ASMESA376GRT316	2485 0650 0060 0110	02FE79
S31201ML141 S3RC141		MIDDLE SEAL CAVITY PUMP P003 SYS 1201	VENT TO ATMOSPHERE & 3PT 0161 SYS 1201	0.75 40130	FEO CS	160	B C 3X6H,27293	3BBA	N/A BW	ASMESA376GRT316	2485 0650 0060 0110	27AP79
S21201ML142 S2RC142		MIDDLE SEAL CAVITY PUMP P004 SYS 1201	VENT TO ATMOSPHERE & 2PT 0171 SYS 1201	0.75 40130	FEO CS	160	B C 2X6H,27293	2BBA	N/A BW	ASMESA376GRT316	2485 0650 0060 0110	02FE79
S31201ML142 S3RC142		MIDDLE SEAL CAVITY PUMP P004 SYS 1201	VENT TO ATMOSPHERE & 3PT 0171 SYS 1201	0.75 40130	FEO CS	160	B C 3X6H,27293	3BBA	N/A BW	ASMESA376GRT316	2485 0650 0060 0110	27AP79
S21201ML143 S2RC143		LINE 040 VAPOR SEAL CAVITY SYS 1201	VENT TO ATMOSPHERE & 2PT 0153 SYS 1201	0.75 40130	FEO B7	160	B C 2X6H,27293	2BBA	N/A BW	ASMESA376GRT316	2485 0650 0060 0110	30JN78
S31201ML143 S3RC143		LINE 040 VAPOR SEAL CAVITY SYS 1201	VENT TO ATMOSPHERE & 3PT 0153 SYS 1201	0.75 40130	FEO B7	160	B C 3X6H,27293	3BBA	N/A BW	ASMESA376GRT316	2485 0650 0060 0110	27AP79
S21201ML144 S2RC144		LINE 041 VAPOR SEAL CAVITY SYS 1201	VENT TO ATMOSPHERE & 2PT 0183 SYS 1201	0.75 40130	FEO B7	160	B C 2X6H,27293	2BBA	N/A BW	ASMESA376GRT316	2485 0650 0060 0110	02FE79
S31201ML144 S3RC144		LINE 041 VAPOR SEAL CAVITY SYS 1201	VENT TO ATMOSPHERE & 3PT 0183 SYS 1201	0.75 40130	FEO B7	160	B C 3X6H,27293	3BBA	N/A BW	ASMESA376GRT316	2485 0650 0060 0110	27AP79
S21201ML145 S2RC145		LINE 043 VAPOR SEAL CAVITY SYS 1201	VENT TO ATMOSPHERE & 2PT 0163 SYS 1201	0.75 40130	FEO B7	160	B C 2X6H,27293	2BBA	N/A BW	ASMESA376GRT316	2485 0650 0060 0110	02FE79

REPORT NO: NM121-50-R1
SEQ: 1-10-04 DESC: TAG SYS/PROJ CLS LE I
MSTR VERSION: 22A LIST VERSION: 22B
PGE-BRK-DESC: TAG SYSTEM NO.

LINE DESIGNATION LIST - MASTERFILE
SAN ONOFRE NUCLEAR GENERATING STATION

REPORT DATE: 11/MY/79
PAGE: BRK- 12 RPT- 12

LINE NUMBER (SHORT TAG)	M S D	- DESCRIPTION FROM -	- DESCRIPTION TO -	PIPE SIZE / - P & ID - DRAWING	MATL CLS / COORD	PIPE SCHED / REV	WALL THICK	CLN CLS / PROJ CLS / CODE OF ACCOUNT	INSULATION THICK TYPE / SYSTEM ENG S-U	2" PP CONN / MATERIAL	I S I	DESIGN PRES TEMP / OPERATION PRES TEMP / ACCESS DATE
S31201ML145 S3RC145		LINE 043 VAPOR SEAL CAVITY SYS 1201	VENT TO ATMOSPHERE & 3PT 0163 SYS 1201	0.75 40130	FEO	160 B7		B C 3X6H,27293	N/A 3BBA	BW ASMESA376GRT316		2485 0650 0060 0110 27AP79
S21201ML146 S2RC146		LINE 042 VAPOR SEAL CAVITY SYS 1201	VENT TO ATMOSPHERE & 2PT 0173 SYS 1201	0.75 40130	FEO	160 B7		B C 2X6H,27293	N/A 2BBA	BW ASMESA376GRT316		2485 0650 0060 0110 02FE79
S31201ML146 S3RC146		LINE 042 VAPOR SEAL CAVITY SYS 1201	VENT TO ATMOSPHERE & 3PT 0173 SYS 1201	0.75 40130	FEO	160 B7		B C 3X6H,27293	N/A 3BBA	BW ASMESA376GRT316		2485 0650 0060 0110 27AP79
S21201ML147 S2RC147		LINE 065 - VALVE 152 SYS 1204	LINE 018 RC HOT LOOP SYS 1201	3.00 40111	FEO	160 C5		B A 2X6A,18262	3.0 CHC 2BBB	BW ASMESA376GRT316	X	2485 0650 2235 0611 05SE78
S31201ML147 S3RC147		LINE 065 - VALVE 152 SYS 1204	LINE 018 RC HOT LOOP SYS 1201	3.00 40111	FEO	160 C5		B A 3X6A,18262	3.0 CHC 3BBB	BW ASMESA376GRT316	X	2485 0650 2235 0611 27AP79
S21201ML149 S2RC149		LOWER SEAL PUMP P001 SYS 1201	VENT SYS 1201	0.75 40130	FEO	160 C5		B C 2X6H,27293	N/A 2BBA	BW ASMESA376GRT316		2485 0650 0060 0110 30JN78
S31201ML149 S3RC149		LOWER SEAL PUMP P001 SYS 1201	VENT SYS 1201	0.75 40130	FEO	160 C5		B C 3X6H,27293	N/A 3BBA	BW ASMESA376GRT316		2485 0650 0060 0110 27AP79
S21201ML150 S2RC150		LOWER SEAL PUMP P002 SYS 1201	VENT SYS 1201	0.75 40130	FEO	160 C5		B C 2X6H,27293	N/A 2BBA	BW ASMESA376GRT316		2485 0650 0060 0110 30JN78
S31201ML150 S3RC150		LOWER SEAL PUMP P002 SYS 1201	VENT SYS 1201	0.75 40130	FEO	160 C5		B C 3X6H,27293	N/A 3BBA	BW ASMESA376GRT316		2485 0650 0060 0110 27AP79
S21201ML151 S2RC151		LOWER SEAL PUMP P003 SYS 1201	VENT SYS 1201	0.75 40130	FEO	160 C5		B C 2X6H,27293	N/A 2BBA	BW ASMESA376GRT316		2485 0650 0060 0110 30JN78
S31201ML151 S3RC151		LOWER SEAL PUMP P003 SYS 1201	VENT SYS 1201	0.75 40130	FEO	160 C5		B C 3X6H,27293	N/A 3BBA	BW ASMESA376GRT316		2485 0650 0060 0110 27AP79
S21201ML152 S2RC152		LOWER SEAL PUMP P004 SYS 1201	VENT SYS 1201	0.75 40130	FEO	160 C5		B C 2X6H,27293	N/A 2BBA	BW ASMESA376GRT316		2485 0650 0060 0110 30JN78
S31201ML152 S3RC152		LOWER SEAL PUMP P004 SYS 1201	VENT SYS 1201	0.75 40130	FEO	160 C5		B C 3X6H,27293	N/A 3BBA	BW ASMESA376GRT316		2485 0650 0060 0110 27AP79
S21201ML153 S2RC153		R C PUMP SUCTION P001 SYS 1201	PRESS DIFF XMITTER 2PDT 0110 SYS 1201	0.75 40130	FEO	160 B6		B C 2X6L,616	3.0 CHC 2BBA	BW ASMESA376GRT316		2485 0650 2235 0553 30JN78
S31201ML153 S3RC153		R C PUMP SUCTION P001 SYS 1201	PRESS DIFF XMITTER 3PDT 0110 SYS 1201	0.75 40130	FEO	160 B6		B C 3X6L,616	3.0 CHC 3BBA	BW ASMESA376GRT316		2485 0650 2235 0553 27AP79

REPORT NO: 121-50-R1
SEQ: 1-10-04 DESC: TAG SYS/PROJ CLS LE I
MSTR VERSION: 228 LIST VERSION: 228
PGE-BRK-DESC: TAG SYSTEM NO.

LINE DESIGNATION MASTERFILE
SAN ONOFRE NUCLEAR GENERATING STATION

REPORT DATE:
PAGE: RHH- 13 RPT-

LINE NUMBER (SHORT TAG)	M S D	* DESCRIPTION FROM *	* DESCRIPTION TO *	PIPE SIZE / * DRAWING	MATL CLS / P & ID COORD	PIPE SCHED / REV	WALL THICK / CLN CLS / PROJ CLS / CODE OF ACCOUNT	INSULATION THICK TYPE / SYSTEM ENG S-U	2" PP CONN / MATERIAL	I R I	DESIGN PRES TEMP / OPERATION PRES TEMP / ACCESS DATE
S21201ML154 S2RC154		R C PUMP SUCTION P002 SYS 1201	PRESS DIFF XMITTER 2PDT 0122 SYS 1201	0.75 40130	FEO	160 B6	B C 2X6L.616	3.0 CHC 2BBA	BW ASMESA376GRT316		2485 0650 2235 0553 03MY79
S31201ML154 S3RC154		R C PUMP SUCTION P002 SYS 1201	PRESS DIFF XMITTER 3PDT 0122 SYS 1201	0.75 40130	FEO	160 B6	B C 3X6L.616	3.0 CHC 3BBA	BW ASMESA376GRT316		2485 0650 2235 0553 03MY79
S21201ML155 S2RC155		R C PUMP SUCTION P003 SYS 1201	PRESS DIFF XMITTER 2PDT 0112 SYS 1201	0.75 40130	FEO	160 B6	B C 2X6L.616	3.0 CHC 2BBA	BW ASMESA376GRT316		2485 0650 2235 0553 03MY79
S31201ML155 S3RC155		R C PUMP SUCTION P003 SYS 1201	PRESS DIFF XMITTER 3PDT 0112 SYS 1201	0.75 40130	FEO	160 B6	B C 3X6L.616	3.0 CHC 3BBA	BW ASMESA376GRT316		2485 0650 2235 0553 03MY79
S21201ML156 S2RC156		R C PUMP SUCTION P004 SYS 1201	PRESS DIFF XMITTER 2PDT 0120 SYS 1201	0.75 40130	FEO	160 B6	B C 2X6L.616	3.0 CHC 2BBA	BW ASMESA376GRT316		2485 0650 2235 0553 03MY79
S31201ML156 S3RC156		R C PUMP SUCTION P004 SYS 1201	PRESS DIFF XMITTER 3PDT 0120 SYS 1201	0.75 40130	FEO	160 B6	B C 3X6L.616	3.0 CHC 3BBA	BW ASMESA376GRT316		2485 0650 2235 0553 03MY79
S21201ML157 S2RC157		R C PUMP DISCHARGE P001 SYS 1201	PRESS DIFF XMITTER 2PDT 0111 SYS 1201	0.75 40130	FEO	160 B6	B C 2X6L.616	3.0 CHC 2BBA	BW ASMESA376GRT316		2485 0650 2250 0553 01AU78
S31201ML157 S3RC157		R C PUMP DISCHARGE P001 SYS 1201	PRESS DIFF XMITTER 3PDT 0111 SYS 1201	0.75 40130	FEO	160 B6	B C 3X6L.616	3.0 CHC 3BBA	BW ASMESA376GRT316		2485 0650 2250 0553 27AP79
S21201ML158 S2RC158		R C PUMP DISCHARGE P002 SYS 1201	PRESS DIFF XMITTER 2PDT 0123 SYS 1201	0.75 40130	FEO	160 B6	B C 2X6L.616	3.0 CHC 2BBA	BW ASMESA376GRT316		2485 0650 2250 0553 03MY79
S31201ML158 S3RC158		R C PUMP DISCHARGE P002 SYS 1201	PRESS DIFF XMITTER 3PDT 0123 SYS 1201	0.75 40130	FEO	160 B6	B C 3X6L.616	3.0 CHC 3BBA	BW ASMESA376GRT316		2485 0650 2250 0553 03MY79
S21201ML159 S2RC159		R C PUMP DISCHARGE P003 SYS 1201	PRESS DIFF XMITTER 2PDT 0113 SYS 1201	0.75 40130	FEO	160 B6	B C 2X6L.616	3.0 CHC 2BBA	BW ASMESA376GRT316		2485 0650 2250 0553 03MY79
S31201ML159 S3RC159		R C PUMP DISCHARGE P003 SYS 1201	PRESS DIFF XMITTER 3PDT 0113 SYS 1201	0.75 40130	FEO	160 B6	B C 3X6L.616	3.0 CHC 3BBA	BW ASMESA376GRT316		2485 0650 2250 0553 03MY79
S21201ML160 S2RC160		R C PUMP DISCHARGE P004 SYS 1201	PRESS DIFF XMITTER 2PDT 0121 SYS 1201	0.75 40130	FEO	160 B6	B C 2X6L.616	3.0 CHC 2BBA	BW ASMESA376GRT316		2485 0650 2250 0553 03MY79
S31201ML160 S3RC160		R C PUMP DISCHARGE P004 SYS 1201	PRESS DIFF XMITTER 3PDT 0121 SYS 1201	0.75 40130	FEO	160 B6	B C 3X6L.616	3.0 CHC 3BBA	BW ASMESA376GRT316		2485 0650 2250 0553 03MY79
S21201ML161 S2RC161		LINE 017 RC HOT LOOP SYS 1201	PSV (FUTURE) SYS 1201	6.00 40113	KEO	105 E5	B C	N/A 2BHA	BW		0035 0000 0035 0400 05SE78

REPORT NO: NM121-50-R1 LINE DESIGNATION LIST - MASTERFILE REPORT DATE: 11/MY/79
SEQ: 1-10-04 DESC: TAG SYS/PROJ CLS LE I SAN ONOFRE NUCLEAR GENERATING STATION PAGE: BRK- 14 RPT- 14
MSTR VERSION: 228 LIST VERSION: 228
PGE-BRK-DESC: TAG SYSTEM NO.

LINE NUMBER (SHORT TAG)	M S D	* DESCRIPTION FROM *	* DESCRIPTION TO *	PIPE SIZE / * DRAWING	MATL CLS / P & ID COORD REV	PIPE SCHED	WALL THICK / CODE OF ACCOUNT	CLN CLS	PROJ CLS	INSULATION THICK TYPE / SYSTEM ENG S-U	2" PP CONN	I S I	DESIGN PRES TEMP / MATERIAL	OPERATION PRES TEMP / ACCESS DATE
S31201ML161 S3RC161		LINK 017 RC HOT LOOP SYS 1201	PSV (FUTURE) SYS 1201	6.00 40113	KEO E5	109		R	C	3RMA	N/A	BW	0835.0400	0435 0400 27AP79

RECORDS PRINTED THIS PAGE-BREAK: 196

March 14, 1977

APPENDIX B

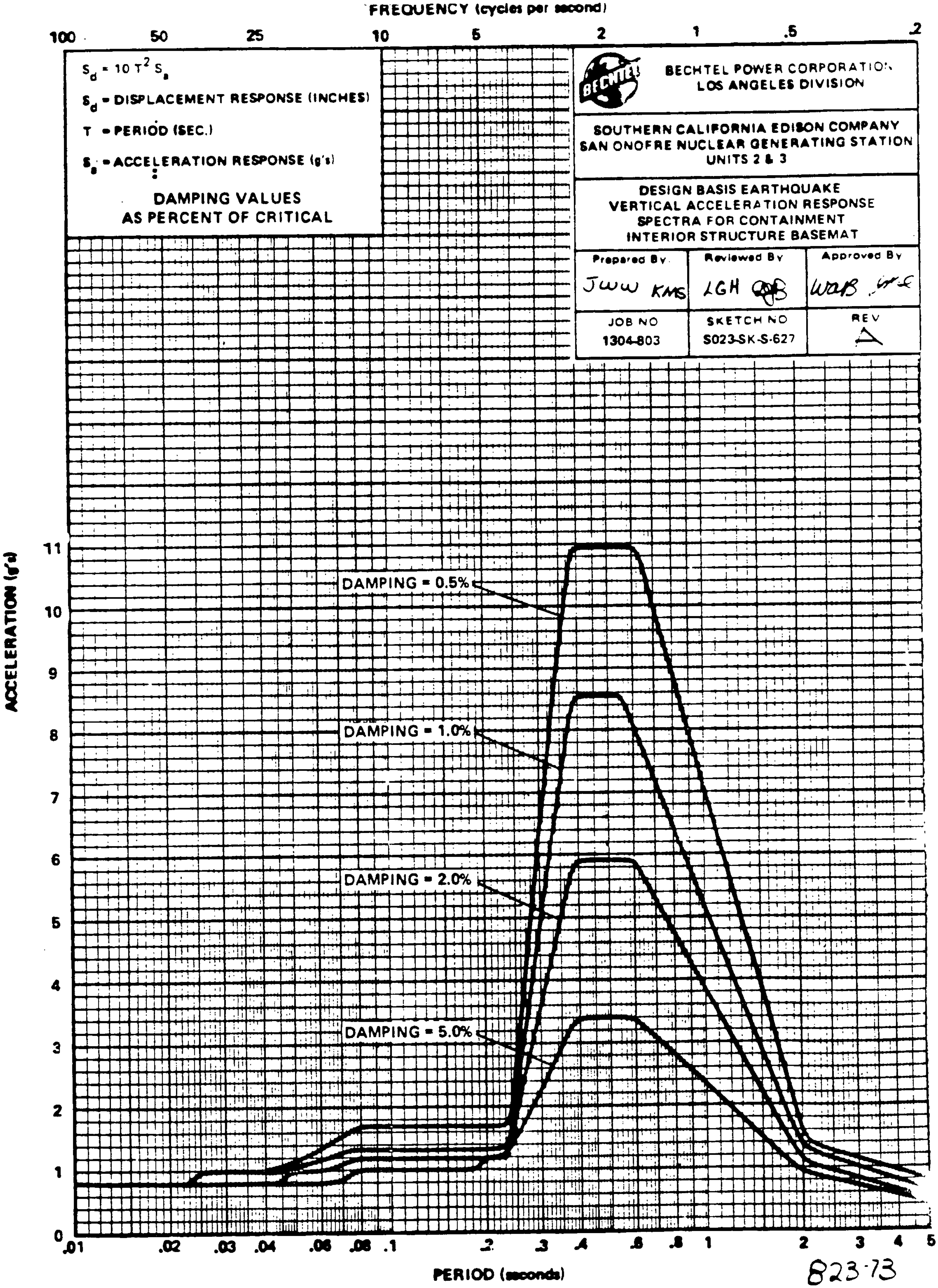
1. Seismic Category I Instructure Response Spectra (as listed on Page 2).

2. CE Reactor Coolant System Tributary Nozzle Response Spectra, Seismic Category I.

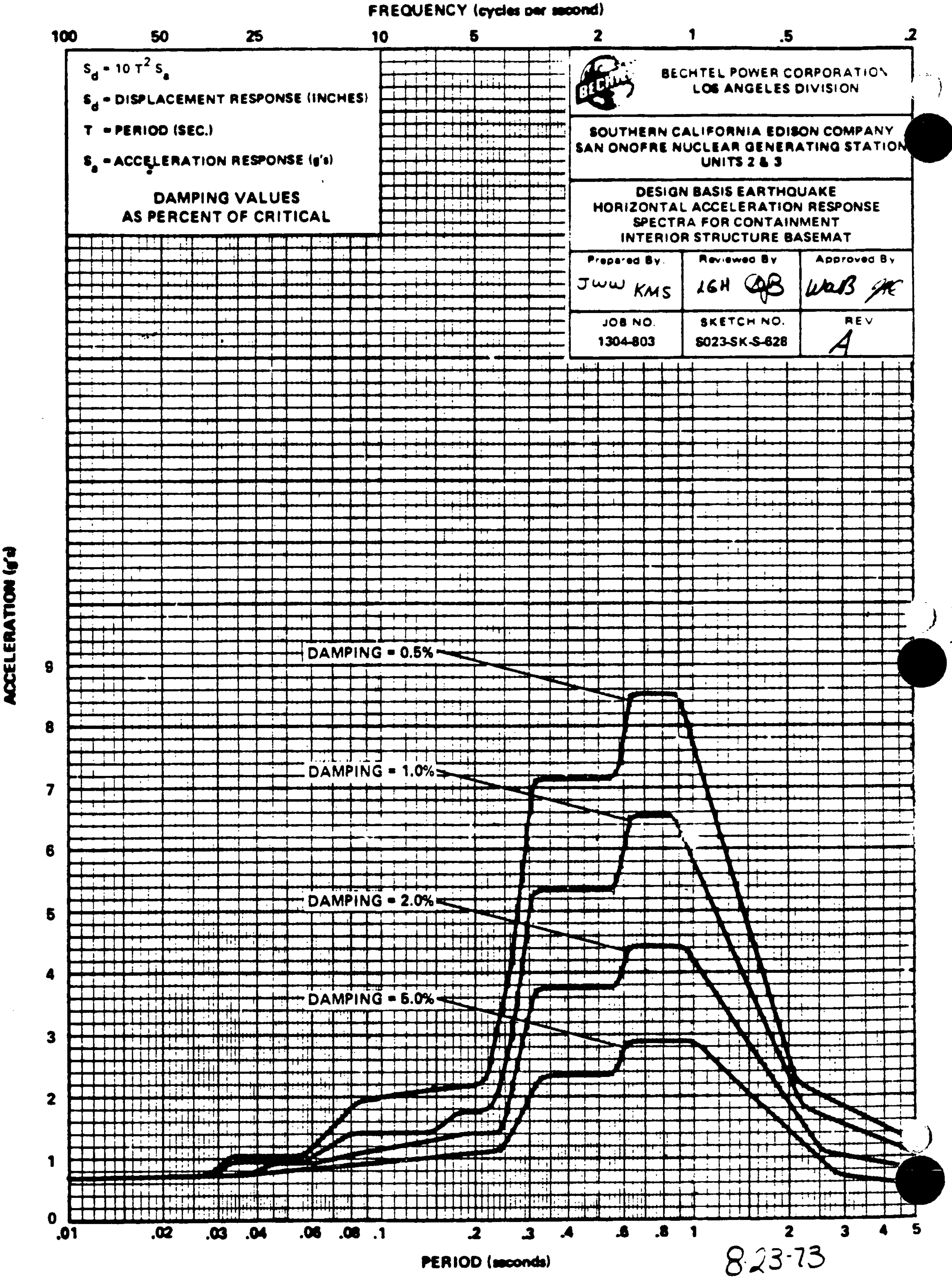
   (Contained in enclosure to CE to BPC letter, S-CE-3122, dated July 30, 1976).....S023-900-B-45-0
   thru 47-0,
   52-0
   thru 59-0,
   62-0
   thru 66-0

   (Contained in enclosure to CE to BPC letter, S-CE-3165, dated August 13, 1976).....S023-900B-71-0
   and-72-0

   (Contained in enclosure to CE to BPC letter, S-CE-3364, dated October 22, 1976).....S023-900B-73
   and-74

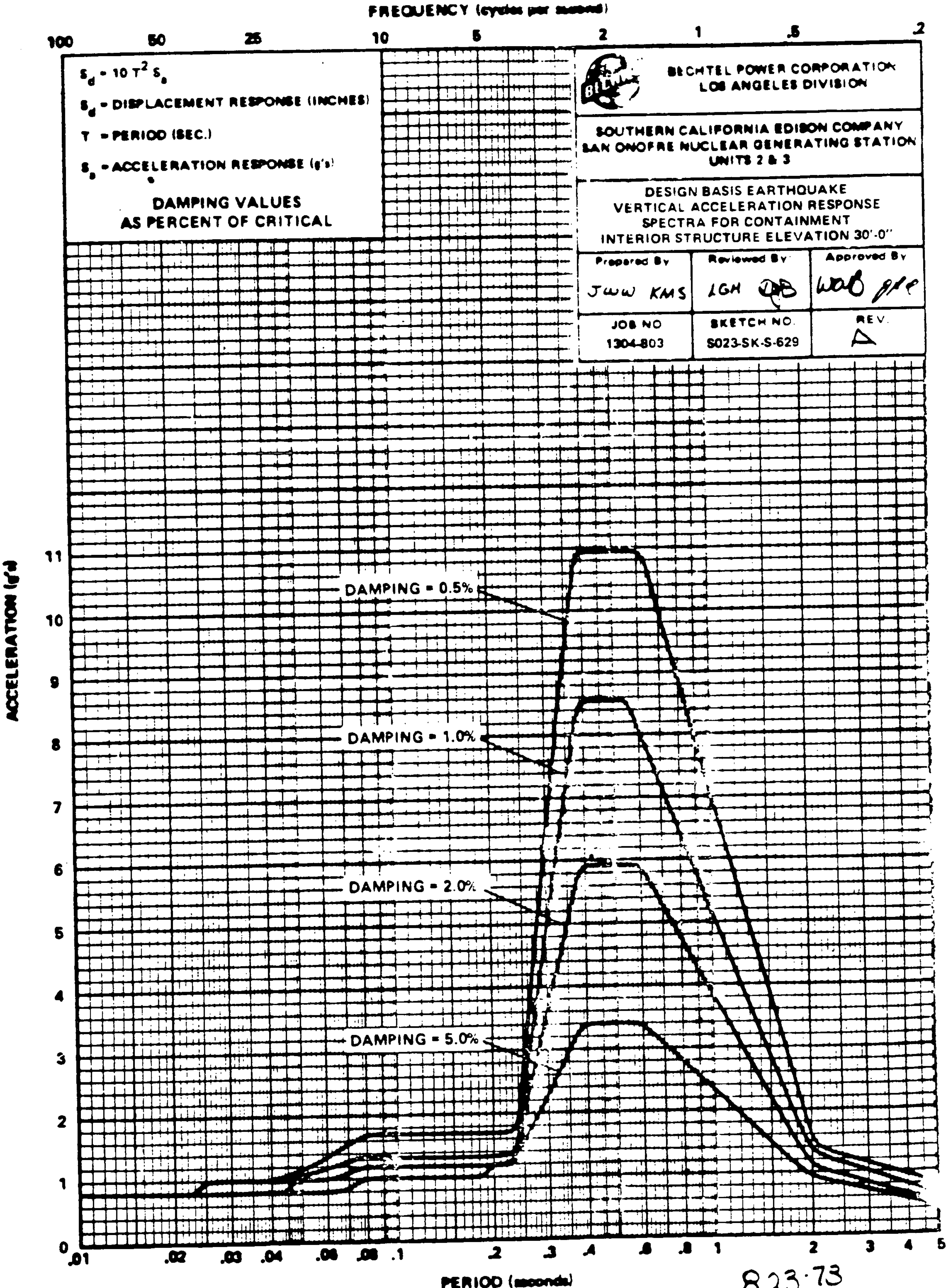

FREQUENCY (cycles per second)
100 50 25 10 5 2 1 .5 .2
$S_d = 10\,T^2\,S_a$
S_d = DISPLACEMENT RESPONSE (INCHES)
T = PERIOD (SEC.)
S_a = ACCELERATION RESPONSE (g's)
DAMPING VALUES
AS PERCENT OF CRITICAL
BECHTEL
BECHTEL POWER CORPORATION
LOS ANGELES DIVISION
SOUTHERN CALIFORNIA EDISON COMPANY
SAN ONOFRE NUCLEAR GENERATING STATION
UNITS 2 & 3
DESIGN BASIS EARTHQUAKE
VERTICAL ACCELERATION RESPONSE
SPECTRA FOR CONTAINMENT
INTERIOR STRUCTURE BASEMAT
Prepared By
JWW KMS
Reviewed By
LGH
Approved By
WAB
JOB NO
1304-803
SKETCH NO
S023-SK-S-627
REV
DAMPING = 0.5%
DAMPING = 1.0%
DAMPING = 2.0%
DAMPING = 5.0%
ACCELERATION (g's)
0 1 2 3 4 5 6 7 8 9 10 11
.01 .02 .03 .04 .06 .08 .1 .2 .3 .4 .6 .8 1 2 3 4 5
PERIOD (seconds)

823-73



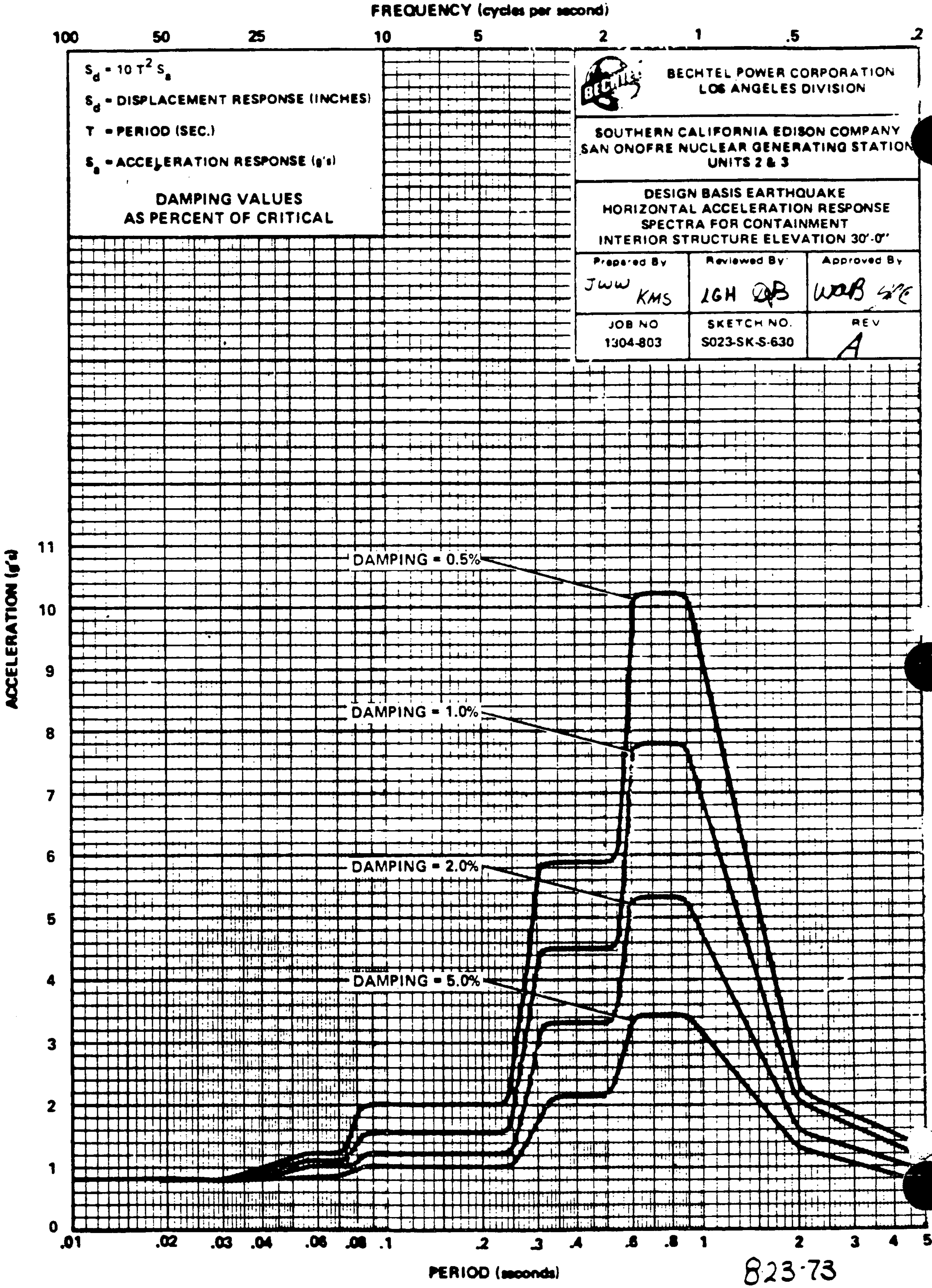
FREQUENCY (cycles per second)
100
50
25
10
5
2
1
.5
.2
$S_d = 10\,T^2\,S_a$
S_d = DISPLACEMENT RESPONSE (INCHES)
T = PERIOD (SEC.)
S_a = ACCELERATION RESPONSE (g's)
DAMPING VALUES
AS PERCENT OF CRITICAL
BECHTEL
BECHTEL POWER CORPORATION
LOS ANGELES DIVISION
SOUTHERN CALIFORNIA EDISON COMPANY
SAN ONOFRE NUCLEAR GENERATING STATION
UNITS 2 & 3
DESIGN BASIS EARTHQUAKE
HORIZONTAL ACCELERATION RESPONSE
SPECTRA FOR CONTAINMENT
INTERIOR STRUCTURE BASEMAT
Prepared By: JWW KMS
Reviewed By: LGH
Approved By: WaB
JOB NO. 1304-803
SKETCH NO. S023-SK-S-628
REV A
ACCELERATION (g's)
9
8
7
6
5
4
3
2
1
0
DAMPING = 0.5%
DAMPING = 1.0%
DAMPING = 2.0%
DAMPING = 5.0%
.01
.02
.03
.04
.06
.08
.1
.2
.3
.4
.6
.8
1
2
3
4
5
PERIOD (seconds)

8-23-73



FREQUENCY (cycles per second)
100
50
25
10
5
2
1
.5
.2
$S_d = 10\,T^2\,S_a$
S_d = DISPLACEMENT RESPONSE (INCHES)
T = PERIOD (SEC.)
S_a = ACCELERATION RESPONSE (g's)
DAMPING VALUES
AS PERCENT OF CRITICAL
BECHTEL POWER CORPORATION
LOS ANGELES DIVISION
SOUTHERN CALIFORNIA EDISON COMPANY
SAN ONOFRE NUCLEAR GENERATING STATION
UNITS 2 & 3
DESIGN BASIS EARTHQUAKE
VERTICAL ACCELERATION RESPONSE
SPECTRA FOR CONTAINMENT
INTERIOR STRUCTURE ELEVATION 30'-0"
Prepared By
JWW KMS
Reviewed By
LGH
Approved By
JOB NO
1304-803
SKETCH NO.
S023-SK-S-629
REV.
DAMPING = 0.5%
DAMPING = 1.0%
DAMPING = 2.0%
DAMPING = 5.0%
ACCELERATION (g's)
11
10
9
8
7
6
5
4
3
2
1
0
.01
.02
.03
.04
.06
.08
.1
.2
.3
.4
.6
.8
1
2
3
4
5
PERIOD (seconds)

823·73



FREQUENCY (cycles per second)
100
50
25
10
5
2
1
.5
.2
$S_d = 10\,T^2\,S_a$
S_d = DISPLACEMENT RESPONSE (INCHES)
T = PERIOD (SEC.)
S_a = ACCELERATION RESPONSE (g's)
DAMPING VALUES
AS PERCENT OF CRITICAL
BECHTEL POWER CORPORATION
LOS ANGELES DIVISION
SOUTHERN CALIFORNIA EDISON COMPANY
SAN ONOFRE NUCLEAR GENERATING STATION
UNITS 2 & 3
DESIGN BASIS EARTHQUAKE
HORIZONTAL ACCELERATION RESPONSE
SPECTRA FOR CONTAINMENT
INTERIOR STRUCTURE ELEVATION 30'-0"
Prepared By
JWW KMS
Reviewed By
LGH DB
Approved By
WAB
JOB NO
1304-803
SKETCH NO.
S023-SK-S-630
REV
A
ACCELERATION (g's)
11
10
9
8
7
6
5
4
3
2
1
0
DAMPING = 0.5%
DAMPING = 1.0%
DAMPING = 2.0%
DAMPING = 5.0%
.01
.02
.03
.04
.06
.08
.1
.2
.3
.4
.6
.8
1
2
3
4
5
PERIOD (seconds)

823-73

BECHTEL POWER CORPORATION
LOS ANGELES DIVISION

SOUTHERN CALIFORNIA EDISON COMPANY
SAN ONOFRE NUCLEAR GENERATING STATION
UNITS 2 & 3

DESIGN BASIS EARTHQUAKE
VERTICAL ACCELERATION RESPONSE
SPECTRA FOR CONTAINMENT
INTERIOR STRUCTURE ELEVATION 45'-0"

Prepared By	Reviewed By	Approved By
JWW CMS	IGH WBS	WBS HE
JOB NO	SKETCH NO	REV
1304-803	S023-SK-S-631	A

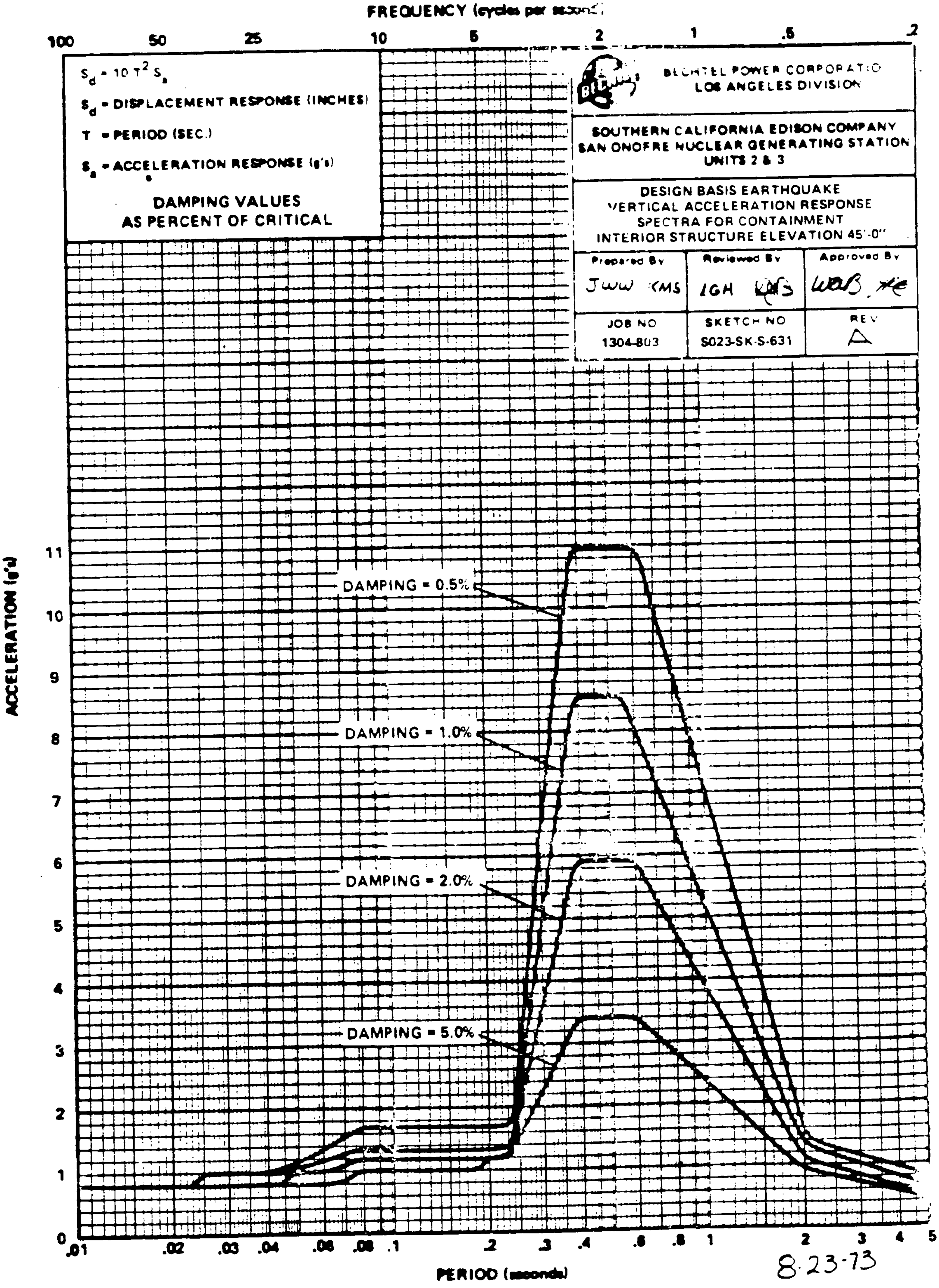
$S_d = 10\,T^2\,S_a$

S_d = DISPLACEMENT RESPONSE (INCHES)

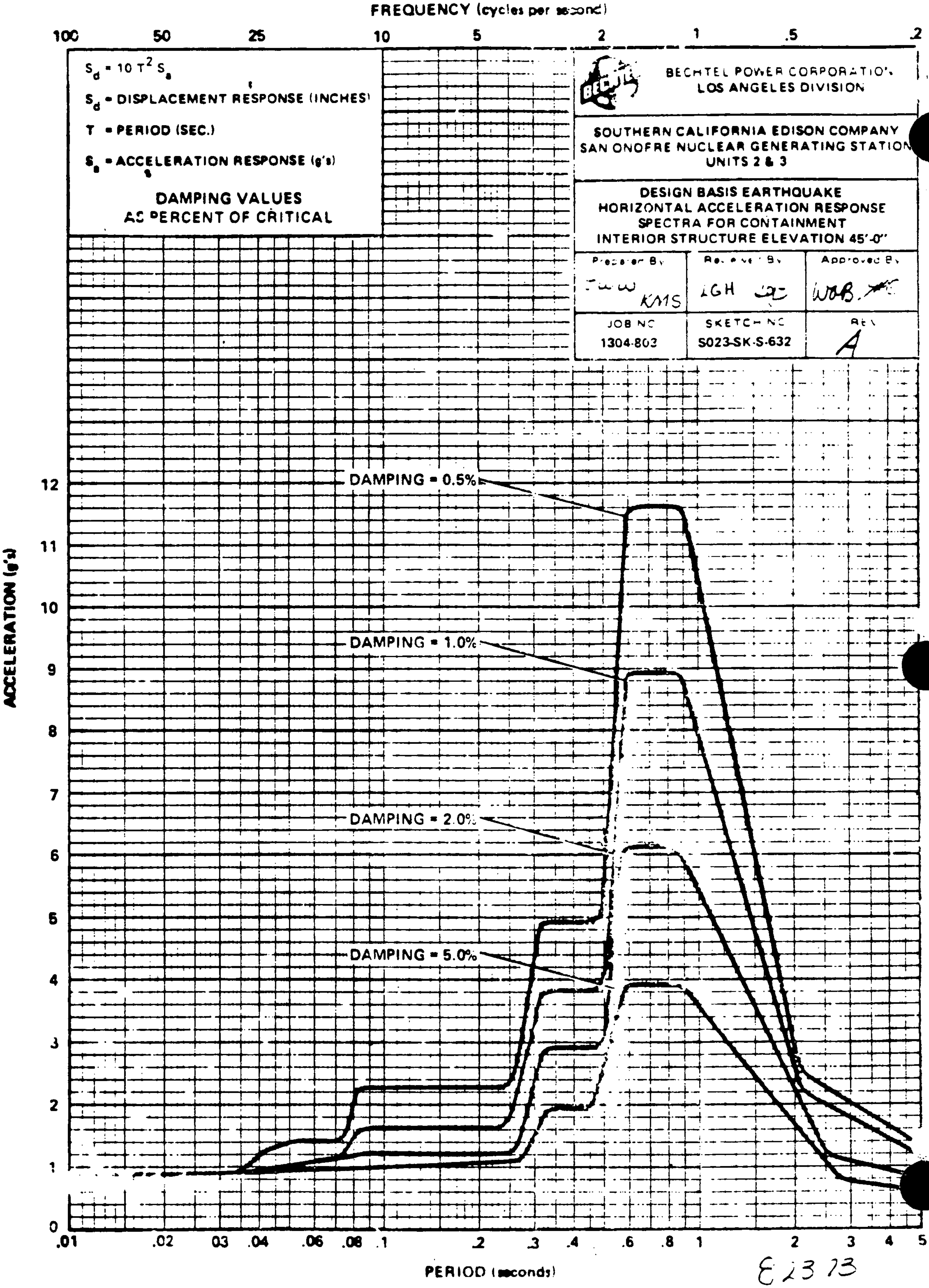
T = PERIOD (SEC.)

S_a = ACCELERATION RESPONSE (g's)

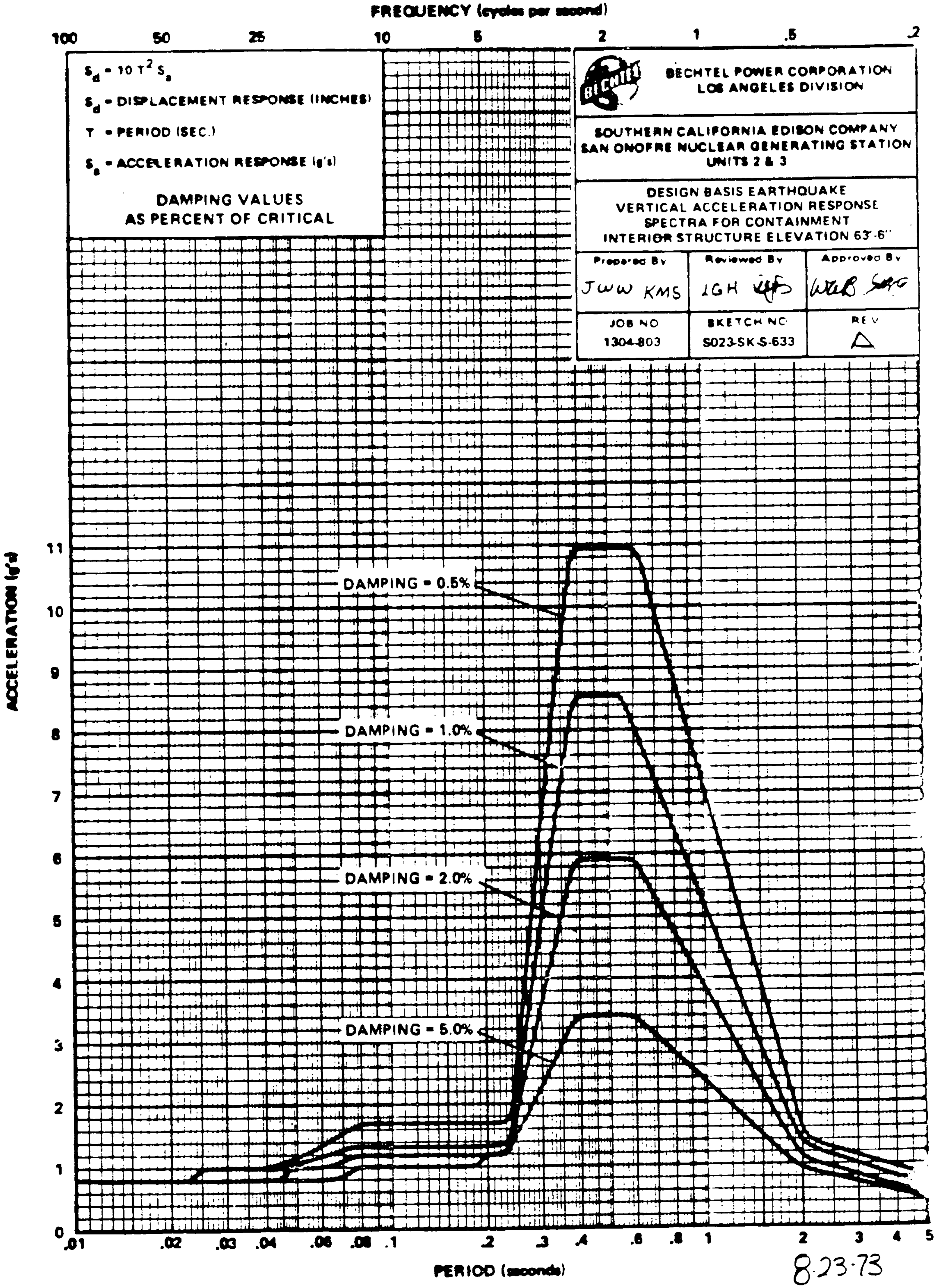
DAMPING VALUES
AS PERCENT OF CRITICAL



8-23-73

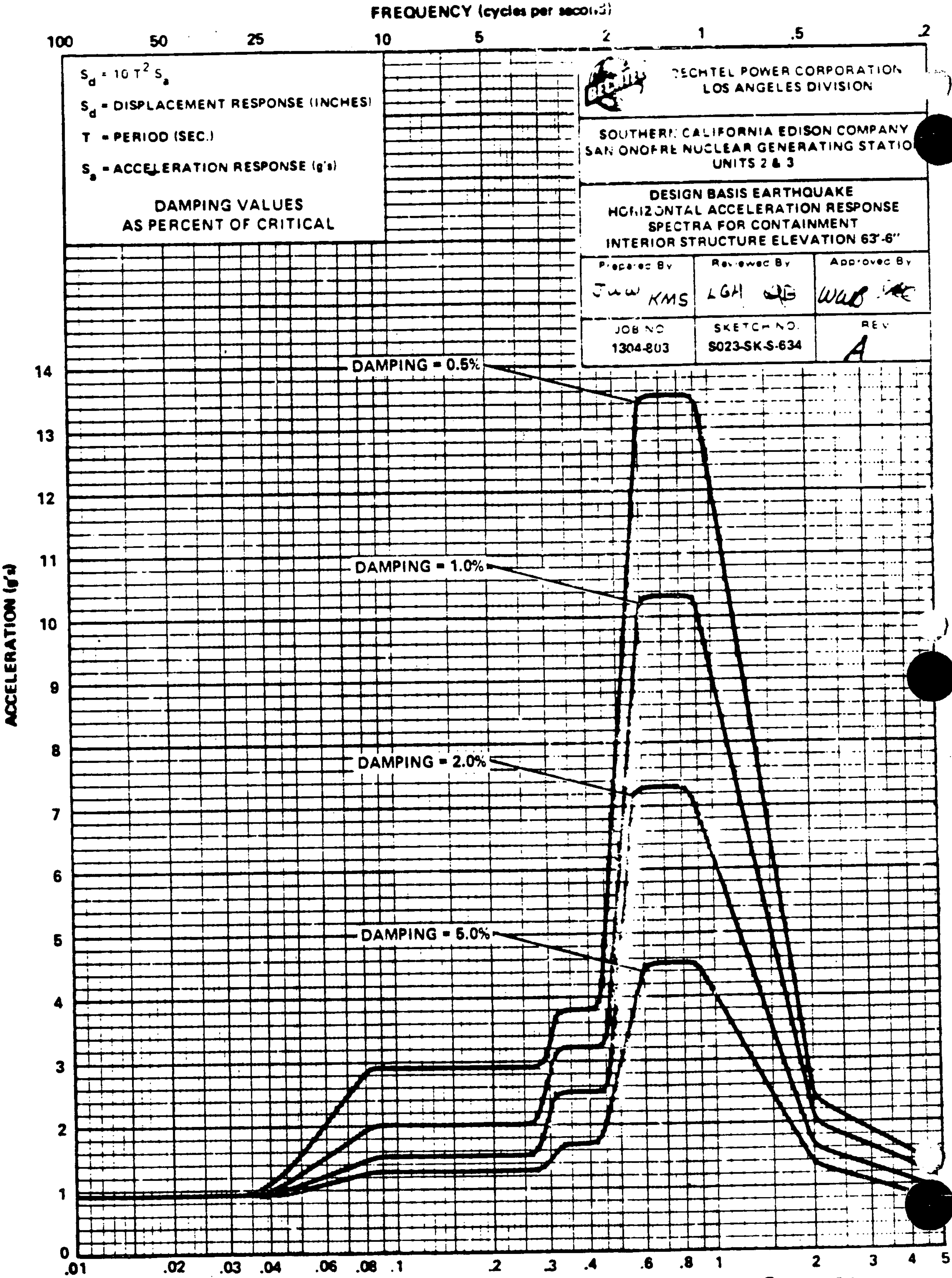

FREQUENCY (cycles per second)
100 50 25 10 5 2 1 .5 .2
$S_d = 10\ T^2\ S_a$
S_d = DISPLACEMENT RESPONSE (INCHES)
T = PERIOD (SEC.)
S_a = ACCELERATION RESPONSE (g's)
DAMPING VALUES
AS PERCENT OF CRITICAL
BECHTEL POWER CORPORATION
LOS ANGELES DIVISION
SOUTHERN CALIFORNIA EDISON COMPANY
SAN ONOFRE NUCLEAR GENERATING STATION
UNITS 2 & 3
DESIGN BASIS EARTHQUAKE
HORIZONTAL ACCELERATION RESPONSE
SPECTRA FOR CONTAINMENT
INTERIOR STRUCTURE ELEVATION 45'-0"
Prepared By
Reviewed By
Approved By
KMS
IGH
WOB
JOB NO
1304-803
SKETCH NO
S023-SK-S-632
REV
A
DAMPING = 0.5%
DAMPING = 1.0%
DAMPING = 2.0%
DAMPING = 5.0%
ACCELERATION (g's)
0 1 2 3 4 5 6 7 8 9 10 11 12
.01 .02 .03 .04 .06 .08 .1 .2 .3 .4 .6 .8 1 2 3 4 5
PERIOD (seconds)

E2373

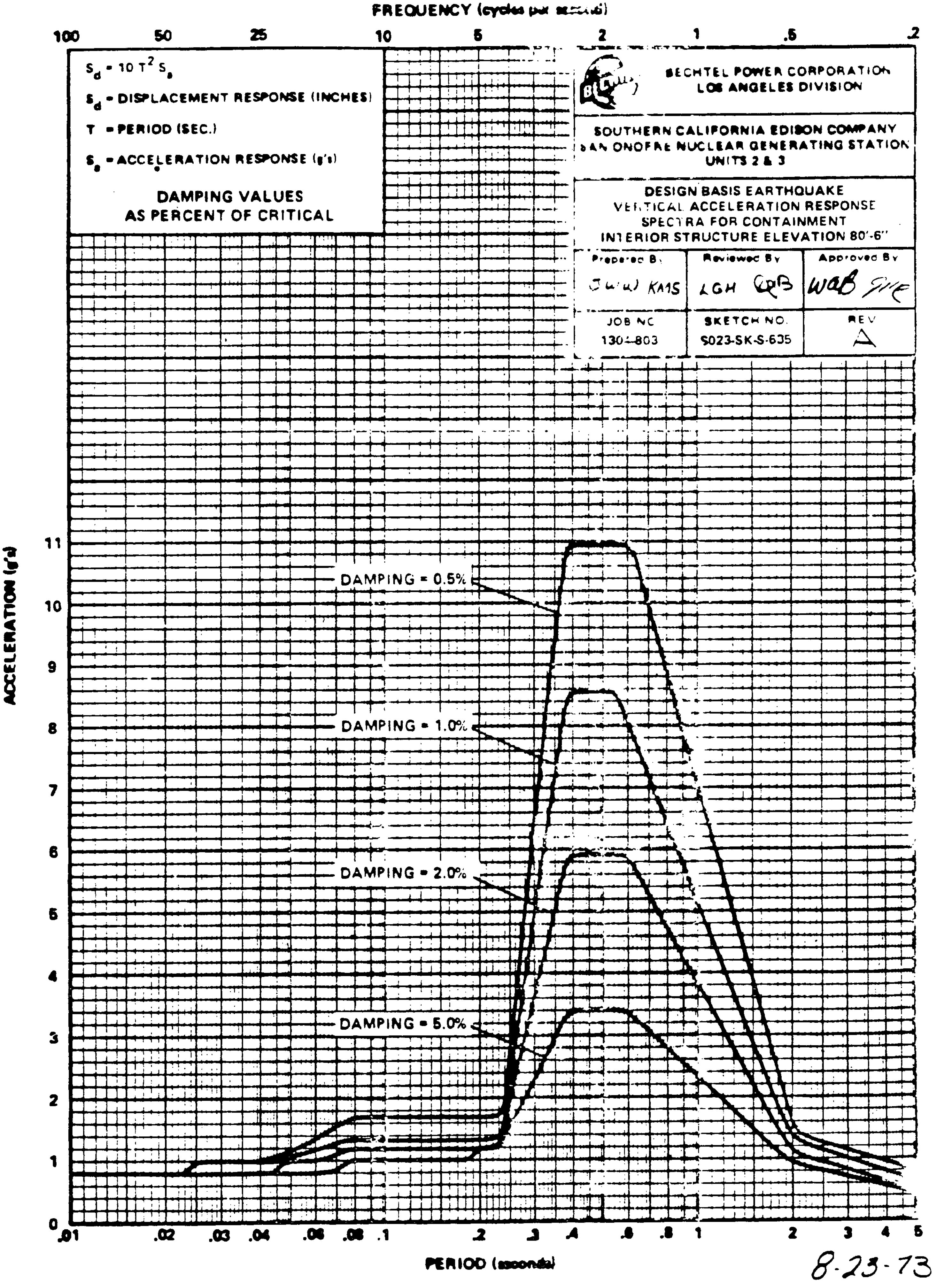


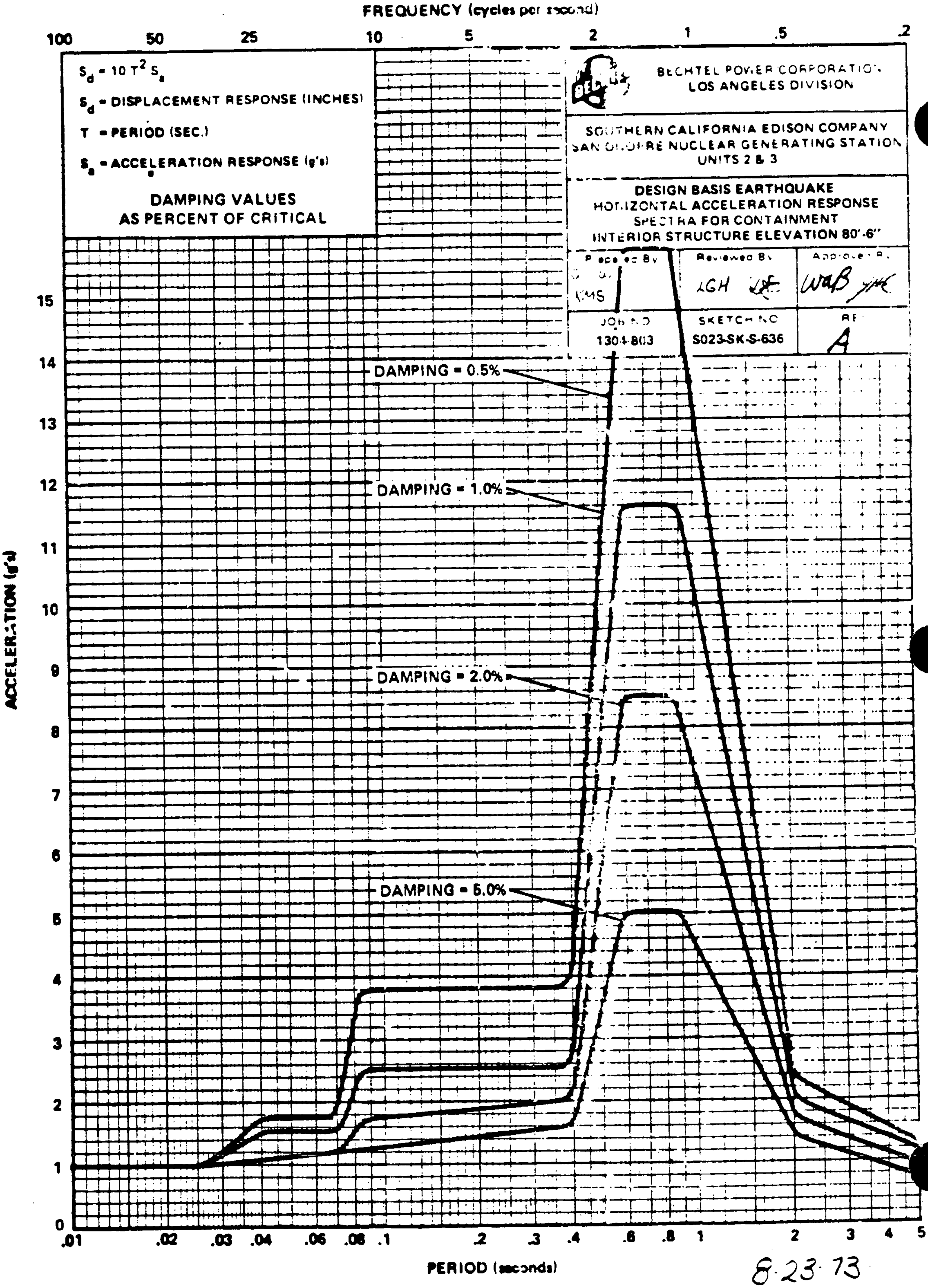
FREQUENCY (cycles per second)
100
50
25
10
5
2
1
.5
.2
$S_d = 10\,T^2\,S_a$
S_d = DISPLACEMENT RESPONSE (INCHES)
T = PERIOD (SEC.)
S_a = ACCELERATION RESPONSE (g's)
DAMPING VALUES
AS PERCENT OF CRITICAL
BECHTEL
BECHTEL POWER CORPORATION
LOS ANGELES DIVISION
SOUTHERN CALIFORNIA EDISON COMPANY
SAN ONOFRE NUCLEAR GENERATING STATION
UNITS 2 & 3
DESIGN BASIS EARTHQUAKE
VERTICAL ACCELERATION RESPONSE
SPECTRA FOR CONTAINMENT
INTERIOR STRUCTURE ELEVATION 63'-6"
Prepared By
JWW KMS
Reviewed By
LGH
Approved By
WEB
JOB NO
1304-803
SKETCH NO
S023-SK-S-633
REV
DAMPING = 0.5%
DAMPING = 1.0%
DAMPING = 2.0%
DAMPING = 5.0%
ACCELERATION (g's)
11
10
9
8
7
6
5
4
3
2
1
0
.01
.02
.03
.04
.06
.08
.1
.2
.3
.4
.6
.8
1
2
3
4
5
PERIOD (seconds)

8-23-73

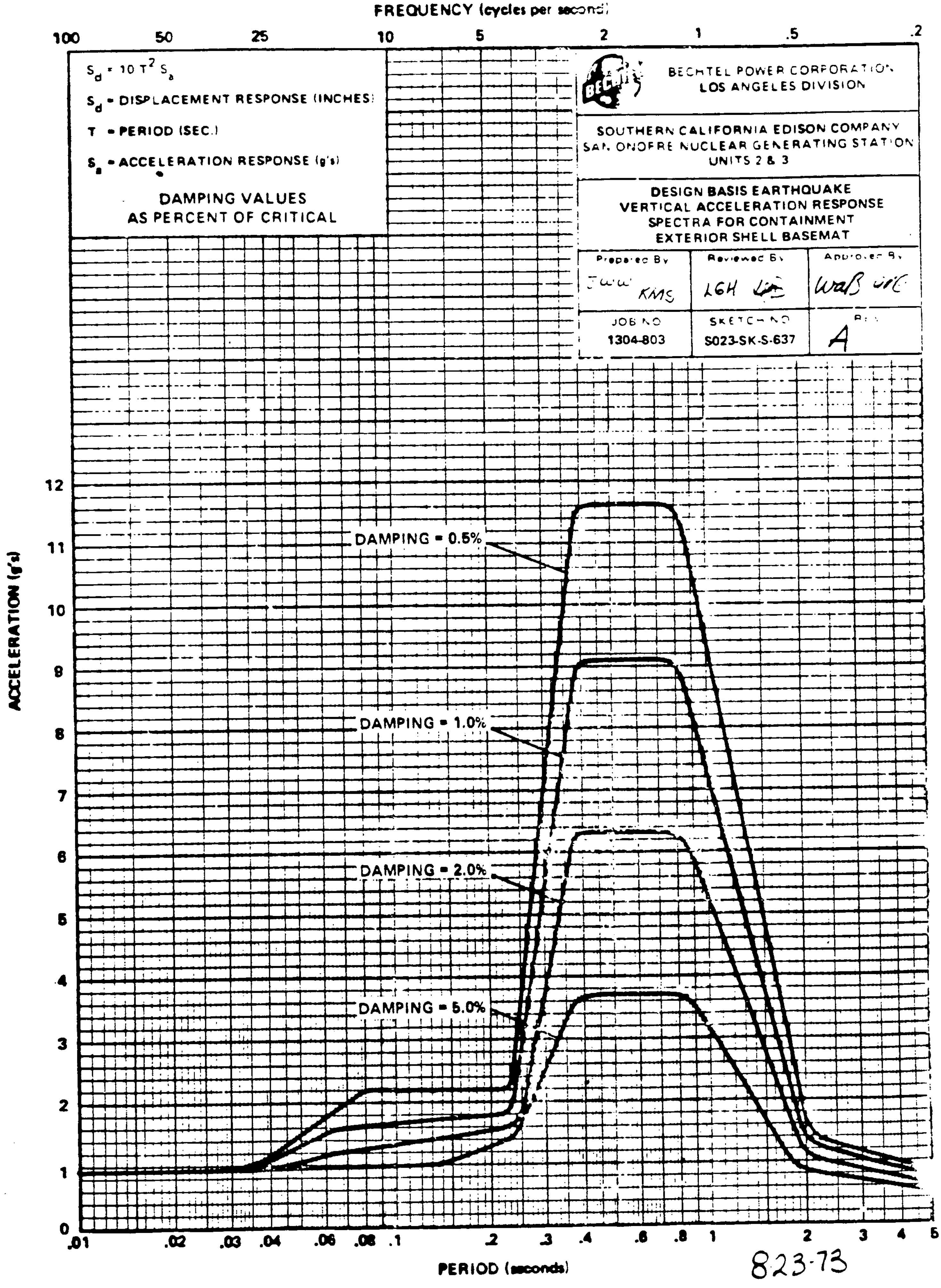

FREQUENCY (cycles per second)
100
50
25
10
5
2
1
.5
.2
$S_d = 10 T^2 S_a$
S_d = DISPLACEMENT RESPONSE (INCHES)
T = PERIOD (SEC.)
S_a = ACCELERATION RESPONSE (g's)
DAMPING VALUES
AS PERCENT OF CRITICAL
BECHTEL POWER CORPORATION
LOS ANGELES DIVISION
SOUTHERN CALIFORNIA EDISON COMPANY
SAN ONOFRE NUCLEAR GENERATING STATION
UNITS 2 & 3
DESIGN BASIS EARTHQUAKE
HORIZONTAL ACCELERATION RESPONSE
SPECTRA FOR CONTAINMENT
INTERIOR STRUCTURE ELEVATION 63'-6"
Prepared By
JWW KMS
Reviewed By
LGH
Approved By
WWB
JOB NO
1304-803
SKETCH NO.
S023-SK-S-634
REV
A
DAMPING = 0.5%
DAMPING = 1.0%
DAMPING = 2.0%
DAMPING = 5.0%
ACCELERATION (g's)
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
.01
.02
.03
.04
.06
.08
.1
.2
.3
.4
.6
.8
1
2
3
4
5
PERIOD (seconds)

823 73


FREQUENCY (cycles per second)
100
50
25
10
5
2
1
.5
.2
$S_d = 10\,T^2\,S_a$
S_d = DISPLACEMENT RESPONSE (INCHES)
T = PERIOD (SEC.)
S_a = ACCELERATION RESPONSE (g's)
DAMPING VALUES
AS PERCENT OF CRITICAL
BECHTEL POWER CORPORATION
LOS ANGELES DIVISION
SOUTHERN CALIFORNIA EDISON COMPANY
SAN ONOFRE NUCLEAR GENERATING STATION
UNITS 2 & 3
DESIGN BASIS EARTHQUAKE
VERTICAL ACCELERATION RESPONSE
SPECTRA FOR CONTAINMENT
INTERIOR STRUCTURE ELEVATION 80'-6"
Prepared By
Reviewed By
Approved By
JOB NO
1304-803
SKETCH NO.
S023-SK-S-635
REV
A
DAMPING = 0.5%
DAMPING = 1.0%
DAMPING = 2.0%
DAMPING = 5.0%
ACCELERATION (g's)
11
10
9
8
7
6
5
4
3
2
1
0
.01
.02
.03
.04
.06
.08
.1
.2
.3
.4
.6
.8
1
2
3
4
5
PERIOD (seconds)
8-23-73

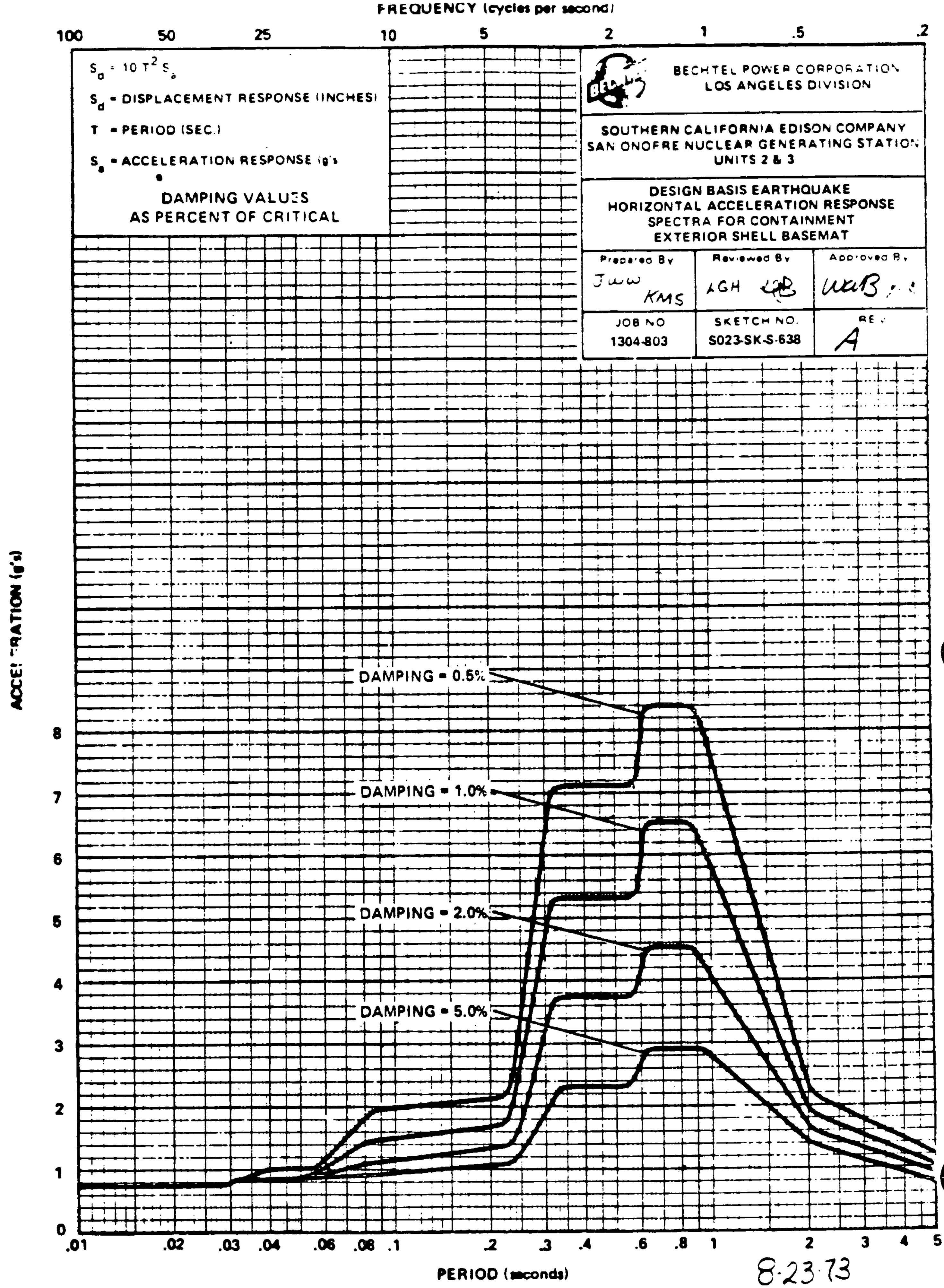

FREQUENCY (cycles per second)
100
50
25
10
5
2
1
.5
.2
$S_d = 10\,T^2\,S_a$
S_d = DISPLACEMENT RESPONSE (INCHES)
T = PERIOD (SEC.)
S_a = ACCELERATION RESPONSE (g's)
DAMPING VALUES
AS PERCENT OF CRITICAL
BECHTEL POWER CORPORATION
LOS ANGELES DIVISION
SOUTHERN CALIFORNIA EDISON COMPANY
SAN ONOFRE NUCLEAR GENERATING STATION
UNITS 2 & 3
DESIGN BASIS EARTHQUAKE
HORIZONTAL ACCELERATION RESPONSE
SPECTRA FOR CONTAINMENT
INTERIOR STRUCTURE ELEVATION 80'-6"
Prepared By
KMS
Reviewed By
LGH
Approved By
WaB
JOB NO
1304-803
SKETCH NO
S023-SK-S-636
REV
A
DAMPING = 0.5%
DAMPING = 1.0%
DAMPING = 2.0%
DAMPING = 5.0%
ACCELERATION (g's)
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
.01
.02
.03
.04
.06
.08
.1
.2
.3
.4
.6
.8
1
2
3
4
5
PERIOD (seconds)

8-23-73

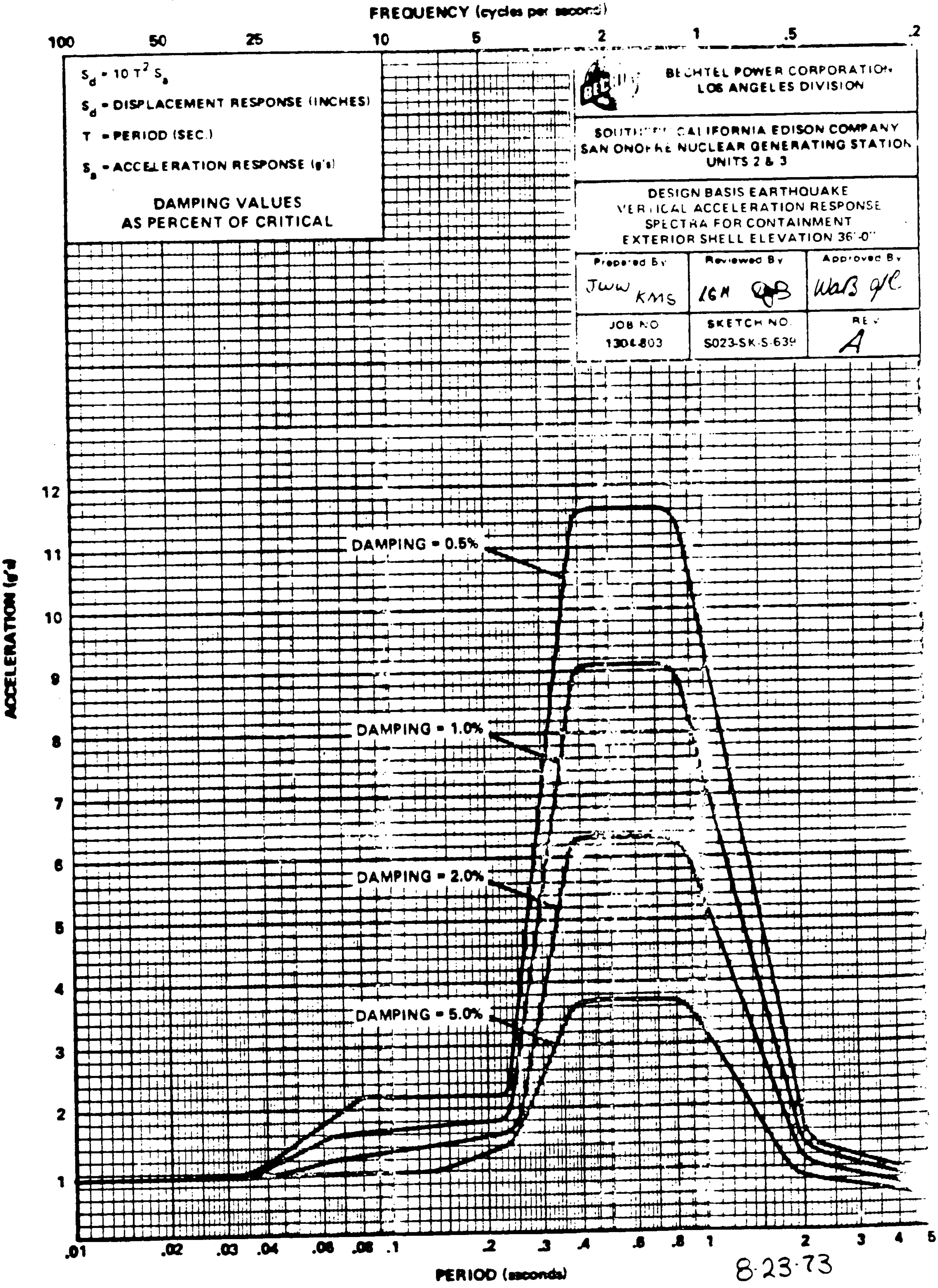


FREQUENCY (cycles per second)
100
50
25
10
5
2
1
.5
.2
$S_d = 10 T^2 S_a$
S_d = DISPLACEMENT RESPONSE (INCHES)
T = PERIOD (SEC.)
S_a = ACCELERATION RESPONSE (g's)
DAMPING VALUES
AS PERCENT OF CRITICAL
BECHTEL POWER CORPORATION
LOS ANGELES DIVISION
SOUTHERN CALIFORNIA EDISON COMPANY
SAN ONOFRE NUCLEAR GENERATING STATION
UNITS 2 & 3
DESIGN BASIS EARTHQUAKE
VERTICAL ACCELERATION RESPONSE
SPECTRA FOR CONTAINMENT
EXTERIOR SHELL BASEMAT
Prepared By
KMS
Reviewed By
LGH
Approved By
JOB NO
1304-803
SKETCH NO
S023-SK-S-637
REV
A
DAMPING = 0.5%
DAMPING = 1.0%
DAMPING = 2.0%
DAMPING = 5.0%
ACCELERATION (g's)
0
1
2
3
4
5
6
7
8
9
10
11
12
.01
.02
.03
.04
.06
.08
.1
.2
.3
.4
.6
.8
1
2
3
4
5
PERIOD (seconds)

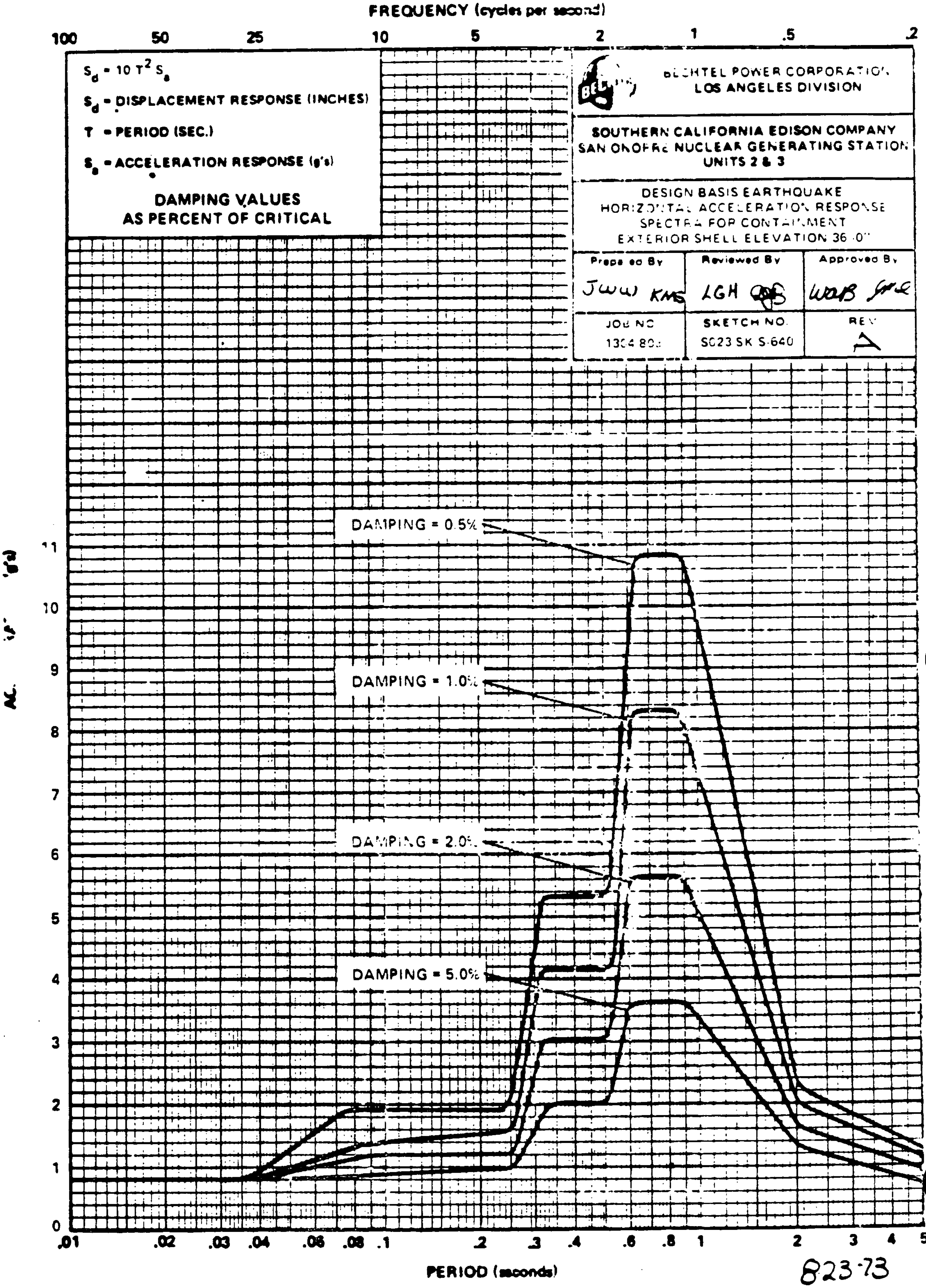
823-73


FREQUENCY (cycles per second)
100 50 25 10 5 2 1 .5 .2
$S_d = 10\,T^2 S_a$
S_d = DISPLACEMENT RESPONSE (INCHES)
T = PERIOD (SEC.)
S_a = ACCELERATION RESPONSE (g's)
DAMPING VALUES
AS PERCENT OF CRITICAL
BECHTEL POWER CORPORATION
LOS ANGELES DIVISION
SOUTHERN CALIFORNIA EDISON COMPANY
SAN ONOFRE NUCLEAR GENERATING STATION
UNITS 2 & 3
DESIGN BASIS EARTHQUAKE
HORIZONTAL ACCELERATION RESPONSE
SPECTRA FOR CONTAINMENT
EXTERIOR SHELL BASEMAT
Prepared By: JWW KMS
Reviewed By: LGH
Approved By
JOB NO 1304-803
SKETCH NO. S023-SK-S-638
REV. A
DAMPING = 0.5%
DAMPING = 1.0%
DAMPING = 2.0%
DAMPING = 5.0%
ACCELERATION (g's)
0 1 2 3 4 5 6 7 8
.01 .02 .03 .04 .06 .08 .1 .2 .3 .4 .6 .8 1 2 3 4 5
PERIOD (seconds)

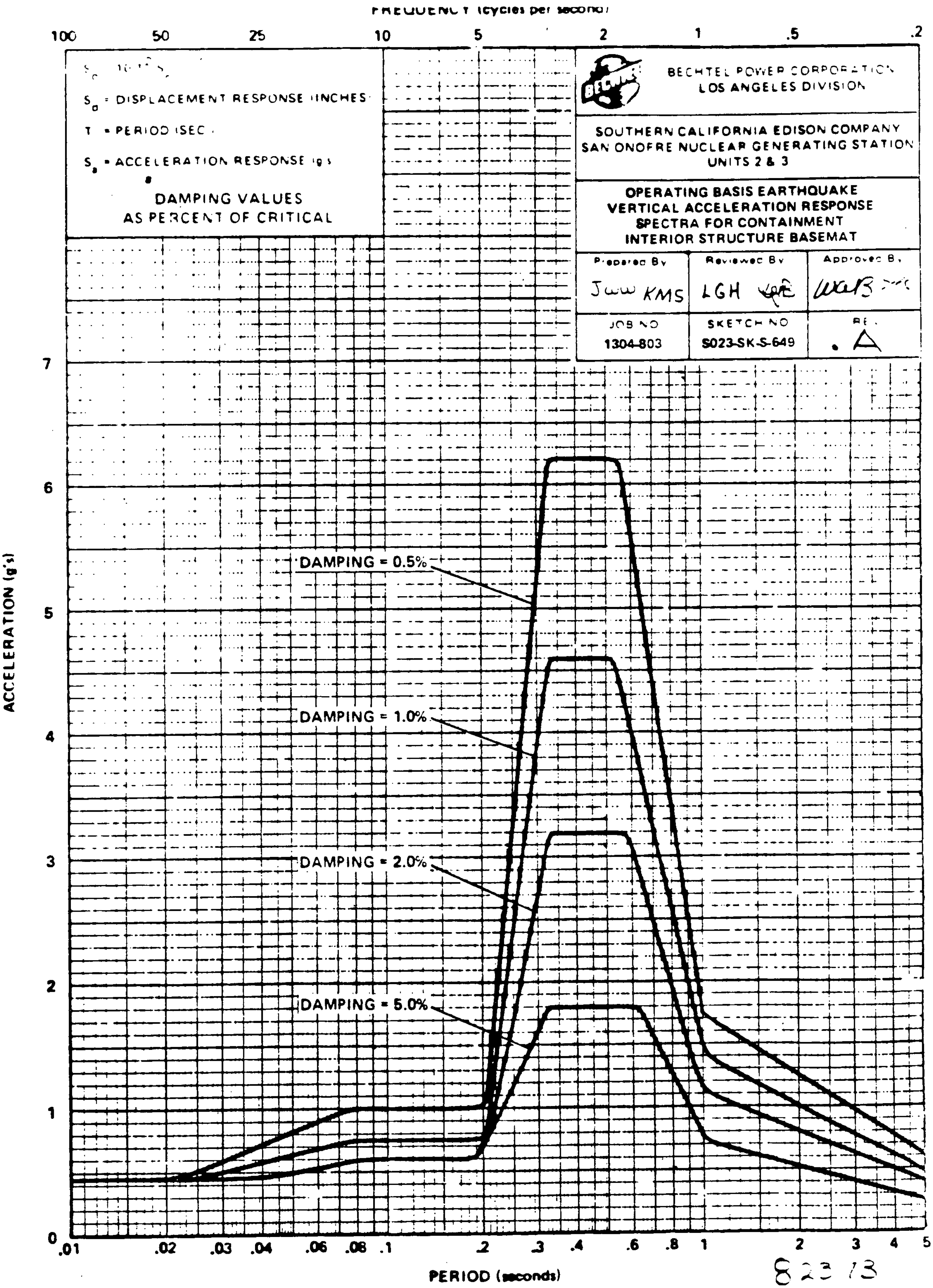
8-23-73



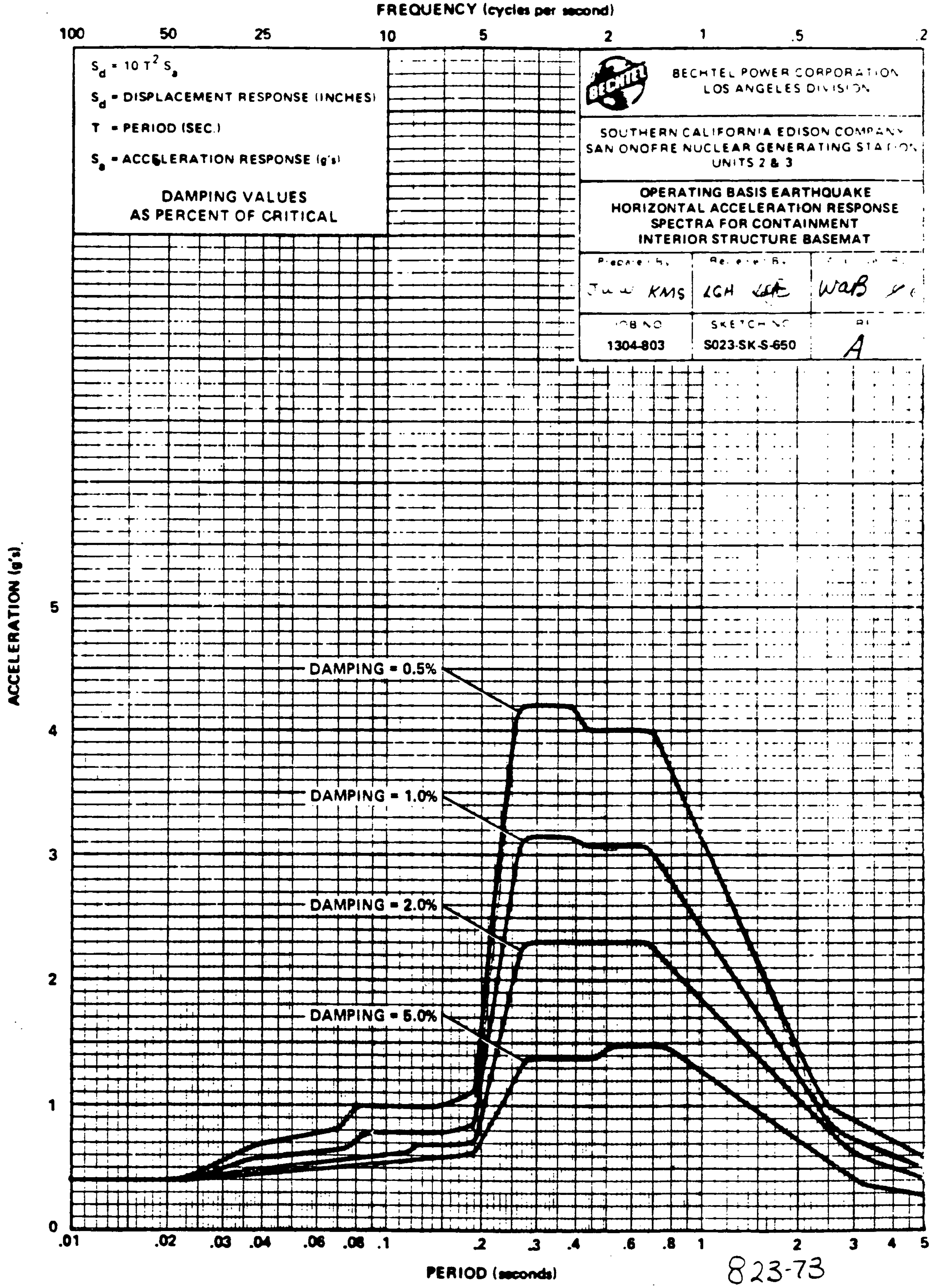
FREQUENCY (cycles per second)
100
50
25
10
5
2
1
.5
.2
$S_d = 10\,T^2\,S_a$
S_d = DISPLACEMENT RESPONSE (INCHES)
T = PERIOD (SEC.)
S_a = ACCELERATION RESPONSE (g's)
DAMPING VALUES AS PERCENT OF CRITICAL
BECHTEL POWER CORPORATION
LOS ANGELES DIVISION
SOUTHERN CALIFORNIA EDISON COMPANY
SAN ONOFRE NUCLEAR GENERATING STATION
UNITS 2 & 3
DESIGN BASIS EARTHQUAKE
VERTICAL ACCELERATION RESPONSE
SPECTRA FOR CONTAINMENT
EXTERIOR SHELL ELEVATION 36'-0"
Prepared By
JWW KMS
Reviewed By
Approved By
JOB NO.
1304-803
SKETCH NO.
S023-SK-S-639
REV.
A
ACCELERATION (g's)
12
11
10
9
8
7
6
5
4
3
2
1
DAMPING = 0.5%
DAMPING = 1.0%
DAMPING = 2.0%
DAMPING = 5.0%
.01
.02
.03
.04
.06
.08
.1
.2
.3
.4
.6
.8
1
2
3
4
5
PERIOD (seconds)
8-23-73


FREQUENCY (cycles per second)
100
50
25
10
5
2
1
.5
.2
$S_d = 10\,T^2\,S_a$
S_d = DISPLACEMENT RESPONSE (INCHES)
T = PERIOD (SEC.)
S_a = ACCELERATION RESPONSE (g's)
DAMPING VALUES
AS PERCENT OF CRITICAL
BECHTEL POWER CORPORATION
LOS ANGELES DIVISION
SOUTHERN CALIFORNIA EDISON COMPANY
SAN ONOFRE NUCLEAR GENERATING STATION
UNITS 2 & 3
DESIGN BASIS EARTHQUAKE
HORIZONTAL ACCELERATION RESPONSE
SPECTRA FOR CONTAINMENT
EXTERIOR SHELL ELEVATION 36'-0"
Prepared By
JWW KMS
Reviewed By
LGH
Approved By
WDB
JOB NO
1304-803
SKETCH NO.
SO23 SK S-640
REV
A
DAMPING = 0.5%
DAMPING = 1.0%
DAMPING = 2.0%
DAMPING = 5.0%
11
10
9
8
7
6
5
4
3
2
1
0
.01
.02
.03
.04
.06
.08
.1
.2
.3
.4
.6
.8
1
2
3
4
5
PERIOD (seconds)

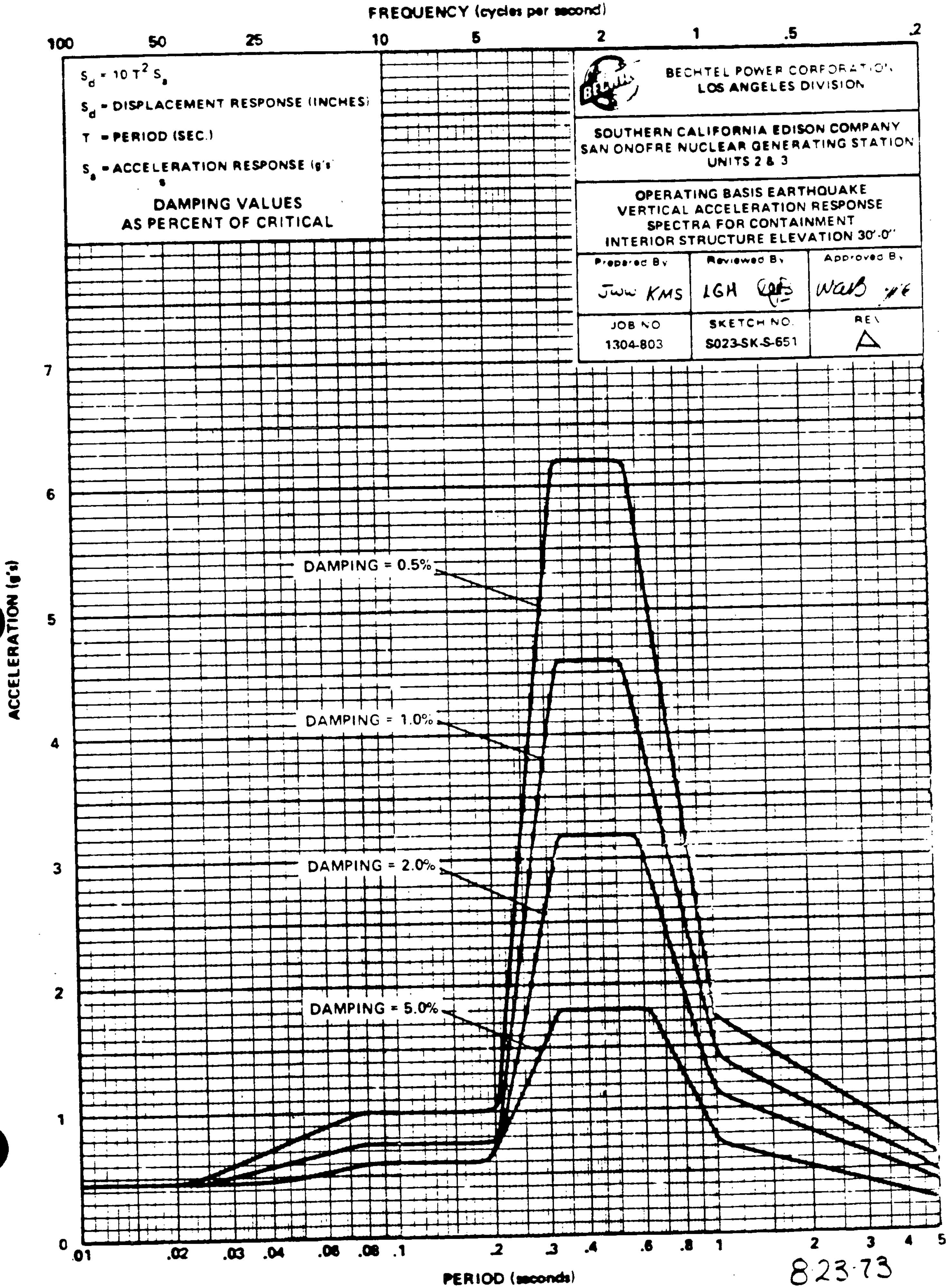
823-73

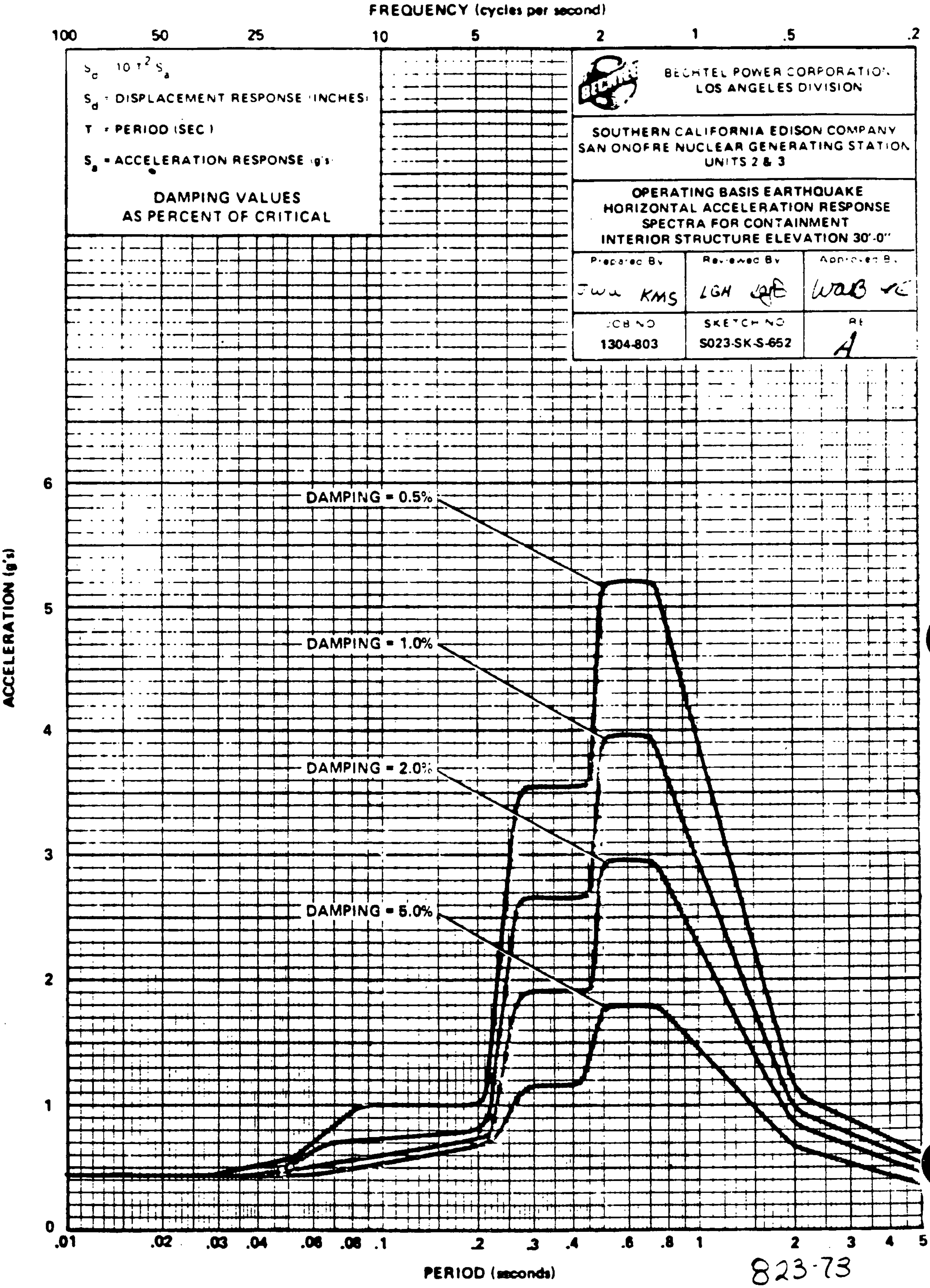

FREQUENCY (cycles per second)
100
50
25
10
5
2
1
.5
.2
S_d = DISPLACEMENT RESPONSE (INCHES)
T = PERIOD (SEC)
S_a = ACCELERATION RESPONSE (g's)
DAMPING VALUES
AS PERCENT OF CRITICAL
BECHTEL POWER CORPORATION
LOS ANGELES DIVISION
SOUTHERN CALIFORNIA EDISON COMPANY
SAN ONOFRE NUCLEAR GENERATING STATION
UNITS 2 & 3
OPERATING BASIS EARTHQUAKE
VERTICAL ACCELERATION RESPONSE
SPECTRA FOR CONTAINMENT
INTERIOR STRUCTURE BASEMAT
Prepared By
JWW KMS
Reviewed By
LGH
Approved By
JOB NO
1304-803
SKETCH NO
S023-SK-S-649
REV
A
ACCELERATION (g's)
7
6
5
4
3
2
1
0
DAMPING = 0.5%
DAMPING = 1.0%
DAMPING = 2.0%
DAMPING = 5.0%
.01
.02
.03
.04
.06
.08
.1
.2
.3
.4
.6
.8
1
2
3
4
5
PERIOD (seconds)

8 23 13

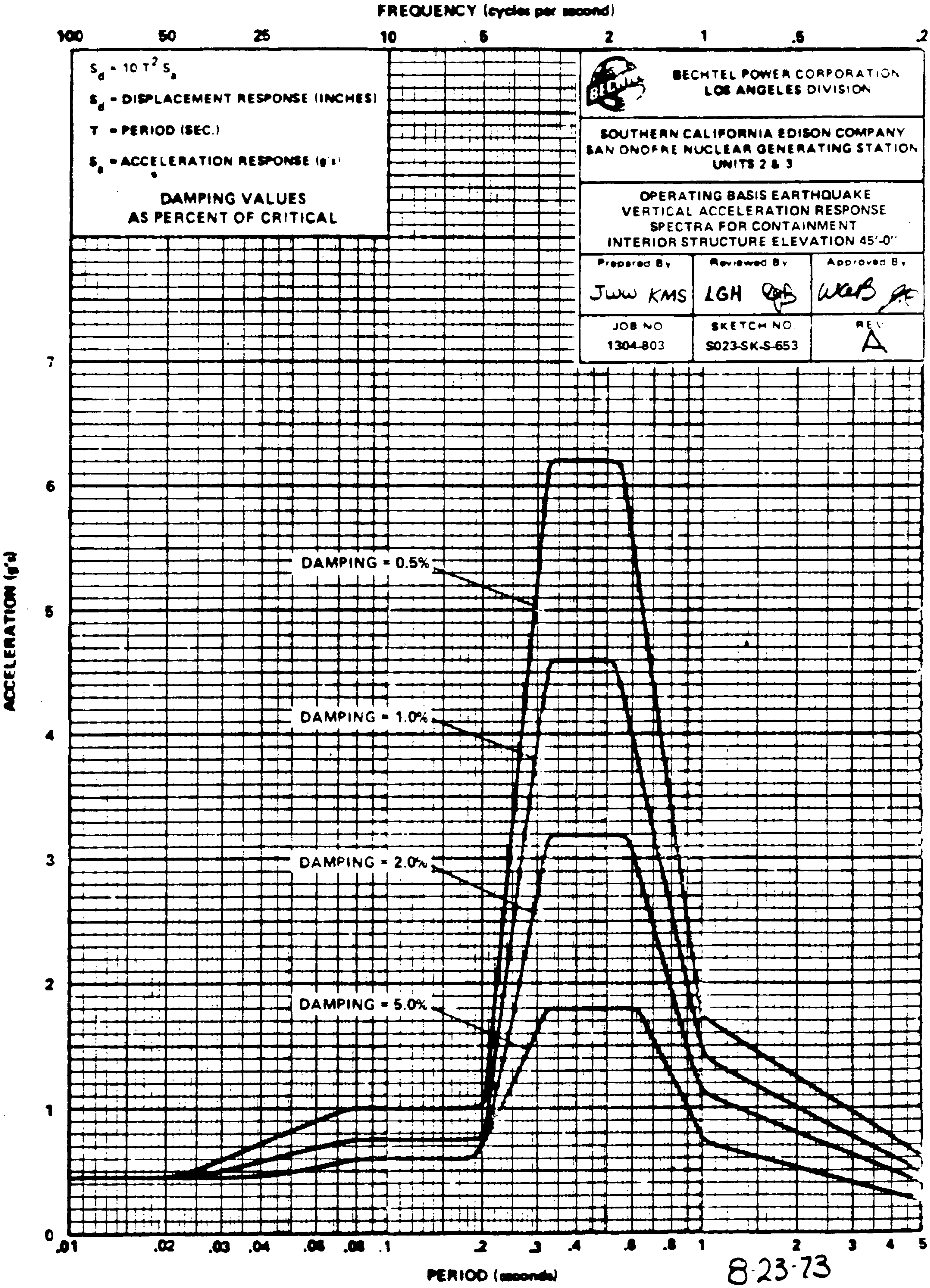

FREQUENCY (cycles per second)
100 50 25 10 5 2 1 .5 .2
Sd = 10 T2 Sa
Sd = DISPLACEMENT RESPONSE (INCHES)
T = PERIOD (SEC.)
Sa = ACCELERATION RESPONSE (g's)
DAMPING VALUES
AS PERCENT OF CRITICAL
BECHTEL
BECHTEL POWER CORPORATION
LOS ANGELES DIVISION
SOUTHERN CALIFORNIA EDISON COMPANY
SAN ONOFRE NUCLEAR GENERATING STATION
UNITS 2 & 3
OPERATING BASIS EARTHQUAKE
HORIZONTAL ACCELERATION RESPONSE
SPECTRA FOR CONTAINMENT
INTERIOR STRUCTURE BASEMAT
KMS
LGH
WaB
1304-803
S023-SK-S-650
A
ACCELERATION (g's)
0 1 2 3 4 5
DAMPING = 0.5%
DAMPING = 1.0%
DAMPING = 2.0%
DAMPING = 5.0%
.01 .02 .03 .04 .06 .08 .1 .2 .3 .4 .6 .8 1 2 3 4 5
PERIOD (seconds)

823-73

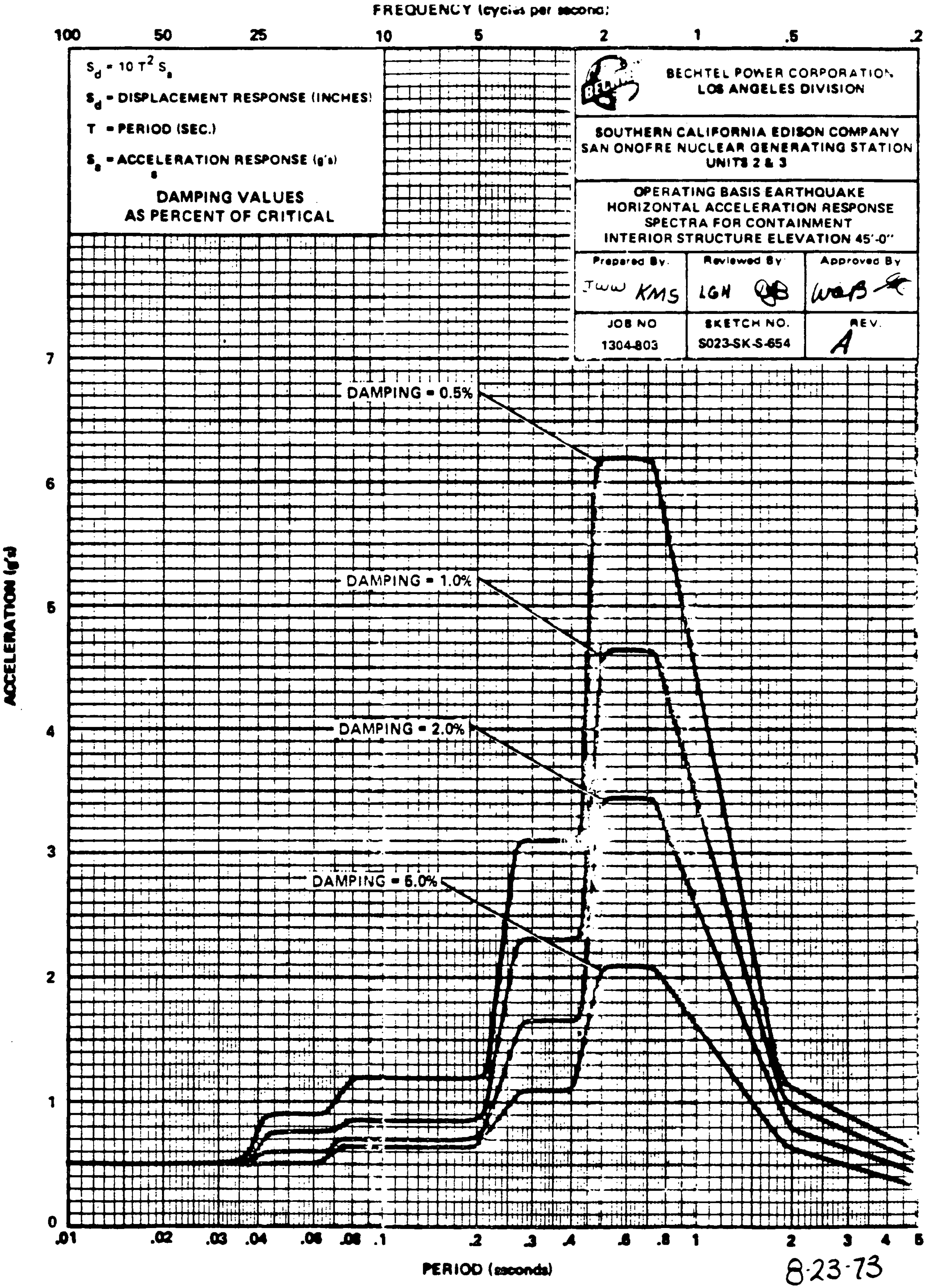

FREQUENCY (cycles per second)
100 50 25 10 5 2 1 .5 .2
$S_d = 10\,T^2\,S_a$
S_d = DISPLACEMENT RESPONSE (INCHES)
T = PERIOD (SEC.)
S_a = ACCELERATION RESPONSE (g's)
DAMPING VALUES AS PERCENT OF CRITICAL
BECHTEL POWER CORPORATION
LOS ANGELES DIVISION
SOUTHERN CALIFORNIA EDISON COMPANY
SAN ONOFRE NUCLEAR GENERATING STATION
UNITS 2 & 3
OPERATING BASIS EARTHQUAKE
VERTICAL ACCELERATION RESPONSE
SPECTRA FOR CONTAINMENT
INTERIOR STRUCTURE ELEVATION 30'-0"
Prepared By
JWW KMS
Reviewed By
LGH
Approved By
JOB NO
1304-803
SKETCH NO.
S023-SK-S-651
REV
DAMPING = 0.5%
DAMPING = 1.0%
DAMPING = 2.0%
DAMPING = 5.0%
ACCELERATION (g's)
0 1 2 3 4 5 6 7
.01 .02 .03 .04 .06 .08 .1 .2 .3 .4 .6 .8 1 2 3 4 5
PERIOD (seconds)
8-23-73


FREQUENCY (cycles per second)
100
50
25
10
5
2
1
.5
.2
$S_d = 10\ T^2\ S_a$
S_d = DISPLACEMENT RESPONSE (INCHES)
T = PERIOD (SEC)
S_a = ACCELERATION RESPONSE (g's)
DAMPING VALUES
AS PERCENT OF CRITICAL
BECHTEL POWER CORPORATION
LOS ANGELES DIVISION
SOUTHERN CALIFORNIA EDISON COMPANY
SAN ONOFRE NUCLEAR GENERATING STATION
UNITS 2 & 3
OPERATING BASIS EARTHQUAKE
HORIZONTAL ACCELERATION RESPONSE
SPECTRA FOR CONTAINMENT
INTERIOR STRUCTURE ELEVATION 30'-0"
Prepared By
JWW KMS
Reviewed By
LGH
Approved By
WAB
JOB NO
1304-803
SKETCH NO
S023-SK-S-652
RE
A
DAMPING = 0.5%
DAMPING = 1.0%
DAMPING = 2.0%
DAMPING = 5.0%
ACCELERATION (g's)
0
1
2
3
4
5
6
.01
.02
.03
.04
.06
.08
.1
.2
.3
.4
.6
.8
1
2
3
4
5
PERIOD (seconds)

823-73

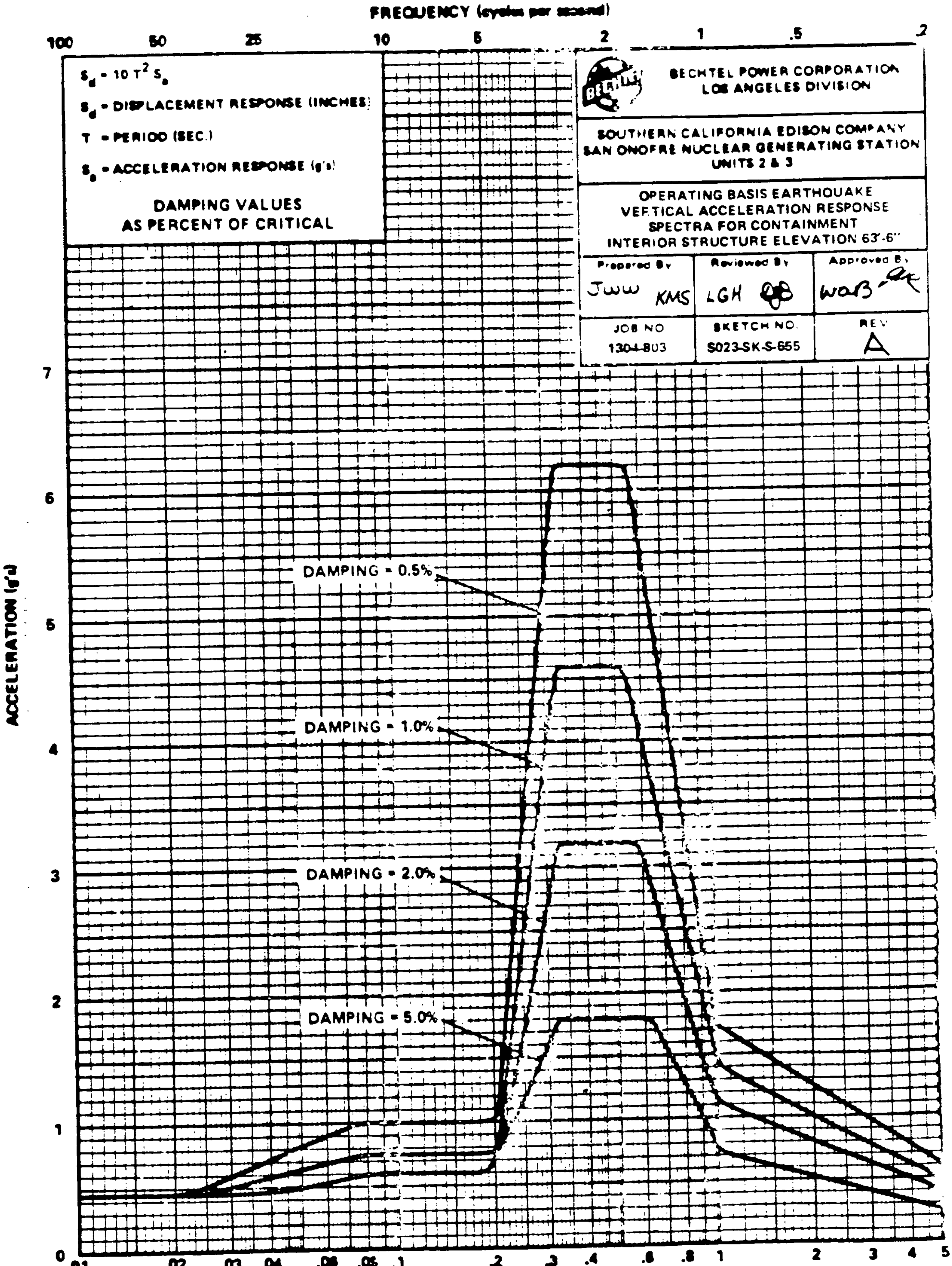


FREQUENCY (cycles per second)
100
50
25
10
5
2
1
.5
.2
$S_d = 10 T^2 S_a$
S_d = DISPLACEMENT RESPONSE (INCHES)
T = PERIOD (SEC.)
S_a = ACCELERATION RESPONSE (g's)
DAMPING VALUES
AS PERCENT OF CRITICAL
BECHTEL POWER CORPORATION
LOS ANGELES DIVISION
SOUTHERN CALIFORNIA EDISON COMPANY
SAN ONOFRE NUCLEAR GENERATING STATION
UNITS 2 & 3
OPERATING BASIS EARTHQUAKE
VERTICAL ACCELERATION RESPONSE
SPECTRA FOR CONTAINMENT
INTERIOR STRUCTURE ELEVATION 45'-0"
Prepared By
JWW KMS
Reviewed By
LGH
Approved By
JOB NO
1304-803
SKETCH NO.
S023-SK-S-653
REV
A
DAMPING = 0.5%
DAMPING = 1.0%
DAMPING = 2.0%
DAMPING = 5.0%
ACCELERATION (g's)
7
6
5
4
3
2
1
0
.01
.02
.03
.04
.06
.08
.1
.2
.3
.4
.6
.8
1
2
3
4
5
PERIOD (seconds)
8-23-73

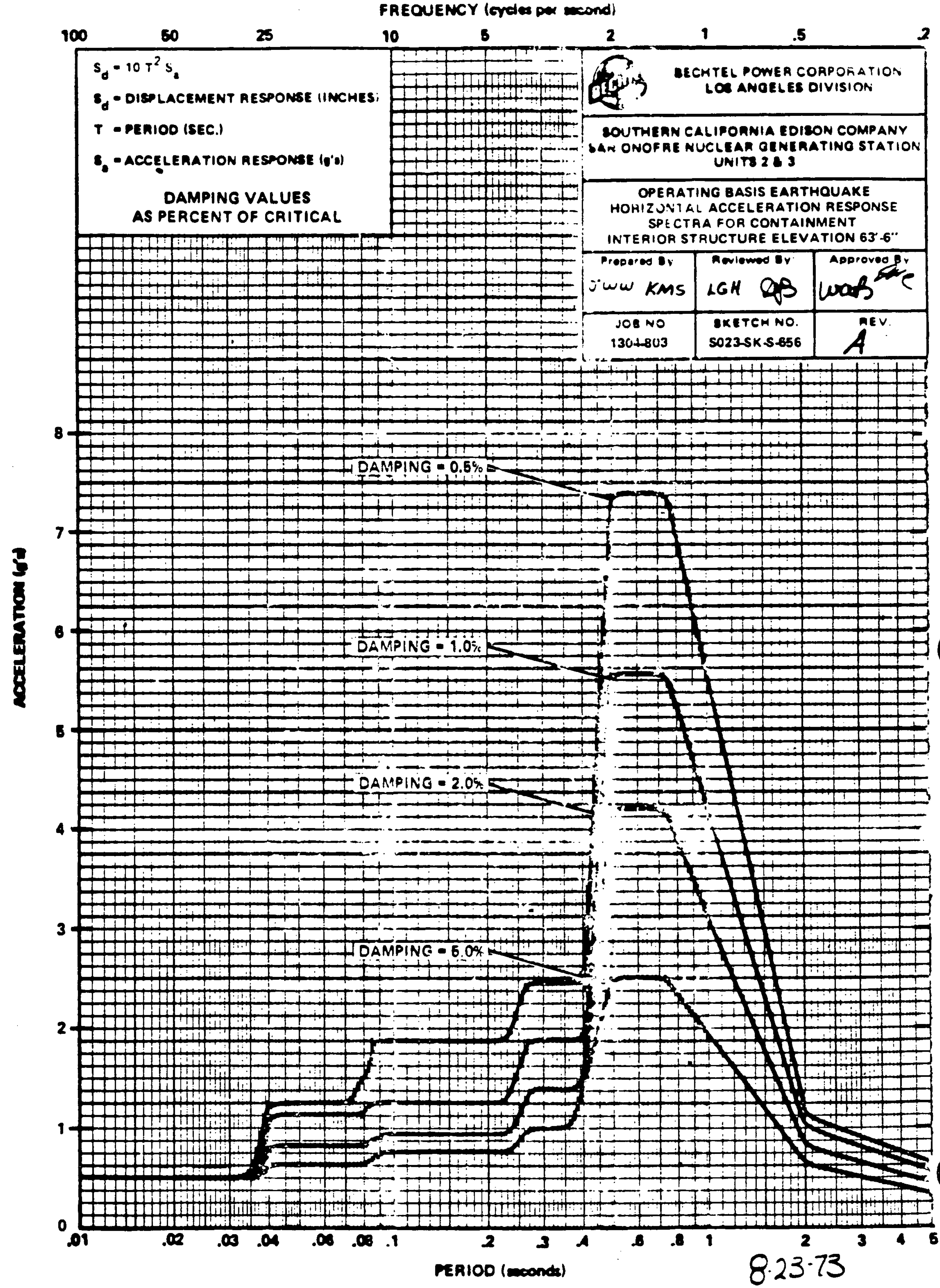


FREQUENCY (cycles per second)
100
50
25
10
5
2
1
.5
.2
$S_d = 10 T^2 S_a$
S_d = DISPLACEMENT RESPONSE (INCHES)
T = PERIOD (SEC.)
S_a = ACCELERATION RESPONSE (g's)
DAMPING VALUES
AS PERCENT OF CRITICAL
BECHTEL POWER CORPORATION
LOS ANGELES DIVISION
SOUTHERN CALIFORNIA EDISON COMPANY
SAN ONOFRE NUCLEAR GENERATING STATION
UNITS 2 & 3
OPERATING BASIS EARTHQUAKE
HORIZONTAL ACCELERATION RESPONSE
SPECTRA FOR CONTAINMENT
INTERIOR STRUCTURE ELEVATION 45'-0"
Prepared By
JWW KMS
Reviewed By
LGH
Approved By
WaB
JOB NO
1304-803
SKETCH NO.
S023-SK-S-654
REV.
A
DAMPING = 0.5%
DAMPING = 1.0%
DAMPING = 2.0%
DAMPING = 5.0%
ACCELERATION (g's)
7
6
5
4
3
2
1
0
.01
.02
.03
.04
.06
.08
.1
.2
.3
.4
.6
.8
1
2
3
4
5
PERIOD (seconds)

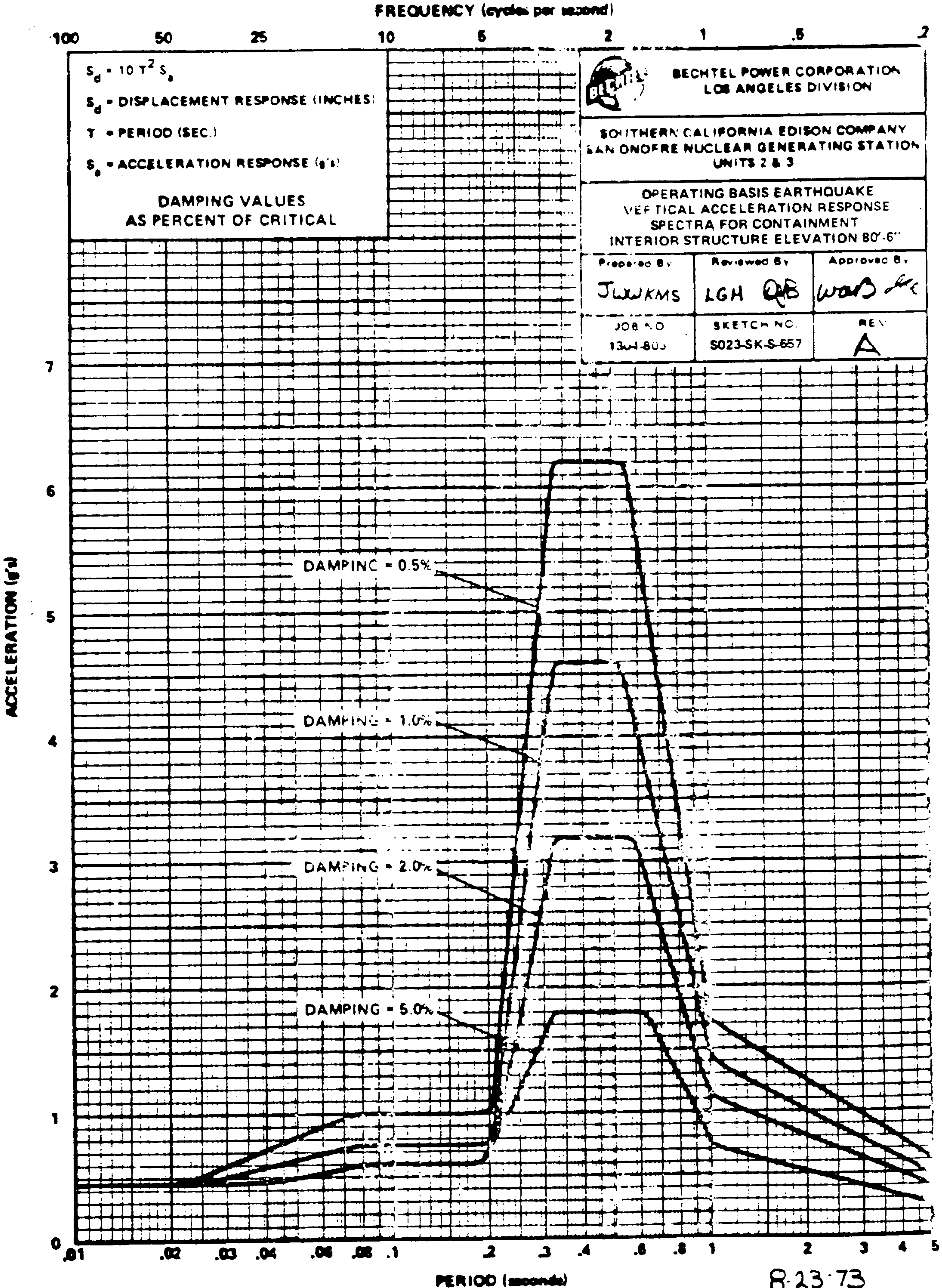
8-23-73


FREQUENCY (cycles per second)
100
50
25
10
5
2
1
.5
.2
S_d = 10 T^2 S_a
S_d = DISPLACEMENT RESPONSE (INCHES)
T = PERIOD (SEC.)
S_a = ACCELERATION RESPONSE (g's)
DAMPING VALUES
AS PERCENT OF CRITICAL
BECHTEL POWER CORPORATION
LOS ANGELES DIVISION
SOUTHERN CALIFORNIA EDISON COMPANY
SAN ONOFRE NUCLEAR GENERATING STATION
UNITS 2 & 3
OPERATING BASIS EARTHQUAKE
VERTICAL ACCELERATION RESPONSE
SPECTRA FOR CONTAINMENT
INTERIOR STRUCTURE ELEVATION 63'-6"
Prepared By
JWW KMS
Reviewed By
LGH
Approved By
WOB
JOB NO
1304-803
SKETCH NO.
S023-SK-S-655
REV
A
ACCELERATION (g's)
7
6
5
4
3
2
1
0
DAMPING = 0.5%
DAMPING = 1.0%
DAMPING = 2.0%
DAMPING = 5.0%
.01
.02
.03
.04
.06
.08
.1
.2
.3
.4
.6
.8
1
2
3
4
5
PERIOD (seconds)

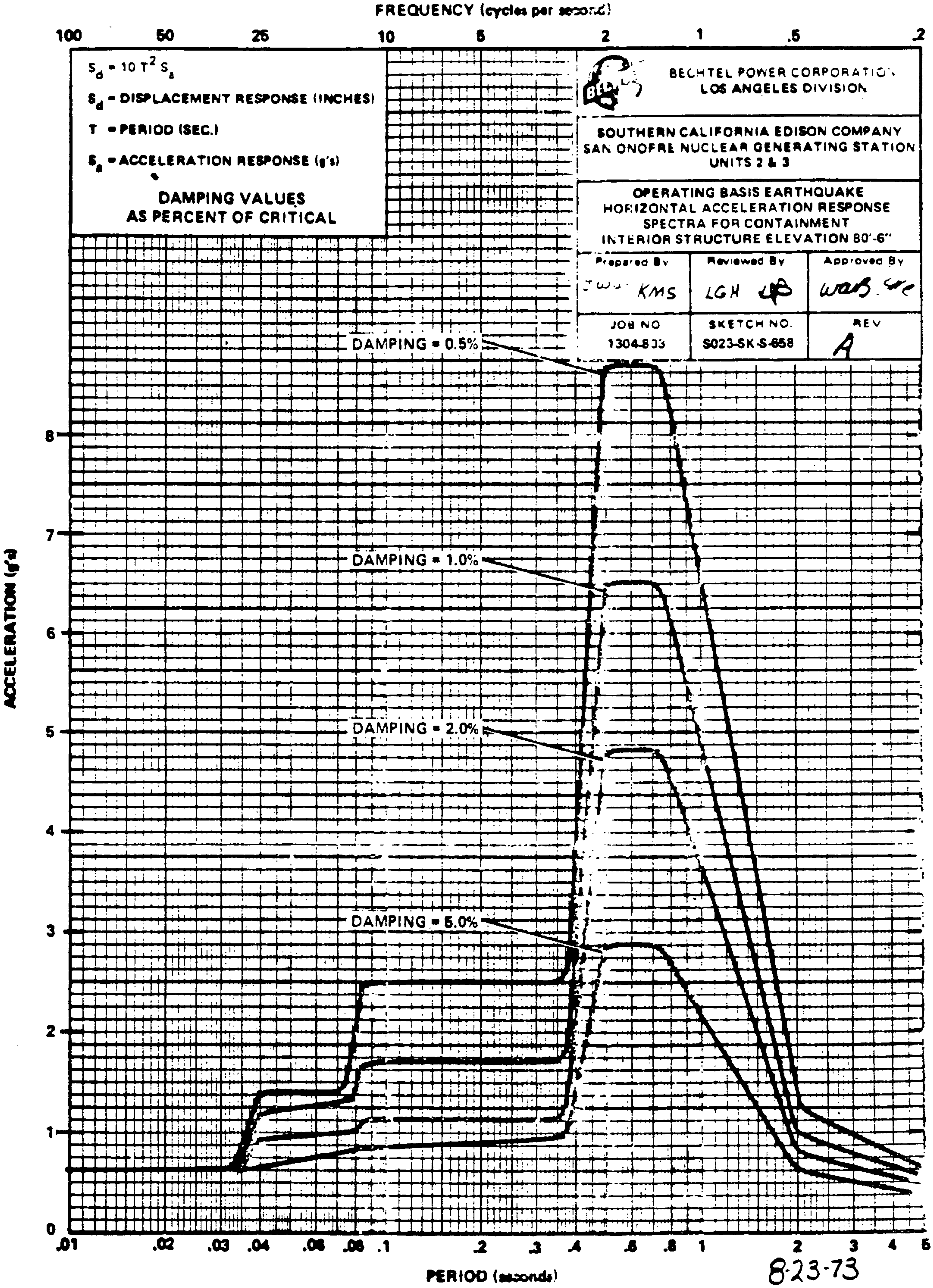
8-23-73



FREQUENCY (cycles per second)
100
50
25
10
5
2
1
.5
.2
$S_d = 10\,T^2\,S_a$
S_d = DISPLACEMENT RESPONSE (INCHES)
T = PERIOD (SEC.)
S_a = ACCELERATION RESPONSE (g's)
DAMPING VALUES AS PERCENT OF CRITICAL
BECHTEL POWER CORPORATION
LOS ANGELES DIVISION
SOUTHERN CALIFORNIA EDISON COMPANY
SAN ONOFRE NUCLEAR GENERATING STATION
UNITS 2 & 3
OPERATING BASIS EARTHQUAKE
HORIZONTAL ACCELERATION RESPONSE
SPECTRA FOR CONTAINMENT
INTERIOR STRUCTURE ELEVATION 63'-6"
Prepared By
JWW KMS
Reviewed By
LGH
Approved By
JOB NO
1304-803
SKETCH NO.
S023-SK-S-656
REV.
A
DAMPING = 0.5%
DAMPING = 1.0%
DAMPING = 2.0%
DAMPING = 5.0%
ACCELERATION (g's)
8
7
6
5
4
3
2
1
0
.01
.02
.03
.04
.06
.08
.1
.2
.3
.4
.6
.8
1
2
3
4
5
PERIOD (seconds)
8-23-73

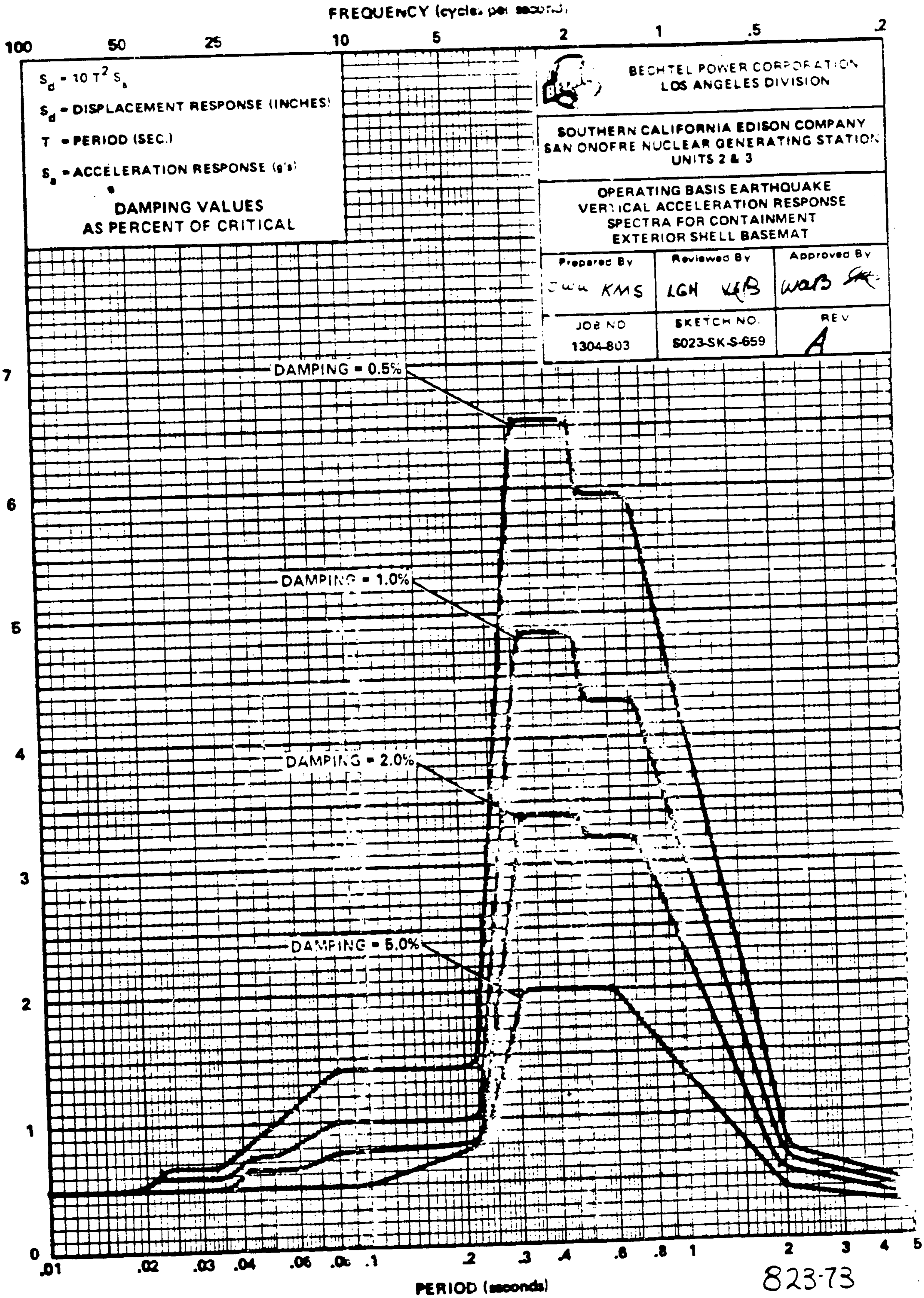

FREQUENCY (cycles per second)
100
50
25
10
5
2
1
.5
.2
$S_d = 10\,T^2\,S_a$
S_d = DISPLACEMENT RESPONSE (INCHES)
T = PERIOD (SEC.)
S_a = ACCELERATION RESPONSE (g's)
DAMPING VALUES
AS PERCENT OF CRITICAL
BECHTEL POWER CORPORATION
LOS ANGELES DIVISION
SOUTHERN CALIFORNIA EDISON COMPANY
SAN ONOFRE NUCLEAR GENERATING STATION
UNITS 2 & 3
OPERATING BASIS EARTHQUAKE
VERTICAL ACCELERATION RESPONSE
SPECTRA FOR CONTAINMENT
INTERIOR STRUCTURE ELEVATION 80'-6"
Prepared By
JWW KMS
Reviewed By
LGH QB
Approved By
JOB NO
13-1-803
SKETCH NO.
S023-SK-S-657
REV
A
ACCELERATION (g's)
0
1
2
3
4
5
6
7
DAMPING = 0.5%
DAMPING = 1.0%
DAMPING = 2.0%
DAMPING = 5.0%
.01
.02
.03
.04
.06
.08
.1
.2
.3
.4
.6
.8
1
2
3
4
5
PERIOD (seconds)

8-23-73



FREQUENCY (cycles per second)
100
50
25
10
5
2
1
.5
.2
$S_d = 10\,T^2\,S_a$
S_d = DISPLACEMENT RESPONSE (INCHES)
T = PERIOD (SEC.)
S_a = ACCELERATION RESPONSE (g's)
DAMPING VALUES AS PERCENT OF CRITICAL
BECHTEL POWER CORPORATION
LOS ANGELES DIVISION
SOUTHERN CALIFORNIA EDISON COMPANY
SAN ONOFRE NUCLEAR GENERATING STATION
UNITS 2 & 3
OPERATING BASIS EARTHQUAKE
HORIZONTAL ACCELERATION RESPONSE
SPECTRA FOR CONTAINMENT
INTERIOR STRUCTURE ELEVATION 80'-6"
Prepared By
KMS
Reviewed By
LGH
Approved By
JOB NO
1304-833
SKETCH NO.
S023-SK-S-658
REV
A
DAMPING = 0.5%
DAMPING = 1.0%
DAMPING = 2.0%
DAMPING = 5.0%
ACCELERATION (g's)
0
1
2
3
4
5
6
7
8
.01
.02
.03
.04
.06
.08
.1
.2
.3
.4
.6
.8
1
2
3
4
5
PERIOD (seconds)

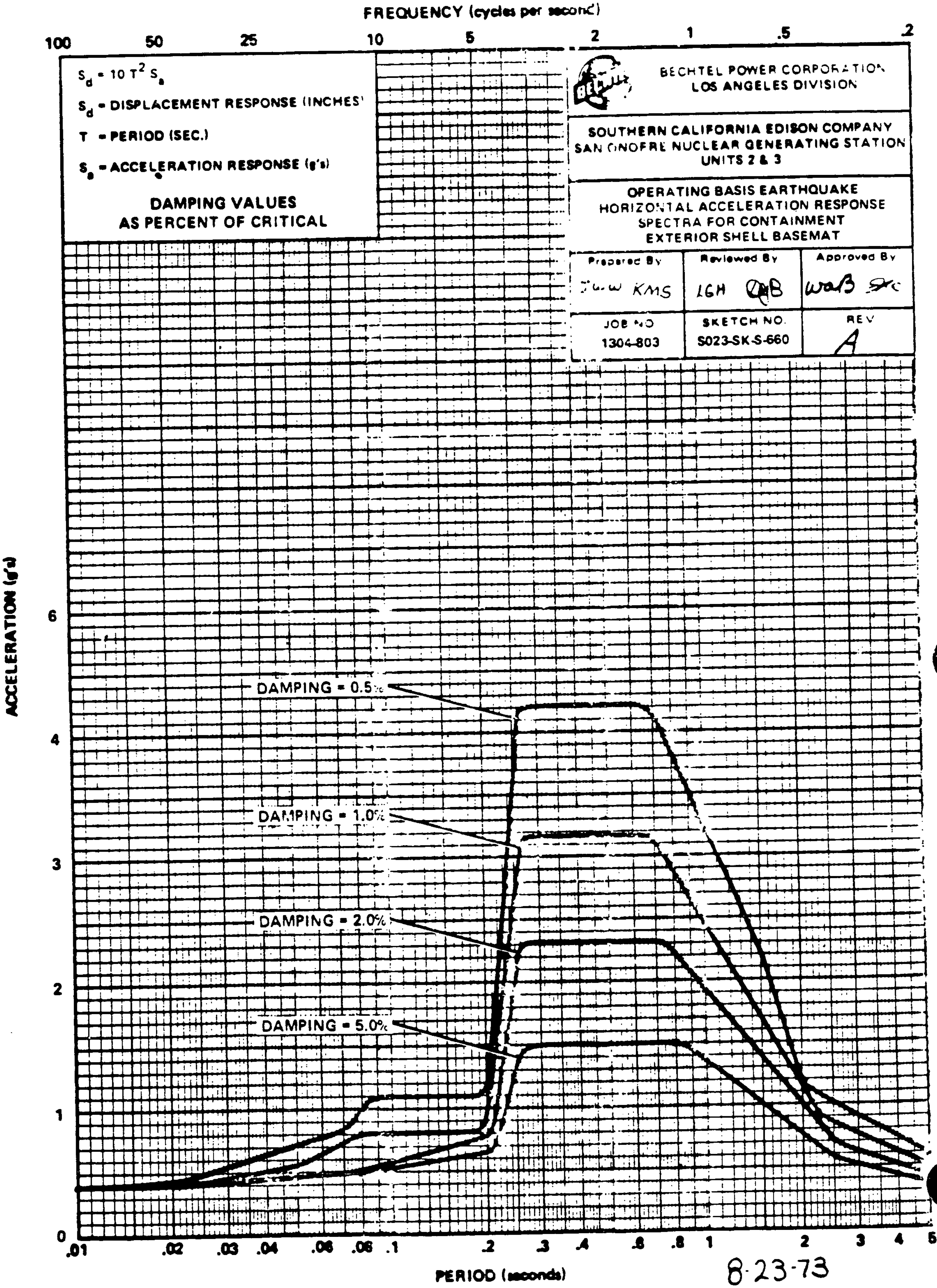
8-23-73



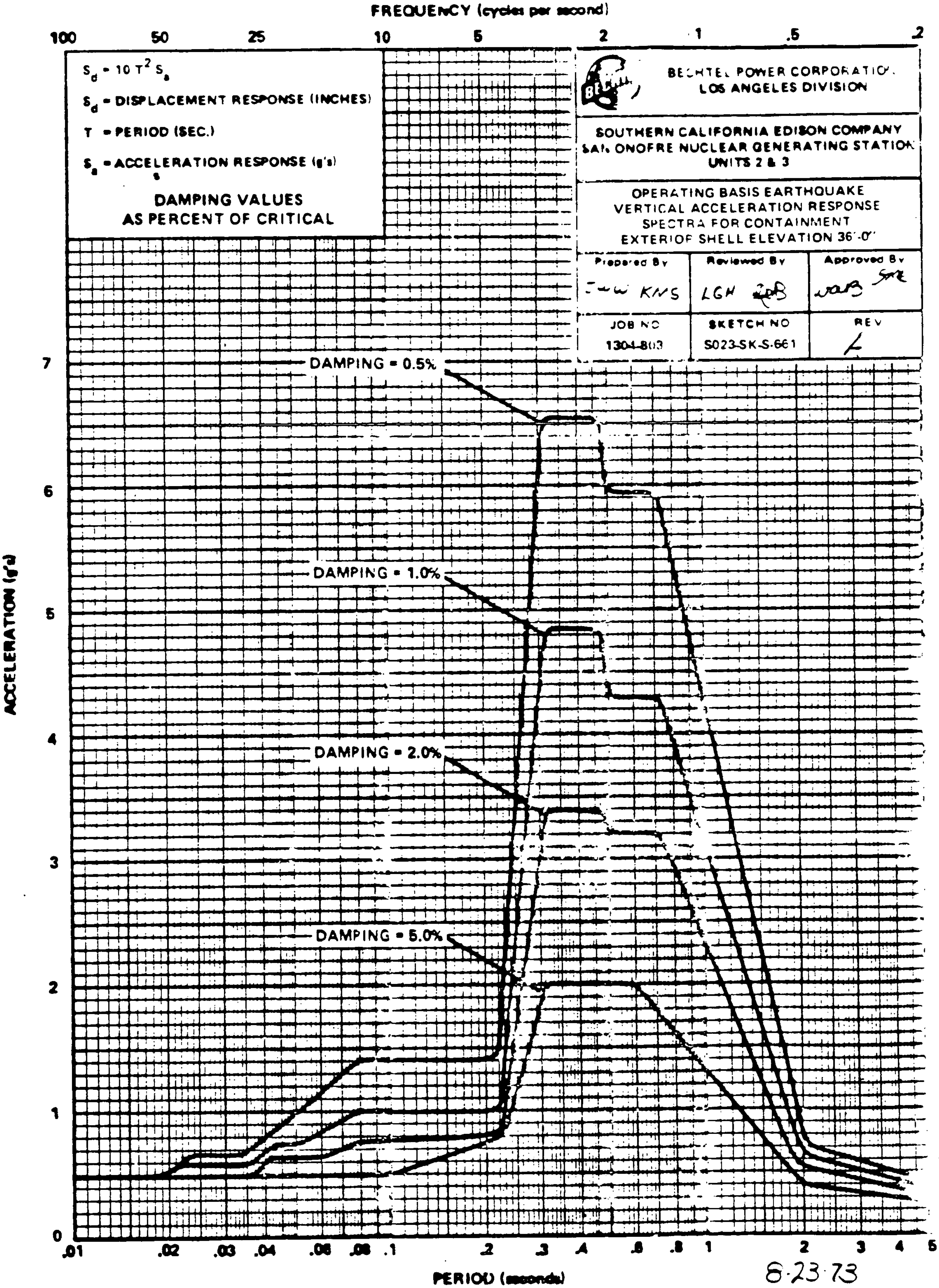
FREQUENCY (cycles per second)
100
50
25
10
5
2
1
.5
.2
$S_d = 10\,T^2\,S_a$
S_d = DISPLACEMENT RESPONSE (INCHES)
T = PERIOD (SEC.)
S_a = ACCELERATION RESPONSE (g's)
DAMPING VALUES
AS PERCENT OF CRITICAL
BECHTEL POWER CORPORATION
LOS ANGELES DIVISION
SOUTHERN CALIFORNIA EDISON COMPANY
SAN ONOFRE NUCLEAR GENERATING STATION
UNITS 2 & 3
OPERATING BASIS EARTHQUAKE
VERTICAL ACCELERATION RESPONSE
SPECTRA FOR CONTAINMENT
EXTERIOR SHELL BASEMAT
Prepared By
KMS
Reviewed By
LGH
Approved By
JOB NO
1304-803
SKETCH NO.
S023-SK-S-659
REV
A
DAMPING = 0.5%
DAMPING = 1.0%
DAMPING = 2.0%
DAMPING = 5.0%
ACCELERATION (g's)
7
6
5
4
3
2
1
0
.01
.02
.03
.04
.06
.08
.1
.2
.3
.4
.6
.8
1
2
3
4
5
PERIOD (seconds)

823-73

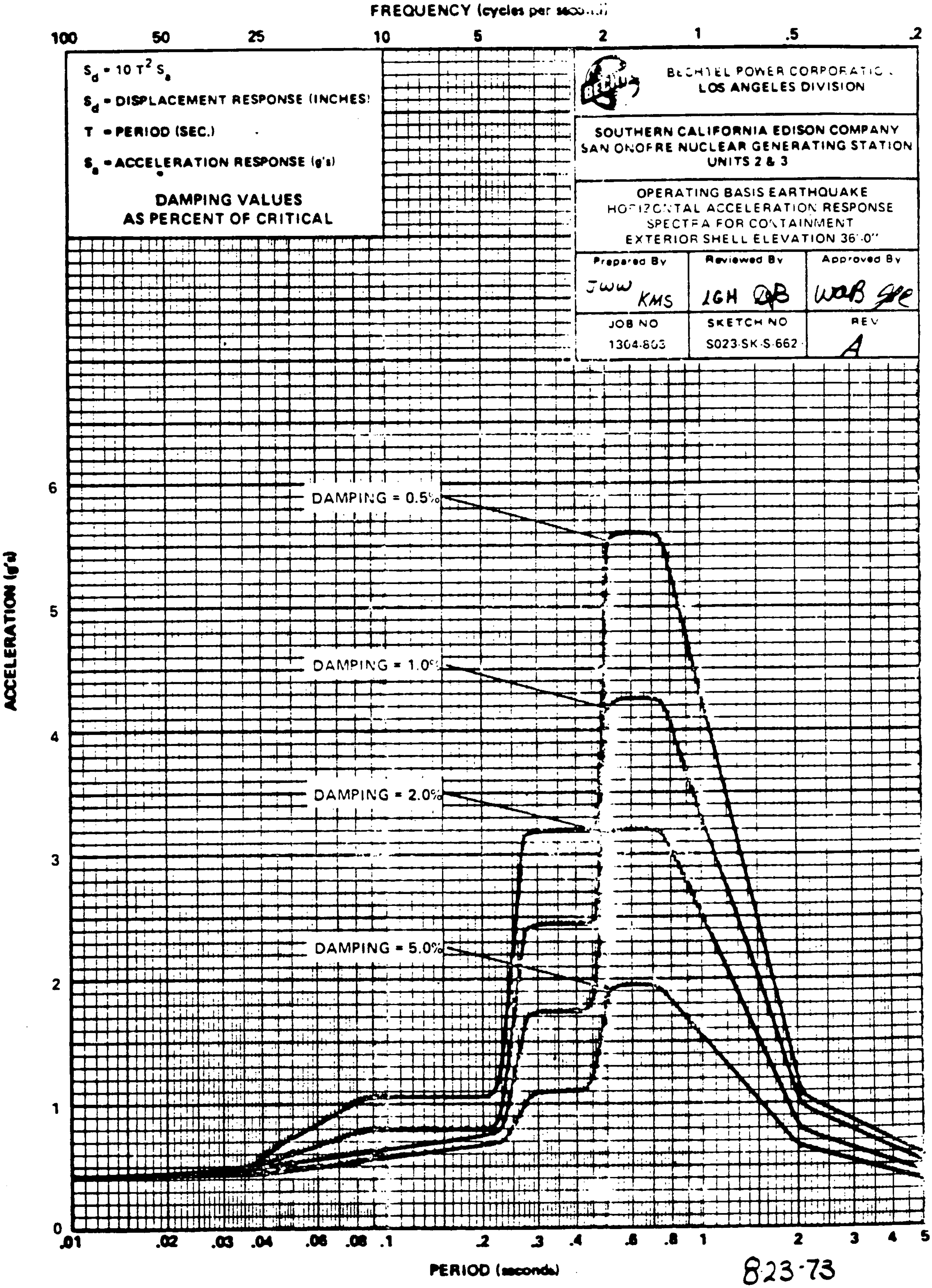
BECHTEL POWER CORPORATION LOS ANGELES DIVISION		
SOUTHERN CALIFORNIA EDISON COMPANY SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3		
OPERATING BASIS EARTHQUAKE HORIZONTAL ACCELERATION RESPONSE SPECTRA FOR CONTAINMENT EXTERIOR SHELL BASEMAT		
Prepared By	Reviewed By	Approved By
JWW KMS	LGH QAB	WAB
JOB NO	SKETCH NO.	REV
1304-803	S023-SK-S-660	A



8-23-73

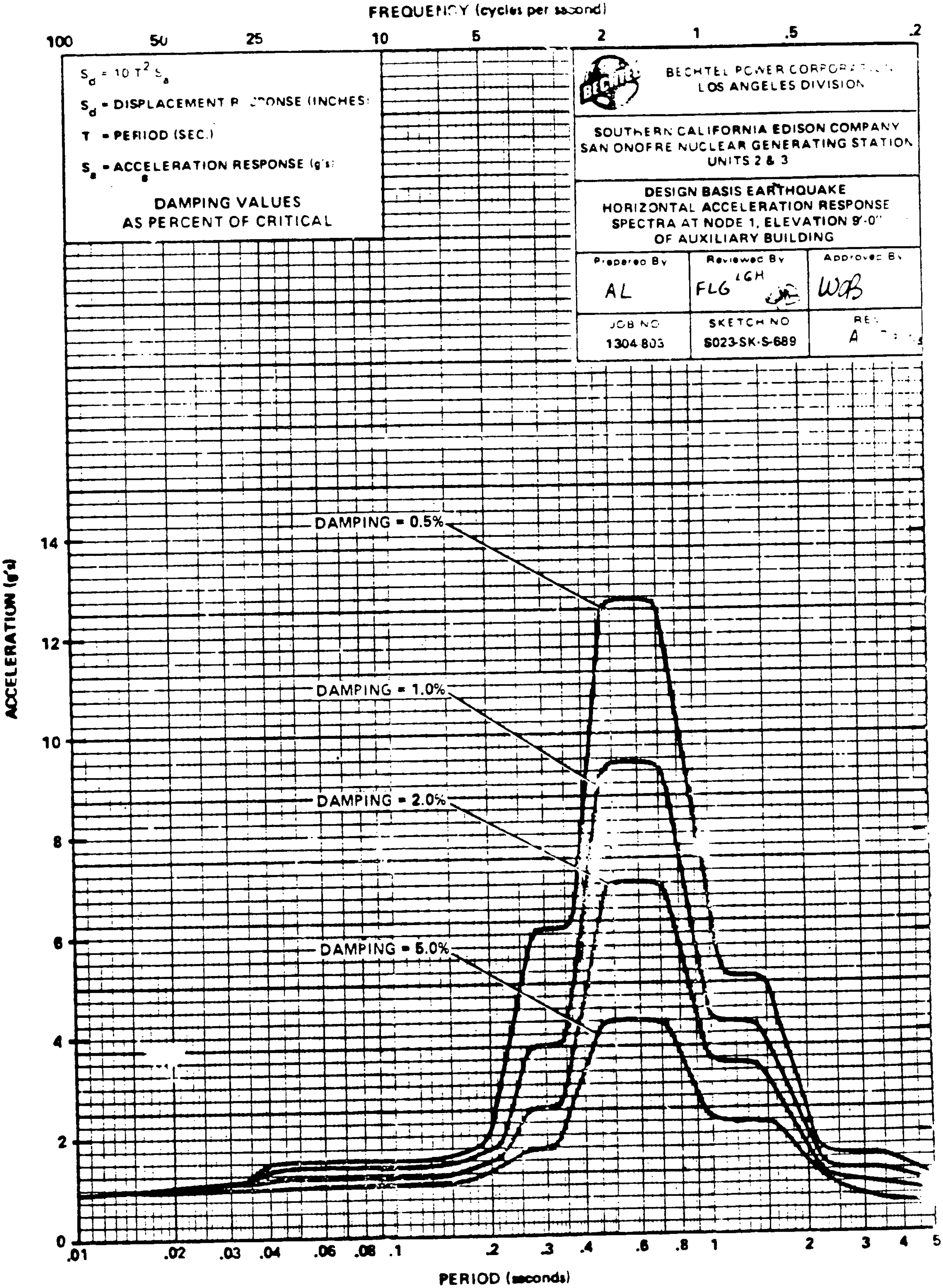


FREQUENCY (cycles per second)
100
50
25
10
5
2
1
.5
.2
$S_d = 10\ T^2\ S_a$
S_d = DISPLACEMENT RESPONSE (INCHES)
T = PERIOD (SEC.)
S_a = ACCELERATION RESPONSE (g's)
DAMPING VALUES
AS PERCENT OF CRITICAL
BECHTEL POWER CORPORATION
LOS ANGELES DIVISION
SOUTHERN CALIFORNIA EDISON COMPANY
SAN ONOFRE NUCLEAR GENERATING STATION
UNITS 2 & 3
OPERATING BASIS EARTHQUAKE
VERTICAL ACCELERATION RESPONSE
SPECTRA FOR CONTAINMENT
EXTERIOR SHELL ELEVATION 36'-0"
Prepared By
Reviewed By
Approved By
JOB NO
1304-803
SKETCH NO
S023-SK-S-661
REV
DAMPING = 0.5%
DAMPING = 1.0%
DAMPING = 2.0%
DAMPING = 5.0%
ACCELERATION (g's)
7
6
5
4
3
2
1
0
.01
.02
.03
.04
.06
.08
.1
.2
.3
.4
.6
.8
1
2
3
4
5
PERIOD (seconds)
8-23-73

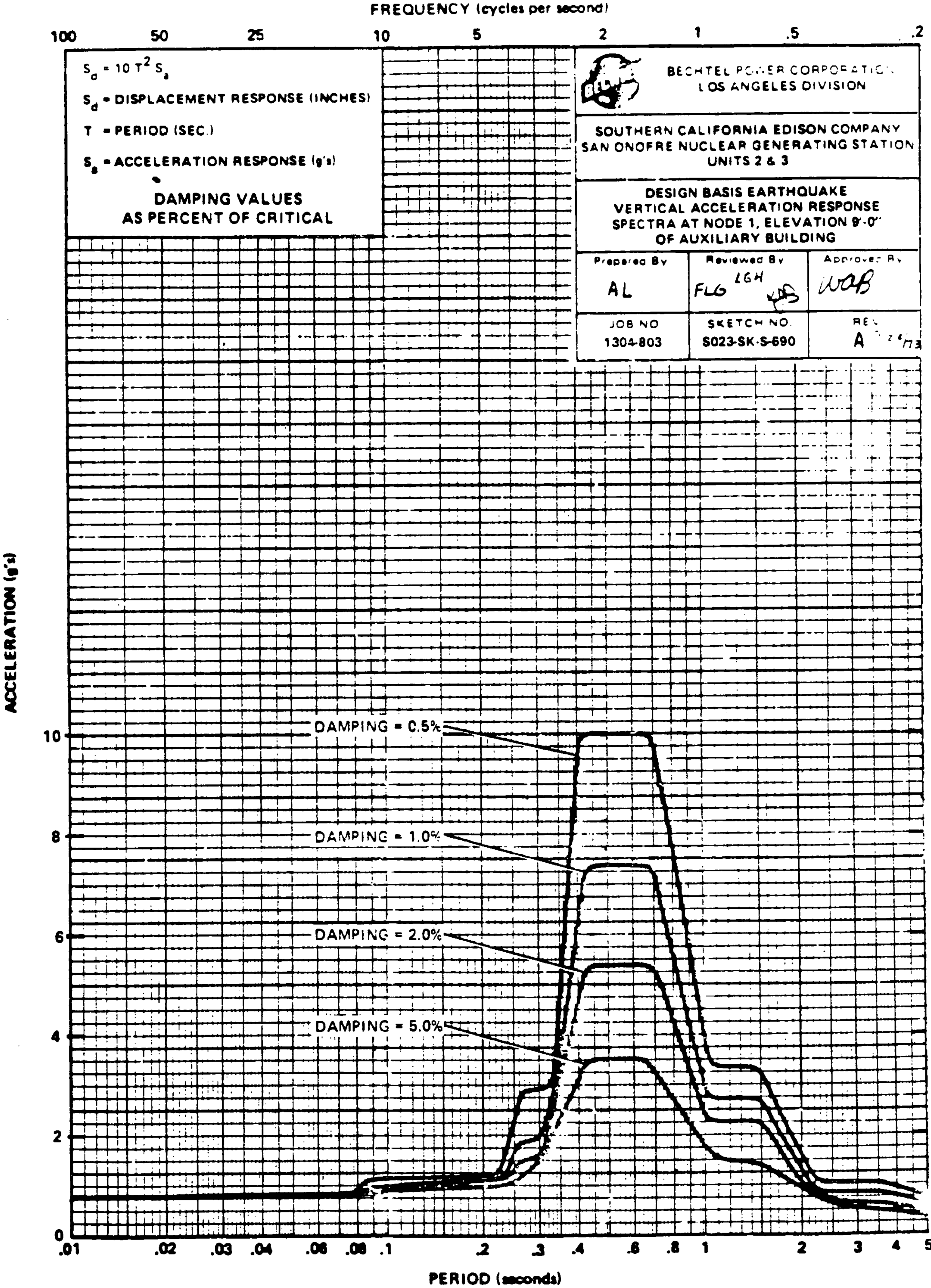


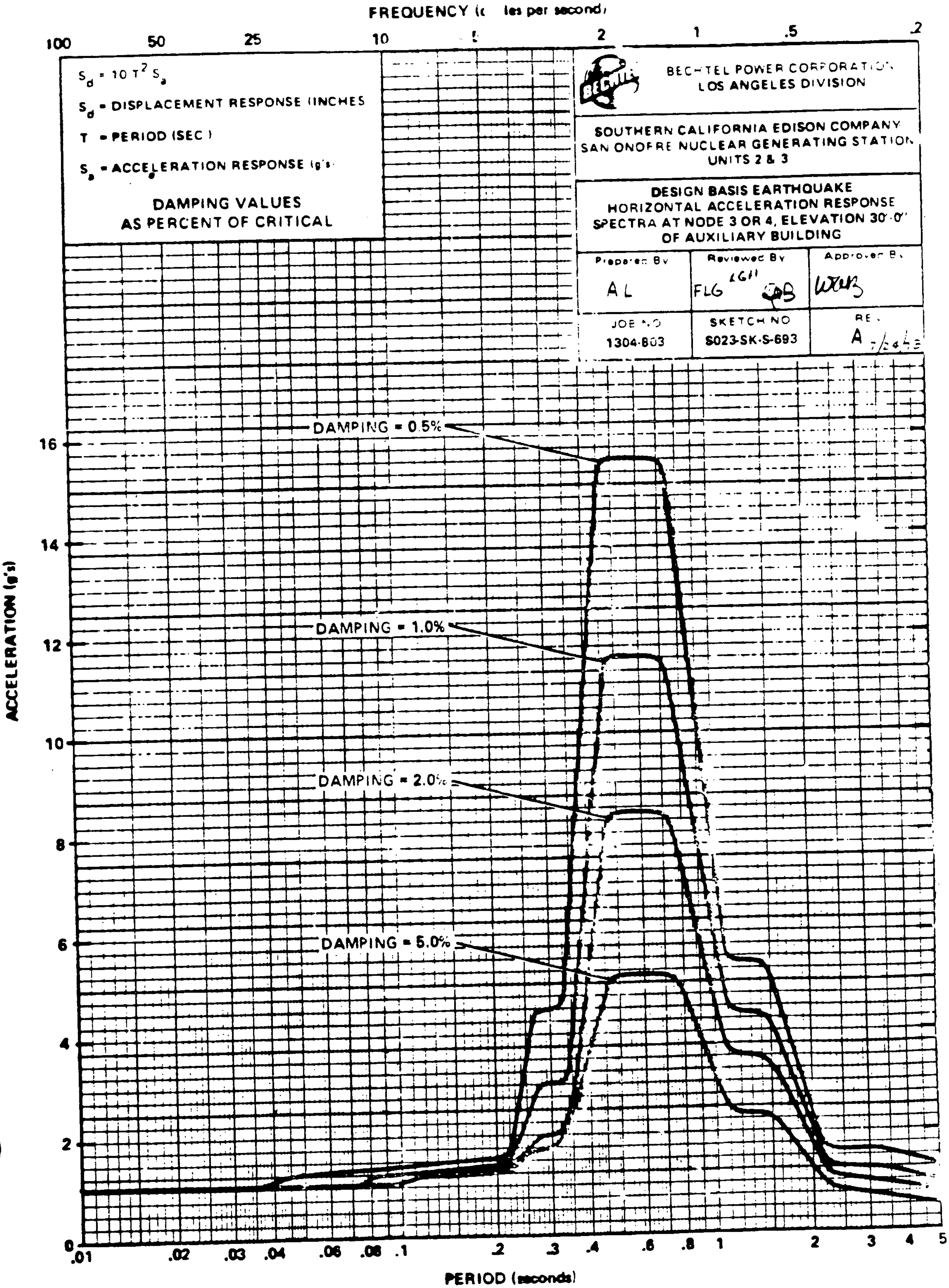
FREQUENCY (cycles per second)
100
50
25
10
5
2
1
.5
.2
$S_d = 10\ T^2\ S_a$
S_d = DISPLACEMENT RESPONSE (INCHES)
T = PERIOD (SEC.)
S_a = ACCELERATION RESPONSE (g's)
DAMPING VALUES
AS PERCENT OF CRITICAL
BECHTEL POWER CORPORATION
LOS ANGELES DIVISION
SOUTHERN CALIFORNIA EDISON COMPANY
SAN ONOFRE NUCLEAR GENERATING STATION
UNITS 2 & 3
OPERATING BASIS EARTHQUAKE
HORIZONTAL ACCELERATION RESPONSE
SPECTRA FOR CONTAINMENT
EXTERIOR SHELL ELEVATION 36'-0"
Prepared By
JWW KMS
Reviewed By
LGH
Approved By
JOB NO
1304-803
SKETCH NO
S023-SK-S-662
REV
A
DAMPING = 0.5%
DAMPING = 1.0%
DAMPING = 2.0%
DAMPING = 5.0%
ACCELERATION (g's)
6
5
4
3
2
1
0
.01
.02
.03
.04
.06
.08
.1
.2
.3
.4
.6
.8
1
2
3
4
5
PERIOD (seconds)

823-73

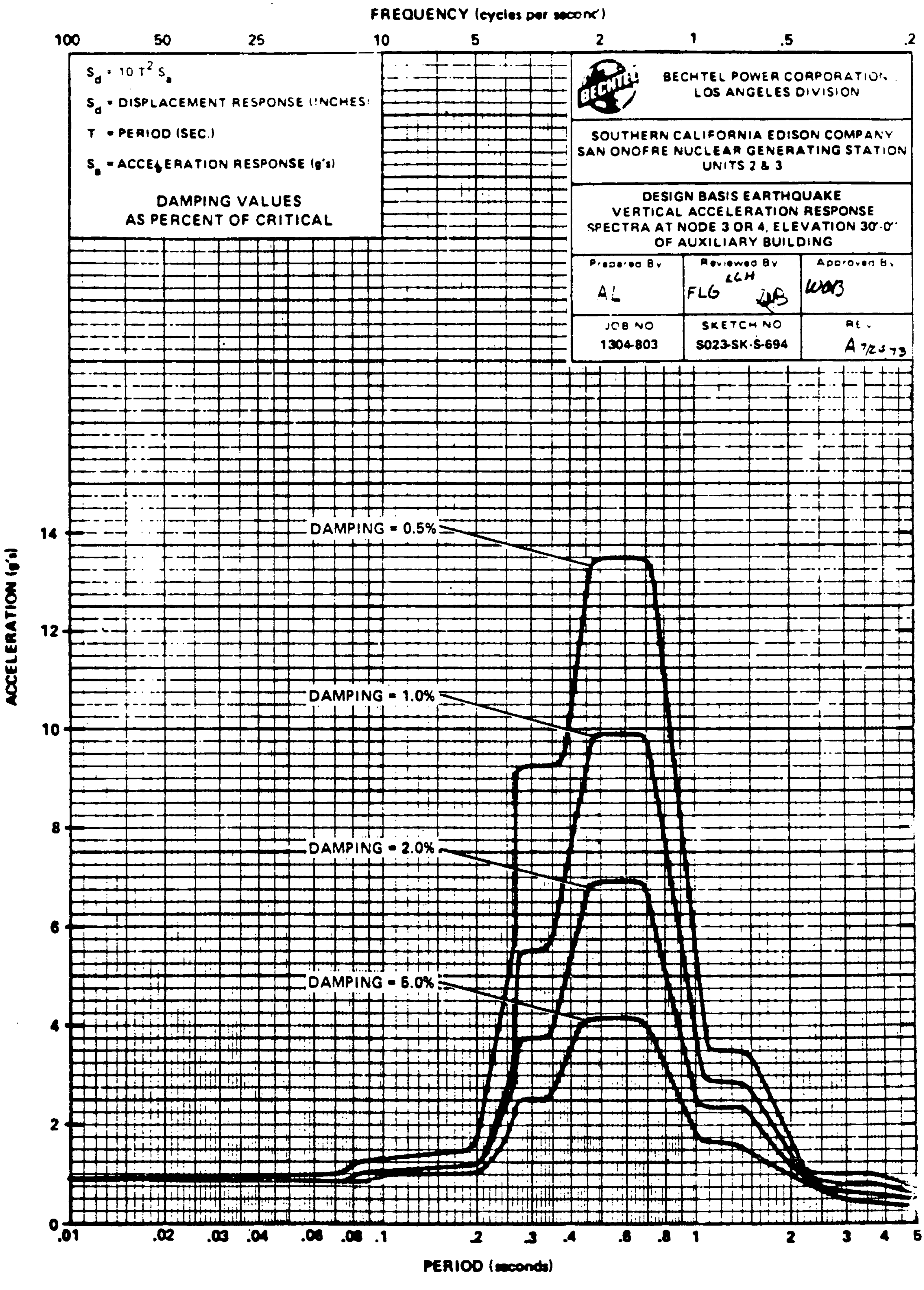


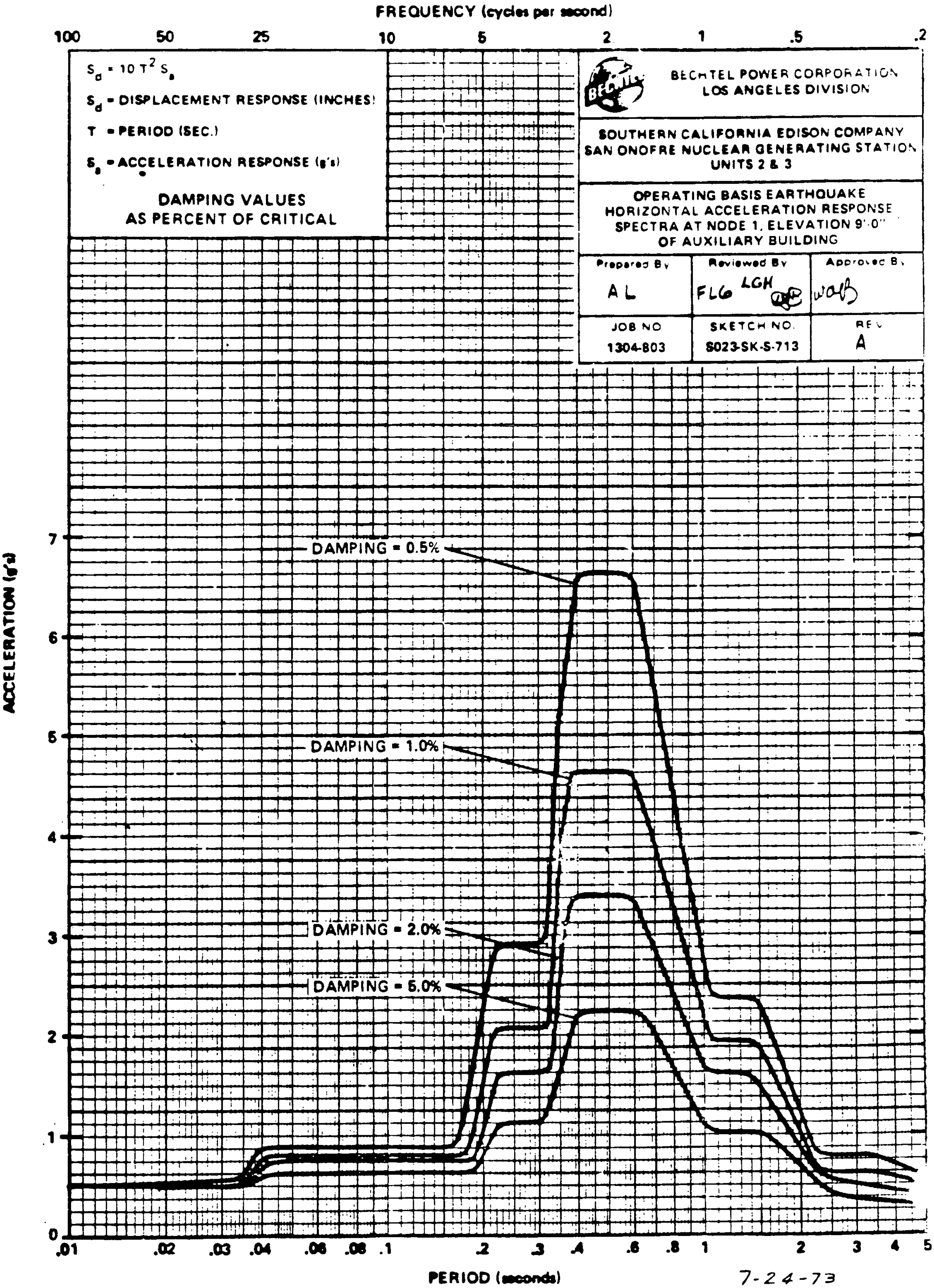
FREQUENCY (cycles per second)
100
50
25
10
5
2
1
.5
.2
$S_d = 10\,T^2\,S_a$
S_d = DISPLACEMENT RESPONSE (INCHES)
T = PERIOD (SEC.)
S_a = ACCELERATION RESPONSE (g's)
DAMPING VALUES
AS PERCENT OF CRITICAL
BECHTEL POWER CORPORATION
LOS ANGELES DIVISION
SOUTHERN CALIFORNIA EDISON COMPANY
SAN ONOFRE NUCLEAR GENERATING STATION
UNITS 2 & 3
DESIGN BASIS EARTHQUAKE
HORIZONTAL ACCELERATION RESPONSE
SPECTRA AT NODE 1, ELEVATION 9'-0"
OF AUXILIARY BUILDING
Prepared By
AL
Reviewed By
FLG LGH
Approved By
WOB
JOB NO
1304-803
SKETCH NO
S023-SK-S-689
REV
A
DAMPING = 0.5%
DAMPING = 1.0%
DAMPING = 2.0%
DAMPING = 5.0%
ACCELERATION (g's)
14
12
10
8
6
4
2
0
.01
.02
.03
.04
.06
.08
.1
.2
.3
.4
.6
.8
1
2
3
4
5
PERIOD (seconds)


FREQUENCY (cycles per second)
100 50 25 10 5 2 1 .5 .2
$S_d = 10\,T^2\,S_a$
S_d = DISPLACEMENT RESPONSE (INCHES)
T = PERIOD (SEC.)
S_a = ACCELERATION RESPONSE (g's)
DAMPING VALUES
AS PERCENT OF CRITICAL
BECHTEL POWER CORPORATION
LOS ANGELES DIVISION
SOUTHERN CALIFORNIA EDISON COMPANY
SAN ONOFRE NUCLEAR GENERATING STATION
UNITS 2 & 3
DESIGN BASIS EARTHQUAKE
VERTICAL ACCELERATION RESPONSE
SPECTRA AT NODE 1, ELEVATION 9'-0"
OF AUXILIARY BUILDING
Prepared By
AL
Reviewed By
FLG LGH
Approved By
WAB
JOB NO
1304-803
SKETCH NO.
S023-SK-S-690
REV
A
ACCELERATION (g's)
10
8
6
4
2
0
DAMPING = 0.5%
DAMPING = 1.0%
DAMPING = 2.0%
DAMPING = 5.0%
.01 .02 .03 .04 .06 .08 .1 .2 .3 .4 .6 .8 1 2 3 4 5
PERIOD (seconds)

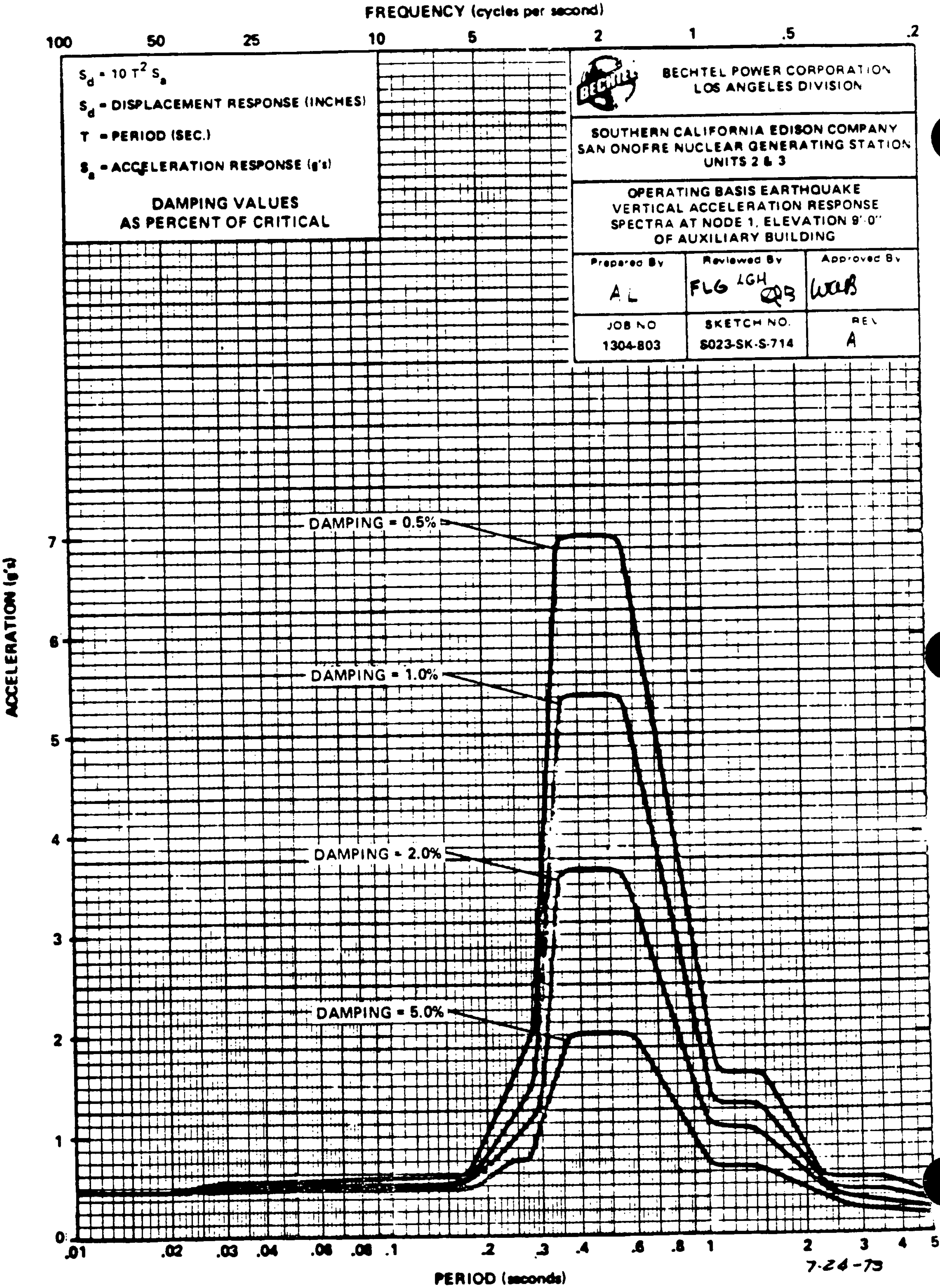


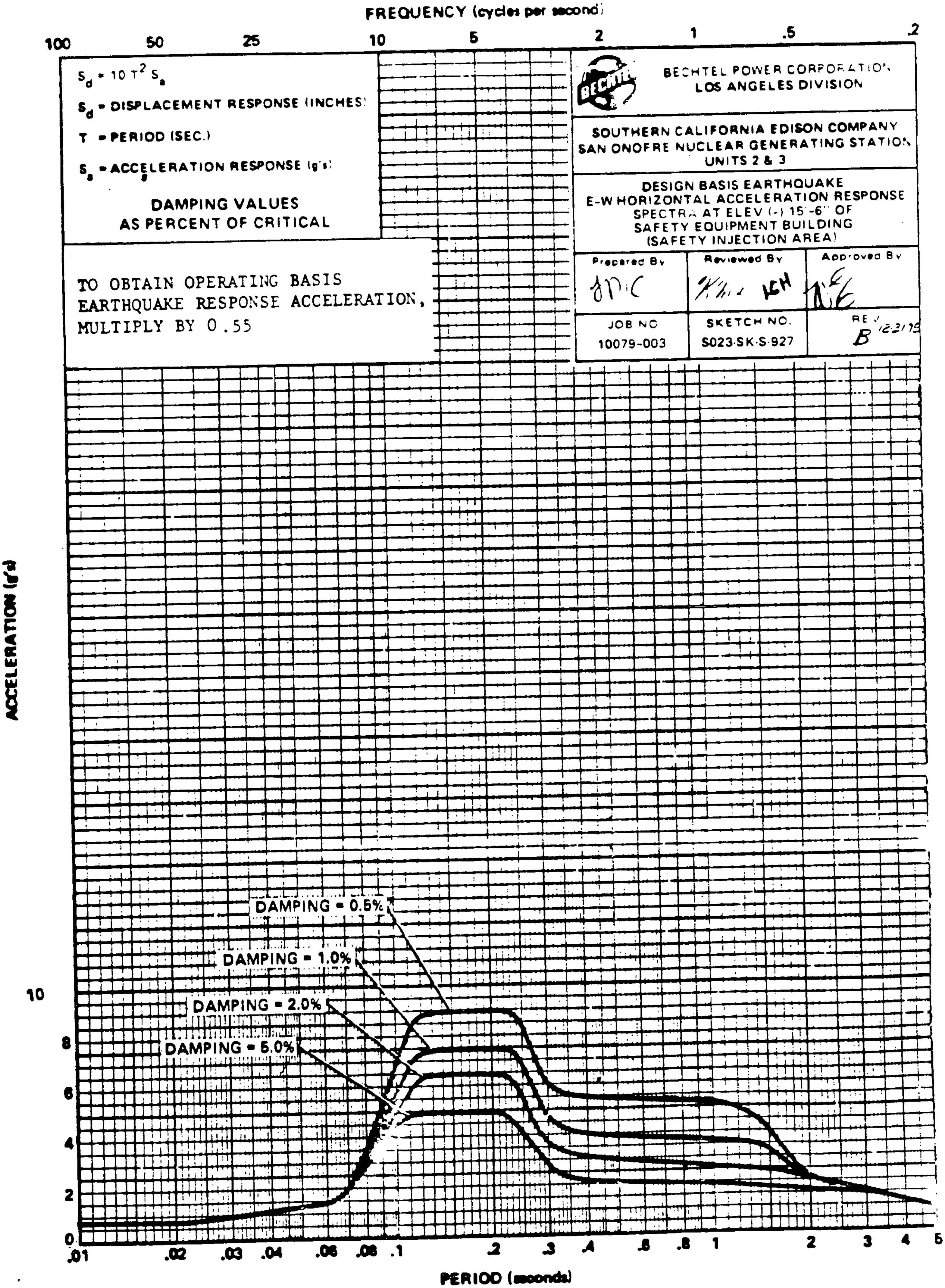
FREQUENCY (c les per second)
100
50
25
10
2
1
.5
.2
$S_d = 10\,T^2\,S_a$
S_d = DISPLACEMENT RESPONSE (INCHES
T = PERIOD (SEC)
S_a = ACCELERATION RESPONSE (g's
DAMPING VALUES
AS PERCENT OF CRITICAL
BECHTEL POWER CORPORATION
LOS ANGELES DIVISION
SOUTHERN CALIFORNIA EDISON COMPANY
SAN ONOFRE NUCLEAR GENERATING STATION
UNITS 2 & 3
DESIGN BASIS EARTHQUAKE
HORIZONTAL ACCELERATION RESPONSE
SPECTRA AT NODE 3 OR 4, ELEVATION 30'-0"
OF AUXILIARY BUILDING
Prepared By
Reviewed By
Approved By
A L
FLG
JOB NO
1304-803
SKETCH NO
S023-SK-S-693
REV
A
DAMPING = 0.5%
DAMPING = 1.0%
DAMPING = 2.0%
DAMPING = 5.0%
ACCELERATION (g's)
16
14
12
10
8
6
4
2
0
.01
.02
.03
.04
.06
.08
.1
.2
.3
.4
.6
.8
1
2
3
4
5
PERIOD (seconds)


FREQUENCY (cycles per second)
100
50
25
10
5
2
1
.5
.2
$S_d = 10\,T^2\,S_a$
S_d = DISPLACEMENT RESPONSE (INCHES)
T = PERIOD (SEC.)
S_a = ACCELERATION RESPONSE (g's)
DAMPING VALUES AS PERCENT OF CRITICAL
BECHTEL
BECHTEL POWER CORPORATION
LOS ANGELES DIVISION
SOUTHERN CALIFORNIA EDISON COMPANY
SAN ONOFRE NUCLEAR GENERATING STATION
UNITS 2 & 3
DESIGN BASIS EARTHQUAKE
VERTICAL ACCELERATION RESPONSE
SPECTRA AT NODE 3 OR 4, ELEVATION 30'-0"
OF AUXILIARY BUILDING
Prepared By
AL
Reviewed By
FLG LCH
Approved By
WOB
JOB NO
1304-803
SKETCH NO
S023-SK-S-694
REV.
A 7/25/73
DAMPING = 0.5%
DAMPING = 1.0%
DAMPING = 2.0%
DAMPING = 5.0%
ACCELERATION (g's)
14
12
10
8
6
4
2
0
.01
.02
.03
.04
.06
.08
.1
.2
.3
.4
.6
.8
1
2
3
4
5
PERIOD (seconds)



FREQUENCY (cycles per second)
100 50 25 10 5 2 1 .5 .2
$S_d = 10\,T^2\,S_a$
S_d = DISPLACEMENT RESPONSE (INCHES)
T = PERIOD (SEC.)
S_a = ACCELERATION RESPONSE (g's)
DAMPING VALUES
AS PERCENT OF CRITICAL
BECHTEL POWER CORPORATION
LOS ANGELES DIVISION
SOUTHERN CALIFORNIA EDISON COMPANY
SAN ONOFRE NUCLEAR GENERATING STATION
UNITS 2 & 3
OPERATING BASIS EARTHQUAKE
HORIZONTAL ACCELERATION RESPONSE
SPECTRA AT NODE 1, ELEVATION 9'-0"
OF AUXILIARY BUILDING
Prepared By
A L
Reviewed By
FLG LGH
Approved By
JOB NO
1304-803
SKETCH NO.
S023-SK-S-713
REV
A
DAMPING = 0.5%
DAMPING = 1.0%
DAMPING = 2.0%
DAMPING = 5.0%
ACCELERATION (g's)
0 1 2 3 4 5 6 7
.01 .02 .03 .04 .06 .08 .1 .2 .3 .4 .6 .8 1 2 3 4 5
PERIOD (seconds)
7-24-73


FREQUENCY (cycles per second)
100
50
25
10
5
2
1
.5
.2
$S_d = 10\,T^2\,S_a$
S_d = DISPLACEMENT RESPONSE (INCHES)
T = PERIOD (SEC.)
S_a = ACCELERATION RESPONSE (g's)
DAMPING VALUES
AS PERCENT OF CRITICAL
BECHTEL POWER CORPORATION
LOS ANGELES DIVISION
SOUTHERN CALIFORNIA EDISON COMPANY
SAN ONOFRE NUCLEAR GENERATING STATION
UNITS 2 & 3
OPERATING BASIS EARTHQUAKE
VERTICAL ACCELERATION RESPONSE
SPECTRA AT NODE 1, ELEVATION 9'-0"
OF AUXILIARY BUILDING
Prepared By
AL
Reviewed By
FLG LGH QB
Approved By
WAB
JOB NO
1304-803
SKETCH NO.
S023-SK-S-714
REV
A
DAMPING = 0.5%
DAMPING = 1.0%
DAMPING = 2.0%
DAMPING = 5.0%
ACCELERATION (g's)
7
6
5
4
3
2
1
0
.01
.02
.03
.04
.06
.08
.1
.2
.3
.4
.6
.8
1
2
3
4
5
PERIOD (seconds)
7-24-73


FREQUENCY (cycles per second)
100
50
25
10
5
2
1
.5
.2
$S_d = 10\,T^2\,S_a$
S_d = DISPLACEMENT RESPONSE (INCHES)
T = PERIOD (SEC.)
S_a = ACCELERATION RESPONSE (g's)
DAMPING VALUES
AS PERCENT OF CRITICAL
BECHTEL POWER CORPORATION
LOS ANGELES DIVISION
SOUTHERN CALIFORNIA EDISON COMPANY
SAN ONOFRE NUCLEAR GENERATING STATION
UNITS 2 & 3
DESIGN BASIS EARTHQUAKE
E-W HORIZONTAL ACCELERATION RESPONSE
SPECTRA AT ELEV (-) 15'-6" OF
SAFETY EQUIPMENT BUILDING
(SAFETY INJECTION AREA)
Prepared By
Reviewed By
Approved By
JPC
KCH
JOB NO
10079-003
SKETCH NO.
S023-SK-S-927
REV
B
12-31-75
TO OBTAIN OPERATING BASIS
EARTHQUAKE RESPONSE ACCELERATION,
MULTIPLY BY 0.55
ACCELERATION (g's)
DAMPING = 0.5%
DAMPING = 1.0%
DAMPING = 2.0%
DAMPING = 5.0%
10
8
6
4
2
0
.01
.02
.03
.04
.06
.08
.1
.2
.3
.4
.6
.8
1
2
3
4
5
PERIOD (seconds)

BECHTEL POWER CORPORATION
LOS ANGELES DIVISION

SOUTHERN CALIFORNIA EDISON COMPANY
SAN ONOFRE NUCLEAR GENERATING STATION
UNITS 2 & 3

DESIGN BASIS EARTHQUAKE
E-W HORIZONTAL ACCELERATION RESPONSE
SPECTRA AT ELEV (-) 5'-3" OF
SAFETY EQUIPMENT BUILDING
(COMPONENT COOLING AREA)

Prepared By	Reviewed By	Approved By
JOK	KMM LGH	
JOB NO	SKETCH NO.	REV
10079-003	S023-SK-S-928	B 6-3-75

$S_d = 10\,T^2\,S_a$

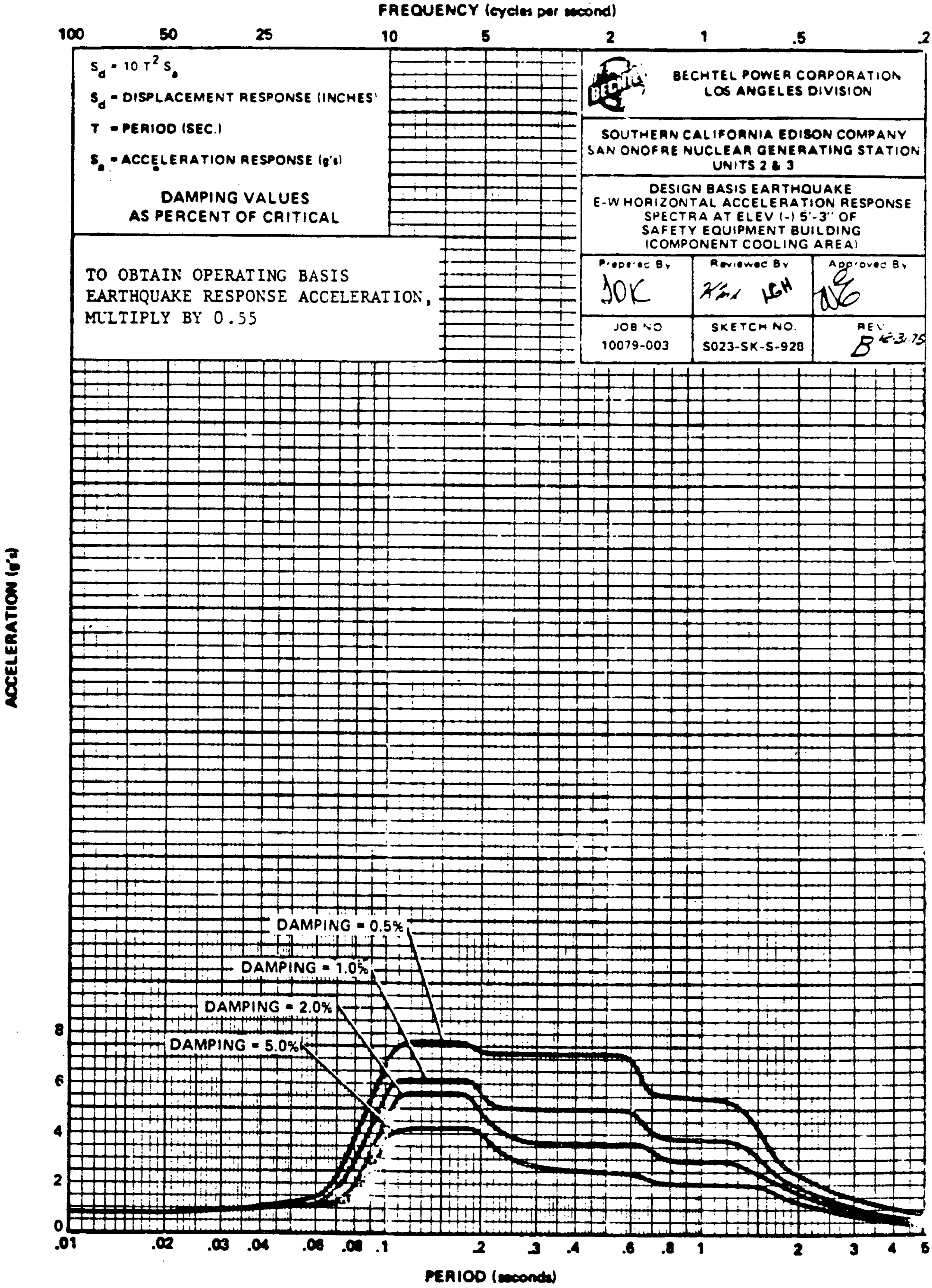
S_d = DISPLACEMENT RESPONSE (INCHES)

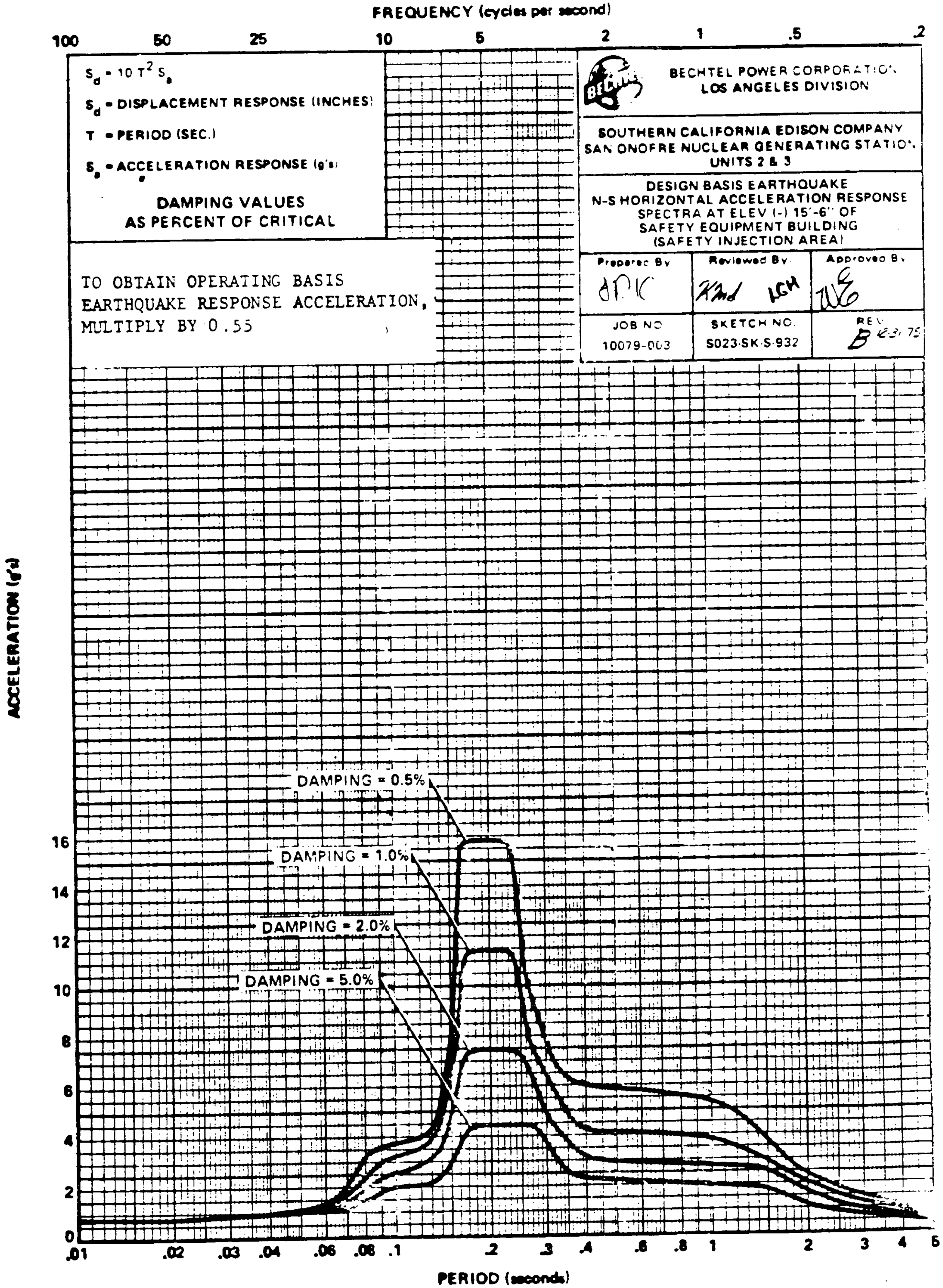
T = PERIOD (SEC.)

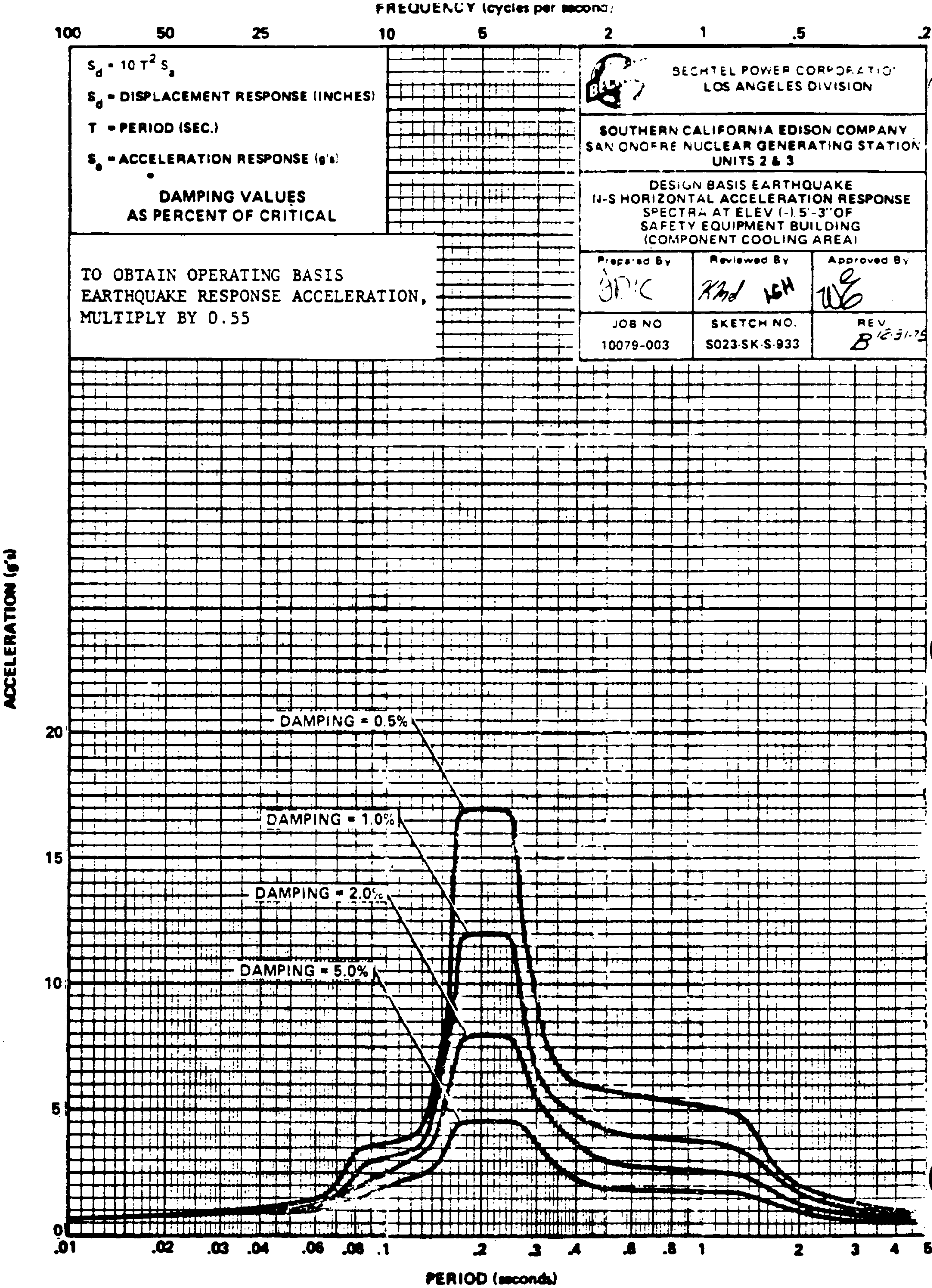
S_a = ACCELERATION RESPONSE (g's)

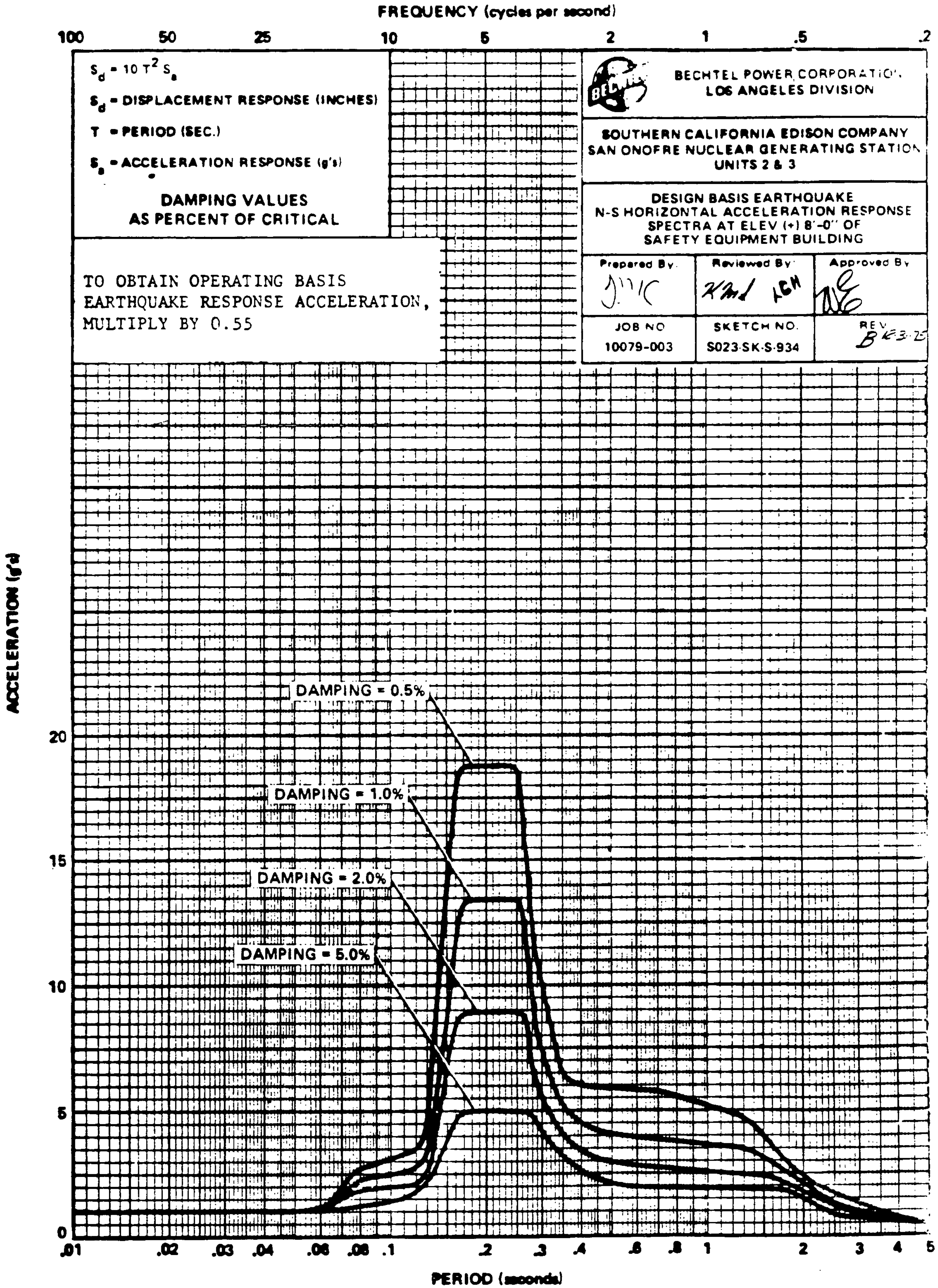
DAMPING VALUES
AS PERCENT OF CRITICAL

TO OBTAIN OPERATING BASIS EARTHQUAKE RESPONSE ACCELERATION, MULTIPLY BY 0.55




FREQUENCY (cycles per second)
100
50
25
10
5
2
1
.5
.2
$S_d = 10\,T^2 S_a$
S_d = DISPLACEMENT RESPONSE (INCHES)
T = PERIOD (SEC.)
S_a = ACCELERATION RESPONSE (g's)
DAMPING VALUES AS PERCENT OF CRITICAL
BECHTEL POWER CORPORATION LOS ANGELES DIVISION
SOUTHERN CALIFORNIA EDISON COMPANY
SAN ONOFRE NUCLEAR GENERATING STATION
UNITS 2 & 3
DESIGN BASIS EARTHQUAKE
N-S HORIZONTAL ACCELERATION RESPONSE SPECTRA AT ELEV (-) 15'-6" OF SAFETY EQUIPMENT BUILDING
(SAFETY INJECTION AREA)
Prepared By
Reviewed By
Approved By
LGH
JOB NO
10079-003
SKETCH NO.
S023-SK-S-932
REV
B
TO OBTAIN OPERATING BASIS EARTHQUAKE RESPONSE ACCELERATION, MULTIPLY BY 0.55
ACCELERATION (g's)
DAMPING = 0.5%
DAMPING = 1.0%
DAMPING = 2.0%
DAMPING = 5.0%
16
14
12
10
8
6
4
2
0
.01
.02
.03
.04
.06
.08
.1
.2
.3
.4
.6
.8
1
2
3
4
5
PERIOD (seconds)


FREQUENCY (cycles per second)
100
50
25
10
5
2
1
.5
.2
$S_d = 10 T^2 S_a$
S_d = DISPLACEMENT RESPONSE (INCHES)
T = PERIOD (SEC.)
S_a = ACCELERATION RESPONSE (g's)
DAMPING VALUES AS PERCENT OF CRITICAL
TO OBTAIN OPERATING BASIS EARTHQUAKE RESPONSE ACCELERATION, MULTIPLY BY 0.55
BECHTEL POWER CORPORATION
LOS ANGELES DIVISION
SOUTHERN CALIFORNIA EDISON COMPANY
SAN ONOFRE NUCLEAR GENERATING STATION
UNITS 2 & 3
DESIGN BASIS EARTHQUAKE
N-S HORIZONTAL ACCELERATION RESPONSE
SPECTRA AT ELEV (-) 5'-3" OF
SAFETY EQUIPMENT BUILDING
(COMPONENT COOLING AREA)
Prepared By
Reviewed By
Approved By
JOB NO
10079-003
SKETCH NO.
S023-SK-S-933
REV
B 12-31-75
DAMPING = 0.5%
DAMPING = 1.0%
DAMPING = 2.0%
DAMPING = 5.0%
ACCELERATION (g's)
20
15
10
5
0
.01
.02
.03
.04
.06
.08
.1
.2
.3
.4
.6
.8
1
2
3
4
5
PERIOD (seconds)


FREQUENCY (cycles per second)
100
50
25
10
5
2
1
.5
.2
$S_d = 10\,T^2\,S_a$
S_d = DISPLACEMENT RESPONSE (INCHES)
T = PERIOD (SEC.)
S_a = ACCELERATION RESPONSE (g's)
DAMPING VALUES
AS PERCENT OF CRITICAL
TO OBTAIN OPERATING BASIS
EARTHQUAKE RESPONSE ACCELERATION,
MULTIPLY BY 0.55
BECHTEL POWER CORPORATION
LOS ANGELES DIVISION
SOUTHERN CALIFORNIA EDISON COMPANY
SAN ONOFRE NUCLEAR GENERATING STATION
UNITS 2 & 3
DESIGN BASIS EARTHQUAKE
N-S HORIZONTAL ACCELERATION RESPONSE
SPECTRA AT ELEV (+) 8'-0" OF
SAFETY EQUIPMENT BUILDING
Prepared By
Reviewed By
Approved By
JOB NO
10079-003
SKETCH NO.
S023-SK-S-934
REV
B
DAMPING = 0.5%
DAMPING = 1.0%
DAMPING = 2.0%
DAMPING = 5.0%
ACCELERATION (g's)
20
15
10
5
0
.01
.02
.03
.04
.06
.08
.1
.2
.3
.4
.6
.8
1
2
3
4
5
PERIOD (seconds)

BECHTEL POWER CORPORATION
LOS ANGELES DIVISION

SOUTHERN CALIFORNIA EDISON COMPANY
SAN ONOFRE NUCLEAR GENERATING STATION
UNITS 2 & 3

DESIGN BASIS EARTHQUAKE
VERTICAL ACCELERATION RESPONSE
SPECTRA AT ELEV (-) 15'-6" OF
SAFETY EQUIPMENT BUILDING
(SAFETY INJECTION AREA)

Prepared By	Reviewed By	Approved By
JDIC	KMd KGH	WG
JOB NO	SKETCH NO.	REV
10079-003	S023-SK-S-937	B 12-31-75

$S_d = 10\,T^2 S_a$

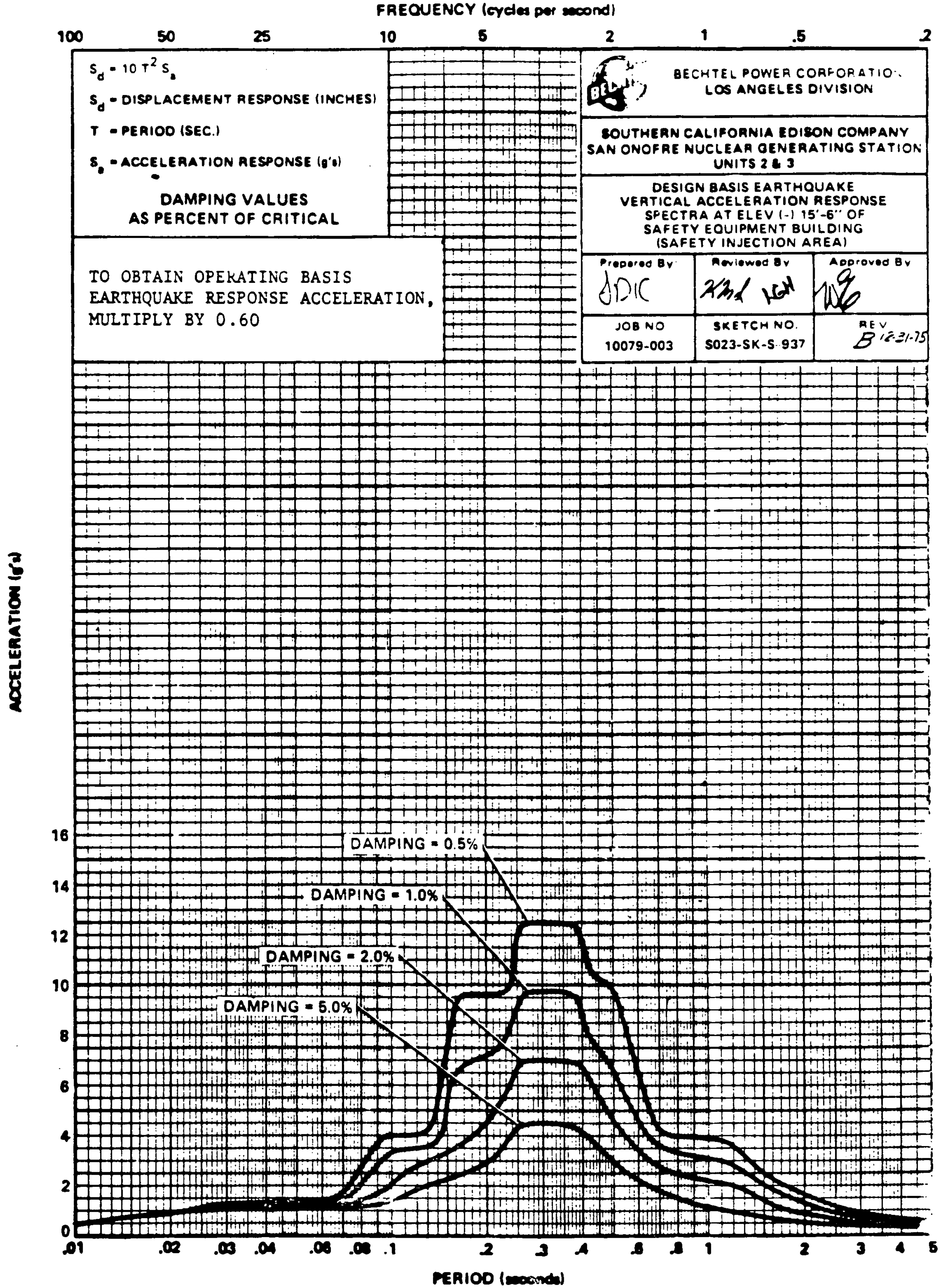
S_d = DISPLACEMENT RESPONSE (INCHES)

T = PERIOD (SEC.)

S_a = ACCELERATION RESPONSE (g's)

DAMPING VALUES
AS PERCENT OF CRITICAL

TO OBTAIN OPERATING BASIS EARTHQUAKE RESPONSE ACCELERATION, MULTIPLY BY 0.60



$S_d = 10\,T^2\,S_a$

S_d = DISPLACEMENT RESPONSE (INCHES)

T = PERIOD (SEC.)

S_a = ACCELERATION RESPONSE (g's)

DAMPING VALUES
AS PERCENT OF CRITICAL

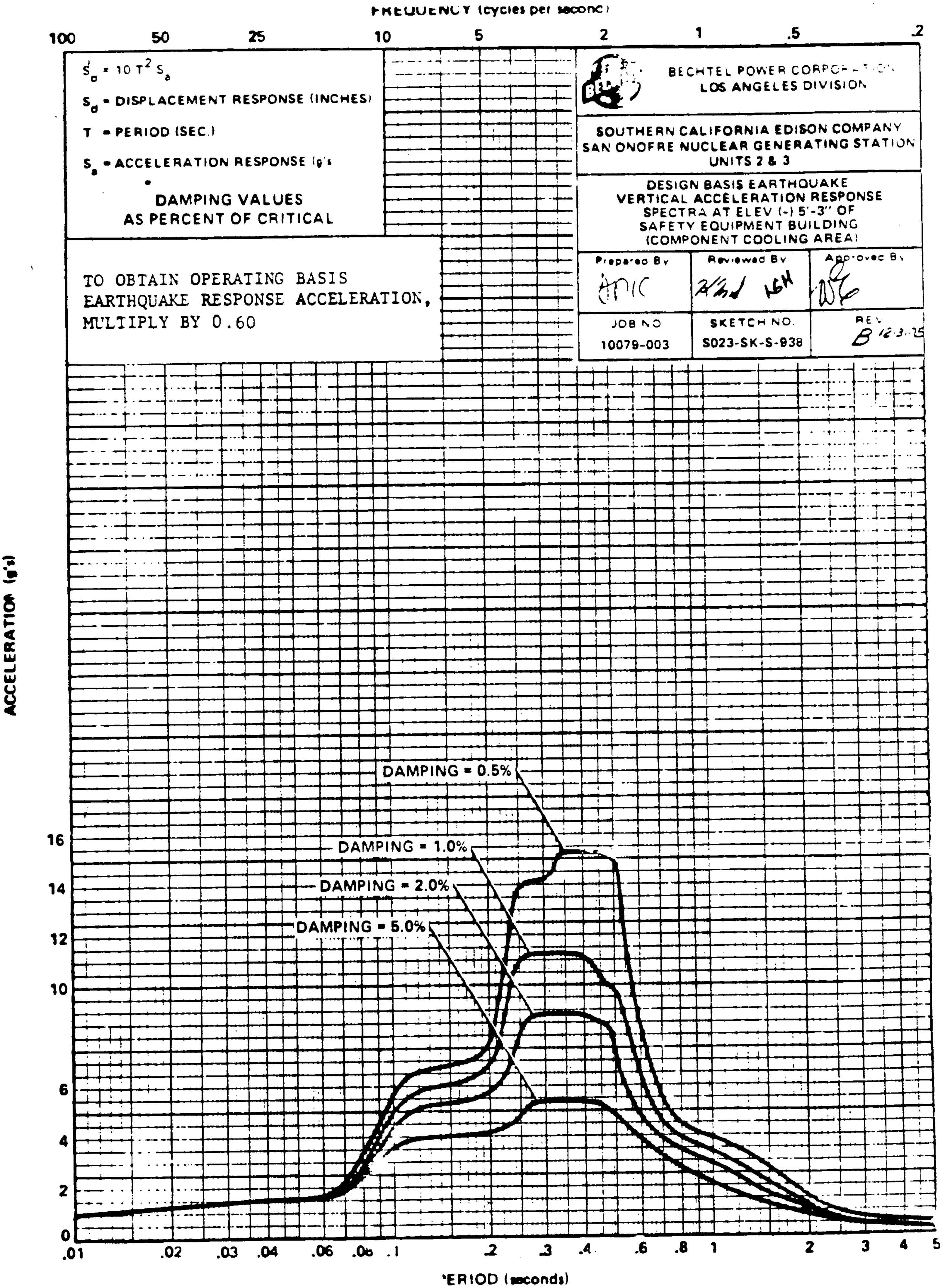
TO OBTAIN OPERATING BASIS EARTHQUAKE RESPONSE ACCELERATION, MULTIPLY BY 0.60

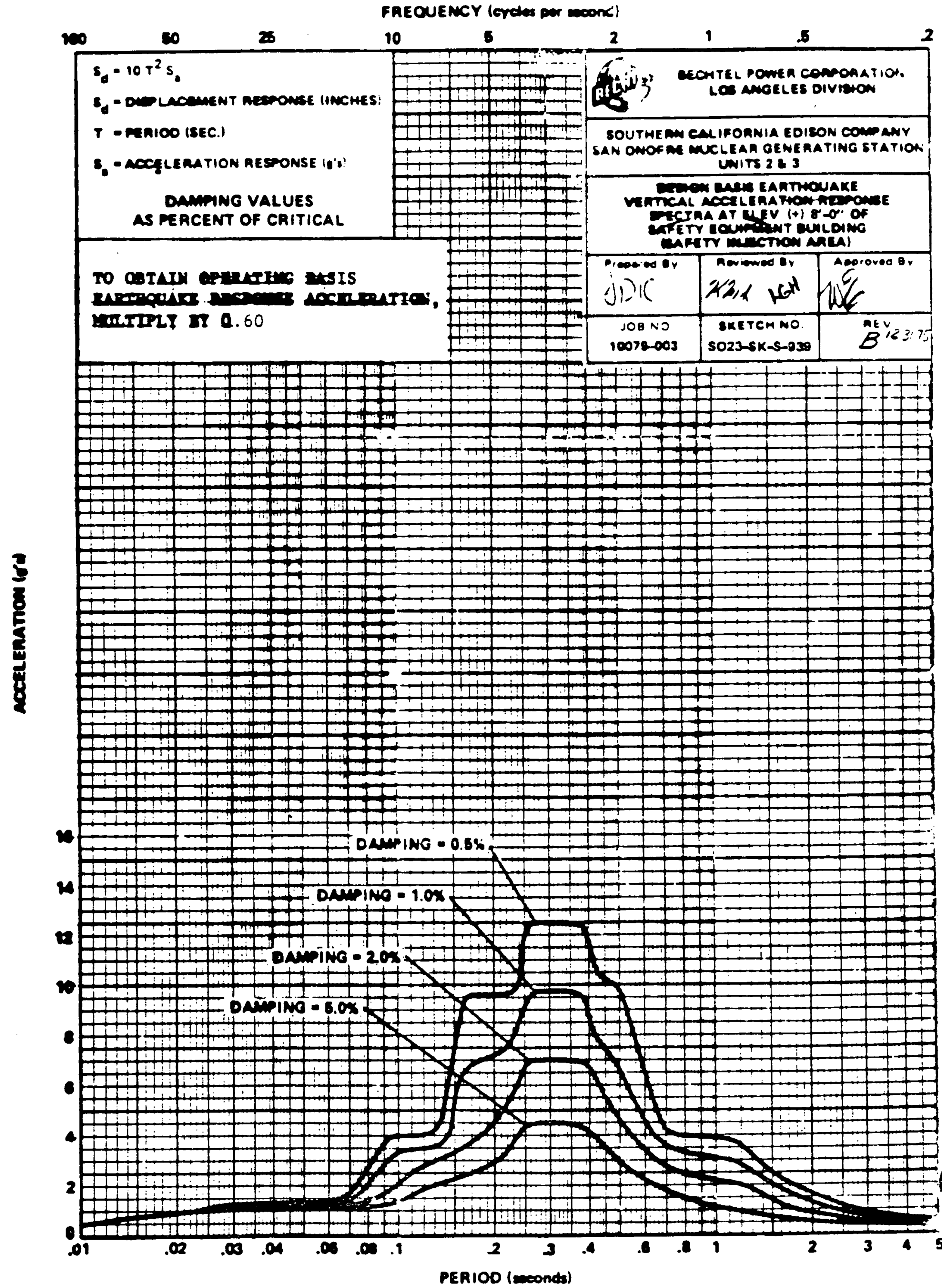
BECHTEL POWER CORPORATION
LOS ANGELES DIVISION

SOUTHERN CALIFORNIA EDISON COMPANY
SAN ONOFRE NUCLEAR GENERATING STATION
UNITS 2 & 3

DESIGN BASIS EARTHQUAKE
VERTICAL ACCELERATION RESPONSE
SPECTRA AT ELEV (-) 5'-3" OF
SAFETY EQUIPMENT BUILDING
(COMPONENT COOLING AREA)

Prepared By	Reviewed By	Approved By
AMC		
JOB NO	SKETCH NO.	REV
10079-003	S023-SK-S-938	B 12-3-75

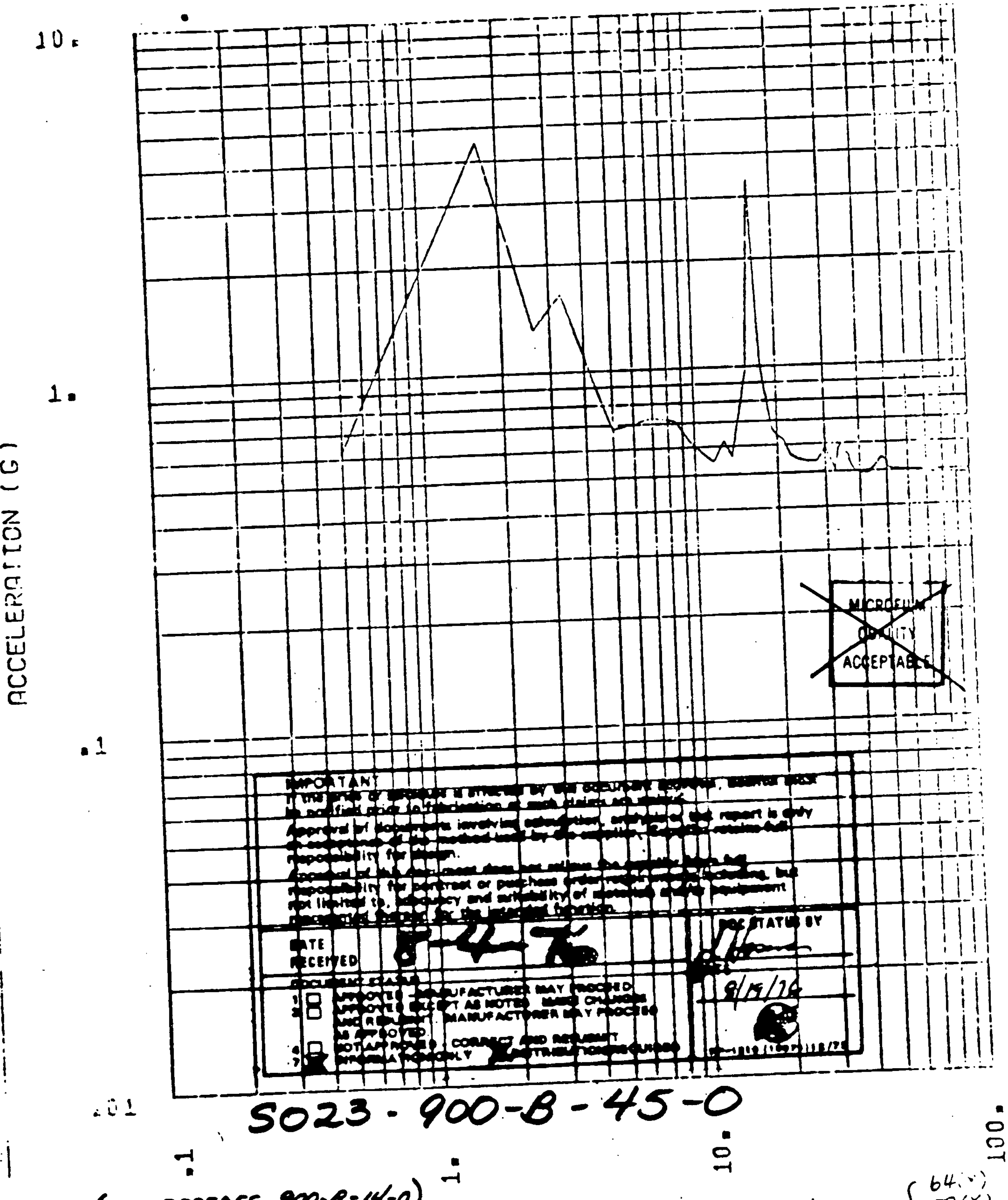



FREQUENCY (cycles per second)
100
50
25
10
5
2
1
.5
.2
$S_d = 10\,T^2\,S_a$
S_d = DISPLACEMENT RESPONSE (INCHES)
T = PERIOD (SEC.)
S_a = ACCELERATION RESPONSE (g's)
DAMPING VALUES AS PERCENT OF CRITICAL
TO OBTAIN OPERATING BASIS EARTHQUAKE RESPONSE ACCELERATION, MULTIPLY BY 0.60
BECHTEL POWER CORPORATION
LOS ANGELES DIVISION
SOUTHERN CALIFORNIA EDISON COMPANY
SAN ONOFRE NUCLEAR GENERATING STATION
UNITS 2 & 3
DESIGN BASIS EARTHQUAKE
VERTICAL ACCELERATION RESPONSE
SPECTRA AT ELEV (+) 8'-0" OF
SAFETY EQUIPMENT BUILDING
(SAFETY INJECTION AREA)
Prepared By
Reviewed By
Approved By
JOB NO
10079-003
SKETCH NO.
SO23-SK-S-939
REV
B 12-3-75
DAMPING = 0.5%
DAMPING = 1.0%
DAMPING = 2.0%
DAMPING = 5.0%
ACCELERATION (g's)
16
14
12
10
8
6
4
2
0
.01
.02
.03
.04
.06
.08
.1
.2
.3
.4
.6
.8
1
2
3
4
5
PERIOD (seconds)

SCE SURGE LINE NO2. X-RESPONSE DUE TO X-ORE .01 DAMPING

COMPLETE ...

"THIS DOCUMENT HAS BEEN REVIEWED BY THE CE SAN ONOFRE UNITS 2 AND 3 PROJECT OFFICE AND IS CONSIDERED TO BE HIGH CONFIDENCE LEVEL INFORMATION."



S023-900-B-45-0

(SUPERSEDES 900-B-14-0)

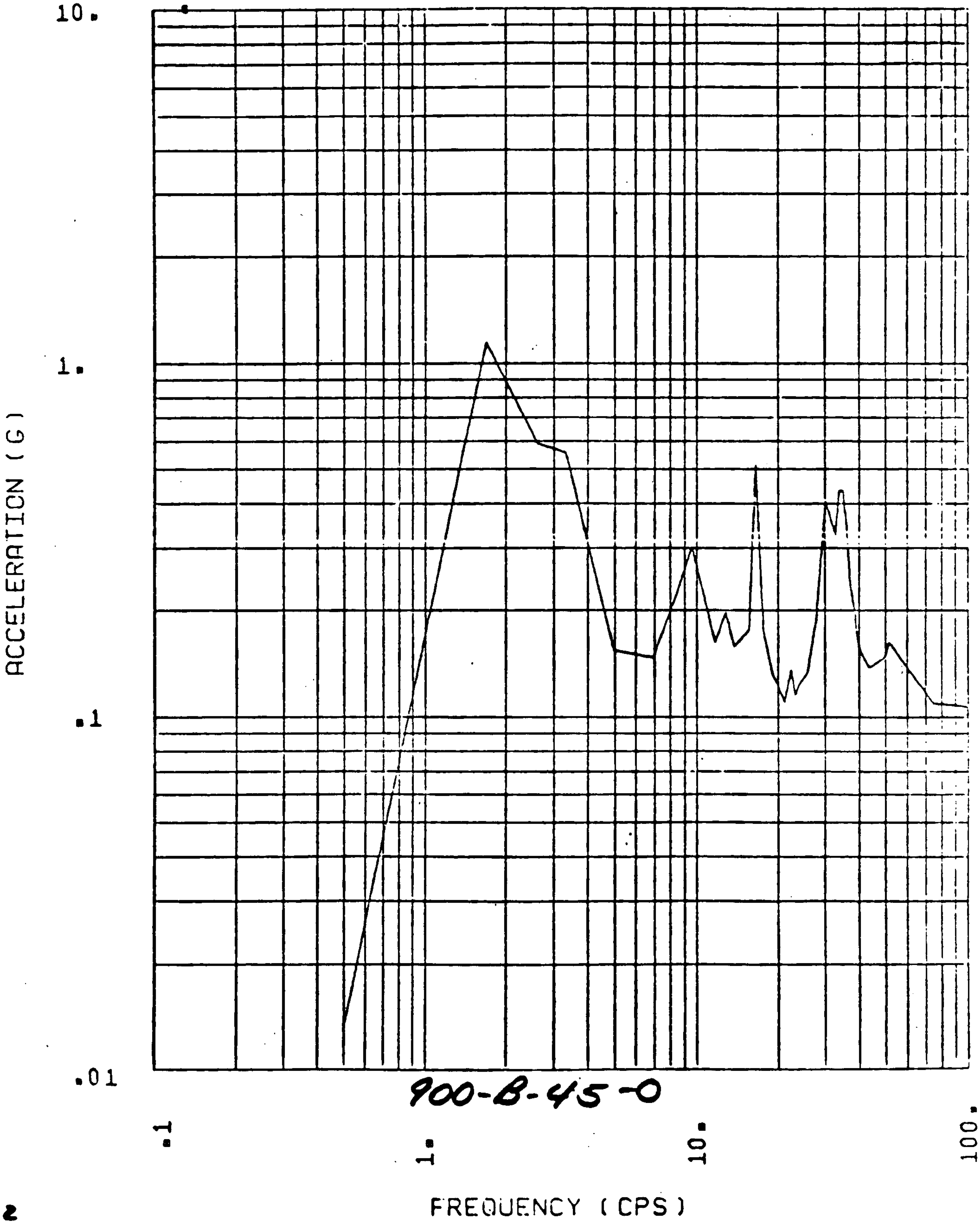
Total 187 { 64(X) 58(Y)

X-1

SCE SURGE LINE NOZ. Y-RESPONSE DUE TO X-OBE .01 DAMPING

COUPLED MODEL

"THIS DOCUMENT HAS BEEN REVIEWED BY THE CE SAN ONOFRE UNITS 2 AND 3 PROJECT OFFICE AND IS CONSIDERED TO BE HIGH CONFIDENCE LEVEL INFORMATION."



900-B-45-0

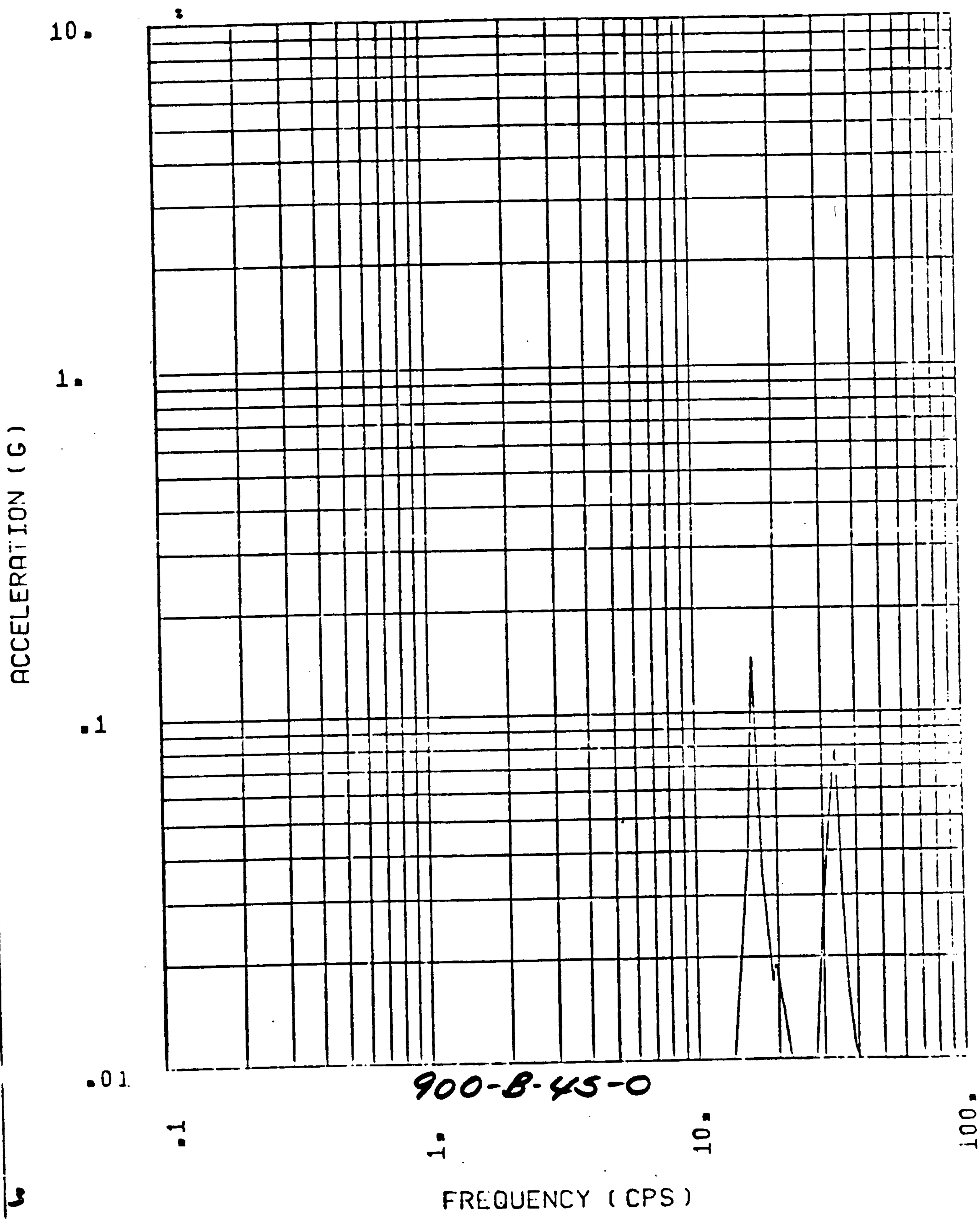
2

x-2

SCE SURGE LINE NOZ. Z-RESPONSE DUE TO X-OBE .01 DAMPING

COUPLED MODEL

"THIS DOCUMENT HAS BEEN REVIEWED BY THE CE SAN ONOFRE UNITS 2 AND 3 PROJECT OFFICE AND IS CONSIDERED TO BE HIGH CONFIDENCE LEVEL INFORMATION."

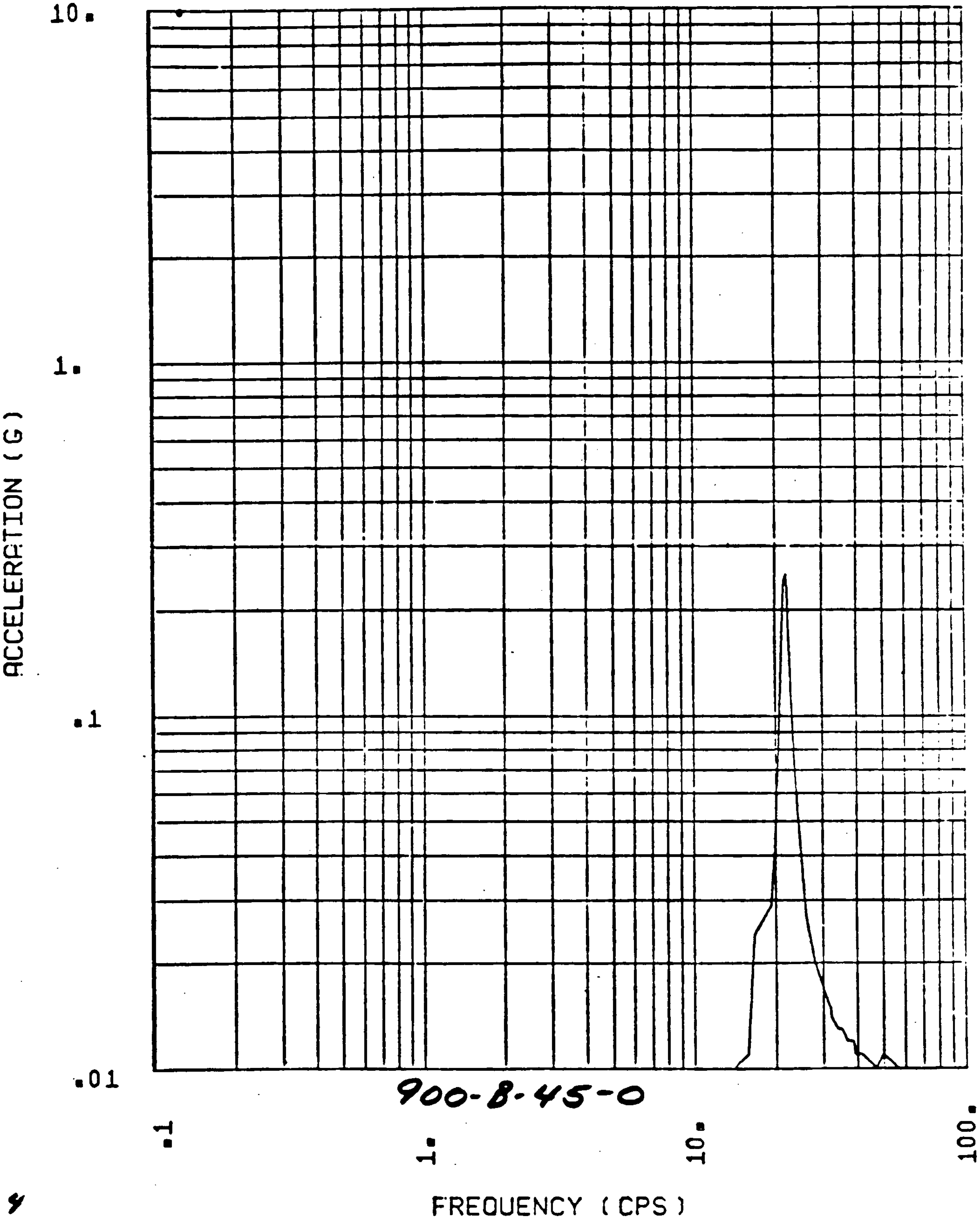


900-8-45-0

SCE SURGE LINE NOZ. X-RESPONSE DUE TO Y-OBE .01 DAMPING

COUPLED MODEL

"THIS DOCUMENT HAS BEEN REVIEWED BY THE CE SAN ONOFRE UNITS 2 AND 3 PROJECT OFFICE AND IS CONSIDERED TO BE HIGH CONFIDENCE LEVEL INFORMATION."



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4

Y-1

SCE SURGE LINE NOZ. Y-RESPONSE DUE TO Y-OBE .01 DAMPING

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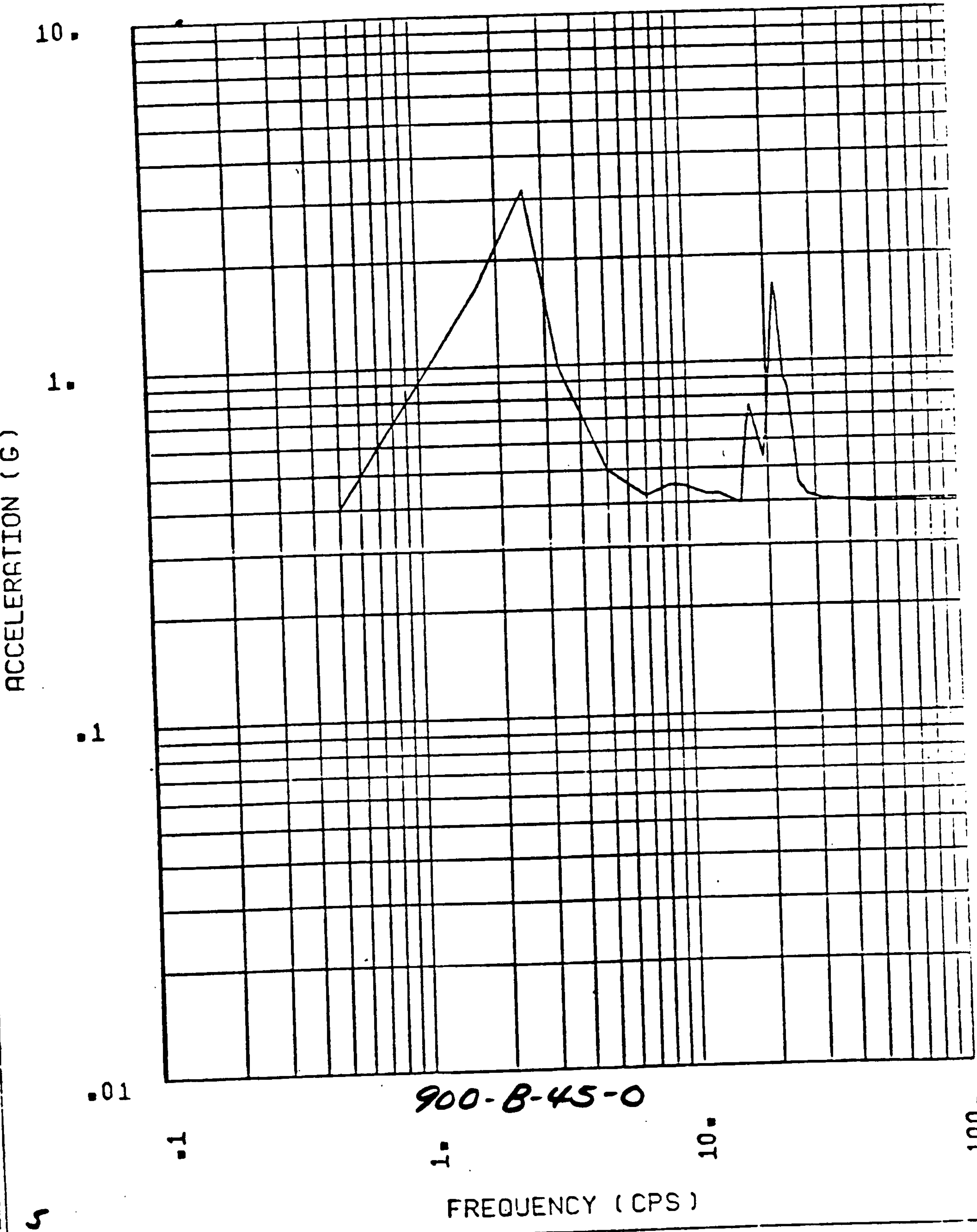

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SCE SURGE LINE NOZ. X-RESPONSE FOR Z-OBE, .01 DAMPING

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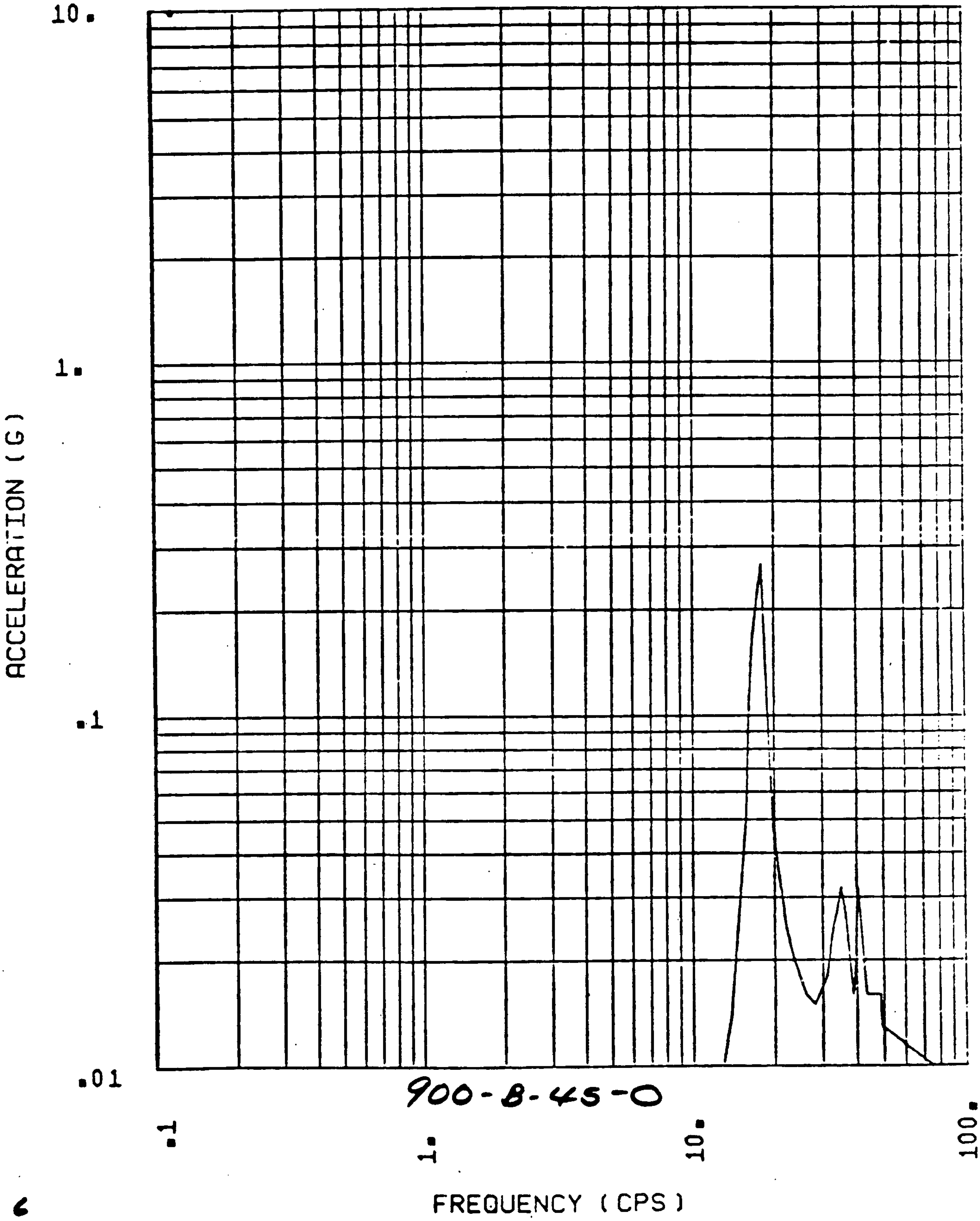

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6

Z-1

SCE SURGE LINE NOZ. Y-RESPONSE FOR Z-OBE, .01 DAMPING

Coupled Model

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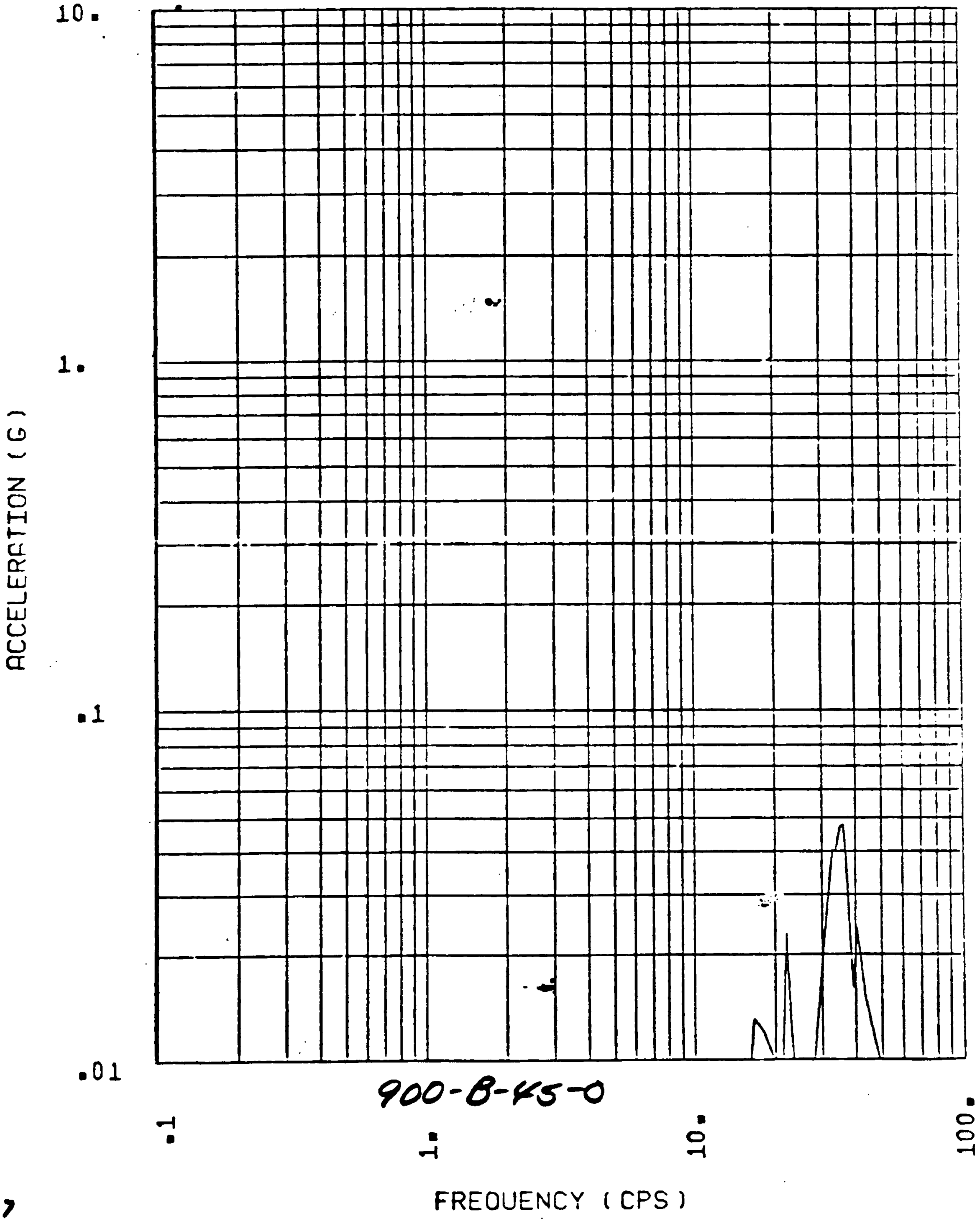

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Z-2

SCE SURGE LINE NOZ. Z-RESPONSE FOR Z-OBE, .01 DAMPING

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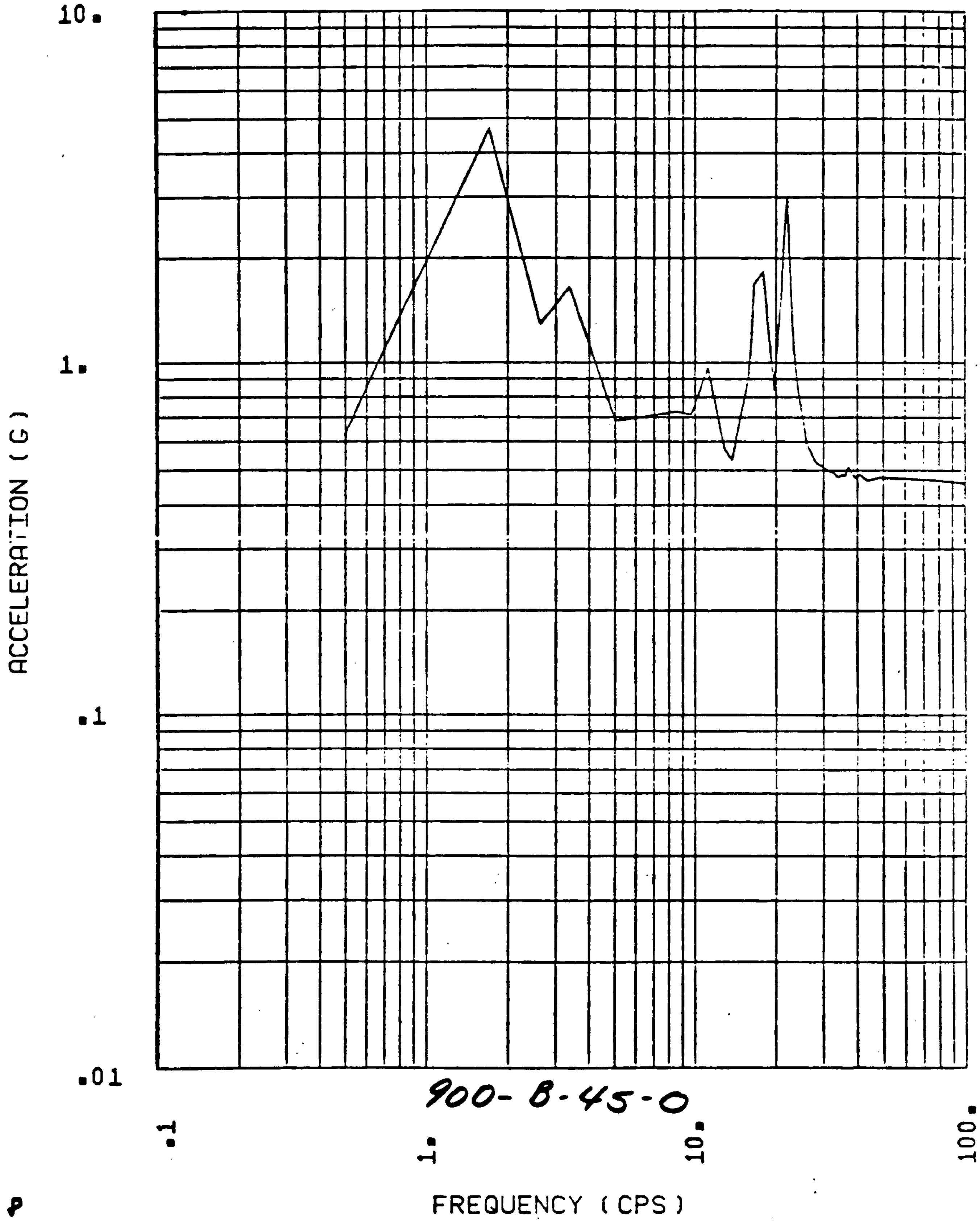

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Z-3

SCE SHUTDOWN COOLING NOT... X-RESPONSE DUE TO X-ORE .02 DAMPING

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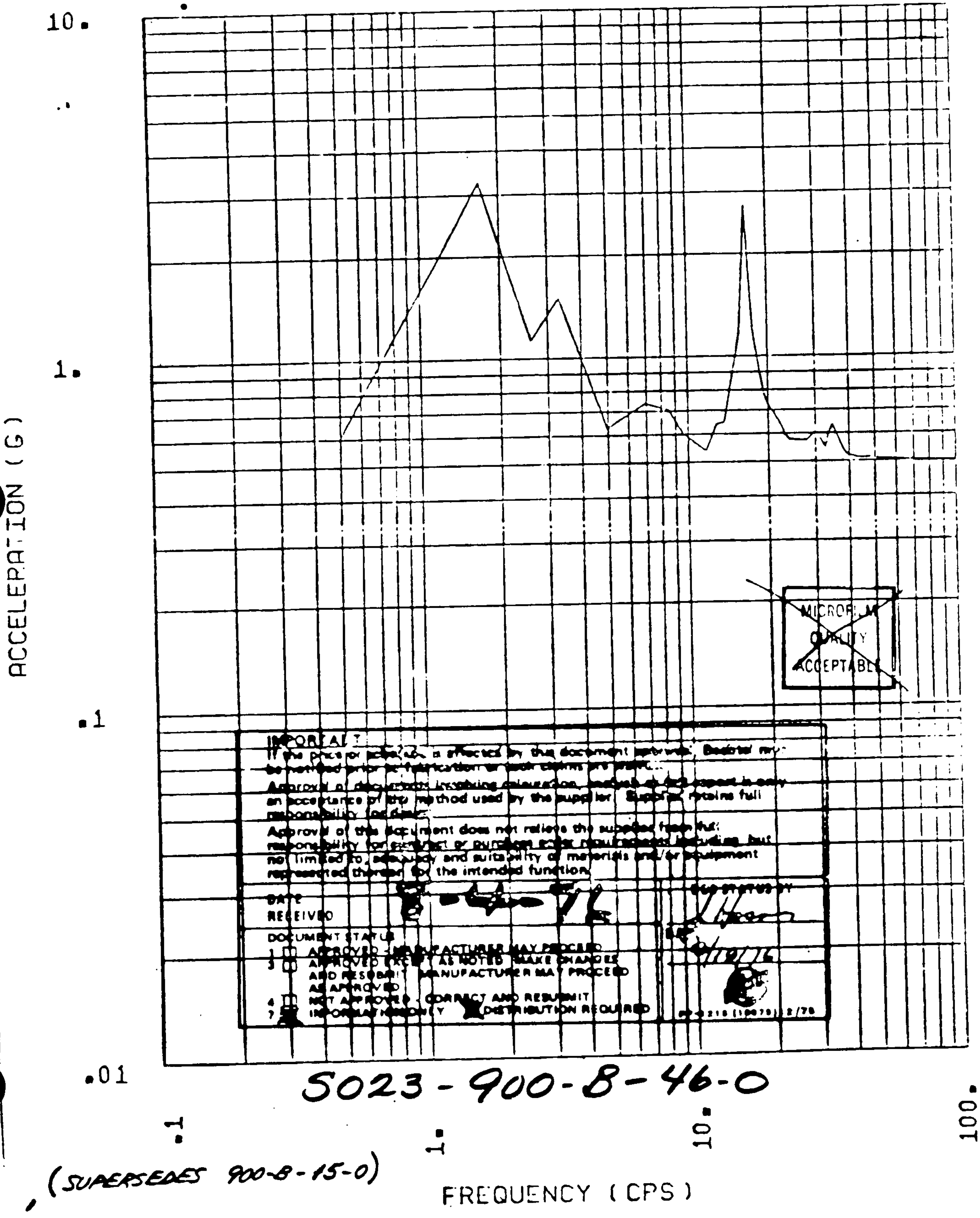

S023-900-8-46-0

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SCE SHUTDOWN COOLING NOZ. UL. Y-RESPONSE DUE TO X-OBE .02 DAMPING

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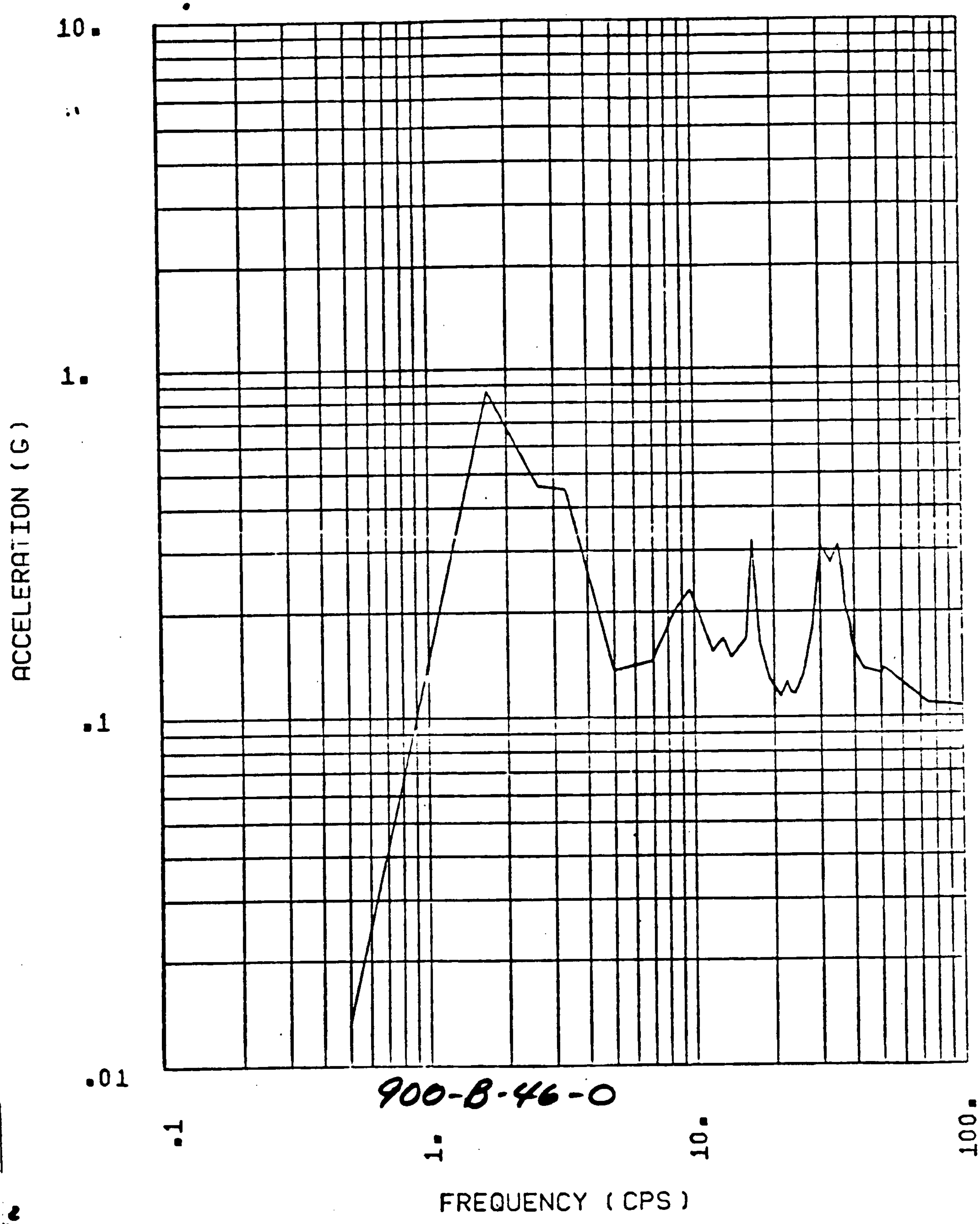

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x-6

SCE SHUTDOWN COOLING NOZ.,HL, Z-RESPONSE DUE TO X-OBE .02 DAMPING

COUPLED MODEL

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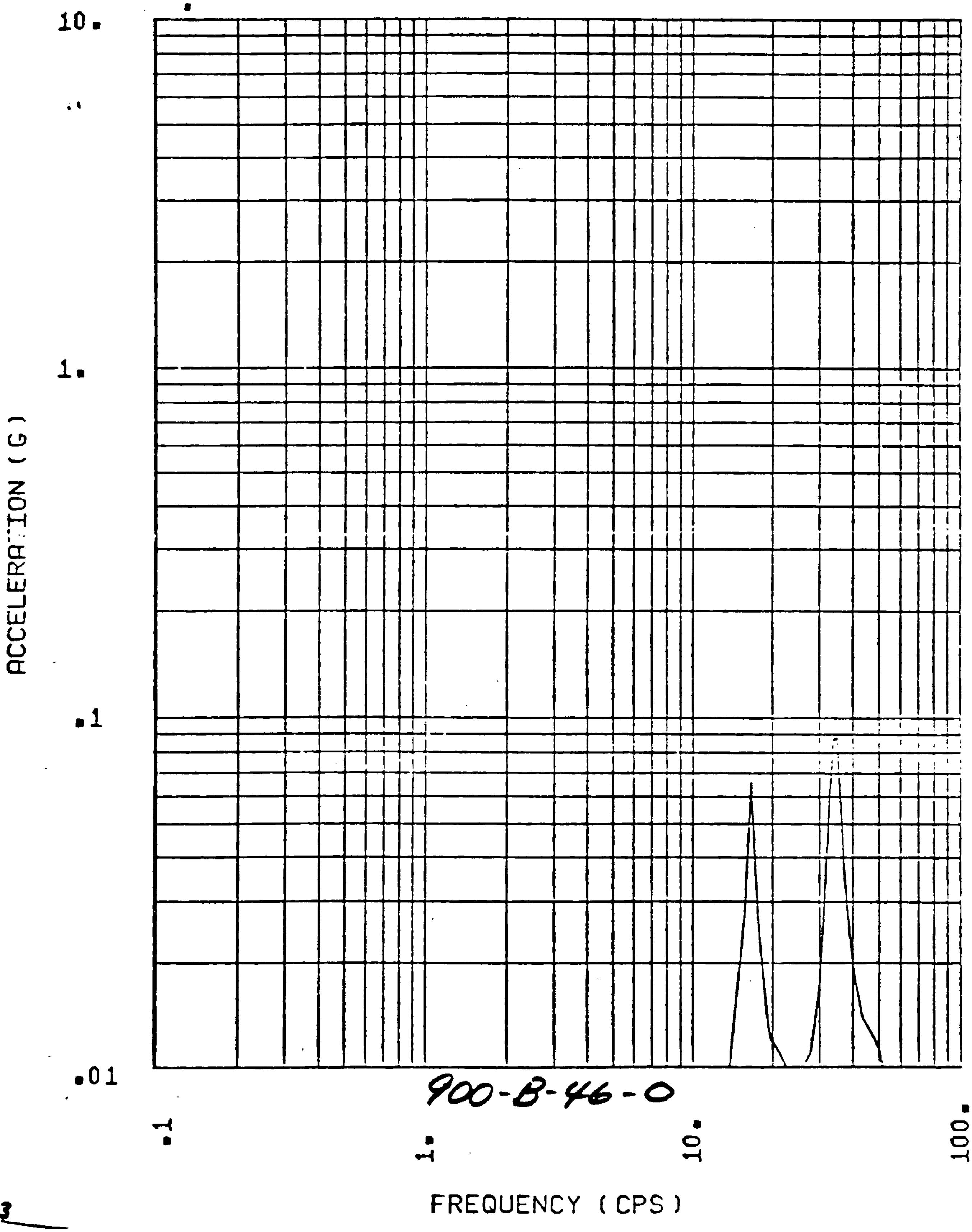

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3

SCE SHUTDOWN COOLING NOZ.,HL, X-RESPONSE DUE TO Y-OBE .02 DAMPING

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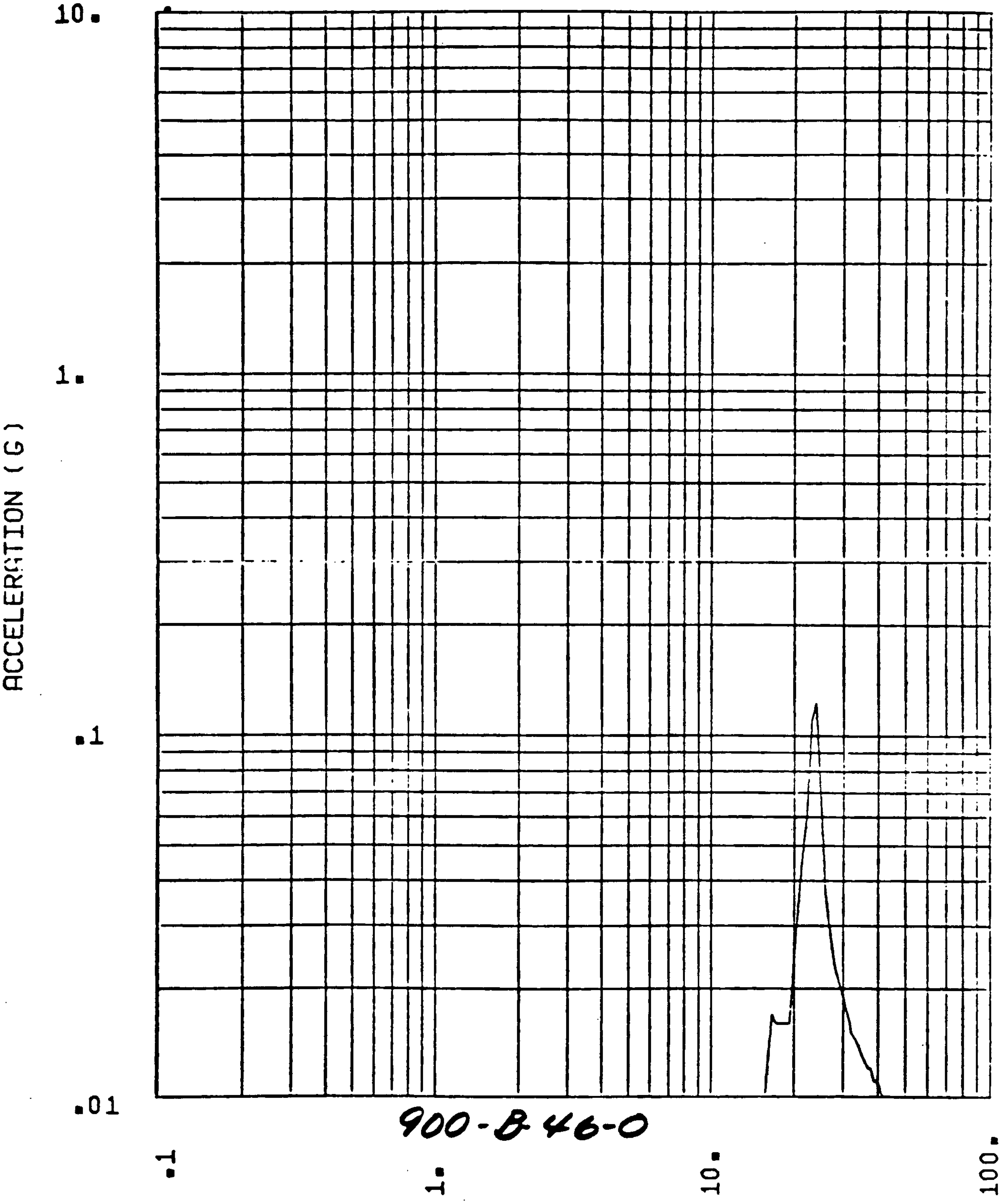

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4

Y-

SCE SHUTDOWN COOLING NOZ.,HL, Y-RESPONSE DUE TO Y-OBE .02 DAMPING 1A

COUPLED MODEL

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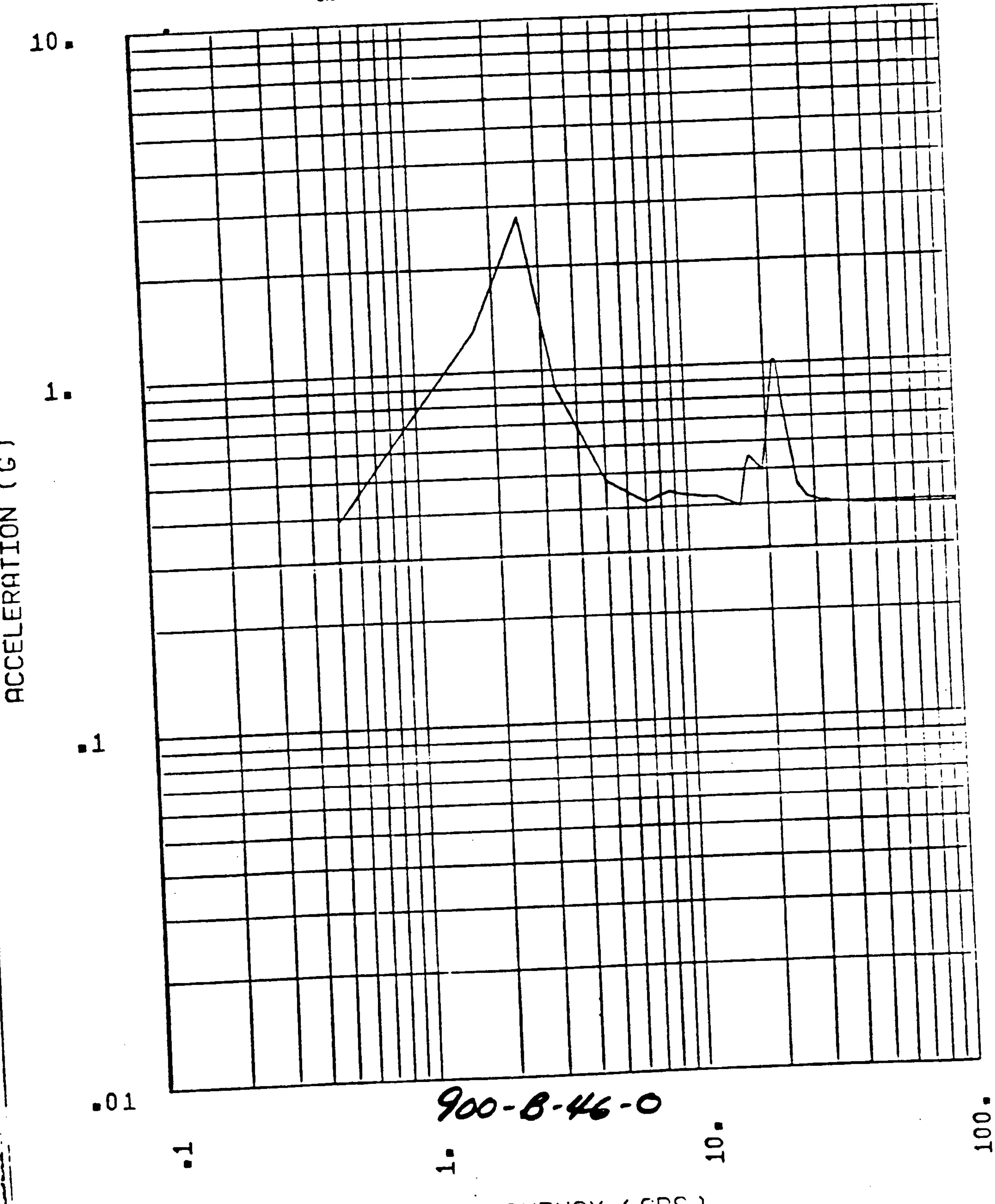

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5

SCE SHUTDOWN COOLING NOZ.,HL, X-RESPONSE DUE TO Z-OBE .02 DAMPING A

Coupled model

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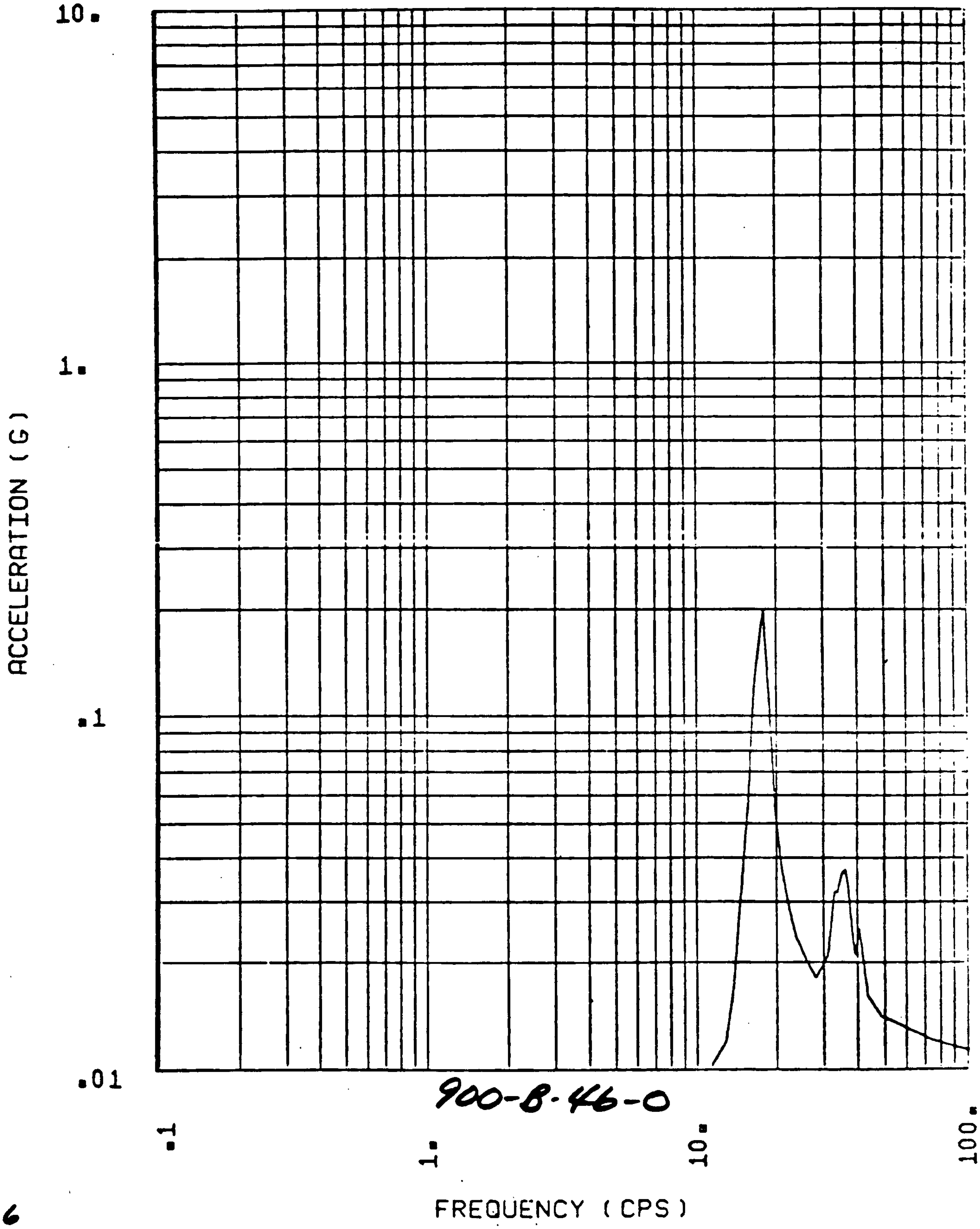

900-8-46-0

Z-4

6

SCE SHUTDOWN COOLING NOZ.,HL, Y-RESPONSE DUE TO Z-OBE .02 DAMPING

Coupled model

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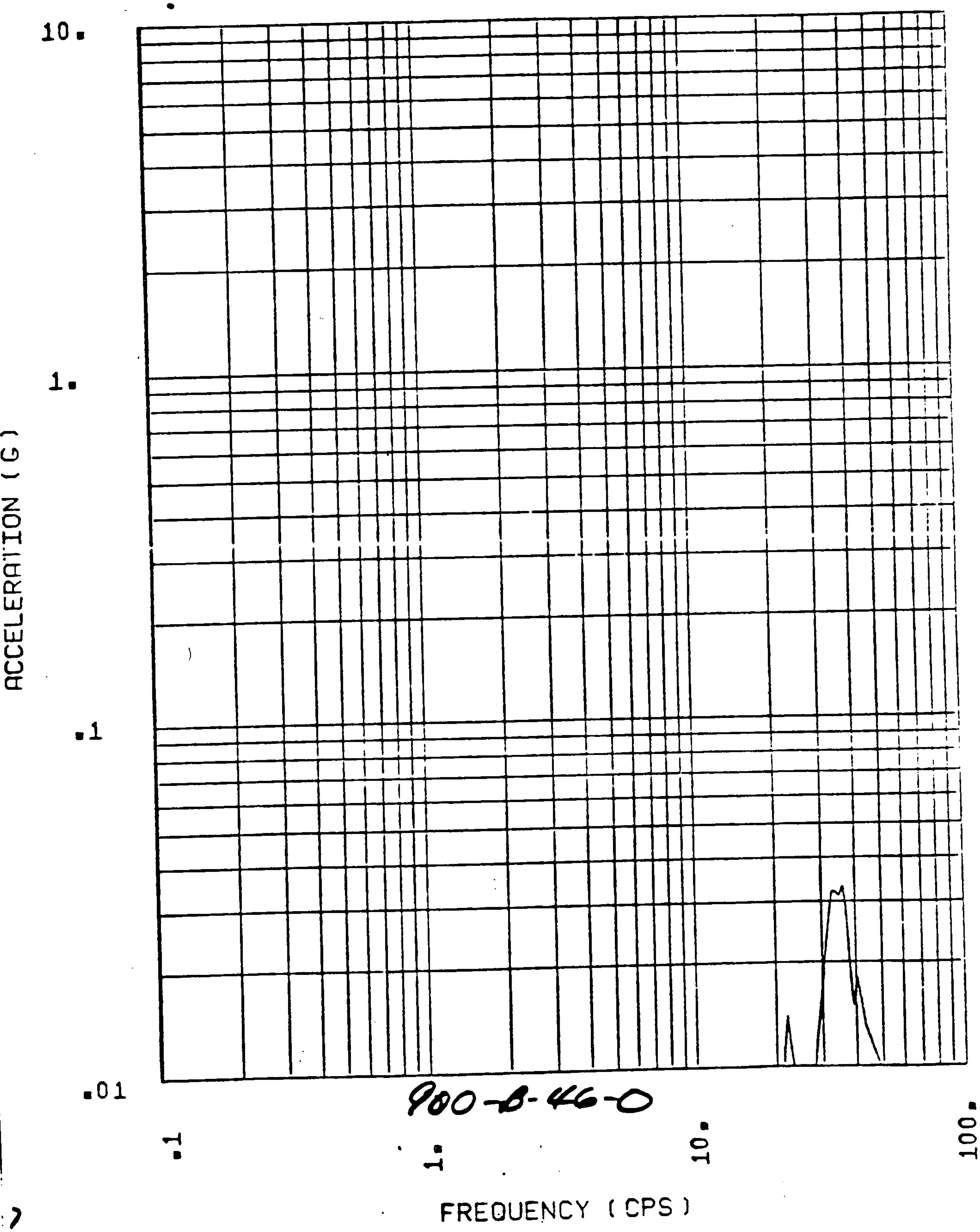

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7-6

SCE SHUTDOWN COOLING NOZ.,HL, Z-RESPONSE DUE TO Z-OBE .02 DAMPING

Coupled model

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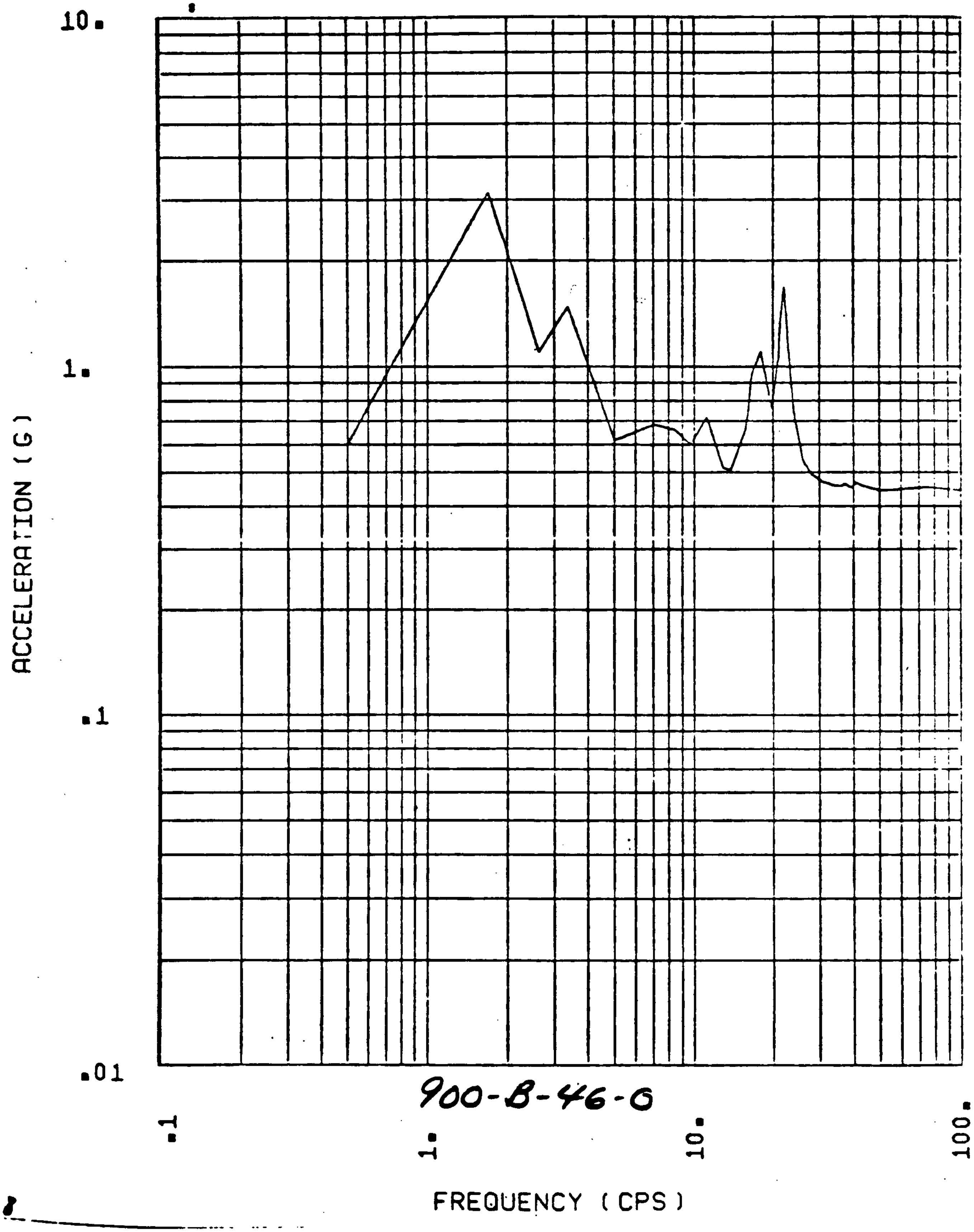

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SCE SHUTDOWN COOLING NOZ. X-RESPONSE DUE TO X-OBE .02 DAMPING

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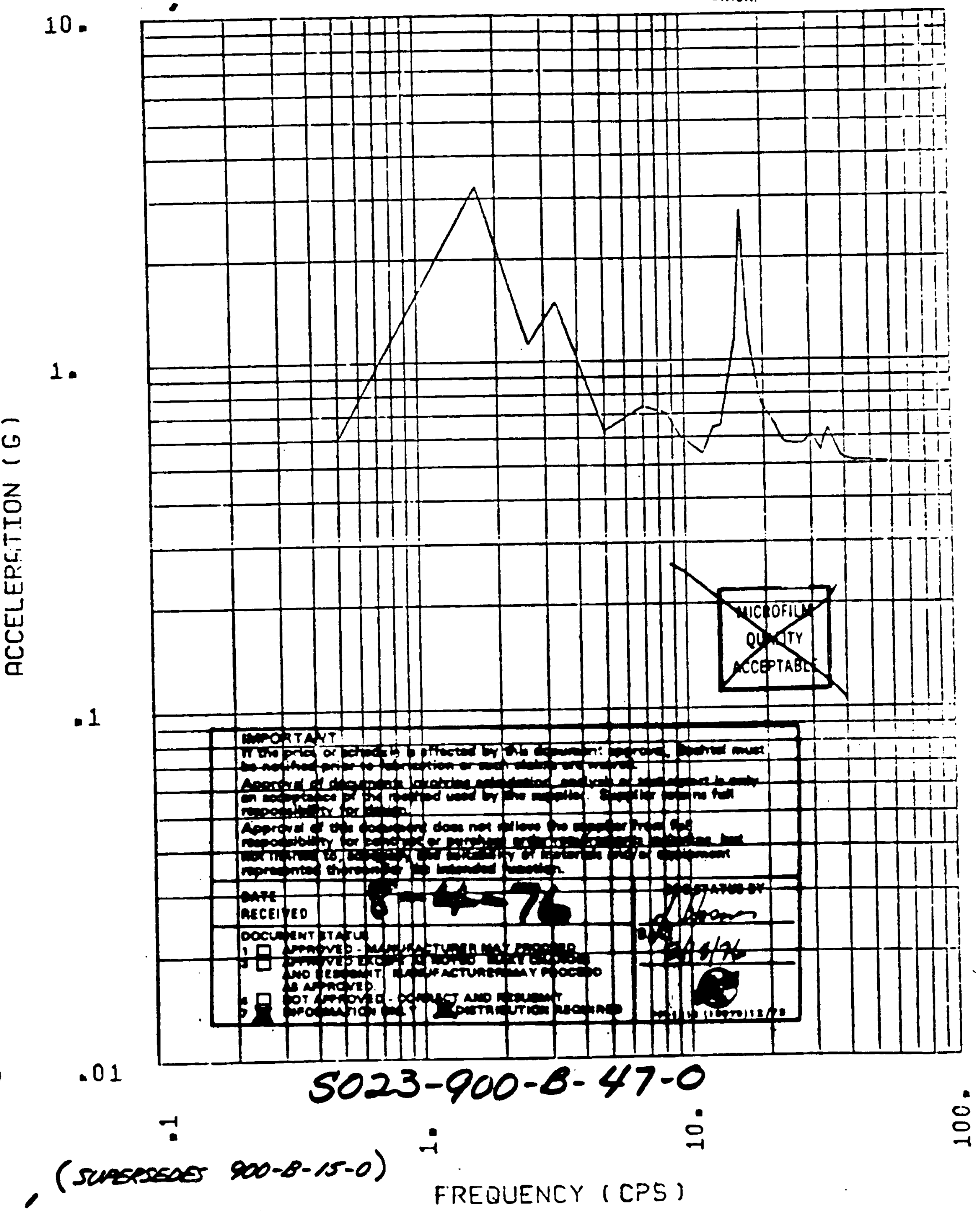

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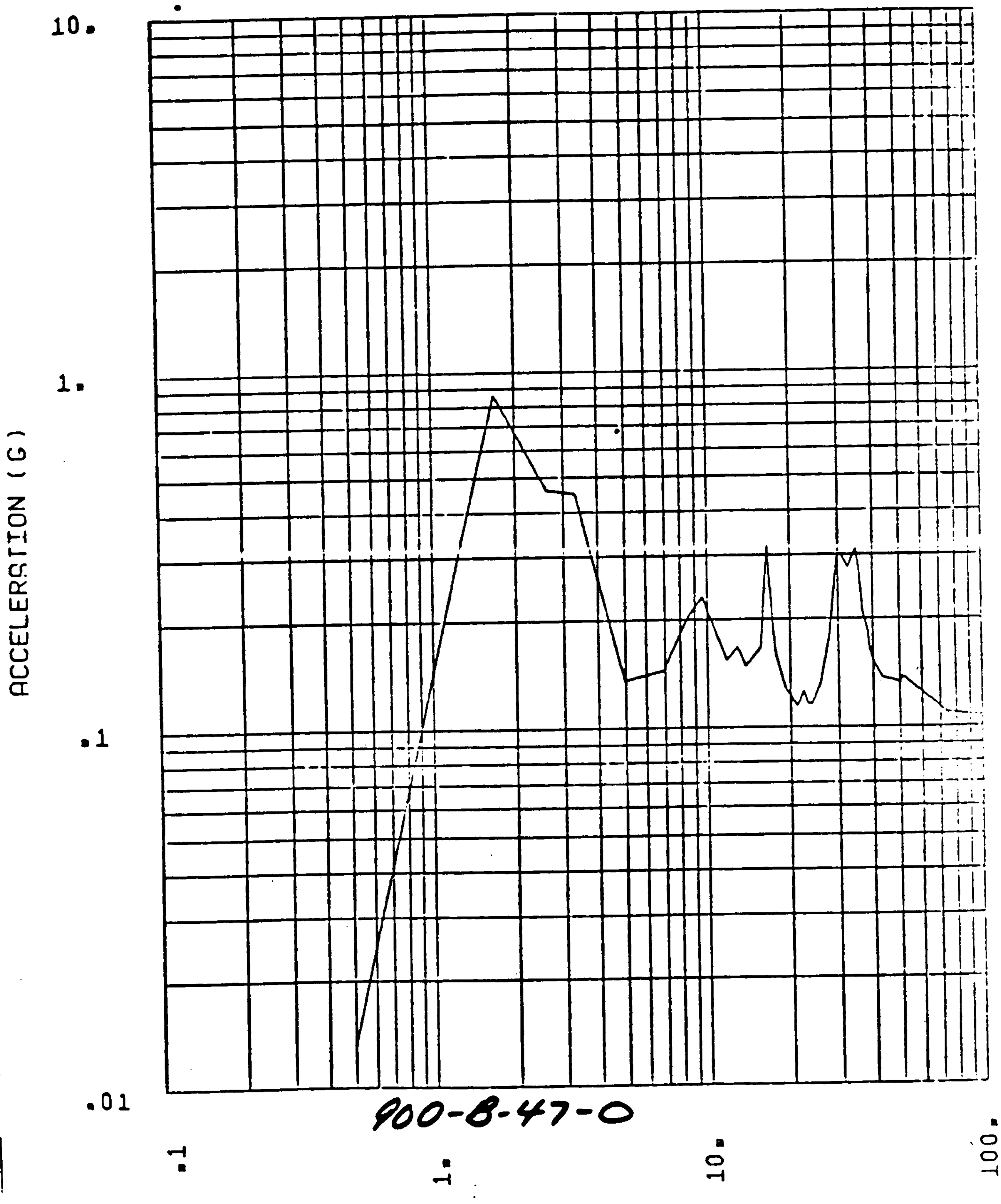

900-8-47-0

X-7

2

SCE SHUTDOWN COOLING NOZ. Z-RESPONSE DUE TO X-OBE .02 DAMPING 12

COUPLED MODEL

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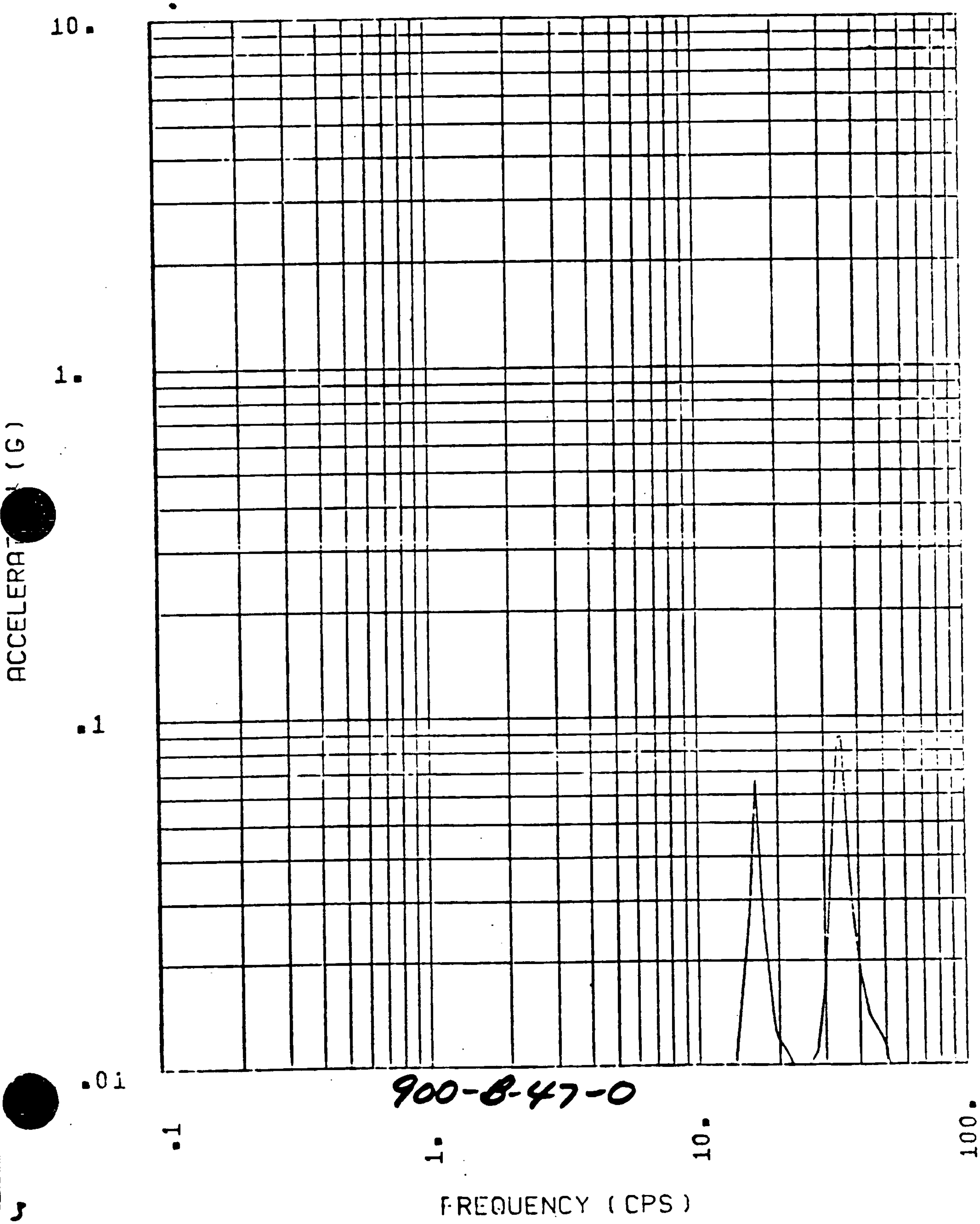

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X-9

SCE SHUTDOWN COOLING NOZ. X-RESPONSE DUE TO Y-OBE .02 DAMPING

COUPLED MOD

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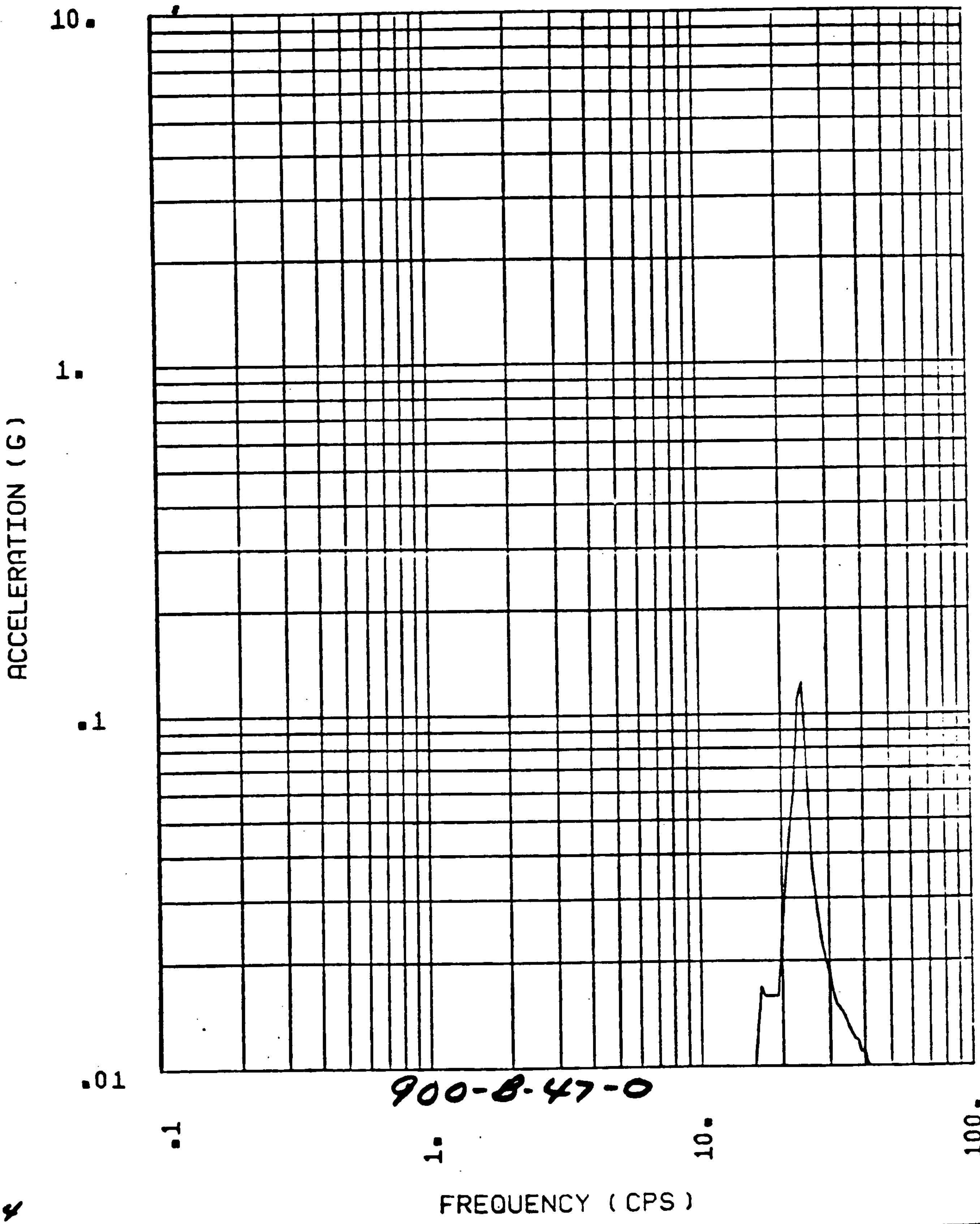

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Y-4

4

SCE SHUTDOWN COOLING NOZ. Y-RESPONSE DUE TO Y-OBE .02 DAMPING 1F

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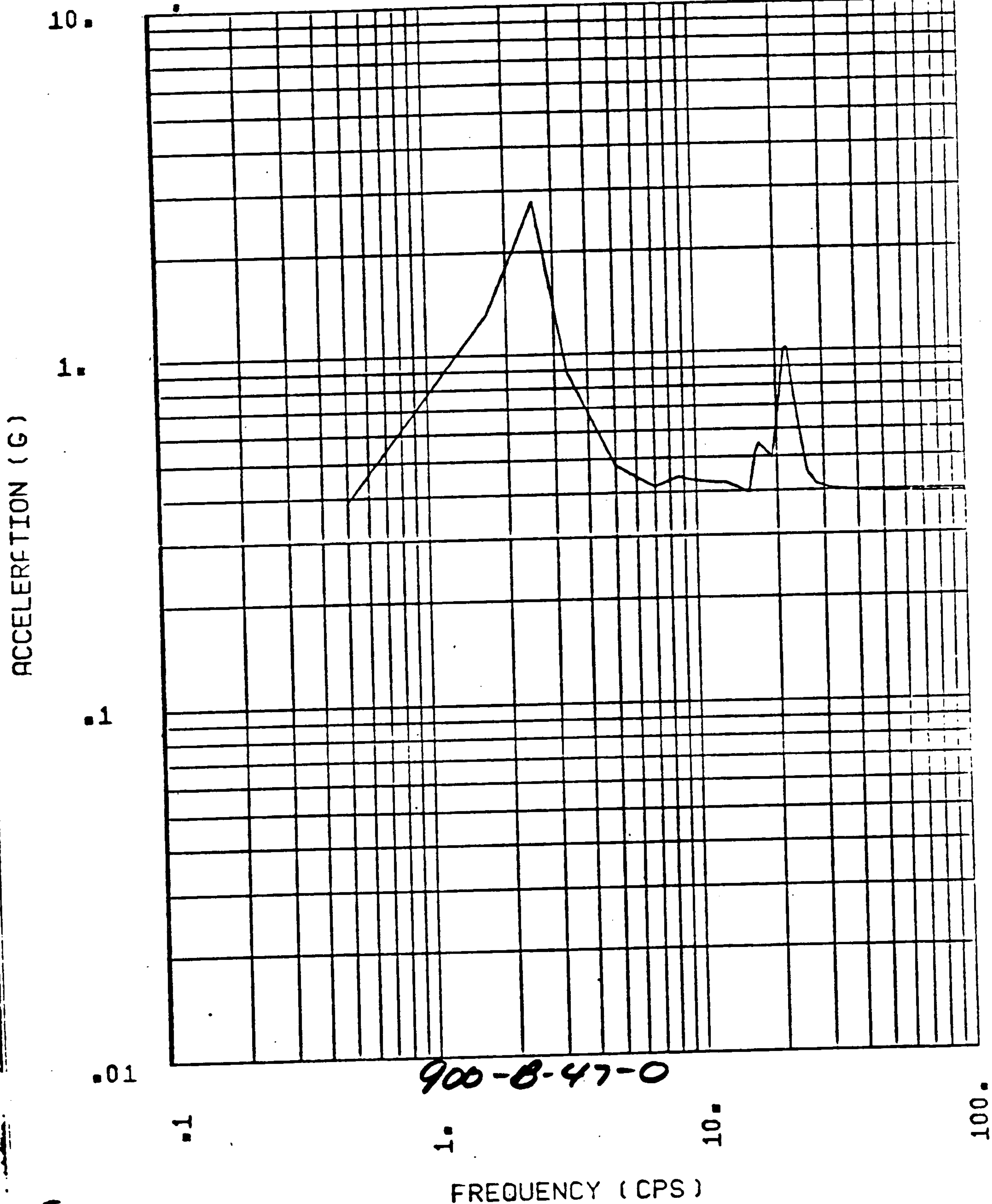

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Y-6

5

SCE SHUTDOWN COOLING NOZ. X-RESPONSE FOR Z-OBE, .02 DAMPING

Coupled model

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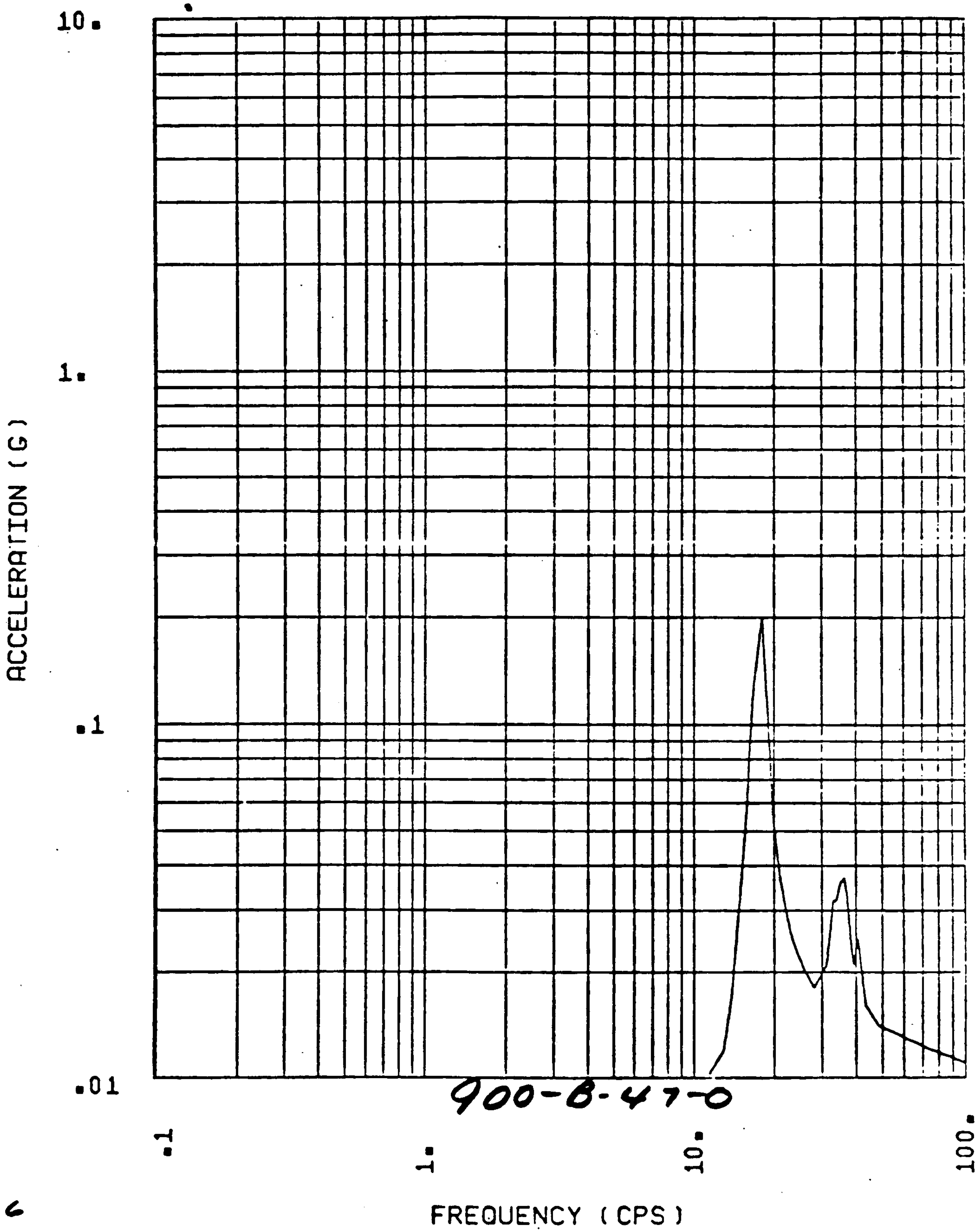

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6

Z-5

SCE SHUTDOWN COOLING NOZ. Y-RESPONSE FOR Z-OBE, .02 DAMPING

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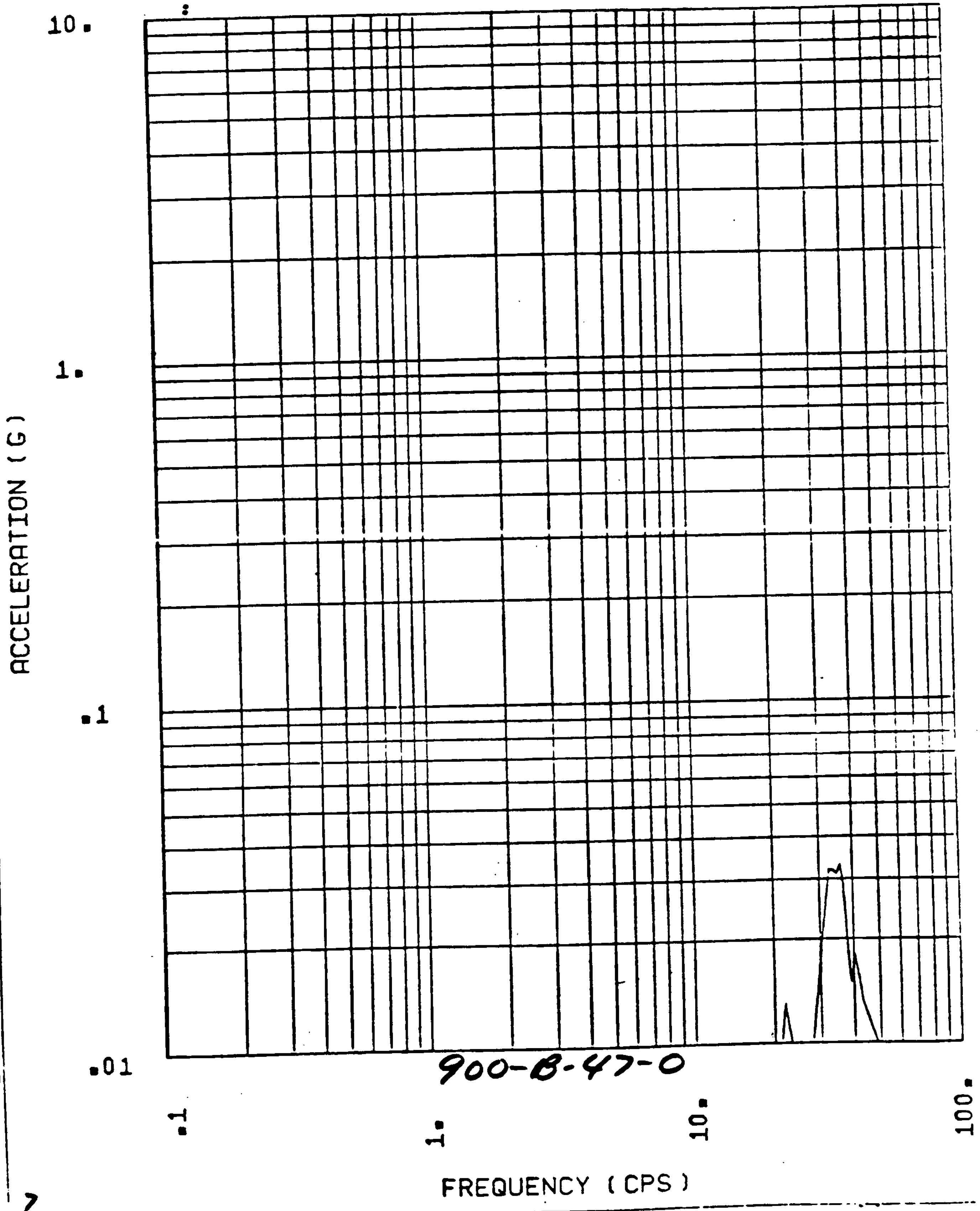

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SCE SHUTDOWN COOLING NOZ. Z-RESPONSE FOR Z-OBE, .02 DAMPING 1Q

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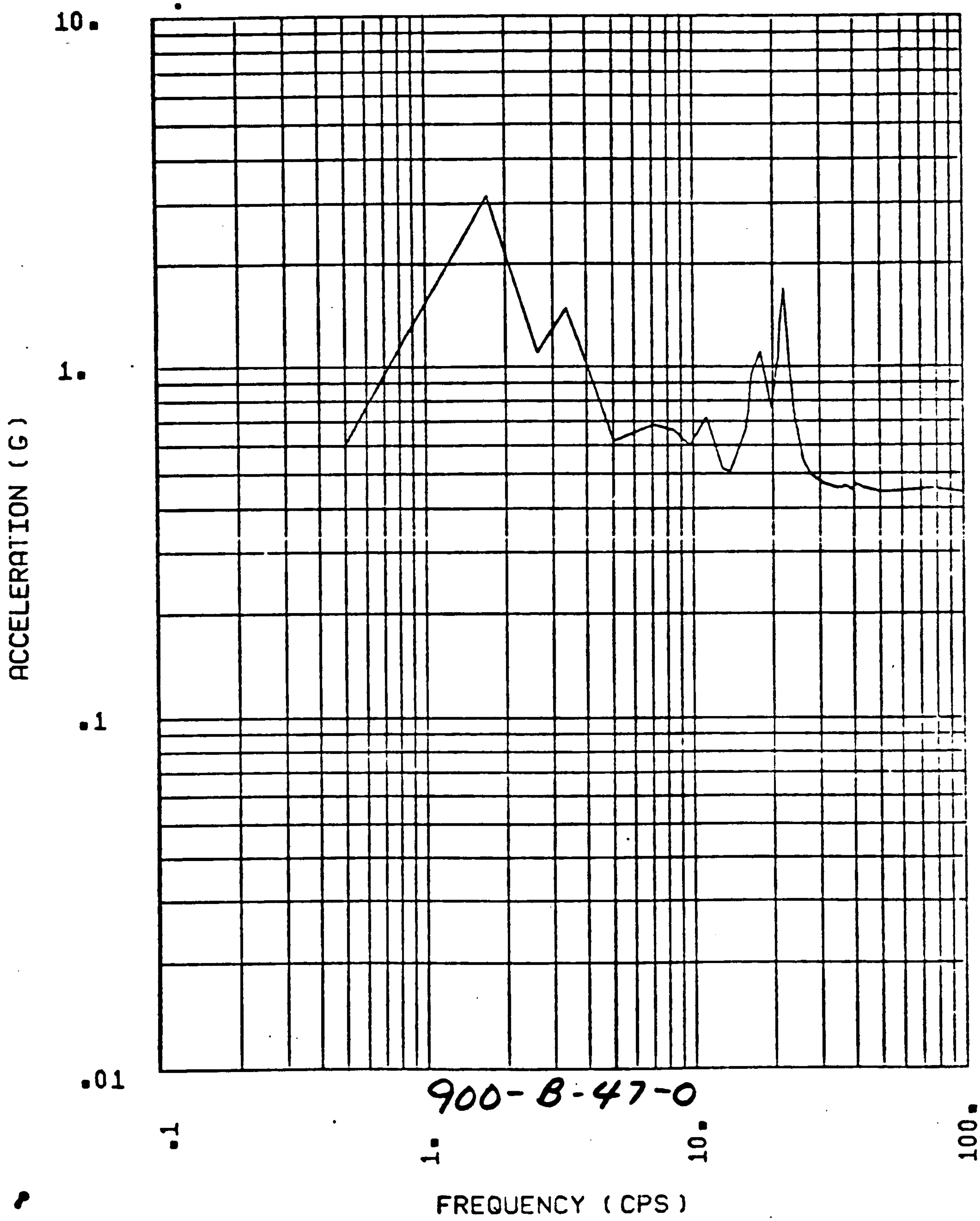

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SCE SAFETY INJECTION NOZ.(19) X-RESPONSE FOR X-OBE, .01 DAMPING

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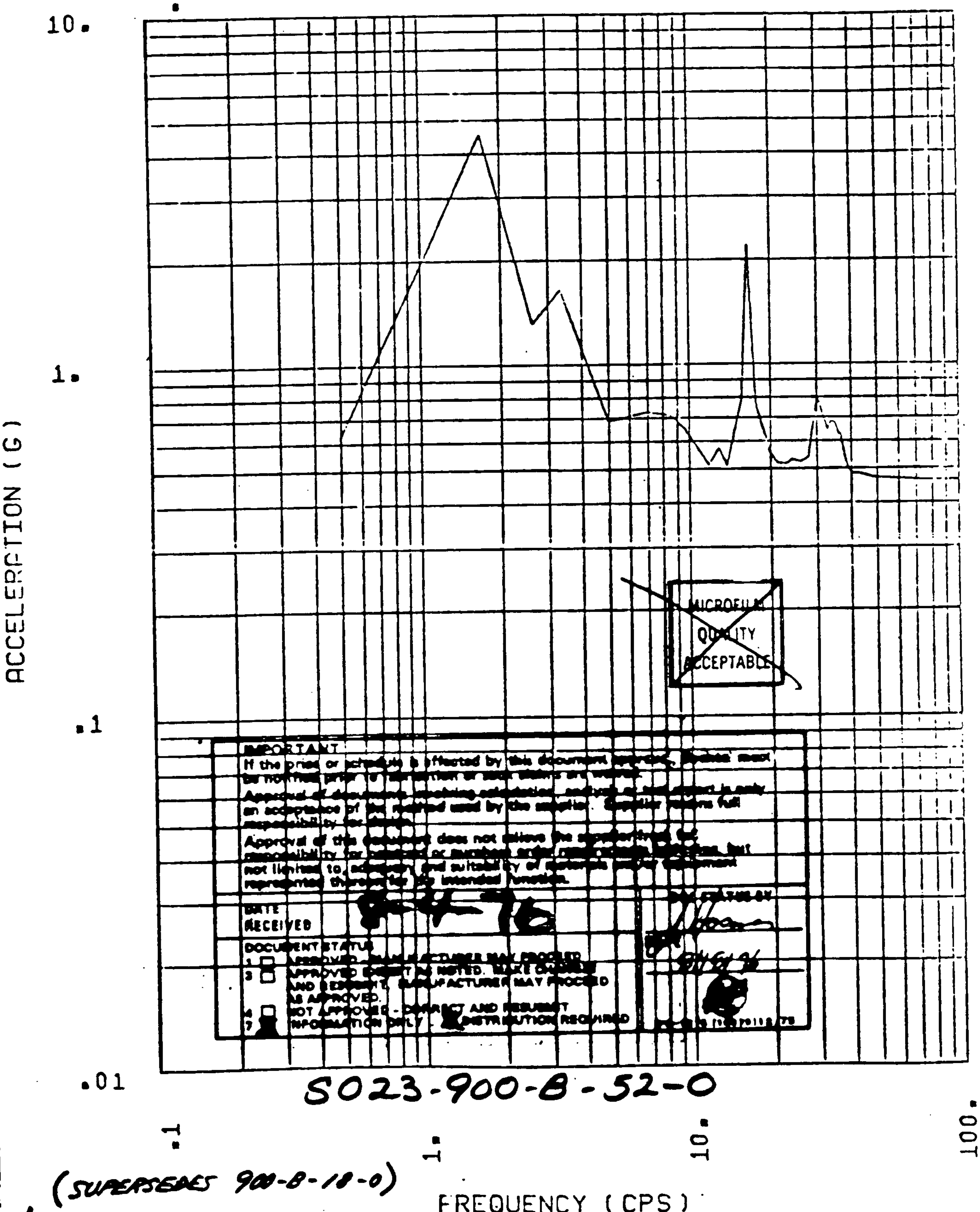

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X-

SCE SAFETY INJECTION NOZ.(1A) Y-RESPONSE FOR X-OBE, .01 DAMPING

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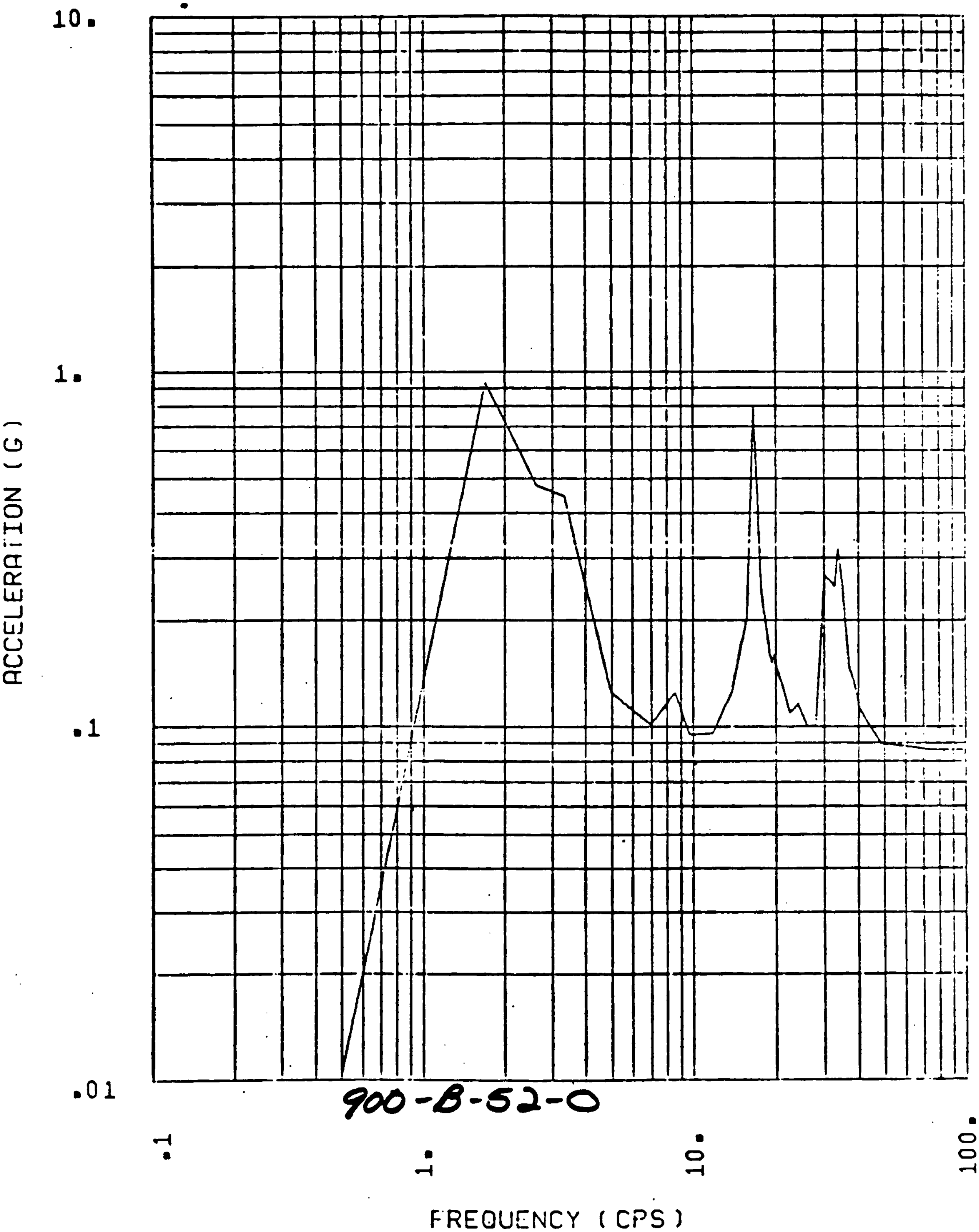

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X-2

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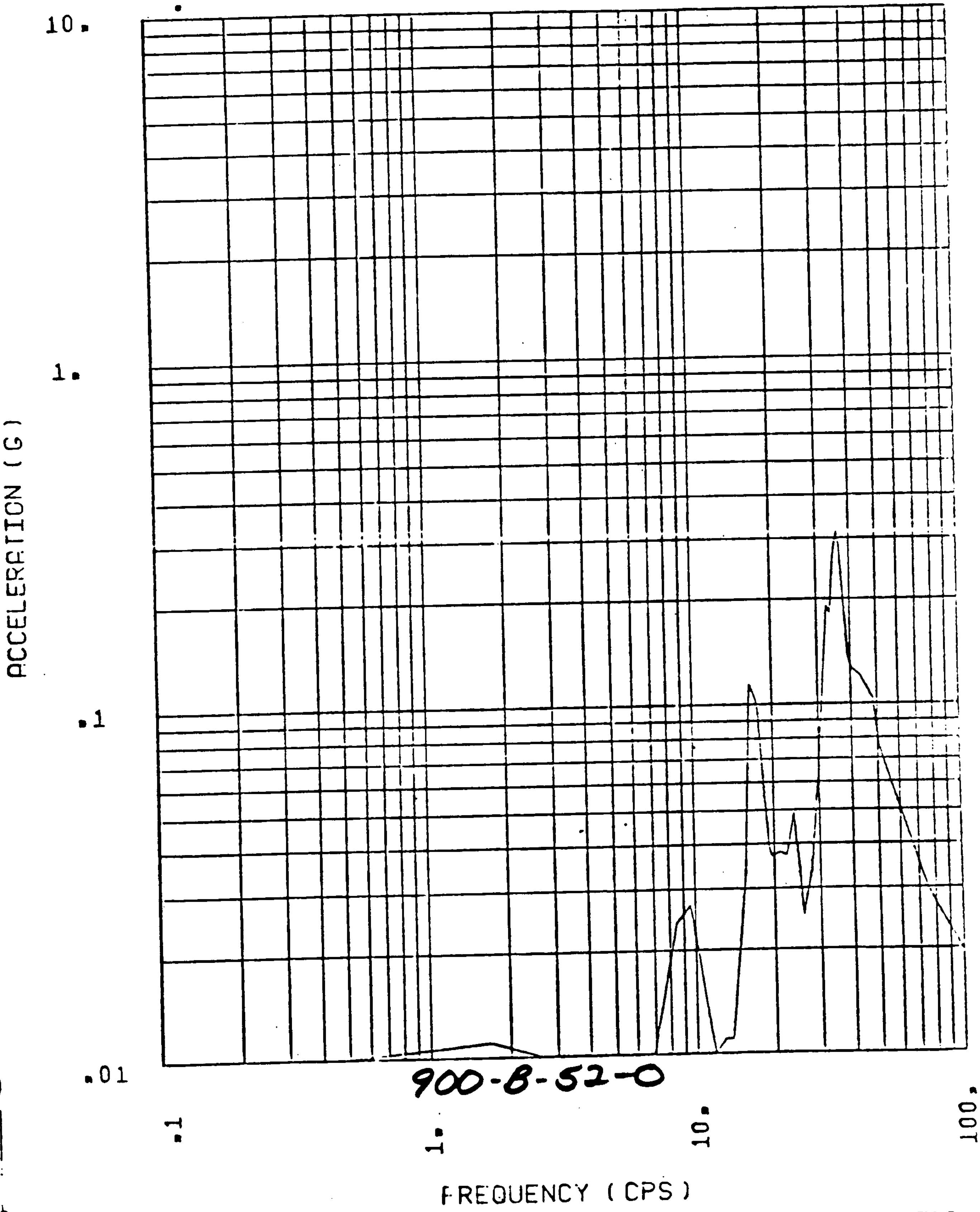

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X-28

SCE SAFETY INJECTION NOZ.(1A) X-RESPONSE FOR Y-OBE, .01 DAMPING

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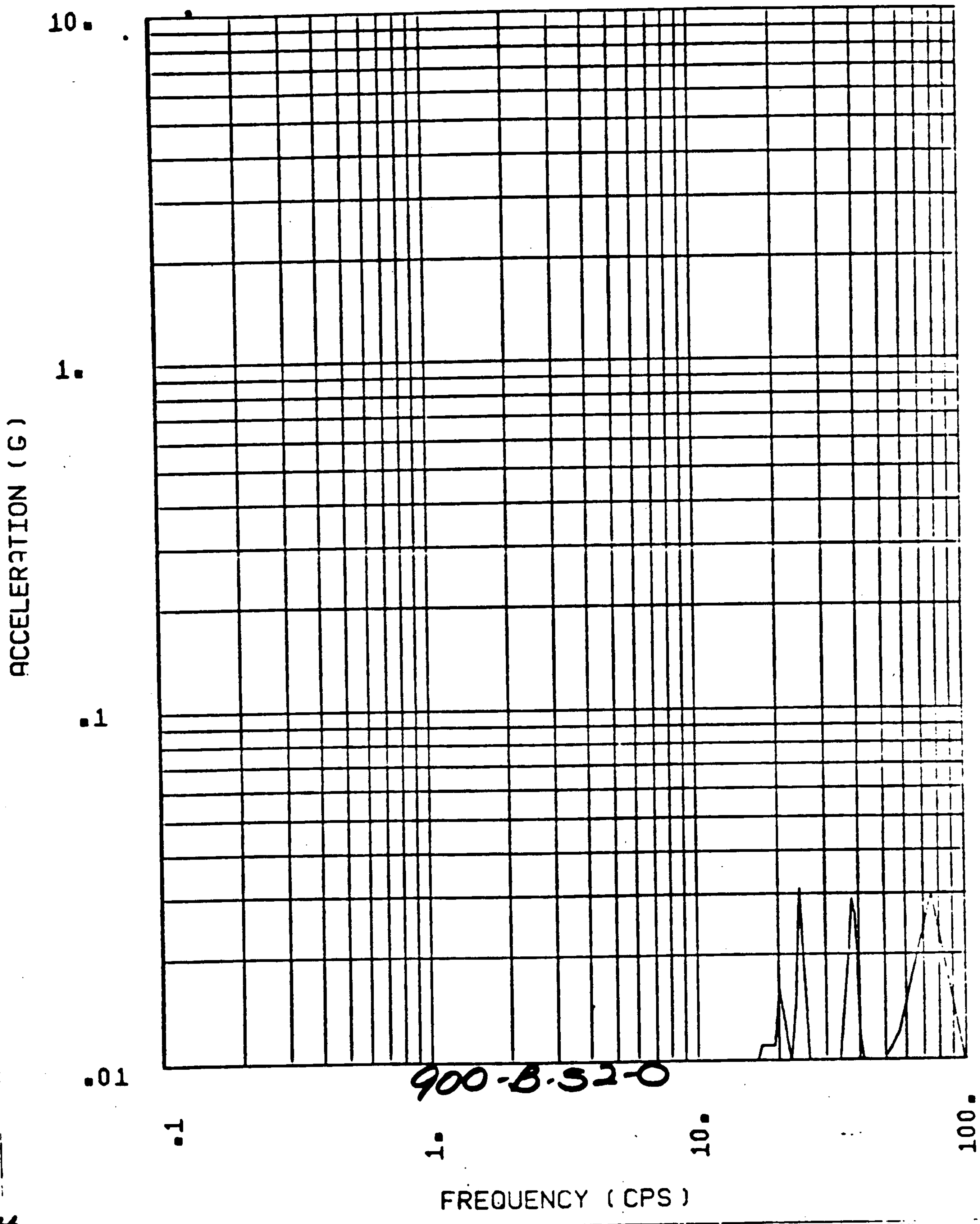

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Y-15

SCE SAFETY INJECTION NOZ.(1A) Z-RESPONSE FOR Y-DPE. .01 DAMPING

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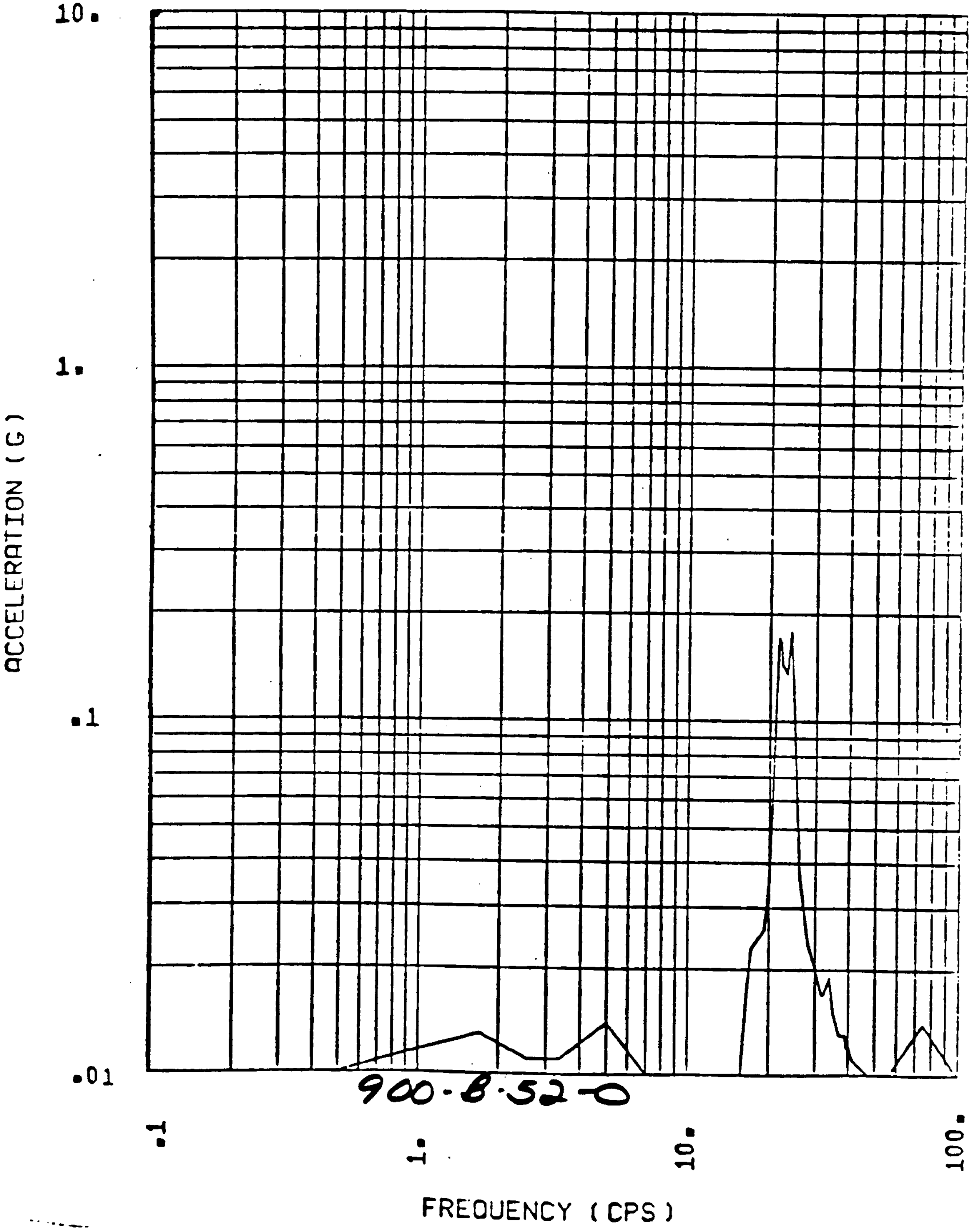

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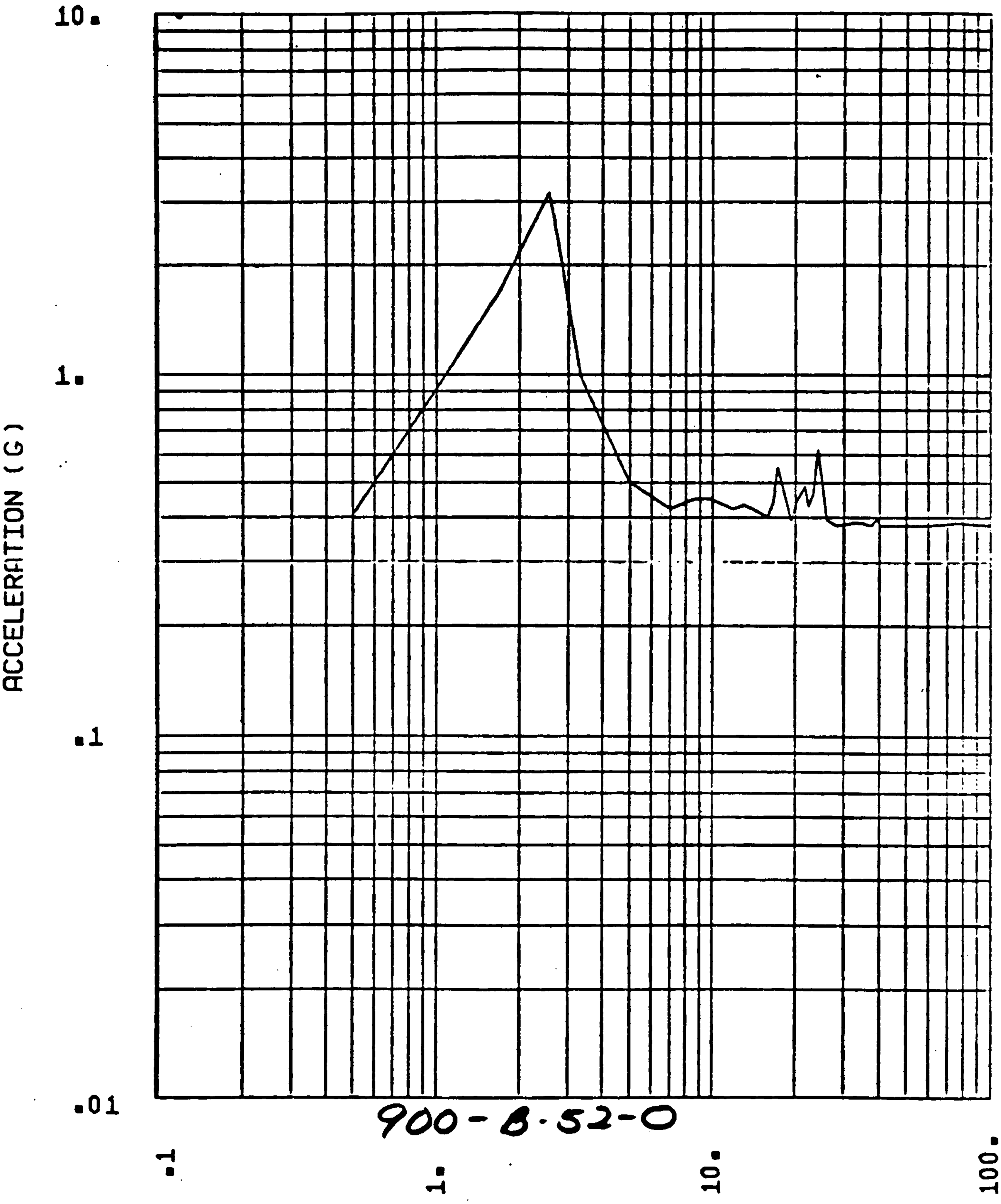

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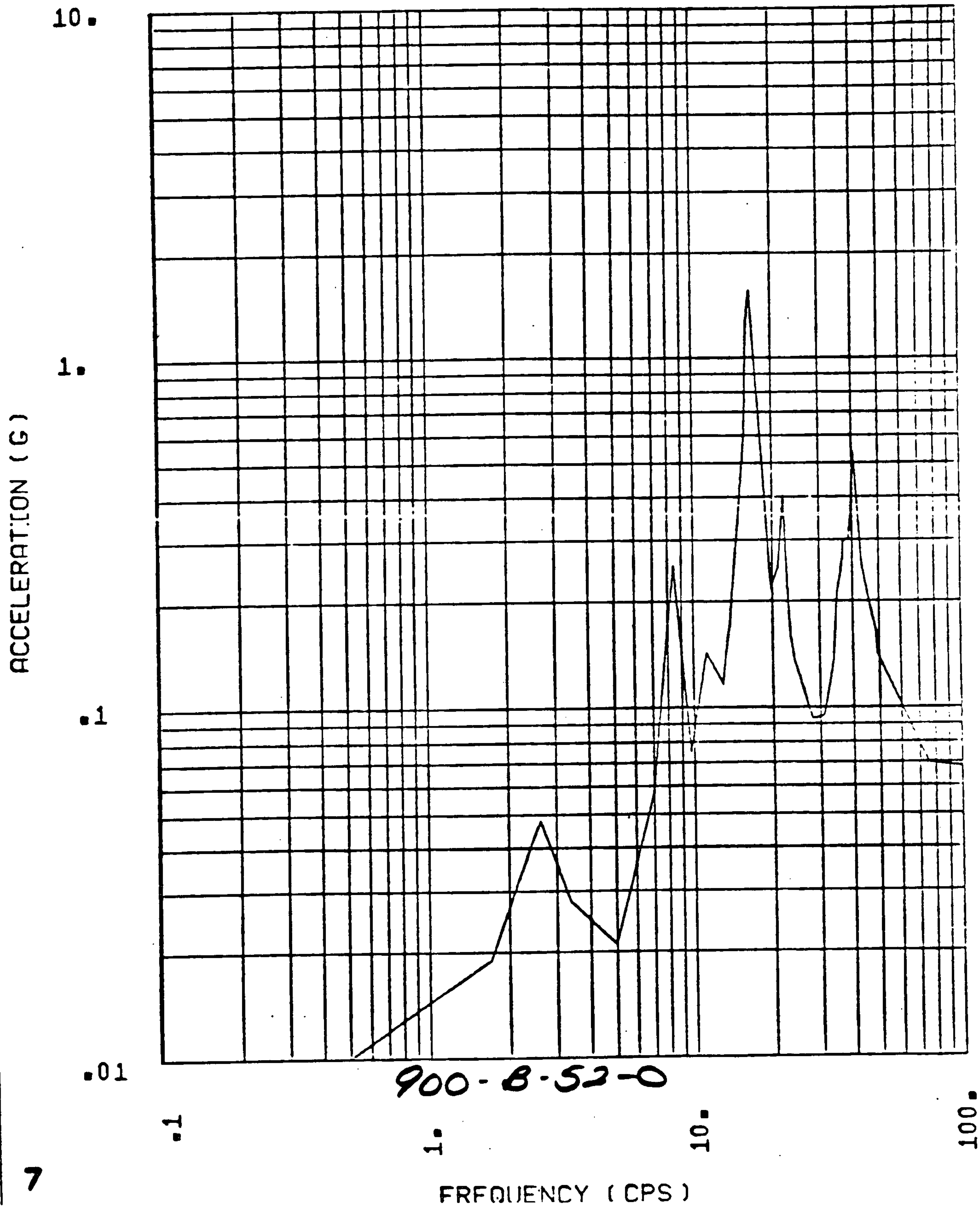

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7

Z-22

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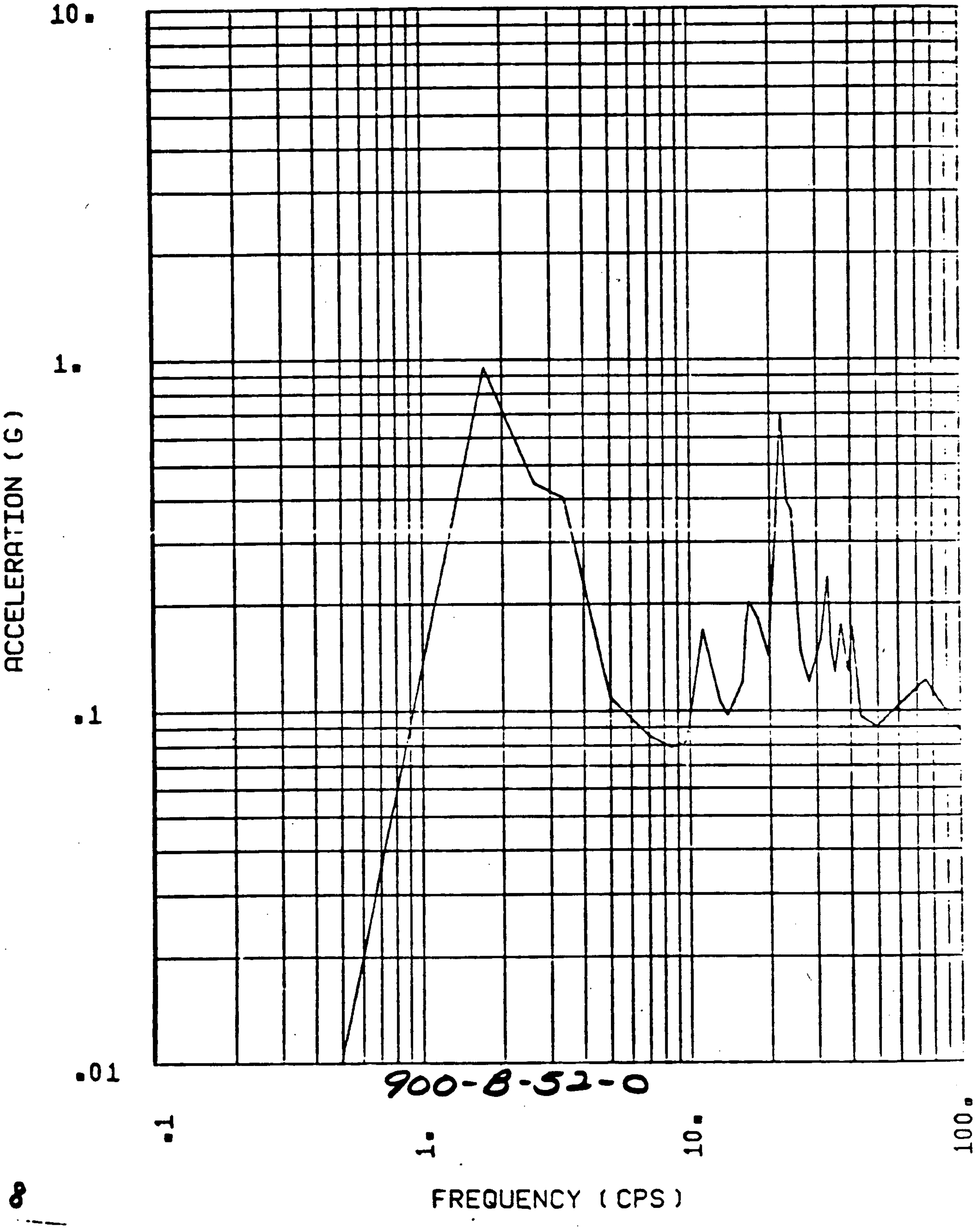

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SCE SAFETY INJECTION NOZ.(1A) Z-RESPONSE FOR Z-OBE, .01 DAMPING

Coupled mode

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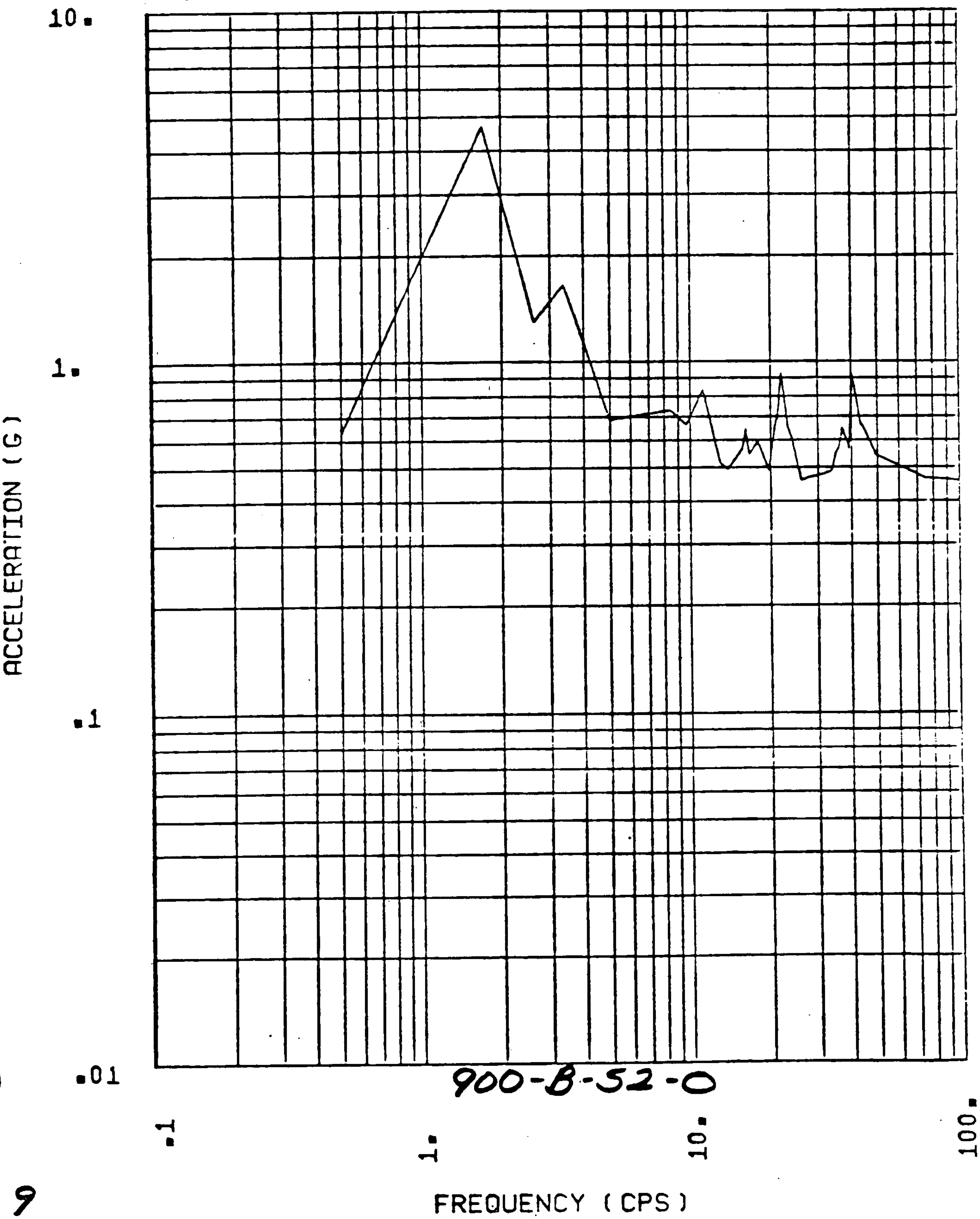

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Z-30

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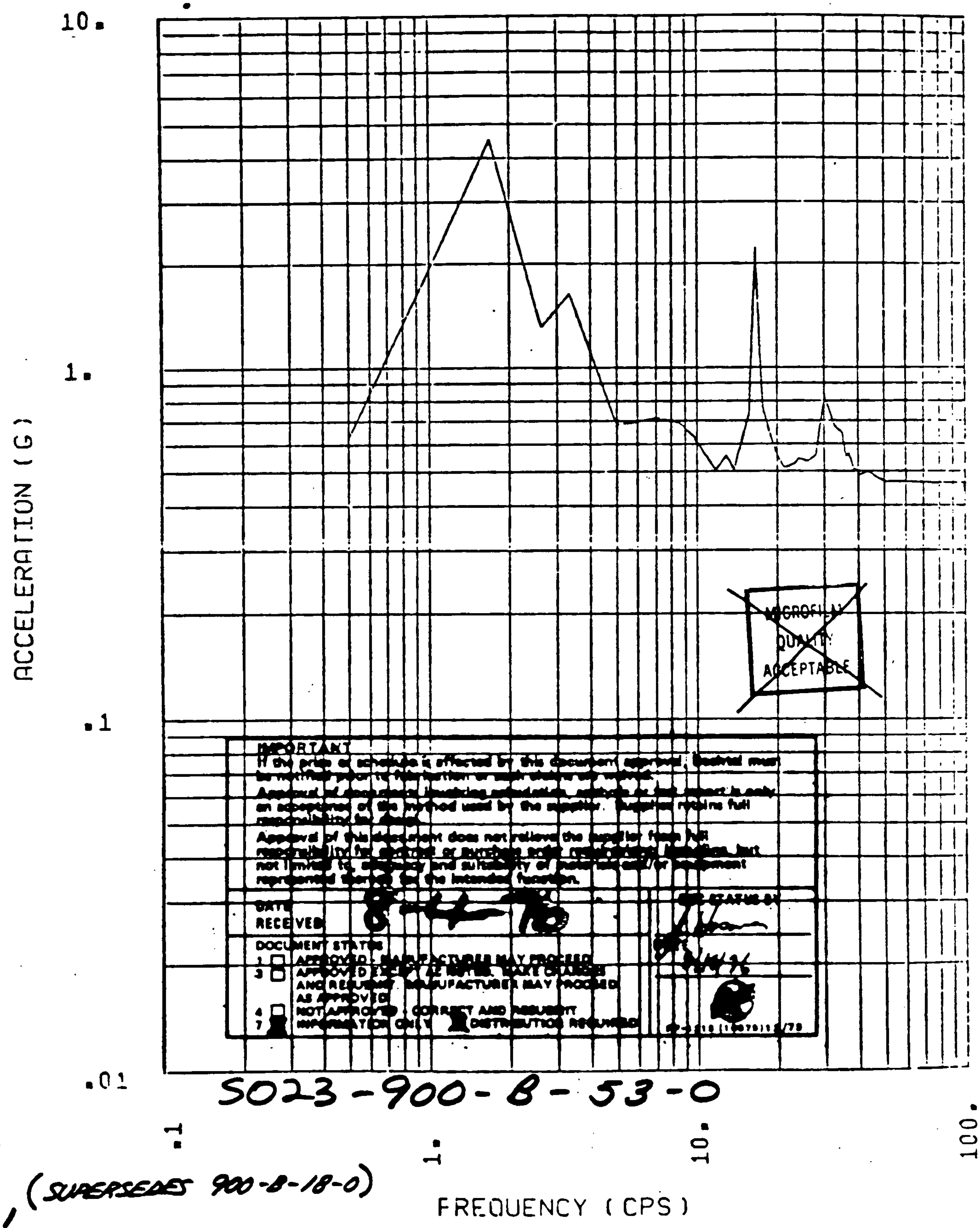

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X-21

SCE SAFETY INJECTION NOZ.(1B) Y-RESPONSE FOR X-OBE, .01 DAMPING
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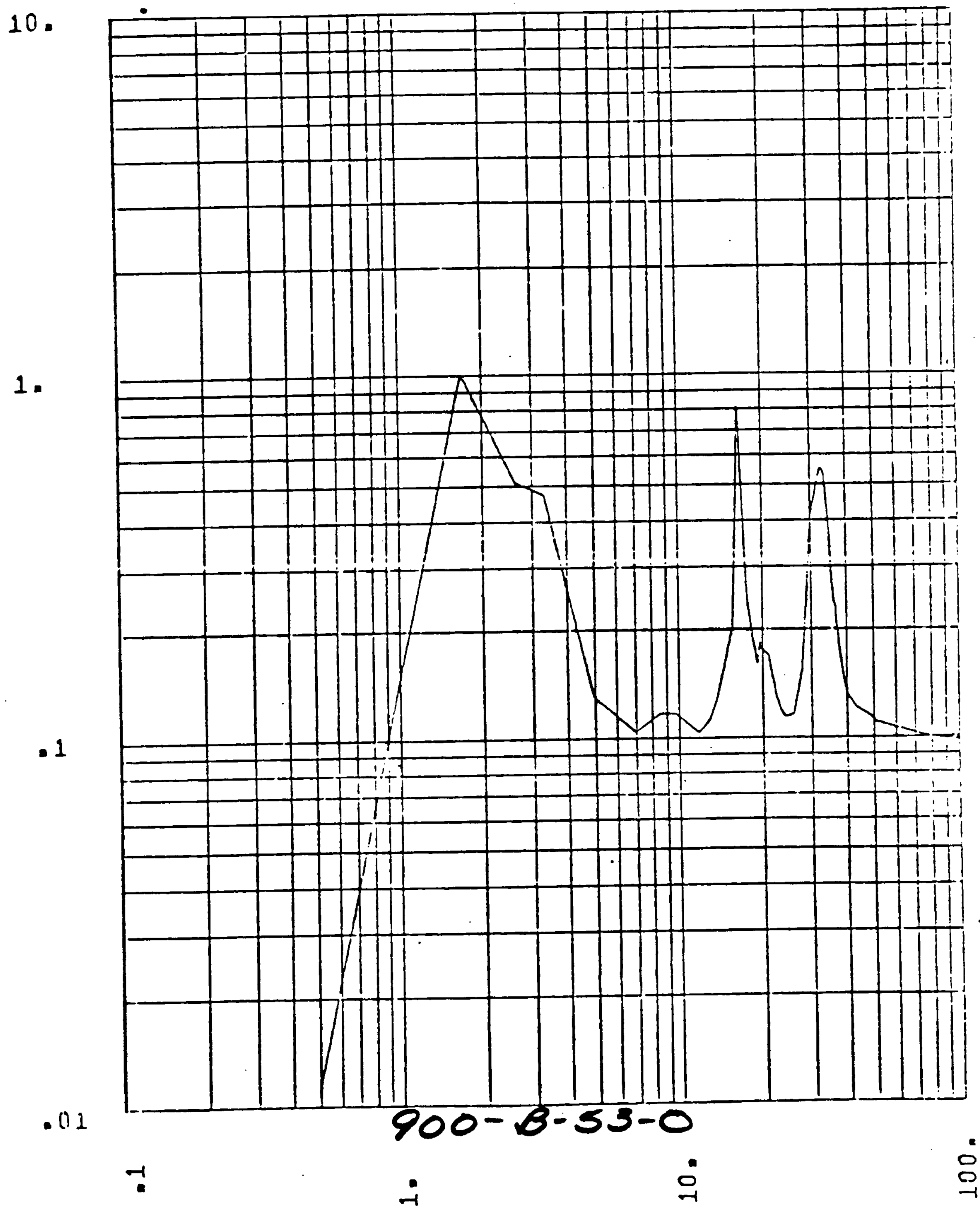

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X-2

2

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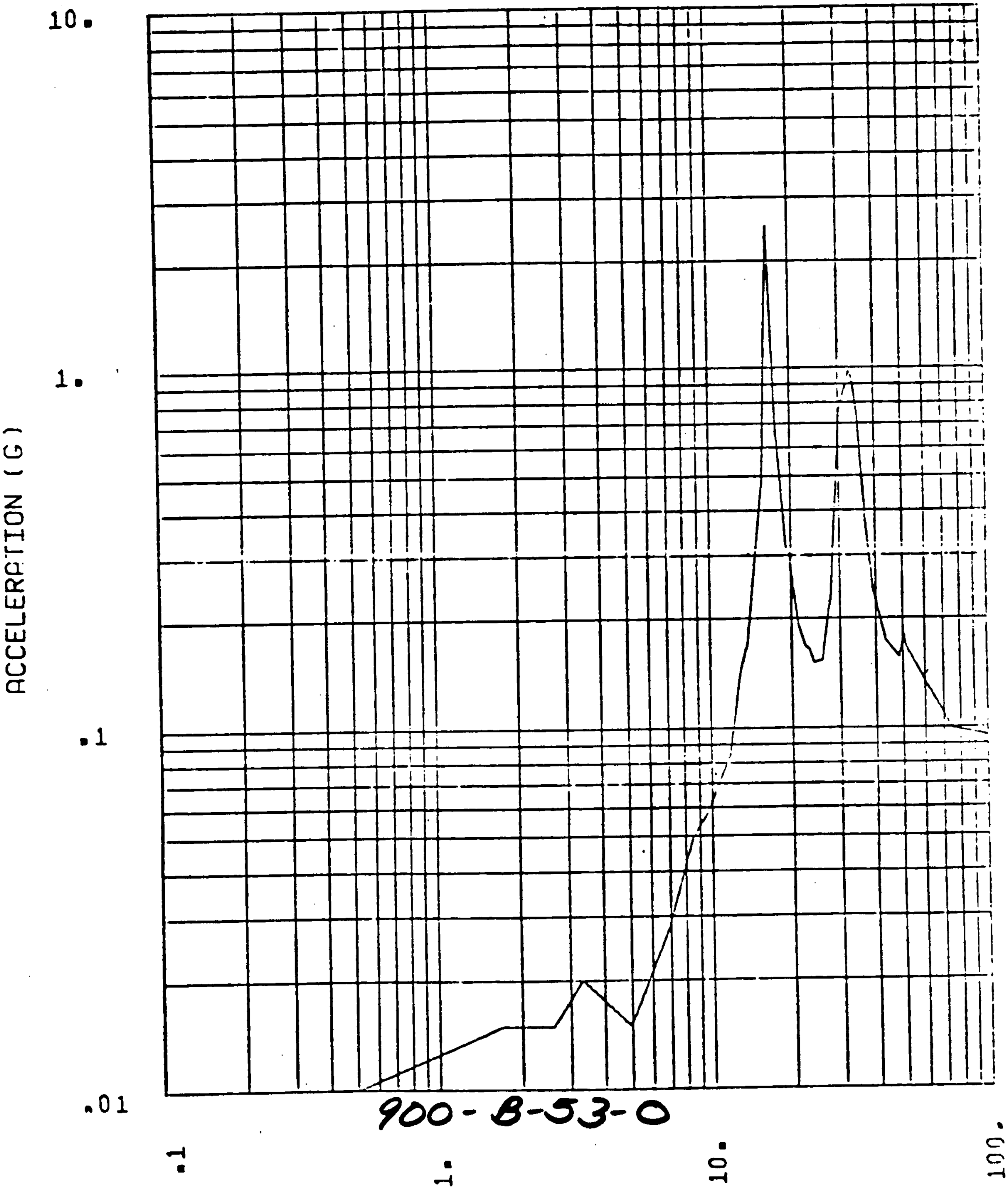

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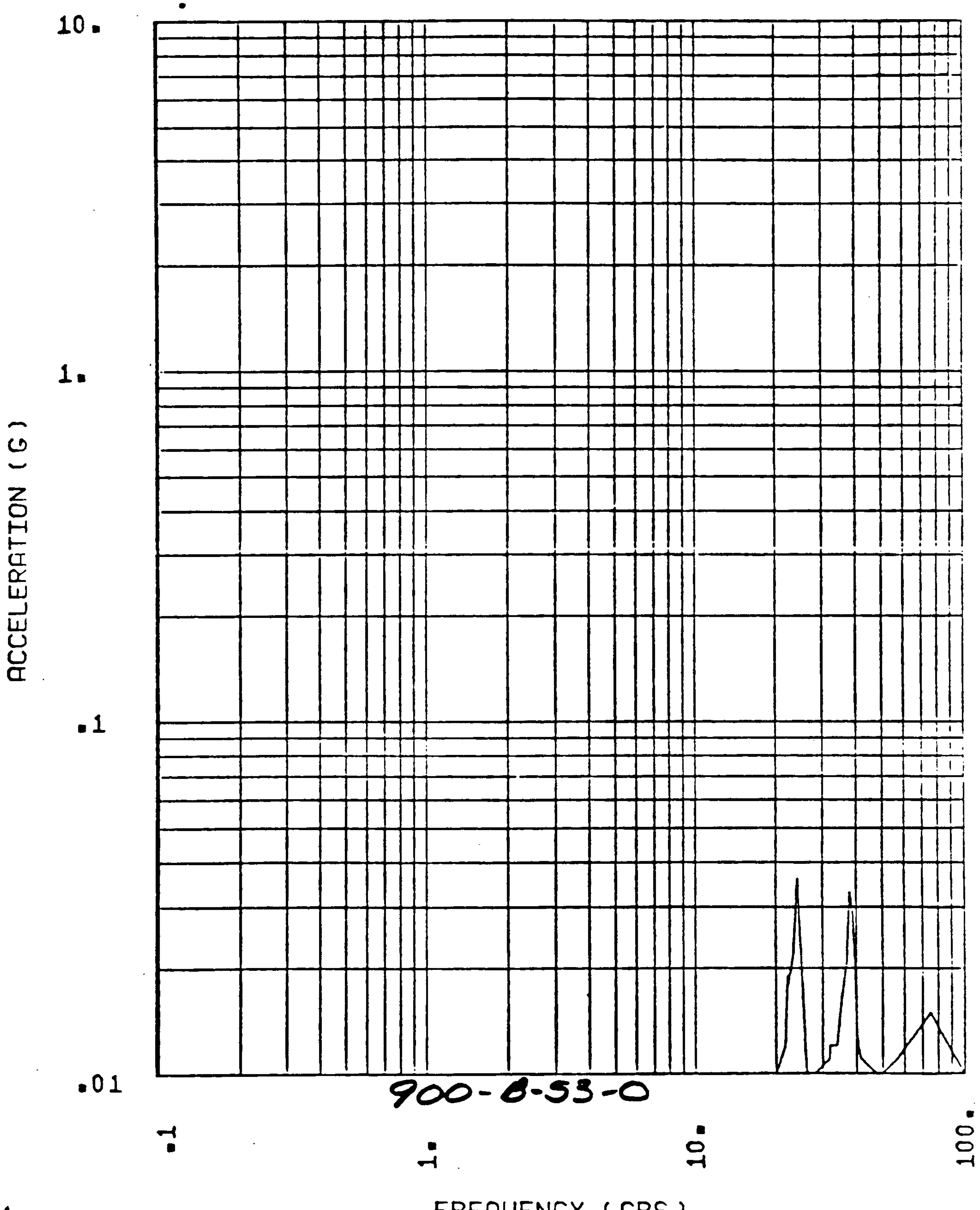

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Y-1

4

SCE SAFETY INJECTION NOZ.(1B) Y-RESPONSE FOR Y-OBE, .01 DAMPING

COUPLED MODEL

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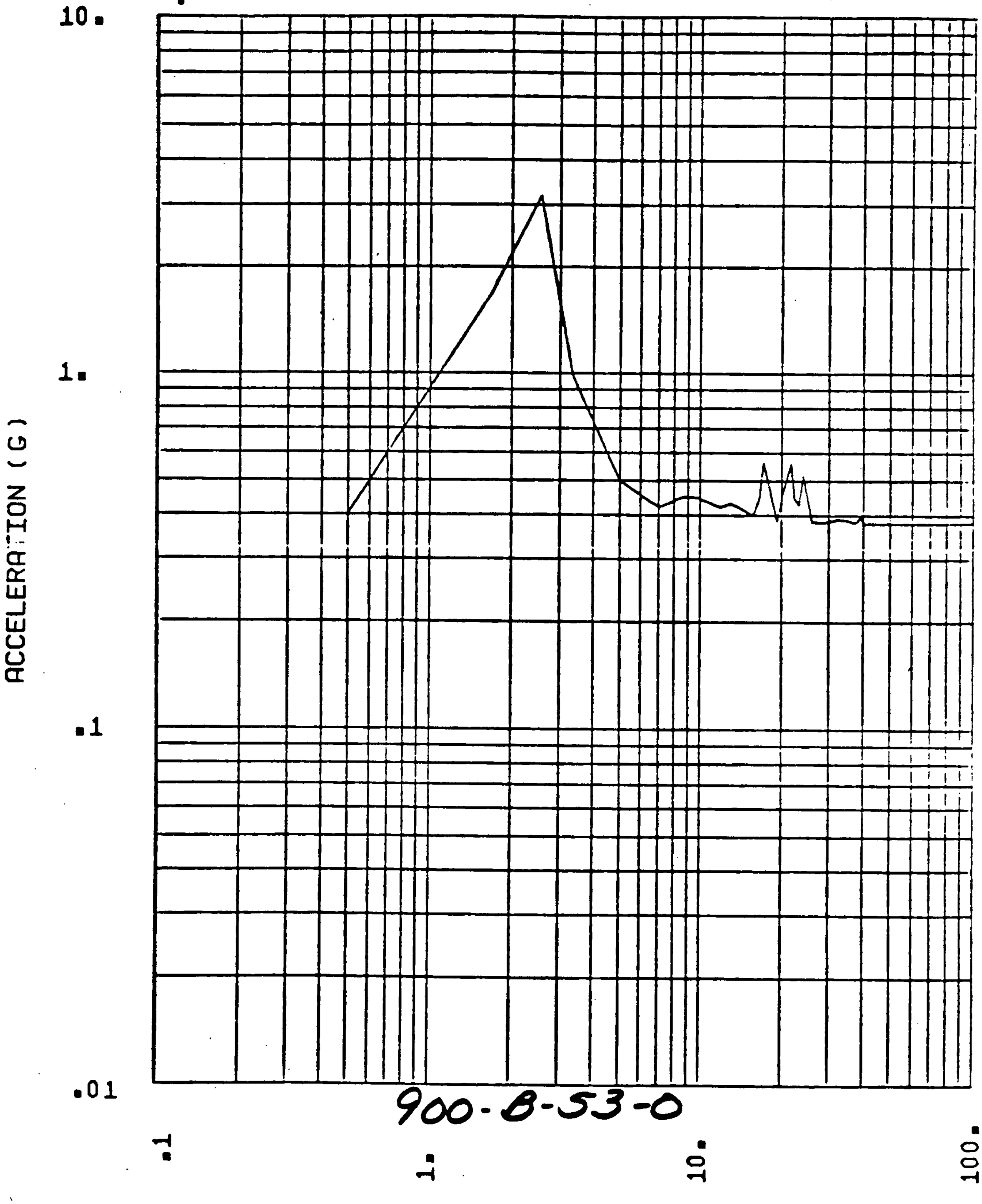

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Y-9?

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COUPLED MODEL

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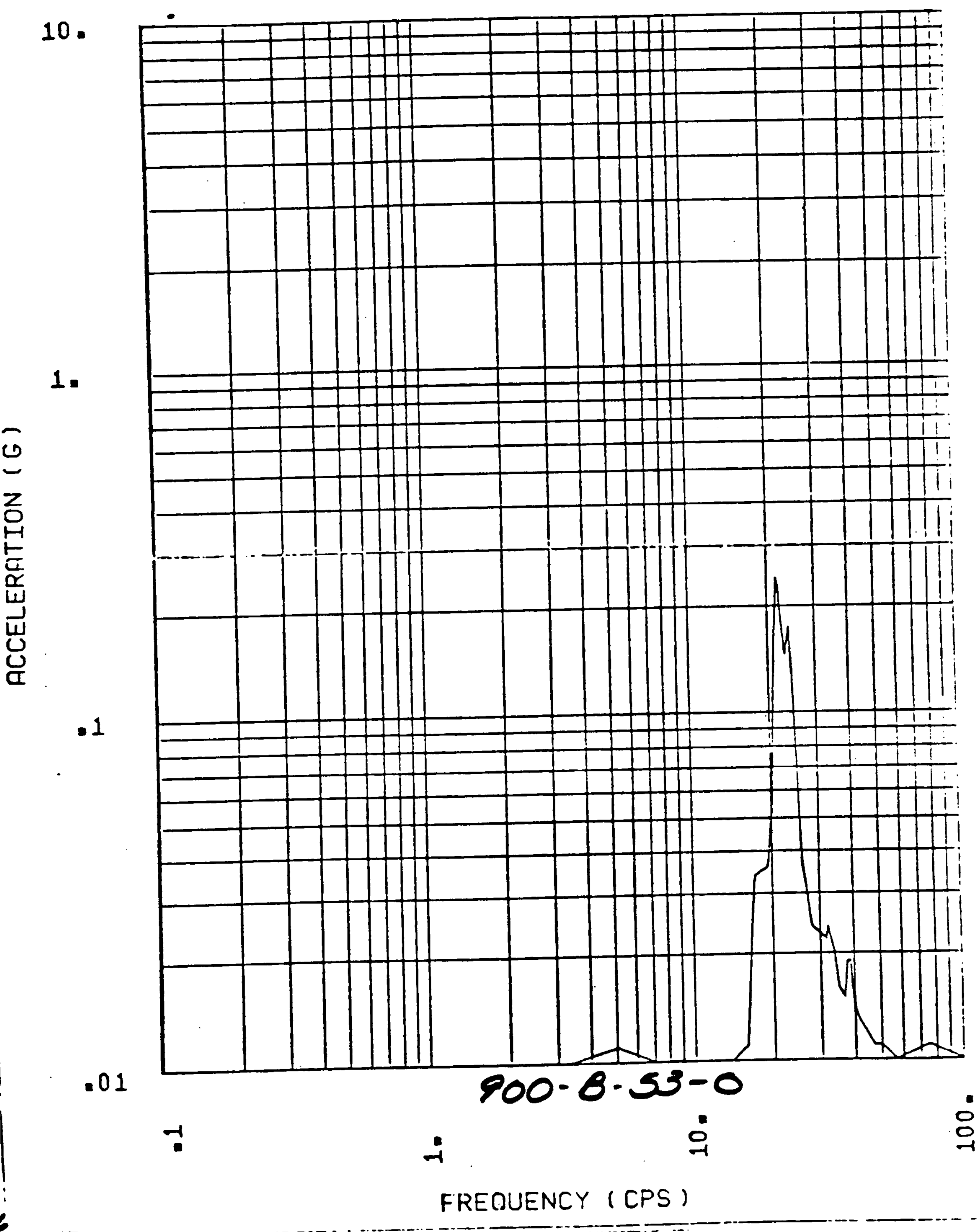

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Coupled Model

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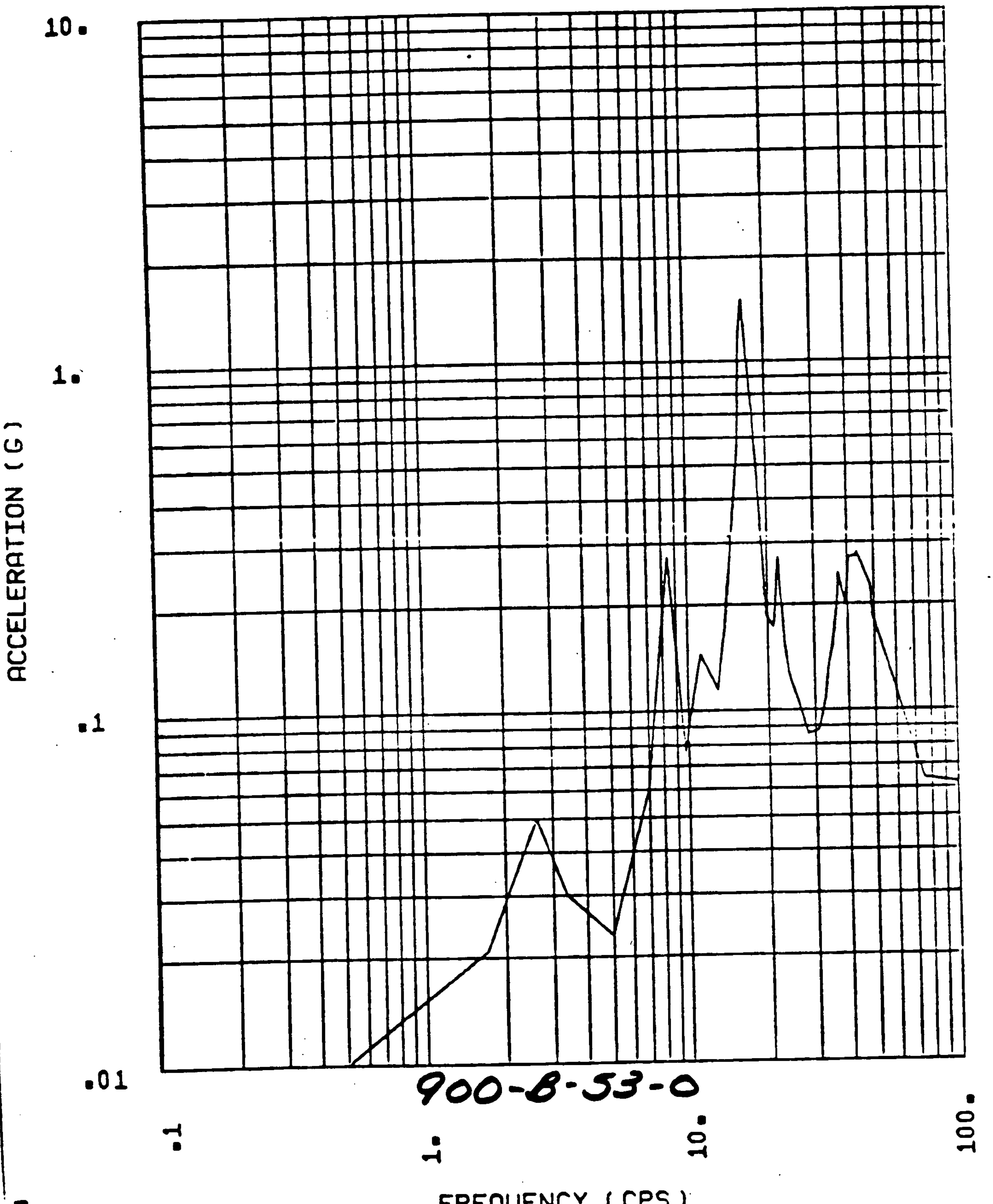

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Coupled Model

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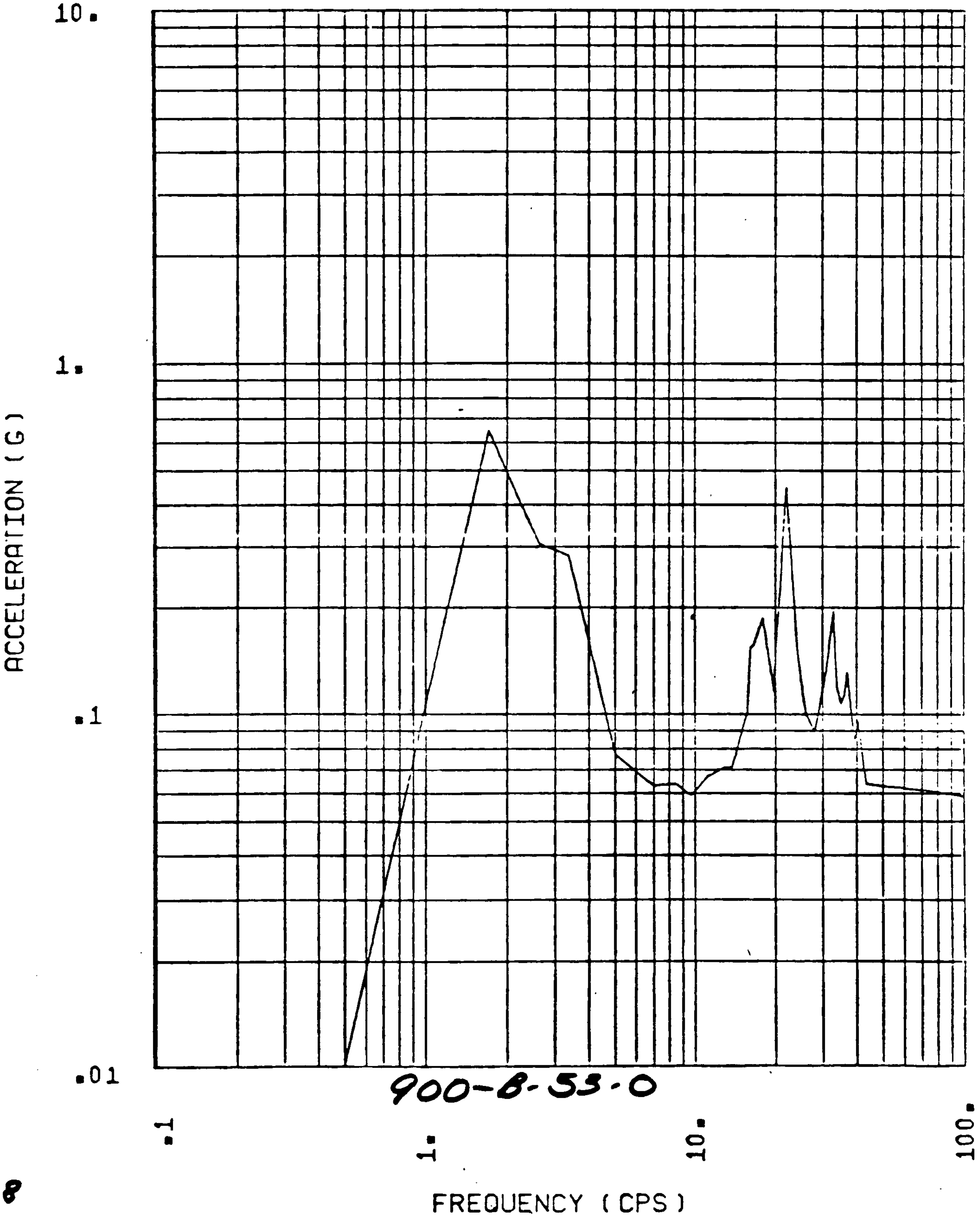

900-8-53-0

8

SCE SAFETY INJECTION NOZ.(1B) Z-RESPONSE FOR Z-OBE, .01 DAMPING

Coupled Mod.

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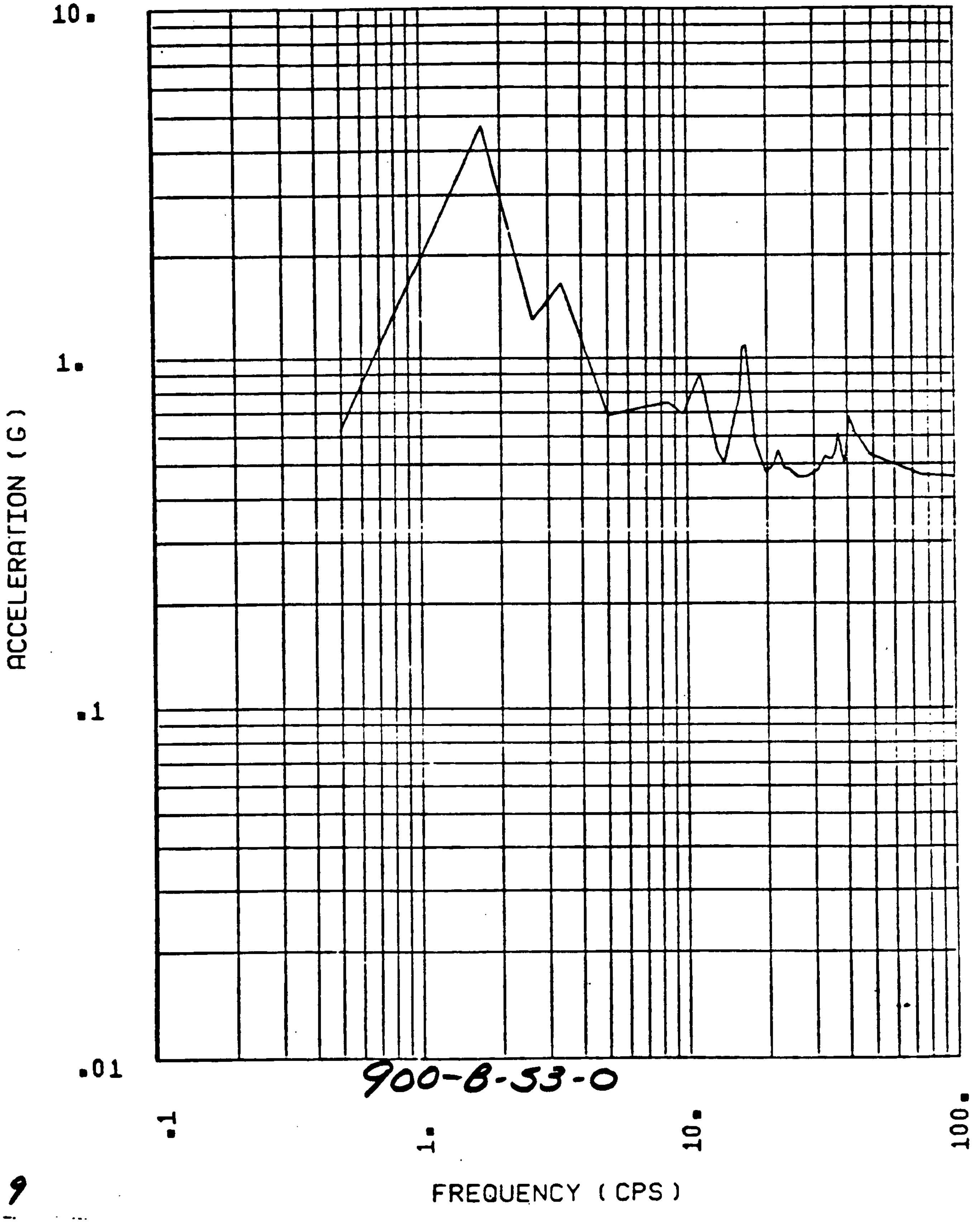

900-B-53-0

SCS SAFETY INJECTION NOZ.(2S) X-RESPONSE FOR X-OBE, .01 DAMPING

COUPLED MODEL

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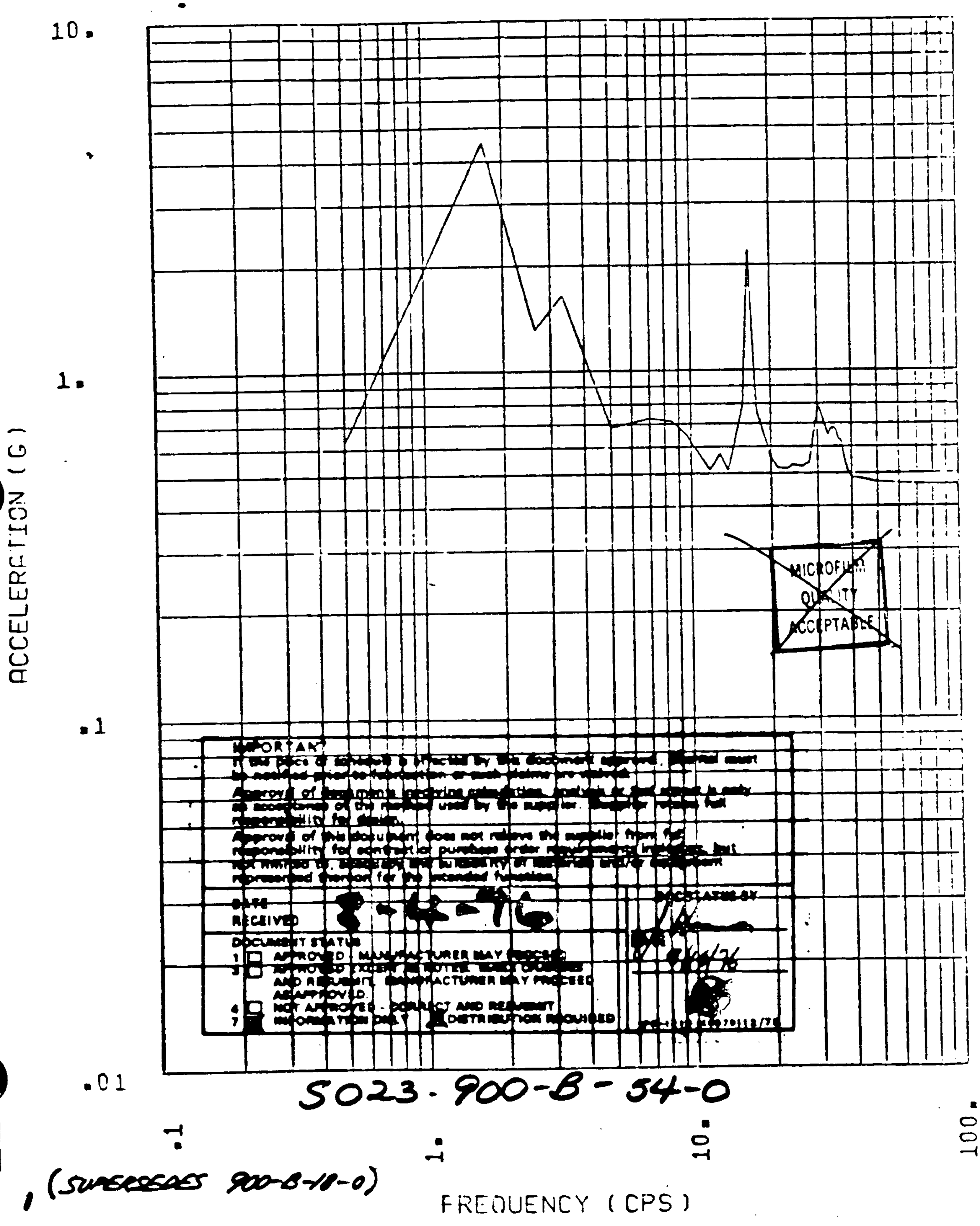

S023-900-B-54-0

(SUPERSEDES 900-B-18-0)

X-23

SCE SAFETY INJECTION NOZ. (2A) Y-RESPONSE FOR X-08 .01 DAMPING

COUPLED MODEL

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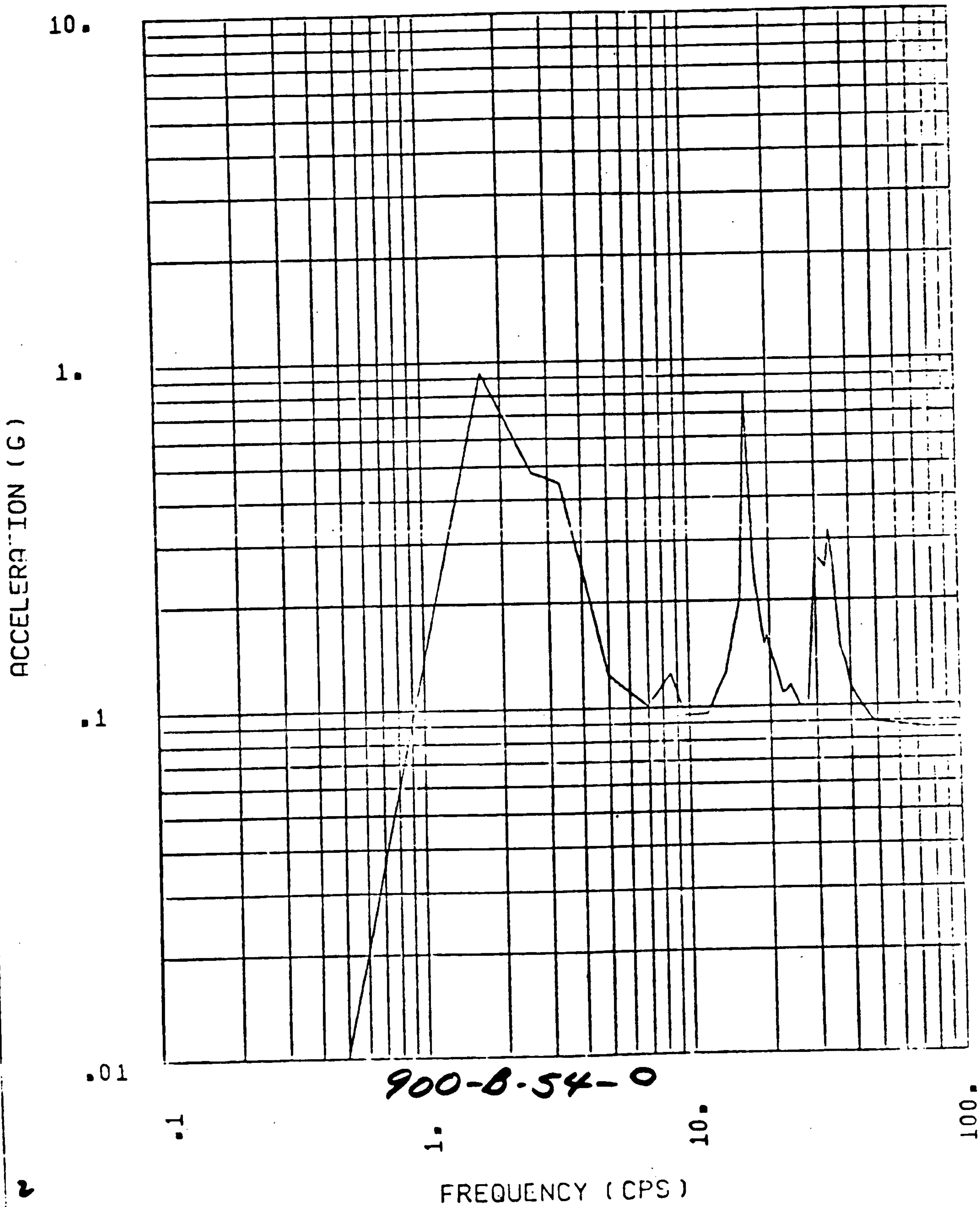

900-B-54-0

2

X-27

SCE SAFETY INJECTION NOZ.(2B) Z-RESPONSE FOR X-OBE, .01 DAMPING

COUPLED MODEL

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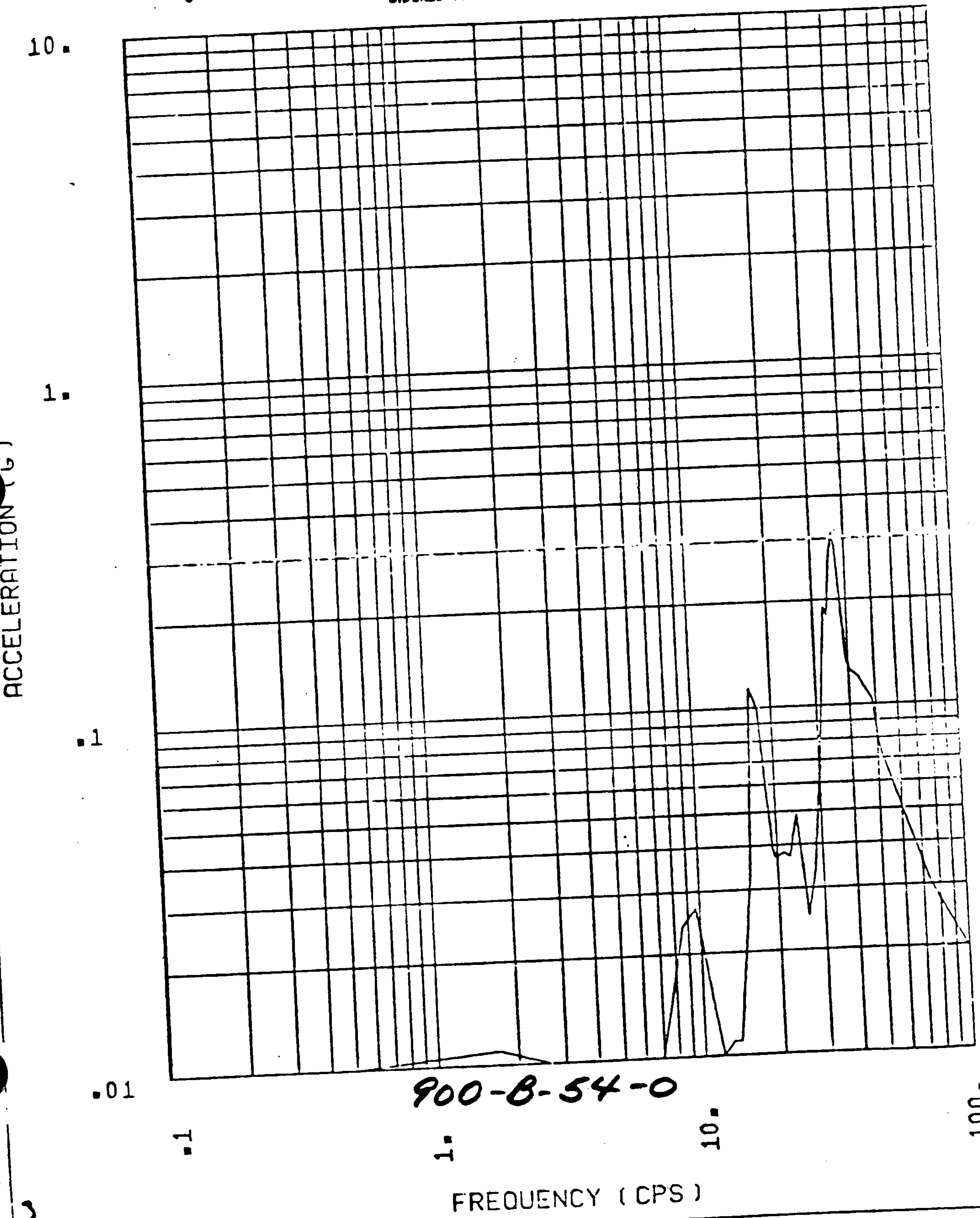

900-B-54-0

X-3

SCE SAFETY INJECTION NOZ.(2A) X-RESPONSE FOR Y-OBE, .01 DAMPING

COUPLED MODEL

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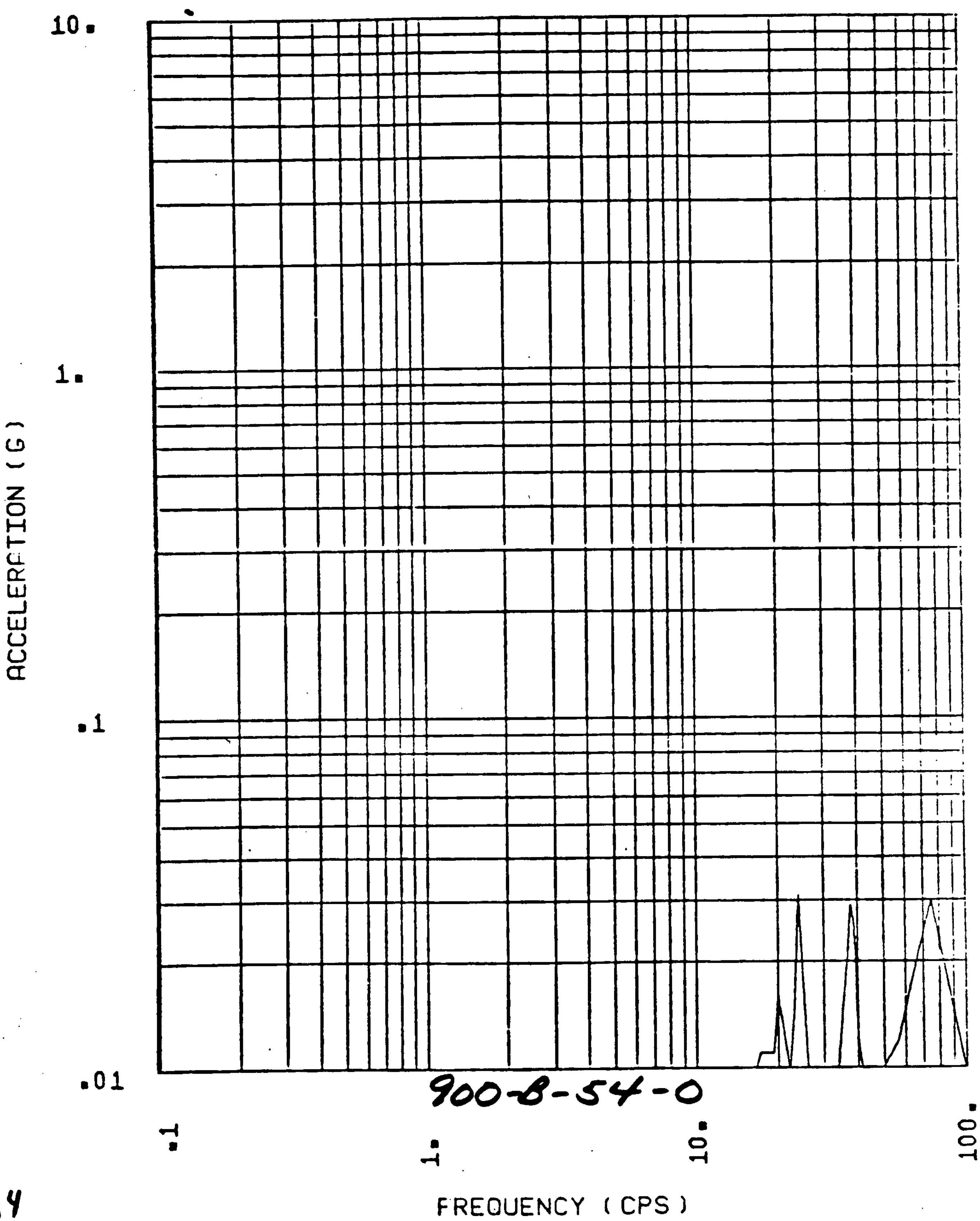

900-B-54-0

Y-12

4

SCE SAFETY INJECTION NOZ.(2A) Y-RESPONSE FOR Y-OBE, .01 DAMPING

COUPLED MODEL

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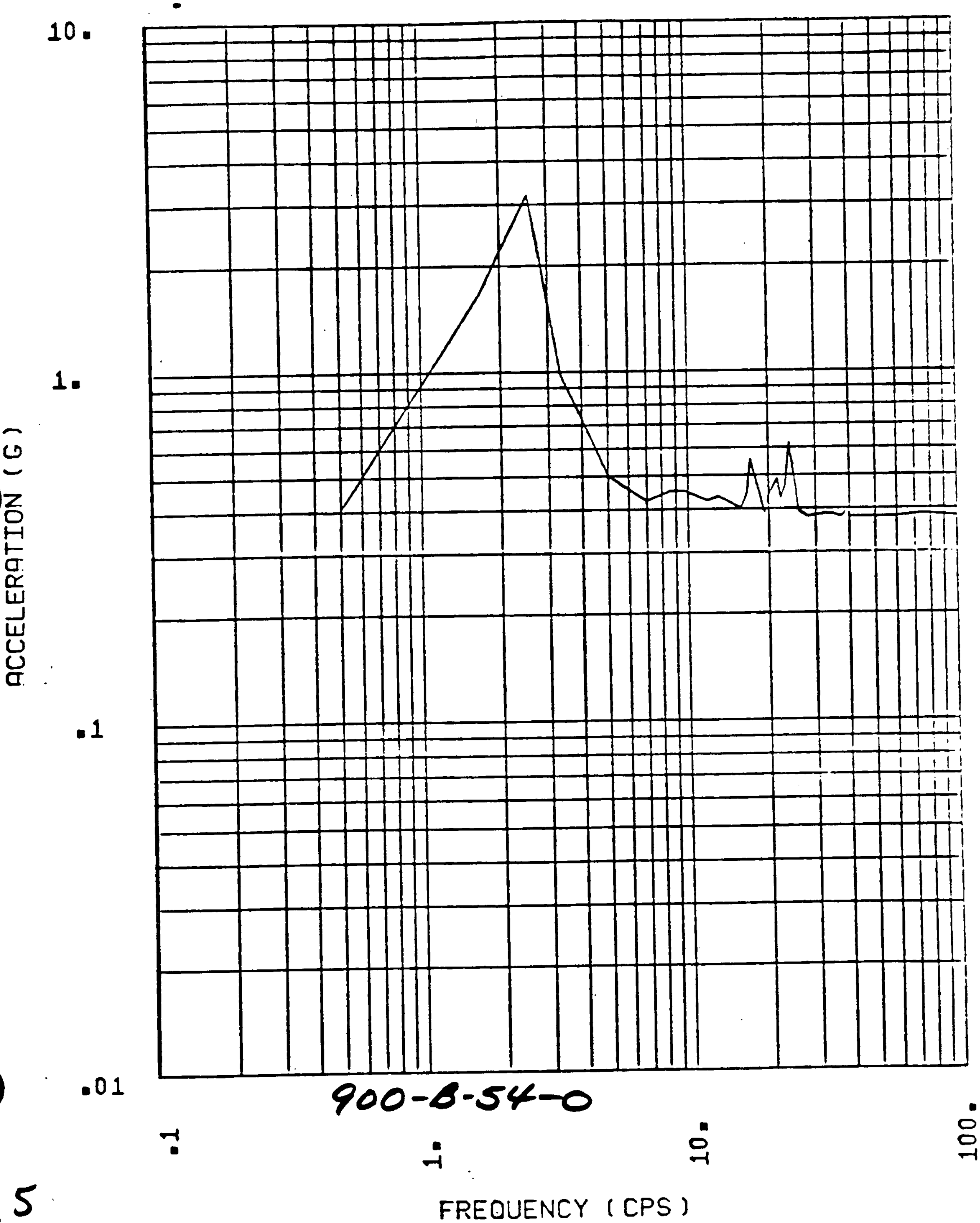

900-B-54-0

5

Y-22

SCE SAFETY INJECTION NOZ.(29) Z-RESPONSE FOR Y-OBE, .01 DAMPING

COUPLED MODE

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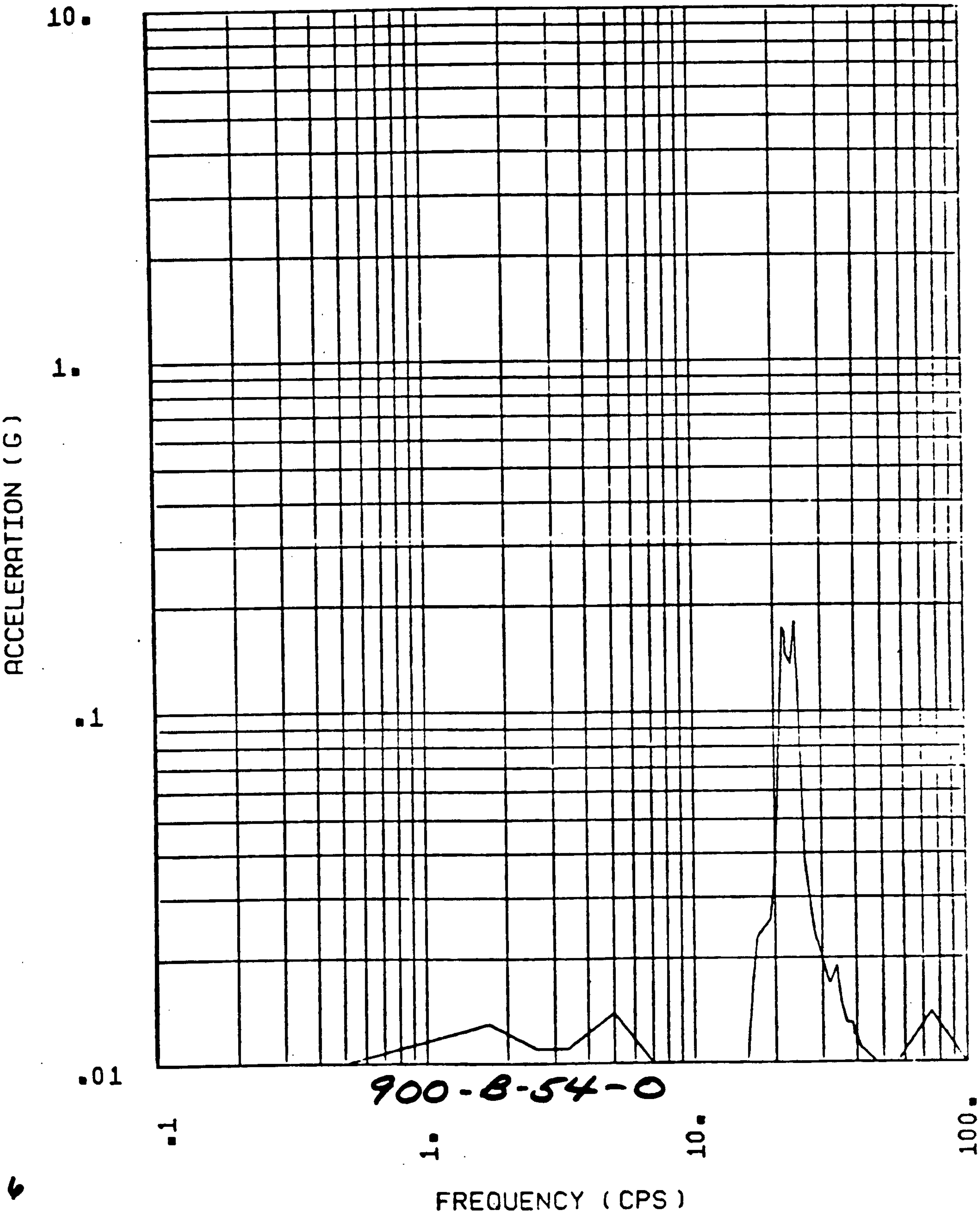

900-B-54-0

6

SCE SAFETY INJECTION NOZ.(2X) X-RESPONSE FOR Z-OBE, .01 DAMPING

Coupled mode.

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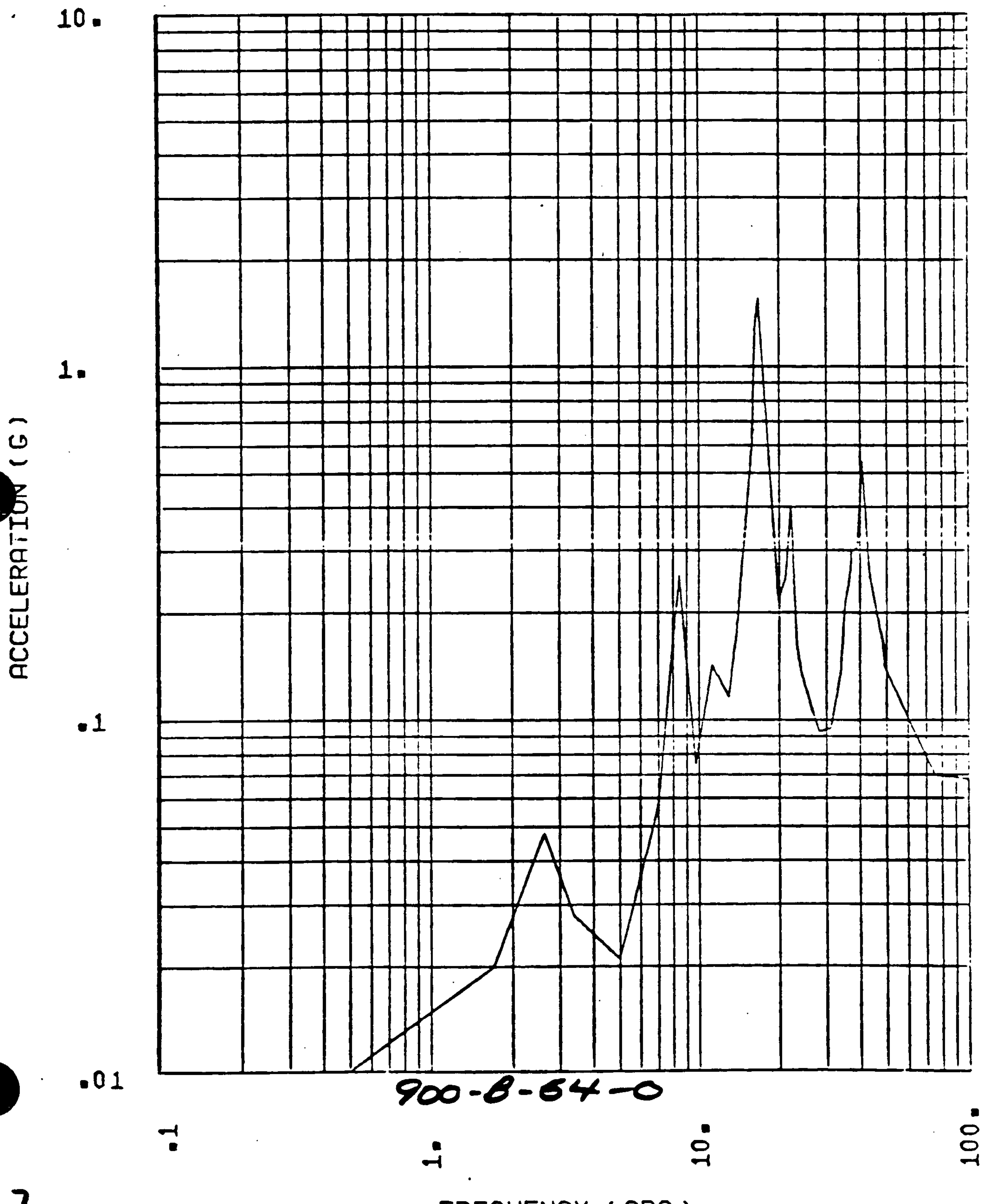

900-8-64-0

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SCE SAFETY INJECTION NOZ.(2X) Y-RESPONSE FOR Z-OBE, .01 DAMPING

Coupled model

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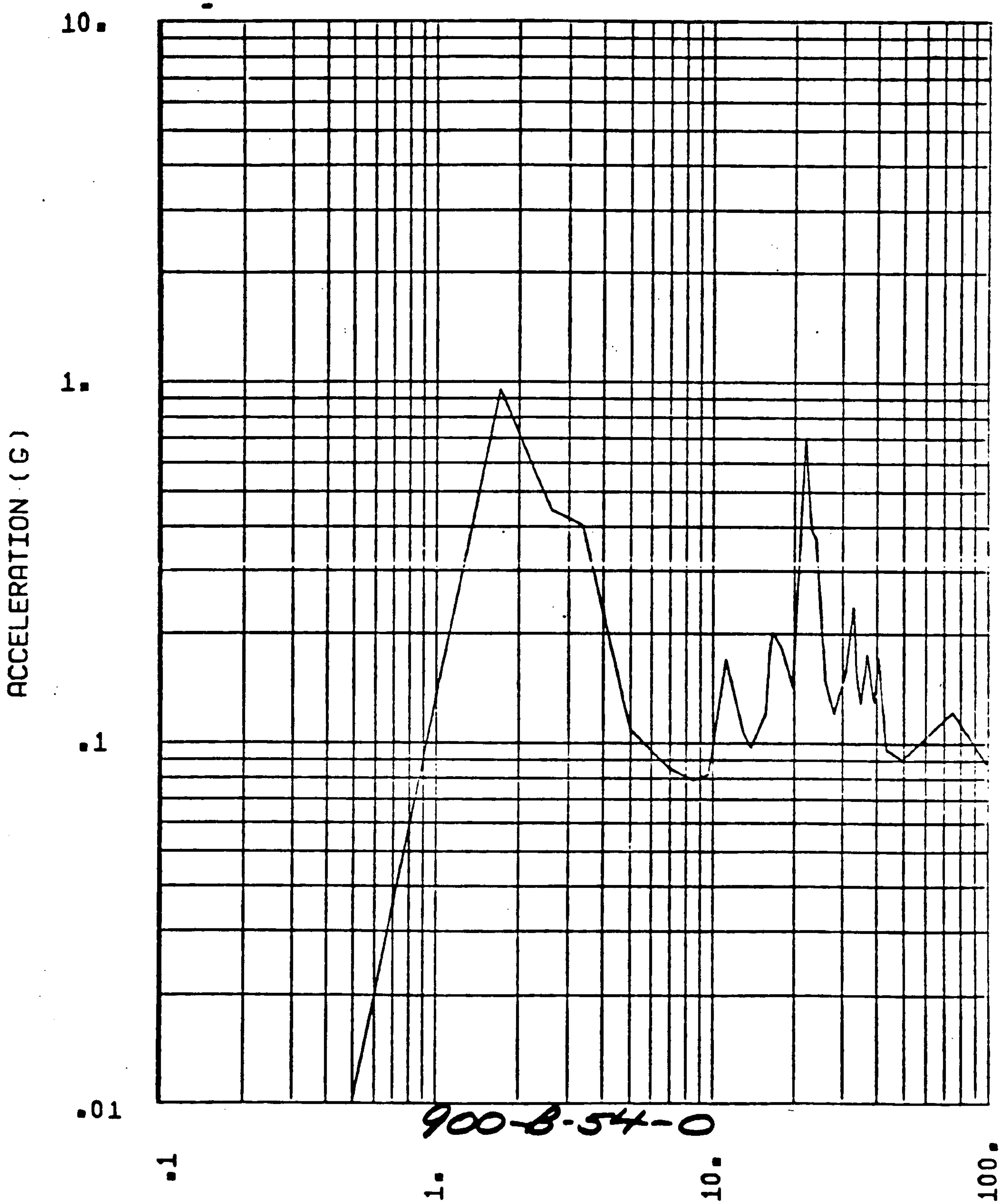

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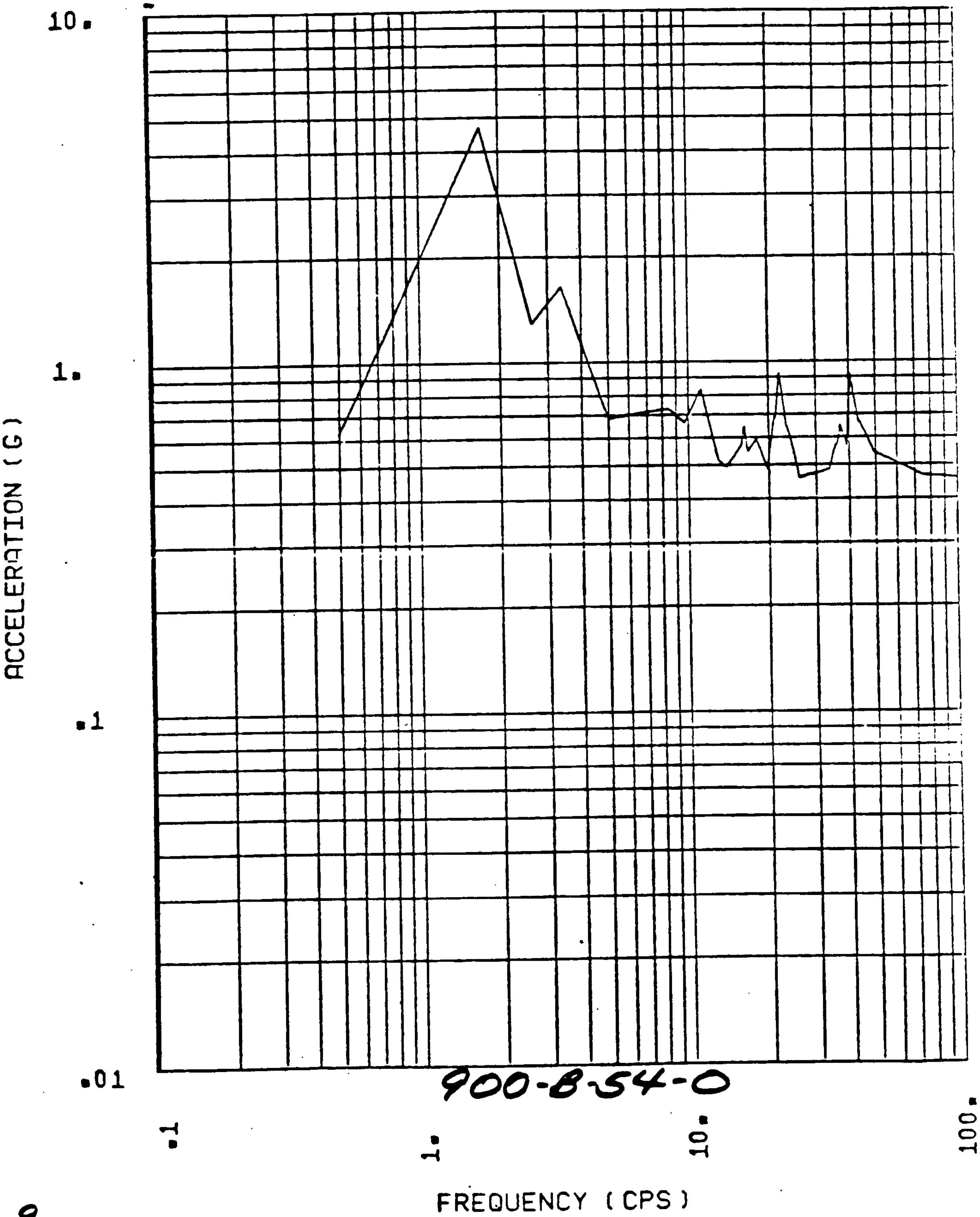

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COUPLED MODEL

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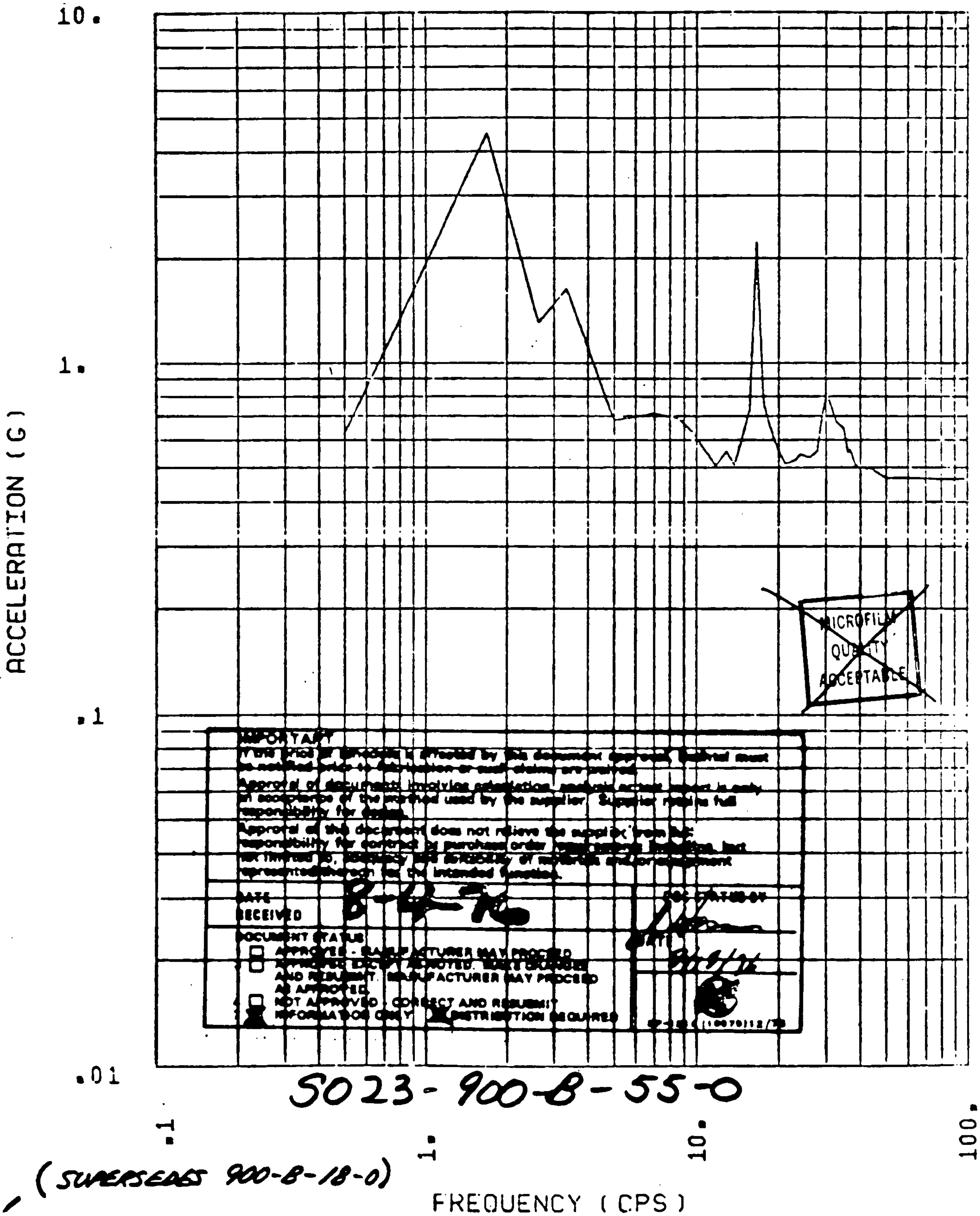

S023-900-B-55-0

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SCE SAFETY INJECTION NOZ.(2B) Y-RESPONSE FOR X-OBE, .01 DAMPING

COUPLED MODEL

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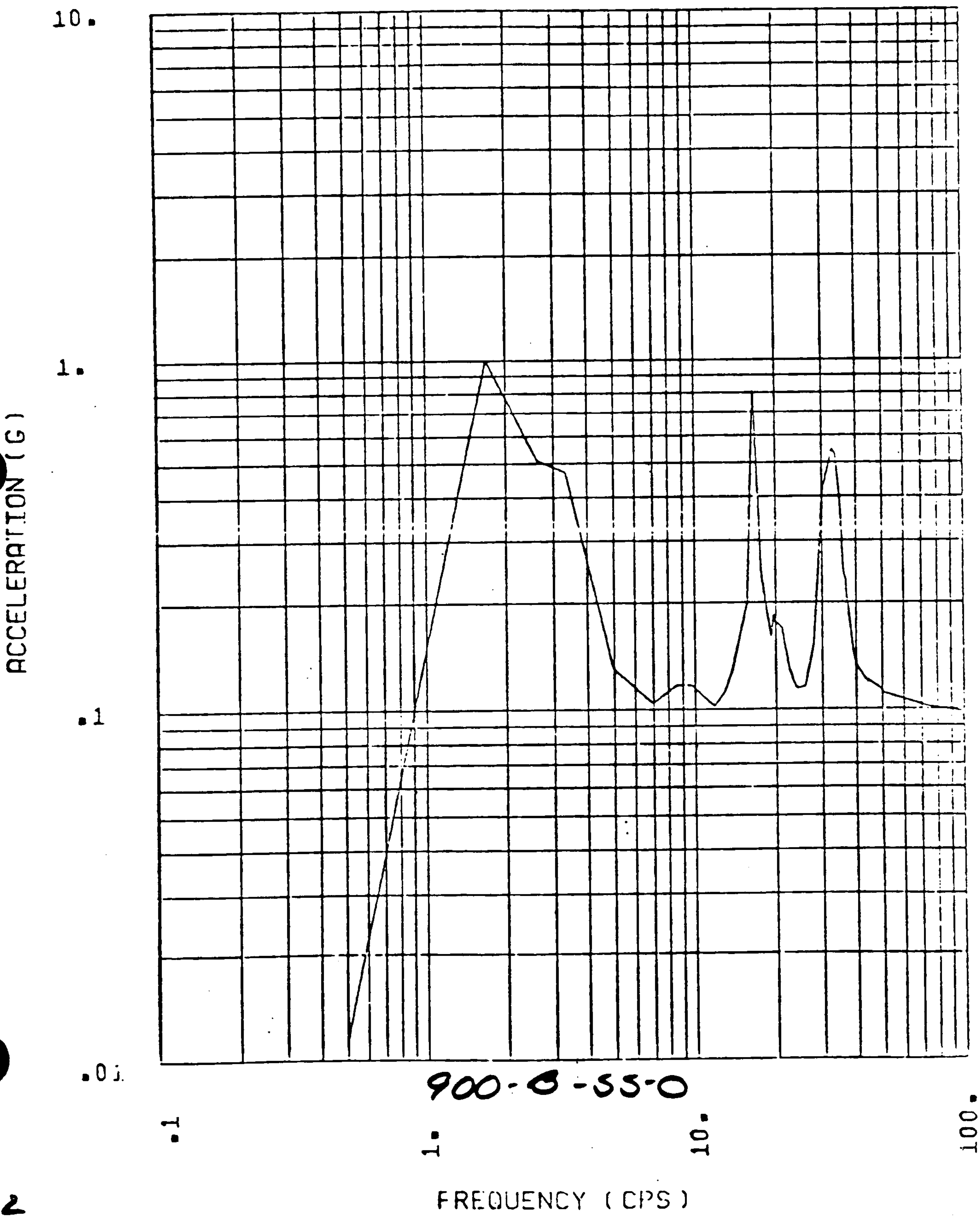

900-8-55-0

2

X-26

[illegible] FOR X-OBL• •01 [illegible]

COUPLED MODEL

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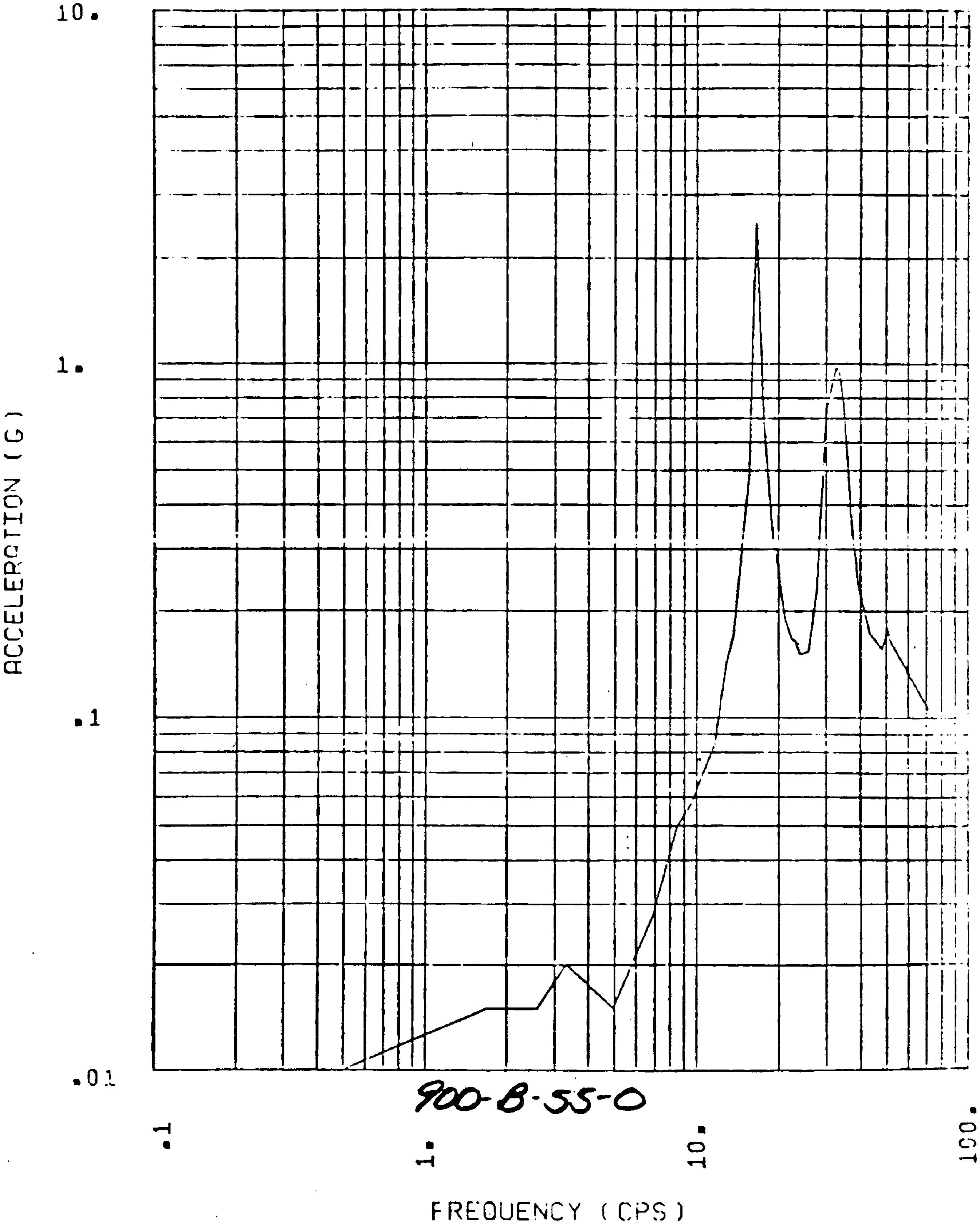

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SCE SAFETY INJECTION NOZ.(2B) X-RESPONSE FOR Y-OBE, .01 DAMPING

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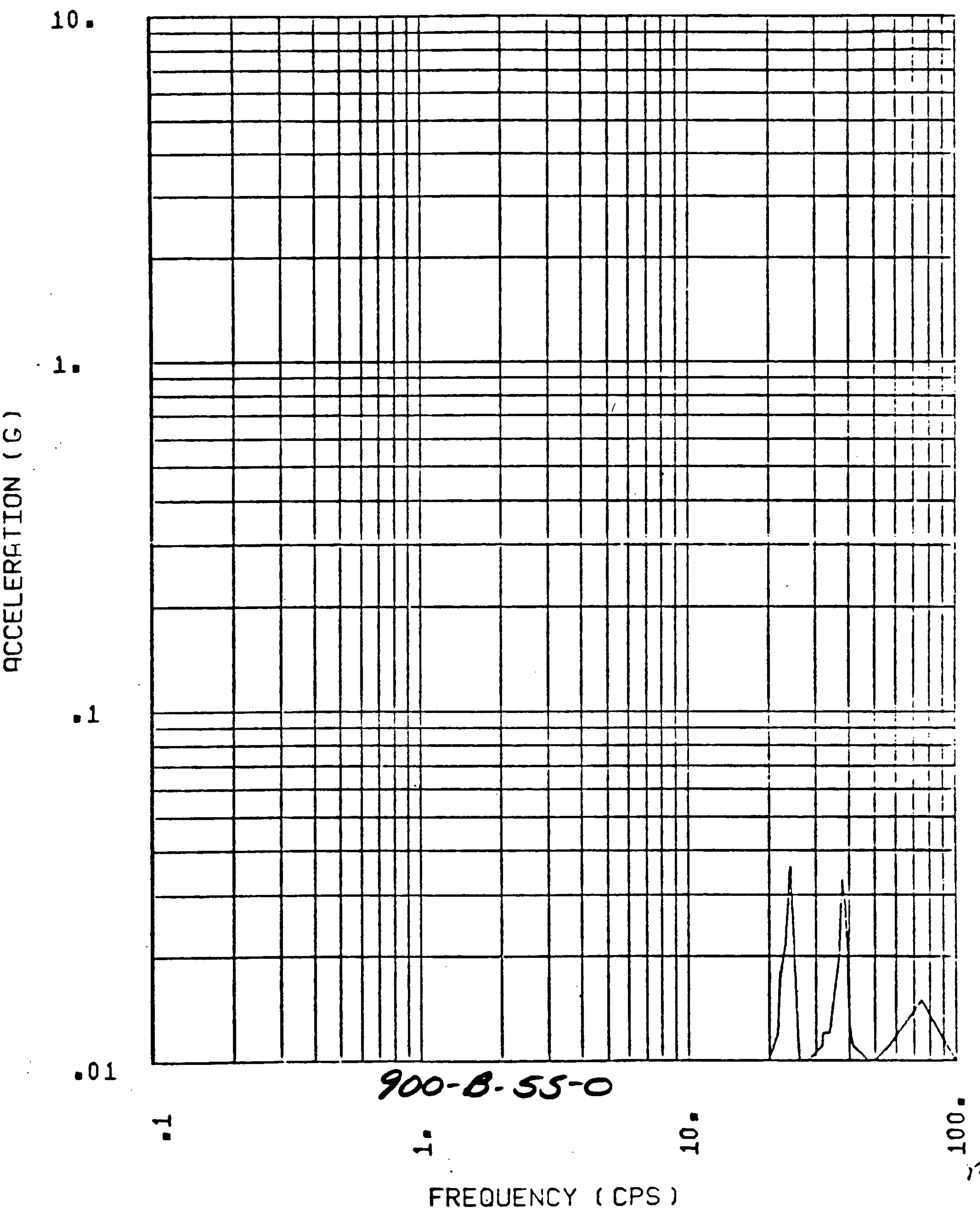

900-B-55-0

Y-17

SCE SAFETY INJECTION NOZ.(2B) Y-RESPONSE FOR Y-OBE, .01 DAMPING

COUPLED MODEL

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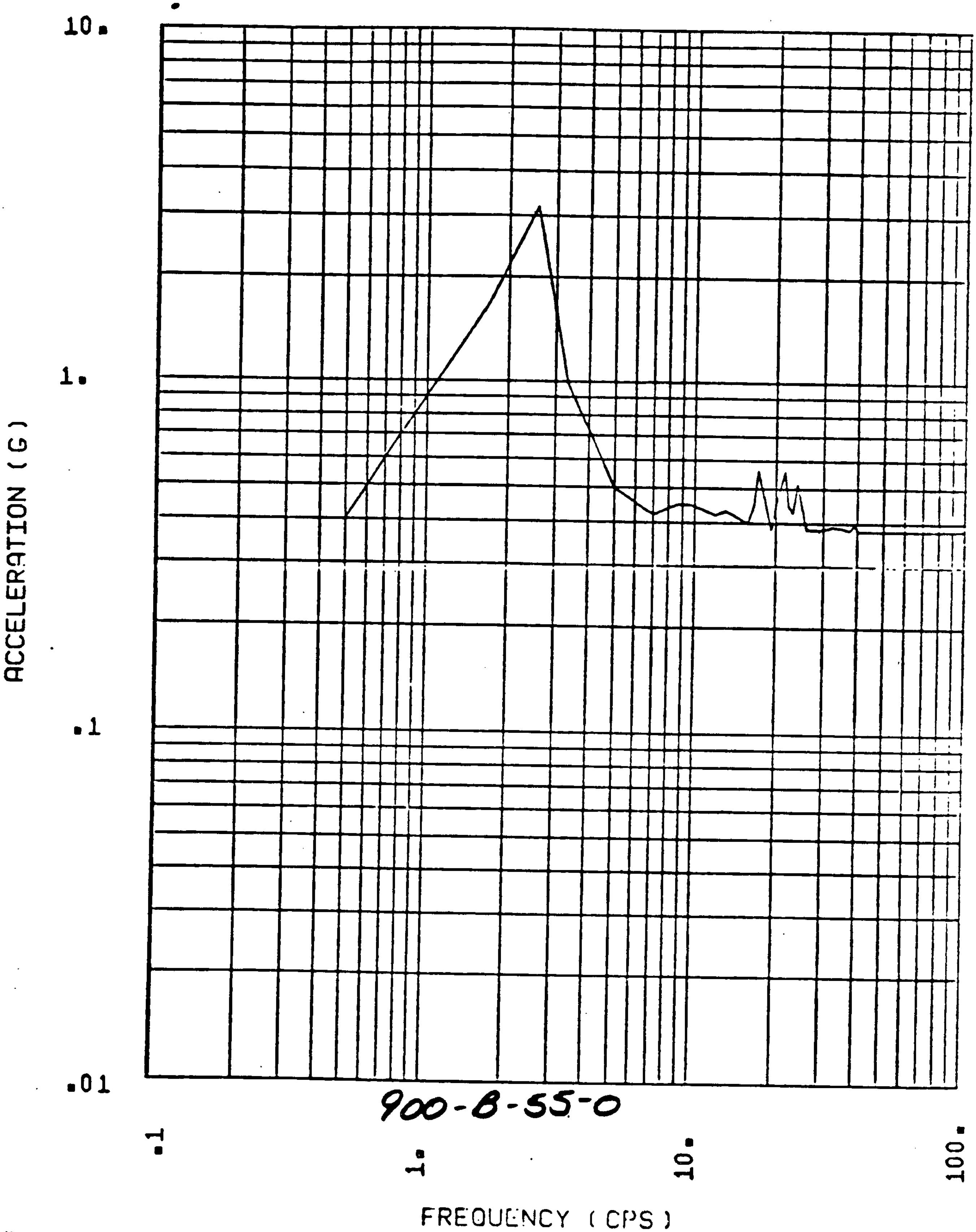

900-B-55-0

Y-1

SCE SAFETY INJECTION NOZ.(2B) Z-RESPONSE FOR Y-OBE, .01 DAMPING

COUPLED MODEL

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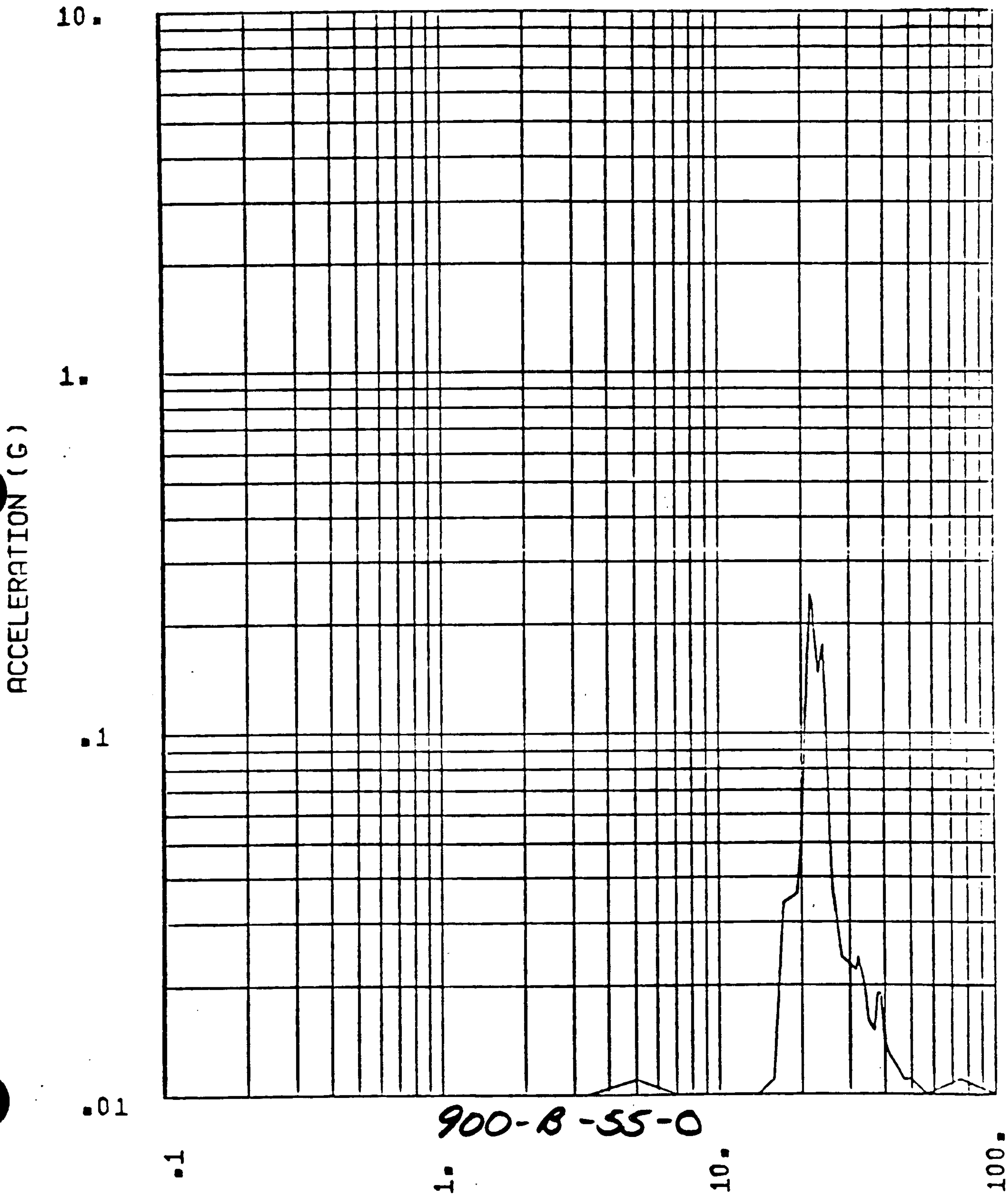

900-B-55-0

Y-25

SCE SAFETY INJECTION NOZ.(2B) X-RESPONSE FOR Z-OBE, .01 DAMPING

Coupled Mode

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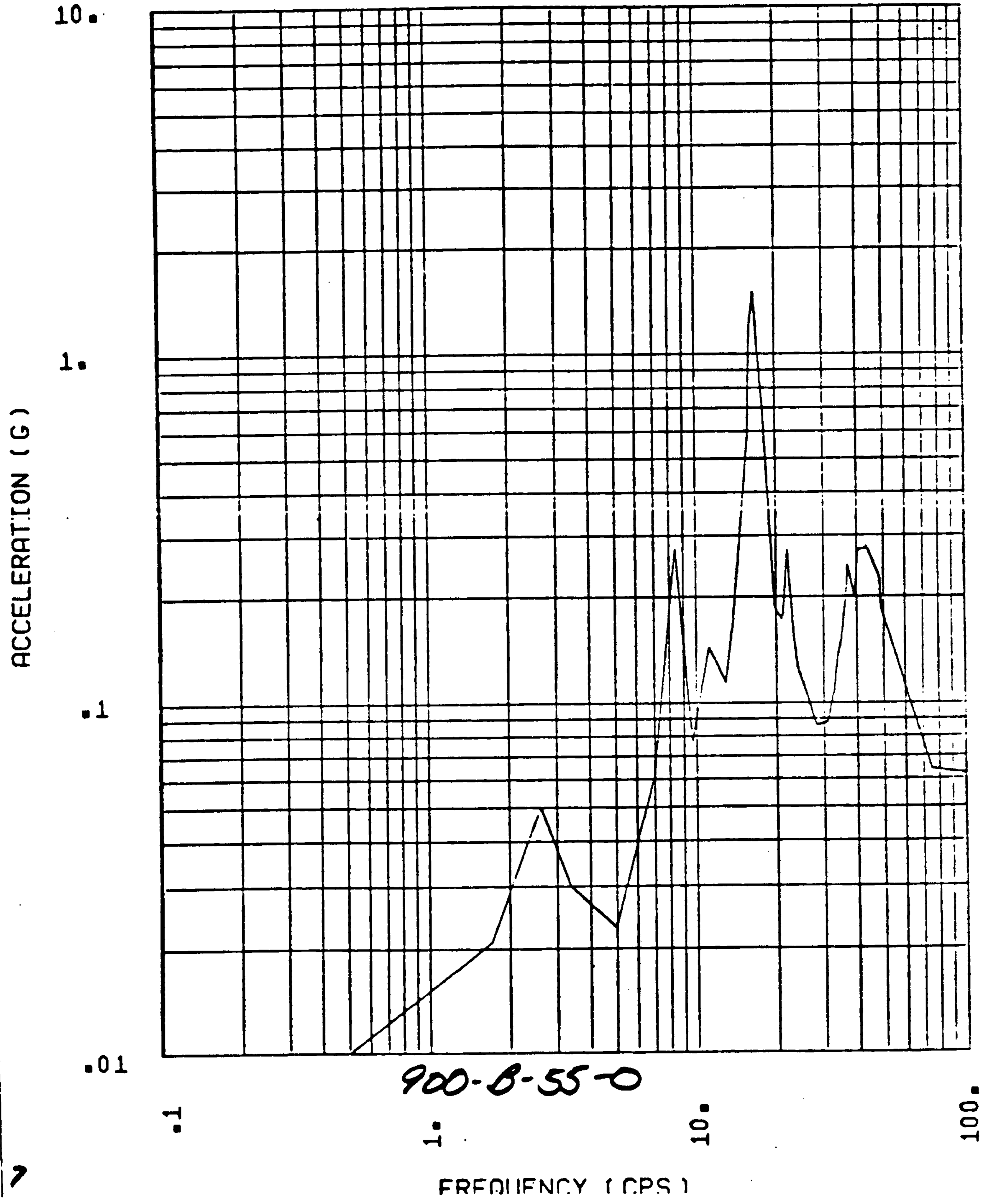

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2-27

SCE SAFETY INJECTION NOZ.(2B) Y-RESPONSE FOR Z-OBE, .01 DAMPING

Coupled model

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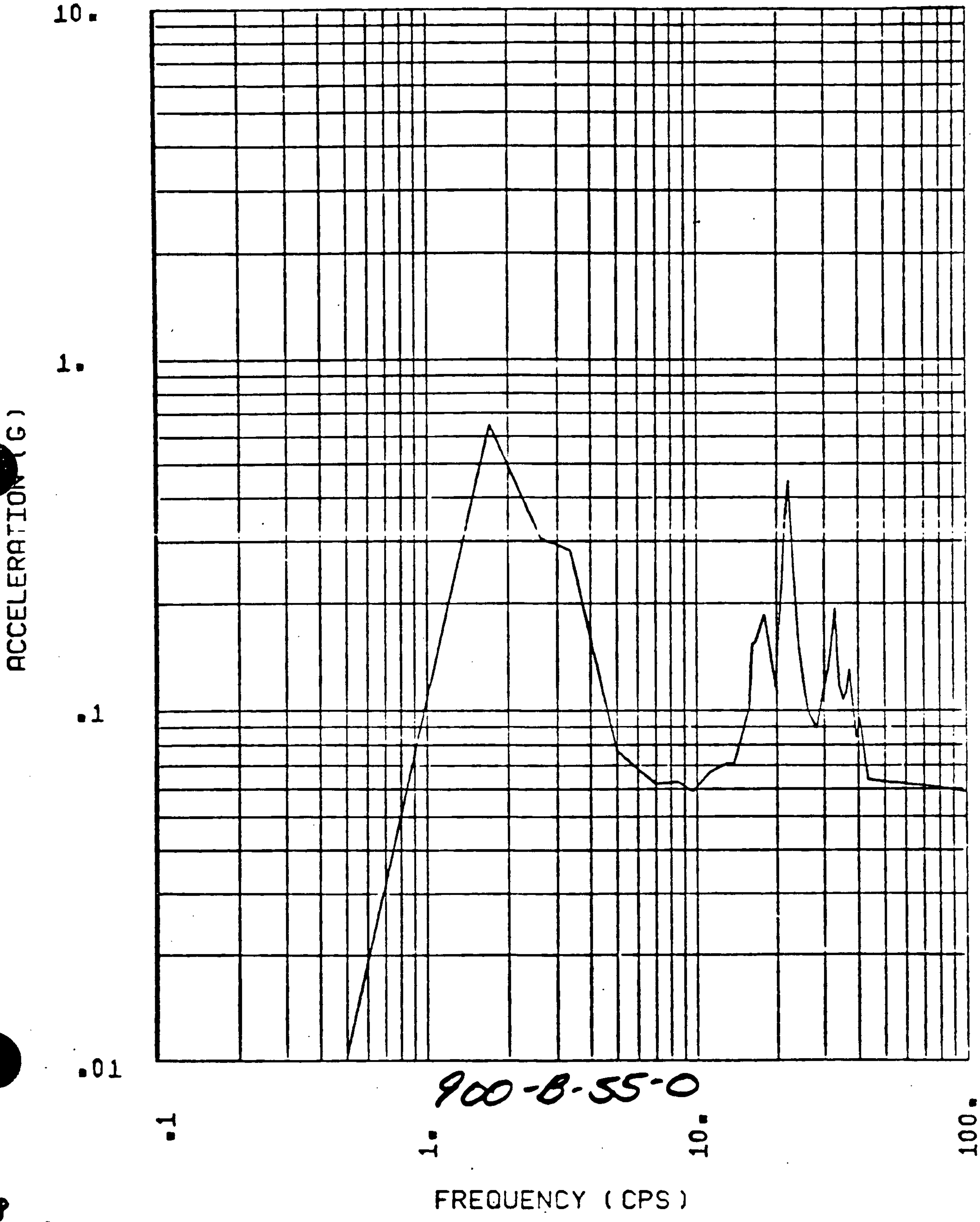

900-B-55-0

SCE SAFETY INJECTION NOZ.(2B) Z-RESPONSE FOR Z-OBE. .01 DAMPING

Coupled model

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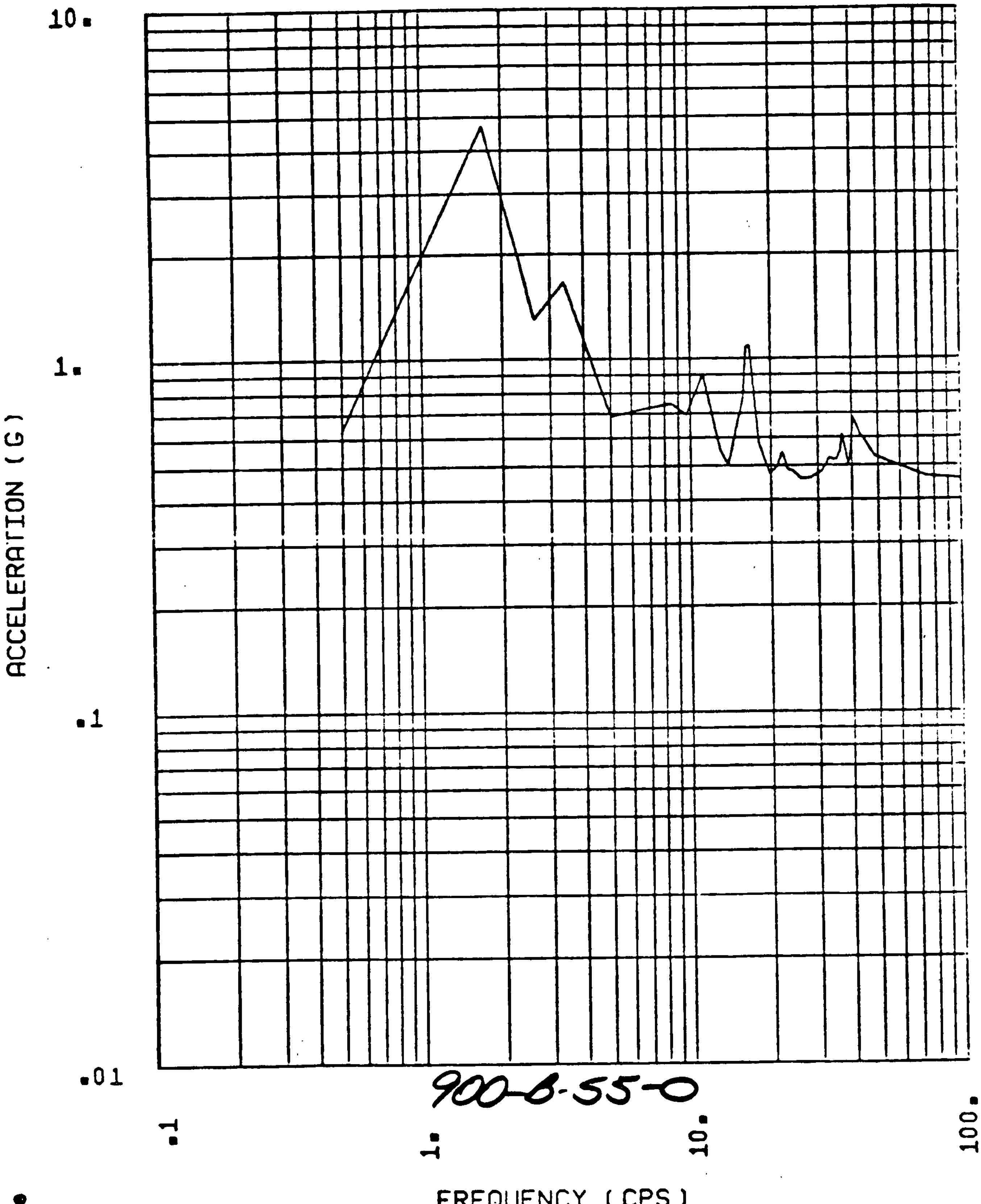

900-6-55-0

SCE PRESSURIZER SPRAY NOZZLE , X-RESPONSE FOR X-OBE, .01 DAMPING

COUPLED MODEL

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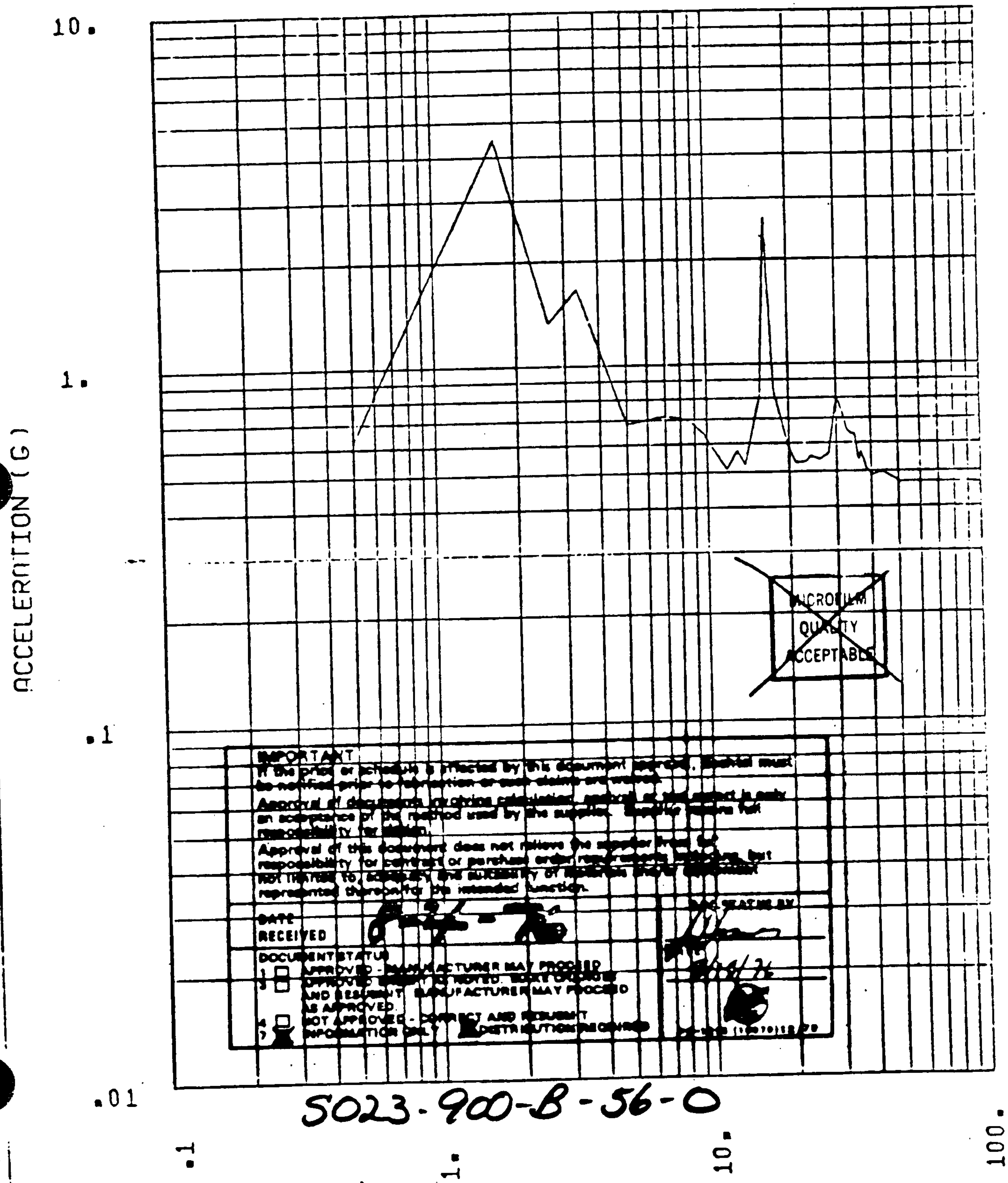

S023-900-B-56-0

(SUPERSEDES 900-B-19-0)

X-

SCE PRESURIZER SPRAY NOZZLE , Y-RESPONSE FOR X-OBE, .01 DAMPING

COUPLED MODEL

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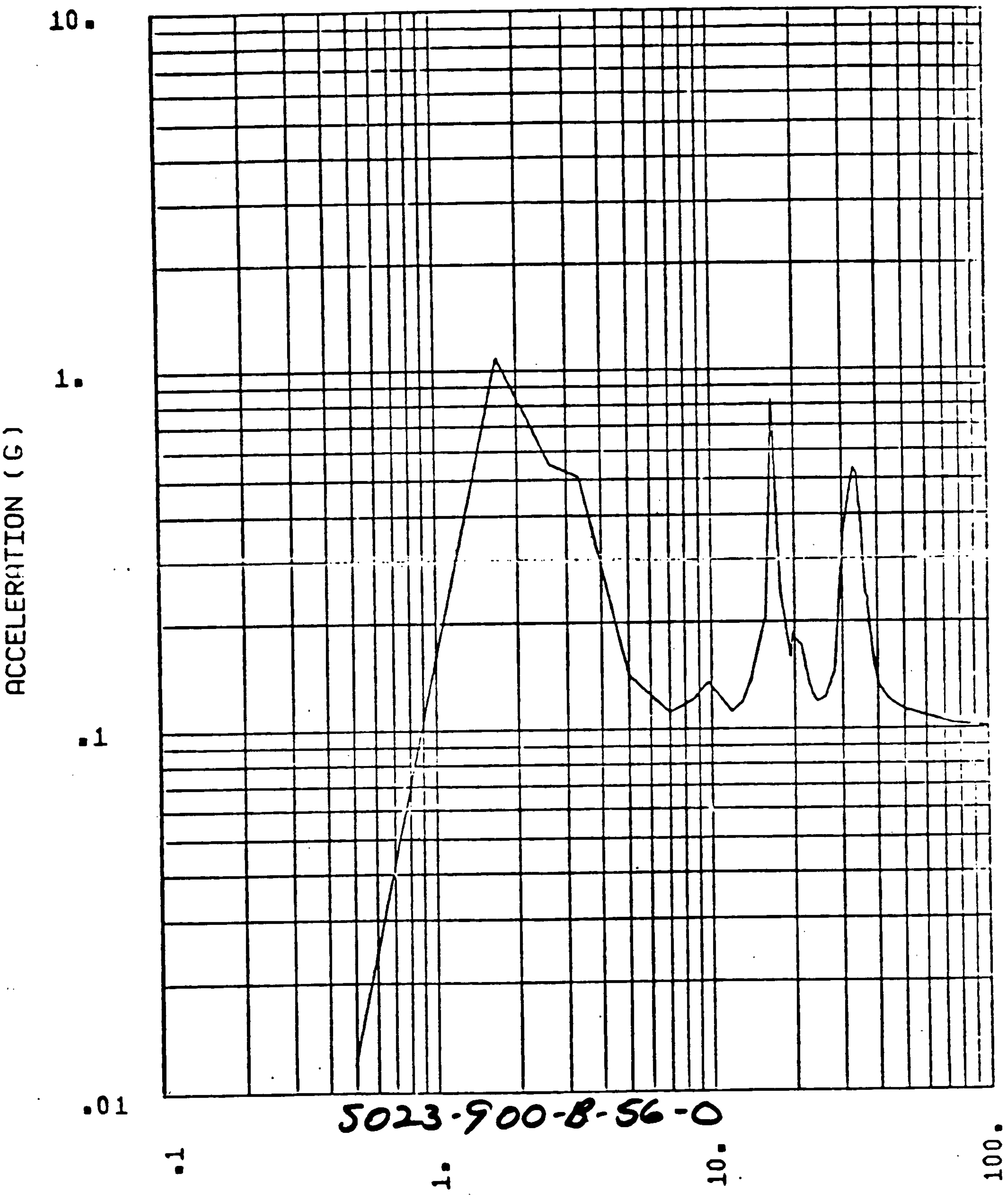

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X-35

SCE PRESSURIZER SPRAY NOZZLE , Z-RESPONSE FOR X-OBE, .01 DAMPING

COUPLED MODEL

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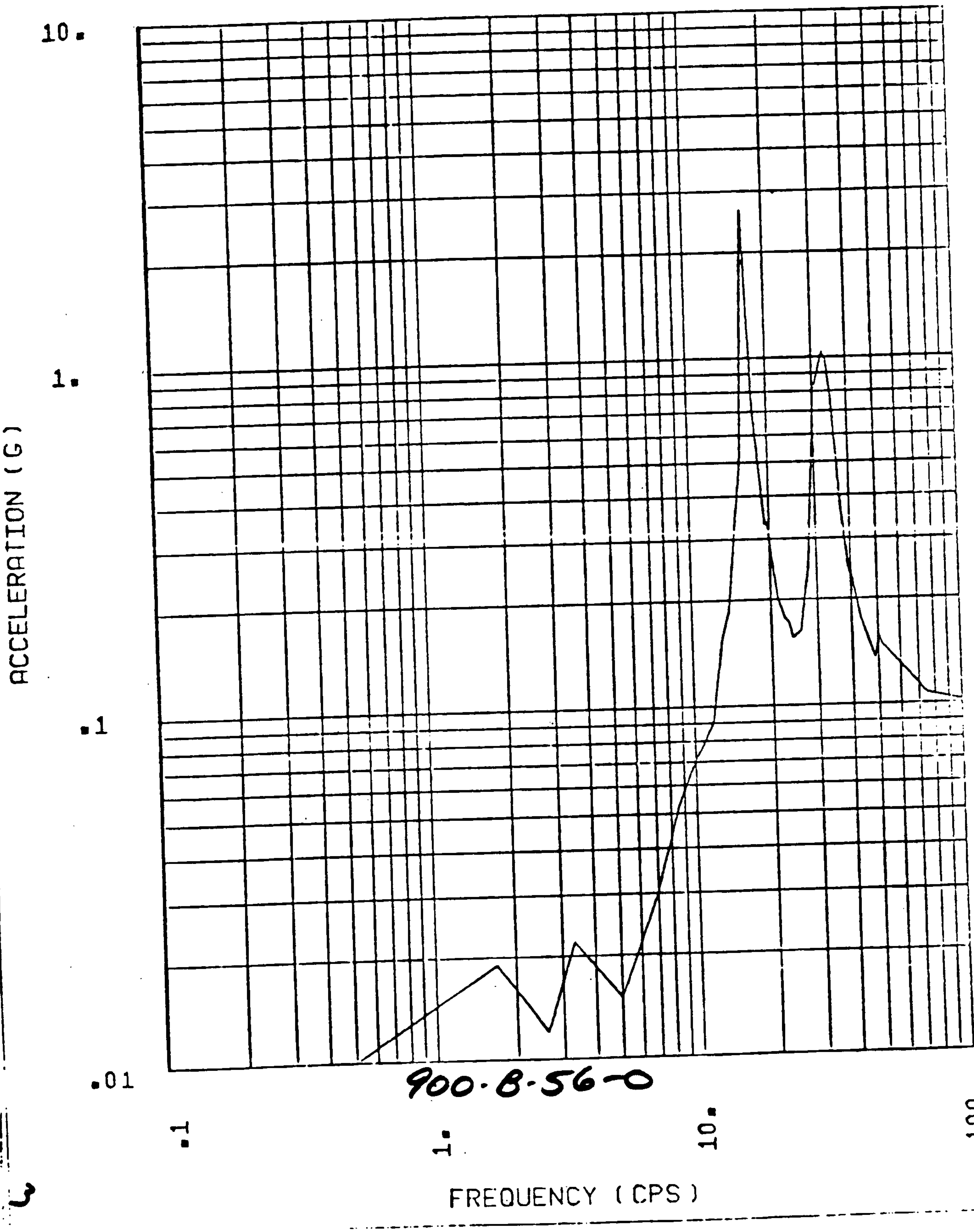

900-B-56-0

X-37

SCE PRESURIZER SPRAY NOZZLE , X-RESPONSE FOR Y-OBE, .01 DAMPING

COUPLED MODEL

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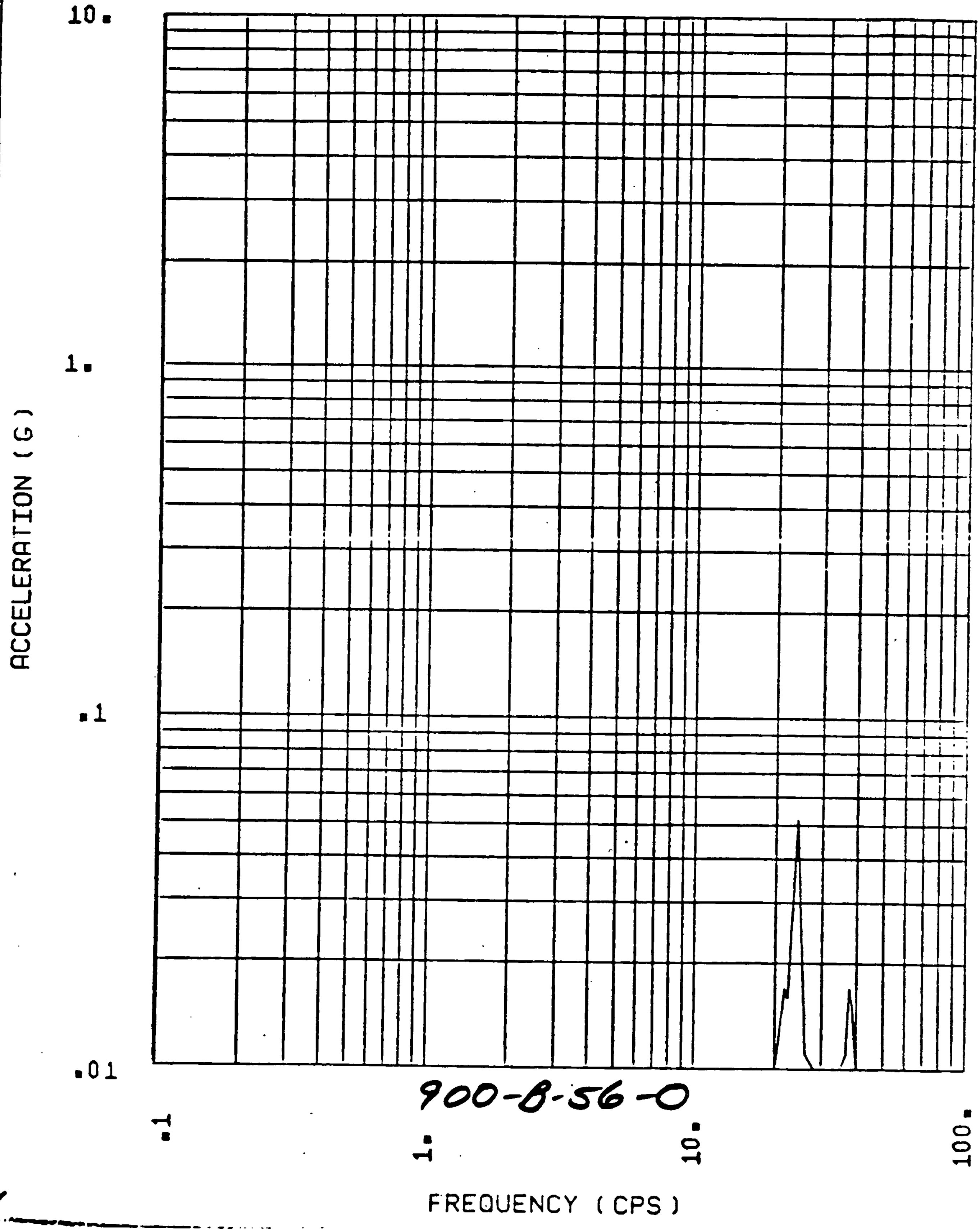

900-8-56-0

Y-2

4

SCE PRESURIZER SPRAY NOZZLE , Y-RESPONSE FOR Y-OBE, .01 DAMPING

COUPLED MODEL

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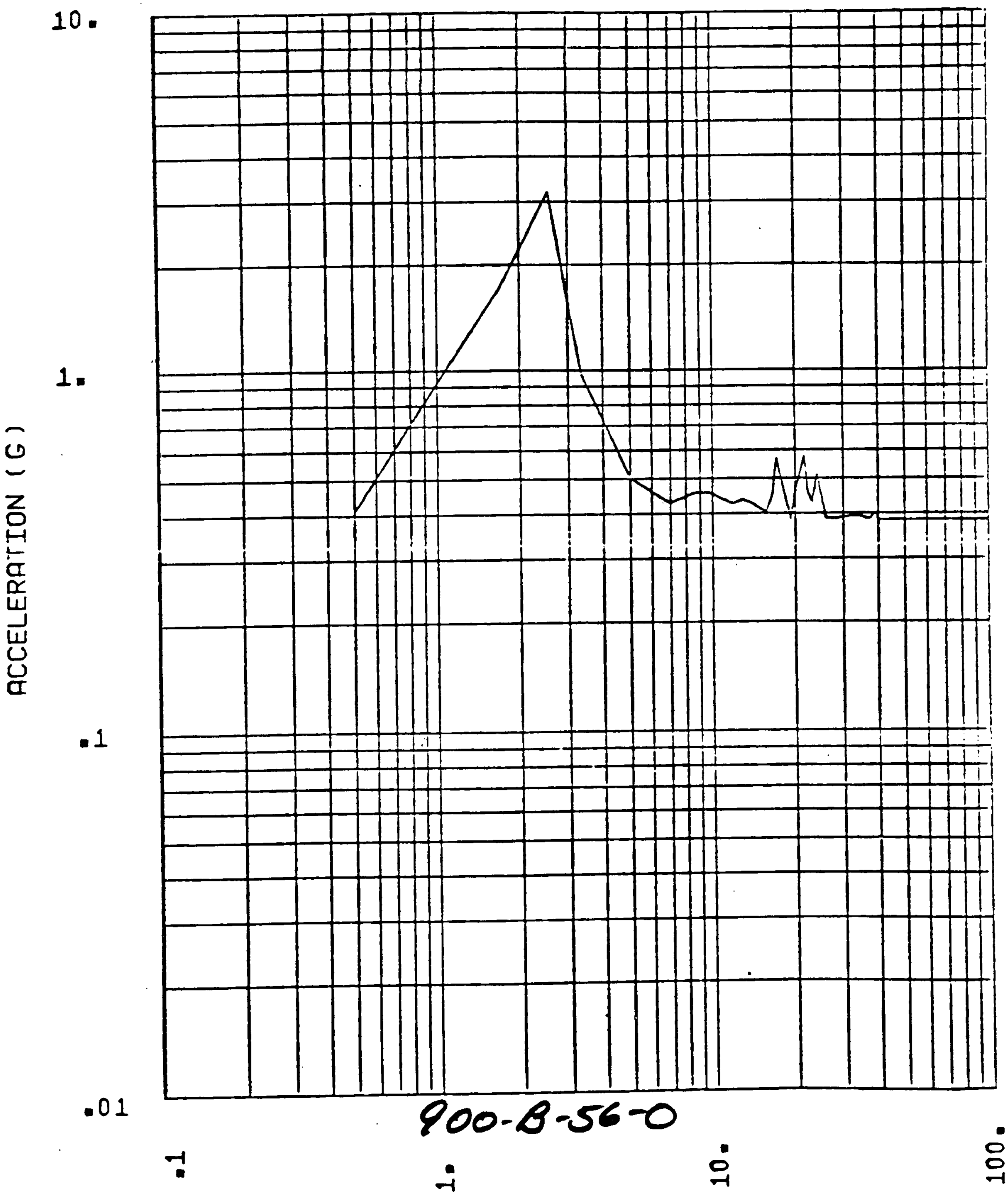

900-B-56-0

Y-30

SCE PRESURIZER SPRAY NOZZLE , Z-RESPONSE FOR Y-OBE, .01 DAMPING

COUPLED MODEL

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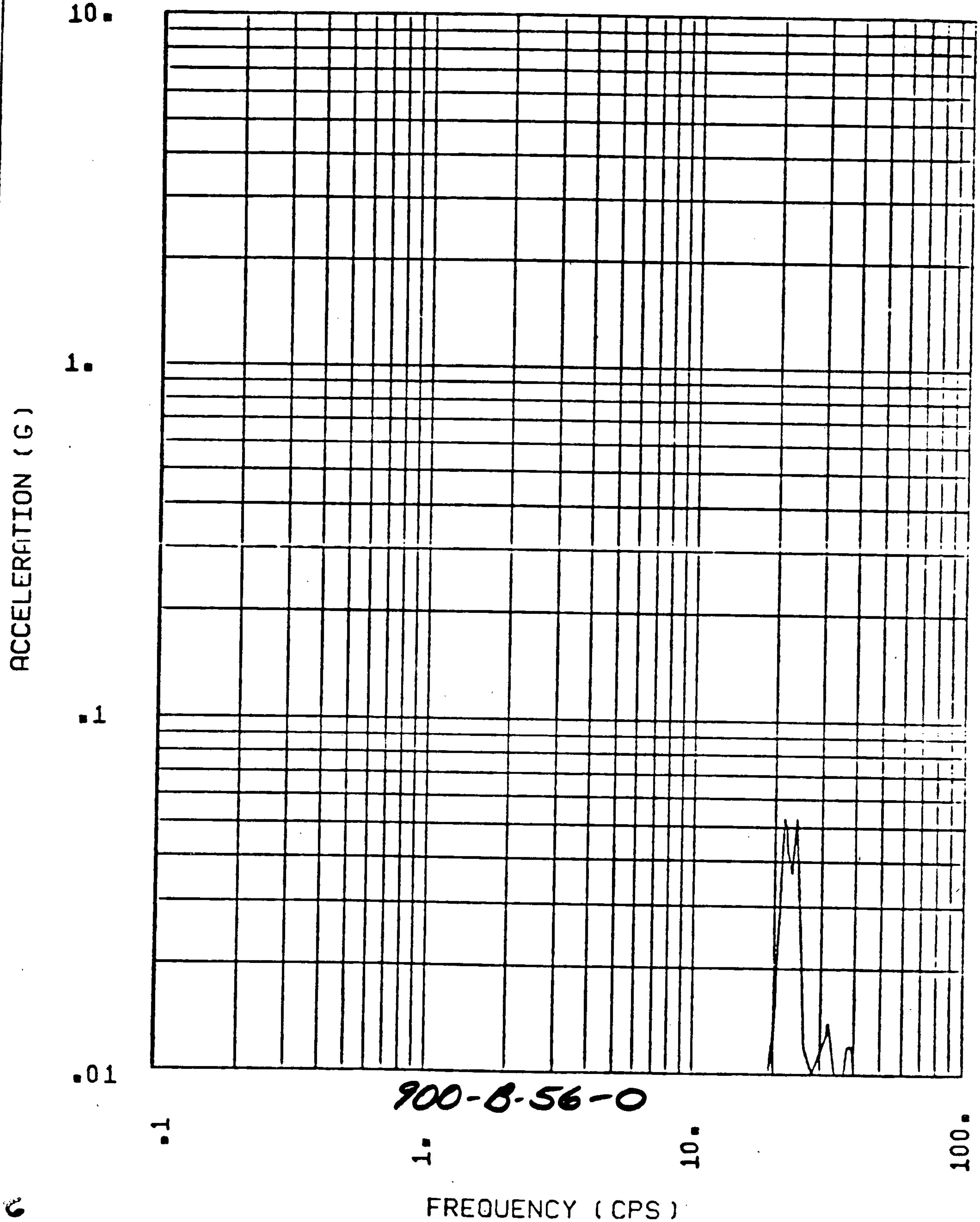

900-B-56-0

SCE PRESURIZER SPRAY NOZZLE , X-RESPONSE FOR Z-OBE, .01 DAMPING

Coupled Mode

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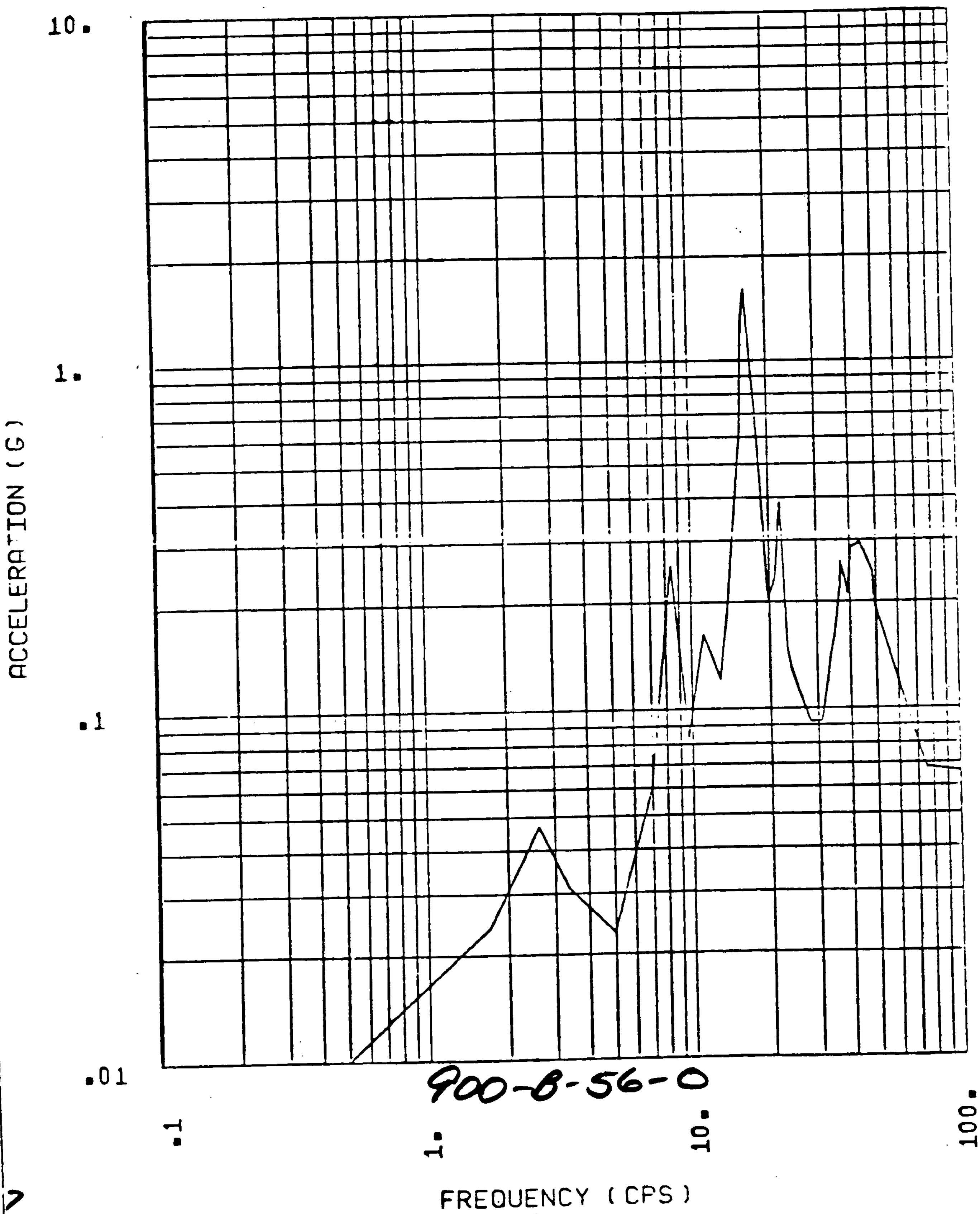

900-B-56-0

Z-34

SCE PRESURIZER SPRAY NOZZLE , Y-RESPONSE FOR Z-OBE, .01 DAMPING

Coupled model

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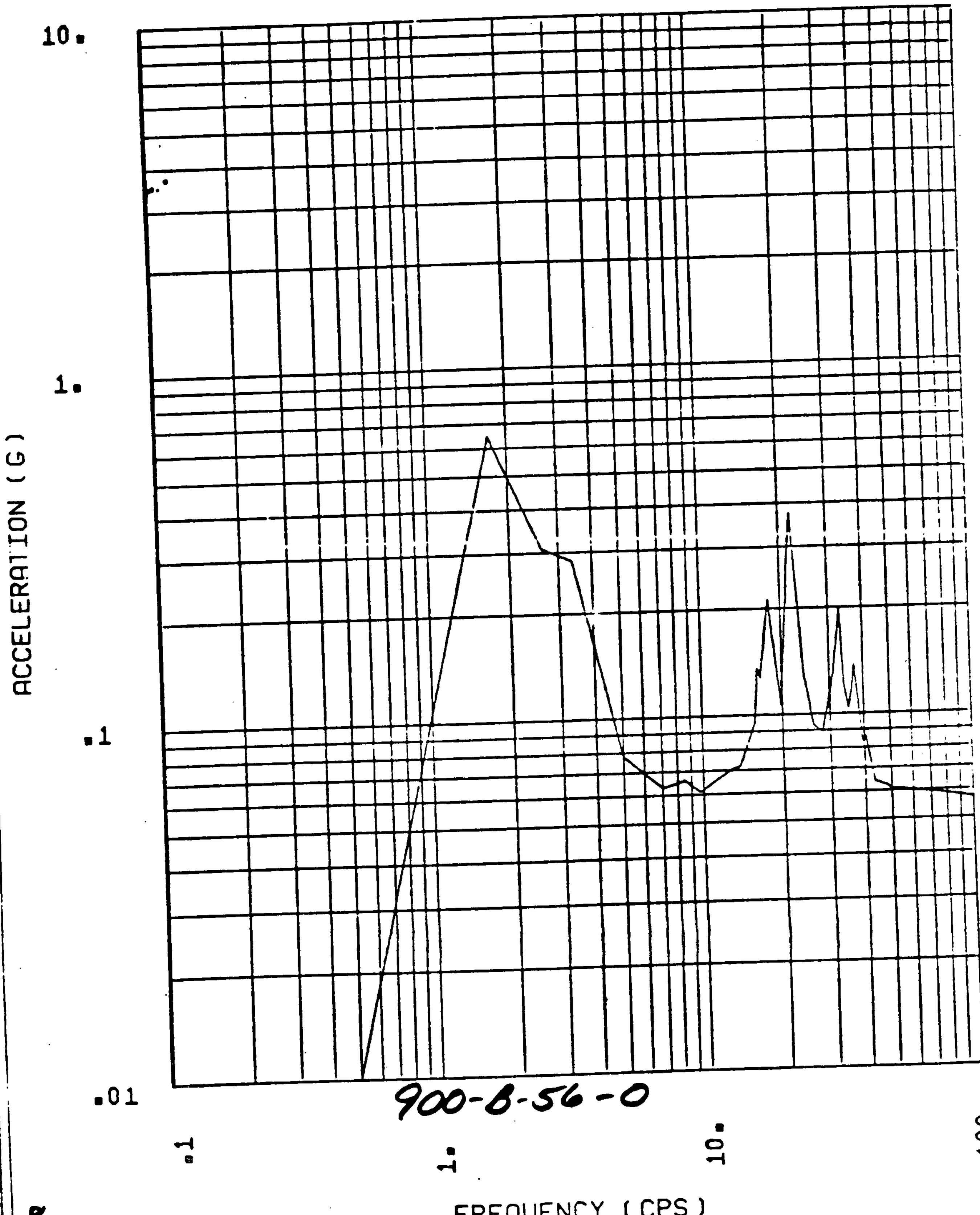

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8

SCE PRESURIZER SPRAY NOZZLE , Z-RESPONSE FOR Z-OBE, .01 DAMPING

Coupled model

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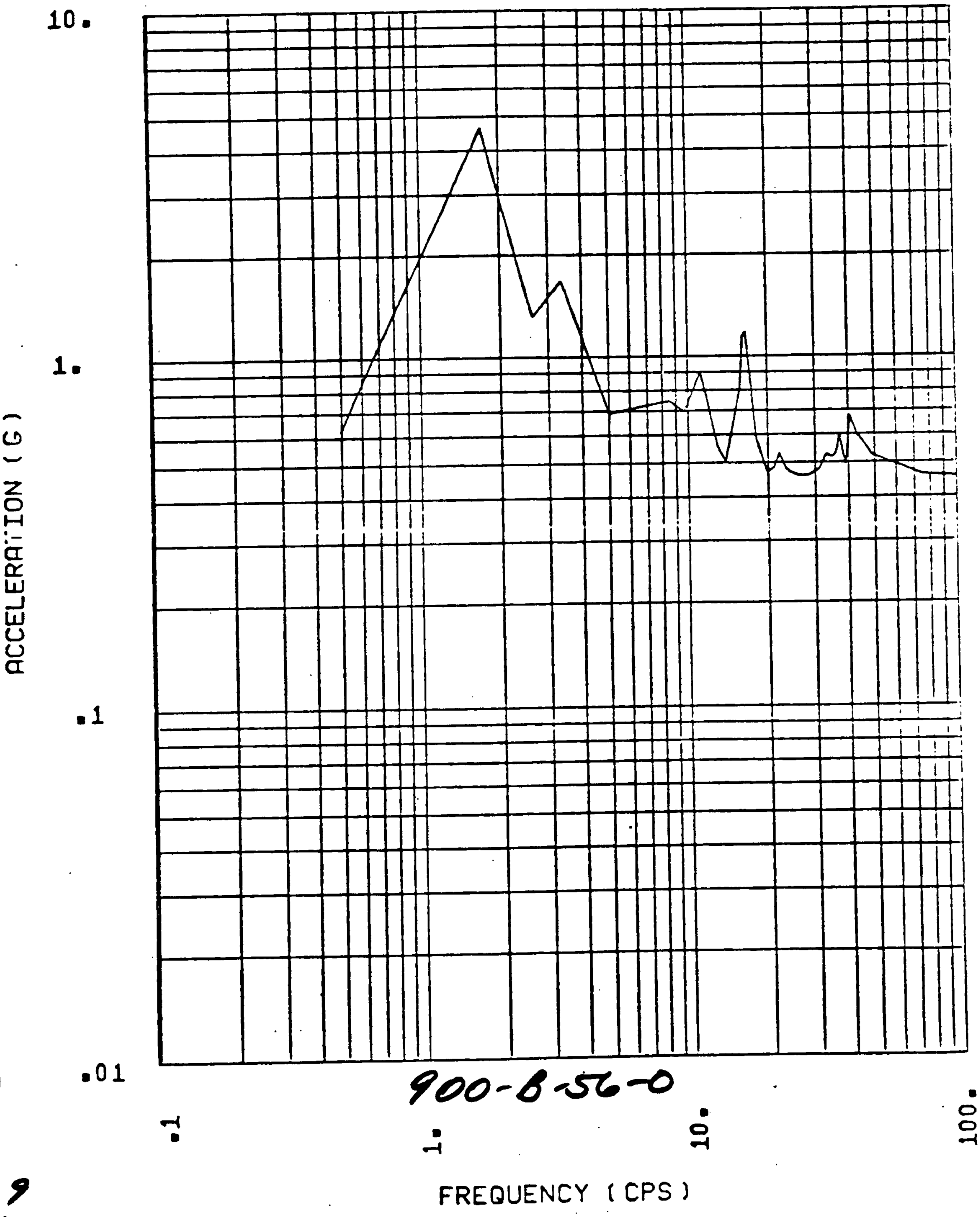

900-B-56-0

9

SCE PRESSURIZER SPRAY NOZ.(1A) X-RESPONSE FOR X-OBE, .01 DAMPING

COUPLED MODEL

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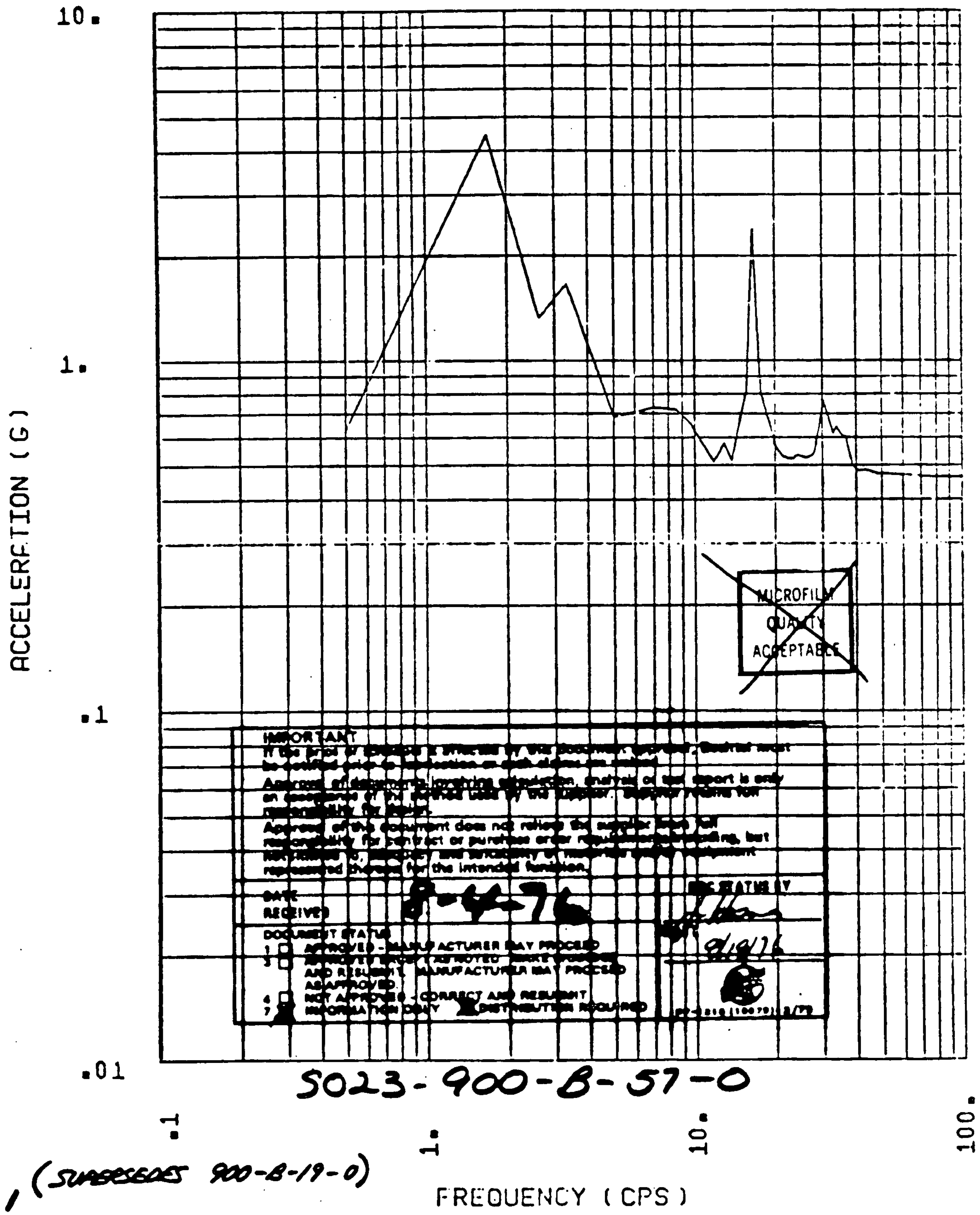

S023-900-B-57-0

(SUPERSEDES 900-B-19-0)

SCE PRESURIZER SPRAY NOZ.(10) Y-RESPONSE FOR X-OBE, .01 DAMPING

COUPLED MODEL

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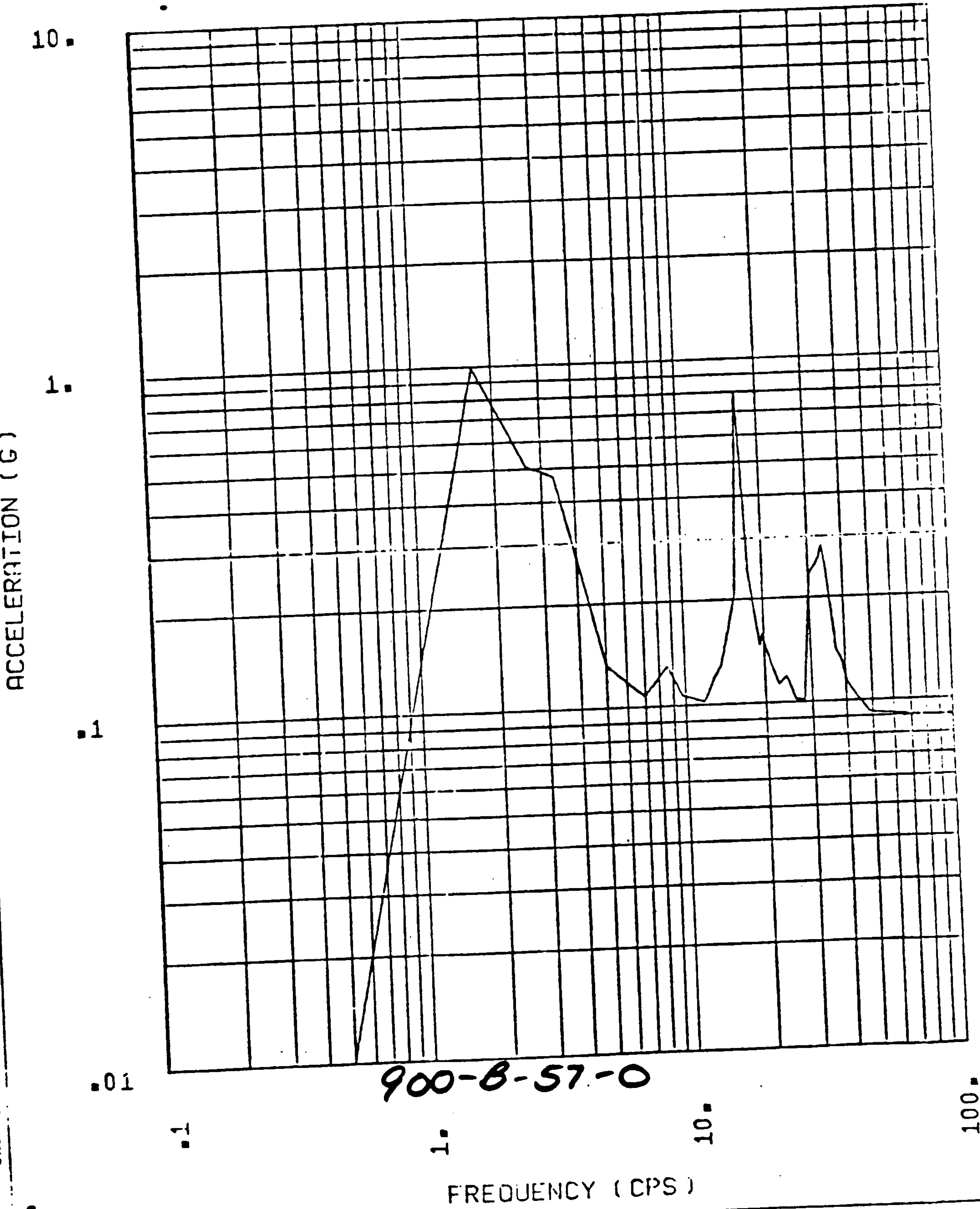

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COUPLED MODEL

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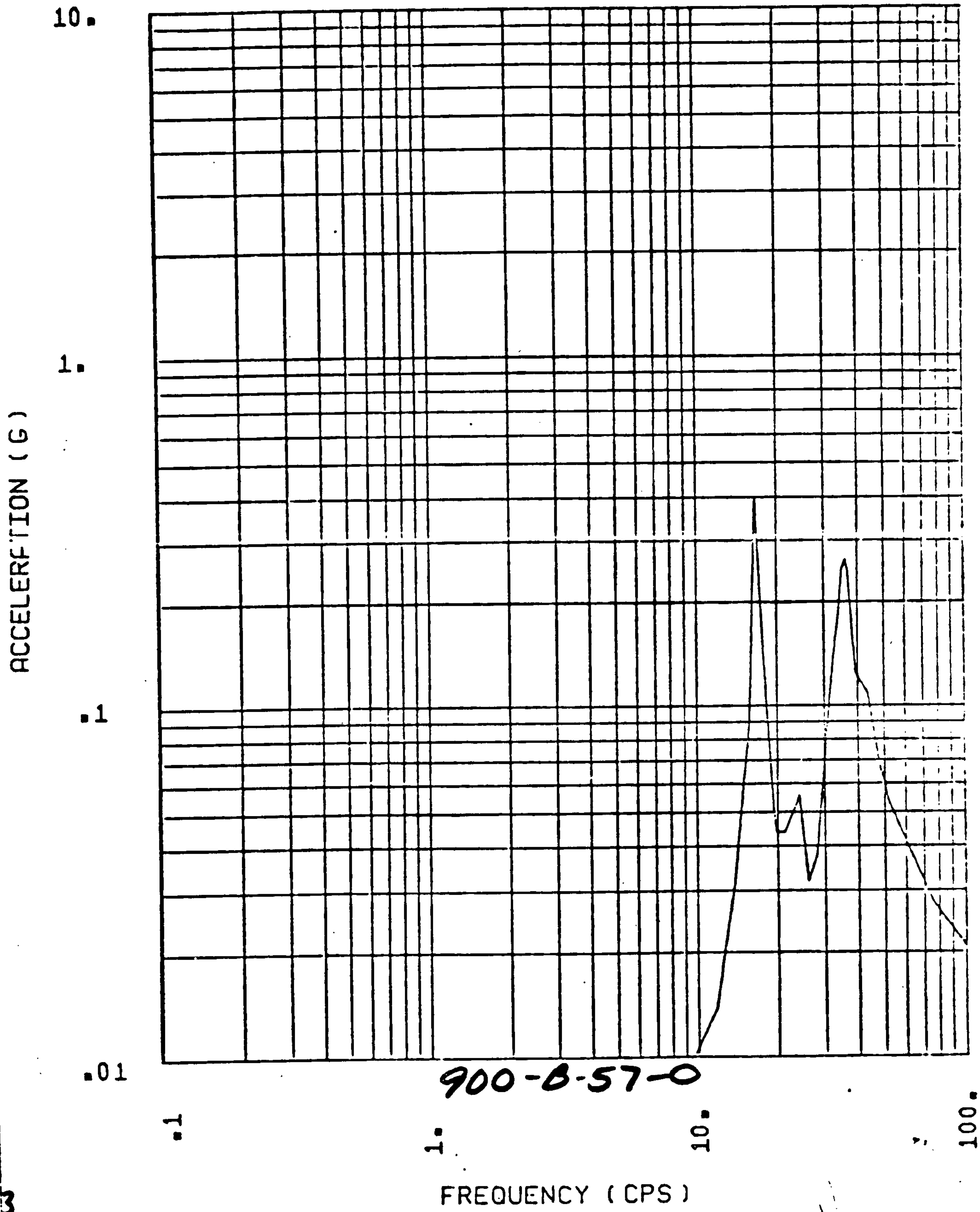

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COUPLED MOD

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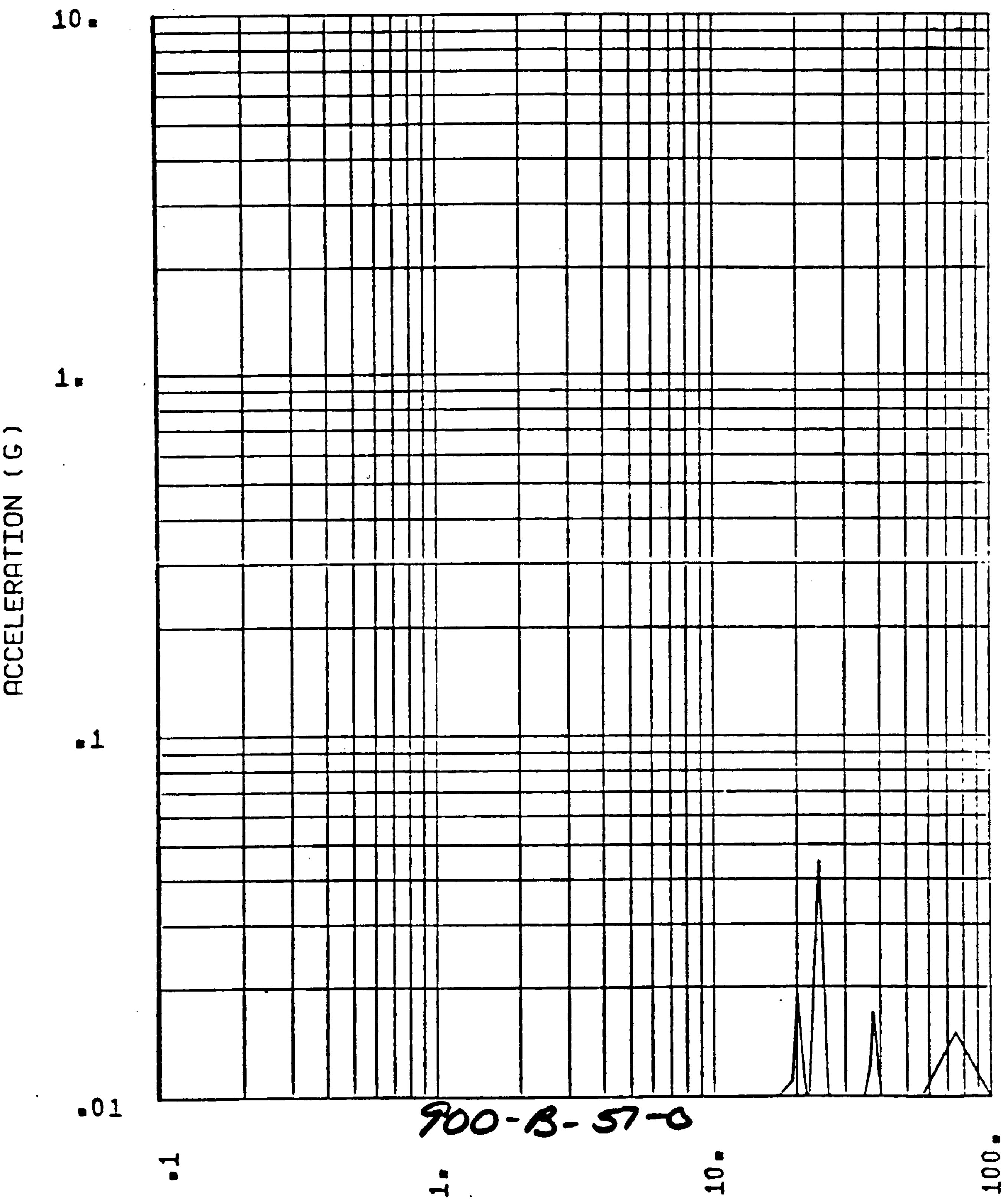

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COUPLED MODEL

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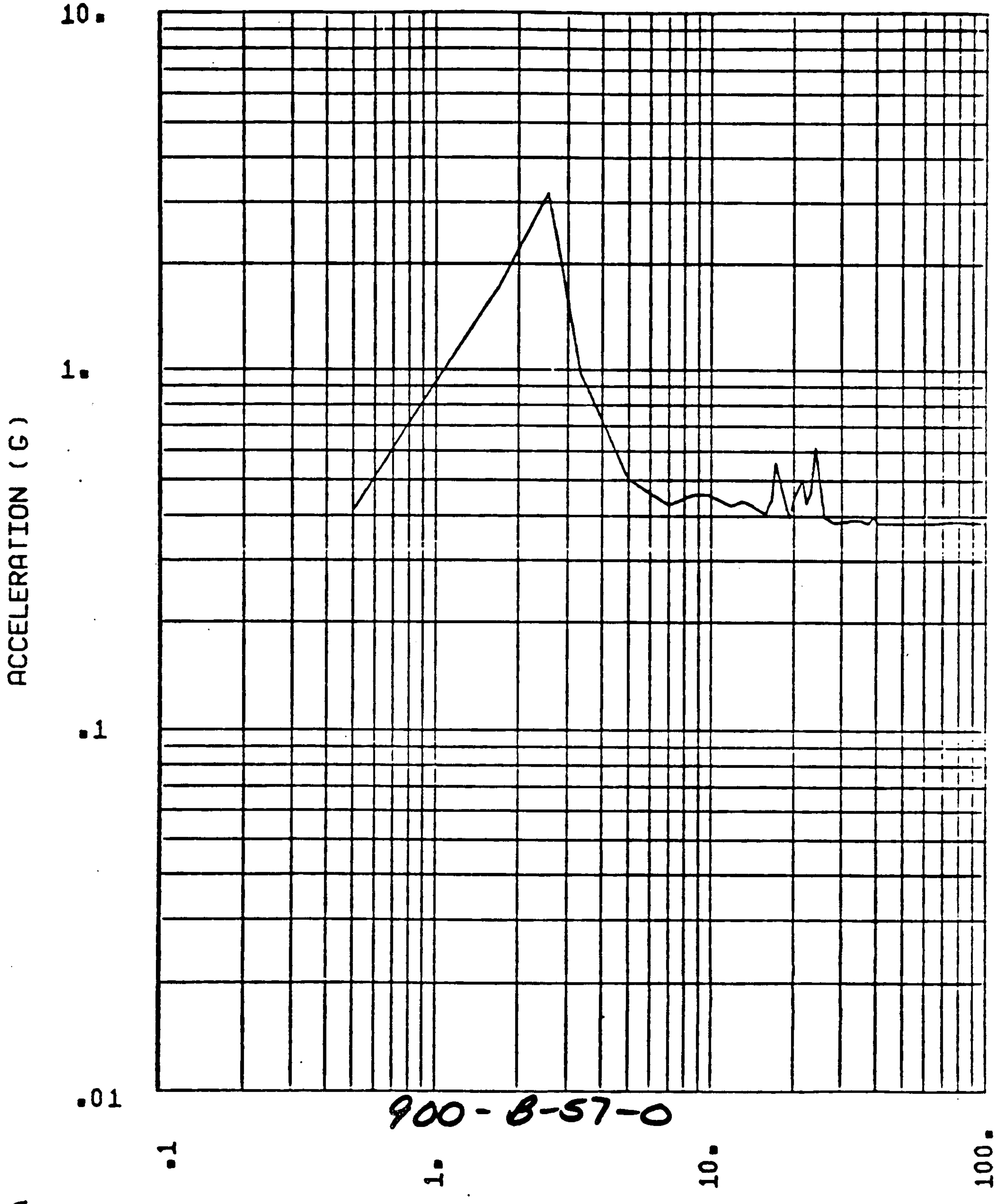

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SCE PRESURIZER SPRAY NOZ.(1A) Z-RESPONSE FOR Y-OBE, .01 DAMPING

COUPLED MODEL

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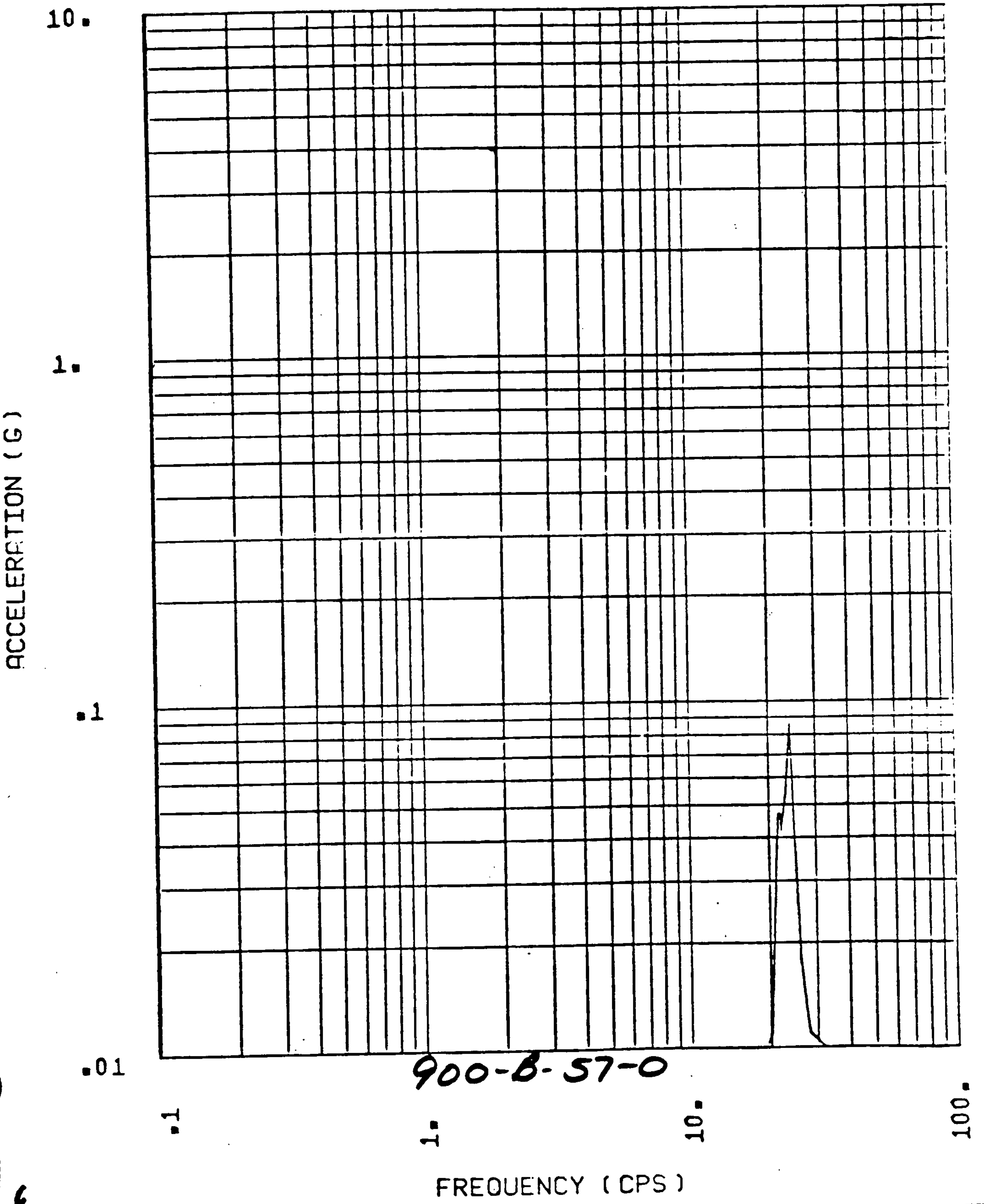

900-B-57-0

Y-31

6

SCE PRESURIZER SPRAY NOZ.(1A) X-RESPONSE FOR Z-OBE, .01 DAMPING

Coupled model

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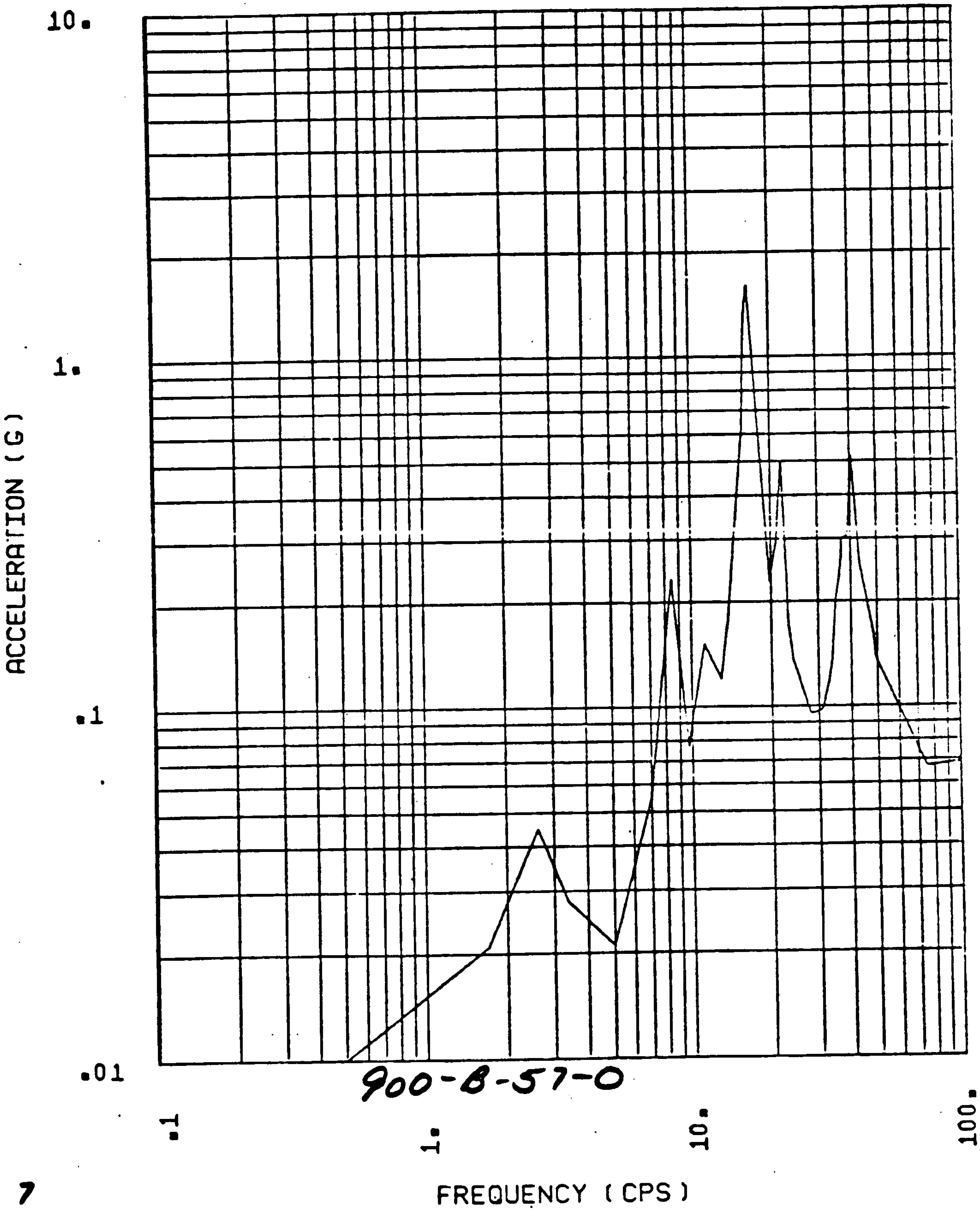

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SCE PRESURIZER SPRAY NOZ.(1A) Y-RESPONSE FOR Z-OBE, .01 DAMPING

Coupled model

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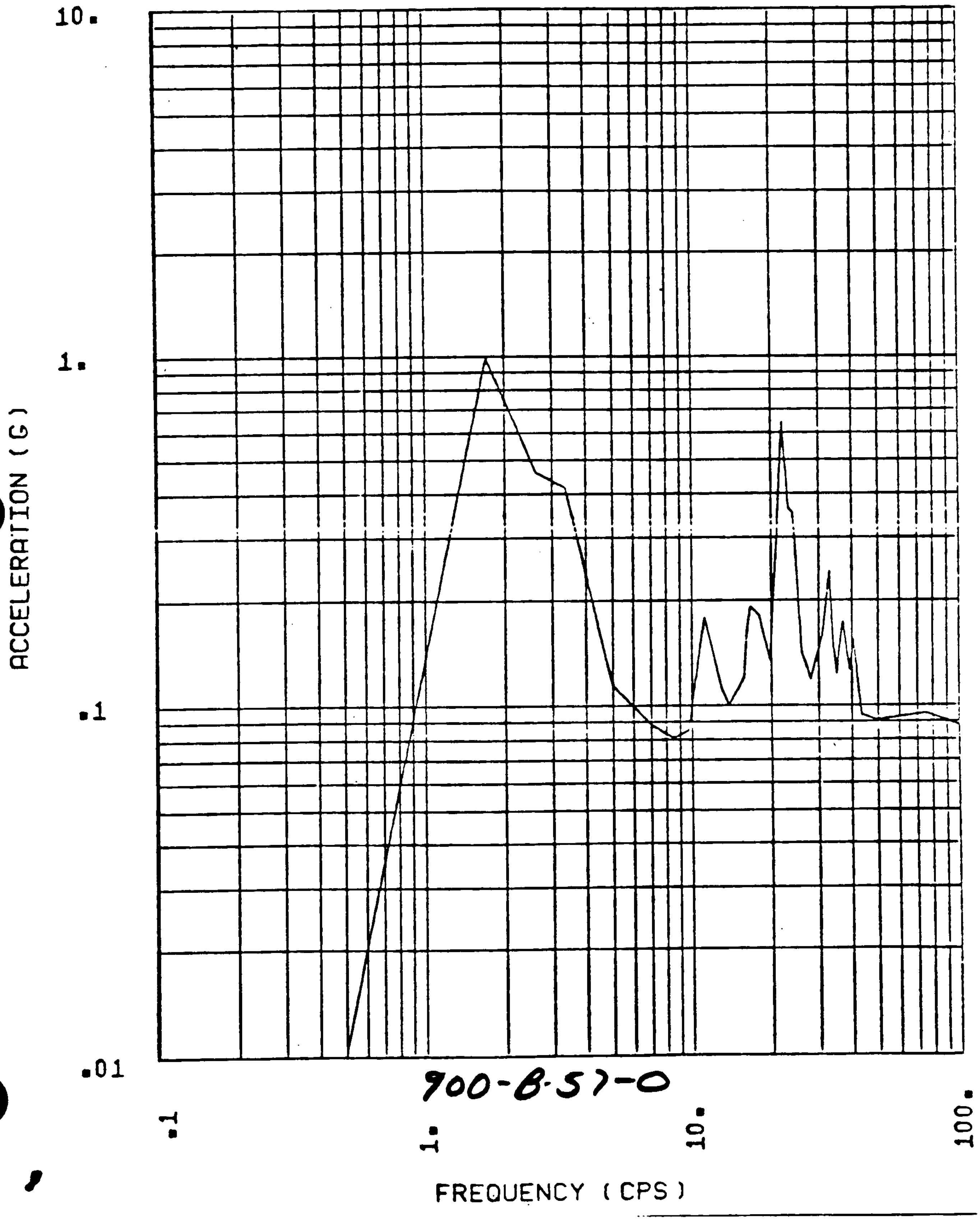

900-B-57-0

SCE PRESURIZER SPRAY NOZ.(19) Z-RESPONSE FOR Z-OBE, .01 DAMPING

Coupled model

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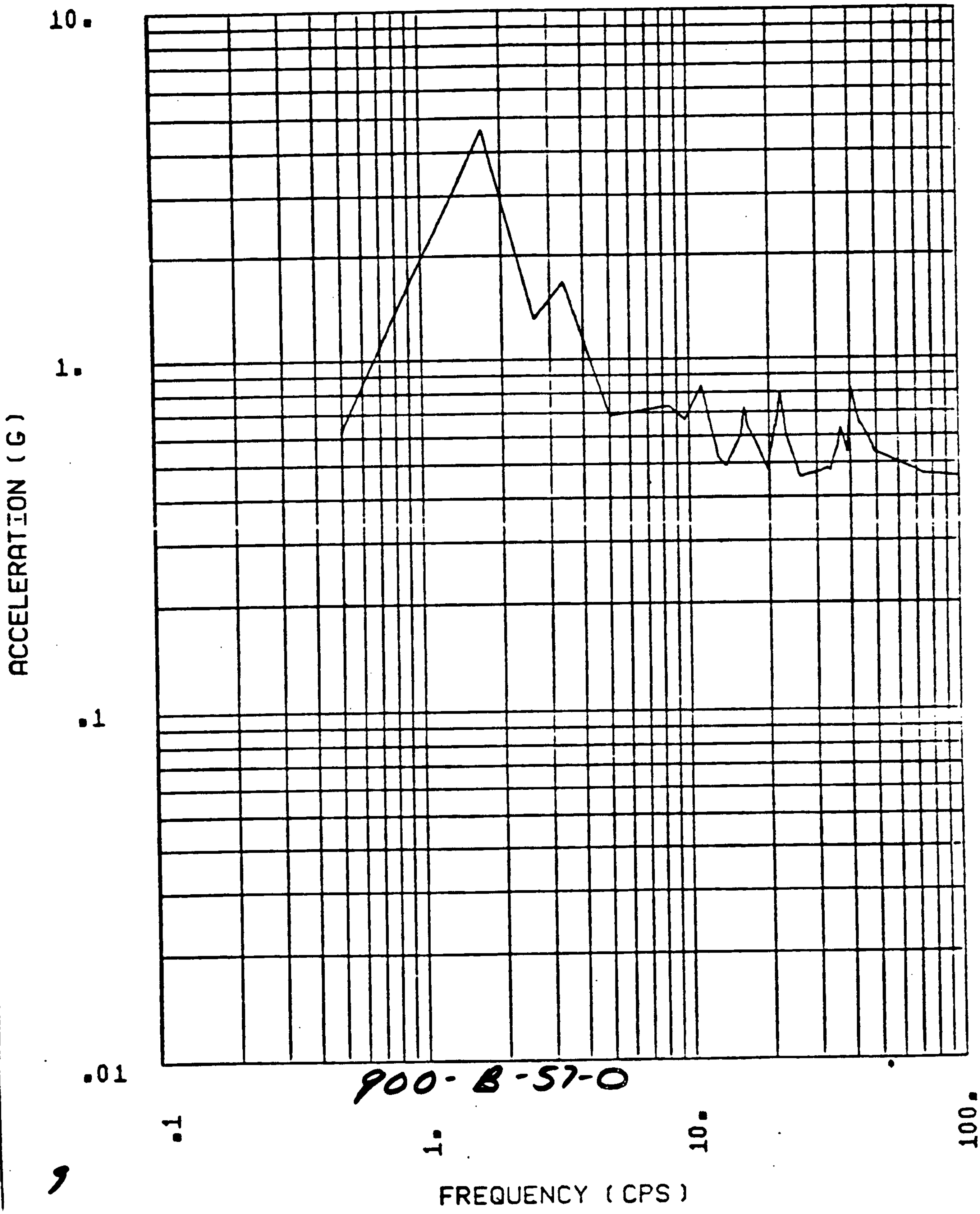

900-B-57-0

9

SCE CHARGEING INLET NOZZLE , X-RESPONSE FOR X-OBE, .01 DAMPING

COUPLED MODEL

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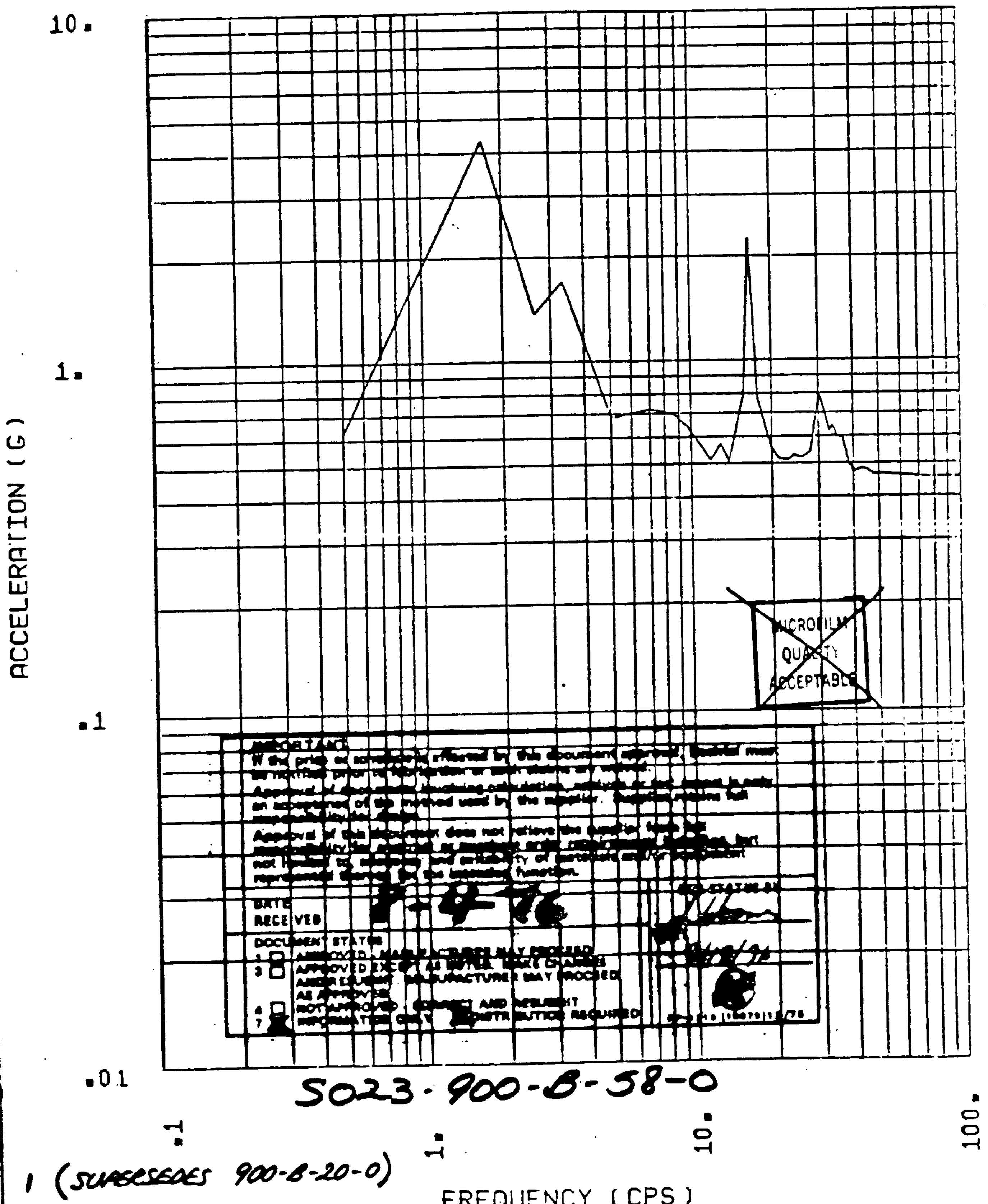

S023-900-B-58-0

1 (SUPERSEDES 900-B-20-0)

X-

SCE CHARGEING INLET NOZZLE , Z-RESPONSE FOR Z-OBE, .01 DAMPING

Coupled model

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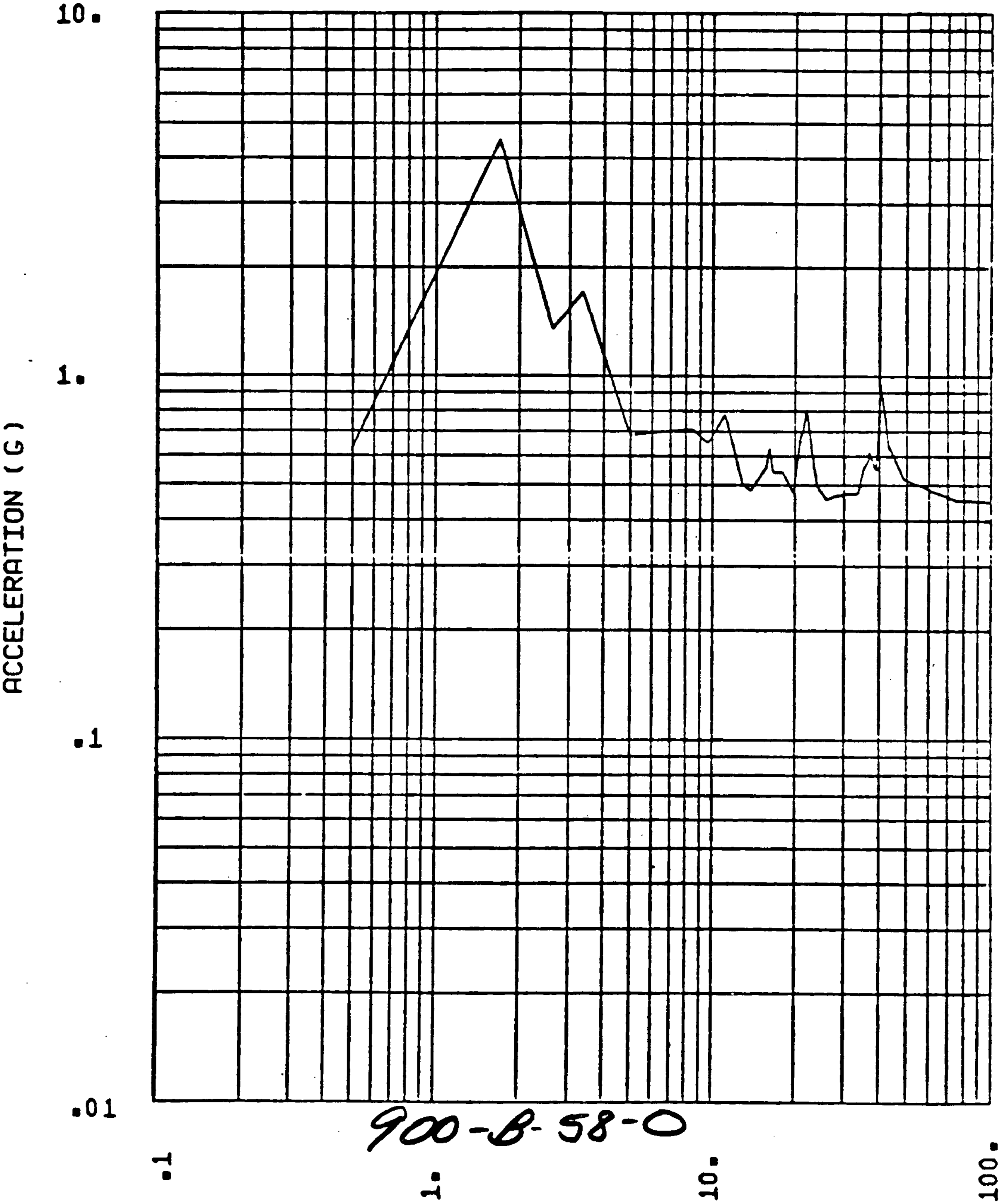

900-B-58-0

9

SCE CHARGEING INLET NOZZLE , Y-RESPONSE FOR Z-OBE, .01 DAMPING

Coupled model

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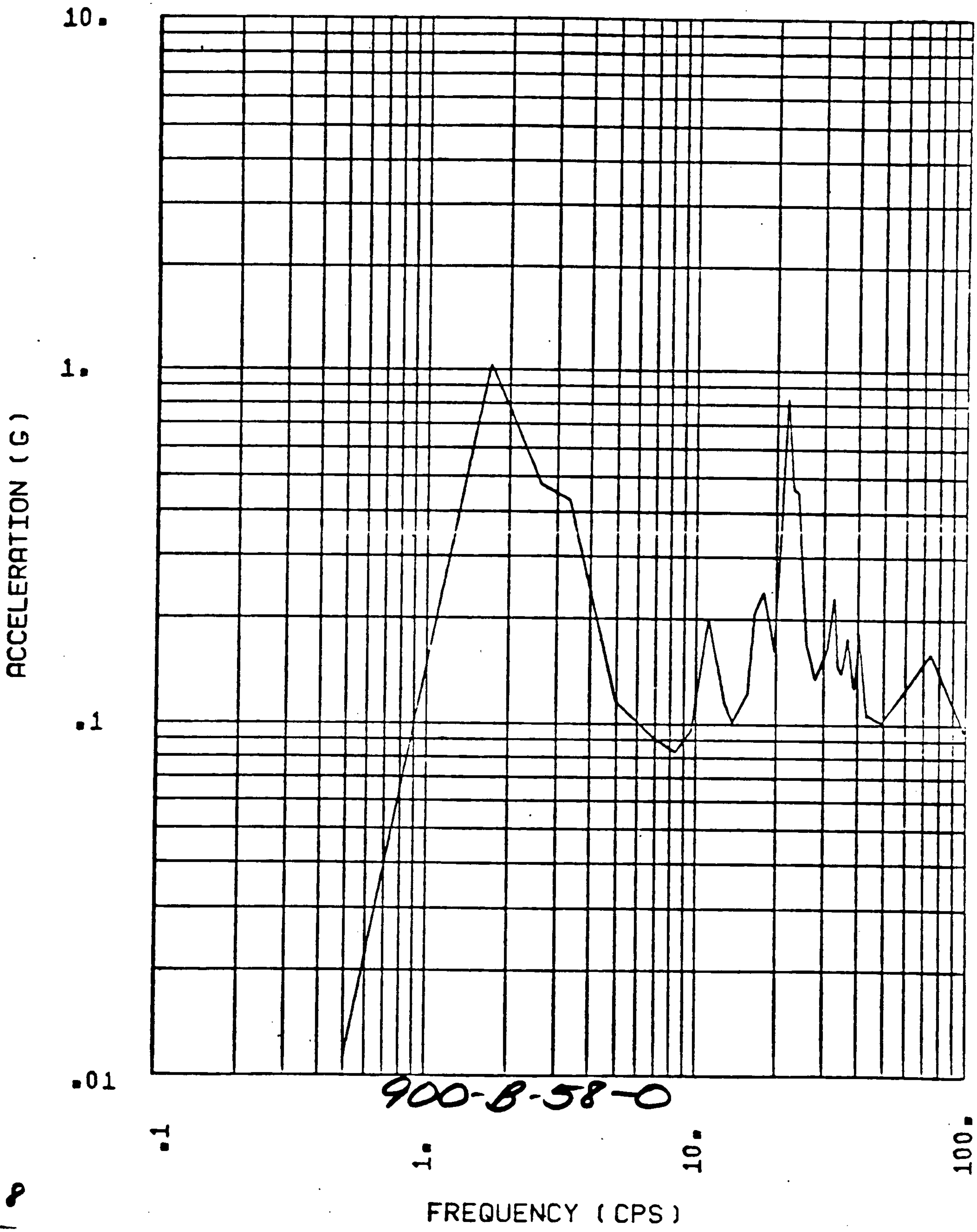

900-B-58-0

8

Z-43

SCE CHARGEING INLET NOZZLE , Y-RESPONSE FOR X-OBE, .01 DAMPING

COUPLED MODEL

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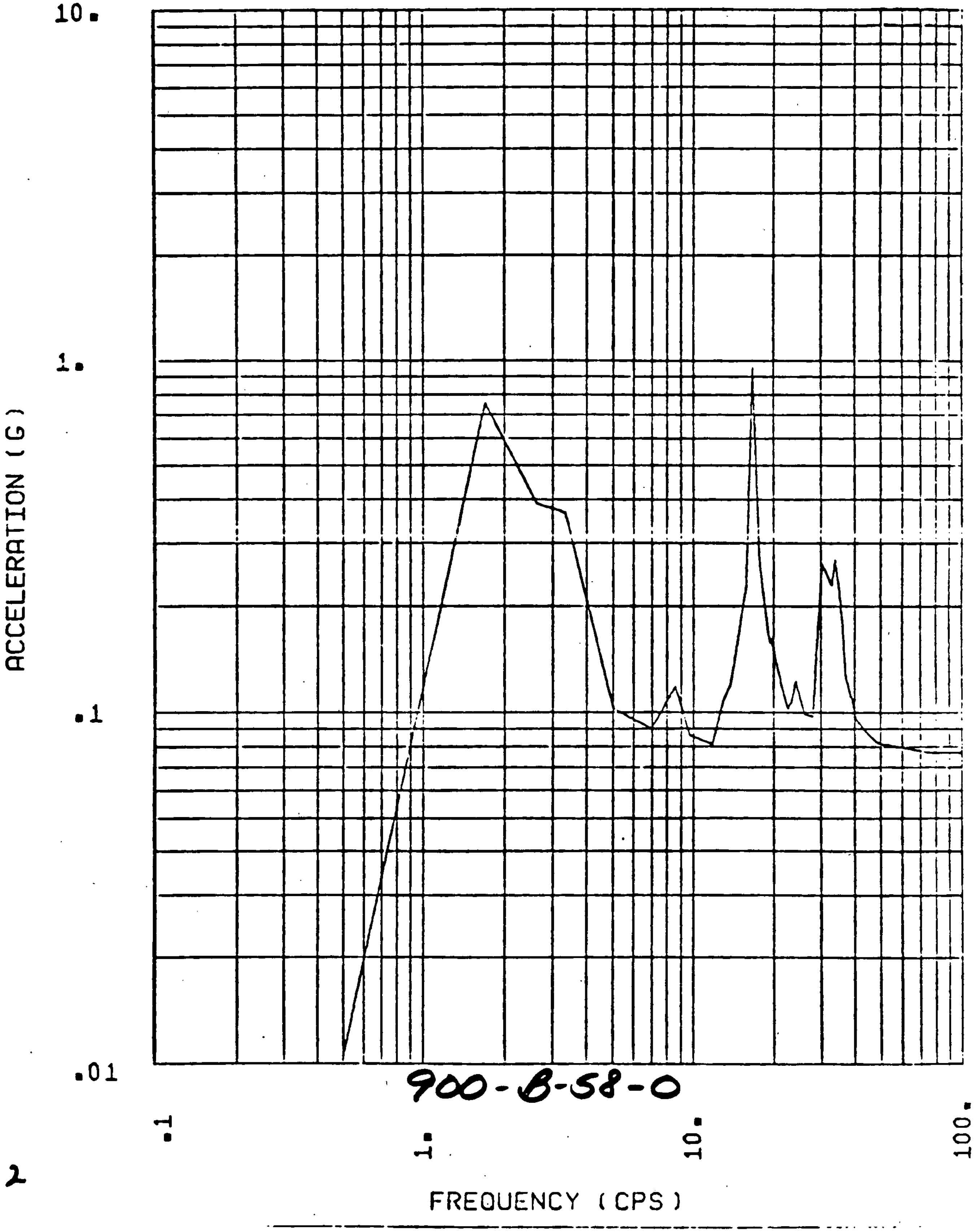

900-B-58-0

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X-T1

SCE CHARGEING INLET NOZZLE , Z-RESPONSE FOR X-OBE, .01 DAMPING

COUPLED MODEL

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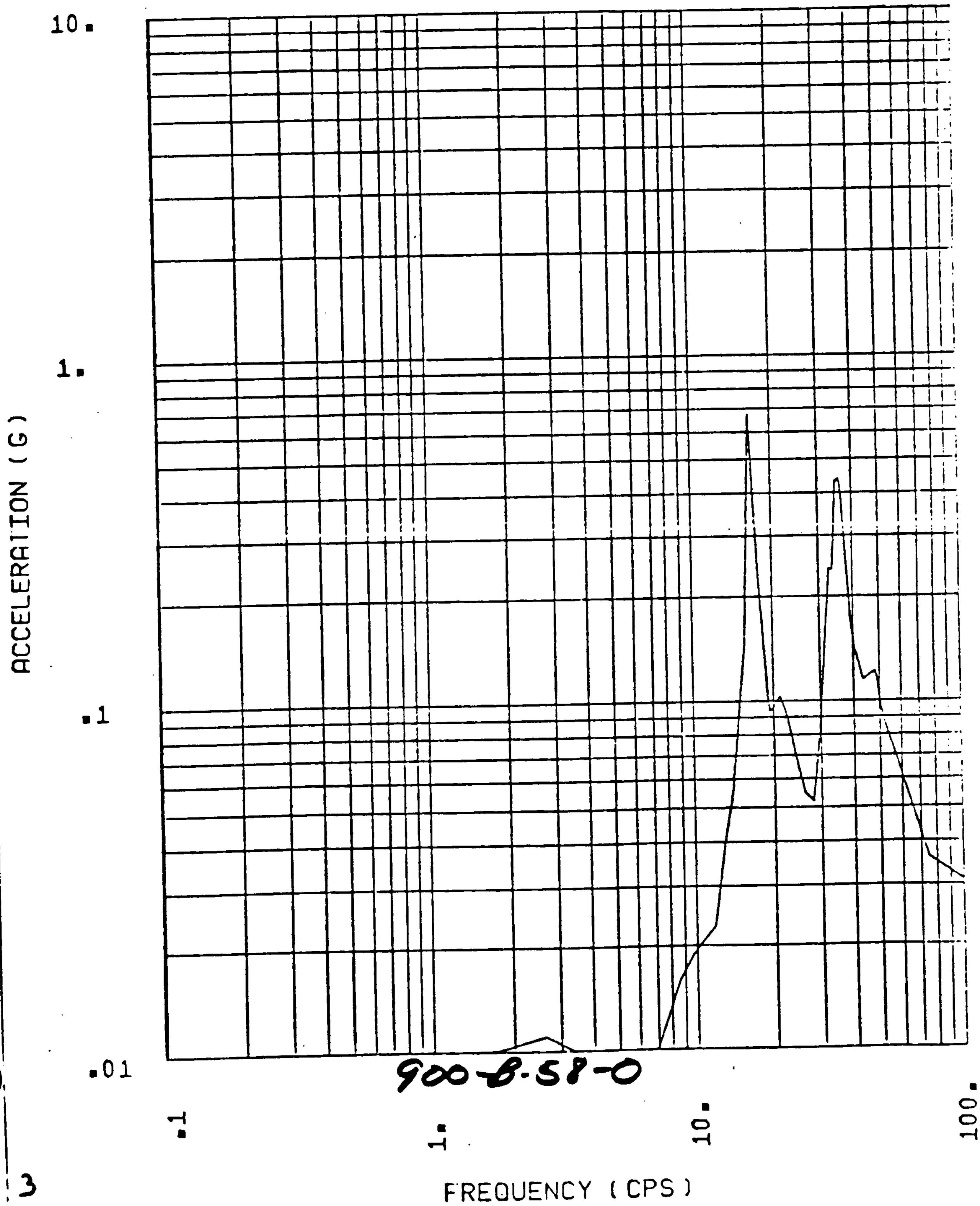

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3

X-43

SCE CHARGEING INLET NOZ.LE , X-RESPONSE FOR Y-OBE, .01 DAMPING

Coupled Model

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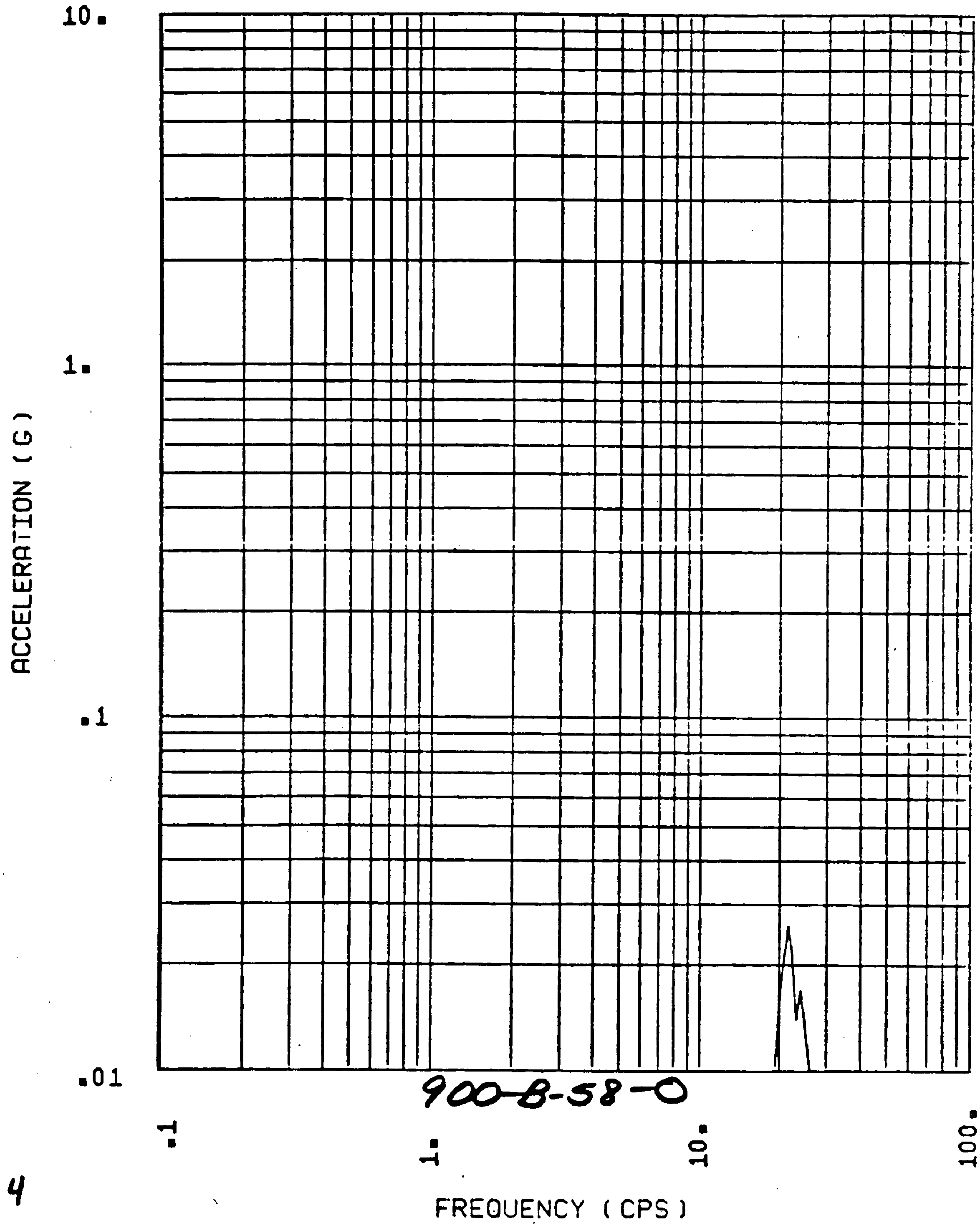

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Y-34

SCE CHARGEING INLET NOZ.LE . Y-RESPONSE FOR Y-OBE. .01 DAMPING

Coupled model

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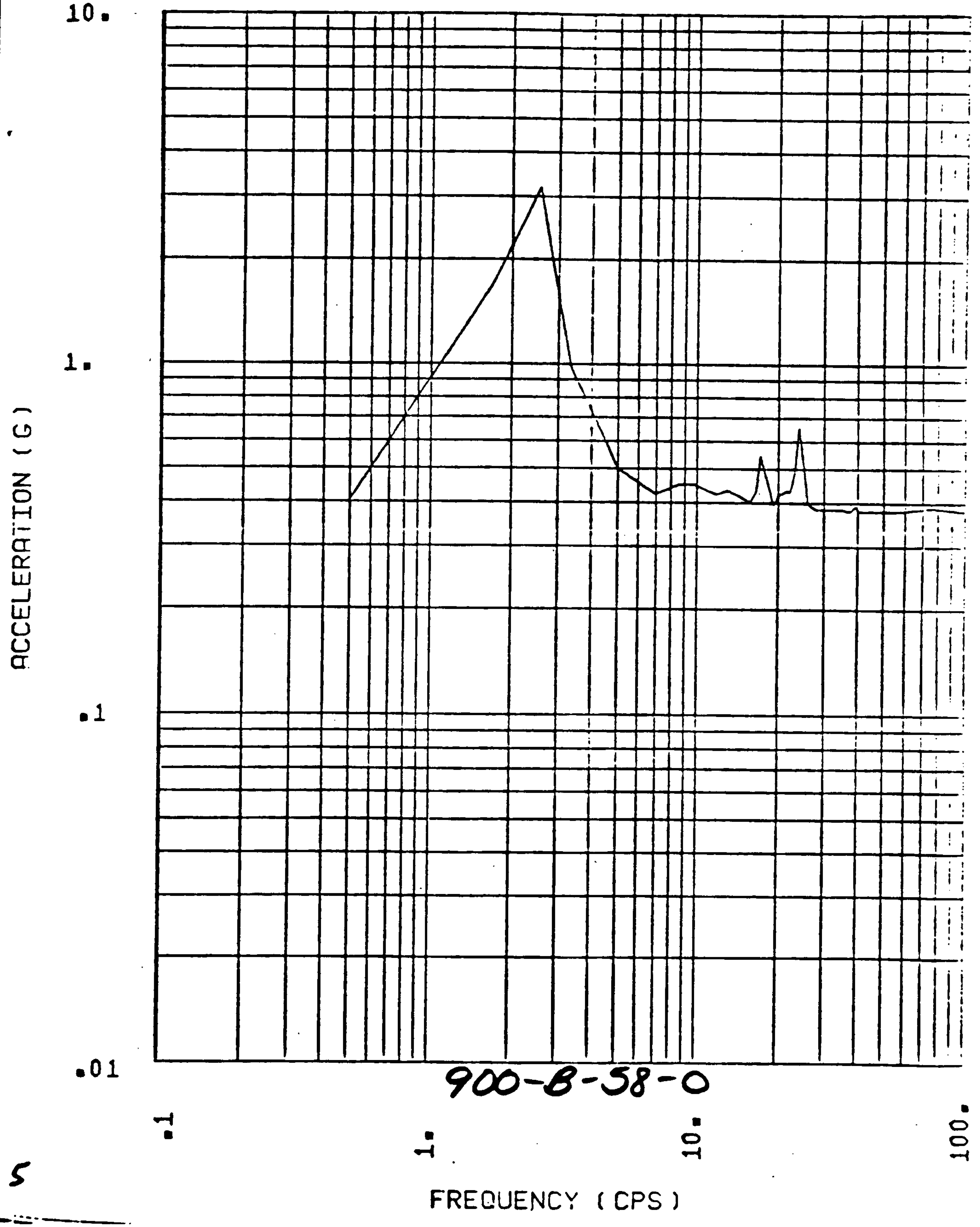

900-B-58-0

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Y-36

SCE CHARGEING INLET NOZ.LE , Z-RESPONSE FOR Y-OBE, .01 DAMPING

Coupled

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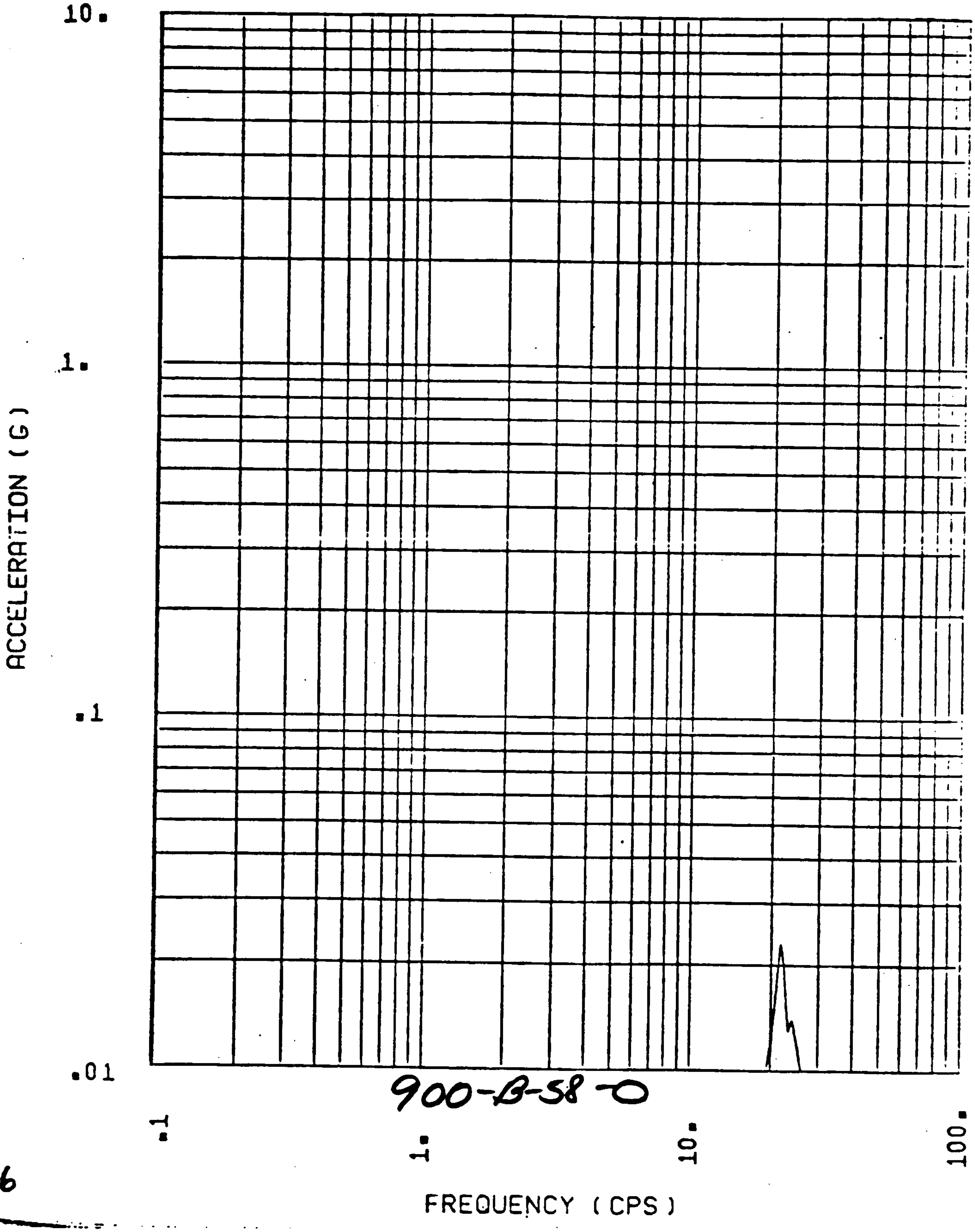

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6

Y-38

SCE CHARGEING INLET NOZZLE , X-RESPONSE FOR Z-OBE, .01 DAMPING

Coupled Model

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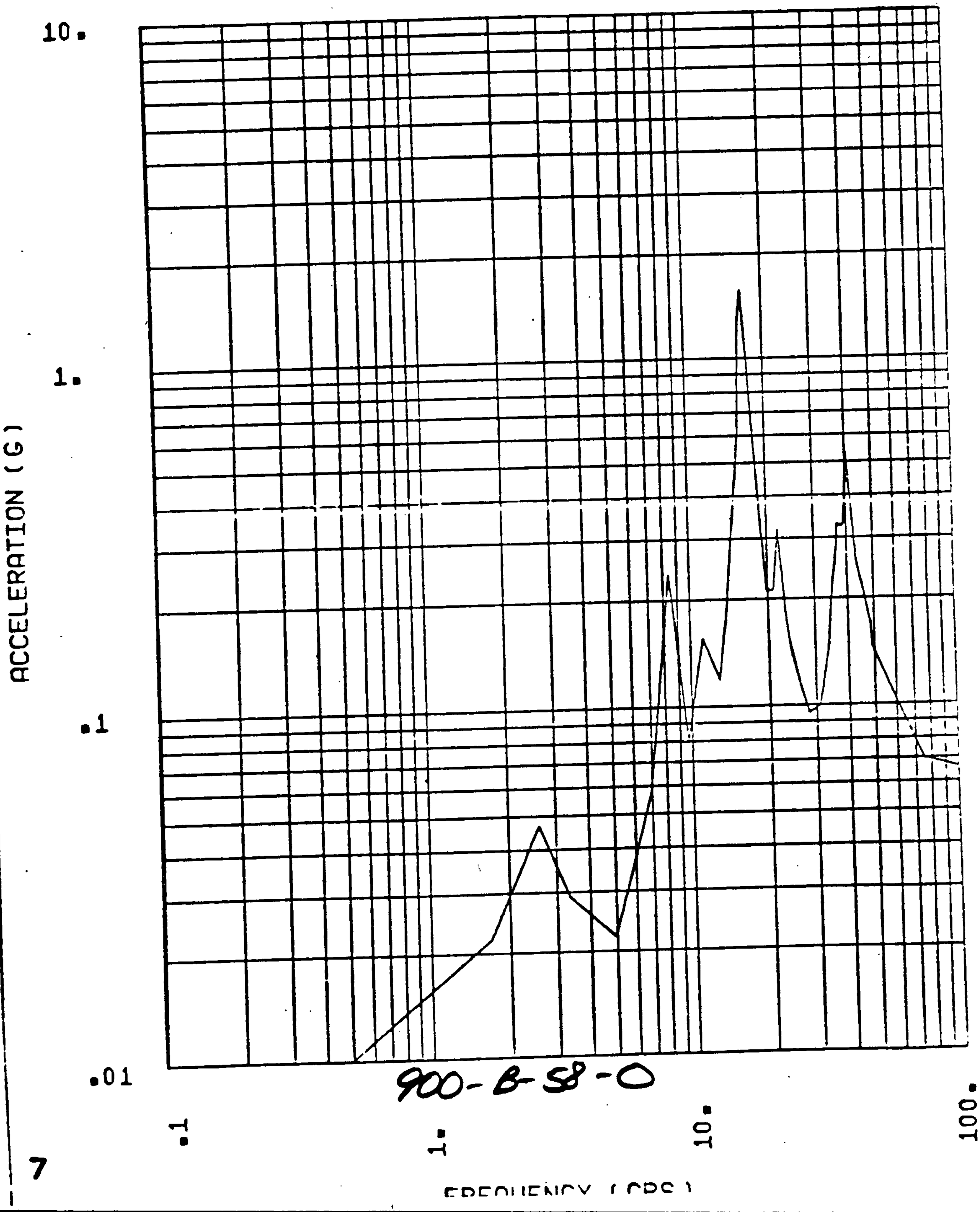

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7

Z-4

:CE CHARGEING INLET NOZ.(1A) X-RESPONSE FOR X-OBE, .01 DAMPING

COUPLED MODEL

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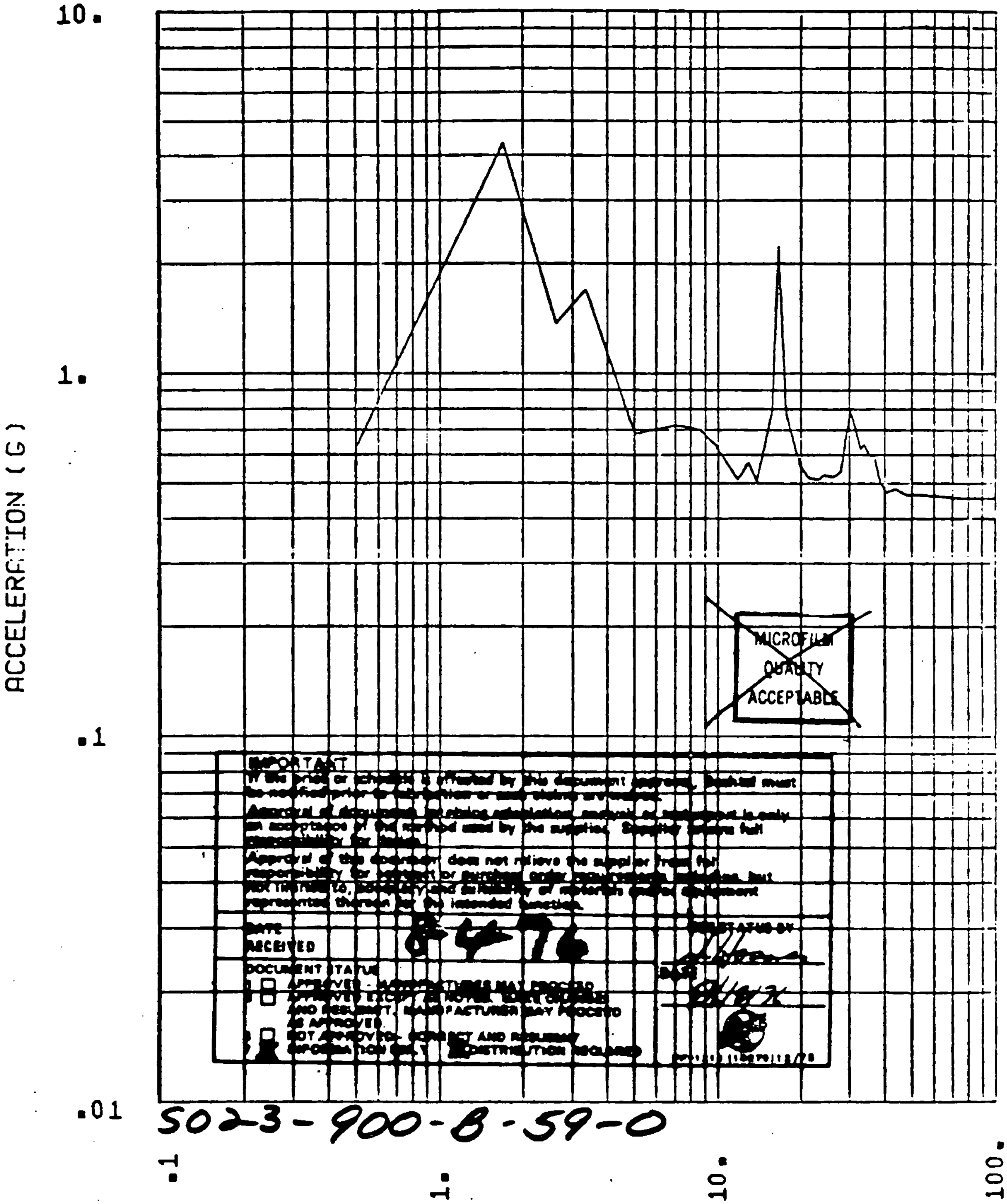

SO23-900-8-59-0

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X-

SCE CHARGEING INLET NOZ.(1A) Y-RESPONSE FOR X-02E, .01 DAMPING

COUPLED MODEL

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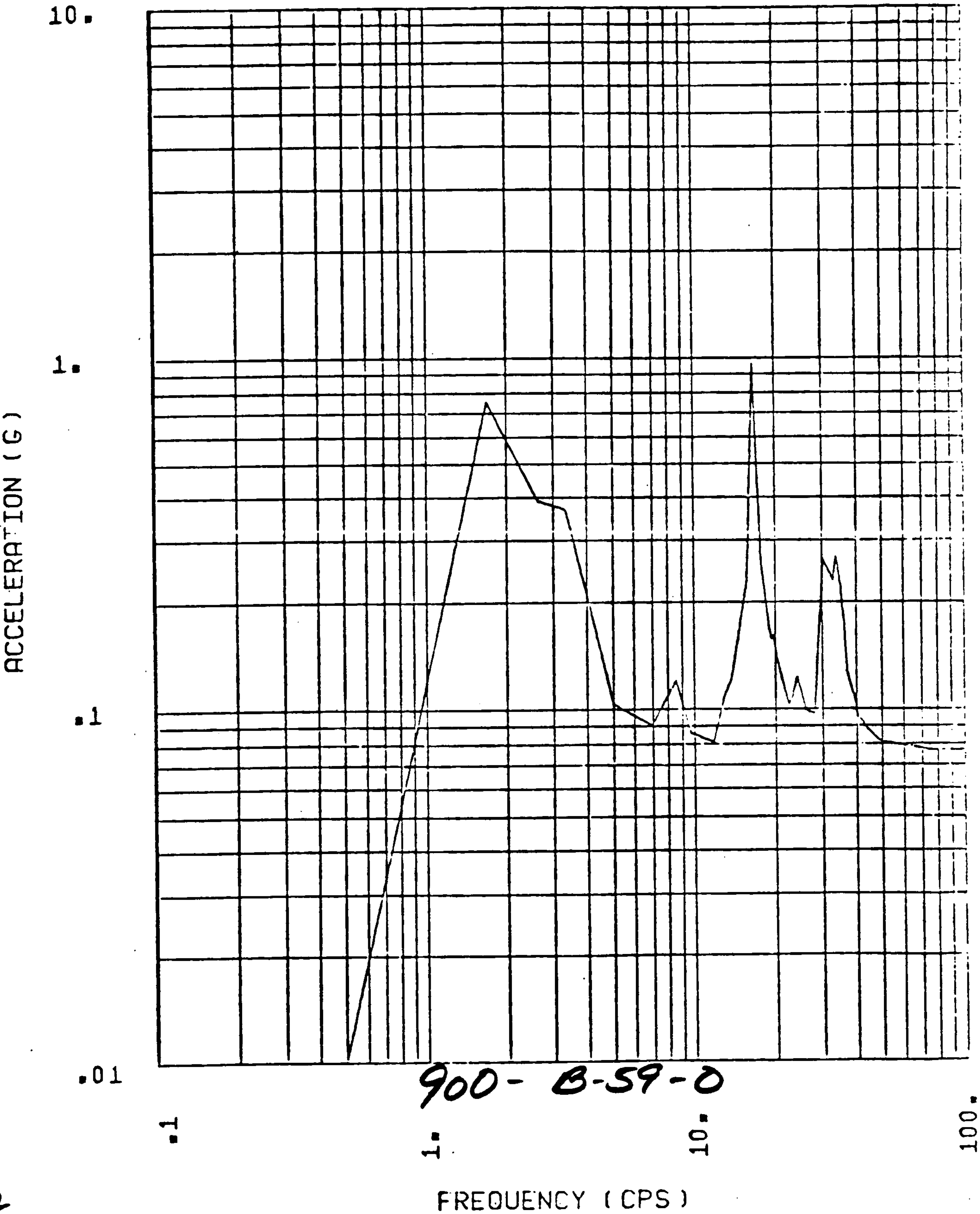

900-B-59-0

X-4.

2

SCE CHARGEING INLET NOZ.(1A) Z-RESPONSE FOR X-OBE. .01 DAMPING

COUPLED MODEL

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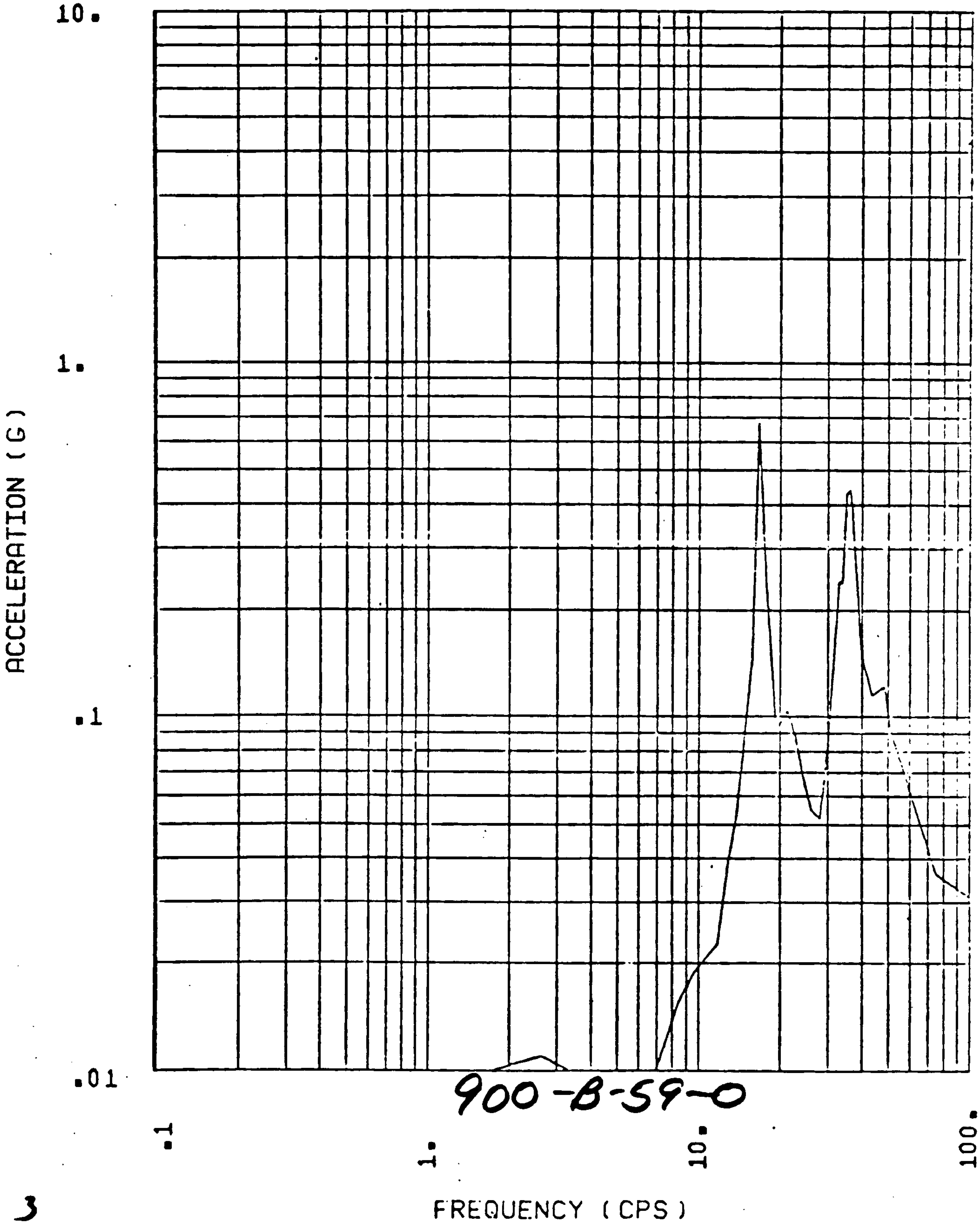

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3

X-4-

SCE CHARGEING INLET NOZ.(1A) X-RESPONSE FOR Y-OBE. .01 DAMPING

COUPLED MODEL

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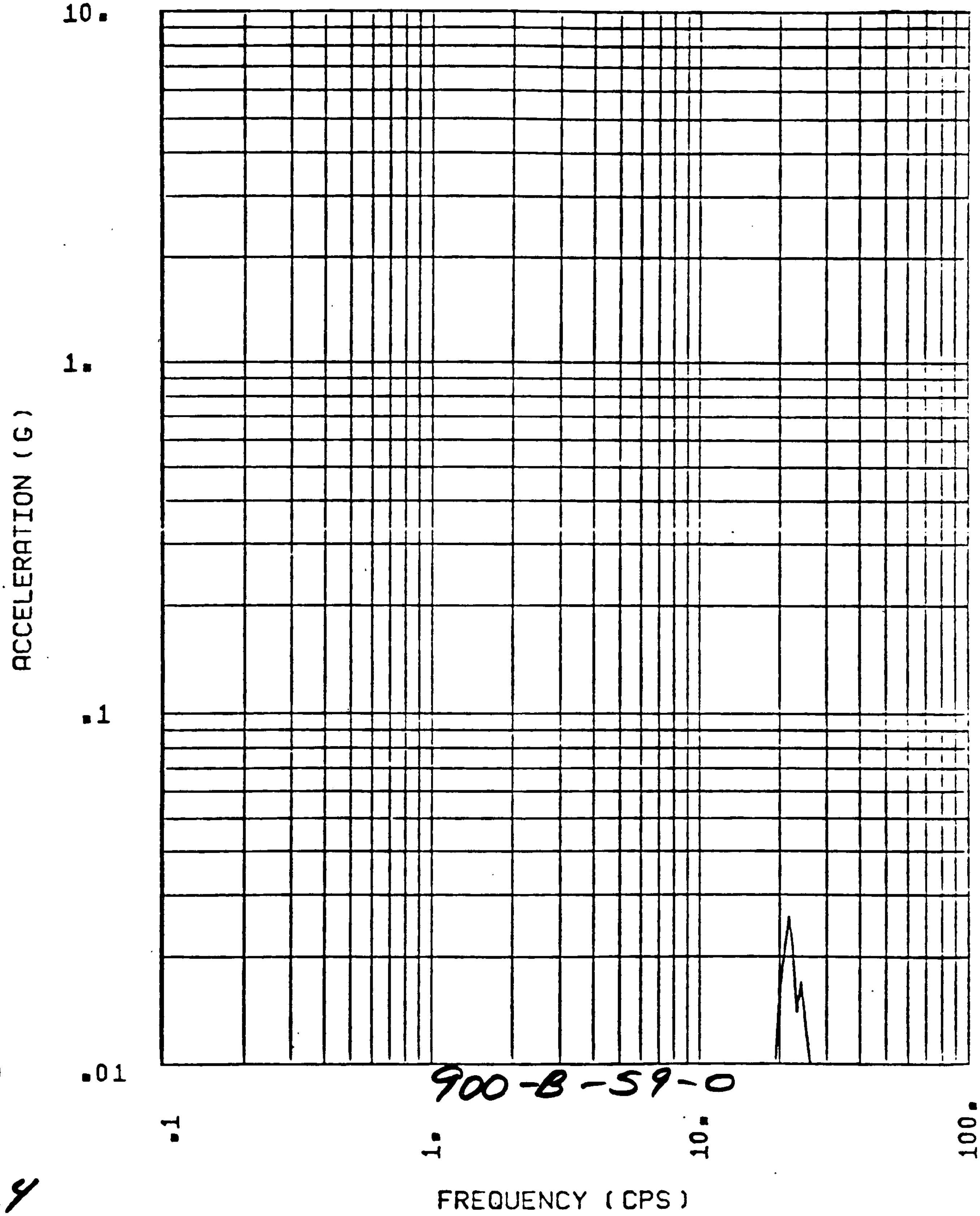

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4

SCE CHARGEING INLET NOZ.(1A) Y-RESPONSE FOR Y-OBE, .01 DAMPING

Coupled model

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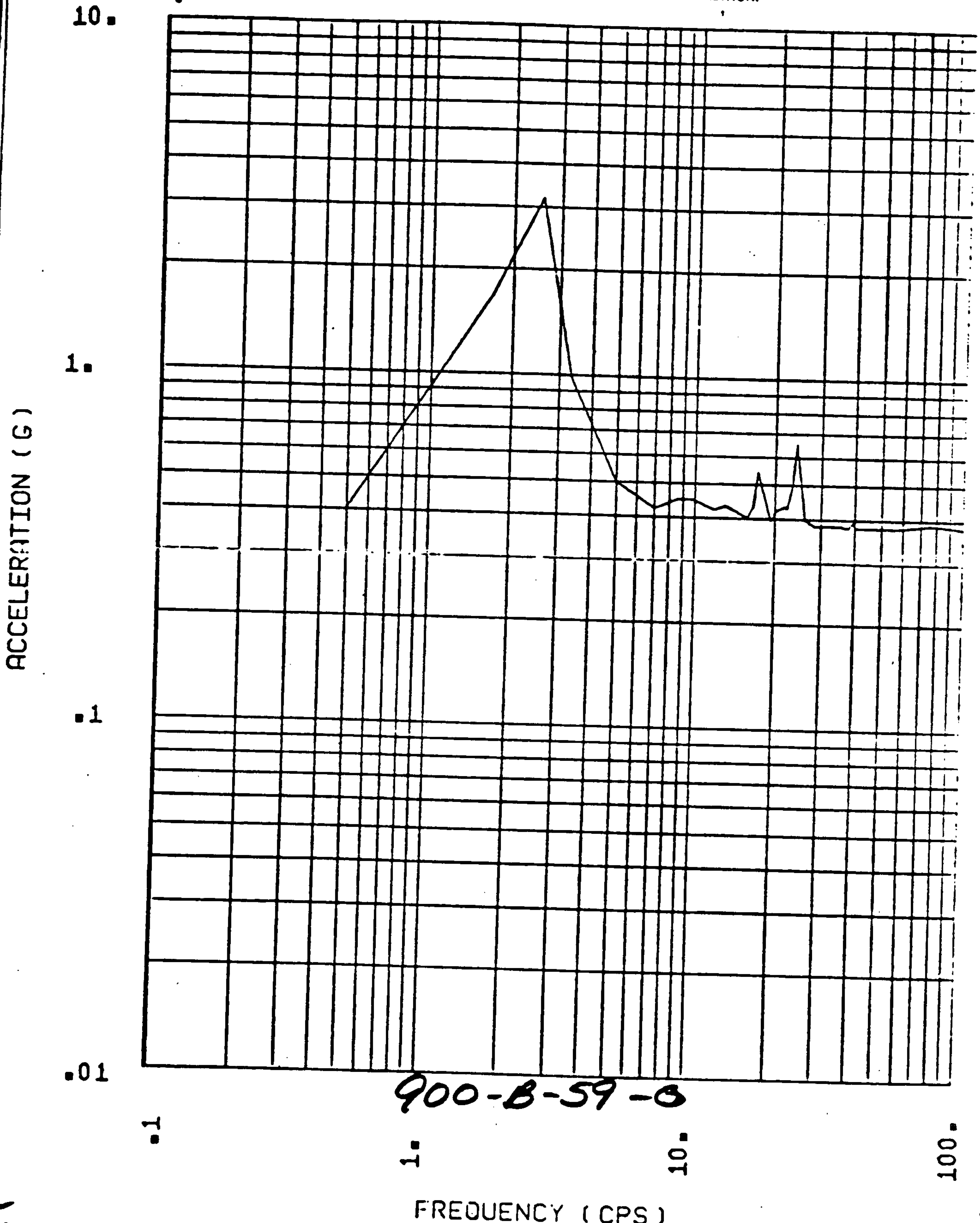

900-B-59-G

5

Y-35

SCE CHARGEING INLET NOZ.(1A) Z-RESPONSE FOR Y-OBE, .01 DAMPING

Coupled Model

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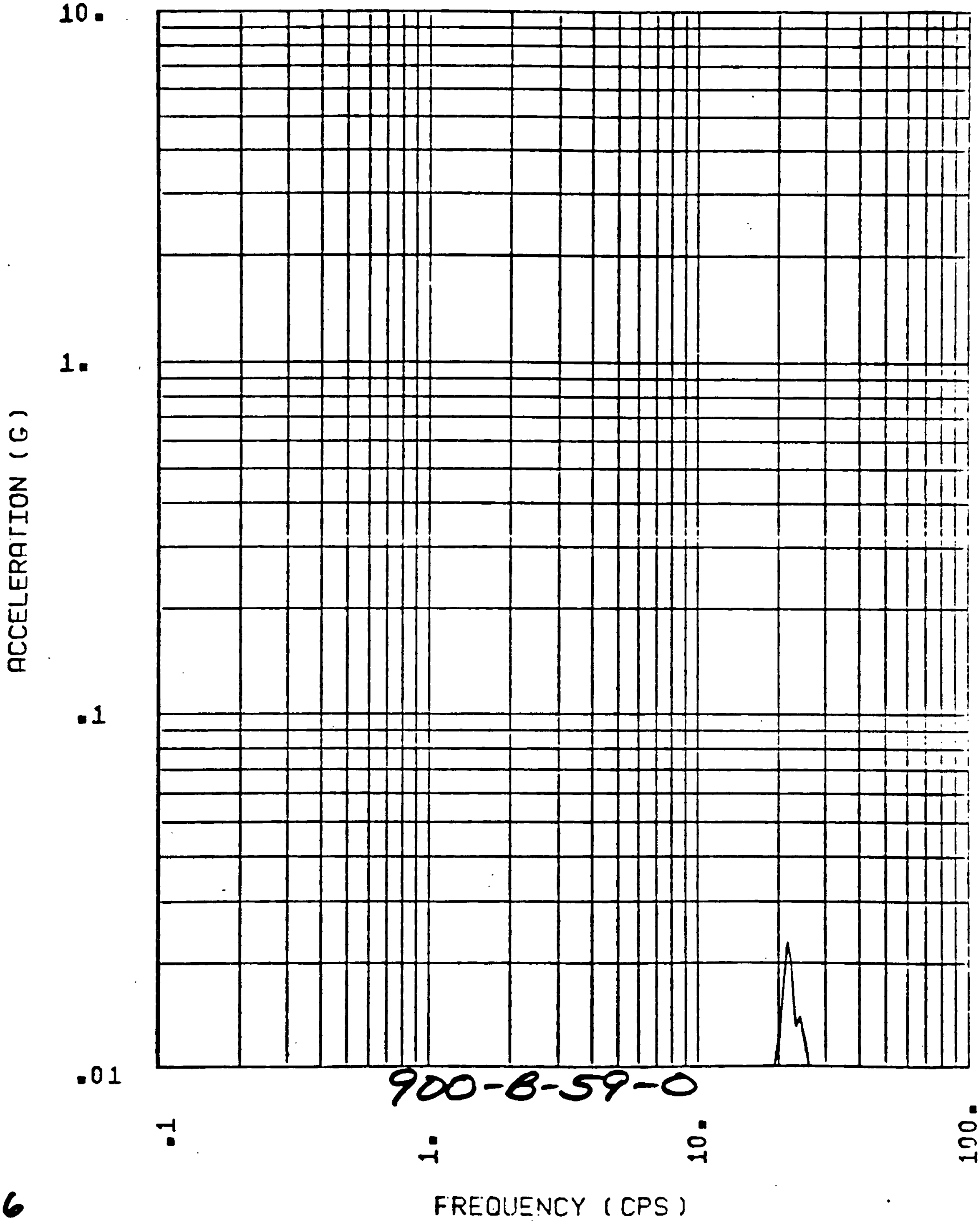

900-B-59-0

SCE CHARGEING INLET NOZ.(1A) X-RESPONSE FOR Z-OBE, .01 DAMPING

Coupled Model

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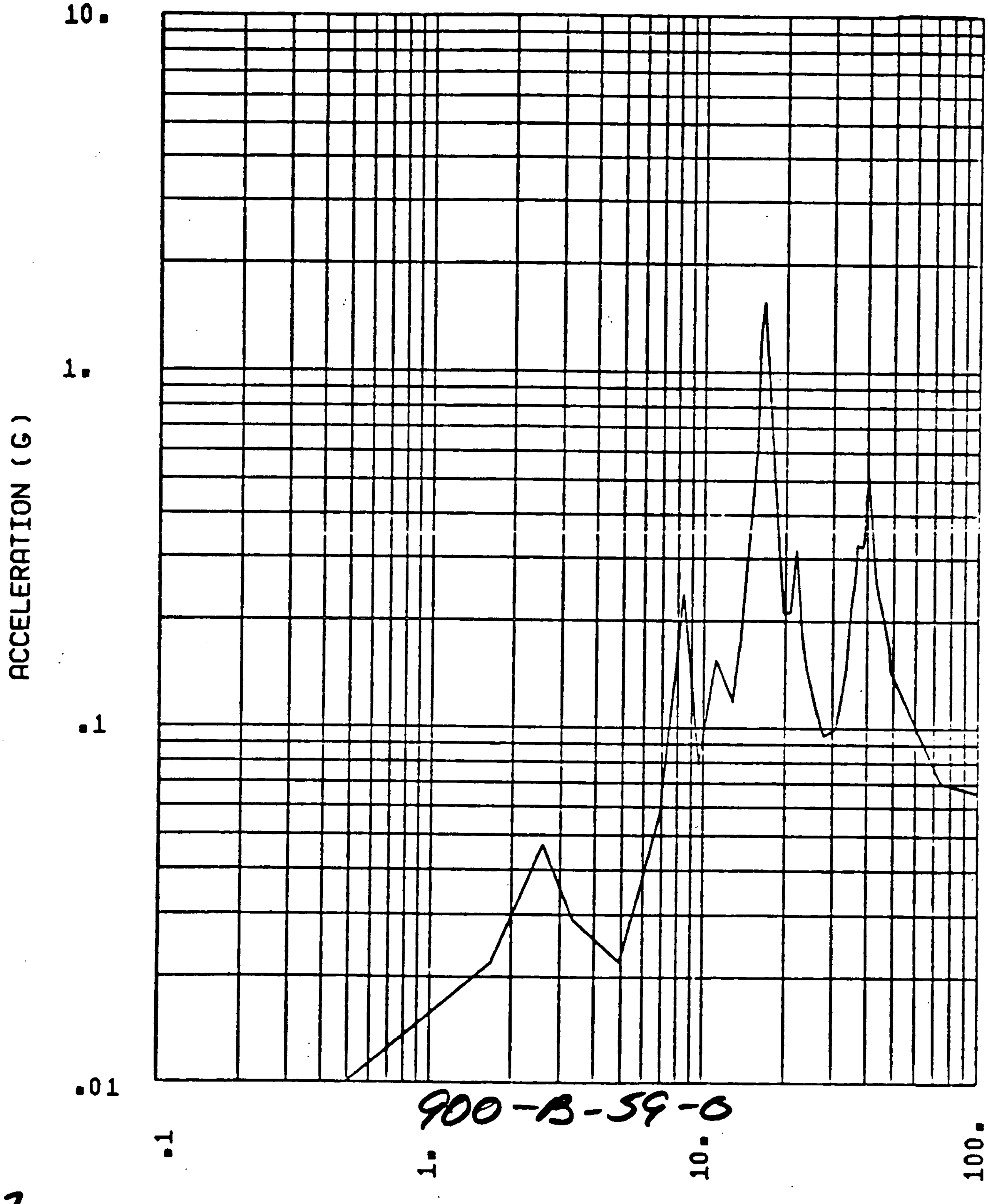

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7

Z-40

SCE CHARGEING INLET NOZ.(1A) Y-RESPONSE FOR Z-OBE, .01 DAMPING

Coupled Model

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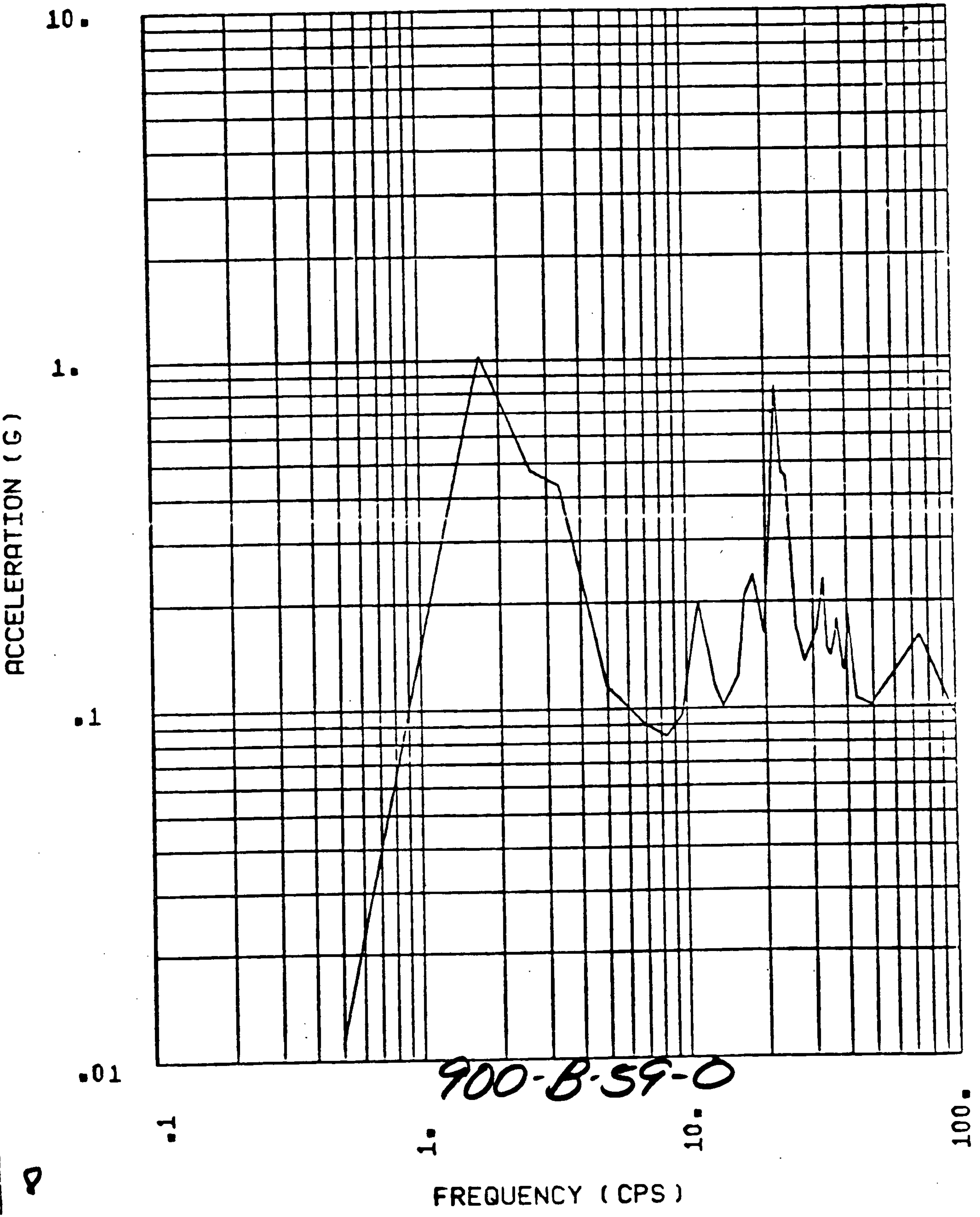

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8

Z-42

SCE CHARGEING INLET NOZ.(1A) Z-RESPONSE FOR Z-OBE, .01 DAMPING

Coupled mod.

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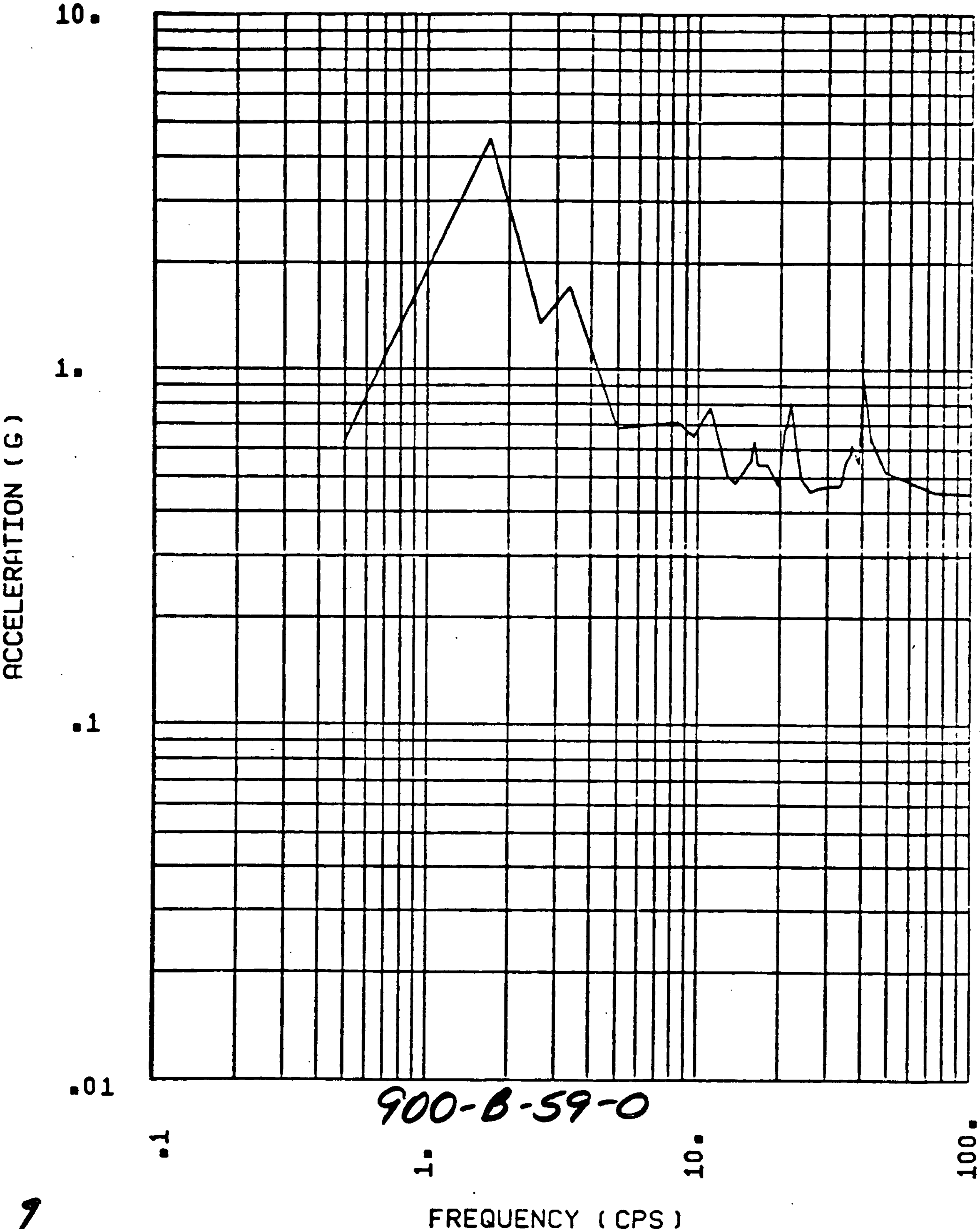

900-B-59-0

9

Z-44

SCE DRAIN NOZ.HL, X-RESPONSE DUE TO X-OBE .01 DAMPING

COUPLED MODEL

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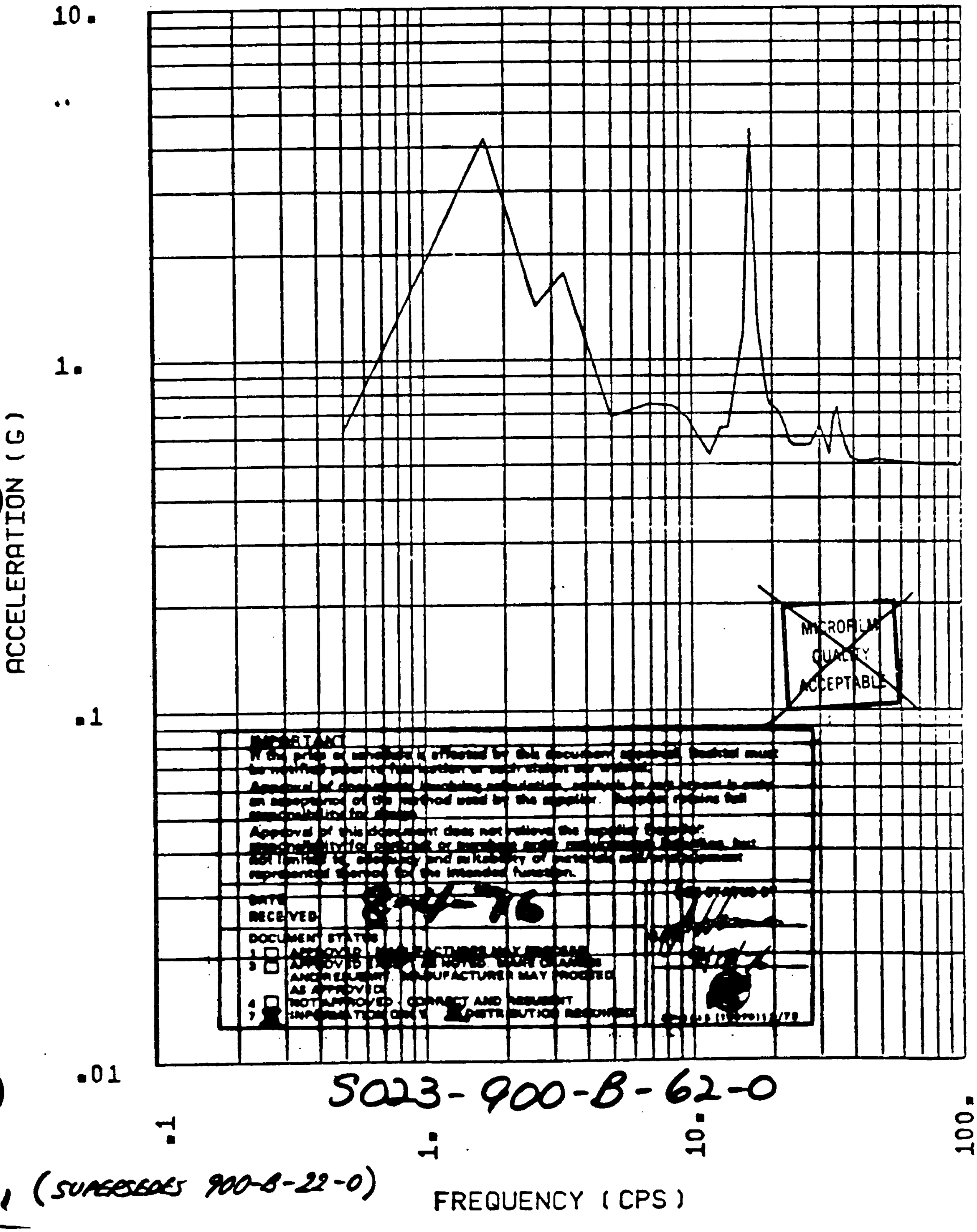

S023-900-B-62-0

(SUPERSEDES 900-B-22-0)

X-

SCE DRAIN NOZ.HL, Y-RESPONSE DUE TO X-OBE .01 DAMPING

COUPLED MODEL

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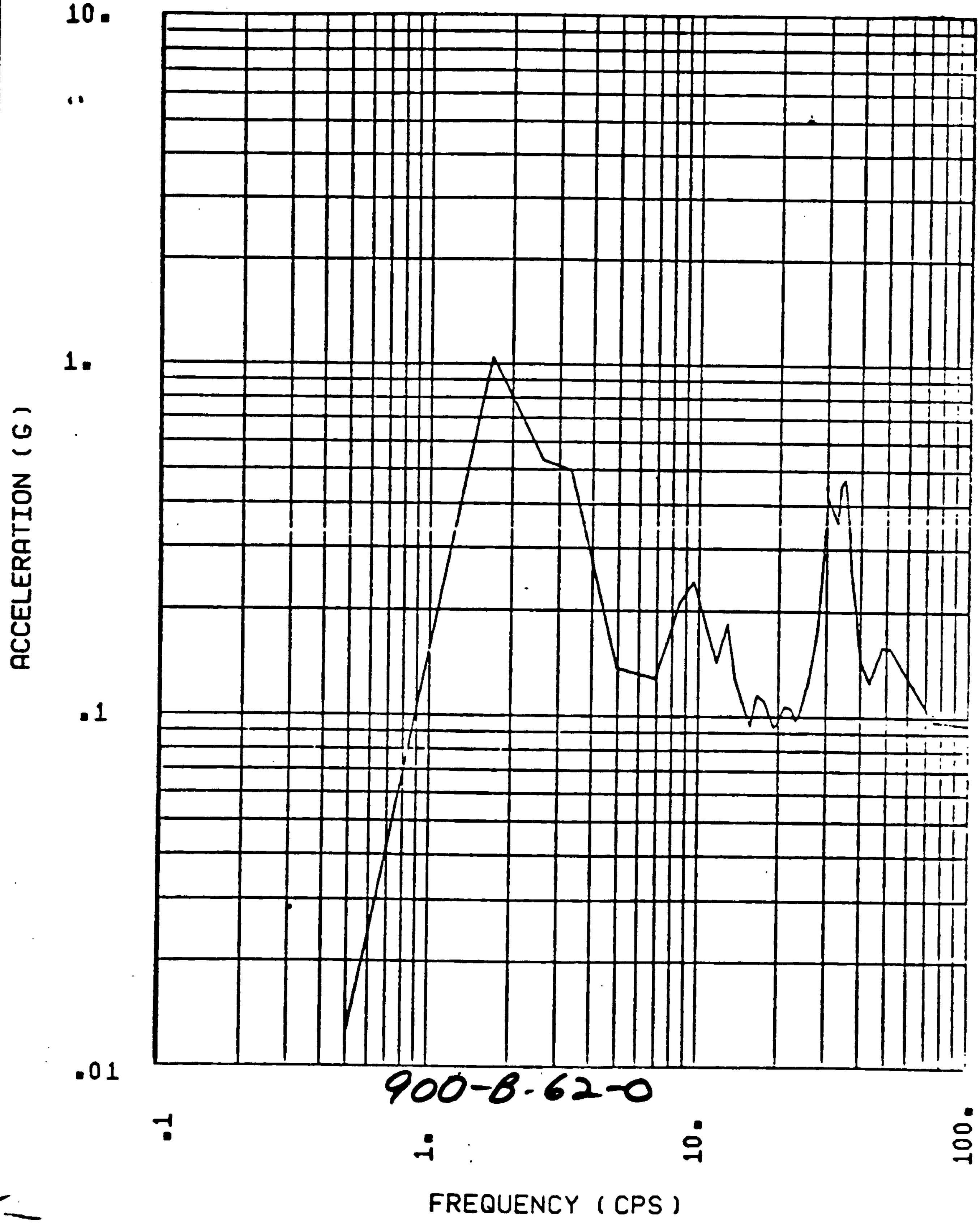

900-B-62-0

X-51

SCE DRAIN NOZ.HL, Z-RESPONSE DUE TO X-OBE .01 DAMPING

COUPLED MODEL

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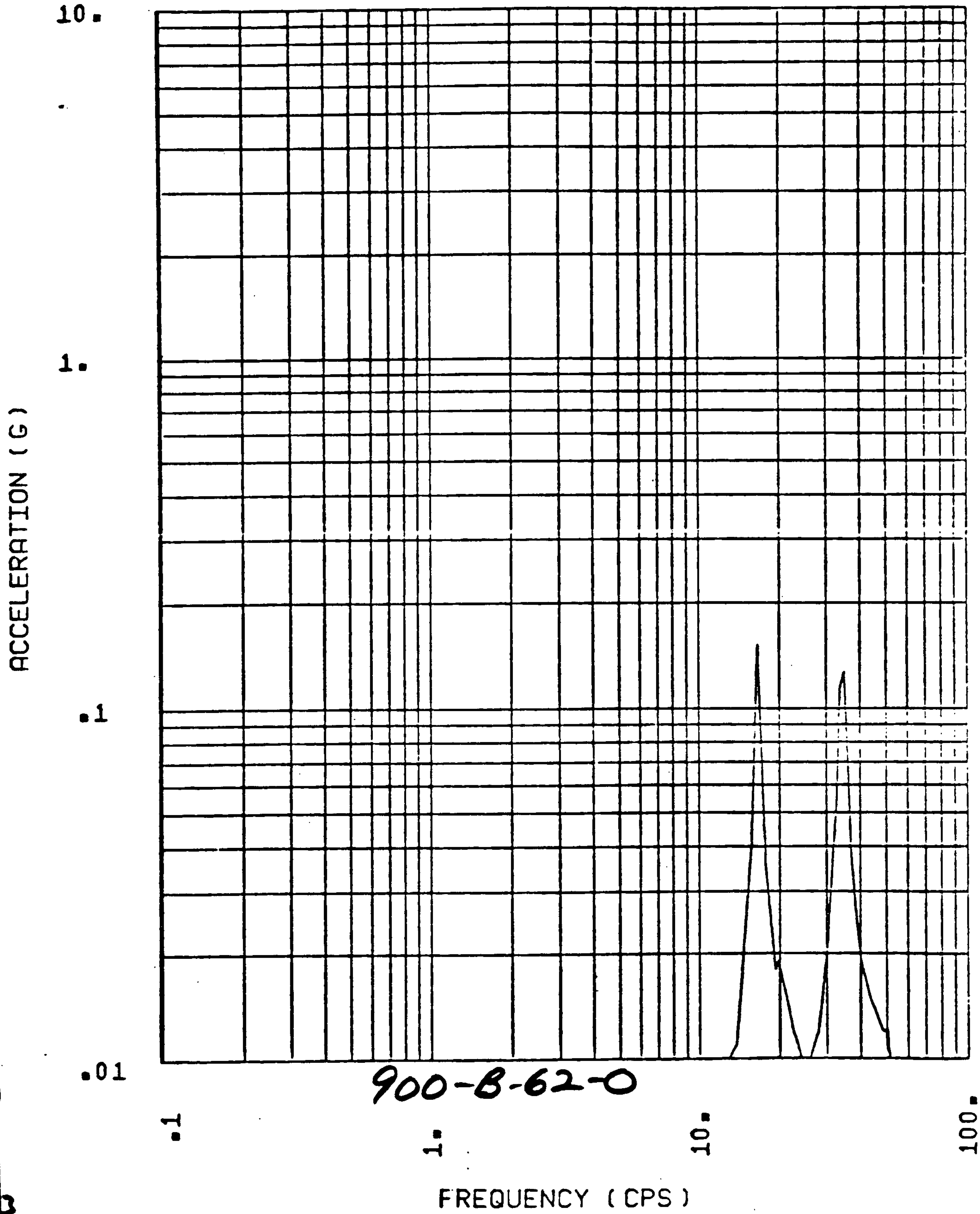

900-B-62-0

X-72

SCE DRAIN NOZ.HL, X-RESPONSE DUE TO Y-OBE .01 DAMPING

Coupled model

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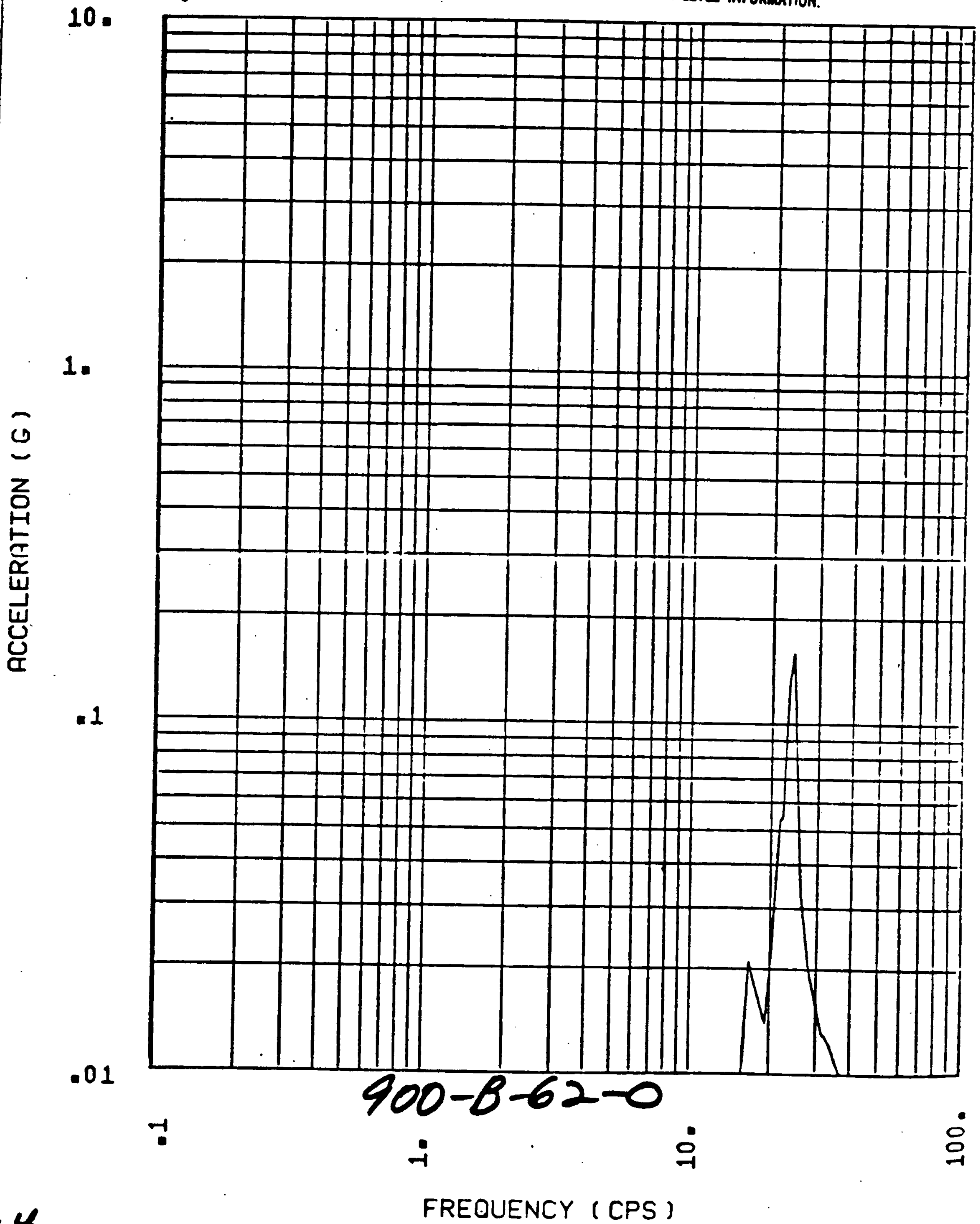

900-B-62-0

Y-45

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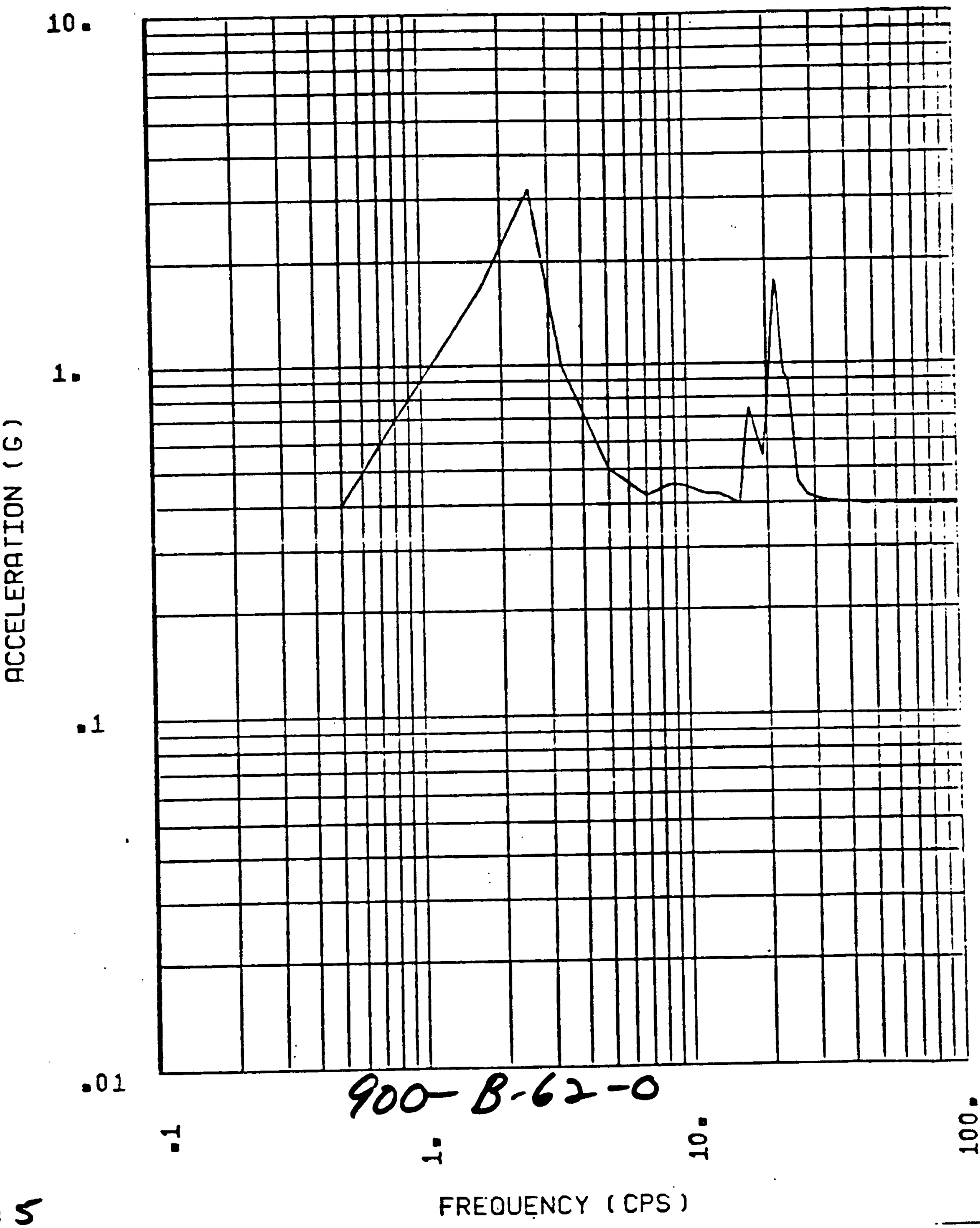

900-B-62-0

Y-46

5

SCE DRAIN NOZ.HL, Y-RESPONSE DUE TO Z-OBE .01 DAMPING

Coupled model

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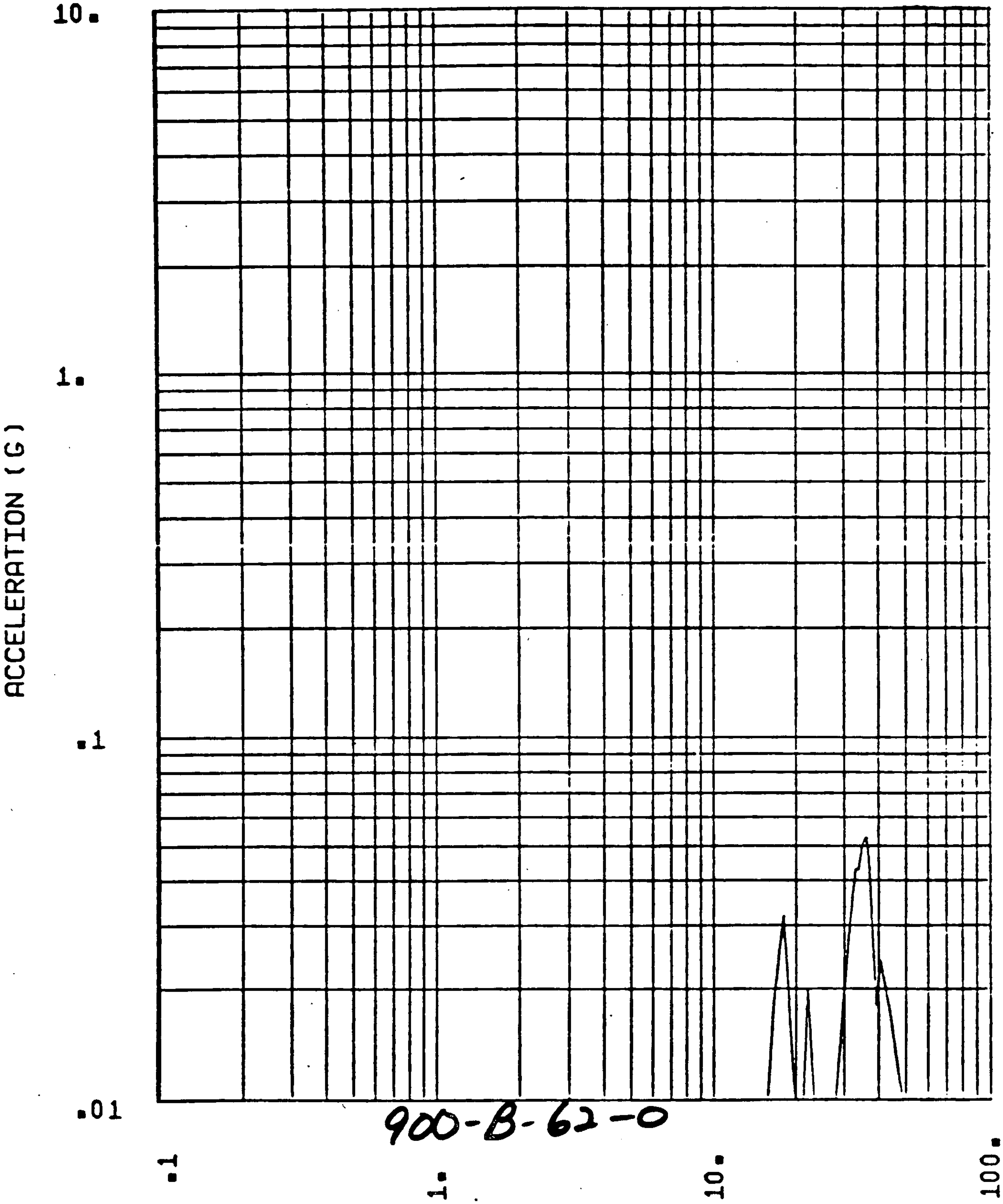

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Z-52

SCE DRAIN NOZ.HL, Z-RESPONSE DUE TO Z-OBE .01 DAMPING

Coupled model

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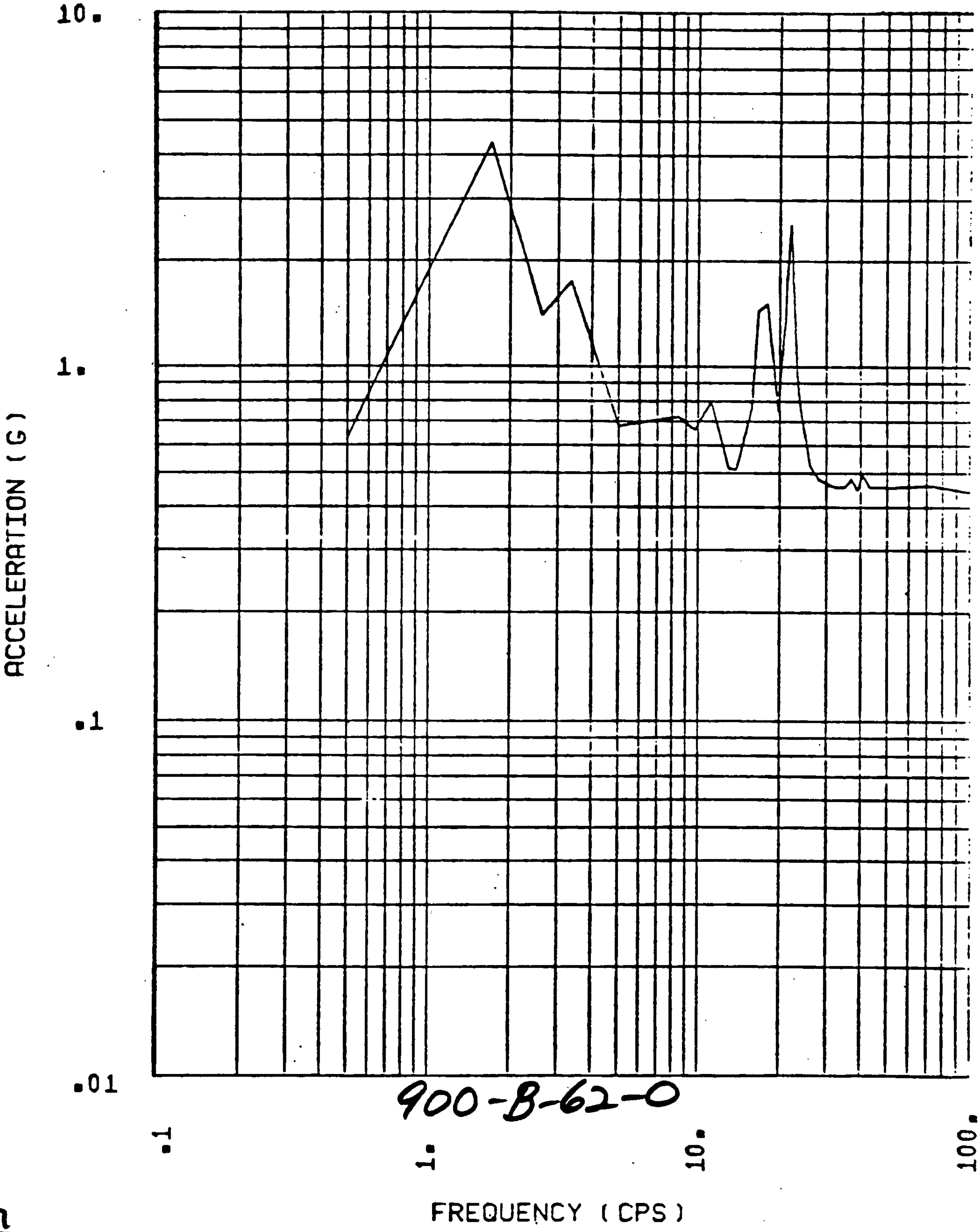

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SCE DRAIN NOZ.CL(1A), X-RESPONSE DUE TO X-OBE .01 DAMPING

COUPLED MODEL

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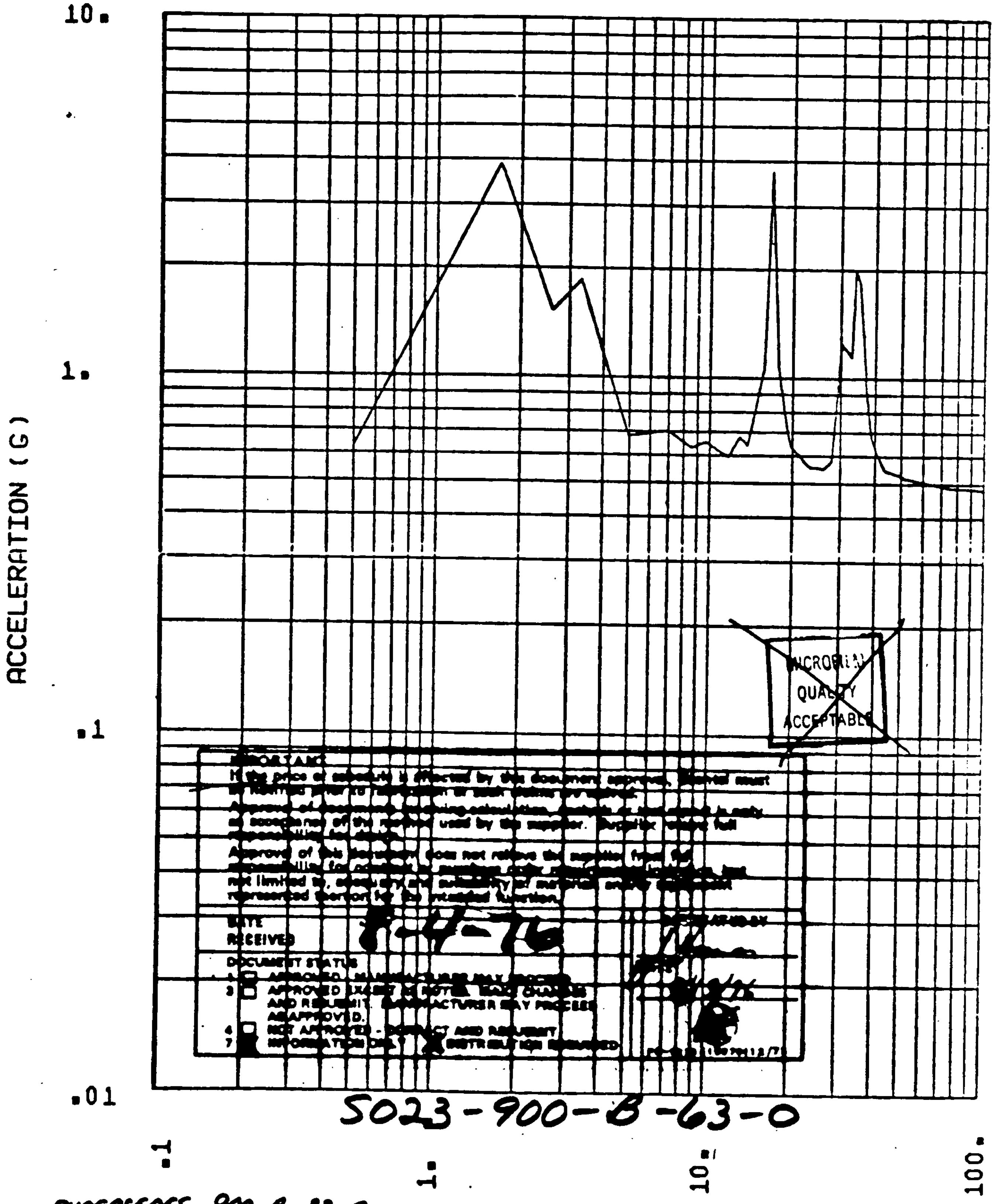

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X-5

SCE DRAIN NOZ.CL(1A), Y-RESPONSE DUE TO X-OBE .01 DAMPING

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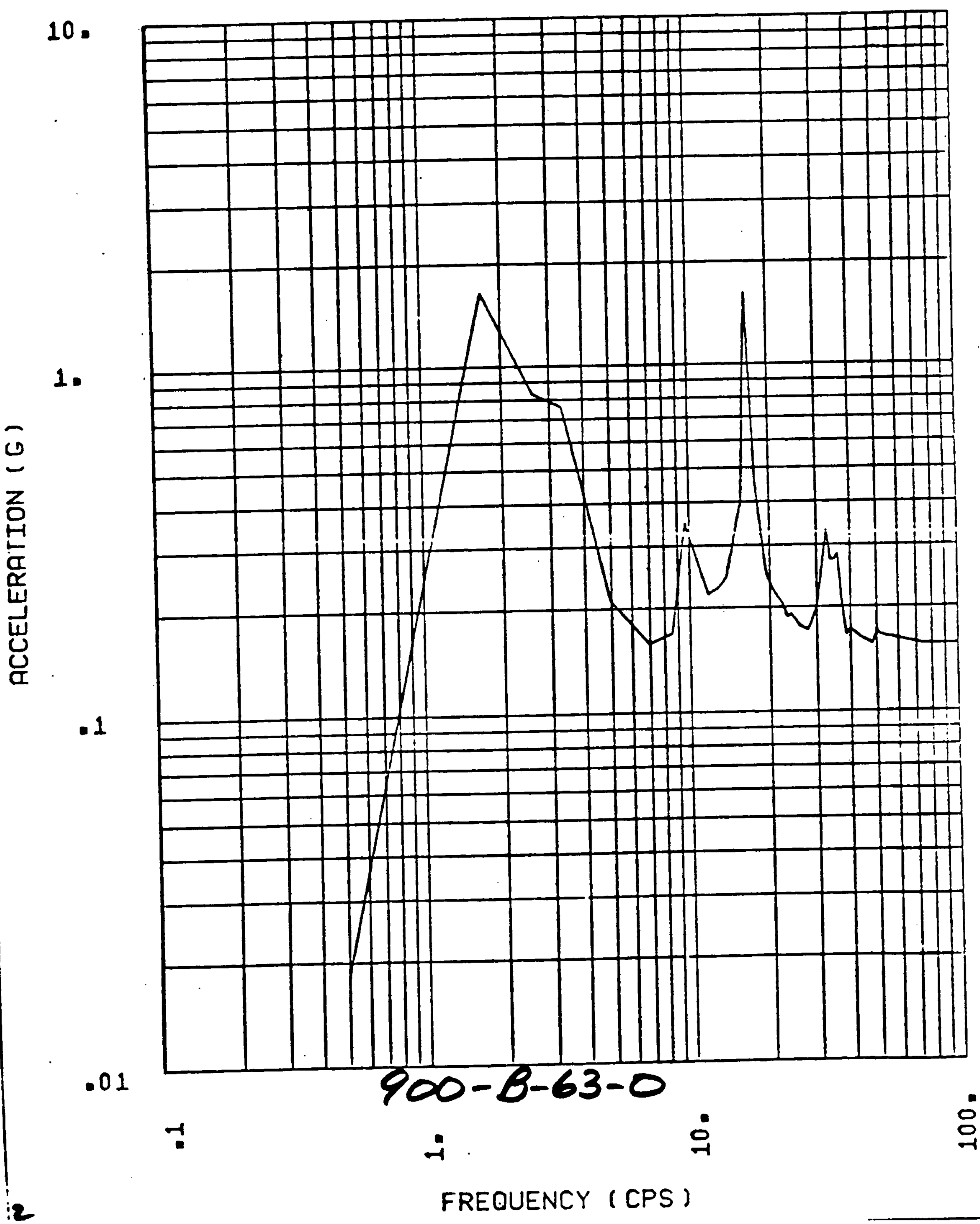

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SCE DRAIN NOZ.CL(1A), Z-RESPONSE DUE TO X-OBE .01 DAMPING

COUPLED MODEL

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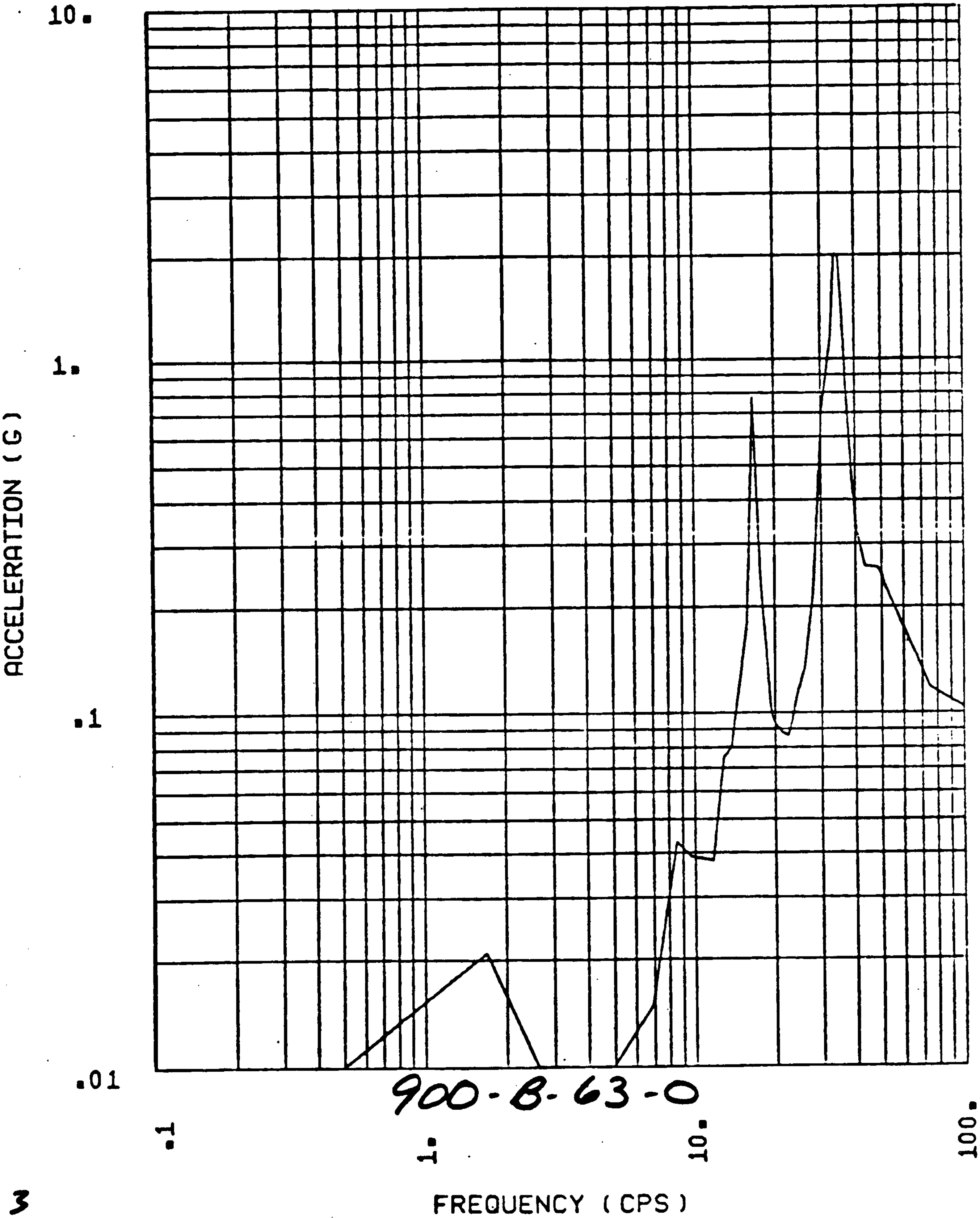

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SCE DRAIN NOZ.CL(1A), X-RESPONSE DUE TO Y-OBE .01 DAMPING

Coupled model

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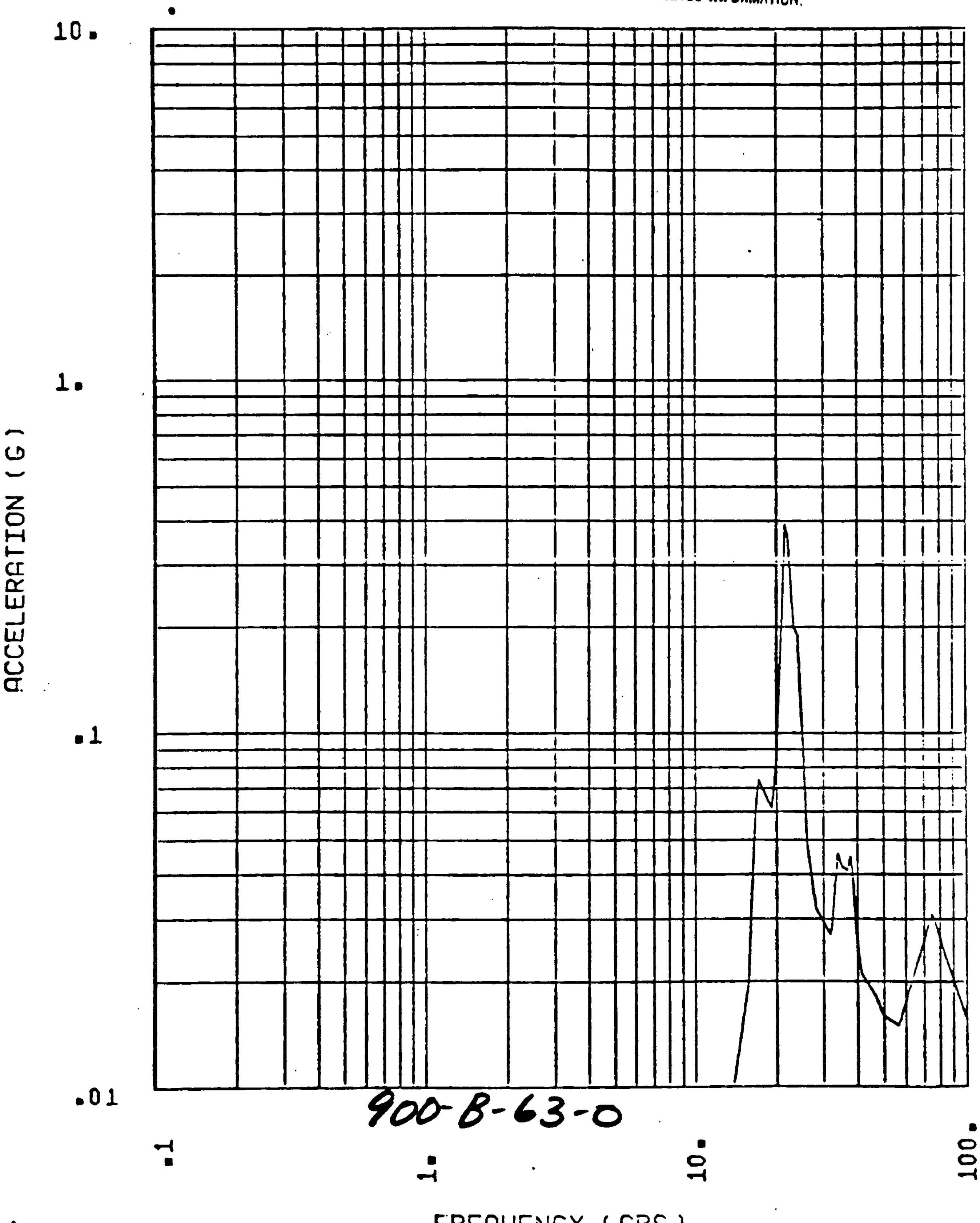

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Y-47

4

SCE DRAIN NOZ.CL(1A), Y-RESPONSE DUE TO Y-OBE .01 DAMPING

Coupled model

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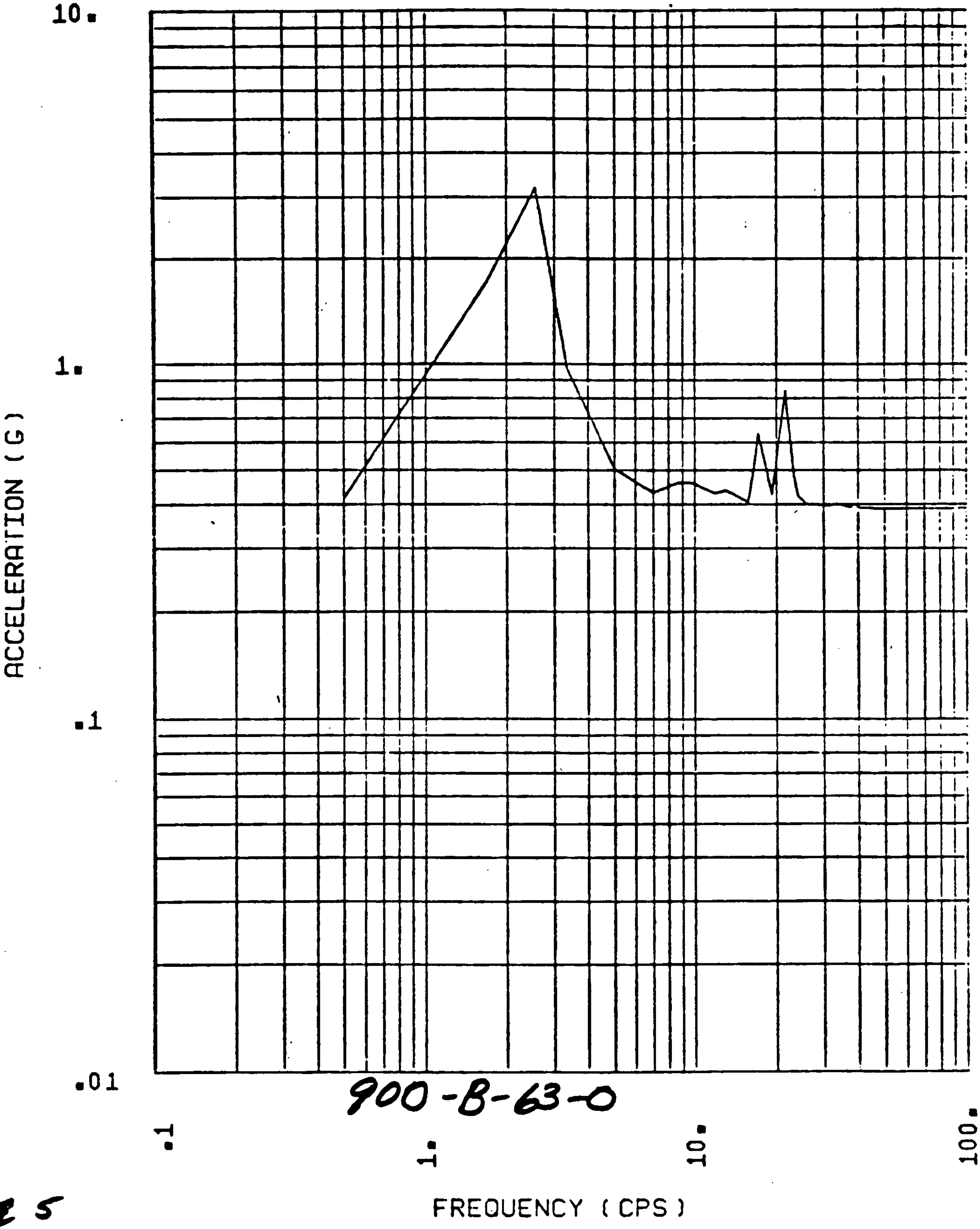

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Y-51

5

SCE DRAIN NOZ.CL(2B). X-RESPONSE DUE TO X-OBE .01 DAMPING

COUPLED MODEL

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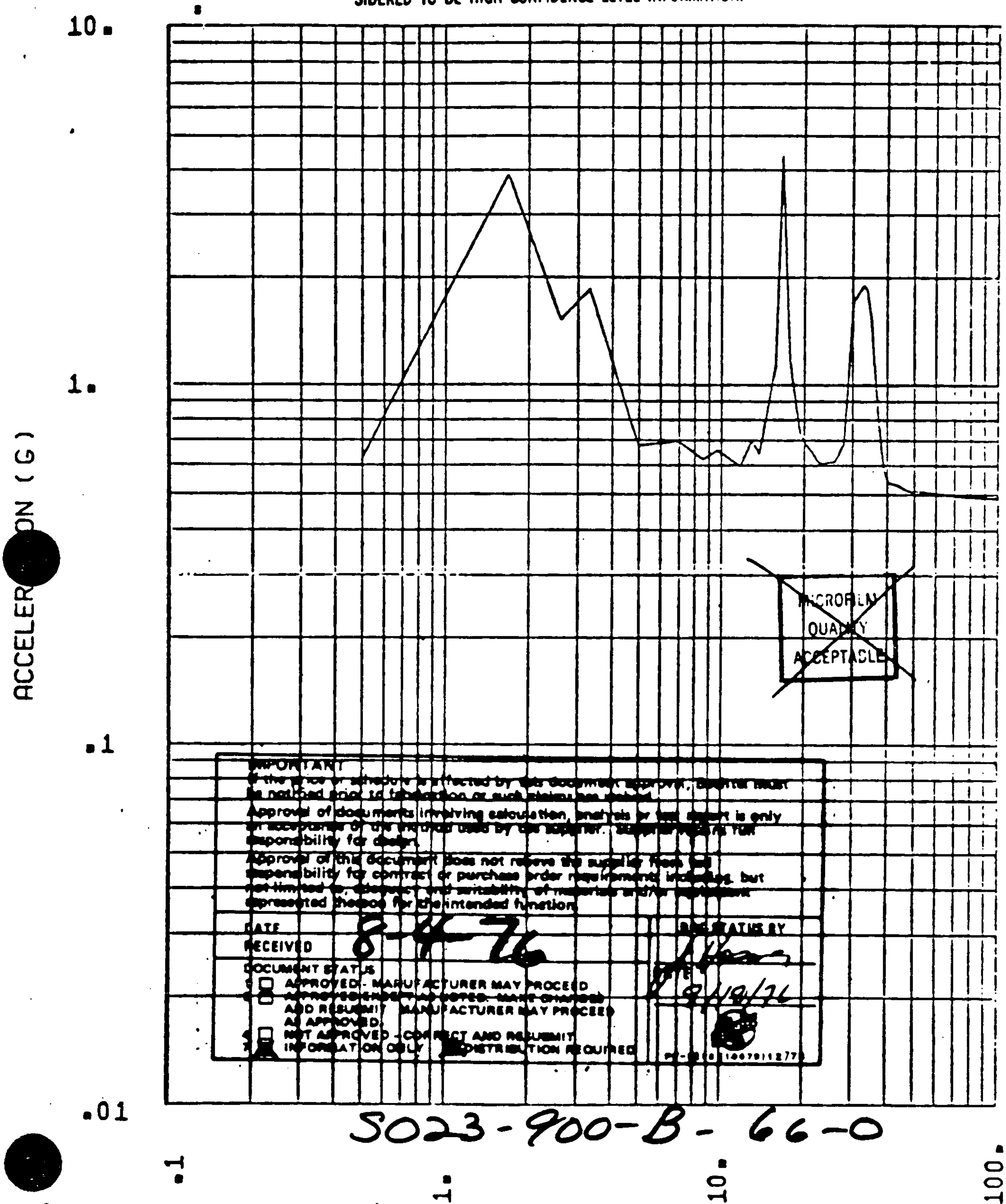

S023-900-B-66-0

(SUPERSEDES 900-B-23-0)

FREQUENCY (CPS)

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SCE DRAIN NOZ.CL(2A), Z-RESPONSE DUE TO Z-OBE .01 DAMPING

Coupled Model

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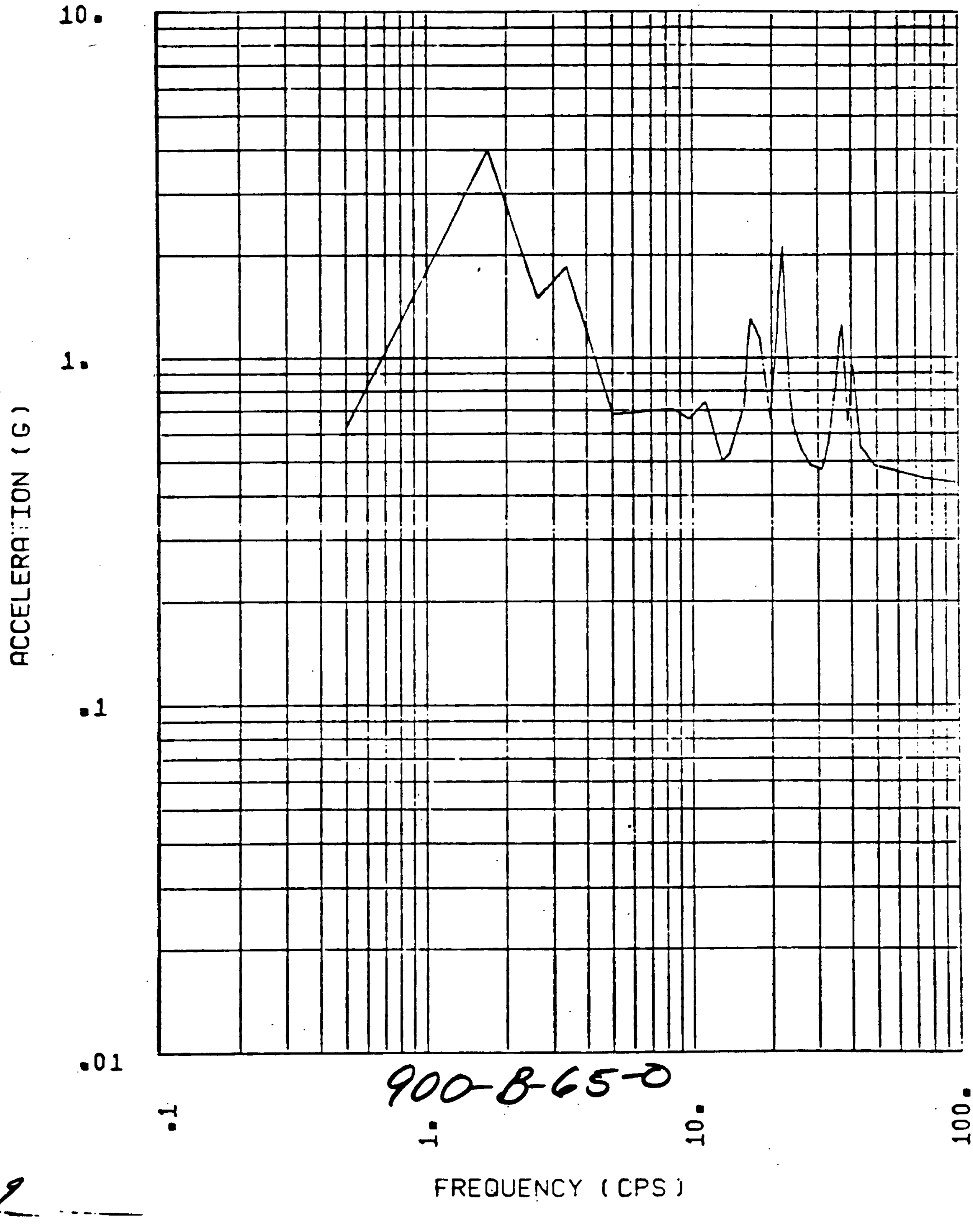

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Z-64

9

SCE DRAIN NOZ.CL(2A). Y-RESPONSE DUE TO Z-OBE .01 DAMPING

Coupled Model

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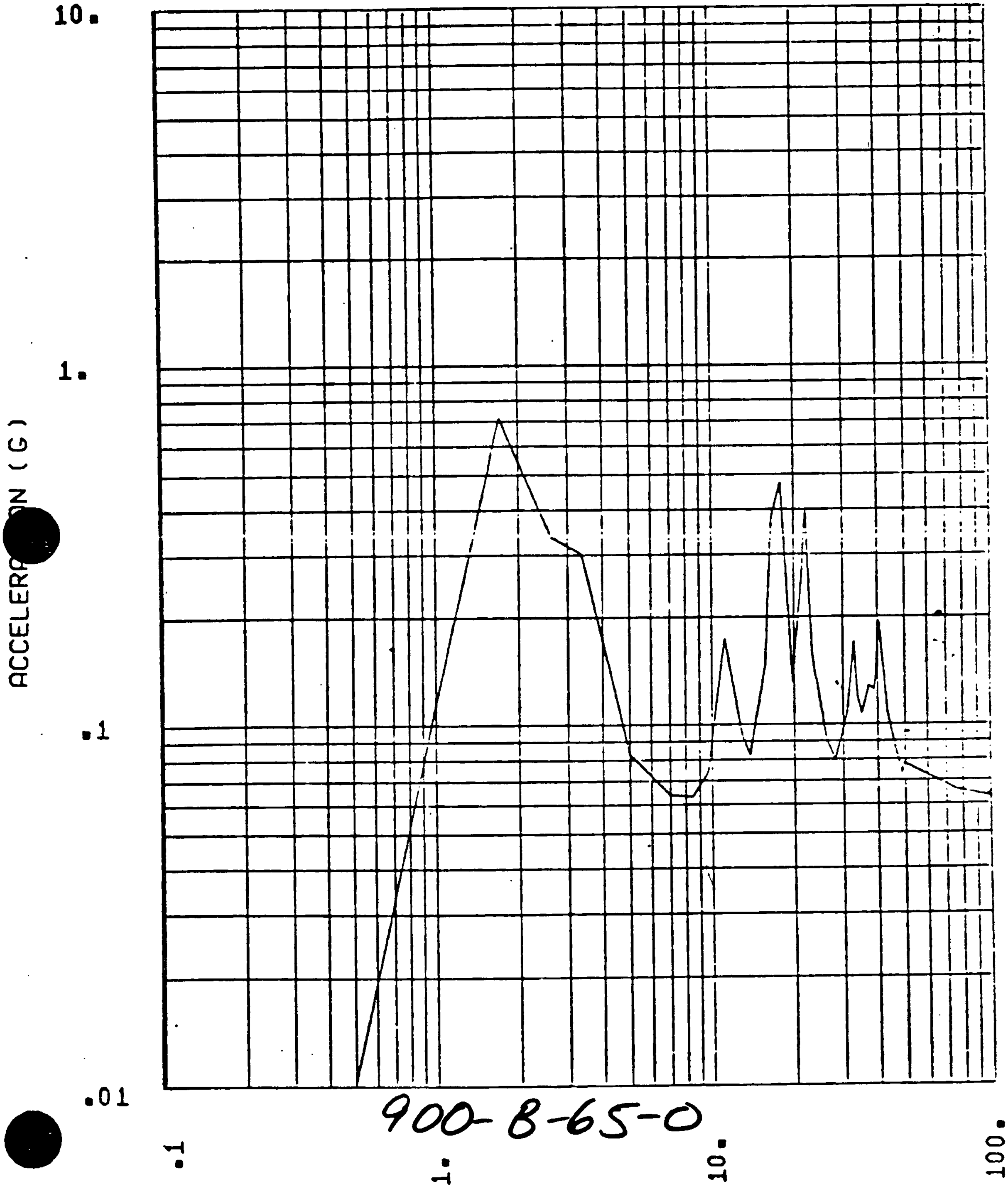

900-8-65-0

8

Z-6?

SCE DRAIN NOZ.CL(2A), X-RESPONSE DUE TO Z-OBE .01 DAMPING

Coupled model

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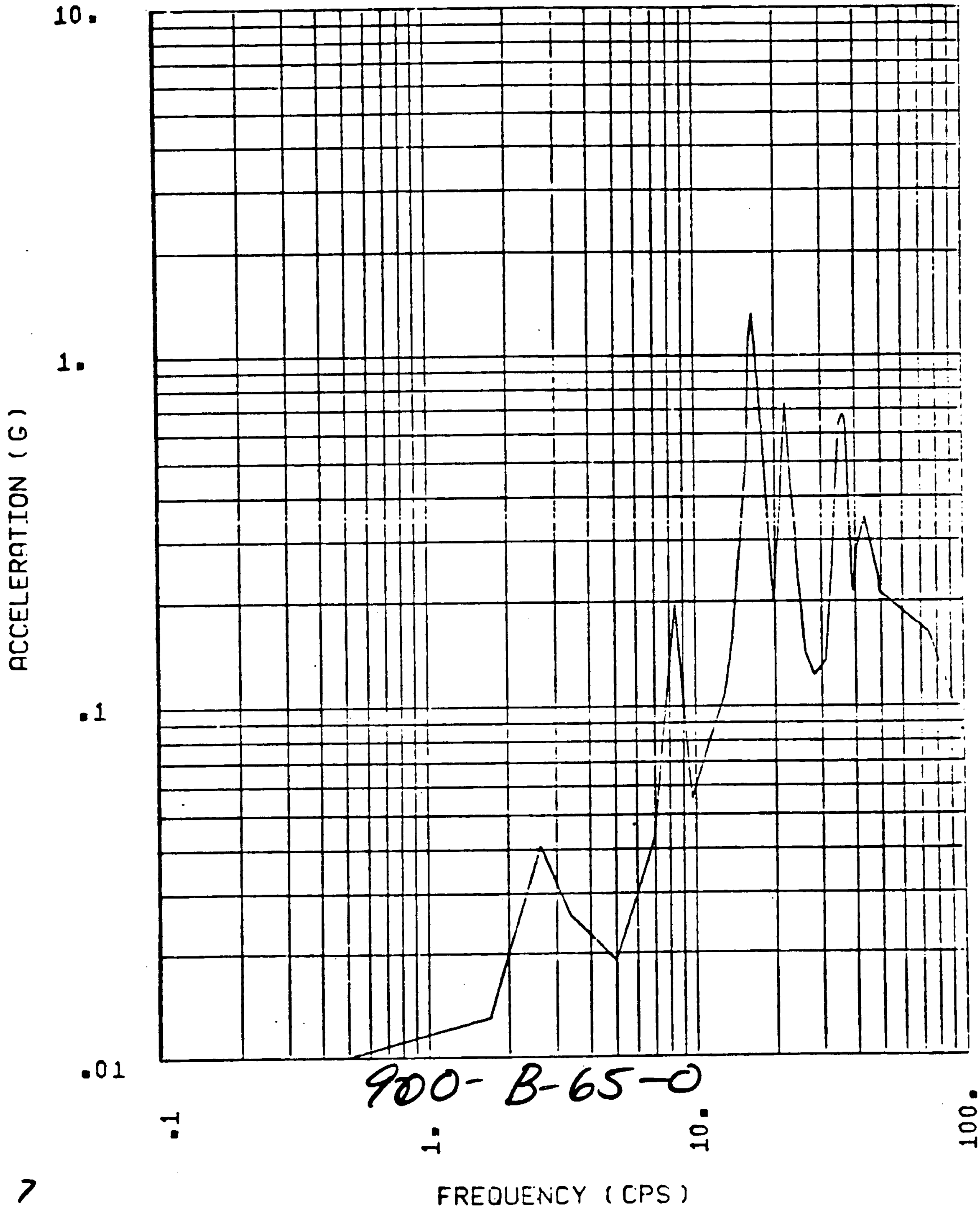

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7

SCE DRAIN NOZ.CL(2A), Z-RESPONSE DUE TO Y-OBE .01 DAMPING

Coupled model

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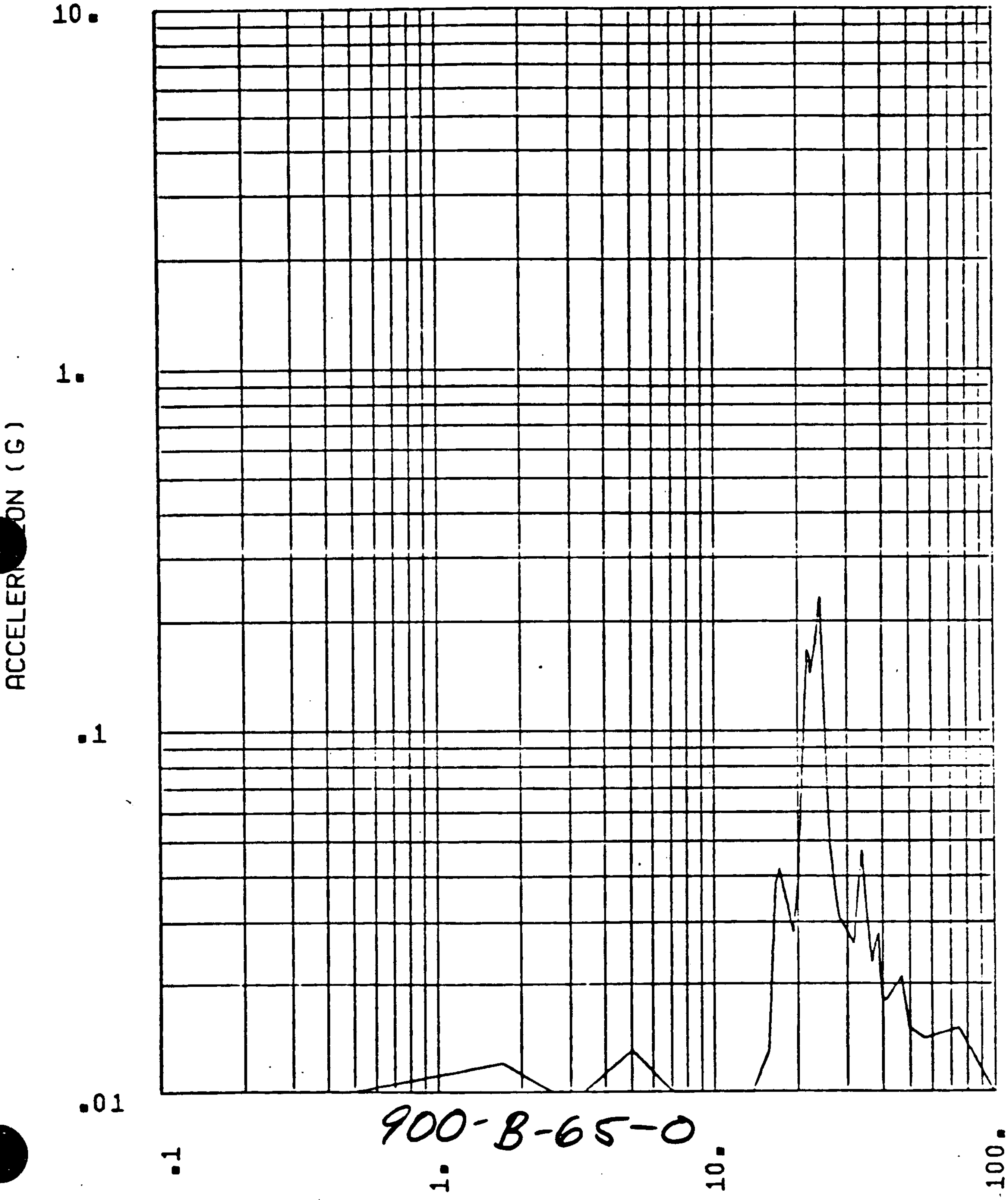

900-B-65-0

Y-58

6

SCE DRAIN NOZ.CL(2A), Y-RESPONSE DUE TO Y-OBE .01 DAMPING

Coupled Model

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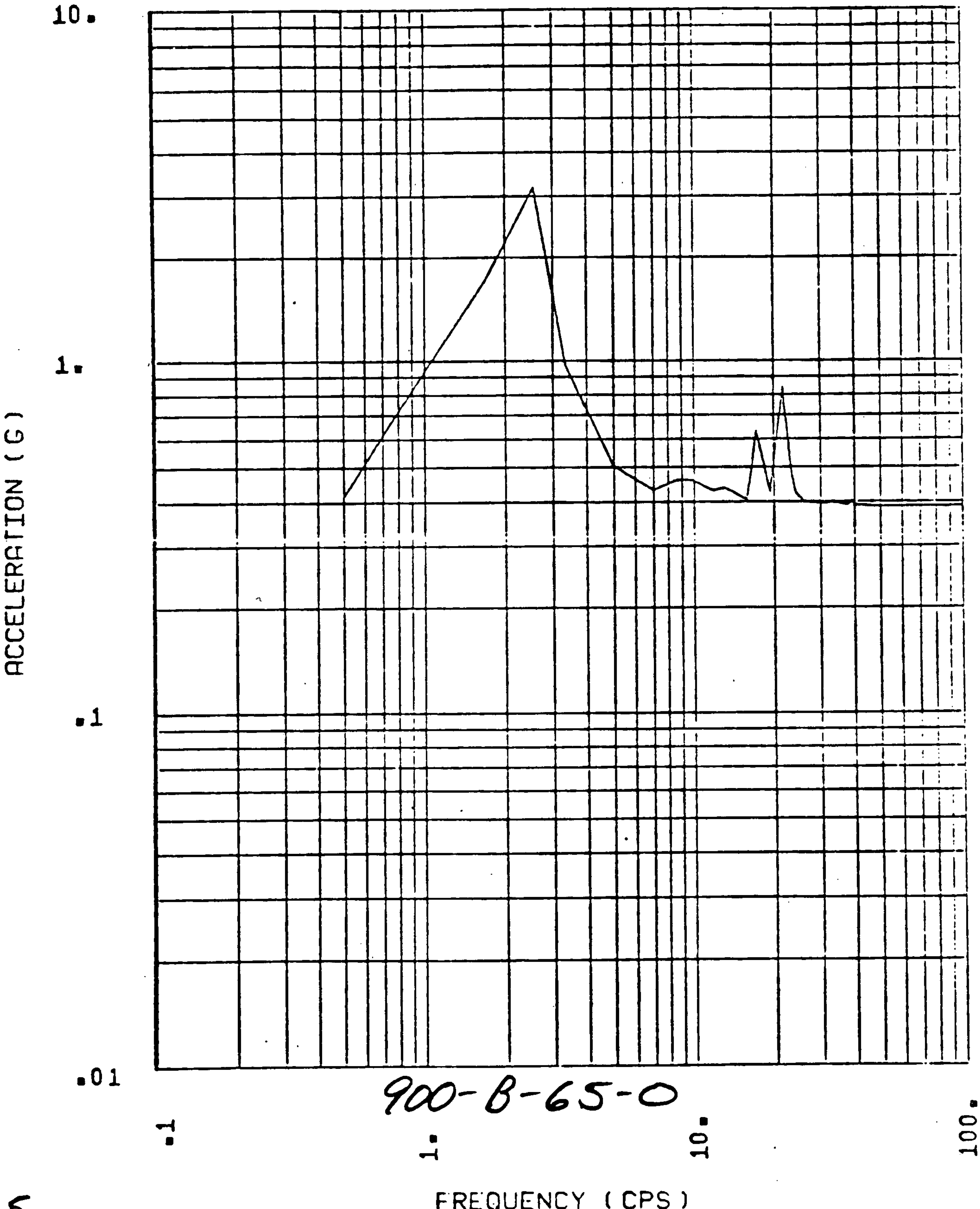

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Y-5

SCE DRAIN NOZ.CL(2A), X-RESPONSE DUE TO Y-OBE .01 DAMPING

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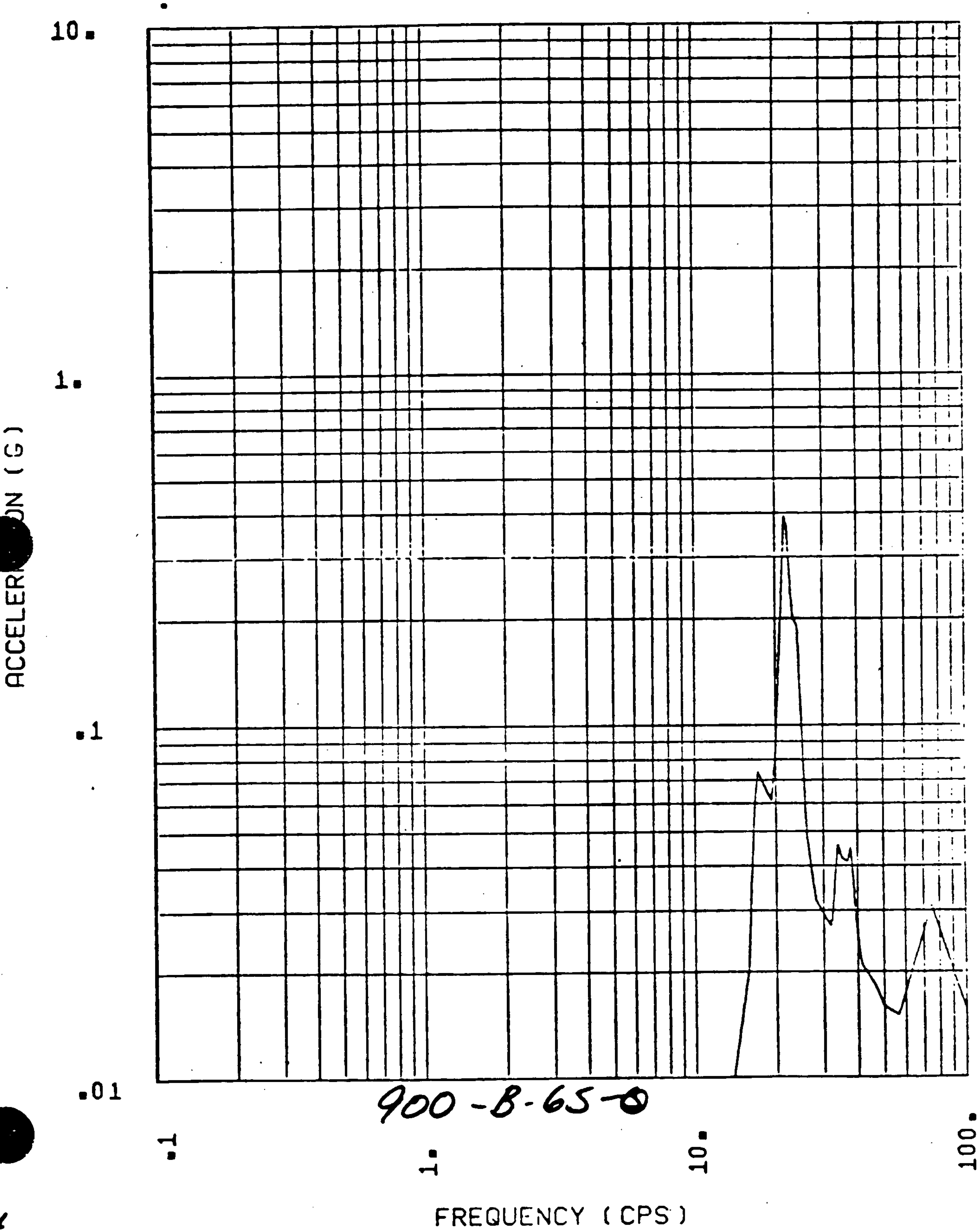

900-B-65-0

Y-53

4

SCE DRAIN NOZ.CL(2A). Z-RESPONSE DUE TO X-OBE .01 DAMPING

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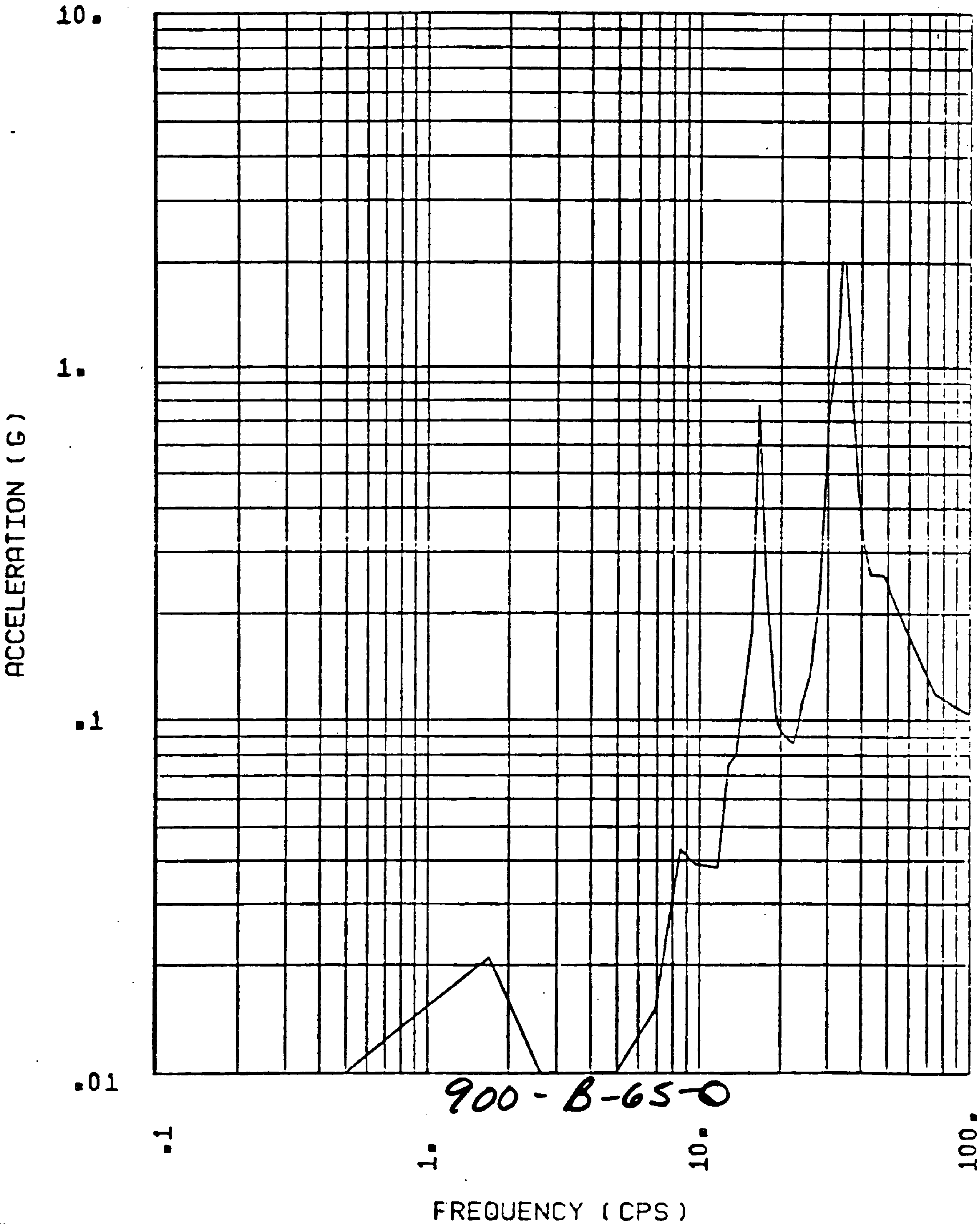

900-B-65-0

3

SCE DRAIN NOZ.CL(2A), Y-RESPONSE DUE TO X-OBE .01 DAMPING

COUPLED MODEL

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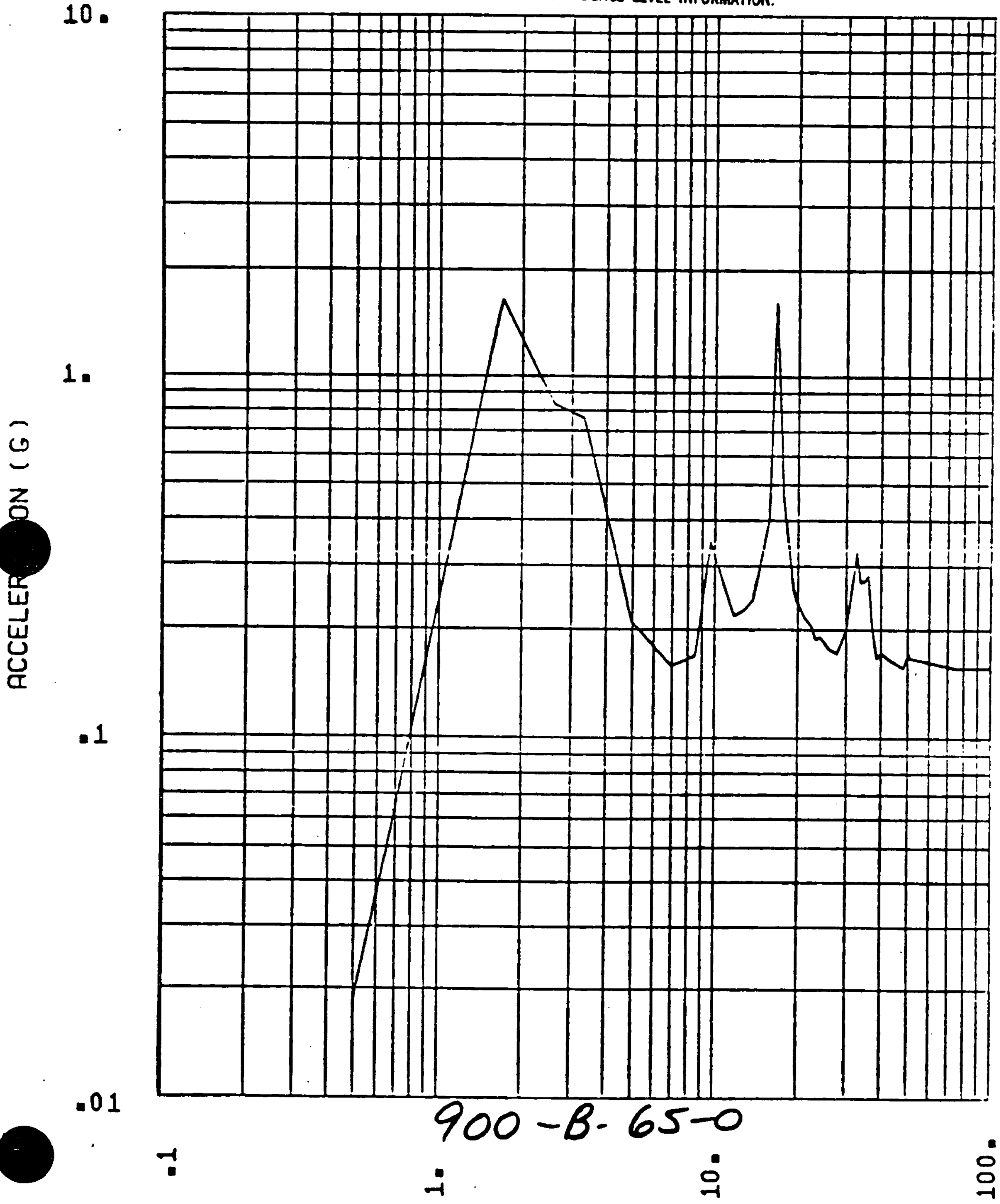

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2

X-

SCE DRAIN NOZ.CL(2A). X-RESPONSE DUE TO X-OBE .01 DAMPING

COUPLED MODEL

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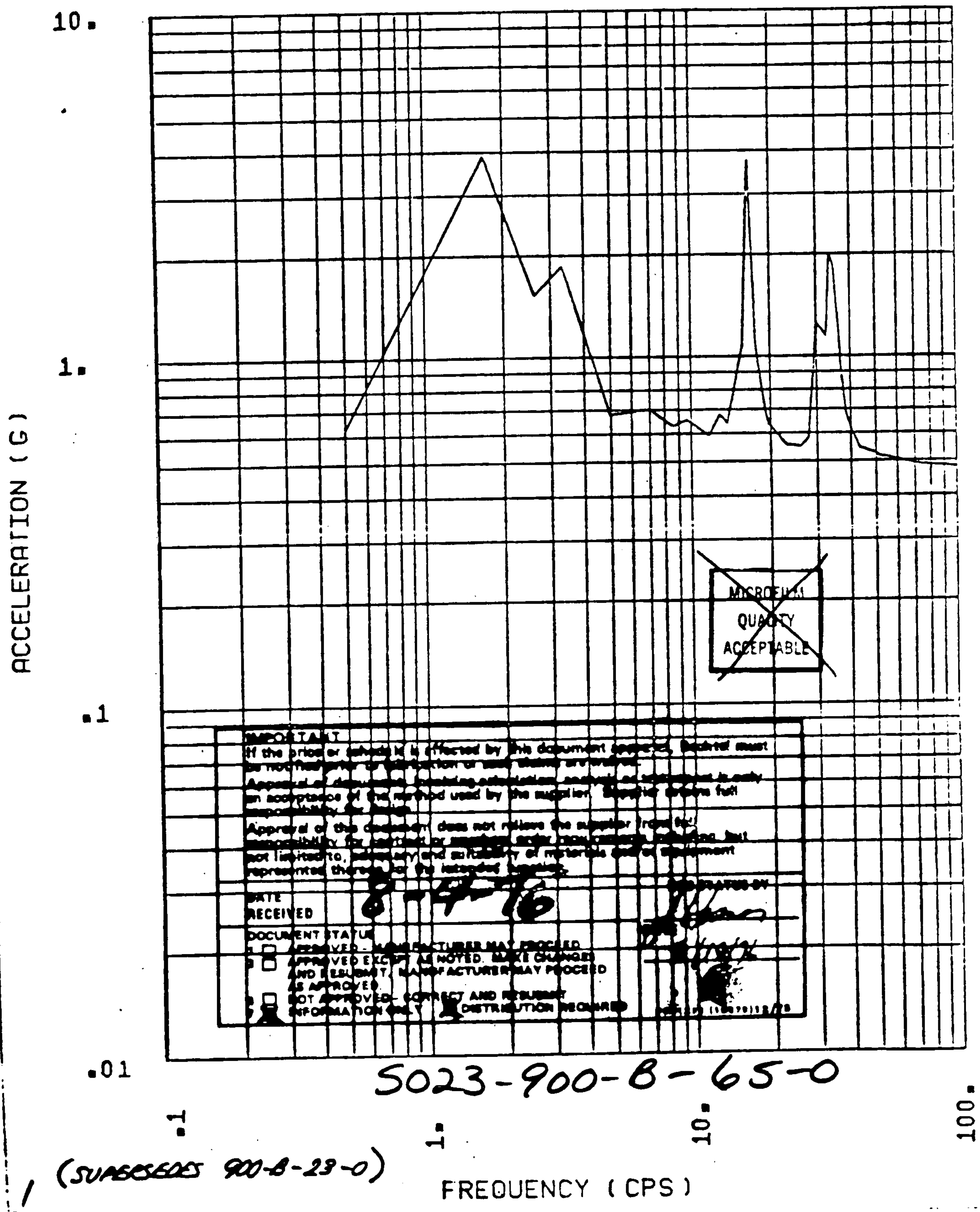

SO23-900-8-65-0

(SUPERSEDES 900-8-23-0)

X-

SCE DRAIN NOZ.CL(1B), Z-RESPONSE DUE TO Z-OBE .01 DAMPING

Coupled model

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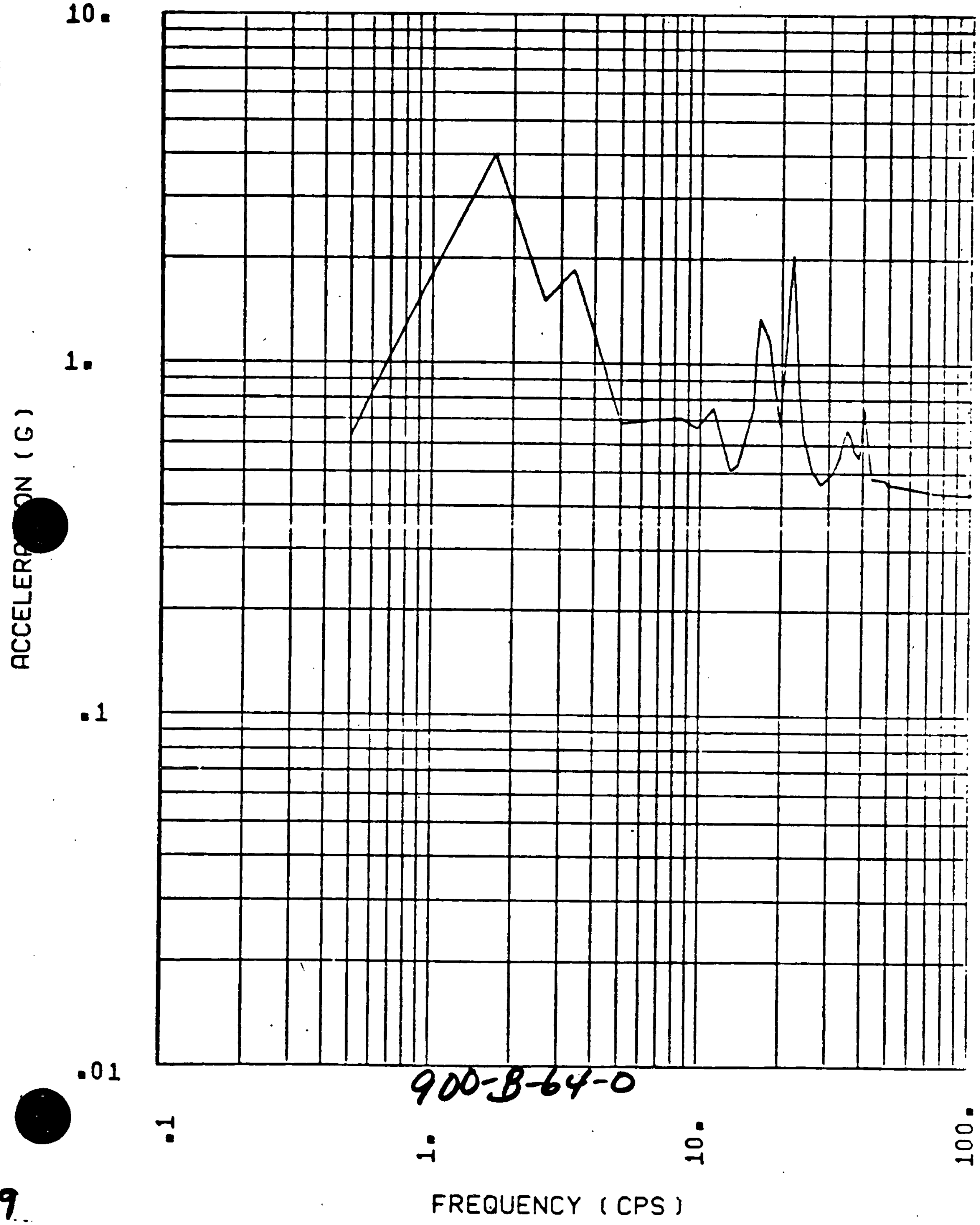

900-B-64-0

Z-63

9

SCE DRAIN NOZ.CL(1B), Y-RESPONSE DUE TO Z-OBE .01 DAMPING

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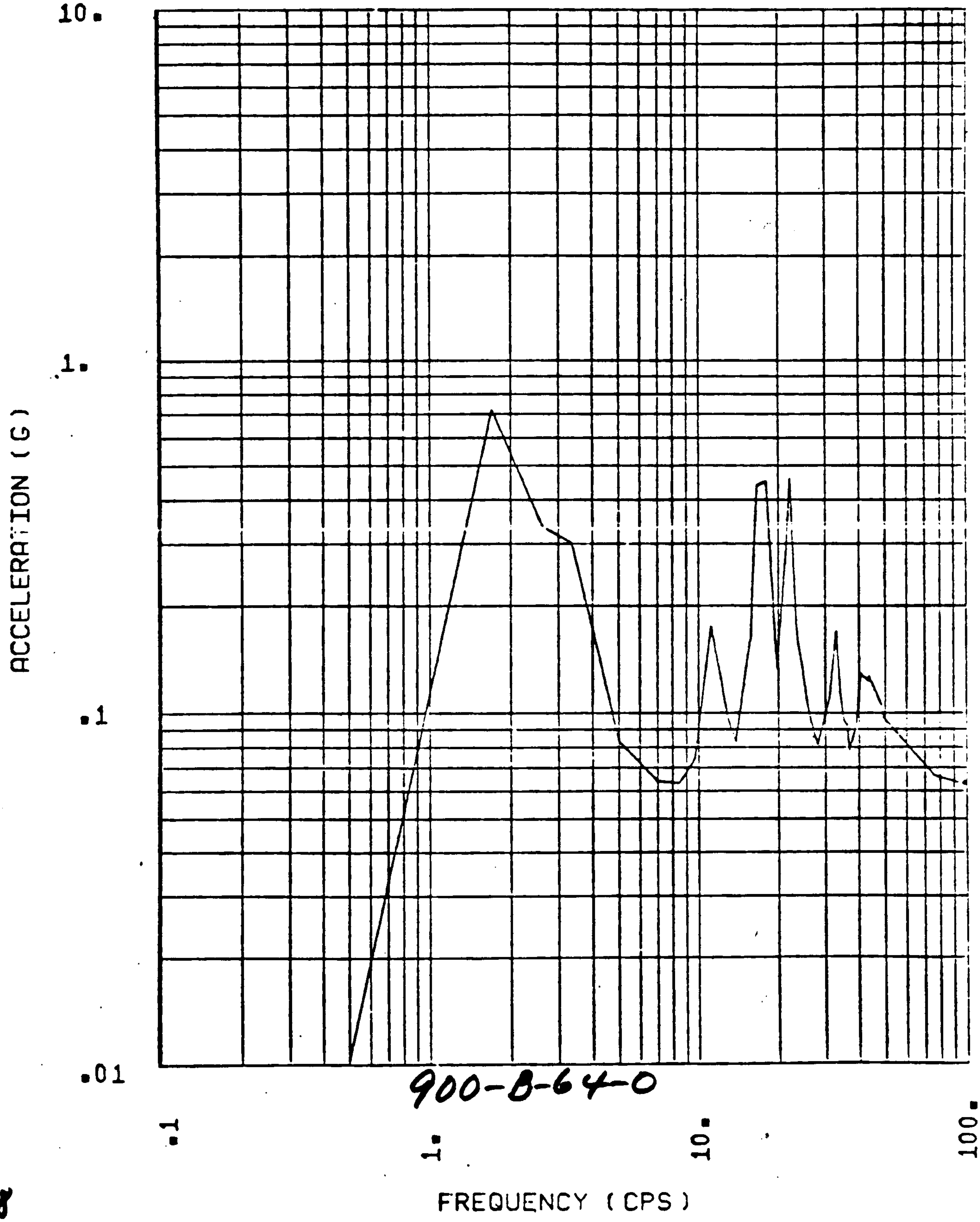

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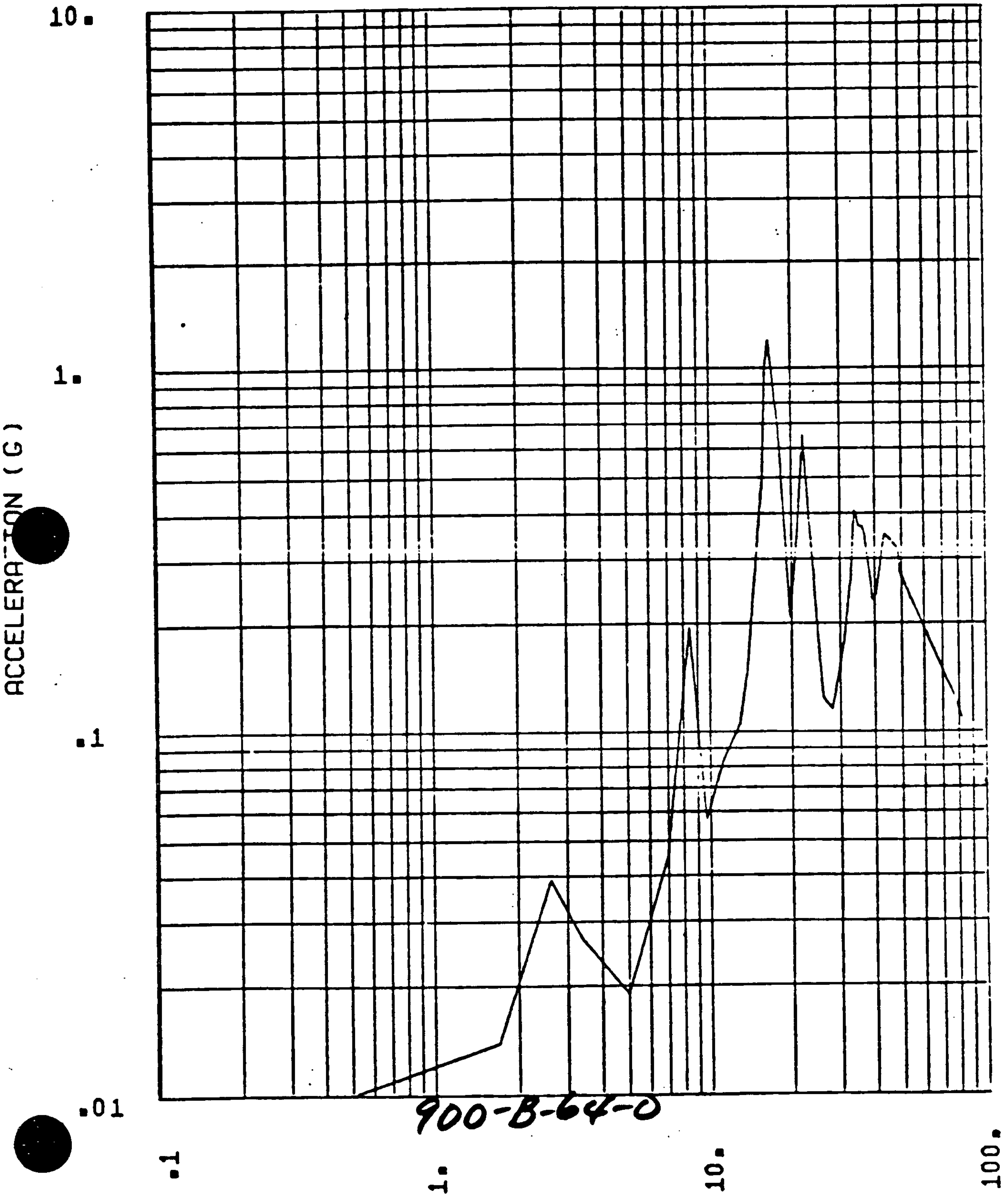

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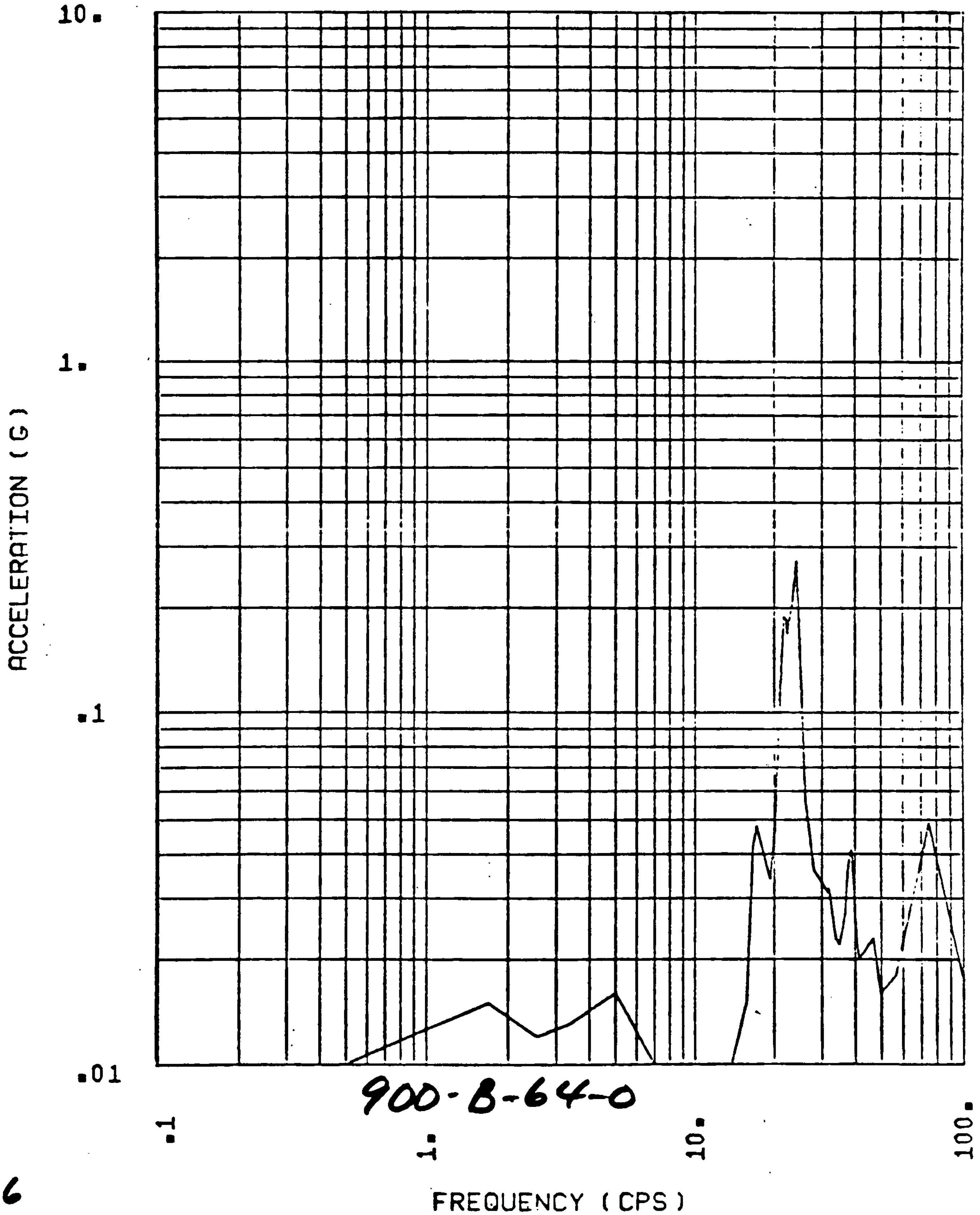

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Y-56

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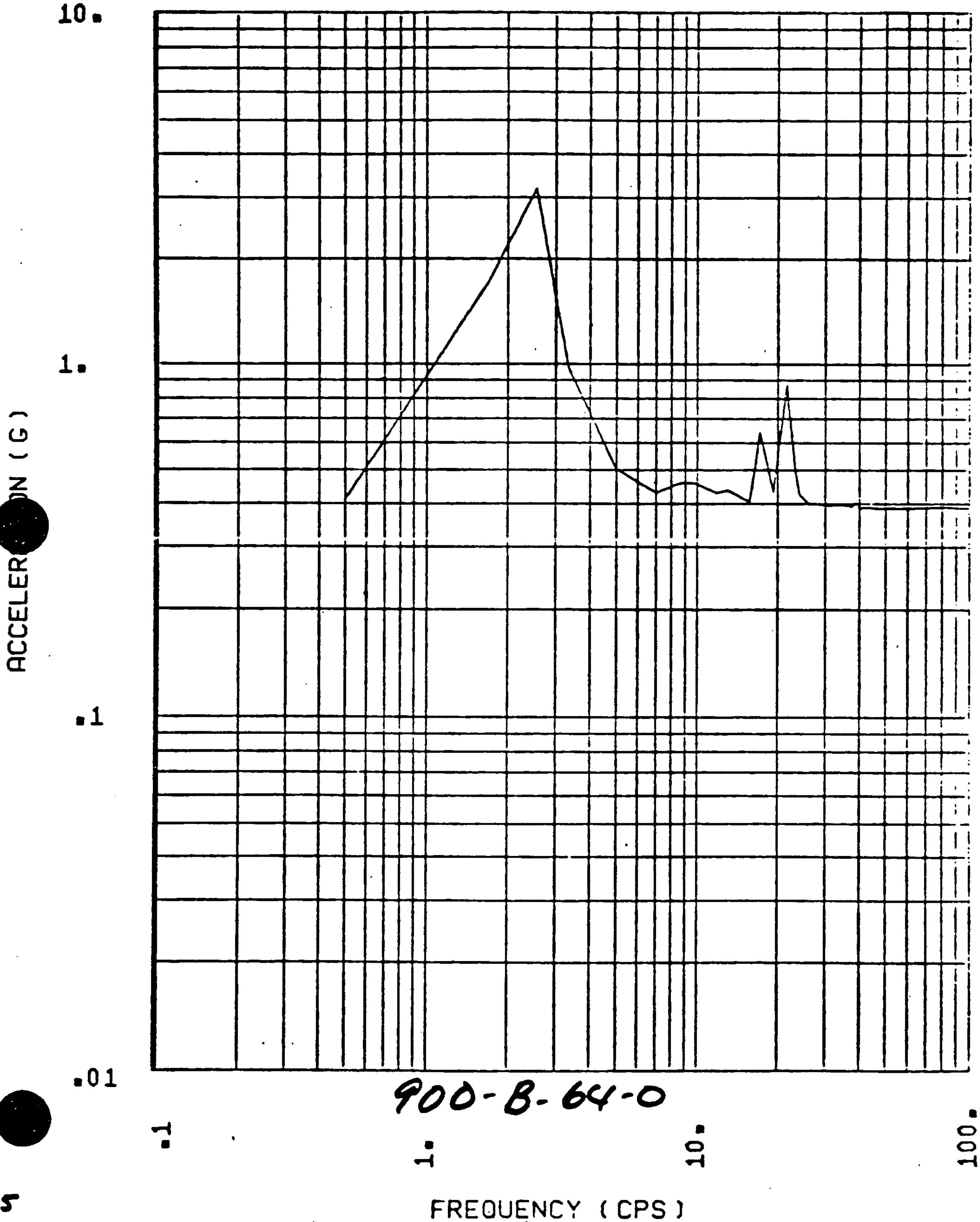

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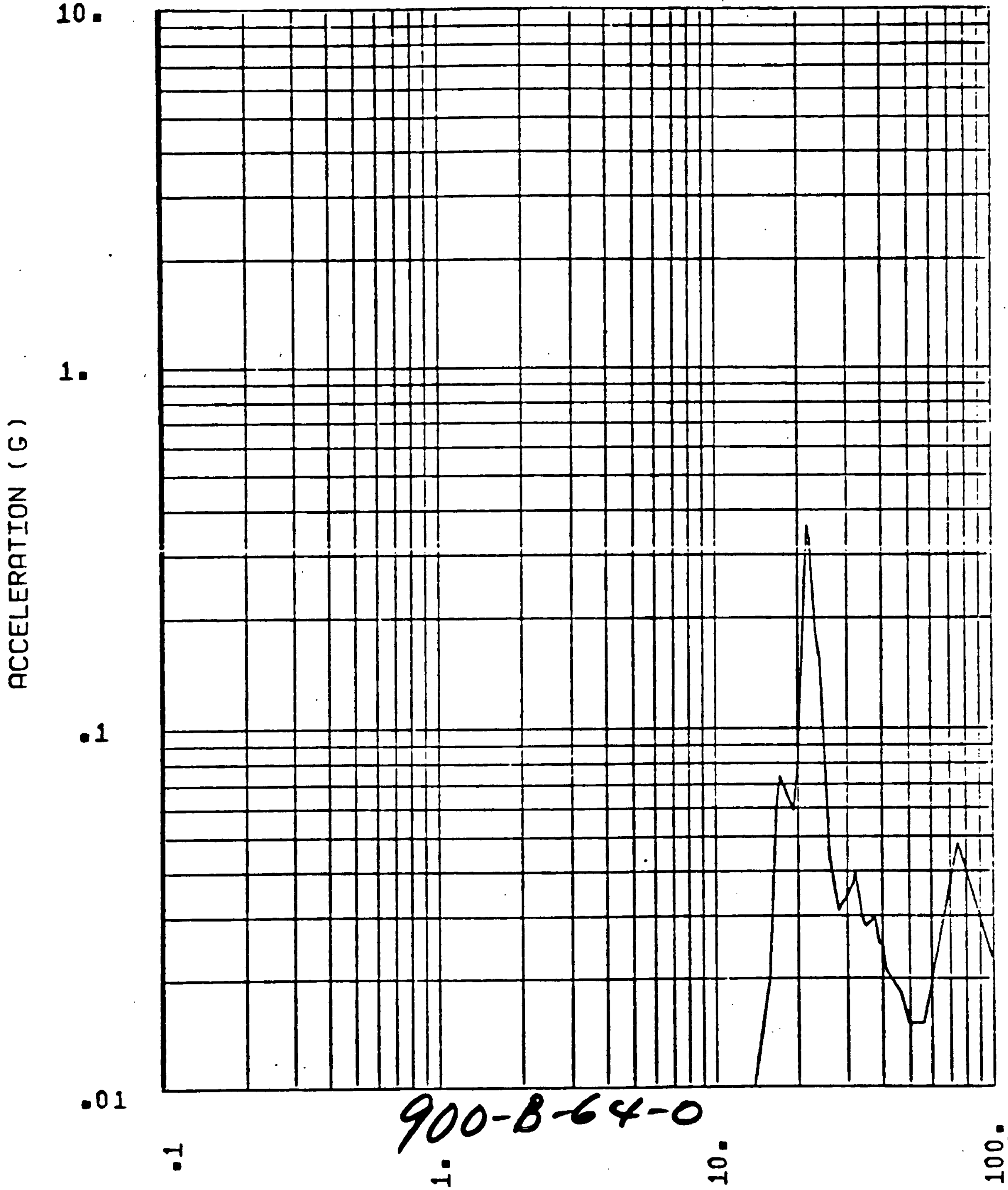

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Y-48

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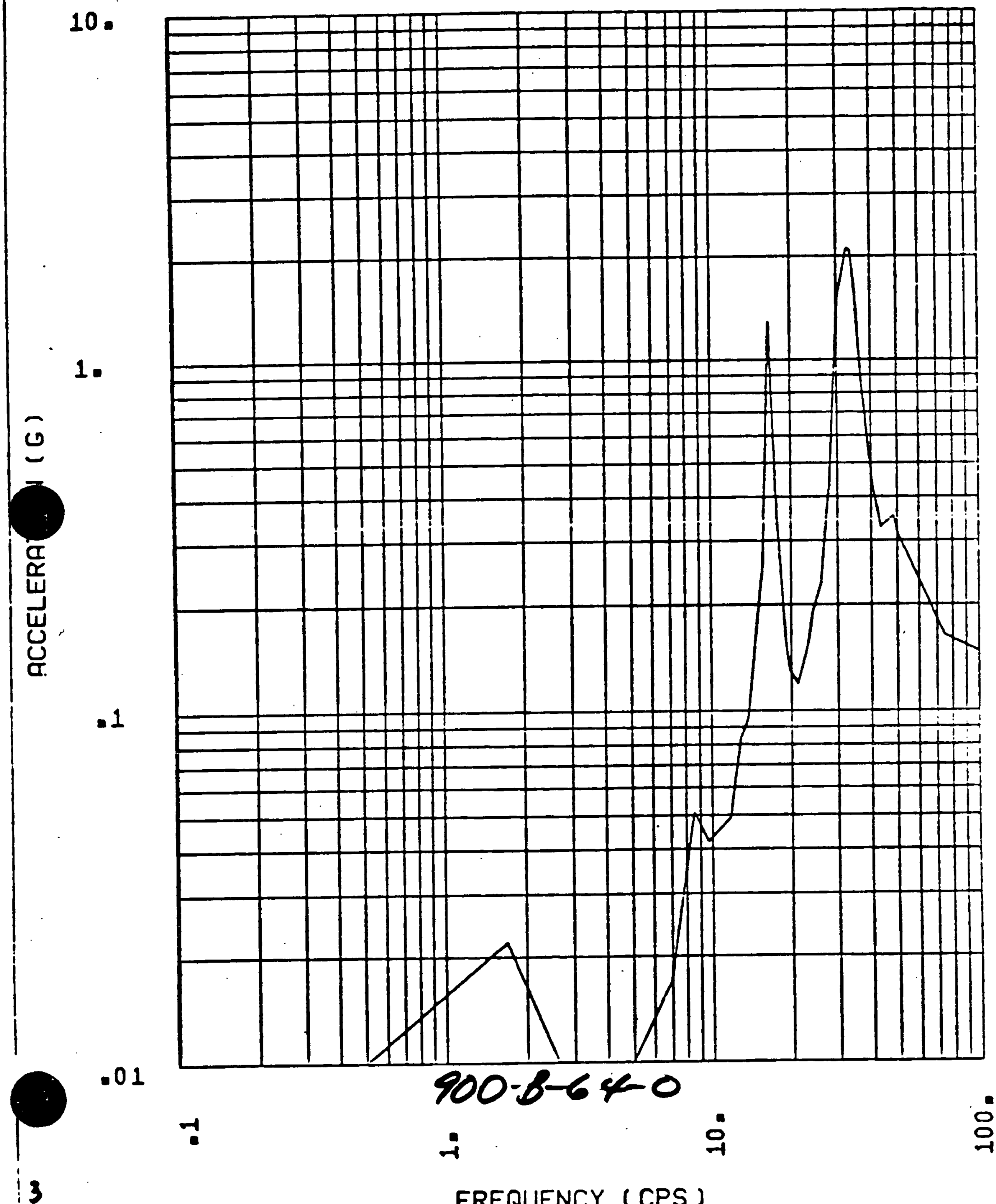

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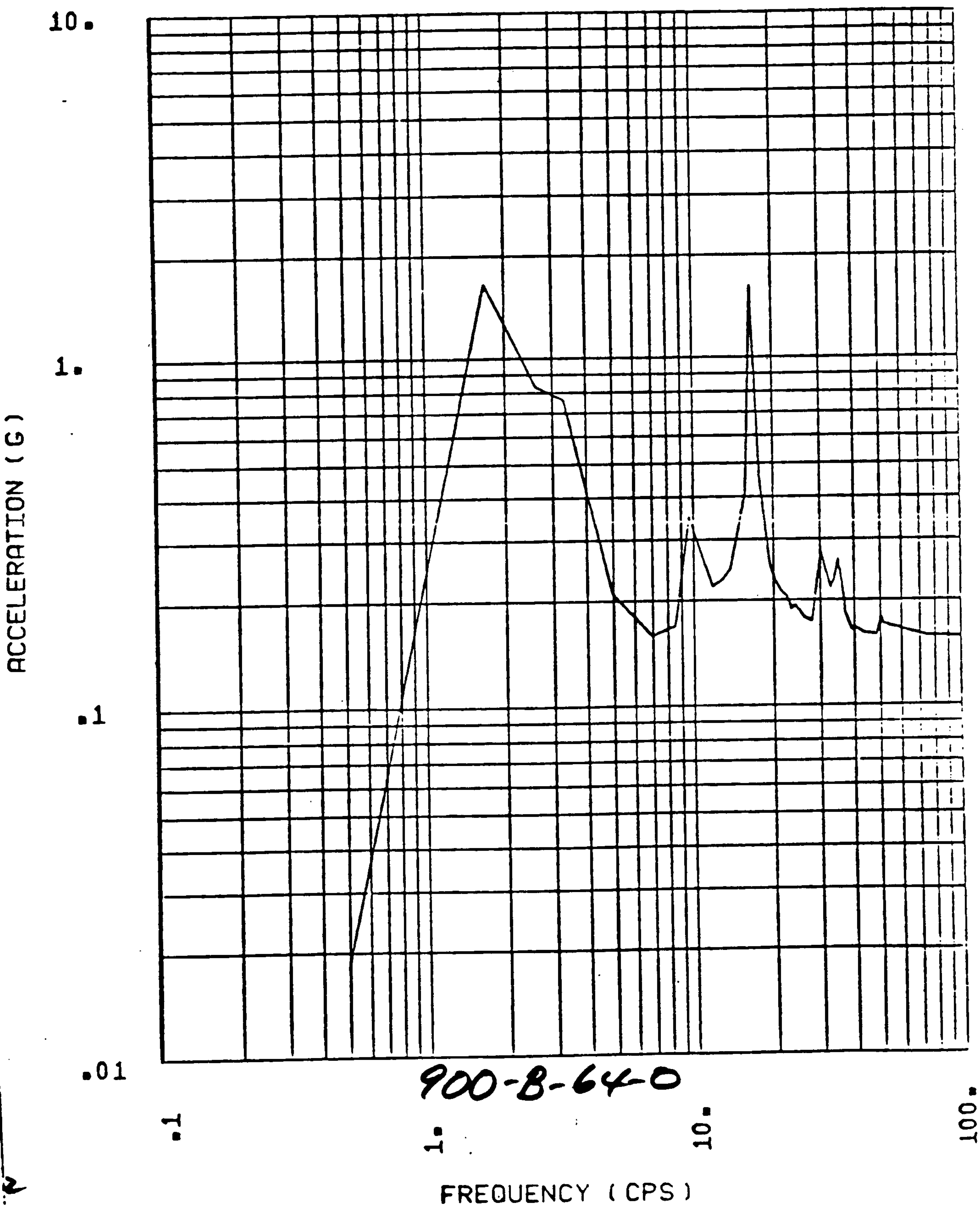

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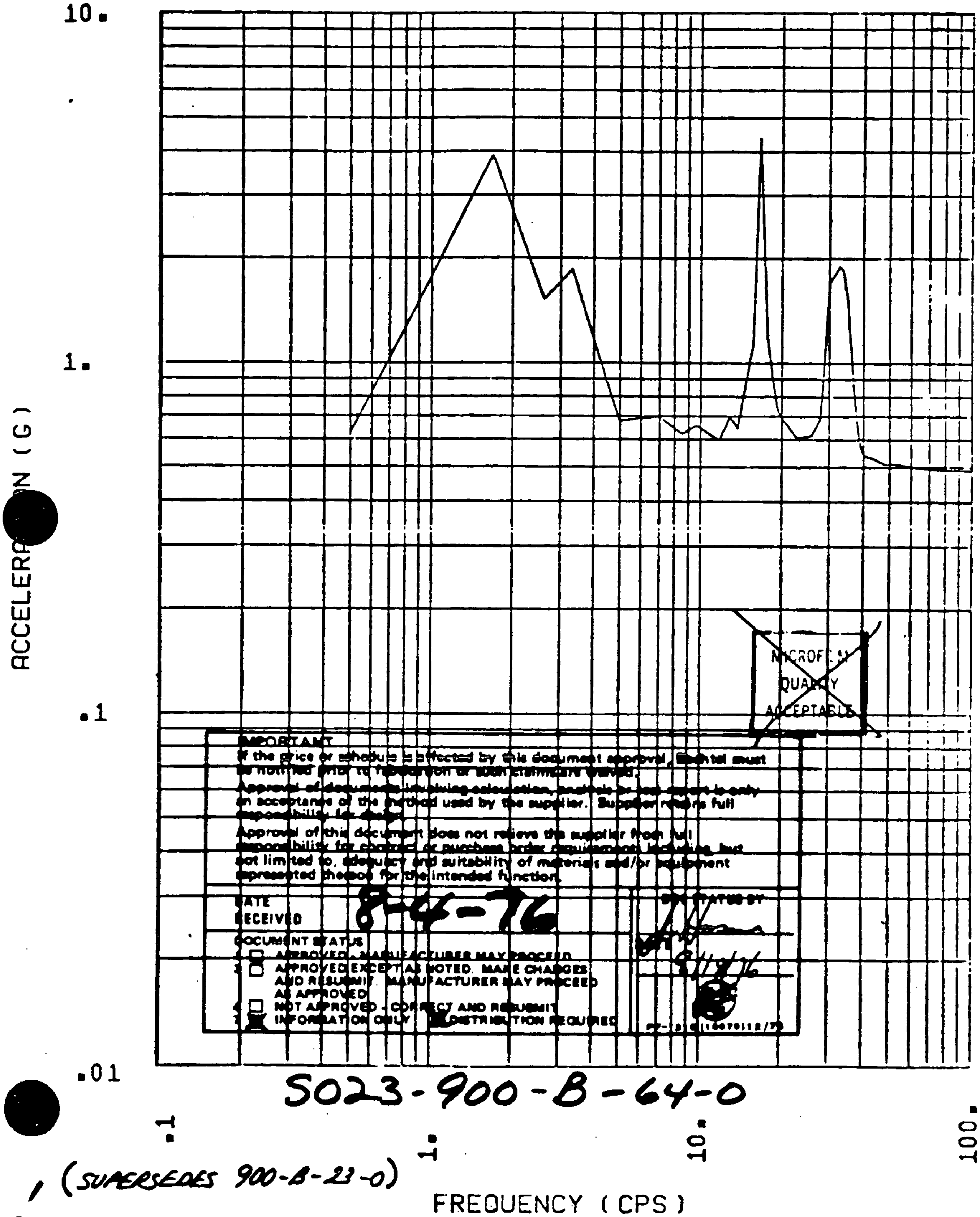

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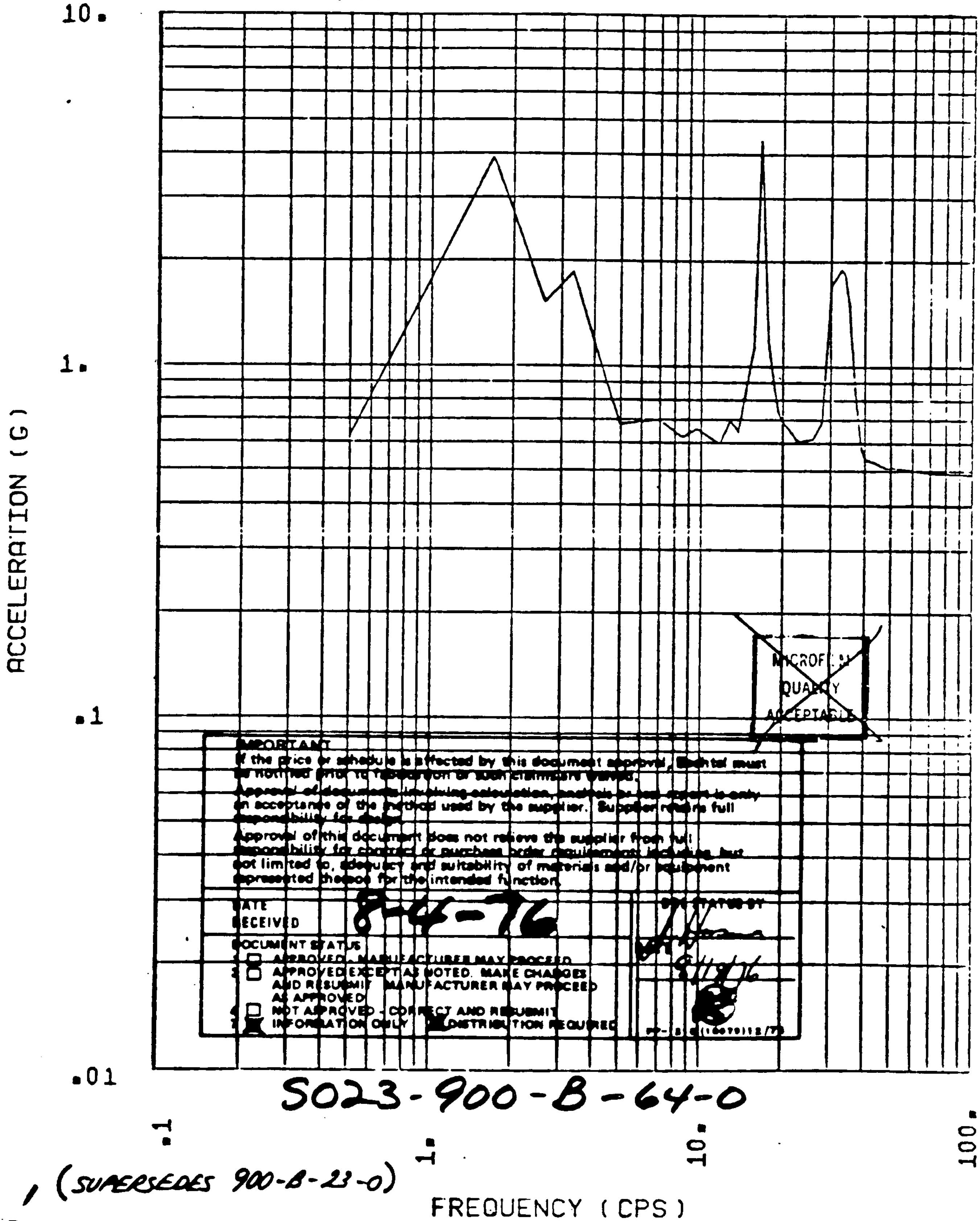

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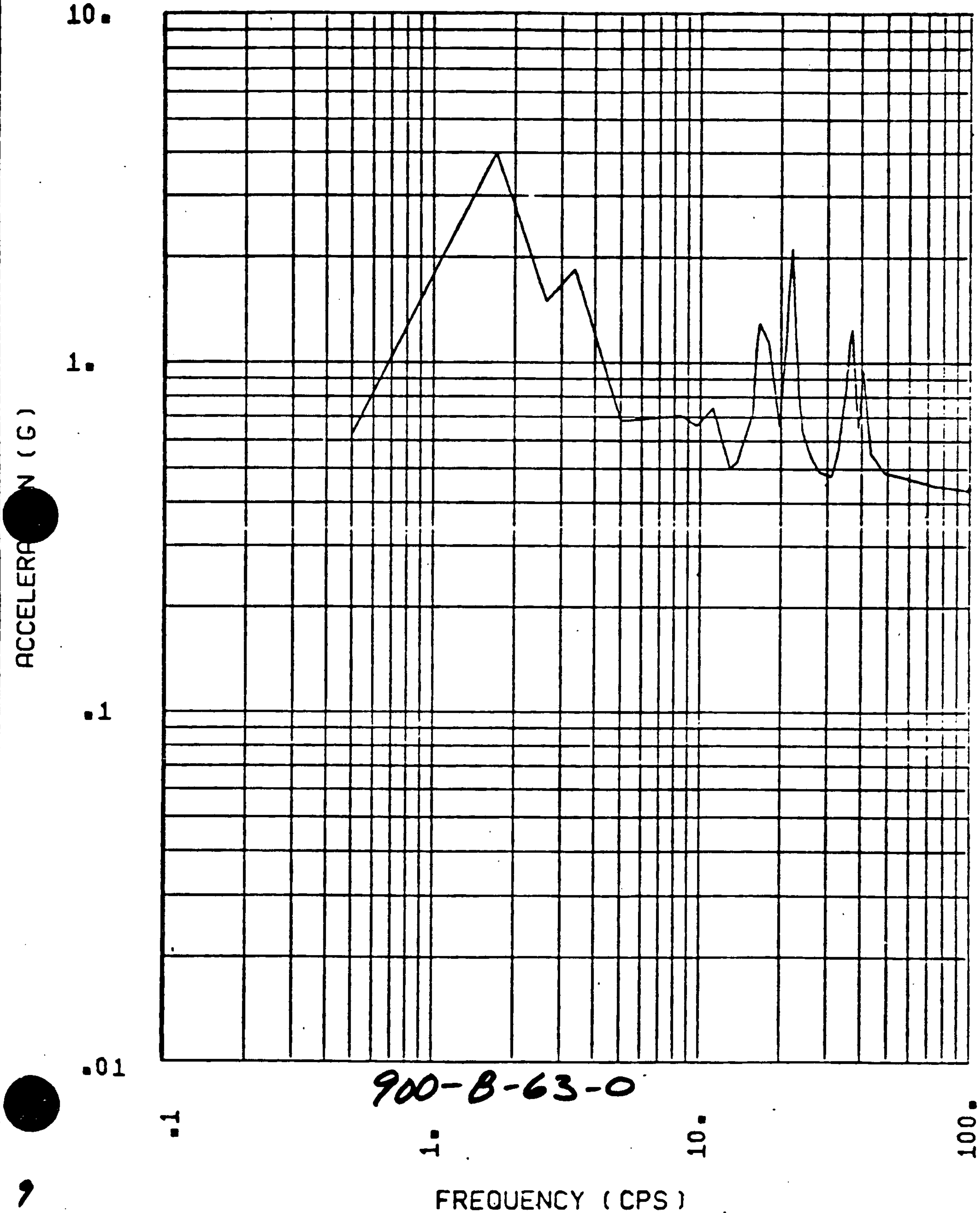

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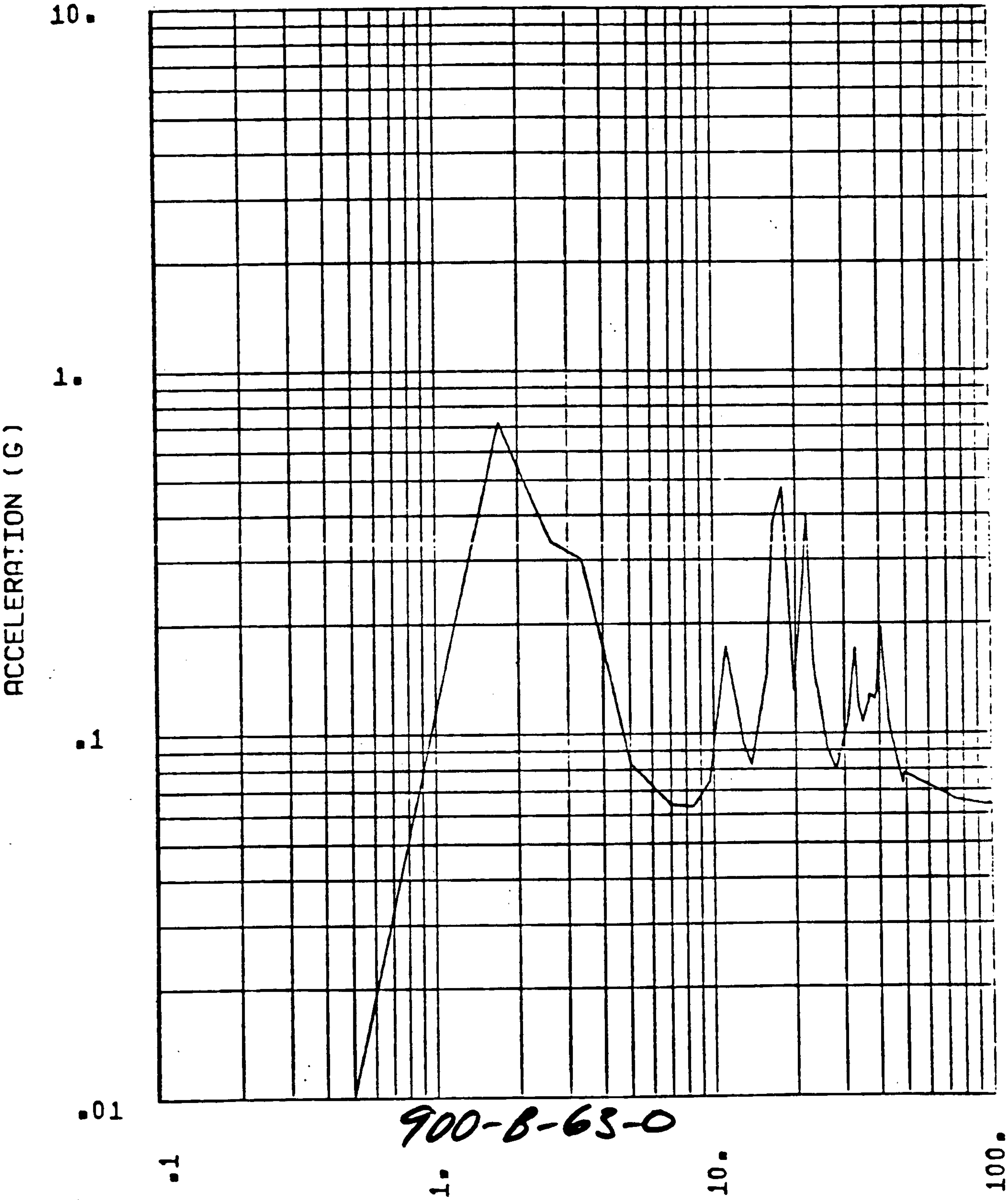

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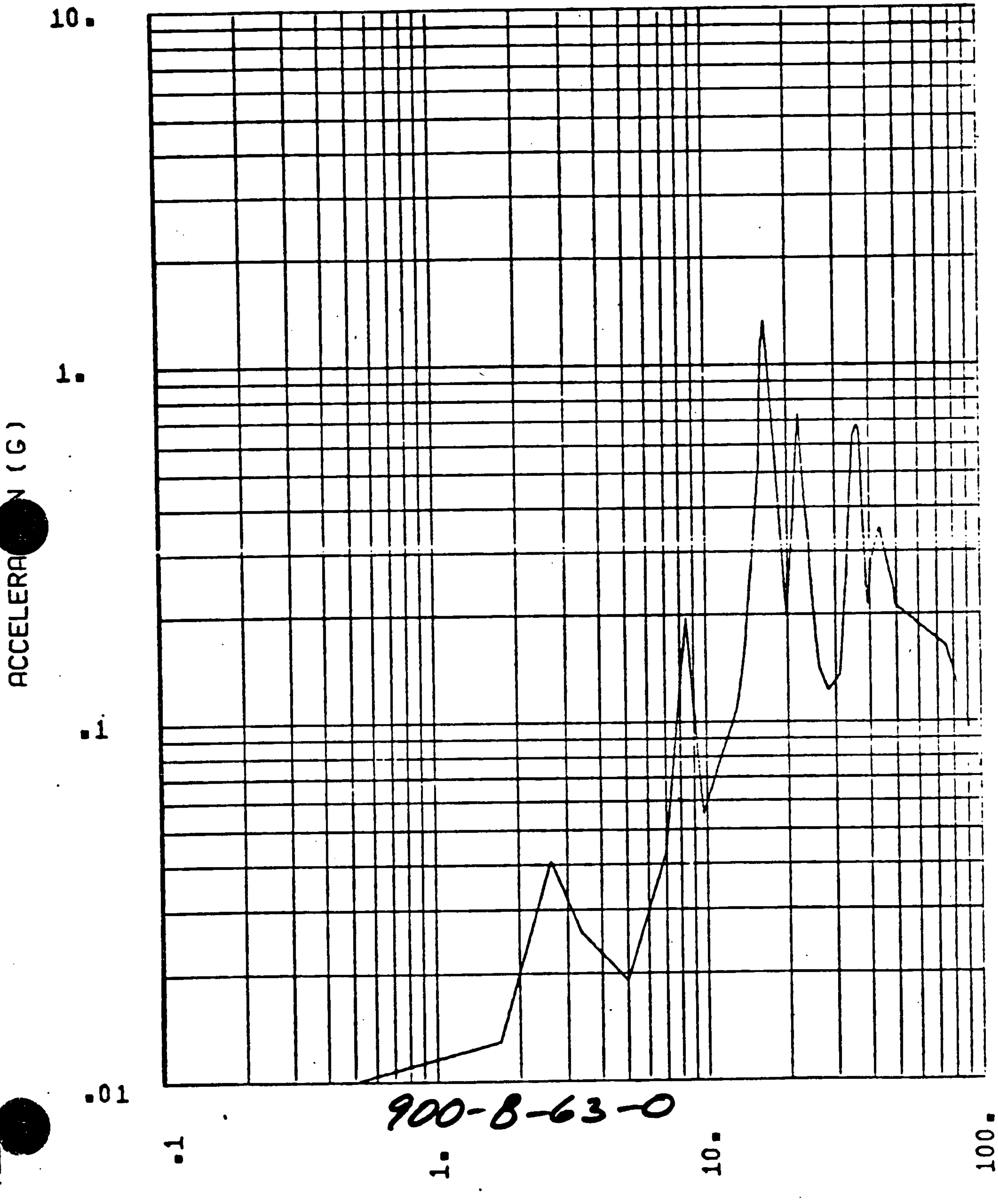

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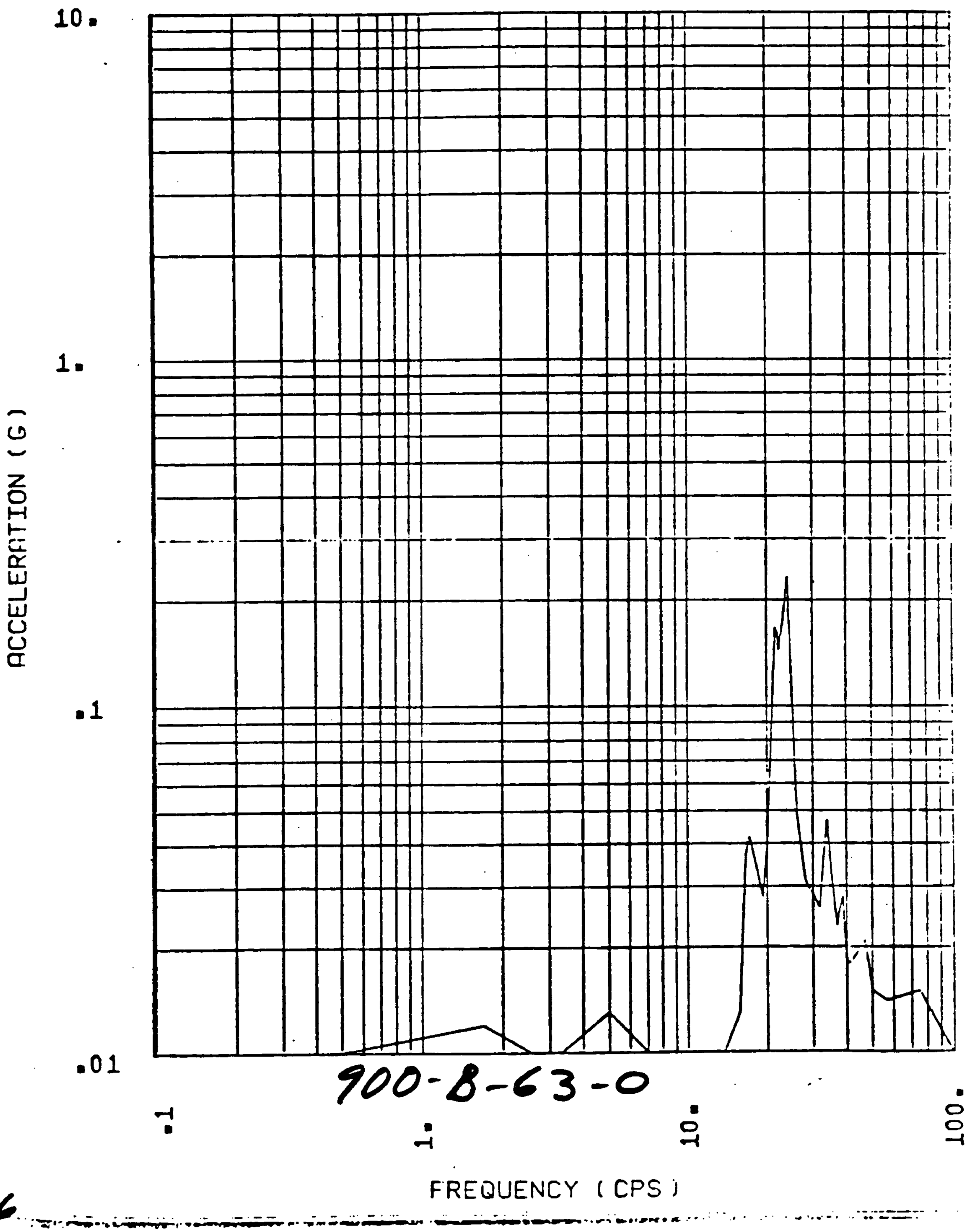

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Y-55

6

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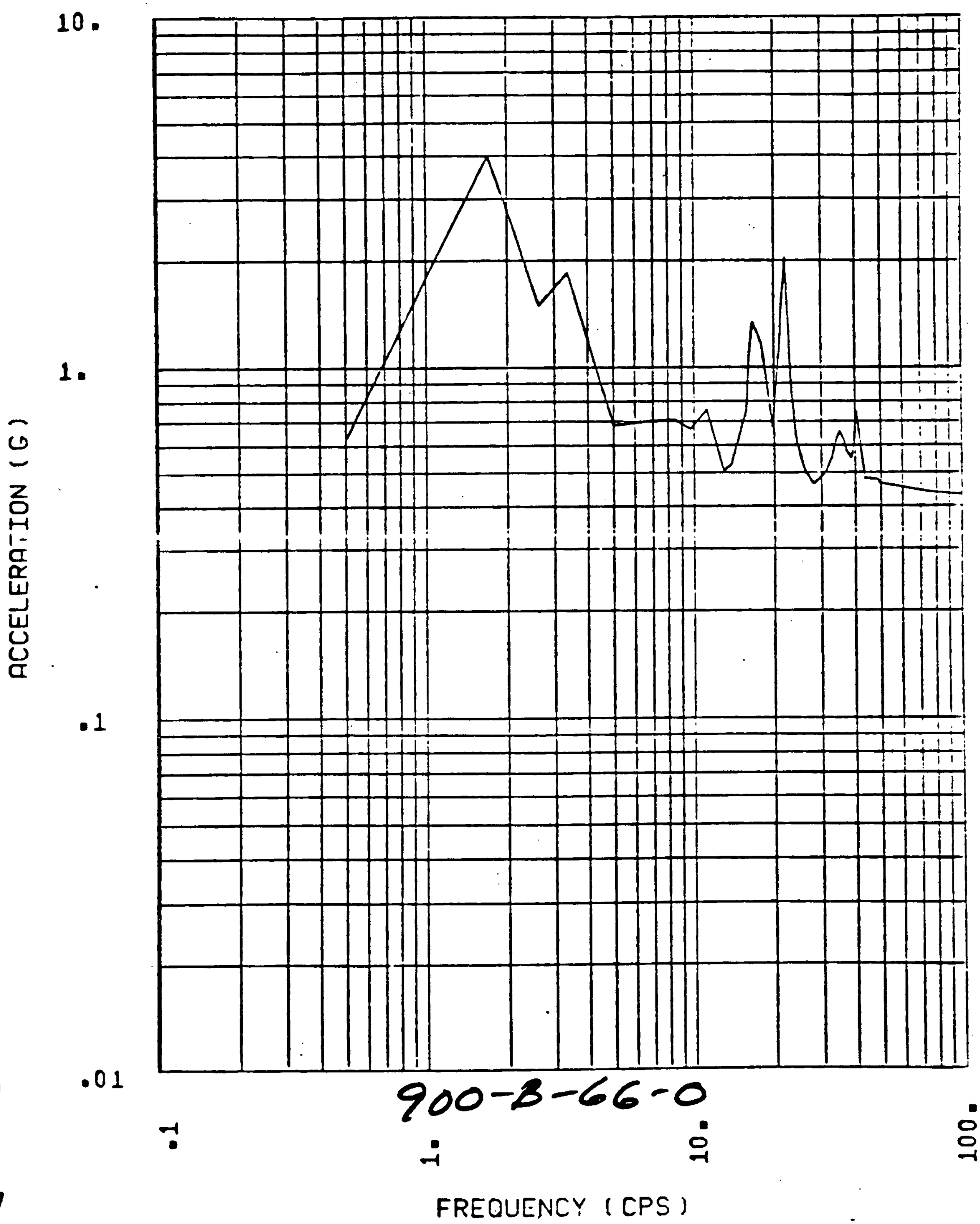

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9

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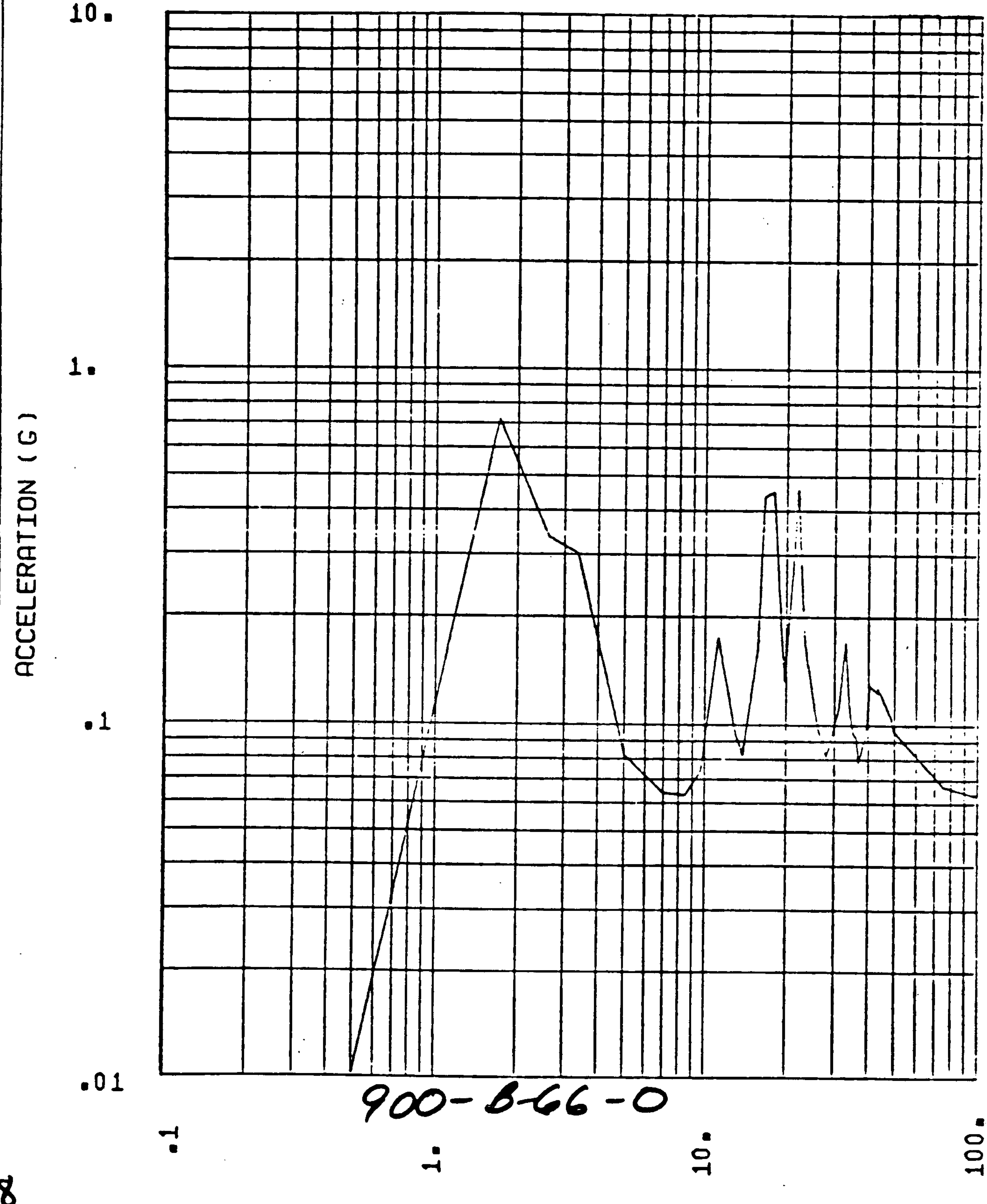

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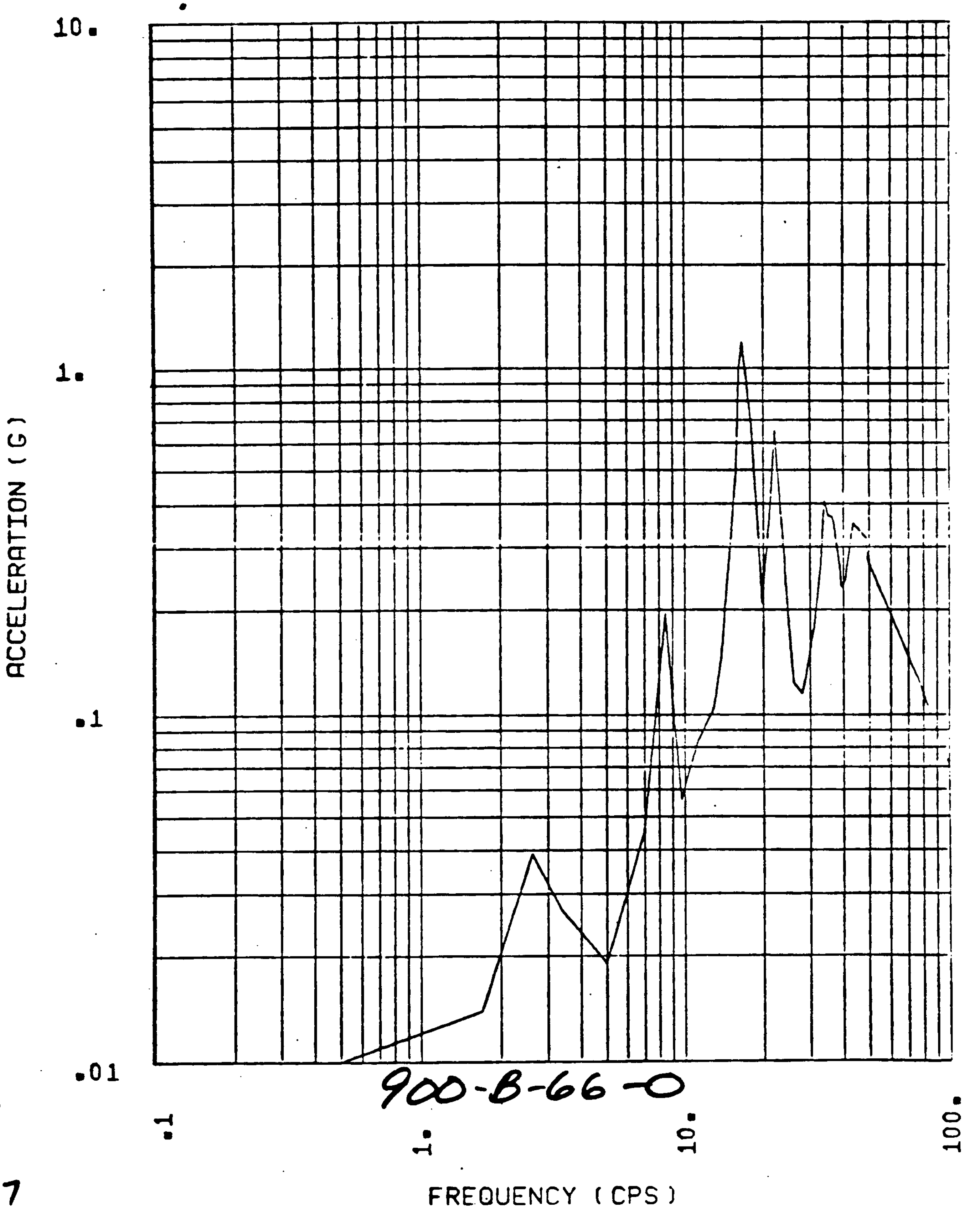

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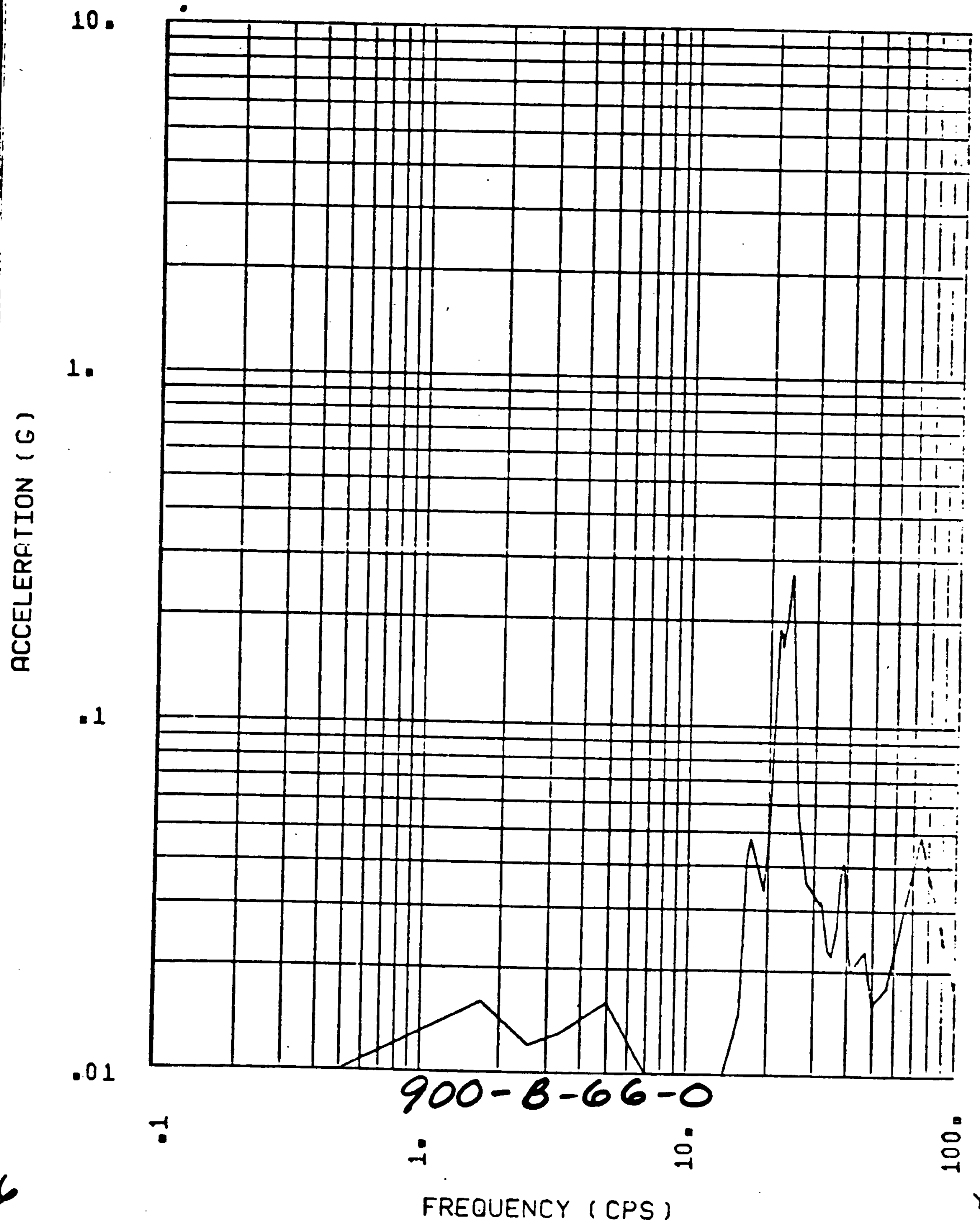

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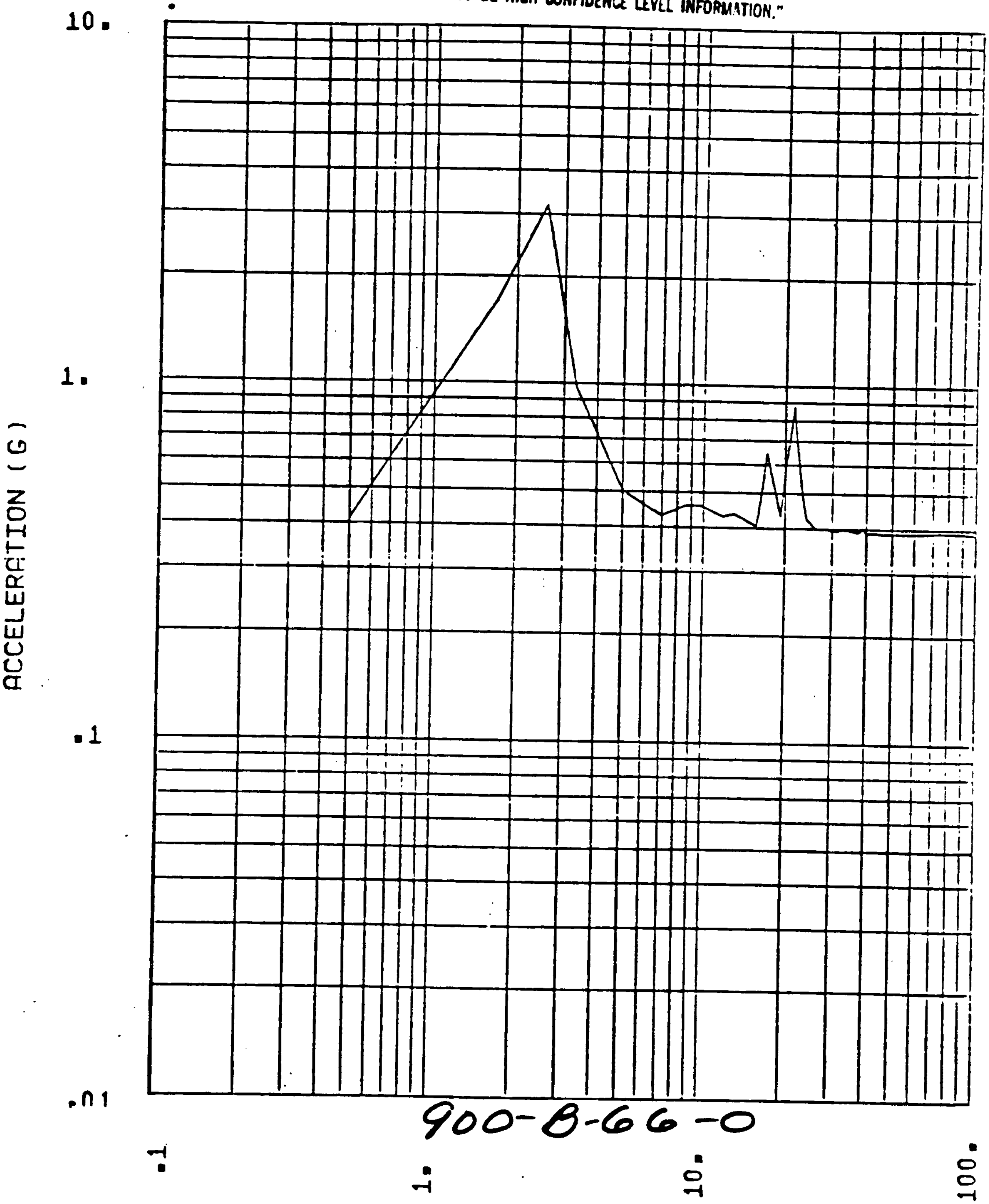

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Y-53

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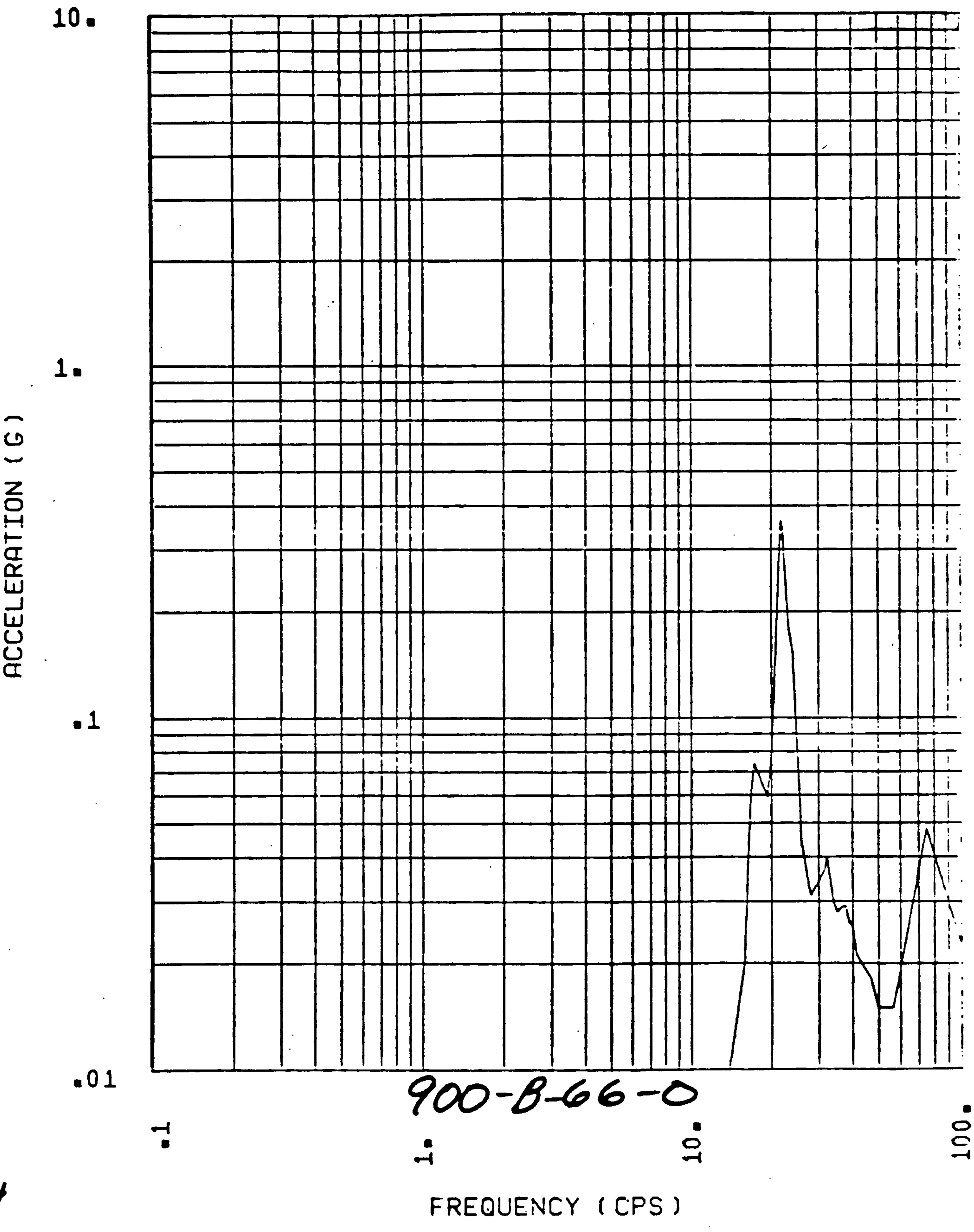

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Y-49

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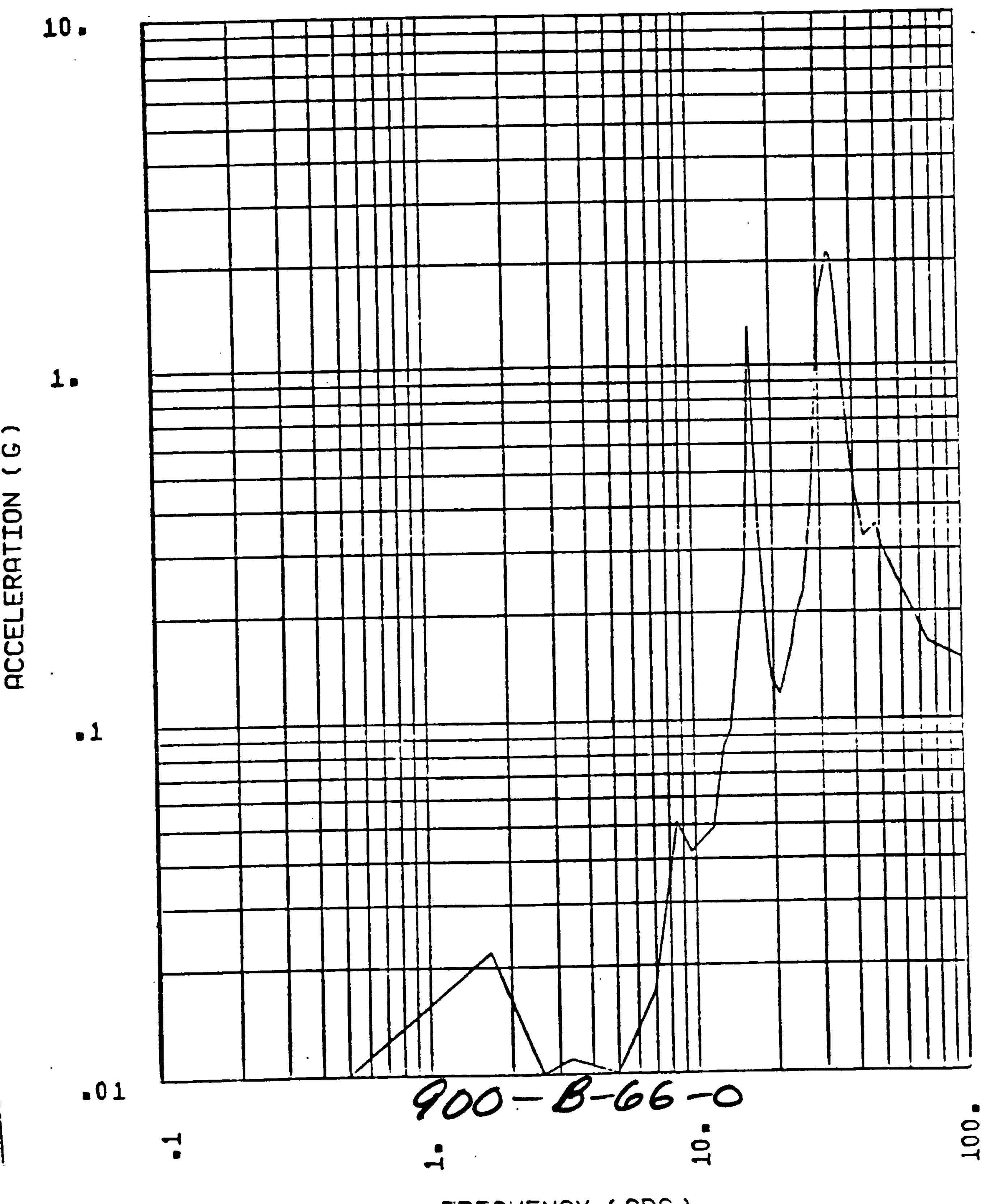

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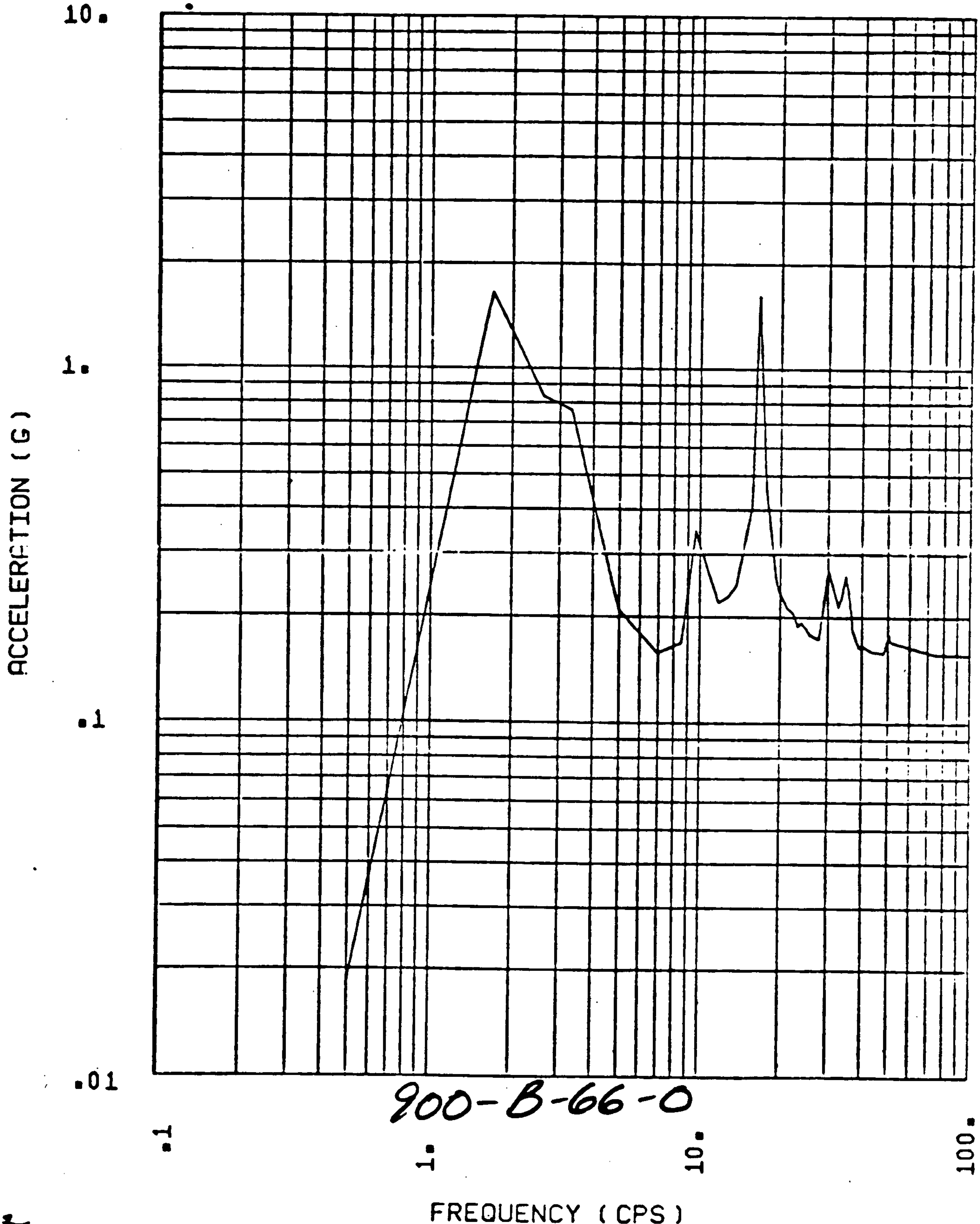

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X-

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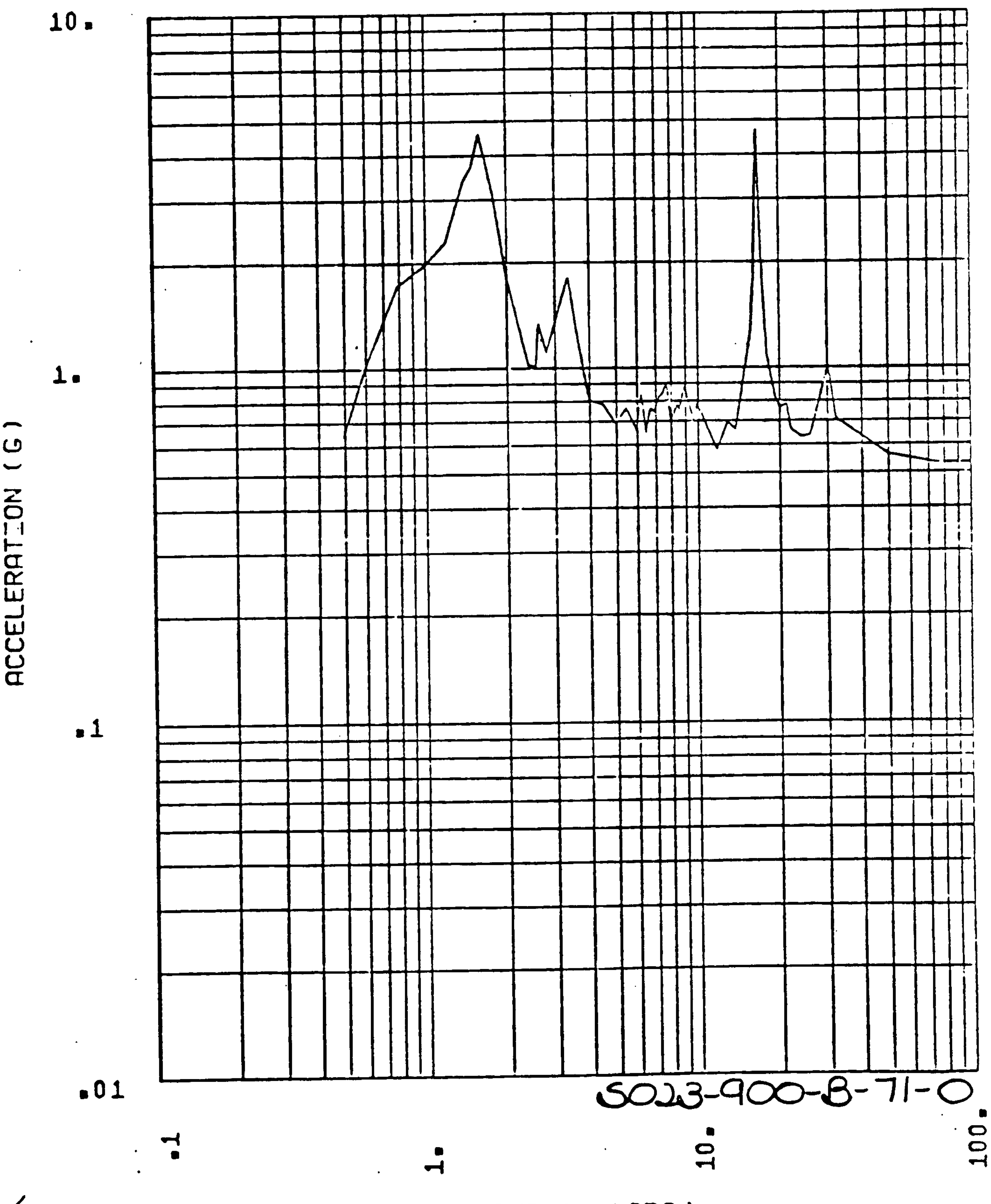

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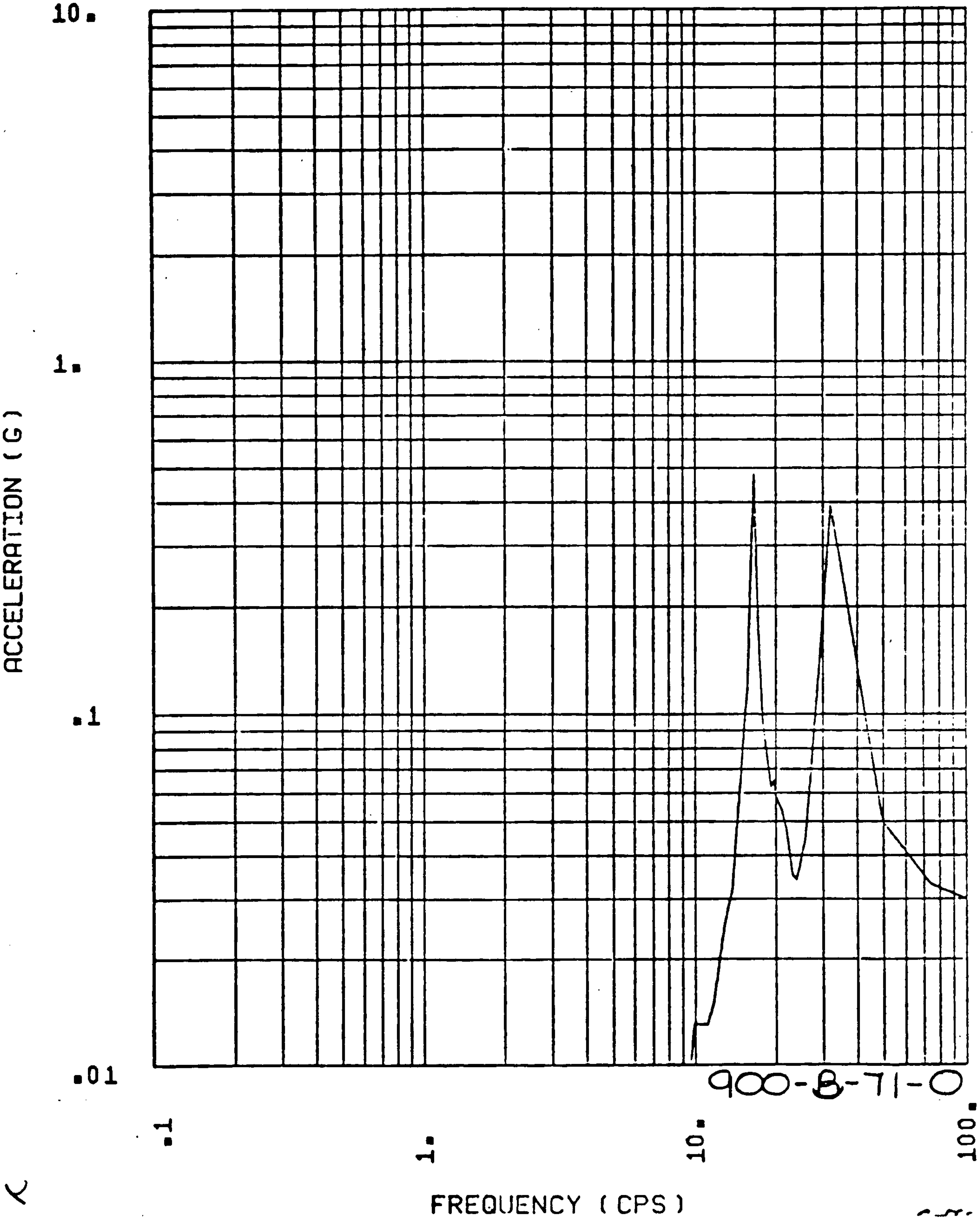

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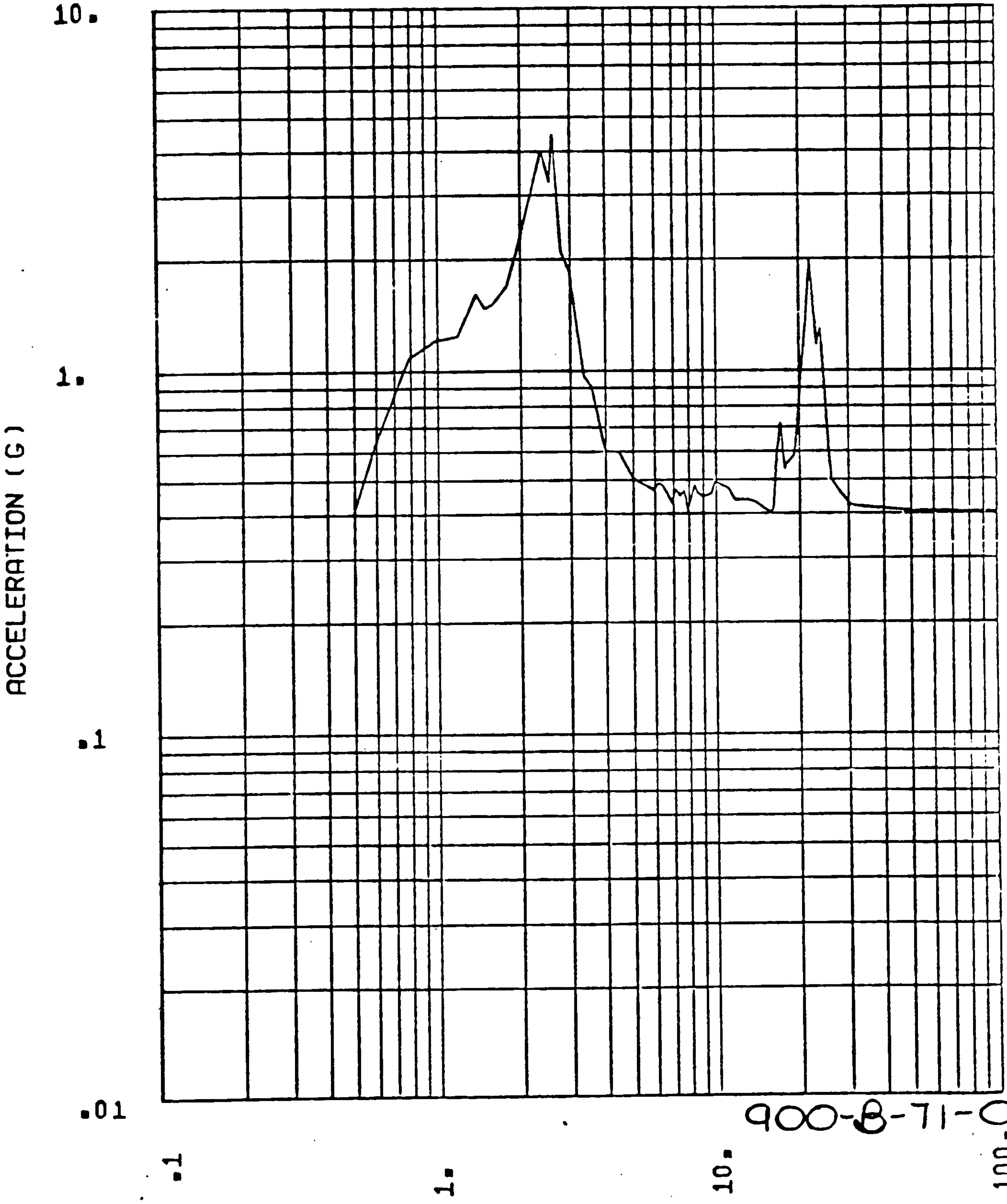

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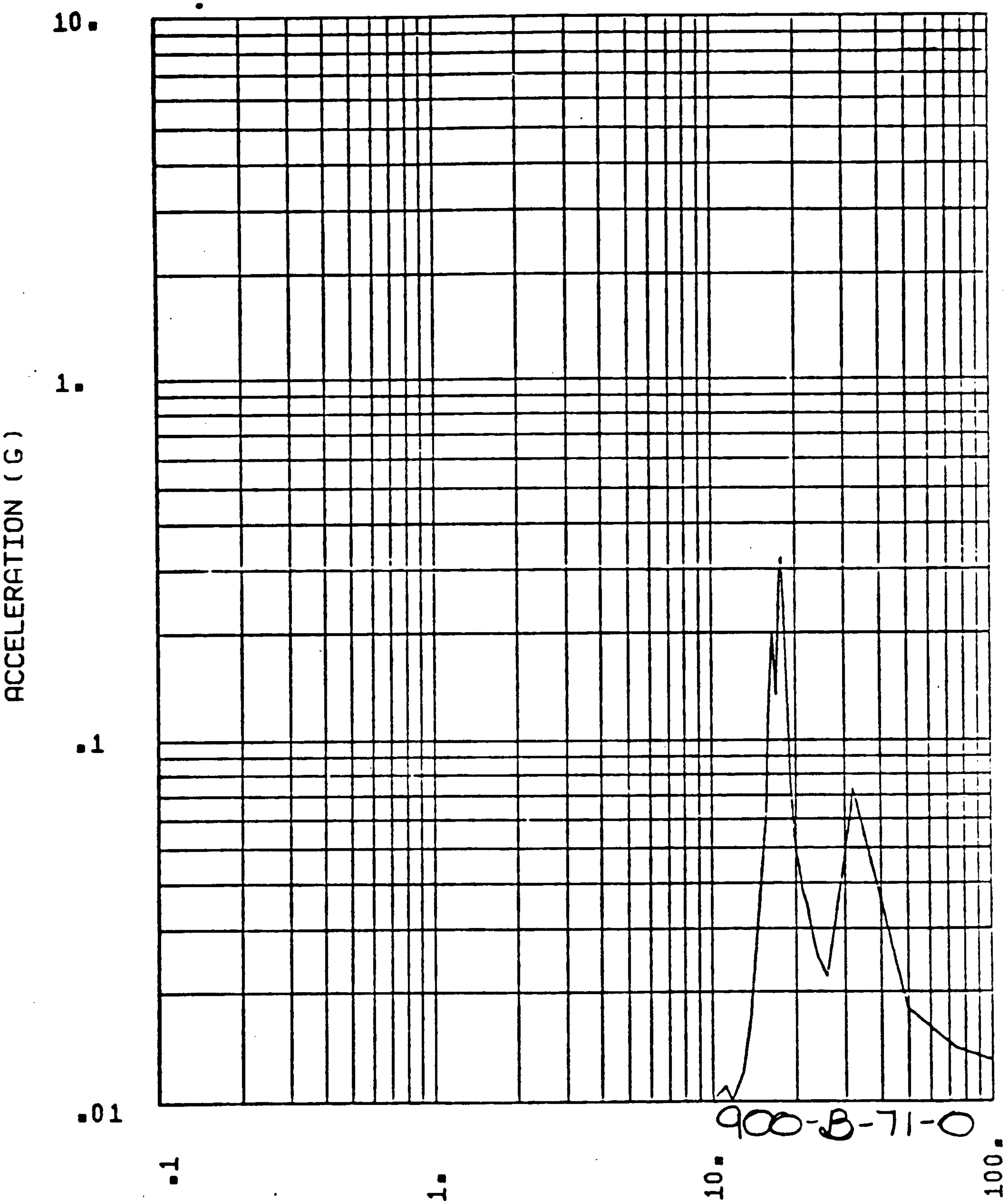

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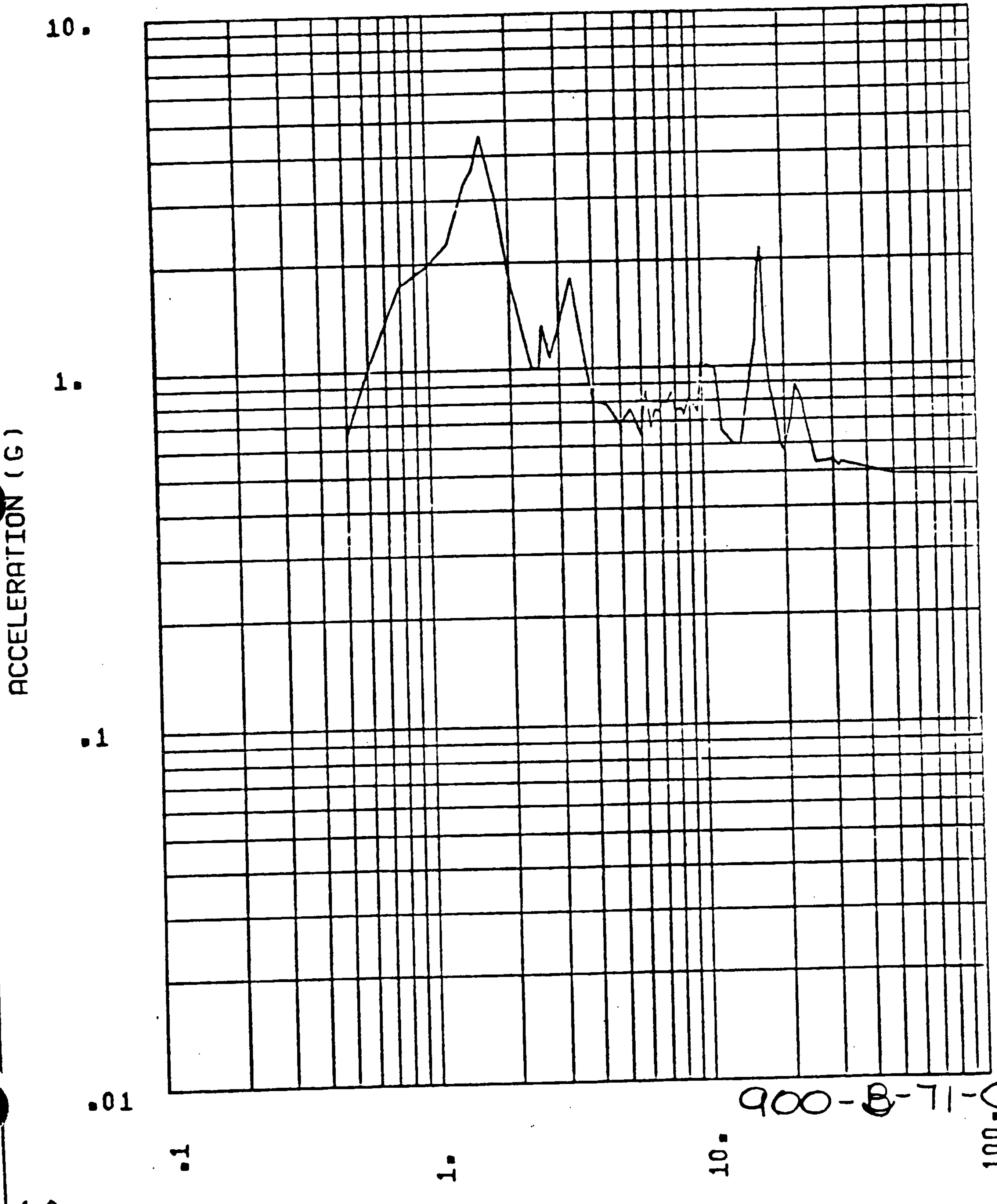

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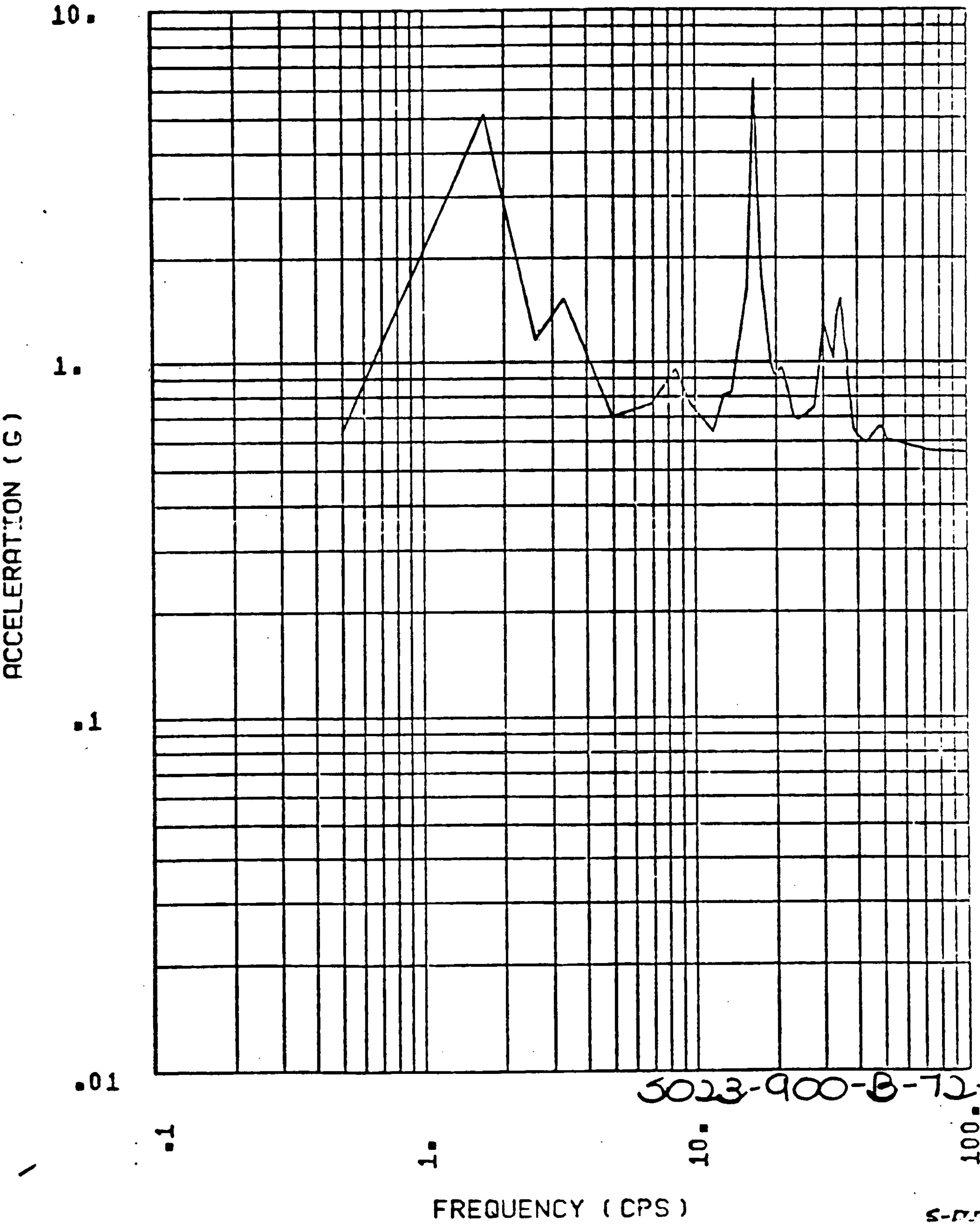

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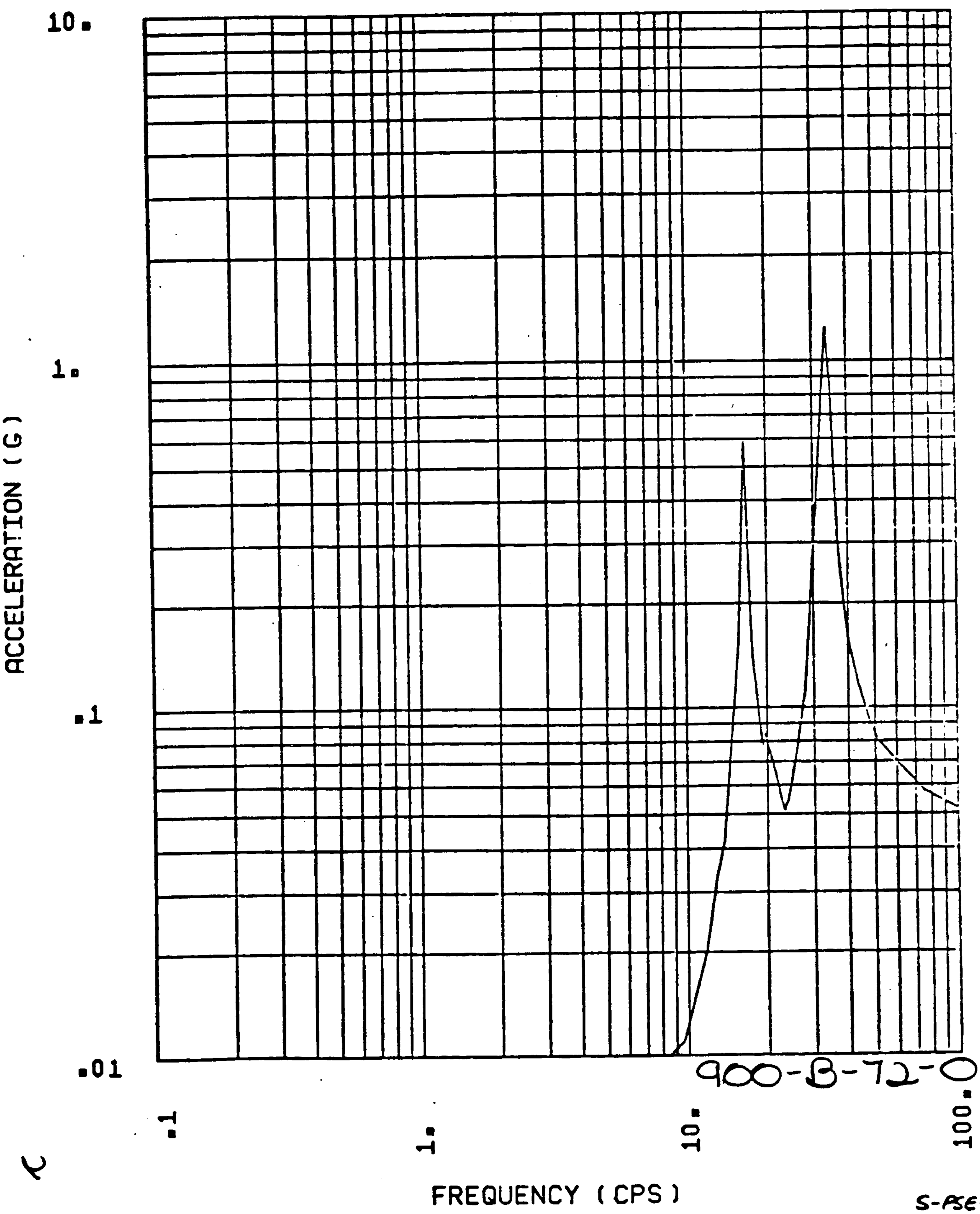

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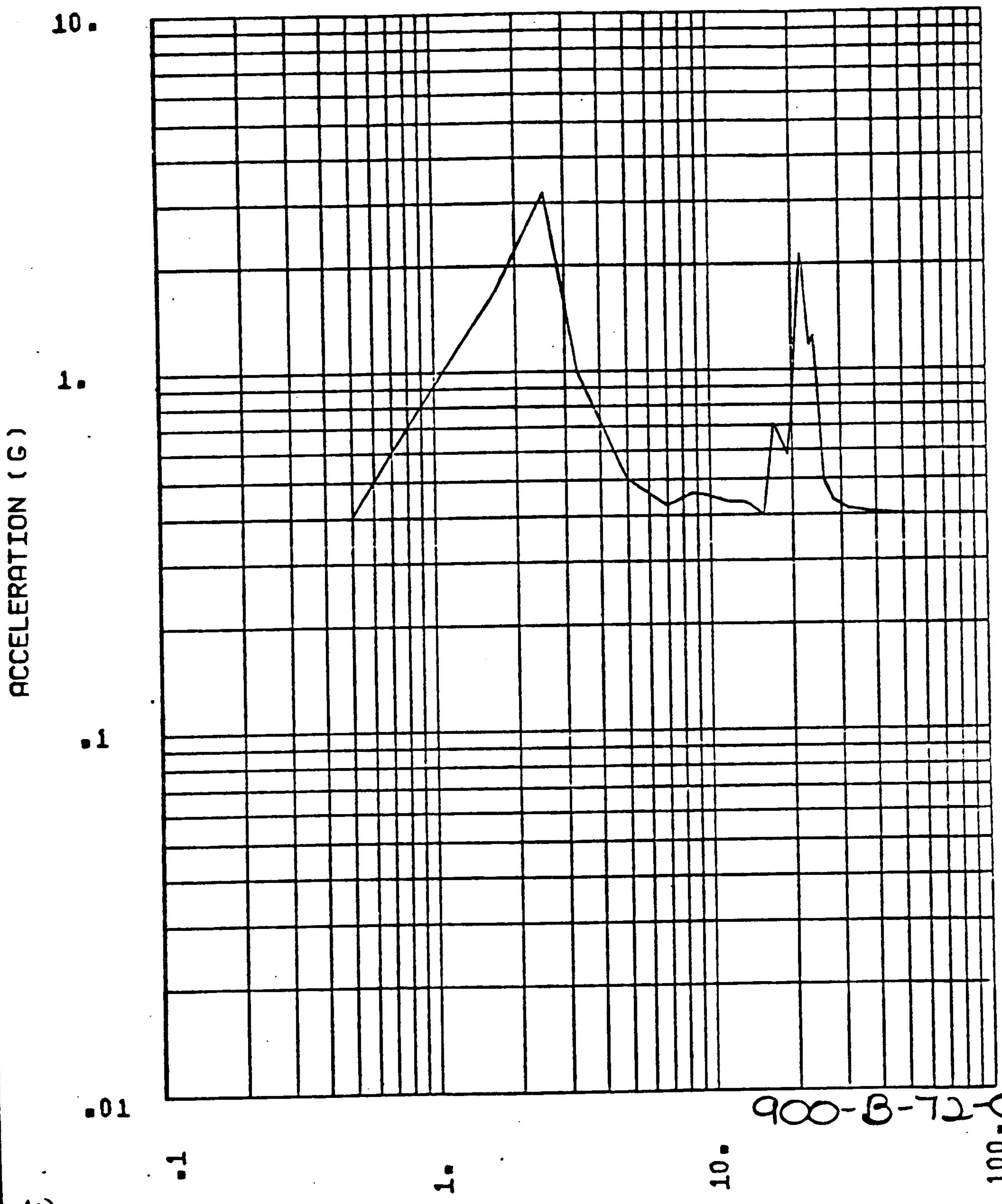

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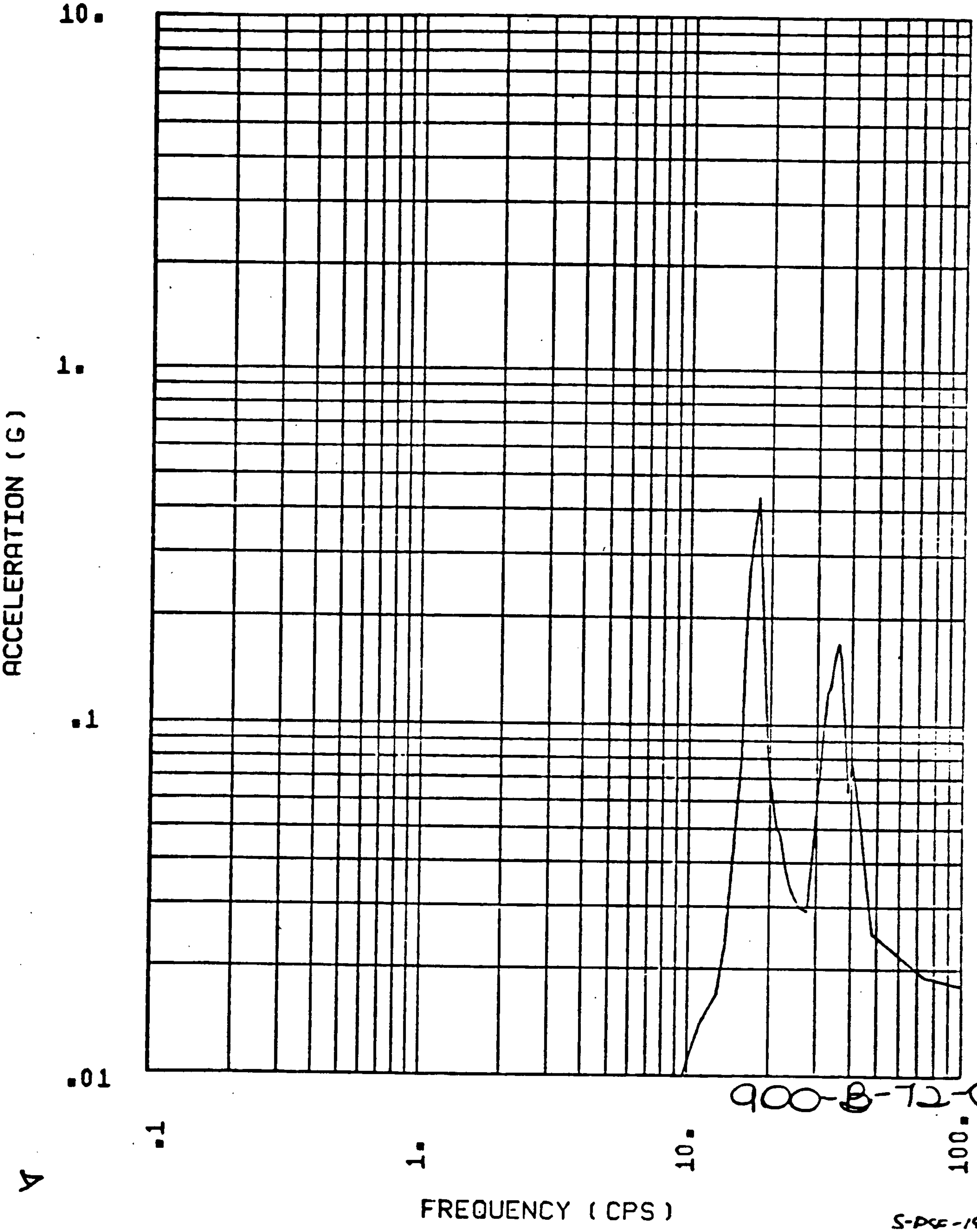

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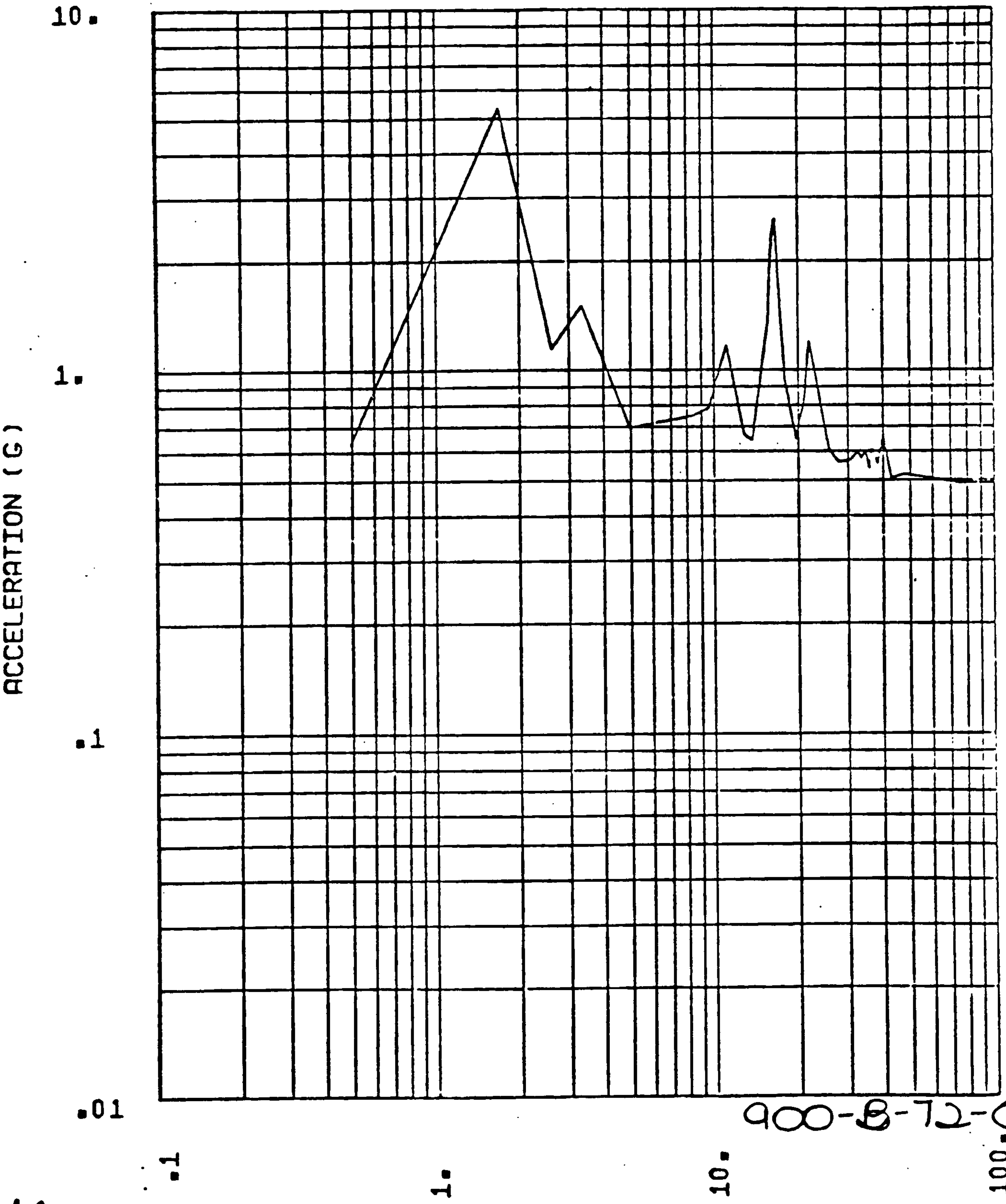

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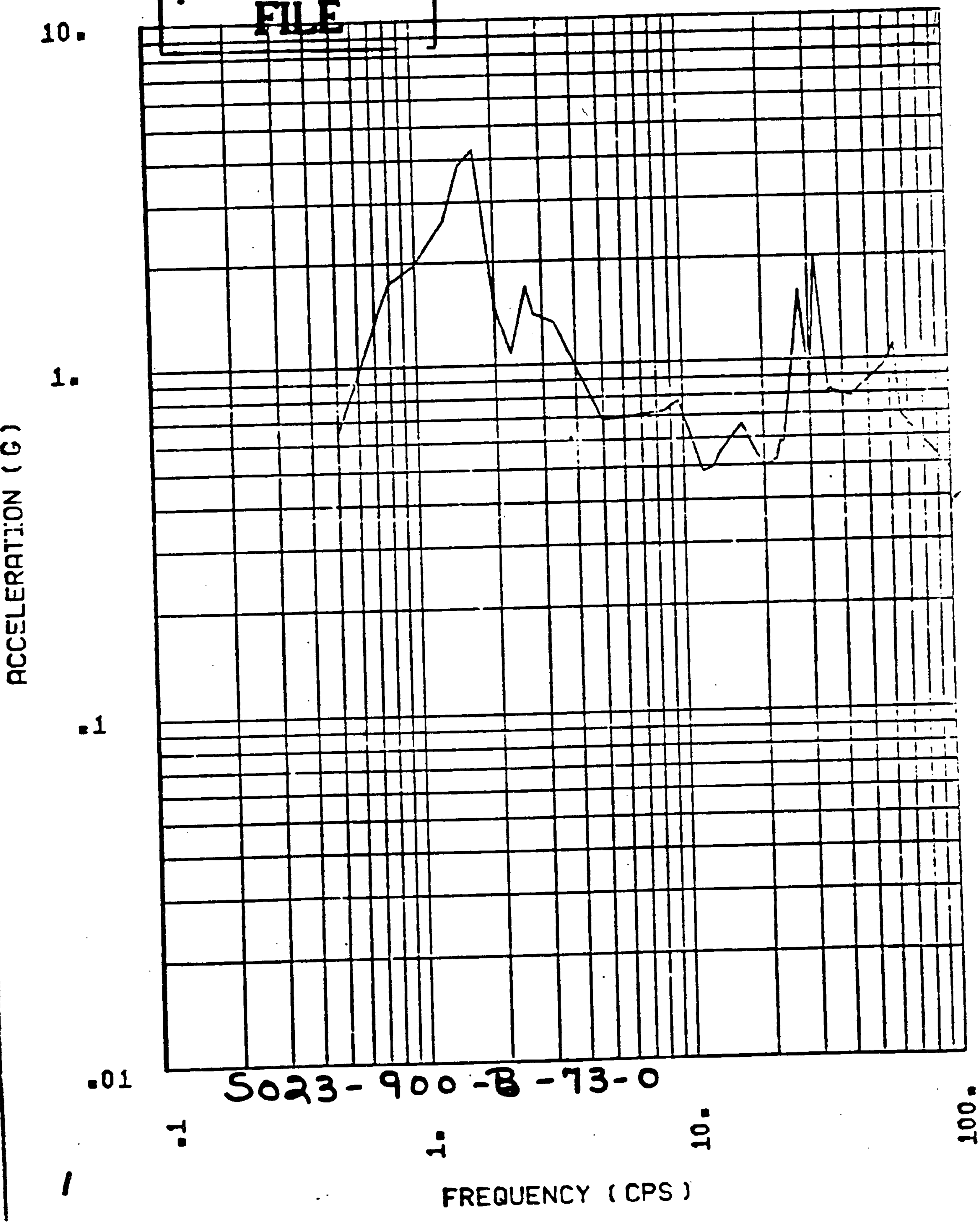

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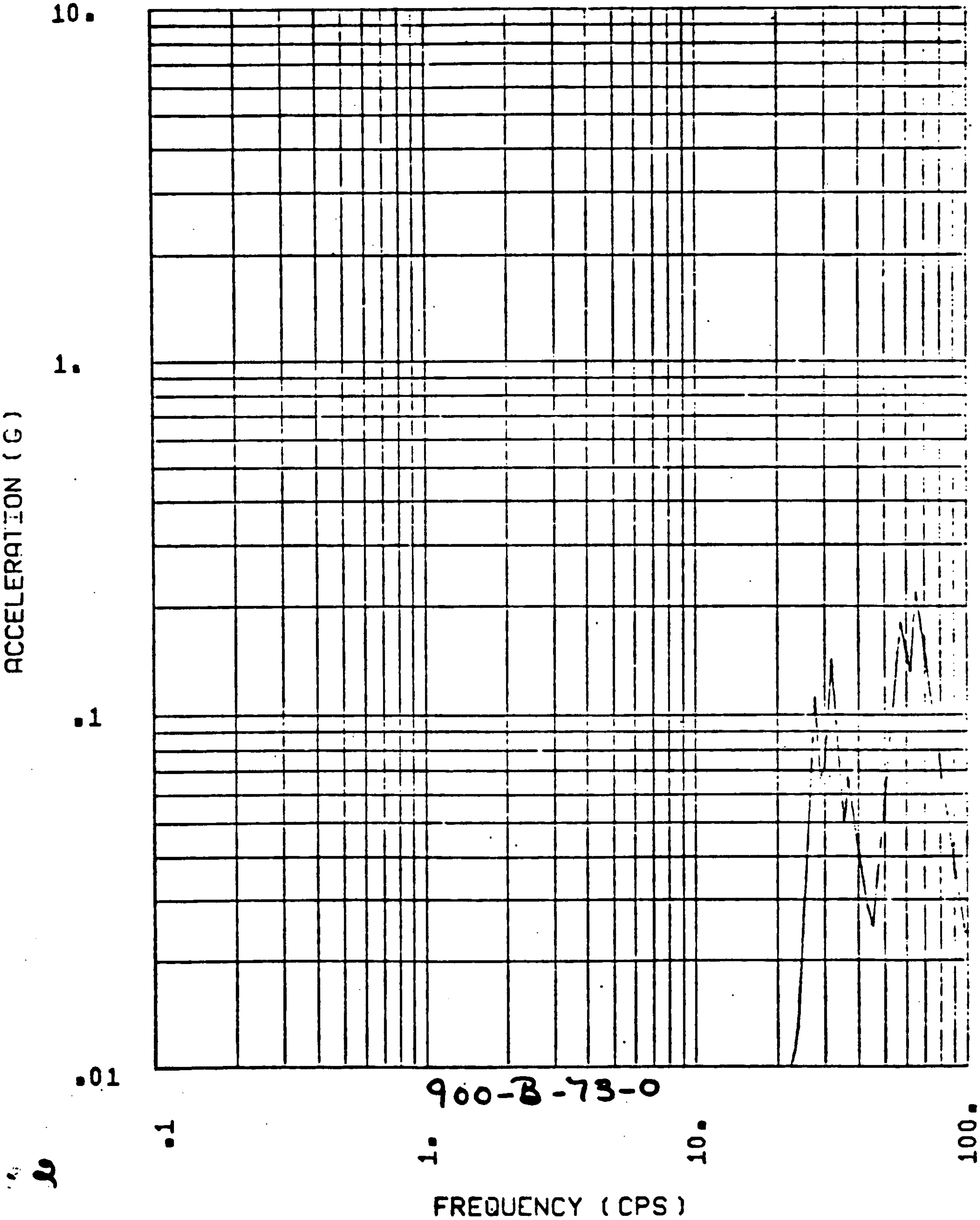
5/15



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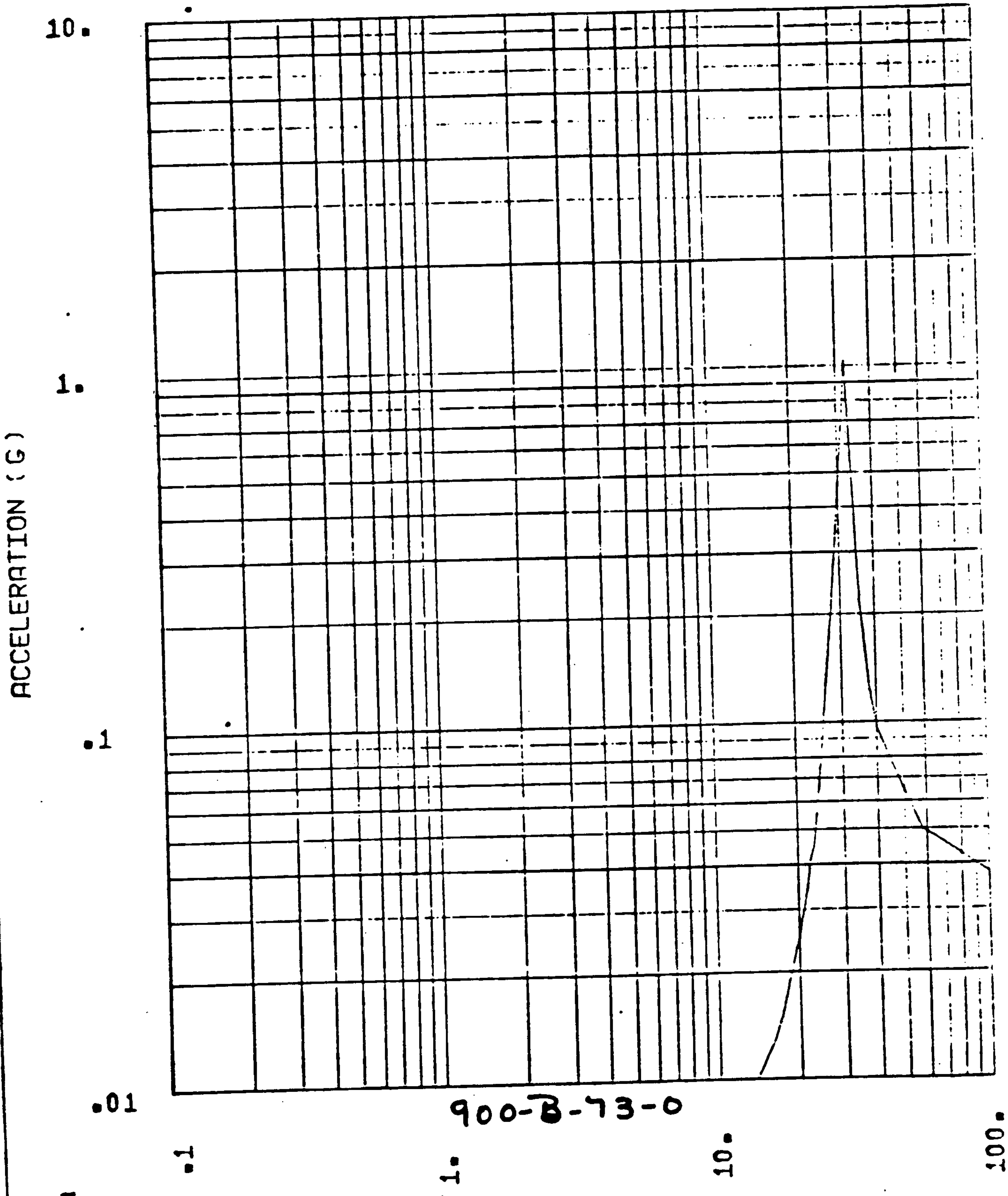
9/15



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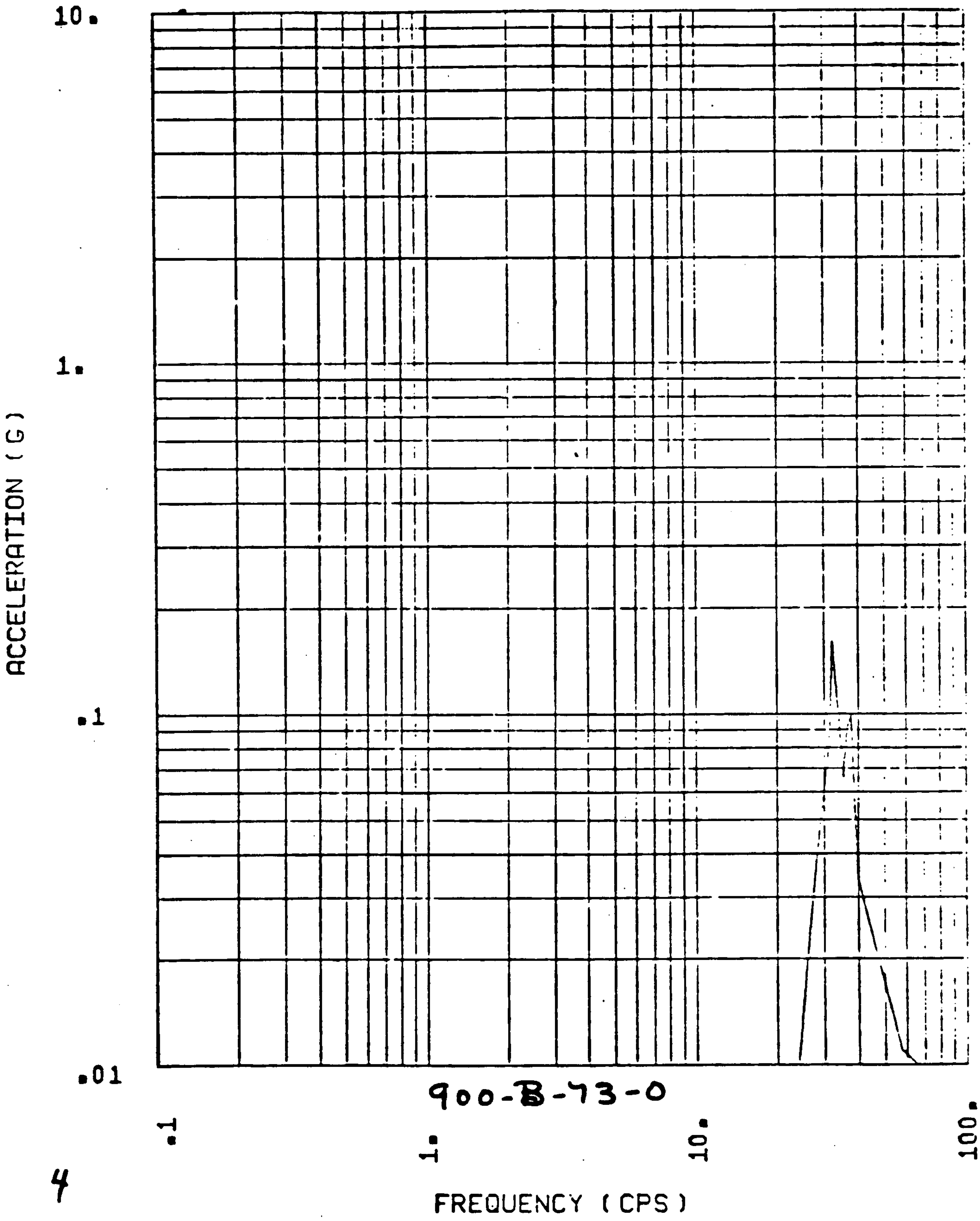

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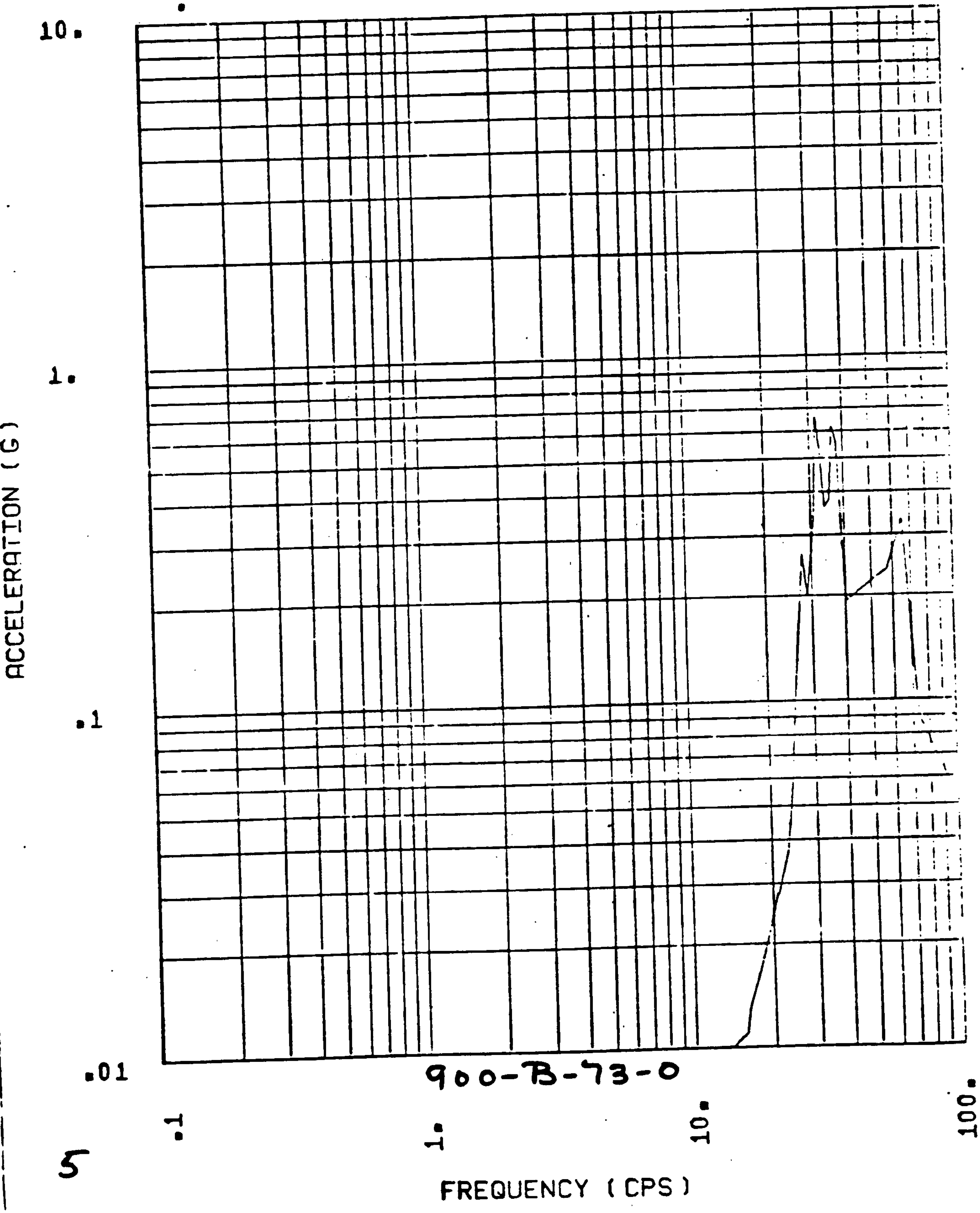

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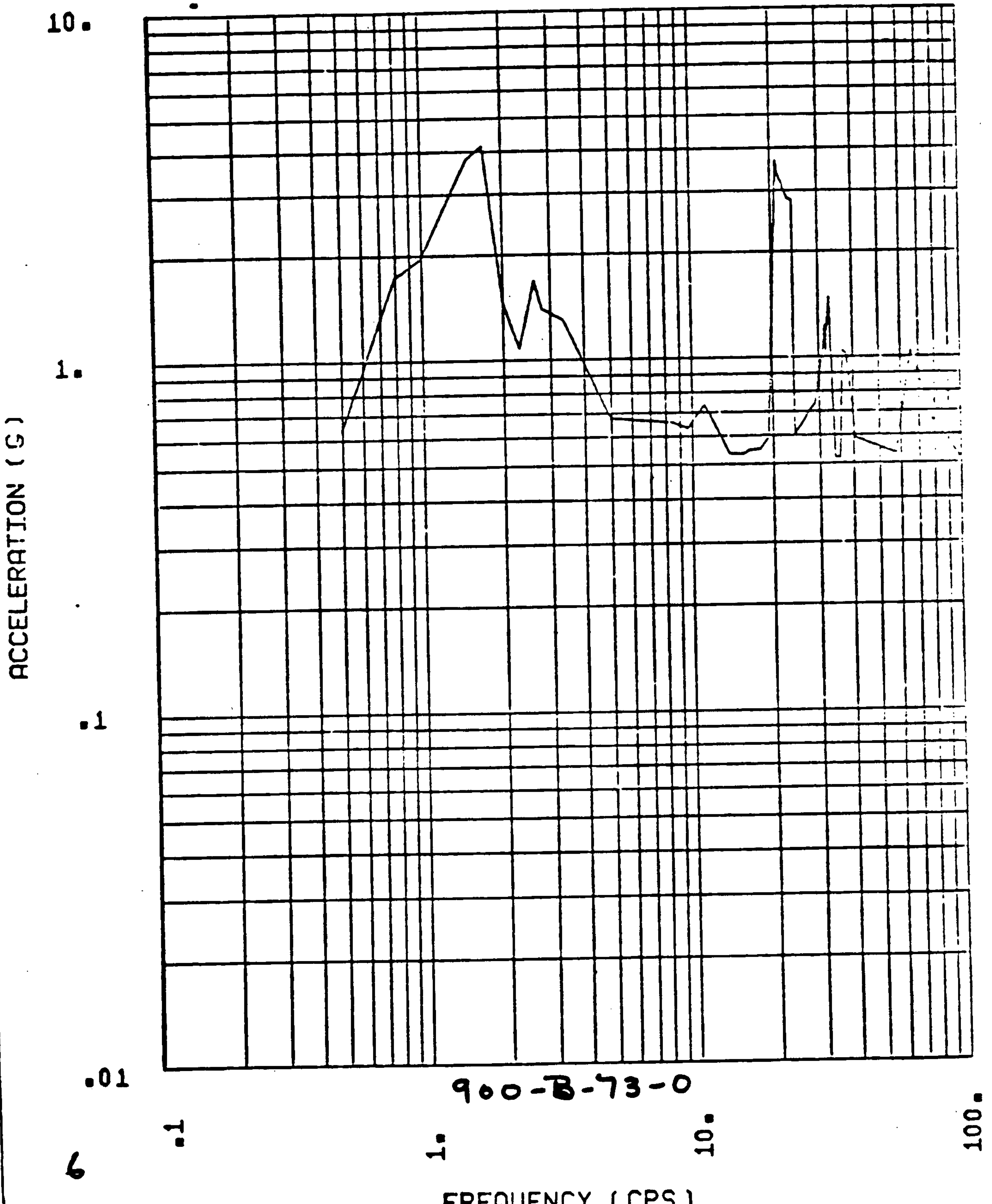

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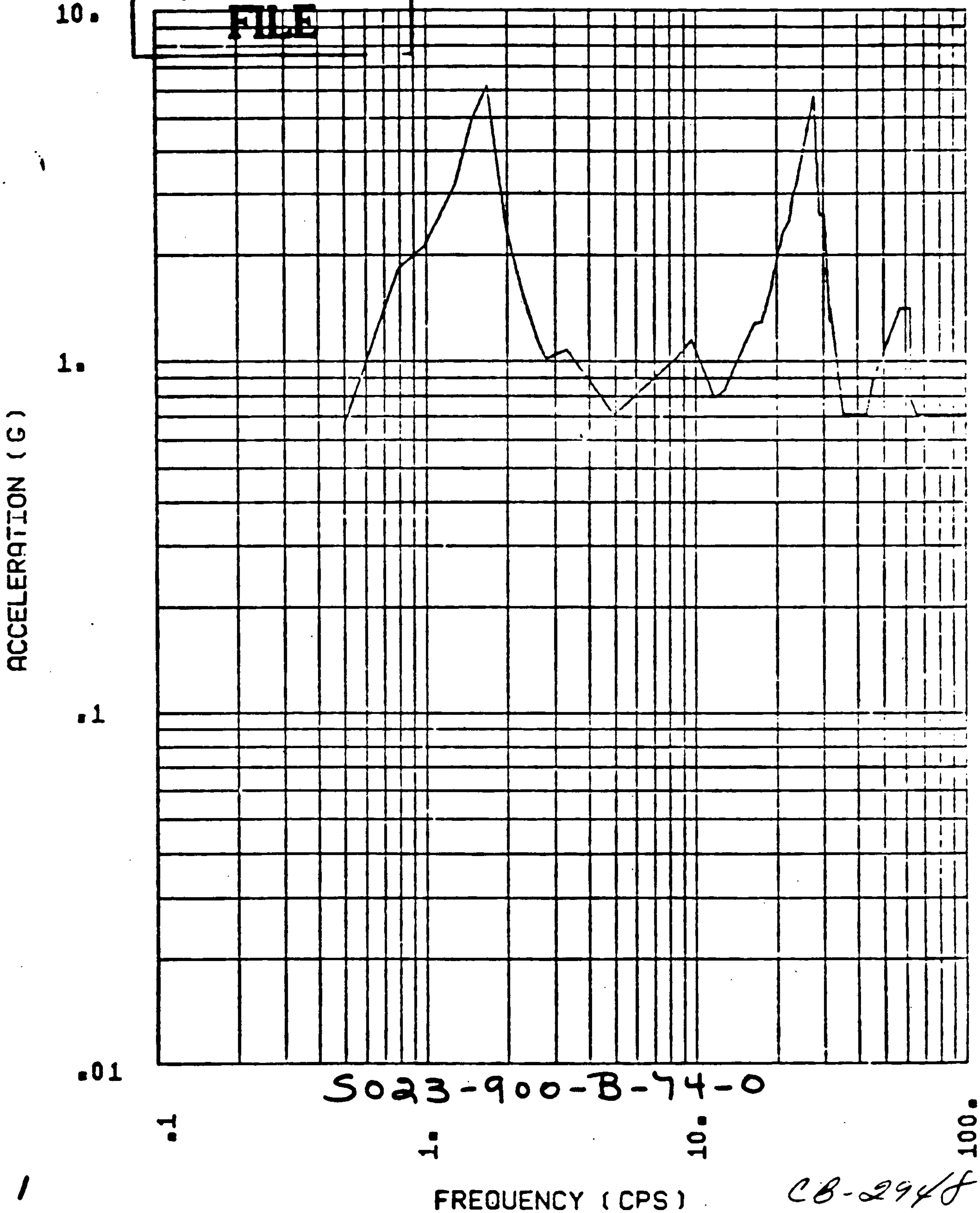

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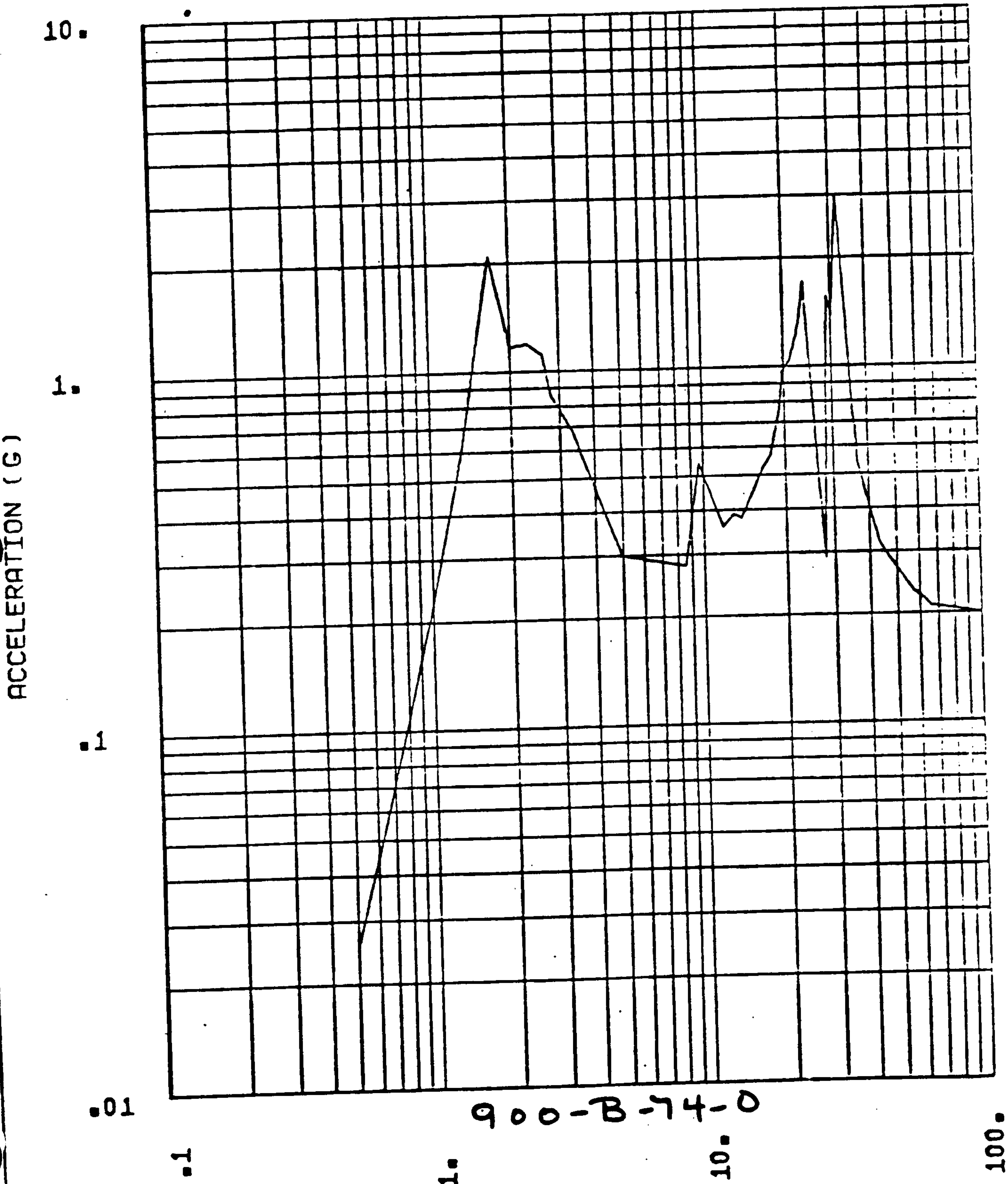

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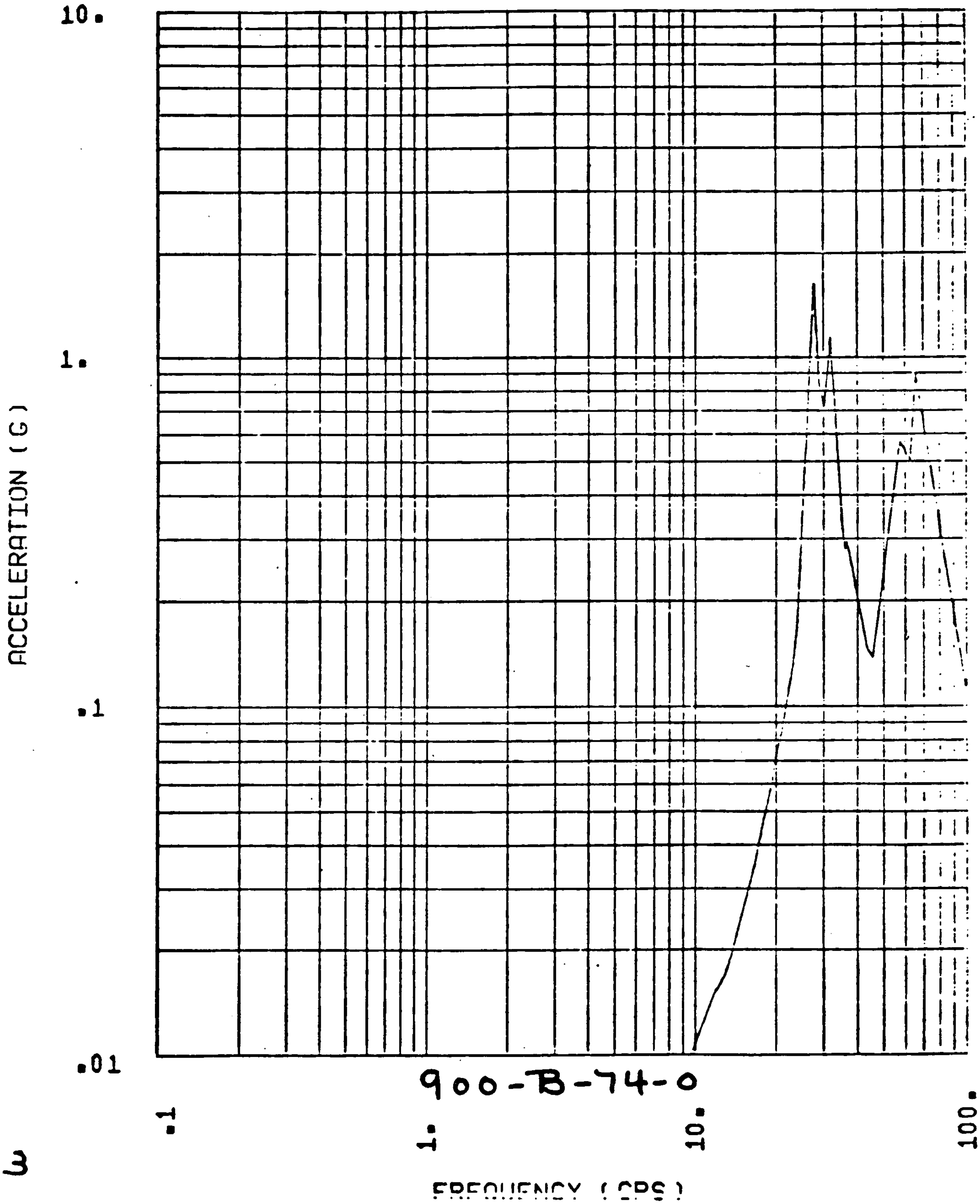

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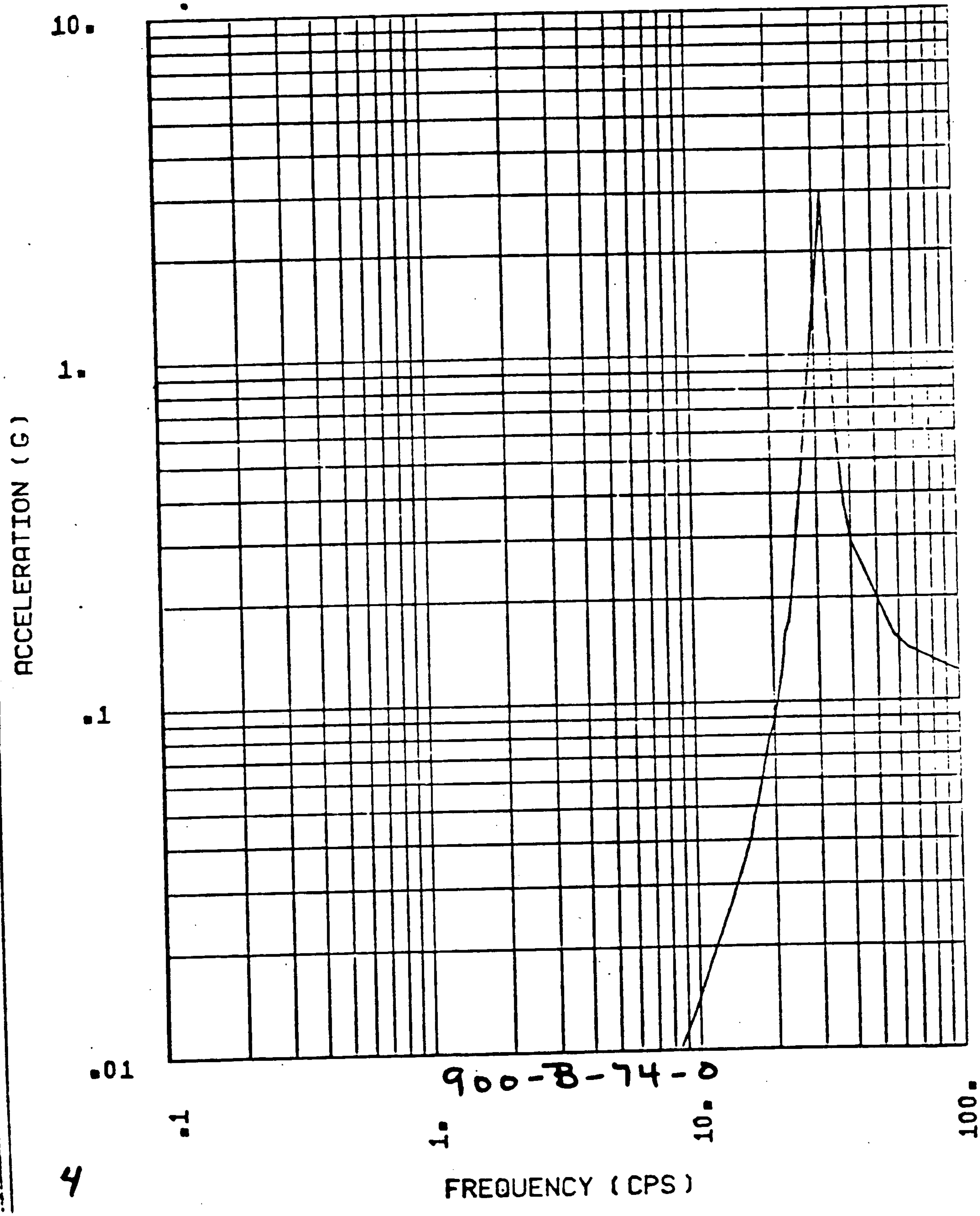

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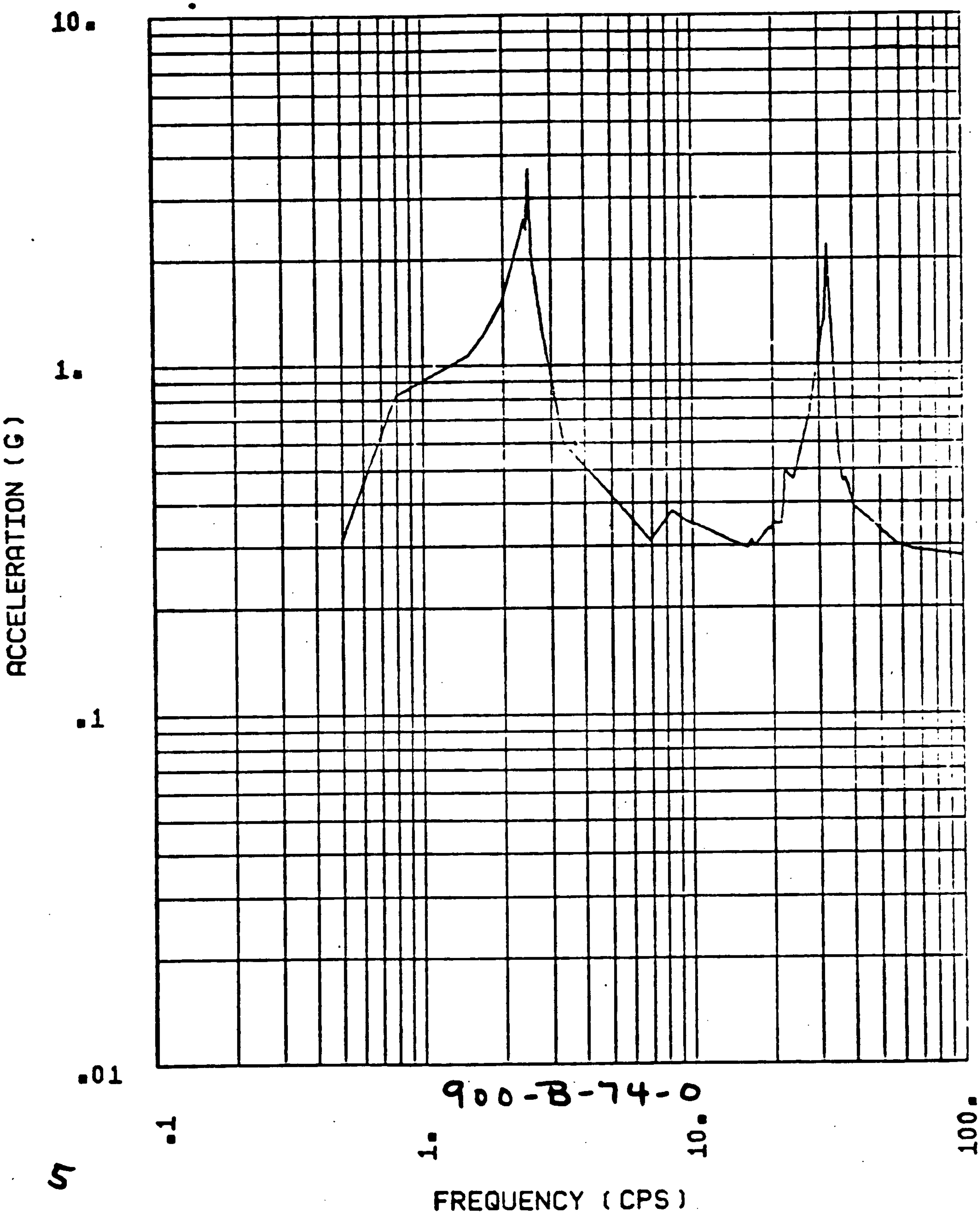

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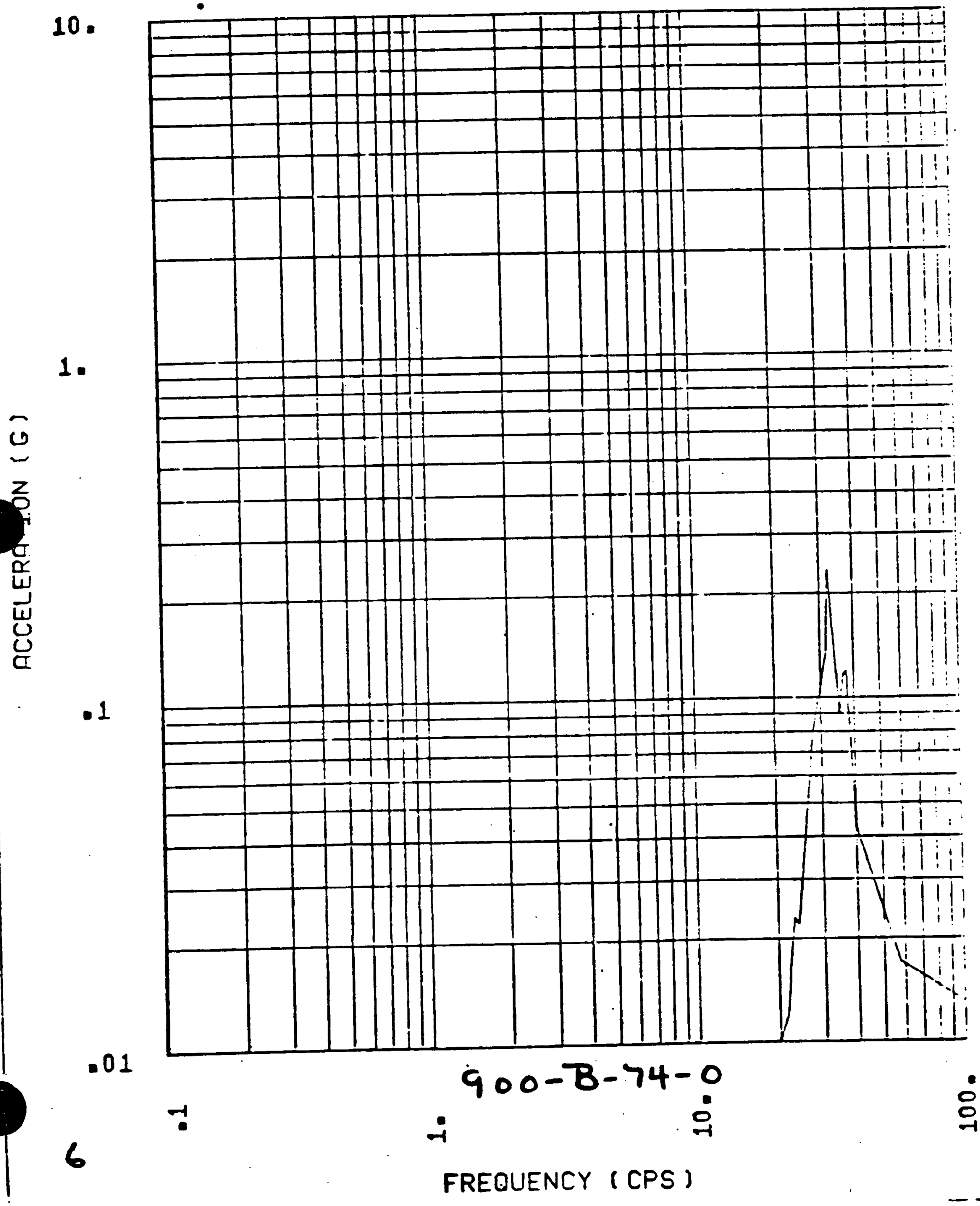

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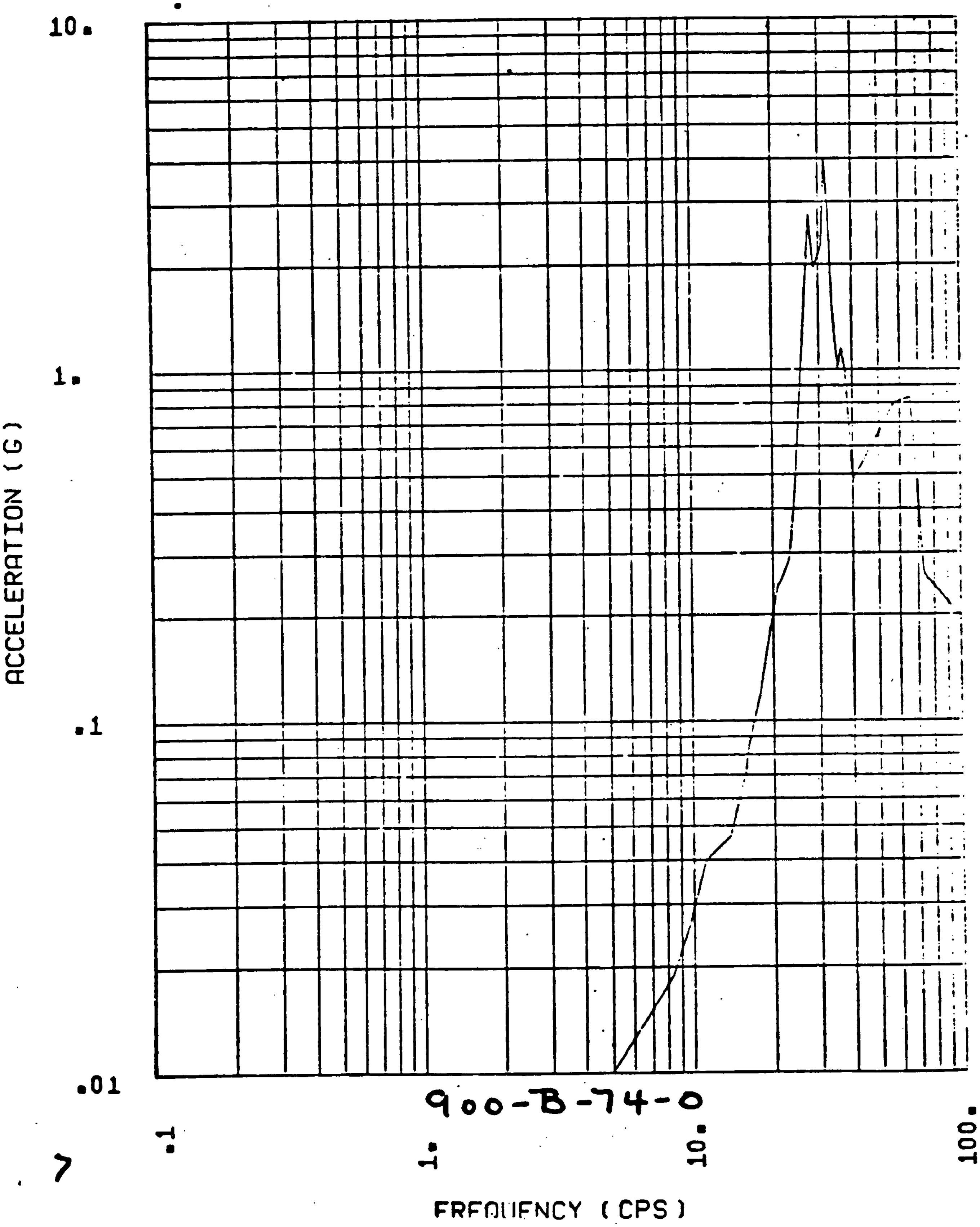

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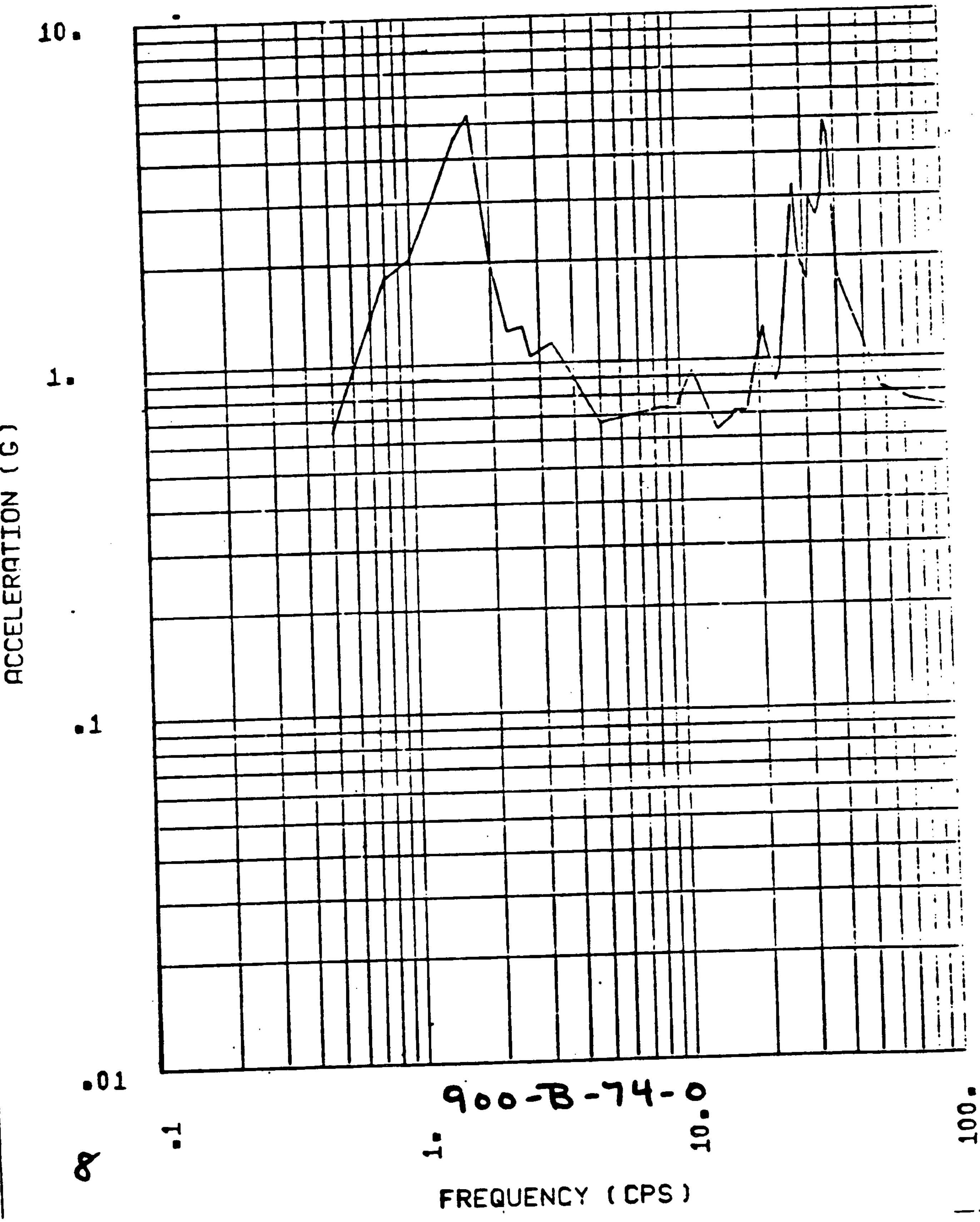

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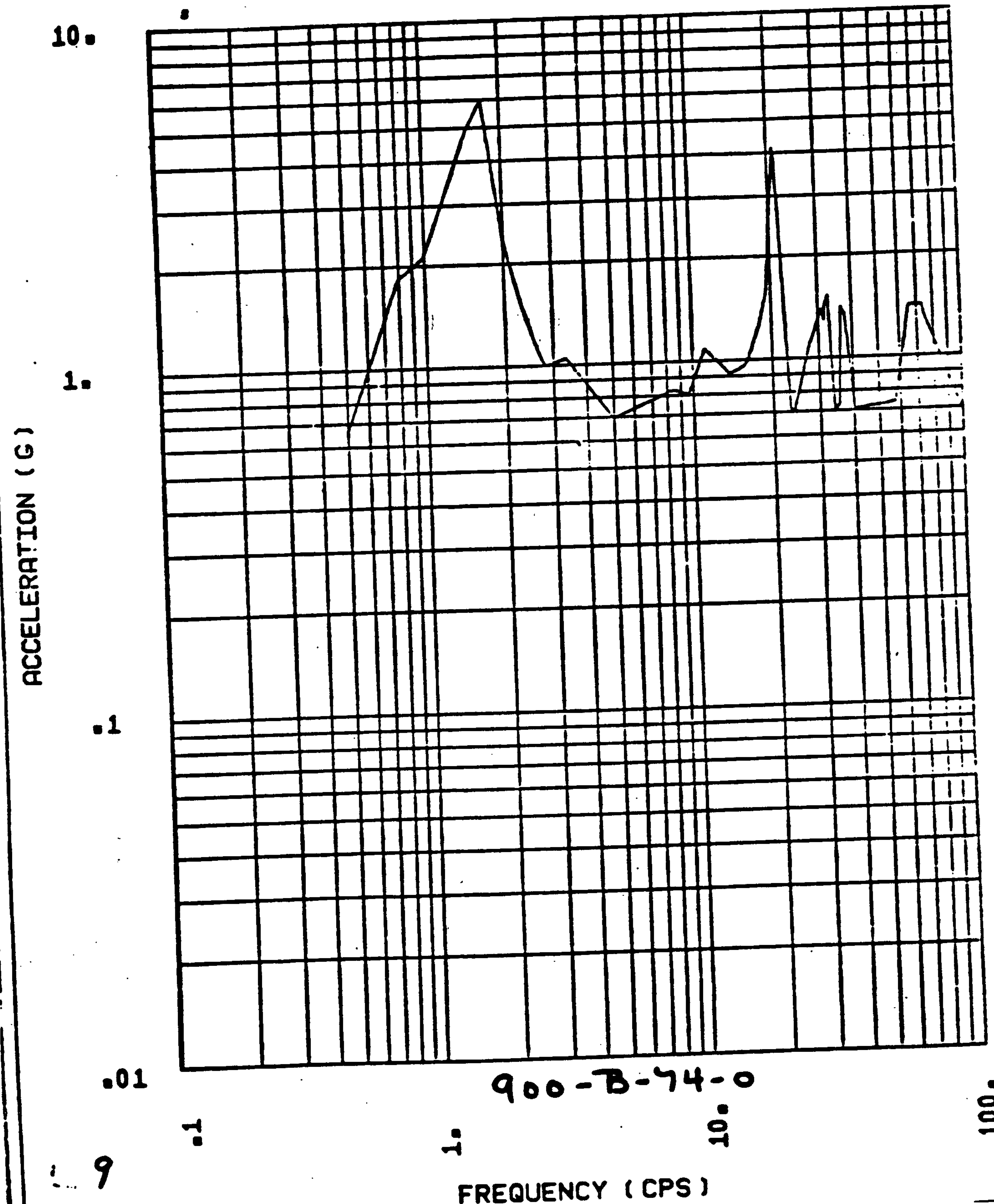

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APPENDIX C

DESIGN TRANSIENTS AND LOADING COMBINATIONS

1. Code Class 1 and 2 Loading Combinations.

2. Preliminary Design Transients for Code Class 1 Reactor Coolant Piping System.

   (Contains information taken from Enclosures (1) and (2) of Combustion Engineering (CE) to BPC letter, S-CE-2452, dated January 6, 1976 and designated as SO23-900-B-41-0 and SO23-900-B-42-0.)

DESIGN LOADING COMBINATIONS FOR ASME CODE CLASS 1 AND 2 REACTOR COOLANT SYSTEM PIPING COMPONENTS

Condition	Design Loading Combinations
Design	PD
Normal	PO + DW
Upset[a]	PO + DW + OBE PO + DW + RVC PO + DW + FV PO + DW + OBE + RVO PO + DW + DU
Emergency	PO + DW + DE
Faulted	PO + DW + DBE + RVO PO + DW + DBE + DF[b] PO + DW + DF

LEGEND:
- PD - Design pressure
- PO - Operating pressure
- DW - Dead weight
- OBE - Operating basis earthquake (inertia portion)
- DBE - Design basis earthquake (inertia portion)
- FV - Fast valve closure
- RVC - Relief valve - closed system (transient)
- RVO - Relief valve - open system (sustained)
- DU - Other transient dynamic events associated with the upset plant condition
- DE - Dynamic events defined as emergency condition
- DF - Dynamic events associated with a LOCA during which or following which the piping system being evaluated must remain intact

a. As required by the ASME Code, Section III, Division I, other loads, such as thermal transient, thermal gradients, and anchor point displacement portion of the OBE, may require additional consideration in addition to those primary stress-producing loads listed.

b. This loading combination (PO + DW + DBE + DF) applies only to components of the reactor coolant pressure boundary.

I. Reactor Vessel Specification

1. Heatup/Cooldown

The most significant transients from the standpoint of meeting the 3 Sm stress intensity range and fatigue limits in the vessel are the Plant Heatup, Plant Cooldown and Leak Test operations. The Plant Heatup (and Plant Cooldown) rate of 100F/hr is retained since nuclear heatup is a probable future requirement. The number of occurrences (500 each) is unchanged.

The previous specification formulation imposed a restriction that the loop fluid temperature be no more than 200F cooler than the pressurizer fluid temperature. This has proved to be an impediment to certain phases of the low power physics test program and to plant operations, particularly plant cooldown. To remove this artificial restriction, the heatup (cooldown) of the loop is divorced from that of the pressurizer by allowing the system pressure to be at any point between the loop saturation pressure and the normal operating pressure of 2250 psia. The revised pressure/temperature curves for Plant Heatup/Plant Cooldown are attached as Figure 1.

2. Loading/Unloading

NCD noted (Reference G) that subsequent to the Consumers Power vessel the plant loading and unloading (±5%/min) transients are analyzed as thermal steps. However, it is decided to retain the ramp characteristics of the transient since they exhibit a fairly large temperature change. The revised pressure/temperature curves for Plant Loading/Plant Unloading are attached as Figure 2. The number of occurrences (15,000 each) is unchanged.

It is noted that the change in temperature (pressure) is plotted, with the initial condition to be determined from the reactor coolant temperature versus load program. This technique (used for all power range transients) then requires only a change to the specification temperature control program (as appropriate) from one contract to the next. In addition, the temperature change occurring during any transient is somewhat increased to cover future minor changes in plant design. By exhibiting the loading and unloading transients separately, confusion concerning end-point consistency is avoided.

The transient curves are slightly idealized (from those in Reference A) to aid the stress analyst. In addition as noted, the temperature/pressure envelope is increased to cover future minor changes in plant response. For example, the hot leg temperature change (expected) of 57F is increased to 60F while the cold leg temperature change is increased from 8F (expected) to 10F. The very mild pressure transient during plant unloading is idealized by drawing a mean curve through the oscillatory curve of Reference A.

Plant maneuvering between 0 - 15 percent power is performed manually and quite slowly (<1%/min). The pressure/temperature changes are part of the 10^6 occurrences of Normal Plant Variations.

3. Step Power Changes/Normal Plant Variations

NCD noted (Reference G) that the ±10 percent power steps in past specifications exhibit temperature and pressure fluctuation within the range of the specified normal plant variations. It is decided to increase the Normal Plant Variations from ±6F, ±50 psi to ±10F, ±100 psi to encompass the revised power step transients (Reference A) and to envelope future plant responses. The ±10 percent power step transient curves are replaced by a statement that these maneuvers (2000 occurrences) are within the 10^6 cycles of normal plant temperature and pressure fluctuations.

4. Plant Trips

Past specifications contained three separate transients, Reactor Trip (400 occurrences), Loss of Primary Flow (40 occurrences), and Loss of Load (40 occurrences), which exhibit quite similar characteristics. It is decided to produce a composite transient with a total of 480 cycles. The pressure and hot leg temperature transients are those of the Loss of Load transient. The cold leg temperature transient is a composite of the Loss of Load and Loss of Primary Flow transients to produce the most conservative temperature change. The composite transient curves are slightly idealized (from those in Reference A) to aid the stress analyst and the temperature/pressure envelope is increased to cover future minor changes in plant response. For example, the hot leg temperature change (expected) of 64F is increased to 70F while the cold leg temperature change is more rapid and a composite of the largest temperature swings. The revised pressure/temperature curves for this composite transient are attached as Figure 3.

5. Loss of Secondary Pressure

Since the number of occurrences established for this transient is only five, the condition is included in the Emergency Condition category. Therefore, it is recommended that the condition be excluded from the fatigue evaluation of the component. However, the designer should consider the effects which may be produced by the relative thermal movement of component parts due to the large, rapid change in loop temperature.

This transient is considered to represent all the rare (<25 occurrences) plant conditions which might produce a significant temperature change. Any accidental steam release from the steam generator by inadvertent valve actuation is thus represented. A second example involves the start of a third reactor coolant pump in a two-loop (four pump) plant when operating at reduced power (~50%) with two pumps in the same loop. The start of the third pump will produce a flow reversal and subsequent change in fluid temperature through one reactor vessel hot leg nozzle of approximately 70F. This type of transient is enveloped by the far more severe pressure/temperature curves for Loss of Secondary Pressure which are attached as Figure 4.

6. Hydrostatic Test

The graphical presentation of the hydrostatic test is replaced by a statement that the reactor vessel is to be hydrostatically tested in accordance with the ASME Boiler and Pressure Vessel Code, Section III, Nuclear Vessels. The primary side temperature is held essentially constant (between 100F-400F) for any one test. The number of occurrences (10) is unchanged.

7. Plant Leak Test

The plant leak test is conducted at the normal operating pressure of 2250 psia in accordance with Figure 5. The steam generator secondary side is at atmospheric pressure. The number of occurrences (200) is unchanged.

8. Bolting of the Closure Head

NCD noted (Reference G) that in past vessel specifications the number of stud elongations is specified and that this has been assumed (by NCD) to correspond instead to the number of bolt ups of the closure head. This is more conservative since there are several stud pulls per closure head bolt-up cycle. For clarification the revised specification wording requires that the reactor vessel assembly be designed for a minimum of fifty head bolt-up cycles.

II. Steam Generator Specification

Items 1-7 of Section I (Reactor Vessel Specification) are applied to the revision of the steam generator specification. In addition, the following modifications are made:

1. Normal Plant Variations

   An allowance is made for secondary pressure fluctuations of ±80 psi (10^6 lifetime occurrences) in addition to the primary temperature and pressure fluctuations.

2. Cold Feedwater at Hot Standby/Loss of Feedwater Flow

   During both of these conditions, the source of the auxiliary feedwater flow in many plants is the condensate storage tank exterior to the turbine building. Typically, this tank is heated only to prevent freezing. In specifications to date, the auxiliary feedwater flow temperature is specified to be 70F. This is changed to the standard value for nonheated tanks of 40F to eliminate an increase in the balance-of-plant requirements (for heating of the fluid stream).

   In past specifications for the loss of feedwater flow conditions, cold feedwater is introduced with the secondary side dry. A conservative computer simulation of the condition (Reference F) shows that after 5 minutes following the loss of normal feedwater from a full load condition, the secondary side contains 28 percent of full load inventory. At this time, auxiliary feedwater at 700 gpm is initiated. To prevent the imposition of an unduly restrictive NDTT condition upon the tubesheet, the specification is revised from a dry condition to the calculated minimum secondary inventory.

3. Secondary Leak Test

   The first sentence of Paragraph 4.3.5 in the specification is as follows:

   "Secondary side leak test will be conducted with the secondary side pressurized from 820 to 1100 psia". To be more general, this will be changed to" . . . from 820 to design pressure". The 820 psia is permitted with the 0.048 inch wall tubing. The test pressure will be appropriately changed if the tube wall thickness is changed.

III. Reactor Coolant Pump Specification

Items 1-7 of Section I (Reactor Vessel Specification) are applied to the revision of the Pump Specification.

IV. Pressurizer Specification

1. Heatup/Cooldown

As noted in Item 1 of Section I (Reactor Vessel Specification), the previous specification requirement that the loop fluid temperature be no more than 200F cooler than the pressurizer fluid temperature impeded plant operations. Accordingly, the heatup (cooldown) of the pressurizer is divorced from that of the loop. At any pressurizer temperature, the pressurizer pressure may be at any point between the saturation condition and the normal operating pressure of 2250 psia. Hence, the point at which the bubble is pulled is not defined thereby permitting operations personnel the widest possible latitude.

Past specifications defined a pressurizer heatup rate of 100F/hr and a cooldown rate of 200F/hr. The former was based on the pressurizer heater output with a solid pressurizer. However, with the hot standby water level established after a bubble pull, the possible heatup rate is substantially increased. Accordingly, the heatup rate of the pressurizer is increased to 200F/hr. The heatup/cooldown rates of the specification limit plant operations since with the actual quantity of spray available for cooldown and the actual heater power available (after bubble pull) for heatup, the process rates could actually be exceeded in the plant. The revised fluid pressure/temperature curves for pressurizer heatup/cooldown are attached as Figure 6. The number of occurrences (500 each) is unchanged.

During the pressurizer cooldown process, the bubble is collapsed by introducing cold auxiliary spray until the pressurizer is filled with subcooled water. This generally takes place just after reactor coolant pump operation is discontinued prior to the initiation of shutdown cooling. The transient is defined as the filling of the pressurizer with 40F auxiliary spray water at 133 gpm starting with an initial water volume equal to that required to cover the heaters. The initial fluid temperature is 400F. This is a conservative description of the process. The Vendor is required to integrate the pressurizer fill analysis with the previously described cooldown process (Figure 6).

2. Loading-Unloading/Step Power Changes/Normal Plant Variations

Inspection of the transient curves of Reference A reveals minor pressurizer pressure and fluid temperature variations during the plant loading and unloading operations. During the loading maneuver, pressure exhibits a maximum variation of 35 psi. The steam temperature exhibits a maximum variation of 2F and the water temperature exhibits a maximum variation of-11F from the equilibrium set point. During the unloading maneuver, pressure exhibits a maximum swing of +20 psi to -60 psi from the set point. The steam/water spaces are essentially in thermal equilibrium throughout the transient with a maximum decrease in temperature of 4F from the set point.

Similar minor pressurizer pressure and fluid temperature variations are noted during the step power changes. The pressurizer pressure varies +50, -50 psi and +50, -100 psi from the set point during the power step increase and decrease, respectively. The maximum fluid temperature swings are +3, -4F and +3, -8F from the set point during the power step increase and decrease, respectively.

It is concluded that the Loading/Unloading and Step Power changes may be considered within the 10^6 cycles of normal plant temperature and pressure fluctuations. The Normal Pressurizer Variations in past specifications of $\pm$50 psi, $\pm$7F are increased to $\pm$100 psi, $\pm$20F to include these transients.

3. Plant Trips

In Section I (Reactor Vessel Specification) a composite transient (480 occurrences) is developed to include Reactor Trip (400 occurrences), Loss of Primary Flow (40 occurrences) and Loss of Load (40 occurrences). The most severe pressure transient (that of the Loss of Load) is used to represent the composite transient. The accompanying pressurizer steam/water temperature transient is slightly idealized (from those in Reference A) to aid the stress analyst and to cover future minor changes in plant response. The revised pressure/temperature curves for this composite transient are attached as Figure 7.

4. Loss of Secondary Pressure

The pressurizer fluid temperature transient accompanying the pressurizer pressure transient (Figure 4) during this incident (discussed in Item 5 of Section I) is attached as Figure 8.

5. Hydrostatic Test

The graphical presentation of the hydrostatic test is replaced by a statement that the pressurizer is to be hydrostatically tested in accordance with the ASME Boiler and Pressure Vessel Code, Section III, Nuclear Vessels. The fluid temperature is held essentially constant (between 100F-400F) for any one test.

6. Plant Leak Test

The pressurizer leak test is an integral part of the Plant Leak Test (Figure 5) as discussed in Item 7 of Section I (Reactor Vessel Specification).

7. Spray Nozzle/Surge Nozzle

During the transients discussed above, the pressurizer surge and spray nozzle flow rates (and fluid temperature) vary. In past specifications these conditions were depicted graphically. After much discussion, it was decided that the following conservatively represents the additional transient conditions to be imposed upon the surge and spray nozzles.

a. Loading

During plant loading, the surge flow temperature transient is as follows (Reference A). At time zero, the small continuous spray (1.5 gpm) produces a flow out of the pressurizer at the equilibrium temperature of 653F. As the power ramp is initiated, the surge flow reverses and a step decrease in temperature (to that of the hot leg) of about 100F occurs. As power is increased, the surge flow temperature rises with the hot leg temperature until at the end of the power ramp the temperature is only about 40F below the pressurizer equilibrium fluid temperature. At this point, the surge flow reverses to accommodate the continuous spray and a step increase in surge flow temperature of 40F occurs.

A statement to the effect that the surge flow temperature undergoes a step decrease of 110F and, after the establishment of equilibrium conditions, a step increase of 110F will conservatively represent this transient. The representation of the transient as a complete stress reversal is more conservative than the time dependent curves supplied previously. The assumption of a constant heat transfer coefficient will eliminate the necessity to define the surge flow rates. This assumption is made for all the surge nozzle transients. The maximum surge flow during plant loading is about 30 lbm/sec (Reference A).

The spray flow during plant loading (Reference B) increases from the continuous spray rate of 1.5 gpm to about 100 gpm and then returns to 1.5 gpm when equilibrium conditions are reached. At the continuous spray flow rate, it is estimated that a 55F fluid temperature drop exists between the loop cold leg and the pressurizer spray nozzle. Upon initiating proportional spray, it is conservatively assumed that this temperature drop is eliminated. The spray flow temperature transient then consists of a 55F step increase followed by the change in the loop cold leg temperature during the transient. The latter is generally of the order of 10F or less. Upon termination of proportional spray, a 55F step decrease in spray fluid temperature is assumed.

It is decided that a statement to the effect that the spray flow temperature undergoes a step increase of 110F and after the establishment of equilibrium conditions a step decrease of 110F will conservatively represent this transient. The temperature range is expanded to 110F to eliminate any differences from plant-to-plant since the Architect-Engineer typically supplies the spray piping and its associated insulation. Accompanying the temperature step, the spray flow is assumed to step from the initial value of 1.5 gpm (continuous spray) to the maximum proportional spray flow of (375 gpm). This maximizes the film heat transfer coefficient.

b. Unloading

During plant unloading, the surge flow temperature transient is similar except that in addition to the 100F step there is an additional 42F step (Reference A). The proportional spray is not activated during plant unloading. The same logic outlined above is used to specify for the unloading transient an additional 15,000 cycles of 110F step change (complete reversal) and 15,000 cycles of 60F step change (complete reversal) in surge flow temperature. There is no spray flow transient for plant unloading.

c. Step Power Changes

A similar approach is taken for the power step transients. During a step load increase there are two surge flow temperature reversals of about 45F. During the step load decrease there is one surge flow temperature reversal of about 42F and two of about 50F. The maximum sustained surge flow during the step power changes is about 50-60 lbm/sec. To the unloading transient an additional 10,000 cycles of 60F step change (complete reversal) in surge flow temperature are added.

The proportional sprays are turned on twice during both the step load increase and the step load decrease transients. To the loading transient an additional 8000 cycles of 110F step change (complete reversal) in spray flow temperature are added. Similarly, maximum spray flow (375 gpm) is assumed to occur during the transients to maximize the film heat transfer coefficient.

d. Plant Trips

During the Reactor Trip, Loss of Primary Flow and Loss of Load transients, there is a brief surge flow reversal toward the pressurizer at time zero which lasts for about 10 seconds. Since the surge line is typically 50 feet in length and the associated pipe velocities are in the 5-10 ft/sec range, the pressurizer surge nozzle will not "feel" this initial flow reversal. For the next 100 seconds, the flow is out of the pressurizer at a temperature which decreases somewhat ($\sim$30F) due to the decreasing pressurizer saturation temperature. At 100 seconds, there is a surge flow reversal toward the pressurizer as hot leg water enters to restore the equilibrium pressurizer water level. This is accompanied by a characteristic (for the trip cases) 75F step decrease in surge flow temperature. The maximum sustained surge flow during the trip cases is in the range of 400-600 lbm/sec. To the loading transient an additional 500 cycles of 110F step change (complete reversal) in surge flow temperature are added.

The proportional sprays are turned on once during both the Loss of Load and Loss of Primary Flow transients. This represents only 80 occurrences but for conservatism an additional total of 500 cycles of 110F step change (complete reversal) in spray flow temperature are added to the loading transient. Maximum spray flow (375 gpm) occurs during these incidents.

e. Loss of Secondary Pressure

During this incident there is a very rapid draining of the pressurizer in 6 seconds during which the surge flow reaches a maximum of a few thousand pounds per second. Thereafter the pressurizer contains steam until the refill transient is initiated at 1550 seconds. Based on Figure 8, a statement to the effect that the surge flow temperature undergoes a step decrease of 250F and, after the establishment of equilibrium conditions, a step increase of 250F will conservatively represent this transient. There is no accompanying spray flow transient.

f. Summary

- It is concluded that a conservative representation for the structural design of the spray nozzle and pressurizer surge nozzle (in addition to vessel heatup/cooldown, normal plant variations, hydrostatic test and leak test) is the following:

Condition	Cycles	Complete Fluid Temperature Reversal	
		Surge Nozzle	Spray Nozzle
(Initial Nozzle Fluid Temperature		653F	450F)
Plant Loading	15,000	110F	110F
Plant Unloading	15,000	110F	-
	15,000	60F	-
Step Power Increase	4,000	60F	110F
Step Power Decrease	6,000	60F	-
	4,000	-	110F
Plant Trips	500	110F	110F
Loss of Secondary Pressure	5	250F	-

To determine film heat transfer coefficients associated with the surge nozzle fluid temperature transients, the accompanying flow transients are required. As shown in Reference A, these are highly non linear and vary considerably in magnitude from case to case. From inspection of these curves in conjunction with the expertise developed from reviewing NCD component analytical stress reports, the following values of constant film coefficients are selected.

The maximum surge flow associated with the 30,500 cycles of the 110F surge nozzle fluid complete temperature reversals occurs during the 500 cycles of plant trips. Based on these flows, a conservative constant film coefficient of 1800 Btu/hr-ft^2-°F is selected for the total 30,500 cycles.

The maximum surge flow associated with the 25,000 cycles of the 60F surge nozzle fluid complete temperature reversals occurs during the power steps. Based on these flows, a conservative constant film coefficient of 95 Btu/hr-ft^2-°F is selected for the total 25,000 cycles.

Based on the surge flows during a loss of secondary pressure, a conservative constant film coefficient of 3600 Btu/hr-ft^2-°F is selected for the 5 cycles of the 250F surge nozzle fluid complete temperature reversal.

For the spray nozzle fluid transients, the specification statement includes (in addition to the fluid temperature step change) the step change in spray flow rate. The Vendor is responsible for determining the film coefficient for the 23,500 cycles of 110F spray nozzle fluid complete temperature reversals.

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March 14, 1977

V. Reactor Coolant Pipe & Fittings Specification

This specification is applied to the primary piping (hot leg, cold leg, (including discharge and suction leg) and surge line and nozzle attachments (surge, shutdown cooling, safety injection, charging, letdown, spray, instruments, drains, and sampling).

1. Piping.

Items 1-7 of Section I (Reactor Vessel Specification) are applied to the revision of that portion of the specification concerned with the hot leg and cold leg (including discharge and suction leg). In addition, the following revisions are made to that portion of the specification concerned with the surge line.

For the heatup (cooldown) of the surge line a composite curve is developed from the heatup (cooldown) of the reactor vessel (loop piping end of the surge line) and from the heatup (cooldown) of the pressurizer (pressurizer end of the surge line). The revised pressure/temperature curves for surge line heatup cooldown are attached as Figure 9. During both the heatup and cooldown operations there is a net flow out of the pressurizer. The maximum flow rate is about 12 lbm/sec.

For Plant Loading (unloading), Step Power Increase (decrease), and Plant Trips, the pressurizer specification section concerning the pressurizer surge nozzle (Item 7.f of Section IV) is applied directly to the surge line.

The Normal Pressurizer Variations of ± 100 psi, ± 20F (Item 2 of Section IV) are applied to the surge line.

For the Loss of Secondary Pressure, the pressurizer specification curve (Item 4 of Section IV) is applied directly to the surge line.

For the Hydrostatic Test and Leak Test, the reactor vessel specification paragraphs (Items 6, 7 of Section I) are applied directly to the surge line.

The NRC is requiring annual testing of the safety injection system. Since the low pressure system is used during plant cooldown, operation of this system is normally annual and is defined in the specification. The high pressure system is not used during normal plant operation and an annual test is now defined. With the pressurizer pressure at 1000 psia (545F) and the loop fluid temperature at 295F, high pressure safety injection flow is initiated. Since this flow exceeds the letdown system capability, flow from the loop to the pressurizer occurs. High pressure safety injection flow is also initiated at two lower pressurizer pressures with the loop fluid temperature held constant at 295F. Based on a maximum flow of 500 gpm, a conservative constant film coefficient of 250 Btu/hr-ft^2-°F is selected for the surge line.

For conservatism, the specification considers the entire 120 occurrences as taking place at the maximum loop-to-pressurizer differential temperature of 250F.

2. Nozzles

For the nozzles which only permit flow from the primary loop piping (shutdown cooling, letdown, spray, instruments, drains, sampling), Items 1-7 of Section I (Reactor Vessel Specification) are applied consistent with the nozzle location on the primary piping. No additional special transients are developed. For the nozzles which permit flow to the primary loop piping (surge, safety injection, charging), the following is considered.

3. Surge Nozzle

The surge nozzle attached to the primary loop piping is assigned the same transient description as the surge line in the specification.

4. Safety Injection Nozzles

Items 1-7 of Section I (Reactor Vessel Specification) are applied to the safety injection nozzles consistent with the nozzle location on the primary loop piping. The following modifications to these transients are added.

a. Plant Cooldown

During plant cooldown when the primary loop temperature is at a maximum of 350F (300 psia), flow through the safety injection nozzles into the primary loop, and flow through the shutdown cooling nozzles out of the primary loop is initiated. This flow is recycled to heat the shutdown cooling heat exchangers from the containment temperature (maximum 120F) to 350F in a minimum 15 minute period. Once the heat exchangers are warmed up, the cooldown of the primary loop is continued. The fluid temperature passing through the safety injection nozzles decreases in an exponential manner from 350F to 70F in a 24 hour period.

This transient is conservatively described in the specification as follows. The fluid in the safety injection nozzles undergoes a step decrease in temperature from 350F to 40F for a period of 15 minutes, followed by a step increase to 350F followed by a ramp decrease at 100F/hr to 70F.

For conservatism, the temperature of the source (refueling water tank) of the shutdown cooling flow is selected (40F) rather than the containment temperature for the safety injection nozzle fluid temperature.

Based on a maximum flow of 10,000 gpm, a conservative constant film coefficient of 2770 Btu/hr-ft^2-°F is selected for the safety injection nozzles.

b. Emergency Conditions

A total of seven occurrences are provided to accommodate the Design Basis Accident (1 occurrence), Loss of Secondary Pressure (5 occurrences) and the testing of the safety injection system at full temperature (1 occurrence). The transient is defined as a step change in the nozzle fluid temperature from 565F to 40F (1240 psia). The nozzle fluid temperature remains at 40F. Based on a maximum flow of 10,000 gpm a conservative constant film coefficient of 2770 Btu/hr-ft^2-°F is selected for the safety injection nozzles.

c. Testing of Safety Injection System

As noted under the surge line section, an annual testing of the high pressure safety injection system is defined. For the safety injection nozzles, this test is conservatively defined as 120 occurrences of a step change in the nozzle fluid temperature from 565F to 40F. Based on a maximum flow of 500 gpm, a conservative constant film coefficient of 250 Btu/hr-ft^2-°F is selected.

5. Charging Nozzles

There is continuous injection of 400F water at 32 gpm per nozzle into the primary cold leg which is operating at a T cold equivalent to 100 percent power and 2250 psia.

a. Heatup/Cooldown

During plant heatup, the charging water fluid temperature increases lineraly from 70F to 400F over a 4.8 hour period. This time period is consistent with the 100F/hr heatup of the primary loop. The maximum charging flow is 44 gpm.

During plant cooldown, the charging water fluid temperature experiences a step decrease from 400F to 200F followed by a linear ramp to 70F over a 4.8 hour period. This time period is consistent with the 100F/hr cooldown of the primary loop. The maximum charging flow is 132 gpm. Based upon this flow rate, a conservative constant film coefficient of 2400 Btu/hr-ft^2-°F is selected for both the heatup and cooldown operations.

b. Loading/Unloading

Inspection of the transient curves of Reference C shows that during plant loading the charging water fluid temperature increases about 80F in a gradual manner over 1000 seconds prior to a gradual return to the equilibrium set point. The transient is defined as a 100F step increase from 400F in the charging fluid temperature and, after the establishment of equilibrium conditions, a 100F step decrease to 400F. The maximum charging flow is 44 gpm. A conservative constant film coefficient of 900 Btu/hr-ft^2-°F is selected.

Inspection of the transient curves of Reference C shows that during plant unloading the charging water fluid temperature decreases (in two steps) about 190F in 500 seconds followed (after 500 seconds) by a similar return to the equilibrium set point. The transient is defined as a 200F step decrease from 400F in the charging fluid temperature and, after the establishment of equilibrium conditions, a 200F step increase to 400F. The maximum charging flow is 132 gpm. A conservative constant film coefficient of 2400 Btu/hr-ft^2-°F is selected.

c. Step Power Changes

Inspection of the transient curves of Reference C shows that during a step load increase the charging fluid temperature increases about 100F over 100 seconds followed by a gradual return to the equilibrium set point. The transient is defined as a 100F step increase from 400F in the charging fluid temperature and, after the establishment of equilibrium conditions, a 100F step decrease to 400F. The maximum charging flow is 44 gpm. The definition is identical to the loading transient.

Inspection of the transient curves of Reference C shows that during a step load decrease the charging fluid temperature decreases about 200F over 100 seconds followed after 200 seconds by a 100F step increase in fluid temperature and then a gradual return to the equilibrium set point. The transient is defined as a 200F step decrease from 400F in the charging fluid temperature and after the establishment of equilibrium conditions a 200F step increase to 400F. Although the maximum charging flow of 88 gpm is less than that during plant unloading, the step load decrease is defined identically to the unloading transient.

d. Normal Plant Variations

The normal plant temperature and pressure fluctuations are the same as those appearing in the reactor vessel specification (Item 3 of Section I).

e. Plant Trips

The Reactor Trip, Loss of Load and Loss of Primary Flow transients are considered as a group since the charging flow temperature transients are quite similar. Inspection of the transient curves for the Loss of Load case (the worst of the three cases) of Reference C shows a rapid drop of charging fluid temperature of 258F followed after 800 seconds by a 150F step increase in fluid temperature and then a gradual return to the equilibrium set point. The transient is defined as a 260F step decrease from 400F in the charging fluid temperature and after the establishment of equilibrium conditions a 260F step increase to 400F. The maximum charging flow is 132 gpm. A conservative constant film coefficient of 2400 Btu/hr-ft^2-°F is selected.

f. Loss of Secondary Pressure

After an inspection of the transient curves of Reference C, the transient is defined as a 280F step decrease from 400F in the charging fluid temperature and after the establishment of equilibrium conditions a 280F step increase to 400F. The maximum charging flow is 132 gpm. A conservative constant film coefficient of 2400 Btu/hr-ft^2-°F is selected.

g. Hydrostatic Test/Plant Leak Test

For the Hydrostatic Test and Plant Leak Test, the reactor vessel specification paragraphs (Items 6, 7 of Section I) are applied to the charging nozzles.

h. CVCS Transients

(1) Purification

Inspection of the transient curves of Reference C shows a rapid drop of charging fluid temperature of 85F followed after a long period of time by a similar return to the equilibrium set point. The transient is defined as a 100F step decrease from 400F in the charging fluid temperature and after the establishment of equilibrium conditions a 100F step increase to 400F. The maximum charging flow is 132 gpm. A conservative constant film coefficient of 2400 Btu/hr-ft^2-°F is selected.

(2) Low Volume Control Tank

Inspection of the transient curves of Reference C shows a 35F change in charging fluid temperature. Since this is very mild, this transient is eliminated from the specification.

(3) Boric Acid Dilution

Inspection of the transient curves of Reference C shows this transient to be very similar to the purification transient and hence receives the same description. A total of 15,000 occurrences is assigned which assumes daily operation for primary loop chemistry/crud control and/or load following maneuvers.

(4) Loss of Charging/RHX Isolation Long Term & Short Term

Inspection of the transient curves of Reference C shows that the transient for the RHX isolation-short term is less severe than that for the RHX isolation-long term. The former transient loses its separate identity and is included in the latter transient. Moreover it is seen that the Loss of Charging Flow and RHX Isolation - Long Term are identical with regards to the thermal transient imposed on the charging nozzle. Hence, the three transients are represented by a single transient. The total number of cycles for these three transients in the old specification is 1400. This is excessive since the transient covers equipment failures in the charging system and is not part of normal plant operations. The number of occurrences is revised to 100.

Previously, NCD could not comply with the stress intensity limits in the charging nozzle for the Loss of Charging transient as represented in past specifications. Based on Reference E, this transient is defined as follows. From an initial temperature of 400F and a flow rate of 44 gpm, the charging flow stops. The water temperature in the nozzle, as a function of time, is determined from the heat input from the loop water and nozzle metal by the designer. After equilibrium temperatures are reached, the charging flow is re-established at 44 gpm and 120F for a period of 60 seconds followed by a 30 second ramp increase in temperature to 400F. The designer determines the film heat transfer coefficient. The nozzle design must accommodate this transient since this definition is final.

(5) Loss of Letdown

Previously, NCD could not comply with the stress intensity limits in the charging nozzle for the Loss of Letdown transient as represented in past specifications. Based on Reference E, this transient is defined as follows. From an initial temperature of 400F and a flow rate of 400 gpm, the charging fluid temperature decreases linearly to 120F in 60 seconds. After thermal equilibrium in the nozzle is established, the charging flow stops. After equilibrium temperatures are reached, the charging flow is re-established at 44 gpm and 120F for a period of 60 seconds followed by a 30 second ramp increase in temperature to 400F. The designer determines the film heat transfer coefficient. The nozzle design must accommodate this transient since this definition is final. The number of occurrences is 100.

(6) Summary

It is concluded that a conservative representation for the structural design of the charging nozzles (in addition to loop heatup/cooldown, normal plant variations, hydrostatic test, leak test, loss of charging and loss of letdown) is the following:

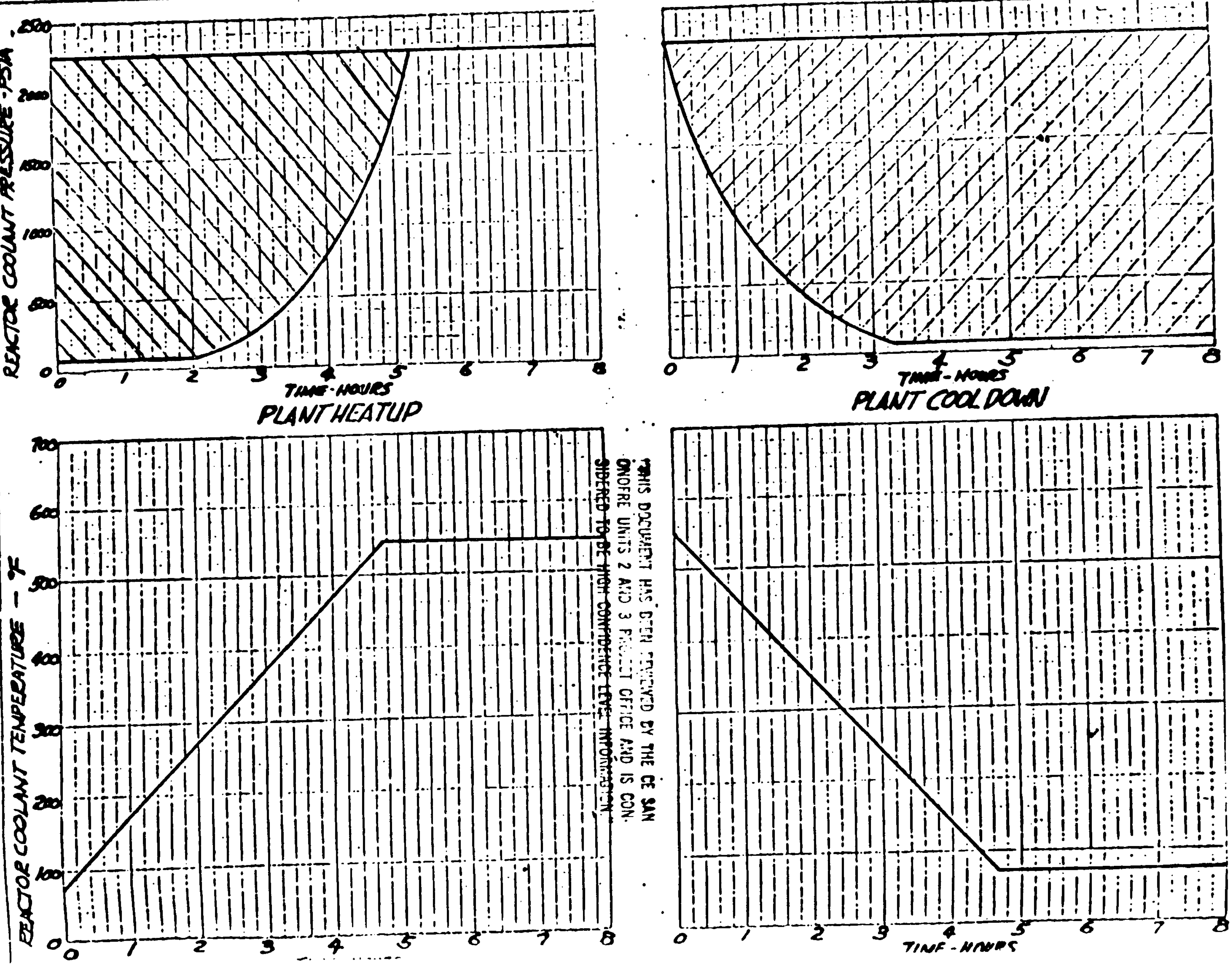
Condition	Cycles	Complete Fluid Temp. Reversal	Direction of Initial Temp. Change	Film HTC (Btu/hr-ft^2-°F)
(initial charging nozzle fluid temperature 400F)				
Plant Loading	15,000	100F	Increase	900
Plant Unloading	15,000	200F	Decrease	2400
Step Power Increase	2,000	100F	Increase	900
Step Power Decrease	2,000	200F	Decrease	2400
Plant Trips	500	260F	Decrease	2400
Loss of Secondary Pressure	5	280F	Decrease	2400
Purification/Boric Acid Dilution	15,000	100F	Decrease	2400

Title: PLANT HEATUP & COOLDOWN

Specification No. 00000-PE-120

Revision 1

Figure - 9.00-B-4/-0



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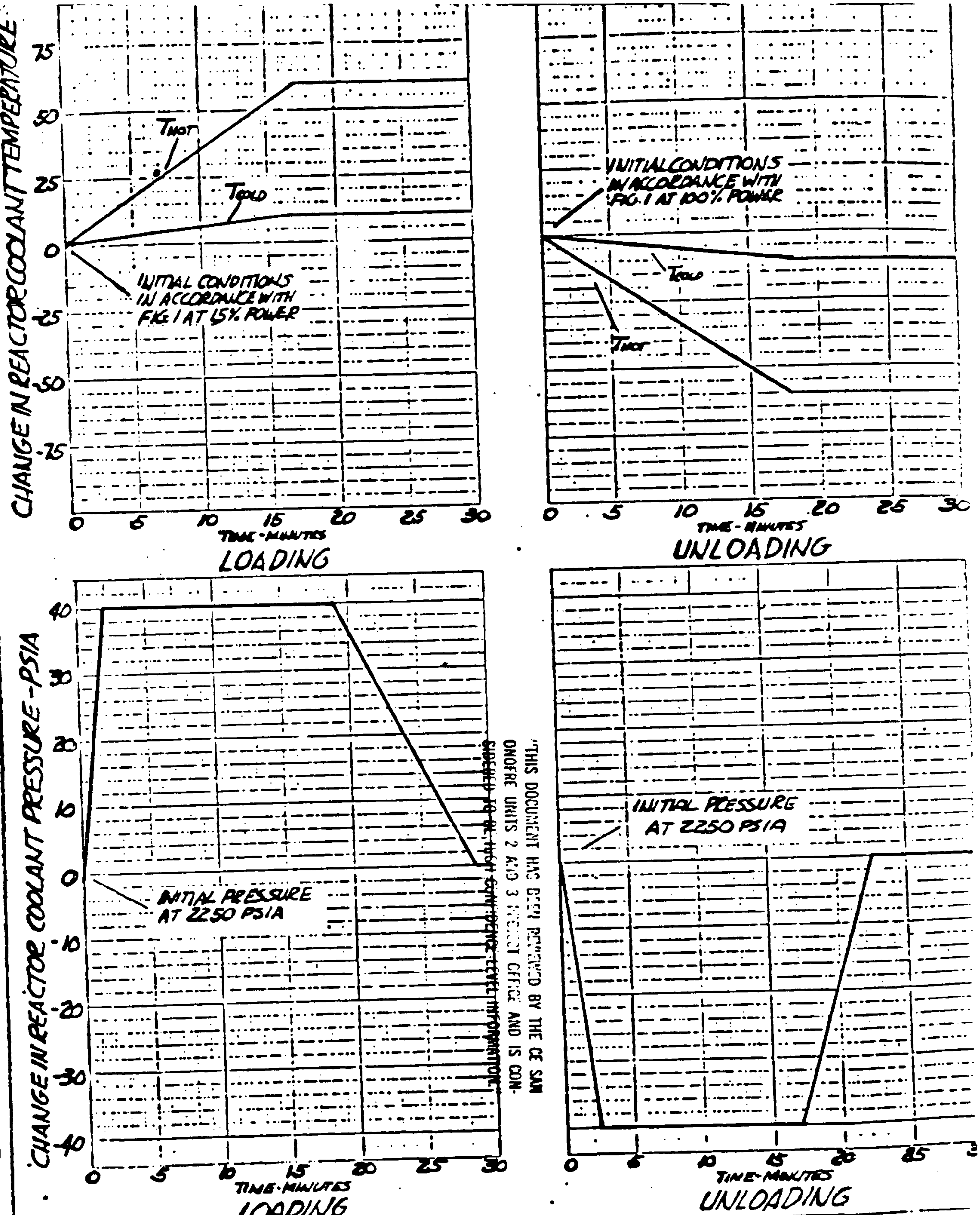
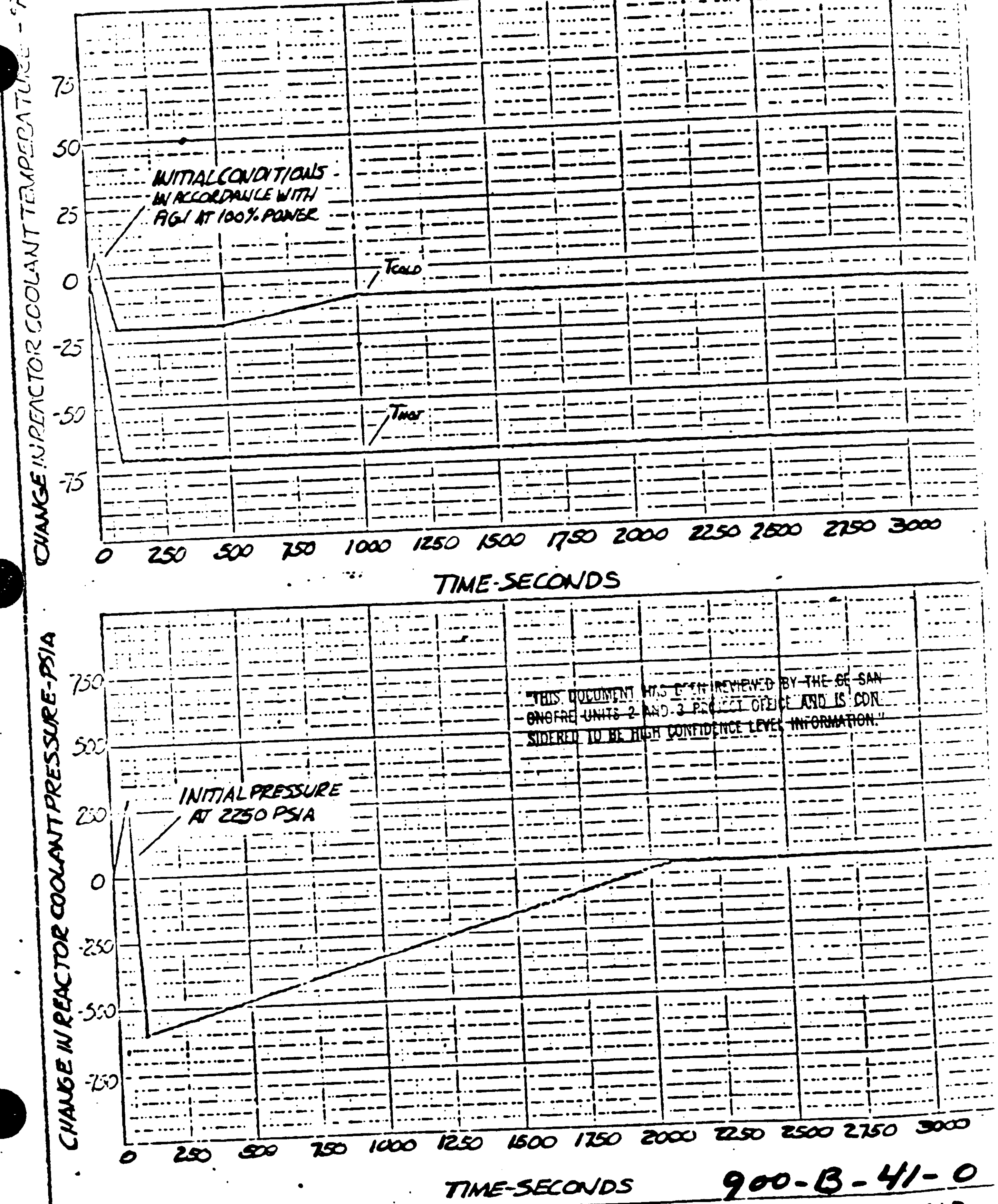


Title: PLANT TRANSIENTS - PLANT LOADING & UNLOADING - 5% FULL LOAD PER MI...

Specification No. 00000-PE-120	Revision 1	Figure 3 Sheet

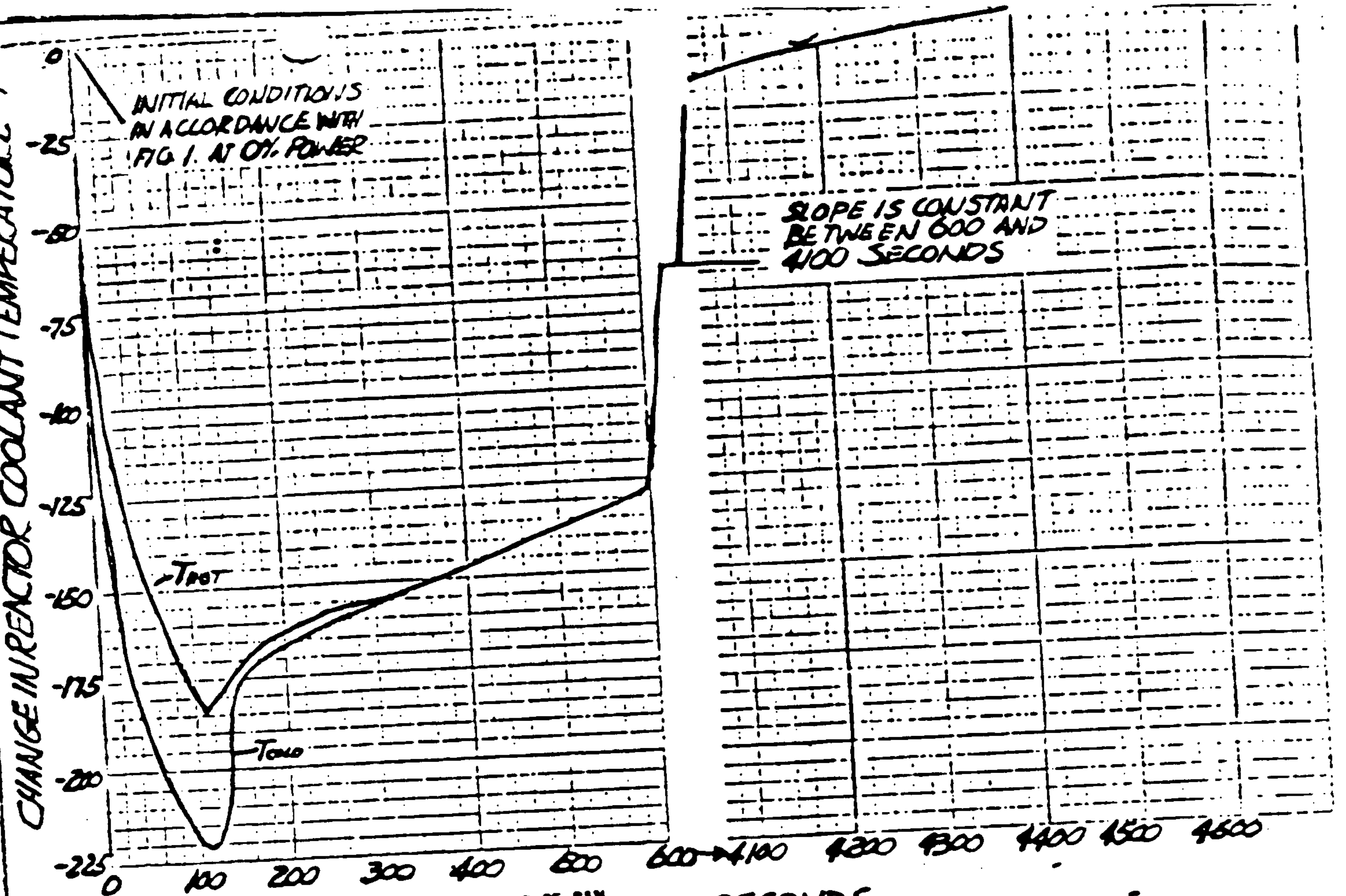
FIGURE 5



900-B-41-0

Title: PLANT TRANSIENTS - TURBINE-REACTOR TRIP, LOSS OF FLOW, LOSS OF LOAD

Figure 5 Sheet



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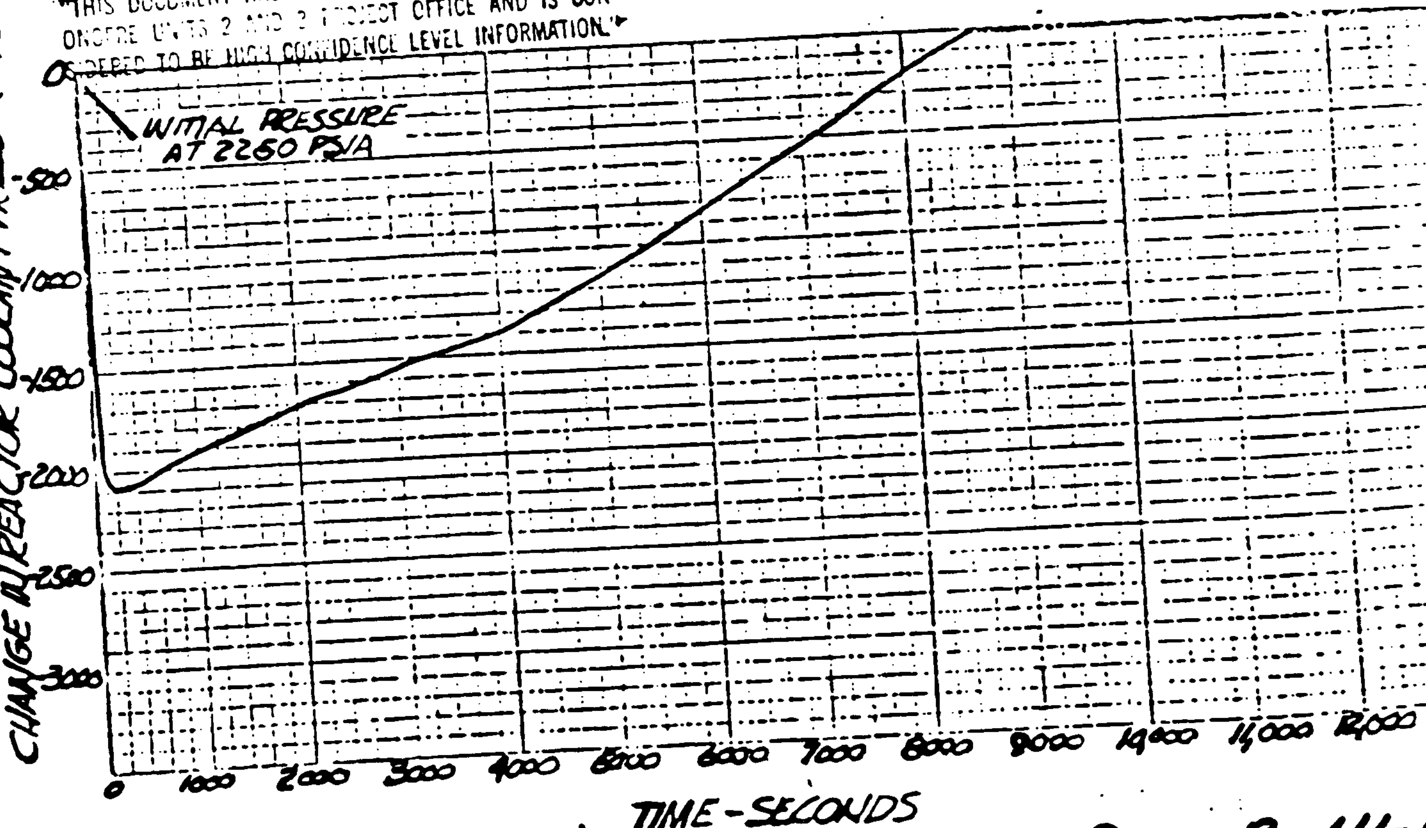


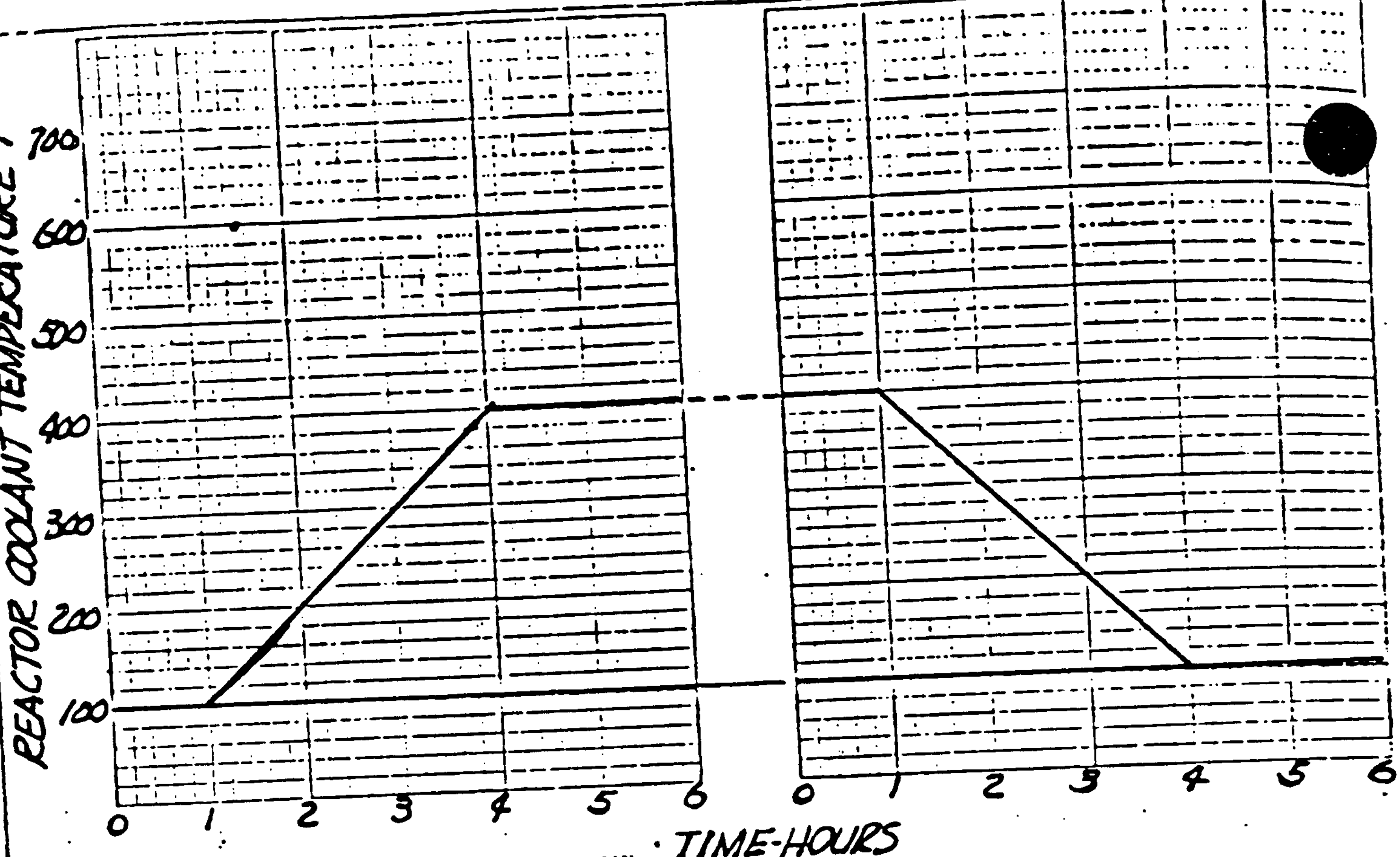
900-B-41-0

Title: PLANT TRANSIENTS - LOSS OF SECONDARY PRESSURE

Revision

Figure

-110



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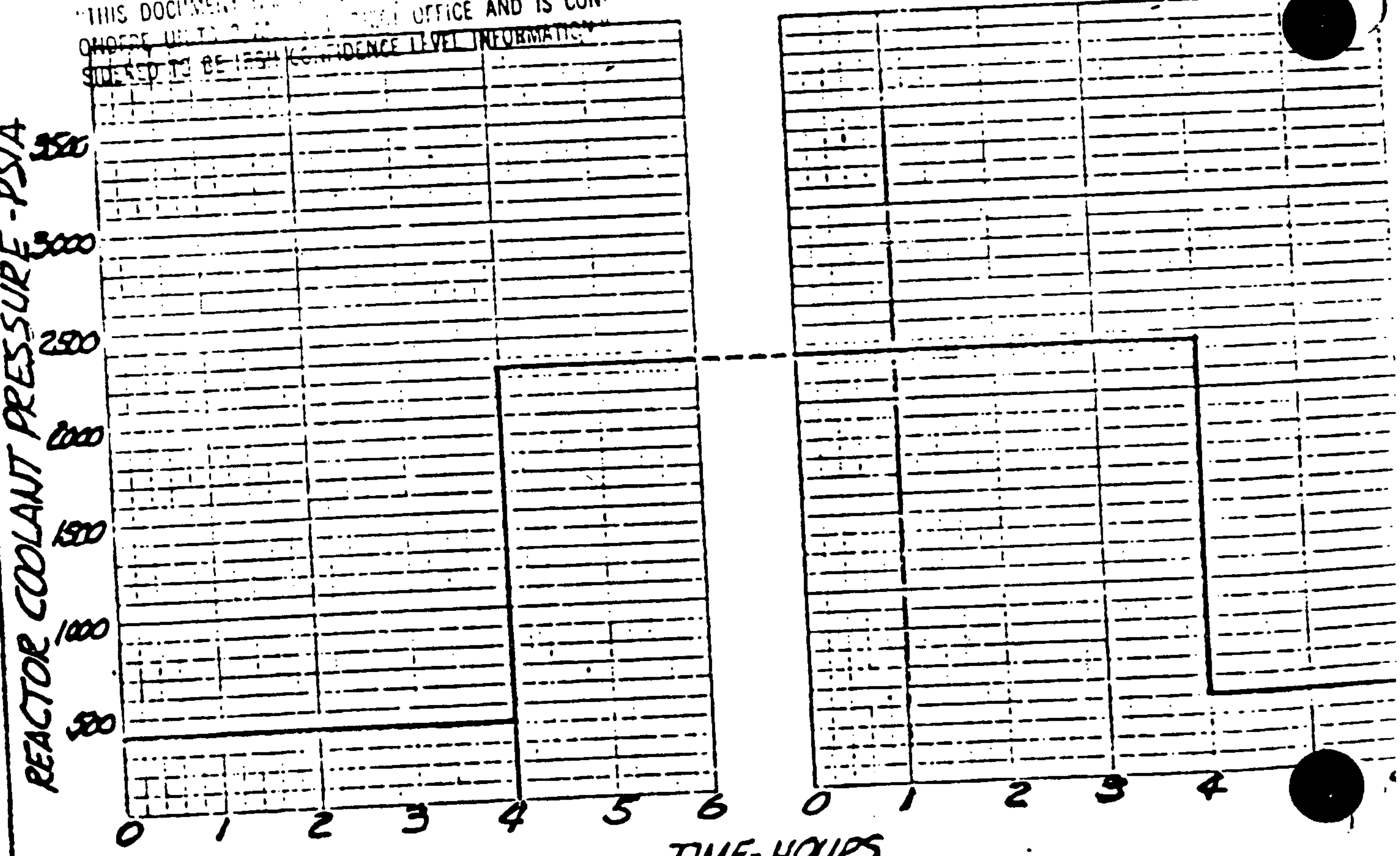

900-B-41-C

Title: PLANT LEAK TEST

Figure

Title:

PRESSURIZER HEATUP & COOLDOWN 900-B-41-0

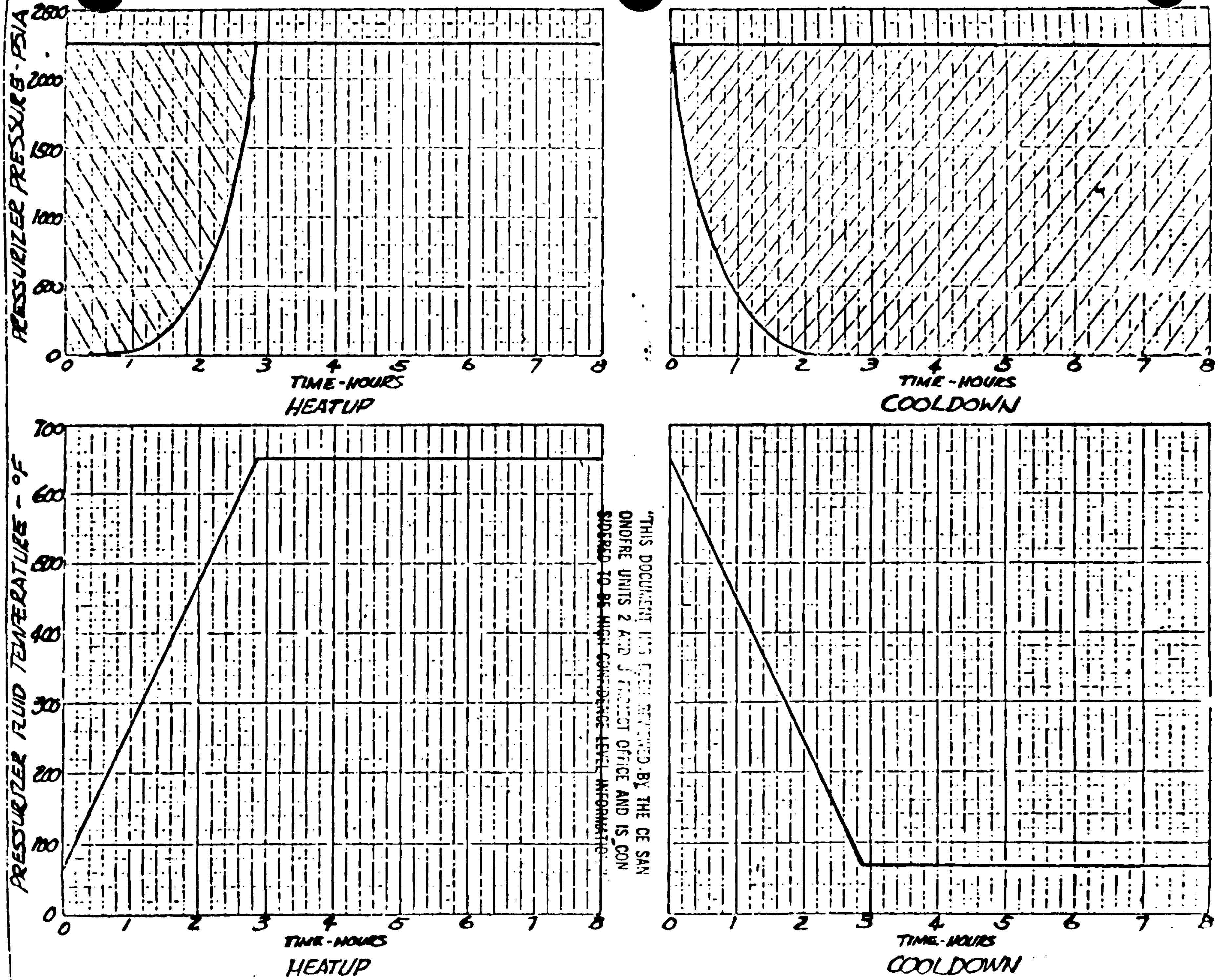

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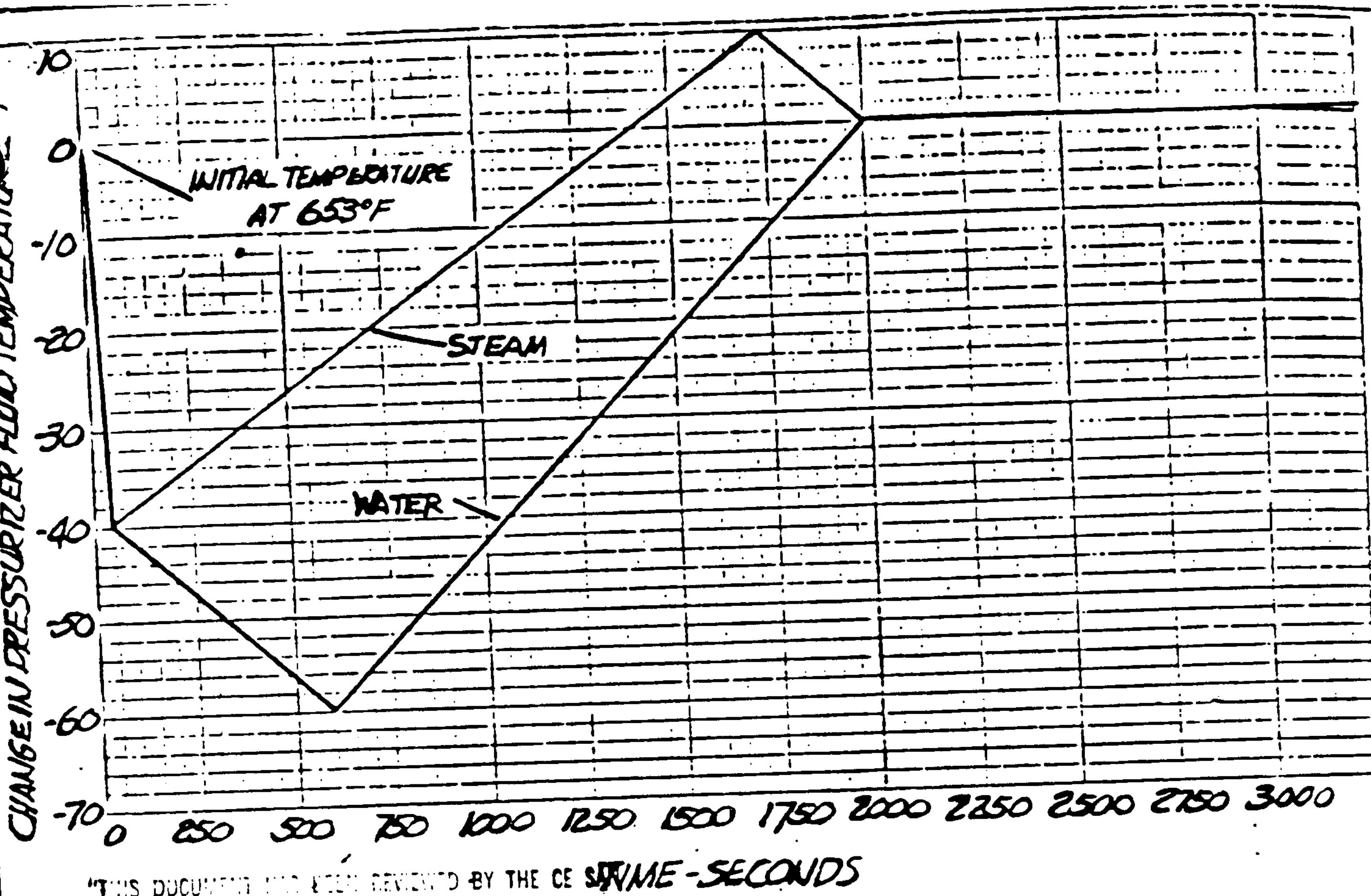
FIGURE 6



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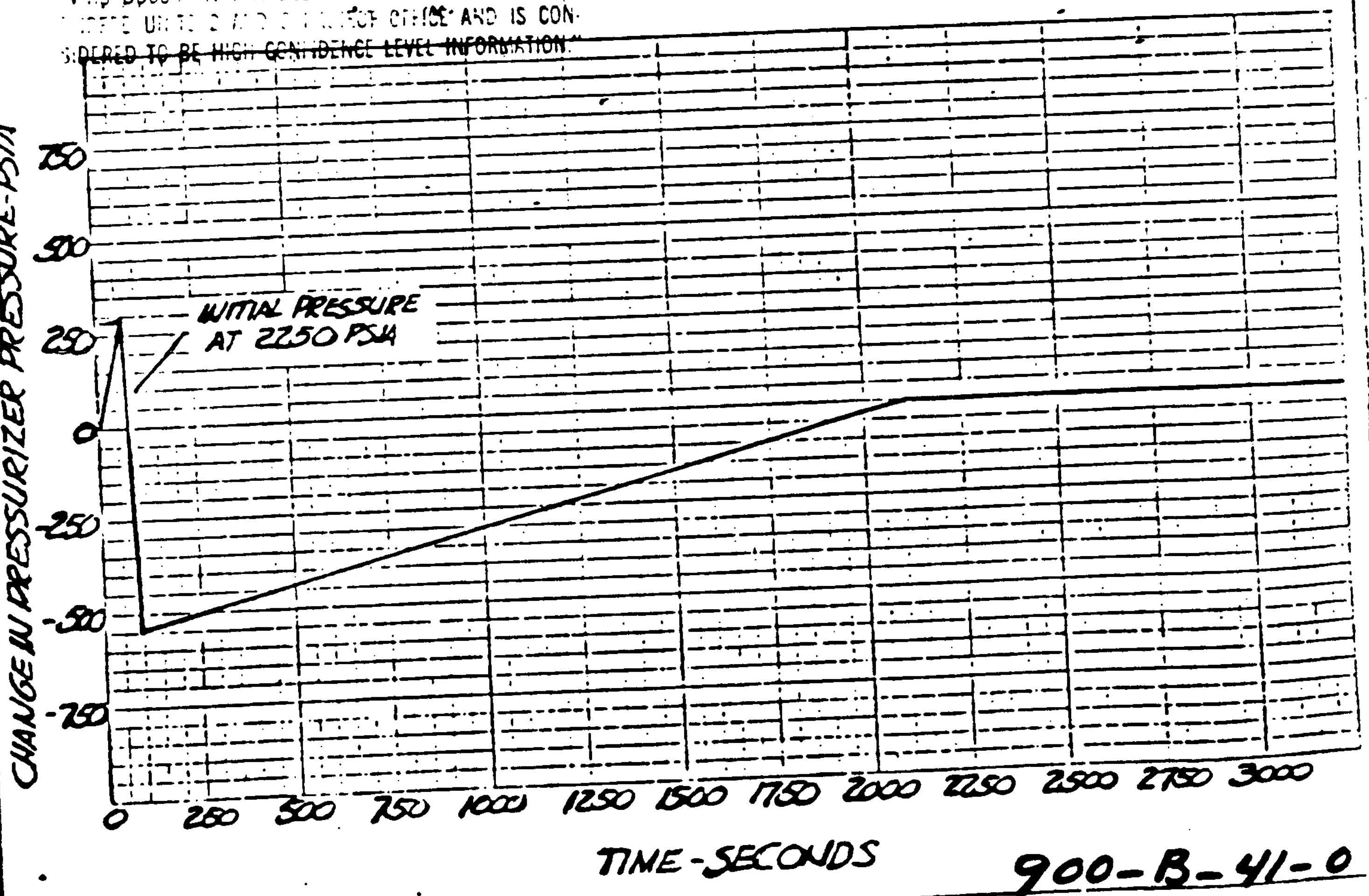


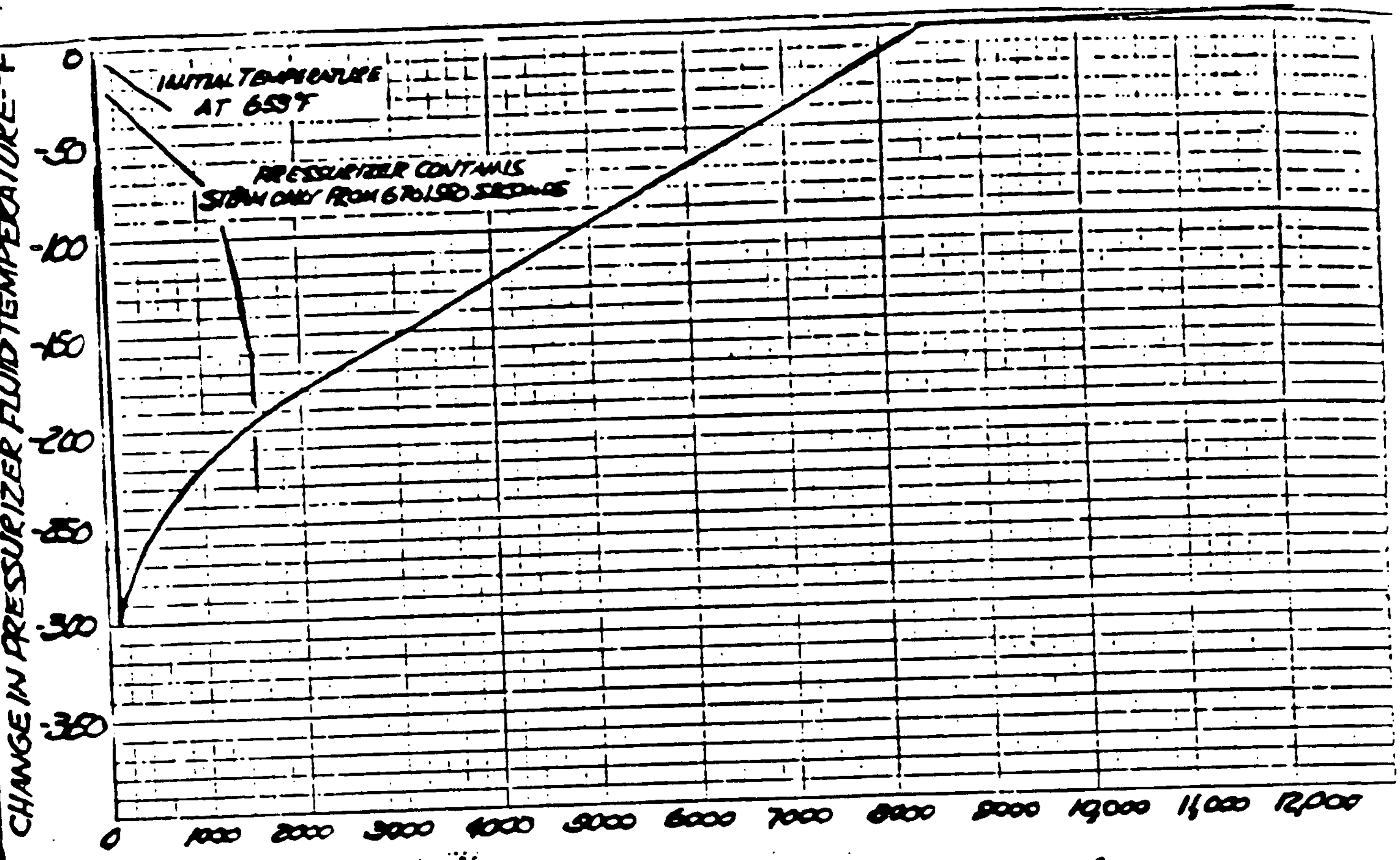
900-B-41-0

Title: PLANT TRANSIENTS - TURBINE - REACTOR TRIP. LOSS OF FLOW, LOSS OF LOAD

Figure 3 | Sheet

Specification No. 00000-PE-150 | Revision

— FIGURE 8 —



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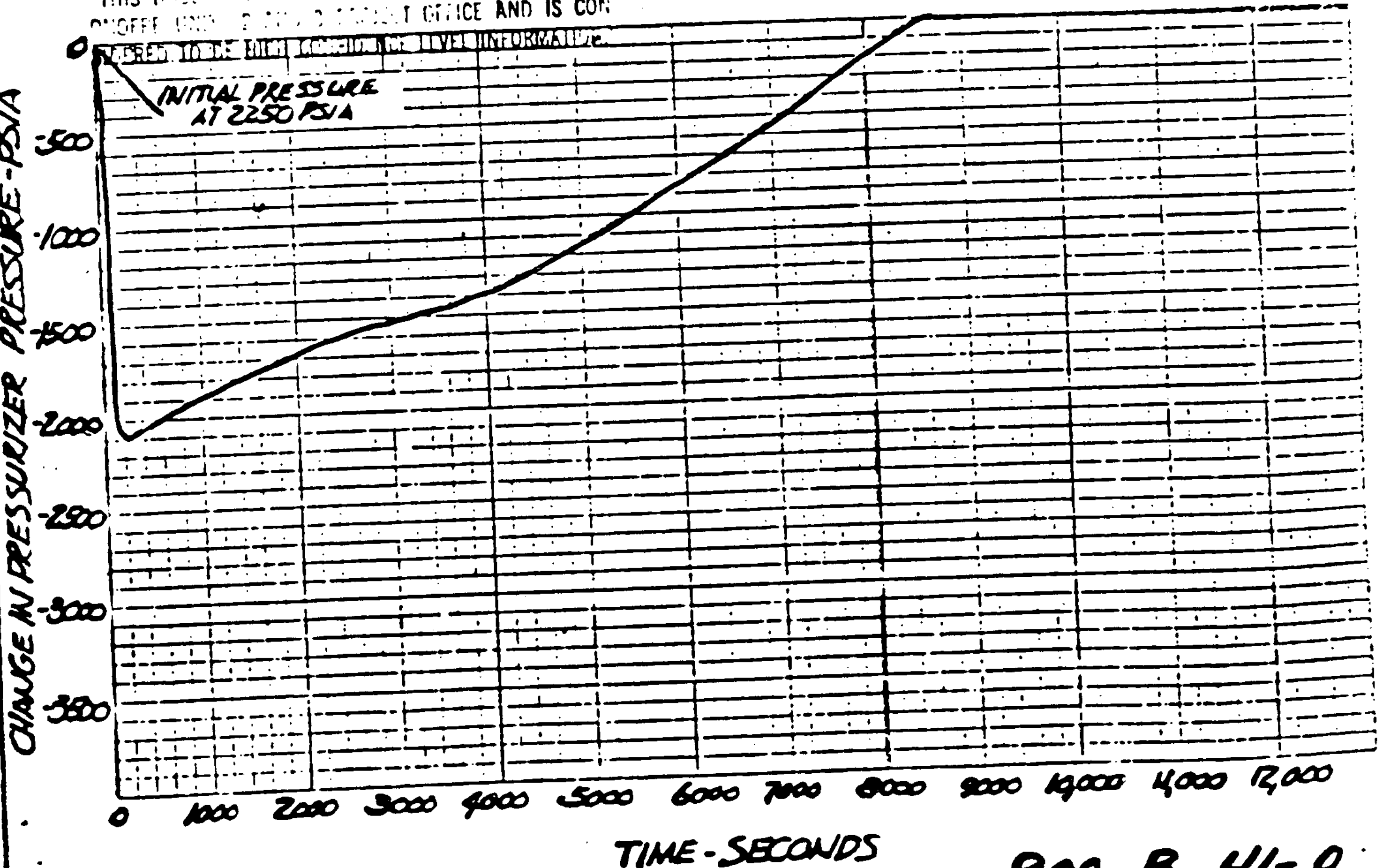

900-B-41-0

TRANSIENTS - LOSS OF SECONDARY PRESSURE

900-8-41

Title: SURGE LINE TRANSIENT - HEATUP AND COOLDOWN

Specification No.

Revision 1

Figure 7

Sheet

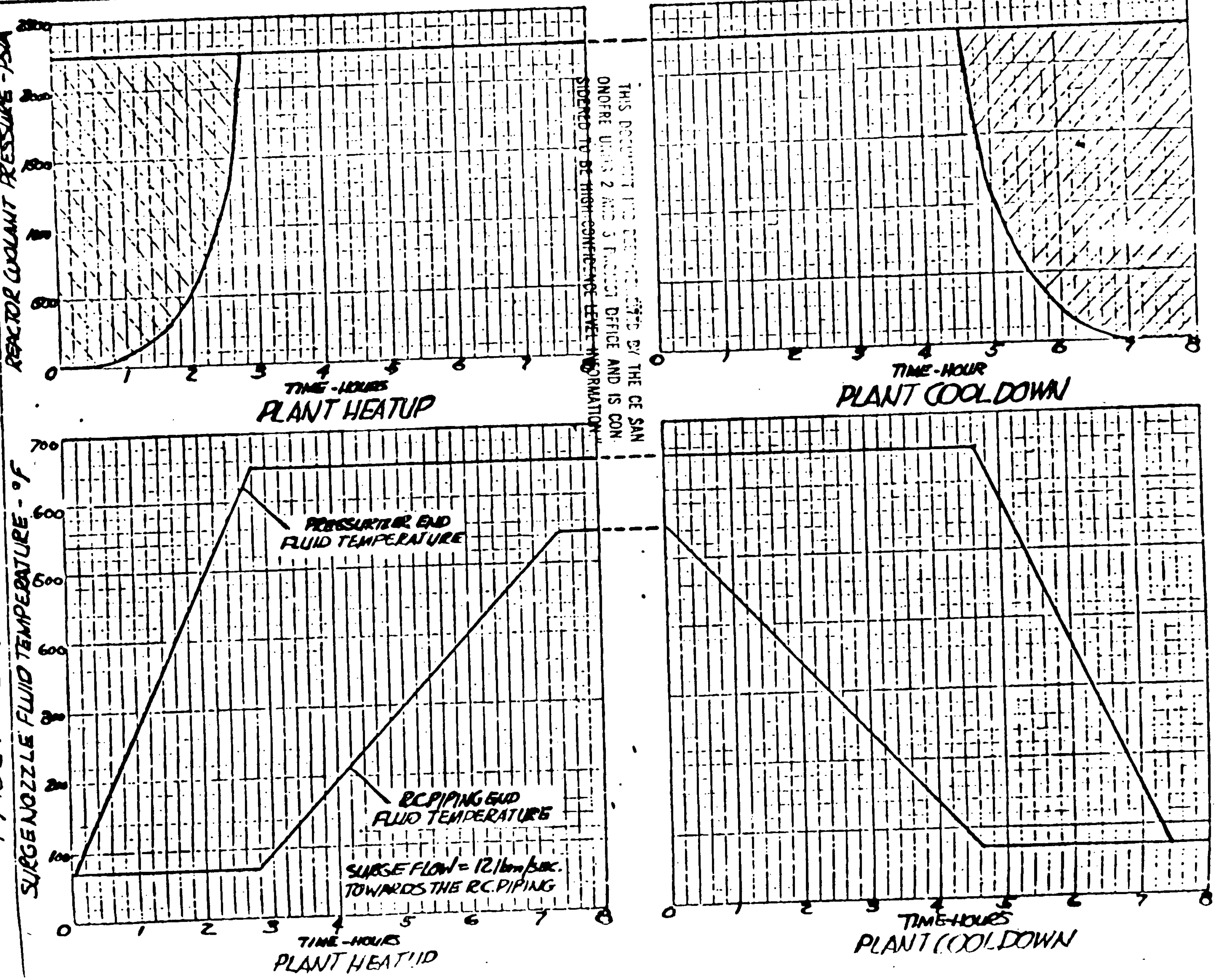

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FIGURE 9

Introduction to Transient Curves

1. All Temperature curves report the change in temperature as a function of time after initiation of transient. The basis for the temperature change is the steady state temperature preceding the initiation of the transient. In all cases the pressurizer steam and water temperatures and the surge line water temperature are 652.8F at time zero. The reactor coolant hot and cold leg temperatures at time zero can be determined from Figure 1 (Reactor Coolant Temperature Versus Power).

2. At time zero the primary system pressure is 2250 psia for all transients. The curves show change in primary pressure as a function of time after the transient has begun.

3. The net surge flow rate has been designated as positive when flow is into the pressurizer.

4. In the Loss of Load Transient the reactor is tripped when primary pressure reaches 2400 psia following the turbine trip. Preceding the transient, the plant is operating at 100 percent power.

5. In the Loss of Flow Transient the reactor is tripped when the vessel coolant flow rate has decreased to 93 percent that of full flow. Preceding the transient, the plant is operating at 100 percent power.

6. The Turbine and Reactor Trip Transient occurs at 100 percent full load plant operation.

7. The Loss of Secondary Pressure Transient is initiated at no load conditions.

8. The secondary pressure at 100 percent power is 900 psia and 1000 psia at no load conditions.

Figures	Transients		Number of Occurrences	
2-1 thru 2-5	90%-100% Power Step		2,000	
3-1 thru 3-5	100%-90% Power Step		2,000	
4-1 thru 4-5	15%-25% Power Step		--	
5-1 thru 5-5	25%-15% Power Step		--	
6-1 thru 6-5	15%-100% Power Ramp at 5%/minute		15,000	
7-1 thru 7-5	100%-15% Power Ramp at -5%/minute		15,000	
8-1 thru 8-5	Turbine-Reactor Trip		400	
9-1 thru 9-5	Loss of Load	Plant Trip	40	480
10-1 thru 10-5	Loss of Flow		40	
11-1 thru 11-5	Loss of Secondary Pressure		5	

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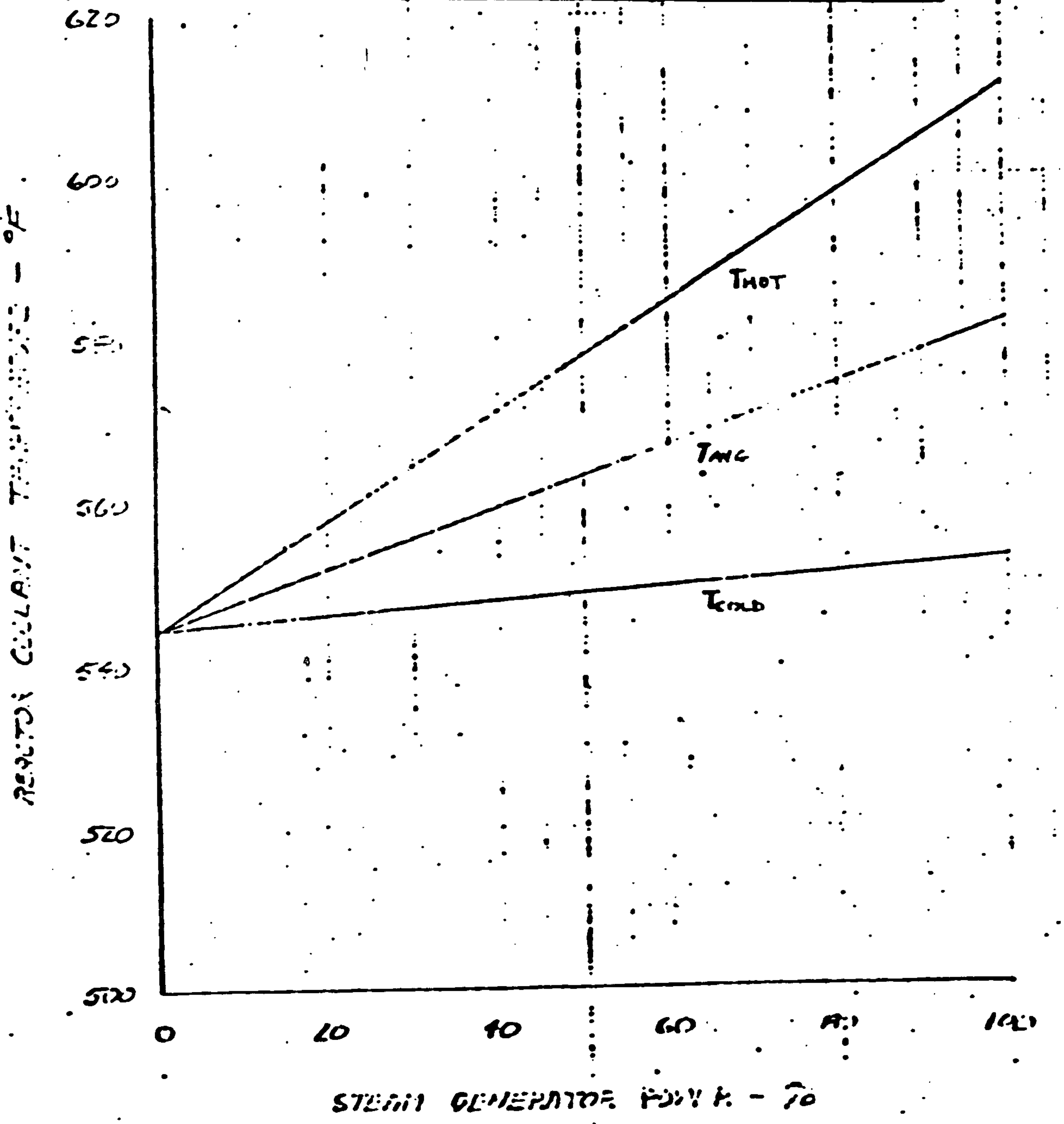

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100% = 3410 MWt

FIG 1

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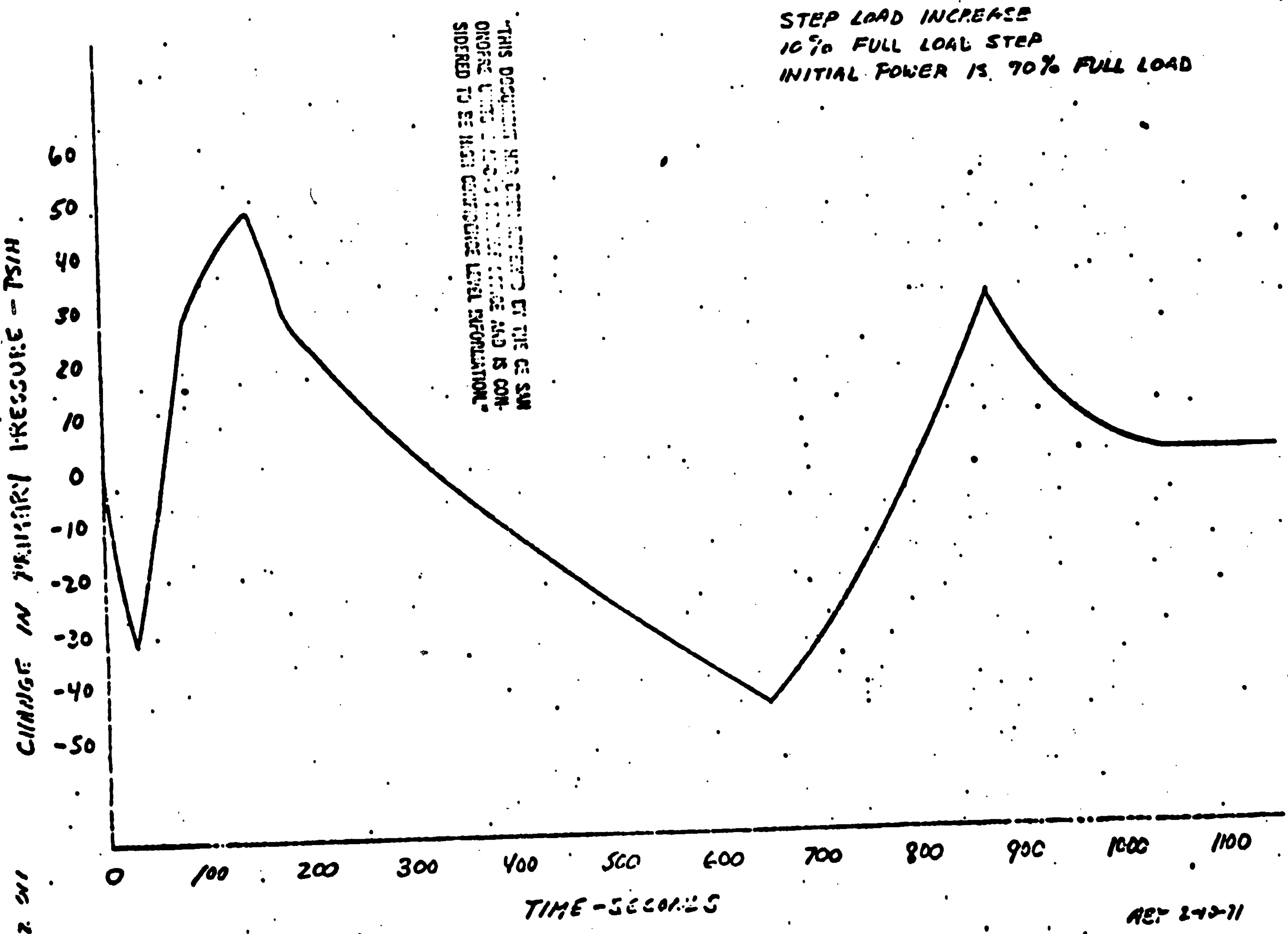

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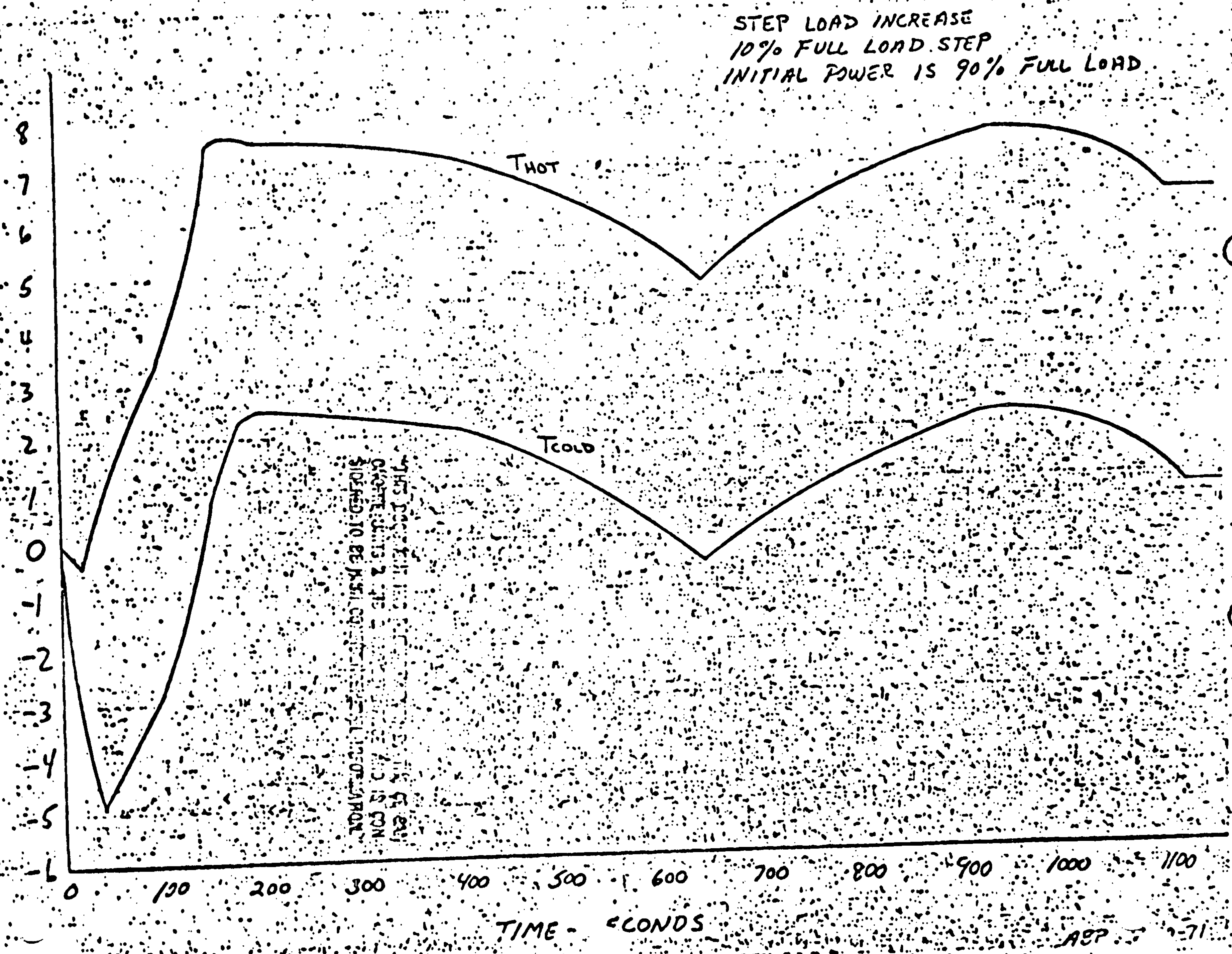
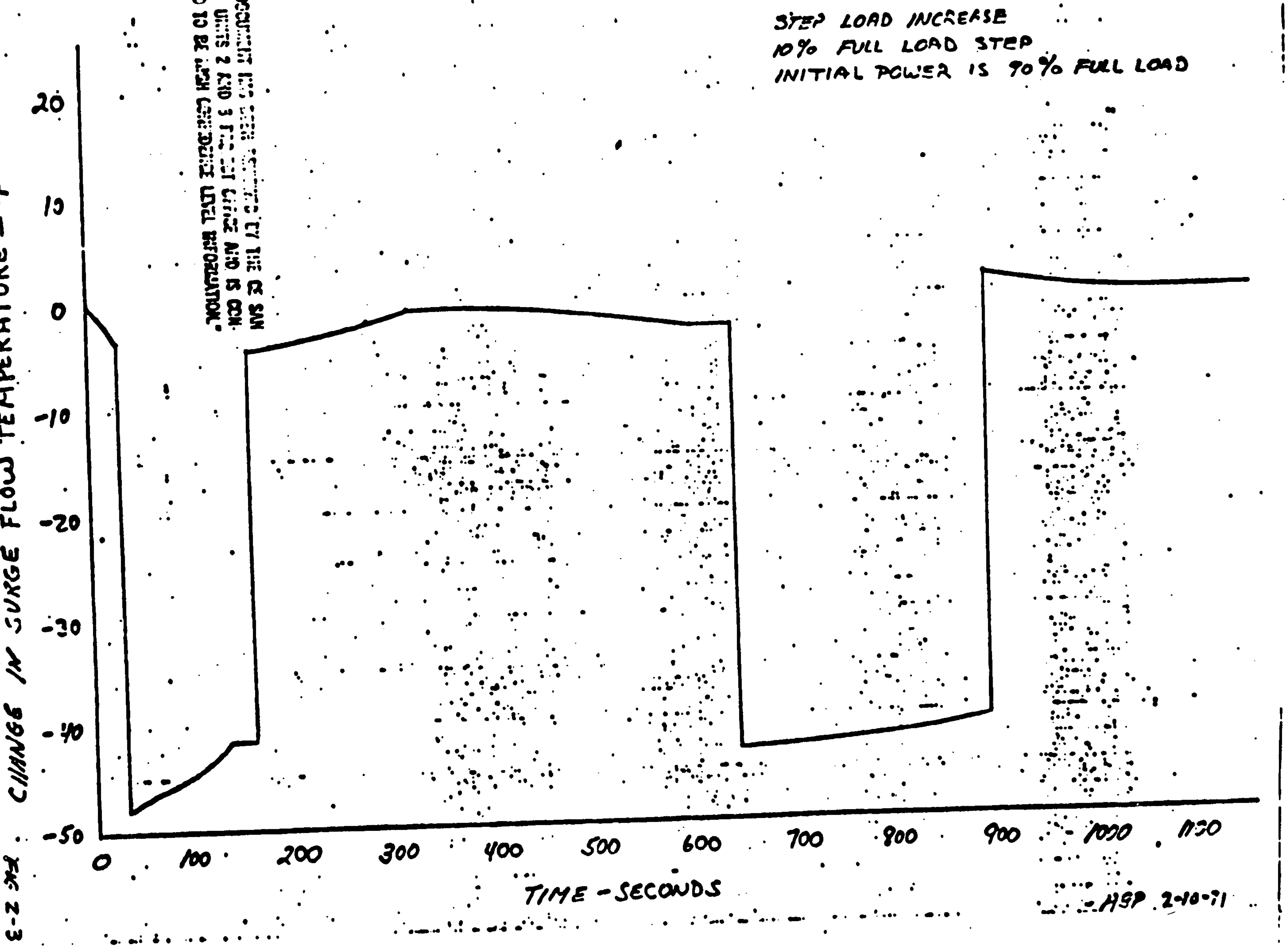


FIG 2-2


STEP LOAD INCREASE
10% FULL LOAD STEP
INITIAL POWER IS 90% FULL LOAD
CHANGE IN SURGE FLOW TEMPERATURE — °F
20
10
0
-10
-20
-30
-40
-50
0
100
200
300
400
500
600
700
800
900
1000
1100
TIME — SECONDS
HSP 2-10-71

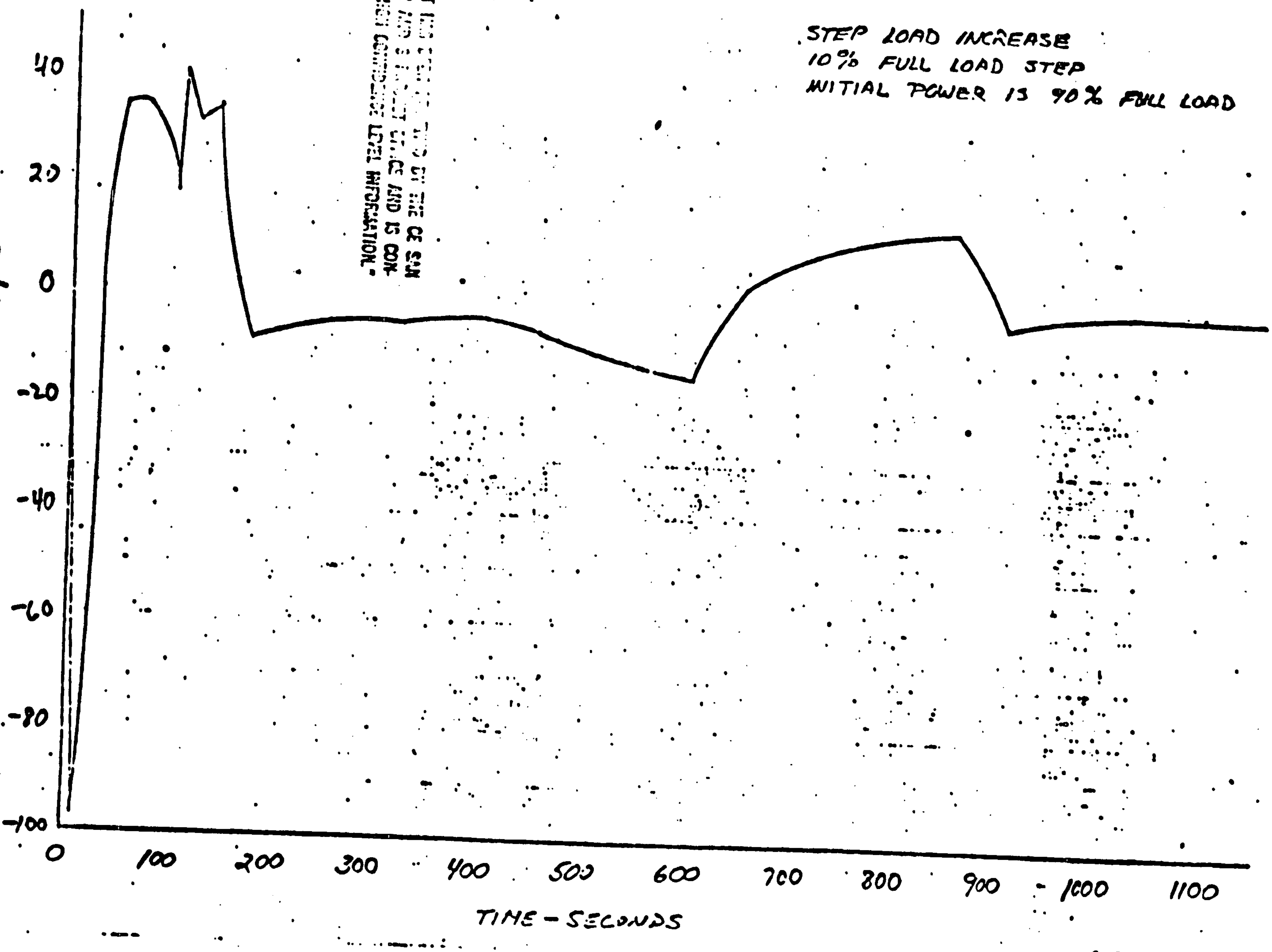


FIG 2-7

900-B-42-0

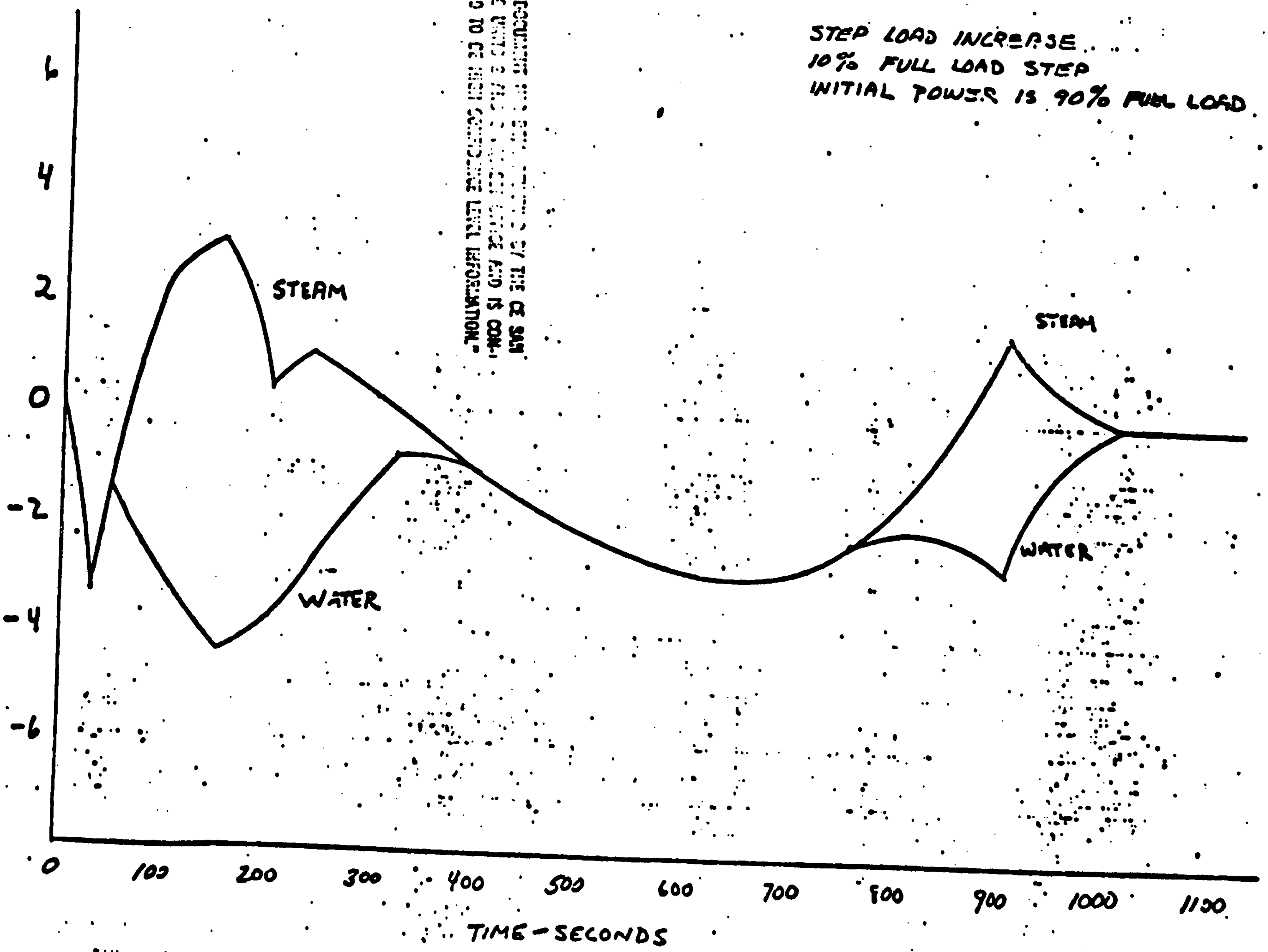


FIG 2-5

0-42-8-006

STEP LOAD DECREASE
10% FULL LOAD STEP
INITIAL POWER IS 100% FULL LOAD

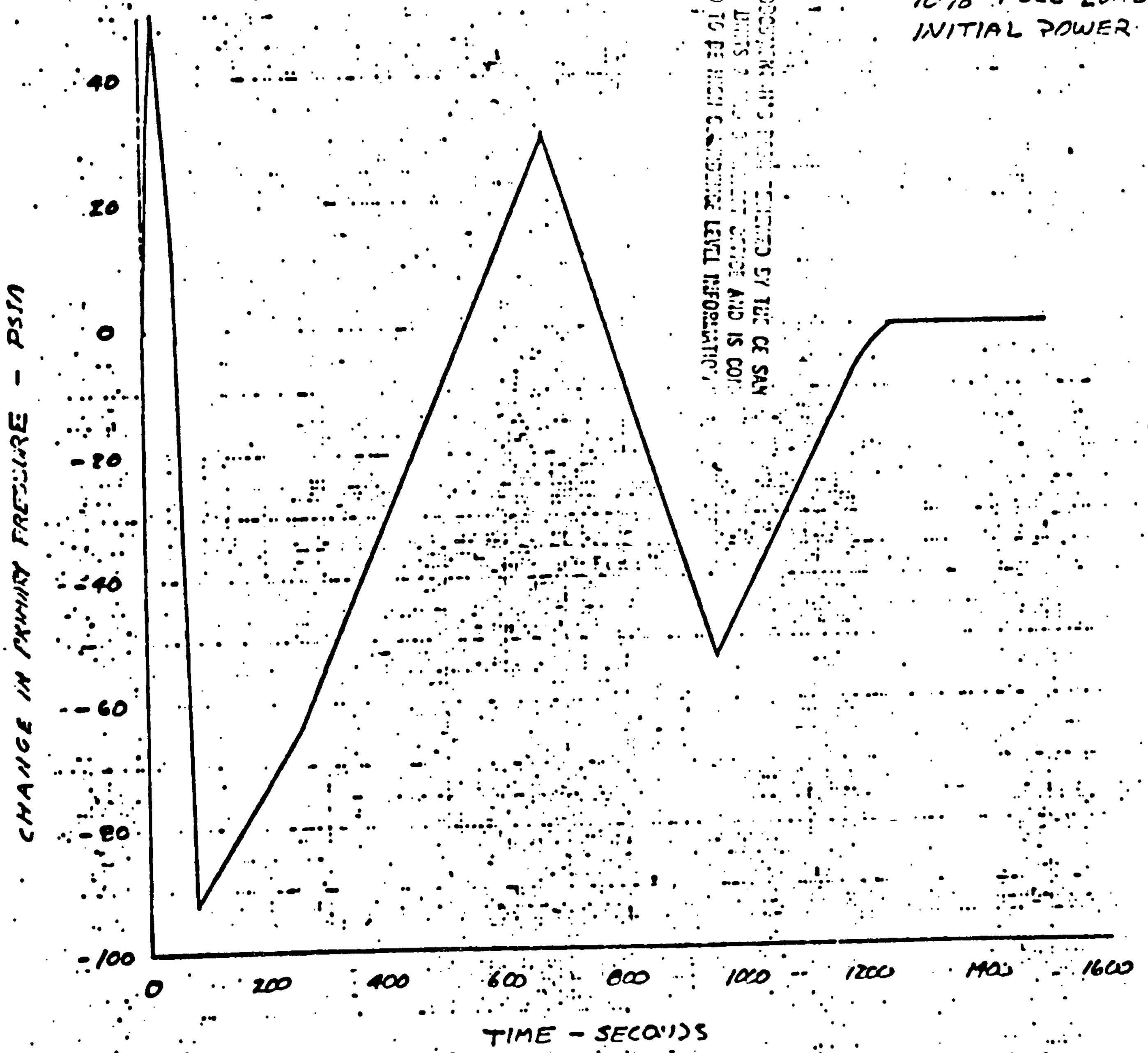


FIG 3-1

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ESH 2-11-71

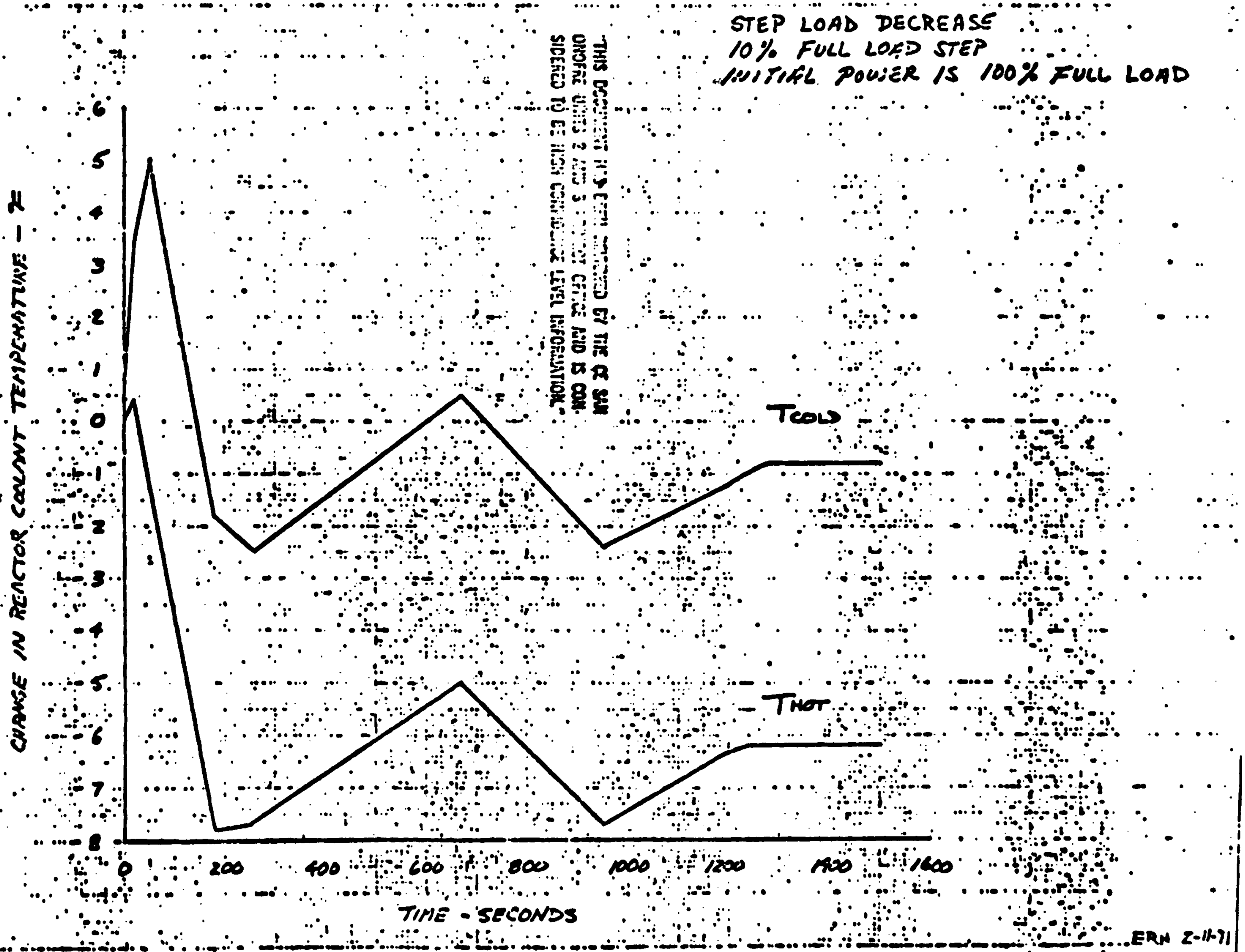

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FIG 3-2

900-B-42-0

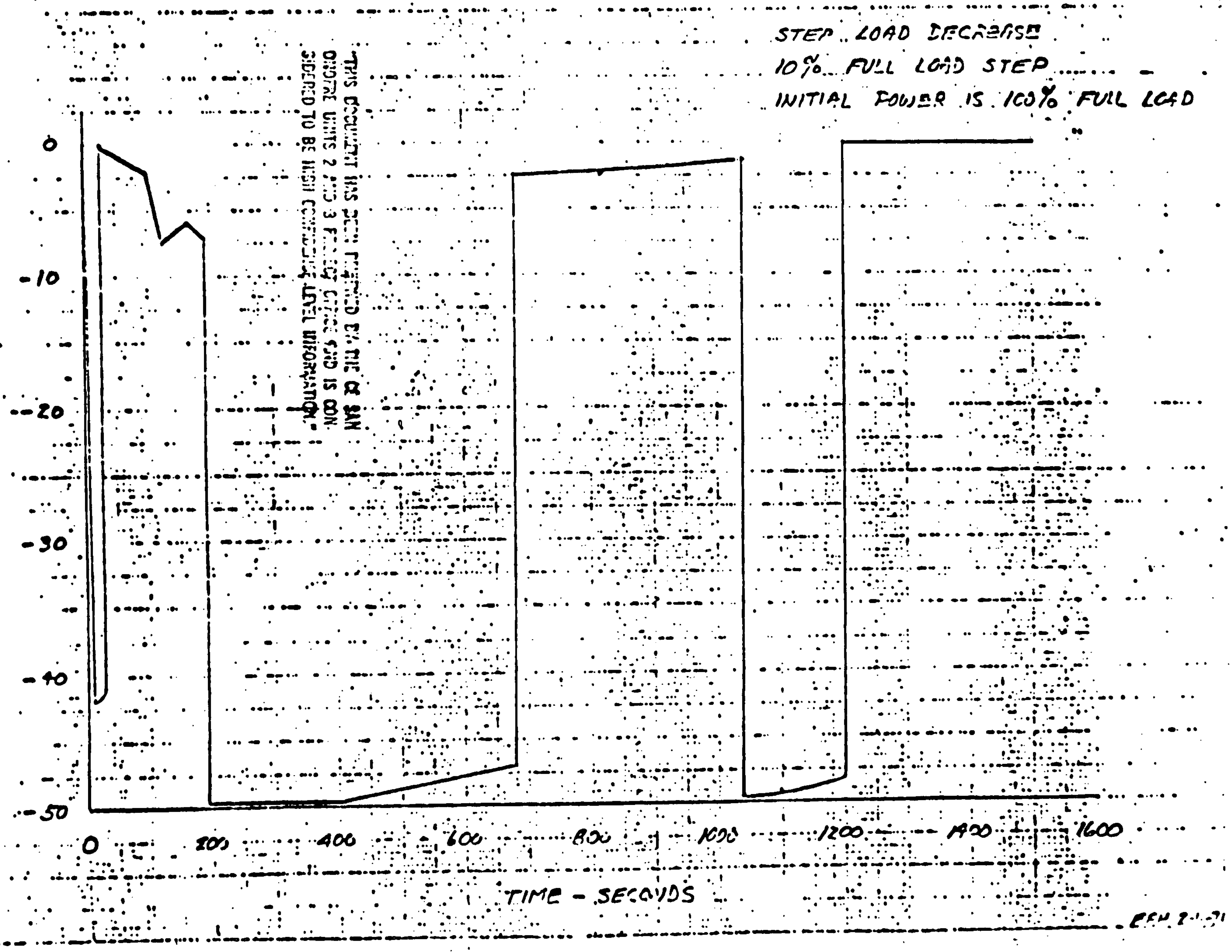

FIG 3-3

EFH 2-1-71

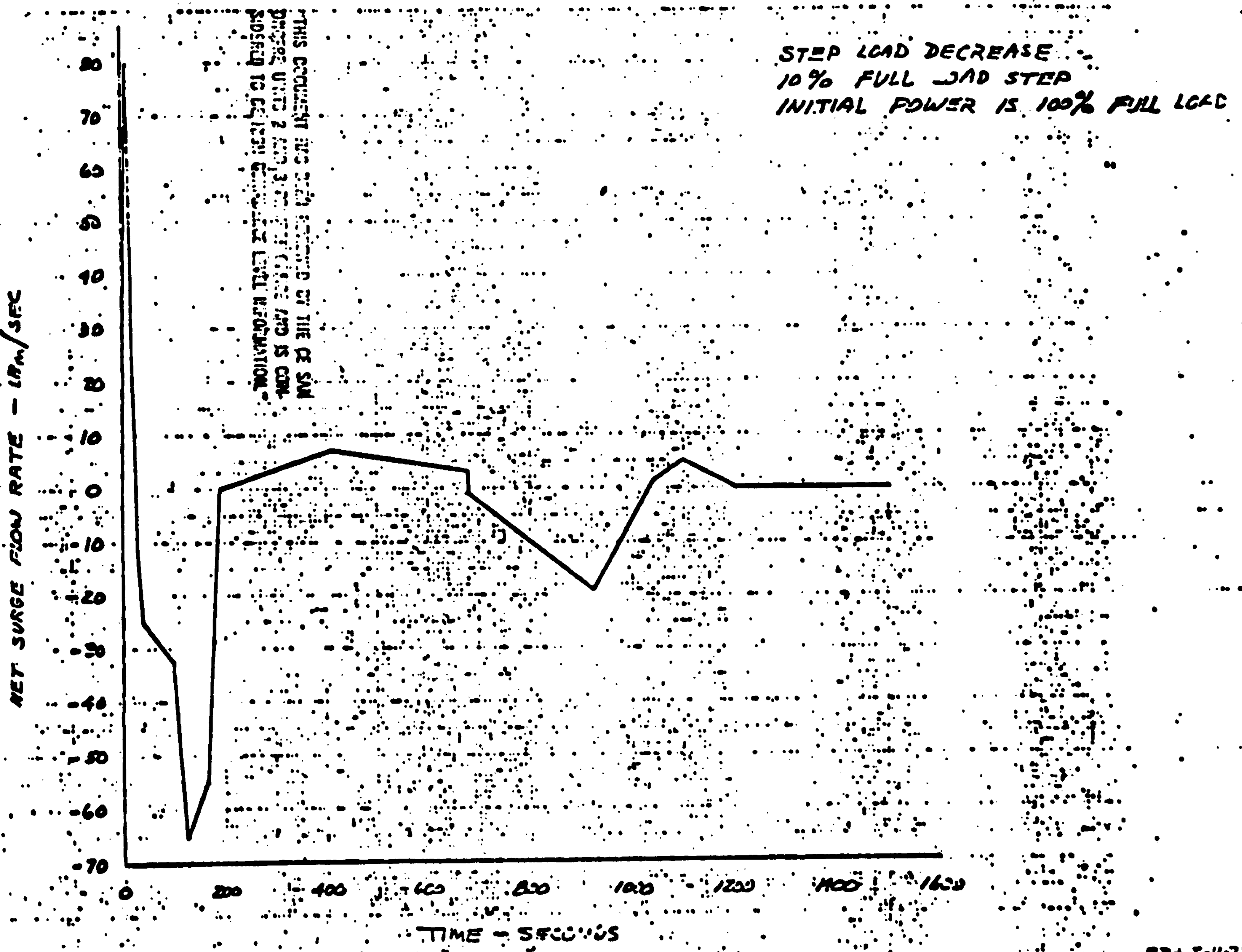

FIG 3-7

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900-B-42-0

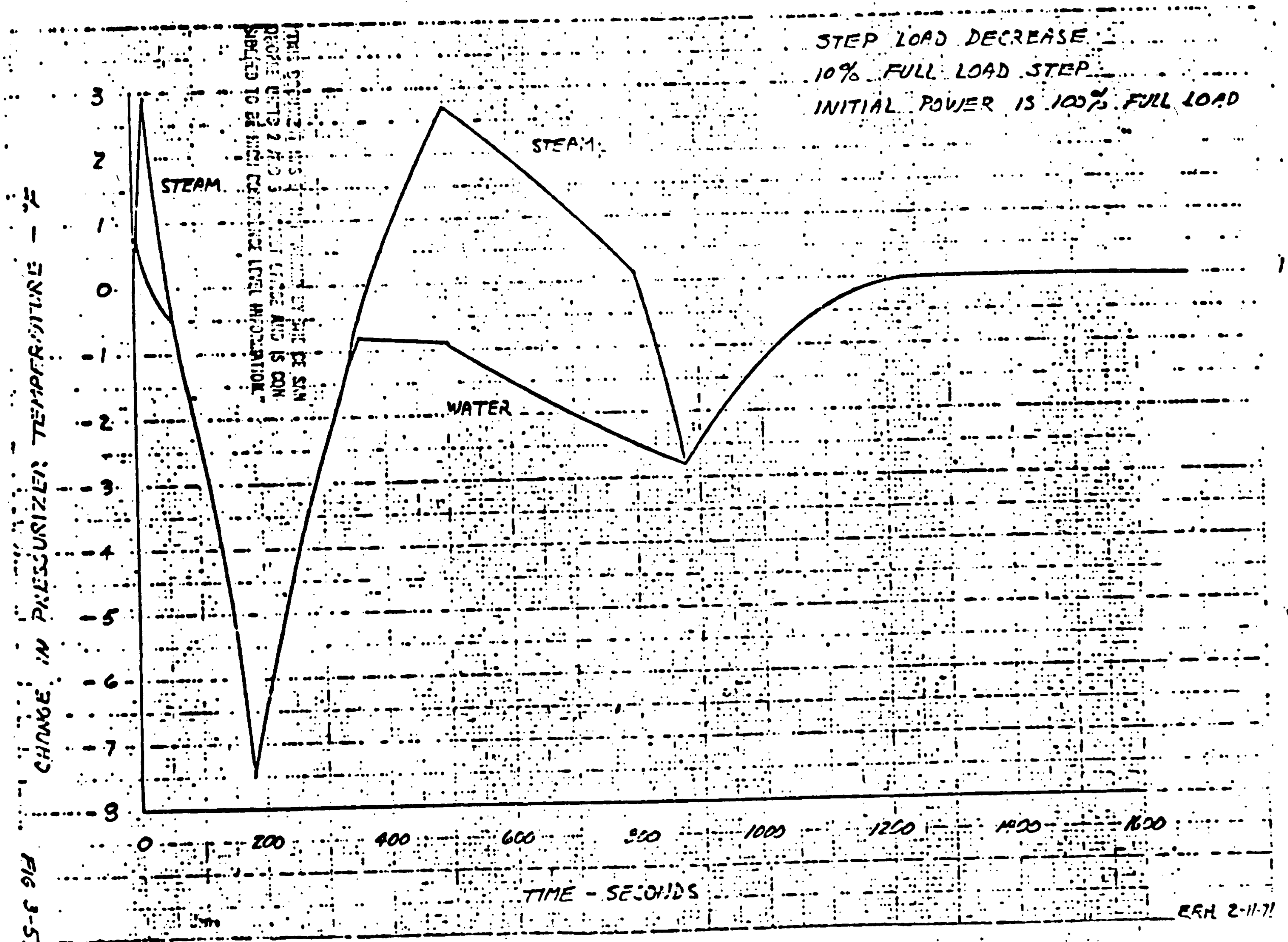

FIG 3-5

ERH 2-11-71

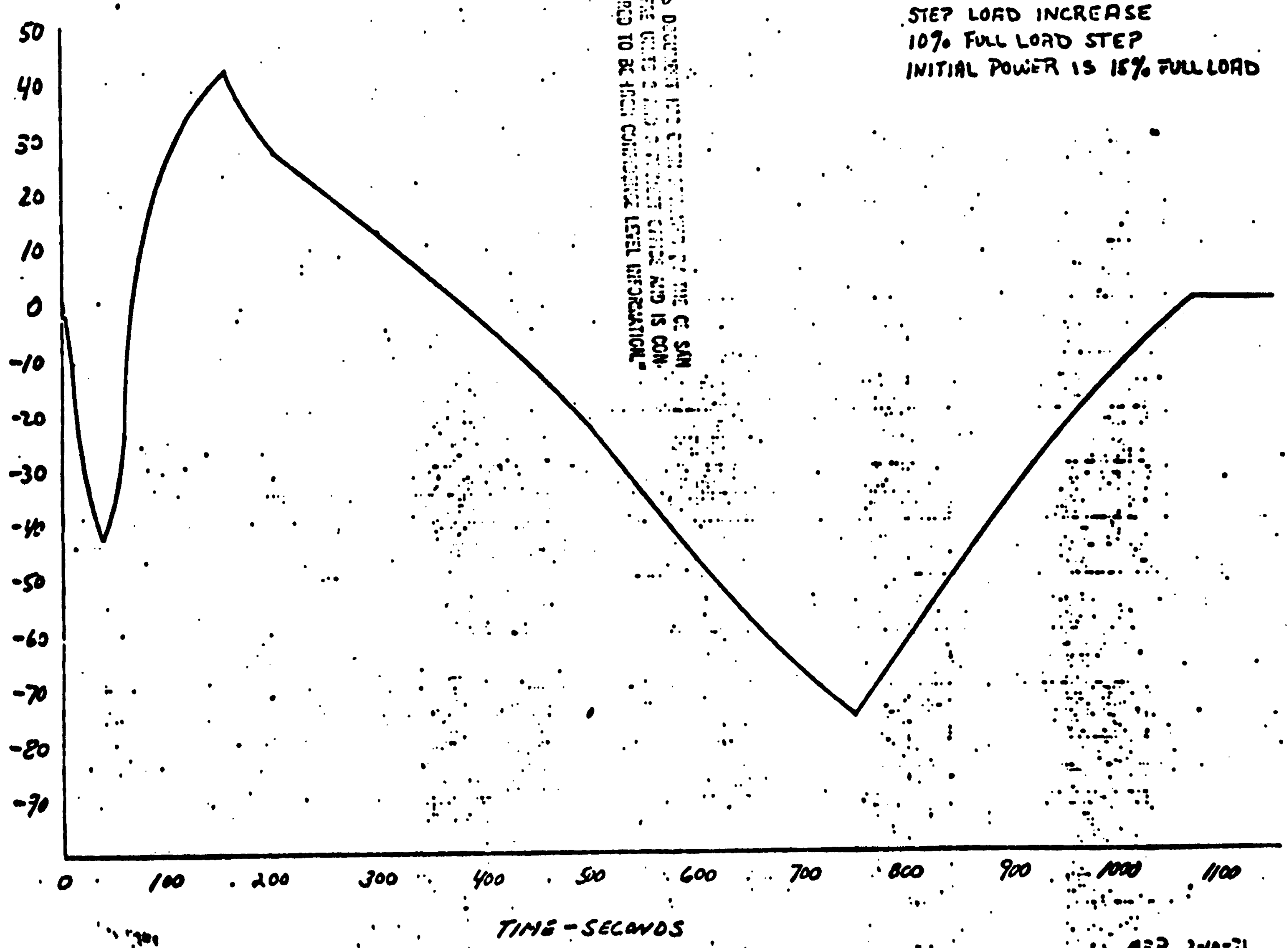

FIG 11-1

900-13-42-0

CHANGE IN REACTOR COOLANT TEMPERATURE - °F

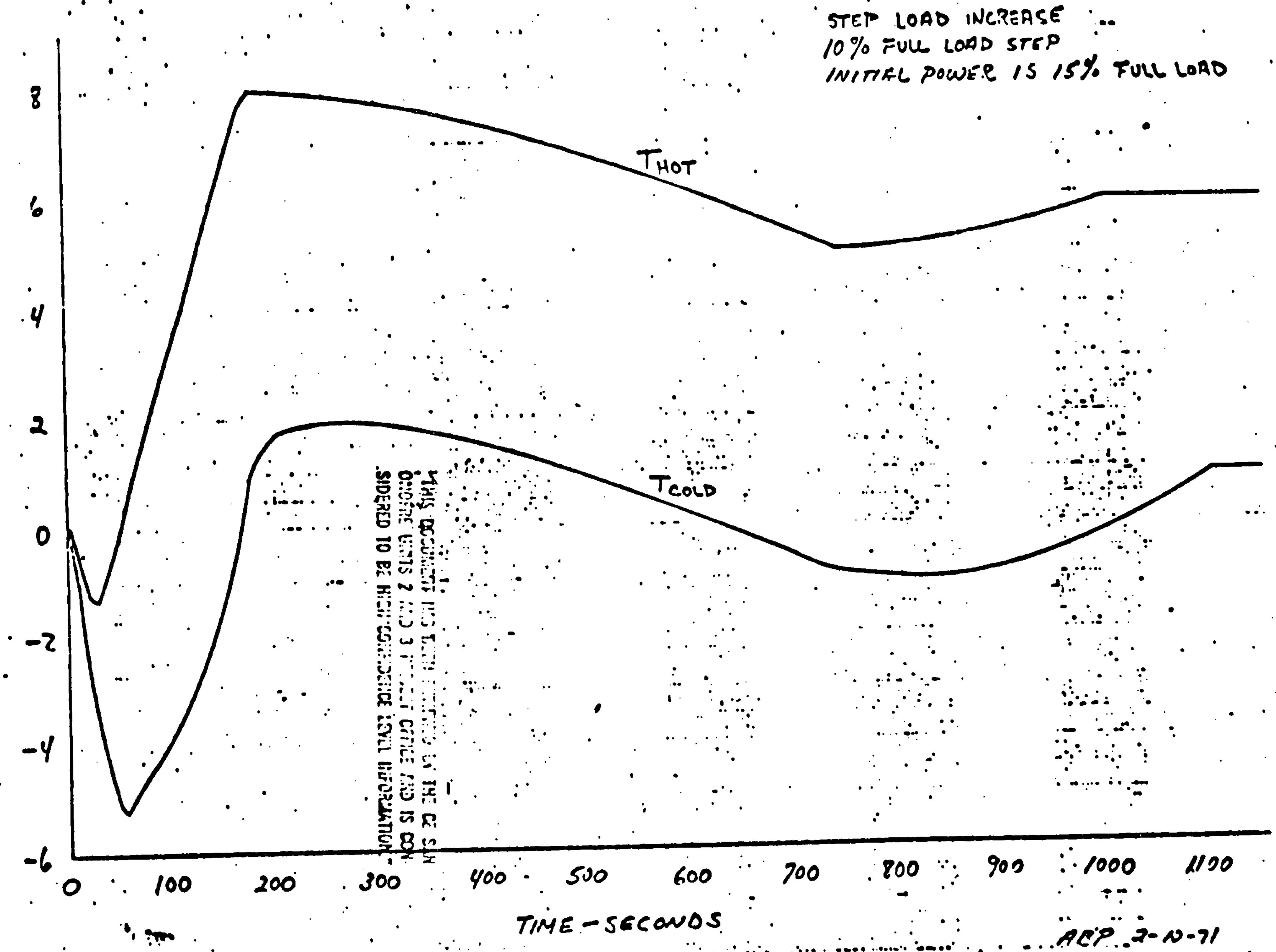

FIG 4-2

900-B-42-0

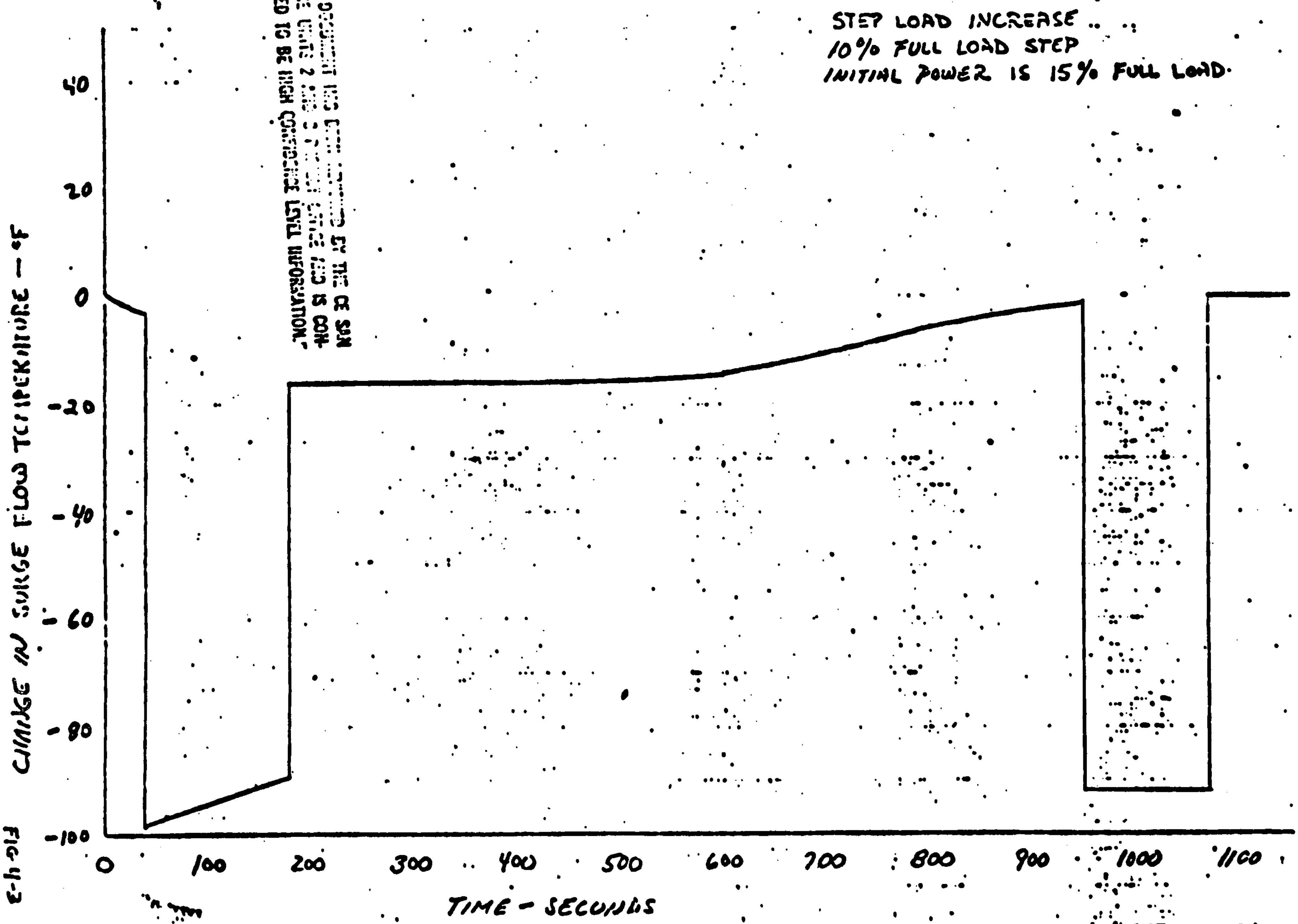

FIG 4-3

900-8-42-0

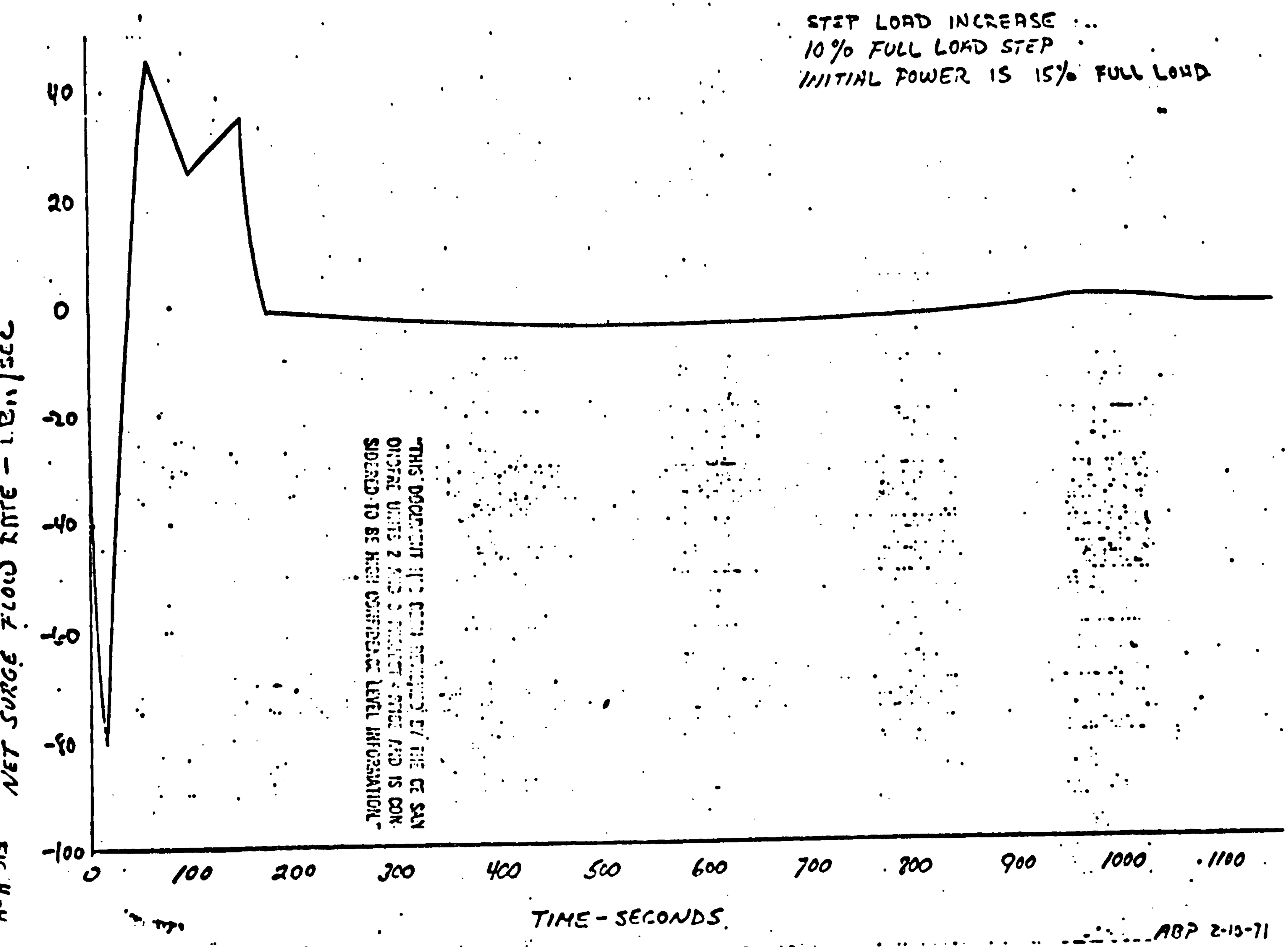

FIG 4-4

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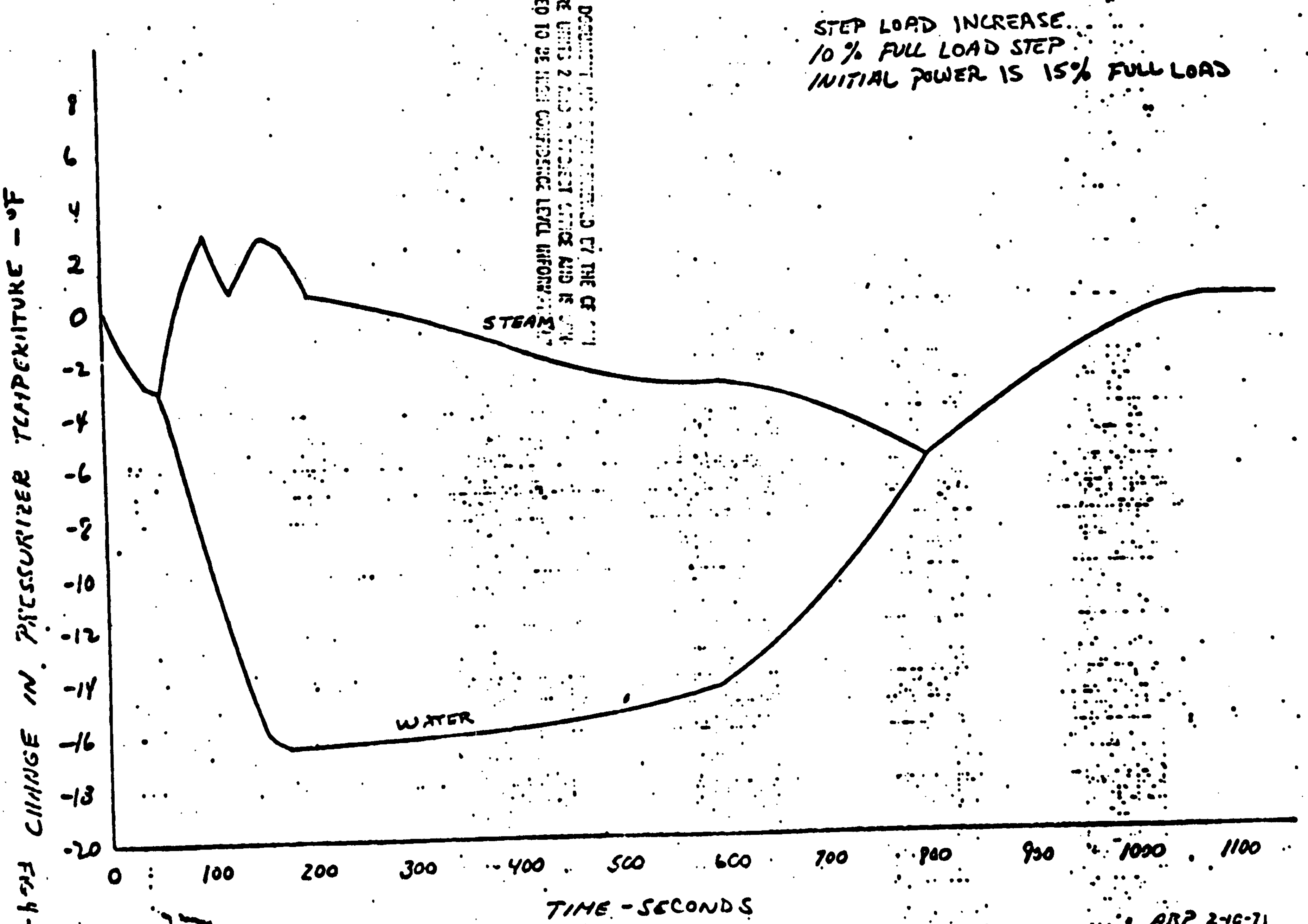

Fig 4-5

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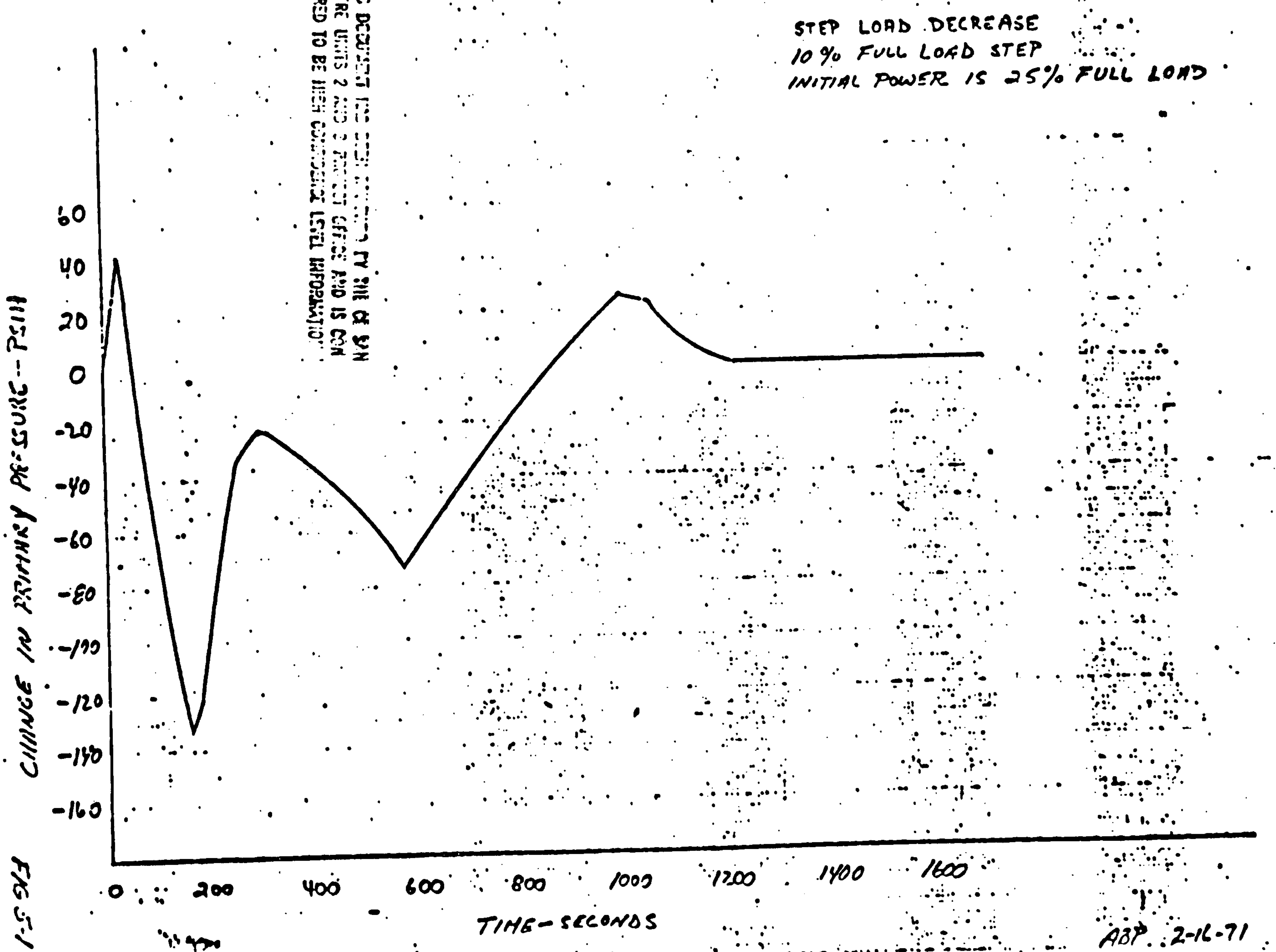

FIG 5-1

900-B-42-0

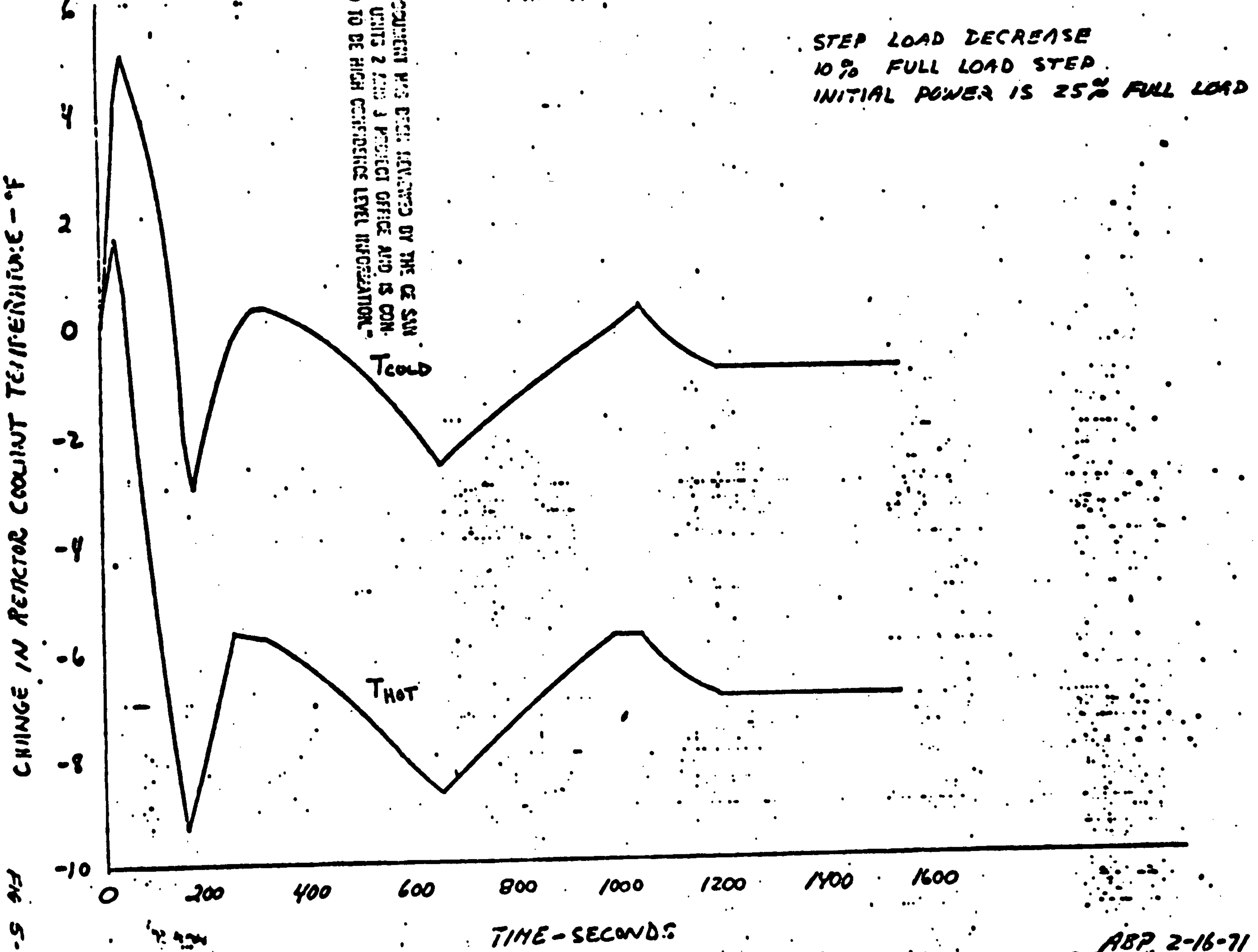

Fig 5-2

900-B-42-0

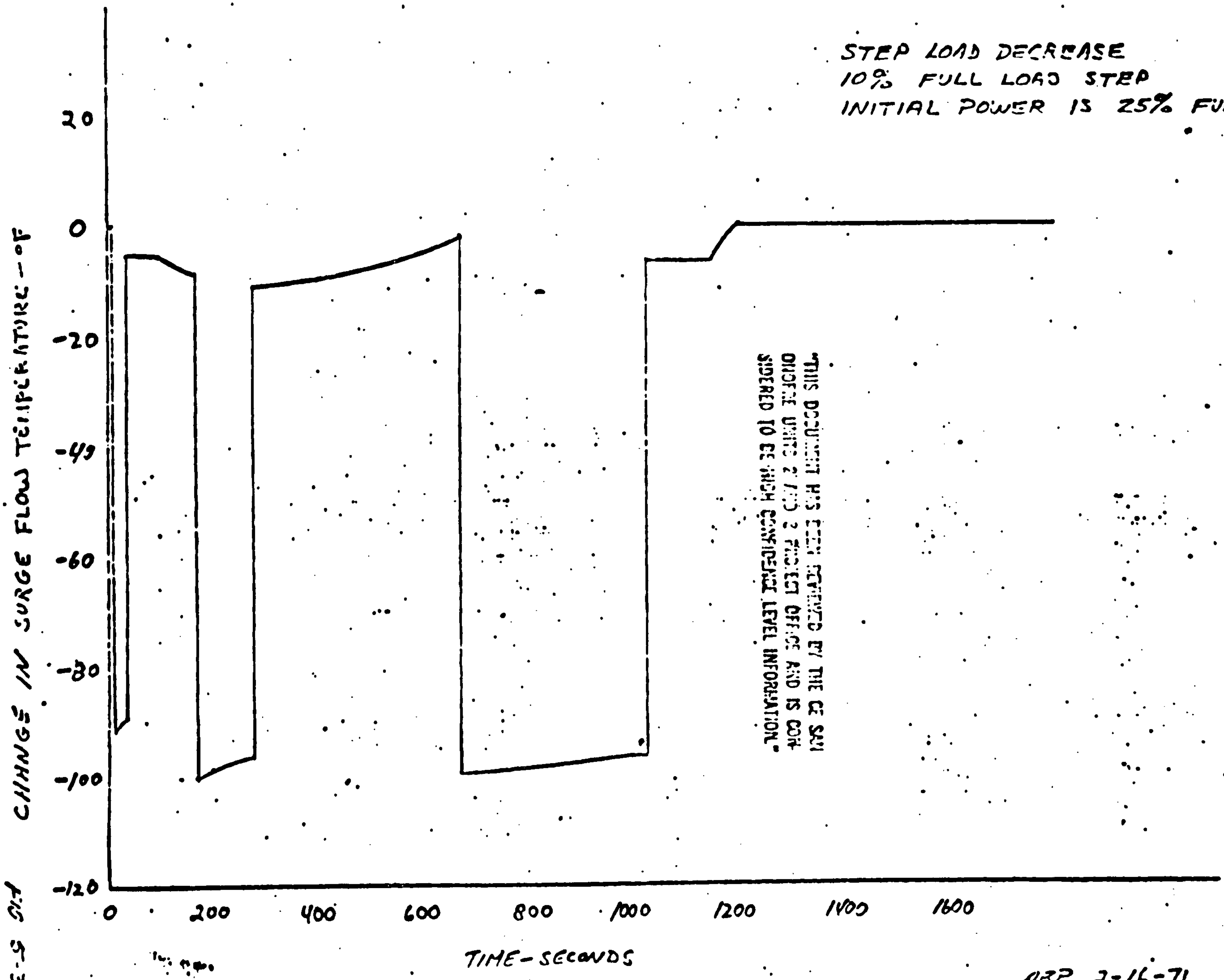

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FIG 5-3

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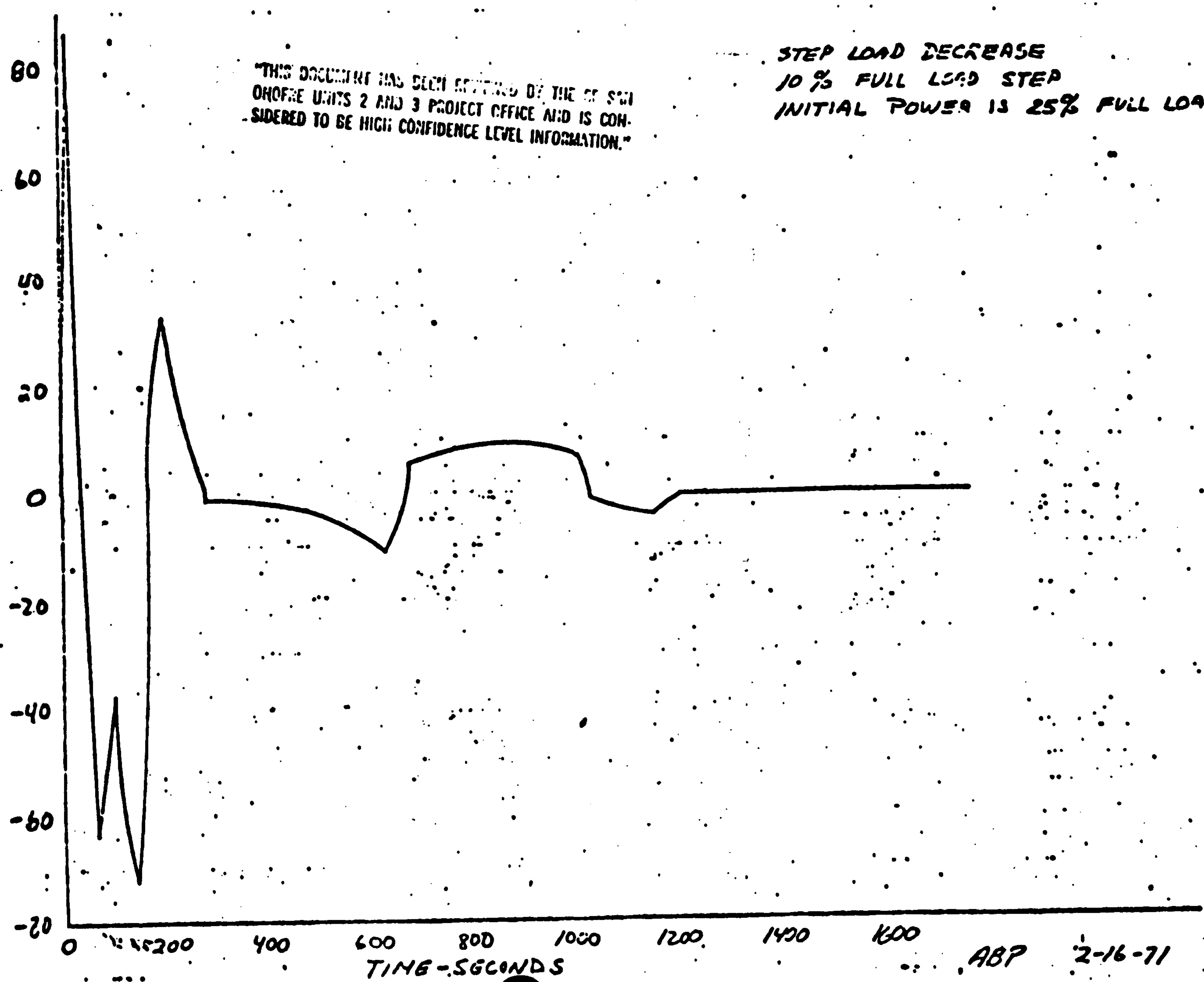

STEP LOAD DECREASE
10 % FULL LOAD STEP
INITIAL POWER IS 25% FULL LOAD
NET SURGE FLOW RATE - LBm/SEC
80
60
40
20
0
-20
-40
-60
-80
0
200
400
600
800
1000
1200
1400
1600
TIME - SECONDS
ABP 2-16-71

900-8-42-0

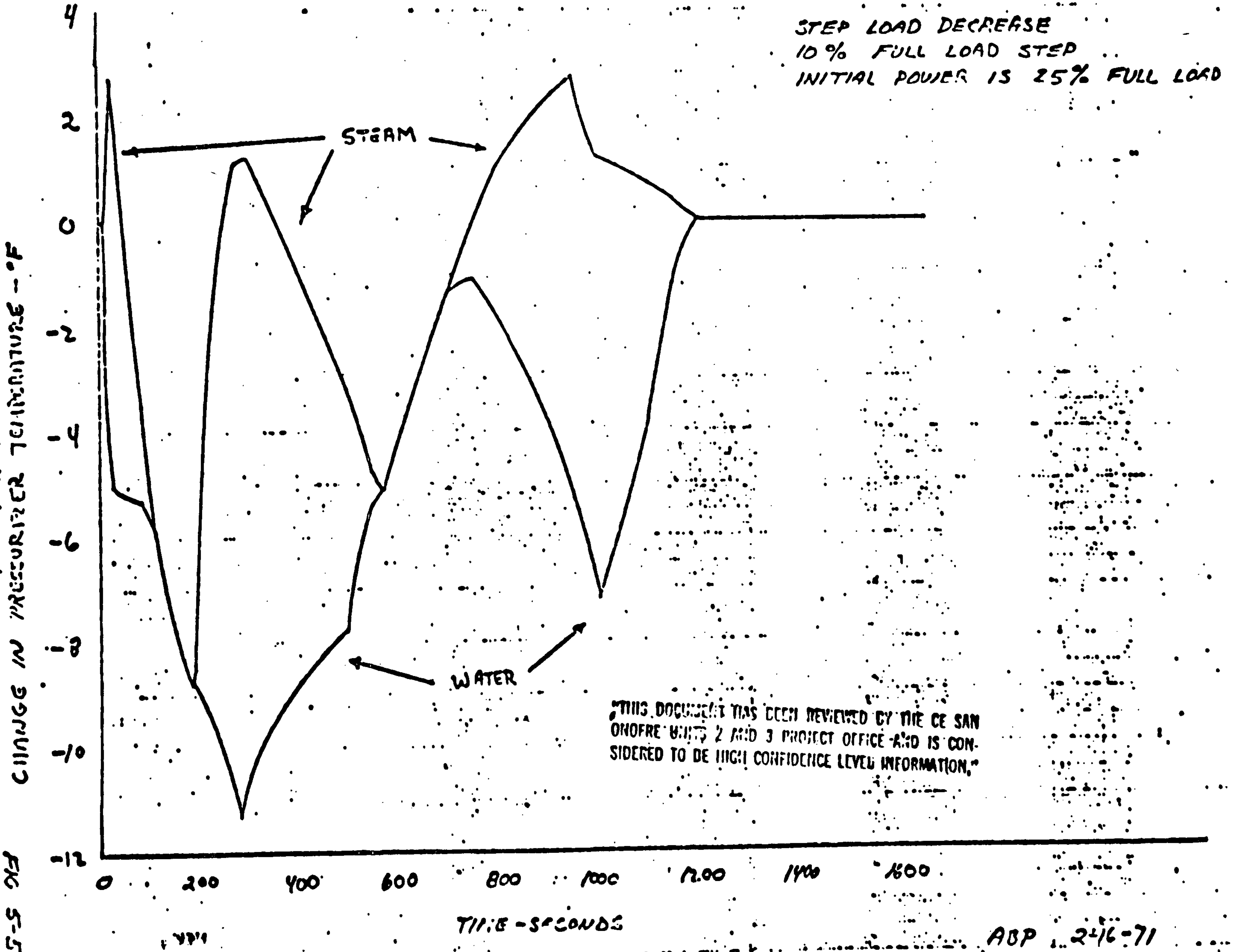
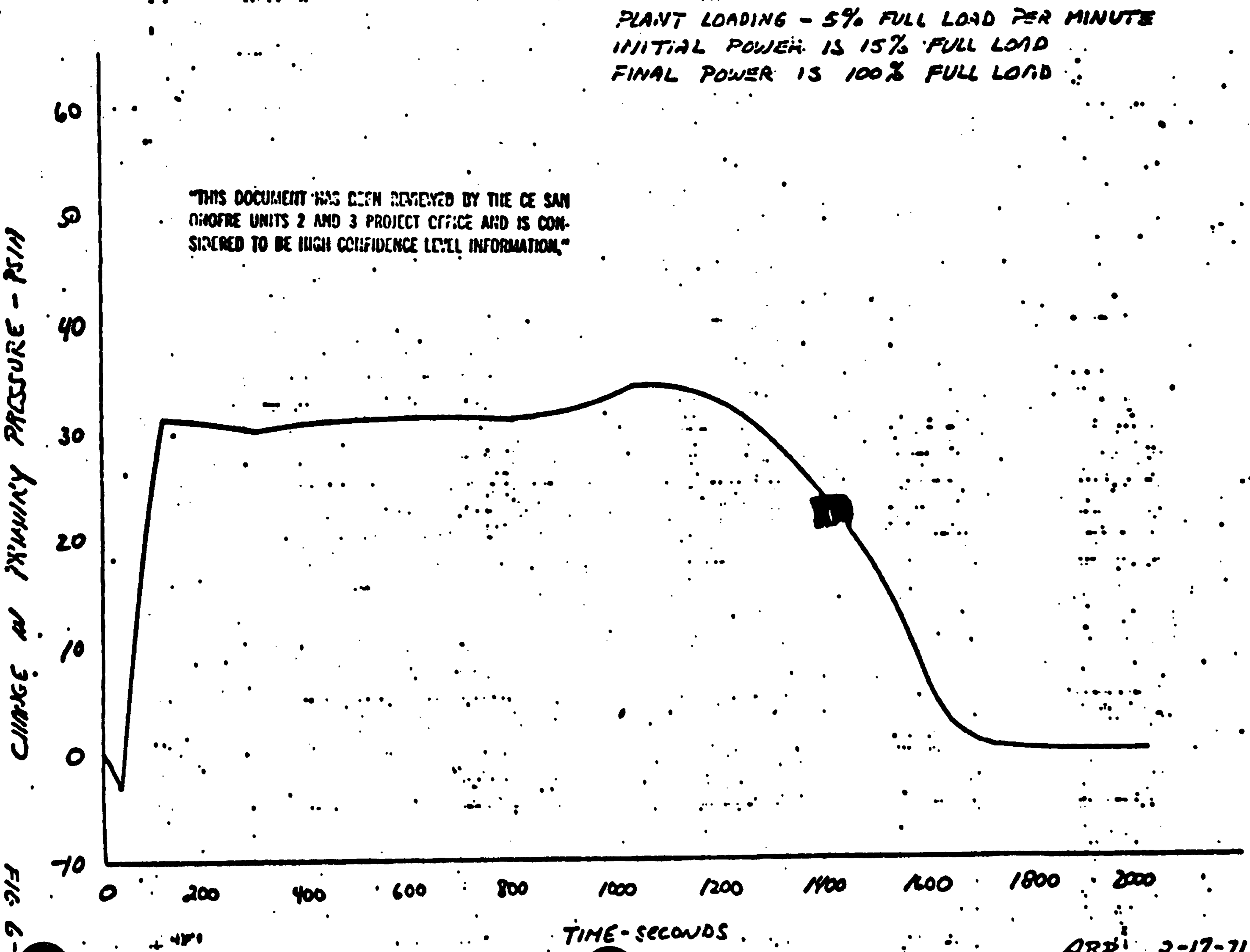


FIG 5-5

900-13-42-0

"THIS DOCUMENT HAS BEEN REVIEWED BY THE CE SAN ONOFRE UNITS 2 AND 3 PROJECT OFFICE AND IS CONSIDERED TO BE HIGH CONFIDENCE LEVEL INFORMATION."



ABP 2-17-71

FIG 6-1

900-B-42-0

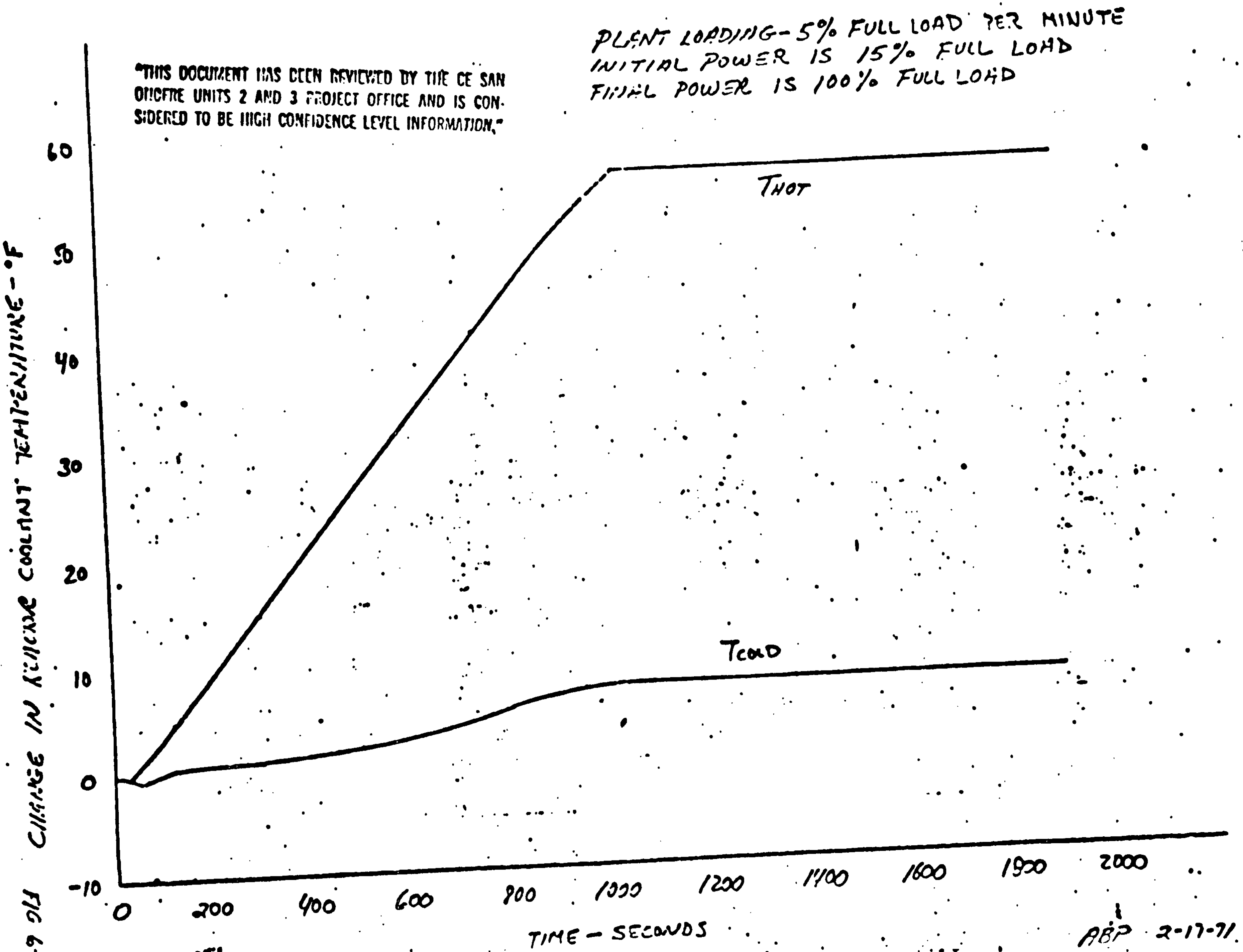


FIG 6-2

900-B-42-0

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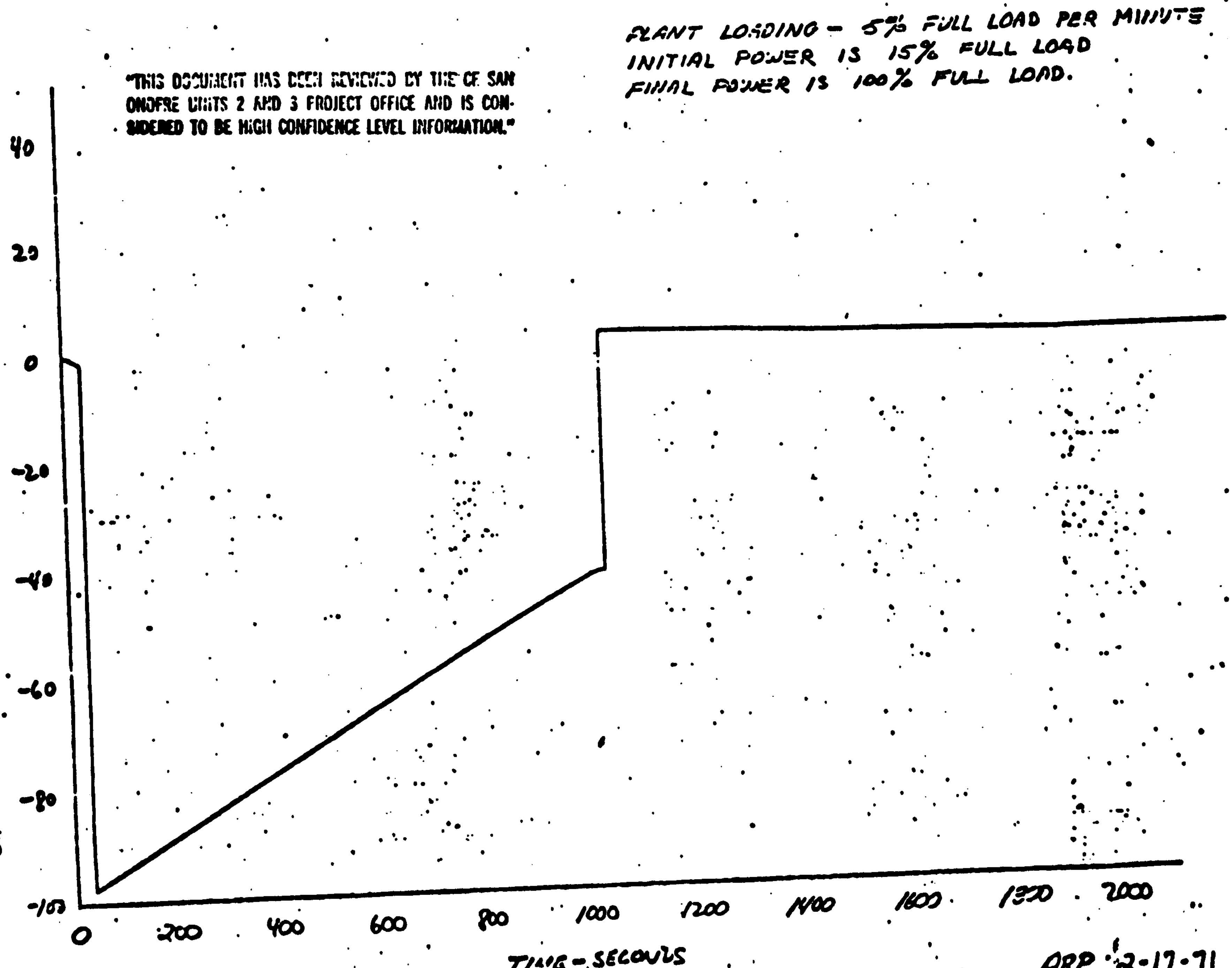

ABP 2-17-71

FIG 6

900-13-42-0

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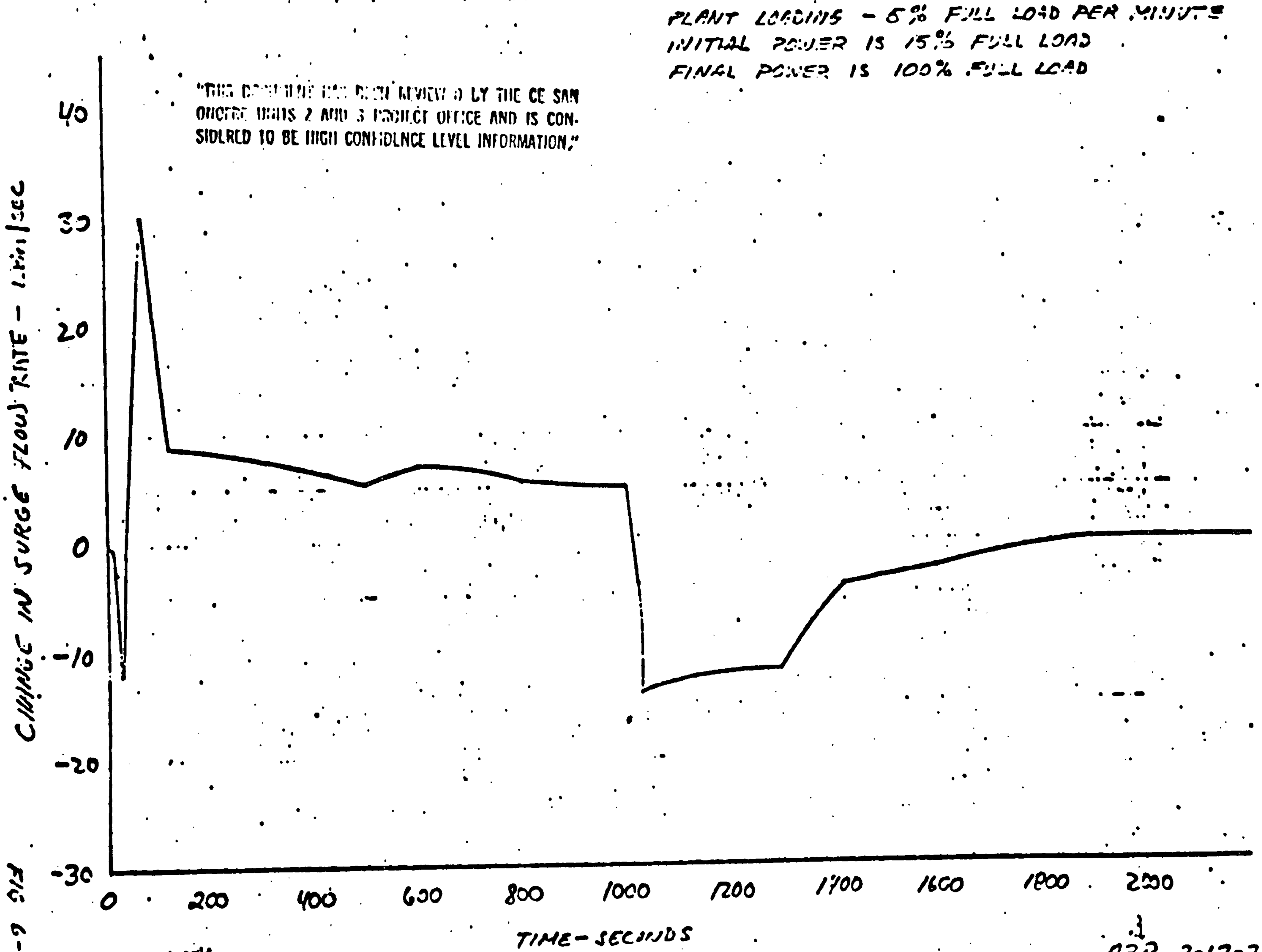

ARP 2-17-71

FIG 6-4

900-B-42-0

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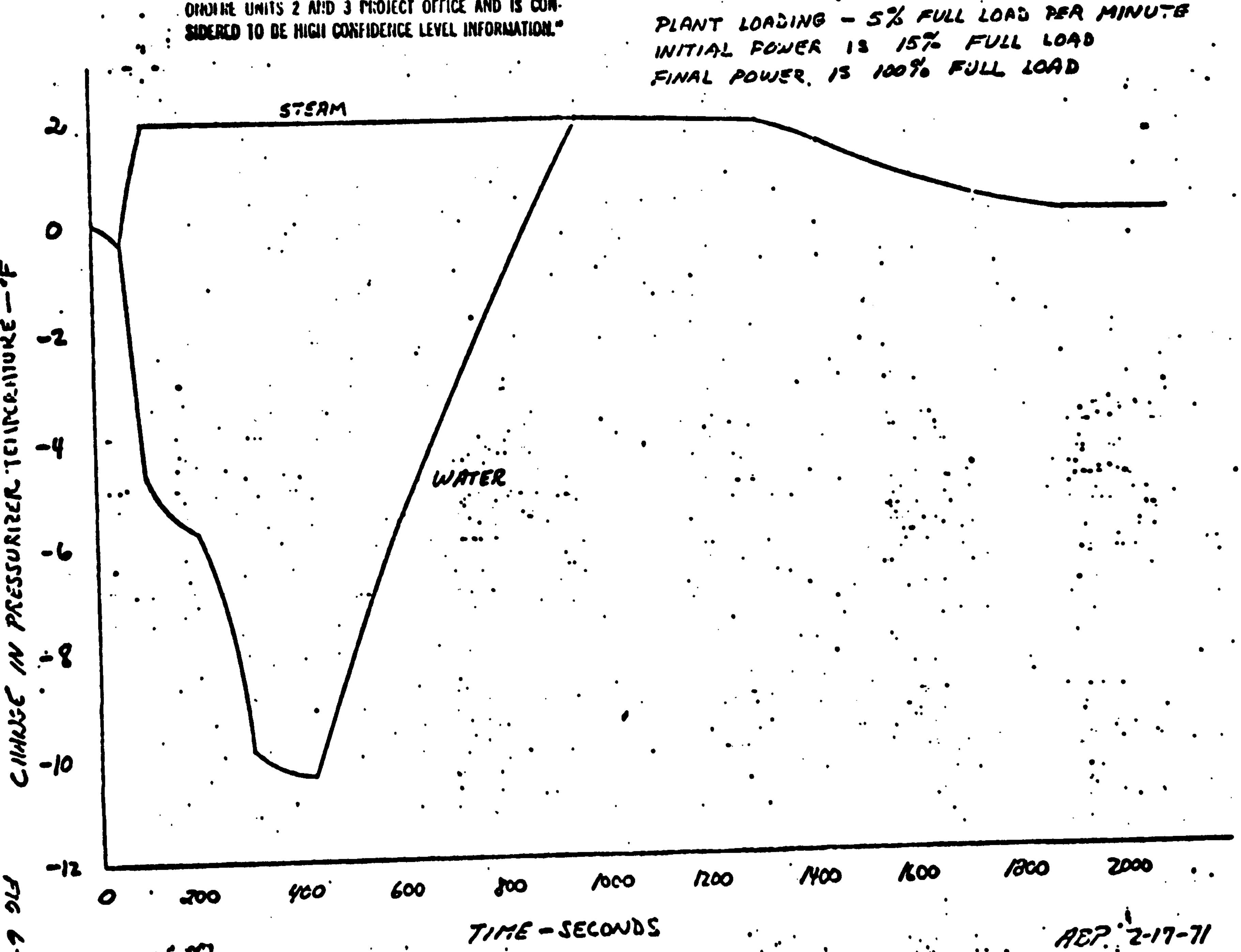

FIG 6-5

AEP 2-17-71

900-B-42-0

"THIS DOCUMENT HAS BEEN REVIEWED BY THE CE SAN ONOFRE UNITS 2 AND 3 PROJECT OFFICE AND IS CONSIDERED TO BE HIGH CONFIDENCE LEVEL INFORMATION."

PLANT UNLOADING - 5% FULL LOAD PER MINUTE
INITIAL POWER IS 100% FULL LOAD
FINAL POWER IS 15% FULL LOAD

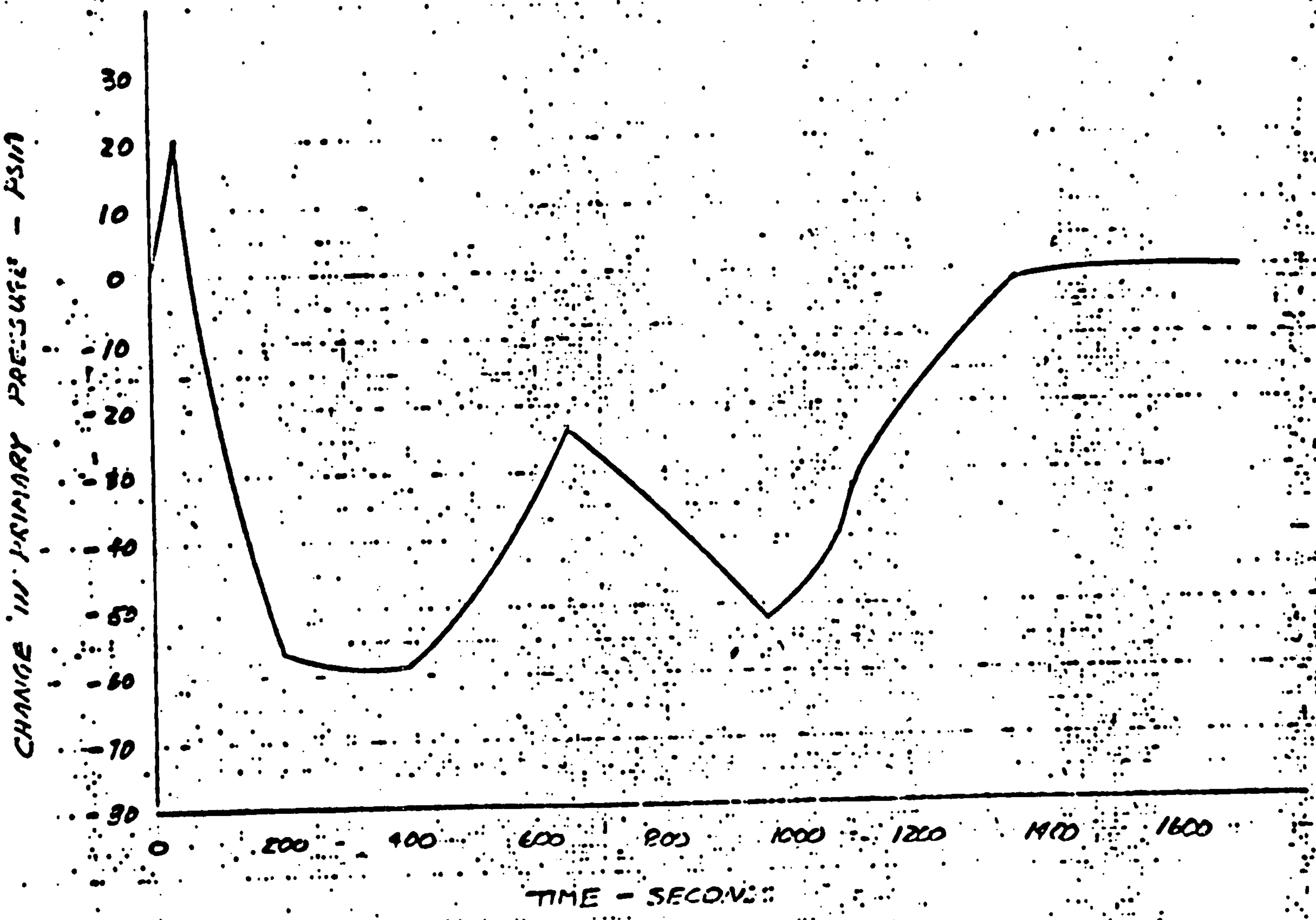

FIG. 7-1

900-B-42-0

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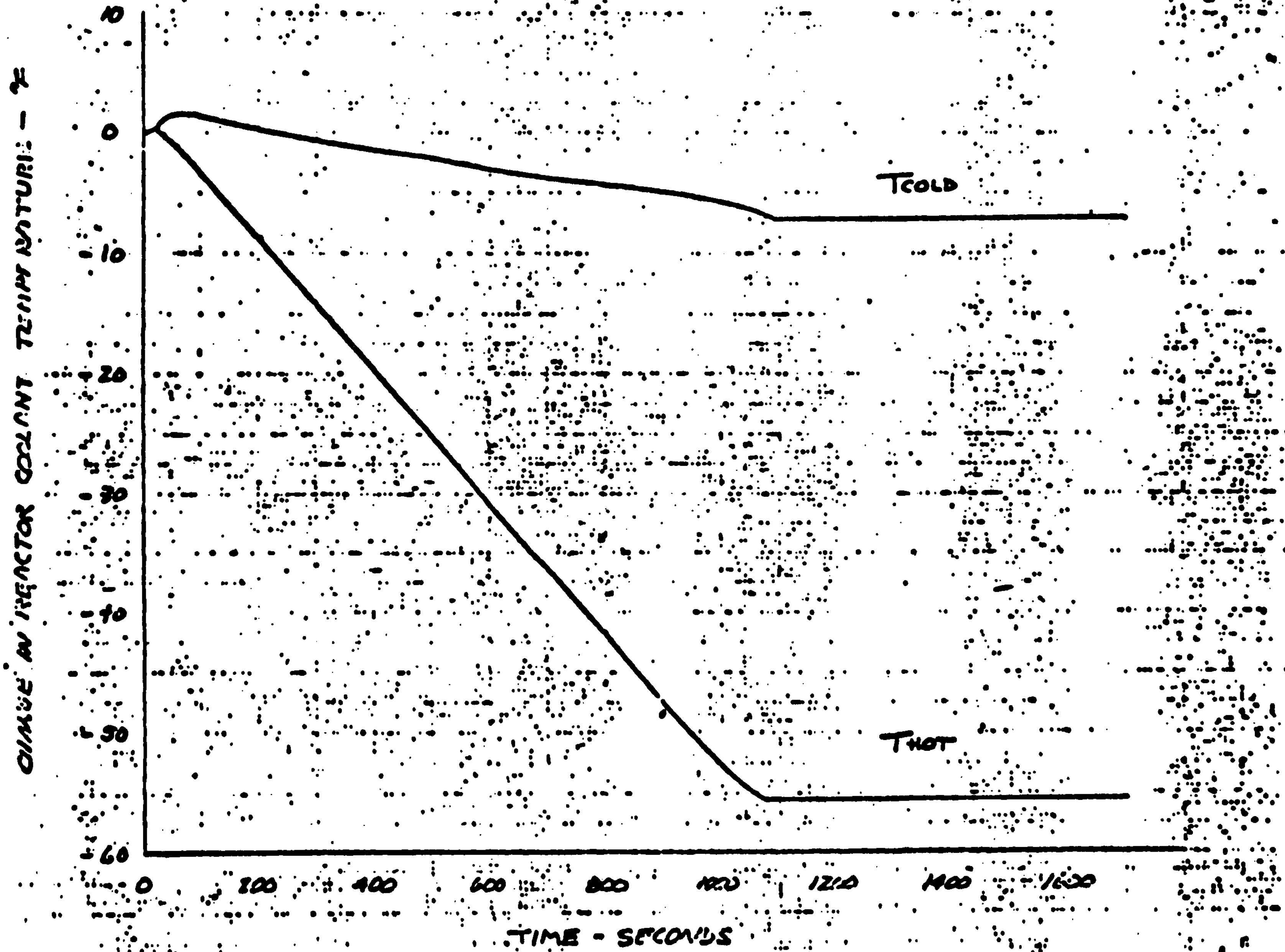
PLANT UNLOADING – 5% FULL LOAD PER MINUTE
INITIAL POWER IS 100% FULL LOAD.
FINAL POWER IS 15% FULL LOAD



ERN 2-17-71

FIG 7-2

900-B-42-0

30

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PLANT UNLOADING — 5% FULL LOAD PER MINUTE
INITIAL POWER IS 100% FULL LOAD
FINAL POWER IS 15% FULL LOAD

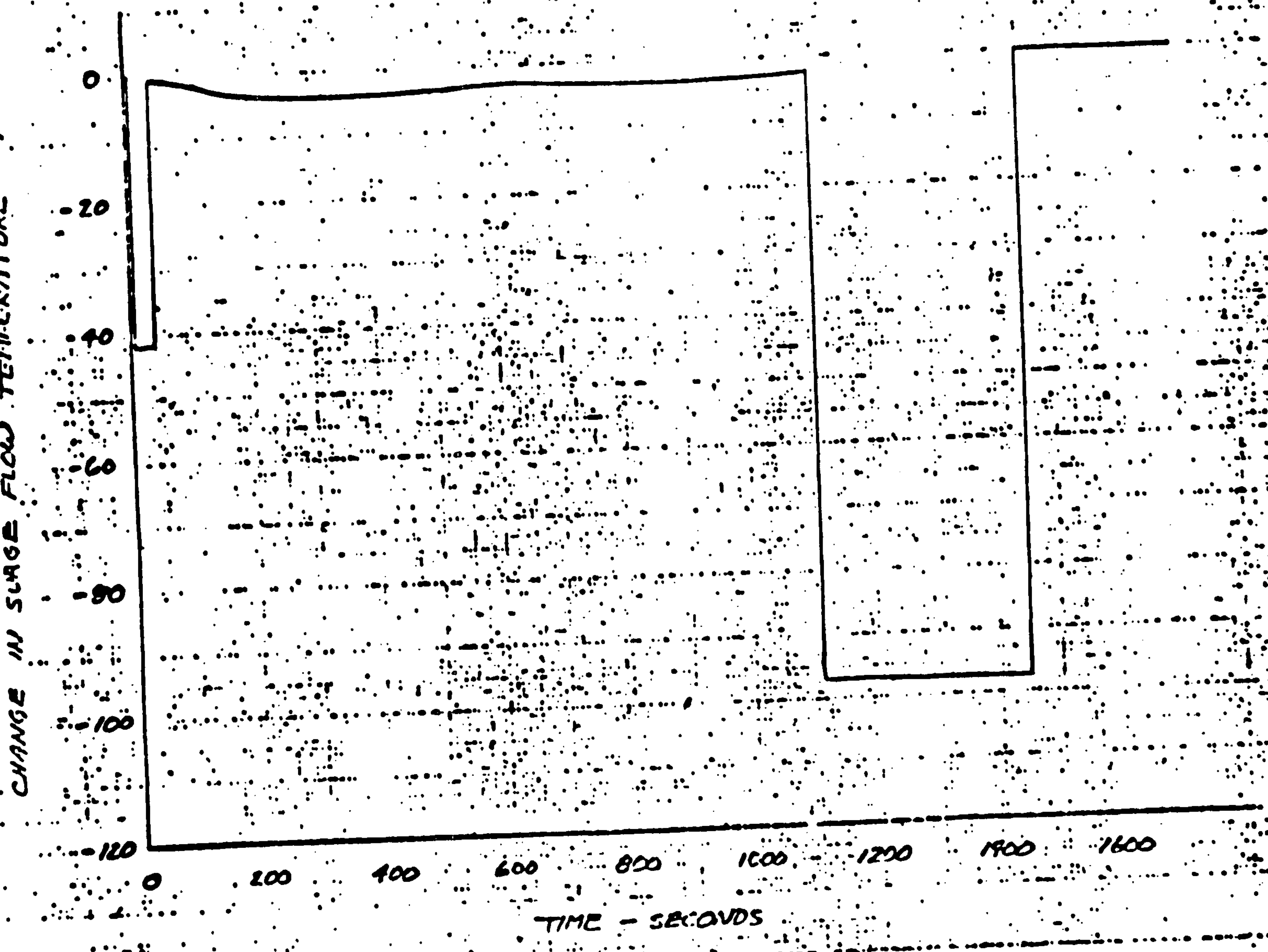

FIG 7-3

900-8-42-0

BRN 3-17-71

PLANT UNLOADING - 5% FULL LOAD PER MINUTE
INITIAL POWER IS 100% FULL LOAD
FINAL POWER IS 15% FULL LOAD

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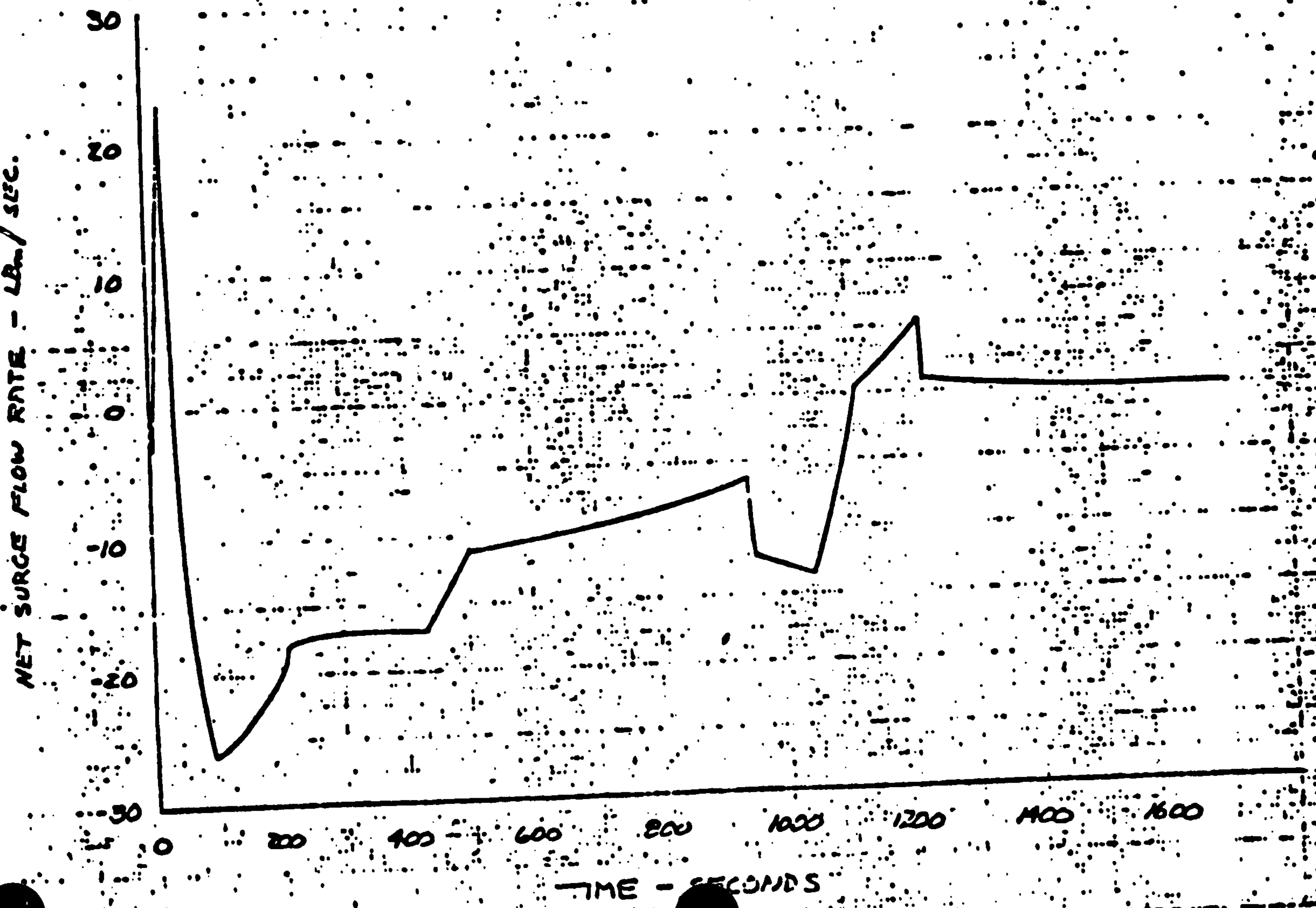

ERN 2-17-71

900-13-42-0

ANT UNLOADING – 5% FULL LOAD PER MI E
INITIAL POWER IS 100% FULL LOAD
FINAL POWER IS 15% FULL LOAD

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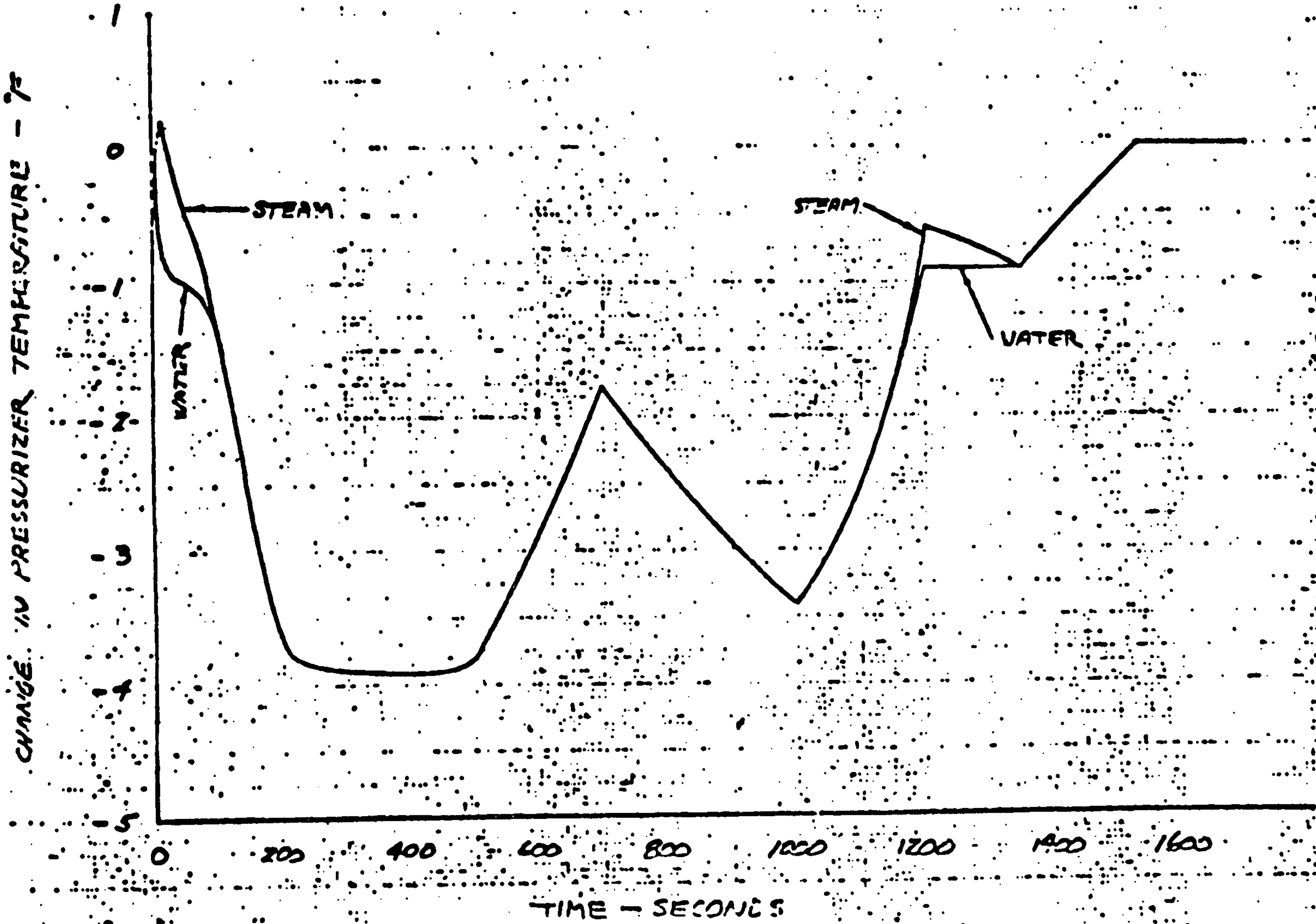

FIG 7-5

900-B-42-0

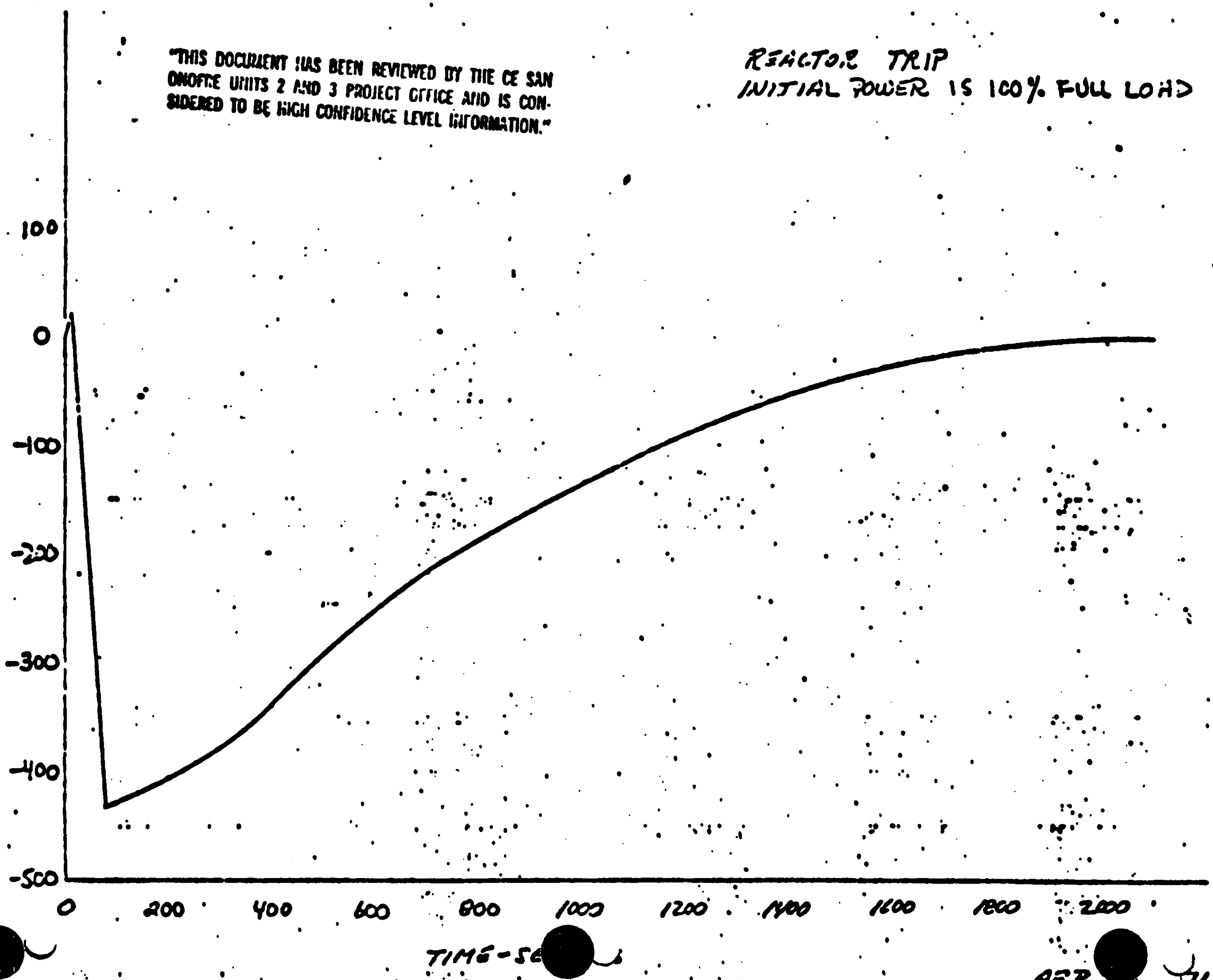

FIG 8.24

900-B-42-0

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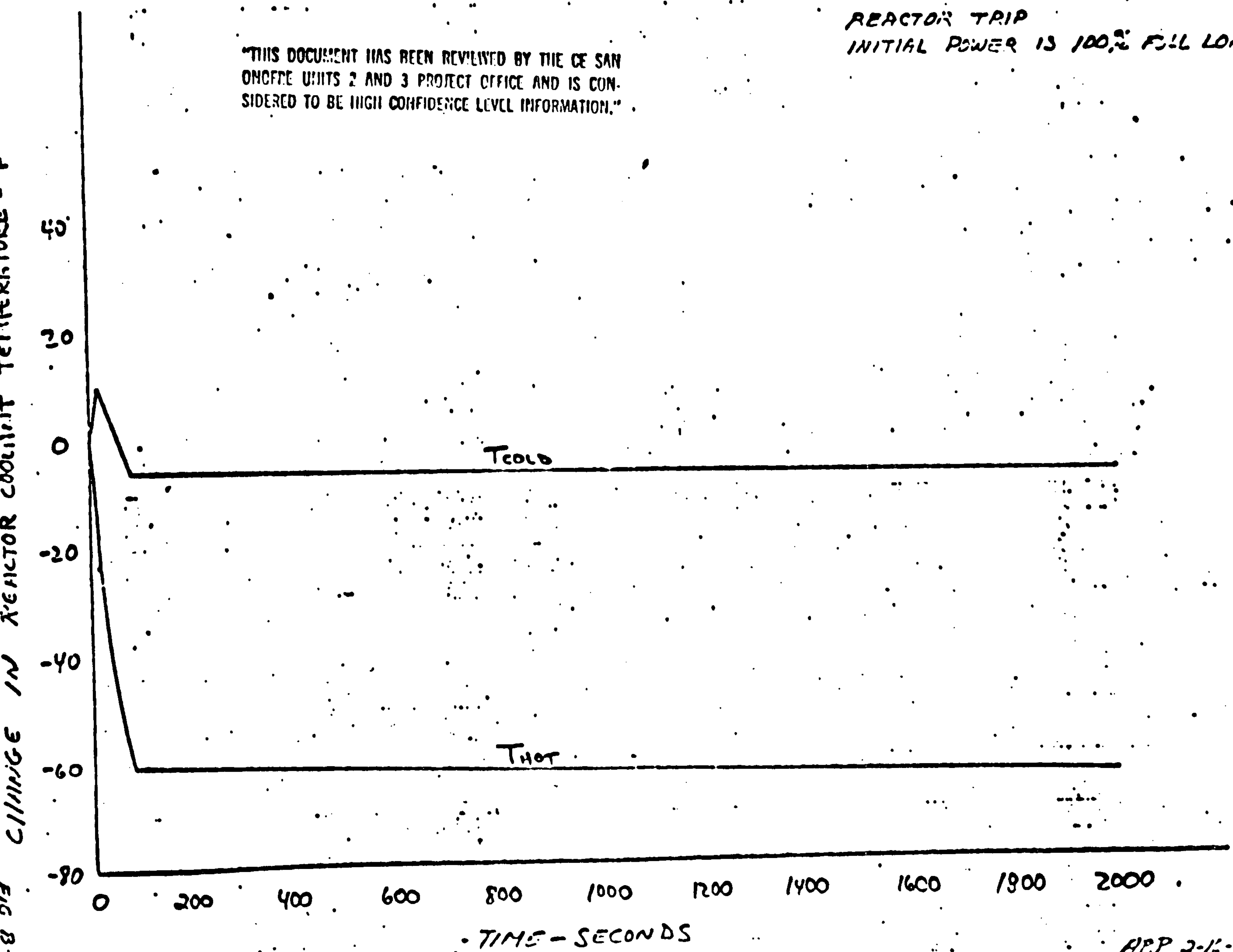

FIG B-2

900-B-42-0

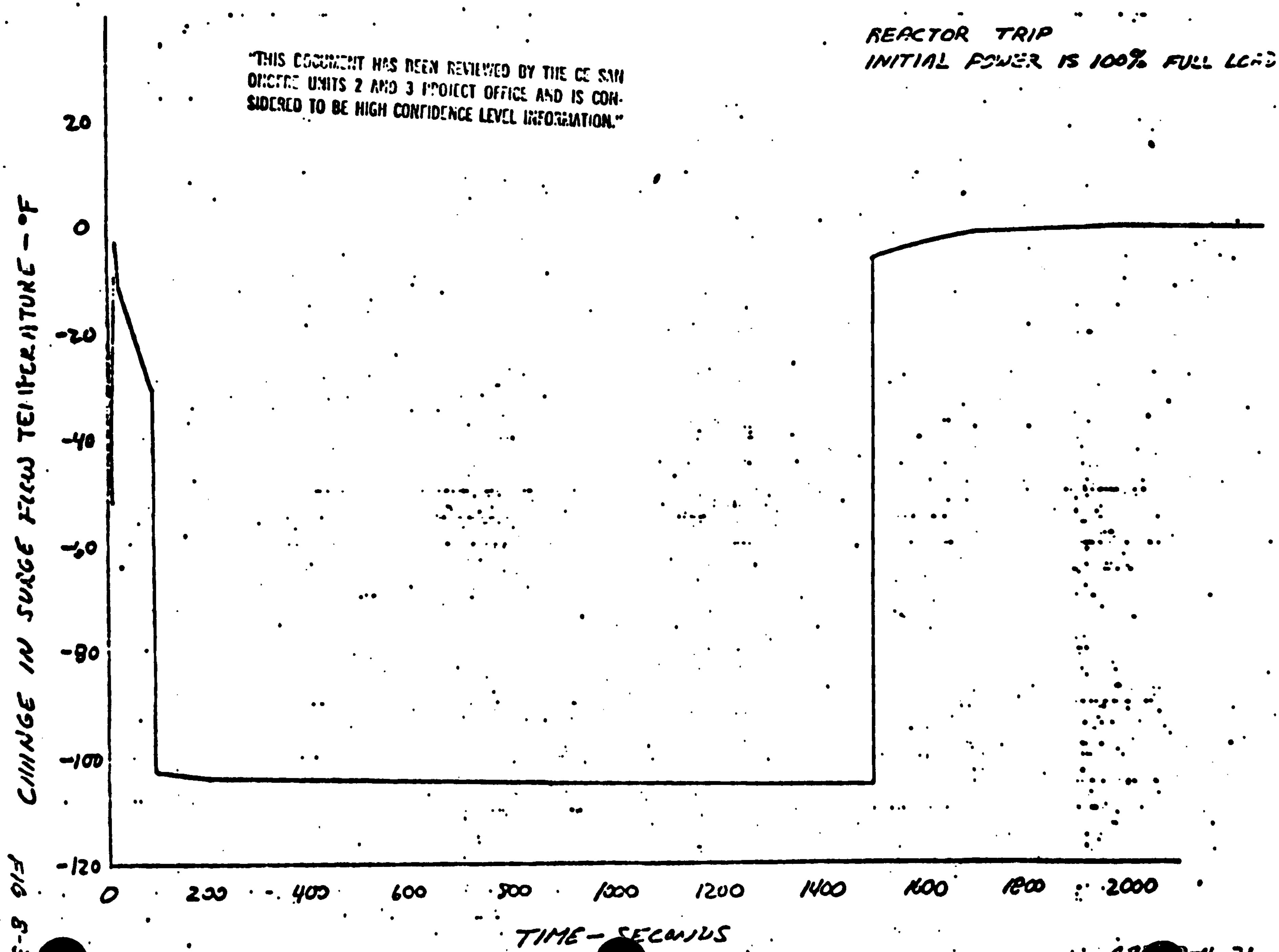

FIG 8-3

900-B-42-0

AB -71

"THIS DOCUMENT HAS BEEN REVIEWED BY THE CE SAN ONOFRE UNITS 2 AND 3 PROJECT OFFICE AND IS CONSIDERED TO BE HIGH CONFIDENCE LEVEL INFORMATION"

REACTOR TRIP
INITIAL POWER IS 100% (FULL LOAD)

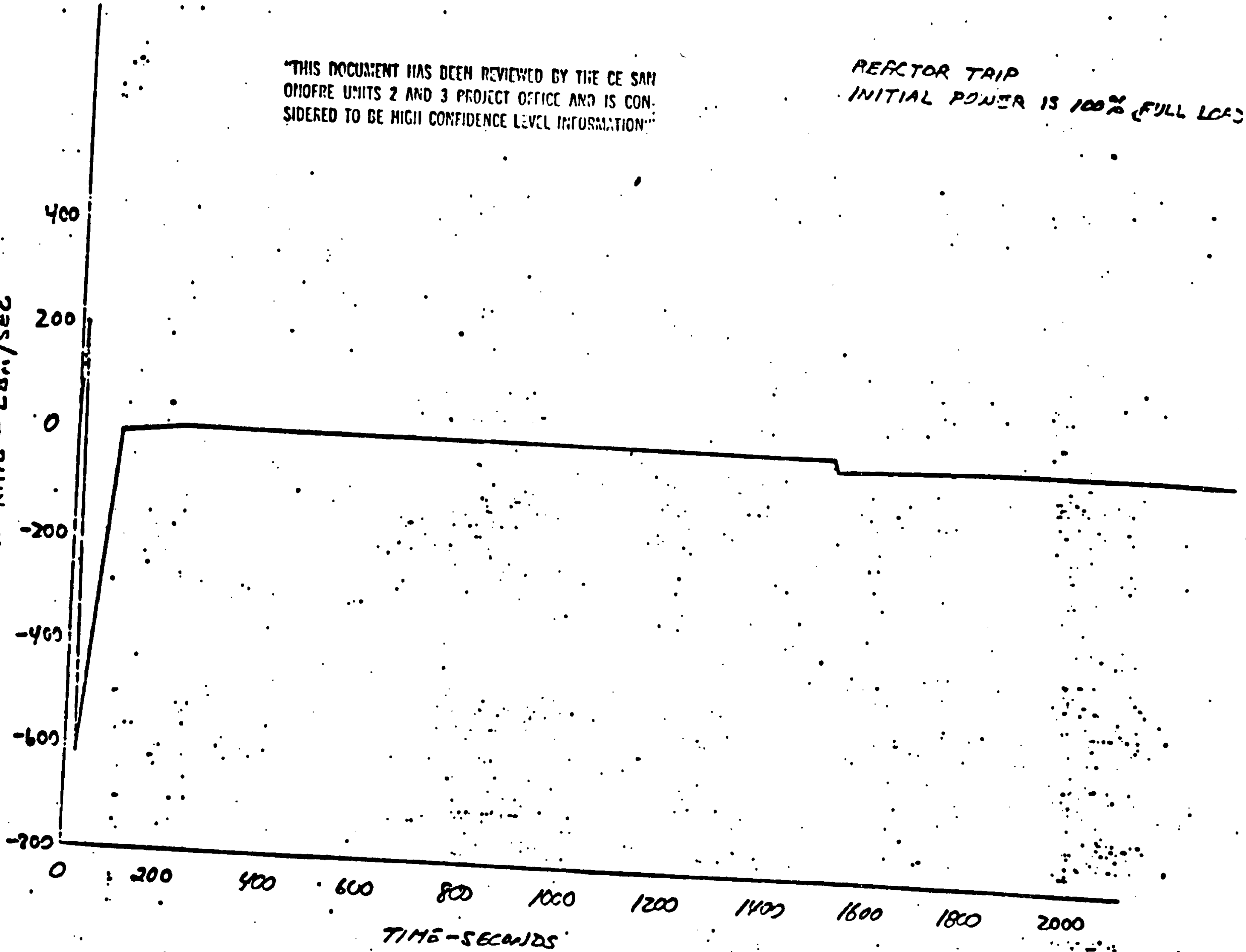

FIG 5-9

900-B-42-0

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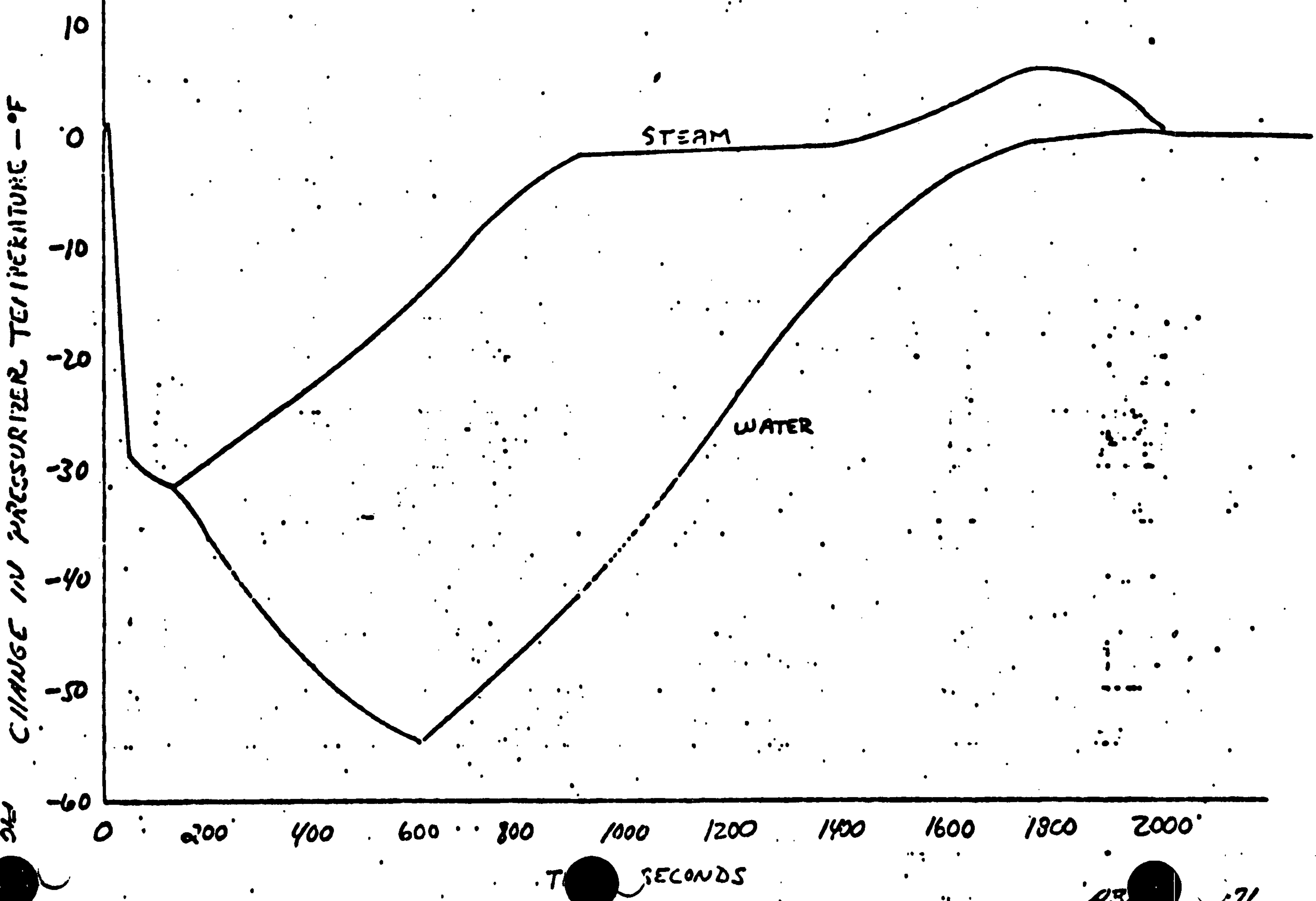
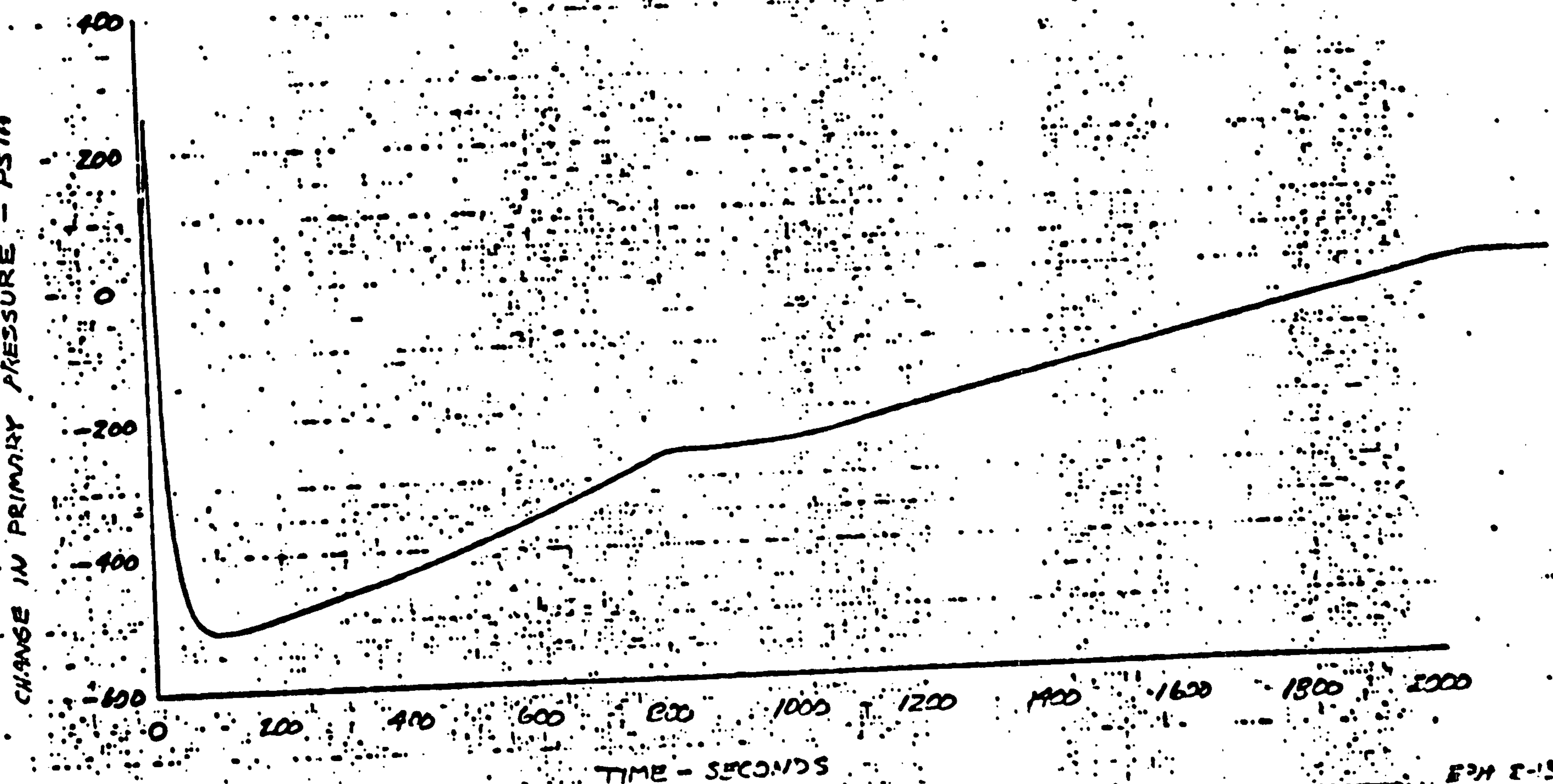
REACTOR TRIP
INITIAL POWER IS 100% FULL LOAD



900-13-42-0

LOSS OF LOAD
INITIAL POWER IS 100% FULL LOAD

"THIS DOCUMENT HAS BEEN REVIEWED BY THE CE SAN ONOFRE UNITS 2 AND 3 PROJECT OFFICE AND IS CONSIDERED TO BE HIGH CONFIDENCE LEVEL INFORMATION."



FK 5-1

900-13-42-0

"THIS DOCUMENT HAS BEEN REVIEWED BY THE CE SAN ONOFRE UNITS 2 AND 3 PROJECT OFFICES AND IS CONSIDERED TO BE HIGH CONFIDENCE LEVEL INFORMATION"

LOSS OF LOAD
INITIAL POWER IS 100% FULL LOAD

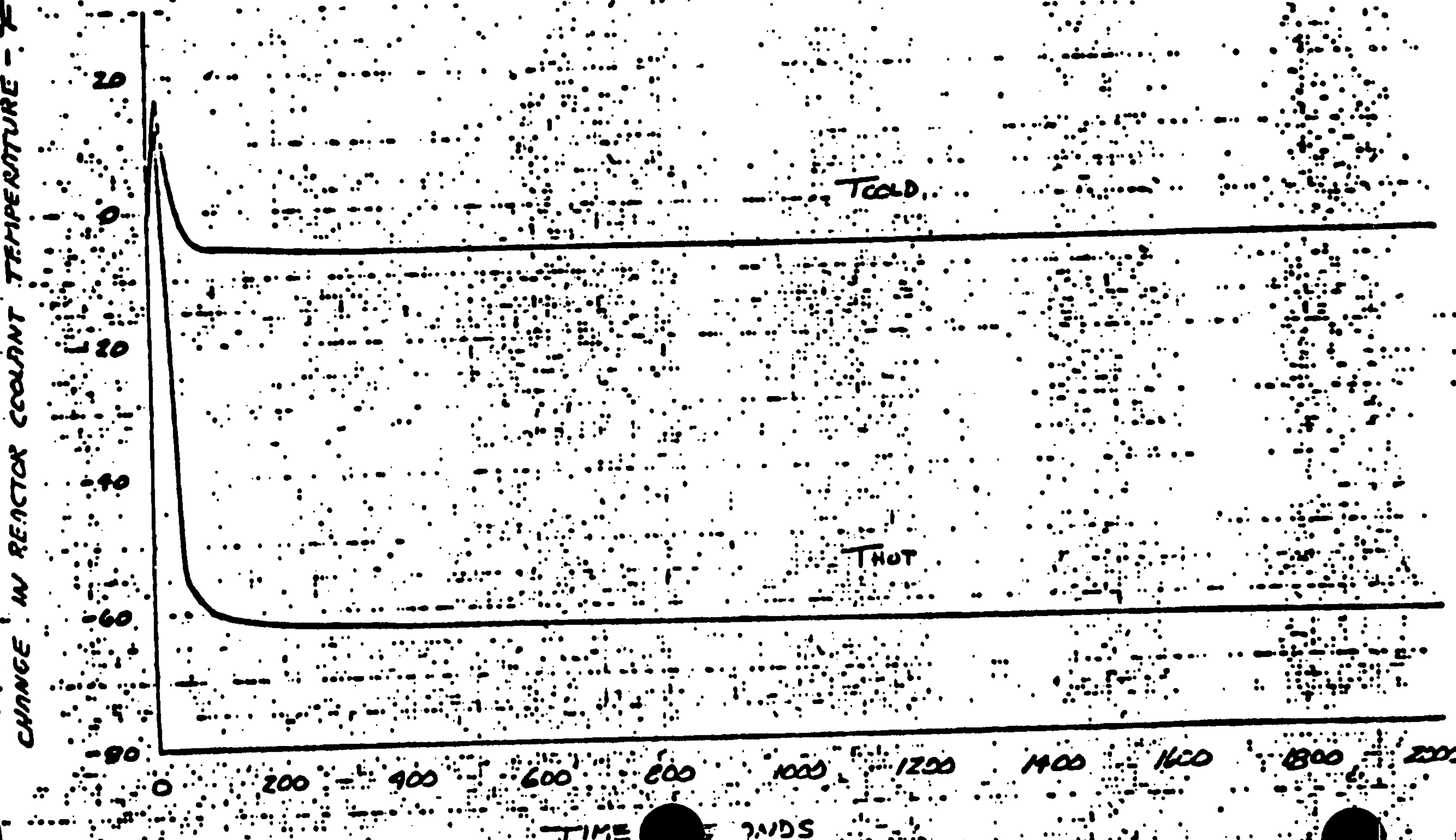


FIG 910-B-42-0

LOSS OF LOAD
INITIAL POWER IS 100% FULL LOAD

"THIS DOCUMENT HAS BEEN REVIEWED BY THE CE-SAN ONOFRE UNITS 2 AND 3 PROJECT OFFICE AND IS CONSIDERED TO BE HIGH CONFIDENCE LEVEL INFORMATION"

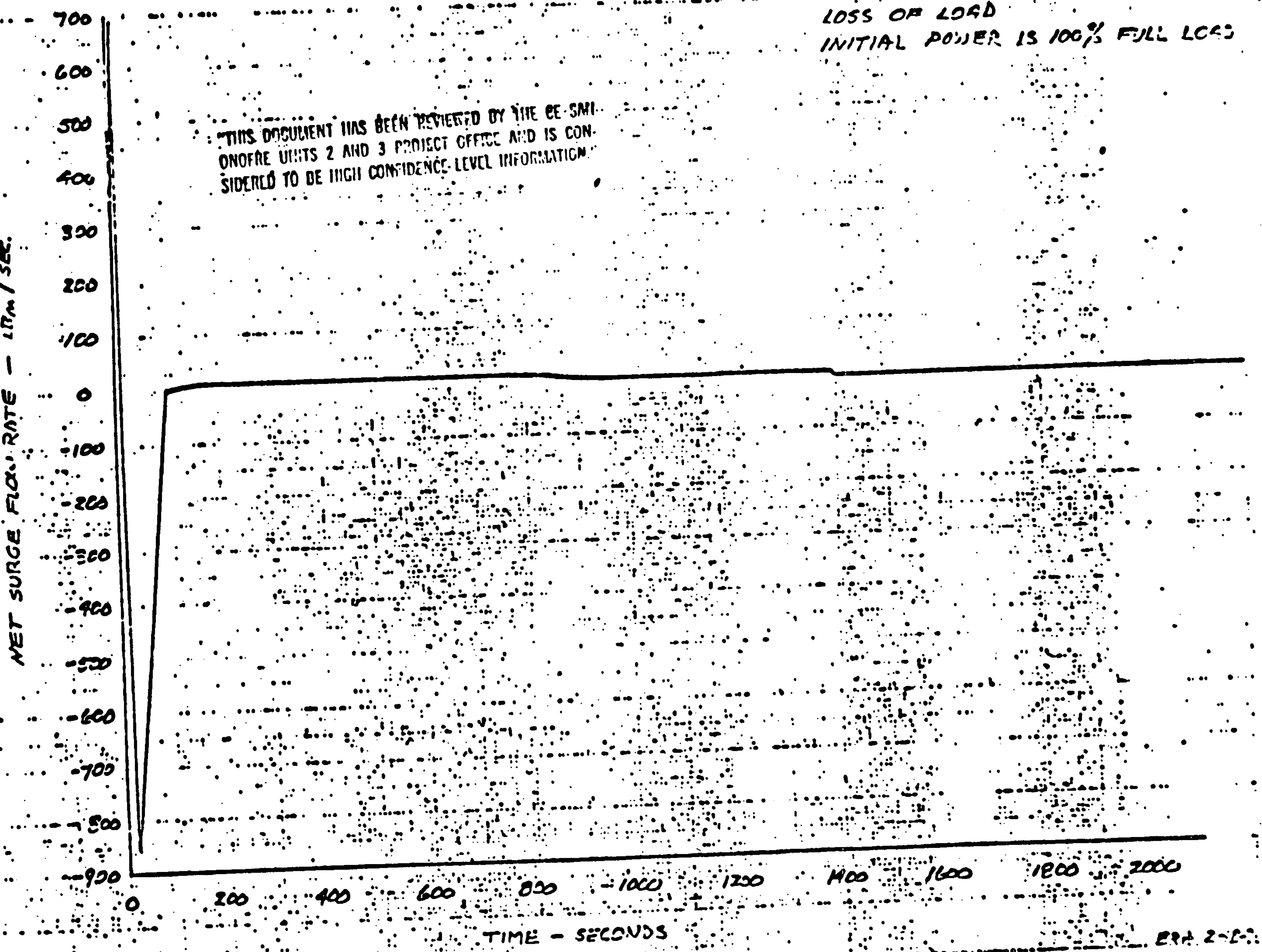


FIG 5-11

900-8-42-0

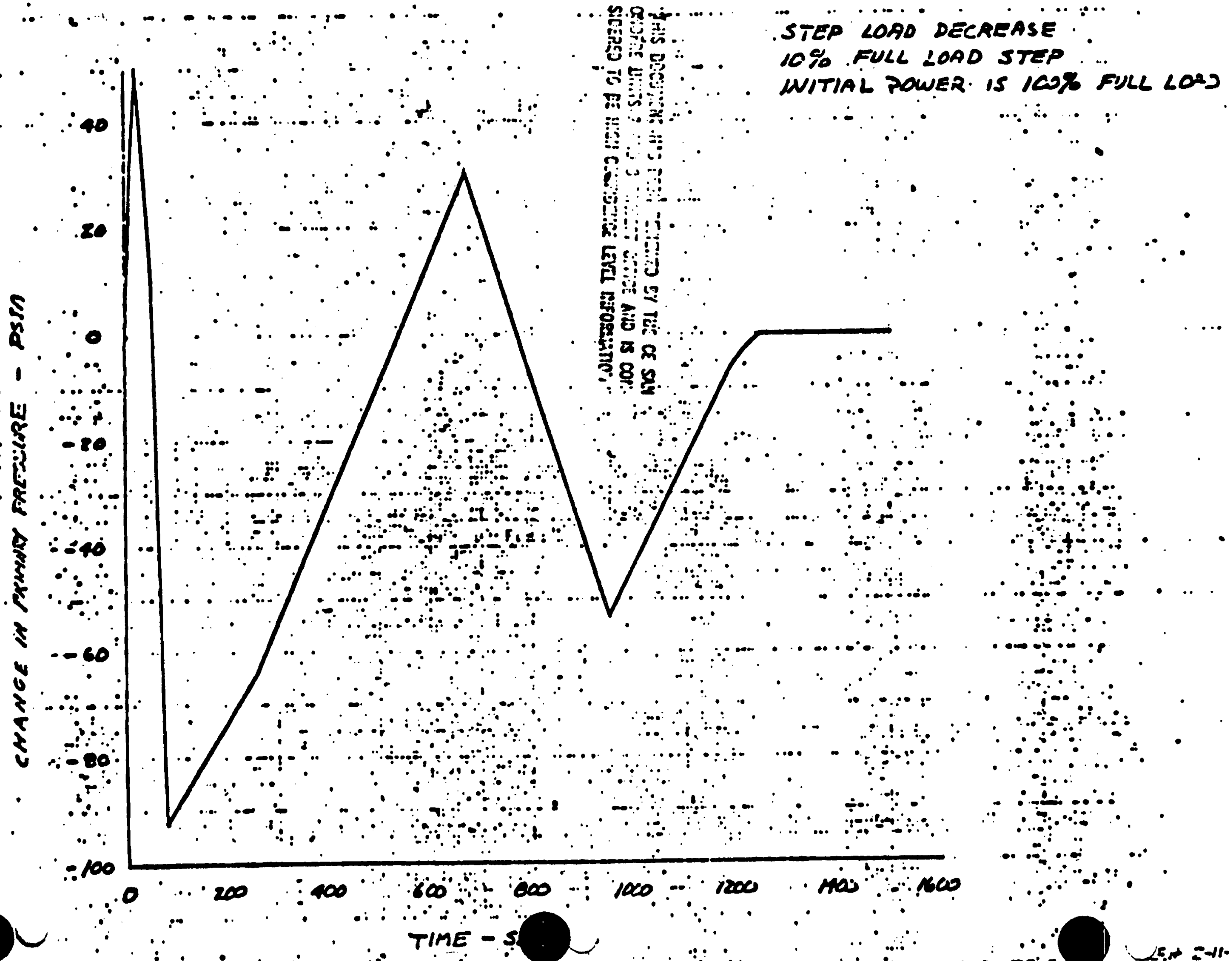


FIG 900-B-42-0

2-11-71

"THIS DOCUMENT HAS BEEN REVIEWED BY THE CE SAN ONOFRE UNITS 2 AND 3 PROJECT OFFICE AND IS CONSIDERED TO BE HIGH CONFIDENCE LEVEL INFORMATION."

LOSS OF LOAD
INITIAL POWER IS 100% FULL LOAD

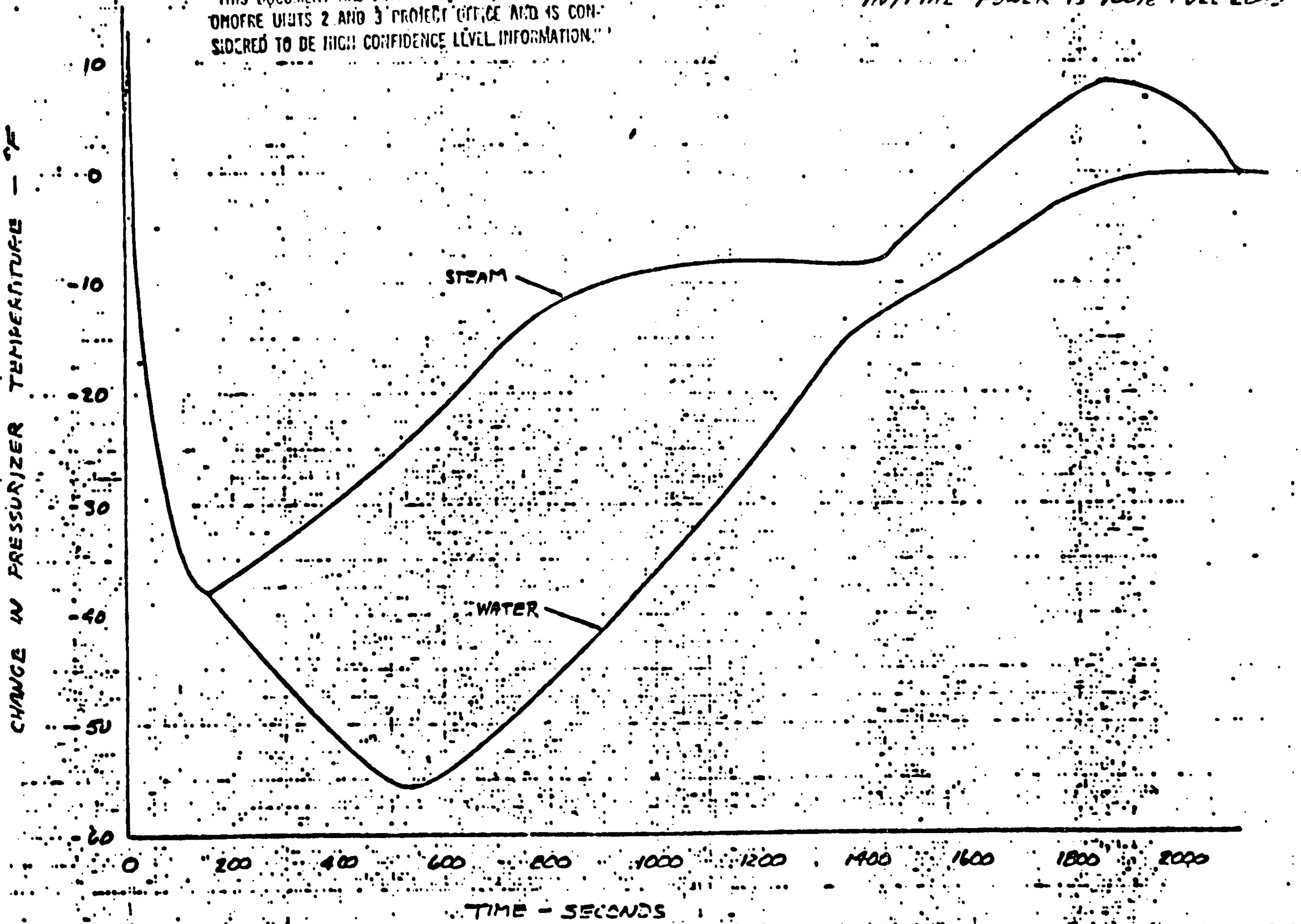
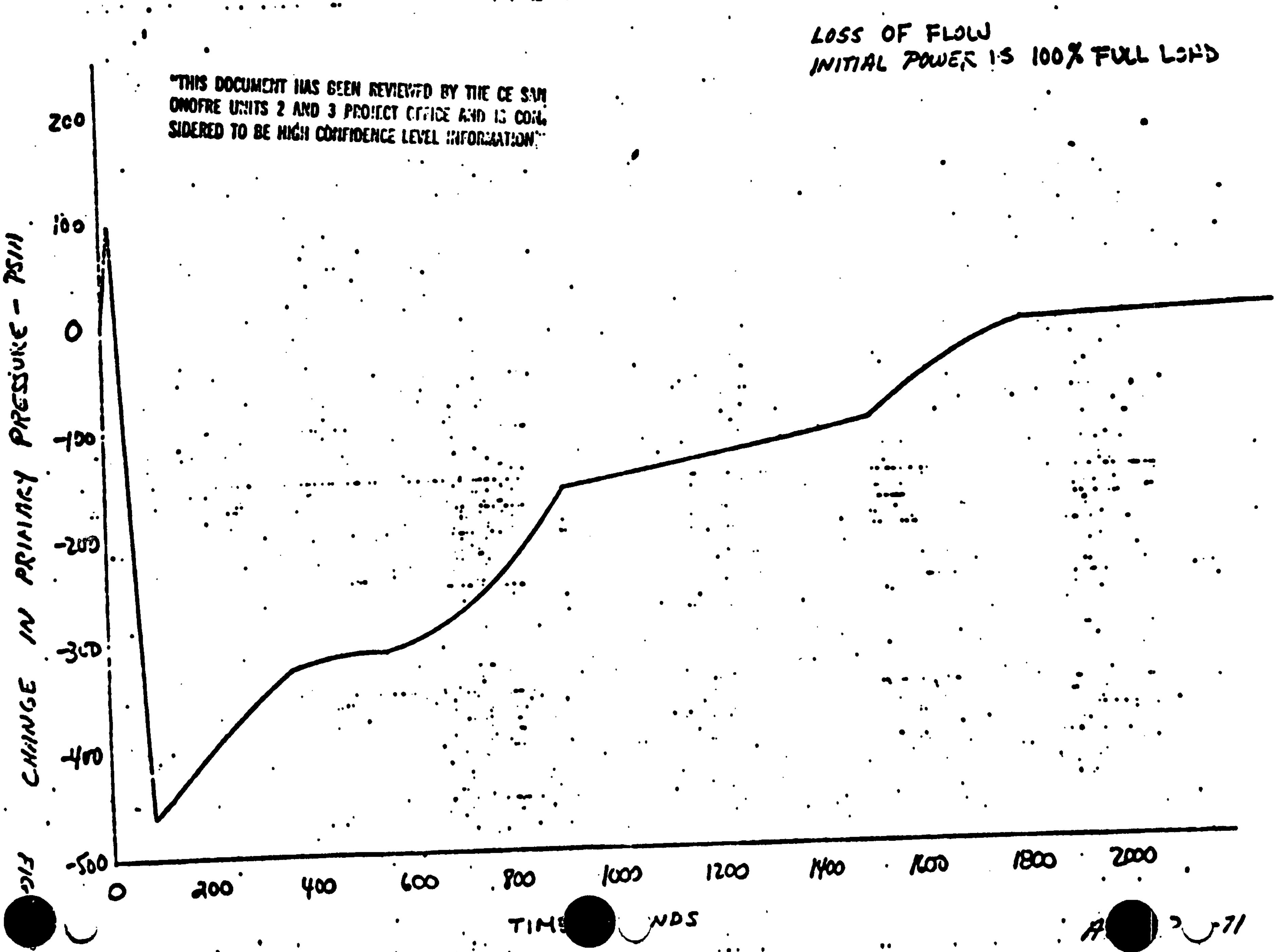


FIG 9-5

900-B-42-0



900-13-42-0
FIG

"THIS DOCUMENT HAS BEEN REVIEWED BY THE CE SAN ONOFRE UNITS 2 AND 3 PROJECT OFFICE AND IS CONSIDERED TO BE HIGH CONFIDENCE LEVEL INFORMATION."

LOSS OF FLOW
INITIAL POWER IS 100% FULL LOAD

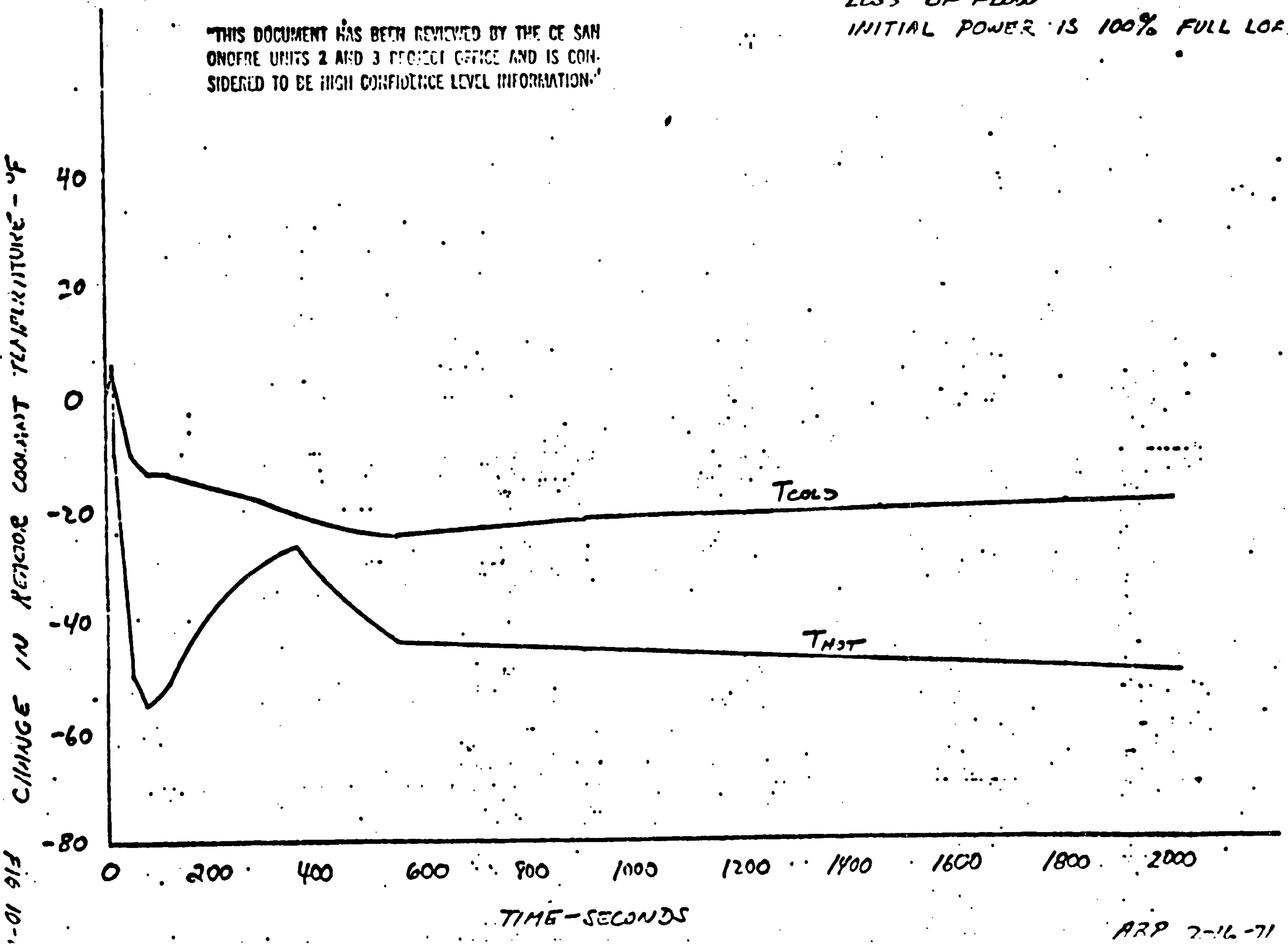


FIG 10-

ARP 2-16-71

900-13-42-0

"THIS DOCUMENT HAS BEEN REVIEWED BY THE CE SAN ONOFRE UNITS 2 AND 3 PROJECT OFFICE AND IS CONSIDERED TO BE HIGH CONFIDENCE LEVEL INFORMATION"

LOSS OF FLOW
INITIAL POWER IS 100% FULL LOAD

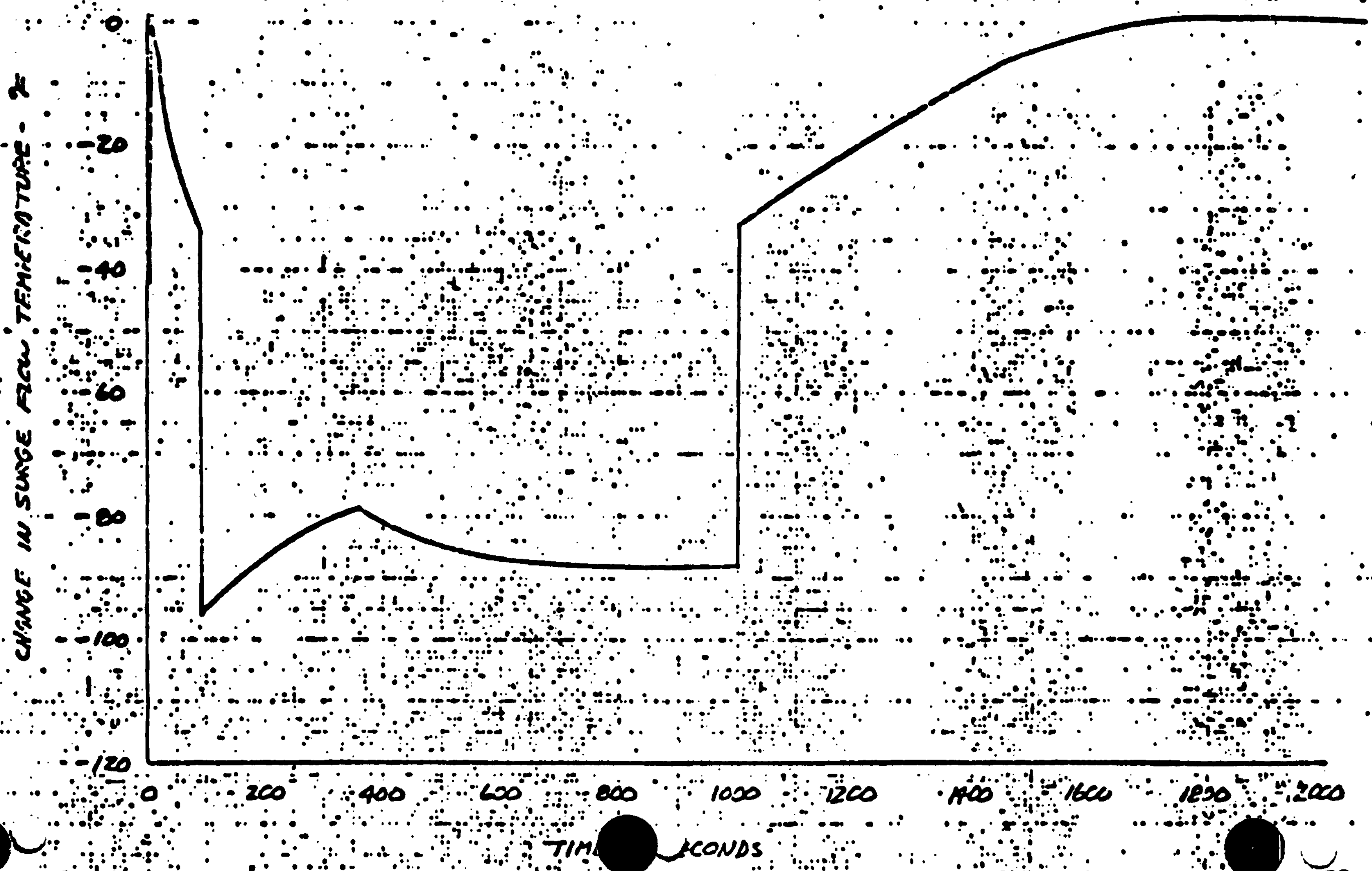


FIG 900-B-42-0

LOSS OF FLOW
INITIAL POWER IS 100% FULL LOAD

"THIS DOCUMENT HAS BEEN REVIEWED BY THE CE SAN ONOFRE UNITS 2 AND 3 PROJECT OFFICE AND IS CONSIDERED TO BE HIGH CONFIDENCE LEVEL INFORMATION."

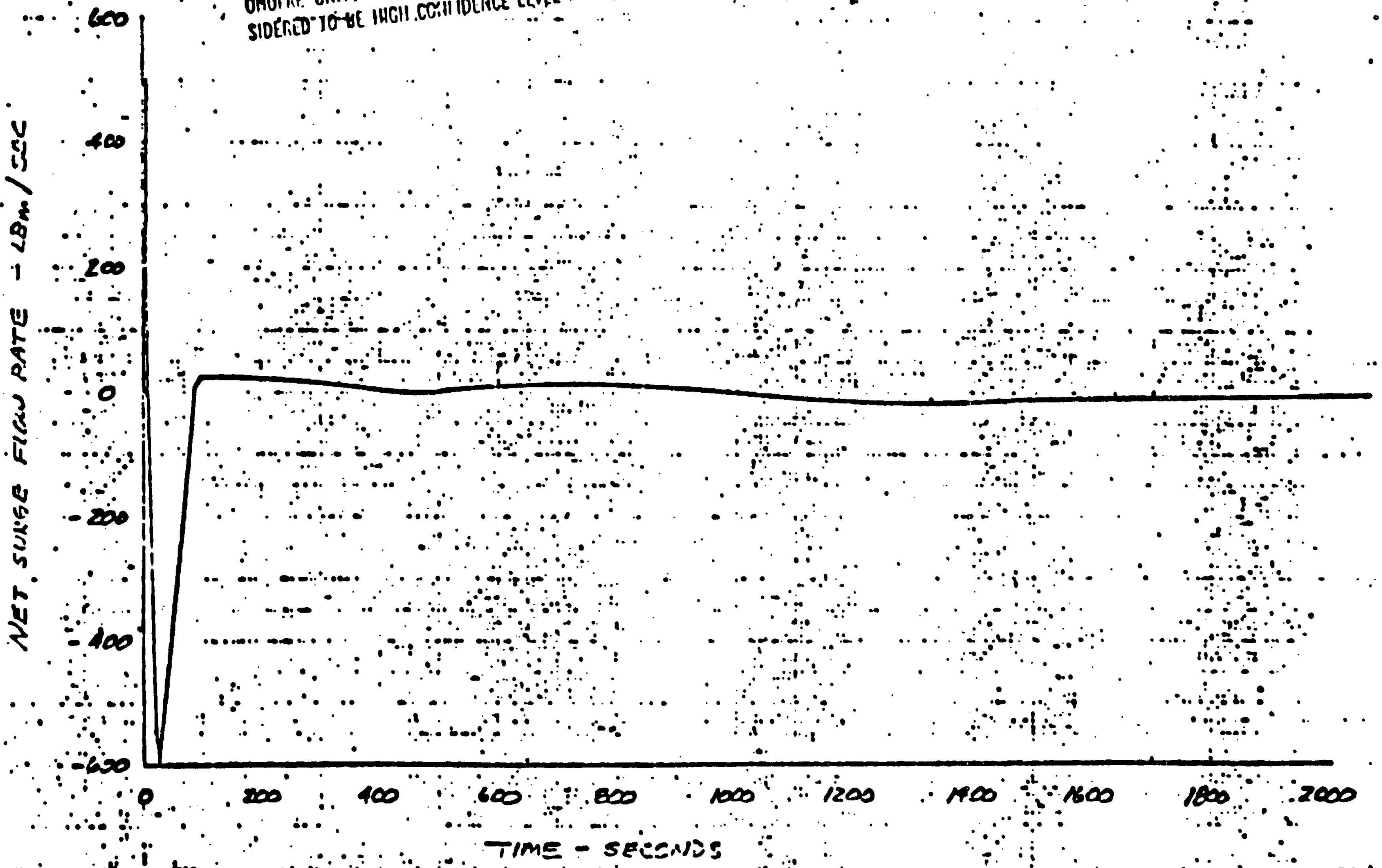


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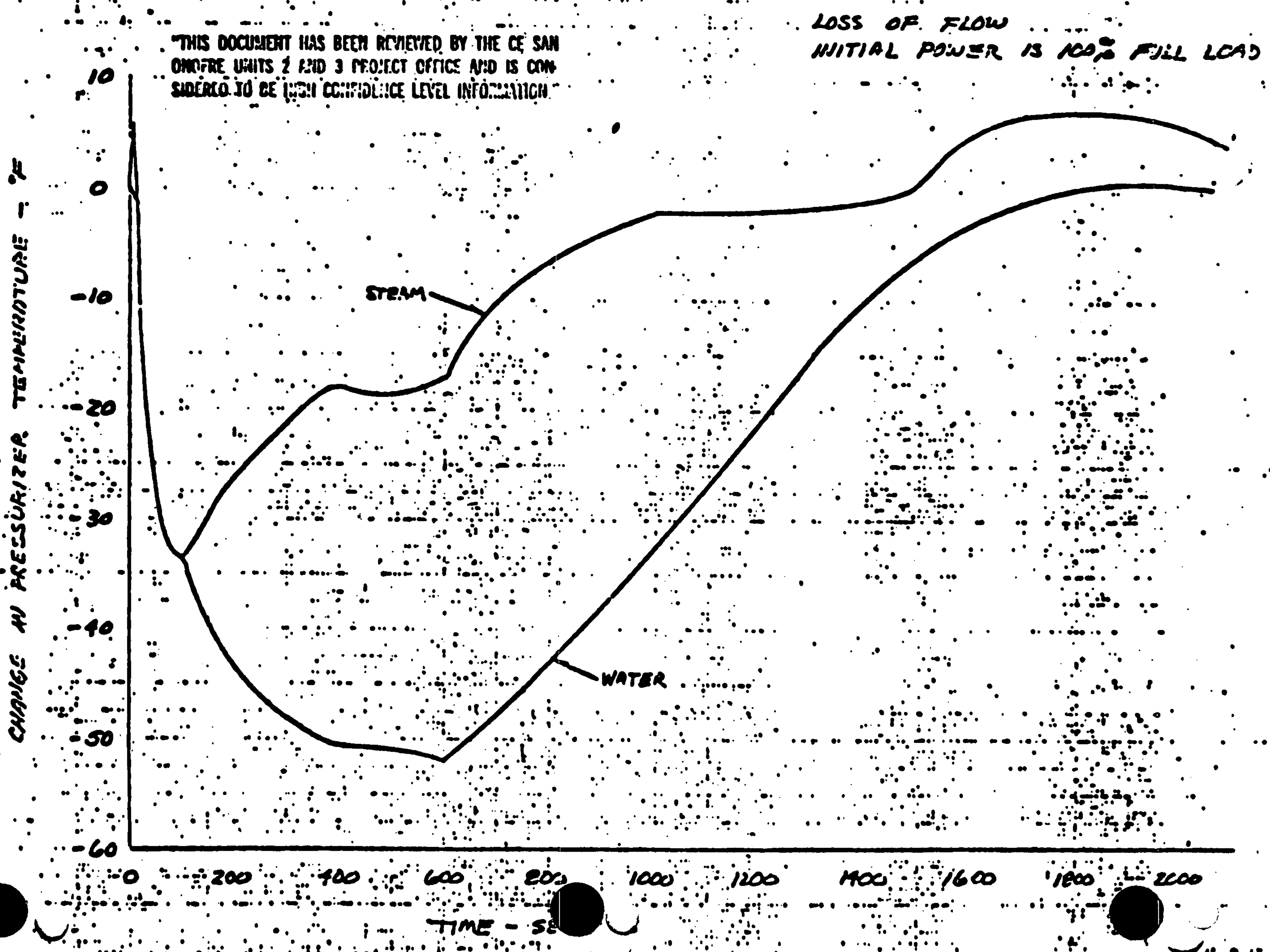
FIG 10-4

900-B-42-0


LOSS OF FLOW
INITIAL POWER IS 100% FULL LOAD
"THIS DOCUMENT HAS BEEN REVIEWED BY THE CE SAN
ONOFRE UNITS 2 AND 3 PROJECT OFFICE AND IS CON-
SIDERED TO BE HIGH CONFIDENCE LEVEL INFORMATION."
CHANGE IN PRESSURIZER TEMPERATURE - °F
10
0
-10
-20
30
-40
-50
-60
STEAM
WATER
0
200
400
600
1000
1200
1400
1600
1800
2000
TIME - SE

FIG

900-B-42-0

LOSS OF SECONDARY PRESSURE

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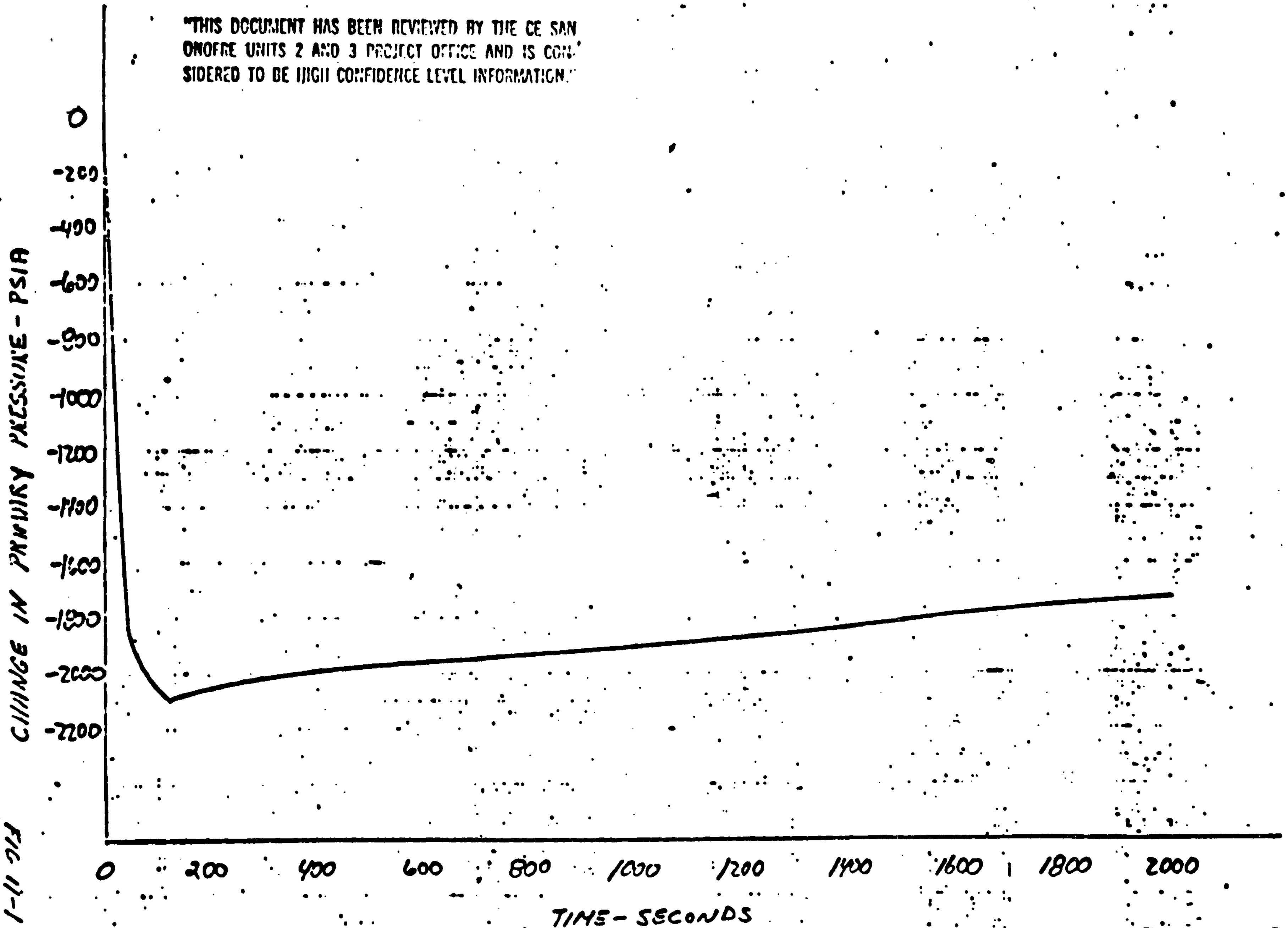


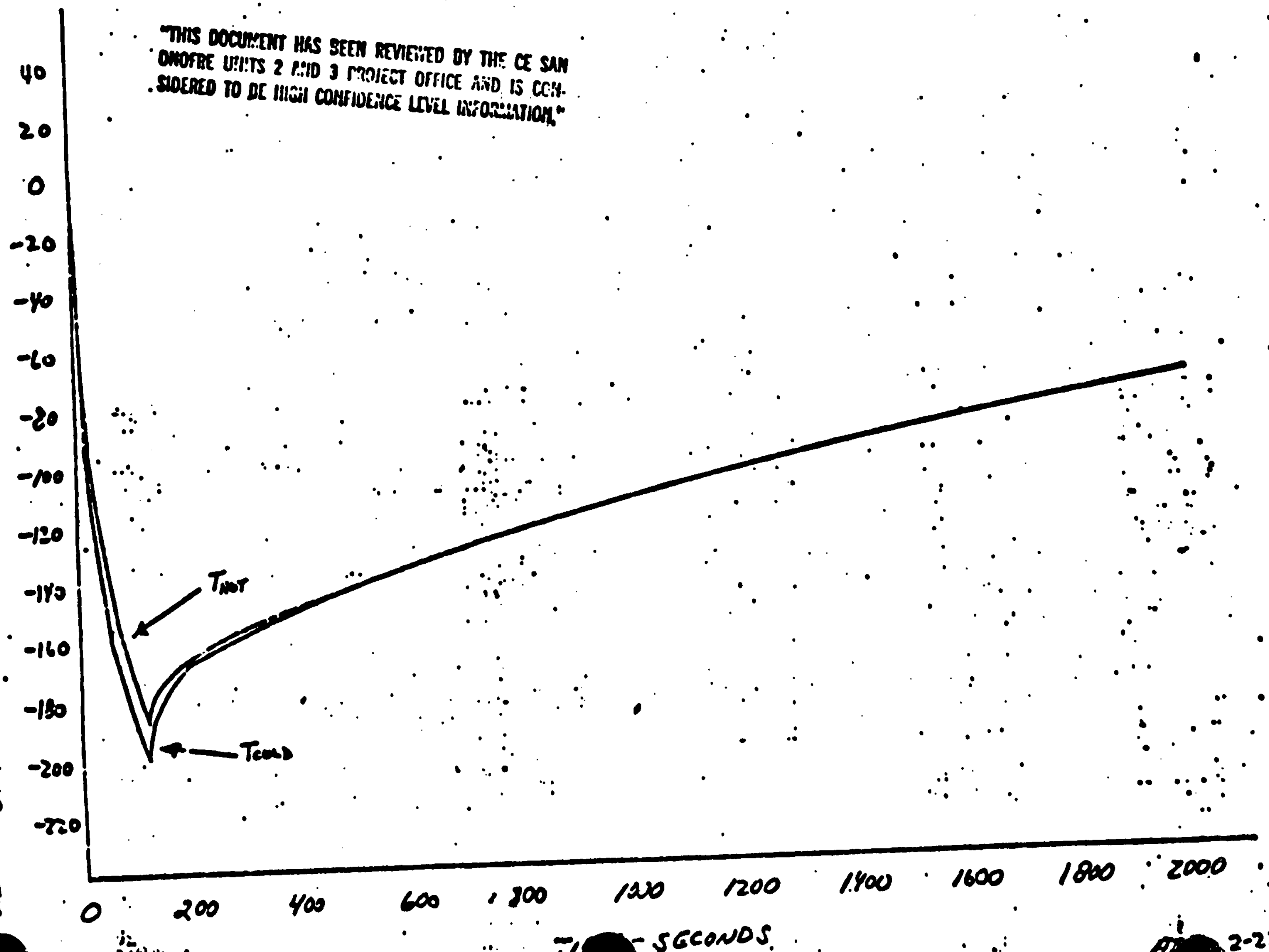
FIG 11-1

ABP 2-23-71

900-13-42-0

48

LOSS OF SECONDARY PRESSURE



2-23-71

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LOSS OF SECONDARY PRESSURE

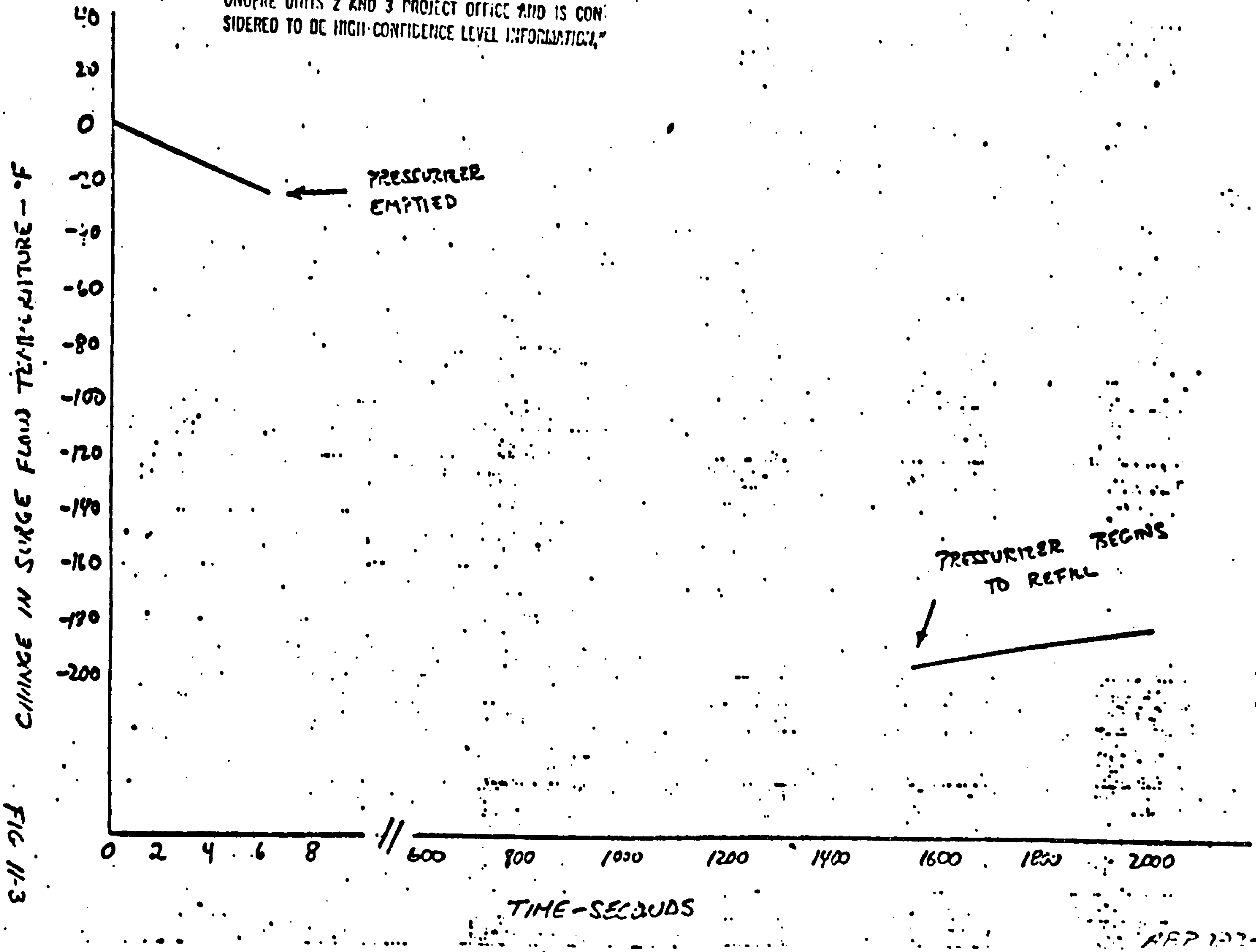
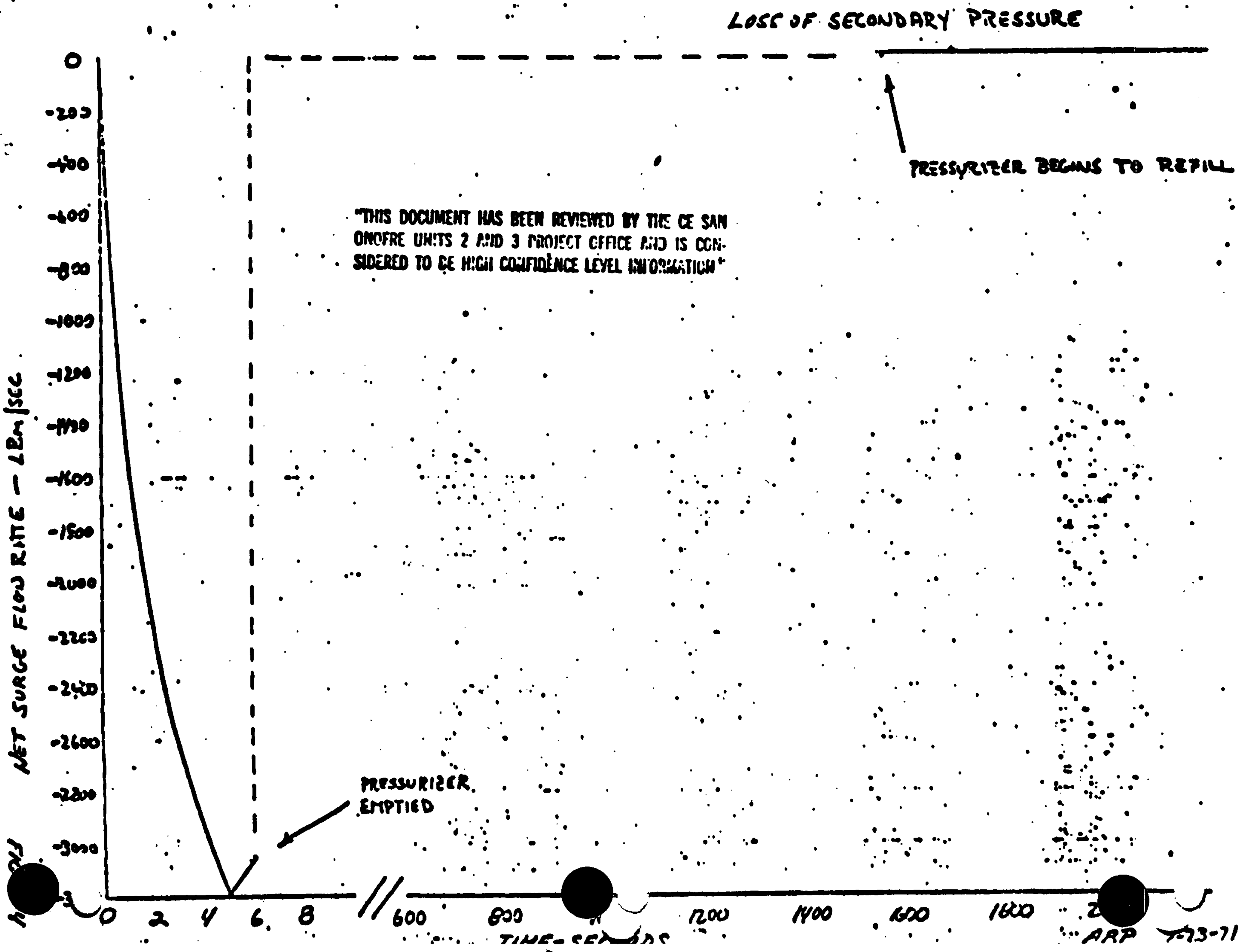


FIG 11-3

900-8-42-0


LOSS OF SECONDARY PRESSURE
PRESSURIZER BEGINS TO REFILL
"THIS DOCUMENT HAS BEEN REVIEWED BY THE CE SAN ONOFRE UNITS 2 AND 3 PROJECT OFFICE AND IS CONSIDERED TO BE HIGH CONFIDENCE LEVEL INFORMATION"
PRESSURIZER EMPTIED
NET SURGE FLOW RATE — LBm/SEC
0
-200
-400
-600
-800
-1000
-1200
-1400
-1600
-1800
-2000
-2200
-2400
-2600
-2800
-3000
0
2
4
6
8
600
800
1200
1400
1600
1800
TIME-SECONDS
ARP 7-23-71

LOSS OF SECONDARY PRESSURE

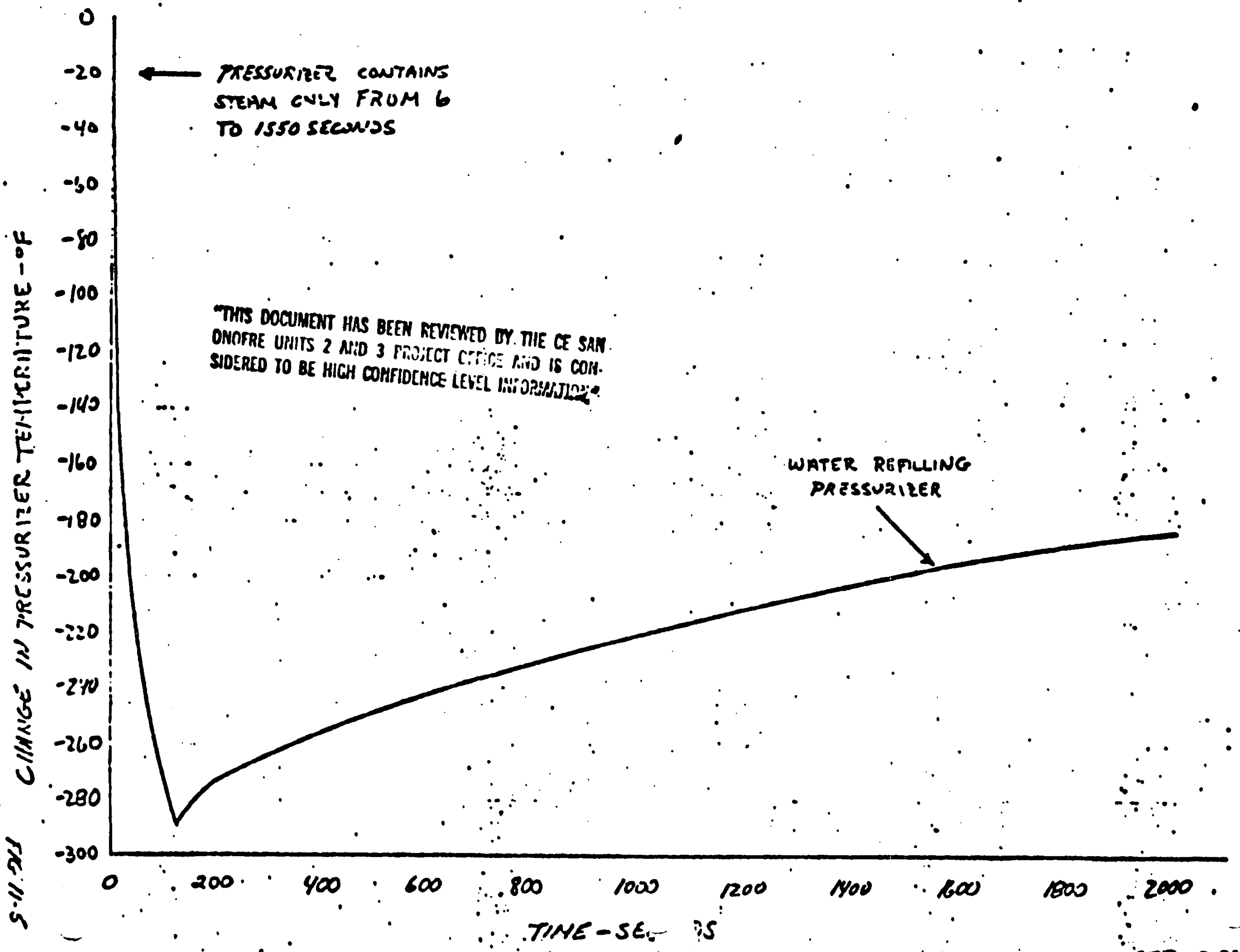


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FIG 11.5

900-B-42-0

APPENDIX D

NOZZLE DISPLACEMENTS

THE MAX REL. DISPLACEMENTS OF SCE NOZZLES,X-RESPONSE DUE TO X-OBE

MAXIMUM RELATIVE DISPLACEMENTS OF BRANCH LINE CONNECTION POINTS

Table 1

LOCATION		DIRECTION GLOBAL		MAX. REL. DISPL (IN)	TIME (SEC)
SURGE LINE NOZZLE,	JOINT 750	DISP	X	-.53994E-01	45.0650
			Y	-.28249E-01	45.0600
			Z	-.77341E-03	45.0500
		ROTN	X	-.17478E-05	6.9150
			Y	.94421E-05	45.0525
			Z	-.12354E-03	45.0275
SHUTDOWN COOLING NOZ.,	JOINT 3750	DISP	X	-.76245E-01	45.0650
			Y	.26259E-01	45.0600
			Z	-.67250E-03	45.0500
		ROTN	X	-.17635E-05	6.9150
			Y	-.34358E-05	45.0525
			Z	-.12376E-03	45.0275
S.G. FEED WATER NOZ.,	JOINT 301	DISP	X	-.60961E-01	9.0450
			Y	.29022E-01	45.0575
			Z	.56929E-03	45.0450
		ROTN	X	.461[illegible]	19.9550
			Y	.36103E-05	45.0550
			Z	-.18691E-03	45.0575
S.G. FEED WATER NOZ.,	JOINT 3301	DISP	X	-.60981E-01	9.0450
			Y	-.29022E-01	45.0575
			Z	.56938E-03	45.0450
		ROTN	X	.48196E-06	19.5550
			Y	-.36113E-05	45.0650
			Z	-.15681E-03	45.0575
S.G. BOT BLOWDOWN NOZ.	JOINT 418	DISP	X	-.53297E-01	45.0175
			Y	-.62111E-03	45.0200
			Z	-.13268E.03	53.7325
		ROTN	X	-.10975E-05	19.5275
			Y	.63025E-05	45.0550
			Z	-.16722E-03	45.0600
S.G. BOT BLOWDOWN NOZ.	JOINT 3413	DISP	X	-.53297E-01	45.0175
			Y	.61111E-03	45.0200
			Z	-.13252E.03	53.7325
		ROTN	X	-.10973E-05	19.5275
			Y	-.67037E-05	45.0550
			Z	-.16721E-03	45.0500
SAFETY INJECTION NOZ.,	JOINT 1765	DISP	X	-.61178E-01	45.0300
			Y	.80387E-02	10.3325
			Z	-.16283E-01	45.0475
		ROTN	X	.64103E-04	9.1825
			Y	-.91859E-04	9.4700
			Z	-.48795E-04	45.0500
SAFETY INJECTION NOZ.,	JOINT 2765	DISP	X	-.47747E-01	45.0650
			Y	.11047E-01	10.3350
			Z	.29914E-01	9.1825
		ROTN	X	.63769E-04	45.0450
			Y	-.34249E-04	23.8350
			Z	-.76628E-04	45.0175
SAFETY INJECTION NOZ.,	JOINT 4765	DISP	X	-.47745E-01	45.0550
			Y	-.11046E-01	10.3350
			Z	.24914E-01	9.1325

Table 1

LOCATION		DIRECTION GLOBAL		MAX. REL. DISPL. (IN)	TIME (SEC)
		ROTN	X	.63769E-04	45.0650
			Y	.34247E-04	23.8850
			Z	-.75530E-04	45.0175
SAFETY INJECTION NOZ.,	JOINT 5765	DISP	X	-.61177E-01	45.0300
			Y	-.80878E-02	10.3325
			Z	-.18282E-01	45.0475
		ROTN	X	.84101E-04	9.1825
			Y	.91859E-04	9.4400
			Z	-.45793E-04	45.0500
PRESURIZER SPRAY NOZ.,	JOINT 1757	DISP	X	-.64955E-01	45.0300
			Y	.56009E-02	45.3325
			Z	-.18094E-01	45.0475
		ROTN	X	.53810E-04	23.9400
			Y	.17471E-03	45.0300
			Z	.82254E-04	10.3325
PRESURIZER SPRAY NOZ.,	JOINT 2757	DISP	X	-.53858E-01	45.0300
			Y	.76801E-02	10.3350
			Z	.25769E-01	9.1825
		ROTN	X	-.60032E-04	10.3375
			Y	.26815E-03	45.0650
			Z	.93054E-04	10.3325
CHARGING INLET NOZZLE,	JOINT 1780	DISP	X	-.63577E-01	45.0300
			Y	.39757E-02	10.3325
			Z	-.13956E-01	45.0475
		ROTN	X	.84103E-04	9.1825
			Y	-.91859E-04	9.4400
			Z	-.46795E-04	45.0500
CHARGING INLET NOZZLE,	JOINT 5780	DISP	X	-.63579E-01	45.0300
			Y	-.89755E-02	10.3325
			Z	-.13955E-01	45.0475
		ROTN	X	.84101E-04	9.1825
			Y	.91859E-04	9.4400
			Z	-.46793E-04	45.0500
S.G. OUTLET NOZZLE,	JOINT 102	DISP	X	-.10702E+00	9.0475
			Y	.54728E-03	35.3900
			Z	.23812E-03	63.6150
		ROTN	X	.52313E-06	19.5550
			Y	.34478E-05	45.0550
			Z	-.16936E-03	45.0575
S.G. OUTLET NOZZLE,	JOINT 3102	DISP	X	-.10702E+00	9.0475
			Y	-.56717E-03	35.3900
			Z	.23507E-03	63.6150
		ROTN	X	.52314E-06	19.5550
			Y	-.34491E-05	45.0650
			Z	-.16965E-03	45.0575
REACTOR VESSEL HEAD,	JOINT 9991	DISP	X	-.12440E+00	45.0650
			Y	-.11452E-05	36.4750
			Z	-.17823E-03	6.9100
		ROTN	X	.43296E-05	9.4050
			Y	.10338E-03	45.0575
			Z	.29480E-03	45.0300
SHUTDN COLNG OUT NOZ.,	JOINT 753	DISP	X	-.78229E-01	45.0650
			Y	-.28249E-01	45.0500
			Z	-.67145E-03	45.0500
		ROTN	X	-.17479E-05	6.9130
			Y	.94421E-05	45.0525
			Z	-.12354E-03	45.0275

Table 1

LOCATION		DIRECTION GLOBAL		MAX. REL. DISPL (IN)	TIME (SEC)
DRAIN NOZZLE, HL,	JOINT 754	DISP	X	-.74851E-01	45.0650
			Y	-.30385E-01	45.0500
			Z	-.82710E-03	45.0500
		ROTN	X	-.19826E-05	6.9150
			Y	.10818E-04	45.0525
			Z	-.10212E-03	45.0175
DRAIN NOZZLE, 1A CL,	JOINT 1586	DISP	X	-.82219E-01	45.0625
			Y	-.39354E-02	9.2375
			Z	.10178E-01	45.0525
		ROTN	X	-.53353E-04	19.5075
			Y	.58145E-04	23.0875
			Z	.75512E-04	45.4000
DRAIN NOZZLE, 1B CL,	JOINT 2586	DISP	X	-.91445E-01	45.0650
			Y	.54858E-02	45.0650
			Z	-.11762E-01	45.0650
		ROTN	X	.14062E-03	45.0350
			Y	-.44821E-04	38.3250
			Z	-.14069E-03	45.0650
DRAIN NOZZLE, 2B CL,	JOINT 4586	DISP	X	-.91443E-01	45.0650
			Y	-.54856E-02	45.0650
			Z	-.11761E-01	45.0650
		ROTN	X	.15061E-03	45.0350
			Y	.44814E-04	38.3250
			Z	-.16088E-03	45.0650
DRAIN NOZZLE, 2A CL,	JOINT 5586	DISP	X	-.82226E-01	45.0625
			Y	.39370E-02	9.2375
			Z	.10175E-01	45.0525
		ROTN	X	-.53340E.04	19.5075
			Y	-.56159E-04	23.0875
			Z	.73398E-04	45.4000

Table 2

THE MAX REL. DISPLACEMENTS OF SCE NOZZLES, Y-RESPONSE DUE TO X-OBE
MAXIMUM RELATIVE DISPLACEMENTS OF BRANCH LINE CONNECTION POINTS

Location		Direction Global	Max. Rel. Displ (in)	Time (sec)
SURGE LINE NOZZLE, JOINT 750	DISP	X	.45206E-02	45.0425
		Y	.13568E-01	45.0175
		Z	-.36130E-03	45.0600
	ROTN	X	-.81914E-06	45.0550
		Y	-.19914E-05	45.0400
		Z	-.11338E-03	45.0225
SHUTDOWN COOLING NOZ., JOINT 3750	DISP	X	-.57034E-02	45.0175
		Y	-.12388E-01	7.5950
		Z	.27996E-03	45.3400
	ROTN	X	-.72432E-06	9.4225
		Y	.16849E-05	45.0400
		Z	-.11915E-03	45.0175
S.G. FEEDWATER NOZ., JOINT 301	DISP	X	-.54097E-03	55.7475
		Y	.23714E-01	45.0200
		Z	.37637E-03	45.0600
	ROTN	X	-.41273E-06	35.8500
		Y	.24296E-05	45.0600
		Z	-.49030E-05	31.2675
S.G. FEEDWATER NOZ., JOINT 3301	DISP	X	-.53035E-03	55.7475
		Y	-.24358E-01	7.5950
		Z	.30307E-03	45.0300
	ROTN	X	-.48417E-06	35.8500
		Y	-.19522E-05	45.0300
		Z	-.47058E-05	9.0925
S.G. BOT BLOWDOWN NOZ. JOINT 418	DISP	X	.13636E-02	31.2425
		Y	.20260E-01	45.0200
		Z	.35225E-04	30.2050
	ROTN	X	.50918E-06	17.6950
		Y	.42409E-05	45.0600
		Z	.28702E-05	7.9025
S.G. BOT BLOWDOWN NOZ. JOINT 3418	DISP	X	-.13690E-02	9.0925
		Y	-.18100E-01	45.0175
		Z	.47163E-04	30.2025
	ROTN	X	.56437E-06	17.6125
		Y	-.34079E-05	45.0300
		Z	.27402E-05	23.3175
SAFETY INJECTION NOZ. JOINT 1765	DISP	X	-.28402E-02	9.1550
		Y	-.16830E-01	30.1800
		Z	-.17044E-02	45.0350
	ROTN	X	.39239E-04	45.3450
		Y	-.66736E-05	35.7950
		Z	-.63122E-04	45.0300

Location	Direction Global	Max. Rel. Displ (in)	Time (sec)
SAFETY INJECTION NOZ. JOINT 2765 DISP	X	-.37290E-02	30.1800
	Y	-.16398E-01	30.1800
	Z	.15055E-02	27.5425
ROTN	X	-.20227E-04	45.3450
	Y	-.12979E-04	35.7300
	Z	-.81221E-04	45.0300
SAFETY INJECTION NOZ. JOINT 4765 DISP	X	-.41242E-02	30.1800
	Y	.17322E-01	30.1800
	Z	.19067E-02	43.3325
ROTN	X	-.23213E-04	7.3150
	Y	.14935E-04	35.7050
	Z	.81364E-04	45.3450
SAFETY INJECTION NOZ. JOINT 5765 DISP	X	-.30809E-02	30.1775
	Y	.17480E-01	45.3450
	Z	.16857E-02	45.3775
ROTN	X	.43395E-04	30.1800
	Y	.74584E-05	35.7950
	Z	-.64671E-04	45.0300
PRESURIZER SPAY NOZ. JOINT 1757 DISP	X	.12849E-02	38.3100
	Y	.17797E-01	44.4125
	Z	-.73527E-03	6.3650
ROTN	X	.16129E-04	9.1575
	Y	.11084E-04	35.7825
	Z	-.30929E-04	45.0600

Location		Direction Global	Max. Rel. Displ (in)	Time (sec)
PRESURIZER•SPAY NOZ. JOINT 2757 DISP		X	-.15686E-02	55.7950
		Y	-.17539E-01	30.1800
		Z	.13963E-02	63.5600
	ROTN	X	.11826E-04	45.0400
		Y	-.47129E-05	23.3150
		Z	-.36715E-04	45.0600
CHARGING INLET NOZZLE, JOINT 1780 DISP		X	.81737E-03	38.3100
		Y	-.15386E-01	30.1800
		Z	-.11700E-02	63.0250
	ROTN	X	.39239E-04	45.3450
		Y	-.66736E-05	35.7950
		Z	-.63122E-04	45.0300
CHARGING INLET NOZZLE, JOINT 5780 DISP		X	.92540E-03	37.5550
		Y	.15941E-01	45.3450
		Z	-.13023E-02	35.7575
	ROTN	X	.43395E-04	30.1800
		Y	.74584E-05	35.7950
		Z	-.64671E-04	45.0300
S.G. OUTLET NOZZLE, JOINT 102 DISP		X	.18294E-02	22.7625
		Y	.24091E-01	45.0200
		Z	-.18498E-03	35.8500
	ROTN	X	-.44394E-06	35.8500
		Y	.23201E-05	45.0600
		Z	-.50401E-05	31.2675
S.G. OUTLET NOZZLE, JOINT 3102 DISP		X	-.17578E-02	9.1150
		Y	-.25583E-01	7.5950
		Z	-.21740E-03	35.8500
	ROTN	X	-.52055E-06	35.8500
		Y	-.18645E-05	45.0300
		Z	-.47940E-05	9.0925
REACTOR VESSEL HEAD, JOINT 9991 DISP		X	.27208E-02	43.3975
		Y	-.28692E-02	10.3500
		Z	-.35614E-03	35.7475
	ROTN	X	-.11825E-05	35.7475
		Y	.35562E-07	30.8475
		Z	-.79230E-05	9.4250
SHUTDN COLNG OUT NOZ, JOINT 753 DISP		X	-.56466E-02	45.0200
		Y	.13568E-01	45.0175
		Z	-.30323E-03	45.0600
	ROTN	X	-.81914E-06	45.0550
		Y	-.19914E-05	45.0400
		Z	-.11338E-03	45.0225
DRAIN NOZZLE, HL, JOINT 754 DISP		X	-.46705E-02	45.0200
		Y	.11129E-01	45.0175
		Z	-.27694E-03	45.0600
	ROTN	X	.80434E-06	30.2075
		Y	-.22493E-05	45.0400
		Z	-.109005-03	45.0200

Location		Direction Global	Max. Rel. Displ (in)	Time (sec)
DRAIN NOZZLE, 1A CL, JOINT 1586	DISP	X	.62682E-02	35.7700
		Y	.16521E-01	44.4125
		Z	-.46322E-02	45.4075
	ROTN	X	.63515E-04	9.1875
		Y	-.34613E-04	35.8225
		Z	.81960E-04	35.7700
DRAIN NOZZLE, 1B CL, JOINT 2586	DISP	X	.61680E-02	35.7725
		Y	.18941E-01	44.4125
		Z	-.39247E-02	17.5775
	ROTN	X	.42706E-04	7.6175
		Y	-.22049E-04	14.9700
		Z	.76053E-04	35.7725
DRAIN NOZZLE, 2B CL, JOINT 4586	DISP	X	.77973E-02	35.7725
		Y	-.17777E-01	44.4125
		Z	-.44124E-02	17.5775
	ROTN	X	.53275E-04	7.6175
		Y	-.23816E-04	37.9275
		Z	.97291E-04	35.7725
DRAIN NOZZLE, 2A CL, JOINT 5586	DISP	X	.81568E-02	35.7700
		Y	-.15658E-01	44.4125
		Z	.51210E-02	17.5725
	ROTN	X	.69973E-04	30.1825
		Y	.39399E-04	35.7675
		Z	.10660E-03	35.7700

Table 3

THE MAX REL. DISPLACEMENTS OF SCE NOZZLES, Y-RESPONSE DUE TO Y-OBE, XY MODEL
MAXIMUM RELATIVE DISPLACEMENTS OF BRANCH LINE CONNECTION POINTS

Location		Direction Global	Max. Rel. Displ (in)	Time (sec)
SURGE LINE NOZZLE, JOINT 750 DISP		X	-.56662E-03	6.2200
		Y	.33485E-02	6.2175
		Z	-.14091E-04	44.2250
	ROTN	X	-.32748E-07	44.2350
		Y	-.35680E-07	44.2250
		Z	.12620E-04	6.2175
SHUTDOWN COOLING NOZ., JOINT 3750 DISP		X	-.47315E-03	6.2150
		Y	.33484E-02	6.2150
		Z	.12581E-04	44.2250
	ROTN	X	.32763E-07	44.2350
		Y	-.35535E-07	44.2250
		Z	-.12621E-04	6.2175
S.G. FEEDWATER NOZ., JOINT 301 DISP		X	-.24816E-04	16.9775
		Y	.42836E-02	6.2125
		Z	.13439E-04	6.2225
	ROTN	X	-.25038E-07	44.2500
		Y	.93767E-07	6.2300
		Z	-.10147E-05	45.2975
S.G. FEEDWATER NOZ., JOINT 3301 DISP		X	.24306E-04	16.9775
		Y	.42838E-02	6.2125
		Z	-.13442E-04	6.2225
	ROTN	X	.25071E-07	44.2500
		Y	.93750E-07	6.2300
		Z	.10145E-05	45.2975
S.G. BOT BLOWDOWN NOZ. JOINT 418 DISP		X	-.27734E-03	8.2275
		Y	.28018E-02	6.2100
		Z	.45547E-05	13.4275
	ROTN	X	-.34974E-07	44.2375
		Y	.16364E-06	6.2300
		Z	.27179E-06	45.2975
S.G. BOT BLOWDOWN NOZ. JOINT 3418 DISP		X	.27729E-03	8.2275
		Y	.28020E-02	6.2100
		Z	-.45568E-05	13.4275
	ROTN	X	.34967E-07	44.2375
		Y	.16366E-06	6.2300
		Z	-.27174E-06	45.2975
SAFETY INJECTION NOZ. JOINT 1765 DISP		X	.18603E-03	44.2250
		Y	.14691E-02	44.2250
		Z	.33912E-03	6.2150
	ROTN	X	.81139E-05	6.2175
		Y	-.20977E-06	44.2250
		Z	.32040E-05	9.5075

Location		Direction Global	Max. Rel. Displ (in)	Time (sec)
SAFETY INJECTION NOZ. JOINT 2765	DISP	X	.21519E-03	44.2275
		Y	.15893E-02	44.2275
		Z	-.54697E-03	6.2175
	ROTN	X	-.13473E-04	6.2175
		Y	.56848E-06	44.2275
		Z	-.36077E-05	44.2000
SAFETY INJECTION NOZ. JOINT 4765	DISP	X	-.21518E-03	44.2275
		Y	.15893E-02	44.2275
		Z	.54098E-03	6.2175
	ROTN	X	.13473E-04	6.2175
		Y	.56872E-06	44.2275
		Z	.36077E-05	44.2000
SAFETY INJECTION NOZ. JOINT 5765	DISP	X	-.18601E-03	44.2250
		Y	.14690E-02	44.2250
		Z	-.33911E-03	6.2150
	ROTN	X	-.81141E-05	6.2175
		Y	-.21004E-06	44.2250
		Z	-.32040E-05	9.5075
PRESURIZER SPAY NOZ. JOINT 1757	DISP	X	.79439E-04	44.2250
		Y	-.14980E-02	9.5075
		Z	.52168E-04	6.2100
	ROTN	X	.19561E-05	6.2175
		Y	-.51760E-06	44.2250
		Z	-.11876E-05	6.2250

Location	Direction Global	Max. Rel. Displ (in)	Time (sec)
PRESURIZER SPAY NOZ. JOINT 2757 DISP	X	.10250E-03	44.2275
	Y	.16363E-02	44.2275
	Z	-.12273E-03	44.2400
ROTN	X	-.35175E-05	6.2150
	Y	-.16688E-06	44.2275
	Z	-.94936E-06	6.2300
CHARGING INLET NOZZLE, JOINT 1730			
DISP	X	.56400E-04	44.2250
	Y	.13163E-02	44.2250
	Z	.50169E-04	44.2250
ROTN	X	.81139E-05	6.2175
	Y	-.20977E-06	44.2250
	Z	.32040E-05	9.5075
CHARGING INLET NOZZLE, JOINT 5780			
DISP	X	-.56377E-04	44.2250
	Y	.13163E-02	44.2250
	Z	-.50221E-04	44.2250
ROTN	X	-.81141E-05	6.2175
	Y	-.21004E-06	44.2250
	Z	-.32048E-05	9.5075
S.G. OUTLET NOZZLE, JOINT 102 DISP	X	.34826E-03	45.2975
	Y	.45733E-02	6.2100
	Z	-.11557E-04	44.2500
ROTN	X	-.26229E-07	44.2500
	Y	.89515E-07	6.2300
	Z	-.10418E-05	45.2975
S.G. OUTLET NOZZLE, JOINT 3102 DISP	X	-.34821E-03	45.2975
	Y	.45737E-02	6.2100
	Z	.11568E-04	44.2500
ROTN	X	.26262E-07	44.2500
	Y	.89548E-07	6.2300
	Z	.10417E-05	45.2975
REACTOR VESSEL HEAD, JOINT 9991 DISP	X	-.18561E-06	45.2975
	Y	.51938E-02	6.2175
	Z	.98491E-08	10.8150
ROTN	X	.22116E-10	10.7650
	Y	.18691E-07	44.2375
	Z	-.48560E-09	45.2750
SHUTDN COLNG OUT NOZ, JOINT 753			
DISP	X	.47317E-03	6.2150
	Y	.33485E-02	6.2175
	Z	-.12570E-04	44.2250
ROTN	X	-.32748E-07	44.2350
	Y	-.35680E-07	44.2250
	Z	.12620E-04	6.2175
DRAIN NOZZLE, HL, JOINT 754 DISP	X	.38381E-03	6.2125
	Y	.36191E-02	6.2175
	Z	-.11927E-04	44.2250
ROTN	X	-.27960E-07	44.2350
	Y	-.52799E-07	44.2275
	Z	.12640E-04	6.2175

Location		Direction Global	Max. Rel. Displ (in)	Time (sec)
DRAIN NOZZLE, 1A CL, JOINT 1586	DISP	X	-.63646E-03	44.2400
		Y	.19363E-02	6.2300
		Z	.16328E-03	9.4700
	ROTN	X	-.50331E-05	9.4700
		Y	.26954E-05	44.2375
		Z	-.10609E-04	44.2400
DRAIN NOZZLE, 1B CL, JOINT 2586	DISP	X	-.65848E-03	44.2400
		Y	.21982E-02	6.2300
		Z	-.26561E-03	23.2275
	ROTN	X	-.64292E-05	6.2150
		Y	-.18914E-05	44.2400
		Z	-.10686E-04	44.2400
DRAIN NOZZLE, 2B CL, JOINT 4586	DISP	X	.65860E-03	44.2400
		Y	.21982E-02	6.2300
		Z	.26555E-03	23.2275
	ROTN	X	.64294E-05	6.2150
		Y	-.18917E-05	44.2400
		Z	.10689E-04	44.2400
DRAIN NOZZLE, 2A CL, JOINT 5586	DISP	X	.63660E-03	44.2400
		Y	.19363E-02	6.2300
		Z	-.16328E-03	9.4700
	ROTN	X	.50332E-05	9.4700
		Y	.26959E-05	44.2375
		Z	.10612E-04	44.2400

Table 4

THE MAX REL. DISPLACEMENTS OF SCE NOZZLES, Y-RESPONSE DUE TO Z-OBE
MAXIMUM RELATIVE DISPLACEMENTS OF BRANCH LINE CONNECTION POINTS

Location		Direction Global	Max. Rel. Displ (in)	Time (sec)
SURGE LINE NOZZLE, JOINT 750 DISP		X	-.99253E-03	50.5300
		Y	.12385E-02	50.5300
		Z	.68923E-03	21.9925
	ROTN	X	.29865E-05	27.6000
		Y	-.75129E-05	37.4950
		Z	.18569E-04	50.5300
SHUTDOWN COOLING NOZ., JOINT 3750 DISP		X	-.59900E-03	37.2900
		Y	.12470E-02	50.3875
		Z	.58938E-03	21.9925
	ROTN	X	.30546E-05	27.6000
		Y	.75966E-05	37.4950
		Z	-.18364E-04	50.3875
S.G. FEEDWATER NOZ., JOINT 301 DISP		X	-.12105E-03	63.7000
		Y	.59630E-03	50.7625
		Z	.27194E-03	45.0400
	ROTN	X	.88287E-06	37.3175
		Y	-.15253E-05	21.9925
		Z	-.29900E-05	20.8725
S.G. FEEDWATER NOZ., JOINT 3301 DISP		X	-.12625E-03	63.7300
		Y	-.59350E-03	20.8500
		Z	.24760E-03	45.0400
	ROTN	X	.90199E-06	37.3175
		Y	.13334E-05	21.9925
		Z	-.31054E-05	50.7875
S.G. BOT BLOWDOWN NOZ. JOINT 418 DISP		X	.78342E-03	20.8950
		Y	.15375E-03	50.7575
		Z	.17937E-03	10.0300
	ROTN	X	-.10791E-05	16.1325
		Y	-.28626E-05	21.9925
		Z	.14099E-05	4.8900
S.G. BOT BLOWDOWN NOZ. JOINT 3418 DISP		X	-.75979E-03	20.8525
		Y	-.15311E-03	62.0550
		Z	.17274E-03	10.0300
	ROTN	X	-.12363E-05	18.1325
		Y	.23276E-05	21.9925
		Z	.13372E-05	4.8625
SAFETY INJECTION NOZ. JOINT 1765 DISP		X	.25395E-02	9.1925
		Y	-.14822E-01	45.0400
		Z	-.15585E-02	9.1925
	ROTN	X	.40403E-04	45.0400
		Y	.28142E-05	33.3375
		Z	.53835E-04	45.0400

Location	Direction Global	Max. Rel. Displ (in)	Time (sec)
SAFETY INJECTION NOZ. JOINT 2765 DISP	X	-.42951E-02	16.1225
	Y	.18640E-01	45.0400
	Z	-.22327E-02	16.1225
ROTN	X	.26051E-04	45.0150
	Y	.14655E-04	16.1625
	Z	-.84789E-04	45.0400
SAFETY INJECTION NOZ. JOINT 4765 DISP	X	-.33022E-02	9.1925
	Y	-.14065E-01	45.0675
	Z	-.16436E-02	21.9625
ROTN	X	.23208E-04	45.0400
	Y	-.11580E-04	16.1600
	Z	-.69020E-04	45.0400
SAFETY INJECTION NOZ. JOINT 5765 DISP	X	-.30853E-02	45.0150
	Y	.19886E-01	45.0400
	Z	.17222E-02	45.0150
ROTN	X	.46483E-04	45.0675
	Y	-.37505E-05	62.0975
	Z	.63381E-04	45.0400
PRESURIZER SPAY NOZ. JOINT 1757 DISP	X	-.14935E-02	37.7625
	Y	-.15739E-01	45.0400
	Z	-.79584E-03	9.2550
ROTN	X	.15020E-04	45.0400
	Y	-.68523E-05	63.5475
	Z	.21203E-04	45.0375

Location		Direction Global	Max. Rel. Displ (in)	Time (sec)
PRESURIZER SPAY NOZ. JOINT 2757 DISP		X	-.19939E-02	16.1225
		Y	.19957E-01	45.0400
		Z	.18278E-02	16.1625
	ROTN	X	.11553E-04	45.0150
		Y	.23562E-05	16.4150
		Z	-.30633E-04	45.0400
CHARGING INLET NOZZLE, JOINT 1780 DISP		X	-.14304E-02	37.7625
		Y	-.13550E-01	45.0400
		Z	.88713E-03	27.5975
	ROTN	X	.40403E-04	45.0400
		Y	.28142E-05	33.3375
		Z	.53835E-04	45.0400
CHARGING INLET NOZZLE, JOINT 5780 DISP		X	-.15055E-02	37.5025
		Y	.18369E-01	45.0400
		Z	-.11350E-02	34.3100
	ROTN	X	.48483E-04	45.0675
		Y	-.37505E-05	62.0975
		Z	.63381E-04	45.0400
S.G. OUTLET NOZZLE, JOINT 102 DISP		X	-.11092E-02	50.4125
		Y	.17236E-03	60.2300
		Z	.37307E-03	16.1650
	ROTN	X	.92303E-06	37.3175
		Y	-.14567E-05	21.9925
		Z	-.30764E-05	20.8725
S.G. OUTLET NOZZLE, JOINT 3102 DISP		X	.11357E-02	20.8500
		Y	-.16105E-03	5.8125
		Z	.38754E-03	16.1650
	ROTN	X	.96688E-06	37.3175
		Y	.12734E-05	21.9925
		Z	-.32109E-05	50.7875
REACTOR VESSEL HEAD, JOINT 9991 DISP		X	.64182E-03	39.6725
		Y	.37423E-02	50.5300
		Z	.31864E-02	37.4975
	ROTN	X	.86934E-05	27.6000
		Y	-.63605E-07	13.6600
		Z	-.17435E-05	39.6725
SHUTDN COLNG OUT NOZ. JOINT 753 DISP		X	.57682E-03	37.6675
		Y	.12385E-02	50.5300
		Z	.63121E-03	21.9925
	ROTN	X	.29865E-05	27.6000
		Y	-.75129E-05	37.4950
		Z	.18569E-04	50.5300
DRAIN NOZZLE, HL, JOINT 754 DISP		X	.48554E-03	37.6675
		Y	.16089E-02	50.5300
		Z	.76420E-03	21.9925
	ROTN	X	.37872E-05	27.6000
		Y	.78308E-05	41.0675
		Z	.18522E-04	50.5300

Location		Direction Global	Max. Rel. Displ (in)	Time (sec)
DRAIN NOZZLE, 1A CL, JOINT 1586	DISP	X	.40853E-02	16.1200
		Y	-.11166E-01	45.0400
		Z	.32534E-02	9.1675
	ROTN	X	.52245E-04	45.0700
		Y	-.21308E-04	62.0550
		Z	-.77599E-04	45.0400
DRAIN NOZZLE, 1B CL, JOINT 2586	DISP	X	-.71376E-02	16.1225
		Y	.15202E-01	45.0400
		Z	-.46203E-02	39.6725
	ROTN	X	.59085E-04	16.4025
		Y	-.26784E-04	37.3000
		Z	.93119E-04	45.0400
DRAIN NOZZLE, 2B CL, JOINT 4586	DISP	X	-.50342E-02	16.1200
		Y	-.11458E-01	45.0400
		Z	.42419E-02	16.1025
	ROTN	X	-.48881E-04	16.1025
		Y	.23034E-04	37.3000
		Z	.74892E-04	45.0400
DRAIN NOZZLE, 2A CL, JOINT 5585	DISP	X	.65185E-02	16.1200
		Y	.14646E-01	45.0400
		Z	-.41837E-02	15.7975
	ROTN	X	-.62625E-04	9.1950
		Y	.29671E-04	16.1725
		Z	-.10173E-03	45.0400

Table 5

THE MAX REL. DISPLACEMENTS OF SCE NOZZLES, Z-RESPONSE DUE TO Z-OBE
MAXIMUM RELATIVE DISPLACEMENTS OF BRANCH LINE CONNECTION POINTS

Location		Direction Global	Max. Rel. Displ (in)	Time (sec)
SURGE LINE NOZZLE, JOINT 750 DISP		X	-.62984E-03	7.3250
		Y	.36276E-03	9.4500
		Z	-.78228E-01	45.0350
	ROTN	X	-.79364E-04	38.2850
		Y	-.45772E-03	45.0325
		Z	-.33488E-05	45.0300
SHUTDOWN COOLING NOZ., JOINT 3750 DISP		X	.67394E-03	37.0575
		Y	-.36279E-03	49.4500
		Z	-.72785E-01	45.0350
	ROTN	X	-.79285E-04	38.2850
		Y	.45797E-03	45.0325
		Z	-.33493E-05	45.0300
S.G. FEEDWATER NOZ., JOINT 301 DISP		X	-.81604E-04	45.0050
		Y	-.36013E-03	63.7450
		Z	-.53388E-01	38.2825
	ROTN	X	.16918E-03	45.0700
		Y	-.4777E-04	45.0450
		Z	.23656E-05	63.7450
S.G. FEEDWATER NOZ., JOINT 3301 DISP		X	-.81519E-04	45.0050
		Y	.36034E-03	63.7450
		Z	-.53382E-01	38.2825
	ROTN	X	.16918E-03	45.0700
		Y	.47701E-04	45.0450
		Z	.23663E-05	63.7450
S.G. BOT BLOWDOWN NOZ, JOINT 418 DISP		X	.78528E-02	45.0450
		Y	.18334E-01	45.0625
		Z	-.10194E+00	45.0350
	ROTN	X	.19527E-03	45.0625
		Y	-.83397E-04	45.0450
		Z	.32702E-05	45.0750
S.G. BOT BLOWDOWN NOZ. JOINT 3418 DISP		X	.78403E-02	45.0450
		Y	-.18337E-01	45.0625
		Z	-.10195E+00	45.0350
	ROTN	X	.19530E-03	45.0625
		Y	.83264E-04	45.0450
		Z	.32687E-05	45.0750
SAFETY INJECTION NOZ. JOINT 1765 DISP		X	-.15976E-01	8.2600
		Y	-.38516E-02	35.3700
		Z	-.71483E-01	45.0625
	ROTN	X	.52602E-04	9.8000
		Y	.33066E-04	53.6500
		Z	.17994E-04	26.7000

Location		Direction Global	Max. Rel. Displ (in)	Time (sec)
SAFETY INJECTION NOZ. JOINT 2765				
DISP		X	.12340E-01	8.1675
		Y	-.46673E-02	44.4225
		Z	-.50315E-01	45.0625
	ROTN	X	.62792E-04	45.0850
		Y	-.42934E-04	45.3950
		Z	-.30710E-04	45.0650
SAFETY INJECTION NOZ. JOINT 4765				
DISP		X	.12340E-01	8.1675
		Y	.46675E-02	44.4225
		Z	-.50315E-01	45.0625
	ROTN	X	.62786E-04	45.0850
		Y	.42931E-04	45.3950
		Z	-.30710E-04	45.0650
SAFETY INJECTION NOZ. JOINT 5765				
DISP		X	-.15976E-01	8.2600
		Y	.38517E-02	35.3700
		Z	-.71483E-01	45.0625
	ROTN	X	.52601E-04	9.8900
		Y	-.33066E-04	53.6500
		Z	.17993E-04	26.7000
PRESURIZER SPAY NOZ. JOINT 1757	DISP	X	-.17391E-01	45.0250
		Y	-.39512E-02	35.3706
		Z	-.70731E-01	45.0475
	ROTN	X	.68644E-04	9.8925
		Y	.10017E-03	45.0200
		Z	-.44213E-04	45.4000

Location		Direction Global	Max. Rel. Displ (in)	Time (sec)
PRESSURIZER SPAY NOZ, JOINT 2757 DISP		X	.13396E-01	8.1675
		Y	-.44066E-02	8.2450
		Z	-.52015E-01	45.0625
	ROTN	X	.66769E-04	9.8900
		Y	-.14294E-03	45.0450
		Z	.58601E-04	45.4000
CHARGING INLET NOZZLE, JOINT 1780 DISP		X	-.16520E-01	8.2600
		Y	-.46261E-02	35.3700
		Z	-.72142E-01	45.0450
	ROTN	X	.52602E-04	9.8900
		Y	.33066E-04	53.6500
		Z	.17994E-04	26.7000
CHARGING INLET NOZZLE, JOINT 5780 DISP		X	-.16520E-01	8.2600
		Y	.46260E-02	35.3700
		Z	-.72142E-01	45.0450
	ROTN	X	.52601E-04	9.8900
		Y	-.33066E-04	53.6500
		Z	.17993E-04	26.7000
S.G. OUTLET NOZZLE, JOINT 102 DISP		X	-.81430E-03	63.7450
		Y	.29770E-04	4.8400
		Z	-.48261E-01	23.2150
	ROTN	X	.17065E-03	45.0675
		Y	-.45626E-04	45.0460
		Z	.24154E-05	63.7450
S.G. OUTLET NOZZLE, JOINT 3102 DISP		X	-.81454E-03	63.7450
		Y	-.29734E-04	4.8400
		Z	-.48261E-01	23.2150
	ROTN	X	.17065E-03	45.0675
		Y	.45554E-04	45.0450
		Z	.24163E-05	63.7450
REACTOR VESSEL HEAD, JOINT 9991 DISP		X	-.17364E-02	45.0300
		Y	-.92929E-07	10.2650
		Z	-.93944E-01	45.0625
	ROTN	X	-.21363E-03	45.0525
		Y	.28921E-07	45.0500
		Z	.62412E-05	45.0300
SHUTDN COLNG OUT NOZ, JOINT 753 DISP		X	.67377E-03	37.0575
		Y	.36276E-03	9.4500
		Z	-.72737E-01	45.0350
	ROTN	X	-.79364E-04	38.2850
		Y	-.45772E-03	45.0325
		Z	-.33488E-05	45.0300
DRAIN NOZZLE, HL, JOINT 754 DISP		X	.65670E-03	37.0575
		Y	.37589E-03	28.7375
		Z	-.62061E-01	45.0350
	ROTN	X	-.87178E-04	45.0325
		Y	-.39556E-03	45.0325
		Z	-.36015E-05	45.0300

Location		Direction Global	Max. Rel. Displ (in)	Time (sec)
DRAIN NOZZLE, 1A CL, JOINT 1586	DISP	X	-.10311E-01	38.1625
		Y	.33059E-02	33.8850
		Z	-.77749E-01	45.0450
	ROTN	X	.74860E-04	15.8400
		Y	-.34080E-03	45.0375
		Z	.79813E-04	8.2400
DRAIN NOZZLE, 1B CL, JOINT 2586	DISP	X	.11190E-01	44.9700
		Y	-.44285E-02	9.4475
		Z	-.78008E-01	45.0450
	ROTN	X	.55316E-04	37.2325
		Y	-.32258E-03	45.0325
		Z	.65308E-04	34.0675
DRAIN NOZZLE, 2B CL, JOINT 4586	DISP	X	.11190E-01	44.9700
		Y	.44279E-02	9.4475
		Z	-.78006E-01	45.9450
	ROTN	X	.55225E-04	37.2325
		Y	.32258E-03	45.0325
		Z	.65306E-04	34.0675
DRAIN NOZZLE, 2A CL, JOINT 5586	DISP	X	-.10411E-01	38.1625
		Y	-.33458E-02	33.8850
		Z	-.77749E-01	45.0450
	ROTN	X	.74159E-04	15.8400
		Y	.34041E-03	45.0375
		Z	.79102E-04	8.2400

THE MAX REL. DISPLACEMENTS OF SCE NOZZLES,Y-RESPONSE DUE TO Y-OBE,YZ, MEDCL

MAXIMUM RELATIVE DISPLACEMENTS OF BRANCH LINE CONNECTION POINTS

Table 6

LOCATION			DIRECTION GLOBAL	MAX. REL. DISPL (IN)	TIME (SEC)
SURGE LINE NOZZLE,	JOINT 750	DISP	X	-.78826E-03	6.2250
			Y	.47483E-02	6.2250
			Z	-.18065E-04	6.2250
		ROTN	X	-.45023E-07	6.2275
			Y	-.39777E-07	44.2775
			Z	.17510E-01	6.2225
SHUTDOWN COOLING NOZ.,	JOINT 3750	DISP	X	-.65829E-03	6.2175
			Y	.47481E-02	6.2250
			Z	.15647E-04	44.2225
		ROTN	X	.45837E-07	6.2275
			Y	-.39557E-07	44.2775
			Z	-.17511E-04	6.2275
S.G. FEED WATER NOZ.,	JOINT 301	DISP	X	-.30703E-04	16.9500
			Y	.60885E-02	6.2275
			Z	.18852E-04	6.2250
		ROTN	X	.23352E-07	17.5675
			Y	.13339E-06	6.2325
			Z	-.88019E-06	38.9475
S.G. FEED WATER NOZ.,	JOINT 3301	DISP	X	.30692E-04	16.9805
			Y	.60882E-02	6.2275
			Z	-.18957E-04	6.2250
		ROTN	X	-.23354E-07	17.5675
			Y	.13337E-06	6.2526
			Z	.88010E-06	38.9475
S.G. BOT BLOWDOWN NOZ.,	JOINT 418	DISP	X	-.29038E-03	38.9475
			Y	.39492E-02	6.2225
			Z	.44868E-06	13.4275
		ROTN	X	-.42118E-07	14.2350
			Y	.23279E-06	6.2325
			Z	-.25969E-06	38.9700
S.G. BOT BLOWDOWN NOZ,	JOINT 3418	DISP	X	.29036E-03	38.9475
			Y	.39492E-02	6.2225
			Z	-.44909E-05	13.4875
		ROTN	X	.42112E-07	44.2550
			Y	.23281E-06	6.2325
			Z	.25976E-06	38.9700
SAFETY INJECTION NOZ.	JOINT 1765	DISP	X	.22026E-03	44.2225
			Y	.19872E-02	6.2306
			Z	.47262E-03	6.2200
		ROTN	X	.11311E-04	6.2200
			Y	-.20795E-06	44.2225
			Z	.41676E-05	9.5075
SAFETY INJECTION NOZ.	JOINT 2765	DISP	X	.24388E-03	44.2250
			Y	.21229E-02	6.2300
			Z	-.75968E-03	6.2200
		ROTN	X	-.18877E-04	6.2225
			Y	-.54258E-06	44.4775
			Z	-.431376-05	44.2500
SAFETY INJECTION NOZ.	JOINT 4765	DISP	X	-.24367E-03	44.2250
			Y	.21229E-02	6.2300
			Z	.75911E-03	6.2200
		ROTN	X	.18878E-04	6.2225
			Y	-.54854E-06	44.4775
			Z	.43137E-05	44.2500

Table 6

LOCATION		DIRECTION GLOBAL	MAX. REL. DISPL. (IN)	TIME (SEC)
SAFETY INJECTION NOZ.	JOINT 5765 DISP	X	-.22023E-03	44.2225
		Y	.19872E-02	6.2500
		Z	-.47261E-03	6.2200
	ROTN	X	-.11311E-04	6.2200
		Y	-.20816E-04	54.2225
		Z	-.41677E-05	9.5075
PRESURIZER SPRAY NOZ,	JOINT 1757 DISP	X	.90436E-04	44.2225
		Y	.20315E-02	6.2250
		Z	.85085E-04	6.2260
	ROTN	X	.27245E-05	6.2200
		Y	-.48687E-06	44.2225
		Z	-.16929E-05	6.2275
PRESURIZER SPRAY NOZ.	JOINT 2757 DISP	X	.10868E-03	44.2250
		Y	.21962E-02	6.2300
		Z	.13771E-03	9.5200
	ROTN	X	-.49222E-05	6.2225
		Y	-.18958E-06	44.2250
		Z	-.13349E-05	6.2325
CHARGING INLET NOZZLE,	JOINT 1780 DISP	X	.59068E-04	44.2225
		Y	.17306E-03	6.2300
		Z	.52746E-04	44.2225
	ROTN	X	.11311E-04	6.2200
		Y	-.20796E-06	44.2225
		Z	.41676E-05	9.5075
CHARGING INLET NOZZLE,	JOINT 5780 DISP	X	-.59054E-04	44.2225
		Y	.17306E-02	6.2300
		Z	-.52786E-04	44.2225
	ROTN	X	-.11311E-04	6.2200
		Y	-.20816E-06	44.2225
		Z	-.41677E-05	9,5075
S.G. OUTLET NOZZLE,	JOINT 102 DISP	X	.26036E-03	44.2425
		Y	.64416E-02	6.2225
		Z	-.10700E-04	47.3725
	ROTN	X	.24238E-07	17.5675
		Y	.12734E-06	6.2325
		Z	-.89536E-06	38.9475
S.G. OUTLET NOZZLE,	JOINT 3102 DISP	X	-.26034E-03	44.2425
		Y	.64415E-02	6.2225
		Z	.10705E-04	17.3725
	ROTN	X	-.24240E-07	17.5675
		Y	.12739E-06	6.2325
		Z	.89529E-06	38.2475
REACTOR VESSEL HEAD,	JOINT 9991 DISP	X	-.14942E-06	17.4050
		Y	.73007E-02	6.2225
		Z	.10661E-07	44.2650
	ROTN	X	.21353E-10	44.2625
		Y	.24353E-07	44.2375
		Z	.41230E-02	17.4450
SHUTDN COLNG OUT NOZ.,	JOINT 753 DISP	X	.65034E-03	6.2175
		Y	.47483E-02	6.2850
		Z	-.15634E-04	44.2225
	ROTN	X	-.45023E-07	6.2275
		Y	-.39777E-07	44.2775
		Z	.17510E-04	6.2225

Table 6

LOCATION	DIRECTION GLOBAL		MAX. REL. DISPL. (IN)	TIME (SEC)
DRAIN NOZZLE, HL.	JOINT 754 DISP	X	.58339E.03	6.2175
		Y	.51106E-02	6.2250
		Z	-.14977E-04	44.2225
	ROTN	X	-.38449E-07	6.2275
		Y	-.62371E-07	44.2775
		Z	.17520E-04	6.2225
DRAIN NOZZLE,14 CL,	JOINT 1586 DISP	X	-.71440E-03	44.2375
		Y	.27559E-02	6.2300
		Z	.18280E-03	9.4975
	ROTN	X	.67892E-05	6.2175
		Y	.28318E-05	44.2375
		Z	-.13555E-04	6.2175
DRAIN NOZZLE, 1B CL.	JOINT 2586 DISP	X	.72815E-03	9.5200
		Y	.31312E-02	6.2500
		Z	.36610E-03	6.2225
	ROTN	X	-.90617E-05	6.2200
		Y	-.25373E-05	6.2500
		Z	-.14691E-04	6.2175
DRAIN NOZZLE, 2B CL.	JOINT 2636 DISP	X	-.72012E-03	8.5204
		Y	.31311E-02	6.2300
		Z	-.36609E-03	6.2225
	ROTN	X	.90620E-05	6.2200
		Y	-.25373E-05	6.2300
		Z	.14692E-04	6.2175
DRAIN NOZZLE, 2A CL.	JOINT 5586 DISP	X	.71455E-03	44.2575
		Y	.27558E-02	6.2500
		Z	-.18276E-03	9.4975
	ROTN	X	-.67893E-05	6.2175
		Y	.28324E-05	44.2375
		Z	.13556E-04	6.2175

Figure 1 Sheet 1

"THIS DOCUMENT HAS BEEN REVIEWED BY THE CE SAN ONOFRE UNITS 2 AND 3 PROJECT OFFICE AND IS CONSIDERED TO BE HIGH CONFIDENCE LEVEL INFORMATION."

Piping Assembly See Fig. 1 Sheet 3		Reference Point	Reference Point Location With Respect to Co-ordinate System Shown on Fig. 1 Sheet 3		
			X(feet)	Y(feet)	Z(feet)
P - 1 See Fig. 1 Sheet 4		760	-21.222	0	0
		770	-20.389	0	0
		780	-19.556	0	0
See Fig. 1 Sheet 5	P-3	1600	-30.744	-6.635	10.281
	P-7	2600	-30.744	-6.635	-10.281
	P-12	5600	30.744	-6.635	-10.281
	P-16	4600	30.744	-6.635	10.281
See Fig. 1 Sheet 6	P-5	1757	-18.860	0	16.348
		1760	-18 484	0	16.168
		1765	-16.179	0	15.062
	P-14	5757	18.860	0	-16.354
		5760	18.484	0	-16.168
		5765	16.179	0	-15.062
See Fig. 1 Sheet 7	P-9	2757	-20.084	0	-10.969
		2760	-19.667	0	-10.969
		2765	-17.110	0	-10.969
	P-18	4757	20.084	0	10.969
		4760	19.667	0	10.969
		4765	17.110	0	10.969
P-10 See Fig. 1 Sheet 8		3760	21.222	0	0
		3770	20.389	0	0
		3780	19.556	0	0

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TITLE: Reactor Coolant Piping Nozzle Locations

CB 2824 (2)

Figure 1 Sheet 2

Piping Assembly See Fig. 1 Sheet 3		Reference Point	Reference Point Movement with Respect to Co-ordinate System Shown on Fig. 1 Sheet 3					
			Displacement (inches)			Rotation (radians)		
			ΔX	ΔY	ΔZ	θX	θY	θZ
P - 1 See Fig. 1 Sheet 4		760	-.999	.272	.001	0	-.00001	.00133
		770	-.960	.287	.001	0	0	.00132
		780	-.921	.302	.001	0	0	.00130
See Fig. 1 Sheet 5	P-3	1600	-1.340	-.162	.410	.00065	.00030	.00040
	P-7	2600	-1.344	-.163	-.411	-.00065	-.00024	.00039
	P-12	5600	1.340	-.162	-.410	-.00065	.00030	-.00040
	P-16	4600	1.344	-.163	.411	.00065	-.00024	-.00039
See Fig. 1 Sheet 6	P-5	1757	-.798	.180	.732	.00058	-.00007	.00030
		1760	-.782	.185	.725	.00060	-.00005	.00034
		1765	-.686	.224	.679	.00070	.00003	.00106
	P-14	5757	.798	.180	-.734	-.00058	-.00007	-.00030
		5760	.782	.185	-.725	-.00060	-.00005	-.00034
		5765	.686	.224	-.679	-.00070	.00003	-.00106
See Fig. 1 Sheet 7	P-9	2757	-.864	.204	-.440	-.00055	.00025	.00032
		2760	-.846	.209	-.441	-.00053	.00025	.00038
		2765	-.740	.243	-.450	-.00052	.00028	.00112
	P-18	4757	.864	.204	.440	.00054	.00025	-.00032
		4760	.846	.209	.441	.00053	.00025	-.00038
		4765	.740	.243	.450	.00052	.00028	-.00112
P - 10 See Fig. 1 Sheet 8		3760	.999	.272	-.001	0	-.00001	-.00133
		3770	.960	.287	-.001	0	-.00001	-.00132
		3780	.921	.302	-.001	0	-.00001	-.00130

Normal Operation - Dead Weight +100% Power Operation

Computer Ref. - (1009-1109)

923-17-1

TITLE: Reactor Coolant Piping Nozzle Movements - Normal OP.

Figure 1 Sheet 2.1

"THIS DOCUMENT HAS BEEN REVIEWED BY THE CE SAN ONOFRE UNITS 2 AND 3 PROJECT OFFICE AND IS CONSIDERED TO BE HIGH CONFIDENCE LEVEL INFORMATION."

Piping Assembly See Fig. 1 Sheet 3		Reference Point	Reference Point Movement with Respect to Co-ordinate System Shown on Fig. 1 Sheet 3					
			Displacement (inches)			Rotation (radians)		
			ΔX	ΔY	ΔZ	θX	θY	θZ
P - 1 See Fig. 1 Sheet 4		760						
		770	.256	1.181	.170	.00013	.00116	.01208
		780						
See Fig. 1 Sheet 5	P-3	1600						
	P-7	2600						
	P-12	5600						
	P-16	4600						
See Fig. 1 Sheet 6	P-5	1757						
		1760						
		1765	.432	.186	.644	.00138	.00606	.00195
	P-14	5757						
		5760						
		5765	.432	.186	.644	.00138	.00606	.00195
See Fig. 1 Sheet 7	P-9	2757						
		2760						
		2765	.436	.229	.533	.00105	.00718	.00213
	P-18	4757						
		4760						
		4765	.436	.229	.533	.00105	.00718	.00213
P - 10 See Fig. 1 Sheet 8		3760						
		3770	.256	1.181	.170	.00013	.00116	.01208
		3780						

NOTE: 1. Tabulated displacements and rotations can be either positive or negative.
2. Displacements and rotations due to pipe rupture and subcompartment pressurization only.

983-17-1

TITLE: Reactor Coolant Piping Nozzle Movements - Ruptured Line

Figure 1 Sheet 2.2

"THIS DOCUMENT HAS BEEN REVIEWED BY THE CE SAN ONOFRE UNITS 2 AND 3 PROJECT OFFICE AND IS CONSIDERED TO BE HIGH CONFIDENCE LEVEL INFORMATION."

Piping Assembly See Fig. 1 Sheet 3		Reference Point	Reference Point Movement with Respect to Co-ordinate System Shown on Fig. 1 Sheet 3					
			Displacement (inches)			Rotation (radians)		
			ΔX	ΔY	ΔZ	ΘX	ΘY	ΘZ
P - 1 See Fig. 1 Sheet 4		760	.074	.102	.064	.00015	.00079	.00074
		770	.074	.093	.073	.00014	.00080	.00075
		780	.075	.085	.083	.00013	.00081	.00074
See Fig. 1 Sheet 5	P-3	1600	.112	.132	.036	.00083	.00100	.00093
	P-7	2600	.113	.131	.030	.00078	.00106	.00097
	P-12	5600	.112	.132	.036	.00083	.00100	.00093
	P-16	4600	.113	.131	.030	.00078	.00106	.00097
See Fig. 1 Sheet 6	P-5	1757	.087	.022	.064	.00021	.00028	.00028
		1760	.086	.024	.066	.00022	.00033	.00033
		1765	.081	.043	.078	.00038	.00057	.00053
	P-14	5757	.087	.022	.064	.00021	.00028	.00028
		5760	.086	.024	.066	.00022	.00033	.00033
		5765	.081	.043	.078	.00038	.00057	.00053
See Fig. 1 Sheet 7	P-9	2757	.070	.028	.044	.00020	.00029	.00033
		2760	.070	.030	.046	.00019	.00034	.00038
		2765	.070	.049	.059	.00023	.00062	.00064
	P-18	4757	.070	.028	.044	.00020	.00029	.00033
		4760	.070	.030	.046	.00019	.00034	.00038
		4765	.070	.049	.059	.00023	.00062	.00064
P - 10 See Fig. 1 Sheet 8		3760	.074	.102	.064	.00015	.00079	.00074
		3770	.074	.093	.073	.00014	.00080	.00075
		3780	.075	.085	.083	.00013	.00081	.00074

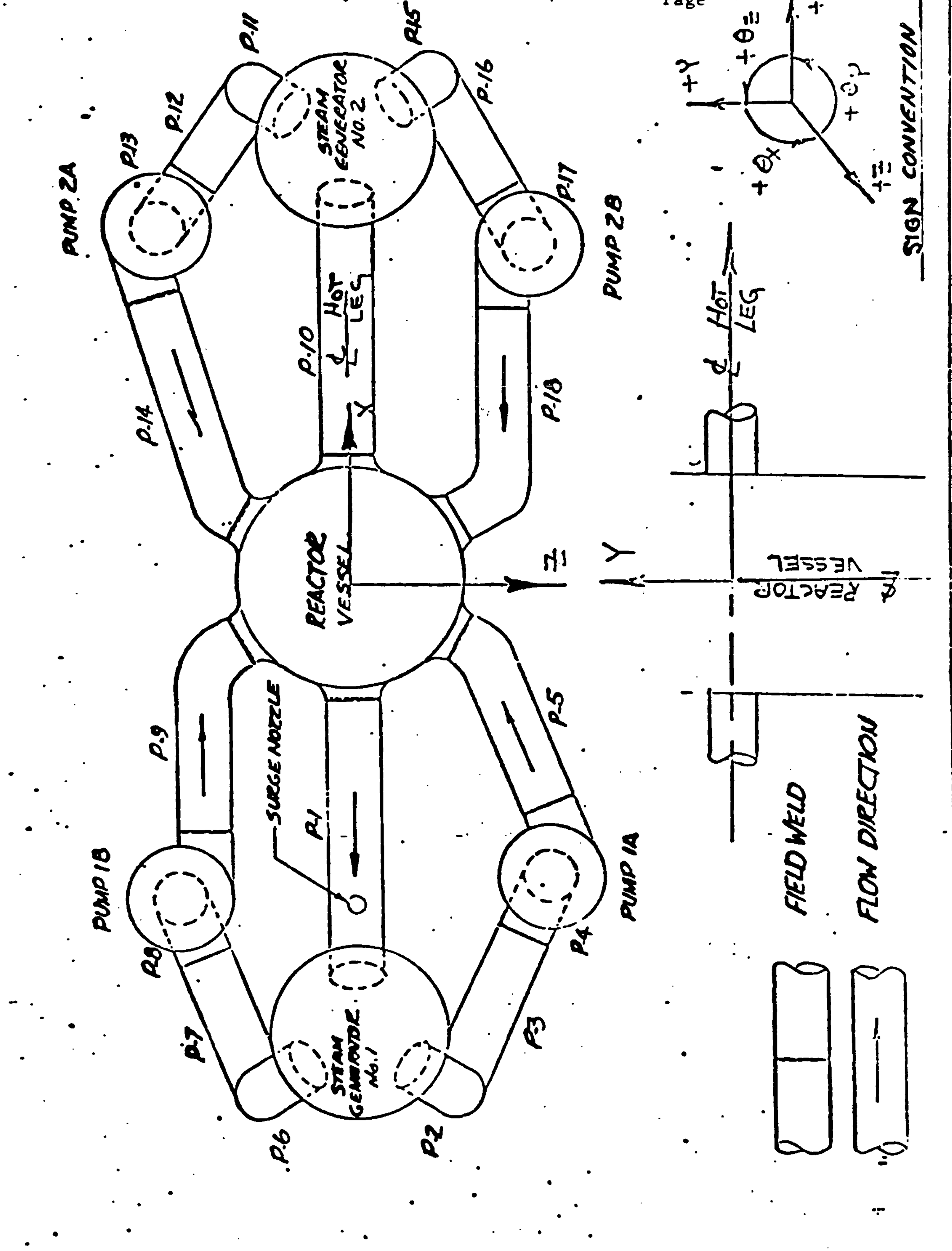
NOTES: 1. Tabulated displacements and rotations can be positive or negative.

2. Displacements and rotations due to pipe rupture and subcompartment pressurization only.

923-17-1

TITLE: Reactor Coolant Piping Nozzle Movements Unruptured Line

3

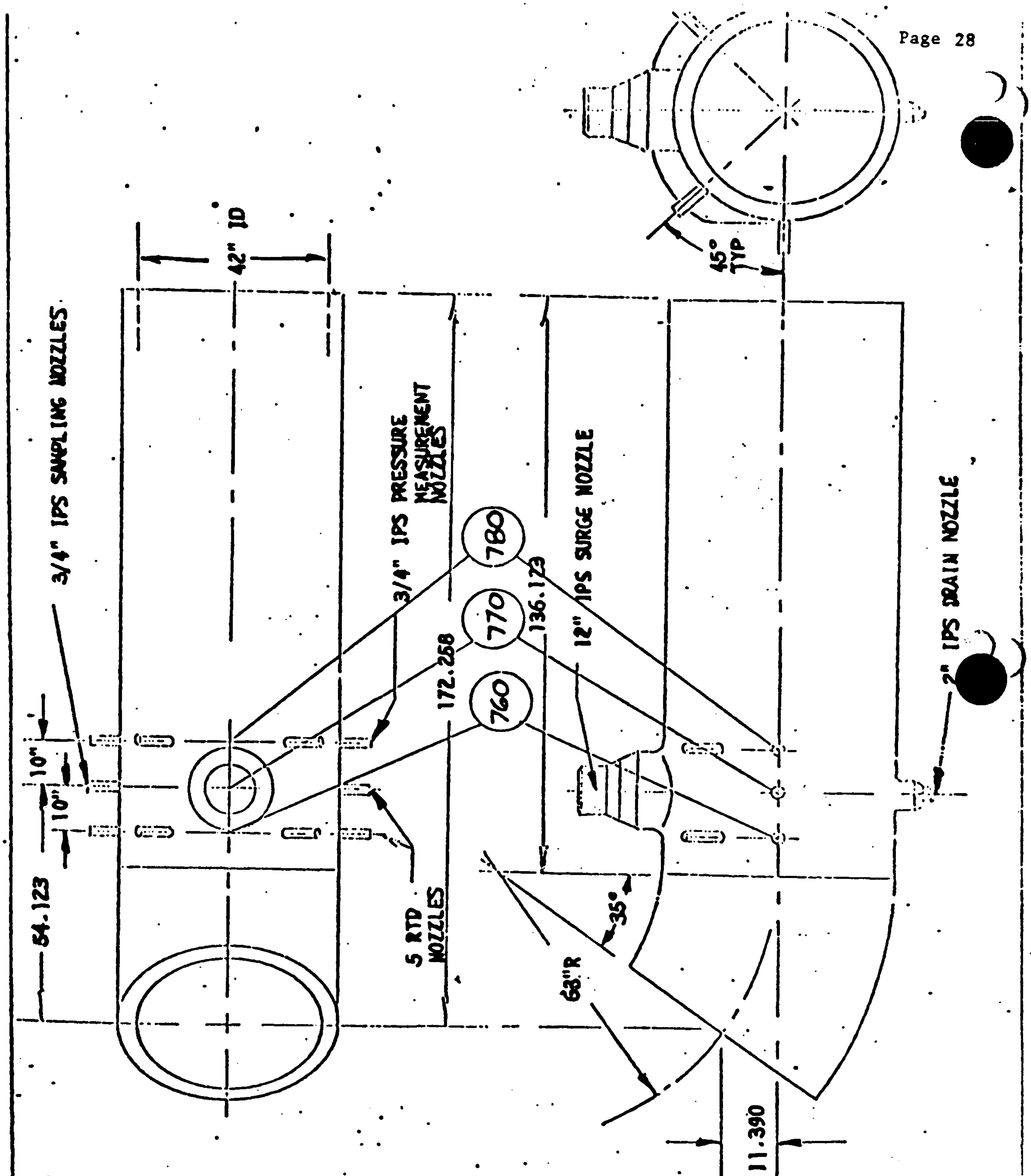


TITLE: REACTOR COOLANT PIPING ARRANGEMENT - PLAN VIEW

Fig. 1 Sheet 3

923-17-1

"THIS DOCUMENT HAS BEEN REVIEWED BY THE CE SAN ONOFRE UNITS 2 AND 3 PROJECT OFFICE AND IS CONSIDERED TO BE HIGH CONFIDENCE LEVEL INFORMATION."

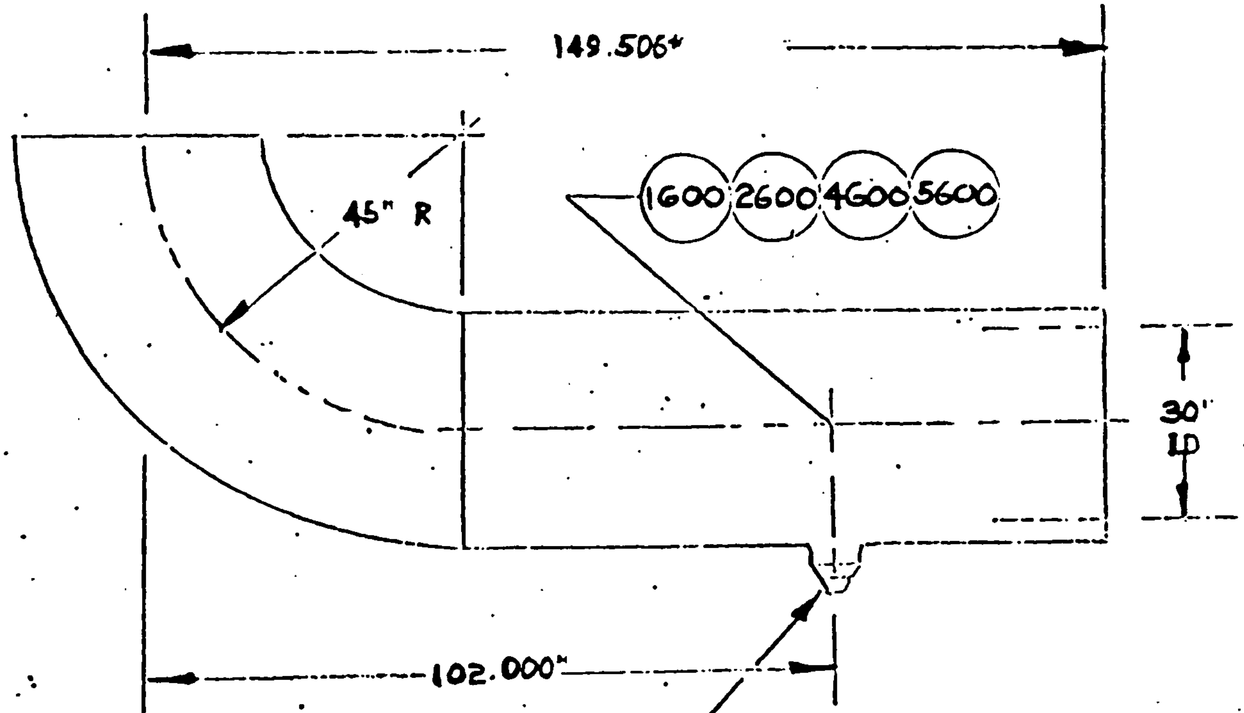


5023-923-17-0

Title: REACTOR COOLANT PIPING DETAILS - Assembly P-1

Fig. 1 Sheet 4

4



2" IPS Drain Nozzle (P-3, P-12, P-16)
2" IPS Letdown & Drain Nozzle (P-7)

INFORMATION ONLY
APPROVAL NOT REQUIRED
JUL 31 1975
BECHTEL
LOS ANGELES

*This is a calculated dimension.
Add 2" extra length per Paragraph 4.9.2
of Specification 00000-PE-140.

5023-923-17-0

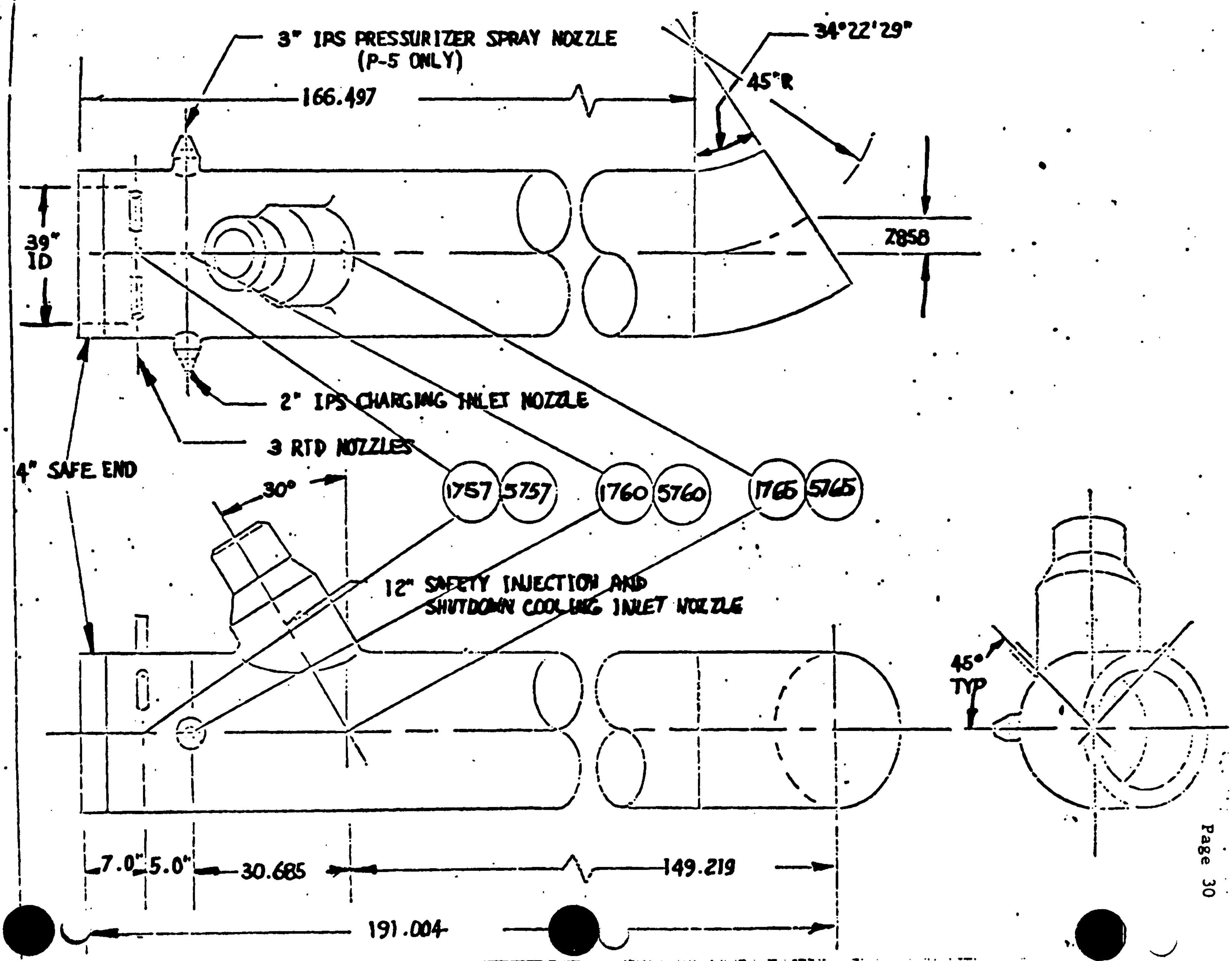
REACTOR COOLANT PIPING DETAILS - Asemblies P-3, 7, 12, 16 Fig. 1 Sheet 5

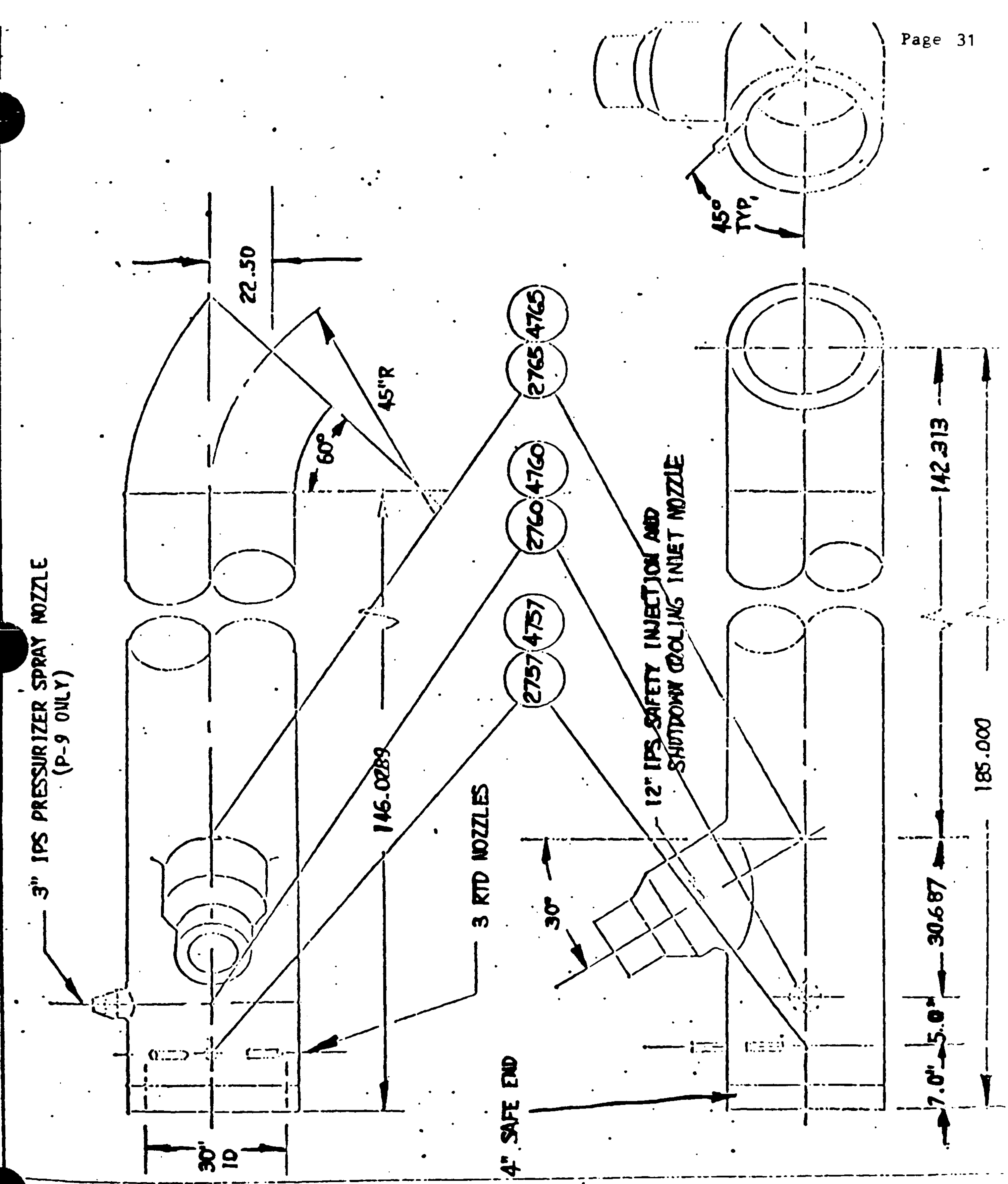
REACTOR COOLANT PIPING DETAILS - Assemblies P-5, 14

Fig. 1 Sheet 6

S023-923-17-0

PAGE R.5.4.4





REACTOR COOLANT PIPING DETAILS - Assemblies P-9, 18 Fig. 1 Sheet 7

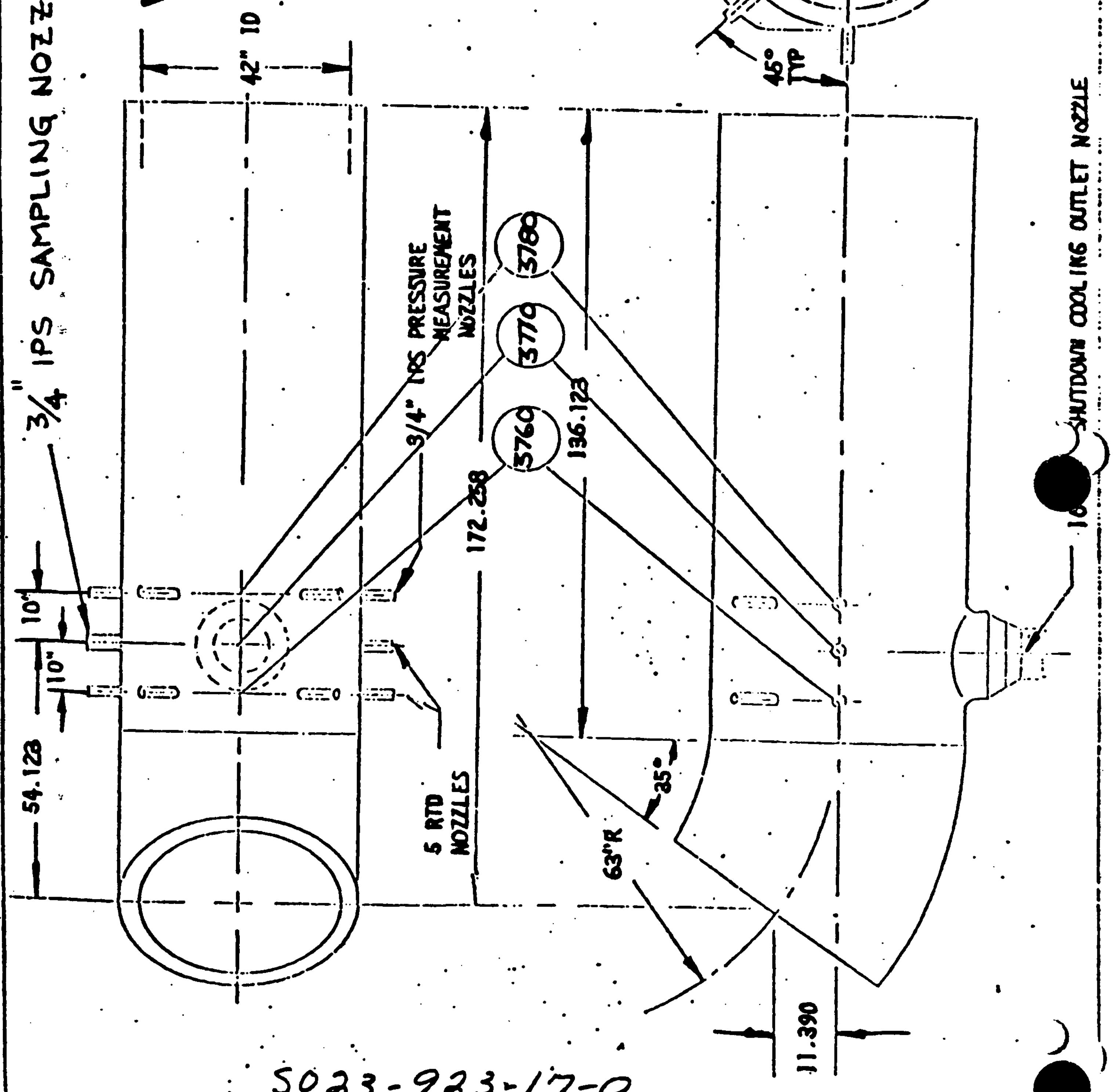
5023-923-17-0

MAY PROCEED
SUBMIT FINAL DWG. - MFG. MAY PROCEED
EXCEPT AS NOTED - MAKE CHANGES & SUBMIT FINAL DWGS. - MFG. MAY PROCEED AS APPROVED
4 ☐ NOT APPROVED - CORRECT AND RESUBMIT
5 ☐ APPROVAL NOT REQUIRED MFG. MAY PROCEED

DATE RECEIVED JUL 3

DWG. STATUS
SIGNED ________
DATE ________
BECHTEL LOS ANGELES

IMPORTANT: Vendor's drawings will be reviewed and approved only as to ... and ... relieve the Vendor's ... and suitability of materials ... represented thereon for the ...



SO23-923-17-0

Title: REACTOR COOLANT PIPING DETAILS - Assembly P-10 Fig. 1 Sheet 8

8

Figure 3 Sheet 1

APPENDIX D

"THIS DOCUMENT HAS BEEN REVIEWED BY THE CE SAN ONOFRE UNITS 2 AND 3 PROJECT OFFICE AND IS CONSIDERED TO BE HIGH CONFIDENCE LEVEL INFORMATION"

Component Nozzle See Fig. 3 Sheet 3	Reference Point	Reference Point Location with respect to Co-ordinate System shown on Fig. 3 Sheet 3		
		X(feet)	Y(feet)	Z(feet)
Spray	6150	0	36.750	0
Safety	6190	-3.595	33.031	-3.595
Safety	6170	3.595	33.031	-3.595
Surge	6040	0	.417	0

S023-919-24-2

TITLE: Pressurizer Nozzle Locations

"THIS DOCUMENT HAS BEEN REVIEWED BY THE CE SAN ONOFRE UNITS 2 AND 3 PROJECT OFFICE AND IS CONSIDERED TO BE HIGH CONFIDENCE LEVEL INFORMATION."

Component Nozzle See Fig. 3 Sheet 3	Reference Point	Reference Point Movement with Respect to Co-ordinate System shown on Fig. 3 Sheet 3					
		Displacements (inches)			Rotations (Radians)		
		Δx	Δy	Δz	θx	θy	θz
Spray	6150	.013	.822	.014	.00007	.00007	.00006
Safety	6190	.013	.822	.015	.00008	.00007	.00009
Safety	6170	.013	.822	.015	.00008	.00007	.00009
Surge	6040	.002	.049	.002	.00002	.00003	.00002

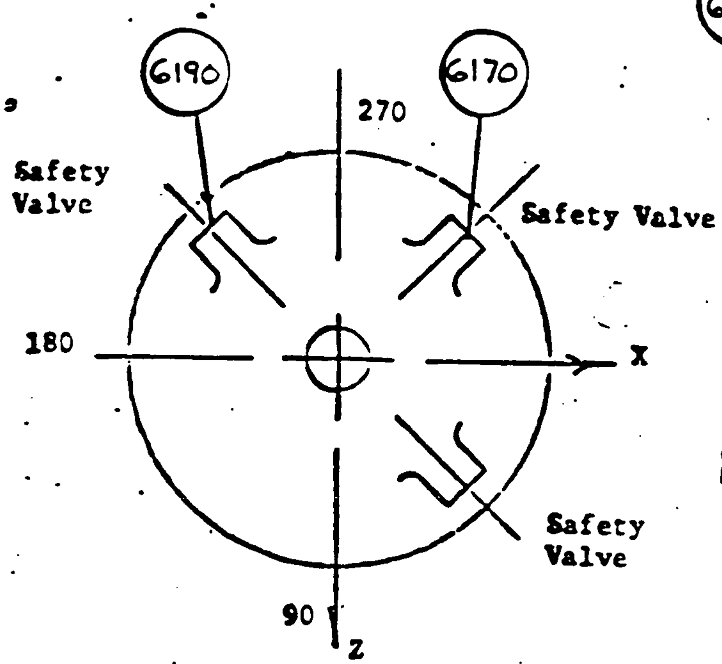
Notes: 1. Tabluated displacements and rotations can be either positive or negative.

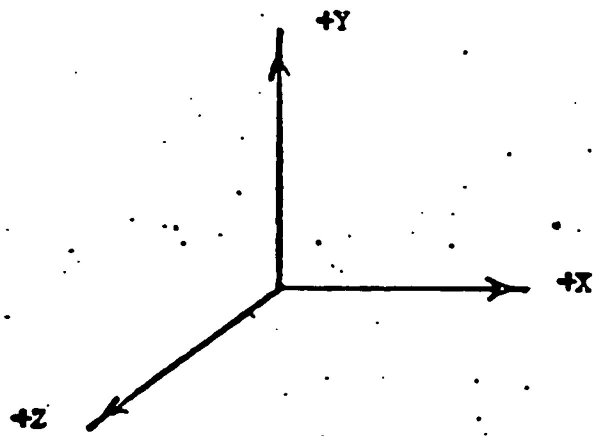
2. Displacements and rotations due to pipe rupture and subcompartment pressurization only.

919-24-2

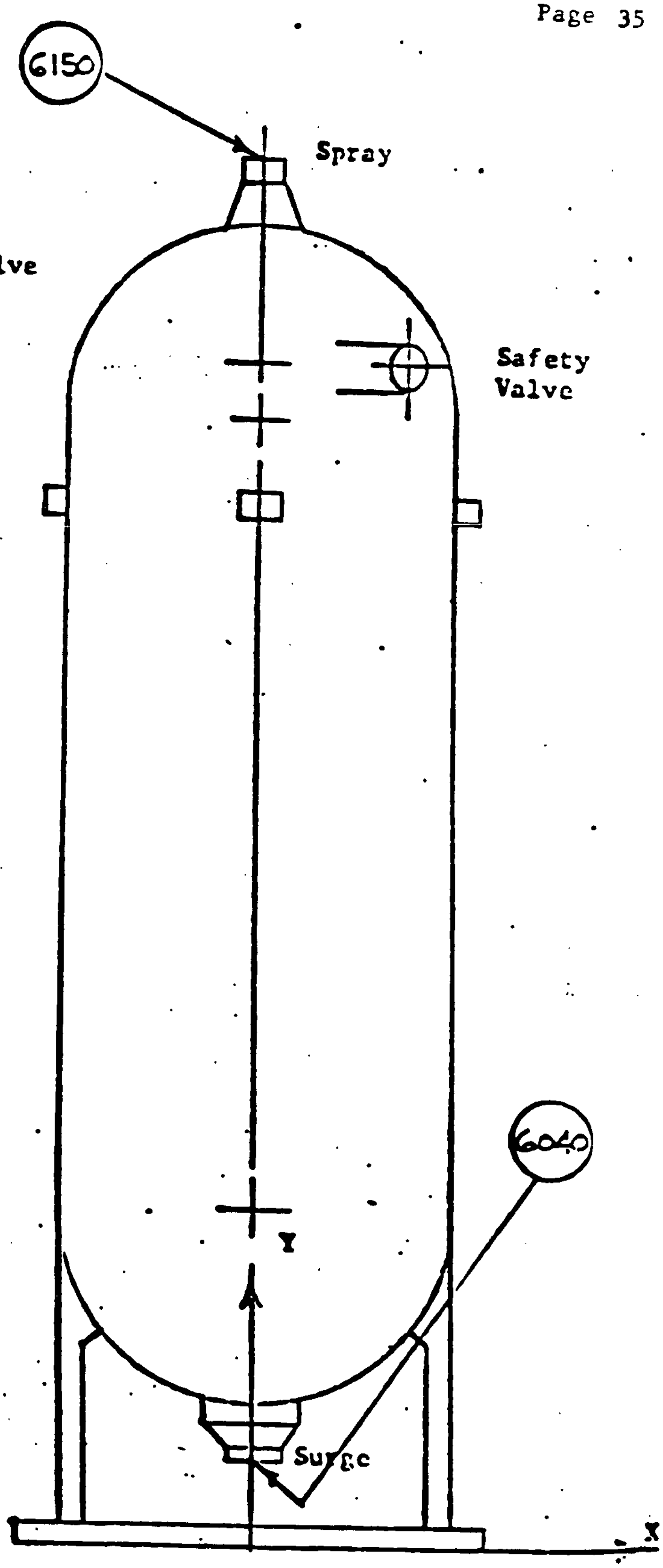
Title: Pressurizer Nozzle Movements - Unruptured Line

Figure 3 Sheet 3





Sign Convention



"THIS DOCUMENT HAS BEEN REVIEWED BY THE CE SAN ONOFRE UNITS 2 AND 3 PROJECT OFFICE AND IS CONSIDERED TO BE HIGH CONFIDENCE LEVEL INFORMATION."

TITLE: Pressurizer Nozzles

919-24-2

IMPORTANT

If the price or schedule is affected by this document approval, Bechtel must be notified prior to fabrication or such claims are waived.
Approval of document involving calculation, analysis or test report is only on acceptance of the method used by the supplier. Supplier retains full responsibility for design.
Approval of this document does not relieve the supplier from full responsibility for contract or purchase order requirements including, but not limited to, adequacy and suitability of materials and/or equipment represented thereon for the intended function.

DATE RECEIVED SEP 16 1976	DOC STATUS BY [illegible]
DOCUMENT STATUS 1 ☒ APPROVED — MANUFACTURER MAY PROCEED 3 ☐ APPROVED EXCEPT AS NOTED. MAKE CHANGES AND RESUBMIT. MANUFACTURER MAY PROCEED AS APPROVED. 4 ☐ NOT APPROVED — CORRECT AND RESUBMIT 7 ☐ INFORMATION ONLY ☐ DISTRIBUTION REQUIRED	DATE 12-9-76 [illegible] PF-1218 (1007B) 12/75

MICROFILM QUALITY ACCEPTABLE

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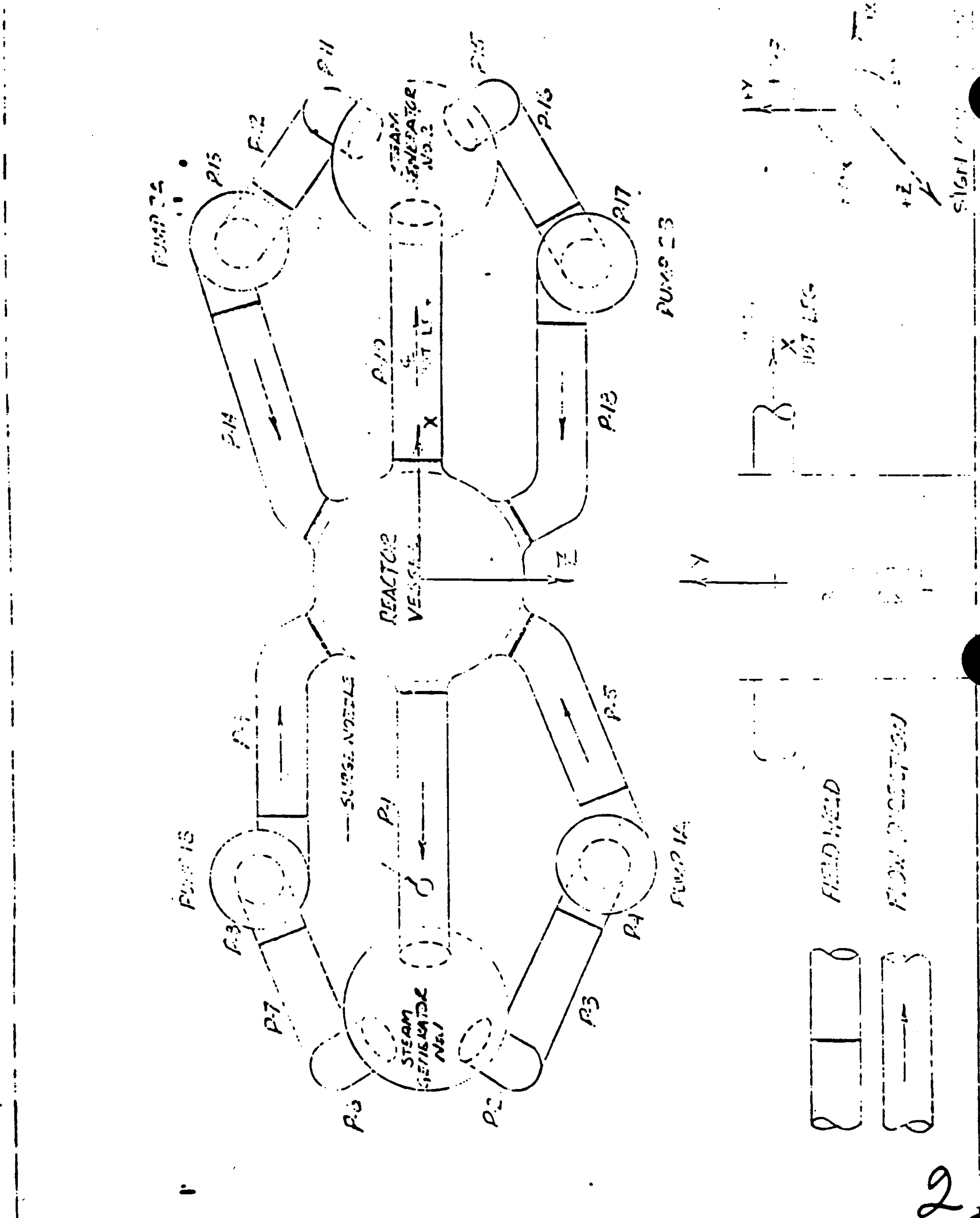
919-24-2

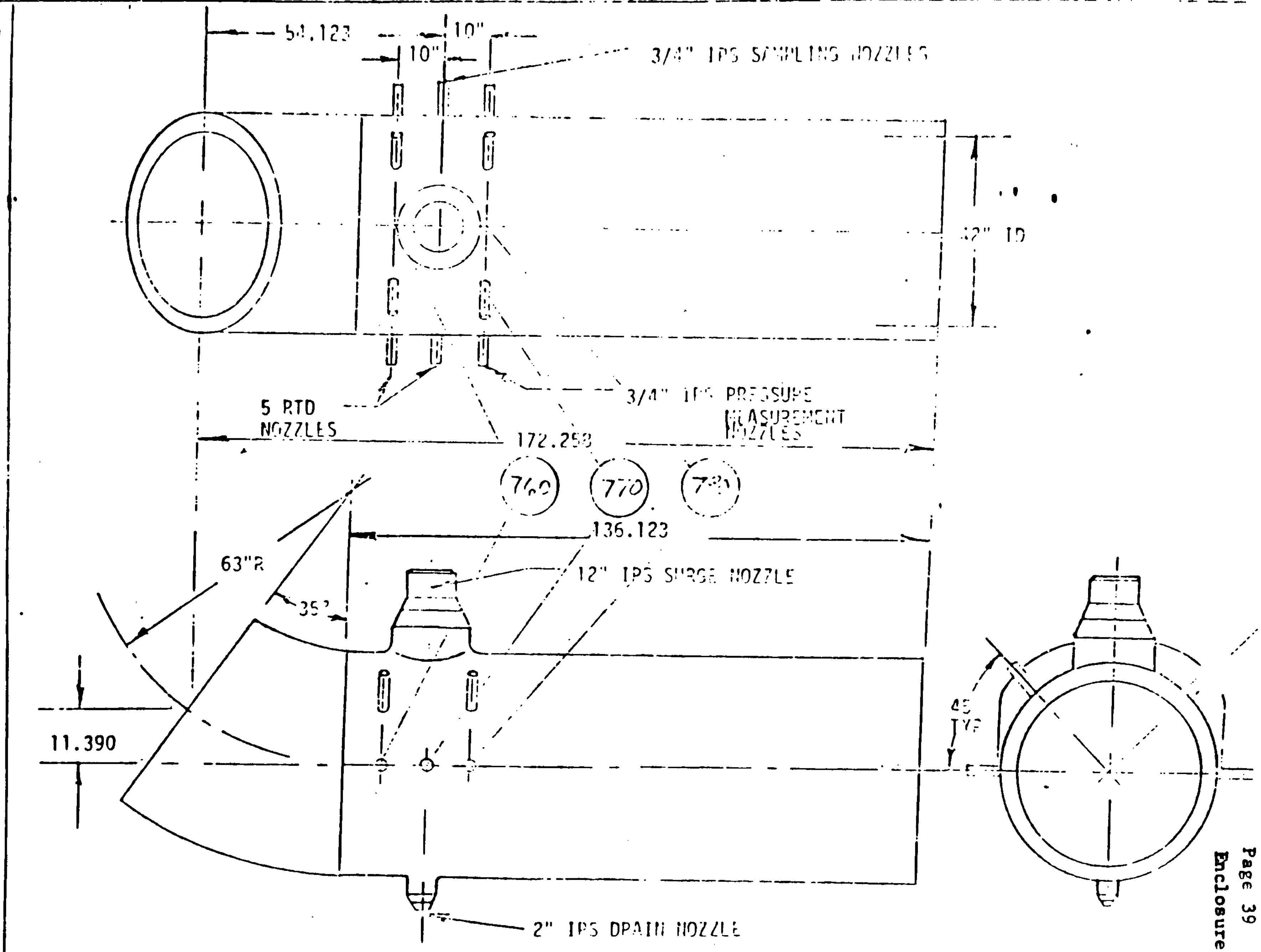
APPENDIX D (Con't)

Unit 3 RCS tributary nozzle movements (normal operation, ruptured line and unruptured line)



2

Title: REACTOR COOLANT PIPING ARRANGEMENT - PLAN VIEW		
Specification No. 01470-PE-140	Revision 0	Figure 7 Sheet 1

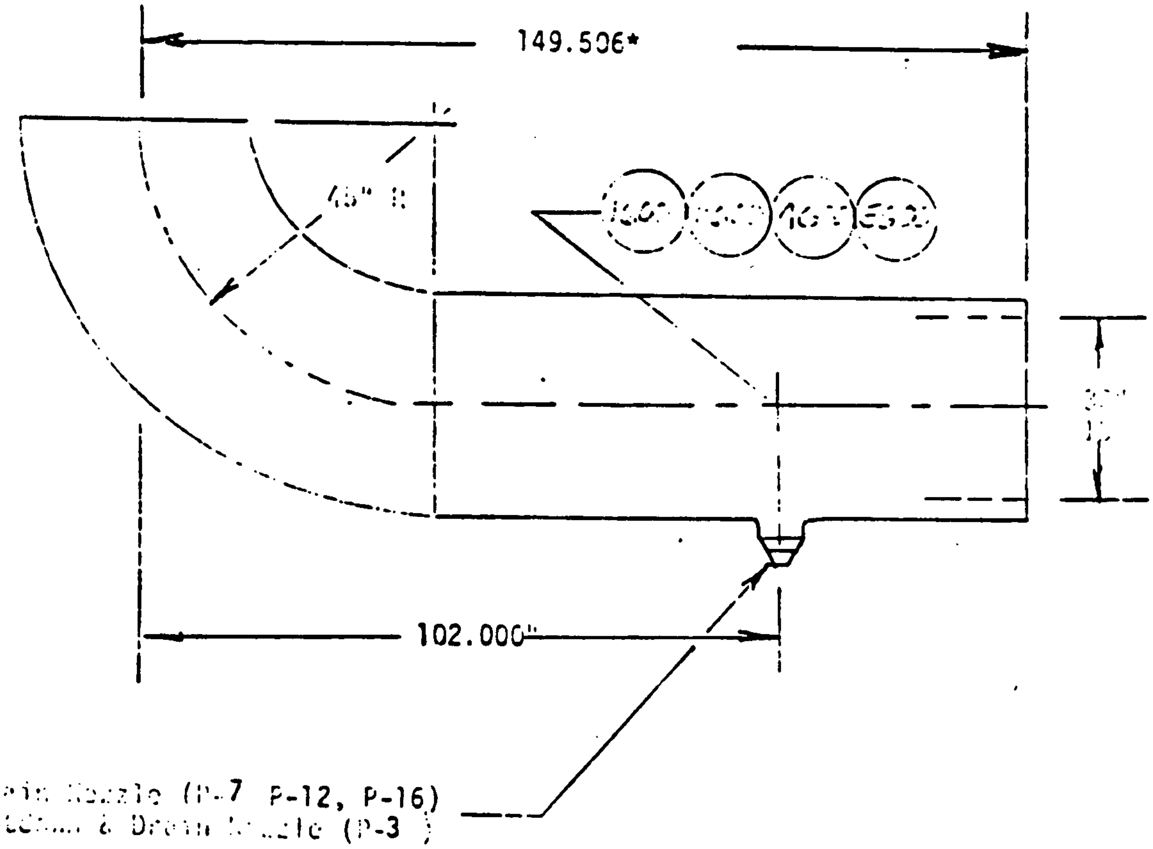


Title: REACTOR COOLANT PIPING DETAILS - Assembly P-1

Specification No. 01470-PE-140

Revision 0

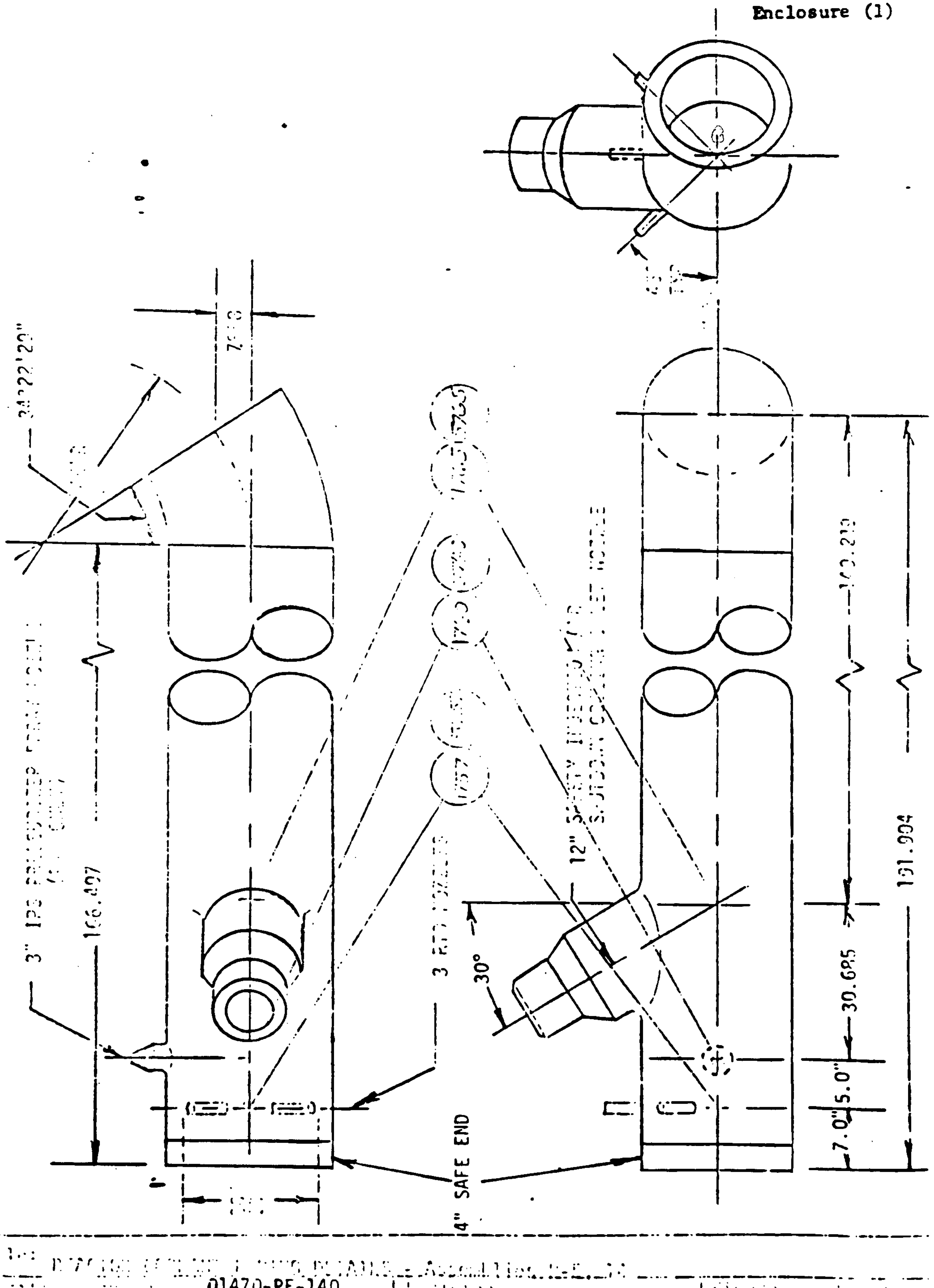
Figure 17 Sheet 3



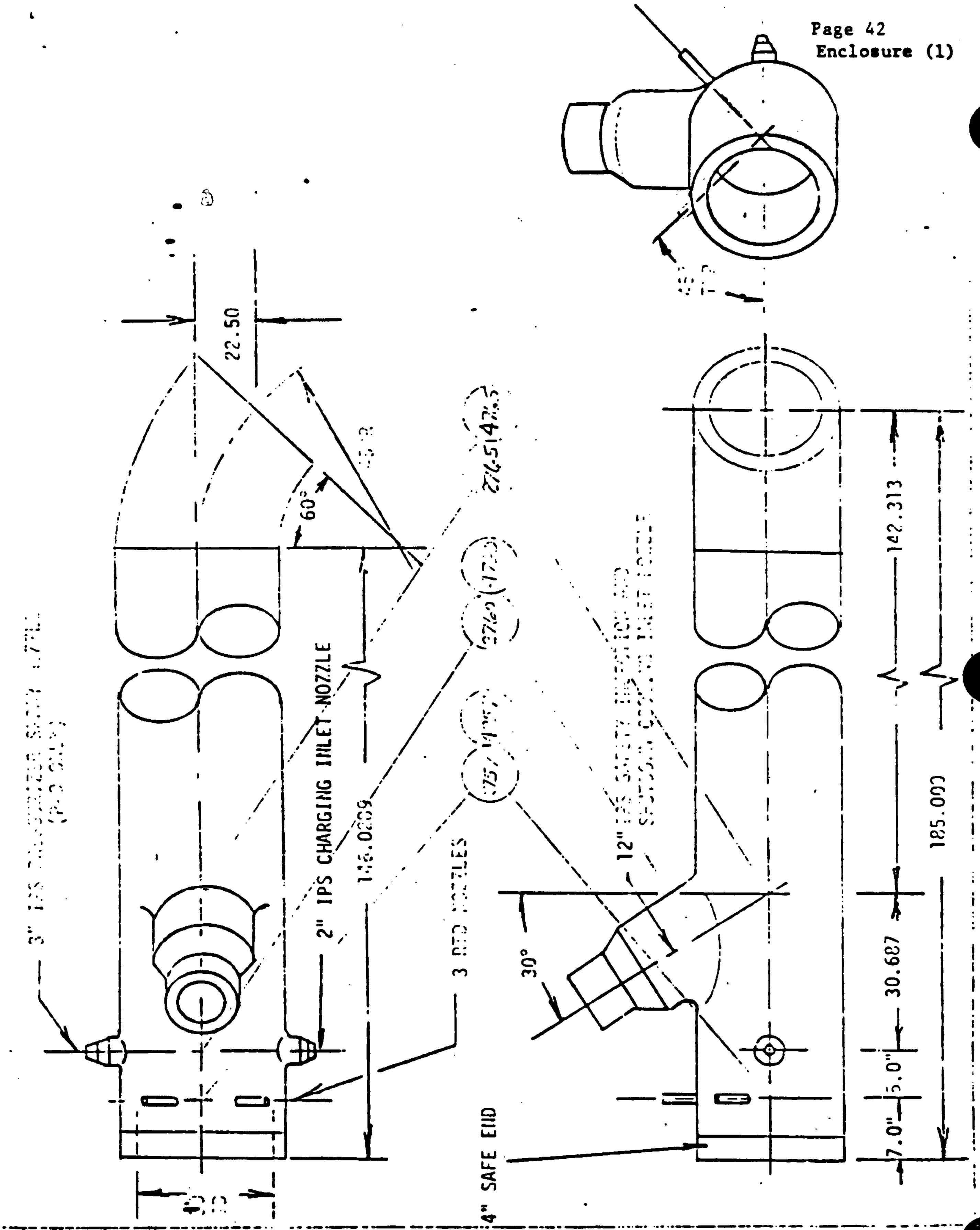
*This is a calculated dimension.
Add 2" extra length per paragraph 4.9.2
of Specification -140.

Title: REACTOR COOLANT PIPING DETAILS - Assemblies P-3, 7, 12, 16

Specification No. 01470-PE-140 | Revision 0



01470-PE-140 | 0 | 17 | 7



Title: REACTOR COOLANT PIPING DETAILS - Assemblies

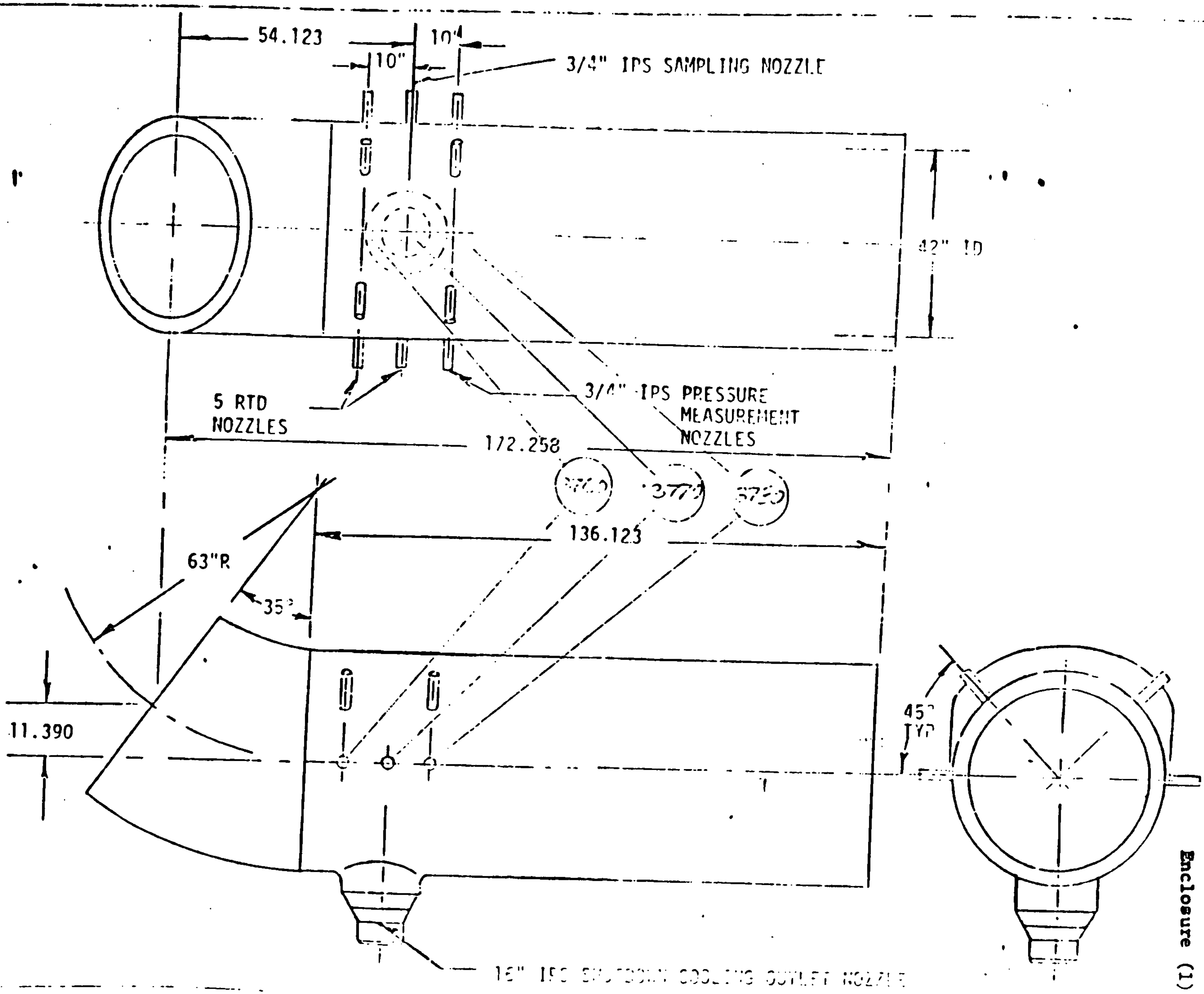
Specification No. 01470-PE-140 | Revision 0

Title: REACTOR COOLANT PIPING DETAILS - Assembly P-10

Specification No. 01470-PE-140

Revision 0

Figure 17 Sheet 9



Enclosure (1)

POWER SYSTEMS
COMBUSTION ENGINEERING INC

Calculation Number ________ Rev.____

Page Number Figure 1 Sheet 1

RC Piping Tributary Nozzle Locations

Enclosure (2)

Piping Assembly See Fig. 17 Sheet 1		Reference Point	Reference Point Location With Respect to Coordinate System Shown on Figure 17 Sheet 1		
			X (feet)	Y (feet)	Z (feet)
See Fig. 17 Sheet 3	P-1	760	-21.222	0	0
		770	-20.389	0	0
		730	-19.556	0	0
See Fig. 17 Sheet 5	P-3	1600	-30.744	-6.635	10.281
	P-7	2600	-30.744	-6.635	-10.281
	P-12	5600	30.744	-6.635	-10.281
	P-16	4600	30.744	-6.635	10.281
See Fig. 17 Sheet 7	P-5	1757	-18.860	0	16.348
		1760	-18.484	0	16.168
		1765	-16.179	0	15.062
	P-14	5757	18.860	0	-16.348
		5760	18.484	0	-16.168
		5765	16.179	0	-15.062
See Fig. 17 Sheet 8	P-9	2757	-20.084	0	-10.969
		2760	-19.667	0	-10.969
		2765	-17.110	0	-10.969
	P-18	4757	+20.084	0	10.969
		4760	19.667	0	10.969
		4765	17.110	0	10.969
See Fig. 17 Sheet 9	P-10	3760	21.222	0	0
		3770	20.389	0	0
		3780	19.556	0	0

POWER SYSTEMS
COMBUSTION ENGINEERING INC

Calculation Number ______________ Rev.____

Page Number Figure 1 Sheet 2

RC Piping Tributary Nozzle Movements - Normal Operation

Enclosure (2)

Piping Assembly See Fig. 17 Sheet 1		Reference Point	Reference Point Movement with Respect to Coordinate System Shown on Fig. 17 Sheet 1					
			Displacement (inches)			Rotations (radians)		
			ΔX	ΔY	ΔZ	θX	θY	θZ
See Fig. 17 Sheet 3	P-1	760	-.999	.272	.001	0	-.00001	.00133
		770	-.960	.287	.001	0	0	.00132
		780	-.921	.302	.001	0	0	.00130
See Fig. 17 Sheet 5	P-3	1600	-1.341	-.162	.410	.00064	.00030	.00040
	P-7	2600	-1.344	-.163	-.411	-.00065	-.00024	.00039
	P-12	5600	1.341	-.162	-.410	-.00064	.00030	-.00040
	P-16	4600	1.344	-.163	.411	.00065	-.00024	-.00039
See Fig. 17 Sheet 7	P-5	1757	-.798	.180	.732	.00058	-.00007	.00081
		1760	-.782	.185	.725	.00060	-.00005	.00085
		1765	-.686	.224	.679	.00071	.00003	.00107
	P-14	5757	.798	.179	-.734	-.00058	-.00006	-.00081
		5760	.782	.185	-.725	-.00060	-.00005	-.00085
		5765	.686	.224	-.679	-.00071	.00003	-.00170
See Fig. 17 Sheet 8	P-9	2757	-.864	.204	-.440	-.00053	.00025	.00083
		2760	-.846	.208	-.441	-.00053	.00025	.00089
		2765	-.740	.243	-.450	-.00051	.00028	.00113
	P-18	4757	.864	.204	.440	.00053	.00025	-.00083
		4760	.846	.208	.441	.00053	.00025	-.00089
		4765	.740	.243	.450	.00051	.00028	-.00113
See Fig. 17 Sheet 9	P-10	3760	.999	.272	-.001	0	-.00001	-.00133
		3770	.960	.287	-.001	0	-.00001	-.00132
		3780	.921	.302	-.001	0	-.00001	-.00130

POWER SYSTEMS
COMBUSTION ENGINEERING INC

Calculation Number ____________ Rev.____

Page Number Figure 1 Sheet 3

RC Piping Tributary Nozzle Movements - Unruptured Line

Enclosure (2)

Piping Assembly See Fig. 17 Sheet 1		Reference Point	Reference Point Movement with Respect to Coordinate System Shown on Fig. 17 Sheet 1					
			Displacement (inches)			Rotation (radians)		
			ΔX	ΔY	ΔZ	θX	θY	θZ
See Fig. 17 Sheet 3	P-1	760	.074	.102	.064	.00015	.00079	.00074
		770	.074	.093	.073	.00014	.00080	.00075
		780	.075	.085	.083	.00013	.00081	.00074
See Fig. 17 Sheet 5	P-3	1600	.112	.132	.036	.00083	.00100	.00093
	P-7	2600	.113	.131	.030	.00078	.00106	.00097
	P-12	5600	.112	.132	.036	.00083	.00100	.00093
	P-16	4600	.113	.131	.030	.00078	.00106	.00097
See Fig. 17 Sheet 7	P-5	1757	.087	.022	.064	.00021	.00028	.00028
		1760	.086	.024	.066	.00022	.00033	.00033
		1765	.081	.043	.078	.00038	.00057	.00053
	P-14	5757	.087	.022	.064	.00021	.00028	.00028
		5760	.086	.024	.066	.00022	.00033	.00033
		5765	.081	.043	.078	.00038	.00057	.00053
See Fig. 17 Sheet 8	P-9	2757	.070	.028	.044	.00020	.00029	.00033
		2760	.070	.030	.046	.00019	.00034	.00038
		2765	.070	.049	.059	.00023	.00062	.00064
	P-18	4757	.070	.028	.044	.00020	.00029	.00033
		4760	.070	.030	.046	.00019	.00034	.00038
		4765	.070	.049	.059	.00023	.00062	.00064
See Fig. 17 Sheet 9	P-10	3760	.074	.102	.064	.00015	.00079	.00074
		3770	.074	.093	.073	.00014	.00080	.00075
		3780	.075	.085	.083	.00013	.00081	.00074

NOTES: 1. Tabulated displacements and rotations can be positive or negative.

2. Displacements and rotations due to LOCA only.

RC Piping Tributary Nozzle Movements - Ruptured Line

Enclosure (2)

Piping Assembly See Fig. 17 Sheet 1		Reference Point	Reference Point Movement with Respect to Coordinate System Shown on Fig. 17 Sheet 1					
			Displacement (inches)			Rotations (radians)		
			ΔX	ΔY	ΔZ	ΘX	ΘY	ΘZ
See Fig. 17 Sheet 3	P-1	760						
		770	.256	1.181	.170	.00013	.00116	.01208
		780						
See Fig. 17 Sheet 5	P-3	1600						
	P-7	2600						
	P-12	5600						
	P-16	4600						
See Fig. 17 Sheet 7	P-5	1757						
		1760						
		1765	.432	.186	.644	.00138	.00606	.00195
	P-14	5757						
		5760						
		5765	.432	.186	.644	.00138	.00606	.00195
See Fig. 17 Sheet 8	P-9	2757						
		2760						
		2765	.436	.229	.533	.00105	.00718	.00213
	P-18	4757						
		4760						
		4765	.436	.229	.533	.00105	.00718	.00213
See Fig. 17 Sheet 9	P-10	3760						
		3770	.256	1.181	.170	.00013	.00116	.01208
		3780						

NOTES: 1. Tabulated displacements and rotations can be positive or negative.

2. Displacements and rotations due to LOCA only.

APPENDIX E

Code Class 2, Instrument Sensing Line List

Code Class 2, Instrument Sensing line List

Code Class 2 Instrument Sensing Line	Equipment
PT-0100X	Pressurizer
PT-0100Y	S2-1201-ME087-Unit 2
PT-0101-1	S2-1201-ME-087-Unit 3
PT-0101-2	
PT-0101-3	
PT-0101-4	
PT-0102-1	
PT-0102-2	
PT-0102-3	
PT-0102-4	
LT-0103	
PT-0103-1	
PT-0104-2	
PT-0105-3	
PT-0106-4	
LT-0110-1	
LT-0110-2	

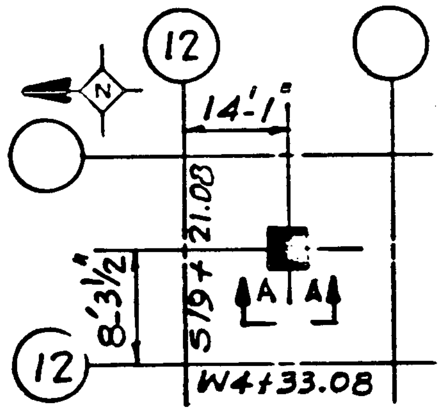
"Tagging", (line numbers), of the Code Class 2 instrument sensing lines on Code Class 1 equipment (pressurizer) within the process piping system, shall be the same as the corresponding instrument number. This shall be typical for Units 2 and 3.

ENCL. C

S.U.S. 2BBB

ITEM NO	NO REQ'D	PART NO	SIZE	DESCRIPTION	NF	AISC	NOTES

COAT SUPPLEMENTARY STRUCTURE WITH NUCLEAR FINISH

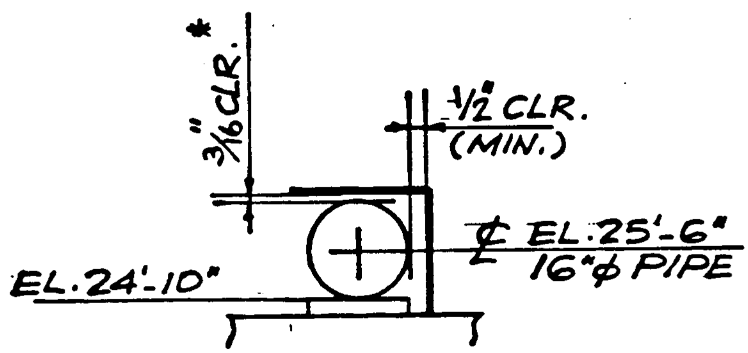


LOCATION PLAN

*NOTE: MIN. TOTAL CLEAR. REQ'D IS 1/8"

(I-C.) AREA NO. 2C06-2

PMC : FEO		TYPE 2		
PROJ CL	PIPE A (Q-C-I)		MAX. TEMP 650°F	
QUAL CL	STEEL II			
DESIGN		X	Y	Z
M (FT-LBS)	+	—	—	—
	-	—	—	—
P (LBS)	+	—	17,958	—
	-	—	31,796	—



SECTION A-A

S PROB. NO. 52 PT. NO. 98

SPOOL NO. 2-RC-016-4

REF. DWGS.
ISO 1201-016-1
PIPE 40400
STEEL

SHT 1 OF 2

TAG NO. 52-RC-016-H-001

1201

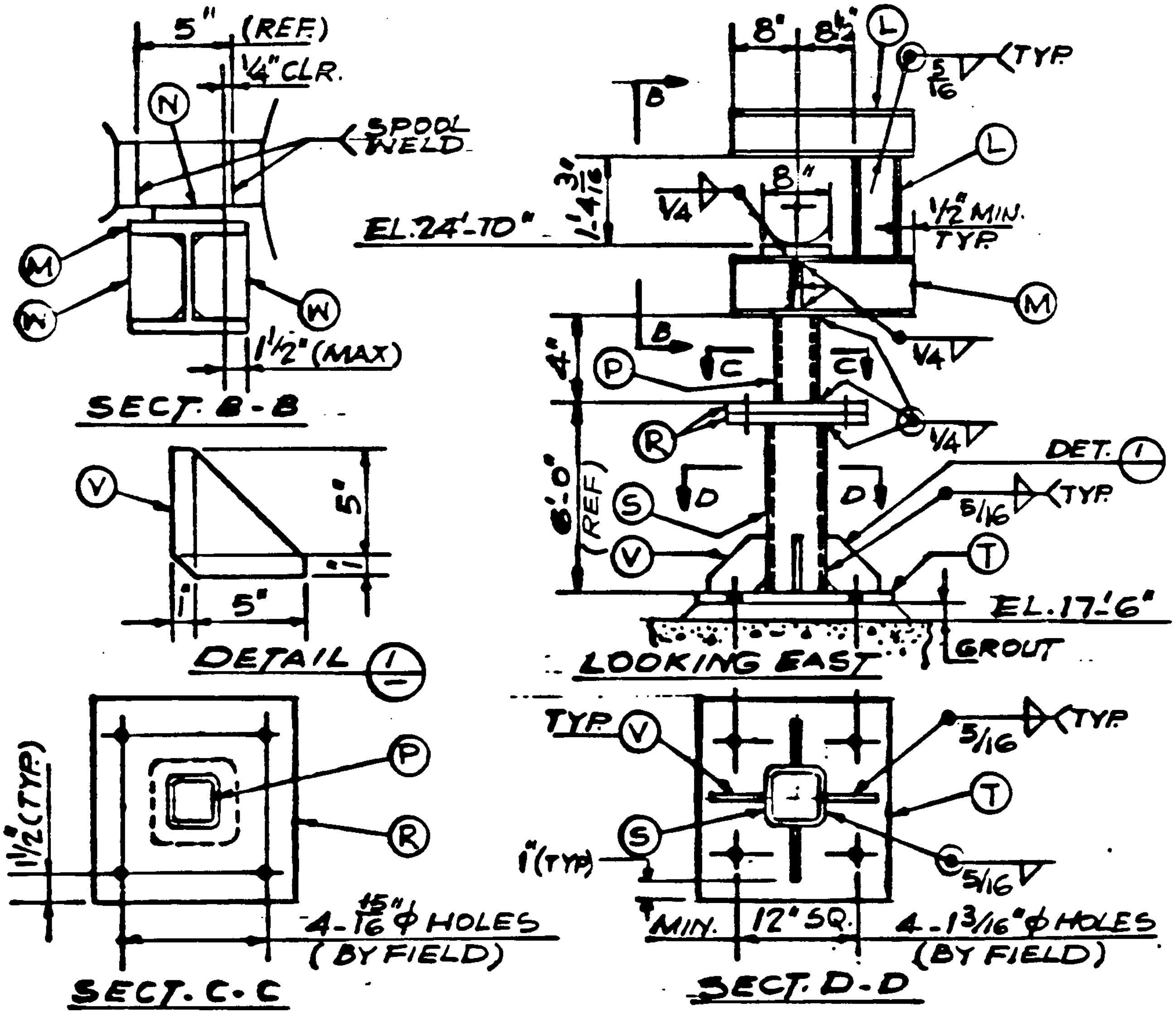
NO.	REVISIONS	DATE	DR.	CHK.	E.G.S.	P.E.	Q.A.E.
2	INCORP. DCN 01, 02 & REDRAWN	2-28-80	D.F.	JB	KG HB	RLR/SIA	DGS

BECHTEL POWER CORPORATION NORWALK, CALIFORNIA	J.O. NO.	SAN ONOFRE NUCLEAR GENERATING STATION
	FILE	PIPE SUPPORT ASSEMBLY
JOB NO. 10079 / DATE / APPROVED		SOUTHERN CALIFORNIA EDISON COMPANY SCALE: NTS LOS ANGELES, CALIF.

8006230

S.U.S. 2BBB

ITEM NO	NO REQ'D	PART NO	SIZE	DESCRIPTION	NF	AISC	NOTES
L	2		W6X20X2'-0"			X	BY FIELD
M	1		W8X40X2'-0"			X	
N	1		PL-1/2X3X0'-8"			X	
P	1		TS 6X6X.375X0'-4			X	
R	2		PL 3/4X14X1'-2"			X	
S	1		TS 8X8X.375X6'-3"			X	
T	1		PL-1X22X1'-10"			X	
V	4		3/8" GUSSET PL			X	
W	2		3/8" STIFF. PL			X	
	4		3/4"φ BOLTS W/NUTS & WASHERS			X	
	4		US-8-HC-LCSF-175				



1201 SHT 2 OF 2

TAG NO. S2-RC-016-H001 REV 2

BECHTEL POWER CORPORATION NORWALK, CALIFORNIA			J.O. NO.	SAN ONOFRE NUCLEAR GENERATING STATION
			FILE	PIPE SUPPORT ASSEMBLY
JOB NO. 10079	DATE	APPROVED		SOUTHERN CALIFORNIA EDISON COMPANY
				SCALE: NTS LOS ANGELES, CALIF.

1000

SAN ONOFRE NUCLEAR GENERATING STATION
UNITS 2 & 3
FIELD CHANGE REQUEST/DCN/SCN

A(QCI) 2BBB

JOB NO. 10079 (I.C.) 206-2

1. FCR NO.	S-5104
DATE	4-26-80
2. PAGE	1 OF 1
3. UNIT NO.	2
12A. QUALITY CLASS	I
12B. SPEC ADDEND. NO.	
12C. DCN SUB NO.	05
12D. DATE	MAY 14 1980
12E. SCN NO.	

4. REF. DWG. OR SPEC.	SHEET NO.	REV.	5. TITLE
S2-RC-016-H-001		2	PIPE SUPPORT ASSEMBLY

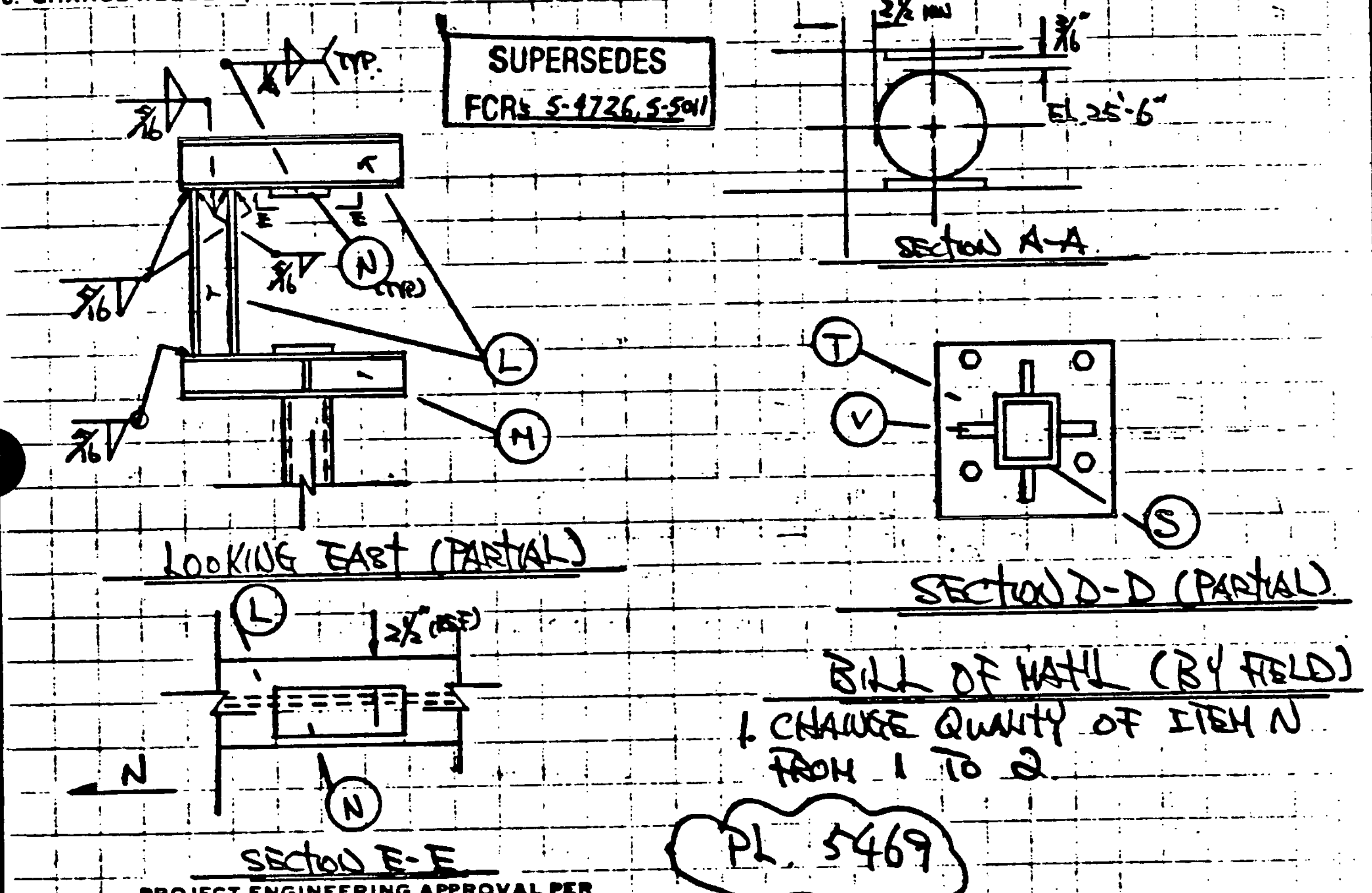
NAME

6. DESIGN ORIGIN: ENGRG ☒ VENDOR ☐ (IDENTIFY)

7. EXISTING CONDITION: CLR DIMENSION SHOWN INCORRECT.
CHANGE BILL OF MAT'L

THIS FCR SUPERSEDES: FCR S-4726, S-5011

8. CHANGE REQUEST/SKETCH



BILL OF MAT'L (BY FIELD)
1. CHANGE QUANTY OF ITEM N FROM 1 TO 2.

PL 5469

VOID FCR S-4726 & S-5011

PROJECT ENGINEERING APPROVAL PER

10. REVIEWED BY	DATE			DATE
CIVIL		PIPE	[signature]	4-30-80
ELEC		INSTR		
MECH		NUC		
WELD		QAE	[signature]	4-30-80

9. [signature]
PREPARED BY

11. APPROVAL OF FLD DISPOSITION
[signature]
PROJECT FIELD ENGINEER
DATE APR 30 1980

12. PROJECT ENGRG APPROVAL: YES ☒ NO ☐ EGS P.E. R.L. Rogers/RH DATE 4-29-80

REMARKS: **CONVERT TO DCN**
Void DCN 344

13. QUALITY ASSURANCE ENGINEER (FIELD): [signature] DATE 4-30-80

14. SCE ENGINEERING APPROVAL P.E. DATE

15. BECHTEL QUALITY ENGINEER/QUALITY ASSURANCE [signature] DATE 5-13-80

16. ADDITIONAL DISTRIBUTION

PF-0924 (10079) 10/78

APR 24 1980

BECHTEL

SAN ONOFRE NUCLEAR GENERATING STATION
UNITS 2 & 3
FIELD CHANGE REQUEST/DCN/SCN

A(QCI).
2BBB

JOB NO. 10079 (1.e.) 2Cof2

1. FCR NO. 8-5011
DATE 4-11-80
2. PAGE 1 OF 1
3. UNIT NO. 2

12A. QUALITY CLASS I
12B. SPEC ADDEND. NO.

12C. DCN SUB NO. 04
12D. APR 30 1980
12E. SCN NO.

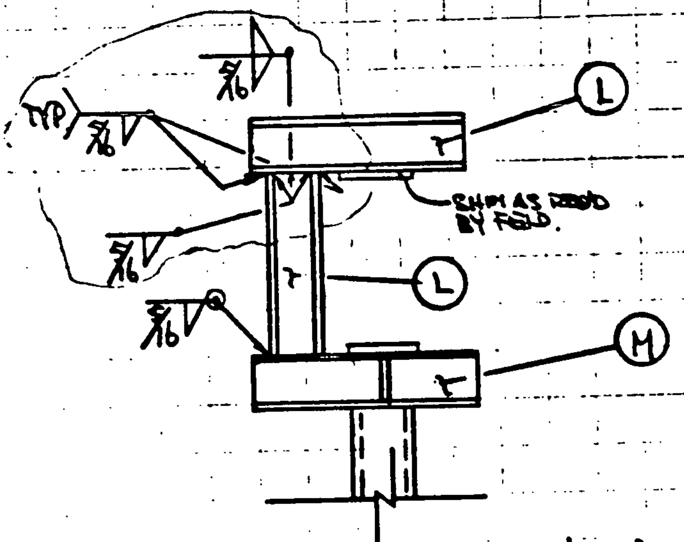
4. REF. DWG. OR SPEC.	SHEET NO.	REV.	5. TITLE
S2-PC016-N-001		2	PIPE SUPPORT ASSEMBLY

NAME

6. DESIGN ORIGIN: ENGRG ☒ VENDOR ☐ (IDENTIFY)
1201

7. EXISTING CONDITION: WELD SYMBOL SHOWN INCORRECT

8. CHANGE REQUEST/SKETCH



NO NEW MAT'L REQ'D.

LOOKING EAST (PARTIAL)

PL5398

PROJECT ENGINEERING APPROVAL PER

10.	REVIEWED BY	DATE
CIVIL		
ELEC		
MECH		
WELD		

PIPE [signature] 4-14-80
INSTR
NUC
QAE [signature] 4-14-80

9. [signature]
PREPARED BY

11. APPROVAL OF FLD DISPOSITION
[signature]
PROJECT FIELD ENGINEER
DATE 4-14-80

12. PROJECT ENGRG APPROVAL: YES ☒ NO ☐ EGS P.E. R.L. Rogers/[illegible] DATE 4-11-80

REMARKS: **CONVERT TO DCN**

13. QUALITY ASSURANCE ENGINEER (FIELD): [signature] DATE 4-14-80

14. SCE ENGINEERING APPROVAL P.E. DATE

15. BECHTEL QUALITY ENGINEER/QUALITY ASSURANCE [signature] DATE 4-28-80

16. ADDITIONAL DISTRIBUTION

PF-0924 (10079) 10/78

BECHTEL

SAN ONOFRE NUCLEAR GENERATING STATION
UNITS 2 & 3
FIELD CHANGE REQUEST/DCN/SCN

A (QCI) 2BBB (I.C.) 2C06-2

JOB NO. 10079

1. FCR NO.	S4726
DATE	3-11-80
2. PAGE	1 OF 1
3. UNIT NO.	2
12A. QUALITY CLASS	I
12B. SPEC ADDEND. NO.	
12C. DCN SUB NO.	03
12D. DATE	MAR 25 1980
12E. SCN NO.	

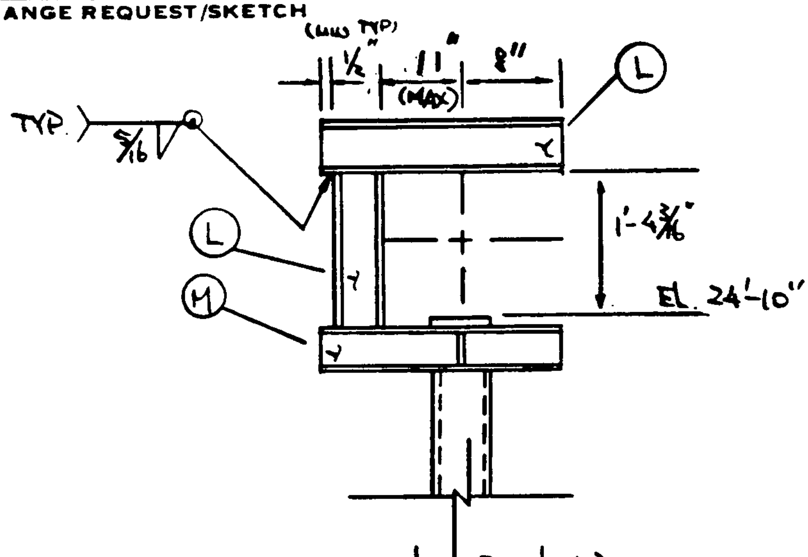
4. REF. DWG. OR SPEC.: 2-RC-016-H-001 SHEET NO.: REV.: 2

5. TITLE: PIPE SUPPORT ASSEMBLY NAME

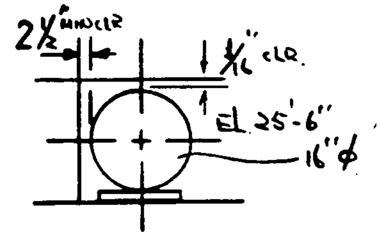
6. DESIGN ORIGIN: 1201 ENGRG ☒ VENDOR ☐ (IDENTIFY)

7. EXISTING CONDITION: MEMBER TOO CLOSE TO THE WALL
WELD CAN NOT BE ACCOMPLISHED

8. CHANGE REQUEST/SKETCH



LOOKING EAST (PARTIAL)



SECTION A-A

NO NEW MAT'L REQ'D

PL 5125

PROJECT ENGINEERING APPROVAL PER

10.	REVIEWED BY	DATE			
CIVIL			PIPE	RJS	3-13-80
ELEC			INSTR		
MECH			NUC		
WELD			QAE	J W Sheppard	3-14-80

9. [signature] PREPARED BY

11. APPROVAL OF FLD DISPOSITION [signature] PROJECT FIELD ENGINEER DATE MAR 14 1980

12. PROJECT ENGRG APPROVAL: YES ☒ NO ☐ EGS P.E. R.L. Rogers/RH DATE 3-12-80

REMARKS: CONVERT TO DCN

13. QUALITY ASSURANCE ENGINEER (FIELD): J W Sheppard DATE 3-14-80

14. SCE ENGINEERING APPROVAL P.E. DATE

15. BECHTEL QUALITY ENGINEER/QUALITY ASSURANCE J W Sheppard DATE 3-25-80

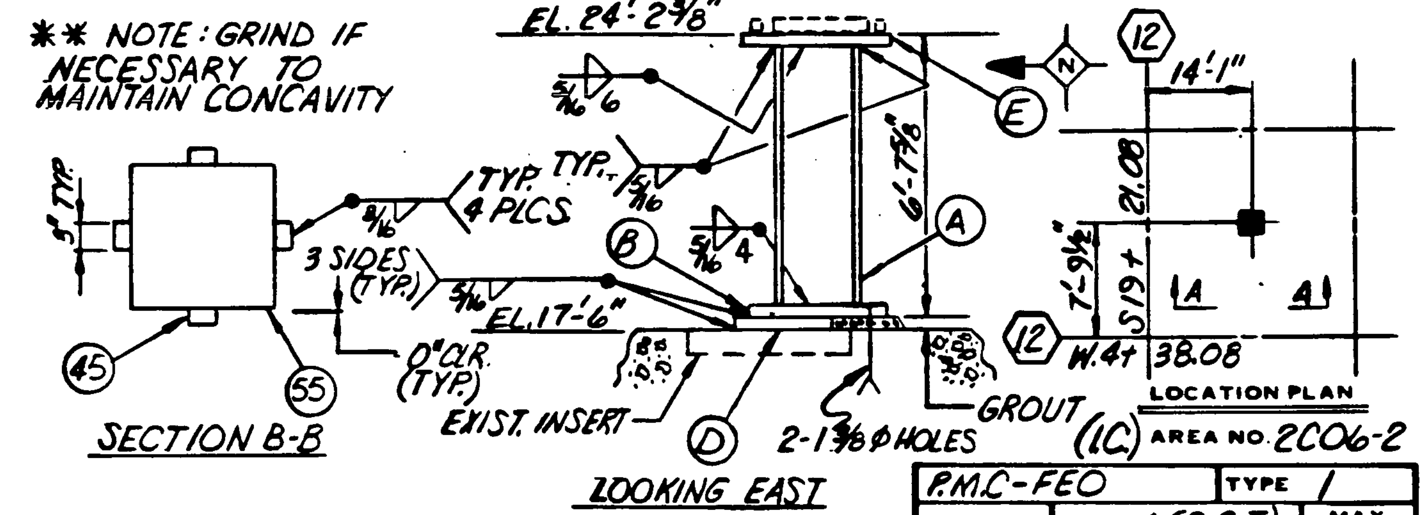
16. ADDITIONAL DISTRIBUTION

PF-0924 (10079) 10/78

SUS-388B

ITEM NO.	NO REQ'D	PART NO.	SIZE / DESCRIPTION	NF	AISC	NOTES
30	1	–	8" SCH. 140 S.S. DUMMY PIPE	✱		BY KELLOGG
31	1	–	12" x 1¼ x 12" C.S. PL	X		BY KELLOGG
54	1	–	UPPER SLIDE BEARING PL 10 GA.			BY FIELD
			S.S. 11½" x 11½"			
55	1		LOWER SLIDE BEARING PL			BY FIELD
			BRONZITE ¼" x 11" x 11"			
D	1		PL ¾ x 10 x 1'-5"			
A	1		W 8 x 31			SPEC.
B	1		PL ¾ x 16 x 1'-4"			S023-206-18
E	1		PL 1¼" x 1'-0¼" x 1'-0¼"			BY FIELD
45	4		C.S. BAR 3/16" x 3/16" x 3"			BY FIELD
	2		US-8-HC-LCSF-175			

✱ INTEGRAL ATTACH. USE ASME SECT. III. SUBSECTION 'NB' MAT'L.

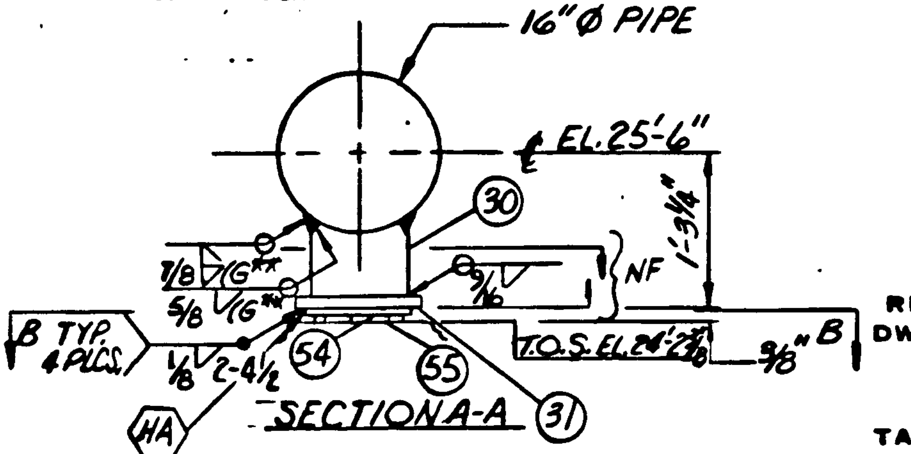


(1C) AREA NO. 2C06-2

P.M.C-FEO		TYPE 1	
PROJ CL	PIPE A (Q.C.I)		MAX. TEMP 650 °F
QUAL CL	STEEL II		

DESIGN		X	Y	Z
M (FT-LBS)	+	—	—	—
	-	—	—	—
P (LBS)	+	—	0	—
	-	—	28914	—

COAT SUPPLEMENTARY STRUCTURE WITH NUCLEAR FINISH



S PROB. NO. 52 PT. NO. 104

SPOOL NO. 2-RC-016-5

REF. DWGS.
ISO. 1201-016-1
PIPE 40400
STEEL —

TAG NO. S2-RC-016-H-002

1201

NO.	REVISIONS	DATE	DR.	CHK.	E.G.S.			P.E.	Q.A.E.
	–								
3	REDRAWN & INCORP. DCN'S #1, 2	2-26-80	TM		KG		HB	—	

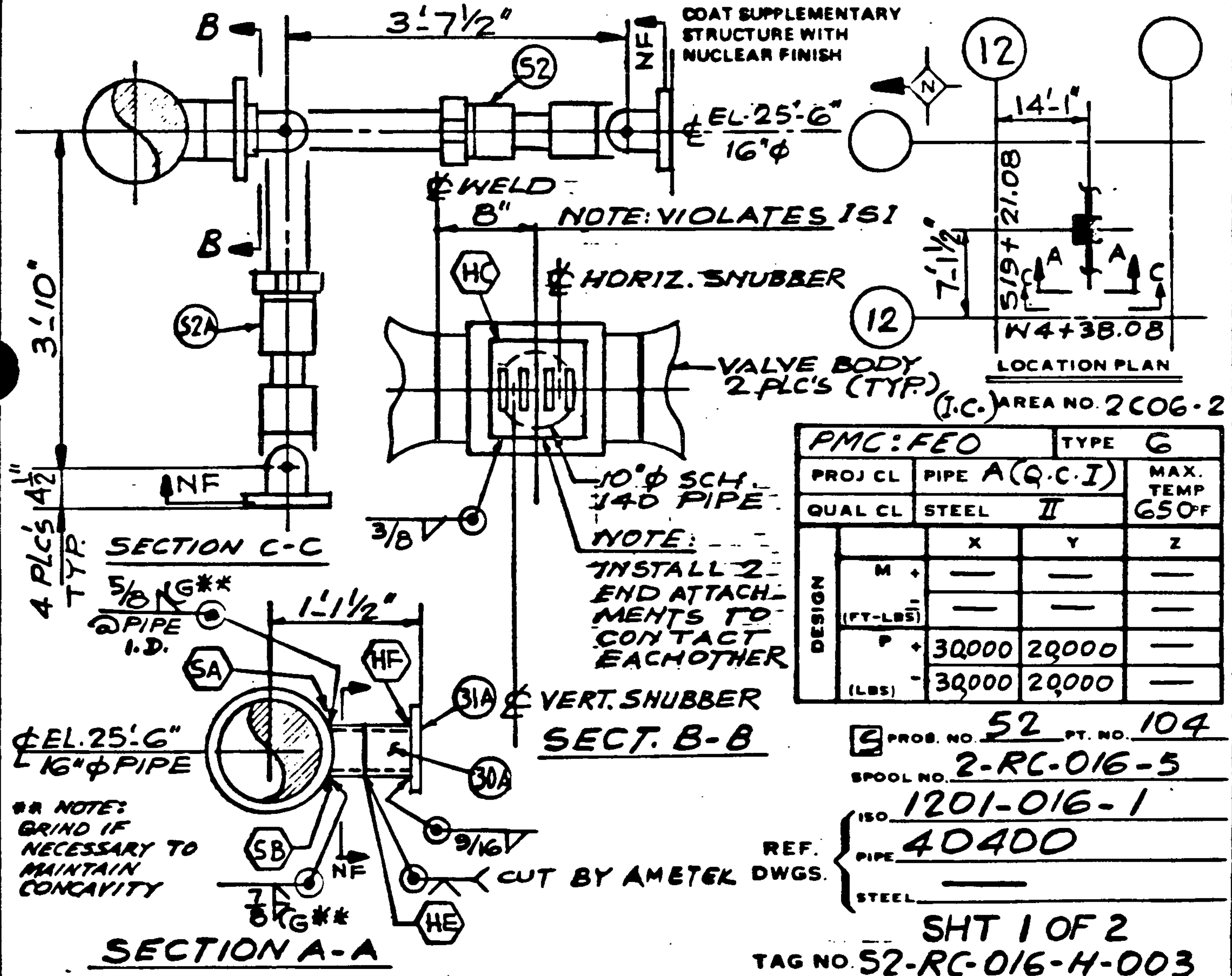
BECHTEL POWER CORPORATION NORWALK, CALIFORNIA	J.O. NO.	SAN ONOFRE NUCLEAR GENERATING STATION
	FILE	PIPE SUPPORT ASSEMBLY
JOB NO. 10079 / DATE / APPROVED		SOUTHERN CALIFORNIA EDISON COMPANY SCALE: NTS LOS ANGELES. CALIF.

PF-633 (10079) 7/79

01-02-01

S.U.S. 28HA

ITEM NO.	NO REQ'D	PART NO	SIZE / DESCRIPTION	NF	AISC	NOTES
52	1	307	35-6" MECH. SHOCK SUPPRESSOR, NUCLEAR CLASS I, C.S.=1.79", H.S.=4.21" W=8.75, LOAD=29516# W/ADDITIONAL REAR BRACKET	X		BY GRINNELL
52A	1	307	35-6" MECH SHOCK SUPPRESSOR W/OPTION NUCLEAR CLASS I, C.S.=3.0", H.S.=3 1/16" W=8 3/4" LOAD=19,000# (USE SURPLUS SNUBBER FROM 52-RC-017-H-030 (NF)	X		BY FIELD
30A	1		10"φ SCH.140 S.S. DUMMY PIPE	*		
31A	1		PL 1 1/4"X14"X1'-2" C.S	X		
L	1		L 1X10X0'-10"		X	BY FIELD
			* INTEGRAL ATTACH. USE ASME SUBSECT 'NB' MAT'L			
	4		US-6-HC-LCSF-175			
A	2		W10X49		X	SPEC.
D	2		3/8" STIFF. PL		X	2025-206-18
J	1		PL-1X18X1'-6"		X	
K	1		W10X49		X	BY FIELD
M	1		PL-1/2" STIFF.		X	
N	2		PL-1/2XB 7/8X1'-2"		X	



(I.C.) AREA NO. 2C06-2

PMC: FEO		TYPE 6	
PROJ CL	PIPE A (Q.C.I)		MAX. TEMP 650°F
QUAL CL	STEEL II		
DESIGN	X	Y	Z
M + (FT-LBS)	—	—	—
M − (FT-LBS)	—	—	—
P + (LBS)	30,000	20,000	—
P − (LBS)	30,000	20,000	—

C PROB. NO. 52 PT. NO. 104

SPOOL NO. 2-RC-016-5

REF. DWGS.: ISO 1201-016-1; PIPE 40400; STEEL —

SHT 1 OF 2

TAG NO. 52-RC-016-H-003

1201

NO.	REVISIONS	DATE	DR.	CHK.	E.G.S.	P.E.	Q.A.E.
1	INCORP. DCN 1,2,3,4,5	2-28-80	D.R.	DAR	ST MB		

BECHTEL POWER CORPORATION
NORWALK, CALIFORNIA

J.O. NO.
FILE

SAN ONOFRE NUCLEAR GENERATING STATION

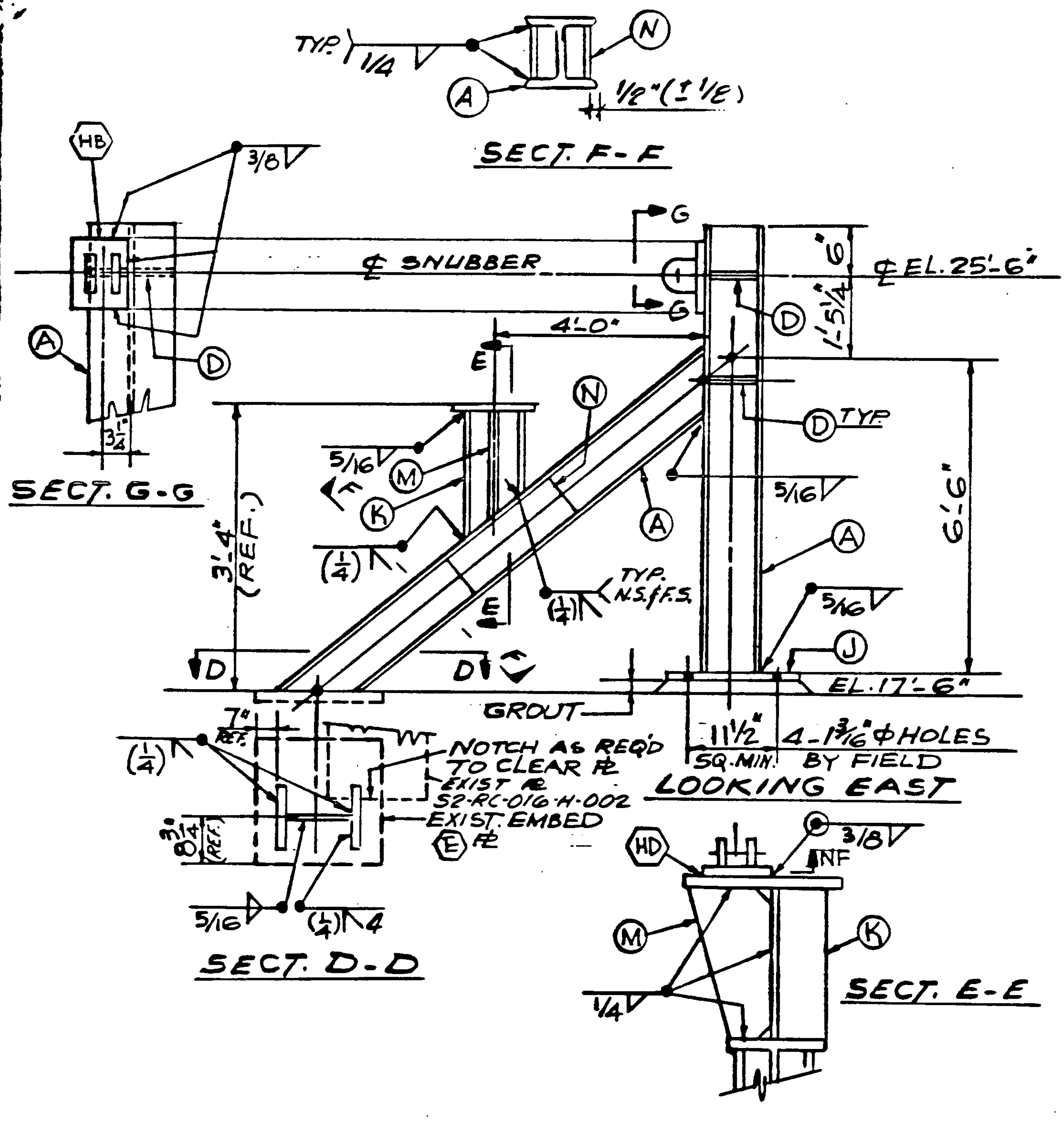
PIPE SUPPORT ASSEMBLY

SOUTHERN CALIFORNIA EDISON COMPANY
LOS ANGELES, CALIF.

SCALE: NTS

JOB NO.	DATE	APPROVED
10079		

S.U.S. 2BHA



1201 SHT 2 OF 2

S2-RC-016-H-003 REV. 4

BECHTEL POWER CORPORATION NORWALK, CALIFORNIA	J.O. NO.	SAN ONOFRE NUCLEAR GENERATING STATION
	FILE	PIPE SUPPORT ASSEMBLY
JOB NO. 10079 / DATE / APPROVED		SOUTHERN CALIFORNIA EDISON COMPANY
		SCALE NTS — LOS ANGELES, CAL.

APR 24 1980

BECHTEL — SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 **FIELD CHANGE REQUEST/DCN/SCN**	1. FCR NO. S-5024	12A. QUALITY CLASS I	12C. DCN SUB NO. 09
IC	DATE 4-16-80		12D. DATE APR 30 1980
(QC-I) SHA JOB NO. 10079 2C062	2. PAGE 1 OF 1	12B. SPEC ADDEND. NO.	
	3. UNIT NO. 2		12E. SCN NO.

REF. DWG. OR SPEC. S2-RC-016-H-003 SHEET NO. REV. 4

5. TITLE PIPE SUPPORT ASSEMBLY

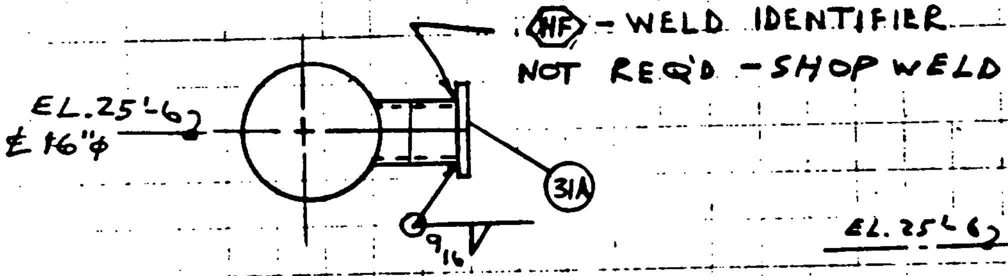
NAME

6. DESIGN ORIGIN: ENGRG ☒ VENDOR ☐ (IDENTIFY)

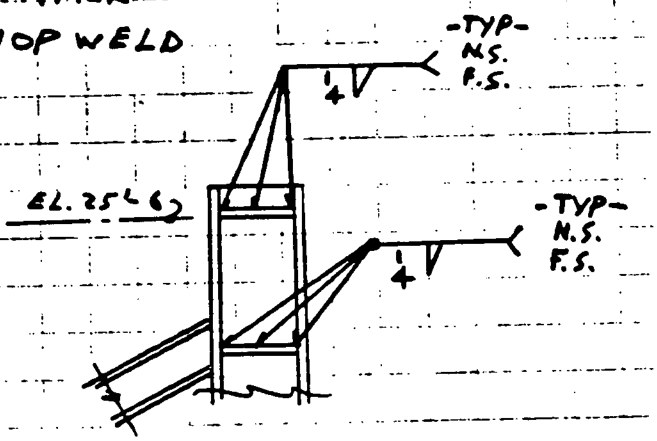
7. EXISTING CONDITION: CHANGE B/M QTY
WELD - FROM FIELD TO SHOP
WELD IDENTIFIER NOT REQ'D

8. CHANGE REQUEST/SKETCH

B/M ITEM #D CHANGE QTY TO 4



SECTION A-A
(PARTIAL)



LOOKING EAST
(PARTIAL)

NO NEW MATERIAL REQ'D

PL-5411

PROJECT ENGINEERING APPROVAL PER

10. REVIEWED BY	DATE			
CIVIL		PIPE	R.J.S.	4-17-80
ELEC		INSTR		
MECH		NUC		
WELD		QAE	[signature]	4-17-80

9. MARIO CAMPANILE
PREPARED BY

11. APPROVAL OF FLD DISPOSITION [signature]
PROJECT FIELD ENGINEER
DATE APR 17 1980

12. PROJECT ENGRG APPROVAL: YES ☑ NO ☐ EGS P.E. R.L. Rogers /RLH DATE 4-16-80

REMARKS: **CONVERT TO DCN**

13. QUALITY ASSURANCE ENGINEER (FIELD): [signature] DATE 4-17-80

14. SCE ENGINEERING APPROVAL P.E. DATE

15. BECHTEL QUALITY ENGINEER/QUALITY ASSURANCE J.W. Sheppard DATE 4-28-80

16. ADDITIONAL DISTRIBUTION

PF-0924 (10079) 10/78

APR 4 1980

BECHTEL

SAN ONOFRE NUCLEAR GENERATING STATION
UNITS 2 & 3
FIELD CHANGE REQUEST/DCN/SCN

OBHA
(I.C.)
JOB NO. 10079 2C06·1

1. FCR NO. S-1869
DATE 3/25/80
2. PAGE 1 OF 1
3. UNIT NO. II

12A. QUALITY CLASS I
12B. SPEC ADDEND. NO.
12C. DCN SUB NO. 07
12D. DATE APR 15 1980
12E. SCN NO.

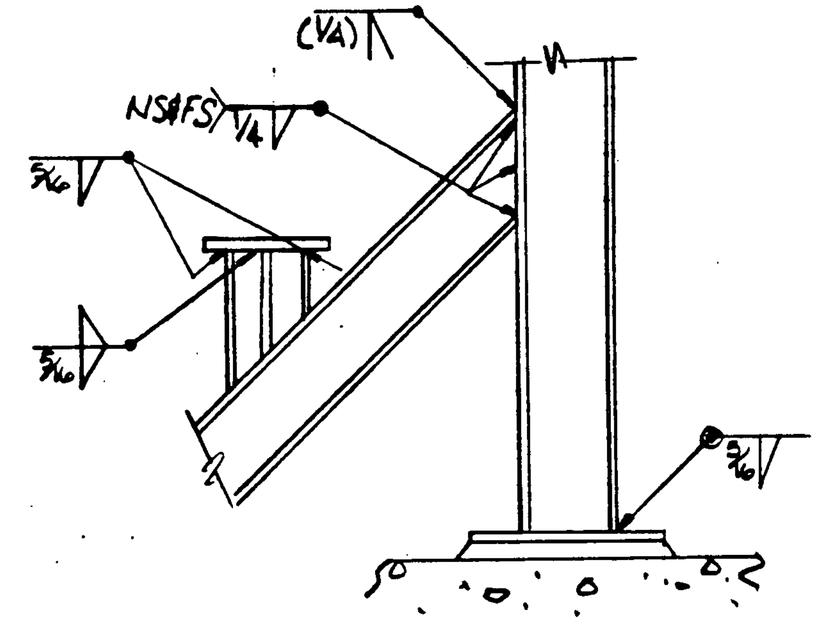
4. REF. DWG. OR SPEC. S2-RC-016-H-003 SHEET NO. REV. 4
5. TITLE PIPE SUPT. ASSEMBLY NAME

6. DESIGN ORIGIN: 1201 ENGRG ☑ VENDOR ☐ (IDENTIFY)

7. EXISTING CONDITION:

INCOMPLETE WELD REQ'MTS. CALLED FOR ON DWG.

8. CHANGE REQUEST/SKETCH



LOOKING EAST
(PARTIAL)

RS280 PROJECT ENGINEERING APPROVAL PER

10. REVIEWED BY DATE

CIVIL ______ ______ PIPE [signature] 3-27-80
ELEC ______ ______ INSTR ______ ______
MECH ______ ______ NUC ______ ______
WELD ______ ______ QAE [signature] 3-27-80

9. C.W. GREER
PREPARED BY

11. APPROVAL OF FLD DISPOSITION
[signature]
PROJECT FIELD ENGINEER
DATE MAR 27 1980

12. PROJECT ENGRG APPROVAL: YES ☒ NO ☐ EGS ______ P.E. R.L. Rogers /RBm DATE 3-27-80

REMARKS: CONVERT TO DCN.

13. QUALITY ASSURANCE ENGINEER (FIELD): [signature] DATE 3-27-80

14. SCE ENGINEERING APPROVAL ______ P.E. ______ DATE ______

15. BECHTEL QUALITY ENGINEER/QUALITY ASSURANCE [signature] DATE 4-11-80

16. ADDITIONAL DISTRIBUTION ______

PF-0924 (10079) 10/78

APR 16 1980

SAN ONOFRE NUCLEAR GENERATING STATION
UNITS 2 & 3
FIELD CHANGE REQUEST/DCN/SCN

A JOB NO. 10079 (I.L.) 2606.2	1. FCR NO. S-4952 DATE 4-3-80 2. PAGE 1 OF 1 3. UNIT NO. 2	12A. QUALITY CLASS I 12B. SPEC ADDEND. NO.	12C. DCN SUB NO. 08 12D. DATE APR 30 1980 12E. SCN NO.

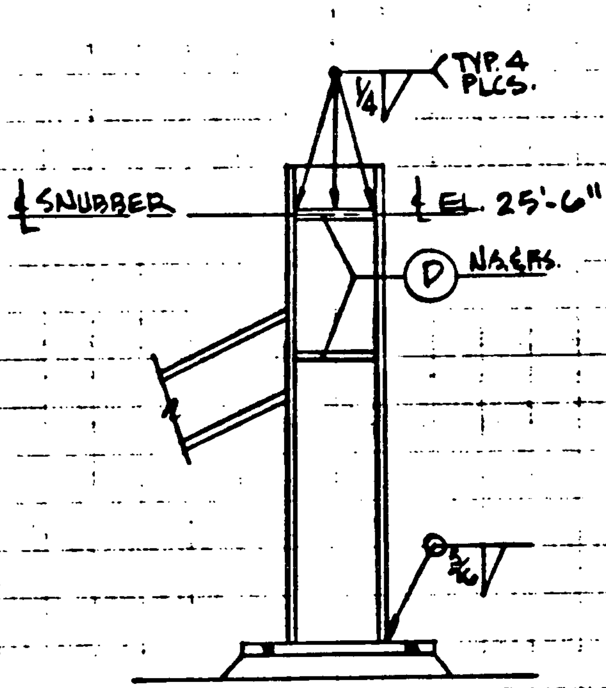
4. REF. DWG. OR SPEC. RC-016-H-003 SHEET NO. 4 REV. 5. TITLE Pipe Supt. Assembly

6. DESIGN ORIGIN: 12cl ENGRG ☑ VENDOR ☐ (IDENTIFY) NAME

7. EXISTING CONDITION:

1. WELD CALL-OUT FOR ITEM "D" MISSING
2. SHOP WELD SHOWN AS FIELD WELD
3. WRONG AMOUNT SHOWN FOR ITEM "D"

8. CHANGE REQUEST/SKETCH



CHG. B of M TO READ:
ITEM "D" - NO. REQ'D. 4

LOOKING EAST
(PARTIAL)

P.L.# 5353 PROJECT ENGINEERING APPROVAL PER

10. REVIEWED BY	DATE			
CIVIL		PIPE	[signature]	4-7-80
ELEC		INSTR		
MECH		NUC		
WELD		QAE	[signature]	4-8-80

9. C.W. GREER
PREPARED BY

11. APPROVAL OF FLD DISPOSITION
[signature]
PROJECT FIELD ENGINEER
DATE APR 08 1980

12. PROJECT ENGRG APPROVAL: YES ☒ NO ☐ EGS P.E. R.L. Rogers III DATE 4-7-80
REMARKS: Convert to DCN

13. QUALITY ASSURANCE ENGINEER (FIELD): [signature] DATE 4-8-80
14. SCE ENGINEERING APPROVAL P.E. DATE
15. BECHTEL QUALITY ENGINEER/QUALITY ASSURANCE [signature] DATE 4-25-80
16. ADDITIONAL DISTRIBUTION

PF-0924 (10079) 10/78

X

BECHTEL

SAN ONOFRE NUCLEAR GENERATING STATION
UNITS 2 & 3
FIELD CHANGE REQUEST/DCN/SCN

A (QC I)
2BUA

JOB NO. 10079 C

1. FCR NO.	S-4712
DATE	3-8-80
2. PAGE	1 OF 1
3. UNIT NO.	2
12A. QUALITY CLASS	I
12B. SPEC ADDEND. NO.	
12C. DCN SUB NO.	06
12D. DATE	MAR 25 1980
12E. SCN NO.	

(1C) 2606-2

REF. DWG. OR SPEC.: S2-RC-016-H-003 SHEET NO. REV. 4 3

5. TITLE: PIPE SUPPORT ASSEMBLY
NAME

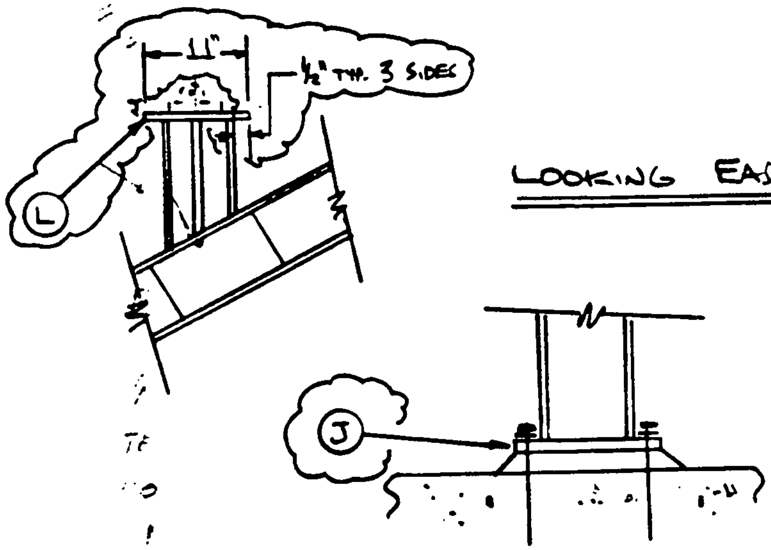
6. DESIGN ORIGIN: ENGRG ☑ VENDOR ☐ (IDENTIFY) 1201

7. EXISTING CONDITION: WELDS NOT REQUIRED, PLATES EITHER NOT IDENTIFIED OR IDENTIFIED INCORRECTLY ON DCN #04 (PLATE UNDERSIZED)

8. CHANGE REQUEST/SKETCH

R 5110

NOTE: FROM SECTION "A-A" (REV. 3 DRAWING), DELETE WELD IDENTIFIER "HA"



LOOKING EAST (CHANGES ONLY)

BILL OF MATERIAL

1. CHANGE SIZE ON ITEM #L FROM 1" x 10" x 10" TO 1" x 11" x 1'-0½"

PROJECT ENGINEERING APPROVAL PER

10. REVIEWED BY	DATE			
CIVIL		PIPE	[signature]	3-11-80
ELEC		PRI INSTR		
MECH		NUC		
WELD		QAE	[signature]	3-12-80

9. R. L. ELLINGSON
PREPARED BY

11. APPROVAL OF FLD DISPOSITION
[signature]
PROJECT FIELD ENGINEER
DATE MAR 12 1980

12. PROJECT ENGRG APPROVAL: YES ☑ NO ☐ EGS ______ P.E. R.L. Rogers/KH DATE 3-11-80

REMARKS: CONVERT TO DCN

QUALITY ASSURANCE ENGINEER (FIELD): [signature] DATE 3-12-80

14. SCE ENGINEERING APPROVAL ______ P.E. ______ DATE ______

15. BECHTEL QUALITY ENGINEER/QUALITY ASSURANCE [signature] DATE 3-25-80

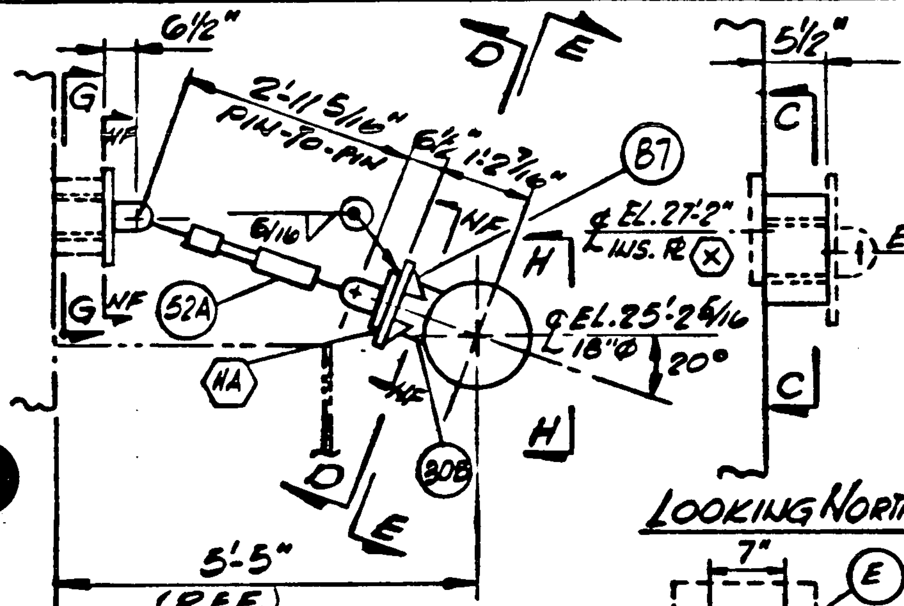
16. ADDITIONAL DISTRIBUTION ______

PF-0924 (10079) 10/78

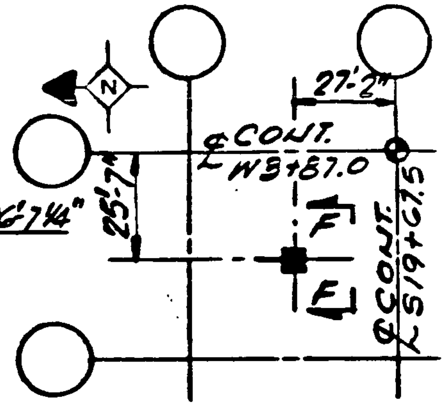
S.U.S. 2 P.B.

ITEM NO	NO REQ'D	PART NO	SIZE / DESCRIPTION	NF	AISC	NOTES
30B	1	—	10"⌀ SCH. 160 S.S. DUMMY STUB	*		SPEC 5023-
31A	1	—	℞ 1¼ x 12 x 1'-10"	X		409-23
B7	4	—	½" GUSSETT ℞	X		"
52A	1		PSA 100-6 PART No. 1811 SERIAL 021-02	X		PSC
			SHOCK ARRESTOR KIT NUCLEAR CLASS I			
			H.S.=3.473" C.S.=2.528",			
			LOAD=132,237#			
D	2	—	℞ ¾ x 7 x 0'-5⅝"		X	BY FIELD
E	2	—	℞ ¾ x 5⅝ x 1'-6"		X	"

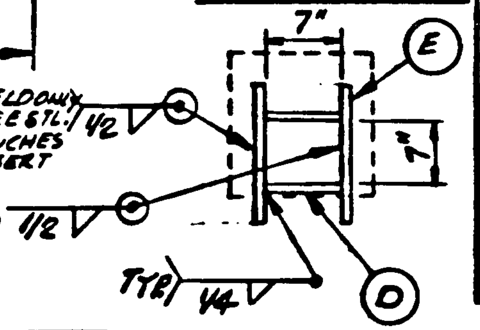
* INTEGRAL ATTACHMENT, USE ASME SECT. III SUBSECTION 'NB' MAT'L.



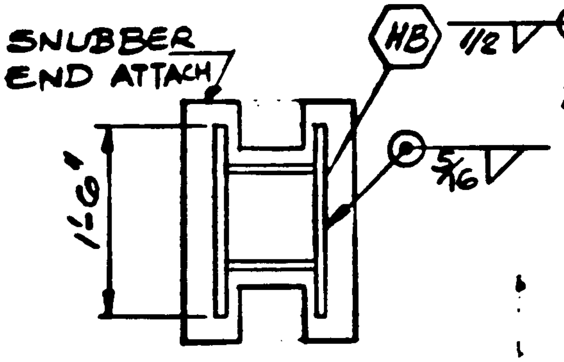
SECTION F-F



LOCATION PLAN



SECT. C-C



SECTION G-G

COAT SUPPLEMENTARY STRUCTURE WITH NUCLEAR FINISH

(I.C.) AREA NO. 2C06-2

PMC-FEO			TYPE G
PROJ CL	PIPE A(QC-I)		MAX. TEMP
QUAL CL	STEEL II		650 °F

DESIGN		X	Y	Z
M (FT-LBS)	+	—	—	—
	−	—	—	—
P (LBS)	+	⊖	23307	132241
	−	⊖	23307	132241

S PROB. NO. 52 PT. NO. 253

SPOOL NO. 2-RC-016-3

REF. DWGS.
- ISO 1201-016-1
- PIPE 40400
- STEEL ——

SHT 1 OF 2

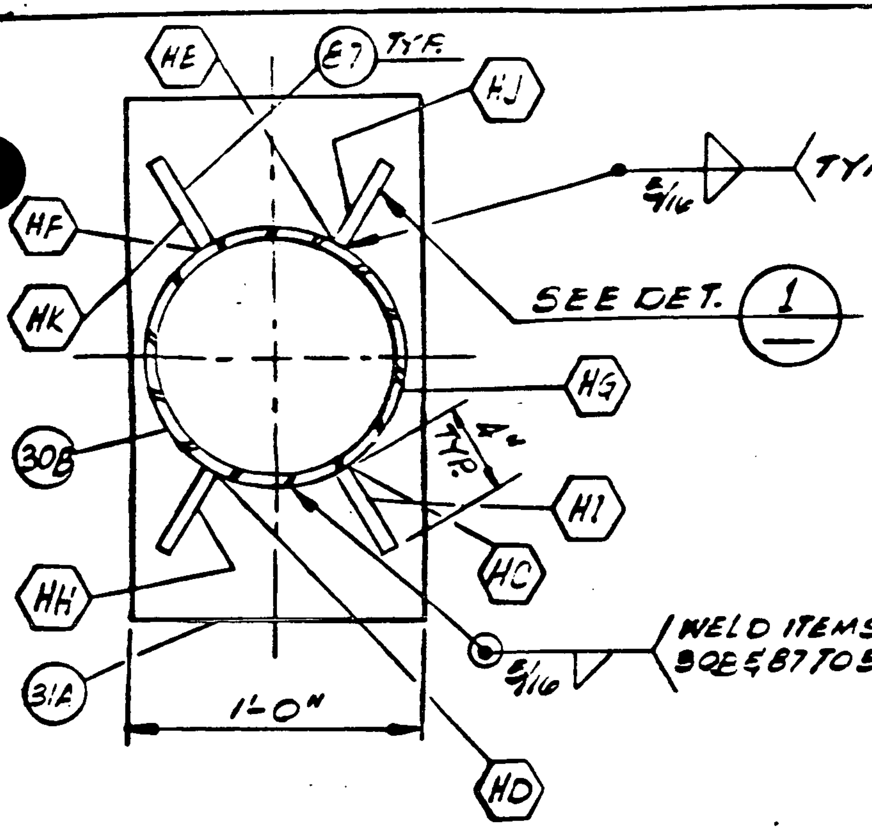
TAG NO. S2-RC-016-H004

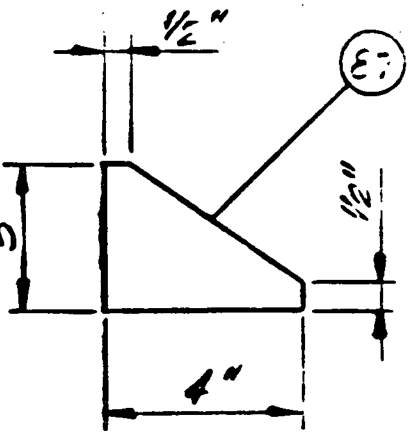
					1201		
2	REDRAWN & INC. DCN 1,2 & 3	2-28-80	YL	ST	KG MB	RLR/SA	
	REVISIONS	DATE	DR.	CHK.	E.G.S.	P.E.	Q.A.E.

BECHTEL POWER CORPORATION NORWALK, CALIFORNIA			J.O. NO.	SAN ONOFRE NUCLEAR GENERATING STATION
			FILE	PIPE SUPPORT ASSEMBLY
JOB NO. 10079	DATE	APPROVED		SOUTHERN CALIFORNIA EDISON COMPANY SCALE: NTS LOS ANGELES, CALIF.

PF-633 (10079) 7/79

01-02-01

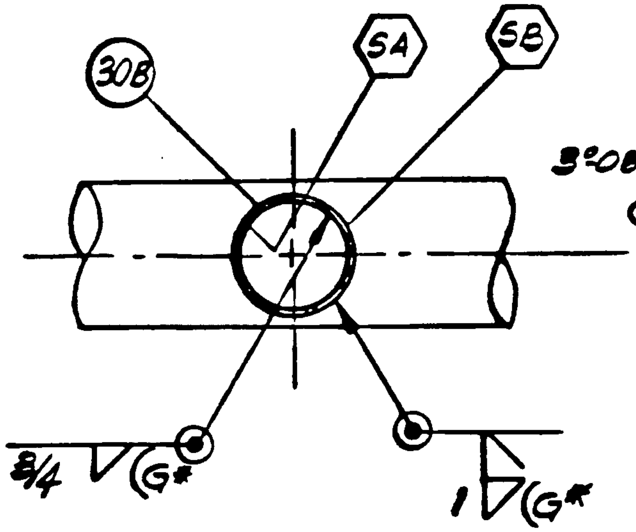


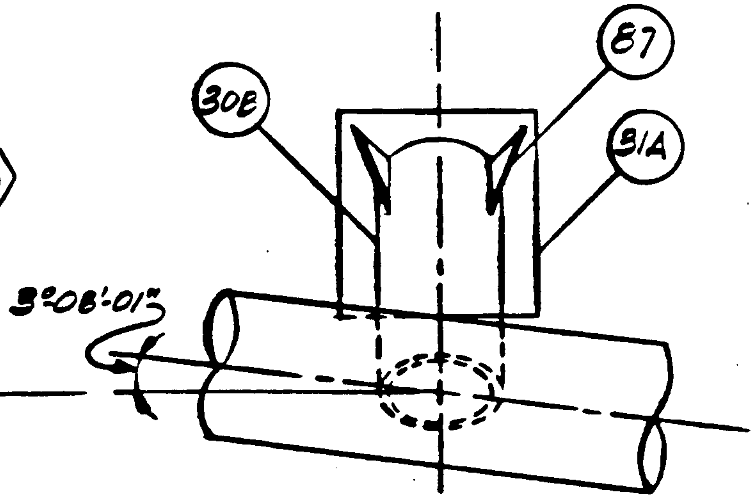


DETAIL 1

SECTION D-D

*GRIND IF NECESSARY TO MAINTAIN CONCAVITY.





SECTION H-H

SECTION E-E

1201 SHT 2 OF 2
S2-RC-016-H-004 REV. 2

BECHTEL POWER CORPORATION NORWALK, CALIFORNIA			J.O. NO.	SAN ONOFRE NUCLEAR GENERATING STATION
			FILE	PIPE SUPPORT ASSEMBLY
JOB NO. 10079	DATE	APPROVED		SOUTHERN CALIFORNIA EDISON COMPANY SCALE: NTS LOS ANGELES, CALIF.

PF-633 (10079) 7/79

01-02-01

APR 4 1980

BECHTEL SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 FIELD CHANGE REQUEST/DCN/SCN	1. FCR NO. S-4877 DATE 3-26-80 2. PAGE 1 OF 1 3. UNIT NO. 2	12A. QUALITY CLASS I 12B. SPEC ADDEND. NO.	12C. DCN SUB NO. 05 12D. DATE APR 15 1980 12E. SCN NO.
A(QCI) 2BBB JOB NO. 10079 (I.C) 2062			

4. REF. DWG. OR SPEC. S2-RC-016-H-004 SHEET NO. REV. 2 | 5. TITLE PIPE SUPPORT ASSEMBLY

6. DESIGN ORIGIN: 12c1 ENGRG ☒ VENDOR ☐ (IDENTIFY) NAME

7. EXISTING CONDITION: CHANGE BILL OF MAT'L

8. CHANGE REQUEST/SKETCH

BILL OF MAT'L (BY FIELD)

1. CHANGE ITEM 52B TO 52C.
USE S3-ST-001-H-008.
306.100-6".
C.S=2.52" H.S=3.47"

PL 5289

PROJECT ENGINEERING APPROVAL PER

10. REVIEWED BY	DATE				9.
CIVIL		PIPE	N.S.	3-27-80	[signature] PREPARED BY
ELEC		INSTR			11. APPROVAL OF FLD DISPOSITION [signature]
MECH		NUC			PROJECT FIELD ENGINEER
WELD		QAE	E.B. [signature]	3/28/80	DATE 3-28-80

12. PROJECT ENGRG APPROVAL: YES ☒ NO ☐ EGS ______ P.E. R.L. Rogers/BEM DATE 3-27-80

REMARKS: CONVERT TO DCN

13. QUALITY ASSURANCE ENGINEER (FIELD): E.B. [signature] DATE 3/28/80

14. SCE ENGINEERING APPROVAL ______ P.E. ______ DATE ______

15. BECHTEL QUALITY ENGINEER/QUALITY ASSURANCE [signature] DATE 4-11-80

16. ADDITIONAL DISTRIBUTION

PF-0924 (10079) 10/78

MAR 31 1980

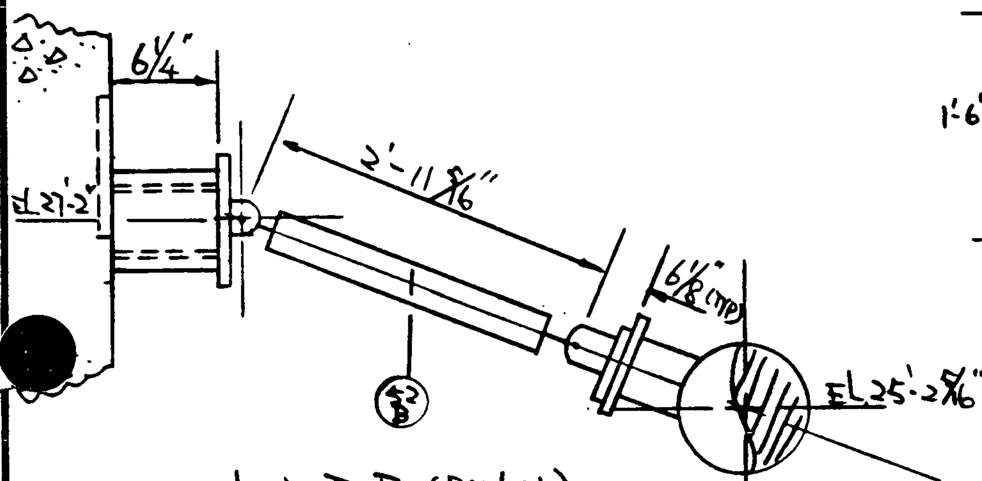
BECHTEL — SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 FIELD CHANGE REQUEST/DCN/SCN	1. FCR NO. S-4849 DATE 3-21-80 2. PAGE 1 OF 1	12A. QUALITY CLASS I	12C. DCN SUB NO. 04
A(QCI) ORBR JOB NO. 10079 (I.C.) 206-2	3. UNIT NO. 2	12B. SPEC ADDEND. NO.	12D. DATE APR 8 1980 12E. SCN NO.

4. REF. DWG. OR SPEC. S2-RC-016-H-004 SHEET NO. REV. 2 | 5. TITLE PIPE SUPPORT ASSEMBLY NAME

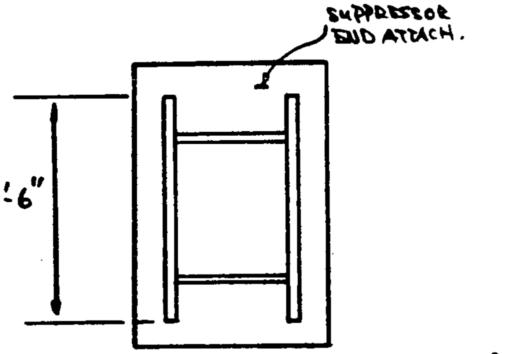
6. DESIGN ORIGIN: 1201 ENGRG ☒ VENDOR ☐ (IDENTIFY)

7. EXISTING CONDITION: CHANGE BILL OF MAT'L

8. CHANGE REQUEST/SKETCH



SECTION F-F (PARTIAL)



SECTION G-G (PARTIAL)

BILL OF MAT'L (BY FIELD)

1. CHANGE ITEM 52A TO 52 B
USE S3-ST-001-H-007.
306 100 - 6" STROKE SUPPRESSOR.
C.S = 2.52" H.S = 3.47.
2. CHANGE DIMENSION OF ITEM D (2 REQ'D) FROM PL ¾ X 7 X 0'-5⅝" TO PL ¾ X 7 X 6¼"
3. CHANGE DIMENSION OF ITEM E FROM PL ¾ X 5⅝ X 1'-6" TO PL ¾ X 6¼" X 1'-6" (2 REQ'D)

PL 255

PROJECT ENGINEERING APPROVAL PER

10. REVIEWED BY	DATE			DATE
CIVIL		PIPE	GS	3-24-80
ELEC		INSTR		
MECH		NUC		
WELD		QAE	[signature]	3-24-80

9. [signature] PREPARED BY

11. APPROVAL OF FLD DISPOSITION [signature] PROJECT FIELD ENGINEER DATE 3-24-80

12. PROJECT ENGRG APPROVAL: YES ☒ NO ☐ EGS ______ P.E. R.L. Rogers/RH DATE 3-24-80

REMARKS: CONVERT TO DCN

13. QUALITY ASSURANCE ENGINEER (FIELD): [signature] DATE 3-24-80

14. SCE ENGINEERING APPROVAL ______ P.E. ______ DATE ______

15. BECHTEL QUALITY ENGINEER/QUALITY ASSURANCE [signature] DATE 4-2-80

16. ADDITIONAL DISTRIBUTION

PF-0924 (10079) 10/78

APR 17 1980

BECHTEL

SAN ONOFRE NUCLEAR GENERATING STATION
UNITS 2 & 3
FIELD CHANGE REQUEST/DCN/SCN

A(Q C I)
2EBB

JOB NO. 10079 (I.C.) 2(06-2

1. FCR NO.	S-4933
DATE	4-3-80
2. PAGE	1 OF 1
3. UNIT NO.	2
12A. QUALITY CLASS	I
12B. SPEC ADDEND NO.	
12C. DCN SUB NO.	06
12D. DATE	APR 30 1980
12E. SCN NO.	

4. REF. DWG. OR SPEC. S-PC-016-H-004 SHEET NO. REV. 2

5. TITLE PIPE SUPPORT ASSEMBLY

NAME

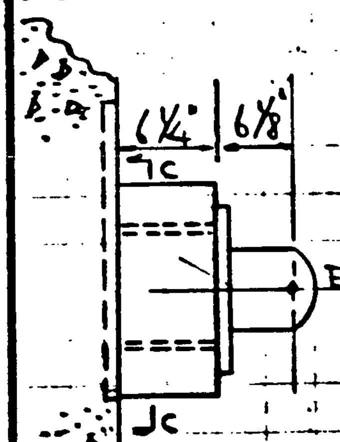
6. DESIGN ORIGIN: ENGRG ☒ VENDOR ☐ (IDENTIFY)

12c1

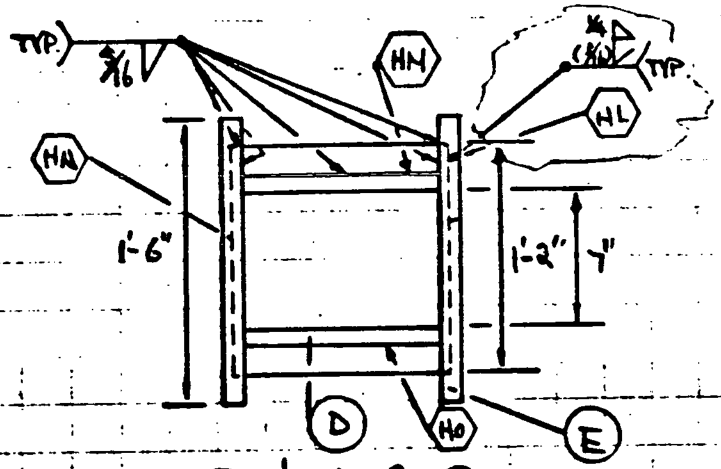
7. EXISTING CONDITION CLARIFICATION OF DWGS.

THIS FCR SUPERSEDES FCR S-4877, S-4849.

8. CHANGE REQUEST/SKETCH



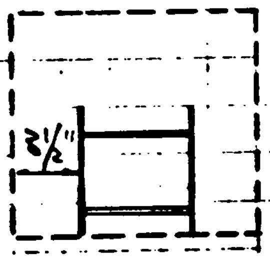
SECTION FF (PARTIAL)



SECTION G-G.

BILL OF MAT'L (BY FIELD)

1. DELETE WELD TO HB & VIEW LOOKING NORTH
2. CHANGE ITEM 52B TO 52C
USE S8-ST-001-H-008
306 100-6"
C.8 = 2.52", H.8 = 3.47"



SECTION C-C (PARTIAL)

PL 5349

SUPERSEDES FCR S-4877-S-4849

VOID FCR S-4877, S-4849.

PROJECT ENGINEERING APPROVAL PER

10. REVIEWED BY DATE

CIVIL		PIPE	NJS	4-4-80
ELEC		INSTR		
MECH		NUC		
WELD		QAE	E.B. [signature]	4/4/80

9. [signature] PREPARED BY

11. APPROVAL OF FLD DISPOSITION [signature] PROJECT FIELD ENGINEER

DATE APR 04 1980

12. PROJECT ENGRG APPROVAL: YES ☒ NO ☐ EGS P.E. R.L. Rogers / [initials] DATE 4-4-80

REMARKS: ~~CONVERT TO DCN~~ Void DCN 475

13. QUALITY ASSURANCE ENGINEER (FIELD): E.B. [signature] DATE 4/4/80

14. SCE ENGINEERING APPROVAL P.E. DATE

15. BECHTEL QUALITY ENGINEER/QUALITY ASSURANCE [signature] DATE 4-28-80

16. ADDITIONAL DISTRIBUTION

PF-0924 (10079) 10/78

Void DCN 475

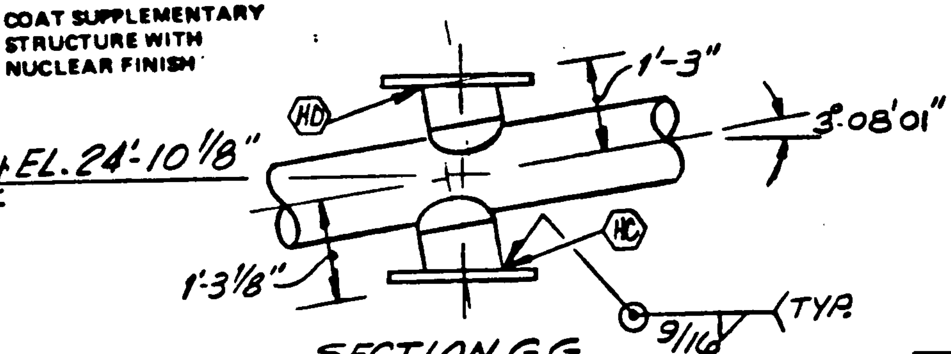
X

ITEM NO.	NO. REQ'D	PART NO.	SIZE / DESCRIPTION	NF	AISC	NOTES
31	2	—	14"X14"X1 1/4 C.S. PL	X		BY KELLOGG
30	2	—	10" SCH. 140 S.S. DUMMY PIPE	*		" "
54	1	—	10 GA. S.S. 13 1/2"X13 1/2" UPPER SLIDE BEARING			BY FIELD
55	1		1/4 X13"X13" BRONZITE LOWER SLIDE PL.			
45	4		C.S. BAR 3/16"X3/16"X3"			
F	2		PL 1/2 X14X1'-2"		X	
G	8		1/2" PL.		X	
H	8		1/2" STIFF. PL.		X	
J	1		PL 1/2 X10X0'-10"		X	
K	5		W8X58		X	
L	1		W6X25		X	
M	1		PL 2"X28"X2'-4		X	
N	1		PL 1 1/4 X17X1'-5"		X	
	12		US-8-HC-LCSF-175			

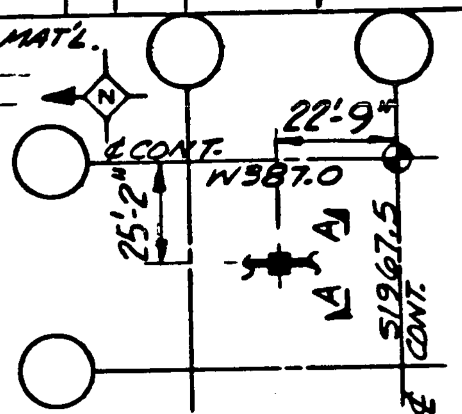
*INTEGRAL ATTACHMENT, USE ASME SECT. III SUBSECT. 'NB' MAT'L.

*** NOTE: MIN TOTAL CLRC. REQ'D. IS 3/16"

COAT SUPPLEMENTARY STRUCTURE WITH NUCLEAR FINISH

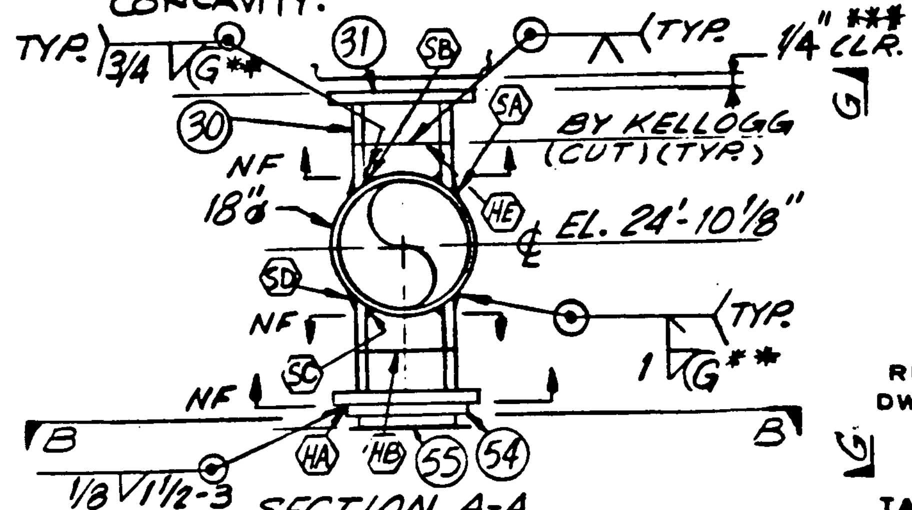


SECTION G G



LOCATION PLAN

** GRIND IF NECESSARY TO MAINTAIN CONCAVITY.



SECTION A-A

I.C. AREA NO. 2C062

PMC: FEO		TYPE 2	
PROJ CL	PIPE A (QC I)		MAX. TEMP 650 °F
QUAL CL	STEEL II		

DESIGN		X	Y	Z
M (FT-LBS)	+	—	—	—
	-	—	—	—
P (LBS)	+	0	88071	0
	-	0	109510	0

S PROB. NO. 52 PT. NO. 53

SPOOL NO. 2RC-016-3

REF. DWGS.
- ISO. 1201-016-1
- PIPE 40400
- STEEL

SHT 1 OF 2

TAG NO S2-RC-016-H-005

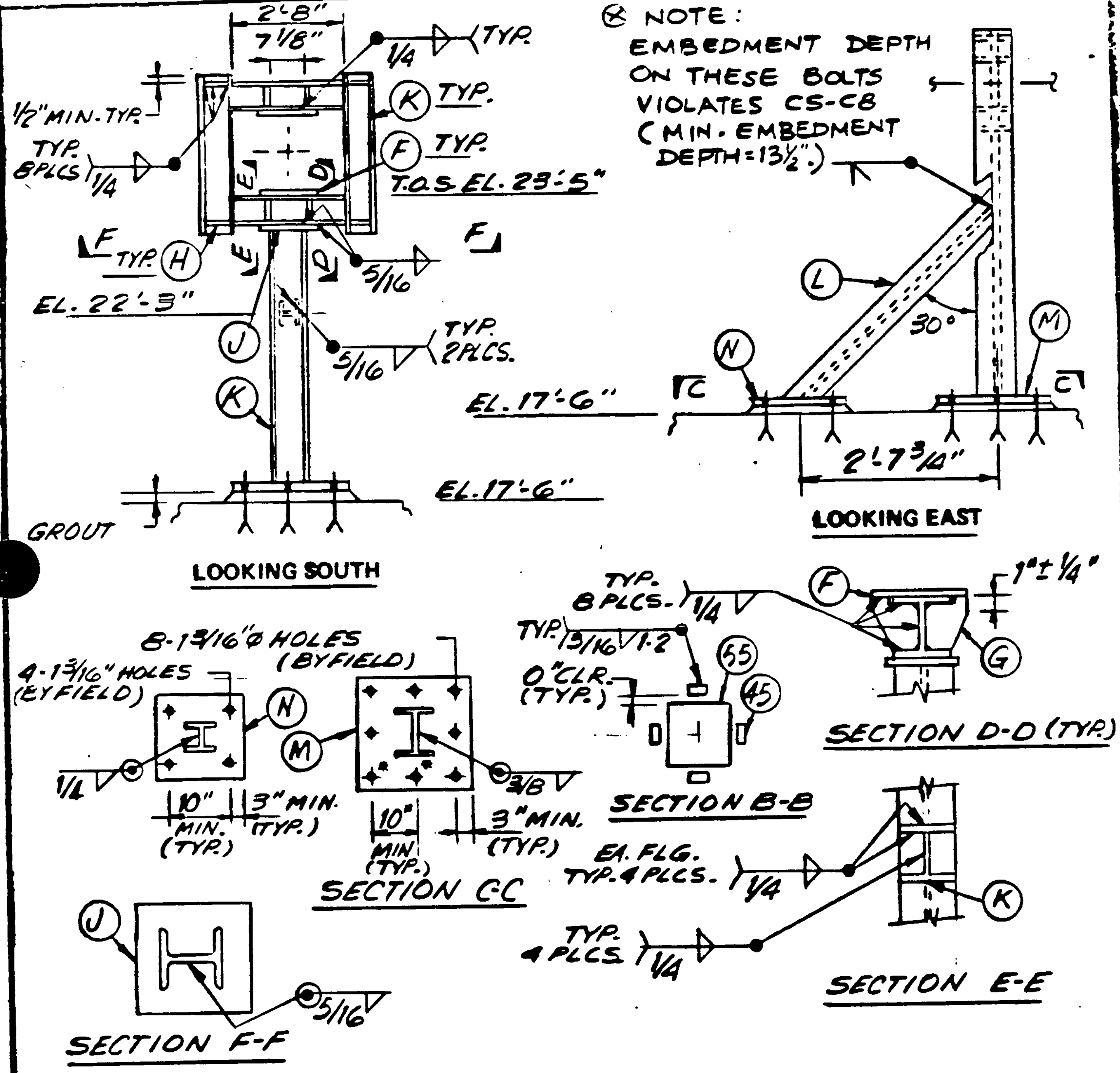
1201

NO.	REVISIONS	DATE	DR.	CHK.	E.G.S.		P.E.	Q.A.E.
4	INCORP. DCN 1,2,3,4 & REDRAWN	2-28-80	JB	SA	KG MB			

BECHTEL POWER CORPORATION NORWALK, CALIFORNIA	J.O. NO.	SAN ONOFRE NUCLEAR GENERATING STATION
	FILE	PIPE SUPPORT ASSEMBLY
JOB NO. 10079 / DATE / APPROVED		SOUTHERN CALIFORNIA EDISON COMPANY — SCALE: NTS — LOS ANGELES, CALIF.

01-02-01

ITEM NO	REQ'D	ART NO	SIZE	DESCRIPTION	NF	AISC	NOTES



1201

SHT 2 OF 2

S2-RC-016-H-005 REV4

BECHTEL POWER CORPORATION NORWALK, CALIFORNIA	J.O. NO.	SAN ONOFRE NUCLEAR GENERATING STATION
	FILE	PIPE SUPPORT ASSEMBLY
JOB NO 10079 / DATE / APPROVED		SOUTHERN CALIFORNIA EDISON SCALE NTS LOS ANGELES CALIF.

APR 7 1980 4=24 S=408 I=112.5

BECHTEL

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3
FIELD CHANGE REQUEST/DCN/SCN

N(QCI) BBB JOB NO. 10079 (I.C.) 2C06-2

1. FCR NO. S4868
DATE 3-25-80
2. PAGE 1 OF 1
3. UNIT NO. 2

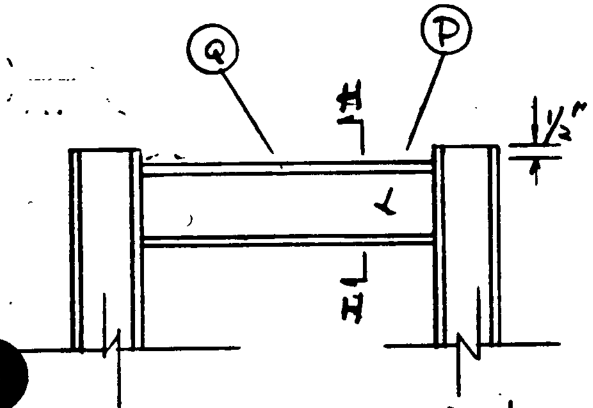
12A. QUALITY CLASS I
12B. SPEC ADDEND. NO.
12C. DCN SUB NO. 05
12D. DATE APR 15 1980
12E. SCN NO.

4. REF. DWG. OR SPEC. S2-RC-016-H-005 SHEET NO. REV. 4
5. TITLE PIPE SUPPORT ASSEMBLY
NAME

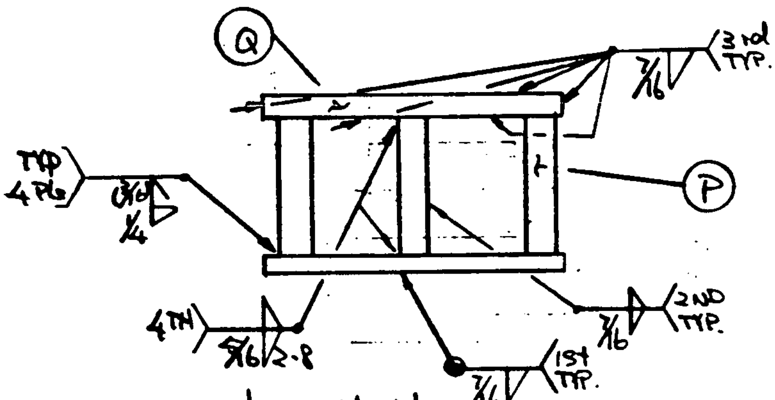
6. DESIGN ORIGIN: 1201 ENGRG ☒ VENDOR ☐ (IDENTIFY)

7. EXISTING CONDITION: 7" CLR BETWEEN R.C. PUMP RESTRAINT TO THE TOP OF DUMMY PIPE. MODIFICATION REQ'D BY FIELD

8. CHANGE REQUEST/SKETCH



LOOKING SOUTH (PARTIAL)



SECTION H-H

BILL OF MAT'L (BY FIELD)
1. CHANGE ITEM K FROM 5 TO 4.
2. CHANGE ITEM G FROM 8 TO 4.
3. ADD ITEM Q PL 1"X 8"X 2'-8" (2 REQ'D)
4. ADD ITEM P PL 1"X 4"X 2'-8" (3 REQ'D)

PL5278

PROJECT ENGINEERING APPROVAL PER

10. REVIEWED BY DATE

CIVIL ______ ______ PIPE [signature] 4-2-80
ELEC ______ ______ INSTR ______ ______
MECH ______ ______ NUC
WELD ______ ______ QA [signature] 4-2-80

9. [signature]
PREPARED BY

11. APPROVAL OF FLD DISPOSITION
[signature]
PROJECT FIELD ENGINEER
DATE APR 02 1980

12. PROJECT ENGRG APPROVAL: YES ☑ NO ☐ EGS ______ P.E. R.L. Rogers/RH DATE 4-2-80

REMARKS: **CONVERT TO DCN**

13. QUALITY ASSURANCE ENGINEER (FIELD): [signature] DATE 4-2-80

14. SCE ENGINEERING APPROVAL ______ P.E. ______ DATE ______

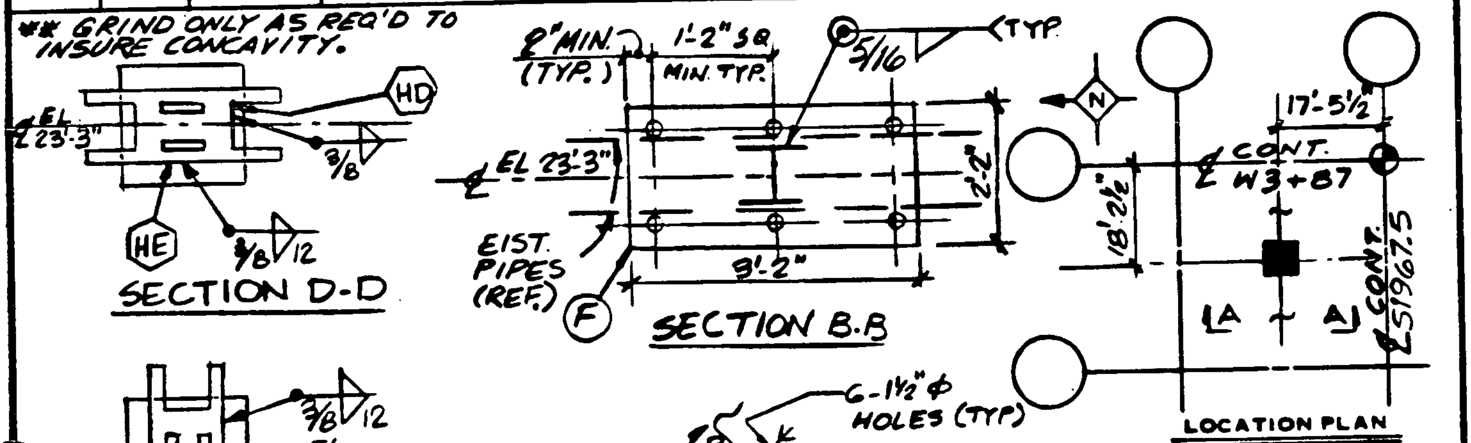
15. BECHTEL QUALITY ENGINEER/QUALITY ASSURANCE [signature] DATE 4-11-80

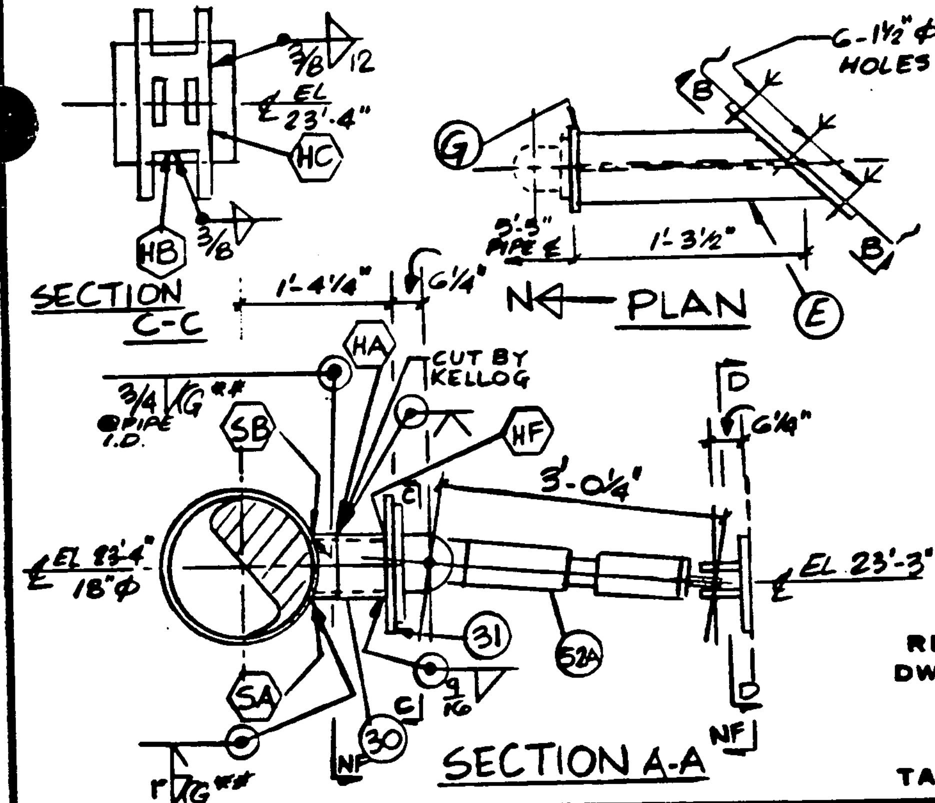
16. ADDITIONAL DISTRIBUTION ______

PF-0924 (10079) 10/78

ITEM NO.	NO. REQ'D	PART NO.	SIZE / DESCRIPTION	NF	AISC	NOTES
30	1	—	10" SCH. 140 S.S. DUMMY PIPE	*		BY KELLOGG
31	1	—	14" x 14" x 1¼" C.S. ℞.	X		"
52A	1	306	PSA -# 100-6 P/N 1811021-02 SHOCK	X		BY GRINNEL
			ARRESTOR KIT. CPS = 3.45", H.P.S. = 2.55"			
			LOAD = 91368#.			
E	1		W 10 x 49		X	BY FIELD.
F	1		℞ 1¼" x 26" x 3'-2"		X	
G	1		℞ 1" x 14" x 1'-2"		X	
	6		US-11-HC-LCSF-225		X	
						COAT SUPPLEMENTARY STRUCTURE WITH NUCLEAR FINISH
			* INTEGRAL ATTACHMENT – USE ASME SUBSECTION 'NB' MATERIAL.			

SUS-2BBB





I.C. AREA NO. 2C06-2

PMC: FEO		TYPE 6	
PROJ CL	PIPE A (QC I)		MAX. TEMP
QUAL CL	STEEL II		650°F
DESIGN	X	Y	Z
M + (FT-LBS)	⊖	⊖	⊖
M − (FT-LBS)	⊖	⊖	⊖
P + (LBS)	91368	⊖	⊖
P − (LBS)	91368	⊖	⊖

5 PROB. NO. 52 PT. NO. 36

SPOOL NO. 2-RC-016-2

REF. DWGS.
- ISO 1201-016-1
- PIPE 40400
- STEEL ——

TAG NO. S2-RC-016-H-008

NO.	REVISIONS	DATE	DR.	CHK.	E.G.S.		P.E.	Q.A.E.
	—				1201			
1	INC. 2 & 3 DCN & VOIDED DCN 1, REDRAWN	2-26-80	KG	[illegible]	[illegible] HB	—	RLP/AM	[illegible]

BECHTEL POWER CORPORATION NORWALK, CALIFORNIA	J.O. NO.	SAN ONOFRE NUCLEAR GENERATING STATION
	FILE	PIPE SUPPORT ASSEMBLY
JOB NO. 10079 / DATE / APPROVED		SOUTHERN CALIFORNIA EDISON COMPANY LOS ANGELES, CALIF. SCALE: NTS

01-02-01

PF-633 (10079) 7/79

MAR 31 1980

BECHTEL — SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 FIELD CHANGE REQUEST/DCN/SCN	1. FCR NO. S-4810 DATE 3-19-80 2. PAGE 1 OF 1 3. UNIT NO. 2	12A. QUALITY CLASS I 12B. SPEC ADDEND. NO.	12C. DCN SUB NO. 04 12D. DATE APR 8 1980 12E. SCN NO.
A(QCI) 2RBB JOB NO. 10079 (1.C.) 2C06-2			

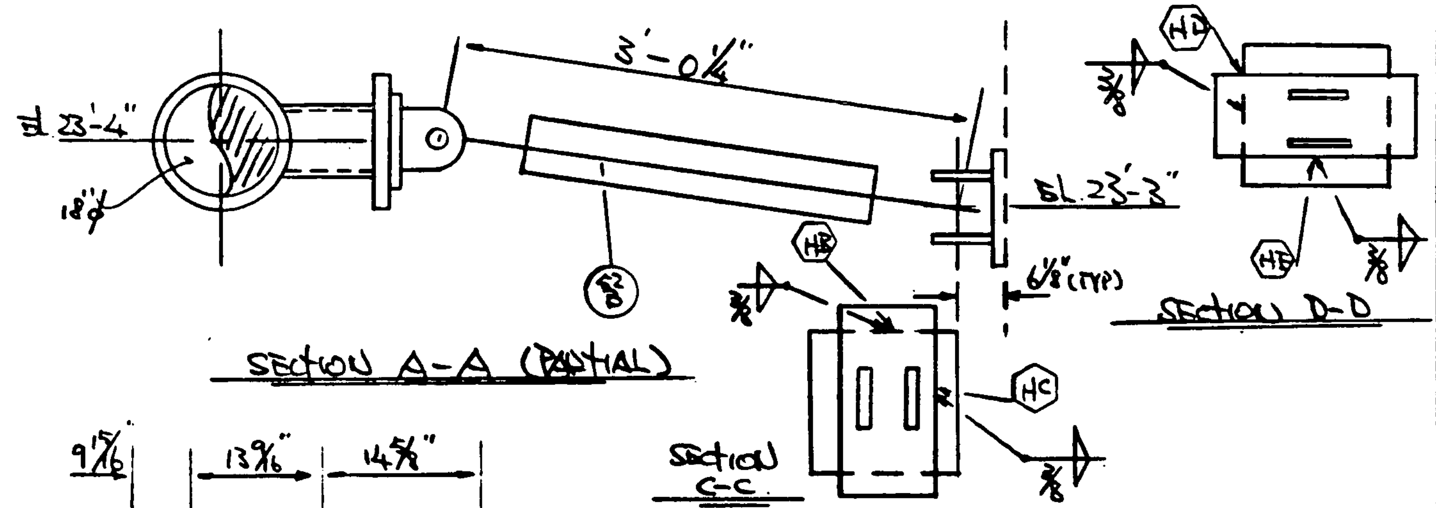
REF. DWG. OR SPEC. S2-RC-016-H-008 SHEET NO. REV. 1

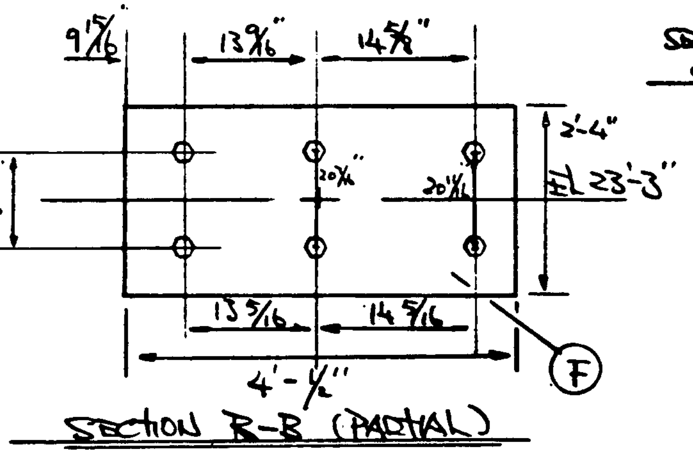
5. TITLE PIPE SUPPORT ASSEMBLY

6. DESIGN ORIGIN: 12c1 ENGRG ☒ VENDOR ☐ (IDENTIFY) NAME

7. EXISTING CONDITION: DIMENSION SHOWN INCORRECT CHANGE BILL OF MAT'L

8. CHANGE REQUEST/SKETCH





BILL OF MAT'L (BY FIELD)

1. CHANGE 52A TO 52B 306
100 – 6" SHOCK SUPPRESSOR
C.S = 3.45" H.S = 2.55"
USE S3-ST-001-H-009.
2. CHANGE ITEM F DIMENSION FROM
1¼ x 3'-2" x 2'-2" TO 1¼ x 28 x 4'-1½"
(1 REQ'D)

PROJECT ENGINEERING APPROVAL PER PL5213

10. REVIEWED BY DATE

CIVIL ______ ______ PIPF [signature] 3-21-80

ELEC ______ ______ INSTR ______ ______

MECH ______ ______ NUC ______ ______

WELD ______ ______ QAE [signature] 3-24-80

9. [signature] PREPARED BY

11. APPROVAL OF FLD DISPOSITION [signature] PROJECT FIELD ENGINEER DATE 3-21-80

12. PROJECT ENGRG APPROVAL: YES ☒ NO ☐ EGS ______ P.E. R.L. Rogers/RH DATE 3-21-80

REMARKS: CONVERT TO DCN

13. QUALITY ASSURANCE ENGINEER (FIELD): [signature] DATE 3-24-80

14. SCE ENGINEERING APPROVAL ______ P.E. ______ DATE ______

15. BECHTEL QUALITY ENGINEER/QUALITY ASSURANCE [signature] DATE 4-2-80

16. ADDITIONAL DISTRIBUTION ______

PF-0924 (10079) 10/78

MAR 31 1980

SAN ONOFRE NUCLEAR GENERATING STATION
UNITS 2 & 3
FIELD CHANGE REQUEST/DCN/SCN

(QCI) QRBB JOB NO. 10079 (I.C.) 2006-2

1. FCR NO.	C-4854
DATE	3-23-80
2. PAGE	1 OF 1
3. UNIT NO.	2
12A. QUALITY CLASS	I
12B. SPEC ADDEND. NO.	
12C. DCN SUB NO.	05
12D. DATE	APR 8 1980
12E. SCN NO.	

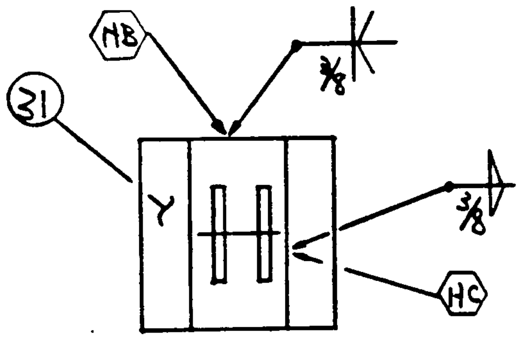
4. REF. DWG. OR SPEC. S2-RC-016-H-008 SHEET NO. REV. 1

5. TITLE PIPE SUPPORT ASSEMBLY NAME

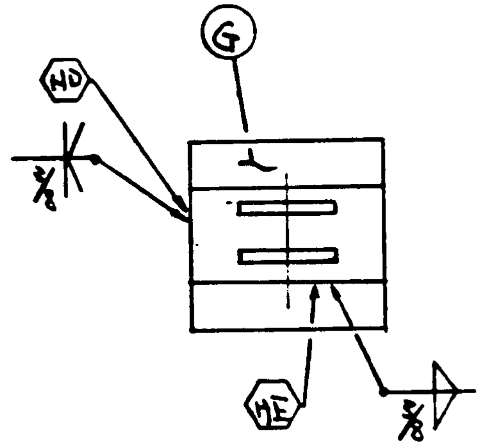
6. DESIGN ORIGIN: 1201 ENGRG ☒ VENDOR ☐ (IDENTIFY)

7. EXISTING CONDITION: DUMMY PL & END BRACKET ARE THE SAME SIZE.

8. CHANGE REQUEST/SKETCH



SECTION C-C



SECTION D-D

NO NEW MAT'L REQD

PL 5265

PROJECT ENGINEERING APPROVAL PER

10. REVIEWED BY		DATE			DATE
CIVIL			PIPE	N.S.	3-24-80
ELEC			INSTR		
MECH			NUC		
WELD			QA	[signature]	3-24-80

9. [signature] PREPARED BY

11. APPROVAL OF FLD DISPOSITION [signature] PROJECT FIELD ENGINEER DATE 3-24-80

12. PROJECT ENGRG APPROVAL: YES ☑ NO ☐ EGS ______ P.E. R.L. Rogers/RH DATE 3-24-80

REMARKS: **CONVERT TO DCN**

13. QUALITY ASSURANCE ENGINEER (FIELD): [signature] DATE 3-24-80

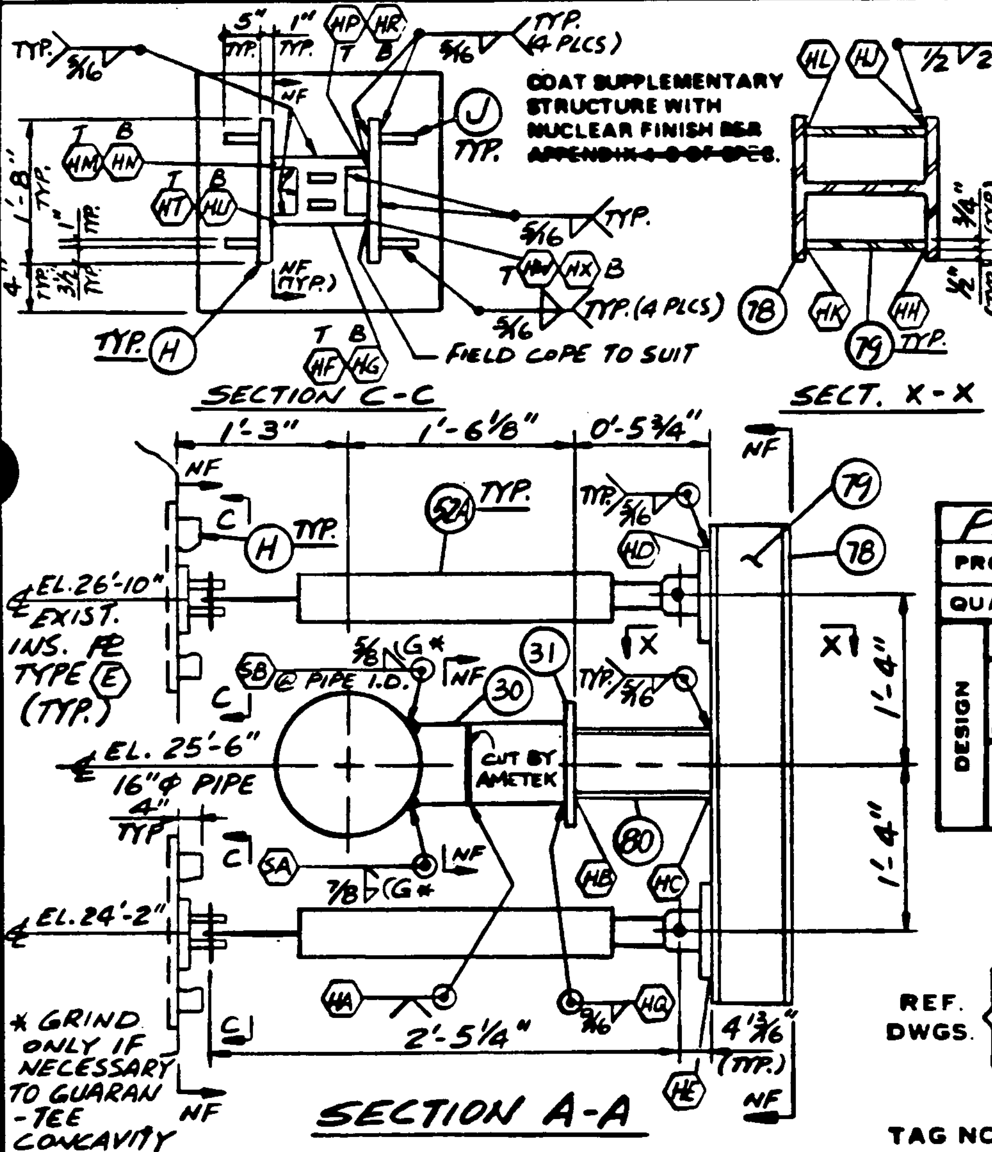
14. SCE ENGINEERING APPROVAL ______ P.E. ______ DATE ______

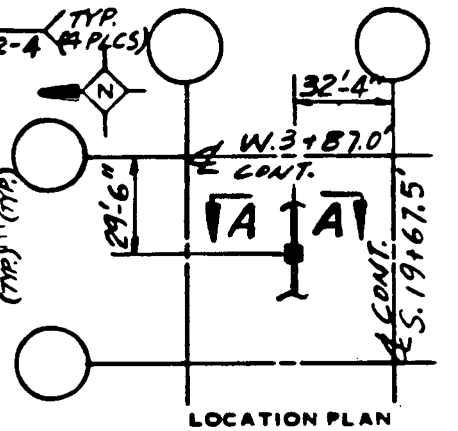
15. BECHTEL QUALITY ENGINEER/QUALITY ASSURANCE [signature] DATE 4-2-80

16. ADDITIONAL DISTRIBUTION

SUS - 2BBB

ITEM NO.	NO. REQ'D	PART NO.	SIZE / DESCRIPTION	NF	AISC	NOTES
30	1		8"Φ SCH 160 S.S. DUMMY PIPE	**		AMETEK
31	1		1¼"x12"x1'-0" C.S. PL	X		5023-409-23
78	1		W8x35 x 4'-0"	X		
79	2		PL ¾" x 7⅛" x 4'-0"	X		BY FIELD
80	1		W8x35 x 0'-5¾"	X		
52A	2		PSA-35-6" STROKE P/N 1811021-02	X		BY PSC
			SHOCK ARRESTOR KIT, C.S.=2.13", H.S.=3.85"			
			LOAD = 40757# EACH.			
H	4		BAR 1"x4"x1'-8"		X	BY FIELD
J	8		BAR 1"x4"x0'-5"		X	
		** INTEGRAL ATTACH. USE ASME SUBSECT. "NB" MAT'L				





(I.C.) AREA NO. 2C06-2

PMC-FEO		TYPE 6	
PROJ CL	PIPE A(QCI)	MAX. TEMP	
QUAL CL	STEEL II	650°F	

DESIGN		X	Y	Z
M (FT-LBS)	+	—	—	—
	−	—	—	—
P (LBS)	+	81413	—	—
	−	81413	—	—

S PROB. NO. 52 PT. NO. 69

SPOOL NO. 2-RC-016-3

REF. DWGS.: ISO 1201-016-1; PIPE 40400; STEEL —

TAG NO. S2-RC-016-H-009

NO.	REVISIONS	DATE	DR.	CHK.	E.G.S.	P.E.	Q.A.E.
					1201		
1	INCORP. DCN 1,2 & 3 & REDRAWN	2-26-80	QT	KG	RL	—	RLB / LM

BECHTEL POWER CORPORATION NORWALK, CALIFORNIA	J.O. NO.	SAN ONOFRE NUCLEAR GENERATING STATION
	FILE	PIPE SUPPORT ASSEMBLY
JOB NO. 10079 / DATE / APPROVED		SOUTHERN CALIFORNIA EDISON COMPANY, LOS ANGELES, CALIF. SCALE: NTS

PF-033 (10079) 7/79

01-02-01

MAR 31 1980

BECHTEL SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 FIELD CHANGE REQUEST/DCN/SCN	1. FCR NO. S-4825 DATE 3-19-80 2. PAGE 1 OF 1 3. UNIT NO. 2	12A. QUALITY CLASS I 12B. SPEC ADDEND. NO.	12C. DCN SUB NO. 04 12D. DATE APR 8 1980 12E. SCN NO.

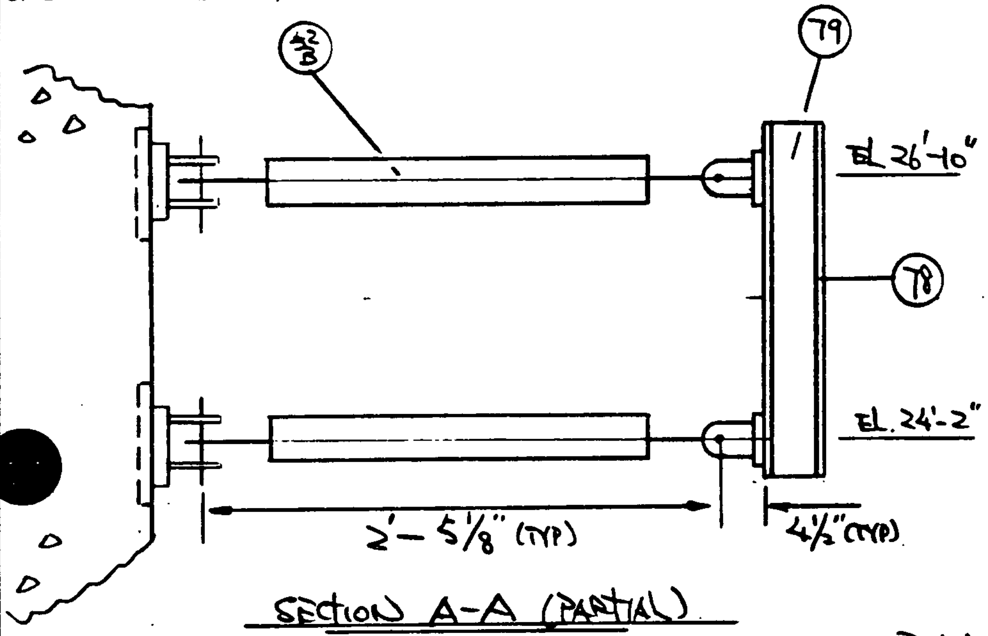
A(QCI) 2BBR JOB NO. 10079 (I.C.) 2606-3

4. REF. DWG. OR SPEC. S2-RC-016-H-009 SHEET NO. REV. 1 5. TITLE PIPE SUPPORT ASSEMBLY

6. DESIGN ORIGIN: 1201 ENGRG ☒ VENDOR ☐ (IDENTIFY) NAME

7. EXISTING CONDITION: CHANGE BILL OF MAT'L

8. CHANGE REQUEST/SKETCH



SECTION A-A (PARTIAL)

BILL OF MAT'L (BY FIELD)
1. CHANGE ITEM 52A TO 52B (2 REQ'D)
USE S3-51-059-H-005 &
S3-81-062-H-005.
35-6" SHOCK SUPPRESSOR 3·6
C.S = 2.13" H.S = 3.85"

PL 5218

PROJECT ENGINEERING APPROVAL PER

10. REVIEWED BY DATE

CIVIL ______ ______ PIPE [signature] 3-21-80
ELEC ______ ______ INSTR ______ ______
MECH ______ ______ NUC ______ ______
WELD ______ ______ QAE [signature] 3-24-80

9. [signature] PREPARED BY

11. APPROVAL OF FLD DISPOSITION [signature] PROJECT FIELD ENGINEER DATE 3-21-80

12. PROJECT ENGRG APPROVAL: YES ☒ NO ☐ EGS ______ P.E. R.L. Rogers/KH DATE 3-21-80

REMARKS: **CONVERT TO DCN**

13. QUALITY ASSURANCE ENGINEER (FIELD): [signature] DATE 3-24-80

14. SCE ENGINEERING APPROVAL ______ P.E. ______ DATE ______

15. BECHTEL QUALITY ENGINEER/QUALITY ASSURANCE [signature] DATE 4-2-80

16. ADDITIONAL DISTRIBUTION ______

PF-0924 (10079) 10/78

APR 7 1980

SAN ONOFRE NUCLEAR GENERATING STATION
UNITS 2 & 3
FIELD CHANGE REQUEST/DCN/SCN

A(QCI)
QBBB

JOB NO. 10079 (1.C) 206-2

1. FCR NO. S-4867	12A. QUALITY CLASS I
DATE 3-25-80	12B. SPEC ADDEND. NO.
2. PAGE 1 OF 1	12C. DCN SUB NO. 05
3. UNIT NO. 2	12D. DATE APR 15 1980
	12E. SCN NO.

4. REF. DWG. OR SPEC. S2-RC-016-H-009 SHEET NO. REV. 1

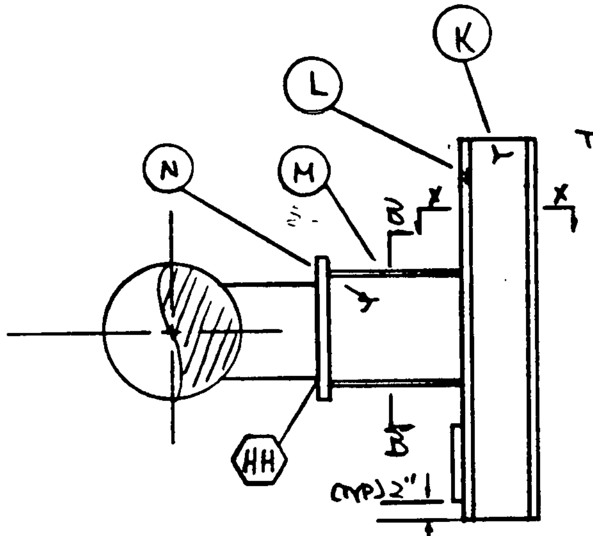
5. TITLE PIPE SUPPORT ASSEMBLY NAME

6. DESIGN ORIGIN: 1201 ENGRG ☒ VENDOR ☐ (IDENTIFY)

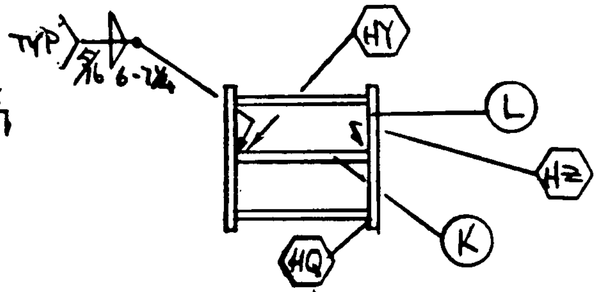
7. EXISTING CONDITION: MAT'L NOT IN STOCK.

8. CHANGE REQUEST/SKETCH

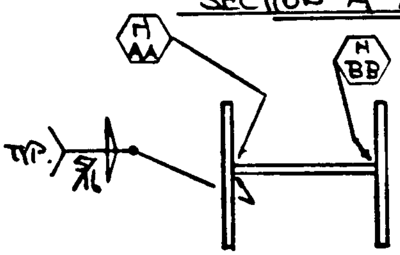
PL 5277



SECTION A-A (PARTIAL)



SECTION X-X



SECTION B-B

BILL OF MAT'L (BY FIELD)

1. DELETE ITEM 78, 80.
*2. ADD ITEM. L PL 1/2" X 8 1/2" X 3'-8 3/4" LG. (2 REQ'D)
*3. ADD ITEM K. PL 1/2" X 7 1/8" X 3'-8 3/4" LG. (1 REQ'D)
*4. ADD ITEM M. PL 1/2" X 8 1/8" X 0'-5 3/4" LG. (2 REQ'D)
*5. ADD ITEM N. PL 1/2" X 7 1/8" X 0'-5 3/4" LG. (1 REQ'D)

*NOTE: REVERSE WELD IDENTIFIERS HE, HF, NF MAT'L.

PROJECT ENGINEERING APPROVAL PER

10. REVIEWED BY / DATE

CIVIL			PIPE	[signature]	4-1-80
ELEC			INSTR		
MECH			NUC		
WELD			QAE	[signature]	4-1-80

9. [signature] PREPARED BY

11. APPROVAL OF FLD DISPOSITION [signature] PROJECT FIELD ENGINEER DATE 4-1-80

12. PROJECT ENGRG APPROVAL: YES ☒ NO ☐ EGS P.E. R.L. Rogers / RH DATE 3-31-80

REMARKS: CONVERT TO DCN

13. QUALITY ASSURANCE ENGINEER (FIELD): [signature] DATE 4-1-80

14. SCE ENGINEERING APPROVAL P.E. DATE

15. BECHTEL QUALITY ENGINEER/QUALITY ASSURANCE [signature] DATE 4-11-80

16. ADDITIONAL DISTRIBUTION

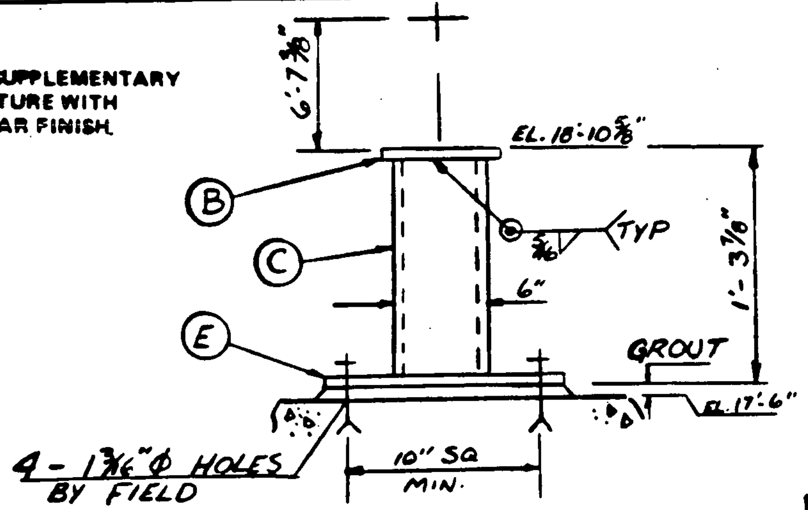
PF-0924 (10079) 10/78

SUS-2BBB

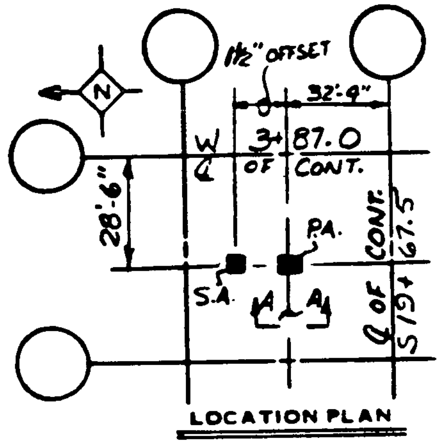
ITEM NO.	NO. REQ'D	PART NO.	SIZE / DESCRIPTION	NF	AISC	NOTES
30A	1	-	8" ϕ SCH. 160 S.S. DUMMY STUB	*		AMETEK
31A	1	-	1 1/4 x 12 x 1'-0" C.S. PL	X		FIELD ✦
52A	1	307	35-6" STROKE, MECH. SHOCK SUPPRESSOR	X		FROM U-3 TAG
			NUCLEAR CLASS 1, CS = 3.00", HS = 3.00",			S3-SI-044-H-003
			W = 1'-5 3/8", W/ADD. REAR BRACKET,			
			LOAD = 35,738 lbs.			
B	1	-	PL 1 x 5 x 0'-7"		X	FIELD
C	1	-	TS 6x4x3/8 x 1'-4"		X	"
E	1	-	PL 1 1/2 x 20 x 1'-8"		X	"
	4	-	US-8-HC-LCSF-175		X	"
			(✦ FROM SURPLUS S2-RC-016-H-004)			

*INTEGRAL ATTACH. USE ASME SUBSECT. NB MAT'L.

COAT SUPPLEMENTARY STRUCTURE WITH NUCLEAR FINISH

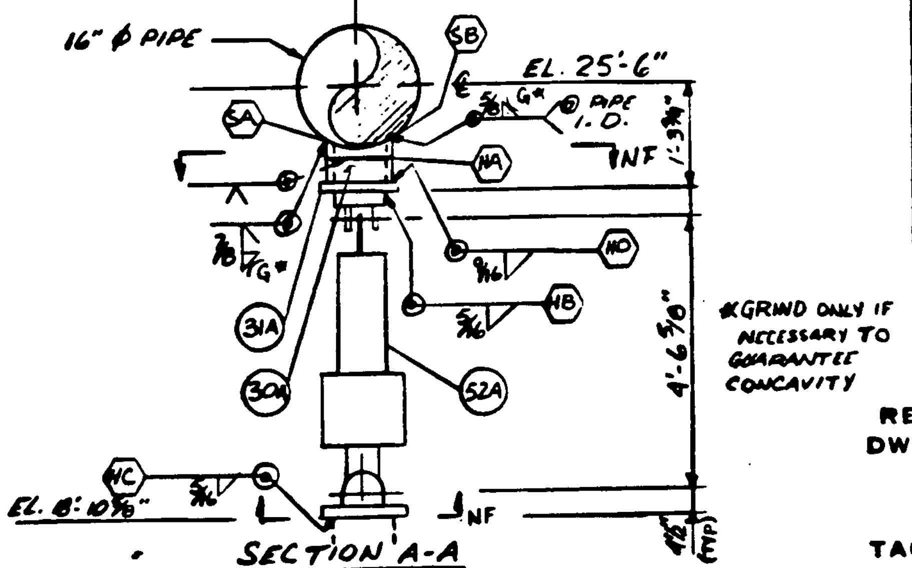


LOOKING WEST



LOCATION PLAN

(I.C.) AREA NO. 2C06-2



SECTION A-A

PMC - FEO		TYPE 6	
PROJ CL	PIPE A(QCI)		MAX. TEMP 650°F
QUAL CL	STEEL II		
DESIGN	X	Y	Z
M + (FT-LBS)			
M - (FT-LBS)			
P + (LBS)	—	35,738	—
P - (LBS)	—	35,738	—

S PROB. NO. 52 PT. NO. 69

SPOOL NO. 2-RC-016-3

REF. DWGS.: ISO 1201-016-1; PIPE 40400; STEEL 23168

TAG NO. S2-RC-016-H-010

1201

NO.	REVISIONS	DATE	DR.	CHK.	E.G.S.		P.E.	Q.A.E.
2	INCORP DCN 01, PCR S-4437 & REDRAWN	2-24-80	B	KG	U	—	RLB/SAA	TGS

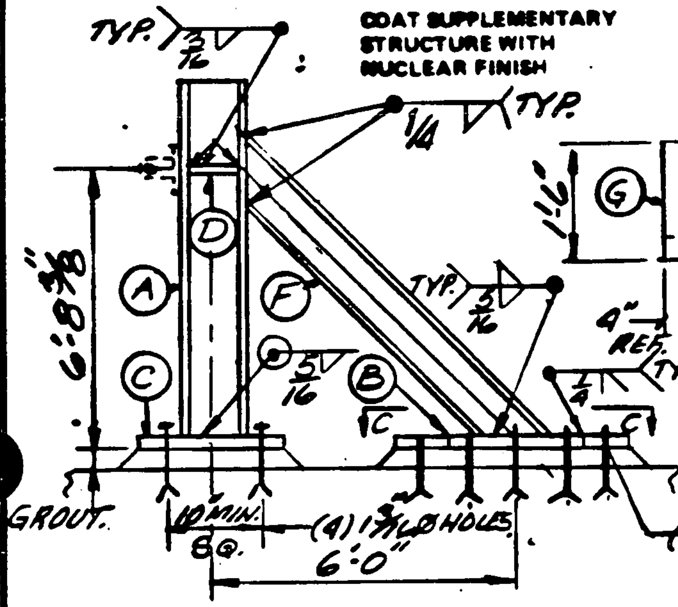
BECHTEL POWER CORPORATION NORWALK, CALIFORNIA	J.O. NO.	SAN ONOFRE NUCLEAR GENERATING STATION
	FILE	PIPE SUPPORT ASSEMBLY
JOB NO. 10079 / DATE / APPROVED		SOUTHERN CALIFORNIA EDISON COMPANY, LOS ANGELES, CALIF. SCALE: NTS

01-02-01

PF-023 (10079) 7/79

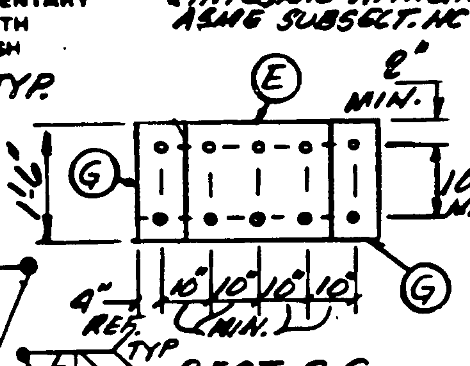
SUS -2BBA

ITEM NO.	NO. REQ'D	PART NO.	SIZE / DESCRIPTION	NF	AISC	NOTES
30	2	—	10"Ø SCH. 40S DUMMY PIPE	*		BY KELLOGG.
31	2	—	12"x12x1/2" C.S. PLATE.	X		" "
52	1	307	35-6 MECH. SHOCK SUPPRESSOR	X		BY GRINNELL.
			W/OPTION 1. C.S.=3.789"; H.S.=2.219"			
			W.=8 3/4" LOAD: 14,445			
A	1	—	W10X49		X	5023-206-18
E	1	—	PL. 1 1/4 x 24 x 1'-6"		X	BY FIELD
F	1	—	W10X49		X	"
D	2	—	3/8" STIFF. PL.		X	5023-206-18
G	2	—	PL. 1 1/4 x 12 x 1'-6"		X	BY FIELD
	14	—	US-B-HC-LCBF-175		X	"
C	1	—	PL. 1" x 18" x 1'-6"		X	SPEC 5023-206-18



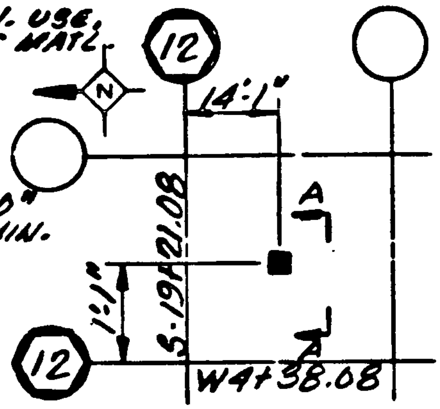
LOOKING SOUTH

NOTE: UPPER DUMMY STUB SHOP WELDED AND MAY REMAIN ON PIPE.



SECT. C-C

EL. 17'-6"



LOCATION PLAN

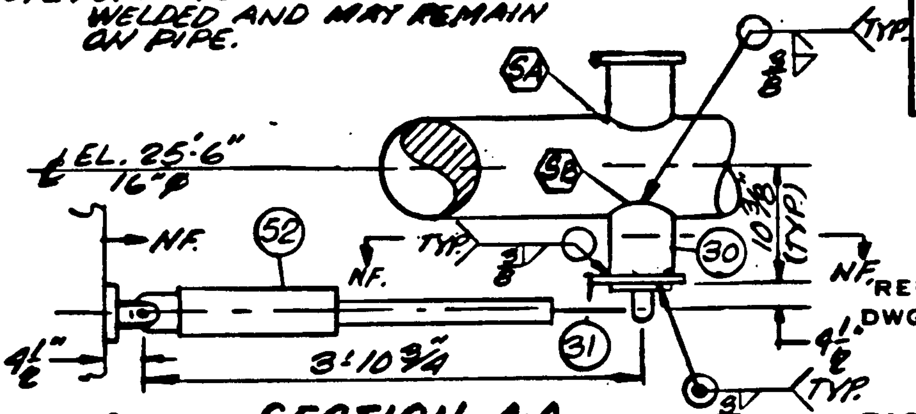
(I.C.) AREA NO. 2C06-2

PMC. KEO		TYPE 6		
PROJ CL	PIPE C (QC II)			MAX. TEMP 400 °F
QUAL CL	STEEL II			
DESIGN		X	Y	Z
M (FT-LBS)	+	—	—	—
	-	—	—	—
P (LBS)	+	0	0	75037
	-	0	0	75037

S PROB. NO. 52 PT. NO. 109

SPOOL NO. 2-RC-017-H-028

REF. DWGS.
ISO 1201-016-1
PIPE 40400
STEEL —



SECTION A-A

TAG NO. S2-RC-017-H-030

NO.	REVISIONS	DATE	DR.	CHK.	E.G.S.		P.E.	Q.A.E.
	—				1201			
2	INC. DCN 1,2, FCR 22146 & 4422 REDRAWN	2-26-80	[illegible]	JB	KG	—	[illegible]	[illegible]

BECHTEL POWER CORPORATION NORWALK, CALIFORNIA	J.O. NO.	SAN ONOFRE NUCLEAR GENERATING STATION
	FILE	PIPE SUPPORT ASSEMBLY
JOB NO. 10079 / DATE / APPROVED		SOUTHERN CALIFORNIA EDISON COMPANY SCALE: NTS — LOS ANGELES, CALIF.

PF-633 (10079) 7/79

01-02-01

MAR 26 1980

BECHTEL SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 FIELD CHANGE REQUEST/DCN/SCN	1. FCR NO. S-4774 DATE 3/14/80 2. PAGE 1 OF 1 3. UNIT NO. 2	12A. QUALITY CLASS II 12B. SPEC ADDEND. NO.	12C. DCN SUB NO. 03 12D. DATE MAR 31 1980 12E. SCN NO.

C(QCII) 2BHA JOB NO. 10079 (1.C) 2C06-2

4. REF. DWG. OR SPEC.	SHEET NO.	REV.	5. TITLE
S2-RC-017-H-030		2	Pipe Support Assembly NAME

6. DESIGN ORIGIN: 1201 ENGRG ☒ VENDOR ☐ (IDENTIFY)

7. EXISTING CONDITION:

Weld symbols incorrect

8. CHANGE REQUEST/SKETCH

Delete weld Identifier SA & SB

PL # 5163

PROJECT ENGINEERING APPROVAL PER

10. REVIEWED BY	DATE			
CIVIL		PIPE	N.F.S.	3-14-80
ELEC		INSTR		
MECH		NUC		
WELD		QAE	[signature]	3-17-80

9. P. Tannirat PREPARED BY

11. APPROVAL OF FLD DISPOSITION [signature] PROJECT FIELD ENGINEER DATE 3-15-80

12. PROJECT ENGRG APPROVAL: YES ☒ NO ☐ EGS ______ P.E. R.I. Rogo [signature] DATE 3-14-80

REMARKS: CONVERT TO DCN

13. QUALITY ASSURANCE ENGINEER (FIELD): J.W. Sheppard DATE 3-18-80

14. SCE ENGINEERING APPROVAL ______ P.E. ______ DATE ______

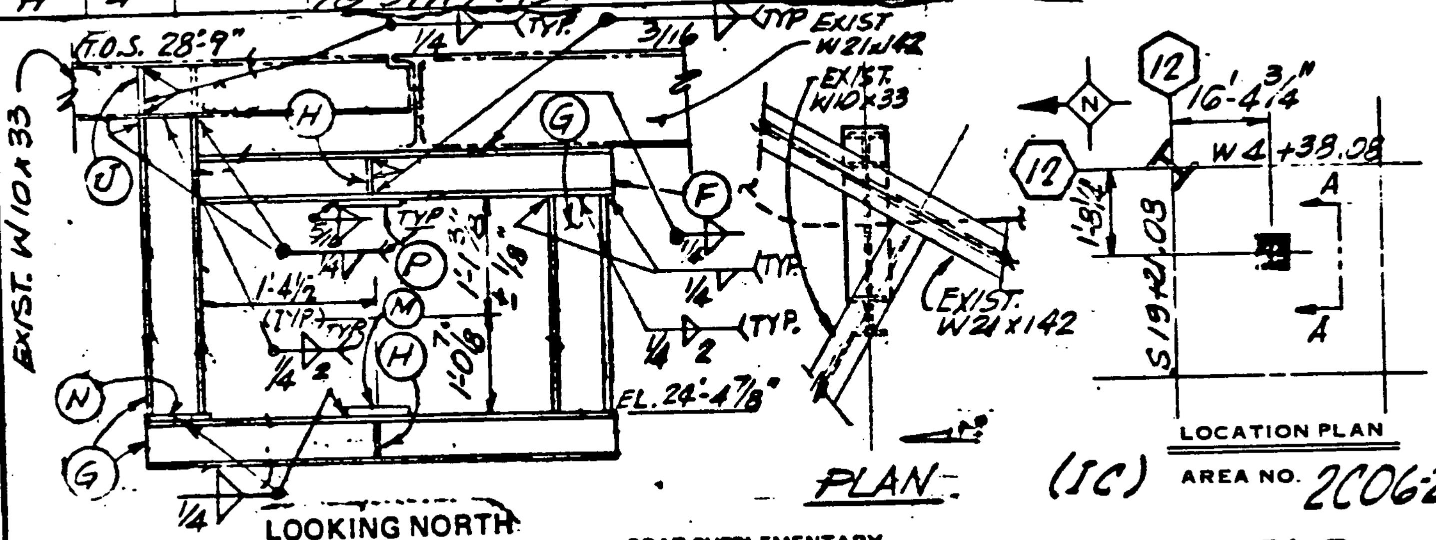
15. BECHTEL QUALITY ENGINEER/QUALITY ASSURANCE J.W. Sheppard DATE 3-28-80

16. ADDITIONAL DISTRIBUTION

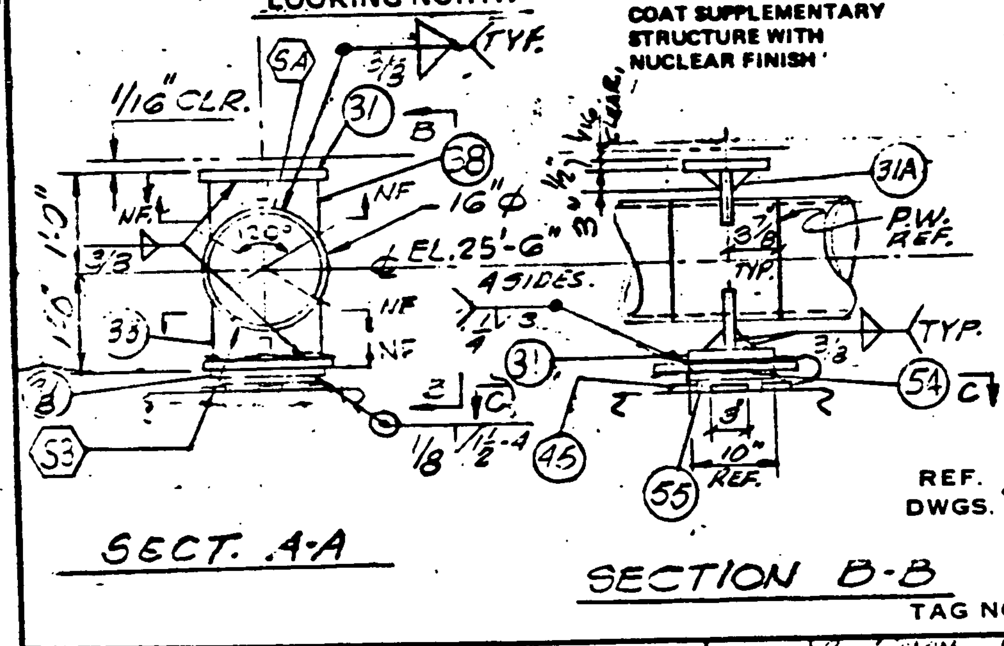
PF-0924 (10079) 10/78

S.U.S. 2BHA

ITEM NO.	NO. REQ'D	PART NO.	SIZE / DESCRIPTION	NF	AISC	NOTES
33	2	-	14"x 4" HIGH x 2 1/4" S.S. PL (SHIP LOOSE)	*		BY KELLOGG
31	2	-	16" x 10" x 1/2" C.S. PL	X		BY KELLOGG
31A	4	-	3" x 3" x 1/2" C.S. PL	X		BY KELLOGG
54	1	-	UPPER SLIDE BEARING PL 10 GA. S.S. 9 1/2" x 9 1/2"			BY FIELD
55	1	-	LOWER SLIDE BEARING PL BRONZITE 1/4" x 9" x 9"			BY FIELD
45	4	-	C.S. BAR 3/16" x 3/16" x 3"			"BY FIELD"
318	1	-	PL. 3/4 X 12 X 1'-0"		X	
F	1	-	W4 X 13 X 3'-3 1/2"		X	
G	3	-	W6 X 15.5		X	
H	4	-	3/8" STIFF. PL.		X	



AREA NO. 2C06-2



DESIGN CODE: C
TYPE: 2

PROJ. CLASS C (QC II)
MAX. TEMP. 400 °F
OPER. LOAD (LBS.) —
DESIGN LOAD (LBS) Y = +4000, -7000
5 PROB. NO. 52 PT. NO. 111
SPOOL NO. 2-RC-017-28
REF. DWGS. ISO 1201-016-1
PIPE 40400
STEEL —

SHT 1 OF 2
TAG NO. S2-RC-017-H-031

NO.	REVISIONS	DATE	DR.	CHK.	E.G.S.	CHF. E.	P.E.	Q.A.E.
5	REVISED PER DCN. NO. 1 & 2 & REDRAWN	2-28-80			KG MB 1201			

BECHTEL POWER CORPORATION
NORWALK, CALIFORNIA

J.O. NO.
FILE

JOB NO. 10079 | DATE | APPROVED

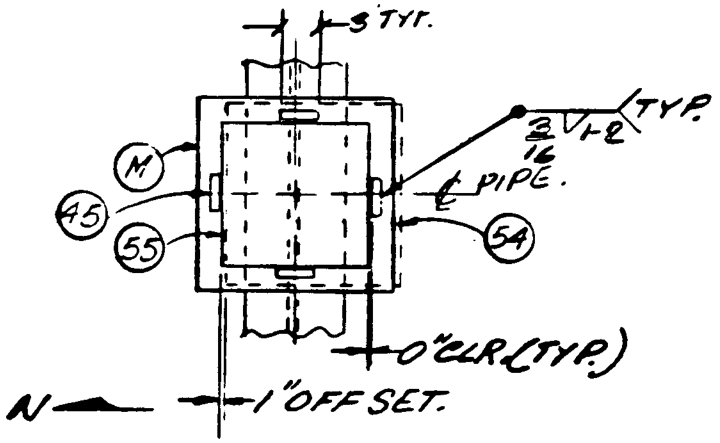
SAN ONOFRE NUCLEAR GENERATING STATION
PIPE SUPPORT ASSEMBLY
SOUTHERN CALIFORNIA EDISON COMPANY
LOS ANGELES, CALIF.
SCALE: NTS

PF-633(10079) 4/75

01-02-01

ITEM NO	NO. REQ'D		SIZE	DESCRIPTION	NF	AISC	NOTES
J	2	—	3/8" STIFF. PL.			X	BY FIELD.
M	1	—	PL 3/4×10×0'-10"			X	"
N	1	—	PL 3/4×7×0'-7"			X	"
P	1	—	PL 7/8×10×0'-10"			X	"

* FOR INTEGRAL ATTACH. USE ASME SUBSECT. NC MATL.



SECTION C-C

120'

SHT 2 OF 2
S2-RC-017-H-031 REV 6

BECHTEL POWER CORPORATION NORWALK, CALIFORNIA	J.O. NO.	SAN ONOFRE NUCLEAR GENERATING STATION
		PIPE SUPPORT ASSEMBLY
JOB NO. 10079 / DATE / APPROVED		SOUTHERN CALIFORNIA EDISON COMPANY SCALE NTS LOS ANGELES CALIF

MAR 12 1980

SAN ONOFRE NUCLEAR GENERATING STATION
UNITS 2 & 3
FIELD CHANGE REQUEST/DCN/SCN

(QCI) (1-C)
JOB NO. 10079 2606-2

1. FCR NO. S-6637	12A QUALITY CLASS II	12C. DCN SUB NO. 03
DATE 2-29-80		12D. DATE MAR 24 1980
2. PAGE 1 OF 1	12B. SPEC ADDEND. NO.	12E. SCN NO.
3. UNIT NO. 2		

4. REF. DWG. OR SPEC. S?-?C-017-H-031 SHEET NO. REV. 6

5. TITLE Pipe Support Assembly

NAME

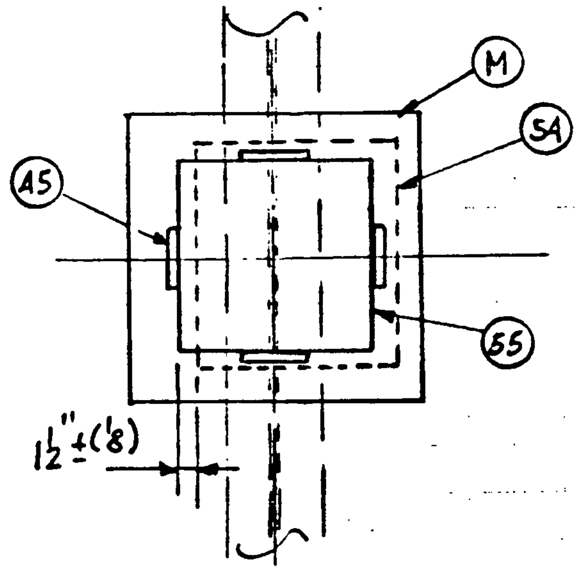
6. DESIGN ORIGIN: 1201 ENGRG ☑ VENDOR ☐ (IDENTIFY)

7. EXISTING CONDITION:

ACTUAL OFF SET DISTANCE LESS THAN AS SHOWN IN DWG

8. CHANGE REQUEST/SKETCH

PL# 5055



No new material req'd

SECT. C-C (PARTIAL)

PROJECT ENGINEERING APPROVAL PER

10.	REVIEWED BY	DATE			
CIVIL			PIPE	NJS	3-1-80
ELEC			INSTR		
MECH			NUC		
WELD			QAE	J.W. Sheppard	3-3-80

9. P. Tannirat
PREPARED BY

11. APPROVAL OF FLD DISPOSITION
D. Christeman
PROJECT FIELD ENGINEER
DATE MAR 02 1980

12. PROJECT ENGRG APPROVAL: YES ☑ NO ☐ FGS ☐ P.E. R.L. Vogus/RR DATE 3-1-80

REMARKS: **CONVERT TO DCN**

13. QUALITY ASSURANCE ENGINEER (FIELD): J.W. Sheppard DATE 3-3-80

14. SCE ENGINEERING APPROVAL P.E. DATE

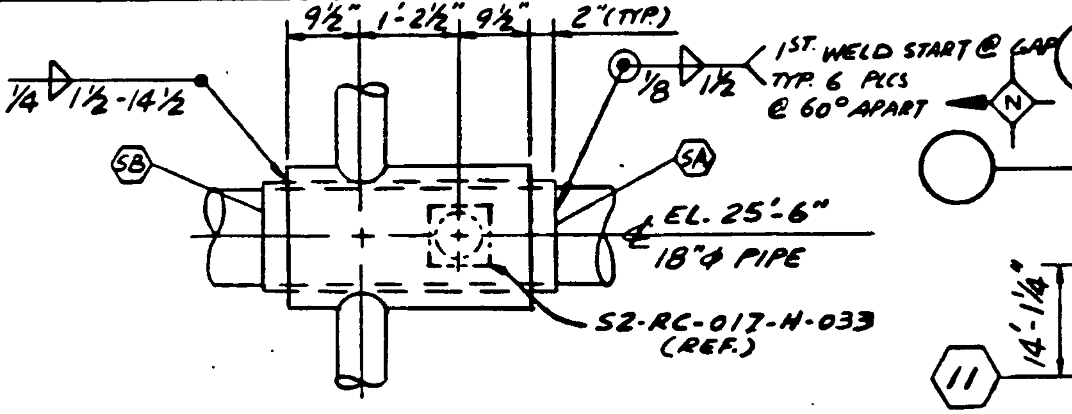
15. BECHTEL QUALITY ENGINEER/QUALITY ASSURANCE J.W. Sheppard DATE 3-21-80

16. ADDITIONAL DISTRIBUTION

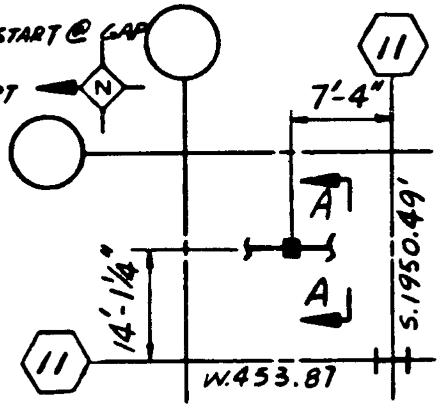
PF-0924 (10079) 10/78

SUS-2BHA

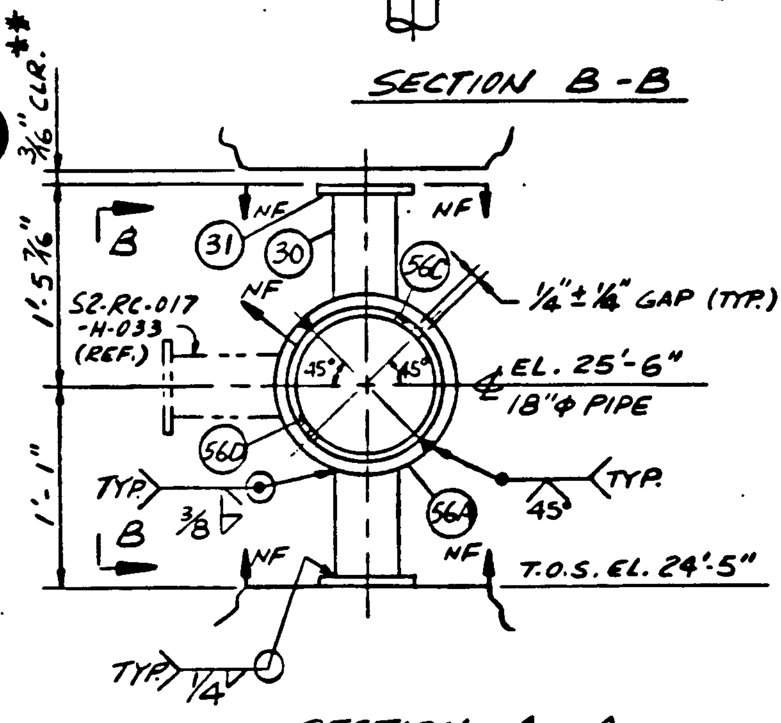
ITEM NO.	NO. REQ'D	PART NO.	SIZE / DESCRIPTION	NF	AISC	NOTES
30	2	—	10"Φ SCH. 40S DUMMY PIPE S.S.	X		BY KELLOGG
31	2	—	12"×12"×½" C.S. PLATE	X		" "
56A	2	—	¼ × 2'-9½" CURVE C.S. PL	X		BY AMETEK
56C	1	—	⅛ × 3'-1½" CURVE S.S. PL	*		" "
56D	1	—	⅛ × 3'-1½" CURVE S.S. PL	*		" "
		* INTEGRAL ATTACH. USE ASME SECT. III SUBSECT. "NC" MAT'L.				
A	1	—	W6 × 20		X	SPEC. S023-206-18
B	1	—	W8 × 35		X	
C	2	—	PL ⅜ × 4 × 0'-6"		X	
D	1	—	W 6 × 20		X	
E	1	—	PL ⅜ × 4 × 0'-6"		X	
	6	—	1"Φ HEX BOLTS		X	



SECTION B-B



LOCATION PLAN



SECTION A-A

COAT SUPPLEMENTARY STRUCTURE WITH NUCLEAR FINISH

(I.C.) AREA NO. 2C06-2

PMC-KEO		TYPE 2	
PROJ CL	PIPE C (QC II)		MAX. TEMP
QUAL CL	STEEL II		400°F

DESIGN		X	Y	Z
M (FT-LBS)	+	—	—	—
	−	—	—	—
P (LBS)	+	—	3491	—
	−	—	11237	—

S PROB. NO. 52 PT. NO. 114

SPOOL NO. 2-RC-017-29

REF. DWGS. ISO 1201-016-2

PIPE 40400

STEEL —

SHT 1 OF 2

TAG NO. S2-RC-017-H-032

1201

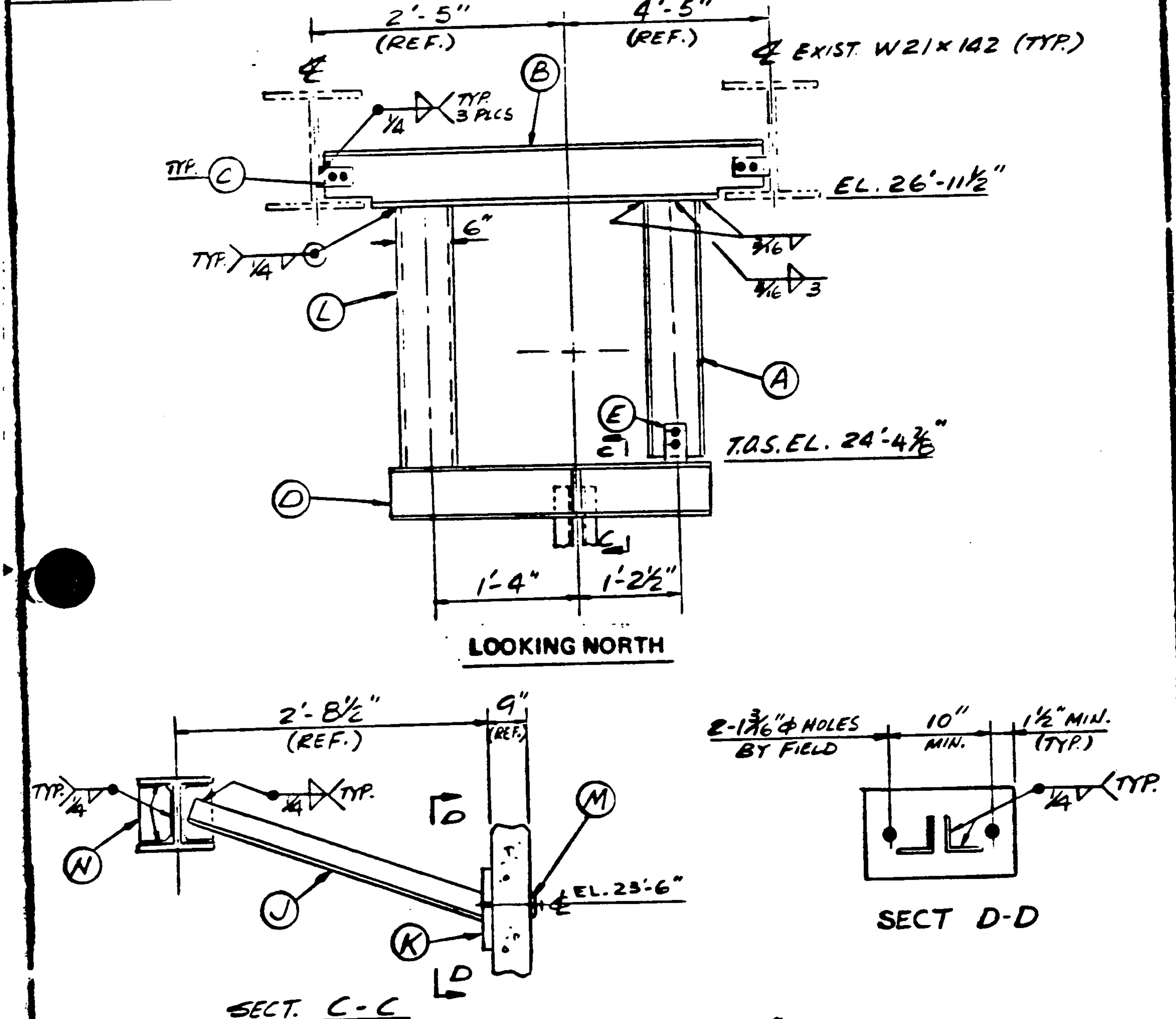
NO.	REVISIONS	DATE	DR.	CHK.	E.G.S.	P.E.	Q.A.E.
3	INCORP. DCN 1,2,3,&4 & REDRAWN	2-28-80	QT	DAR	KG MB		

BECHTEL POWER CORPORATION NORWALK, CALIFORNIA	J.O. NO.	SAN ONOFRE NUCLEAR GENERATING STATION
	FILE	PIPE SUPPORT ASSEMBLY
JOB NO. 10079 / DATE / APPROVED		SOUTHERN CALIFORNIA EDISON COMPANY SCALE: NTS LOS ANGELES, CALIF.

PF-633 (10079) 7/79

01-02-01

ITEM NO	NO REQ'D	PART NO	SIZE / DESCRIPTION	NF	ASC	NOTES
J	2		L 2½ x 2½ x 3/8 x 3'-0" (±)		X	BY FIELD
K	1		PL 1 x 8 x 1'-2"		X	BY FIELD
L	1		T.S. 6 x 4 x 3/8		X	BY FIELD
[illegible]	2		PL 3/4 x 4 x 0'-4"		X	BY FIELD
[illegible]	2		3/8" STIFF. PL		X	BY FIELD
	2		1"Φ A-325 BOLTS/NUTS		X	BY FIELD



**NOTE: MIN. TOTAL CLRC. REQ'D. IS 1/8"

1201- SHT 2 OF 2

S2-RC-017-H-032 REV 3

BECHTEL POWER CORPORATION NORWALK, CALIFORNIA	JOB NO.	SAN ONOFRE NUCLEAR GENERATING STATION
	FILE	PIPE SUPPORT ASSEMBLY
JOB NO. 10079 / DATE / APPROVED		SOUTHERN CALIFORNIA EDISON COMPANY — SCALE NTS — LOS ANGELES CALIF

APR 10 1980

SAN ONOFRE NUCLEAR GENERATING STATION
UNITS 2 & 3
FIELD CHANGE REQUEST/DCN/SCN

2BHA

JOB NO. 10079 (I.C.) 21062

1. FCR NO. 2-4900
DATE 3-28-80
2. PAGE 1 OF 1
3. UNIT NO. II

12A. QUALITY CLASS II
12B. SPEC ADDEND. NO.

12C. DCN SUB NO. 05
12D. DATE APR 22 1980
12E. SCN NO.

4. REF. DWG. OR SPEC.	SHEET NO.	REV.	5. TITLE
S2-RC-017-H-032		3	PIPE SUPT. ASSEMBLY

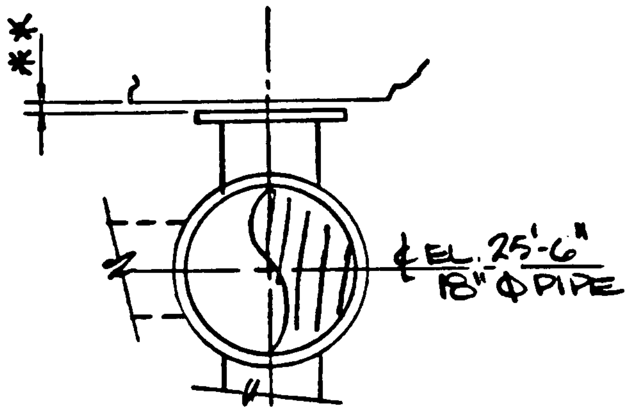
NAME

6. DESIGN ORIGIN: ENGRG ☒ VENDOR ☐ (IDENTIFY)
1201

7. EXISTING CONDITION:

MIN./MAX. CLEARANCE REQ'MT. CHG.

8. CHANGE REQUEST/SKETCH



SECT. A-A
(PARTIAL)

** NOTE:
1. MIN. TOTAL CLR. REQ'D IS 1/8"
2. MAX TOTAL CLR IS 5/16"

PL# 5310 PROJECT ENGINEERING APPROVAL PER

10.	REVIEWED BY	DATE		REVIEWED BY	DATE
CIVIL			PIPF	[signature]	4-1-80
ELEC			INSTR		
MECH			NUC		
WELD			QAE	[signature]	4-1-80

9. C.W. GREER / S. Tampa
PREPARED BY

11. APPROVAL OF FLD DISPOSITION
[signature]
PROJECT FIELD ENGINEER
DATE APR 01 1980

12. PROJECT ENGRG APPROVAL: YES ☒ NO ☐ EGS. ______ P.E. R.L. Rogers/RH DATE 3-31-80

REMARKS: CONVERT TO DCN

13. QUALITY ASSURANCE ENGINEER (FIELD): [signature] DATE 4-1-80

14. SCE ENGINEERING APPROVAL ______ P.E. ______ DATE ______

15. BECHTEL QUALITY ENGINEER/QUALITY ASSURANCE [signature] DATE 4-16-80

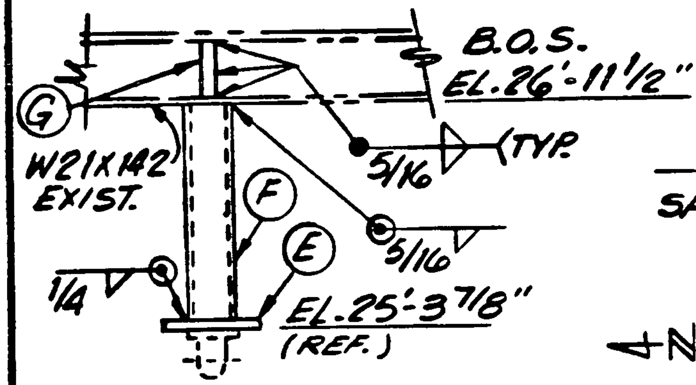
16. ADDITIONAL DISTRIBUTION

PF-0924 (10079) 10/78

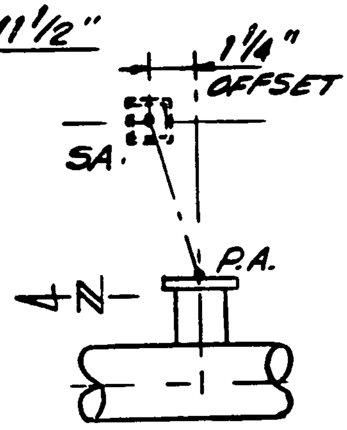
2BHA

ITEM NO.	NO. REQ'D	PART NO.	SIZE / DESCRIPTION	NF	AISC	NOTES
30	1	—	10"ø SCH. 40S DUMMY PIPE S.S.	X		BY KELLOGG
31	1	—	℞ 1/2 X 12 X 1'-0" CARBON STEEL	X		"
52A	1	307	#3-5" STROKE MECH. SHOCK SUPPRESSOR W/ADDITIONAL REAR BRACKET, CS = 1 1/2", HS = 3 3/8", W = 8 3/8", LOAD = 944#			SURPLUS FROM S2-S1-003-H-015
E	1		℞ 1/2 X 6 X 0'-6"		X	BY FIELD
F	1		TS 4 X 4 X 1/2		X	
G	2		1/2" STIFF ℞		X	

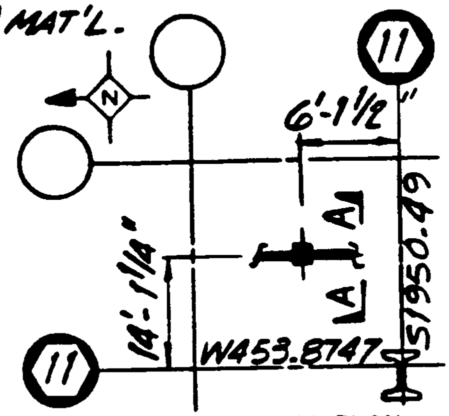
*INTEGRAL ATTACH. USE ASME SECT III SUBSECT. 'NC' MAT'L.



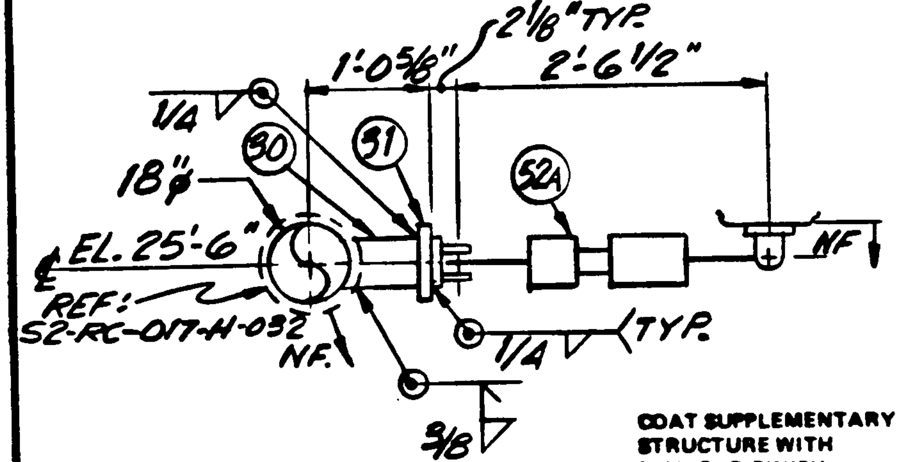
LOOKING NORTH



PLAN



LOCATION PLAN



SECTION A-A

COAT SUPPLEMENTARY STRUCTURE WITH NUCLEAR FINISH

(I.C.) AREA NO. 2C06-2

PMC: KEO			TYPE 6
PROJ CL	PIPE C (QC II)		MAX. TEMP
QUAL CL	STEEL II		400 °F

DESIGN		X	Y	Z
M (FT-LBS)	+	—	—	—
	-	—	—	—
P (LBS)	+	0	0	944
	-	0	0	944

5 PROB. NO. 52 PT. NO. 114

SPOOL NO. 2RC-017-29

REF. DWGS.: ISO 1201-016-2; PIPE 40400; STEEL 23211

TAG NO. S2-RC-017-H-033

1201

NO.	REVISIONS	DATE	DR.	CHK.	E.G.S.		P.E.	Q.A.E.
4	INC. FCR 22174, 13201, DCN 1 & 2 REDRAWN	2-26-80	BO		KG MB	—		

BECHTEL POWER CORPORATION
NORWALK, CALIFORNIA

JOB NO. 10079 | DATE | APPROVED

J.O. NO.

FILE

SAN ONOFRE NUCLEAR GENERATING STATION

PIPE SUPPORT ASSEMBLY

SOUTHERN CALIFORNIA EDISON COMPANY
LOS ANGELES, CALIF.

SCALE: NTS

01-02-01

PF-633 (10079) 7/79

MAR 26 1980

BECHTEL — SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 FIELD CHANGE REQUEST/DCN/SCN	1. FCR NO. S-4770 DATE 3/14/80 2. PAGE 1 OF 1 3. UNIT NO. 2	12A. QUALITY CLASS II 12B. SPEC ADDEND. NO.	12C. DCN SUB NO. 05 MAR 31 1980 12E. SCN NO.

C(QCII) (1.C)
2BHA JOB NO. 10079 2C06-2

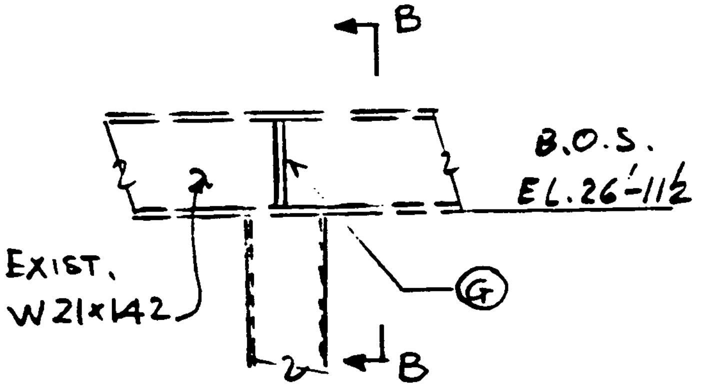
4. REF. DWG. OR SPEC.	SHEET NO.	REV.	5. TITLE
S2-RC-017-H-033		4	Pipe Support Assembly NAME

6. DESIGN ORIGIN: 1201 ENGRG ☒ VENDOR ☐ (IDENTIFY)

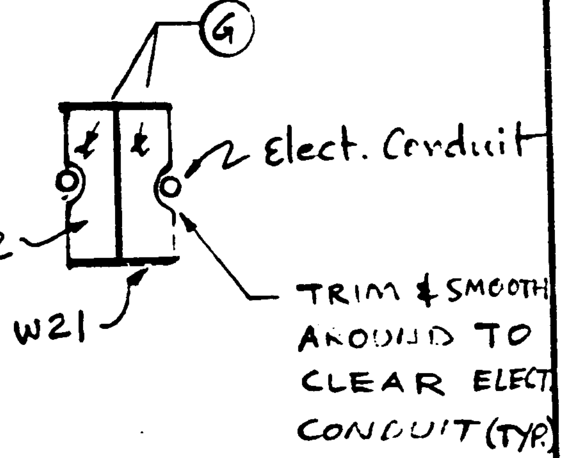
7. EXISTING CONDITION:

1/2" stiffener PL interfere with Elect. Conduit

8. CHANGE REQUEST/SKETCH



LOOKING NORTH
(PARTIAL)



SECT. B-B

PL# 5159

PROJECT ENGINEERING APPROVAL PER

10. REVIEWED BY	DATE			
CIVIL		PIPF	YJS	3-14-80
ELEC		INSTR		
MECH		NUC		
WELD		QAE	[signature]	3-17-80

9. P. Tanniyat
PREPARED BY

11. APPROVAL OF FLD DISPOSITION
[signature]
PROJECT FIELD ENGINEER
DATE 3-15-80

12. PROJECT ENGRG APPROVAL: YES ☒ NO ☐ EGS ____ P.E. R.L. Rogerson DATE 3-14-80

REMARKS: CONVERT TO DCN

13. QUALITY ASSURANCE ENGINEER (FIELD): [signature] DATE 3-18-80

14. SCE ENGINEERING APPROVAL ____ P.E. ____ DATE ____

15. BECHTEL QUALITY ENGINEER/QUALITY ASSURANCE [signature] DATE 3-28-80

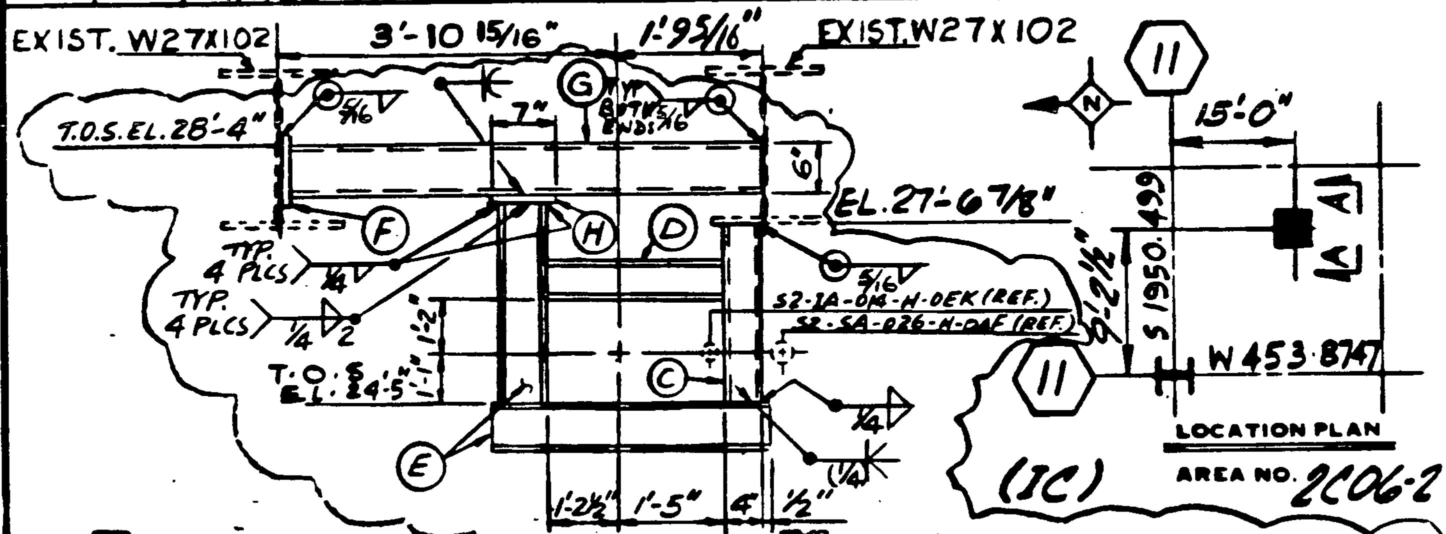
16. ADDITIONAL DISTRIBUTION ____

PF-0924 (10079) 10/78

ITEM NO.	NO. REQ'D	PART NO.	SIZE / DESCRIPTION	NF	AISC	NOTES
30	2	—	10"ϕ SCH. 40S DUMMY PIPE S.S.	*		BY KELLOGG
31	2	—	PL ½ x 11¼ x 0'-11¼" C.S.	X		" "
C	1		T.S. 6x4x½ x 3'-1⅞"		X	BY FIELD
D	1		W4 x 13 x 2'-7½"		X	BY FIELD
E	2		W6 x 20		X	BY FIELD
F	1		PL ¾ x 5 x 0'-7" 4		X	BY FIELD
G	1		T.S. 6x4x½ x 5'-7"		X	BY FIELD
H	1		PL ¾ x 6½ x 0'-7"		X	BY FIELD

* INTEGAL ATTACHMENT USE ASME SUBSECTION "NC" MAT'L

SUS-2BHA

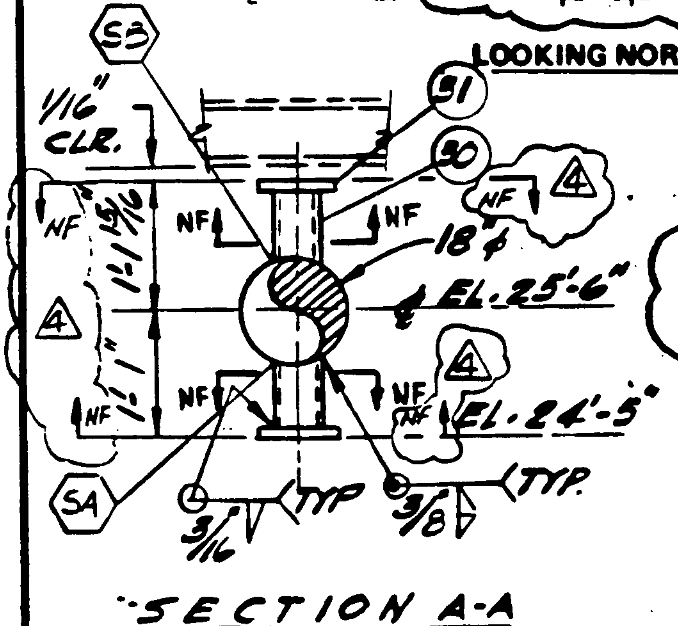


AREA NO. 2C06-2

4 PMC-KED STEEL II

TYPE: 2

LOOKING NORTH



SECTION A-A

COAT SUPPLEMENTARY STRUCTURE WITH NUCLEAR FINISH 4

PROJ. CLASS C (QC II)

MAX. TEMP. 400°F

OPER. LOAD (LBS.) —

DESIGN LOAD (LBS) 13283

5 PROB. NO. 52 PT. NO. 120

SPOOL NO. 2-RC-017-38

REF. DWGS.
- ISO 1201-016-2
- PIPE 40400 ϕ (40386)
- STEEL —

TAG NO. S2-RC-017-H-035

NO.	REVISIONS	DATE	DR.	CHK.	E.G.S.	CHF. E.	P.E.	Q.A.E.
4	INCORP. DCN 3	2-26-80	QT	KG	HB 1201	—		
3	INCORP. DCN # 1 & 2	6-29-79	NS			—		
0	ISSUED FOR CONSTRUCTION	2-8-77	MR	DATA		—		

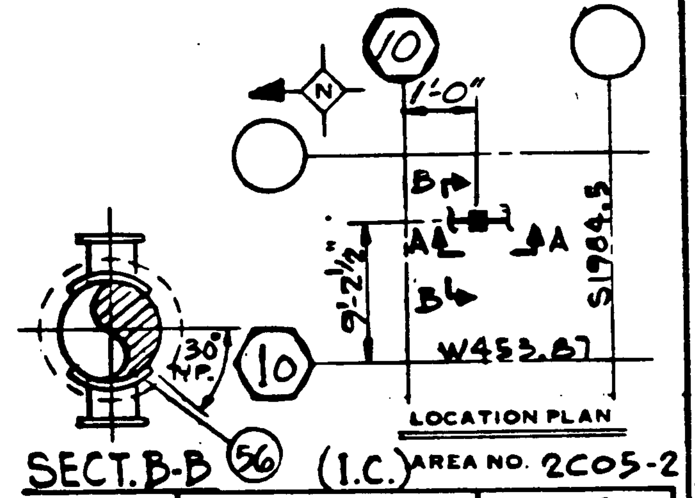
BECHTEL POWER CORPORATION NORWALK, CALIFORNIA	J.O. NO.	SAN ONOFRE NUCLEAR GENERATING STATION
	FILE	PIPE SUPPORT ASSEMBLY
JOB NO. 10079 / DATE / APPROVED		SOUTHERN CALIFORNIA EDISON COMPANY LOS ANGELES, CALIF. SCALE: NTS

PF-633(10079) A/78

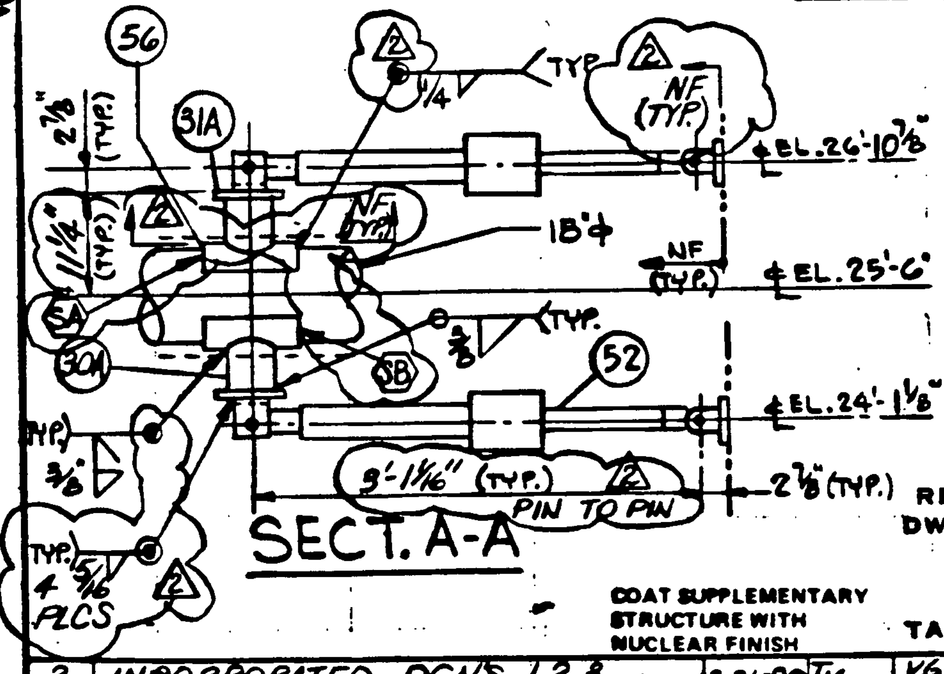
01-02-01

ITEM NO.	NO. REQ'D	PART NO.	DESCRIPTION	NF	AISC	NOTES
30A	2	—	10" ⌀ SCH. 40S DUMMY PIPE	X		BY FIELD
31A	2	—	3/4 x 12 3/4 x 1'-0 3/4" S.S. PLATE 2	X		" "
52	2	307	No 10, 6" STROKE, MECH SHOCK SUPPRESSOR			
			NUCLEAR CLASS 2, W = 10", CS = 2 1/16, HS = 3 9/16			
			W/ADDITIONAL REAR BRACKET, LOAD = 12124#	X		BY GRINNELL
56	2	—	1/4" x 120° x 14 1/4" S.S. CURVED PLATE 2	*		BY KELLOGG
			* INTEGRAL ATTACHMENT - USE CODE SUB-SEC NC MATERIAL.			

SUS: 2BHA



(I.C.) AREA NO. 2C05-2



DESIGN CODE	C	TYPE	6	
PROJ CL	PIPE C (QC II)			MAX. TEMP 400°F
QUAL CL	STEEL			

DESIGN		X	Y	Z
M (FT-LBS)	+	—	—	—
	−	—	—	—
P (LBS)	+	24248	—	—
	−	24248 2	—	—

S PROB. NO. 22 PT. NO. 125

SPOOL NO. 2-RC-017-16

REF. DWGS.
- ISO 1201-016-1
- PIPE 40386
- STEEL 20075

COAT SUPPLEMENTARY STRUCTURE WITH NUCLEAR FINISH

TAG NO. S2-RC-017-H-036

CALC. C-270-3.0

NO.	REVISIONS	DATE	DR.	CHK.	E.G.S.	CHF. E	P.E.	QAE
2	INCORPORATED DCNS 1,2,3	2-26-80	TM	KG	LQ MB 1201	—		
1	CHANGED DIM. OF ITEM #56	7-11-77	R.K.			—	JDH	
0	ISSUED FOR CONSTRUCTION	5-18-77				—	JDH	

BECHTEL POWER CORPORATION
NORWALK, CALIFORNIA

JOB NO.	DATE	APPROVED
10079		

J.O. NO.

FILE

SAN ONOFRE NUCLEAR GENERATING STATION

PIPE SUPPORT ASSEMBLY

SOUTHERN CALIFORNIA EDISON COMPANY
LOS ANGELES, CALIF.

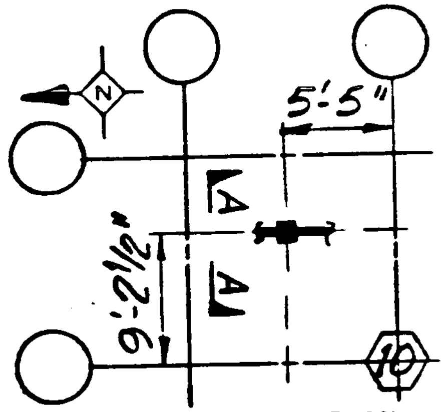
SCALE: NTS

01-02-01

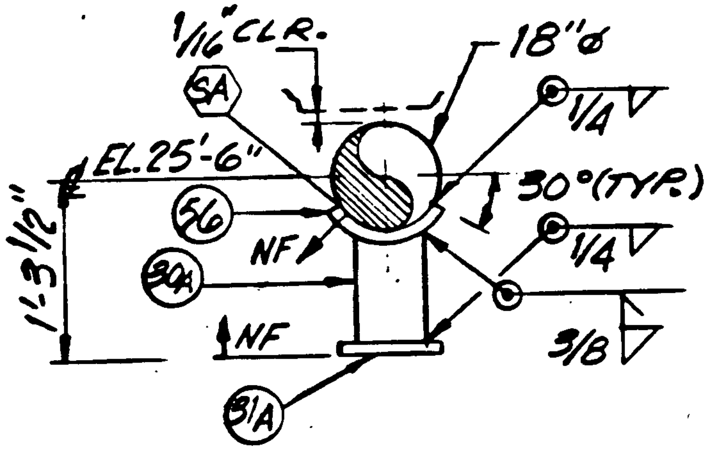
SUS 2BHA

ITEM NO.	NO REQ'D	PART NO	SIZE / DESCRIPTION	NF	AISC	NOTES
30A	1		10"ø SCH 40S DUMMY STUB	X		BY FIELD
31A	1		PL 3/4 X 12 X 1'-0" CARBON STEEL	X		
56	1		1/4 X 120° X 14 3/4" S.S. CURVED PLATE	X		BY KELLOGG
D	1		W6X15.5X5'-6 3/4" LG		X	
E	2		L3X3X1/4X0'-4" LG		X	
F	1		W6X15.5X1'-10 7/16 LG		X	
G	1		1/2X9X0'-9" C.S. PLATE		X	BY FIELD.
H	1		PL 1/2X12X1'-0"		X	
J	1		W6X15.5		X	
K	1		PL 3/4X14X2'-0" LG		X	
	4		US-8-HC-LCSF-175			

*INTEGRAL ATTACHMENT-USE ASME SECT III SUBSECT NC MAT'L.



LOCATION PLAN



SECTION A-A

COAT SUPPLEMENTARY STRUCTURE WITH NUCLEAR FINISH

(I.C.) AREA NO. 2C05-2

PMC: KEO		TYPE 2	
PROJ CL	PIPE C (QC II)		MAX. TEMP
QUAL CL	STEEL II		400°F
DESIGN	X	Y	Z
M + (FT-LBS)	—	—	—
M - (FT-LBS)	—	—	—
P + (LBS)	0	1384	0
P - (LBS)	0	1384	0

PROB. NO. 52 PT. NO. 125

SPOOL NO. 2RC-017-16

REF. DWGS.
- ISO. 1201-016-1
- PIPE 40386
- STEEL 1201

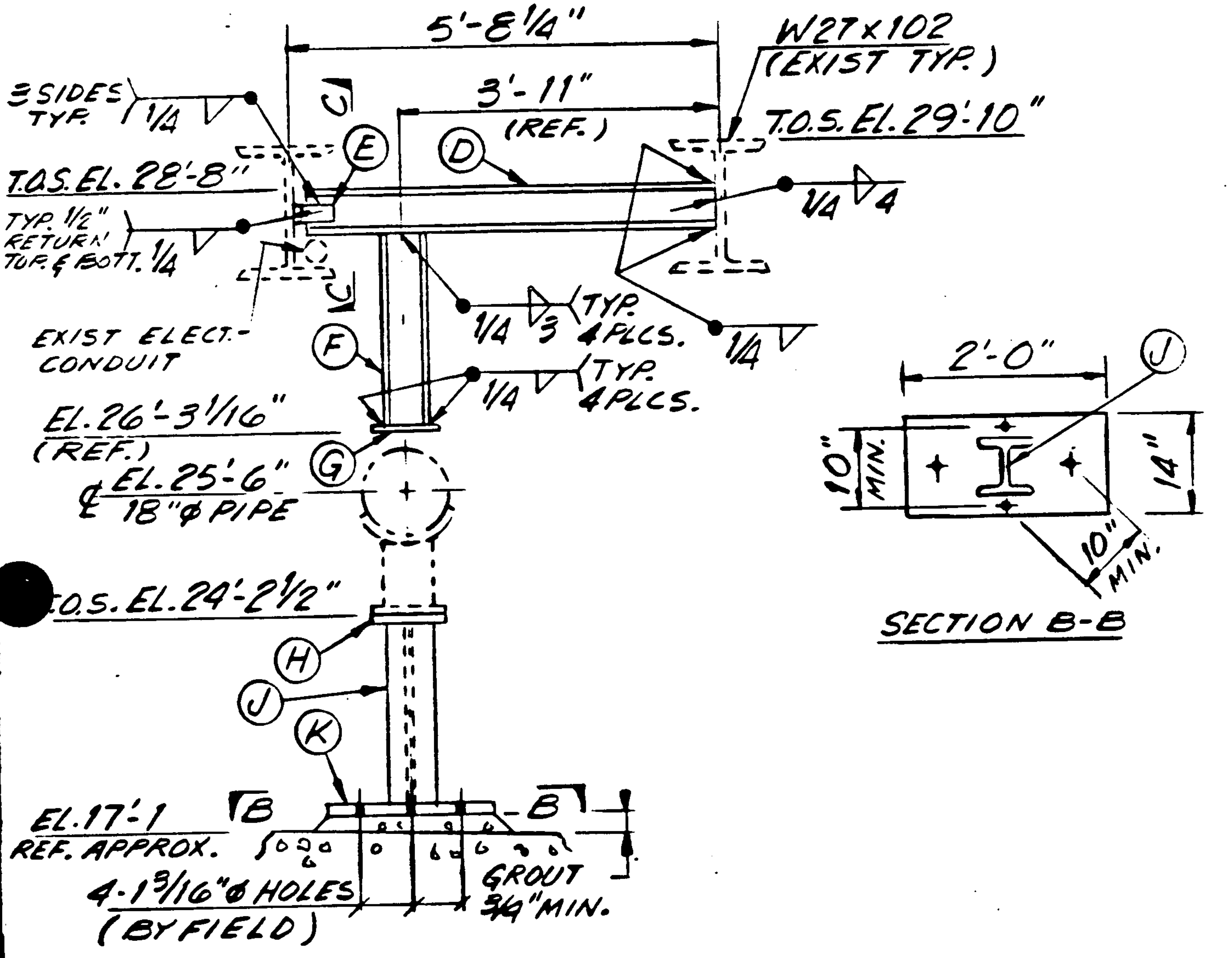
SHT 1 OF 2

TAG NO S2-RC-017-H-037

NO.	REVISIONS	DATE	DR.	CHK.	E.G.S.	P.E.	Q.A.E.
3	INCORP. DCN 1,2,3 & 4 REDRAWN	2-28-80			KG MB	RLF/	

BECHTEL POWER CORPORATION NORWALK, CALIFORNIA	J.O. NO.	SAN ONOFRE NUCLEAR GENERATING STATION
	FILE	PIPE SUPPORT ASSEMBLY
JOB NO. 10079 / DATE / APPROVED		SOUTHERN CALIFORNIA EDISON COMPANY SCALE: NTS LOS ANGELES, CALIF.

ITEM NO	NO REQ'D	PART NO	SIZE	DESCRIPTION	INF	AISC	NOTES



LOOKING SOUTH

1201

SHT 2 OF 2

S2-RC-017-H-037 REV 3

BECHTEL POWER CORPORATION
NORWALK, CALIFORNIA

JOB NO. 10079 | DATE | APPROVED

J.O. NO. | FILE

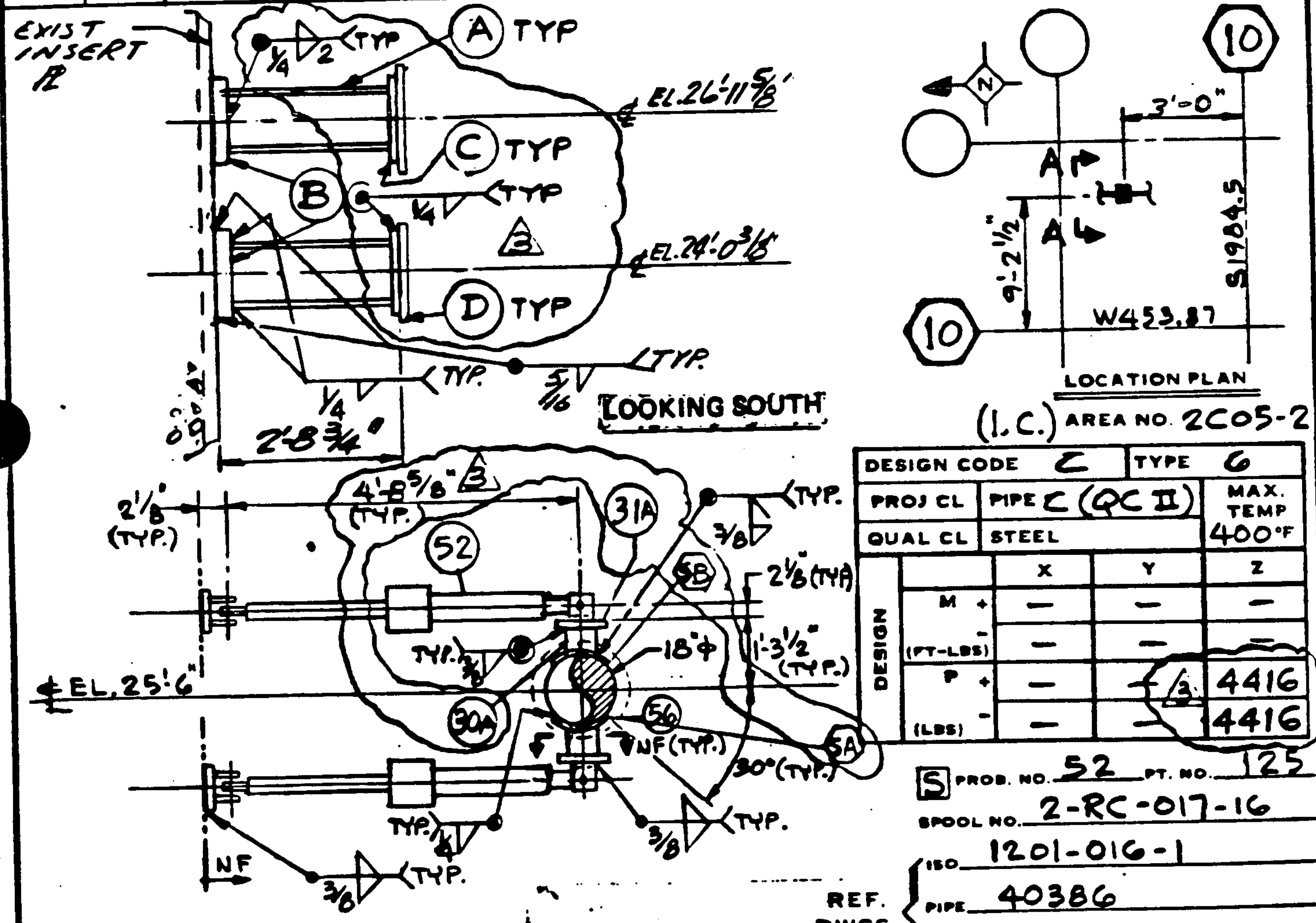
SAN ONOFRE NUCLEAR GENERATING STATION

PIP. SUPPORT ASSEMBLY

SOUTHERN CALIFORNIA EDISON COMPANY
SCALE NTS
LOS ANGELES CALIF.

ITEM NO.	NO. REQ'D	PART NO.	SIZE / DESCRIPTION	NF	AISC	NOTES
30A	2	—	10"φ SCH. 40S - SS DUMMY PIPE	X		BY FIELD
31A	2	—	1/2" x 12" x 1'-0" C.S. PLATE	X		" "
52	2	307	No 3, 5" STROKE, MECH. SHOCK SUPPRESSOR, W=34 1/8", CS=1 1/8, HS=3 1/8, W/ADDITIONAL REAR BRACKET, LOAD = 2208#	X	3	BY GRINNELL
56	2	—	1/4" x 120° x 14 3/4" S.S. CURVED PLATE (SHIP 100SE) *			BY KELLOGG
A	2		W 4 x 13			SPEC.
B	2		PL 3/4 x 6 x 0'-6"			S023-206-15
C	2		PL 1/2 x 5 x 0'-5"			
D	2	—	PL 1/2 x 6 x 0'-6" 3		X	BY FIELD

* INTEGRAL ATTACHMENT — USE CODE SUB. SEC. NC MATERIAL.



SECT. A-A

COAT SUPPLEMENTARY STRUCTURE WITH NUCLEAR FINISH ~~PER APPENDIX 4-C OF SPEC.~~

(I.C.) AREA NO. 2C05-2

DESIGN CODE	C	TYPE	6
PROJ CL	PIPE C (QC II)		MAX. TEMP 400°F
QUAL CL	STEEL		

DESIGN		X	Y	Z
M (FT-LBS)	+	—	—	—
	-	—	—	—
P (LBS)	+	—	—	3 4416
	-	—	—	4416

S PROB. NO. 52 PT. NO. 125

SPOOL NO. 2-RC-017-16

REF. DWGS.
ISO 1201-016-1
PIPE 40386
STEEL —

1201

TAG NO. S2-RC-017-H-038

CALC C-270-3.0

658

NO.	REVISIONS	DATE	DR.	CHK.	E.G.S.	CHF. E.	P.E.	Q.A.E.
2	REVISED AS SHOWN	4-18-78		KJ	RT HSN	—		
3	INCORPORATED DCN'S 1, 2 & 3	2-26-80	KG		MB	—		
0	ISSUED FOR CONSTRUCTION	5-12-77			HSN RT	—		

BECHTEL POWER CORPORATION
NORWALK, CALIFORNIA

J.O. NO.	
FILE	

JOB NO.	DATE	APPROVED
10079		

SAN ONOFRE NUCLEAR GENERATING STATION

PIPE SUPPORT ASSEMBLY

SOUTHERN CALIFORNIA EDISON COMPANY
LOS ANGELES, CALIF.

SCALE: NTS

01-02-01

PF-633(10079) 12/76

MAR 31 1980

SAN ONOFRE NUCLEAR GENERATING STATION
UNITS 2 & 3
FIELD CHANGE REQUEST/DCN/SCN

C(QC II)
2BHA JOB NO. 10079 (1·C) 2C05·2

1. FCR NO.	S-4788
DATE	3/15/80
2. PAGE	1 OF 1
3. UNIT NO.	2
12A. QUALITY CLASS	II
12B. SPEC ADDEND. NO.	
12C. DCN SUB NO.	04
12D. DATE	APR 8 1980
12E. SCN NO.	

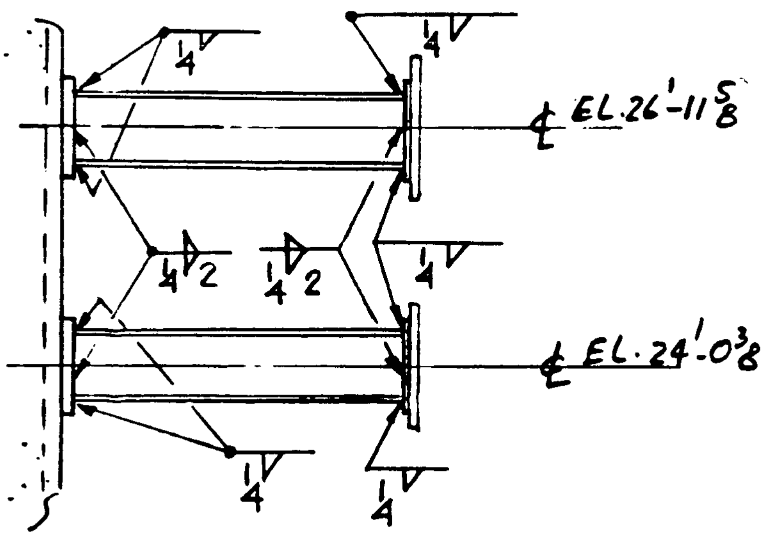
REF. DWG. OR SPEC.	SHEET NO.	REV.	5. TITLE
S2-RC-017-H-038		3	Pipe Support Assembly

6. DESIGN ORIGIN: 1201 ENGRG ☒ VENDOR ☐ (IDENTIFY) NAME

7. EXISTING CONDITION:

Incorrect weld Symbols.

8. CHANGE REQUEST/SKETCH



PL# 5178

No new material req'd

LOOKING SOUTH
(PARTIAL)

PROJECT ENGINEERING APPROVAL PER

10. REVIEWED BY	DATE			DATE
CIVIL		PIPE	[signature]	2-18-80
ELEC		INSTR		
MECH		NUC		
WELD		QAE	[signature]	3-19-80

9. P. Tannirat
PREPARED BY

11. APPROVAL OF FLD DISPOSITION
[signature]
PROJECT FIELD ENGINEER
DATE 3-19-80

12. PROJECT ENGRG APPROVAL: YES ☑ NO ☐ EGS P.E. R.L. Rogers /[signature] DATE 3-18-80

REMARKS: **CONVERT TO DCN**

13. QUALITY ASSURANCE ENGINEER (FIELD): [signature] DATE 3-19-80

14. SCE ENGINEERING APPROVAL P.E. DATE

15. BECHTEL QUALITY ENGINEER/QUALITY ASSURANCE [signature] DATE 4-2-80

16. ADDITIONAL DISTRIBUTION

PF-0924 (10079) 10/78

APR 7 1980

SAN ONOFRE NUCLEAR GENERATING STATION
UNITS 2 & 3
FIELD CHANGE REQUEST/DCN/SCN

BHA
C

JOB NO. 10079 (I.C.) 2605.2

1. FCR NO.	S 4844
DATE	4.2.80
2. PAGE	1 OF 1
3. UNIT NO.	2
12A. QUALITY CLASS	II
12B. SPEC ADDEND. NO.	
12C. DCN SUB NO.	05
12D. DATE	APR 15 1980
12E. SCN NO.	

4. REF. DWG. OR SPEC. S2-RC-017-H-038 SHEET NO. REV. 3

5. TITLE Pipe Supt. Assembly

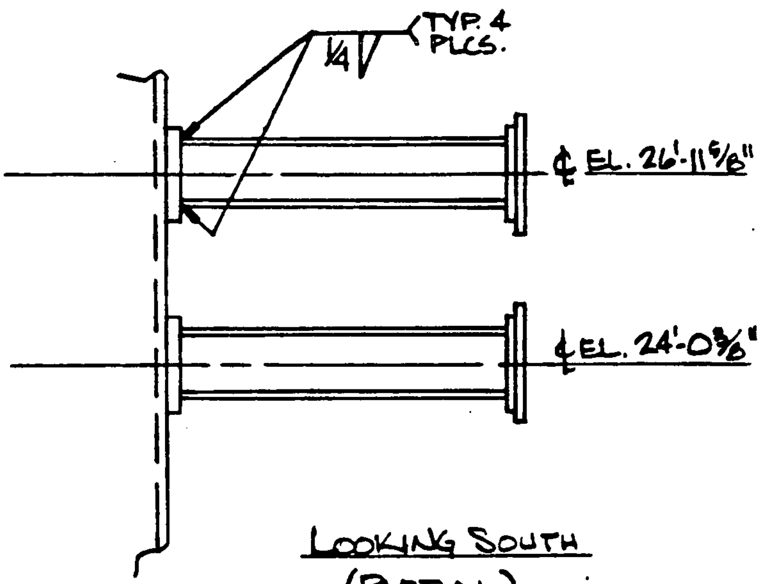
6. DESIGN ORIGIN: ENGRG ☒ VENDOR ☐ (IDENTIFY) NAME

7. EXISTING CONDITION:

EXIST'G SHOP WELDS SHOWN AS FIELD WELDS

WORK WITH FCR # S-4788

8. CHANGE REQUEST/SKETCH TO:



LOOKING SOUTH
(PARTIAL)

RL # 5344 PROJECT ENGINEERING APPROVAL PER

10. REVIEWED BY DATE

CIVIL			PIPE	R.J.S.	4-3-80
ELEC			INSTR		
MECH			NUC		
WELD			QAE	J Wolff	4-4-80

9. C.W. GREER
PREPARED BY

11. APPROVAL OF FLD DISPOSITION
Louis [signature]
PROJECT FIELD ENGINEER
DATE APR 04 1980

12. PROJECT ENGRG APPROVAL: YES ☒ NO ☐ EGS P.E. R.L. Rogers DATE 4-3-80

REMARKS: **CONVERT TO DCN**

13. QUALITY ASSURANCE ENGINEER (FIELD): J Wolff [signature] DATE 4-4-80

14. SCE ENGINEERING APPROVAL P.E. DATE

15. BECHTEL QUALITY ENGINEER/QUALITY ASSURANCE [signature] DATE 4-11-80

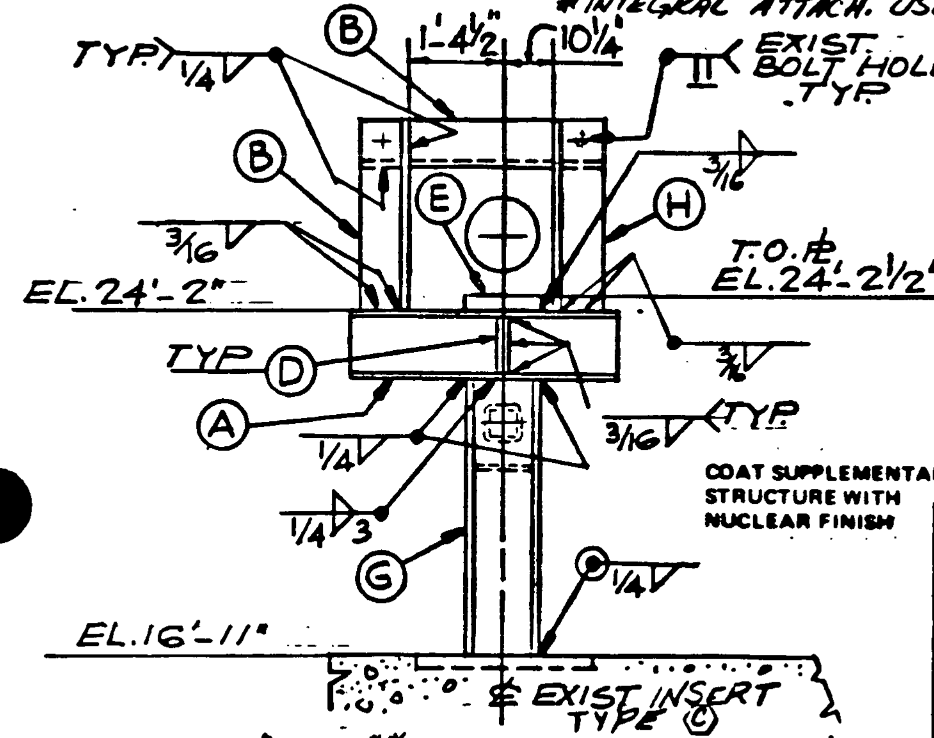
16. ADDITIONAL DISTRIBUTION

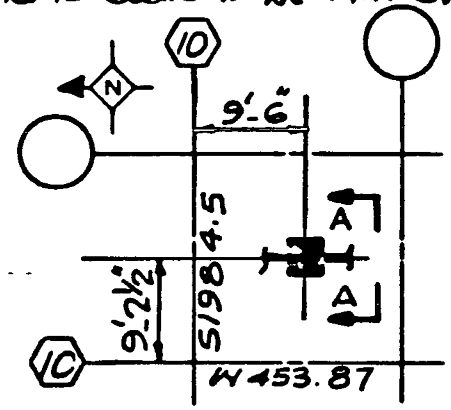
PF-0924 (10079) 10/78

SUS-2BH

ITEM NO.	NO. REQ'D	PART NO.	SIZE DESCRIPTION	NF	AISC	NOTES
30A	2		10"φ SCH. 40 S DUMMY STUB	*		FIELD
31A	2		3/4"X12"X1'-0" CS PLATE	X		"
A	1		W6X15.5		X	S023-206-18
B	2		Ls 3X3X3/8		X	"
D	2		3/8" STIFF. PL		X	"
E	1		PL-1/2X11X0'-11"		X	"
G	1		W6X15.5X6'-9"		X	FIELD
H	1		L3X3X3/8X2'-10 5/16"		X	"
J	1		TS3X3X.250		X	"
L	1		PL-3/8" STIFF. PL		X	"
M	1		PL-1/2X5 1/2X0'-9"		X	"
N	1		PL-1/2X6X0'-9"		X	"

*INTEGRAL ATTACH. USE ASME SUBSECT. 'NC' MAT'L.





LOCATION PLAN

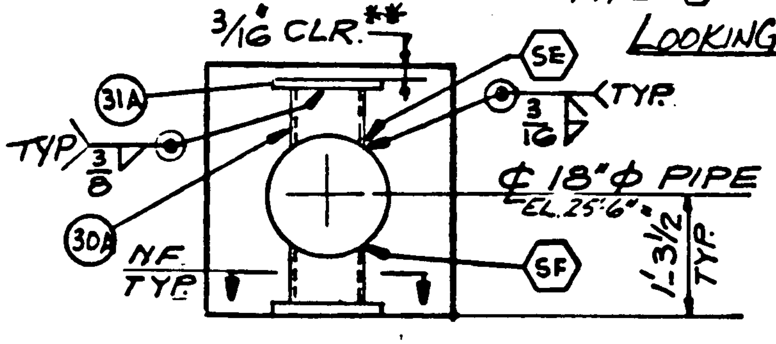
COAT SUPPLEMENTARY STRUCTURE WITH NUCLEAR FINISH

(IC)

AREA NO. 2C05-2

PMC=KEO			TYPE 2
PROJ CL	PIPE C(QCII)		MAX. TEMP 400 °F
QUAL CL	STEEL II		

DESIGN		X	Y	Z
M (FT-LBS)	+	—	—	—
	-	—	—	—
P (LBS)	+	—	111	—
	-	—	5443	—



SECT. A-A

S PROB. NO. 52 PT. NO. 130

SPOOL NO. 2-RC-017-17

REF. DWGS. ISO 1201-016-1

PIPE 40386

STEEL —

SHT 1 OF 2

TAG NO. S2-RC-017-H-039

1201

NO.	REVISIONS	DATE	DR.	CHK.	E.G.S.	P.E.	Q.A.E.
5	INCORP. DCN 01 THRU 09, REDRAWN	2-28-80	D.P.	ST	KG MB		

BECHTEL POWER CORPORATION
NORWALK, CALIFORNIA

J.O. NO.

FILE

SAN ONOFRE NUCLEAR GENERATING STATION

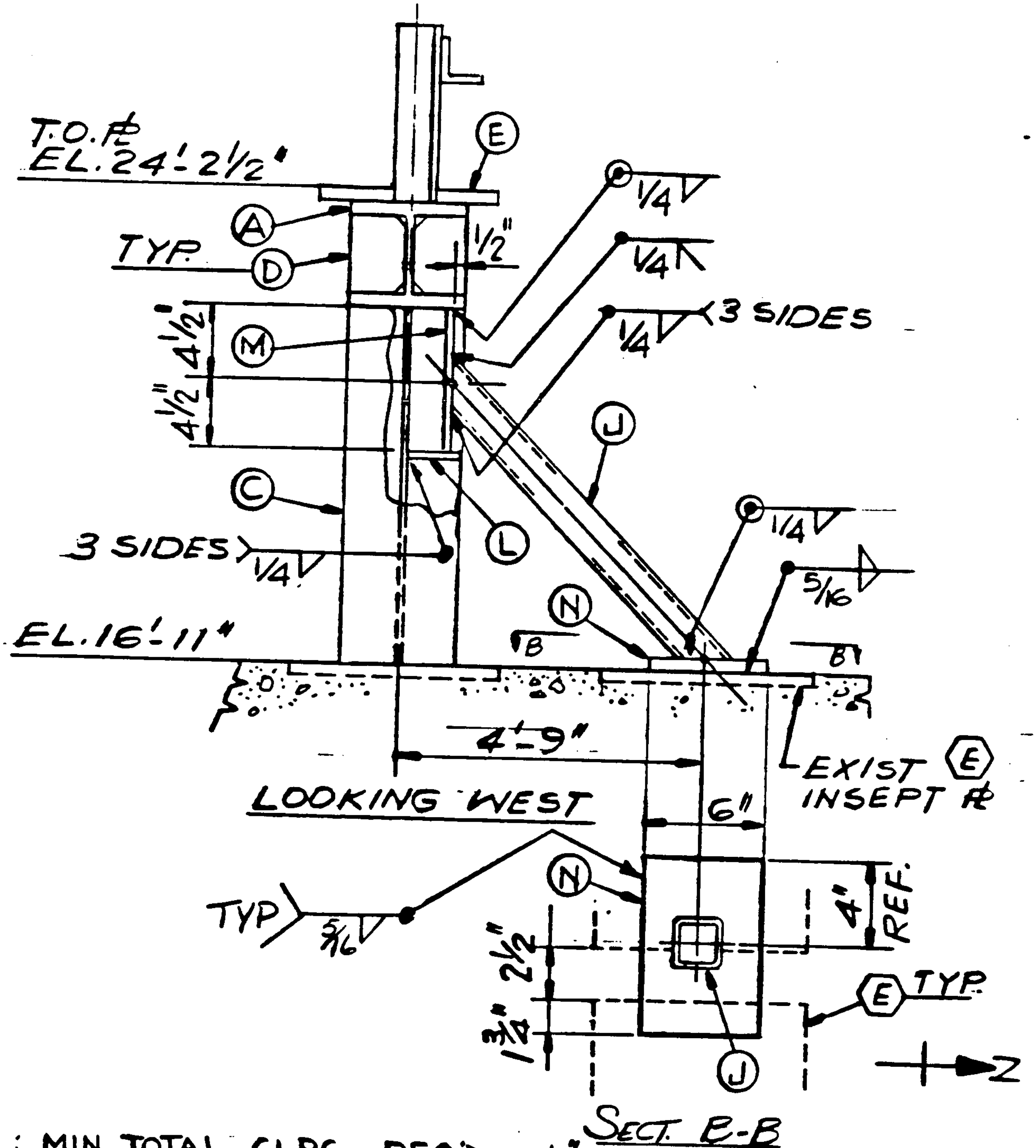
PIPE SUPPORT ASSEMBLY

JOB NO. 10079 | DATE | APPROVED

SOUTHERN CALIFORNIA EDISON COMPANY
SCALE NTS LOS ANGELES, CALIF.

PF-633 (10079) 7/79

01-02-01



** NOTE: MIN TOTAL CLRC. REQ'D IS 1/8"

SHT 2 OF 2

S2-RC-017-H-039 REV. 5

BECHTEL POWER CORPORATION NORWALK, CALIFORNIA	J.O. NO.	SAN ONOFRE NUCLEAR GENERATING STATION
	FILE	PIPE SUPPORT ASSEMBLY
JOB NO 10079 / DATE / APPROVED		SOUTHERN CALIFORNIA EDISON COMPANY SCALE NTS LOS ANGELES CAL

MAR 31 1980

BECHTEL

SAN ONOFRE NUCLEAR GENERATING STATION
UNITS 2 & 3
FIELD CHANGE REQUEST/DCN/SCN

C(QC II) (I.C)
2BHA JOB NO. 10079 2CO5-2

1. FCR NO. S-4800	12A. QUALITY CLASS II	12C. DCN SUB NO. 10
DATE 3-18-80		12D. DATE APR 8 1980
2. PAGE 1 OF 1	12B. SPEC ADDEND. NO.	12E. SCN NO.
3. UNIT NO. 2		

REF. DWG. OR SPEC. S2-RC-017-H-039 SHEET NO. REV. 5

5. TITLE Pipe Support Assembly

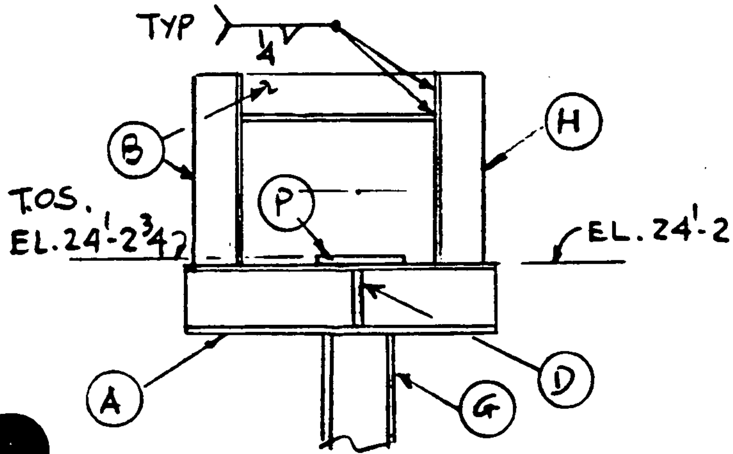
NAME

6. DESIGN ORIGIN: ENGRG ☒ VENDOR ☐ (IDENTIFY)

7. EXISTING CONDITION:

Need to revise Framing & Weld Symbols.

8. CHANGE REQUEST/SKETCH



LOOKING NORTH
(PARTIAL)

#PL 5197

- Delete Item © on Sect. Looking WEST.
- No new material req'd

PROJECT ENGINEERING APPROVAL PER

10. REVIEWED BY DATE

CIVIL			PIPE	NJS	2-19-80
ELEC			INSTR		
MECH			NUC		
WELD			QA	G.W. Sheppard	3-20-80

9. P. Tannirat
PREPARED BY

11. APPROVAL OF FLD DISPOSITION
[signature]
PROJECT FIELD ENGINEER
DATE MAR 20 1980

12. PROJECT ENGRG APPROVAL: YES ☑ NO ☐ EGS ____ P.E. R.L. Rogers/RH DATE 3-19-80

REMARKS: **CONVERT TO DCN**

13. QUALITY ASSURANCE ENGINEER (FIELD): G.W. Sheppard DATE 3-20-80

14. SCE ENGINEERING APPROVAL ____ P.E. ____ DATE ____

15. BECHTEL QUALITY ENGINEER/QUALITY ASSURANCE [signature] DATE 4-2-80

16. ADDITIONAL DISTRIBUTION

PF-0924 (10079) 10/78

APR 17 1980

SAN ONOFRE NUCLEAR GENERATING STATION
UNITS 2 & 3
FIELD CHANGE REQUEST/DCN/SCN

2BHA
C
(I.C.)
JOB NO. 10079 2605-2

1. FCR NO. S-4952
DATE 4-3-80
2. PAGE 1 OF 1
3. UNIT NO. 2

12A. QUALITY CLASS II
12B. SPEC ADDEND. NO.
12C. DCN SUB NO. U
12D. DATE APR 30 1980
12E. SCN NO.

4. REF. DWG. OR SPEC. 2-RC-017-H-029 SHEET NO. REV. 5
5. TITLE PIPE SUPT. ASSEMBLY

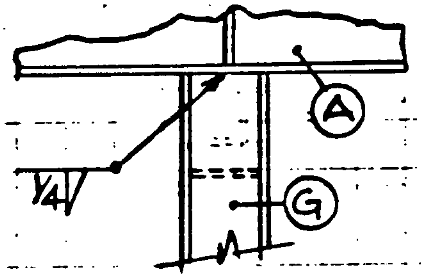
6. DESIGN ORIGIN: 12c1 ENGRG ☒ VENDOR ☐ (IDENTIFY) NAME

7. EXISTING CONDITION:

1. WELD BOTH SIDES OF WEB TO MEMBER "G" NOT REQ'D.
2. MISMATCH BETWEEN TOP DUMMY LEG AND 3"x3" ANGLE

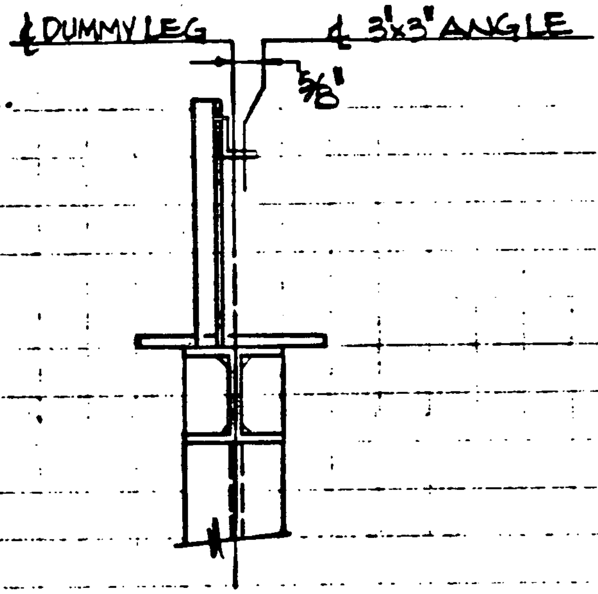
8. CHANGE REQUEST/SKETCH TO:

1.



LOOKING NORTH
(PARTIAL)

2.



LOOKING WEST
(PARTIAL)

PJ#5354 PROJECT ENGINEERING APPROVAL PER

10. REVIEWED BY	DATE			
CIVIL		PIPE	[signature]	4-7-80
ELEC		INSTR		
MECH		NUC		
WELD		QAE	[signature]	4-8-80

9. C.W. GREER
PREPARED BY

11. APPROVAL OF FLD DISPOSITION
[signature]
PROJECT FIELD ENGINEER
DATE APR 08 1980

12. PROJECT ENGRG APPROVAL: YES ☒ NO ☐ EGS P.E. R.L. Rogers/[signature] DATE 4-7-80

REMARKS: CONVERT TO DCN.

13. QUALITY ASSURANCE ENGINEER (FIELD): [signature] DATE 4-8-80

14. SCE ENGINEERING APPROVAL P.E. DATE

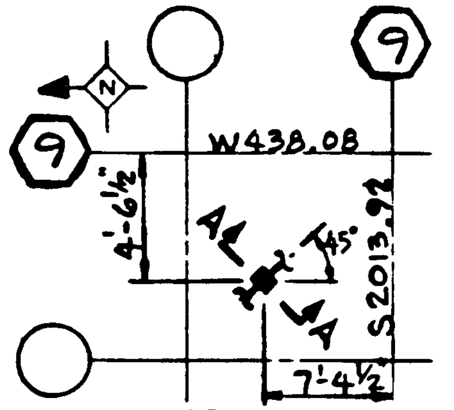
15. BECHTEL QUALITY ENGINEER/QUALITY ASSURANCE [signature] DATE 4-28-80

16. ADDITIONAL DISTRIBUTION

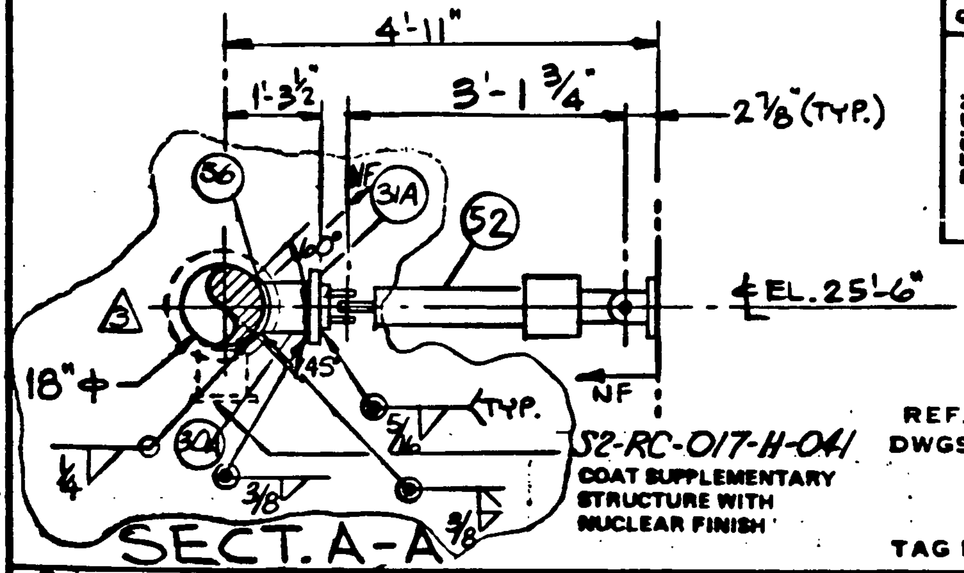
PF-0924 (10079) 10/78

X

ITEM NO.	NO. REQ'D	PART NO.	SIZE / DESCRIPTION	NF	AISC	NOTES
30A	1	—	10" † SCH. 40 S S.S. DUMMY PIPE	X		BY FIELD
31A	1	—	3/4" x 12" x 1'-0" C.S. PLATE	X		" "
52	1	307	NO 10, 6" STROKE, MECH. SHOCK SUPPRESSOR, CS = 3 1/4", HS = 2 3/4", W = 10", W/ADDITIONAL REAR BRACKET, †LOAD = 16,734#	X		BY GRINNELL
56	1	—	1/4" x 10 5/8" x 1'-2 3/4" S.S. CURVED PLATE	*		BY KELLOGG
		3	* INTEGRAL ATTACHMENT — USE CODE SUB. SEC. NC MATERIAL.			
			† FAULTED CONDITION			



LOCATION PLAN



SECT. A-A

(I.C.) AREA NO. 2C05-2

P.M.C.-KEO		TYPE 6	
PROJ CL	PIPE C (QC II)		MAX. TEMP 400 °F
QUAL CL	STEEL II		

DESIGN		X	Y	Z
M (FT-LBS)	+	—	—	—
	−	—	—	—
P (LBS)	+	11833	—	11833
	−	11833	—	11833

S PROB. NO. 52 PT. NO. 140

SPOOL NO. 2-RC-017-18

REF. DWGS.
- ISO 1201-016-1
- PIPE 40386
- STEEL S2-RC-017-H-041

TAG NO. S2-RC-017-H-040

NO.	REVISIONS	DATE	DR.	CHK.	E.G.S.	CHF. E.	P.E.	QAE
2	CHANGED 2'-11 3/4" TO 3'-1 3/4"	7-21-81	KK	JR		—		
3	INCORP. DCN #3 VOID DCNS 01 & 02	2-26-80	TM		KG	—		
0	ISSUED FOR CONSTRUCTION	5-12-77				—		

BECHTEL POWER CORPORATION NORWALK, CALIFORNIA	J.O. NO.	SAN ONOFRE NUCLEAR GENERATING STATION
	FILE	PIPE SUPPORT ASSEMBLY
JOB NO. 10079 / DATE / APPROVED		SOUTHERN CALIFORNIA EDISON COMPANY SCALE: NTS LOS ANGELES, CALIF.

PF-633(10079) 12/76

01-02-01

MAR 12 1980

BECHTEL

SAN ONOFRE NUCLEAR GENERATING STATION
UNITS 2 & 3
FIELD CHANGE REQUEST/DCN/SCN

1. FCR NO. S-4559	12A. QUALITY CLASS II	12C. DCN SUB NO. 04	
DATE 2-27-80		12D. DATE MAR 24 1980	
2. PAGE 1 OF 1	12B. SPEC ADDEND. NO.	12E. SCN NO.	
3. UNIT NO. 2			

(QC II) ZBHA JOB NO. 10079 (I.C) C05-2

4. REF. DWG. OR SPEC.	SHEET NO.	REV.	5. TITLE
S2-RC-017-H-040		3	PIPE SUPPORT ASSEMBLY

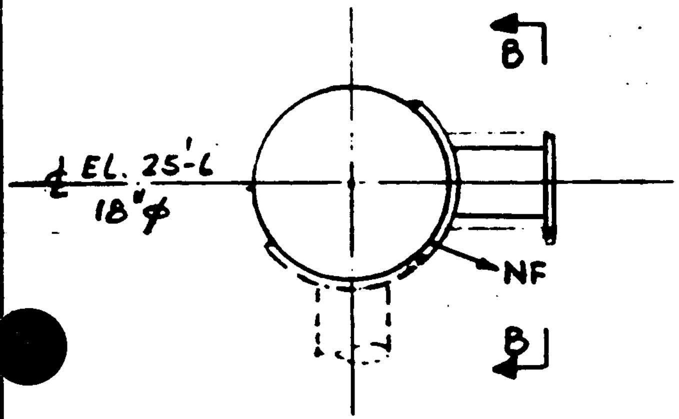
NAME

6. DESIGN ORIGIN: 12.1 ENGRG ☒ VENDOR ☐ (IDENTIFY)

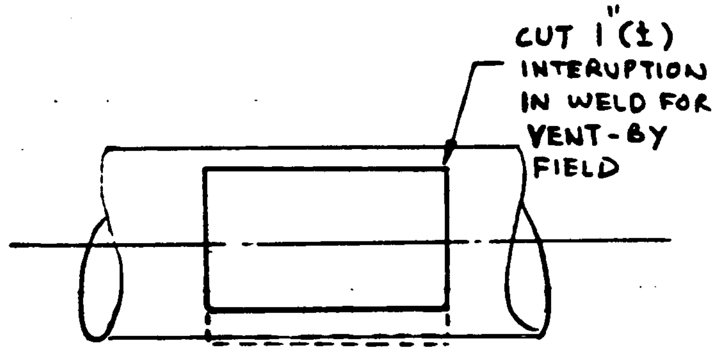
7. EXISTING CONDITION:

wrapper ℄ weep hole was sealed by welding wrapper ℄ of S2-RC-017-H-041

8. CHANGE REQUEST/SKETCH



SECT. A-A
(PARTIAL)



SECT. B-B

NO NEW MAT'L REQ'D

PL #4998

PROJECT ENGINEERING APPROVAL PER

10. REVIEWED BY	DATE			
CIVIL		PIPE	[signature]	2-25-80
ELEC		INSTR		
MECH		NUC		
WELD		QAE	[signature]	2-26-80

9. P. Tannirat
PREPARED BY

11. APPROVAL OF FLD DISPOSITION
[signature]
PROJECT FIELD ENGINEER
DATE 2/26/80

12. PROJECT ENGRG APPROVAL: YES ☒ NO ☐ EGS ______ P.E. R.L. Rogers RCH DATE 2-25-80

REMARKS: **CONVERT TO DCN**

13. QUALITY ASSURANCE ENGINEER (FIELD): [signature] DATE 2-26-80

14. SCE ENGINEERING APPROVAL ______ P.E. ______ DATE ______

15. BECHTEL QUALITY ENGINEER/QUALITY ASSURANCE [signature] DATE 3-21-80

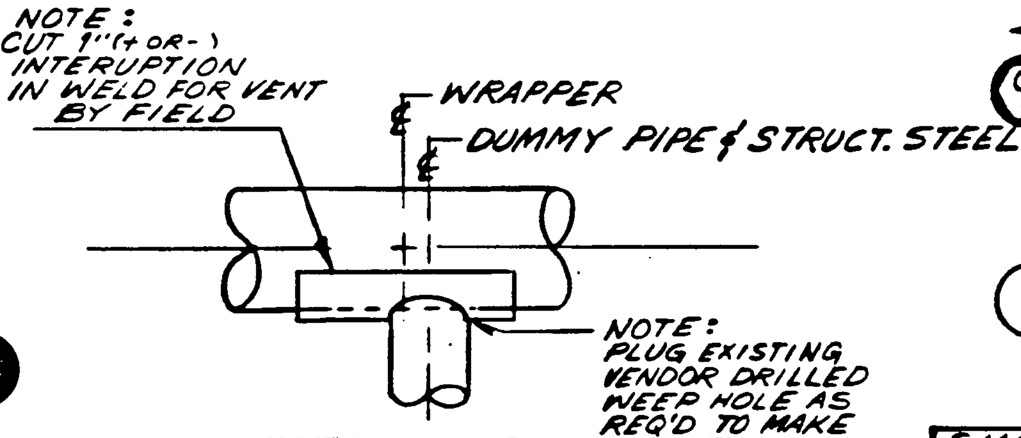
16. ADDITIONAL DISTRIBUTION

PF-0924 (10079) 10/78

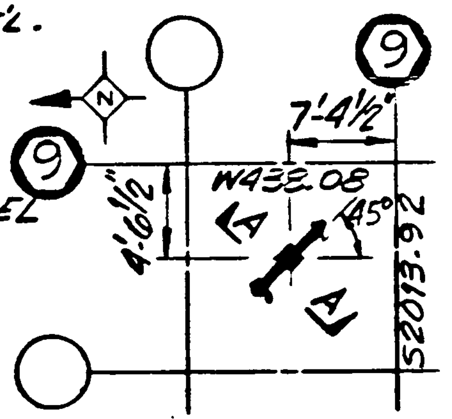
S.U.S.: 2BHA

ITEM NO	NO REQ'D	PART NO	SIZE / DESCRIPTION	NF	AISC	NOTES
30A	1		10"ø SCH.40S DUMMY PIPE	X		BY FIELD
31B	1		PL 3/4 x 12 x 1'-0" C.S. PLATE	X		"
56	1		1/4" x 105° x 14 3/4" S.S. CURVED PLATE	X*		BY KELLOGG
A	2		W6 x 15.5		X	BY FIELD
C	1		PL 1/2 x 12 x 1'-0"		X	5023-206-1E
H	4		3/8" STIFF PL		X	
J	1		PL 3/4" x 14 x 2'-2 1/2"		X	
L	1		W 14 x 95 x 8'-6 1/2"		X	
M	1		PL 1 x 17 1/2 x 2'-2 1/2"		X	BY FIELD
Q	1		W4 x 13 x 1'-10"		X	
R	1		W4 x 13 x 3'-0"		X	
S	1		W4 x 13 x 0'-9"		X	

*INTEGRAL ATTACHMENT - USE CODE SUBSECT. 'NC' MAT'L.



SECTION F-F

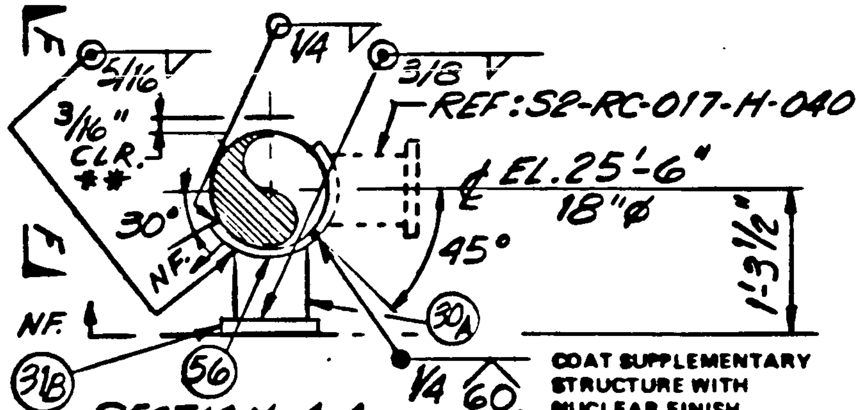


LOCATION PLAN

(I.C.) AREA NO 2C05-2

**NOTE: MIN. TOTAL CLRC. REQ'D IS 1/8"

PMC: KEO			TYPE 1	
PROJ CL	PIPE C (QC II)			MAX. TEMP 400 °F
QUAL CL	STEEL II			
DESIGN		X	Y	Z
M (FT-LBS)	+	—	—	—
	-	—	—	—
P (LBS)	+	0	1662	0
	-	0	6721	0



COAT SUPPLEMENTARY STRUCTURE WITH NUCLEAR FINISH

SECTION A-A

S PROB. NO. 52 PT. NO. 140

SPOOL NO. 2-RC-017-18

REF. DWGS.
ISO 1201-016-1
PIPE 40386
STEEL

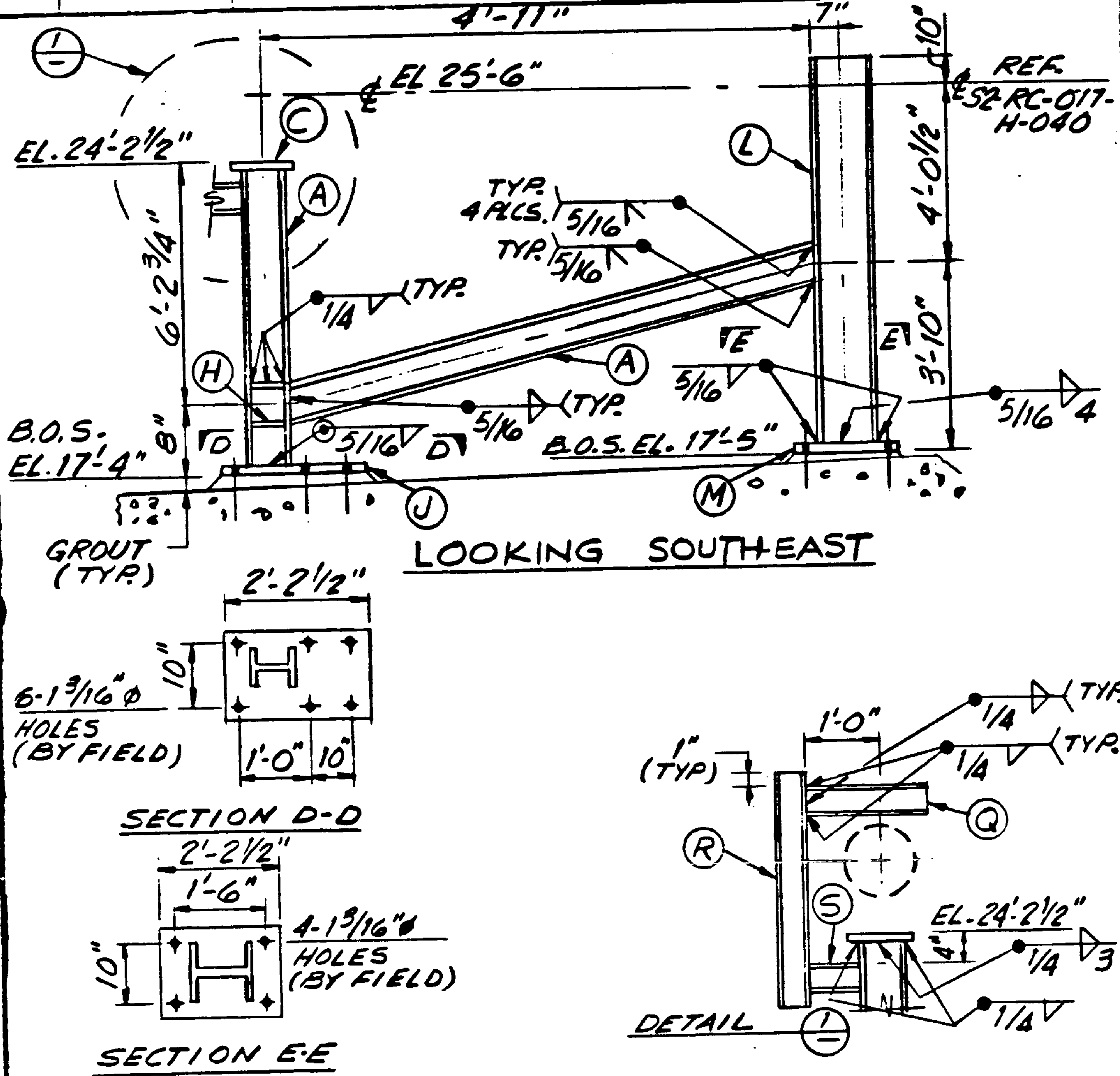
SHT 1 OF 2

TAG NO. S2-RC-017-H-041

NO.	REVISIONS	DATE	DR.	CHK.	E.G.S.	P.E.	QAE
					1201		
B	INC. DCN 01,02,03,04,05,06,07	2-28-80	BD	ST	KG		

BECHTEL POWER CORPORATION NORWALK, CALIFORNIA	J.O. NO.	SAN ONOFRE NUCLEAR GENERATING STATION
	FILE	PIPE SUPPORT ASSEMBLY
JOB NO. 10079 / DATE / APPROVED		SOUTHERN CALIFORNIA EDISON COMPANY SCALE: NTS LOS ANGELES, CALIF.

ITEM NO	NO REQ'D	PART NO	SIZE	DESCRIPTION	NF	A-SC	NOTES
	10		US-8-HC-LCSF-175				BY FIELD



1201 SHT 2 OF 2

S2-RC-017-H-041 REV 3

BECHTEL POWER CORPORATION NORWALK, CALIFORNIA				SAN ONOFRE NUCLEAR GENERATING STATION
			FILE	PIPE SUPPORT ASSEMBLY
JOB NO. 10079	DATE	APPROVED		SOUTHERN CALIFORNIA EDISON COMPANY LOS ANGELES, CALIF. SCALE NTS

APR 10 1980

SAN ONOFRE NUCLEAR GENERATING STATION
UNITS 2 & 3
FIELD CHANGE REQUEST/DCN/SCN

2BHA
C

JOB NO. 10079 (I.C.) 2005.2

1. FCR NO. S-4954
DATE 4-3-80
2. PAGE 1 OF 1
3. UNIT NO. 2

12A. QUALITY CLASS II
12B. SPEC ADDEND NO.
12C. DCN SUB NO. U
12D. DATE APR 30 1980
12E. SCN NO.

4. REF. DWG. OR SPEC. 2-RC-07-H-041 SHEET NO. REV. 3
5. TITLE PIPE SUPT. ASSEMBLY

6. DESIGN ORIGIN: 12c1 ENGRG ☒ VENDOR ☐ (IDENTIFY) NAME

7. EXISTING CONDITION:

WRONG SIZE PL CALL-OUT FOR PL "M" ON REV. 3 DWG.

8. CHANGE REQUEST/SKETCH

CHANGE BILL OF MAT'L. TO READ:

ITEM "M" - PL 1"x 17 1/2" x 2'-1 1/2"

PC#5395 PROJECT ENGINEERING APPROVAL PER

10. REVIEWED BY	DATE			
CIVIL		PIP	[signature]	4-7-80
ELEC		INSTR		
MECH		NUC		
WELD		QA	[signature]	4-8-80

9. C.W. GREER
PREPARED BY

11. APPROVAL OF FLD DISPOSITION
[signature]
PROJECT FIELD ENGINEER
DATE APR 08 1980

12. PROJECT ENGRG APPROVAL: YES ☒ NO ☐ EGS P.E. R.L. Rogers/KH DATE 4-7-80

REMARKS: CONVERT TO DCN

13. QUALITY ASSURANCE ENGINEER (FIELD): [signature] DATE 4-8-80

14. SCE ENGINEERING APPROVAL P.E. DATE

15. BECHTEL QUALITY ENGINEER/QUALITY ASSURANCE [signature] DATE 4-28-80

16. ADDITIONAL DISTRIBUTION

PF-0924 (10079) 10/78

X

APR 10 1980

C/S

SAN ONOFRE NUCLEAR GENERATING STATION
UNITS 2 & 3
FIELD CHANGE REQUEST/DCN/SCN

(QC II)
BHA

JOB NO. 10079 (I.C) 2C05-2

1. FCR NO. S-4842	12A. QUALITY CLASS II	12C. DCN SUB NO. 09	
DATE 3-20-80		12D. DATE APR 22 1980	
2. PAGE 1 OF 1	12B. SPEC ADDEND. NO.	12E. SCN NO.	
3. UNIT NO. 2			

4. REF. DWG. OR SPEC. S2-RC-017-H-041 SHEET NO. REV. 3

5. TITLE Pipe Support Assembly
NAME

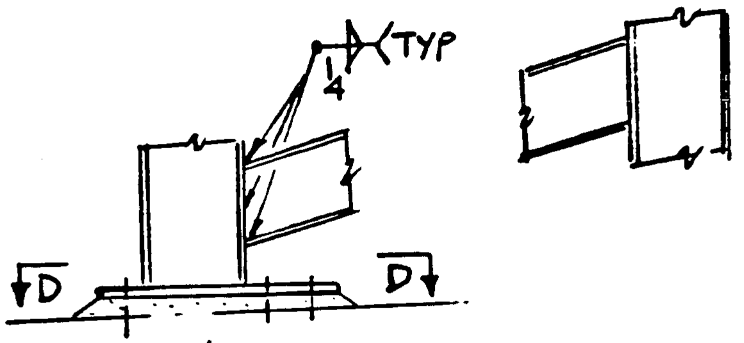
6. DESIGN ORIGIN: 1201 ENGRG ☒ VENDOR ☐ (IDENTIFY)

7. EXISTING CONDITION:

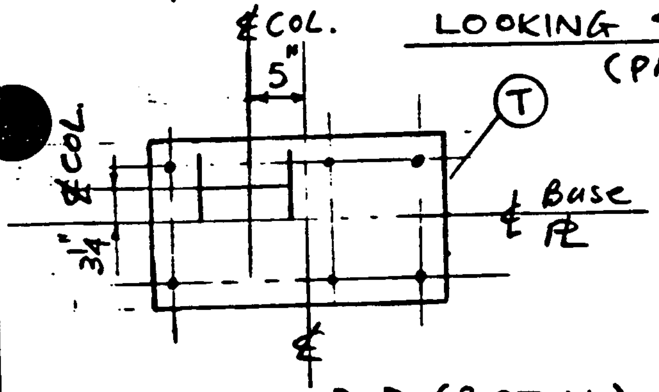
Need Col. Location on Sect. D-D & weld symbols incorrect.

8. CHANGE REQUEST/SKETCH

PL#5246



LOOKING SOUTHEAST
(PARTIAL)



SECT. D-D (PARTIAL)

BILL OF MAT'L REQ'D

1) Delete Item J
2) Add Item T 1ea PL 1x14x2'-2½
(By Field)

PROJECT ENGINEERING APPROVAL PER

10. REVIEWED BY DATE

CIVIL			PIPE	GJS	3-21-80
ELEC			INSTR		
MECH			NUC		
WELD			QAE	[signature]	3-24-80

9. P. Tannirat
PREPARED BY

11. APPROVAL OF FLD DISPOSITION
[signature]
PROJECT FIELD ENGINEER
DATE 3-21-80

12. PROJECT ENGRG APPROVAL: YES ☑ NO ☐ EGS P.E. R.L. Rogers/RH DATE 3-21-80

REMARKS: CONVERT TO DCN

13. QUALITY ASSURANCE ENGINEER (FIELD): [signature] DATE 3-24-80

14. SCE ENGINEERING APPROVAL P.E. DATE

15. BECHTEL QUALITY ENGINEER/QUALITY ASSURANCE [signature] DATE 4-16-80

16. ADDITIONAL DISTRIBUTION

PF-0924 (10079) 10/78

APR 24 1980 CS EH040

SAN ONOFRE NUCLEAR GENERATING STATION
UNITS 2 & 3
FIELD CHANGE REQUEST/DCN/SCN

C(RCII)
BHA
JOB NO. 10079 IC 2C05-2

1. FCR NO. S-5025
DATE 4-16-80
2. PAGE 1 OF 1
3. UNIT NO. 2

12A. QUALITY CLASS II
12B. SPEC ADDEND. NO.
12C. DCN SUB NO. 12
12D. DATE APR 30 1980
12E. SCN NO.

4. REF. DWG. OR SPEC. S2-RC-017-H-041 SHEET NO. REV. 3
5. TITLE PIPE SUPPORT ASSEMBLY
NAME

6. DESIGN ORIGIN: ENGRG ☒ VENDOR ☐ (IDENTIFY)

7. EXISTING CONDITION:

CHANGE B/M

8. CHANGE REQUEST/SKETCH

CHANGE ITEM *T TO PL 3/4" x 14 x 2'-2½"

NO NEW MATERIAL REQ'D

PL-5412

PROJECT ENGINEERING APPROVAL PER

10. REVIEWED BY DATE
CIVIL ______ ______ PIPE [signature] 4-17-80
ELEC ______ ______ INSTR ______ ______
MECH ______ ______ NUC ______ ______
WELD ______ ______ QAE [signature] 4-18-80

9. MARIO CAMPANILE
PREPARED BY

11. APPROVAL OF FLD DISPOSITION
[signature]
PROJECT/FIELD ENGINEER
DATE APR 18 1980

12. PROJECT ENGRG APPROVAL: YES ☒ NO ☐ EGS P.E. R.L. Rogers DATE 4-17-80

REMARKS: CONVERT TO DCN

13. QUALITY ASSURANCE ENGINEER (FIELD): [signature] DATE 4-18-80

14. SCE ENGINEERING APPROVAL ______ P.E. ______ DATE ______

15. BECHTEL QUALITY ENGINEER/QUALITY ASSURANCE [signature] DATE 4-28-80

16. ADDITIONAL DISTRIBUTION ______

PF-0924 (10079) 10/78

APR 10 1980

BECHTEL

SAN ONOFRE NUCLEAR GENERATING STATION
UNITS 2 & 3
FIELD CHANGE REQUEST/DCN/SCN

BHA
C

JOB NO. 10079 (I.C.) 2605.2

1. FCR NO. 24880	12A. QUALITY CLASS II	12C. DCN SUB NO. 10
DATE 3-26-80		12D. DATE APR 22 1980
2. PAGE 1 OF 1	12B. SPEC ADDEND. NO.	12E. SCN NO.
3. UNIT NO. II		

4. REF. DWG. OR SPEC. S2-RC-017-H-041 SHEET NO. REV. 3

5. TITLE Pipe Supt. Assembly
NAME

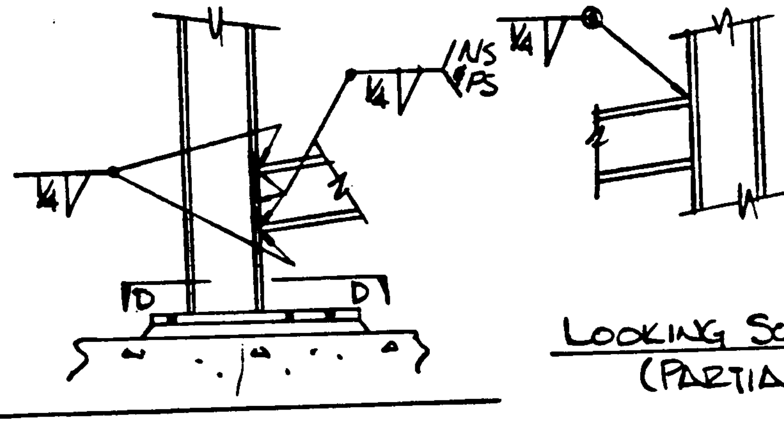
6. DESIGN ORIGIN: 12c1 ENGRG ☑ VENDOR ☐ (IDENTIFY)

7. EXISTING CONDITION:

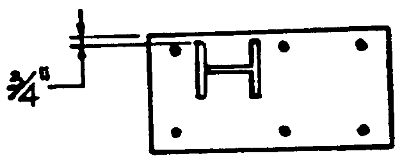
1. INCORRECT WELD SYMBOLS CALLED FOR
2. VERT. BEAM "A" FALLS OUTSIDE BOLT PATTERN OF PL "J"

8. CHANGE REQUEST/SKETCH

No NEW MAT'L. REQ'D.



LOOKING SOUTHEAST
(PARTIAL)



SECT. D-D (PARTIAL)

SUPERSEDES
FCR S-4719

P.L. #5291 PROJECT ENGINEERING APPROVAL PER

10. REVIEWED BY DATE

CIVIL ______
ELEC ______
MECH ______
WELD ______
PIPE [signature] 3-27-80
INSTR ______
NUC ______
QAE [signature] 3-27-80

9. C.W. GREER
PREPARED BY

11. APPROVAL OF FLD DISPOSITION
[signature]
PROJECT FIELD ENGINEER
DATE MAR 27 1980

12. PROJECT ENGRG APPROVAL: YES ☒ NO ☐ EGS ______ P.E. R.L. Rogers / [signature] DATE 3-27-80

REMARKS: CONVERT TO D.C.N. Void DCN 8

13. QUALITY ASSURANCE ENGINEER (FIELD): [signature] DATE 3-27-80

14. SCE ENGINEERING APPROVAL ______ P.E. ______ DATE ______

15. BECHTEL QUALITY ENGINEER/QUALITY ASSURANCE [signature] DATE 4-16-80

16. ADDITIONAL DISTRIBUTION

PF-0924 (10079) 10/78

MAR 28 1980

BOTH SIDES OF WELD

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3

FIELD CHANGE REQUEST/DCN/SCN

C(QC II) 1.C

2BHA JOB NO. 10079 2C05-2

1. FCR NO.	3-4719
DATE	3-10-80
2. PAGE	1 OF 1
3. UNIT NO.	2
12A. QUALITY CLASS	II
12B. SPEC ADDEND. NO.	
12C. DCN SUB NO.	08
12D. DATE	MAR 31 1980
12E. SCN NO.	

4. REF. DWG. OR SPEC. S2-RC-017-H-041 SHEET NO. REV. 3

5. TITLE Pipe Support Assembly NAME

6. DESIGN ORIGIN: ENGRG ☒ VENDOR ☐ (IDENTIFY) 1201

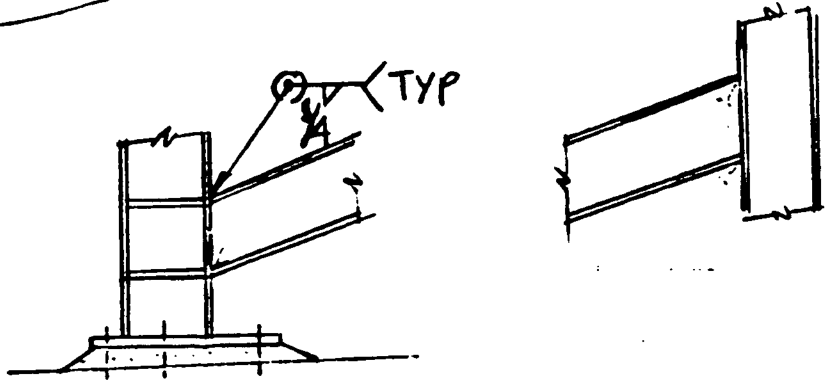
7. EXISTING CONDITION:

WELD SYMBOLS INCORRECT

8. CHANGE REQUEST/SKETCH

PL # 5117

NO NEW MAT'L REQ'D



LOOKING SOUTHEAST (PARTIAL)

PROJECT ENGINEERING APPROVAL PER

10. REVIEWED BY	DATE			
CIVIL		PIPE	N.S.	3-13-80
ELEC		INSTR		
MECH		NUC		
WELD		QAE	G.W. Sheppard	3-14-80

9. P. Tannirat — PREPARED BY

11. APPROVAL OF FLD DISPOSITION — R. Christensen — PROJECT FIELD ENGINEER

DATE MAR 14 1980

12. PROJECT ENGRG APPROVAL: YES ☑ NO ☐ EGS P.E. R.L. Rogers/KH DATE 3-13-80

REMARKS: CONVERT TO DCN

13. QUALITY ASSURANCE ENGINEER (FIELD): G.W. Sheppard DATE 3-14-80

14. SCE ENGINEERING APPROVAL P.E. DATE

15. BECHTEL QUALITY ENGINEER/QUALITY ASSURANCE G.W. Sheppard DATE 3-28-80

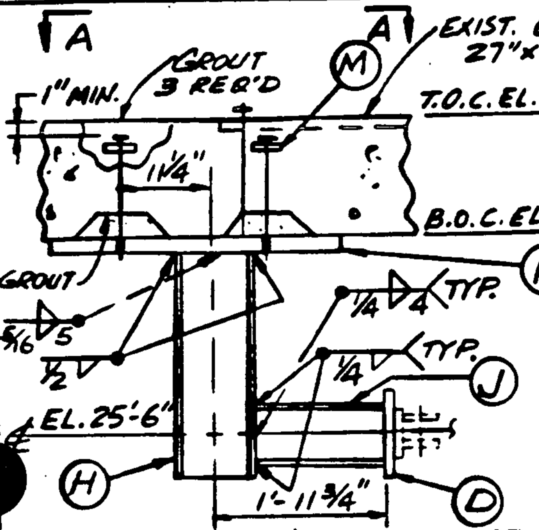
16. ADDITIONAL DISTRIBUTION

PF-0924 (10079) 10/78

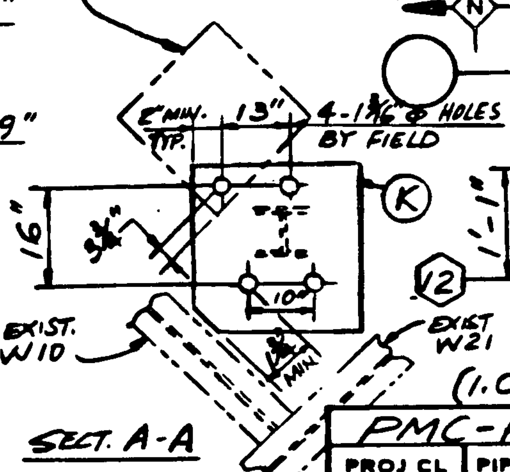
SUS - 2BHA

ITEM NO.	NO. REQ'D	PART NO.	SIZE	DESCRIPTION	NF	AISC	NOTES
30	1		8"φ SCH. 40 S.S. DUMMY PIPE		*		S023-409-23
31	1		3/4" × 12" × 1'-0" C.S. PL		X		S023-409-23
52A	1	FIG. 306	#10 - 6" STROKE MECH. SHOCK SUPPRESSOR W/ADDITIONAL REAR BRACKET, C.S. = 4 5/16", H.S. = 1 9/16", LOAD = 11501 #		X		SURPLUS FROM TAG NO. S2-TC-027-H-013
D	1		PL 3/4" × 9 × 0'-9"			X	S023-206-18
H	1		W10 × 49 × 3'-6"			X	BY FIELD
J	1		W8 × 31 × 1'-6 3/4"			X	BY FIELD
K	1		PL 1 1/2" × 22" × 2'-2"			X	BY FIELD
M	3		PL 1/2" × 4" × 0'-4"			X	BY FIELD
	4		1"φ A325 THRU BOLTS W/ WASHERS				BY FIELD

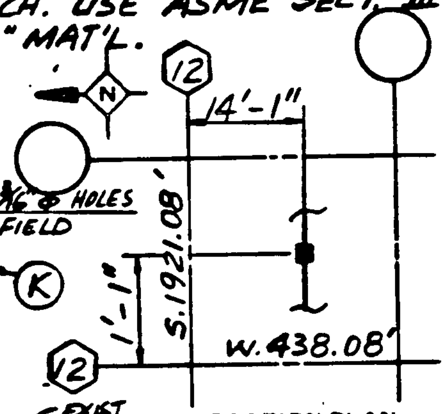
* INTEGRAL ATTACH. USE ASME SECT. III SUBSECT. "NC" MAT'L.



LOOKING EAST



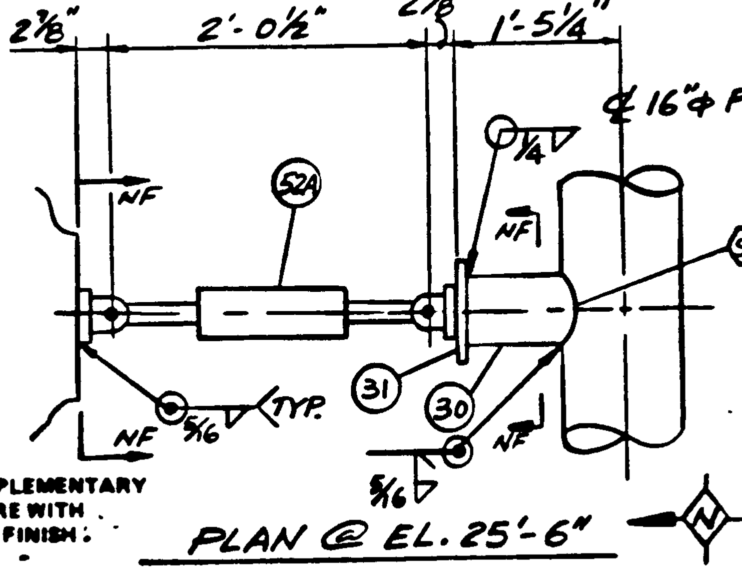
SECT. A-A



LOCATION PLAN

(I.C.) AREA NO. 2C06-2

PMC-KEO		TYPE 6		
PROJ CL	PIPE C(QC II)		MAX. TEMP	
QUAL CL	STEEL II		400°F	
DESIGN		X	Y	Z
M (FT-LBS)	+	—	—	—
	-	—	—	—
P (LBS)	+	11501	—	—
	-	11501	—	—



COAT SUPPLEMENTARY STRUCTURE WITH NUCLEAR FINISH.

PLAN @ EL. 25'-6"

S PROB. NO. 52 PT. NO. 109

SPOOL NO. 2-RC-017-28

REF. DWGS.: ISO 1201-016-1; PIPE 40400; STEEL 23211

TAG NO. S2-RC-017-H-080

1201

NO.	REVISIONS	DATE	DR.	CHK.	E.G.S.	P.E.	Q.A.E.
	—						
1	INCORP. DCN 1,2 & FCR-S4423 & REDRAWN	2-26-80	QT	[illegible]	KG	[illegible]	[illegible]

BECHTEL POWER CORPORATION NORWALK, CALIFORNIA	J.O. NO.	SAN ONOFRE NUCLEAR GENERATING STATION
	FILE	PIPE SUPPORT ASSEMBLY
JOB NO. 10079 / DATE / APPROVED		SOUTHERN CALIFORNIA EDISON COMPANY SCALE: NTS LOS ANGELES, CALIF.

01-02-01

PP-633 (10079) 7/79

APR 1 1980

BECHTEL

SAN ONOFRE NUCLEAR GENERATING STATION
UNITS 2 & 3
FIELD CHANGE REQUEST/DCN/SCN

2 BHA

(I.C.) 20062

JOB NO. 10079

1. FCR NO. 3-4923	12A. QUALITY CLASS II	12C. DCN SUB NO. 03
DATE 3-31-80	12B. SPEC ADDEND. NO.	12D. DATE APR 15 1980
2. PAGE 1 OF 1		12E. SCN NO.
3. UNIT NO. II		

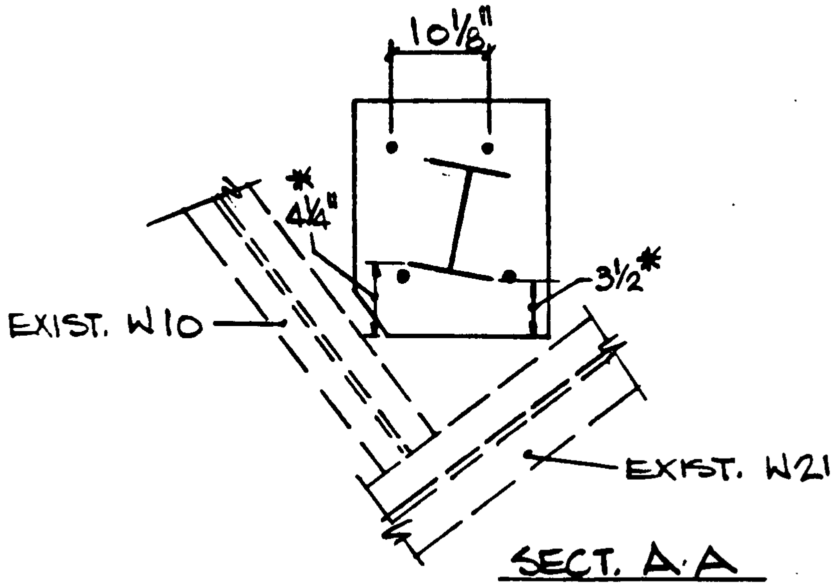
4. REF. DWG. OR SPEC.	SHEET NO.	REV.	5. TITLE
S2-RC-017-H-080		1	PIPE SUPT. ASSEMBLY

6. DESIGN ORIGIN: 1201 ENGRG ☒ VENDOR ☐ (IDENTIFY) NAME

7. EXISTING CONDITION:

CLARIFICATION OF VERT. ITEM "H" LOCATION REQ'D.

8. CHANGE REQUEST/SKETCH



SECT. A-A

*NOTE:
THESE ARE REF. DIM. ONLY.

PL #5324 PROJECT ENGINEERING APPROVAL PER

10. REVIEWED BY	DATE			
CIVIL		PIPE	[signature]	4-1-80
ELEC		INSTR		
MECH		NUC		
WELD		QAE	[signature]	4-2-80

9. C.W. GREER JR.
PREPARED BY

11. APPROVAL OF FLD DISPOSITION
[signature]
PROJECT FIELD ENGINEER
DATE APR 02 1980

12. PROJECT ENGRG APPROVAL: YES ☒ NO ☐ EGS ______ P.E. R.L. Rogers /RH DATE 4-1-80

REMARKS: CONVERT TO DCN.

13. QUALITY ASSURANCE ENGINEER (FIELD): [signature] DATE 4-2-80

14. SCE ENGINEERING APPROVAL ______ P.E. ______ DATE ______

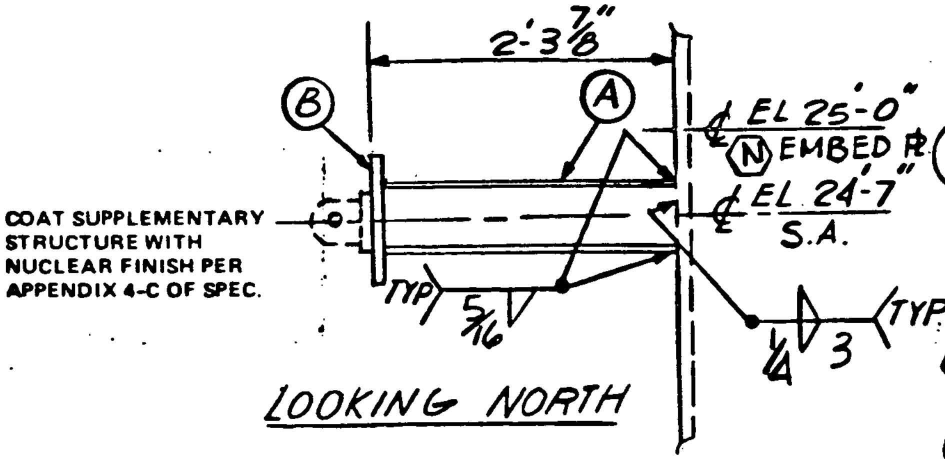
15. BECHTEL QUALITY ENGINEER/QUALITY ASSURANCE [signature] DATE 4-11-80

16. ADDITIONAL DISTRIBUTION ______

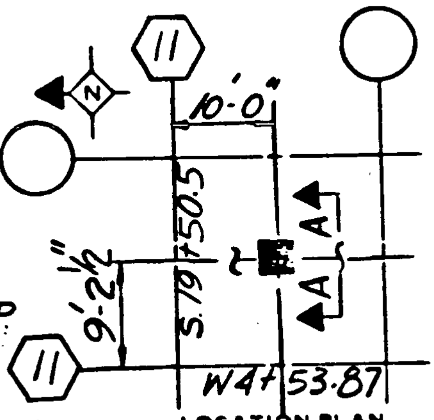
PF-0924 (10079) 10/78

ITEM NO.	NO. REQ'D	PART NO.	SIZE. DESCRIPTION	NF	AISC	NOTES
30	1	–	8"φ SCH. 40 S.S. DUMMY PIPE	*		BY SPEC.
31	1	–	3/4"X10"X0'-10" C. STEEL PL	X		S023-409-23
52A	1	–	PSA-3-5" STROKE P/N-1811011-46	X		BY PSC
			SHOCK ARRESTOR KIT, NUCLEAR CLASS-II CPS=1 3/8" HPS-3 1/2" LOAD: 2194 # (1)			
A	1	–	W8 X 24		X	BY SPEC.
B	1	–	1"X 9"X 0'-9" PL		X	S023-206-18

* INTEGRAL ATTACH. - USE ASME SUBSECTION NC MAT'L

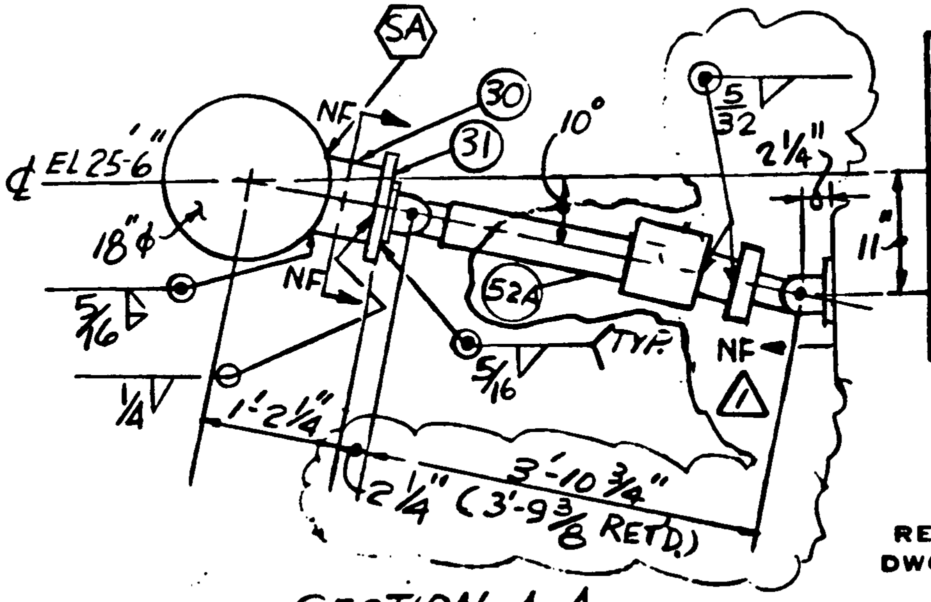


LOOKING NORTH



LOCATION PLAN

AREA NO. 2C06-2



SECTION A-A

PMC - KEO		TYPE 6	
PROJ CL	PIPE C (QC II)		MAX. TEMP 400 °F
QUAL CL	STEEL		

DESIGN		X	Y	Z
M (FT-LBS)	+	–	–	–
	-	–	–	–
P (LBS)	+	–	–	2194
	-	–	–	2194

S PROB. NO. 52 PT. NO. 122

SPOOL NO. 2-RC-017-16

REF. DWGS. ISO 1201-016-2

PIPE 40400

STEEL 23177

TAG NO. S2-RC-017-H-081

NO.	REVISIONS	DATE	DR.	CHK.	E.G.S.		P.E.	Q.A.E.
					1201			
1	SNUBBER VENDOR CHANGE (1)	10-16-79	NY	JBP	MB			
0	ISSUED FOR CONSTRUCTION	6-6-79	RSS		HSN			

BECHTEL POWER CORPORATION
NORWALK, CALIFORNIA

J.O. NO.

FILE

SAN ONOFRE NUCLEAR GENERATING STATION

PIPE SUPPORT ASSEMBLY

SOUTHERN CALIFORNIA EDISON COMPANY
LOS ANGELES. CALIF.

SCALE: NTS

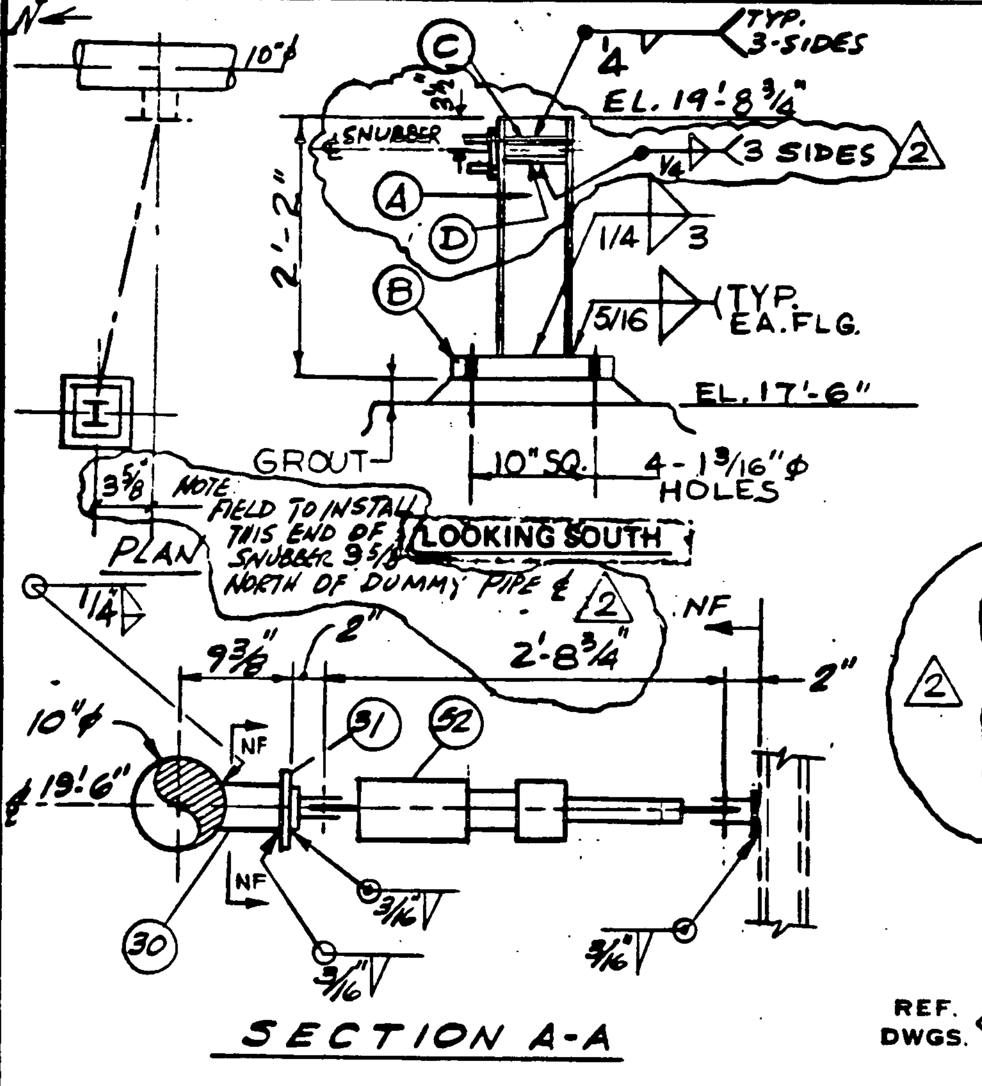
JOB NO.	DATE	APPROVED
10079		

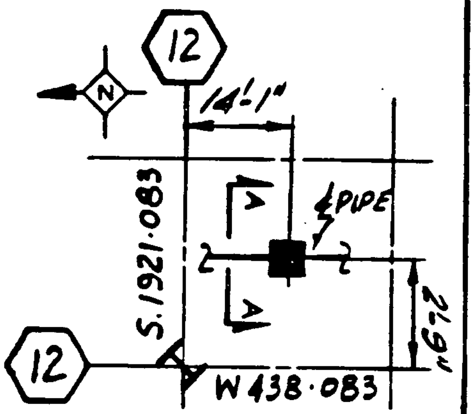
PF-633 (10079) 12/76

01-02-01

SUD.CDDA

ITEM NO.	NO. REQ'D	PART NO.	SIZE DESCRIPTION	NF	AISC	NOTES
30	1	—	6" ¢ SCH. 40S DUMMY PIPE S.S.	*		BY KELLOGG
31	1	—	8" x 8" x 3/8" C.S. PLATE	X		" "
52	1	307	3-5 MECH. SHOCK SUPPRESSOR	X		BY GRINNELL
			W/ OPTION 1 C.P.S. = 3.2905"			
			H.P.S. = 1.7095 W = 8.88" LOAD 1150 #			
* INT. ATTACH.			USE ASME SECT. III SUBSECT. 'NC' MAT'L			
		2				
D	2	—	3/8" STIFF. PL		X	BY FIELD
A	1		W 6 X 20	SPEC.	X	SPEC.
B	1		PL 3/4 X 14 X 1'-2"		X	5023-206-18
C	2		3/8 STIFF. PL			
	4		US-8-HC-LCSF-175			BY FIELD





LOCATION PLAN

(J.C.) AREA NO. 2C06-2

PMC: KEO

TYPE: 6

2

PROJ. CLASS C (QC II)

MAX. TEMP. 400 °F

OPER. LOAD (LBS.) —

DESIGN LOAD (LBS) 1150

S PROB. NO. 52 PT. NO. 91

SPOOL NO. 2-RC-071-1

REF. DWGS.: ISO. 1201-016-1; PIPE 40400; STEEL —

TAG NO. S2-RC-071-H-001

NO.	REVISIONS	DATE	DR.	CHK.	E.G.S.	CHF. E.	P.E.	Q.A.E.
2	INCORPORATED DCNS 1&2 & FCR 4434	2-26-80	KG		1201	—		
1	ADDED STIFF.	7-11-77				—		
0	ISSUED FOR CONSTRUCTION	2-8-77				—		

BECHTEL POWER CORPORATION
NORWALK, CALIFORNIA

JOB NO.	DATE	APPROVED	J.O. NO.	FILE
10079				

SAN ONOFRE NUCLEAR GENERATING STATION

PIPE SUPPORT ASSEMBLY

SOUTHERN CALIFORNIA EDISON COMPANY
SCALE: NTS
LOS ANGELES, CALIF.

PF-633(10079) 4/75

01-02-01

SAN ONOFRE NUCLEAR GENERATING STATION
UNITS 2 & 3
FIELD CHANGE REQUEST/DCN/SCN

C(QCII)
BHA
1.C

JOB NO. 10079 ~~C062~~ C062

1. FCR NO. S-4727
DATE 3/10/80
2. PAGE 1 OF 1
3. UNIT NO. 2

12A. QUALITY CLASS II
12B. SPEC ADDEND. NO.

12C. DCN SUB NO. 03
12D. DATE MAR 25 1980
12E. SCN NO.

4. REF. DWG. OR SPEC. S2-RC-07H-001
SHEET NO.
REV. ~~12~~

5. TITLE Pipe Support Assembly
NAME

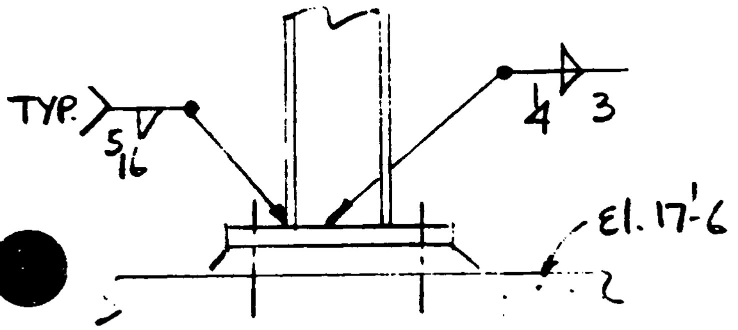
6. DESIGN ORIGIN: 1201 ENGRG ☒ VENDOR ☐ (IDENTIFY)

7. EXISTING CONDITION:

WELD SYMBOLS INCORRECT

8. CHANGE REQUEST/SKETCH

PL# 5120



LOOKING SOUTH (PARTIAL)

NO NEW MAT'L REQ'D

PROJECT ENGINEERING APPROVAL PER

10.	REVIEWED BY	DATE			
CIVIL			PIPF	BJS	3-11-80
ELEC			INSTR		
MECH			NUC		
WELD			QAE	[signature]	3-12-80

9. P. Tammiyot
PREPARED BY

11. APPROVAL OF FLD DISPOSITION
[signature]
PROJECT FIELD ENGINEER
DATE MAR 12 1980

12. PROJECT ENGRG APPROVAL: YES ☒ NO ☐ EGS ______ P.E. R.L. Rogers/RE DATE 3-11-80

REMARKS: **CONVERT TO DCN**

13. QUALITY ASSURANCE ENGINEER (FIELD): [signature] DATE 3-12-80

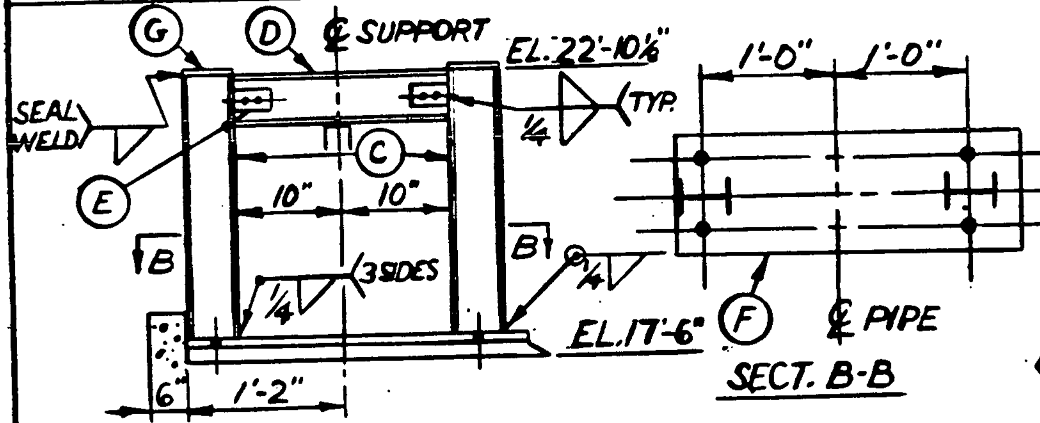
14. SCE ENGINEERING APPROVAL ______ P.E. ______ DATE ______

15. BECHTEL QUALITY ENGINEER/QUALITY ASSURANCE [signature] DATE 3-25-80

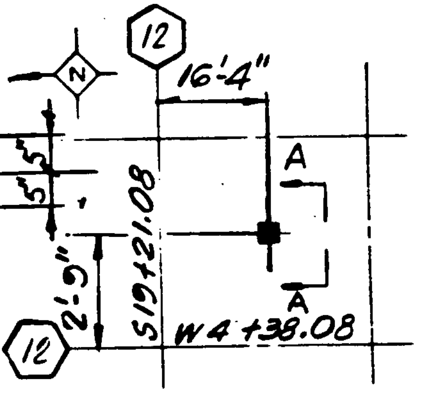
16. ADDITIONAL DISTRIBUTION

PF-0924 (10079) 10/78

ITEM NO	NO REQ'D	PART NO	SIZE / DESCRIPTION	NF	AISC	NOTES
1	1	66	1 1/8" BEAM ATTACHMENT WITH PIN & COTTER	X		BY FIELD
2	1	290	1 1/8" WELDLESS EYENUT W/R.H. TAP	X		BY GRINNELL
7	2	—	1 1/8" HEX NUT	X		"
9	1	140N	1 1/8" φ ROD W/R.H.T. BOTH ENDS 1'-2 3/4" LG.; W/ 4 TBE	X		"
14	1	295H	10"φ DOUBLE BOLT CLAMP	X		"
19	1	C-82	#13 TYPE "B" VARIABLE SPRING HL-2574# CL 2290#	X		BY GRINNELL
			MVT. .237"DN ; W/TS			
~~C~~	~~2~~	~~–~~	~~TS 4x4x.25~~			
~~D~~	~~1~~	~~–~~	~~W 4x13~~			
~~E~~	~~1~~	~~–~~	~~PL 3/8"x2 1/2"x6"~~			SPEC.
~~F~~	~~1~~	~~–~~	~~PL 1/2"x2'-6"x1'-6"~~			S023-206-18
G	2		PL 4x4x1/4"			
	4		5/8"φ HEX. BOLTS			
	4		US-B-HC-LCSF-175			"BY FIELD"

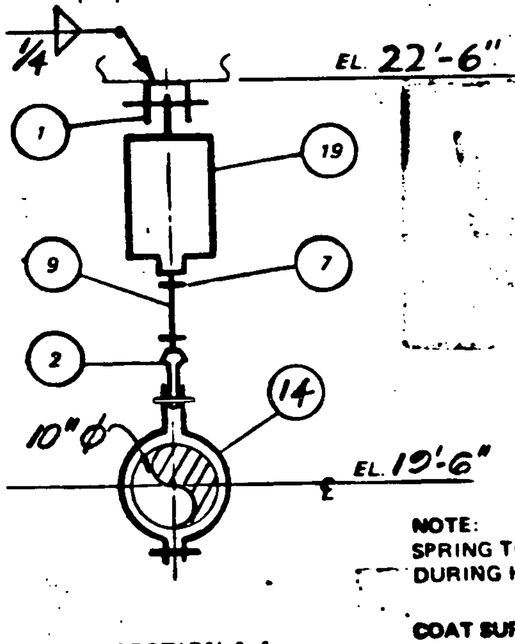


SECT. B-B



LOCATION PLAN

(I.C.) AREA NO. 2C06-2



SECTION A-A

DESIGN CODE C			TYPE 5	
PROJ CL	PIPE C (QC II)		MAX. TEMP 400 °F	
QUAL CL	STEEL			
DESIGN		X	Y	Z
	M +	—	—	—
	(FT-LBS) -	—	—	—
	P +	—	—	—
	(LBS) -	—	2660	—

S PROB. NO. 52 PT. NO. 91

SPOOL NO. 2-RC-071-1

REF. DWGS.:
- ISO 1201-016-1
- PIPE 40400
- STEEL —

NOTE:
SPRING TO BE LOCKED DURING HYDRO TEST

COAT SUPPLEMENTARY STRUCTURE WITH NUCLEAR FINISH PER APPENDIX 4-C OF SPEC.

1201

TAG NO. S2-RC-071-H-002

NO.	REVISIONS	DATE	DR.	CHK.	E.G.S.		P.E.	QAE
2	INCORP. DCN's 1-4, ISSUE VOID/STRESS	4-29-77	DWH	FSM	HSN	—		
1	REV. SECT. B-B & ELEVATION & B/M	4-25-77	AB RL		DW	—	JDH	
0	ISSUED FOR CONSTRUCTION	3-12-77	GC	BP/ACEW	LAM HSN	—	JDH	JRM

BECHTEL POWER CORPORATION NORWALK, CALIFORNIA	J.O. NO.
	FILE
JOB NO. 10079 / DATE / APPROVED	

SAN ONOFRE NUCLEAR GENERATING STATION

PIPE SUPPORT ASSEMBLY

SOUTHERN CALIFORNIA EDISON COMPANY
LOS ANGELES, CALIF.

SCALE: NTS

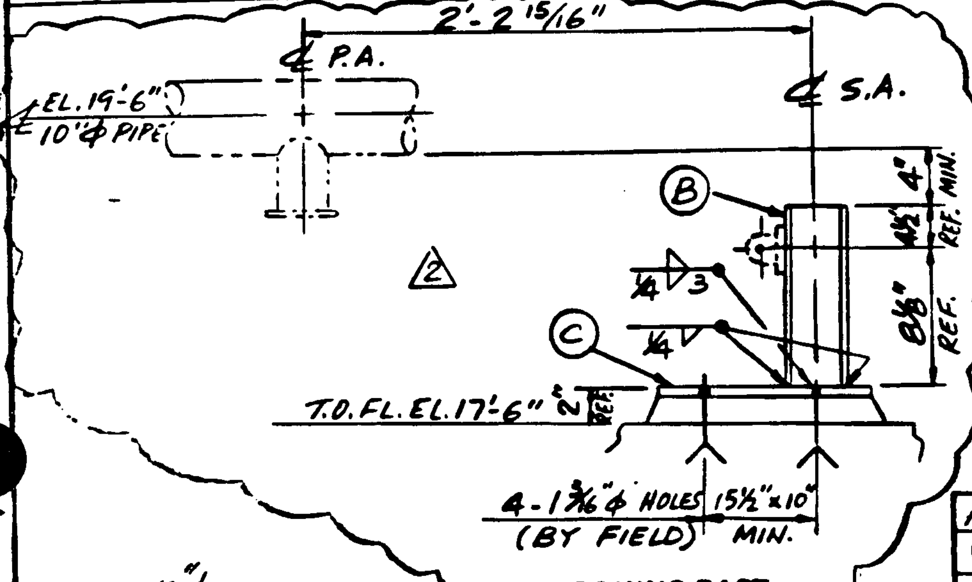
05-03-02

PF-633 (10079) 12/76

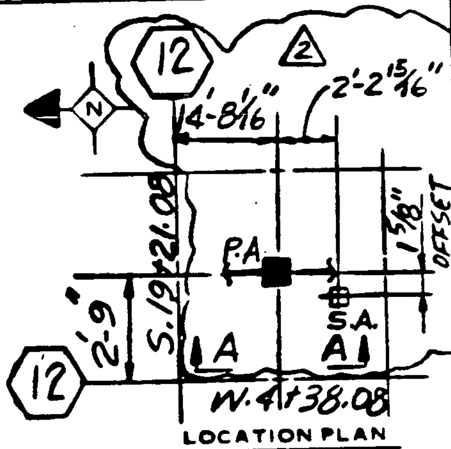
ITEM NO	NO REQ'D	PART NO	SIZE / DESCRIPTION	NF	AISC	NOTES
30	1	-	6"ϕ SCH. 80S DUMMY PIPE	*		BY SPEC.
31	1	-	½" x 9" x 0'-9" C.S. BASE ℞	X		S023-409-23
52A	1	FIG. 306	#10 - 6" STROKE MECH. SHOCK SUPPRESSOR. C.S.= 1.671" H.S.= 4.33" W/ADDITIONAL REAR BRACKET LOAD = 7686 # △2	X		USE SURPLUS MAT'L FROM S2-FW-294-H-005
B	1	—	W 6 x 15.5		X	BY FIELD
C	1	—	℞ ½ x 22 x 2'-6"		X	BY FIELD
	4	—	US-B-HC-LCSF-175			

* INTEGRAL ATTACH - USE ASME SUBSECTION NC MAT'L

SUS-2BHA



LOOKING EAST

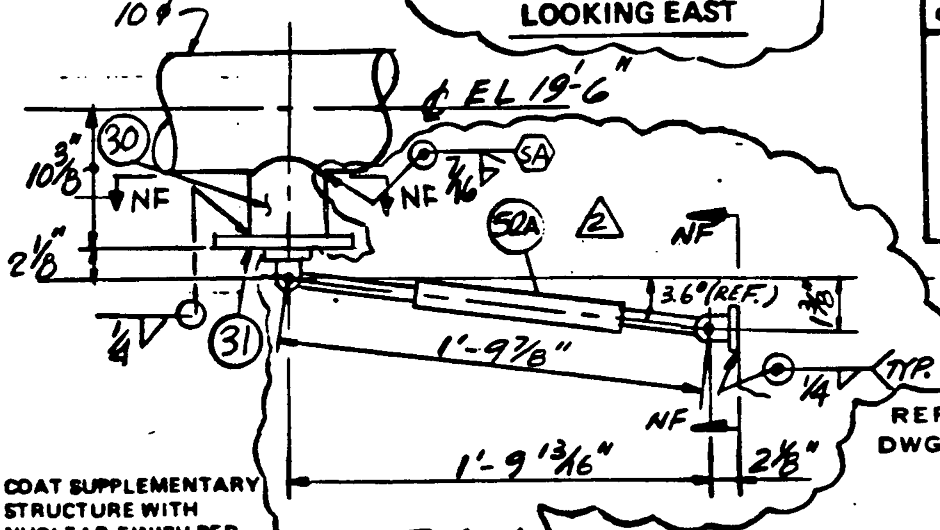


LOCATION PLAN

I.C. AREA NO. 2C06-2

PMC-KEO		TYPE	6
PROJ CL	PIPE C(QCII)		MAX. TEMP 400°F
QUAL CL	STEEL II △2		

DESIGN		X	Y	Z
M (FT-LBS)	+	—	—	—
	-	—	—	—
P (LBS) △2	+	7686	—	—
	-	7686	—	—



SECT. A-A

S PROB. NO. 52 PT. NO. 91

SPOOL NO. 2-RC-071-1

REF. DWGS.
- ISO. 1201-016-1
- PIPE 40400
- STEEL —

COAT SUPPLEMENTARY STRUCTURE WITH NUCLEAR FINISH ~~PER APPENDIX 4-C OF SPEC.~~

TAG NO. S2-RC-071-H-003

NO.	REVISIONS	DATE	DR.	CHK.	E.G.S.		P.E.	Q.A.E.
2	INCORP. DCN 1,2,3,4 & 5	2-26-80	QT	KG	MB 12.1	—	RLP/SAM	[illegible]
1	REVISED AS NOTED (QE TO Q.A.E.)	3-2-79	[illegible]	[illegible]	[illegible]	—	[illegible]	[illegible]
0	ISSUED FOR CONSTRUCTION	2-9-79	RSS	RD	HSN/DH	[illegible]	[illegible]	[illegible]

BECHTEL POWER CORPORATION NORWALK, CALIFORNIA	J.O. NO.	SAN ONOFRE NUCLEAR GENERATING STATION
	FILE	PIPE SUPPORT ASSEMBLY
JOB NO. 10079 / DATE / APPROVED		SOUTHERN CALIFORNIA EDISON COMPANY LOS ANGELES, CALIF. SCALE: NTS

01-02-01

APR 10 1980

SAN ONOFRE NUCLEAR GENERATING STATION
UNITS 2 & 3
FIELD CHANGE REQUEST/DCN/SCN

2 BHA
C

(I.C.)

JOB NO. 10079 2C062

1. FCR NO. 2-4095
DATE 4-6-80
2. PAGE 1 OF 1
3. UNIT NO. 2

12A. QUALITY CLASS II
12B. SPEC ADDEND. NO.
12C. DCN SUB NO. 06
12D. DATE APR 30 1980
12E. SCN NO.

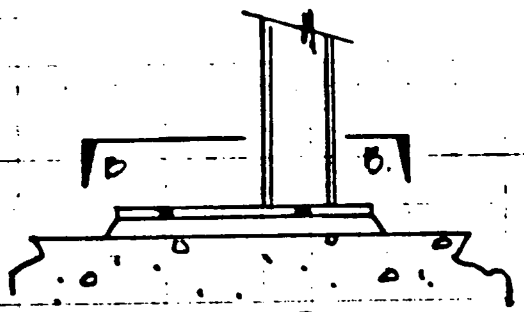
REF. DWG. OR SPEC. RC-071-H-003 SHEET NO. REV. 2
5. TITLE PIPE SUPT. ASSEMBLY NAME

6. DESIGN ORIGIN: 1201 ENGRG ☒ VENDOR ☐ (IDENTIFY)

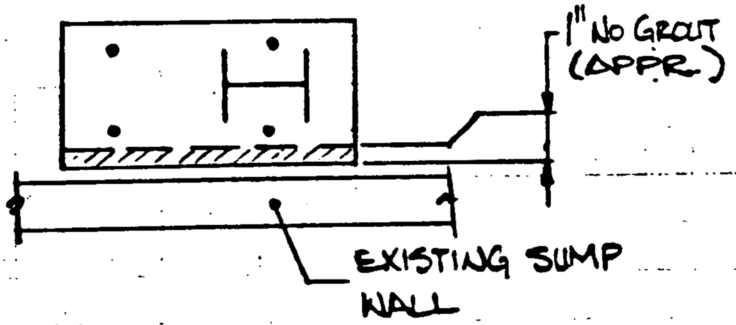
7. EXISTING CONDITION:

1. GROUTING OF BASE PL AS CALLED FOR WILL NOT ALLOW WATER DRAINAGE TO PROXIMITY OF SUMP WALL. 2 SECT. B-B REQ'D.

8. CHANGE REQUEST/SKETCH TO



LOOKING EAST
(PARTIAL)



SECT. B-B

P.L. 5378 PROJECT ENGINEERING APPROVAL PER

10. REVIEWED BY DATE

CIVIL ______ ______
ELEC ______ ______
MECH ______ ______
WELD ______ ______

PIPE [signature] 4-9-80
INSTR ______ ______
NUC ______ ______
QA [signature] 4-10-80

9. C.W. GREER
PREPARED BY

11. APPROVAL OF FLD DISPOSITION
[signature]
PROJECT FIELD ENGINEER
DATE 4-10-80

12. PROJECT ENGRG APPROVAL: YES ☒ NO ☐ EGS ______ P.E. R.L. Rogers/RA DATE 4-9-80

REMARKS: CONVERT TO DCN

13. QUALITY ASSURANCE ENGINEER (FIELD): [signature] DATE 4-10-80

14. SCE ENGINEERING APPROVAL ______ P.E. ______ DATE ______

15. BECHTEL QUALITY ENGINEER/QUALITY ASSURANCE [signature] DATE 4/25/80

16. ADDITIONAL DISTRIBUTION ______

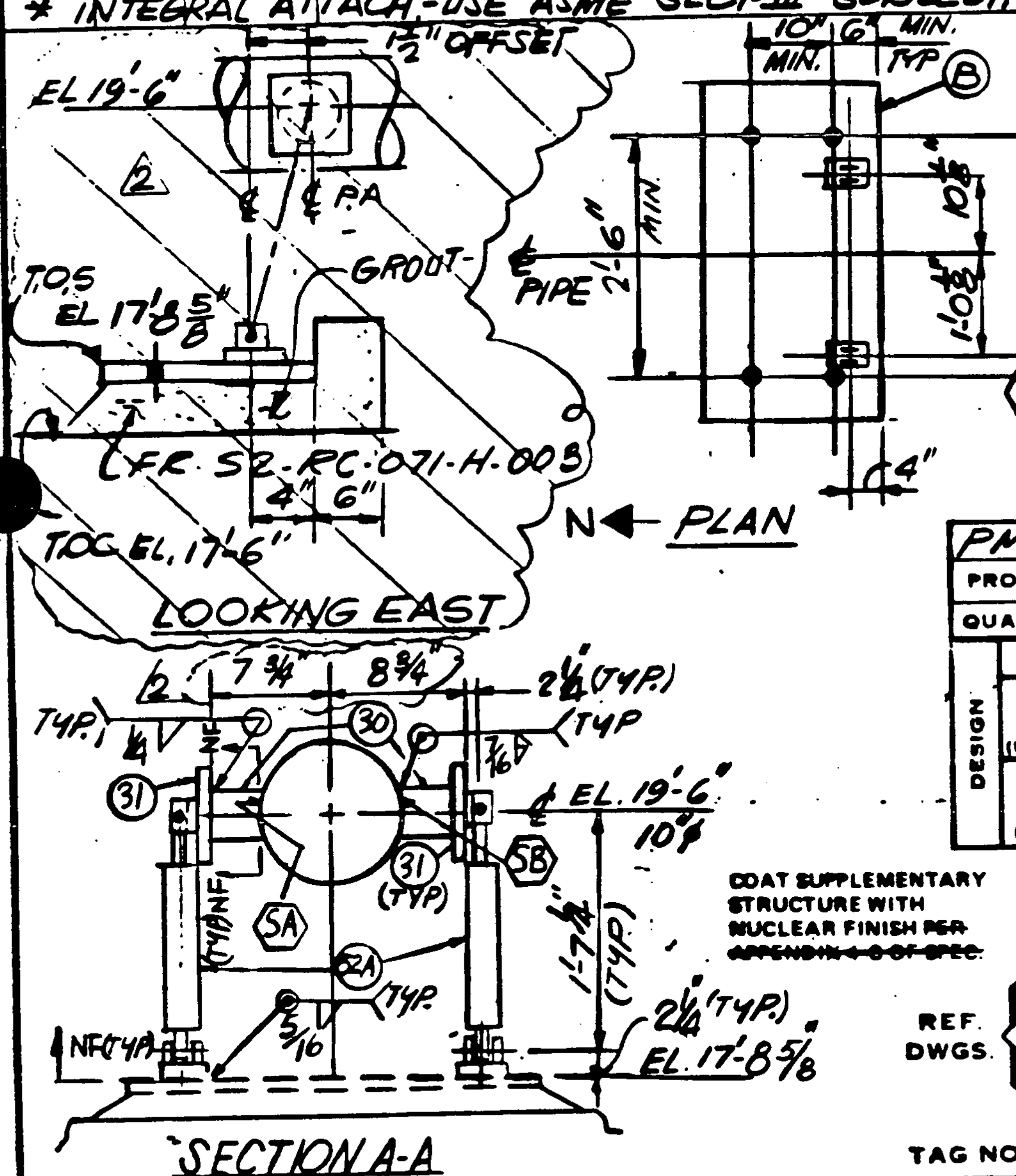
PF-0924 (10079) 10/78

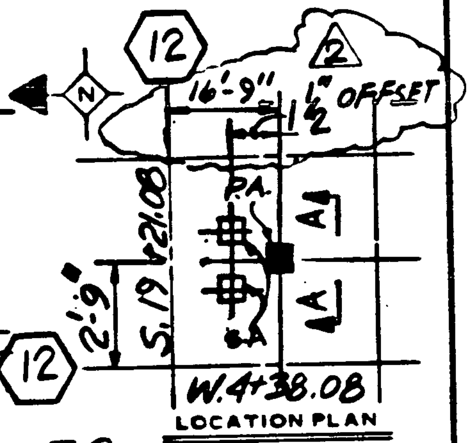
X

SUS-2BHA

ITEM NO.	NO. REQ'D	PART NO.	SIZE / DESCRIPTION	NF	AISC	NOTES
30	2	-	6"ϕ SCH. 80S DUMMY PIPE	*		BY SPEC.
31	2	-	½"x9"x0'-9" C.S. BASE PL	X		S023-409-23
52A	2		PSA 3-5 STROKE P/N 1811012-02 SHOCK ARRESTOR KIT, NUC. CLASS 2, CPS= 2¾" H.P.S = 2½" LOAD = 2549# EACH	X		BY PSC
B	1	-	PL 1X22"X3'-6"		X	BY FIELD
	4		US-8-HC-LCSF-175			BY FIELD

* INTEGRAL ATTACH.-USE ASME SECT-III SUBSECT. "NC" MATL





I.C.

AREA NO. 2C06-2

PMC- KEO		TYPE	6
PROJ CL	PIPE C(QCII)		MAX. TEMP
QUAL CL	STEEL -		400 °F

DESIGN		X	Y	Z
M (FT-LBS)	+	—	—	—
	-	—	—	—
P (LBS)	+	—	5100	—
	-	—	2 5100	—

COAT SUPPLEMENTARY STRUCTURE WITH NUCLEAR FINISH ~~PER APPENDIX 4-C OF SPEC.~~

S PROB. NO. 52 PT. NO. 291

SPOOL NO. 2-RC-071-1

REF. DWGS.
- ISO 1201-016-1
- PIPE 40400
- STEEL S2-RC-071-H-003 2

TAG NO. S2-RC-071-H-004

NO.	REVISIONS	DATE	DR.	CHK.	E.G.S.		P.E.	Q.E.
2	INCORP. DCN #3,4 & FCR 4532	2-26-80	TM		KG M 1201	—	RLB/SAP	
1	SNUB. VEND. CHG'D. & INC. DCN. #1 & 2	10-16-79	JL	AS YL	HB	—		
0	ISSUED FOR CONSTRUCTION	6-6-79	RSS		HSN	—		

BECHTEL POWER CORPORATION NORWALK, CALIFORNIA	J.O. NO.	SAN ONOFRE NUCLEAR GENERATING STATION
	FILE	PIPE SUPPORT ASSEMBLY
JOB NO. 10079 / DATE / APPROVED		SOUTHERN CALIFORNIA EDISON COMPANY LOS ANGELES, CALIF.
		SCALE: NTS

01-02-01

MAR 19 1980

SAN ONOFRE NUCLEAR GENERATING STATION
UNITS 2 & 3
FIELD CHANGE REQUEST/DCN/SCN

(QC II) 1.C
2BHA JOB NO. 10079 2006-2

1. FCR NO. S-4675	12A. QUALITY CLASS II	12C. DCN SUB NO. 05
DATE 3-3-80		12D. DATE MAR 27 1980
2. PAGE 1 OF 1	12B. SPEC ADDEND. NO.	12E. SCN NO.
3. UNIT NO. 2		

4. REF. DWG. OR SPEC. S2-RC-071-H-004 SHEET NO. REV 2

5. TITLE Pipe Support Assembly NAME

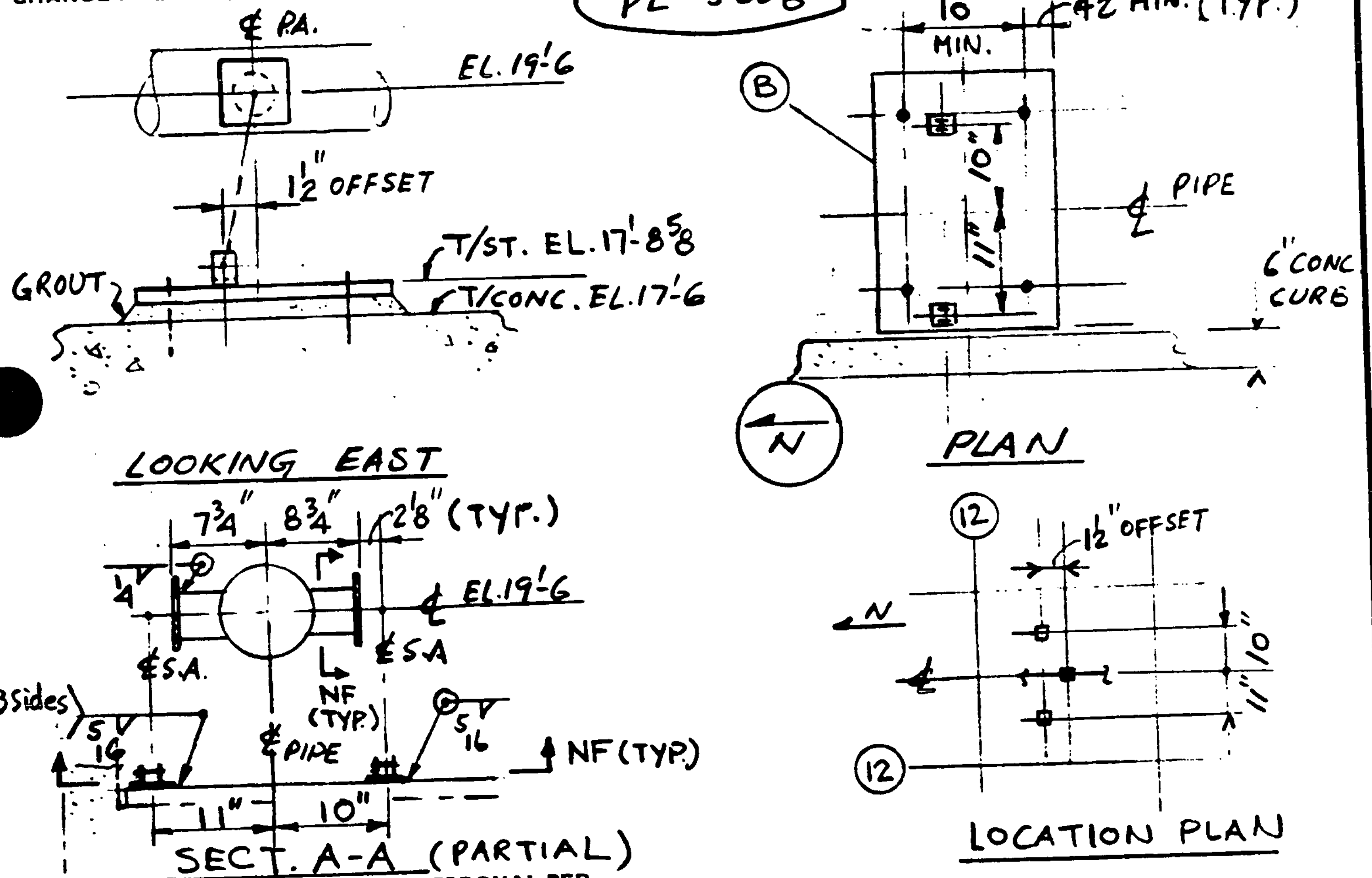
6. DESIGN ORIGIN: ENGRG ☒ VENDOR ☐ (IDENTIFY) 1201

7. EXISTING CONDITION:

DIMENSIONS SHOWN INCORRECT.
NO NEW MATERIAL REQ'D

8. CHANGE REQUEST/SKETCH

PL #5066



PROJECT ENGINEERING APPROVAL PER

10. REVIEWED BY DATE

CIVIL ________ ________ PIPE RLS 3-4-80
ELEC ________ ________ INSTR ________
MECH ________ ________ NUC ________
WELD ________ ________ QAE J.W. Sheppard 3-5-80

9. P. Tannirat
PREPARED BY

11. APPROVAL OF FLD DISPOSITION
PROJECT FIELD ENGINEER
DATE MAR 05 1980

12. PROJECT ENGRG APPROVAL: YES ☒ NO ☐ EGS ________ P.E. R.L. Rogers/MA DATE 3-4-80

REMARKS: **CONVERT TO DCN** ~~Void FCR S-4532~~

13. QUALITY ASSURANCE ENGINEER (FIELD): J.W. Sheppard DATE 3-5-80

14. SCE ENGINEERING APPROVAL ________ P.E. ________ DATE ________

15. BECHTEL QUALITY ENGINEER/QUALITY ASSURANCE J.W. Sheppard DATE 3-26-80

16. ADDITIONAL DISTRIBUTION ________

MAR 19 1980

BECHTEL

SAN ONOFRE NUCLEAR GENERATING STATION
UNITS 2 & 3
FIELD CHANGE REQUEST/DCN/SCN

(QC II) (I.C.)
2BHA JOB NO. 10079 2C06-2

1. FCR NO. S4692	12A. QUALITY CLASS II	12C. DCN SUB NO. 06	
DATE 3-5-80	12B. SPEC ADDEND. NO.	12D. DATE MAR 27 1980	
2. PAGE 1 OF 1		12E. SCN NO.	
3. UNIT NO. 2			

4. REF. DWG. OR SPEC. S2-RC-071-H-004 SHEET NO. REV. 2

5. TITLE Pipe Support Assembly
NAME

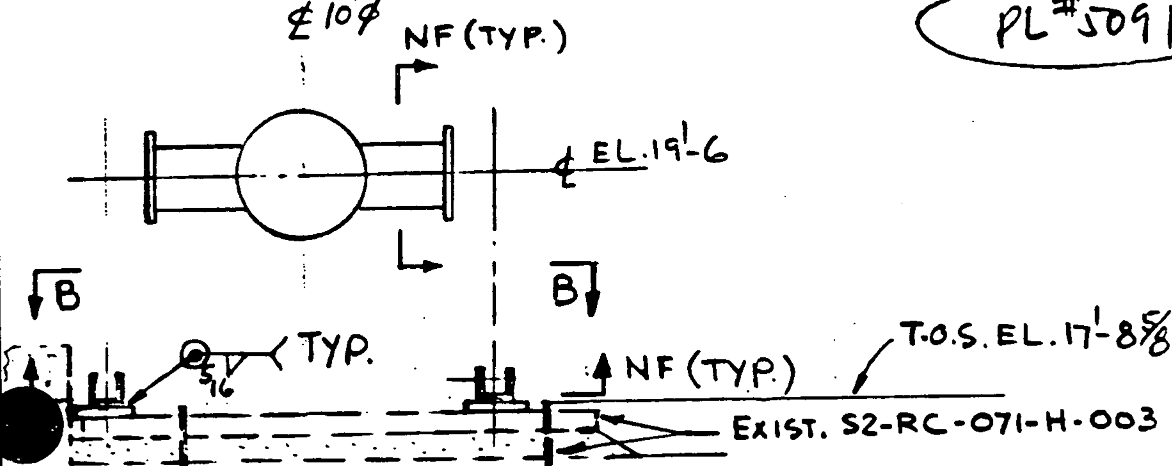
6. DESIGN ORIGIN: 1201 ENGRG ☒ VENDOR ☐ (IDENTIFY)

7. EXISTING CONDITION:

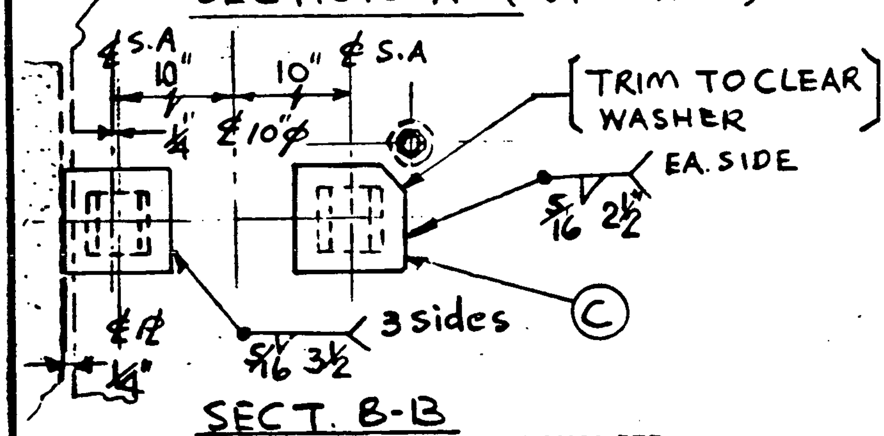
Not adequate projection for rock bolts

8. CHANGE REQUEST/SKETCH

PL#5091



SECTION A-A (PARTIAL)



SECT. B-B

BILL OF MATERIAL

— Add item Ⓒ 2 ea - PL 4"×3/4"×4" (by field)

— Delete item Ⓑ

PROJECT ENGINEERING APPROVAL PER

10. REVIEWED BY	DATE			
CIVIL		PIPE	R.T.S.	3-11-80
ELEC		INSTR		
MECH		NUC		
WELD		QAE	[signature]	3-12-80

9. P. Tannirat
PREPARED BY

11. APPROVAL OF FLD DISPOSITION
[signature]
PROJECT FIELD ENGINEER
DATE MAR 12 1980

12. PROJECT ENGRG APPROVAL: YES ☑ NO ☐ EGS ☐ P.E. R.L. Rogers/RA DATE 3-11-80

REMARKS: **CONVERT TO DCN**

13. QUALITY ASSURANCE ENGINEER (FIELD): G.W. Sheppard DATE 3-12-80

14. SCE ENGINEERING APPROVAL ______ P.E. ______ DATE ______

15. BECHTEL QUALITY ENGINEER/QUALITY ASSURANCE G.W. Sheppard DATE 3-26-80

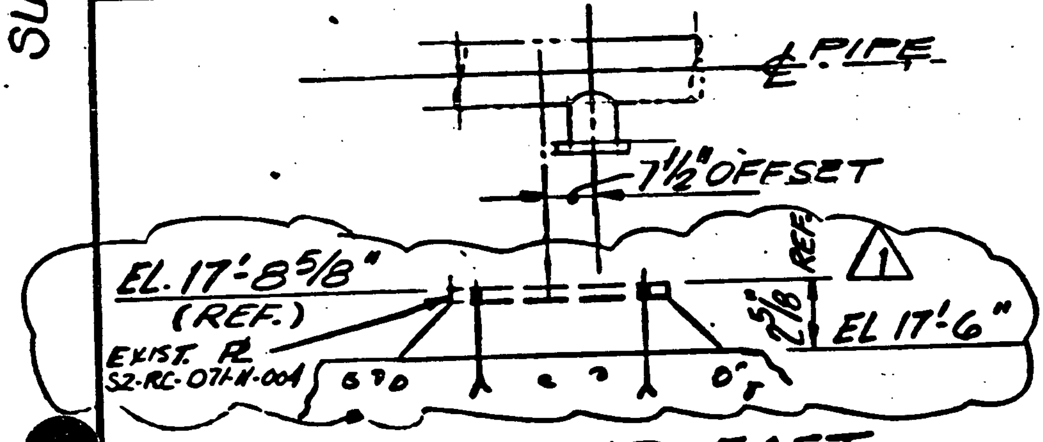
16. ADDITIONAL DISTRIBUTION

SUS-2BHA

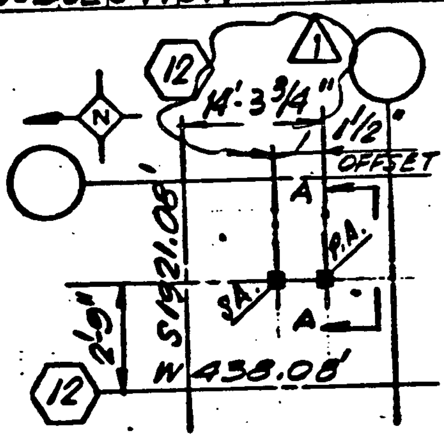
LEE

ITEM NO.	NO. REQ'D	PART NO.	SIZE / DESCRIPTION	NF	AISC	NOTES
30	1		4"Ø SCH. 80S DUMMY PIPE	*	·	SPEC
31	1		PL 1 × 10 × 0'-10" C.S. PL	X		S023-409-23
23	1	TVS1	13 TYPE "F" VARIABLE SPRING, H.L. = 2614#, C.L. = 2357#, MVT. = .26" DN	X		BY STC

*INTEGRAL ATTACHMENT-USE ASME SECT. III SUBSECTION "NC" MAT'L.



LOOKING EAST

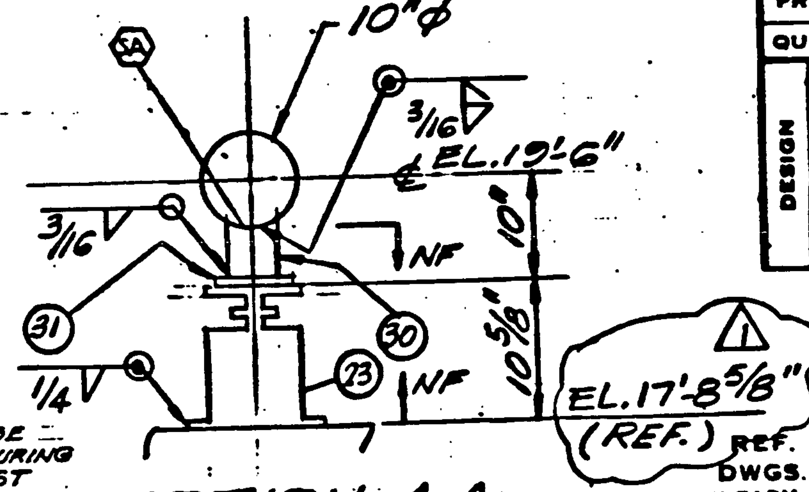


LOCATION PLAN

I.C. AREA NO. 2006·2

PMC-KEO		TYPE 5	
PROJ CL	PIPE C(QC II)		MAX. TEMP
QUAL CL	STEEL II		400°F

DESIGN		X	Y	Z
M (FT-LBS)	+	–	–	–
	–	–	–	–
P (LBS)	+	0	0	0
	–	0	3301	0



NOTE: SPRING TO BE LOCKED DURING HYDRO TEST

SECTION A-A

COAT SUPPLEMENTARY STRUCTURE WITH NUCLEAR FINISH

S PROB. NO. 52 PT. NO. 291

SPOOL NO. 2RC-071-1

REF. DWGS.
ISO 1201-016-1
PIPE 40400
STEEL S2-RC-071-H-004

TAG NO. S2-RC-071-H-005

1201

NO.	REVISIONS	DATE	DR.	CHK.	E.G.S.	P.E.	Q.A.E.
1	INCORP. DCN 01, 02, 03 & 04	3-5-80		KG	KG		
0	ISSUED FOR CONSTRUCTION	7-13-79					

BECHTEL POWER CORPORATION
NORWALK, CALIFORNIA

J.O. NO.

FILE

SAN ONOFRE NUCLEAR GENERATING STATION

PIPE SUPPORT ASSEMBLY

SOUTHERN CALIFORNIA EDISON COMPANY
LOS ANGELES, CALIF.

JOB NO.	DATE	APPROVED
10079		

SCALE: NTS

01-02-01

ITEM NO.	NO REQ'D	PART NO	SIZE / DESCRIPTION	NF	AISC	NOTES
31	2	—	8"x8"x1¼" C.S. PL.	X		BY KELLOGG.
30	2	—	6"Ø SCH.120S DUMMY PIPE.	*		"
54	1	—	UPPER SLIDE BEARING 10GA. S.S. 7½"x7½" PL.			BY FIELD.
55	1	—	LOWER SLIDE BEARING BRONZITE ¼"x7"x7" PL.			"
45	4	—	C.S. BAR 9/16"x9/16"x3"			
A	2	—	W8x35.		X	
B	2	—	W4x13.			
C	1	—	PL ¾x16x1'-4"			SPEC.
D	2	—	PL ½x8x0'-8"			5023-206-18
E	6	—	⅜" STIFF. PL.			
F	2	—	PL. ⅜x2½x0'-6"			
G	1	—	TS 3x6x½.			
J	2	—	PL ⅛x4x0'-7"			BY FIELD.
	4	—	¾"Ø HEX BOLTS.			5023-206-18
	4	—	US-8-HC-LCSF-175		X	BY FIELD

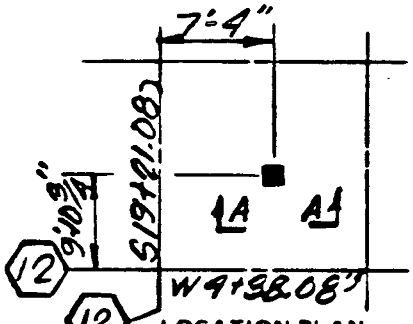
SUS. 2BBB.

*INTEGRAL ATTACH. USE ASME SECT. III SUBSECT. NB. MATL.

** GRIND ONLY AS NECESSARY TO INSURE CONCAVITY.

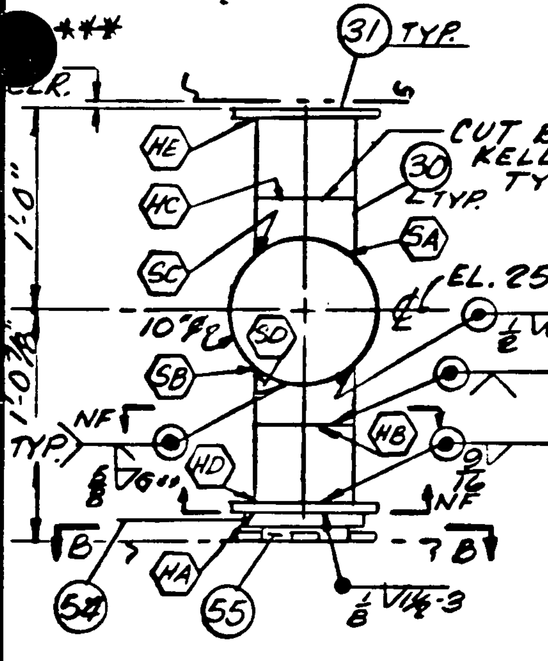
*** NOTE: MIN. TOTAL CLRC. REQ'D IS 3/16"

COAT SUPPLEMENTARY STRUCTURE WITH NUCLEAR FINISH

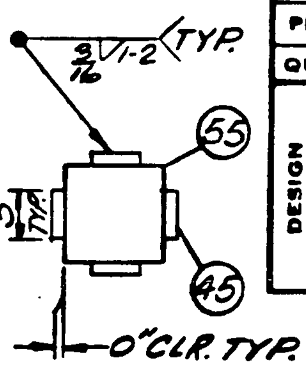


LOCATION PLAN

AREA NO. 2C06-2



SECTION A-A



SECT. B-B

(J.C.)

P.M.C.-FEO		TYPE 2	
PROJ CL	PIPE A (QC1)		MAX. TEMP 650 °F
QUAL CL	STEEL II		

DESIGN		X	Y	Z
M (FT-LBS)	+	—	—	—
	-	—	—	—
P (LBS)	+	0	502	0
	-	0	10283	0

S PROB. NO. 52 PT. NO. 278

SPOOL NO. 2-RC-072-1

REF. DWGS.: ISO 1201-016-1; PIPE 40400.; STEEL ——

SHT 1 OF 2

TAG NO. S2-RC-072-H-001

NO.	REVISIONS	DATE	DR.	CHK.	E.G.S.		P.E.	Q.A.E.
					1201			
3	REDRAWN & INC. DCN'S. 01, 02 & 03	2-28-80	[illegible]	JB	SMB		RLR	[illegible]

BECHTEL POWER CORPORATION
NORWALK, CALIFORNIA

J.O. NO.

FILE

JOB NO. 10079 | DATE | APPROVED

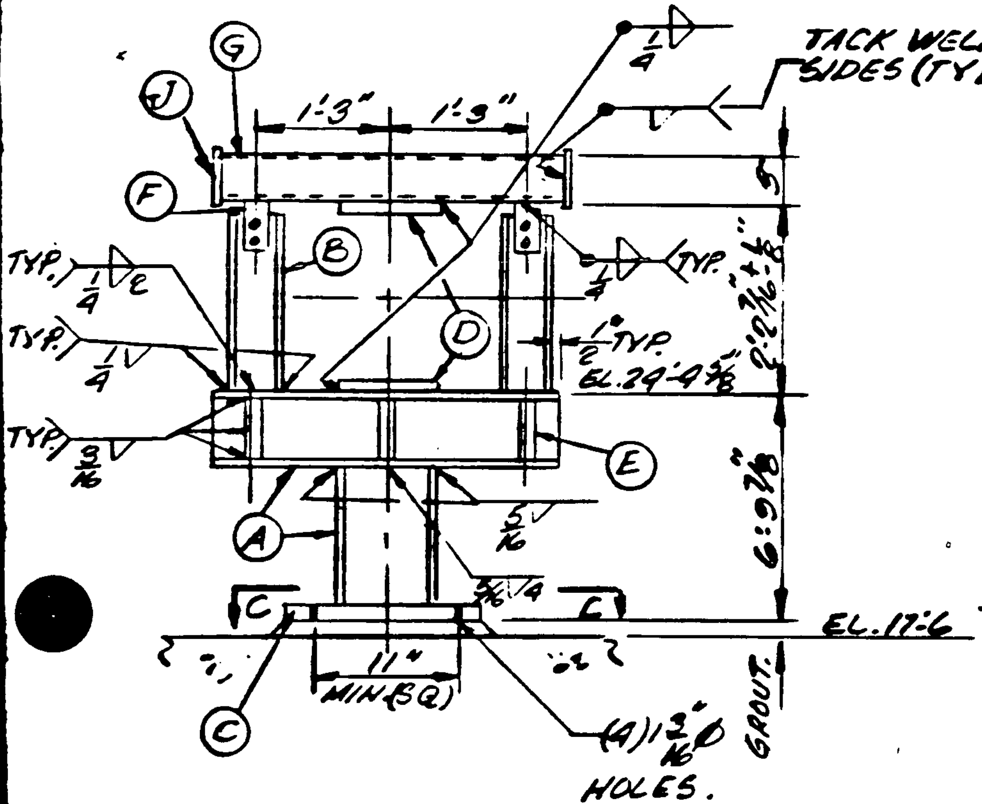
SAN ONOFRE NUCLEAR GENERATING STATION

PIPE SUPPORT ASSEMBLY

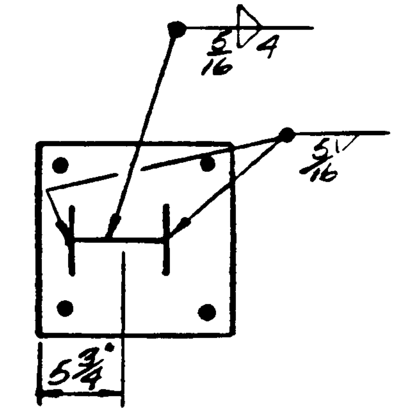
SOUTHERN CALIFORNIA EDISON COMPANY
SCALE: NTS
LOS ANGELES, CALIF.

PF-633 (10079) 7/79

ITEM NO	NO REQ'D	PART NO	SIZE	DESCRIPTION	NF	AISC	NOTES



LOOKING EAST.



SECTION C-C

12C1 SHT 2 OF 2

S2-RC-072-H001 REV 3

BECHTEL POWER CORPORATION NORWALK, CALIFORNIA	J.O. NO.	SAN ONOFRE NUCLEAR GENERATING STATION
	FILE	PIPE SUPPORT ASSEMBLY
JOB NO. 10079 / DATE / APPROVED		SOUTHERN CALIFORNIA EDISON COMPANY SCALE NTS LOS ANGELES CALIF.

MAR 26 1980

SAN ONOFRE NUCLEAR GENERATING STATION
UNITS 2 & 3
FIELD CHANGE REQUEST/DCN/SCN

BECHTEL

A(Q CI)
2BBR
JOB NO. 10079
(1.C)
2C06-2

1. FCR NO. S-4763
DATE 3-13-80
2. PAGE 1 OF 1
3. UNIT NO. 2

12A. QUALITY CLASS I
12B. SPEC ADDEND. NO.

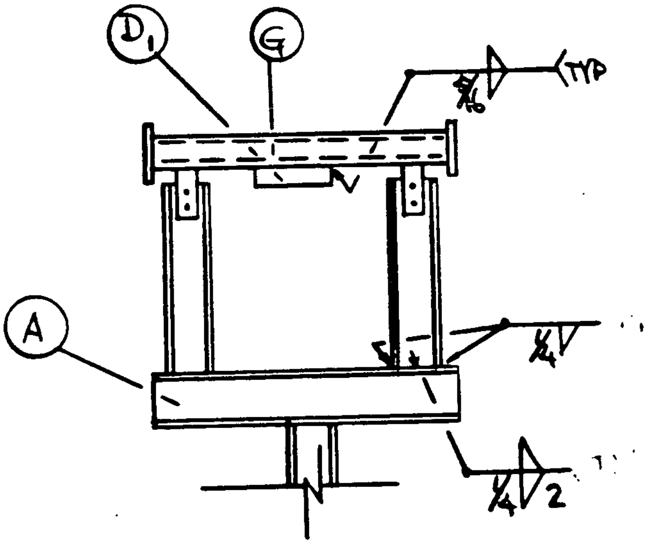
12C. DCN SUB NO. 04
12D. DATE MAR 31 1980
12E. SCN NO.

REF. DWG. OR SPEC. 2-RC072-H-001. SHEET NO. REV. 3
5. TITLE PIPE SUPPORT ASSEMBLY
NAME

6. DESIGN ORIGIN: ENGRG ☒ VENDOR ☐ (IDENTIFY)
12:1

7. EXISTING CONDITION: CHANGE SHOP WELD TO FIELD WELD.
EXCESSIVE CLR. THICKER PL REQ'D BY FIELD

8. CHANGE REQUEST/SKETCH



LOOKING EAST (PARTIAL)

PL 5152

BILL OF MAT'L (BY FIELD)

1. CHANGE QUANTITY OF ITEM D FROM 2 TO 1.
2. ADD ITEM D1 PL 1½"x8x8. (1 REQ'D)
3. CHANGE ITEM G FROM T.S. 3x6x½ TO T.S. 6x4x½"

PROJECT ENGINEERING APPROVAL PER

9. Lai Chi Shing
PREPARED BY

10. REVIEWED BY DATE
CIVIL
ELEC
MECH
WELD
PIPE R.J.S. 3-15-80
INSTR
NUC
QAE G.W. Sheppard 3-17-80

11. APPROVAL OF FLD DISPOSITION
D. Christensen
PROJECT FIELD ENGINEER
DATE 3-15-80

12. PROJECT ENGRG APPROVAL: YES ☑ NO ☐ EGS P.E. R.L. Rogers/RLH DATE 3-15-80

REMARKS: **CONVERT TO DCN**

13. QUALITY ASSURANCE ENGINEER (FIELD): G.W. Sheppard DATE 3-17-80

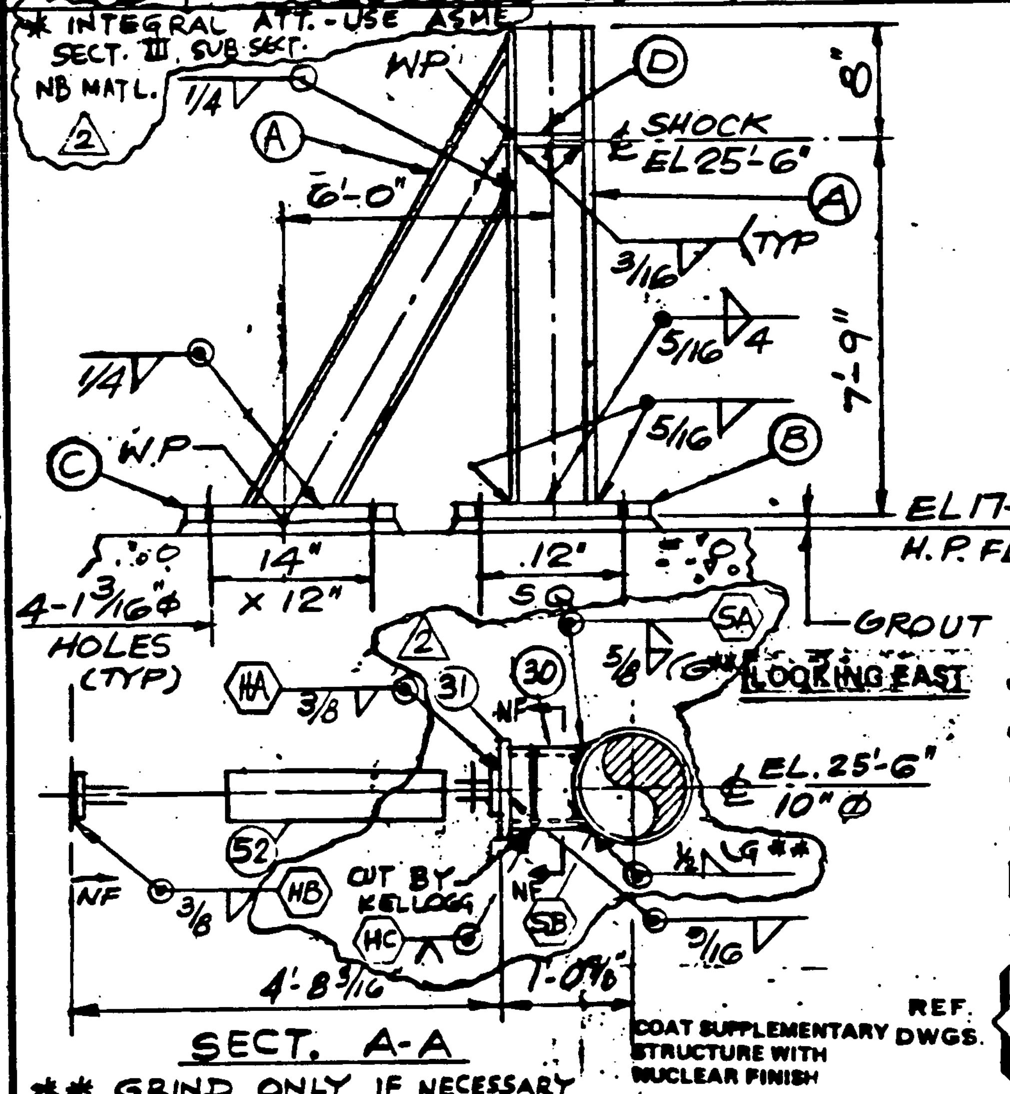
14. SCE ENGINEERING APPROVAL P.E. DATE

15. BECHTEL QUALITY ENGINEER/QUALITY ASSURANCE G.W. Sheppard DATE 3-28-80

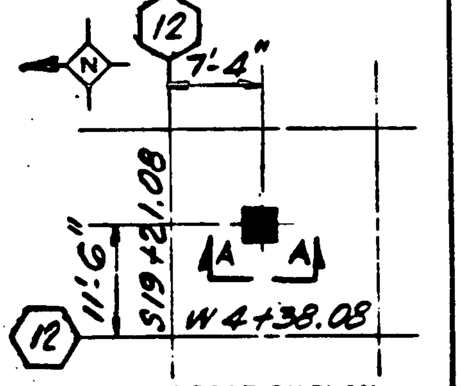
16. ADDITIONAL DISTRIBUTION

PF-0924 (10079) 10/78

ITEM NO.	NO. REQ'D	PART NO.	SIZE / DESCRIPTION	NF	AISC	NOTES
45	4		C.S. BAR 3/16" x 3/16" x 3"			"BY FIELD"
52	1	307	35-6 MECH. SHOCK SUPPRESSOR	X		BY GRINNELL
			W/ OPTION 1, C.S. = 4.205"			
			H.S. = 1.795", W = 8.75"			
		–	LOAD = 29200			
30	1	–	6" SCH. 120 S.S. DUMMY PIPE	*		BY KELLOGG
31	1	–	12" x 12" x 1¼" C.S. PL	X		BY KELLOGG
A	2		W 8 x 31			
B	1		PL 1 x 16 x 1'-4"			
C	1		PL 3/4 x 16 x 1'-6"			SPEC.
D	2		3/8" STIFF. PL'S			5023-206-18
	8		US-8-HC-LCSF-175			



** GRIND ONLY IF NECESSARY TO GUARANTEE CONCAVITY.



LOCATION PLAN

AREA NO. 2C06-2

DESIGN CODE: C

TYPE: 6

PROJ. CLASS A (QC I)

MAX. TEMP. 650°F

OPER. LOAD (LBS.) 2

DESIGN LOAD (LBS.) ±33456 (X-DIR)

5 PROB. NO. 52 PT. NO. 78

SPOOL NO. 2-RC-072-1

REF. DWGS.
ISO 1201-016-1
PIPE 40400
STEEL ——

TAG NO. S2-RC-072-H-002

\# 825

NO.	REVISIONS	DATE	DR.	CHK.	E.G.S.	CHF. E.	P.E.	Q.A.E.
2	INCORPORATED DCNS 1 & 2	2-26-80	KG	[illegible]	1201	—	RIP/SA	[illegible]
1	INCORP. PER FCR # 12149-S	5-24-78	CWG	RG	R.T. HSN	—	[illegible]	[illegible]
0	ISSUED FOR CONSTRUCTION	5-12-77	SL	BP/AF	WLM HSN RT	—	[illegible]	JRM

BECHTEL POWER CORPORATION NORWALK, CALIFORNIA	J.O. NO.	SAN ONOFRE NUCLEAR GENERATING STATION
	FILE	PIPE SUPPORT ASSEMBLY
JOB NO. 10079 / DATE / APPROVED		SOUTHERN CALIFORNIA EDISON COMPANY SCALE: NTS LOS ANGELES, CALIF.

PF-633(10079) 4/75

01-02-01

SAN ONOFRE NUCLEAR GENERATING STATION
UNITS 2 & 3
FIELD CHANGE REQUEST/DCN/SCN

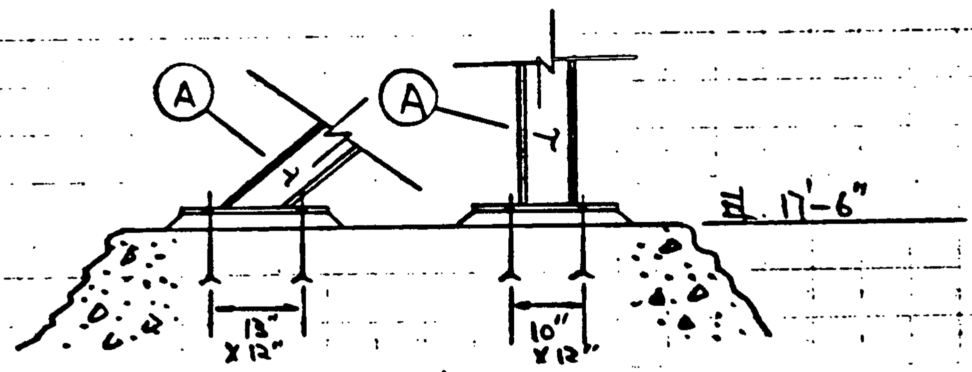
A(QCI) 2PEP JOB NO. 10079 (I.C.) 2006?	1. FCR NO. S-4955 DATE 4-3-80 2. PAGE 1 OF 1 3. UNIT NO. 2	12A. QUALITY CLASS I 12B. SPEC ADDEND. NO.	12C. DCN SUB NO. 03 12D. DATE APR 30 1980 12E. SCN NO.

4. REF. DWG. OR SPEC. PC-072-H-002 SHEET NO. REV. 2 | 5. TITLE PIPE SUPPORT ASSEMBLY

6. DESIGN ORIGIN: ENGRG ☒ VENDOR ☐ (IDENTIFY) NAME
1201

7. EXISTING CONDITION: ROCKBOLTS HIT REBAR

8. CHANGE REQUEST/SKETCH



LOOKING EAST (PARTIAL)

NO NEW MAT'L REQ'D

PL 5356

PROJECT ENGINEERING APPROVAL PER

10. REVIEWED BY	DATE			
CIVIL		PIPE	NJS	4-7-80
ELEC		INSTR		
MECH		NUC		
WELD		QAE	J W Sheppard	4-8-80

9. [signature] PREPARED BY

11. APPROVAL OF FLD DISPOSITION [signature] PROJECT FIELD ENGINEER DATE APR 08 1980

12. PROJECT ENGRG APPROVAL: YES ☒ NO ☐ EGS P.E. R.L. Rogers /RH DATE 4-7-80

REMARKS: **CONVERT TO DCN**

13. QUALITY ASSURANCE ENGINEER (FIELD): J W Sheppard DATE 4-8-80

14. SCE ENGINEERING APPROVAL P.E. DATE

15. BECHTEL QUALITY ENGINEER/QUALITY ASSURANCE [signature] DATE 4-28-80

16. ADDITIONAL DISTRIBUTION

PF-0924 (10079) 10/78

X

BECHTEL

SAN ONOFRE NUCLEAR GENERATING STATION
UNITS 2 & 3
FIELD CHANGE REQUEST/DCN/SCN

1. FCR NO. S-5051	12A. QUALITY CLASS I
DATE 4-18-80	12B. SPEC ADDEND. NO.
2. PAGE 1 OF 1	12C. DCN SUB NO. 83
3. UNIT NO. 2	12E. SCN NO.

MAY 13 1980

(QCI) (1.e) 2C06-3
BBB JOB NO. 10079

4. REF. DWG. OR SPEC. S2-RC-072-H002 SHEET NO. REV. 2

5. TITLE PIPE SUPPORT ASSEMBLY
NAME

6. DESIGN ORIGIN: ENGRG ☒ VENDOR ☐ (IDENTIFY)
1201

7. EXISTING CONDITION: ITEM 45 NOT REQ'D

8. CHANGE REQUEST/SKETCH

BILL OF MAT'L

1. DELETE ITEM 45.

PL 5425

PROJECT ENGINEERING APPROVAL PER

10. REVIEWED BY DATE

CIVIL			PIPF	NJS	4-24-80
ELEC			INSTR		
MECH			NUC		
WELD			QAE	[signature]	4-25-80

9. [signature]
PREPARED BY

11. APPROVAL OF FLD DISPOSITION
[signature]
PROJECT FIELD ENGINEER
DATE 4-25-80

12. PROJECT ENGRG APPROVAL: YES ☒ NO ☐ EGS P.E. R.L. Rogers/RA DATE 4-24-80

REMARKS: CONVERT TO DCN

13. QUALITY ASSURANCE ENGINEER (FIELD): [signature] DATE 4-25-80

14. SCE ENGINEERING APPROVAL P.E. DATE

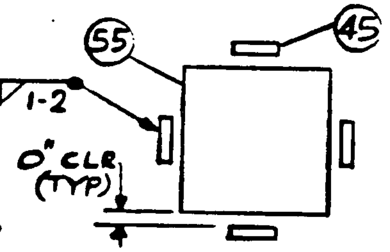
15. BECHTEL QUALITY ENGINEER/QUALITY ASSURANCE [signature] DATE 5-9-80

16. ADDITIONAL DISTRIBUTION

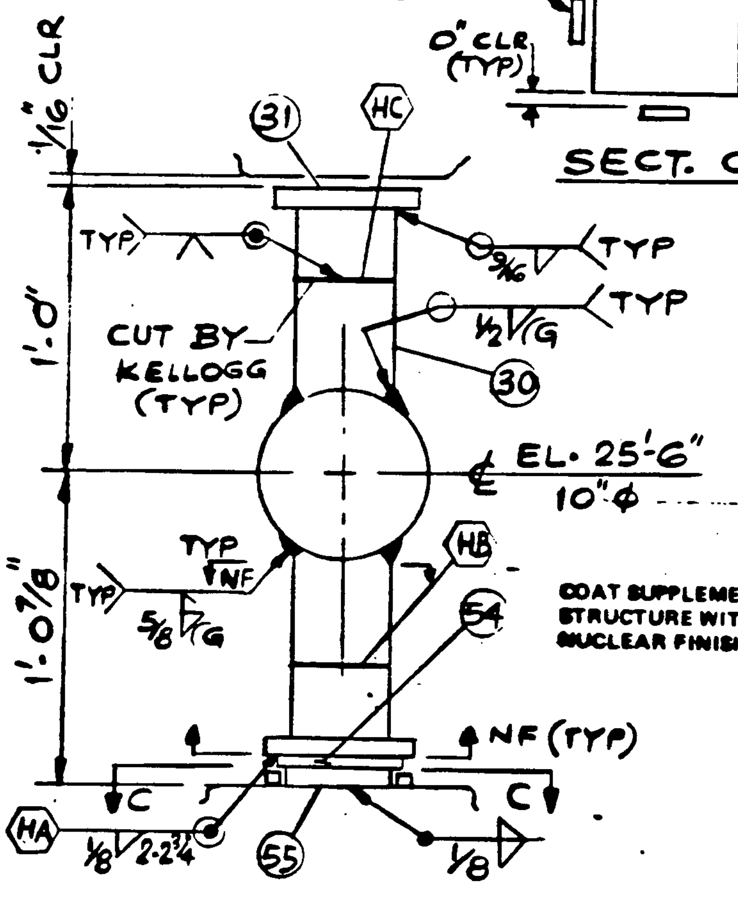
PF-0924 (10079) 10/78

S.U.S. 2 BH

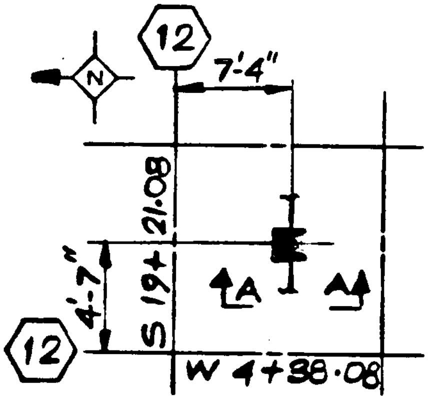
ITEM NO	NO. REQ'D	PART NO	SIZE	DESCRIPTION	NF	AISC	NOTES
31	2	–	1¼ × E × 0'-8" C.S. ℞		×		BY KELLOGG
30	2	–	6"φ SCH. 120 S.S. DUMMY PIPE		*		" "
54	1	–	UPPER SLIDE BEARING ℞				BY FIELD
			10 GA S.S. 7½" × 7½"				
55	1	–	LOWER SLIDE BEARING ℞				" "
			BRONZITE ¼" × 7" × 7"				
45	4	–	3/16" × 3/16" × 3" C.S. BAR				" " .
*INTEGRAL ATTACH. USE ASME SECT. III, SUB SECT 'NB' MATL							



SECT. C-C



SECT. A-A



LOCATION PLAN

COAT SUPPLEMENTARY STRUCTURE WITH NUCLEAR FINISH

(I.C.) AREA NO. 2C06-2

PMC : FEO			TYPE 2	
PROJ CL	PIPE A (Q.C.I)			MAX. TEMP 650°F
QUAL CL	STEEL II			
DESIGN		X	Y	Z
	M +	—	—	—
	(FT-LBS) −	—	—	—
	P +	0	2777	0
	(LBS) −	0	4536	0

S PROB. NO. 52 PT. NO. 83

SPOOL NO. 2-RC-072-2

REF. DWGS.
- ISO 1201-016-1
- PIPE 40400
- STEEL —

1201 SHT 1 OF 2

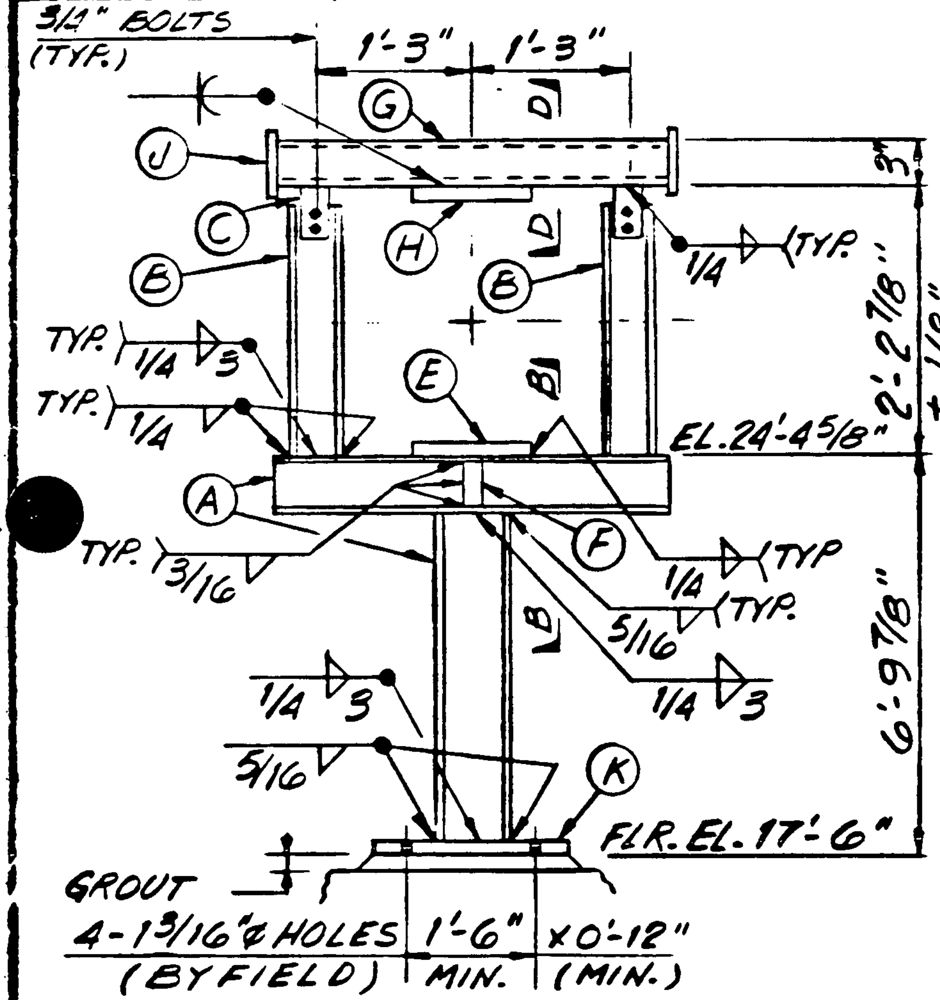
TAG NO. S2-RC-072-H-003

4	REDRAWN & INC. DCN 1&2	2-28-80	KG	JB	ST MB	RLB [illegible]
	REVISIONS	DATE	DR.	CHK.	E.G.S.	P.E. Q.A.E.

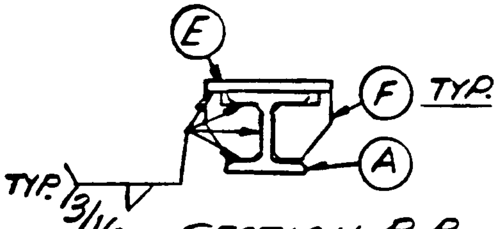
BECHTEL POWER CORPORATION NORWALK, CALIFORNIA	J.O. NO.	SAN ONOFRE NUCLEAR GENERATING STATION
	FILE	PIPE SUPPORT ASSEMBLY
JOB NO. 10079 / DATE / APPROVED		SOUTHERN CALIFORNIA EDISON COMPANY SCALE: NTS LOS ANGELES, CALIF.

PF-633 (10079) 7/79

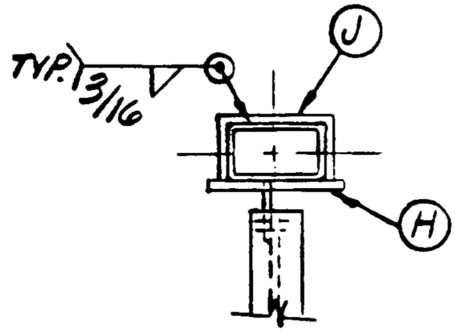
ITEM NO	NO REQ'D		DESCRIPTION	MF AISC	
A	2		W6X25		SPEC. S023-206-1E
B	2		W4X13		
C	2		PL 3/8 X 2 1/2 X 0'-6"		
[illegible]	1		PL 1/2 X 8 X 0'-8"		
F	2		5/8" GUSSET PLATE		
G	1		T.S. 3X6X.50		BY FIELD
H	1		PL 1/2 X 8 X 0'-8"		
J	2		PL 1/4 X 4 X 0'-7"		
K	1		PL 3/4 X 16 1/2 X 1'-10"		
	4		3/4" ⌀ HEX BOLTS		
	4		US-8-HC-LCSF-175		



LOOKING EAST



SECTION B-B



SECTION D-D

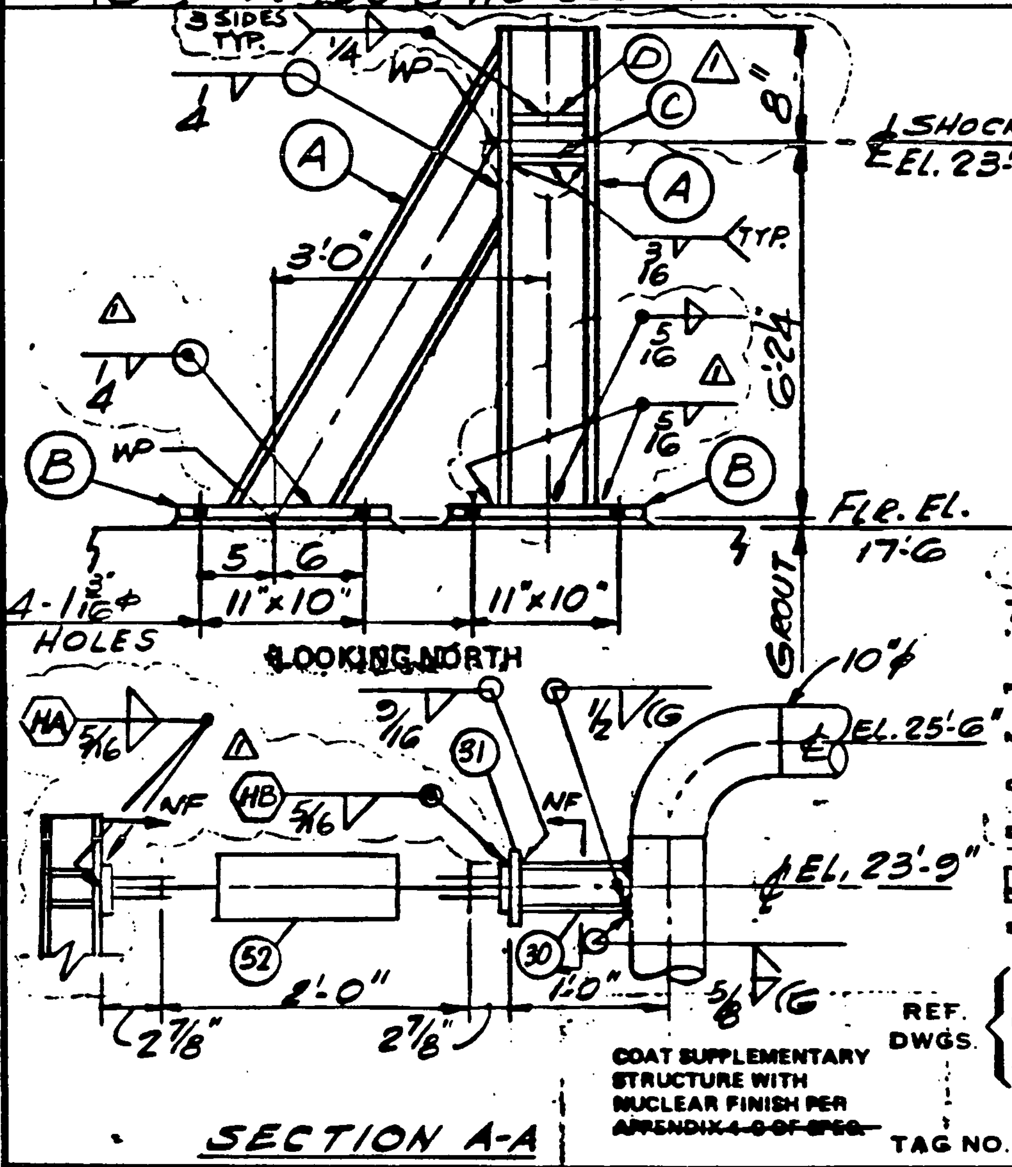
1201 SHT 2 OF 2

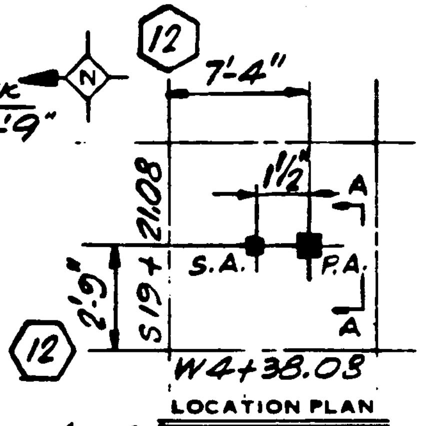
S2-RC-072-H-003 REV 4

BECHTEL POWER CORPORATION NORWALK, CALIFORNIA	JOB NO	SAN ONOFRE NUCLEAR GENERATING STATION
	FILE	PIPE SUPPORT ASSEMBLY
JOB NO. 10079 / DATE / APPROVED		SOUTHERN CALIFORNIA EDISON CO. SCALE NTS LOS ANGELES

SUS - 2 BHA

ITEM NO.	NO. REQ'D	PART NO.	SIZE / DESCRIPTION	NF	AISC	NOTES
52	1	306	10-6 MECH. SHOCK SUPPRESSOR	X		BY GRINNELL
			W/ OPTION 1 C.S. = 3.83"			
			H.S. = 2.17			
30	1	-	6" SCH. 120 S.S. DUMMY PIPE	*		BY KELLOGG
31	1	-	8"×8"×1¼" C.S. PL	X		BY KELLOGG
	△1	* INTEGRAL ATTACH. USE ASME SUBSECT. "NB" MAT'L.				
A	2	-	W6×25		X	SPEC.
B	2	-	PL 1"×14×1'-3"		X	S023-206-18
C	2	-	3/8" STIFF. PL^S		X	
D	2	-	3/8" STIFF. PL △		X	BY FIELD
	8	-	US-8-HC-LCSF-175			"BY FIELD"





(JC) AREA NO. 2C06-2

PMC- FEO △
TYPE: 6

PROJ. CLASS A (QC1)

MAX. TEMP. 650°F

OPER. LOAD (LBS.) —

△ DESIGN LOAD (LBS) Pz = ±5151

S PROB. NO. 52 PT. NO. 83

SPOOL NO. 2-RC-072-2

REF. DWGS. ISO. 1201-016-1 PIPE 40400 STEEL —

COAT SUPPLEMENTARY STRUCTURE WITH NUCLEAR FINISH PER ~~APPENDIX 4-G OF SPEC.~~

TAG NO. S2-RC-072-H-004

NO.	REVISIONS	DATE	DR.	CHK.	E.G.S.	CHF. E.	P.E.	Q.A.E.
1	INCORP. DCN 1, 2 & 3 & FER 2453	2-26-80				—		
0	ISSUED FOR CONSTRUCTION	5-12-77						

BECHTEL POWER CORPORATION
NORWALK, CALIFORNIA

J.O. NO.

FILE

JOB NO. 10079 | DATE | APPROVED

SAN ONOFRE NUCLEAR GENERATING STATION

PIPE SUPPORT ASSEMBLY

SOUTHERN CALIFORNIA EDISON COMPANY
SCALE: NTS
LOS ANGELES, CALIF.

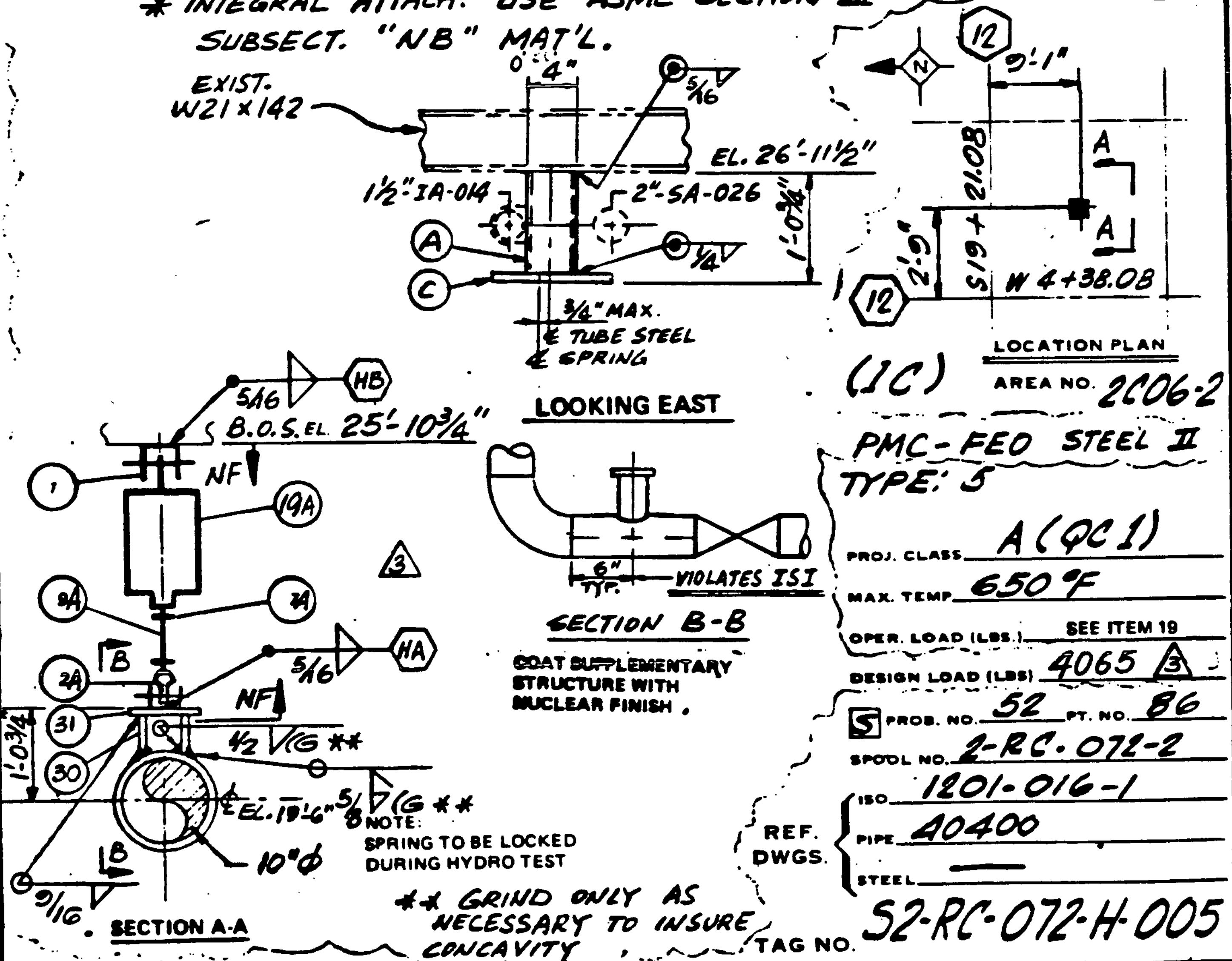
PF-633(10079) 4/75

01-02-01

SUS-2BBA

ITEM NO.	NO. REQ'D	PART NO.	SIZE	DESCRIPTION	NF	MISC	NOTES
1	2	66	1 1/8"	BEAM ATTACHMENT	X		BY FIELD
2A	1	290	1 1/8"	WELDLESS EYENUT W/R.H. TAP (3)	X		BY GRINNELL
7A	2	—	1 1/8"	HEX NUT	X		"
9A	1	140N	1 1/8"	φ ROD W/R.H.T. BOTH ENDS 3'-7" LG.; W/ 7" TBE	X		BY FIELD
19A	1	B-268	14	TYPE "B" VARIABLE SPRING HL=4065# CL=3873# MVT. 1/4" ↓; W/TS	X		BY GRINNELL
30	1	-		6"φ SCH. 120 S.S. DUMMY PIPE	*		BY KELLOGG
31	1	-		8"x8"x1 1/4" C.S. PL	X		BY KELLOGG
A	1	-		T.S. 6x4x1/2 x 1'-0"	X		BY FIELD
C	1	-		PL 3/4 x 8 x 0'-8" (3)	X		"

* INTEGRAL ATTACH. USE ASME SECTION III SUBSECT. "NB" MAT'L.



LOCATION PLAN

SECTION B-B

SECTION A-A

COAT SUPPLEMENTARY STRUCTURE WITH NUCLEAR FINISH.

NOTE: SPRING TO BE LOCKED DURING HYDRO TEST

** GRIND ONLY AS NECESSARY TO INSURE CONCAVITY

(IC)

AREA NO. 2C06-2

PMC-FEO STEEL II TYPE: 5

PROJ. CLASS A (QC 1)

MAX. TEMP 650°F

OPER. LOAD (LBS.) SEE ITEM 19

DESIGN LOAD (LBS) 4065 (3)

S PROB. NO. 52 PT. NO. 86

SPOOL NO. 2-RC-072-2

REF. DWGS. ISO 1201-016-1; PIPE 40400; STEEL —

TAG NO. S2-RC-072-H-005

2A1

NO.	REVISIONS	DATE	DR.	CHK.	E.G.S.	CHF. E.	P.E.	QA.E.
2	ADDED BOTTOM OF EXIST W21x142	10-10-77			MN	—		
3	INCORP. DCN 1,2 & 3	2-26-80			KG	—		
0	ISSUED FOR CONSTRUCTION	5-12-77		BP/AL				

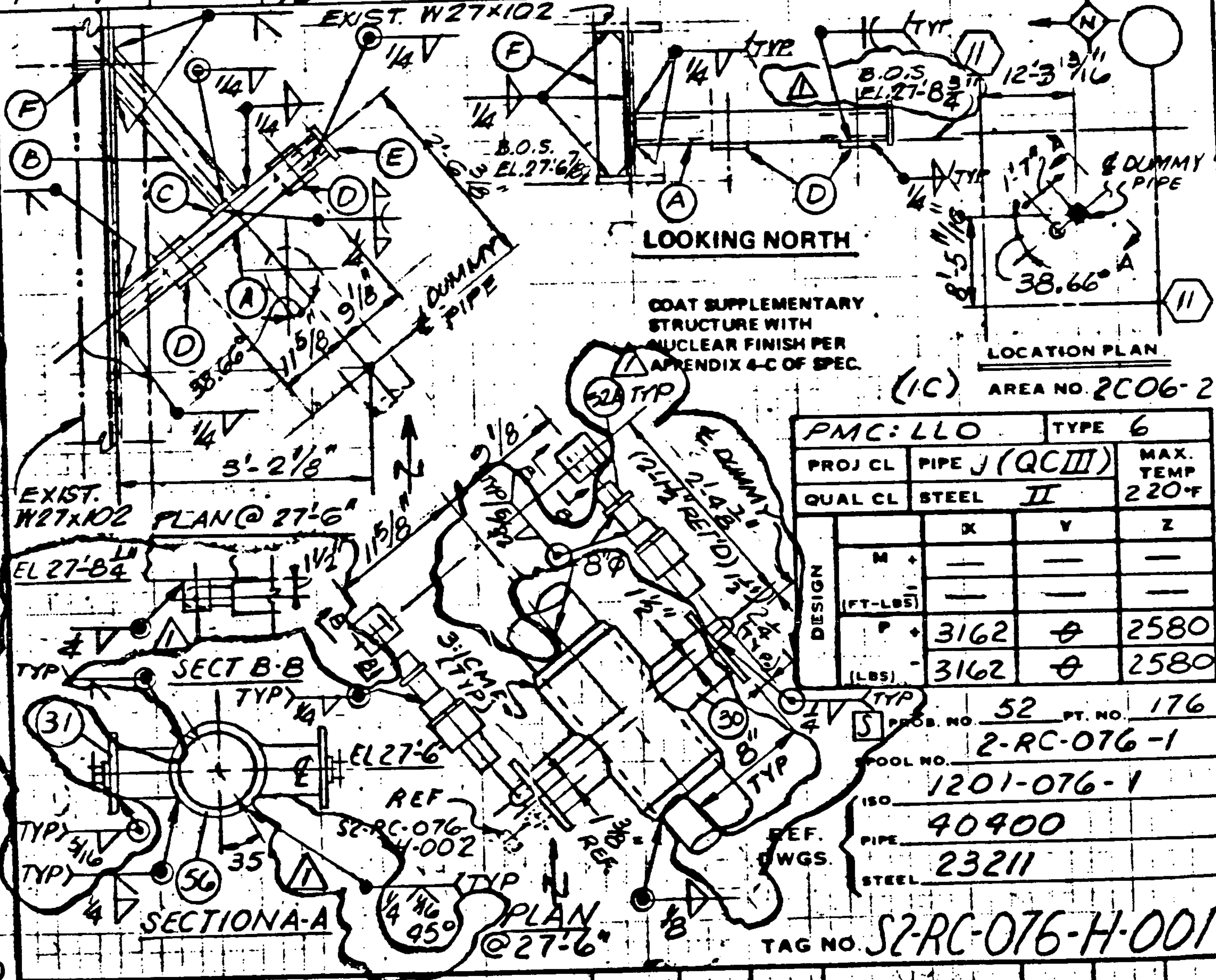
BECHTEL POWER CORPORATION NORWALK, CALIFORNIA	J.O. NO.	SAN ONOFRE NUCLEAR GENERATING STATION
	FILE	PIPE SUPPORT ASSEMBLY
JOB NO. 10079 / DATE / APPROVED		SOUTHERN CALIFORNIA EDISON COMPANY SCALE: NTS LOS ANGELES, CALIF.

05-03-02

PF-633(10079) 10/75

ITEM NO.	NO. REQ'D	PART NO.	SIZE / DESCRIPTION	NF	AISC	NOTES
30	2	—	4"φ SCH40S DUMMY PIPE S.S			SPEC
31	2	—	℞ 3/4 x 7" x 0'-7" CS END PLATE			5023-409-23
56	2	—	3/8 x 10" S.S. CURVED PLATE			
52A	2	—	PSA 3-5" STROKE PIN 1811023-26 SHOCK			BY PSC
	△		ARRESTOR KIT, CPS = 3 3/8", HPS = 1 5/8"			
			LOAD = 3666# EA			
A	1		T.S. 4 x 4 x .375			
B	1		T.S. 4 x 4 x .375			
C	1		℞ 1/2 x 5 x 0'-5"		X	SPEC
D	2		℞ 1/2 x 5 1/2 x 0'-5 1/2"			5023-206-18
E	1		℞ 1/4 x 5 x 0'-5"			
F	1		3/8" STIFF. ℞			

SUS: 2 BHA



AREA NO. 2C06-2

PMC: LLO			TYPE 6
PROJ CL	PIPE J (QC III)		MAX. TEMP
QUAL CL	STEEL II		220°F
DESIGN	X	Y	Z
M + (FT-LBS)	—	—	—
M −	—	—	—
P + (LBS)	3162	0	2580
P −	3162	0	2580

PROB. NO. 52 PT. NO. 176

SPOOL NO. 2-RC-076-1

REF. DWGS. ISO 1201-076-1

PIPE 40400

STEEL 23211

TAG NO. S2-RC-076-H-001

NO.	REVISIONS	DATE	DR.	CHK.	E.G.S.		P.E.	QAE
1	SNUBBER VENDOR CHANGED	10-30-79	JL	AG	GM HB	—		
0	ISSUED FOR CONSTRUCTION	7-11-79	YM GC	WT YL	HB JJ GM HB	—		C7

BECHTEL POWER CORPORATION
NORWALK, CALIFORNIA

J.O. NO. | FILE | JOB NO. | DATE | APPROVED

SAN ONOFRE NUCLEAR GENERATING STATION

PIPE SUPPORT ASSEMBLY

SOUTHERN CALIFORNIA EDISON COMPANY
LOS ANGELES, CALIF.

MAR 31 1980

SAN ONOFRE NUCLEAR GENERATING STATION UNITS 2 & 3 FIELD CHANGE REQUEST/DCN/SCN J(QC III) (J.C.) 2BHA JOB NO. 10079 2C06-2	1. FCR NO. S-4837 DATE 3-20-80 2. PAGE 1 OF 1 3. UNIT NO. 2	12A. QUALITY CLASS III 12B. SPEC ADDEND. NO.	12C. DCN SUB NO. 02 12D. DATE APR 8 1980 12E. SCN NO.

4. REF. DWG. OR SPEC. S2-RC-076-H-001 SHEET NO. REV. 1

5. TITLE Pipe Support Assembly

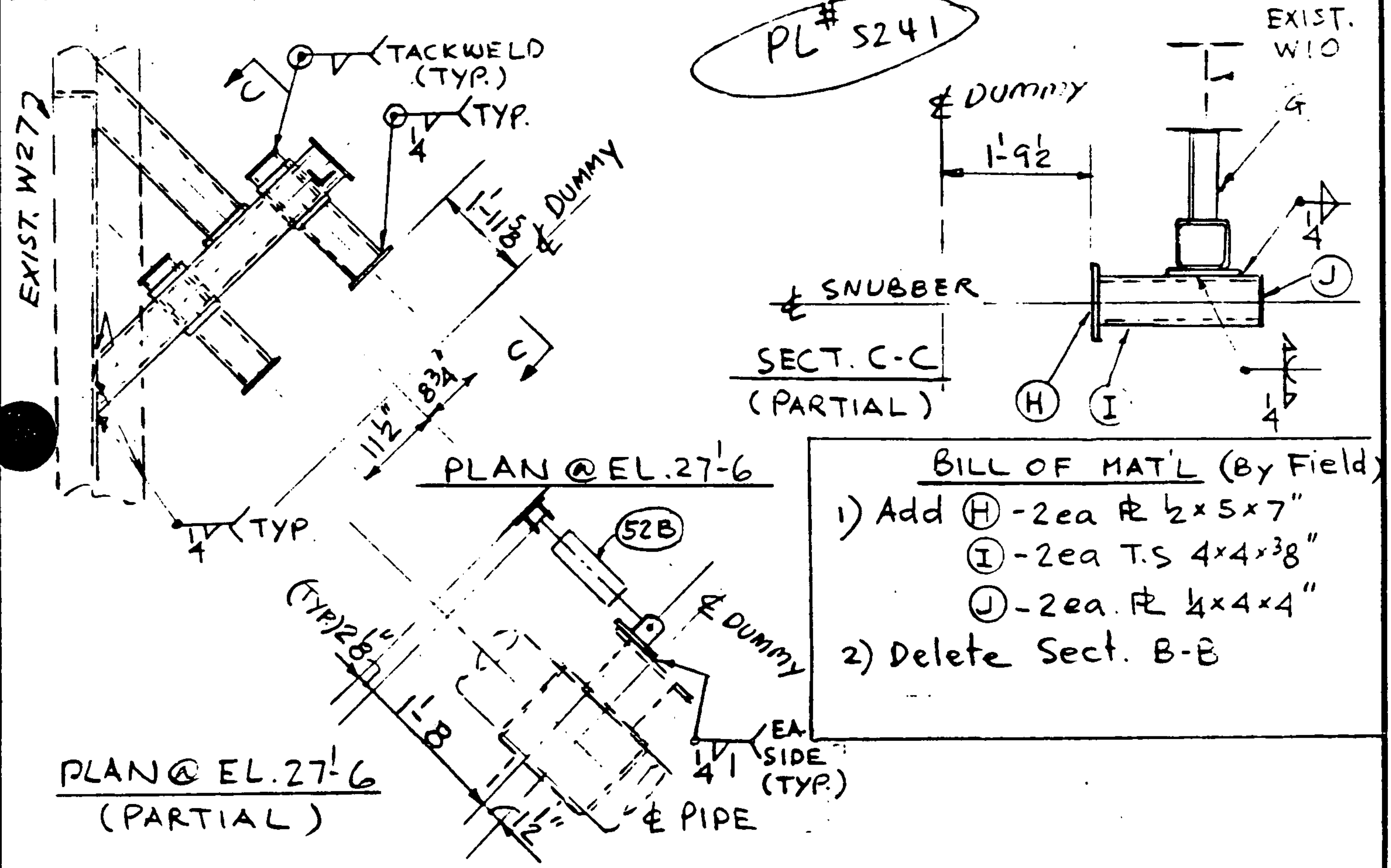
NAME

6. DESIGN ORIGIN: ENGRG ☒ VENDOR ☐ (IDENTIFY)

7. EXISTING CONDITION:

Need to revise Framing

8. CHANGE REQUEST/SKETCH



BILL OF MAT'L (By Field)

1) Add (H) - 2ea PL 1/2×5×7"
(I) - 2ea T.S 4×4×3/8"
(J) - 2ea PL 1/4×4×4"

2) Delete Sect. B-B

PROJECT ENGINEERING APPROVAL PER

10. REVIEWED BY	DATE			
CIVIL		PIPE	NJS	3-21-80
ELEC		INSTR		
MECH		NUC		
WELD		QAE		

9. P. Tannirat — PREPARED BY

11. APPROVAL OF FLD DISPOSITION — [signature] PROJECT FIELD ENGINEER

DATE 3-21-80

12. PROJECT ENGRG APPROVAL: YES ☑ NO ☐ EGS ___ P.E. R.L. Rogers/RH DATE 3-21-80

REMARKS: CONVERT TO DCN

13. QUALITY ASSURANCE ENGINEER (FIELD): N/A [initials] DATE 3-21-80

14. SCE ENGINEERING APPROVAL ___ P.E. ___ DATE ___

15. BECHTEL QUALITY ENGINEER/QUALITY ASSURANCE ___ DATE ___

16. ADDITIONAL DISTRIBUTION ___

PF-0924 (10079) 10/78

MAR 26 1980

BECHTEL

SAN ONOFRE NUCLEAR GENERATING STATION
UNITS 2 & 3
FIELD CHANGE REQUEST/DCN/SCN

J(QC III)
2BHA

JOB NO. 10079 (1.C) 2C06-2

1. FCR NO. S-4736
DATE 3/12/80
2. PAGE 1 OF 1
3. UNIT NO. 2

12A. QUALITY CLASS III
12B. SPEC ADDEND. NO.
12C. DCN SUB NO. 01
12D. DATE MAR 31 1980
12E. SCN NO.

4. REF. DWG. OR SPEC. S2-RC-076-H-001 SHEET NO. REV. 1
5. TITLE Pipe Support Assembly
NAME

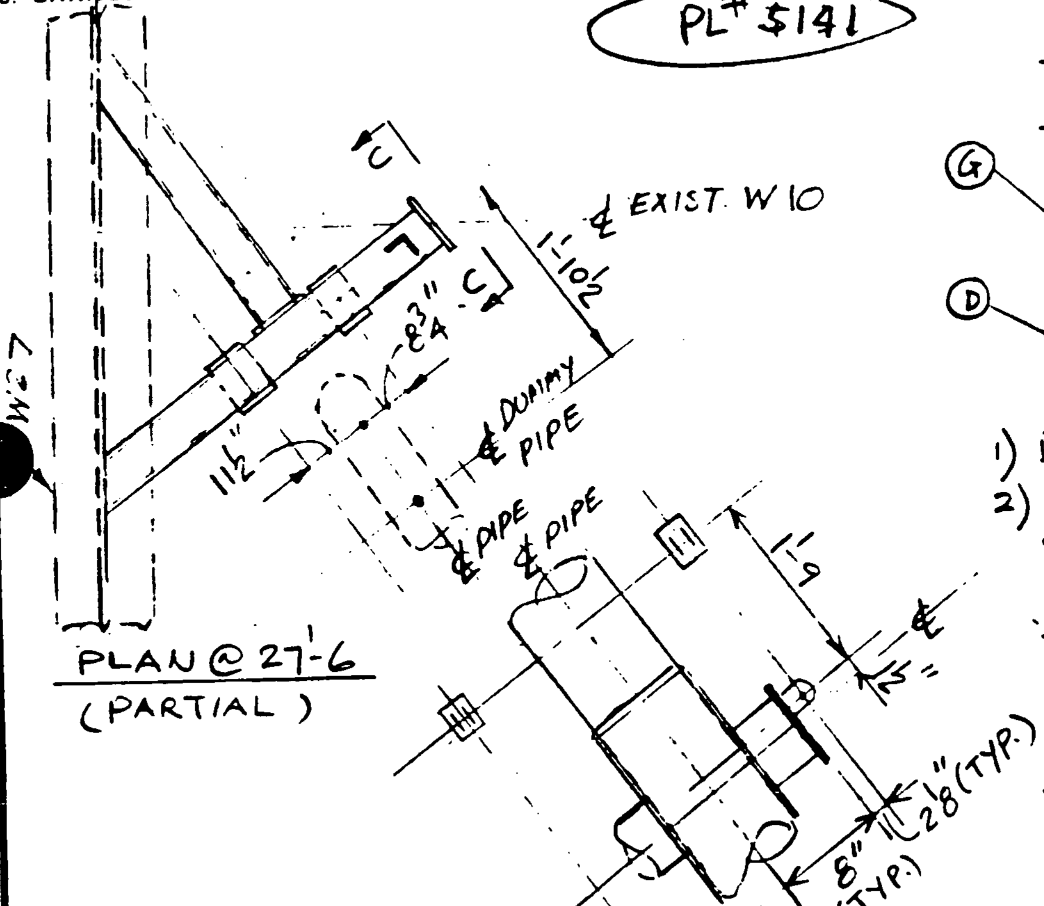
6. DESIGN ORIGIN: ENGRG ☒ VENDOR ☐ (IDENTIFY)

7. EXISTING CONDITION:

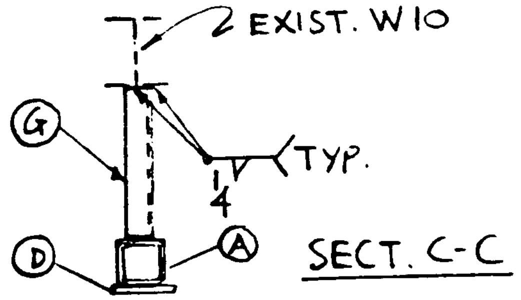
Item 52A Suppressor not in stock

8. CHANGE REQUEST/SKETCH

PL# 5141



PLAN @ 27'-6
(PARTIAL)



SECT. C-C

BILL OF MAT'L (By Field)

1) Delete Item 52A
2) Add Item 52B use Mech shock Arrestor retag 2-ea from S2-RC-147-H-001 - Fig. 306 No 3-5" stroke CPS = 3 3/8", HPS = 1 5/8" Load = 3666# ea.
3) Add item G 1-∠3×3×1/4

PLAN @ 27'-6
(PARTIAL)

PROJECT ENGINEERING APPROVAL PER

10. REVIEWED BY DATE

CIVIL			PIPE	N.S.	3-14-80
ELEC			INSTR		
MECH			NUC		
WELD			QAE	[signature]	3-17-80

9. P. Tannirat
PREPARED BY

11. APPROVAL OF FLD DISPOSITION
[signature]
PROJECT FIELD ENGINEER
DATE 3-15-80

12. PROJECT ENGRG APPROVAL: YES ☒ NO ☐ EGS ______ P.E. P.L. Rogers/BBm DATE 3-14-80

REMARKS Convert to DCN

13. QUALITY ASSURANCE ENGINEER (FIELD): [signature] DATE 3-18-80

14. SCE ENGINEERING APPROVAL ______ P.E. ______ DATE ______

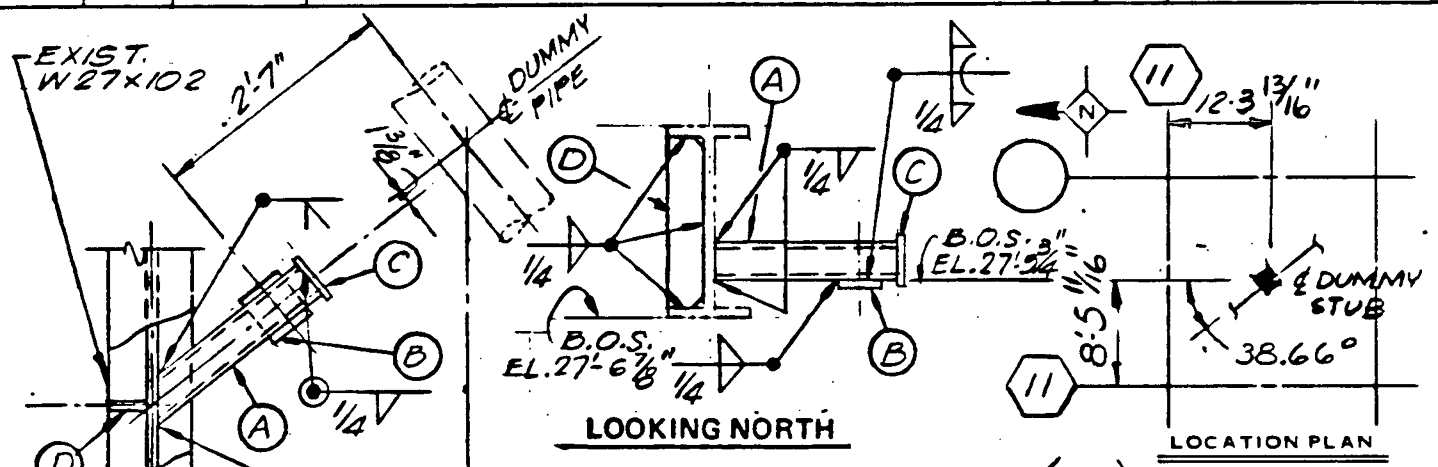
15. BECHTEL QUALITY ENGINEER/QUALITY ASSURANCE ______ DATE ______

16. ADDITIONAL DISTRIBUTION ______

PF-0924 (10079) 10/78

ITEM NO	NO REQ'D	PART NO.	SIZE DESCRIPTION	NF	AISC	NOTES
52A	1		PSA 1-4" STROKE P/N 1811008-19			BY PSC
		△1	SHOCK ARRESTOR KIT, NON-NUCLEAR			
			CPS= 2 5/16", HPS= 1 1/16" LOAD= 1417#			
A	1		TS 4×4×.375			
B	1		PL 1/2×5 1/2×0'-5 1/2"			SPEC.
C	1		PL 1/4×5×0'-5"			S023-206-18
D	1		3/8" STIFF. PL			

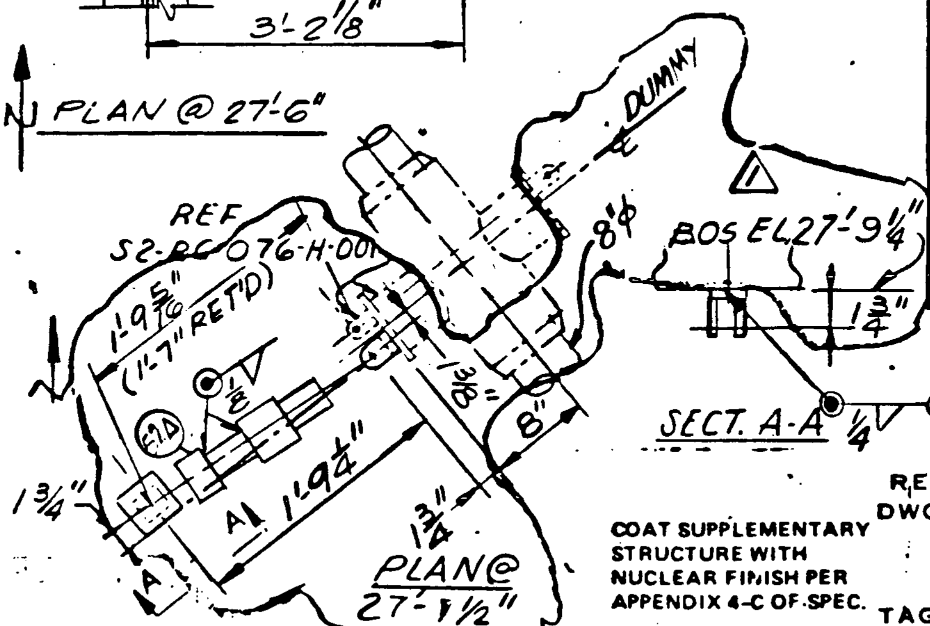
SUS:2BHA



(1C)

AREA NO. 2C06-2

PMC: LLO			TYPE 6	
PROJ CL	PIPE J(QC III)			MAX. TEMP 220°F
QUAL CL	STEEL II			
DESIGN		X	Y	Z
M (FT-LBS)	+	—	—	—
	-	—	—	—
P (LBS)	+	885	—	1107
	-	885	—	1107



S PROB. NO. 52 PT. NO. 176

SPOOL NO. 2-RC-076-1

REF. DWGS.: ISO 1201-076-1; PIPE 40400; STEEL 23211

COAT SUPPLEMENTARY STRUCTURE WITH NUCLEAR FINISH PER APPENDIX 4-C OF SPEC.

TAG NO. S2-RC-076-H-002

NO.	REVISIONS	DATE	DR.	CHK.	E.G.S.	P.E.	Q.A.E.
1	SNUBBER VENDOR CHANGED	11-9-79	JL	AG			
0	ISSUED FOR CONSTRUCTION	7-11-79					

BECHTEL POWER CORPORATION NORWALK, CALIFORNIA	J.O. NO.	SAN ONOFRE NUCLEAR GENERATING STATION
	FILE	PIPE SUPPORT ASSEMBLY
JOB NO. 10079 / DATE / APPROVED		SOUTHERN CALIFORNIA EDISON COMPANY LOS ANGELES, CALIF. SCALE: NTS

MAR 31 1980

BECHTEL

SAN ONOFRE NUCLEAR GENERATING STATION
UNITS 2 & 3
FIELD CHANGE REQUEST/DCN/SCN

J (QC III) (I.C)
2BHA JOB NO. 10079 2C06-2

1. FCR NO. S-4839
DATE 3-19-80
2. PAGE 1 OF 1
3. UNIT NO. 2

12A. QUALITY CLASS III
12B. SPEC ADDEND. NO.

12C. DCN SUB NO. 02
12D. DATE APR 8 1980
12E. SCN NO.

4. REF. DWG. OR SPEC. S2-RC-076-H-002 SHEET NO. REV. 1
5. TITLE Pipe Support Assembly
NAME

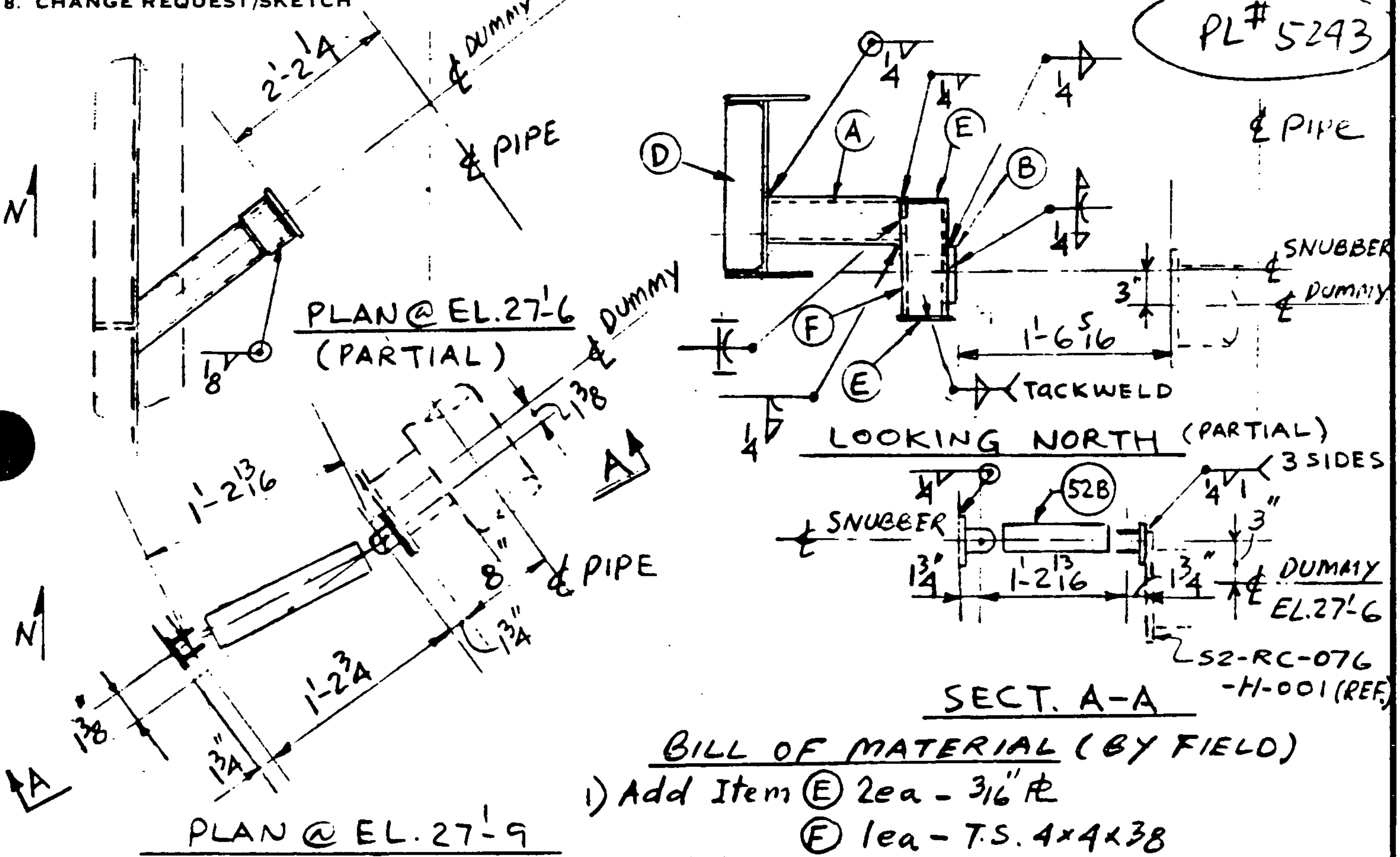
6. DESIGN ORIGIN: ENGRG ☒ VENDOR ☐ (IDENTIFY)

7. EXISTING CONDITION:

Need to revise Support Framing

8. CHANGE REQUEST/SKETCH

PL# 5243



BILL OF MATERIAL (BY FIELD)

1) Add Item (E) 2ea - 3/16" PL
(F) 1ea - T.S. 4x4x3/8
2) Delete Item (C)

PROJECT ENGINEERING APPROVAL PER

10. REVIEWED BY DATE

CIVIL			PIPE	NJS	3-21-80
ELEC			INSTR		
MECH			NUC		
WELD			QAE		

9. P. Tanniratt
PREPARED BY

11. APPROVAL OF FLD DISPOSITION
Louis J. Garvey
PROJECT FIELD ENGINEER
DATE 3-21-80

12. PROJECT ENGRG APPROVAL: YES ☑ NO ☐ EGS ______ P.E. R.L. Rogers / RH DATE 3-21-80

REMARKS: **CONVERT TO DCN**

13. QUALITY ASSURANCE ENGINEER (FIELD): N/A 1QH DATE 3-21-80

14. SCE ENGINEERING APPROVAL ______ P.E. ______ DATE ______

15. BECHTEL QUALITY ENGINEER/QUALITY ASSURANCE ______ DATE ______

16. ADDITIONAL DISTRIBUTION ______

PF-0924 (10079) 10/78

MAR 26 1980

BECHTEL

SAN ONOFRE NUCLEAR GENERATING STATION
UNITS 2 & 3
FIELD CHANGE REQUEST/DCN/SCN

1(QC III) (1.C)
2 BHA JOB NO. 10079 2C06-2

1. FCR NO. S-4733	12A. QUALITY CLASS III	12C. DCN SUB NO. 01
DATE 3/12/80	12B. SPEC ADDEND NO.	12D. DATE MAR 31 1980
2. PAGE 1 OF 1		12E. SCN NO.
3. UNIT NO. 2		

4. REF. DWG. OR SPEC. S2-RC-076-H-002 SHEET NO. REV. 1

5. TITLE Pipe Support Assembly
NAME

6. DESIGN ORIGIN: ENGRG ☒ VENDOR ☐ (IDENTIFY)

7. EXISTING CONDITION:

Item 52A suppressor not in stock

8. CHANGE REQUEST/SKETCH

(PL# 5138)

BILL OF MATERIAL

1. DELETE ITEM #52A
2. ADD ITEM #52B - 1 REQ'D - No. 1 - 4" STROKE MECHANICAL SHOCK ARRESTOR
CPS = 2 5/16", HPS = 1"/16" LOAD = 1417#
USE SURPLUS SNUBBER · S2-RC-071-H-007

NOTE: IN PLAN @ 27'-1½" CHANGE "52A" TO 52B

PROJECT ENGINEERING APPROVAL PER

10. REVIEWED BY	DATE			
CIVIL		PIPE	N.J.S.	3-15-80
ELEC		INSTR		
MECH		NUC		
WELD		QAE		

9. P. Tanmirat
PREPARED BY

11. APPROVAL OF FLD DISPOSITION
[signature]
PROJECT FIELD ENGINEER
DATE 3-15-80

12. PROJECT ENGRG APPROVAL: YES ☑ NO ☐ EGS P.E. R.L. Rogers/KH DATE 3-15-80

REMARKS: CONVERT TO DCN

13. QUALITY ASSURANCE ENGINEER (FIELD): [signature] DATE 3-18-80

14. SCE ENGINEERING APPROVAL P.E. DATE

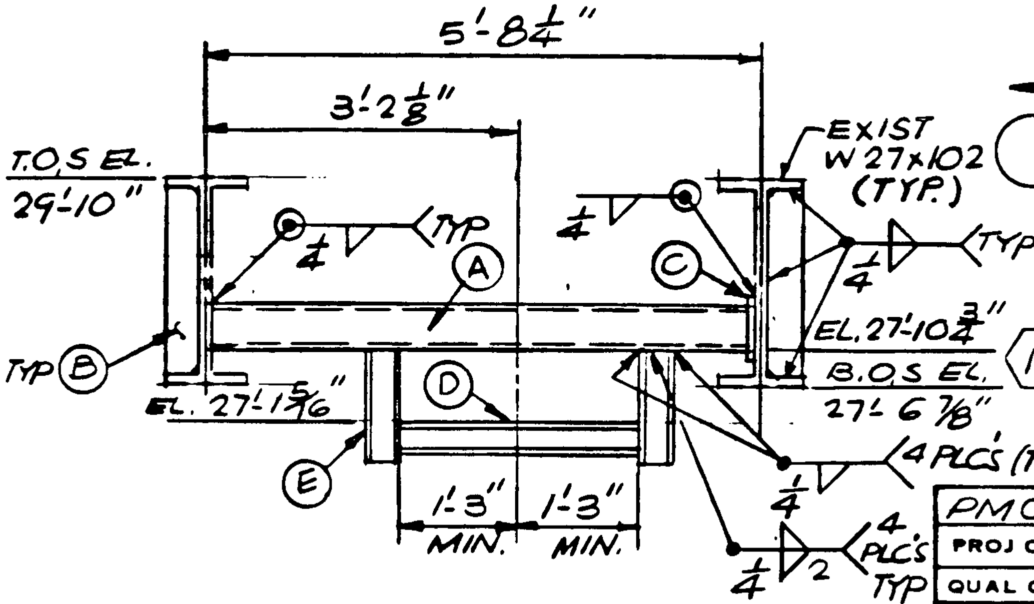
15. BECHTEL QUALITY ENGINEER/QUALITY ASSURANCE DATE

16. ADDITIONAL DISTRIBUTION

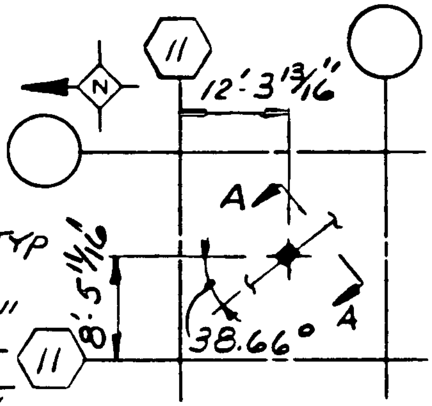
PF-0924 (10079) 10/78

SUS: 2BHA

ITEM NO.	NO. REQ'D	PART NO	SIZE	DESCRIPTION	NF	AISC	NOTES
A	1		TS 6×6×.375×5'-9"			X	
B	2		3/8" STIFF. PL			X	
C	1		PL 1/2×7"×0'-7"			X	SPEC
D	1		W4×13			X	SO23-206-18
E	2		W4×13			X	



LOOKING NORTH

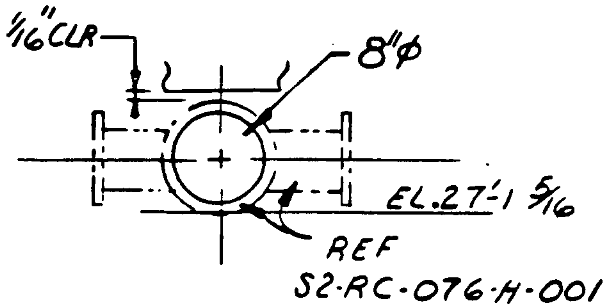


LOCATION PLAN

AREA NO 2C06-2

PMC: LLO		TYPE 6	
PROJ CL	PIPE J(QCIII		MAX. TEMP 220°F
QUAL CL	STEEL II		

DESIGN		X	Y	Z
M (FT-LBS)	+	—	—	—
	-	—	—	—
P (LBS)	+	⊖	6173	⊖
	-	⊖	2563	⊖



SECTION A-A

COAT SUPPLEMENTARY STRUCTURE WITH NUCLEAR FINISH PER APPENDIX 4-C OF SPEC.

S PROB. NO. 52 PT. NO. 176

SPOOL NO. 2-RC-076-1

REF. DWGS.
- ISO 1201-076-1
- PIPE 40400
- STEEL 23211

TAG NO. S2-RC-076-H-003

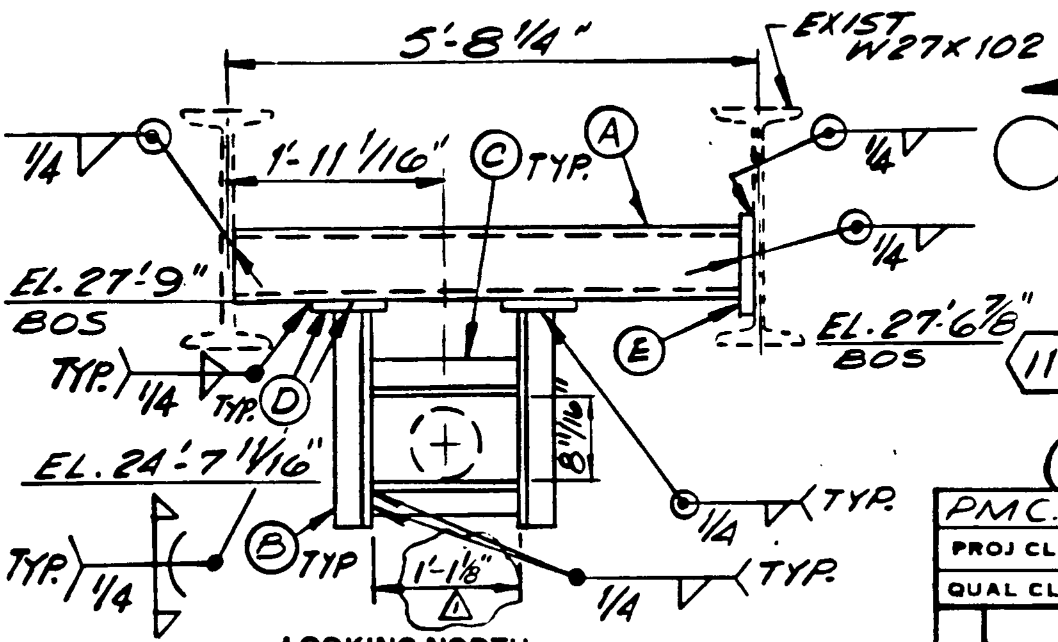
NO.	REVISIONS	DATE	DR.	CHK.	E.G.S.	P.E.	QAE
0	ISSUED FOR CONSTRUCTION	7-11-79	VM	[illegible]	P.A. [illegible]	[illegible]	CJ

BECHTEL POWER CORPORATION NORWALK, CALIFORNIA			J.O. NO.	SAN ONOFRE NUCLEAR GENERATING STATION
			FILE	PIPE SUPPORT ASSEMBLY
JOB NO. 10079	DATE	APPROVED		SOUTHERN CALIFORNIA EDISON COMPANY SCALE: NTS LOS ANGELES. CALIF.

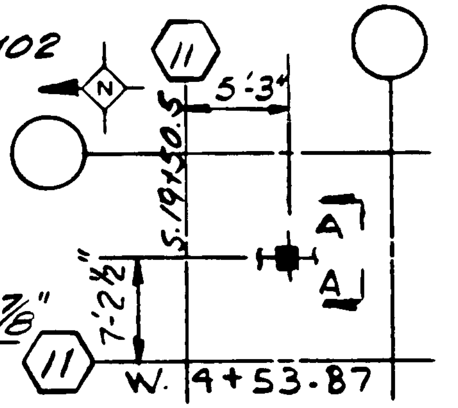
PF-633 (10079) 12/76

SUS:2BHA

ITEM NO.	NO. REQ'D	PART NO.	SIZE	DESCRIPTION	NF	AISC	NOTES
A	1		TS 4X4X 1/2			X	SPEC
B	2		L 3X3 X 3/8 X 3'-6"			X	5029-206-18
C	2		L 3X3 X 3/8			X	
D	2		PL 3/8X5X0'-5"			X	
E	1		PL 1/2X5X0'-5"			X	



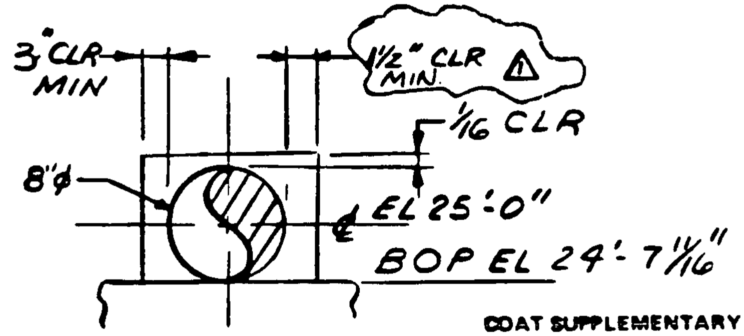
LOOKING NORTH



LOCATION PLAN

(1C) AREA NO. 2C05-2

PMC. LLO			TYPE 2	
PROJ CL	PIPE J(QCIII)			MAX. TEMP
QUAL CL	STEEL III			220 °F
DESIGN		X	Y	Z
M (FT-LBS)	+	—	—	—
	-	—	—	—
P (LBS)	+	0	500	0
	-	0	776	0



SECTION A-A

COAT SUPPLEMENTARY STRUCTURE WITH NUCLEAR FINISH

S PROB. NO. 52 PT. NO. 183

SPOOL NO. 2-RC-076-1

REF. DWGS. ISO 1201-076-1

PIPE 40400

STEEL 23211

TAG NO. S2-RC-076-H-004

NO.	REVISIONS	DATE	DR.	CHK.	E.G.S.		P.E.	QAE
1	INCORPORATED DCN 01	2-26-80	JB	KG	RL MB	—	RLP/SNA	OS
0	ISSUED FOR CONSTRUCTION	7-10-79	MK	RMM/LL	J. P.A.			CZ

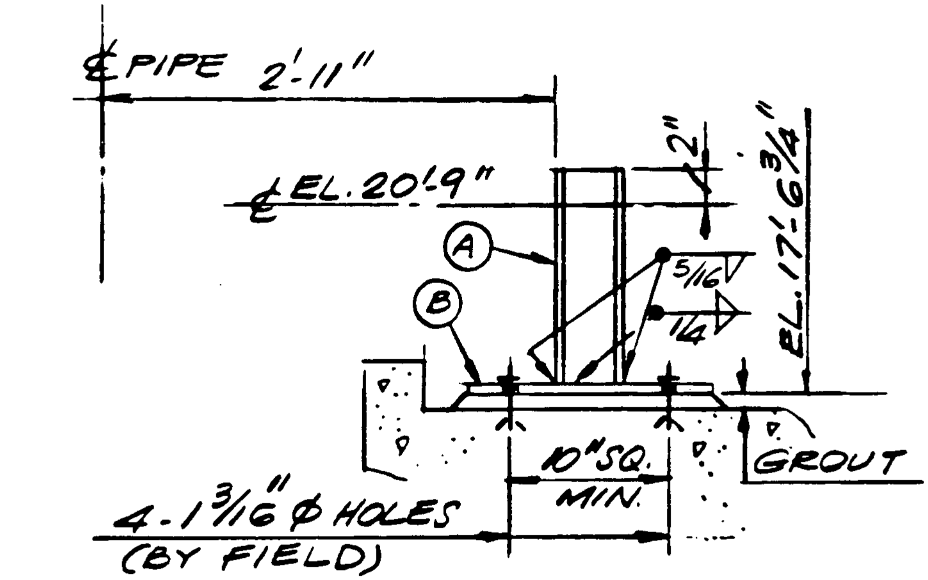
BECHTEL POWER CORPORATION NORWALK, CALIFORNIA	J. O. NO.	SAN ONOFRE NUCLEAR GENERATING STATION
	FILE	PIPE SUPPORT ASSEMBLY
JOB NO. 10079 / DATE / APPROVED		SOUTHERN CALIFORNIA EDISON COMPANY LOS ANGELES, CALIF. SCALE: NTS

PF-633 (10079) 12/76

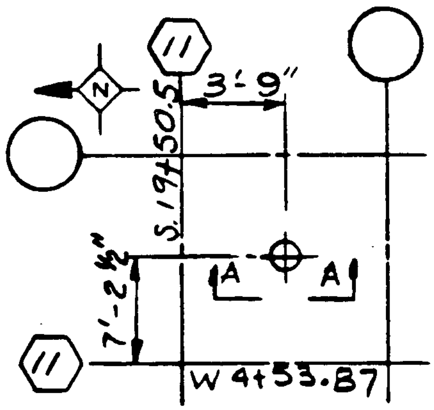
01-02-01

ITEM NO.	NO. REQ'D	PART NO.	SIZE / DESCRIPTION	NF	AISC	NOTES
30	1	–	4"Ø SCH.40S DUMMY PIPE S.S.			SPEC
31	1	–	PL ½×6×0'-6" CS END PLATE			S023-409-23
52A	1		PSA ¼-4" STROKE P/N 1811002-21			BY PSC
			SHOCK ARRESTOR KIT, CPS=1¼",			
			H.PS=3½", LOAD=32#			
A	1		W4×13×3'-5"		X	SPEC
B	1		PL 1×22×1'-10"		X	S023-206-18
	4		1"Ø CONC. FASTENERS			BY FIELD

SUS: BHA



LOOKING EAST

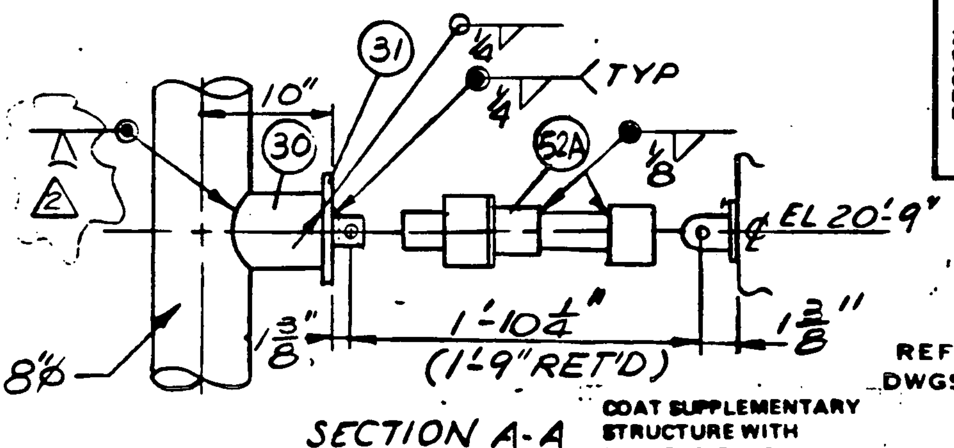


LOCATION PLAN

AREA NO. 2C05-2

(1C)

PMIC: LLO		TYPE 2	
PROJ CL	PIPE J (QC III)	MAX. TEMP	
QUAL CL	STEEL III	220°F	
DESIGN	X	Y 2	Z
M + (FT-LBS)	—	—	—
M − (FT-LBS)	—	—	—
P + (LBS)	500	θ	θ
P − (LBS)	500	θ	θ



SECTION A-A

COAT SUPPLEMENTARY STRUCTURE WITH NUCLEAR FINISH

S PROB. NO. 52 PT. NO. 186

SPOOL NO. 2-RC-076-1

REF. DWGS.
- ISO 1201-076-1
- PIPE 40400
- STEEL 23110

TAG NO. S2-RC-076-H-005

3445

NO.	REVISIONS	DATE	DR.	CHK.	E.G.S.		P.E.	QAE
2	INCORPORATED DCN 01	2-26-80	JB	KG	RE HB	—	RLH/SAM	[illegible]
1	SNUBBER VENDOR CHANGED	10-30-79	JL	AG	[illegible] HB	—	[illegible]	[illegible]
0	ISSUED FOR CONSTRUCTION	7-10-79	[illegible]	[illegible]	[illegible] HB	—	[illegible]	CJ

BECHTEL POWER CORPORATION
NORWALK, CALIFORNIA

J.O. NO.

FILE

SAN ONOFRE NUCLEAR GENERATING STATION

PIPE SUPPORT ASSEMBLY

SOUTHERN CALIFORNIA EDISON COMPANY
SCALE: NTS
LOS ANGELES, CALIF.

JOB NO.	DATE	APPROVED
10079		

MAR 31 1980

BECHTEL

SAN ONOFRE NUCLEAR GENERATING STATION
UNITS 2 & 3
FIELD CHANGE REQUEST/DCN/SCN

J(QCIII)
ZBHA JOB NO. 10079 (I.C) 2C05-2

1. FCR NO. S-4840	12A. QUALITY CLASS III	12C. DCN SUB NO. 02	
DATE 3-20-80		12D. DATE APR 8 1980	
2. PAGE 1 OF 1	12B. SPEC ADDEND. NO.		
3. UNIT NO. 2		12E. SCN NO.	

REF. DWG. OR SPEC.	SHEET NO.	REV.	5. TITLE
S2-RC-076-H-005		2	Pipe Support Assembly

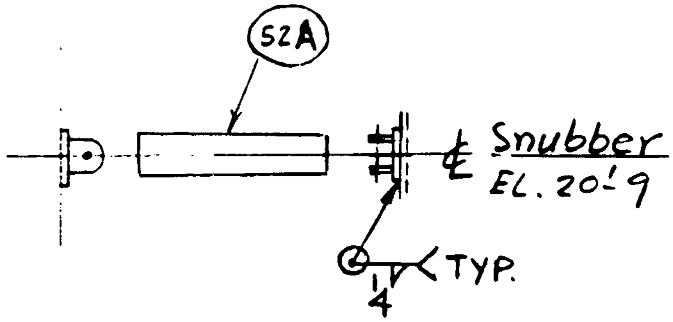
6. DESIGN ORIGIN: ENGRG ☒ VENDOR ☐ (IDENTIFY) NAME

7. EXISTING CONDITION:

Need to rotate snubber bracket

8. CHANGE REQUEST/SKETCH

PL# 5244



No new Material Req'd

SECT. A-A
(PARTIAL)

PROJECT ENGINEERING APPROVAL PER

10. REVIEWED BY	DATE			
CIVIL		PIPE	[signature]	3-21-80
ELEC		INSTR		
MECH		NUC		
WELD		QAE		

9. P. Tannirat
PREPARED BY

11. APPROVAL OF FLD DISPOSITION
[signature]
PROJECT FIELD ENGINEER
DATE 3-21-80

12. PROJECT ENGRG APPROVAL: YES ☑ NO ☐ EGS ______ P.E. R.L. Rogers/RH DATE 3-21-80

REMARKS: **CONVERT TO DCN**

13. QUALITY ASSURANCE ENGINEER (FIELD): N/A [initials] DATE 3-21-80

14. SCE ENGINEERING APPROVAL ______ P.E. ______ DATE ______

15. BECHTEL QUALITY ENGINEER/QUALITY ASSURANCE ______ DATE ______

16. ADDITIONAL DISTRIBUTION ______

PF-0924 (10079) 10/78

MAR 3 1 1980

SAN ONOFRE NUCLEAR GENERATING STATION
UNITS 2 & 3
FIELD CHANGE REQUEST/DCN/SCN

JT (Q CL III)
ZBHA

JOB NO. 10079 (I.C.) 2Y05-2

1. FCR NO. S-4115
DATE 3-8-80
2. PAGE 1 OF 1
3. UNIT NO. 2

12A. QUALITY CLASS: III
12B. SPEC ADDEND. NO.
12C. DCN SUB NO. 03
12D. DATE APR 8 1980
12E. SCN NO.

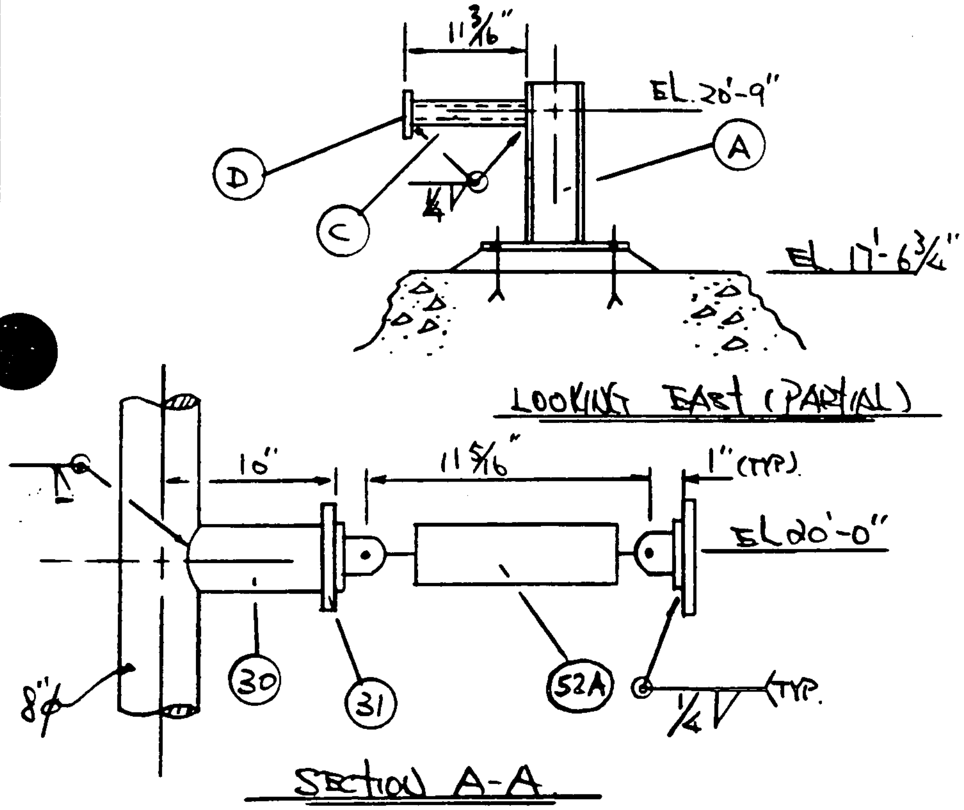
4. REF. DWG. OR SPEC.: S2-PC-016-H-005
SHEET NO.
REV. 2
5. TITLE: PIPE SUPPORT ASSEMBLY
NAME

6. DESIGN ORIGIN: ENGRG ☒ VENDOR ☐ (IDENTIFY)

7. EXISTING CONDITION: SUPPRESSOR MISSING IN FIELD.

8. CHANGE REQUEST/SKETCH

PL 5113



Bill of Mat'l (by Field)

1. Delete Item 52
2. Add 52A 1 ea Fig 306 4-4" stroke Mech. arrestor CPS = 14 HPS = 3 1/2 Load = 32# (retag from S3-SI-077-H-002)
3. Add item C 1-T.S. 3"x3"x3/16"
4. Add item D 1-PL 1/2"x5"x5"

PROJECT ENGINEERING APPROVAL PER

10. REVIEWED BY / DATE

CIVIL			PIPE	[signature]	3-14-80
ELEC			INSTR		
MECH			NUC		
WELD			QAE		

9. [signature]
PREPARED BY

11. APPROVAL OF FLD DISPOSITION
[signature]
PROJECT FIELD ENGINEER
DATE 3-15-80

12. PROJECT ENGRG APPROVAL: YES ☒ NO ☐ EGS __________ P.E. R.L. Rogers [signature] DATE 3-14-80

REMARKS: CONVERT TO DCN

13. QUALITY ASSURANCE ENGINEER (FIELD): [signature] DATE 3-18-80

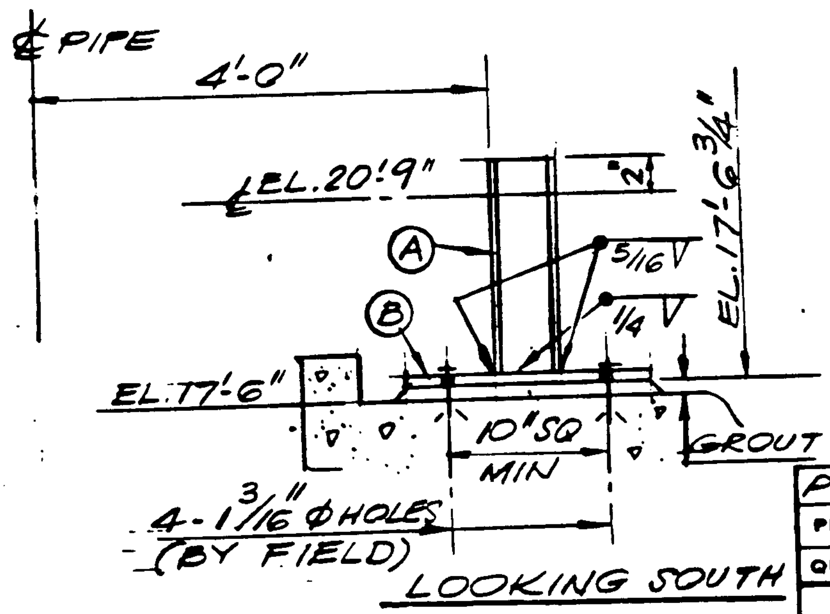
14. SCE ENGINEERING APPROVAL __________ P.E. __________ DATE __________

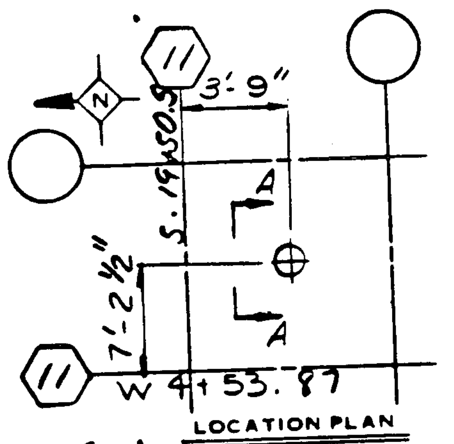
15. BECHTEL QUALITY ENGINEER/QUALITY ASSURANCE __________ DATE __________

16. ADDITIONAL DISTRIBUTION __________

SUS : BHA

ITEM NO.	NO. REQ'D	PART NO.	SIZE / DESCRIPTION	NF	AISC	NOTES
30	1	—	4"Ø SCH. 40S DUMMY PIPE S. S.			SPEC
31	1	—	PL ½ x 6 x 0'-6" CS END PLATE			S023-409-23
52A	1		PSA ¼ 4" STROKE, P/N 1811002-34	X		BY PSC
			SHOCK ARRESTOR KIT, CPS = 1¼"			
			HPS = 3½", LOAD = 194#			
					X	SPEC.
A	1		W4 x 13 x 3'-5"		X	S023-206-18
B	1		PL 1" x 22 x 1'-10"			
						BY FIELD
	4		1"Ø CONC. FASTENERS			

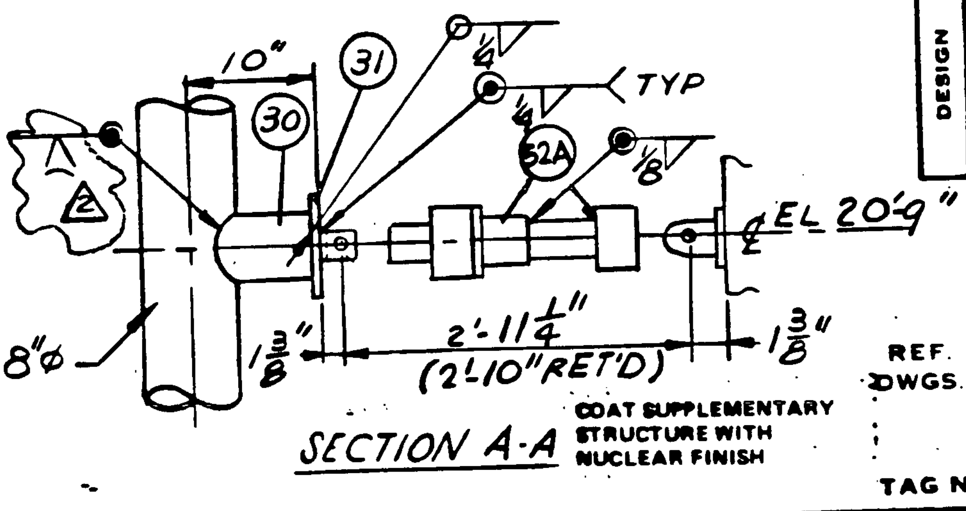




AREA NO. 2C05-2

PMC: LLO			TYPE 2
PROJ CL	PIPE J CQC III		MAX. TEMP
QUAL CL	STEEL III		220 °F

DESIGN		X	Y	Z
M (FT-LBS)	+	—		—
	−	—	—	—
P (LBS)	+	0	0	500
	−	0	0	500



COAT SUPPLEMENTARY STRUCTURE WITH NUCLEAR FINISH

S PROB. NO. 52 PT. NO. 186

SPOOL NO. 2-RC-076-1

REF. DWGS.
- ISO 1201-076-1
- PIPE 40400
- STEEL 23110

TAG NO. S2-RC-076-H-006

NO.	REVISIONS	DATE	DR.	CHK.	E.G.S.		P.E.	QAE
2	INCORPORATED DCN 01	2-26-80	JB	KG	MB	—		
1	SNUBBER VENDOR CHANGED	10-30-79	JL	AG	MB	—		CF
0	ISSUED FOR CONSTRUCTION	7-10-79	HM GC			—		

PC 3446

BECHTEL POWER CORPORATION
NORWALK, CALIFORNIA

JOB NO. 10079 | DATE | APPROVED

J.O. NO.

FILE

SAN ONOFRE NUCLEAR GENERATING STATION

PIPE SUPPORT ASSEMBLY

SOUTHERN CALIFORNIA EDISON COMPANY
LOS ANGELES, CALIF.

SCALE: NTS

01-02-01

PT-033 (10079) 12/76

MAR 21 1980

BECHTEL

SAN ONOFRE NUCLEAR GENERATING STATION
UNITS 2 & 3
FIELD CHANGE REQUEST/DCN/SCN

J(QC III) (I.C)
2BHA JOB NO. 10079 2C05-2

1. FCR NO. S-4841	12A. QUALITY CLASS III	12C. DCN SUB NO. 04
DATE 3-20-80		12D. DATE APR 8 1980
2. PAGE 1 OF 1	12B. SPEC ADDEND. NO.	
3. UNIT NO. 2		12E. SCN NO.

4. REF. DWG. OR SPEC.	SHEET NO.	REV.	5. TITLE
S2-RC-076-H-006		2	Pipe Support Assembly

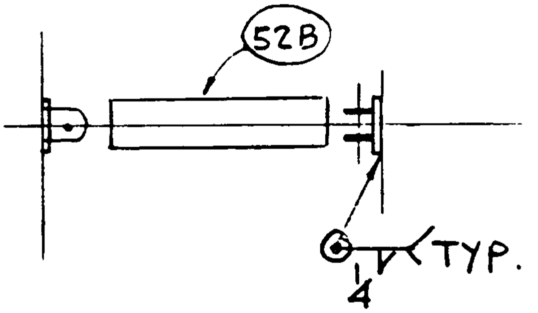
6. DESIGN ORIGIN: ENGRG ☒ VENDOR ☐ (IDENTIFY) NAME

7. EXISTING CONDITION:

Need to rotate snubber bracket

8. CHANGE REQUEST/SKETCH

(PL# 5245)



1) Change Item 52A to 52B in BILL OF MAT'L (FCR# S-4734)

2) No new Material Req'd

PROJECT ENGINEERING APPROVAL PER

10. REVIEWED BY	DATE			
CIVIL		PIPE	[signature]	3-21-80
ELEC		INSTR		
MECH		NUC		
WELD		QAE		

9. P. Tannirat
PREPARED BY

11. APPROVAL OF FLD DISPOSITION
[signature]
PROJECT FIELD ENGINEER
DATE 3-21-80

12. PROJECT ENGRG APPROVAL: YES ☑ NO ☐ EGS ______ P.E. R.L. Rogers/RH DATE 3-21-80

REMARKS: CONVERT TO DCN

QUALITY ASSURANCE ENGINEER (FIELD): N/A [signature] DATE 3-21-80

14. SCE ENGINEERING APPROVAL ______ P.E. ______ DATE ______
15. BECHTEL QUALITY ENGINEER/QUALITY ASSURANCE ______ DATE ______
16. ADDITIONAL DISTRIBUTION ______

PF-0924 (10079) 10/78

MAR 26 1980

SAN ONOFRE NUCLEAR GENERATING STATION
UNITS 2 & 3
FIELD CHANGE REQUEST/DCN/SCN

J (QC III)
2BHA
JOB NO. 10079 (I.C) 2C05-2

1. FCR NO. S-4734 DATE 3/1/80 2. PAGE 1 OF 1 3. UNIT NO. 2	12A. QUALITY CLASS II	12B. SPEC ADDEND NO.	12C. DCN SUB NO. 03 12D. DATE MAR 31 1980 12E. SCN NO.

4. REF. DWG. OR SPEC. S2-RC-076-H-006 SHEET NO. REV. 2

5. TITLE Pipe Support Assembly
NAME

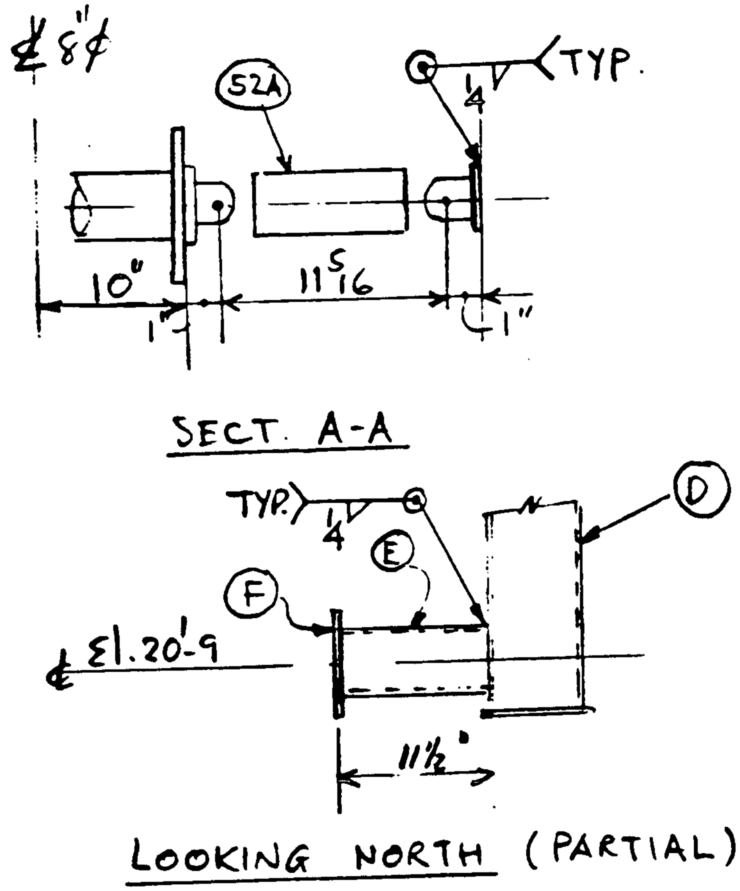
6. DESIGN ORIGIN: ENGRG ☒ VENDOR ☐ (IDENTIFY)

7. EXISTING CONDITION:

Item (52) suppressor not in stock

8. CHANGE REQUEST/SKETCH

PL# 5139



Bill of Mat'l (by Field)

1) Delete Item (52)

2) Add item (52A) 1ea - Fig 306 1/4 - 4" stroke Mech. shock arrestor CPS = 14, HFS = 3½ Load = 194#
(Retag from S3-SI-168-H-003)

3) Add Item (E) 1 - T.S. 3×3×3/16"

4) Add Item (F) 1 - PL ½"×5×5"

PROJECT ENGINEERING APPROVAL PER

10. REVIEWED BY DATE

CIVIL			PIPE	R.J.S.	3-14-80
ELEC			INSTR		
MECH			NUC		
WELD			QAE		

9. P. Tannirat
PREPARED BY

11. APPROVAL OF FLD DISPOSITION
[signature]
PROJECT FIELD ENGINEER
DATE 3-15-80

12. PROJECT ENGRG APPROVAL: YES ☒ NO ☐ EGS P.E. R.L. Rogers DATE 3-14-80

REMARKS: CONVERT TO DCN

13. QUALITY ASSURANCE ENGINEER (FIELD): [signature] DATE 3-18-80

14. SCE ENGINEERING APPROVAL P.E. DATE

15. BECHTEL QUALITY ENGINEER/QUALITY ASSURANCE DATE

16. ADDITIONAL DISTRIBUTION

PF-0924 (10079) 10/78

MAR 12 1980

SAN ONOFRE NUCLEAR GENERATI[illegible] STATION UNITS 2 & 3
DRAWING CHANGE N[illegible] (DCN) (IC)
JOB NO. 100[illegible] 2C05-2 "RLE."

J (QC III)

DCN NUMBER				
DRAWING NO.	SHEET NO.	REV. NO.	DCN SUB NO.	QUALITY CLASS
S2-RC-076-H-006	—	2	02	III

STARTUP SYSTEMS AFFECTED: 2BHA

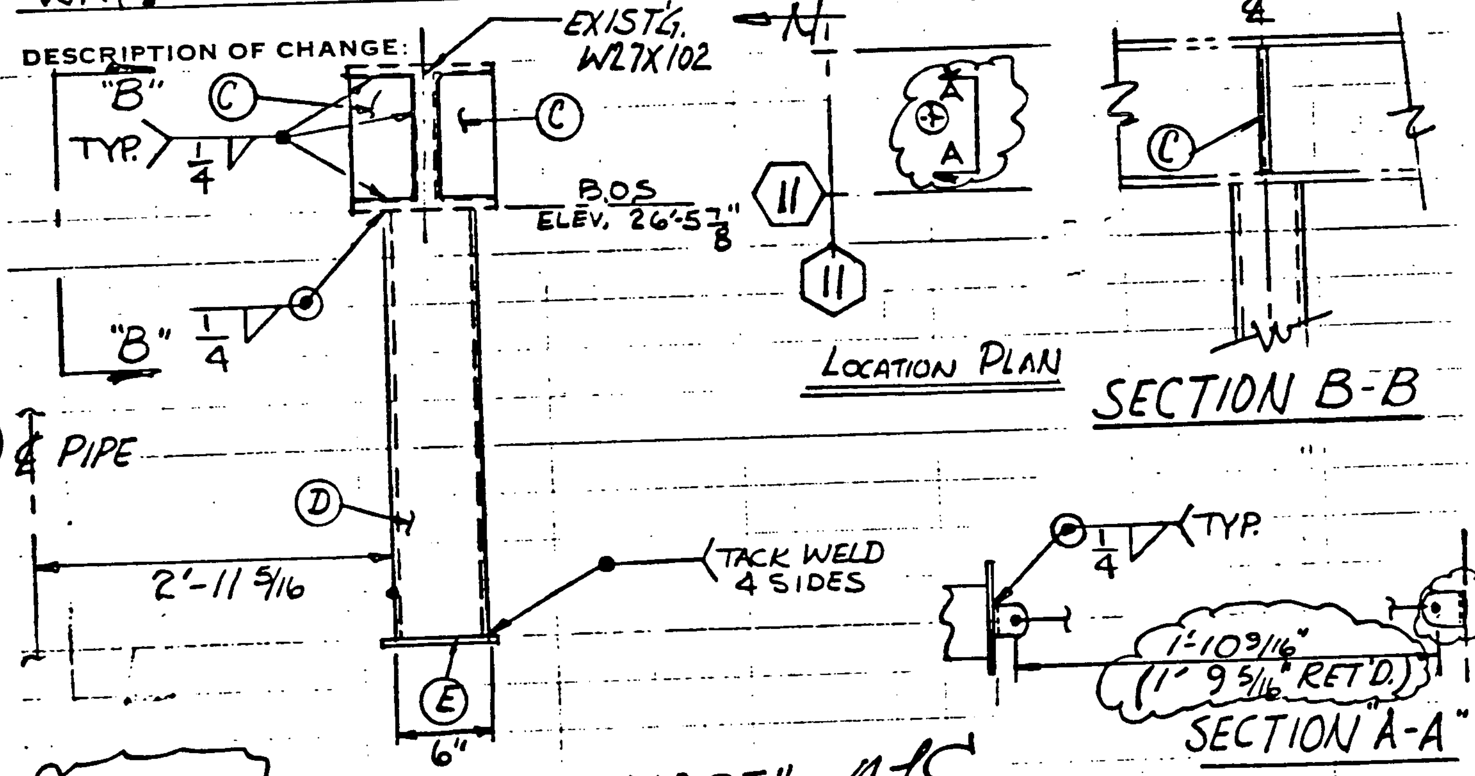
JOB NO. 10079-003 PAGE 1 OF 2 PAGE

DATE: FEB. 28, 1980 BY: R. MEJIANO

CHANGE REQUESTED BY: ☐ CLIENT ☐ ENG'R'G ☒ FIELD ☐ SUPPLIER/CONTRACTOR

REASON FOR CHANGE: REDESIGNED PIPE SUPPORT TO CLEAR PASSAGE WAY.

DESCRIPTION OF CHANGE:



PL# 4911 LOOKING NORTH NJS 2-29-80

MATERIAL PROCUREMENT RESPONSIBILITY	AFFECTED PURCHASE ORDERS	REVISED FOR DCN CHANGE YES	NO
☐ BECHTEL OFFICE	NONE		✓
☒ BECHTEL FIELD			
☐ SCE			

APPROVAL SIGNATURES: DATE

BECHTEL ENGINEERING ________ EGS R.L. Rogers/HH PE 2-29-80 DATE

SCE ENGINEERING APPROVAL ________ PE ________ DATE

BECHTEL QUALITY ENGINEER ________ DATE

BECHTEL QUALITY ASSURANCE ________

ADDITIONAL DISTRIBUTION: ________

PF-4276 (10079) 9/79

S... ONOFRE NUCLEAR GENERATING STATION UNITS ... & 3
DRAWING CHANGE NOTICE (DCN)
JOB NO. 10079

MAR 12 1980

SUPPLEMENTAL PAGE

DCN NUMBER			
DRAWING NO.	SHEET NO.	REV.	DCN SUB NO.
S2-RC-076-H-006	—	2	02

JOB NO. 10079-003 PAGE 2 OF 2 PAGE

DATE: FEB. 28, 1980 BY: R. MEJIANO

DESCRIPTION OF CHANGE CHANGE: STL. REF DWG TO: 23211

VENDOR	ADD	CHNG	DELETE	INFO	N/A
					✓
KELLOGG					✓
PIPE FAB					✓
GRINNELL					✓
409-23					
206-18			A & B		✓
206-1					
OTHER PSC		52A			
FIELD	C, D & E		(4) 1Ø CONC. FASTENERS		

COMBUSTION	INFORMATION ONLY	YES	NO
			✓

ADDITIONS AND CHANGES ONLY

	ITEM	QTY	PART NO.	DESCRIPTION	AISC	NF
ADD	C	2	—	3/8" STIFFENER ℞'S.		
	D	1	—	T.S. 6"x4"x1/2"x 6'-0" LG.		
	E	1	—	℞ 1/4x4 1/2x 0'-6 1/2"		
CHG.	52A			PN 1811002 (22) "FIELD MODIFY"		

3

PF-4275 (10079) 9/79