WESTINGHOUSE PROPRIETARY CLASS 3

SDTAR-80-05-08

R. E. GINNA NUCLEAR POWER PLANT

SEISMIC UPGRADING PROGRAM

PIPING STRESS ANALYSIS

MAIN STEAM SYSTEM, SECTION 200

AUTHORS: W. A. Massie
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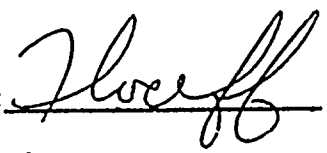
APPROVED: 

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NUCLEAR TECHNOLOGY DIVISION

JULY 1980

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1.0 SYSTEM DESCRIPTION

1.1 Extent of Piping (1, 2)

30" line from steam generator 1B to penetration #402. No branch lines are explicitly included.

1.2 Specifications (3)

30" MS-600-1

Design Conditions:

Pipe: Schedule 80 electric fusion welded, ASTM A155-65, Grade C55, Class 1.

Fittings: Schedule 80 ASTM A234, Grade WPB, 3000 psi, butt weld.

1.3 Operating Modes (4)

	°F	PSIG
Normal Operation	508	715
Safety Relief Valve Operation	561	1140

1.3.2 Seismic Environment

The seismic environment is represented by linear acceleration response spectra at various floor elevations, linear accelerations due to torsional response of the building, and relative displacements of anchors and supports. The torsional response of the containment building and interior structure has negligible effect, due to the symmetry of these structures.

The response spectra and floor displacements are based on a dynamic response analysis of the containment, interior structure or other building supporting seismic class piping. For this project, Gilbert Associates, Inc., has performed this analysis and summarized their results in Ginna Station Seismic Upgrading Program, Reactor Building Seismic Analysis, December 21, 1979.

That document provides response spectra along two orthogonal horizontal lines and the vertical for each node in the GAI dynamic analysis. For piping which is attached between several node points, no single set of response spectra will adequately describe the piping environment. To assure conservative results in such cases, a combined spectrum for each direction is obtained by using the highest acceleration of any adjacent node at each frequency. The result is a response spectra envelope.

For the subject system, the following building node points are adjacent to the piping or equipment supports:

BUILDING	NODE	ADJACENT PIPING SUPPORTS OR EQUIPMENT
CONTAINMENT	304	PENETRATION
INTERIOR STRUCTURE	1202	MS-6, MS-7, MS-8, MS-9, MS-10

The response spectra for these points and the response spectra envelope are shown graphically in Appendix A. The coordinate system for these spectra is not, in general, coincident with the coordinate system used for the piping model. Figure A.2-2 indicates the orientation of the horizontal axes of each system. Prior to analysis, the piping system model is rotated such that it aligns with the spectra coordinate axes.

Note that it is sufficient to align -Z (piping) with Y (structural) since the signs are of no consequence in such an elastic, seismic analysis.

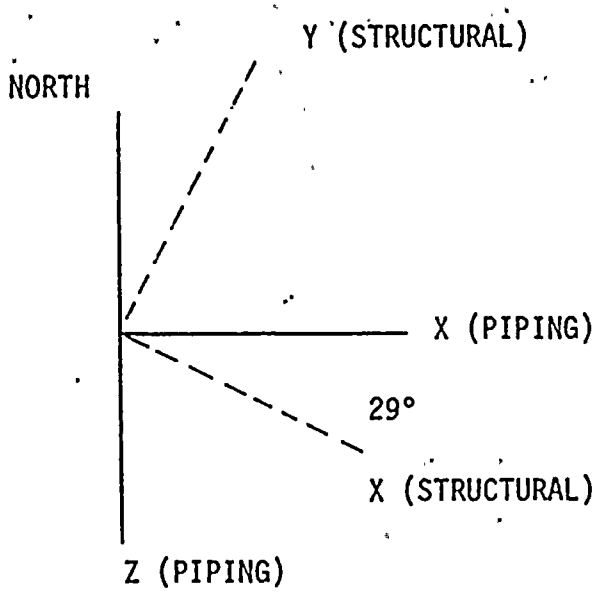


FIGURE A.2-2: COORDINATE SYSTEMS

Rotation of the piping model by -29° will align the two systems.

The displacements relative to ground of the building structures at points of support or equipment attachment are summarized below:

ABSOLUTE DISPLACEMENTS
IN STRUCTURAL COORDINATES

SUPPORT OR EQUIPMENT	X	Y	VERT.	$R_X.10^3$	$R_Y.10^3$	$R_Y.10^3$
PENETRATION	.0534	.0531	.0034	—	—	—
MSG, MS7, MS8, MS9, MS10	.1074	.0771	.0013	—	—	.005
STEAM GEN. NOZZLE	.112	.130	.064	.303	.015	.262

*Units: radians and inches

Each displacement component at each location represents a separate loading condition. Only displacements which can be transferred to the piping through the supports are included. A vertical support, for instance, can only transfer vertical displacement from the building to the piping. The net effect of all component displacements at all points of support is estimated by summing the absolute value of the results for each component at each point.

To reduce the number of cases that must be considered, a support (or group of supports with identical displacements) can be assigned zero displacements. The other displacements are then revised to give the same relative displacements. Only the remaining non-zero displacements need be used as loading conditions. For the subject system, these relative displacements are given below:

SUPPORT OR EQUIPMENT	RELATIVE DISPLACEMENT IN STRUCTURAL COORDINATES*					
	X	Y	VERT.	$R_X.10^3$	$R_Y.10^3$	$R_V.10^3$
PENETRATION	.1608	.1302	.0047	—	—	.005
MSG, MS7, MS8, MS9, MS10	—	—	—	—	—	—
STEAM GEN. NOZZLE	.2194	.2071	.0653	.303	.015	.267

*Zero displacement indicates attachment at the chosen base location.

Note that since these displacements are in structural coordinates, each component must be rotated +29° to the piping coordinates before inclusion in the piping model. The subsequent rotation of the piping model will then result in specification of the displacements in the structural coordinates as indicated.

1.4 Static Displacements

The displacements of anchors due to thermal expansion and other static conditions are summarized in Table 1.4-1.

TABLE 1.4-1: STATIC DISPLACEMENTS

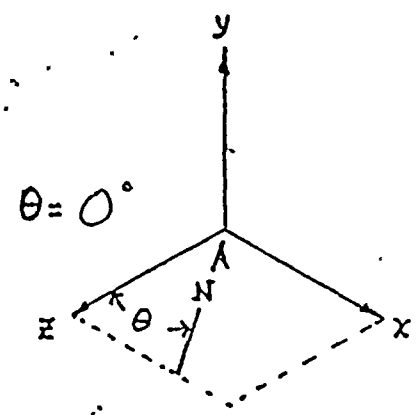
SYSTEM: MAIN STEAM PREPARED BY: F.P. Dwyer

SECTION: LOOP B CHECKED BY: [illegible]

REFERENCE(S): GAI LETTER DATED 10-9-79, CENTRAL ENGR. FILE NUMBER 13N1-GO-L0281

Equipment Description	Compt. Node no.	Therm. Mode no.	Thermal Growth DX (in)	DY (in)	DZ (in)
CONTAINMENT LINER *	720		-.1196	.26	-.0766

* AVERAGE SUMMER TEMP 100°F, WINTER -10°F.



Thermal Mode I:

Thermal Mode II:

Thermal Mode III:

Thermal Mode IV:

2.0 ANALYSIS

2.1 Piping

2.1.1 Basic Stress Criteria

According to criteria established for this project, piping included in this scope is to satisfy the requirements of equations 11, 12 and either 13 or 14 of ANSI B31.1b-1973, "Summer Addenda" to Power Piping ANSI B31.1-1973. These equations govern allowable moments due to sustained loads (deadweight), occasional loads (seismic), and thermal expansion loads, respectively. Relative seismic anchor displacement effects must be included in equations 12, 13 or 14.

$$\frac{PD_o}{4\,t_n} + \frac{0.75\,i\,M_A}{Z} \leq S_h \qquad \text{B31.1-11}$$

$$\frac{PD_o}{4t_n} + \frac{0.75\,i\,M_A}{Z} + \frac{0.75\,i\,M_B}{Z} \leq k\,S_h \qquad \text{B31.1-12}$$

$$\frac{i\,M_c}{Z} \leq S_A \qquad \text{B31.1-13}$$

$$\frac{PD_o}{4\,t_n} + \frac{0.75\,i\,M_A}{Z} + \frac{i\,M_c}{Z} \leq S_h + S_A \qquad \text{B31.1-14}$$

M_A = resultant moment due to weight and other sustained loads, in-lb.

M_B = resultant moment due to occasional loads such as fluid flow transients and earthquake, in - lb.

M_c = range of resultant moments due to the thermal expansion, in - lb

P = internal design pressure, psig

D_o = outside diameter of pipe, in.

t_n = nominal wall thickness of component, in.

i = stress intensification factor* from appendix D, B31.16 - 1973
$0.75\ i \geq 1.0$

Z = section modulus, in^3 as described in B31.16 - 1973, section 104.8.4.B.

S_h = basic material allowable stress at maximum temperature.

S_A = allowable stress range for expansion stresses.

k = 1.2 for occasional loads acting less than 1% of the time.

Analytical procedures for checking compliance with these equations include a distributed mass deadweight analysis, lumped mass response spectra seismic analysis, and a thermal flexibility analysis. These procedures are implemented by the computer program WESTDYN, which determines loads and displacements at all chosen cross sections, associated stress levels as defined by equations 11, 12 and 13, and reactions at all support and equipment connections. WESTDYN input is prepared by program WESGEN from a data base established by program PAGES.

Three coordinate systems have been consolidated in this analysis. The piping geometry is described in the PAGES program input using the GAI piping drawing coordinate system, with north along the negative Z axis. For inside containment systems, this data is altered using program ANZEIT which transforms the model to a system parallel to the GAI structural coordinate system, which has the positive Y axis inclined 29° east (clockwise) of north. The

piping geometry is thus specified in a coordinate system whose axes are parallel to the response spectra axes used by GAI for the containment and interior structure. The third coordinate system is local and is described when used in this documentation.

2.2 Nozzle Load Evaluation

Loads imposed on equipment nozzles must meet the following criteria unless specific allowable loads are known, in which case those loads must not be exceeded.

(1) axial force $\leq 0.01\ S_Y A$

(2) bending moment $\leq 0.1\ S_Y Z$

(3) torsional moment $\leq 0.2\ S_Y Z$

(4) shear force $\leq 0.01\ S_Y A$

where S_Y = yield stress of nozzle at operating temperature from ASME Section III

A = cross sectional area of pipe, in^2

Z = section modulus of pipe in^3

These allowables apply for the following loading conditions:

a) Normal condition -- deadweight plus maximum operating thermal

b) Design condition -- OBE earthquake plus maximum operating thermal plus deadweight

2.3 Valve Load Evaluation

Valves are classified as either active or inactive. Operation of an active valve is required for a cold shutdown. All other valves are calssified as inactive. For inactive valves, it is necessary to assure that the pipe valve interface meets the criteria for piping stresses. The valve load criteria discussed below apply only to active valves.

VALVE TYPE	STRESS LIMITS ON VALVE ENDS
Swing Check	$\sigma_{max} \leq S_Y$
	$\sigma_{bending} \leq 0.75\ S_Y$
	$\sigma_{torsion} \leq 0.5\ S_Y$
Safety, open	$\sigma_{max} \leq 0.75\ S_Y$
Safety, closed	refer to vendor's specifications
Other	$\sigma_{max} \leq 0.75\ S_Y$
	$\sigma_{bending} \leq 0.50\ S_Y$
	$\sigma_{torsion} \leq 0.50\ S_Y$

σ_{max} = maximum principal stress

$$= 0.5\ (H + S_o + \sqrt{(H - S_o)^2 + 4\ S_S^2})\ \ S_S^2$$

$\sigma_{bending}$ = maximum fiber stress due to bending
$= M_b/Z$

$\sigma_{tension}$ = maximum fiber stress due to torsion
$= M_t/2Z$

S_Y = yield stress at design temperature for ASME SA-376, type 316 for stainless steel valves and ASME SA-106 grade B for carbon steel valves.

Z = section modulus of piping

M_b = resultant bending moment

M_t = torsional moment

$H = P_o [r_o^2 + r_i^2)/(r_o^2 - r_i^2)]$, hoop stress

P_o = operating pressure

r_o = pipe outside radius

r_i = pipe inside radius

$L = P_o [r_i^2/(r_o^2 - r_i^2)]$, longitudinal pressure stress

$F = F_X/A$

F_X = axial load

$B = M_c/Z$

$S_o = F + B + L$

$S_S = V + V_{torsion}$

$V = 2F_S/A$

F_S = shear force

Active valves may be checked for compliance with these criteria by manual calculation using loads from the piping analysis or automatically by using program VALVE. This program is linked to the piping anlaysis output file from which it obtains all necessary load data for each valve.

3.0 RESULTS OF STRESS ANALYSIS AND LOAD EVALUATION

The as-built piping and support system satisfies the stress and nozzle load criteria described above.

SUPPORT DESCRIPTION FOR ISOMETRY

SYSTEM: MAIN STEAM

PREPARED BY: [illegible]

SECTION: ASME III

CHECKED BY: [illegible]

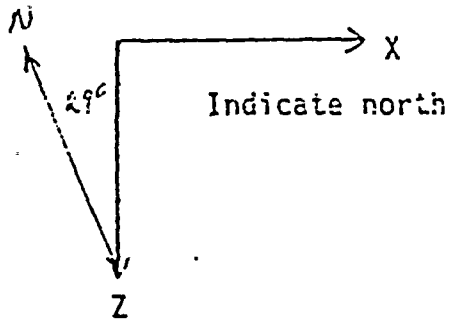
SUPPORT: MS-6

DESCRIPTION

LINE OF ACTION	STIFFNESS
☐ Axial, Horizontal	
☐ Transverse, Horizontal	
☒ Vertical	CONSTANT FORCE
☐ Other (Specify)	HANGER 7400 LB

LOADS (kips, in-kips)

	FX	FY	FZ	MX	MY	MZ	ANALYSIS/NODE
Deadweight	—	7.4	—	—	—	—	Y6FPDKW/580
Seismic, OBE	—		—	—	—	—	Y6FPDMP/580
Thermal I	—		—	—	—	—	Y6FPI39/580
Thermal II	—		—	—	—	—	Y6FPI39/580
Thermal III	—		—	—	—	—	Y6FPDZX/580
Seismic, SSE	—		—	—	—	—	Y6FPDHF/580



THERMAL I: 100% POWER

THERMAL II: SAFETY VALVE RELIEF

THERMAL III:

SUPPORT DESCRIPTION AND LOAD SUMMARY

SYSTEM: MAIN STEAM PREPARED BY: [illegible]

SECTION: LOOP E CHECKED BY: [illegible]

SUPPORT: 45-7

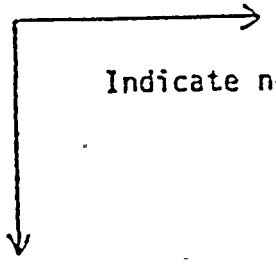
DESCRIPTION

LINE OF ACTION	STIFFNESS
☐ Axial, Horizontal	
☐ Transverse, Horizontal	
☐ Vertical	
☒ Other (Specify)	SKEW SNUBBER

STIFFNESS MATRIX REPRESENTING SNUBBER + SUPPORT FOR SNUBBER

LOADS (kips, in-kips)

	FX	FY	FZ	MX	MY	MZ	ANALYSIS/NODE
Deadweight	—	—	—	—	—	—	Y6FPD KW/600
Seismic, OBE	21.52	—	6.19	.1	485.2	.1	Y6FPDHP/600
Thermal I	—	—	—	—	—	—	Y6FPD39 600
Thermal II	—	—	—	—	—	—	Y6FPD39/600
~~Thermal III~~	33.27	—	9.57	.1	750.1	—	Y6FPD+X/600
Seismic, SSE	35.46	—	10.2	.2	799.6	.1	Y6FPDHP/600



THERMAL I:

THERMAL II:

~~THERMAL III:~~ EXTERNALS

SUPPORT DESCRIPTION AND LOAD SUMMARY

SYSTEM: MAIN STEAM

SECTION: LOOP C

SUPPORT: MS-C-5

PREPARED BY: [illegible]

CHECKED BY: [illegible]

DESCRIPTION

LINE OF ACTION

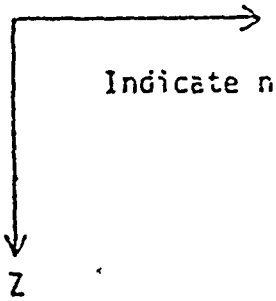
- ☐ Axial, Horizontal
- ☐ Transverse, Horizontal
- ☒ Vertical
- ☐ Other (Specify)

STIFFNESS

SNUBBER 2.5 K/IN

LOADS (kips, in-kips)

	FX	FY	FZ	MX	MY	MZ	ANALYSIS/NODE
Deadweight	—	—	—	—	—	—	Y6FPDKW/640
Seismic, OBE	—	6.86	—	—	—	—	Y6FPDH 639/640
Thermal I	—	—	—	—	—	—	Y6FPI 639/640
Thermal II	—	—	—	—	—	—	Y6FPI 639/640
~~Thermal III~~	—	4.49	—	—	—	—	Y6FPDEX/640
Seismic, SSE	—	13.37	—	—	—	—	Y6FPDHP/640



Indicate north

THERMAL I: 100% POWER

THERMAL II: SAFETY VALVE RELIEF

~~THERMAL III:~~ EXTERNALS

SUPPORT IDENTIFICATION AND LOCATION

SYSTEM: MAIN STEAM — PREPARED BY: [illegible]

SECTION: ~COR B — CHECKED BY: [illegible]

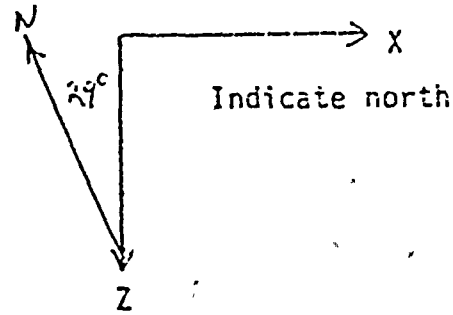
SUPPORT: MS-7

DESCRIPTION

LINE OF ACTION	STIFFNESS
☐ Axial, Horizontal	
☐ Transverse, Horizontal	
☒ Vertical	CONSTANT FORCE
☐ Other (Specify)	HANGER 7700. LB

LOADS (kips, in-kips)

	FX	FY	FZ	MX	MY	MZ	ANALYSIS/NODE
Deadweight	—	7.4	—	—	—	—	Y6FPDKW/650
Seismic, OBE	—		—	—	—	—	Y6FFDHF/650
Thermal I	—		—	—	—	—	Y6FPP39/650
Thermal II	—		—	—	—	—	Y6FPP39/650
Thermal III	—		—	—	—	—	Y6FPIEX/650
Seismic, SSE	—		—	—	—	—	Y6FFDHF/650



THERMAL I: 100 % POWER

THERMAL II: SAFETY VALVE RELIEF

THERMAL III:

SUPPORT DESCRIPTION AND LOAD SUMMARY

SYSTEM: MAIN STEAM

PREPARED BY: T. P. [illegible]

SECTION: LOOP 6

CHECKED BY: [illegible]

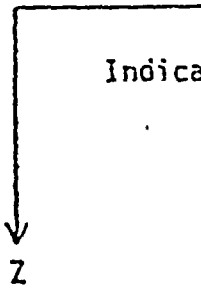
SUPPORT: MS-107

DESCRIPTION

LINE OF ACTION	STIFFNESS
☐ Axial, Horizontal	
☐ Transverse, Horizontal	
☒ Vertical	VARIABLE SPRING
☐ Other (Specify)	1.51 K/IN

LOADS (kips, in-kips)

	FX	FY	FZ	MX	MY	MZ	ANALYSIS/NODE
Deadweight	—	-7.09	—	—	—	—	Y6FPDXW/680
Seismic, OBE	—	.04	—	—	—	—	Y6FPDHP/680
Thermal I	—	1.37	—	—	—	—	Y6FPD39/680
Thermal II	—	1.38	—	—	—	—	Y6FPD39/680
~~Thermal III~~	—	01	—	—	—	—	Y6FPD2X/680
Seismic, SSE	—	.06	—	—	—	—	Y6FPDHP/680



THERMAL I: 100% POWER

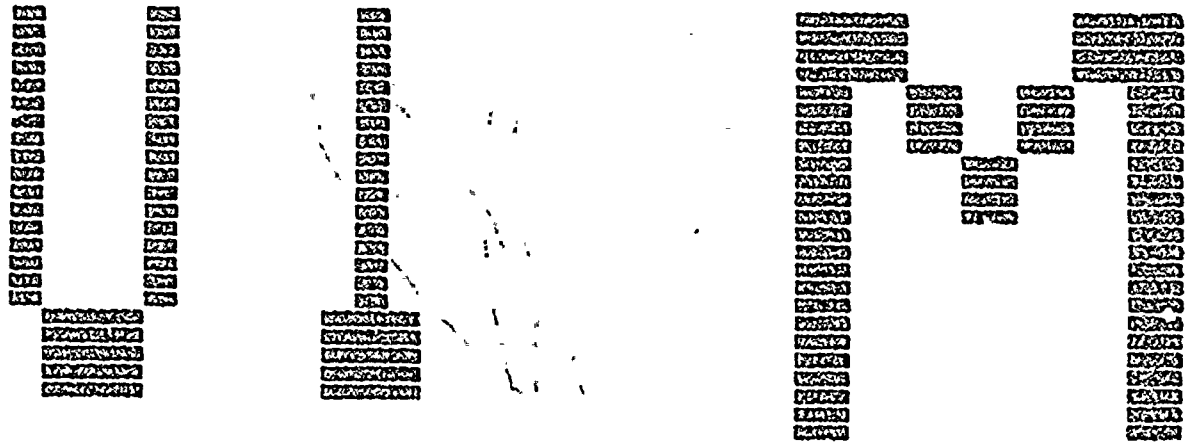
THERMAL II: SAFETY VALVE RELIEF

~~THERMAL III:~~ EXTERNALS

OUT FROM THE JUNCTION ALONG THE BRANCH CENTERLINE, AND Z BY THE RIGHT HAND RULE . FOR INTERSECTIONS AT OTHER THAN 90 DEGREES, X IS NORMAL TO THE X-Z PLANE, IN THE PLANE OF THE BRANCH AND HEADER CENTERLINES .

DISPLACEMENTS AT SUPPORTS AND DISCONTINUITIES IN GLOBAL COORDS

DESCRIPTOR	NODE	DX (INCHES)	DY (INCHES)	DZ (INCHES)	RX (RADS)	RY (RADS)	RZ (RADS)
SK	1103	.001	-.000	.000	-.000011	.000001	.000021
ST 1	129	-.001	-.007	.004	.000038	.000018	.000005
ST 1	169	.000	-.003	-.003	-.000031	-.000015	-.000001
SK	1194	.000	-.000	-.000	.000005	-.000005	.000009
	580	.009	-.025	.041	.000176	.000116	-.000035
DYMS7	600	.018	-.040	.035	.000247	.000190	-.000017
SHMS8	640	.019	-.036	.010	.000184	.000094	.000044
	650	.018	-.034	.010	.000176	.000092	.000043
RIMS10		.007	-.010	.004	.000085	.000058	.000033



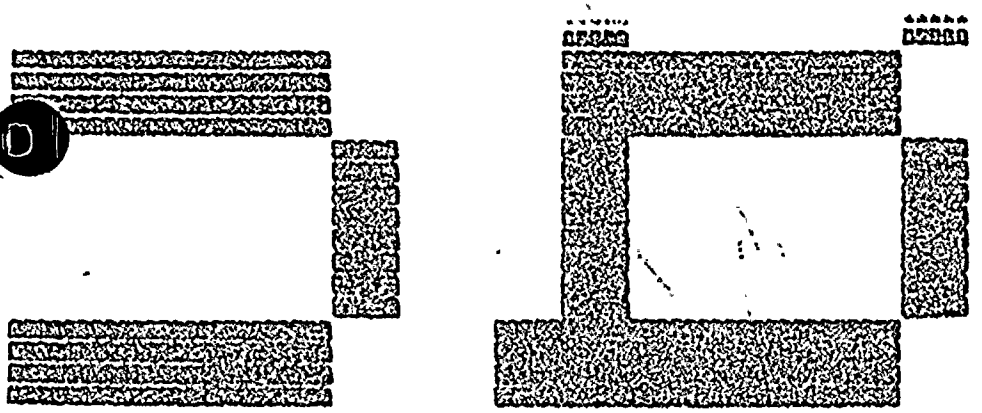
DISPLACEMENTS AT SUPPORTS AND DISCONTINUITIES IN GLOBAL COORDS

DESCRIPTOR	NODE	DX (INCHES)	DY (INCHES)	DZ (INCHES)	RX (RADS)	RY (RADS)	RZ (RADS)
SK	1103	-.291	-.076	-.158	.000397	.000033	-.000720
ST 1	129	-1.492	.046	-.768	.000137	.000027	.000820
ST 1	169	-1.306	.001	.222	-.000235	.000221	.000489
SK	1194	-.291	-.074	.173	-.000541	.000052	-.000854
DYMS7	600	-2.503	2.39[illegible]	.[illegible]03	-.000529	-.003554	-.002354
SHMS8	640	-1.904	1.822	.762	-.002958	-.003791	-.004385
RIMS10	680	-.940	.908	.329	-.003200	-.003180	-.003902

SK	1103	4993.2-	.00	-993.29	.30	-.0	-.0	.0
ST 1	129	176.04	-1.10	-176.01	3.16	-163.5	-3.6	-12731.0
ST 1	169	53.12	-.50	-53.07	-2.23	7090.7	-23.9	-6013.0
SK	1194	4070.04	.00	4070.04	-.00	.0	-.0	.0
DYNS7	600	.00	.00	-.00	-.00	.0	.0	.0
DYNS8	640	.00	.00	-.00	-.00	.0	.0	.0
RIMS10	680	1.30	.02	-1.30	-.00	.0	.0	.0

DISPLACEMENTS AT SUPPORTS AND DISCONTINUITIES IN GLOBAL COORDS

DESCRIPTOR	NODE	DX (INCHES)	DY (INCHES)	DZ (INCHES)	RX (RADS)	RY (RADS)	RZ (RADS)
SK	1103	-.291	-.076	-.158	.000400	.000043	-.000724
ST 1	129	-1.497	.048	-.761	.000210	.000031	.000092
ST 1	169	-1.306	.000	.222	-.000248	.000218	.000496
SK	1194	-.281	-.074	.173	-.000542	.000053	-.000055
DYNS7	600	-2.628	2.406	.476	-.000524	-.003080	-.002313
DYNS8	640	-1.966	1.834	.955	-.002901	-.003727	-.004402
RIMS10	680	-.977	.913	.419	-.003228	-.003037	-.003923



ODE ENVELOPE OF 312 CONT SHELL 311 I.C. 313 SG Y6FPDHP 6/28/80 WESTDYN PAGE 2

DISPLACEMENTS AT SUPPORTS AND DISCONTINUITIES IN GLOBAL COORDS

DESCRIPTOR	NODE	DX (INCHES)	DY (INCHES)	DZ (INCHES)	RX (RADS)	RY (RADS)	RZ (RADS)
DYMS7	600	.122	.054	.049	.000187	.000093	.000368
SHMS8	640	.130	.029	.074	.000080	.000163	.000242
RIMS10	680	.100	.027	.059	.000099	.000549	.000091

ELBOWS HAVE X ALONG THE PIPE CENTERLINE, Y FROM THE POINT TO THE CENTER OF CURVATURE OF THE BEND, AND Z NORMAL TO THE PLANE OF THE ELBOW BY THE RIGHT HAND RULE.

BRANCHES AND TEES HAVE LOCAL SYSTEM AS DEFINED BY TABLE ND-3683.2-1 OF THE ASME III CODE . X IS ALONG THE HEADER PIPE CENTERLINE, Y IS OUT FROM THE JUNCTION ALONG THE BRANCH CENTERLINE, AND Z BY THE RIGHT HAND RULE . FOR IN CORRECTIONS AT OTHER THAN 90 DEGREES, Y IS NORMAL TO THE X-Z PLANE, IN THE PLANE OF THE BRANCH AND HEADER CENTERLINES .

DISPLACEMENTS AT SUPPORTS AND DISCONTINUITIES IN GLOBAL COORDS

DESCRIPTOR	NODE	DX (INCHES)	DY (INCHES)	DZ (INCHES)	RX (RADS)	RY (RADS)	RZ (RADS)
DYMS7	600	.201	.128	.080	.000420	.000155	.000742
SMMS8	640	.214	.057	.121	.000166	.000269	.000489
RIMS10	680	.164	.042	.097	.000149	.000905	.000213

HAND RULE . IF RUN IS IN THE +Y(GLOBAL) DIRECTION, Y(LOCAL) = Z(GLOBAL), AND Z(LOCAL) = X(GLOBAL) . IF RUN IS IN THE -Y(GLOBAL) DIRECTION, X(LOCAL) = -Y(GLOBAL), Y(LOCAL) = -Z(GLOBAL), Z(LOCAL) = +X(GLOBAL) .

ELBOWS HAVE X ALONG THE PIPE CENTERLINE, Y FROM THE POINT TO THE CENTER OF CURVATURE OF THE BEND, AND Z NORMAL TO THE PLANE OF THE ELBOW BY THE RIGHT HAND RULE.

BRANCHES AND TEES HAVE LOCAL SYSTEM AS DEFINED BY TABLE NB-3683.2-1 OF THE ASME III CODE . X IS ALONG THE HEADER PIPE CENTERLINE, Y IS OUT FROM THE JUNCTION ALONG THE BRANCH CENTERLINE, AND Z BY THE RIGHT HAND RULE . FOR INTERSECTIONS AT OTHER THAN 90 DEGREES, Y IS NORMAL TO THE X-Z PLANE, IN THE PLANE OF THE BRANCH AND HEADER CENTERLINES .

DISPLACEMENTS AT SUPPORTS AND DISCONTINUITIES IN GLOBAL COORDS

DESCRIPTOR	NODE	DX (INCHES)	DY (INCHES)	DZ (INCHES)	RX (RADS)	RY (RADS)	RZ (RADS)
DYMS7	600	.067	-.006	-.031	.000022	-.000683	.000114
SMMS8	640	.049	.003	.026	-.000005	.000051	.000009
RIMS10	680	.026	.002	.015	-.000011	.000183	-.000001

ELBOWS HAVE X ALONG THE PIPE CENTERLINE, Y FROM THE POINT TO THE CENTER OF CURVATURE OF THE BEND, AND Z NORMAL TO THE PLANE OF THE ELBOW BY THE RIGHT HAND RULE.

BRANCHES AND TEES HAVE LOCAL SYSTEM AS DEFINED BY TABLE NB-3683.7-1 OF THE ASME III CODE . X IS ALONG THE HEADER PIPE CENTERLINE, Y IS OUT FROM THE JUNCTION ALONG THE BRANCH CENTERLINE, AND Z BY THE RIGHT HAND RULE . FOR INTERSECTIONS AT OTHER THAN 90 DEGREES, Y IS NORMAL TO THE X-Z PLANE, IN THE PLANE OF THE BRANCH AND HEADER CENTERLINES .

DISPLACEMENTS AT SUPPORTS AND DISCONTINUITIES IN GLOBAL COORDS

DESCRIPTOR	NODE	DX (INCHES)	DY (INCHES)	DZ (INCHES)	RX (RADS)	RY (RADS)	RZ (RADS)
DYMS7	600	.001	.030	.002	.000183	.000007	-.000143
CMMS8	640	-.000	.007	-.000	.000077	-.000000	-.000171
RIMS10	680	-.000	.004	-.000	.000030	-.000001	-.000104

[illegible] RULE [illegible] IS IN THE [illegible] DIRECTION, [illegible] (GLOBAL), AND [illegible] (GLOBAL) IS RUN IS IN THE [illegible] DIRECTION, [illegible] (GLOBAL) [illegible] (GLOBAL).

ELBOWS HAVE X ALONG THE PIPE CENTERLINE, Y FROM THE POINT TO THE CENTER OF CURVATURE OF THE BEND, AND Z NORMAL TO THE PLANE OF THE ELBOW BY THE RIGHT HAND RULE.

BRANCHES AND TEES HAVE LOCAL SYSTEM AS DEFINED BY TABLE ND-3685.2-1 OF THE ASME III CODE. X IS ALONG THE HEADER PIPE CENTERLINE, Y IS OUT FROM THE JUNCTION ALONG THE BRANCH CENTERLINE, AND Z BY THE RIGHT HAND RULE. FOR INTERSECTIONS AT OTHER THAN 90 DEGREES, Y IS NORMAL TO THE X-Z PLANE, IN THE PLANE OF THE BRANCH AND HEADER CENTERLINES.

EXTERNAL Z DISPLACEMENT OF S.G. Y6FPDZX 6/30/80 WESTDYN PAGE 2

DISPLACEMENTS AT SUPPORTS AND DISCONTINUITIES IN GLOBAL COORDS

DESCRIPTOR	NODE	DX (INCHES)	DY (INCHES)	DZ (INCHES)	RX (RADS)	RY (RADS)	RZ (RADS)
DYMS7	600	.005	-.003	.161	.000179	.001207	.000095
SNMS8	640	.025	.002	.016	.000043	.000337	-.000009
RIM310	680	-.001	.003	.002	-.000003	.000027	-.000023

STRAIGHT PIPES HAVE X ALONG THE PIPE CENTERLINE (IN THE DIRECTION OF MODELING), Y UPWARD IN THE VERTICAL PLANE, AND Z BY THE RIGHT HAND RULE. IF RUN IS IN THE +Y(GLOBAL) DIRECTION, X(LOCAL) = +X(GLOBAL), AND Z(LOCAL) = -Z(GLOBAL). IF RUN IS IN THE -Y(GLOBAL) DIRECTION, X(LOCAL) = -Y(GLOBAL), Y(LOCAL) = -Z(GLOBAL), Z = +X(GLOBAL).

ELBOWS HAVE X ALONG THE PIPE CENTERLINE, Y FROM THE POINT TO THE CENTER OF CURVATURE OF THE BEND, AND Z NORMAL TO THE PLANE OF THE ELBOW BY THE RIGHT HAND RULE.

BRANCHES AND TEES HAVE LOCAL SYSTEM AS DEFINED BY TABLE NB-3683.2-1 OF THE ASME III CODE. X IS ALONG THE HEADER PIPE CENTERLINE, Y IS OUT FROM THE JUNCTION ALONG THE BRANCH CENTERLINE, AND Z BY THE RIGHT HAND RULE. FOR INTERSECTIONS AT OTHER THAN 90 DEGREES, Y IS NORMAL TO THE X-Z PLANE, IN THE PLANE OF THE BRANCH AND HEADER CENTERLINES.

DISPLACEMENTS AT SUPPORTS AND DISCONTINUITIES IN GLOBAL COORDS

DESCRIPTOR	NODE	DX (INCHES)	DY (INCHES)	DZ (INCHES)	RX (RADS)	RY (RADS)	RZ (RADS)
DYMS7	600	-.001	-.019	.011	.000017	.000084	.000096
SMMS8	640	.002	-.005	.001	.000003	.000023	.000079
RIMS10	680	-.000	-.001	.000	-.000007	.000002	.000039

STRAIGHT RUNS HAVE X ALONG THE PIPE CENTERLINE (IN THE DIRECTION OF MODELLING), Y UPWARD IN THE VERTICAL PLANE, AND Z BY THE RIGHT HAND RULE . IF RUN IS IN THE +Y(GLOBAL) DIRECTION, Y(LOCAL) = Z(GLOBAL), AND Z(LOCAL) = X(GLOBAL) . IF RUN IS IN THE -Y(GLOBAL) DIRECTION, X(LOCAL) = -Y(GLOBAL), Y(LOCAL) = -Z(GLOBAL), Z(LOCAL) = +X(GLOBAL) .

ELBOWS HAVE X ALONG THE PIPE CENTERLINE, Y FROM THE POINT TO THE CENTER OF CURVATURE OF THE BEND, AND Z NORMAL TO THE PLANE OF THE ELBOW BY THE RIGHT HAND RULE.

BRANCHES AND TEES HAVE LOCAL SYSTEM AS DEFINED BY TABLE NB-3683.2-1 OF THE ASME III CODE . X IS ALONG THE HEADER PIPE CENTERLINE, Y IS OUT FROM THE JUNCTION ALONG THE BRANCH CENTERLINE, AND Z BY THE RIGHT HAND RULE . FOR INTERSECTIONS AT OTHER THAN 90 DEGREES, Y IS NORMAL TO THE X-Z PLANE, IN THE PLANE OF THE BRANCH AND HEADER CENTERLINES .

DISPLACEMENTS AT SUPPORTS AND DISCONTINUITIES IN GLOBAL COORDS

DESCRIPTOR	NODE	DX (INCHES)	DY (INCHES)	DZ (INCHES)	RX (RADS)	RY (RADS)	RZ (RADS)
DYMS7	600	.010	-.002	.006	.000007	-.000009	.000031
SNMS8	640	.009	.001	.005	-.000003	.000028	.000005
RIMS10	680	.004	.000	.002	-.000004	.000029	.000002

DEFINITION OF LOCAL COORDINATE SYSTEM FOR PIPING LOAD TABLES

STRAIGHT RUNS HAVE X ALONG THE PIPE CENTERLINE (IN THE DIRECTION OF MODELLING), Y UPWARD IN THE VERTICAL PLANE, AND Z BY THE RIGHT HAND RULE . IF RUN IS IN THE +Y(GLOBAL) DIRECTION, X(LOCAL) = Z(GLOBAL), AND Z(LOCAL) = X(GLOBAL) . IF RUN IS IN THE -Y(GLOBAL) DIRECTION, X(LOCAL) = -Y(GLOBAL), Y(LOCAL) = -Z(GLOBAL), Z(LOCAL) = +X(GLOBAL) .

ELBOWS HAVE X ALONG THE PIPE CENTERLINE, Y FROM THE POINT TO THE CENTER OF CURVATURE OF THE BEND, AND Z NORMAL TO THE PLANE OF THE ELBOW BY THE RIGHT HAND RULE.

BRANCHES AND TEES HAVE LOCAL SYSTEM AS DEFINED BY TABLE NB-3683.2-1 OF THE ASME III CODE . X IS ALONG THE HEADER PIPE CENTERLINE, Y IS OUT FROM THE JUNCTION ALONG THE BRANCH CENTERLINE, AND Z BY THE RIGHT HAND RULE . FOR INTERSECTIONS AT OTHER THAN 90 DEGREES, Y IS NORMAL TO THE X-Z PLANE, IN THE PLANE OF THE BRANCH AND HEADER CENTERLINES .

DISPLACEMENTS AT SUPPORTS AND DISCONTINUITIES IN GLOBAL COORDS

DESCRIPTOR	NODE	DX (INCHES)	DY (INCHES)	DZ (INCHES)	RX (RADS)	RY (RADS)	RZ (RADS)
DYMS7	600	-.000	-.001	.000	.000001	.000002	.000008
SWMS8	640	-.000	.000	-.000	-.000001	.000000	.000003
RIMS10	680	-.000	.000	-.000	-.000001	-.000000	.000001

DIRECTION, X=LOCAL, Y=GLOBAL, Y=LOCAL, Z=GLOBAL, Z=LOCAL, X=GLOBAL) .

ELBOWS HAVE X ALONG THE PIPE CENTERLINE, Y FROM THE POINT TO THE CENTER OF CURVATURE OF THE BEND, AND Z NORMAL TO THE PLANE OF THE ELBOW BY THE RIGHT HAND RULE.

BRANCHES AND TEES HAVE LOCAL SYSTEM AS DEFINED BY PARA NB-3683.1 OF THE ASME III CODE . X IS ALONG THE HEADER PIPE CENTERLINE, Y IS OUT FROM THE JUNCTION ALONG THE BRANCH CENTERLINE, AND Z BY THE RIGHT HAND RULE . FOR INTERSECTIONS AT OTHER THAN 90 DEGREES, Y IS NORMAL TO THE X-Z PLANE, IN THE PLANE OF THE BRANCH AND HEADER CENTERLINES .

EXTERNAL X DISPLACEMENT OF CONTAINMENT

DISPLACEMENTS AT SUPPORTS AND DISCONTINUITIES IN GLOBAL COORDS

DESCRIPTOR	NODE	DX (INCHES)	DY (INCHES)	DZ (INCHES)	RX (RADS)	RY (RADS)	RZ (RADS)
RVNS7	600	.024	-.001	-.013	.000079	.000512	.000029
SGNS8	640	.048	.000	-.037	.000016	-.000246	.000001
RINS10	680	.109	.001	-.028	-.000001	-.000401	-.000004

STRAIGHT RUNS HAVE X ALONG THE PIPE CENTERLINE (IN THE DIRECTION OF MODELLING), Y UPWARD IN THE VERTICAL PLANE, AND Z BY THE RIGHT HAND RULE. IF RUN IS IN THE +Y(GLOBAL) DIRECTION, Y(LOCAL) = Z(GLOBAL), AND Z(LOCAL) = X(GLOBAL). IF RUN IS IN THE -Y(GLOBAL) DIRECTION, X(LOCAL) = -Y(GLOBAL), Y(LOCAL) = -Z(GLOBAL), Z(LOCAL) = +X(GLOBAL).

ELBOWS HAVE X ALONG THE PIPE CENTERLINE, Y FROM THE POINT TO THE CENTER OF CURVATURE OF THE BEND; AND Z NORMAL TO THE PLANE OF THE ELBOW BY THE RIGHT HAND RULE.

BRANCHES AND TEES HAVE LOCAL SYSTEM AS DEFINED BY TABLE NB-3683.2-1 OF THE ASME III CODE. X IS ALONG THE HEADER PIPE CENTERLINE, Y IS OUT FROM THE JUNCTION ALONG THE BRANCH CENTERLINE, AND Z BY THE RIGHT HAND RULE. FOR INTERSECTIONS AT OTHER THAN 90 DEGREES, Y IS NORMAL TO THE X-Z PLANE, IN THE PLANE OF THE BRANCH AND HEADER CENTERLINES.

EXTERNAL Y(VERT) DISPLACEMENT OF CONTAINMENT — Y6FP070 7/ 3/80 WESTDTH PAGE 2

DISPLACEMENTS AT SUPPORTS AND DISCONTINUITIES IN GLOBAL COORDS

DESCRIPTOR	NODE	DX (INCHES)	DY (INCHES)	DZ (INCHES)	RX (RADS)	RY (RADS)	RZ (RADS)
DYMS7	600	-.000	-.001	.000	.000007	-.000001	.000004
SXMS8	640	.000	.000	-.000	.000011	-.000000	.000009
RIMS10	660	.000	.003	.000	.000010	.000000	.000009

[illegible] FROM THE POINT [illegible] THE CENTER OF CURVATURE OF THE BEND, AND Z NORMAL TO THE PLANE OF THE ELBOW BY THE RIGHT HAND RULE.

BRANCHES AND TEES HAVE LOCAL SYSTEM AS DEFINED BY TABLE NB-3683.1-1 OF THE ASME III CODE . X IS ALONG THE HEADER PIPE CENTERLINE, Y IS OUT FROM THE JUNCTION ALONG THE BRANCH CENTERLINE, AND Z BY THE RIGHT HAND RULE . FOR INTERSECTIONS AT OTHER THAN 90 DEGREES, Y IS NORMAL TO THE X-Z PLANE, IN THE PLANE OF THE BRANCH AND HEADER CENTERLINES .

DISPLACEMENTS AT SUPPORTS AND DISCONTINUITIES IN GLOBAL COORDS

DESCRIPTOR	NODE	DX (INCHES)	DY (INCHES)	DZ (INCHES)	RX (RADS)	RY (RADS)	RZ (RADS)
DYMS7	600	-.024	.001	.021	-.000091	-.000758	-.000033
SNMS8	640	-.034	-.001	.111	-.000024	-.000261	.000008
RIMS10	680	-.007	-.001	.125	-.000000	-.000079	.000013

[illegible] IN THE [illegible]
DIRECTION, Y=LOCAL [illegible] =YGLOBAL), [illegible] =ZGLOBAL), Z LOCAL =
-XGLOBAL) .

ELBOWS HAVE X ALONG THE PIPE CENTERLINE, Y FROM THE POINT TO THE CENTER OF CURVATURE OF THE BEND, AND Z NORMAL TO THE PLANE OF THE ELBOW BY THE RIGHT HAND RULE.

BRANCHES AND TEES HAVE LOCAL SYSTEM AS DEFINED BY TABLE NB-3685.2-1 OF THE ASME III CODE . X IS ALONG THE HEADER PIPE CENTERLINE, Y IS OUT FROM THE JUNCTION ALONG THE BRANCH CENTERLINE, AND Z BY THE RIGHT HAND RULE . FOR INTERSECTIONS AT OTHER THAN 90 DEGREES, Y IS NORMAL TO THE X-Z PLANE, IN THE PLANE OF THE BRANCH AND HEADER CENTERLINES .

DISPLACEMENTS AT SUPPORTS AND DISCONTINUITIES IN GLOBAL COORDS

DESCRIPTOR	NODE	DX (INCHES)	DY (INCHES)	DZ (INCHES)	RX (RADS)	RY (RADS)	RZ (RADS)
DYMS7	600	.000	-.000	.000	-.000000	-.000001	.000000
SMMS8	640	.000	-.000	.000	-.000000	-.000001	.000000
RIMS10	680	.000	-.000	.000	-.000000	.000000	.000000

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MAIN STEAM DEAD WEIGHT Y6FPDKW 6/28/80 WESTDYN

EQUATION 11 STRESS ANALYSIS PER ANSI B31.1 CODE THROUGH THE SUMMER 1973 ADDENDA (NNS PIPING)
ALL STRESSES IN PSI

NON-NUCLEAR SAFETY (NNS) PIPING

NODE POINT	MEMBER TYPE	EQUATION NUMBER	PRESSURE STRESS	BENDING STRESS	TOTAL STRESS	ALLOWABLE STRESS	OVERSTRESS
133	CR	11	637.	16.	653.	12402.	
510	CR	11	637.	17.	654.	12402.	
510	CR	11	4828.	158.	4986.	12402.	
520	CR	11	4828.	159.	4987.	12402.	
520	CR	11	4828.	159.	4987.	12402.	
521	CR	11	4828.	159.	4987.	12402.	
521	EL	11	4828.	234.	5062.	12402.	
530	EL	11	4828.	185.	5013.	12402.	
530	CR	11	4828.	125.	4953.	12402.	
540	CR	11	4828.	125.	4953.	12402.	
540	RE	11	5734.	236.	5971.	12402.	
550	RE	11	5734.	227.	5961.	12402.	
550	CR	11	5734.	243.	5977.	12402.	
560	CR	11	5734.	242.	5976.	12402.	
560	CR	11	5734.	150.	5885.	12402.	
570	CR	11	5734.	151.	5885.	12402.	
570	CR	11	5734.	151.	5885.	12402.	
580	CR	11	5734.	243.	5978.	12402.	

MAIN STEAM DEAD WEIGHT Y6FPDKW 6/28/80 WESTDYN

EQUATION 11 STRESS ANALYSIS PER ANSI B31.1 CODE THROUGH THE SUMMER 1973 ADDENDA (NNS PIPING)
ALL STRESSES IN PSI

NON-NUCLEAR SAFETY (NNS) PIPING

NODE POINT	MEMBER TYPE	EQUATION NUMBER	PRESSURE STRESS	BENDING STRESS	TOTAL STRESS	ALLOWABLE STRESS	OVERSTRESS
580	CR	11	5734.	243.	5978.	12402.	
581	CR	11	5734.	243.	5977.	12402.	
581	EL	11	5734	391	6125.	12402.	
590	EL	11	5734.	123.	5857.	12402.	
600	CR	11	5734	[illegible]	5811.	12402	

530	CR	11	4828.	125.	4953.	12402.
540	RE	11	5734.	236.	5971.	12402.
550	RE	11	5734.	227.	5961.	12402.
550	CR	11	5734.	243.	5977.	12402.
560	CR	11	5734.	242.	5976.	12402.
560	CR	11	5734.	150.	5885.	12402.
570	CR	11	5734.	151.	5885.	12402.
570	CR	11	5734.	151.	5885.	12402.
580	CR	11	5734.	243.	5978.	12402.

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EQUATION 11 STRESS ANALYSIS PER ANSI B31.1 CODE THROUGH THE SUMMER 1973 ADDENDA (NNS PIPING)
ALL STRESSES IN PSI

NON-NUCLEAR SAFETY (NNS) PIPING

NODE POINT	MEMBER TYPE	EQUATION NUMBER	PRESSURE STRESS	BENDING STRESS	TOTAL STRESS	ALLOWABLE STRESS	OVERSTRESS
580	CR	11	5734.	243.	5978.	12402.	
581	CR	11	5734.	243.	5977.	12402.	
581	EL	11	5734.	391.	6125.	12402.	
590	EL	11	5734.	123.	5857.	12402.	
590	CR	11	5734.	76.	5811.	12402.	
600	CR	11	5734.	82.	5816.	12402.	
600	CR	11	5734.	82.	5816.	12402.	
610	CR	11	5734.	128.	5863.	12402.	
610	CR	11	5734.	128.	5863.	12402.	
620	CR	11	5734.	142.	5876.	12402.	
620	CR	11	5734.	142.	5876.	12402.	
621	CR	11	5734.	142.	5876.	12402.	
621	EL	11	5734.	229.	5963.	12402.	
630	EL	11	5734.	270.	6004.	12402.	
630	CR	11	5734.	168.	5902.	12402.	
640	CR	11	5734.	264.	5999.	12402.	
640	CR	11	5734.	264.	5999.	12402.	
650	CR	11	5734.	321.	6055.	12402.	

EQUATION 11 STRESS ANALYSIS PER ANSI B31.1 CODE THROUGH THE SUMMER 1973 ADDENDA (NNS PIPING)
ALL STRESSES IN PSI

-NUCLEAR SAFETY (NNS) PIPING

NODE POINT	MEMBER TYPE	EQUATION NUMBER	PRESSURE STRESS	BENDING STRESS	TOTAL STRESS	ALLOWABLE STRESS	OVERSTRESS
650	CR	11	5734.	321.	6055.	12402.	
660	CR	11	5734.	270.	6005.	12402.	

590	ER	11	5734.	76.	5811.	12402.
600	CR	11	5734.	82.	5816.	12402.
600	CR	11	5734.	82.	5816.	12402.
610	CR	11	5734.	128.	5863.	12402.
610	CR	11	5734.	128.	5863.	12402.
620	CR	11	5734.	142.	5876.	12402.
620	CR	11	5734.	142.	5876.	12402.
621	CR	11	5734.	142.	5876.	12402.
621	EL	11	5734.	229.	5963.	12402.
630	EL	11	5734.	270.	6004.	12402.
630	CR	11	5734.	168.	5902.	12402.
640	CR	11	5734.	264.	5999.	12402.
640	CR	11	5734.	264.	5999.	12402.
650	CR	11	5734.	321.	6055.	12402.

MAIN STEAM DEAD WEIGHT Y6FPDKW 6/28/80 WESTDYN

EQUATION 11 STRESS ANALYSIS PER ANSI B31.1 CODE THROUGH THE SUMMER 1973 ADDENDA (NNS PIPING)
ALL STRESSES IN PSI

NON-NUCLEAR SAFETY (NNS) PIPING

NODE POINT	MEMBER TYPE	EQUATION NUMBER	PRESSURE STRESS	BENDING STRESS	TOTAL STRESS	ALLOWABLE STRESS	OVERSTRESS
650	CR	11	5734.	321.	6055.	12402.	
660	CR	11	5734.	270.	6005.	12402.	
660	CR	11	5734.	270.	6005.	12402.	
670	CR	11	5734.	191.	5925.	12402.	
670	CR	11	5734.	191.	5925.	12402.	
680	CR	11	5734.	330.	6064.	12402.	
680	CR	11	5734.	330.	6064.	12402.	
690	CR	11	5734.	162.	5896.	12402.	
690	CR	11	5734.	162.	5896.	12402.	
700	CR	11	5734.	95.	5829.	12402.	
700	CR	11	5734.	95.	5829.	12402.	
701	CR	11	5734.	95.	5829.	12402.	
701	EL	11	5734.	153.	5887.	12402.	
710	EL	11	5734.	264.	5998.	12402.	
710	CR	11	5734.	164.	5898.	12402.	
720	CR	11	5734.	164.	5898.	12402.	

END OF WESTDYN TABULATIONS

EQUATION 13 STRESS ANALYSIS PER ANSI B31.1 CODE THROUGH THE SUMMER 1973 ADDENDA (NNS PIPING)
ALL STRESSES IN PSI

NON-NUCLEAR SAFETY (NNS) PIPING

NODE POINT	MEMBER TYPE	EQUATION NUMBER	PRESSURE STRESS	BENDING STRESS	TOTAL STRESS	ALLOWABLE STRESS	OVERSTRESS
133	CR	13		353.	353.	18003.	
510	CR	13		317.	317.	18003.	
510	CR	13		3021.	3021.	18003.	
520	CR	13		3020.	3020.	18003.	
520	CR	13		3020.	3020.	18003.	
521	CR	13		3019.	3019.	18003.	
521	EL	13		5948.	5948.	18003.	
530	EL	13		5568.	5568.	18003.	
530	CR	13		2836.	2836.	18003.	
540	CR	13		2837.	2837.	18003.	
540	RE	13		7169.	7169.	18003.	
550	RE	13		7420.	7420.	18003.	
550	CR	13		7951.	7951.	18003.	
550	CR	13		6019.	6019.	18003.	
560	CR	13		3742.	3742.	18003.	
570	CR	13		4052.	4052.	18003.	
570	CR	13		4052.	4052.	18003.	
580	CR	13		5050.	5050.	18003.	

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EQUATION 13 STRESS ANALYSIS PER ANSI B31.1 CODE THROUGH THE SUMMER 1973 ADDENDA (NNS PIPING)
ALL STRESSES IN PSI

NON-NUCLEAR SAFETY (NNS) PIPING

NODE POINT	MEMBER TYPE	EQUATION NUMBER	PRESSURE STRESS	BENDING STRESS	TOTAL STRESS	ALLOWABLE STRESS	OVERSTRESS
133	CR	13		333.	333.	18003.	
510	CR	13		317.	317.	18003.	
510	CR	13		3021.	3021.	18003.	
520	CR	13		3020.	3020.	18003.	
520	CR	13		3020.	3020.	18003.	
521	CR	13		3019.	3019.	18003.	
521	EL	13		5948.	5948.	18003.	
530	EL	13		5588.	5588.	18003.	
530	CR	13		2836.	2836.	18003.	
540	CR	13		2837.	2837.	18003.	
540	RE	13		7169.	7169.	18003.	
550	RE	13		7420.	7420.	18003.	
550	CR	13		7951.	7951.	18003.	
560	CR	13		8019.	8019.	18003.	
560	CR	13		3742.	3742.	18003.	
570	CR	13		4052.	4052.	18003.	
570	CR	13		4052.	4052.	18003.	
580	CR	13		5030.	5030.	18003.	

EQUATION 13 STRESS ANALYSIS PER ANSI B31.1 CODE THROUGH THE SUMMER 1973 ADDENDA (NNS PIPING)
ALL STRESSES IN PSI

NON-NUCLEAR SAFETY (NNS) PIPING

NODE POINT	MEMBER TYPE	EQUATION NUMBER	PRESSURE STRESS	BENDING STRESS	TOTAL STRESS	ALLOWABLE STRESS	OVERSTRESS
580	CR	13		5030.	5030.	18603.	
581	CR	13		5032.	5032.	18603.	
581	EL	13		10799.	10799.	18603.	
590	EL	13		10561.	10561.	18603.	
590	CR	13		4922.	4922.	18603.	
600	CR	13		4865.	4865.	18603.	
600	CR	13		4865.	4865.	18603.	
610	CR	13		4361.	4361.	18603.	
610	CR	13		4361.	4361.	18603.	
620	CR	13		4045.	4045.	18603.	
620	CR	13		4045.	4045.	18603.	
621	CR	13		4044.	4044.	18603.	
621	EL	13		8678.	8678.	18603.	
630	EL	13		6754.	6754.	18603.	
630	CR	13		3147.	3147.	18603.	
640	CR	13		2627.	2627.	18603.	
640	CR	13		2627.	2627.	18603.	
650	CR	13		2416.	2416.	18603.	

EQUATION 13 STRESS ANALYSIS PER ANSI B31.1 CODE THROUGH THE SUMMER 1973 ADDENDA (NNS PIPING)
ALL STRESSES IN PSI

NON-NUCLEAR SAFETY (NNS) PIPING

NODE POINT	MEMBER TYPE	EQUATION NUMBER	PRESSURE STRESS	BENDING STRESS	TOTAL STRESS	ALLOWABLE STRESS	OVERSTRESS
650	CR	13		2416.	2416.	18603.	
660	CR	13		2169.	2169.	18603.	
660	CR	13		2169.	2169.	18603.	
670	CR	13		2104.	2104.	18603.	
670	CR	13		2104.	2104.	18603.	
680	CR	13		3055.	3055.	18603.	
680	CR	13		3055.	3055.	18603.	
690	CR	13		3962.	3962.	18603.	
690	CR	13		3962.	3962.	18603.	
700	CR	13		5773.	5773.	18603.	
700	CR	13		5773.	5773.	18603.	
701	CR	13		5774.	5774.	18603.	
701	EL	13		12413.	12413.	18603.	
710	EL	13		15107.	15107.	18603.	
710	CR	13		7027.	7027.	18603.	
720	CR	13		7030.	7030.	18603.	

EQUATION 13 STRESS ANALYSIS PER ANSI B31.1 CODE THROUGH THE SUMMER 1973 ADDENDA (NNS PIPING)
ALL STRESSES IN PSI

NON-NUCLEAR SAFETY (NNS) PIPING

NODE POINT	MEMBER TYPE	EQUATION NUMBER	PRESSURE STRESS	BENDING STRESS	TOTAL STRESS	ALLOWABLE STRESS	OVERSTRESS
133	CR	13		315.	315.	18003.	
510	CR	13		299.	299.	18003.	
510	CR	13		2847.	2847.	18003.	
520	CR	13		2846.	2846.	18003.	
520	CR	13		2846.	2846.	18003.	
521	CR	13		2845.	2845.	18003.	
521	EL	13		5006.	5006.	18003.	
530	EL	13		5185.	5185.	18003.	
530	CR	13		2632.	2632.	18003.	
540	CR	13		2633.	2633.	18003.	
540	RE	13		6653.	6653.	18003.	
550	RE	13		6915.	6915.	18003.	
550	CR	13		7410.	7410.	18003.	
560	CR	13		7482.	7482.	18003.	
560	CR	13		3491.	3491.	18003.	
570	CR	13		3816.	3816.	18003.	
570	CR	13		3810.	3810.	18003.	
580	CR	13		4834.	4834.	18003.	

EQUATION 13 STRESS ANALYSIS PER ANSI B31.1 CODE THROUGH THE SUMMER 1973 ADDENDA (NNS PIPING)
ALL STRESSES IN PSI

NON-NUCLEAR SAFETY (NNS) PIPING

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NODE POINT	MEMBER TYPE	EQUATION NUMBER	PRESSURE STRESS	BENDING STRESS	TOTAL STRESS	ALLOWABLE STRESS	OVERSTRESS
580	CR	13		4834.	4834.	18603.	
581	CR	13		4836.	4836.	18603.	
581	EL	13		10377.	10377.	18603.	
590	EL	13		10366.	10366.	18603.	
590	CR	13		4830.	4830.	18603.	
600	CR	13		4778.	4778.	18603.	
600	CR	13		4778.	4778.	18603.	
610	CR	13		4310.	4310.	18603.	
610	CR	13		4310.	4310.	18603.	
620	CR	13		3997.	3997.	18603.	
620	CR	13		3997.	3997.	18603.	
621	CR	13		3996.	3996.	18603.	
621	EL	13		8575.	8575.	18603.	
630	EL	13		6488.	6488.	18603.	
630	CR	13		3023.	3023.	18603.	
640	CR	13		2489.	2489.	18603.	
640	CR	13		2489.	2489.	18603.	
650	CR	13		2272.	2272.	18603.	

EQUATION 13 STRESS ANALYSIS PER ANSI B31.1 CODE THROUGH THE SUMMER 1973 ADDENDA (NNS PIPING)
ALL STRESSES IN PSI

NON-NUCLEAR SAFETY (NNS) PIPING

NODE POINT	MEMBER TYPE	EQUATION NUMBER	PRESSURE STRESS	BENDING STRESS	TOTAL STRESS	ALLOWABLE STRESS	OVERSTRESS
650	CR	13		2272.	2272.	18003.	
660	CR	13		2016.	2016.	18003.	
660	CR	13		2016.	2016.	18003.	
670	CR	13		2021.	2021.	18003.	
670	CR	13		2021.	2021.	18003.	
680	CR	13		3027.	3027.	18003.	
680	CR	13		3027.	3027.	18003.	
690	CR	13		3962.	3962.	18003.	
690	CR	13		3962.	3962.	18003.	
700	CR	13		5806.	5806.	18003.	
700	CR	13		5806.	5806.	18003.	
701	CR	13		5808.	5808.	18003.	
701	EL	13		12485.	12485.	18003.	
710	EL	13		15139.	15139.	18003.	
710	CR	13		7042.	7042.	18003.	
720	CR	13		7045.	7045.	18003.	

OBE ENVELOPE OF 312 CONT SHELL 311 I.C. 313 SG Y6FPDHP 6/28/83

EQUATION 12 STRESS ANALYSIS PER ANSI B31.1 CODE THROUGH THE SUMMER 1973 ADDENDA (NNS PIP
ALL STRESSES IN PSI

NON-NUCLEAR SAFETY (NNS) PIPING

NODE POINT	MEMBER TYPE	EQUATION NUMBER	PRESSURE STRESS	BENDING STRESS	TOTAL STRESS	ALLOWABLE STRESS	OVERSTR
133	CR	12	637.	186.	823.	14882.	
510	CR	12	637.	178.	815.	14882.	
510	CR	12	4828.	1695.	6523.	14882.	
520	CR	12	4828.	1694.	6522.	14882.	
520	CR	12	4828.	1694.	6522.	14882.	
521	CR	12	4828.	1694.	6522.	14882.	
521	EL	12	4828.	2503.	7331.	14882.	
530	EL	12	4828.	1457.	6285.	14882.	
530	CR	12	4828.	986.	5814.	14882.	
540	CR	12	4828.	983.	5811.	14882.	
540	RE	12	5734.	1863.	7597.	14882.	
550	RE	12	5734.	1452.	7186.	14882.	
550	CR	12	5734.	1556.	7290.	14882.	
560	CR	12	5734.	1461.	7196.	14882.	
560	CR	12	5734.	909.	6644.	14882.	
570	CR	12	5734.	499.	6234.	14882.	
570	CR	12	5734.	499.	6234.	14882.	
580	CR	12	5734.	794.	6528.	14882.	

OBE ENVELOPE OF 312 CONT SHELL 311 I.C. 313 SG Y6FPDHP 6/28/83

EQUATION 12 STRESS ANALYSIS PER ANSI B31.1 CODE THROUGH THE SUMMER 1973 ADDENDA (NNS PIP
ALL STRESSES IN PSI

NON-NUCLEAR SAFETY (NNS) PIPING

NODE POINT	MEMBER TYPE	EQUATION NUMBER	PRESSURE STRESS	BENDING STRESS	TOTAL STRESS	ALLOWABLE STRESS	OVERSTR
580	CR	12	5734.	794.	6528.	14882.	
581	CR	12	5734.	794.	6529.	14882.	
581	EL	12	5734.	1279.	7013.	14882.	

540	CR	12	4020.	983.	5811.	14882.
540	RE	12	5734.	1063.	7597.	14882.
550	RE	12	5734.	1452.	7186.	14882.
550	CR	12	5734.	1556.	7290.	14882.
560	CR	12	5734.	1461.	7196.	14882.
560	CR	12	5734.	909.	6644.	14882.
570	CR	12	5734.	499.	6234.	14882.
570	CR	12	5734.	499.	6234.	14882.
560	CR	12	5734.	794.	6528.	14882.

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OBE ENVELOPE OF 312 CONT SHELL 311 I.C. 313 SG Y6FPDHP 6/28/80

EQUATION 12 STRESS ANALYSIS PER ANSI B31.1 CODE THROUGH THE SUMMER 1973 ADDENDA (NNS PIP.
ALL STRESSES IN PSI

NON-NUCLEAR SAFETY (NNS) PIPING

NODE POINT	MEMBER TYPE	EQUATION NUMBER	PRESSURE STRESS	BENDING STRESS	TOTAL STRESS	ALLOWABLE STRESS	OVERSTRI
580	CR	12	5734.	794.	6528.	14882.	
581	CR	12	5734.	794.	6529.	14882.	
581	EL	12	5734.	1279.	7013.	14882.	
590	EL	12	5734.	1431.	7165.	14882.	
590	CR	12	5734.	889.	6623.	14882.	
600	CR	12	5734.	416.	6151.	14882.	
600	CR	12	5734.	416.	6151.	14882.	
610	CR	12	5734.	379.	6113.	14882.	
610	CR	12	5734.	379.	6113.	14882.	
620	CR	12	5734.	384.	6118.	14882.	
620	CR	12	5734.	384.	6118.	14882.	
621	CR	12	5734.	384.	6118.	14882.	
621	EL	12	5734.	617.	6352.	14882.	
630	EL	12	5734.	841.	6575.	14882.	
630	CR	12	5734.	522.	6257.	14882.	
640	CR	12	5734.	977.	6711.	14882.	
640	CR	12	5734.	977.	6711.	14882.	
650	CR	12	5734.	1175.	6910.	14882.	

OBE ENVELOPE OF 312 CONT SHELL 311 I.C. 313 SG Y6FPDHP 6/28/80

EQUATION 12 STRESS ANALYSIS PER ANSI B31.1 CODE THROUGH THE SUMMER 1973 ADDENDA (NNS PIP
ALL STRESSES IN PSI

NON-NUCLEAR SAFETY (NNS) PIPING

NODE POINT	MEMBER TYPE	EQUATION NUMBER	PRESSURE STRESS	BENDING STRESS	TOTAL STRESS	ALLOWABLE STRESS	OVERSTRI
650	CR	12	5734.	1175.	6910.	14882.	

610	CR	12	5734.	379.	6113.	14882.
620	CR	12	5734.	384.	6118.	14882.
620	CR	12	5734.	384.	6118.	14882.
621	CR	12	5734.	384.	6118.	14882.
621	EL	12	5734.	617.	6352.	14882.
630	EL	12	5734.	841.	6575.	14882.
630	CR	12	5734.	522.	6257.	14882.
640	CR	12	5734.	977.	6711.	14882.
640	CR	12	5734.	977.	6711.	14882.
650	CR	12	5734.	1175.	6910.	14882.

OBE ENVELOPE OF 312 CONT SHELL 311 I.C. 313 SG YGFPDHP 6/28/80 1

EQUATION 12 STRESS ANALYSIS PER ANSI B31.1 CODE THROUGH THE SUMMER 1973 ADDENDA (NNS PIPI
ALL STRESSES IN PSI

NON-NUCLEAR SAFETY (NNS) PIPING

NODE POINT	MEMBER TYPE	EQUATION NUMBER	PRESSURE STRESS	BENDING STRESS	TOTAL STRESS	ALLOWABLE STRESS	OVERSTRE:
650	CR	12	5734.	1175.	6910.	14882.	
660	CR	12	5734.	1449.	7183.	14882.	
660	CR	12	5734.	1449.	7183.	14882.	
670	CR	12	5734.	1924.	7658.	14882.	
670	CR	12	5734.	1924.	7658.	14882.	
680	CR	12	5734.	1423	7157.	14882.	
680	CR	12	5734.	1422.	7157.	14882.	
690	CR	12	5734.	997.	6732.	14882.	
690	CR	12	5734.	997.	6732.	14882.	
700	CR	12	5734.	547.	6281.	14882.	
700	CR	12	5734.	547.	6281.	14882.	
701	CR	12	5734.	548.	6282.	14882.	
701	EL	12	5734.	883.	6617.	14882.	
710	EL	12	5734.	2254.	7988.	14882.	
710	CR	12	5734.	1398.	7132.	14882.	
720	CR	12	5734.	1400.	7134.	14882.	

END OF WESTDYN TABULATIONS

SSE SEISMIC ANALYSIS Y6FPDHP 6/28/80 MI

EQUATION 12 STRESS ANALYSIS PER ANSI B31.1 CODE THROUGH THE SUMMER 1973 ADDENDA (NNS PIPIN
ALL STRESSES IN PSI

NON-NUCLEAR SAFETY (NNS) PIPING

NODE POINT	MEMBER TYPE	EQUATION NUMBER	PRESSURE STRESS	BENDING STRESS	TOTAL STRESS	ALLOWABLE STRESS	OVERSTRES
133	CR	12	637.	315.	952.	14882.	
510	CR	12	637.	303.	940.	14882.	
510	CR	12	4828.	2879.	7707.	14882.	
520	CR	12	4828.	2879.	7707.	14882.	
520	CR	12	4828.	2879.	7707.	14882.	
521	CR	12	4828.	2878.	7706.	14882.	
521	EL	12	4828.	4253.	9081.	14882.	
530	EL	12	4828.	2483.	7311.	14882.	
530	CR	12	4828.	1680.	6508.	14882.	
540	CR	12	4828.	1675.	6503.	14882.	
540	RE	12	5734.	3174.	8908.	14882.	
550	RE	12	5734.	2481.	8215.	14882.	
550	CR	12	5734.	2658.	8393.	14882.	
560	CR	12	5734.	2499.	8233.	14882.	
560	CR	12	5734.	1555.	7289.	14882.	
570	CR	12	5734.	859.	6594.	14882.	
570	CR	12	5734.	859.	6594.	14882.	
580	CR	12	5734.	1320.	7054.	14882.	

SSE SEISMIC ANALYSIS Y6FPDHP 6/28/80 ME

EQUATION 12 STRESS ANALYSIS PER ANSI B31.1 CODE THROUGH THE SUMMER 1973 ADDENDA (NNS PIPING
ALL STRESSES IN PSI

NON-NUCLEAR SAFETY (NNS) PIPING

NODE POINT	MEMBER TYPE	EQUATION NUMBER	PRESSURE STRESS	BENDING STRESS	TOTAL STRESS	ALLOWABLE STRESS	OVERSTRESS
580	CR	12	5734.	1320.	7054.	14882.	

540	CR	12	4028.	1679.	[illegible]	[illegible]
540	BE	12	5734.	3174.	[illegible]	[illegible]
550	BE	12	5734.	2401.	[illegible]	[illegible]
550	CR	12	5734.	2658.	8391.	[illegible]
560	CR	12	5734.	2499.	8233.	[illegible]
560	CR	12	5734.	1555.	7289.	[illegible]
570	CR	12	5734.	859.	6594.	[illegible]
570	CR	12	5734.	859.	6594.	14882.
580	CR	12	5734.	1320.	7054.	14882.

SSE SEISMIC ANALYSIS

YGFPDHP 6/28/

EQUATION 12 STRESS ANALYSIS PER ANSI B31.1 CODE THROUGH THE SUMMER 1973 ADDENDA (NNS)
ALL STRESSES IN PSI

NON-NUCLEAR SAFETY (NNS) PIPING

NODE POINT	MEMBER TYPE	EQUATION NUMBER	PRESSURE STRESS	BENDING STRESS	TOTAL STRESS	ALLOWABLE STRESS
580	CR	12	5734.	1320.	7054.	14882.
581	CR	12	5734.	1321.	7055.	14882.
581	EL	12	5734.	2126.	7860.	14882.
590	EL	12	5734.	2383.	8118.	14882.
590	CR	12	5734.	1481.	7215.	14882.
600	CR	12	5734.	720.	6454.	14882.
600	CR	12	5734.	720.	6454.	14882.
610	CR	12	5734.	666.	6401.	14882.
610	CR	12	5734.	666.	6401.	14882.
620	CR	12	5734.	644.	6379.	14882.
620	CR	12	5734.	644.	6379.	14882.
621	CR	12	5734.	644.	6379.	14882.
621	EL	12	5734.	1037.	6771.	14882.
630	EL	12	5734.	1526.	7260.	14882.
630	CR	12	5734.	948.	6682.	14882.
640	CR	12	5734.	1702.	7437.	14882.
640	CR	12	5734.	1702.	7437.	14882.
650	CR	12	5734.	2001.	7735.	14882.

SSE SEISMIC ANALYSIS

YGFPDHP 6/28/

EQUATION 12 STRESS ANALYSIS PER ANSI B31.1 CODE THROUGH THE SUMMER 1973 ADDENDA (NNS)
ALL STRESSES IN PSI

NON-NUCLEAR SAFETY (NNS) PIPING

NODE POINT	MEMBER TYPE	EQUATION NUMBER	PRESSURE STRESS	BENDING STRESS	TOTAL STRESS	ALLOWABLE STRESS	OVE
650	CR	12	5734.	2001.	7735.	14882.	
660	CR	12	5734.	2423.	8157.	14882.	

620	CR	12	5734.	644.	6379.	[illegible]
620	CR	12	5734.	644.	6379.	[illegible]
621	CR	12	5734.	644.	6379.	[illegible]
621	EL	12	5734.	1037.	6771.	[illegible]
630	EL	12	5734.	1526.	7260.	[illegible]
630	CR	12	5734.	948.	6682.	[illegible]
640	CR	12	5734.	1702.	7437.	14882.
640	CR	12	5734.	1702.	7437.	14882.
650	CR	12	5734.	2001.	7735.	14882.

SSE SEISMIC ANALYSIS

TOFPDHP 6/20/80

EQUATION 12 STRESS ANALYSIS PER ANSI B31.1 CODE THROUGH THE SUMMER 1973 ADDENDA (NNS &
ALL STRESSES IN PSI

NON-NUCLEAR SAFETY (NNS) PIPING

NODE POINT	MEMBER TYPE	EQUATION NUMBER	PRESSURE STRESS	BENDING STRESS	TOTAL STRESS	ALLOWABLE STRESS	OVERS
650	CR	12	5734.	2001.	7735.	14882.	
660	CR	12	5734.	2423.	8157.	14882.	
660	CR	12	5734.	2423.	8157.	14882.	
670	CR	12	5734.	3151.	8886.	14882.	
670	CR	12	5734.	3151.	8886.	14882.	
680	CR	12	5734.	2329.	8064.	14882.	
680	CR	12	5734.	2329.	8064.	14882.	
690	CR	12	5734.	1633.	7367.	14882.	
690	CR	12	5734.	1633.	7367.	14882.	
700	CR	12	5734.	898.	6632.	14882.	
700	CR	12	5734.	898.	6632.	14882.	
701	CR	12	5734.	900.	6634.	14882.	
701	EL	12	5734.	1451.	7185.	14882.	
710	EL	12	5734.	3683.	9418.	14882.	
710	CR	12	5734.	2284.	8019.	14882.	
720	CR	12	5734.	2287.	8021.	14882.	

END OF WESTDYN TABULATIONS

EXTERNAL X DISPLACEMENT OF S.G. Y6FPDZX 6/30/80 WESTD

EQUATION 12 STRESS ANALYSIS PER ANSI B31.1 CODE THROUGH THE SUMMER 1973 ADDENDA (NNS PIPING)
ALL STRESSES IN PSI

NON-NUCLEAR SAFETY (NNS) PIPING

NODE POINT	MEMBER TYPE	EQUATION NUMBER	PRESSURE STRESS	BENDING STRESS	TOTAL STRESS	ALLOWABLE STRESS	OVERSTRESS
133	CR	12	637.	153.	790.	14882.	
510	CR	12	637.	150.	788.	14882.	
510	CR	12	4828.	1432.	6260.	14882.	
520	CR	12	4828.	1432.	6260.	14882.	
520	CR	12	4828.	1432.	6260.	14882.	
521	CR	12	4828.	1432.	6260.	14882.	
521	EL	12	4828.	2116.	6944.	14882.	
530	EL	12	4828.	1559.	6387.	14882.	
530	CR	12	4828.	1055.	5883.	14882.	
540	CR	12	4828.	1053.	5881.	14882.	
540	RE	12	5734.	1996.	7730.	14882.	
550	RE	12	5734.	1760.	7494.	14882.	
550	CR	12	5734.	1886.	7620.	14882.	
560	CR	12	5734.	1830.	7564.	14882.	
560	CR	12	5734.	1139.	6873.	14882.	
570	CR	12	5734.	857.	6591.	14882.	
570	CR	12	5734.	857.	6591.	14882.	
580	CR	12	5734.	293.	6028.	14882.	

EXTERNAL X DISPLACEMENT OF S.G. Y6FPDZX 6/30/80 WESTD

EQUATION 12 STRESS ANALYSIS PER ANSI B31.1 CODE THROUGH THE SUMMER 1973 ADDENDA (NNS PIPING)
ALL STRESSES IN PSI

NON-NUCLEAR SAFETY (NNS) PIPING

NODE POINT	MEMBER TYPE	EQUATION NUMBER	PRESSURE STRESS	BENDING STRESS	TOTAL STRESS	ALLOWABLE STRESS	OVERSTRESS

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	RB	12	5734.	1996.	[illegible]	[illegible]
550	RB	12	5734.	1760.	7494.	14882.
550	LR	12	5734.	1883.	7620.	14882.
560	LR	12	5734.	1830.	7564.	14882.
560	LR	12	5734.	1139.	6873.	14882.
570	CR	12	5734.	857.	6591.	14882.
570	CR	12	5734.	857.	6591.	14882.
580	CR	12	5734.	293.	6028.	14882.

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EXTERNAL X DISPLACEMENT OF S.G. Y6FP02X 6/30/80 WESTI

EQUATION 12 STRESS ANALYSIS PER ANSI B31.1 CODE THROUGH THE SUMMER 1973 ADDENDA (NNS PIPING)
ALL STRESSES IN PSI

NON-NUCLEAR SAFETY (NNS) PIPING

NODE POINT	MEMBER TYPE	EQUATION NUMBER	PRESSURE STRESS	BENDING STRESS	TOTAL STRESS	ALLOWABLE STRESS	OVERSTRESS
580	CR	12	5734.	293.	6028.	14882.	
581	CR	12	5734.	293.	6027.	14882.	
581	EL	12	5734.	471.	6205.	14882.	
590	EL	12	5734.	721.	6455.	14882.	
590	CR	12	5734.	448.	6182.	14882.	
600	CR	12	5734.	630.	6365.	14882.	
600	CR	12	5734.	630.	6365.	14882.	
610	CR	12	5734.	623.	6358.	14882.	
610	CR	12	5734.	623.	6358.	14882.	
620	CR	12	5734.	619.	6353.	14882.	
620	CR	12	5734.	619.	6353.	14882.	
621	CR	12	5734.	619.	6353.	14882.	
621	EL	12	5734.	996.	6730.	14882.	
630	EL	12	5734.	842.	6577.	14882.	
630	CR	12	5734.	523.	6258.	14882.	
640	CR	12	5734.	468.	6202.	14882.	
640	CR	12	5734.	468.	6202.	14882.	
650	CR	12	5734.	445.	6179.	14882.	

EXTERNAL X DISPLACEMENT OF S.G. Y6FP02X 6/30/80 WESTI

EQUATION 12 STRESS ANALYSIS PER ANSI B31.1 CODE THROUGH THE SUMMER 1973 ADDENDA (NNS PIPING)
ALL STRESSES IN PSI

NON-NUCLEAR SAFETY (NNS) PIPING

NODE POINT	MEMBER TYPE	EQUATION NUMBER	PRESSURE STRESS	BENDING STRESS	TOTAL STRESS	ALLOWABLE STRESS	OVERSTRESS
650	CR	12	5734.	445.	6179.	14882.	
660	CR	12	5734.	414.	6148.	14882.	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	

600	CR	12	5734.	630.	6365.	14882.
600	CR	12	5734.	630.	6365.	14882.
610	CR	12	5734.	623.	6358.	14882.
610	CR	12	5734.	623.	6358.	14882.
620	CR	12	5734.	619.	6353.	14882.
620	CR	12	5734.	619.	6353.	14882.
621	CR	12	5734.	619.	6353.	14882.
621	EL	12	5734.	996.	6730.	14882.
630	EL	12	5734.	842.	6577.	14882.
630	CR	12	5734.	523.	6258.	14882.
640	CR	12	5734.	468.	6202.	14882.
640	CR	12	5734.	468.	6202.	14882.
650	CR	12	5734.	445.	6179.	14882.

EXTERNAL X DISPLACEMENT OF S.G. Y6FPD2X 6/30/80 WESTDYN

EQUATION 12 STRESS ANALYSIS PER ANSI B31.1 CODE THROUGH THE SUMMER 1973 ADDENDA (NNS PIPING)
ALL STRESSES IN PSI

NON-NUCLEAR SAFETY (NNS) PIPING

NODE POINT	MEMBER TYPE	EQUATION NUMBER	PRESSURE STRESS	BENDING STRESS	TOTAL STRESS	ALLOWABLE STRESS	OVERSTRESS
650	CR	12	5734.	445.	6179.	14882.	
660	CR	12	5734.	414.	6148.	14882.	
660	CR	12	5734.	414.	6148.	14882.	
670	CR	12	5734.	201.	5935.	14882.	
670	CR	12	5734.	201.	5935.	14882.	
680	CR	12	5734.	95.	5829.	14882.	
680	CR	12	5734.	95.	5829.	14882.	
690	CR	12	5734.	11.	5746.	14882.	
690	CR	12	5734.	11.	5746.	14882.	
700	CR	12	5734.	171.	5905.	14882.	
700	CR	12	5734.	171.	5905.	14882.	
701	CR	12	5734.	171.	5905.	14882.	
701	EL	12	5734.	275.	6010.	14882.	
710	EL	12	5734.	404.	6138.	14882.	
710	CR	12	5734.	251.	5985.	14882.	
720	CR	12	5734.	251.	5985.	14882.	

END OF WESTDYN TABULATIONS

EXTERNAL Y(VERT) DISPLACEMENT OF S.G. Y6FPDIX 6/30/86

EQUATION 12 STRESS ANALYSIS PER ANSI B31.1 CODE THROUGH THE SUMMER 1973 ADDENDA (NNS PIPI
ALL STRESSES IN PSI

NON-NUCLEAR SAFETY (NNS) PIPING

NODE POINT	MEMBER TYPE	EQUATION NUMBER	PRESSURE STRESS	BENDING STRESS	TOTAL STRESS	ALLOWAB E STRESS	OVERSTRE
133	CR	12	637.	24.	661.	14882.	
510	CR	12	637.	25.	662.	14882.	
510	CR	12	4828.	234.	5062.	14882.	
520	CR	12	4828.	234.	5062.	14882.	
520	CR	12	4828.	234.	5062.	14882.	
521	CR	12	4828.	234.	5062.	14882.	
521	EL	12	4828.	346.	5174.	14882.	
530	EL	12	4828.	292.	5120.	14882.	
530	CR	12	4828.	197.	5025.	14882.	
540	CR	12	4828.	197.	5025.	14882.	
540	RE	12	5734.	374.	6108.	14882.	
550	RE	12	5734.	348.	6083.	14882.	
550	CR	12	5734.	373.	6108.	14882.	
560	CR	12	5734.	368.	6102.	14882.	
560	CR	12	5734.	229.	5963.	14882.	
570	CR	12	5734.	209.	5943.	14882.	
570	CR	12	5734.	209.	5943.	14882.	
580	CR	12	5734.	222.	5956.	14882.	

EXTERNAL Y(VERT) DISPLACEMENT OF S.G. Y6FPD2X 6

EQUATION 12 STRESS ANALYSIS PER ANSI B31.1 CODE THROUGH THE SUMMER 1973 ADDENDA
ALL STRESSES IN PSI

NON-NUCLEAR SAFETY (NNS) PIPING

NODE POINT	MEMBER TYPE	EQUATION NUMBER	PRESSURE STRESS	BENDING STRESS	TOTAL STRESS	ALLOWABLE STRESS
580	CR	12	5734.	222.	5956.	14882.
581	CR	12	5734.	222.	5956.	14882.
581	EL	12	5734.	357.	6092.	14882.
590	EL	12	5734.	343.	6078.	14882.
590	CR	12	5734.	213.	5948.	14882.
600	CR	12	5734.	211.	5945.	14882.
600	CR	12	5734.	211.	5945.	14882.
610	CR	12	5734.	188.	5922.	14882.
610	CR	12	5734.	188.	5922.	14882.
620	CR	12	5734.	189.	5923.	14882.
620	CR	12	5734.	189.	5923.	14882.
621	CR	12	5734.	189.	5923.	14882.
621	EL	12	5734.	304.	6038.	14882.
630	EL	12	5734.	260.	5995.	14882.
630	CR	12	5734.	162.	5896.	14882.
640	CR	12	5734.	137.	5872.	14882.
640	CR	12	5734.	137.	5872.	14882.
650	CR	12	5734.	137.	5872.	14882.

EXTERNAL Y(VERT) DISPLACEMENT OF S.G. Y6FPD2X 6/3

EQUATION 12 STRESS ANALYSIS PER ANSI B31.1 CODE THROUGH THE SUMMER 1973 ADDENDA (N
ALL STRESSES IN PSI

NON-NUCLEAR SAFETY (NNS) PIPING

NODE POINT	MEMBER TYPE	EQUATION NUMBER	PRESSURE STRESS	BENDING STRESS	TOTAL STRESS	ALLOWABLE STRESS

590	EL	12	5734.	341.	6075.	14882.
590	CR	12	5734.	213.	5948.	14882.
600	CR	12	5734.	211.	5945.	14882.
600	CR	12	5734.	211.	5945.	14882.
610	CR	12	5734.	188.	5922.	14882.
610	CR	12	5734.	188.	5922.	14882.
620	CR	12	5734.	189.	5923.	14882.
620	CR	12	5734.	189.	5923.	14882.
621	CR	12	5734.	189.	5923.	14882.
621	EL	12	5734.	304.	6038.	14882.
630	EL	12	5734.	260.	5995.	14882.
630	CR	12	5734.	162.	5896.	14882.
640	CR	12	5734.	137.	5872.	14882.
640	CR	12	5734.	137.	5872.	14882.
650	CR	12	5734.	137.	5872.	14882.

EXTERNAL Y(VERT) DISPLACEMENT OF S.G. Y6FPDZX 6/3

EQUATION 12 STRESS ANALYSIS PER ANSI B31.1 CODE THROUGH THE SUMMER 1973 ADDENDA (N
ALL STRESSES IN PSI

NON-NUCLEAR SAFETY (NNS) PIPING

NODE POINT	MEMBER TYPE	EQUATION NUMBER	PRESSURE STRESS	BENDING STRESS	TOTAL STRESS	ALLOWABLE STRESS	O
650	CR	12	5734.	137.	5872.	14882.	
660	CR	12	5734.	137.	5871.	14882.	
660	CR	12	5734.	137.	5871.	14882.	
670	CR	12	5734.	135.	5869.	14882.	
670	CR	12	5734.	135.	5869.	14882.	
680	CR	12	5734.	134.	5868.	14882.	
680	CR	12	5734.	134.	5868.	14882.	
690	CR	12	5734.	134.	5868.	14882.	
690	CR	12	5734.	134.	5868.	14882.	
700	CR	12	5734.	133.	5867.	14882.	
700	CR	12	5734.	133.	5867.	14882.	
701	CR	12	5734.	133.	5867.	14882.	
701	EL	12	5734.	214.	5949.	14882.	
710	EL	12	5734.	217.	5952.	14882.	
710	CR	12	5734.	135.	5869.	14882.	
720	CR	12	5734.	135.	5869.	14882.	

END OF WESTDYN TABULATIONS

EXTERNAL Z DISPLACEMENT OF S.G. Y6FPDZX 6/30/80

EQUATION 12 STRESS ANALYSIS PER ANSI B31.1 CODE THROUGH THE SUMMER 1973 ADDENDA (NNS PI
ALL STRESSES IN PSI

NON-NUCLEAR SAFETY (NNS) PIPING

NODE POINT	MEMBER TYPE	EQUATION NUMBER	PRESSURE STRESS	BENDING STRESS	TOTAL STRESS	ALLOWABLE STRESS	OVERST
133	CR	12	637.	105.	742.	14882.	
510	CR	12	637.	84.	721.	14882.	
510	CR	12	4828.	799.	5627.	14882.	
520	CR	12	4828.	797.	5625.	14882.	
520	CR	12	4828.	797.	5625.	14882.	
521	CR	12	4828.	796.	5624.	14882.	
521	EL	12	4828.	1177.	6005.	14882.	
530	EL	12	4828.	446.	5274.	14882.	
530	CR	12	4828.	302.	5130.	14882.	
540	CR	12	4828.	300.	5128.	14882.	
540	RE	12	5734.	569.	6303.	14882.	
550	RE	12	5734.	464.	6198.	14882.	
550	CR	12	5734.	497.	6231.	14882.	
560	CR	12	5734.	494.	6229.	14882.	
560	CR	12	5734.	308.	6042.	14882.	
570	CR	12	5734.	470.	6204.	14882.	
570	CR	12	5734.	470.	6204.	14882.	
580	CR	12	5734.	1198.	6933.	14882.	

EXTERNAL Z DISPLACEMENT OF S.G. Y6FPDZX 6/30/80

EQUATION 12 STRESS ANALYSIS PER ANSI B31.1 CODE THROUGH THE SUMMER 1973 ADDENDA (NNS PI
ALL STRESSES IN PSI

NON-NUCLEAR SAFETY (NNS) PIPING

NODE POINT	MEMBER TYPE	EQUATION NUMBER	PRESSURE STRESS	BENDING STRESS	TOTAL STRESS	ALLOWABLE STRESS	OVERST
580	CR	12	5734.	1198.	6933.	14882.	
581	CR	12	5734.	1200.	6934.	14882.	
581	EL	12	5734.	1931.	7665.	14882.	

530	CR	12	4020.	102.	3110.	[illegible]
540	CR	12	4020.	300.	3128.	[illegible]
540	BE	12	5734.	569.	6303.	[illegible]
550	BE	12	5734.	464.	6190.	14882.
550	CR	12	5734.	497.	6231.	14882.
560	CR	12	5734.	496.	6229.	14882.
560	CR	12	5734.	308.	6042.	14882.
570	CR	12	5734.	470.	6204.	14882.
570	CR	12	5734.	470.	6204.	14882.
580	CR	12	5734.	1198.	6933.	14882.

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EXTERNAL Z DISPLACEMENT OF S.G. Y6FPDZX 6/30/80

EQUATION 12 STRESS ANALYSIS PER ANSI B31.1 CODE THROUGH THE SUMMER 1973 ADDENDA (NNS PIP
ALL STRESSES IN PSI

NON-NUCLEAR SAFETY (NNS) PIPING

NODE POINT	MEMBER TYPE	EQUATION NUMBER	PRESSURE STRESS	BENDING STRESS	TOTAL STRESS	ALLOWABLE STRESS
580	CR	12	5734.	1198.	6933.	14882.
581	CR	12	5734.	1200.	6934.	14882.
581	EL	12	5734.	1931.	7665.	14882.
590	EL	12	5734.	1465.	7200.	14882.
590	CR	12	5734.	910.	6645.	14882.
600	CR	12	5734.	1205.	6939.	14882.
600	CR	12	5734.	1205.	6939.	14882.
610	CR	12	5734.	508.	6242.	14882.
610	CR	12	5734.	508.	6242.	14882.
620	CR	12	5734.	305.	6040.	14882.
620	CR	12	5734.	305.	6040.	14882.
621	CR	12	5734.	308.	6042.	14882.
621	EL	12	5734.	495.	6229.	14882.
630	EL	12	5734.	1769.	7503.	14882.
630	CR	12	5734.	1099.	6834.	14882.
640	CR	12	5734.	1002.	6737.	14882.
640	CR	12	5734.	1002.	6737.	14882.
650	CR	12	5734.	960.	6695.	14882.

EXTERNAL Z DISPLACEMENT OF S.G. Y6FPDZX 6/30/80

EQUATION 12 STRESS ANALYSIS PER ANSI B31.1 CODE THROUGH THE SUMMER 1973 ADDENDA (NNS PIP
ALL STRESSES IN PSI

NON-NUCLEAR SAFETY (NNS) PIPING

NODE POINT	MEMBER TYPE	EQUATION NUMBER	PRESSURE STRESS	BENDING STRESS	TOTAL STRESS	ALLOWABLE STRESS	OVERSTR
[illegible]	CR	12	5734.	960.	6695.	14882.	

600	CR	12	5734.	1203	6937	[illegible]
610	CR	12	5734.	508.	6242.	[illegible]
610	CR	12	5734.	508.	6242.	[illegible]
620	CR	12	5734.	305.	6040.	[illegible]
620	CR	12	5734.	305.	6040.	[illegible]
621	CR	12	5734.	308.	6042.	[illegible]
621	EL	12	5734.	495.	6229.	[illegible]
630	EL	12	5734.	1769.	7503.	[illegible]
630	CR	12	5734.	1099.	6834.	[illegible]
640	CR	12	5734.	1002.	6737.	[illegible]
640	CR	12	5734.	1002.	6737.	[illegible]
650	CR	12	5734.	960.	6695.	[illegible]

EXTERNAL Z DISPLACEMENT OF S.G. [illegible] 6/30/80

EQUATION 12 STRESS ANALYSIS PER ANSI B31.1 CODE THROUGH THE SUMMER 1973 ADDENDA (NNS PIPI
ALL STRESSES IN PSI

NON-NUCLEAR SAFETY (NNS) PIPING

NODE POINT	MEMBER TYPE	EQUATION NUMBER	PRESSURE STRESS	BENDING STRESS	TOTAL STRESS	ALLOWABLE STRESS	OVERSTRE
650	CR	12	5734.	960.	6695.	14882.	
660	CR	12	5734.	906.	6640.	14882.	
660	CR	12	5734.	906.	6640.	14882.	
670	CR	12	5734.	526.	6260.	14882.	
670	CR	12	5734.	526.	6260.	14882.	
680	CR	12	5734.	336.	6070.	14882.	
680	CR	12	5734.	336.	6070.	14882.	
690	CR	12	5734.	172.	5906.	14882.	
690	CR	12	5734.	172.	5906.	14882.	
700	CR	12	5734.	136.	5870.	14882.	
700	CR	12	5734.	136.	5870.	14882.	
701	CR	12	5734.	136.	5871.	14882.	
701	EL	12	5734.	220.	5954.	14882.	
710	EL	12	5734.	521.	6255.	14882.	
710	CR	12	5734.	323.	6057.	14882.	
720	CR	12	5734.	326.	6060.	14882.	

END OF WESTDYN TABULATIONS

EXTERNAL X ROTATION OF S.G. Y6FPC2X 6.

EQUATION 12 STRESS ANALYSIS PER ANSI B31.1 CODE THROUGH THE SUMMER 1973 ADDENDA
ALL STRESSES IN PSI

NON-NUCLEAR SAFETY (NNS) PIPING

NODE POINT	MEMBER TYPE	EQUATION NUMBER	PRESSURE STRESS	BENDING STRESS	TOTAL STRESS	ALLOWABLE STRESS
133	CR	12	637.	30.	667.	14882.
510	CR	12	637.	28.	665.	14882.
510	CR	12	4828.	266.	5094.	14882.
520	CR	12	4828.	266.	5094.	14882.
520	CR	12	4828.	266.	5094.	14882.
521	CR	12	4828.	266.	5094.	14882.
521	EL	12	4828.	393.	5221.	14882.
530	EL	12	4828.	267.	5095.	14882.
530	CR	12	4828.	180.	5008.	14882.
540	CR	12	4828.	180.	5008.	14882.
540	RE	12	5734.	342.	6076.	14882.
550	RE	12	5734.	323.	6057.	14882.
550	CR	12	5734.	346.	6080.	14882.
560	CR	12	5734.	342.	6076.	14882.
560	CR	12	5734.	213.	5947.	14882.
570	CR	12	5734.	195.	5929.	14882.
570	CR	12	5734.	195.	5929.	14882.
580	CR	12	5734.	181.	5916.	14882.

EXTERNAL X ROTATION OF S.G. Y6FPD2X 6/

EQUATION 12 STRESS ANALYSIS PER ANSI B31.1 CODE THROUGH THE SUMMER 1973 ADDENDA
ALL STRESSES IN PSI

NON-NUCLEAR SAFETY (NNS) PIPING

NODE POINT	MEMBER TYPE	EQUATION NUMBER	PRESSURE STRESS	BENDING STRESS	TOTAL STRESS	ALLOWABLE STRESS
580	CR	12	5734.	181.	5916.	14882.

530	EL	12	4828.	267.	5095.	14882.
530	CR	12	4828.	180.	5008.	14882.
540	CR	12	4828.	180.	5008.	14882.
540	RE	12	5734.	342.	6076.	14882.
550	RE	12	5734.	323.	6057.	14882.
550	CR	12	5734.	346.	6080.	14882.
560	CR	12	5734.	342.	6076.	14882.
560	CR	12	5734.	213.	5947.	14882.
570	CR	12	5734.	195.	5929.	14882.
570	CR	12	5734.	195.	5929.	14882.
580	CR	12	5734.	181.	5916.	14882.

EXTERNAL X ROTATION OF S.G. Y6FPDZX 6/3(

EQUATION 12 STRESS ANALYSIS PER ANSI B31.1 CODE THROUGH THE SUMMER 1973 ADDENDA (NI
ALL STRESSES IN PSI

NON-NUCLEAR SAFETY (NNS) PIPING

NODE POINT	MEMBER TYPE	EQUATION NUMBER	PRESSURE STRESS	BENDING STRESS	TOTAL STRESS	ALLOWABLE STRESS	0\
580	CR	12	5734.	181.	5916.	14882.	
581	CR	12	5734.	181.	5916.	14882.	
581	EL	12	5734.	292.	6026.	14882.	
590	EL	12	5734.	195.	5930.	14882.	
590	CR	12	5734.	121.	5856.	14882.	
600	CR	12	5734.	127.	5861.	14882.	
600	CR	12	5734.	127.	5861.	14882.	
610	CR	12	5734.	66.	5801.	14882.	
610	CR	12	5734.	66.	5801.	14882.	
620	CR	12	5734.	29.	5763.	14882.	
620	CR	12	5734.	29.	5763.	14882.	
621	CR	12	5734.	29.	5763.	14882.	
621	EL	12	5734.	46.	5781.	14882.	
630	EL	12	5734.	165.	5899.	14882.	
630	CR	12	5734.	103.	5837.	14882.	
640	CR	12	5734.	119.	5853.	14882.	
640	CR	12	5734.	119.	5853.	14882.	
650	CR	12	5734.	115.	5849.	14882.	

EXTERNAL X ROTATION OF S.G. Y6FPDZX 6/30.

EQUATION 12 STRESS ANALYSIS PER ANSI B31.1 CODE THROUGH THE SUMMER 1973 ADDENDA (NN:
ALL STRESSES IN PSI

NON-NUCLEAR SAFETY (NNS) PIPING

NODE POINT	MEMBER TYPE	EQUATION NUMBER	PRESSURE STRESS	BENDING STRESS	TOTAL STRESS	ALLOWABLE STRESS	OVI
650	CR	12	5734.	115.	5849.	14882.	

610	CR	12	5734.	66.	5801.	14882.
610	CR	12	5734.	66.	5801.	14882.
620	CR	12	5734.	29.	5763.	14882.
620	CR	12	5734.	29.	5763.	14882.
621	CR	12	5734.	29.	5763.	14882.
621	EL	12	5734.	46.	5781.	14882.
630	EL	12	5734.	165.	5899.	14882.
630	CR	12	5734.	103.	5837.	14882.
640	CR	12	5734.	119.	5853.	14882.
640	CR	12	5734.	119.	5853.	14882.
650	CR	12	5734.	115.	5849.	14882.

EXTERNAL X ROTATION OF S.G. Y6FPDZX 6/30/

EQUATION 12 STRESS ANALYSIS PER ANSI B31.1 CODE THROUGH THE SUMMER 1973 ADDENDA (NNS
ALL STRESSES IN PSI

NON-NUCLEAR SAFETY (NNS) PIPING

NODE POINT	MEMBER TYPE	EQUATION NUMBER	PRESSURE STRESS	BENDING STRESS	TOTAL STRESS	ALLOWABLE STRESS	OVE
650	CR	12	5734.	115.	5849.	14882.	
660	CR	12	5734.	110.	5844.	14882.	
660	CR	12	5734.	110.	5844.	14882.	
670	CR	12	5734.	78.	5812.	14882.	
670	CR	12	5734.	78.	5812.	14882.	
680	CR	12	5734.	65.	5799.	14882.	
680	CR	12	5734.	65.	5799.	14882.	
690	CR	12	5734.	56.	5791.	14882.	
690	CR	12	5734.	56.	5791.	14882.	
700	CR	12	5734.	52.	5787.	14882.	
700	CR	12	5734.	52.	5787.	14882.	
701	CR	12	5734.	52.	5787.	14882.	
701	EL	12	5734.	84.	5819.	14882.	
710	EL	12	5734.	82.	5817.	14882.	
710	CR	12	5734.	51.	5785.	14882.	
720	CR	12	5734.	51.	5785.	14882.	

END OF ACCEPTED MODIFICATIONS

6 EXTERNAL Y ROTATION OF S.G. Y6FPDZX 6

EQUATION 12 STRESS ANALYSIS PER ANSI B31.1 CODE THROUGH THE SUMMER 1973 ADDENDA
ALL STRESSES IN PSI
NON-NUCLEAR SAFETY (NNS) PIPING

NODE POINT	MEMBER TYPE	EQUATION NUMBER	PRESSURE STRESS	BENDING STRESS	TOTAL STRESS	ALLOWABLE STRESS
133	CR	12	637.	40.	677.	14882.
510	CR	12	637.	39.	676.	14882.
510	CR	12	4828.	373.	5201.	14882.
520	CR	12	4828.	373.	5201.	14882.
520	CR	12	4828.	373.	5201.	14882.
521	CR	12	4828.	373.	5201.	14882.
521	EL	12	4828.	551.	5379.	14882.
530	EL	12	4828.	428.	5256.	14882.
530	CR	12	4828.	290.	5118.	14882.
540	CR	12	4828.	289.	5117.	14882.
540	RE	12	5734.	548.	6282.	14882.
550	RE	12	5734.	495.	6229.	14882.
550	CR	12	5734.	530.	6265.	14882.
560	CR	12	5734.	518.	6252.	14882.
560	CR	12	5734.	322.	6056.	14882.
570	CR	12	5734.	258.	5992.	14882.
570	CR	12	5734.	258.	5992.	14882.
580	CR	12	5734.	116.	5850.	14882.

EXTERNAL Y ROTATION OF S.G. Y6FPDZX 6

EQUATION 12 STRESS ANALYSIS PER ANSI B31.1 CODE THROUGH THE SUMMER 1973 ADDENDA
ALL STRESSES IN PSI
NON-NUCLEAR SAFETY (NNS) PIPING

NODE POINT	MEMBER TYPE	EQUATION NUMBER	PRESSURE STRESS	BENDING STRESS	TOTAL STRESS	ALLOWABLE STRESS
580	CR	12	5734.	116.	5850.	14882.
581	CR	12	5734.	116.	5850.	14882.

520	CR	12	4020.	373.	5201.	14882.
521	CR	12	4020.	373.	5201.	14882.
521	EL	12	4020.	551.	5379.	14882.
530	EL	12	4020.	428.	5256.	14882.
530	CR	12	4028.	290.	5118.	14882.
540	CR	12	4020.	289.	5117.	14882.
540	RE	12	5734.	548.	6282.	14882.
550	RE	12	5734.	495.	6229.	14882.
550	CR	12	5734.	530.	6265.	14882.
560	CR	12	5734.	518.	6252.	14882.
560	CR	12	5734.	322.	6056.	14882.
570	CR	12	5734.	258.	5992.	14882.
570	CR	12	5734.	258.	5992.	14882.
580	CR	12	5734.	116.	5850.	14882.

EXTERNAL Y ROTATION OF S.G.

Y6FPDZX 6/3

EQUATION 12 STRESS ANALYSIS PER ANSI B31.1 CODE THROUGH THE SUMMER 1973 ADDENDA (N

ALL STRESSES IN PSI

NON-NUCLEAR SAFETY (NNS) PIPING

NODE POINT	MEMBER TYPE	EQUATION NUMBER	PRESSURE STRESS	BENDING STRESS	TOTAL STRESS	ALLOWABLE STRESS
580	CR	12	5734.	116.	5850.	14882.
581	CR	12	5734.	116.	5850.	14882.
581	EL	12	5734.	187.	5921.	14882.
590	EL	12	5734.	72.	5806.	14882.
590	CR	12	5734.	44.	5779.	14882.
600	CR	12	5734.	74.	5808.	14882.
600	CR	12	5734.	74.	5808.	14882.
610	CR	12	5734.	62.	5796.	14882.
610	CR	12	5734.	62.	5796.	14882.
620	CR	12	5734.	49.	5783.	14882.
620	CR	12	5734.	49.	5783.	14882.
621	CR	12	5734.	49.	5783.	14882.
621	EL	12	5734.	78.	5813.	14882.
630	EL	12	5734.	39.	5773.	14882.
630	CR	12	5734.	24.	5758.	14882.
640	CR	12	5734.	18.	5752.	14882.
640	CR	12	5734.	18.	5752.	14882.
650	CR	12	5734.	16.	5751.	14882.

.93 EXTERNAL Y ROTATION OF S.G. Y6FPDZX

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.93 EQUATION 12 STRESS ANALYSIS PER ANSI B31.1 CODE THROUGH THE SUMMER 1973 ADDEND/

ALL STRESSES IN PSI

NON-NUCLEAR SAFETY (NNS) PIPING

NODE POINT	MEMBER TYPE	EQUATION NUMBER	PRESSURE STRESS	BENDING STRESS	TOTAL STRESS	ALLOWABLE STRESS
650	CR	12	5734.	16.	5751.	14882.
660	CR	12	5734.	15.	5749.	14882.
660	CR	12	5734.	15.	5749.	14882.
670	CR	12	5734.	6.	5741.	14882.
670	CR	12	5734.	6.	5741.	14882.
680	CR	12	5734.	10.	5744.	14882.
680	CR	12	5734.	10.	5744.	14882.
690	CR	12	5734.	15.	5749.	14882.
690	CR	12	5734.	15.	5749.	14882.
700	CR	12	5734.	25.	5759.	14882.
700	CR	12	5734.	25.	5759.	14882.
701	CR	12	5734.	25.	5759.	14882.
701	EL	12	5734.	40.	5775.	14882.
710	EL	12	5734.	63.	5797.	14882.
710	CR	12	5734.	39.	5773.	14882.
720	CR	12	5734.	39.	5773.	14882.

7 END OF WESTDYN TABULATIONS

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EXTERNAL Z ROTATION OF S.G. Y6FPDZX 6/30/80

EQUATION 12 STRESS ANALYSIS PER ANSI B31.1 CODE THROUGH THE SUMMER 1973 ADDENDA (NNS PIP
ALL STRESSES IN PSI

NON-NUCLEAR SAFETY (NNS) PIPING

NODE POINT	MEMBER TYPE	EQUATION NUMBER	PRESSURE STRESS	BENDING STRESS	TOTAL STRESS	ALLOWABLE STRESS	OVERSTR
133	CR	12	637.	1.	638.	14882.	
510	CR	12	637.	1.	638.	14882.	
510	CR	12	4828.	6.	4834.	14882.	
520	CR	12	4828.	6.	4834.	14882.	
520	CR	12	4828.	6.	4834.	14882.	
521	CR	12	4828.	6.	4834.	14882.	
521	EL	12	4828.	9.	4837.	14882.	
530	EL	12	4828.	7.	4835.	14882.	
530	CR	12	4828.	5.	4833.	14882.	
540	CR	12	4828.	5.	4833.	14882.	
540	RE	12	5734.	9.	5743.	14882.	
550	RE	12	5734.	9.	5743.	14882.	
550	CR	12	5734.	9.	5744.	14882.	
560	CR	12	5734.	9.	5743.	14882.	
560	CR	12	5734.	6.	5740.	14882.	
570	CR	12	5734.	5.	5740.	14882.	
570	CR	12	5734.	5.	5740.	14882.	
580	CR	12	5734.	5.	5740.	14882.	

EXTERNAL Z ROTATION OF S.G. Y6FPDZX 6/30/80

EQUATION 12 STRESS ANALYSIS PER ANSI B31.1 CODE THROUGH THE SUMMER 1973 ADDENDA (NNS PIP
ALL STRESSES IN PSI

NON-NUCLEAR SAFETY (NNS) PIPING

NODE POINT	MEMBER TYPE	EQUATION NUMBER	PRESSURE STRESS	BENDING STRESS	TOTAL STRESS	ALLOWABLE STRESS	OVERSTR
580	CR	12	5734.	5.	5740.	14882.	
581	CR	12	5734.	5.	5740.	14882.	
581	EL	12	5734.	9.	5743.	14882.	

530	EL	12	4020.	7.	4835.	14882.
530	CR	12	4020.	5.	4833.	14882.
540	CR	12	4020.	5.	4833.	14882.
540	EL	12	5734.	9.	5743.	14882.
550	EL	12	5734.	9.	5743.	14882.
550	CR	12	5734.	9.	5744.	14882.
560	CR	12	5734.	9.	5743.	14882.
560	CR	12	5734.	6.	5740.	14882.
570	CR	12	5734.	5.	5740.	14882.
570	CR	12	5734.	5.	5740.	14882.
580	CR	12	5734.	5.	5740.	14882.

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EXTERNAL Z ROTATION OF S.G. Y6FPDZX 6/30/80

EQUATION 12 STRESS ANALYSIS PER ANSI B31.1 CODE THROUGH THE SUMMER 1973 ADDENDA (NNS PIPI
ALL STRESSES IN PSI

NON-NUCLEAR SAFETY (NNS) PIPING

NODE POINT	MEMBER TYPE	EQUATION NUMBER	PRESSURE STRESS	BENDING STRESS	TOTAL STRESS	ALLOWABLE STRESS	OVERSTRE
580	CR	12	5734.	5.	5740.	14882.	
581	CR	12	5734.	5.	5740.	14882.	
581	EL	12	5734.	9.	5743.	14882.	
590	EL	12	5734.	9.	5743.	14882.	
590	CR	12	5734.	6.	5740.	14882.	
600	CR	12	5734.	6.	5740.	14882.	
600	CR	12	5734.	6.	5740.	14882.	
610	CR	12	5734.	5.	5740.	14882.	
610	CR	12	5734.	5.	5740.	14882.	
620	CR	12	5734.	5.	5739.	14882.	
620	CR	12	5734.	5.	5739.	14882.	
621	CR	12	5734.	5.	5739.	14882.	
621	EL	12	5734.	8.	5742.	14882.	
630	EL	12	5734.	7.	5741.	14882.	
630	CR	12	5734.	4.	5738.	14882.	
640	CR	12	5734.	4.	5738.	14882.	
640	CR	12	5734.	4.	5738.	14882.	
650	CR	12	5734.	4.	5738.	14882.	

EXTERNAL Z ROTATION OF S.G. Y6FPDZX 6/30/80

EQUATION 12 STRESS ANALYSIS PER ANSI B31.1 CODE THROUGH THE SUMMER 1973 ADDENDA (NNS PIPIN
ALL STRESSES IN PSI

NON-NUCLEAR SAFETY (NNS) PIPING

NODE POINT	MEMBER TYPE	EQUATION NUMBER	PRESSURE STRESS	BENDING STRESS	TOTAL STRESS	ALLOWABLE STRESS	OVERSTRES

600	CR	12	5734.	6.	5740.	14882.
610	CR	12	5734.	5.	5740.	14882.
610	CR	12	5734.	5.	5740.	14882.
620	CR	12	5734.	5.	5739.	14882.
620	CR	12	5734.	5.	5739.	14882.
621	CR	12	5734.	5.	5739.	14882.
621	EL	12	5734.	0.	5742.	14882.
630	EL	12	5734.	7.	5741.	14882.
630	CR	12	5734.	4.	5738.	14882.
640	CR	12	5734.	4.	5738.	14882.
640	CR	12	5734.	4.	5738.	14882.
650	CR	12	5734.	4.	5738.	14882.

EXTERNAL Z ROTATION OF S.G. Y6FPDZX 6/30/80 W

EQUATION 12 STRESS ANALYSIS PER ANSI B31.1 CODE THROUGH THE SUMMER 1973 ADDENDA (NNS PIPIN
ALL STRESSES IN PSI

NON-NUCLEAR SAFETY (NNS) PIPING

NODE POINT	MEMBER TYPE	EQUATION NUMBER	PRESSURE STRESS	BENDING STRESS	TOTAL STRESS	ALLOWABLE STRESS	OVERSTRES
650	CR	12	5734.	4.	5738.	14882.	
660	CR	12	5734.	4.	5738.	14882.	
660	CR	12	5734.	4.	5738.	14882.	
670	CR	12	5734.	3.	5737.	14882.	
670	CR	12	5734.	3.	5737.	14882.	
680	CR	12	5734.	3.	5737.	14882.	
680	CR	12	5734.	3.	5737.	14882.	
690	CR	12	5734.	2.	5737.	14882.	
690	CR	12	5734.	2.	5737.	14882.	
700	CR	12	5734.	3.	5737.	14882.	
700	CR	12	5734.	3.	5737.	14882.	
701	CR	12	5734.	3.	5737.	14882.	
701	EL	12	5734.	4.	5739.	14882.	
710	EL	12	5734.	4.	5739.	14882.	
710	CR	12	5734.	3.	5737.	14882.	
720	CR	12	5734.	3.	5737.	14882.	

END OF WESTDYN TABULATIONS

EXTERNAL X DISPLACEMENT OF CONTAINMENT Y6FPD70 7/ 3/80 WES

EQUATION 12 STRESS ANALYSIS PER ANSI B31.1 CODE THROUGH THE SUMMER 1973 ADDENDA (NNS PIPING)
ALL STRESSES IN PSI

NON-NUCLEAR SAFETY (NNS) PIPING

NODE POINT	MEMBER TYPE	EQUATION NUMBER	PRESSURE STRESS	BENDING STRESS	TOTAL STRESS	ALLOWABLE STRESS	OVERSTRESS
133	CR	12	637.	38.	675.	14882.	
510	CR	12	637.	25.	662.	14882.	
510	CR	12	4828.	240.	5068.	14882.	
520	CR	12	4828.	239.	5067.	14882.	
520	CR	12	4828.	239.	5067.	14882.	
521	CR	12	4828.	238.	5066.	14882.	
521	EL	12	4828.	352.	5180.	14882.	
530	EL	12	4828.	203.	5031.	14882.	
530	CR	12	4828.	138.	4966.	14882.	
540	CR	12	4828.	138.	4966.	14882.	
540	RE	12	5734.	261.	5996.	14882.	
550	RE	12	5734.	309.	6043.	14882.	
550	CR	12	5734.	331.	6065.	14882.	
560	CR	12	5734.	343.	6078.	14882.	
560	CR	12	5734.	214.	5948.	14882.	
570	CR	12	5734.	284.	6018.	14882.	
570	CR	12	5734.	284.	6018.	14882.	
580	CR	12	5734.	468.	6202.	14882.	

EXTERNAL X DISPLACEMENT OF CONTAINMENT Y6FPD70 7/ 3/80 WES

EQUATION 12 STRESS ANALYSIS PER ANSI B31.1 CODE THROUGH THE SUMMER 1973 ADDENDA (NNS PIPING)
ALL STRESSES IN PSI

NON-NUCLEAR SAFETY (NNS) PIPING

NODE	MEMBER	EQUATION	PRESSURE	BENDING	TOTAL	ALLOWABLE	OVERSTRESS

521	EL	12	4828.	352.	5180.	14882.
530	EL	12	4828.	203.	5031.	14882.
530	CR	12	4828.	138.	4966.	14882.
540	CR	12	4828.	138.	4966.	14882.
540	RE	12	5734.	261.	5996.	14882.
550	RE	12	5734.	309.	6043.	14882.
550	CR	12	5734.	331.	6065.	14882.
560	CR	12	5734.	343.	6078.	14882.
560	CR	12	5734.	214.	5948.	14882.
570	CR	12	5734.	284.	6018.	14882.
570	CR	12	5734.	284.	6018.	14882.
580	CR	12	5734.	468.	6202.	14882.

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EXTERNAL X DISPLACEMENT OF CONTAINMENT Y6FPD70 7/ 3/80

EQUATION 12 STRESS ANALYSIS PER ANSI B31.1 CODE THROUGH THE SUMMER 1973 ADDENDA (NNS P
ALL STRESSES IN PSI

NON-NUCLEAR SAFETY (NNS) PIPING

NODE POINT	MEMBER TYPE	EQUATION NUMBER	PRESSURE STRESS	BENDING STRESS	TOTAL STRESS	ALLOWABLE STRESS	OVERS
580	CR	12	5734.	468.	6202.	14882.	
581	CR	12	5734.	468.	6202.	14882.	
581	EL	12	5734.	753.	6488.	14882.	
590	EL	12	5734.	299.	6033.	14882.	
590	CR	12	5734.	186.	5920.	14882.	
600	CR	12	5734.	297.	6032.	14882.	
600	CR	12	5734.	297.	6032.	14882.	
610	CR	12	5734.	45.	5779.	14882.	
610	CR	12	5734.	45.	5779.	14882.	
620	CR	12	5734.	424.	6158.	14882.	
620	CR	12	5734.	424.	6158.	14882.	
621	CR	12	5734.	425.	6159.	14882.	
621	EL	12	5734.	684.	6418.	14882.	
630	EL	12	5734.	1197.	6932.	14882.	
630	CR	12	5734.	744.	6478.	14882.	
640	CR	12	5734.	653.	6387.	14882.	
640	CR	12	5734.	653.	6387.	14882.	
650	CR	12	5734.	613.	6347.	14882.	

EXTERNAL X DISPLACEMENT OF CONTAINMENT Y6FPD70 7/ 3/80

EQUATION 12 STRESS ANALYSIS PER ANSI B31.1 CODE THROUGH THE SUMMER 1973 ADDENDA (NNS PI
ALL STRESSES IN PSI

NON-NUCLEAR SAFETY (NNS) PIPING

NODE POINT	MEMBER TYPE	EQUATION NUMBER	PRESSURE STRESS	BENDING STRESS	TOTAL STRESS	ALLOWABLE STRESS	OVERST

580	EL	12	5734.	753.	6487.	14882.
590	EL	12	5734.	299.	6033.	14882.
590	CR	12	5734.	186.	5920.	14882.
600	CR	12	5734.	297.	6032.	14882.
600	CR	12	5734.	297.	6032.	14882.
610	CR	12	5734.	45.	5779.	14882.
610	CR	12	5736.	45.	5779.	14882.
620	CR	12	5734	424.	6158.	14882.
620	CR	12	5734.	424.	6158.	14882.
621	CR	12	5734.	425.	6159.	14882.
621	EL	12	5734.	684.	6418.	14882.
630	EL	12	5734.	1197.	6932.	14882.
630	CR	12	5734.	744.	6478.	14882.
640	CR	12	5734.	653.	6387.	14882.
640	CR	12	5734.	653.	6387.	14882.
650	CR	12	5734.	613.	6347.	14882.

EXTERNAL X DISPLACEMENT OF CONTAINMENT Y6FPD70 7/ 3

EQUATION 12 STRESS ANALYSIS PER ANSI B31.1 CODE THROUGH THE SUMMER 1973 ADDENDA NNS
ALL STRESSES IN PSI

NON-NUCLEAR SAFETY (NNS) PIPING

NODE POINT	MEMBER TYPE	EQUATION NUMBER	PRESSURE STRESS	BENDING STRESS	TOTAL STRESS	ALLOWABLE STRESS	OVE
650	CR	12	5734.	613.	6347.	14882.	
660	CR	12	5734.	561.	6295.	14882.	
660	CR	12	5734.	561.	6295.	14882.	
670	CR	12	5734.	196.	5930.	14882.	
670	CR	12	5734.	196.	5930.	14882.	
680	CR	12	5734.	24.	5758.	14882.	
680	CR	12	5734.	24.	5758.	14882.	
690	CR	12	5734.	146.	5881.	14882.	
690	CR	12	5734.	146.	5881.	14882.	
700	CR	12	5734.	440.	6174.	14882.	
700	CR	12	5734.	440.	6174.	14882.	
701	CR	12	5734.	440.	6175.	14882.	
701	EL	12	5734.	710.	6444.	14882.	
710	EL	12	5734.	466.	6200.	14882.	
710	CR	12	5734.	289.	6023.	14882.	
720	CR	12	5734.	288.	6022.	14882.	

EXTERNAL Y(VERT) DISPLACEMENT OF CONTAINMENT Y6FPD70 7/ 3/8

EQUATION 12 STRESS ANALYSIS PER ANSI B31.1 C THROUGH THE SUMMER 1973 ADDENDA (NNS I
ALL STRE. IN PSI

NON-NUCLEAR SAFETY (NNS) PIPING

NODE POINT	MEMBER TYPE	EQUATION NUMBER	PRESSURE STRESS	BENDING STRESS	TOTAL STRESS	ALLOWABLE STRESS	OVER
133	CR	12	637.	0.	638.	14882.	
510	CR	12	637.	0.	638.	14882.	
510	CR	12	4828.	4.	4832.	14882.	
520	CR	12	4828.	4.	4832.	14882.	
520	CR	12	4828.	4.	4832.	14882.	
521	CR	12	4828.	4.	4832.	14882.	
521	EL	12	4828.	6.	4834.	14882.	
530	EL	12	4828.	6.	4834.	14882.	
530	CR	12	4828.	4.	4832.	14882.	
540	CR	12	4828.	4.	4832.	14882.	
540	RE	12	5734.	8.	5742.	14882.	
550	RE	12	5734.	8.	5742.	14882.	
550	CR	12	5734.	8.	5743.	14882.	
560	CR	12	5734.	8.	5743.	14882.	
560	CR	12	5734.	5.	5740.	14882.	
570	CR	12	5734.	5.	5740.	14882.	
570	CR	12	5734.	5.	5740.	14882.	
580	CR	12	5734.	6.	5740.	14882.	

EXTERNAL Y(VERT) DISPLACEMENT OF CONTAINMENT Y6FPD70 7/ 3/80

EQUATION 12 STRESS ANALYSIS PER ANSI B31.1 CODE THROUGH THE SUMMER 1973 ADDENDA (NNS PI
ALL STRESSES IN PSI

NON-NUCLEAR SAFETY (NNS) PIPING

NODE POINT	MEMBER TYPE	EQUATION NUMBER	PRESSURE STRESS	BENDING STRESS	TOTAL STRESS	ALLOWABLE STRESS	OVERSI
580	CR	12	5734.	6.	5740.	14882.	

				4.	4834.	14882.
530	EL	12	4828.	6.	4834.	14882.
530	CR	12	4828.	4.	4832.	14882.
540	CR	12	4828.	4.	4832.	14882.
540	RE	12	5734.	8.	5742.	14882.
550	RE	12	5734.	8.	5742.	14882.
550	CR	12	5734.	8.	5743.	14882.
560	CR	12	5734.	8.	5743.	14882.
560	CR	12	5734.	5.	5740.	14882.
570	CR	12	5734.	5.	5740.	14882.
570	CR	12	5734.	5.	5740.	14882.
580	CR	12	5734.	6.	5740.	14882

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EXTERNAL Y(VERT) DISPLACEMENT OF CONTAINMENT Y6FPD70 7/ 3/80

EQUATION 12 STRESS ANALYSIS PER ANSI B31.1 CODE THROUGH THE SUMMER 1973 ADDENDA (NNS P
ALL STRESSES IN PSI

NON-NUCLEAR SAFETY (NNS) PIPING

NODE POINT	MEMBER TYPE	EQUATION NUMBER	PRESSURE STRESS	BENDING STRESS	TOTAL STRESS	ALLOWABLE STRESS	OVERS
580	CR	12	5734.	6.	5740.	14882.	
581	CR	12	5734.	6.	5740.	14882.	
581	EL	12	5734.	9.	5743.	14882.	
590	EL	12	5734.	9.	5744.	14882.	
590	CR	12	5734.	6.	5740.	14882.	
600	CR	12	5734.	6.	5740.	14882.	
600	CR	12	5734.	6.	5740.	14882.	
610	CR	12	5734.	6.	5740.	14882.	
610	CR	12	5734.	6.	5740.	14882.	
620	CR	12	5734.	6.	5740.	14882.	
620	CR	12	5734.	6.	5740.	14882.	
621	CR	12	5734.	6.	5740.	14882.	
621	EL	12	5734.	9.	5744.	14882.	
630	EL	12	5734.	9.	5743.	14882.	
630	CR	12	5734.	6.	5740.	14882.	
640	CR	12	5734.	6.	5740.	14882.	
640	CR	12	5734.	6.	5740.	14882.	
650	CR	12	5734.	5.	5739.	14882.	

EXTERNAL Y(VERT) DISPLACEMENT OF CONTAINMENT Y6FPD70 7/ 3/80

EQUATION 12 STRESS ANALYSIS PER ANSI B31.1 CODE THROUGH THE SUMMER 1973 ADDENDA (NNS PIF
ALL STRESSES IN PSI

NON-NUCLEAR SAFETY (NNS) PIPING

NODE POINT	MEMBER TYPE	EQUATION NUMBER	PRESSURE STRESS	BENDING STRESS	TOTAL STRESS	ALLOWABLE STRESS	OVERSTR

590	CR	12	5734.	6.	5740.	14882.
600	CR	12	5734.	6.	5740.	14882.
600	CR	12	5734.	6.	5740.	14882.
610	CR	12	5734.	6.	5740.	14882.
610	CR	12	5734.	6.	5740.	14882.
620	CR	12	5734.	6.	5740.	14882.
620	CR	12	5734.	6.	5740.	14882.
621	CR	12	5734.	6.	5740.	14882.
621	EL	12	5734.	9.	5744.	14882.
630	EL	12	5734.	9.	5743.	14882.
630	CR	12	5734.	6.	5740.	14882.
640	CR	12	5734.	6.	5740.	14882.
640	CR	12	5734.	6.	5740.	14882.
650	CR	12	5734.	5.	5739.	14882.

EXTERNAL Y(VERT) DISPLACEMENT OF CONTAINMENT Y6FPD70 7/ 3/80

EQUATION 12 STRESS ANALYSIS PER ANSI B31.1 CODE THROUGH THE SUMMER 1973 ADDENDA (NNS PI
ALL STRESSES IN PSI

NON-NUCLEAR SAFETY (NNS) PIPING

NODE POINT	MEMBER TYPE	EQUATION NUMBER	PRESSURE STRESS	BENDING STRESS	TOTAL STRESS	ALLOWABLE STRESS	OVERSTI
650	CR	12	5734.	5.	5739.	14882.	
660	CR	12	5734.	4.	5738.	14882.	
660	CR	12	5734.	4.	5738.	14882.	
670	CR	12	5734.	3.	5737.	14882.	
670	CR	12	5734.	3.	5737.	14882.	
680	CR	12	5734.	6.	5741.	14882.	
680	CR	12	5734.	6.	5741.	14882.	
690	CR	12	5734.	10.	5744.	14882.	
690	CR	12	5734.	10.	5744.	14882.	
700	CR	12	5734.	16.	5750.	14882.	
700	CR	12	5734.	16.	5750.	14882.	
701	CR	12	5734.	16.	5750.	14882.	
701	EL	12	5734.	25.	5759.	14882.	
710	EL	12	5734.	30.	5764.	14882.	
710	CR	12	5734.	18.	5753.	14882.	
720	CR	12	5734.	18.	5753.	14882.	

END OF WESTDYN TABULATIONS

EXTERNAL Z DISPLACEMENT OF CONTAINMENT Y6FPD70 7/ 3/8

EQUATION 12 STRESS ANALYSIS PER ANSI B31.1 CODE THROUGH THE SUMMER 1973 ADDENDA (NNS
ALL STRESSES IN PSI

NON-NUCLEAR SAFETY (NNS) PIPING

NODE POINT	MEMBER TYPE	EQUATION NUMBER	PRESSURE STRESS	BENDING STRESS	TOTAL STRESS	ALLOWABLE STRESS	OVER
133	CR	12	637.	45.	682.	14882.	
510	CR	12	637.	32.	669.	14882.	
510	CR	12	4828.	303.	5131.	14882.	
520	CR	12	4828.	302.	5130.	14882.	
520	CR	12	4828.	302.	5130.	14882.	
521	CR	12	4828.	301.	5129.	14882.	
521	EL	12	4828.	445.	5273.	14882.	
530	EL	12	4828.	190.	5018.	14882.	
530	CR	12	4828.	129.	4957.	14882.	
540	CR	12	4828.	129.	4957.	14882.	
540	RE	12	5734.	245.	5979.	14882.	
550	RE	12	5734.	311.	6045.	14882.	
550	CR	12	5734.	333.	6067.	14882.	
560	CR	12	5734.	353.	6088.	14882.	
560	CR	12	5734.	220.	5954.	14882.	
570	CR	12	5734.	342.	6076.	14882.	
570	CR	12	5734.	342.	6076.	14882.	
580	CR	12	5734.	666.	6401.	14882.	

EXTERNAL Z DISPLACEMENT OF CONTAINMENT Y6FPD70 7/ 3/80

EQUATION 12 STRESS ANALYSIS PER ANSI B31.1 CODE THROUGH THE SUMMER 1973 ADDENDA (NNS P
ALL STRESSES IN PSI

NON-NUCLEAR SAFETY (NNS) PIPING

NODE POINT	MEMBER TYPE	EQUATION NUMBER	PRESSURE STRESS	BENDING STRESS	TOTAL STRESS	ALLOWABLE STRESS	OVERSI

...

[illegible]	[illegible]			[illegible]0.	5018.	[illegible].
530	CR	12	4828.	129.	4957.	14882.
540	CR	12	4828.	129.	4957.	14882.
540	RE	12	5734.	245.	5979.	14882.
550	RE	12	5734.	311.	6045.	14882.
550	CR	12	5734.	333.	6067.	14882.
560	CR	12	5734.	353.	6088.	14882.
560	CR	12	5734.	220.	5954.	14882.
570	CR	12	5734.	342.	6076.	14882.
570	CR	12	5734.	342.	6076.	14882.
580	CR	12	5734.	666.	6401.	14882.

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EXTERNAL Z DISPLACEMENT OF CONTAINMENT Y6FPD70 7/ 3/80

EQUATION 12 STRESS ANALYSIS PER ANSI B31.1 CODE THROUGH THE SUMMER 1973 ADDENDA (NNS PI
ALL STRESSES IN PSI

NON-NUCLEAR SAFETY (NNS) PIPING

NODE POINT	MEMBER TYPE	EQUATION NUMBER	PRESSURE STRESS	BENDING STRESS	TOTAL STRESS	ALLOWABLE STRESS	OVERST
580	CR	12	5734.	666.	6401.	14882.	
581	CR	12	5734.	667.	6401.	14882.	
581	EL	12	5734.	1073.	6807.	14882.	
590	EL	12	5734.	740.	6474.	14882.	
590	CR	12	5734.	460.	6194.	14882.	
600	CR	12	5734.	585.	6320.	14882.	
600	CR	12	5734.	585.	6320.	14882.	
610	CR	12	5734.	224.	5958.	14882.	
610	CR	12	5734.	224.	5958.	14882.	
620	CR	12	5734.	187.	5921.	14882.	
620	CR	12	5734.	187.	5921.	14882.	
621	CR	12	5734.	188.	5922.	14882.	
621	EL	12	5734.	303.	6037.	14882.	
630	EL	12	5734.	974.	6708.	14882.	
630	CR	12	5734.	605.	6339.	14882.	
640	CR	12	5734.	557.	6291.	14882.	
640	CR	12	5734.	557.	6291.	14882.	
650	CR	12	5734.	536.	6270.	14882.	

EXTERNAL Z DISPLACEMENT OF CONTAINMENT Y6FPD70 7/ 3/80

EQUATION 12 STRESS ANALYSIS PER ANSI B31.1 CODE THROUGH THE SUMMER 1973 ADDENDA (NNS PIP
ALL STRESSES IN PSI

NON-NUCLEAR SAFETY (NNS) PIPING

NODE POINT	MEMBER TYPE	EQUATION NUMBER	PRESSURE STRESS	BENDING STRESS	TOTAL STRESS	ALLOWABLE STRESS	OVERSTR
650	CR	12	5734.	536.	6270.	14882.	

600	CR	12	5734.	589.	6320.	14882.
610	CR	12	5734.	224.	5958.	14882.
610	CR	12	5734.	224.	5958.	14882.
620	CR	12	5734.	187.	5921.	14882.
620	CR	12	5734.	187.	5921.	14882.
621	CR	12	5734.	188.	5922.	14882.
621	EL	12	5734.	303.	6037.	14882.
630	EL	12	5734.	974.	6708.	14882.
630	CR	12	5734.	605.	6339.	14882.
640	CR	12	5734.	557.	6291.	14882.
640	CR	12	5734.	557.	6291.	14882.
650	CR	12	5734.	536.	6270.	14882.

EXTERNAL Z DISPLACEMENT OF CONTAINMENT Y6FPD70 7/ 3/80

EQUATION 12 STRESS ANALYSIS PER ANSI B31.1 CODE THROUGH THE SUMMER 1973 ADDENDA (NNS PIP
ALL STRESSES IN PSI

NON-NUCLEAR SAFETY (NNS) PIPING

NODE POINT	MEMBER TYPE	EQUATION NUMBER	PRESSURE STRESS	BENDING STRESS	TOTAL STRESS	ALLOWABLE STRESS	OVERSTR
650	CR	12	5734.	536.	6270.	14882.	
660	CR	12	5734.	509.	6243.	14882.	
660	CR	12	5734.	509.	6243.	14882.	
670	CR	12	5734.	319.	6053.	14882.	
670	CR	12	5734.	319.	6053.	14882.	
680	CR	12	5734.	224.	5958.	14882.	
680	CR	12	5734.	224.	5958.	14882.	
690	CR	12	5734.	142.	5876.	14882.	
690	CR	12	5734.	142.	5876.	14882.	
700	CR	12	5734.	16.	5750.	14882.	
700	CR	12	5734.	16.	5750.	14882.	
701	CR	12	5734.	16.	5750.	14882.	
701	EL	12	5734.	26.	5760.	14882.	
710	EL	12	5734.	366.	6100.	14882.	
710	CR	12	5734.	227.	5961.	14882.	
720	CR	12	5734.	228.	5963.	14882.	

END OF WESTDYN TABULATIONS

EXTERNAL Y ROTATION OF CONTAINMENT Y6FPD70 7/ 3/80

EQUATION 12 STRESS ANALYSIS PER ANSI B31.1 CODE THROUGH THE SUMMER 1973 ADDENDA (NNS PIPI
ALL STRESSES IN PSI

NON-NUCLEAR SAFETY (NNS) PIPING

NODE POINT	MEMBER TYPE	EQUATION NUMBER	PRESSURE STRESS	BENDING STRESS	TOTAL STRESS	ALLOWABLE STRESS	OVERSTRE
133	CR	12	637.	0.	637.	14882.	
510	CR	12	637.	0.	637.	14882.	
510	CR	12	4828.	1.	4829.	14882.	
520	CR	12	4828.	1.	4829.	14882.	
520	CR	12	4828.	1.	4829.	14882.	
521	CR	12	4828.	1.	4829.	14882.	
521	EL	12	4828.	1.	4829.	14882.	
530	EL	12	4828.	0.	4828.	14882.	
530	CR	12	4828.	0.	4828.	14882.	
540	CR	12	4828.	0.	4828.	14882.	
540	RE	12	5734.	1.	5735.	14882.	
550	RE	12	5734.	0.	5735.	14882.	
550	CR	12	5734.	0.	5735.	14882.	
560	CR	12	5734.	0.	5735.	14882.	
560	CR	12	5734.	0.	5735.	14882.	
570	CR	12	5734.	0.	5735.	14882.	
570	CR	12	5734.	0.	5735.	14882.	
580	CR	12	5734.	1.	5735.	14882.	

EXTERNAL Y ROTATION OF CONTAINMENT Y6FPD70 7/ 3/80 WI

EQUATION 12 STRESS ANALYSIS PER ANSI B31.1 CODE THROUGH THE SUMMER 1973 ADDENDA (NNS PIPIN
ALL STRESSES IN PSI

NON-NUCLEAR SAFETY (NNS) PIPING

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	4828.	[illegible]
540	CR	12	4828.	0.	4828.	[illegible]
540	RE	12	5734.	1.	5735.	14882.
550	RE	12	5734.	0.	5735.	[illegible]
550	CR	12	5734.	0.	5735.	14882.
560	CR	12	5734.	0.	5735.	14882.
560	CR	12	5734.	0.	5735.	14882.
570	CR	12	5734.	0.	5735.	14882.
570	CR	12	5734.	0.	5735.	14882.
580	CR	12	5734.	1.	5735.	14882.

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EXTERNAL Y ROTATION OF CONTAINMENT Y6FP070 7/ 3/80 W

EQUATION 12 STRESS ANALYSIS PER ANSI B31.1 CODE THROUGH THE SUMMER 1973 ADDENDA (NNS PIPIN
ALL STRESSES IN PSI

NON-NUCLEAR SAFETY (NNS) PIPING

NODE POINT	MEMBER TYPE	EQUATION NUMBER	PRESSURE STRESS	BENDING STRESS	TOTAL STRESS	ALLOWABLE STRESS	OVERSTRES
580	CR	12	5734.	1.	5735.	14882.	
581	CR	12	5734.	1.	5735.	14882.	
581	EL	12	5734.	1.	5735.	14882.	
590	EL	12	5734.	1.	5736.	14882.	
590	CR	12	5734.	1.	5735.	14882.	
600	CR	12	5734.	1.	5735.	14882.	
600	CR	12	5734.	1.	5735.	14882.	
610	CR	12	5734.	1.	5735.	14882.	
610	CR	12	5734.	1.	5735.	14882.	
620	CR	12	5734.	0.	5735.	14882.	
620	CR	12	5734.	0.	5735.	14882.	
621	CR	12	5734.	0.	5735.	14882.	
621	EL	12	5734.	1.	5735.	14882.	
630	EL	12	5734.	0.	5735.	14882.	
630	CR	12	5734.	0.	5735.	14882.	
640	CR	12	5734.	1.	5735.	14882.	
640	CR	12	5734.	1.	5735.	14882.	
650	CR	12	5734.	1.	5735.	14882.	

EXTERNAL Y ROTATION OF CONTAINMENT Y6FP070 7/ 3/80 NE

EQUATION 12 STRESS ANALYSIS PER ANSI B31.1 CODE THROUGH THE SUMMER 1973 ADDENDA (NNS PIPIN
ALL STRESSES IN PSI

NON-NUCLEAR SAFETY (NNS) PIPING

NODE POINT	MEMBER TYPE	EQUATION NUMBER	PRESSURE STRESS	BENDING STRESS	TOTAL STRESS	ALLOWABLE STRESS	OVERSTRESS
650	CR	12	5734.	1.	5735.	14882.	
660	CR	12	5734.	1.	5735.	14882.	

600	CR	12	5734.	1.	5735.	14882.
600	CR	12	5734.	1.	5735.	14882.
610	CR	12	5734.	1.	5735.	14882.
610	CR	12	5734.	1.	5735.	14882.
620	CR	12	5734.	0.	5735.	14882.
620	CR	12	5734.	0.	5735.	14882.
621	CR	12	5734.	0.	5735.	14882.
621	EL	12	5734.	1.	5735.	14882.
630	EL	12	5734.	0.	5735.	14882.
630	CR	12	5734.	0.	5735.	14882.
640	CR	12	5734.	1.	5735.	14882.
640	CR	12	5734.	1.	5735.	14882.
650	CR	12	5734.	1.	5735.	14882.

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EXTERNAL Y ROTATION OF CONTAINMENT Y6FP070 7/ 3/80

EQUATION 12 STRESS ANALYSIS PER ANSI B31.1 CODE THROUGH THE SUMMER 1973 ADDENDA (NNS PIPIN
ALL STRESSES IN PSI

NON-NUCLEAR SAFETY (NNS) PIPING

NODE POINT	MEMBER TYPE	EQUATION NUMBER	PRESSURE STRESS	BENDING STRESS	TOTAL STRESS	ALLOWABLE STRESS	OVERSTRES
650	CR	12	5734.	1.	5735.	14882.	
660	CR	12	5734.	1.	5735.	14882.	
660	CR	12	5734.	1.	5735.	14882.	
670	CR	12	5734.	2.	5737.	14882.	
670	CR	12	5734.	2.	5737.	14882.	
680	CR	12	5734.	3.	5737.	14882.	
680	CR	12	5734.	3.	5737.	14882.	
690	CR	12	5734.	3.	5738.	14882.	
690	CR	12	5734.	3.	5738.	14882.	
700	CR	12	5734.	5.	5739.	14882.	
700	CR	12	5734.	5.	5739.	14882.	
701	CR	12	5734.	5.	5739.	14882.	
701	EL	12	5734.	7.	5742.	14882.	
710	EL	12	5734.	8.	5743.	14882.	
710	CR	12	5734.	5.	5739.	14882.	
720	CR	12	5734.	5.	5739.	14882.	

END OF WESTDYN TABULATIONS

174	.000	-.003	-.005	-.000031	-.000015	-.000001
175	.000	-.003	-.008	-.000031	-.000015	-.000001
176	.000	-.003	-.009	-.000031	-.000015	-.000001
177	.000	-.003	-.010	-.000031	-.000015	-.000001
178	.000	-.003	-.012	-.000031	-.000015	-.000001
169	.000	-.003	-.003	-.000031	-.000015	-.000001
180	-.000	-.002	-.003	-.000031	-.000015	-.000001
181	-.000	-.002	-.002	-.000031	-.000015	-.000001
182	-.000	-.002	-.002	-.000023	-.000015	.000006
183	-.000	-.002	-.001	-.000014	-.000015	.000013

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MAIN STEAM DEAD WEIGHT Y6FPDKW 6/28/80 WESTDYN

PIPING DISPLACEMENTS IN GLOBAL COORDINATES

POINT I3	DX (INCHES)	DY (INCHES)	DZ (INCHES)	RX (RADS)	RY (RADS)	RZ (RADS)
184	-.000	-.002	-.001	-.000006	-.000013	.000017
185	-.000	-.001	-.000	.000001	-.000009	.000016
186	-.000	-.001	-.000	.000002	-.000009	.000016
189	-.000	-.001	-.000	.000003	-.000007	.000014
190	-.000	-.001	-.000	.000003	-.000007	.000014
191	-.000	-.000	-.000	.000004	-.000006	.000011
192	-.000	-.000	-.000	.000005	-.000005	.000010
196	-.000	-.000	-.000	.000005	-.000005	.000010
1193	-.000	-.000	-.000	.000005	-.000005	.000009
1194	.000	-.000	-.000	.000005	-.000005	.000009
1193	-.000	-.000	-.000	.000005	-.000005	.000009
193	.000	-.000	-.000	.000005	-.000005	.000008
194	-.000	-.000	-.000	.000000	-.000000	.000000
101	.000	-.000	.000	-.000000	.000000	-.000000
135	-.004	-.007	.030	.000040	.000023	.000002
510	-.004	-.007	.031	.000040	.000023	.000002
520	-.004	-.007	.031	.000040	.000023	.000002

REACTOR COOLANT LOOP

MAIN STEAM

MAIN STEAM DEAD WEIGHT Y6FPDKW 6/28/80 WESTDYN F

PIPING DISPLACEMENTS IN GLOBAL COORDINATES

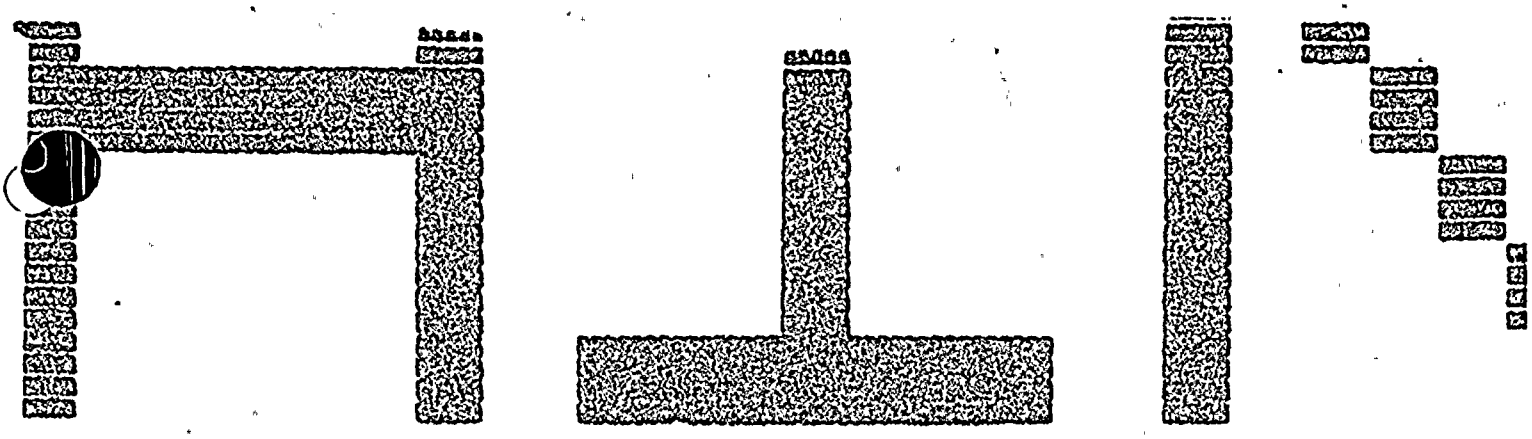
POINT I3	DX (INCHES)	DY (INCHES)	DZ (INCHES)	RX (RADS)	RY (RADS)	RZ (RADS)

193	.000	-.000	-.000	.000000	-.000000	.000000
194	-.000	-.000	-.000	.000000	-.000000	.000000
101	.000	-.000	.000	-.000000	.000000	-.000000
135	-.004	-.007	.030	.000040	.000023	.000002
510	-.004	-.007	.031	.000040	.000023	.000002
520	-.004	-.007	.031	.000040	.000023	.000002

MAIN STEAM DEAD WEIGHT Y6FPDKW 6/28/80 WESTDYN PA

PIPING DISPLACEMENTS IN GLOBAL COORDINATES

POINT ID	DX (INCHES)	DY (INCHES)	DZ (INCHES)	RX (RADS)	RY (RADS)	RZ (RADS)
521	-.004	-.007	.031	.000040	.000023	.000002
530	-.001	-.012	.036	.000140	.000089	-.000018
540	-.001	-.012	.036	.000140	.000089	-.000018
550	-.000	-.013	.036	.000143	.000093	-.000021
560	.000	-.014	.036	.000144	.000094	-.000021
570	.003	-.017	.038	.000151	.000101	-.000027
580	.009	-.025	.041	.000176	.000116	-.000035
581	.009	-.025	.041	.000176	.000116	-.000035
590	.018	-.040	.036	.000247	.000190	-.000018
600	.018	-.040	.035	.000247	.000190	-.000017
610	.021	-.044	.029	.000243	.000191	-.000010
620	.024	-.048	.022	.000237	.000188	.000001
621	.024	-.048	.021	.000237	.000188	.000001
630	.022	-.041	.011	.000197	.000101	.000045
640	.019	-.036	.010	.000184	.000094	.000044
650	.018	-.034	.010	.000176	.000092	.000043
660	.017	-.031	.009	.000166	.000088	.000041



PIPING DISPLACEMENTS IN GLOBAL COORDINATES

POINT I3	DX (INCHES)	(INCHES)	DZ (INCHES)	RX (RADS)	RY (RADS)	RZ (RADS)
670	.010	-.016	.005	.000117	.000067	.000038
680	.007	-.010	.004	.000085	.000058	.000033
690	.004	-.006	.003	.000058	.000051	.000029
700	.001	-.002	.001	.000037	.000040	.000036
701	.001	-.002	.001	.000037	.000040	.000036
710	-.000	-.000	.000	.000000	.000000	.000000
720	-.000	.000	-.000	.000000	.000000	-.000000

PIPING DISPLACEMENTS IN GLOBAL COORDINATES

POINT ID	DX (INCHES)	DY (INCHES)	DZ (INCHES)	RX (RADS)	RY (RADS)	RZ (RADS)
104	-.568	.077	.261	-.000400	.000151	-.000001
105	-.434	.073	.244	-.000472	.000104	-.000405
106	-.424	.072	.243	-.000477	.000101	-.000431
109	-.384	.067	.233	-.000506	.000081	-.000613
190	-.384	.067	.233	-.000506	.000081	-.000613
191	-.346	.060	.215	-.000533	.000062	-.000773
192	-.338	.058	.210	-.000535	.000059	-.000802
196	-.338	.058	.210	-.000535	.000059	-.000804
1193	-.258	.031	.159	-.000542	.000053	-.000855
1194	-.281	-.074	.173	-.000542	.000053	-.000855
1195	-.258	.031	.159	-.000542	.000053	-.000855
193	-.221	.010	.136	-.000521	.000050	-.000839
194	-.221	.005	.136	-.000014	.000000	-.000022
101	.000	.000	-.000	.000000	-.000000	.000000
155	-2.143	2.318	-.574	.000355	-.000046	.000834
510	-2.155	2.391	-.568	.000361	-.000051	.000830
520	-2.156	2.392	-.568	.000361	-.000052	.000829

PIPING DISPLACEMENTS IN GLOBAL COORDINATES

POINT ID	DX (INCHES)	DY (INCHES)	DZ (INCHES)	RX (RADS)	RY (RADS)	RZ (RADS)
521	-2.156	2.392	-.568	.000362	-.000052	.000829
530	-2.277	2.562	-.341	.000991	-.000454	.000086
540	-2.277	2.562	-.340	.000991	-.000455	.000084
550	-2.316	2.548	-.279	.001022	-.000534	-.000050
560	-2.324	2.545	-.265	.001027	-.000552	-.000081
570	-2.397	2.521	-.155	.001047	-.000705	-.000341
580	-2.581	2.480	.094	.000947	-.001094	-.001021
581	-2.582	2.480	.095	.000946	-.001095	-.001022
590	-2.635	2.413	.459	-.000493	-.003867	-.002283
600	-2.628	2.406	.476	-.000524	-.003880	-.002313
610	-2.552	2.328	.663	-.000861	-.003987	-.002596
620	-2.470	2.238	.874	-.001260	-.004040	-.002846
621	-2.470	2.238	.874	-.001261	-.004040	-.002846
630	-2.115	1.957	1.027	-.002794	-.003791	-.004396
640	-1.966	1.854	.955	-.002981	-.003727	-.004402
650	-1.901	1.778	.923	-.003052	-.003697	-.004399
660	-1.817	1.704	.881	-.003132	-.003654	-.004390

PIPING DISPLACEMENTS IN GLOBAL COORDINATES

POINT ID	DX (INCHES)	DY (INCHES)	DZ (INCHES)	RX (RADS)	RY (RADS)	RZ (RADS)
670	-1.247	1.173	.578	-.003349	-.003277	-.004154
680	-.977	.913	.419	-.003228	-.003037	-.003925
690	-.755	.701	.277	-.003006	-.002801	-.003670
700	-.368	.356	-.003	-.002310	-.002291	-.003055
701	-.367	.356	-.004	-.002310	-.002291	-.003054
710	-.120	.260	-.077	-.000002	-.000001	-.000001
720	-.120	.260	-.077	.000000	-.000000	.000000

PIPING DISPLACEMENTS IN GLOBAL COORDINATES

POINT ID	DX (INCHES)	DY (INCHES)	DZ (INCHES)	RX (RADS)	RY (RADS)	RZ (RADS)
184	-.568	.077	.261	-.000395	.000151	-.000000
185	-.434	.072	.244	-.000470	.000103	-.000404
186	-.424	.072	.243	-.000474	.000100	-.000430
189	-.384	.067	.233	-.000505	.000080	-.000612
190	-.384	.067	.233	-.000505	.000080	-.000612
191	-.346	.060	.215	-.000532	.000061	-.000772
192	-.338	.058	.210	-.000534	.000058	-.000801
196	-.338	.058	.210	-.000535	.000058	-.000803
1193	-.258	.031	.159	-.000541	.000052	-.000854
1194	-.281	-.074	.173	-.000541	.000052	-.000854
1193	-.258	.031	.159	-.000541	.000052	-.000854
193	-.221	.010	.136	-.000520	.000050	-.000838
194	-.221	.005	.136	-.000014	.000000	-.000022
101	.000	.000	-.000	.000000	-.000000	.000000
133	-2.089	2.318	-.636	.000274	-.000035	.000762
510	-2.101	2.383	-.632	.000280	-.000039	.000757
520	-2.101	2.383	-.632	.000281	-.000040	.000757

PIPING DISPLACEMENTS IN GLOBAL COORDINATES

POINT 13	DX (INCHES)	DY (INCHES)	DZ (INCHES)	RX (RADS)	RY (RADS)	RZ (RADS)
521	-2.101	2.384	-.632	.000281	-.000040	.000756
530	-2.204	2.534	-.429	.000937	-.000290	-.000024
540	-2.204	2.534	-.428	.000937	-.000291	-.000026
550	-2.237	2.521	-.373	.000968	-.000359	-.000156
560	-2.244	2.518	-.361	.000973	-.000375	-.000186
570	-2.305	2.497	-.262	.000996	-.000508	-.000438
580	-2.462	2.461	-.038	.000902	-.000863	-.001098
581	-2.462	2.461	-.037	.000902	-.000863	-.001100
590	-2.509	2.397	.287	-.000499	-.003541	-.002325
600	-2.503	2.390	.303	-.000529	-.003554	-.002354
610	-2.439	2.312	.472	-.000859	-.003669	-.002630
620	-2.370	2.223	.664	-.001250	-.003740	-.002873
621	-2.370	2.223	.665	-.001251	-.003740	-.002873
630	-2.047	1.945	.820	-.002773	-.003833	-.004380
640	-1.904	1.822	.762	-.002958	-.003791	-.004385
650	-1.841	1.766	.736	-.003027	-.003769	-.004381
600	-1.759	1.693	.702	-.003107	-.003737	-.004371

PIPING DISPLACEMENTS IN GLOBAL COORDINATES

POINT 13	DX (INCHES)	DY (INCHES)	DZ (INCHES)	RX (RADS)	RY (RADS)	RZ (RADS)
670	-1.204	1.166	.458	-.003320	-.003410	-.004132
680	-.940	.908	.329	-.003200	-.003180	-.003902
690	-.723	.698	.213	-.002980	-.002944	-.003646
700	-.346	.355	-.019	-.002291	-.002415	-.003033
701	-.346	.355	-.019	-.002290	-.002414	-.003033
710	-.120	.260	-.077	-.000002	-.000001	-.000001
720	-.120	.260	-.077	.000000	-.000000	.000000

OBE ENVELOPE OF 312 CONT SHELL 311 I.C. 313 SG Y6FPDHP 6/28/80 WESTDYN

PIPING DISPLACEMENTS IN GLOBAL COORDINATES

POINT ID	DX (INCHES)	DY (INCHES)	DZ (INCHES)	RX (RADS)	RY (RADS)	RZ (RADS)
133	0.000	0.000	0.000	0.000000	0.000000	0.000000
510	.000	.000	.000	.000001	.000006	.000002
520	.000	.000	.000	.000001	.000006	.000002
521	.000	.000	.000	.000001	.000007	.000002
530	.024	.010	.012	.000273	.000690	.000382
540	.025	.010	.012	.000273	.000691	.000382
550	.034	.015	.016	.000276	.000727	.000378
560	.037	.016	.017	.000277	.000733	.000377
570	.056	.026	.027	.000278	.000767	.000369
580	.100	.048	.048	.000266	.000734	.000351
581	.100	.048	.048	.000266	.000734	.000351
590	.122	.055	.048	.000188	.000087	.000367
600	.122	.054	.049	.000187	.000093	.000368
610	.120	.048	.052	.000177	.000112	.000371
620	.118	.041	.056	.000164	.000138	.000372
621	.118	.041	.056	.000164	.000138	.000372
630	.125	.030	.071	.000090	.000207	.000262

OBE ENVELOPE OF 312 CONT SHELL 311 I.C. 313 SG Y6FPDHP 6/28/80 WESTDYN

PIPING DISPLACEMENTS IN GLOBAL COORDINATES

POINT ID	DX (INCHES)	DY (INCHES)	DZ (INCHES)	RX (RADS)	RY (RADS)	RZ (RADS)
640	.130	.029	.074	.000080	.000163	.000242
650	.132	.029	.075	.000074	.000134	.000231
660	.133	.030	.075	.000066	.000088	.000217
670	.122	.031	.070	.000050	.000341	.000116
680	.100	.027	.059	.000099	.000549	.000091
690	.073	.021	.046	.000131	.000677	.000098
700	.014	.005	.017	.000125	.000724	.000128
701	.014	.005	.017	.000125	.000724	.000128
710	.000	.000	.000	.000000	.000000	.000000
720	.000	.000	.000	.000000	.000000	.000000

PIPING DISPLACEMENTS IN GLOBAL COORDINATES

POINT ID	DX (INCHES)	DY (INCHES)	DZ (INCHES)	RX (RADS)	RY (RADS)	RZ (RADS)
133	0.000	0.000	0.000	0.000000	0.000000	0.000000
510	.000	.000	.000	.000003	.000010	.000003
520	.000	.000	.000	.000003	.000011	.000003
521	.000	.000	.000	.000003	.000011	.000003
530	.041	.023	.021	.000630	.001137	.000690
540	.041	.023	.021	.000630	.001138	.000690
550	.057	.035	.028	.000642	.001198	.000689
560	.060	.038	.030	.000644	.001208	.000689
570	.092	.060	.045	.000653	.001265	.000687
580	.165	.112	.080	.000633	.001211	.000677
581	.165	.112	.080	.000633	.001210	.000677
590	.201	.129	.080	.000423	.000145	.000741
600	.201	.128	.080	.000420	.000155	.000742
610	.198	.114	.085	.000396	.000185	.000752
620	.195	.098	.093	.000369	.000228	.000758
621	.195	.098	.093	.000369	.000228	.000758
630	.206	.063	.117	.000192	.000340	.000531

SSE SEISMIC ANALYSIS Y6FPDHP 6/28/80 WESTDYN

PIPING DISPLACEMENTS IN GLOBAL COORDINATES

POINT ID	DX (INCHES)	DY (INCHES)	DZ (INCHES)	RX (RADS)	RY (RADS)	RZ (RADS)
640	.214	.057	.121	.000166	.000269	.000489
650	.217	.055	.123	.000152	.000221	.000468
660	.220	.054	.124	.000134	.000145	.000442
670	.202	.049	.115	.000082	.000562	.000267
680	.164	.042	.097	.000149	.000905	.000213
690	.121	.032	.076	.000195	.001116	.000199
700	.024	.008	.028	.000188	.001193	.000209
701	.024	.008	.028	.000188	.001193	.000209
710	.000	.000	.000	.000000	.000001	.000000
720	.000	.000	.000	.000000	.000000	.000000

EXTERNAL X DISPLACEMENT OF S.G. Y6FPDZX 6/30/80 WESTDYN PA

PIPING DISPLACEMENTS IN GLOBAL COORDINATES

POINT I3	DX (INCHES)	DY (INCHES)	DZ (INCHES)	RX (RADS)	RY (RADS)	RZ (RADS)
133	.219	0.000	-.000	0.000000	0.000000	0.000000
510	.219	-.000	-.000	.000000	-.000005	.000001
520	.219	-.000	-.000	.000000	-.000006	.000001
521	.219	-.000	-.000	.000000	-.000006	.000001
530	.198	-.002	-.009	-.000061	-.000677	.000277
540	.198	-.002	-.009	-.000061	-.000678	.000276
550	.189	-.003	-.014	-.000055	-.000723	.000266
560	.186	-.004	-.015	-.000054	-.000732	.000264
570	.167	-.005	-.024	-.000044	-.000797	.000245
580	.118	-.010	-.048	-.000028	-.000872	.000198
581	.118	-.010	-.048	-.000028	-.000872	.000198
590	.068	-.006	-.032	.000022	-.000696	.000115
600	.067	-.006	-.031	.000022	-.000683	.000114
610	.058	-.003	-.011	.000015	-.000634	.000099
620	.049	-.000	.008	.000005	-.000580	.000086
621	.049	-.000	.008	.000005	-.000580	.000086
630	.050	.003	.026	-.000002	.000019	.000011

EXTERNAL X DISPLACEMENT OF S.G. Y6FPDZX 6/30/80 WESTDYN PA

PIPING DISPLACEMENTS IN GLOBAL COORDINATES

POINT I3	DX (INCHES)	DY (INCHES)	DZ (INCHES)	RX (RADS)	RY (RADS)	RZ (RADS)
640	.049	.003	.026	-.000005	.000051	.000009
650	.048	.003	.025	-.000006	.000065	.000008
660	.047	.003	.025	-.000007	.000081	.000007
670	.034	.002	.019	-.000011	.000163	.000001
680	.026	.002	.015	-.000011	.000183	-.000001
690	.018	.001	.011	-.000010	.000188	-.000003
700	.003	.000	.004	-.000007	.000170	-.000005
701	.003	.000	.004	-.000007	.000170	-.000005
710	.000	.000	.000	-.000000	.000000	-.000000
720	-.000	.000	-.000	.000000	.000000	.000000

PIPING DISPLACEMENTS IN GLOBAL COORDINATES

POINT I3	DX (INCHES)	DY (INCHES)	DZ (INCHES)	RX (RADS)	RY (RADS)	RZ (RADS)
133	0.000	.065	0.000	0.000000	0.000000	0.000000
510	.000	.065	.000	.000001	-.000000	-.000000
520	.000	.065	.000	.000001	-.000000	-.000000
521	.000	.065	.000	.000001	-.000000	-.000000
530	.001	.061	.003	.000158	.000011	-.000008
540	.001	.061	.003	.000158	.000011	-.000008
550	.001	.059	.003	.000167	.000009	-.000015
560	.001	.058	.003	.000168	.000009	-.000017
570	.001	.054	.003	.000180	.000007	-.000031
580	.001	.044	.004	.000195	.000005	-.000069
581	.001	.044	.004	.000195	.000005	-.000069
590	.001	.031	.003	.000184	.000007	-.000141
600	.001	.030	.002	.000183	.000007	-.000143
610	.001	.023	.002	.000168	.000009	-.000156
620	.000	.015	.001	.000149	.000010	-.000165
621	.000	.015	.001	.000149	.000010	-.000165
630	-.000	.007	-.000	.000086	.000000	-.000179

EXTERNAL Y(VERT) DISPLACEMENT OF S.G. Y6FPD2X 6/30/80 WESTDYN PAGE

PIPING DISPLACEMENTS IN GLOBAL COORDINATES

POINT I3	DX (INCHES)	DY (INCHES)	DZ (INCHES)	RX (RADS)	RY (RADS)	RZ (RADS)
640	-.000	.007	-.000	.000077	-.000000	-.000171
650	-.000	.007	-.000	.000074	-.000000	-.000167
660	-.000	.007	-.000	.000070	-.000000	-.000161
670	-.000	.005	-.000	.000042	-.000001	-.000124
680	-.000	.004	-.000	.000030	-.000001	-.000104
690	-.000	.003	-.000	.000019	-.000001	-.000087
700	.000	.001	.000	-.000000	-.000001	-.000055
701	.000	.001	.000	-.000000	-.000001	-.000055
710	-.000	.000	.000	.000000	.000000	-.000000
720	.000	0.000	.000	-.000000	-.000000	-.000000

EXTERNAL Z DISPLACEMENT OF S.G. Y6FPDZX 6/30/80 WESTDYN

PIPING DISPLACEMENTS IN GLOBAL COORDINATES

POINT ID	DX (INCHES)	DY (INCHES)	DZ (INCHES)	RX (RADS)	RY (RADS)	RZ (RADS)
133	.000	0.000	.207	0.000000	0.000000	0.000000
510	.000	-.000	.207	-.000002	-.000002	.000000
520	.000	-.000	.207	-.000002	-.000002	.000000
521	.000	-.000	.207	-.000002	-.000003	.000000
530	-.008	.003	.199	-.000069	-.000221	.000126
540	-.008	.003	.199	-.000069	-.000221	.000126
550	-.011	.003	.197	-.000057	-.000224	.000122
560	-.012	.003	.197	-.000054	-.000224	.000121
570	-.018	.002	.194	-.000033	-.000211	.000114
580	-.028	.000	.189	.000008	-.000090	.000094
581	-.028	.000	.189	.000008	-.000090	.000094
590	.004	-.003	.165	.000179	.001201	.000095
600	.005	-.003	.161	.000179	.001207	.000095
610	.024	-.003	.123	.000178	.001276	.000089
620	.045	-.003	.080	.000169	.001286	.000081
621	.045	-.003	.080	.000169	.001286	.000081
630	.034	.001	.020	.000053	.000406	-.000005

EXTERNAL Z DISPLACEMENT OF S.G. Y6FPDZX 6/30/80 WESTDYN

PIPING DISPLACEMENTS IN GLOBAL COORDINATES

POINT ID	DX (INCHES)	DY (INCHES)	DZ (INCHES)	RX (RADS)	RY (RADS)	RZ (RADS)
640	..025	.002	.016	.000043	.000337	-.000009
650	.022	.002	.014	.000039	.000308	-.000011
660	.018	.003	.012	.000034	.000273	-.000012
670	.002	.004	.004	.000006	.000084	-.000021
680	-.001	.003	.002	-.000003	.000027	-.000023
690	-.001	.002	.002	-.000008	-.000002	-.000023
700	.001	.001	.002	-.000011	-.000005	-.000021
701	.001	.001	.002	-.000011	-.000005	-.000021
710	-.000	.000	.000	-.000000	.000000	-.000000
720	.000	.000	.000	0.000000	-.000000	.000000

EXTERNAL X ROTATION OF S.G. Y6FPDZX 6/30/80 WESTDY

PIPING DISPLACEMENTS IN GLOBAL COORDINATES

POINT ID	DX (INCHES)	DY (INCHES)	DZ (INCHES)	RX (RADS)	RY (RADS)	RZ (RADS)
133	0.000	0.000	0.000	.000303	0.000000	.000000
510	-.000	.000	.005	.000302	-.000000	.000000
520	-.000	.000	.005	.000302	-.000000	.000000
521	-.000	.000	.005	.000302	-.000000	.000000
530	-.001	-.007	.014	.000127	-.000027	-.000002
540	-.001	-.007	.014	.000126	-.000027	-.000002
550	-.001	-.009	.014	.000118	-.000026	.000003
560	-.002	-.009	.014	.000116	-.000026	.000004
570	-.002	-.012	.014	.000103	-.000023	.000012
580	-.003	-.018	.013	.000080	-.000012	.000036
581	-.003	-.018	.013	.000080	-.000012	.000036
590	-.001	-.019	.011	.000017	.000084	.000095
600	-.001	-.019	.011	.000017	.000084	.000096
610	.001	-.016	.009	.000016	.000089	.000103
620	.003	-.013	.006	.000017	.000089	.000106
621	.003	-.013	.006	.000017	.000089	.000106
630	.002	-.006	.001	.000005	.000028	.000084

EXTERNAL X ROTATION OF S.G. Y6FPDZX 6/30/80 WESTDYN

PIPING DISPLACEMENTS IN GLOBAL COORDINATES

POINT ID	DX (INCHES)	DY (INCHES)	DZ (INCHES)	RX (RADS)	RY (RADS)	RZ (RADS)
640	.002	-.005	.001	.000003	.000023	.000079
650	.001	-.005	.001	.000001	.000021	.000076
660	.001	-.004	.001	-.000000	.000019	.000072
670	.000	-.002	.000	-.000007	.000006	.000049
680	-.000	-.001	.000	-.000007	.000002	.000039
690	-.000	-.001	.000	-.000007	-.000000	.000031
700	.000	-.000	.000	-.000002	-.000001	.000017
701	.000	-.000	.000	-.000002	-.000001	.000017
710	-.000	.000	.000	-.000000	.000000	.000000
720	.000	.000	.000	.000000	-.000000	.000000

PIPING DISPLACEMENTS IN GLOBAL COORDINATES

POINT I3	DX (INCHES)	DY (INCHES)	DZ (INCHES)	RX (RADS)	RY (RADS)	RZ (RADS)
133	0.000	0.000	0.000	0.000000	.000267	0.000000
510	-.000	-.000	-.000	-.000000	.000266	.000000
520	-.000	-.000	-.000	-.000000	.000265	.000000
521	-.000	-.000	-.000	-.000000	.000265	.000000
530	.005	-.001	.003	-.000016	.000086	.000072
540	.005	-.001	.003	-.000016	.000086	.000072
550	.006	-.001	.003	-.000014	.000073	.000070
560	.007	-.001	.004	-.000014	.000070	.000069
570	.008	-.001	.004	-.000011	.000051	.000065
580	.010	-.003	.005	-.000006	.000024	.000054
581	.010	-.003	.005	-.000006	.000024	.000054
590	.010	-.002	.005	.000007	-.000010	.000031
600	.010	-.002	.006	.000007	-.000009	.000031
610	.010	-.001	.006	.000006	-.000005	.000028
620	.010	-.000	.006	.000004	-.000001	.000025
621	.010	-.000	.006	.000004	-.000001	.000025
630	.009	.001	.005	-.000003	.000026	.000006

PIPING DISPLACEMENTS IN GLOBAL COORDINATES

POINT I3	DX (INCHES)	DY (INCHES)	DZ (INCHES)	RX (RADS)	RY (RADS)	RZ (RADS)
640	.009	.001	.005	-.000003	.000028	.000005
650	.008	.001	.004	-.000003	.000028	.000005
660	.008	.001	.004	-.000004	.000028	.000005
670	.005	.001	.003	-.000004	.000030	.000002
680	.004	.000	.002	-.000004	.000029	.000004
690	.002	.000	.002	-.000003	.000028	.000001
700	.000	.000	.001	-.000002	.000024	-.000000
701	.000	.000	.001	-.000002	.000024	-.000000
710	-.000	.000	.000	-.000000	.000000	.000000
720	-.000	.000	-.000	.000000	.000000	.000000

PIPING DISPLACEMENTS IN GLOBAL COORDINATES

POINT I3	DX (INCHES)	DY (INCHES)	DZ (INCHES)	RX (RADS)	RY (RADS)	RZ (RADS)
133	0.000	0.000	0.000	.000000	0.000000	.000015
510	-.000	-.000	.000	.000000	.000000	.000015
520	-.000	-.000	.000	.000000	.000000	.000015
521	-.000	-.000	.000	.000000	.000000	.000015
530	-.001	-.000	.000	.000001	.000003	.000012
540	-.001	-.000	.000	.000001	.000003	.000012
550	-.001	-.000	.000	.000001	.000003	.000011
560	-.001	-.000	.000	.000001	.000003	.000011
570	-.001	-.001	.000	.000001	.000003	.000011
580	-.000	-.001	.000	.000001	.000003	.000010
581	-.000	-.001	.000	.000001	.000003	.000010
590	-.000	-.001	.000	.000001	.000002	.000008
600	-.000	-.001	.000	.000001	.000002	.000008
610	-.000	-.001	.000	.000001	.000002	.000007
620	-.000	-.000	.000	.000001	.000002	.000007
621	-.000	-.000	.000	.000001	.000002	.000007
630	-.000	-.000	-.000	-.000001	.000000	.000003

PIPING DISPLACEMENTS IN GLOBAL COORDINATES

POINT I3	DX (INCHES)	DY (INCHES)	DZ (INCHES)	RX (RADS)	RY (RADS)	RZ (RADS)
640	-.000	.000	-.000	-.000001	.000000	.000003
650	-.000	.000	-.000	-.000001	-.000000	.000003
660	-.000	.000	-.000	-.000001	-.000000	.000003
670	-.000	.000	-.000	-.000001	-.000000	.000002
680	-.000	.000	-.000	-.000001	-.000000	.000001
690	-.000	.000	-.000	-.000001	-.000000	.000001
700	.000	-.000	-.000	-.000000	-.000000	.000000
701	-.000	-.000	-.000	-.000000	-.000000	.000001
710	-.000	.000	-.000	-.000000	-.000000	.000000
720	.000	-.000	.000	.000000	-.000000	.000000

EXTERNAL X DISPLACEMENT OF CONTAINMENT Y6FPD70 7/ 3/80 WESTDYN

PIPING DISPLACEMENTS IN GLOBAL COORDINATES

POINT I3	DX (INCHES)	DY (INCHES)	DZ (INCHES)	RX (RADS)	RY (RADS)	RZ (RADS)
133	0.000	0.000	0.000	0.000000	0.000000	0.000000
510	.000	-.000	-.000	-.000001	-.000000	-.000000
520	.000	-.000	-.000	-.000001	-.000000	-.000000
521	.000	-.000	-.000	-.000001	-.000000	-.000000
530	.000	.002	-.002	-.000018	.000017	.000008
540	.000	.002	-.002	-.000018	.000017	.000008
550	.000	.002	-.002	-.000013	.000022	.000009
560	.000	.002	-.002	-.000012	.000023	.000009
570	.001	.002	-.002	-.000004	.000038	.000011
580	.004	.001	-.000	.000012	.000093	.000013
581	.004	.001	-.000	.000012	.000094	.000013
590	.023	-.001	-.011	.000079	.000510	.000028
600	.024	-.001	-.013	.000079	.000512	.000029
610	.032	-.001	-.028	.000081	.000522	.000029
620	.040	-.002	-.046	.000079	.000501	.000029
621	.040	-.002	-.046	.000079	.000501	.000029
630	.043	-.000	-.059	.000020	-.000200	.000003

EXTERNAL X DISPLACEMENT OF CONTAINMENT Y6FPD70 7/ 3/80 WESTDYN

PIPING DISPLACEMENTS IN GLOBAL COORDINATES

POINT I3	DX (INCHES)	DY (INCHES)	DZ (INCHES)	RX (RADS)	RY (RADS)	RZ (RADS)
640	.048	.000	-.057	.000016	-.000246	.000001
650	.051	.001	-.056	.000014	-.000264	.000001
660	.055	.001	-.054	.000012	-.000287	-.000000
670	.089	.001	-.037	.000002	-.000387	-.000005
680	.109	.001	-.028	-.000001	-.000401	-.000006
690	.126	.001	-.020	-.000003	-.000393	-.000007
700	.155	.000	-.005	-.000004	-.000330	-.000007
701	.155	.000	-.005	-.000004	-.000330	-.000007
710	.161	.000	.000	-.000000	-.000000	-.000000
720	.161	.000	.000	.000000	-.000000	-.000000

PIPING DISPLACEMENTS IN GLOBAL COORDINATES

POINT I3	DX (INCHES)	DY (INCHES)	DZ (INCHES)	RX (RADS)	RY (RADS)	RZ (RADS)
133	0.000	0.000	0.000	0.000000	0.000000	0.000000
510	-.000	.000	.000	.000000	.000000	.000000
520	-.000	.000	.000	.000000	.000000	.000000
521	-.000	.000	.000	.000000	.000000	.000000
530	-.000	-.000	.000	.000003	-.000000	.000002
540	-.000	-.000	.000	.000003	-.000000	.000002
550	-.000	-.000	.000	.000003	-.000000	.000002
560	-.000	-.000	.000	.000003	-.000000	.000002
570	-.000	-.000	.000	.000003	-.000000	.000002
580	-.000	-.001	.000	.000004	-.000000	.000003
581	-.000	-.001	.000	.000004	-.000000	.000003
590	-.000	-.001	.000	.000007	-.000000	.000004
600	-.000	-.001	.000	.000007	-.000001	.000004
610	-.000	-.001	.000	.000007	-.000001	.000004
620	-.000	-.001	.000	.000008	-.000001	.000005
621	-.000	-.001	.000	.000008	-.000001	.000005
630	-.000	-.000	-.000	.000010	-.000000	.000008

PIPING DISPLACEMENTS IN GLOBAL COORDINATES

POINT I3	DX (INCHES)	DY (INCHES)	DZ (INCHES)	RX (RADS)	RY (RADS)	RZ (RADS)
640	.000	.000	-.000	.000011	-.000000	.000009
650	.000	.000	-.000	.000011	-.000000	.000009
660	.000	.001	.000	.000011	-.000000	.000009
670	.000	.002	.000	.000011	.000000	.000009
680	.000	.003	.000	.000010	.000000	.000009
690	.000	.003	.000	.000009	.000000	.000009
700	.000	.004	-.000	.000007	.000000	.000008
701	.000	.004	-.000	.000007	.000000	.000008
710	.000	.005	-.000	.000000	-.000000	.000000
720	-.000	.005	-.000	-.000000	.000000	-.000000

EXTERNAL Z DISPLACEMENT OF CONTAINMENT Y6FPD70 7/ 3/80 WESTDYN

PIPING DISPLACEMENTS IN GLOBAL COORDINATES

POINT I3	DX (INCHES)	DY (INCHES)	DZ (INCHES)	RX (RADS)	RY (RADS)	RZ (RADS)
133	0.000	0.000	0.000	0.000000	0.000000	0.000000
510	.000	.000	.000	.000001	.000001	-.000000
520	.000	.000	.000	.000001	.000001	-.000000
521	.000	.000	.000	.000001	.000001	-.000000
530	.002	-.002	.003	.000029	.000026	-.000030
540	.002	-.002	.003	.000029	.000026	-.000030
550	.002	-.002	.003	.000023	.000022	-.000029
560	.002	-.002	.003	.000022	.000021	-.000029
570	.003	-.002	.004	.000012	.000005	-.000027
580	.001	-.001	.003	-.000007	-.000071	-.000022
581	.001	-.001	.003	-.000007	-.000071	-.000022
590	-.023	.001	.018	-.000090	-.000754	-.000034
600	-.024	.001	.021	-.000091	-.000758	-.000033
610	-.035	.001	.044	-.000090	-.000790	-.000032
620	-.048	.002	.071	-.000087	-.000792	-.000030
621	-.048	.002	.071	-.000087	-.000792	-.000030
630	-.040	-.000	.108	-.000029	-.000299	.000006

EXTERNAL Z DISPLACEMENT OF CONTAINMENT Y6FPD70 7/ 3/80 WESTDYN

PIPING DISPLACEMENTS IN GLOBAL COORDINATES

POINT I3	DX (INCHES)	DY (INCHES)	DZ (INCHES)	RX (RADS)	RY (RADS)	RZ (RADS)
640	-.034	-.001	.111	-.000024	-.000261	.000008
650	-.031	-.001	.113	-.000022	-.000245	.000008
660	-.028	-.001	.114	-.000019	-.000225	.000009
670	-.012	-.002	.122	-.000005	-.000115	.000012
680	-.007	-.001	.125	-.000000	-.000079	.000013
690	-.005	-.001	.126	.000002	-.000058	.000013
700	-.001	-.000	.128	.000005	-.000044	.000011
701	-.001	-.000	.128	.000005	-.000044	.000011
710	.000	-.000	.130	.000000	-.000000	.000000
720	.000	-.000	.130	-.000000	.000000	0.000000

PIPING DISPLACEMENTS IN GLOBAL COORDINATES

POINT I3	DX (INCHES)	DY (INCHES)	DZ (INCHES)	RX (RADS)	RY (RADS)	RZ (RADS)
133	0.000	0.000	0.000	0.000000	0.000000	0.000000
510	.000	.000	.000	.000000	.000000	-.000000
520	.000	.000	.000	.000000	.000000	-.000000
521	.000	.000	.000	.000000	.000000	-.000000
530	.000	-.000	.000	.000000	.000000	-.000000
540	.000	-.000	.000	.000000	.000000	-.000000
550	.000	-.000	.000	.000000	.000000	-.000000
560	.000	-.000	.000	.000000	.000000	-.000000
570	.000	-.000	.000	.000000	.000000	-.000000
580	.000	-.000	.000	.000000	.000000	-.000000
581	.000	-.000	.000	.000000	.000000	-.000000
590	.000	-.000	.000	-.000000	-.000001	.000000
600	.000	-.000	.000	-.000000	-.000001	.000000
610	.000	-.000	.000	-.000000	-.000001	.000000
620	.000	-.000	.000	-.000000	-.000001	.000000
621	.000	-.000	.000	-.000000	-.000001	.000000
630	.000	.000	.000	-.000000	-.000001	.000000

PIPING DISPLACEMENTS IN GLOBAL COORDINATES

POINT I3	DX (INCHES)	DY (INCHES)	DZ (INCHES)	RX (RADS)	RY (RADS)	RZ (RADS)
640	.000	-.000	.000	-.000000	-.000001	.000000
650	.000	-.000	.000	-.000000	-.000001	.000000
660	.000	-.000	.000	-.000000	-.000001	.000000
670	.000	-.000	.000	-.000000	-.000000	.000000
680	.000	-.000	.000	-.000000	.000000	.000000
690	.000	-.000	.000	-.000000	.000000	.000000
700	.000	-.000	.000	.000000	.000001	.000000
701	.000	-.000	.000	.000000	.000001	.000000
710	-.000	-.000	.000	-.000000	.000005	.000000
720	.000	-.000	.000	0.000000	.000005	.000000

3.0 REFERENCES

Isometrics C-381-350, Sheet 1, Rev. C

Flow Diagrams 33013-534, Rev. 1

R. E. Ginna Seismic Upgrading Program Criteria Document, Rev. 0, 4/2/80.

Piping Specification #5291, 12/23/67.

Orthographic Drawings D-304-014, Rev. IV.

Main Steam Safety Valve Set Points Data from RGE letter dated 10/15/79.

Support Drawings: B-381-401, Sheet 1, Rev. 1
B-381-401, Sheet 2, Rev. 2
B-381-402, Sheet 1
B-381-402, Sheet 2

ALLOWABLE STRESS

The allowable stresses for use with equations (11), (12), (13) and (14) of the Summer Addenda, Power Piping ANSI B31.1-1973 have been determined in accordance with the requirements of Section 102.3.1C of B31.1-1973. Specifically,

$$S_A = f\,(1.25S_c + 0.25\,S_h) \qquad (1)$$

S_A = allowable stress range

S_c = basic material allowable stress at minimum (cold) temperature from the Allowable Stress Tables.

S_h = basic material allowable stress at maximum (hot) temperature from the Allowable Stress Tables.

f = stress range reduction factor for cyclic conditions for total number, N, of full temperature cycles over total number of years during which system is expected to be in operation, from Table 102.3.2,C.

The Allowable Stress Tables are in Appendix A of B31.1-1973. If not all cycles are full temperature cycles, an equivalent number of full temperature cycles is used to determine f.

$$N = N_E + r_1^5\,N_1 + r_2^5\,N_2 + \ldots r_n^5\,N_n \qquad (2)$$

where N_E = number of cycles at full temperature change, ΔT_E, for which expansion stress, S_E, has been calculated by Eq. (13).

$N_1, N_2, \ldots N_n$ = number of cycles at lesser temperature changes, $\Delta T_1, \Delta T_2, \ldots \Delta T_r$

$r_1, r_2, \ldots r_n = \Delta T_1/\Delta T_E, \Delta T_2/\Delta T_E, \ldots \Delta T_r/\Delta T_E$

Applicable values for this system are summarized in the following table.

Operating Mode i	N_i	T_c	T_n	T_i	r_i*	$r_i^5 \cdot N_i$**
1. 100% power						
2. safety valve relief						
3.						
4.						
5.						
6.						
						N << 7000

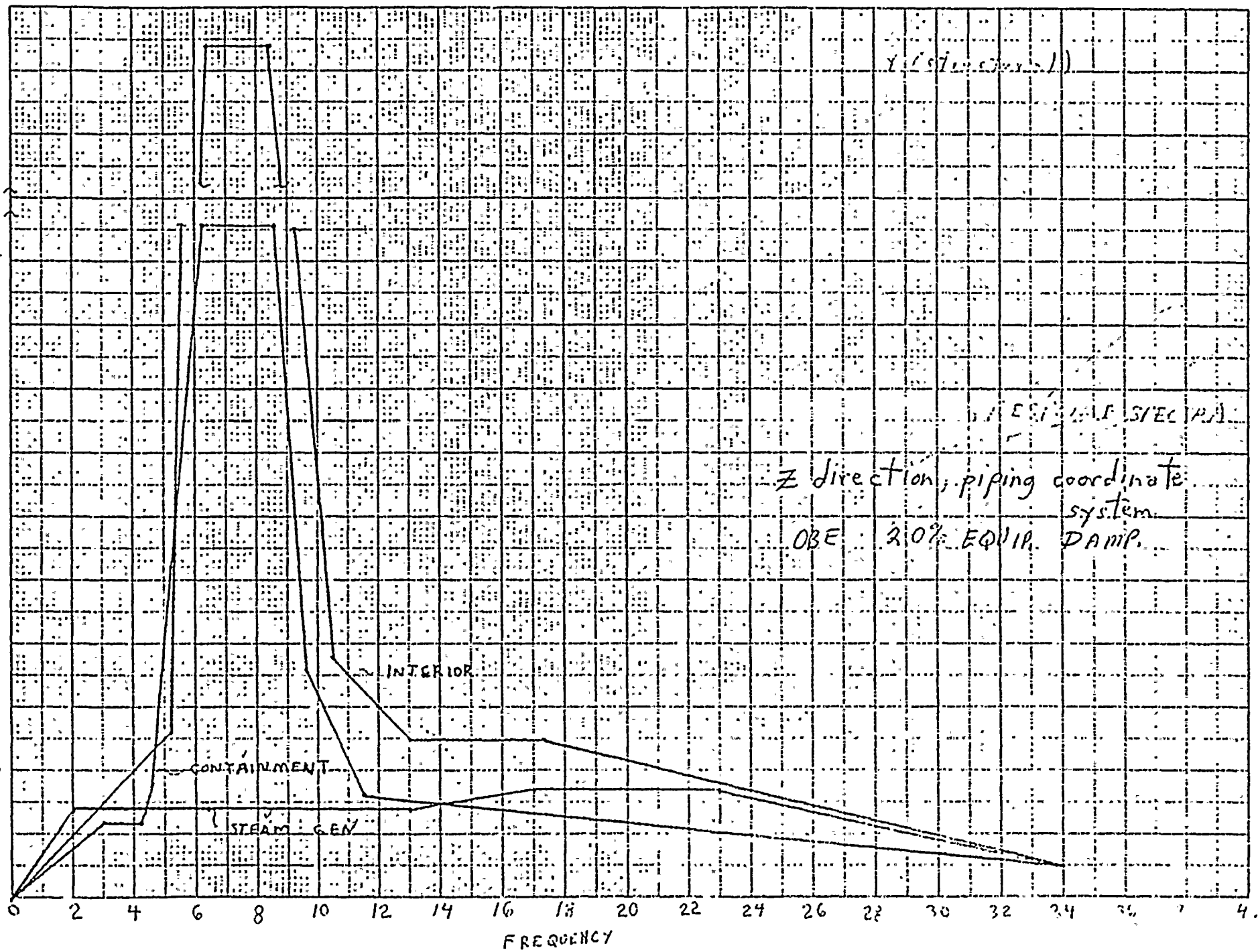
r_i = 1 for the mode with $\Delta T_i = \Delta T_E$

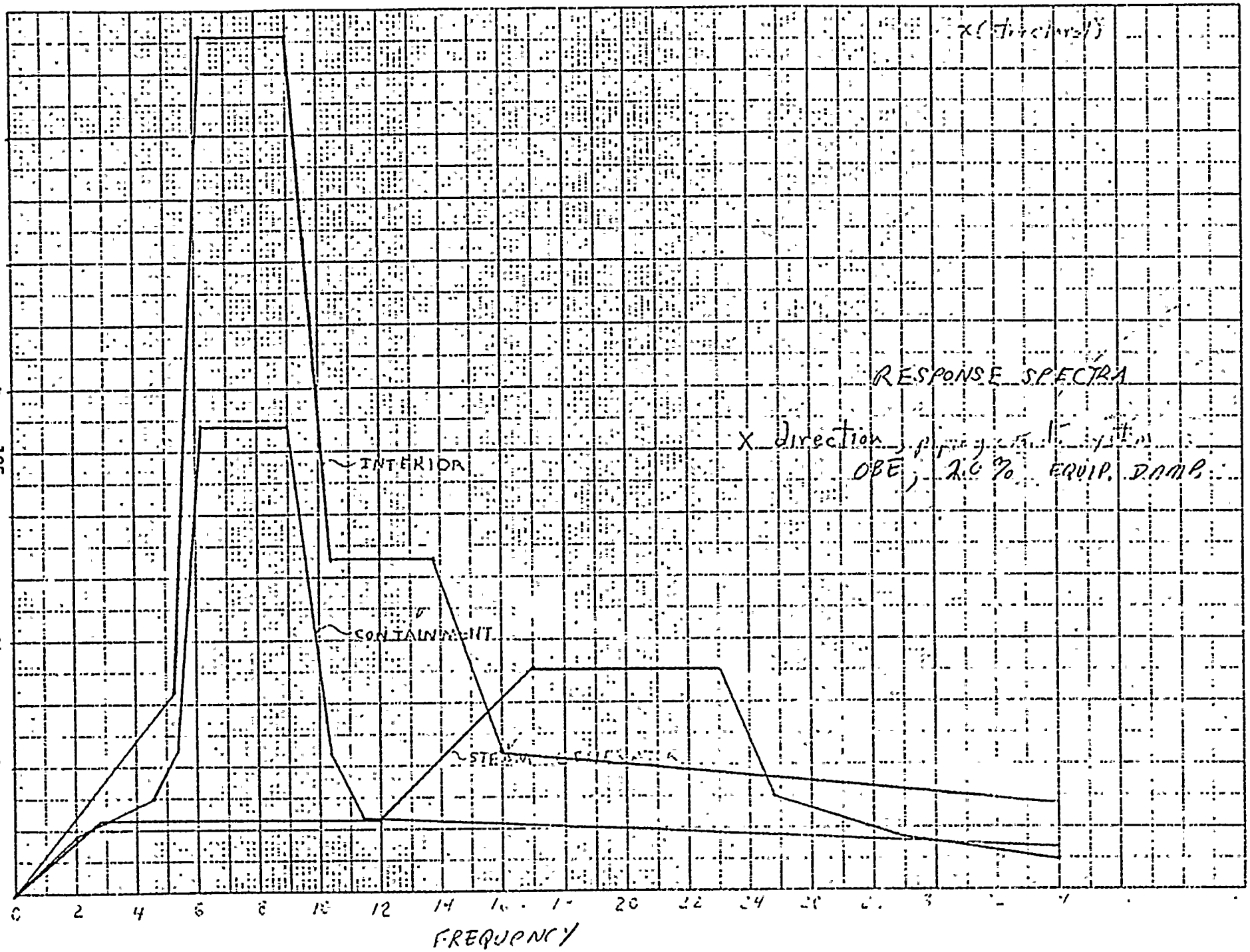
**This value is N_E for the mode with $\Delta T_i = \Delta T_E$.

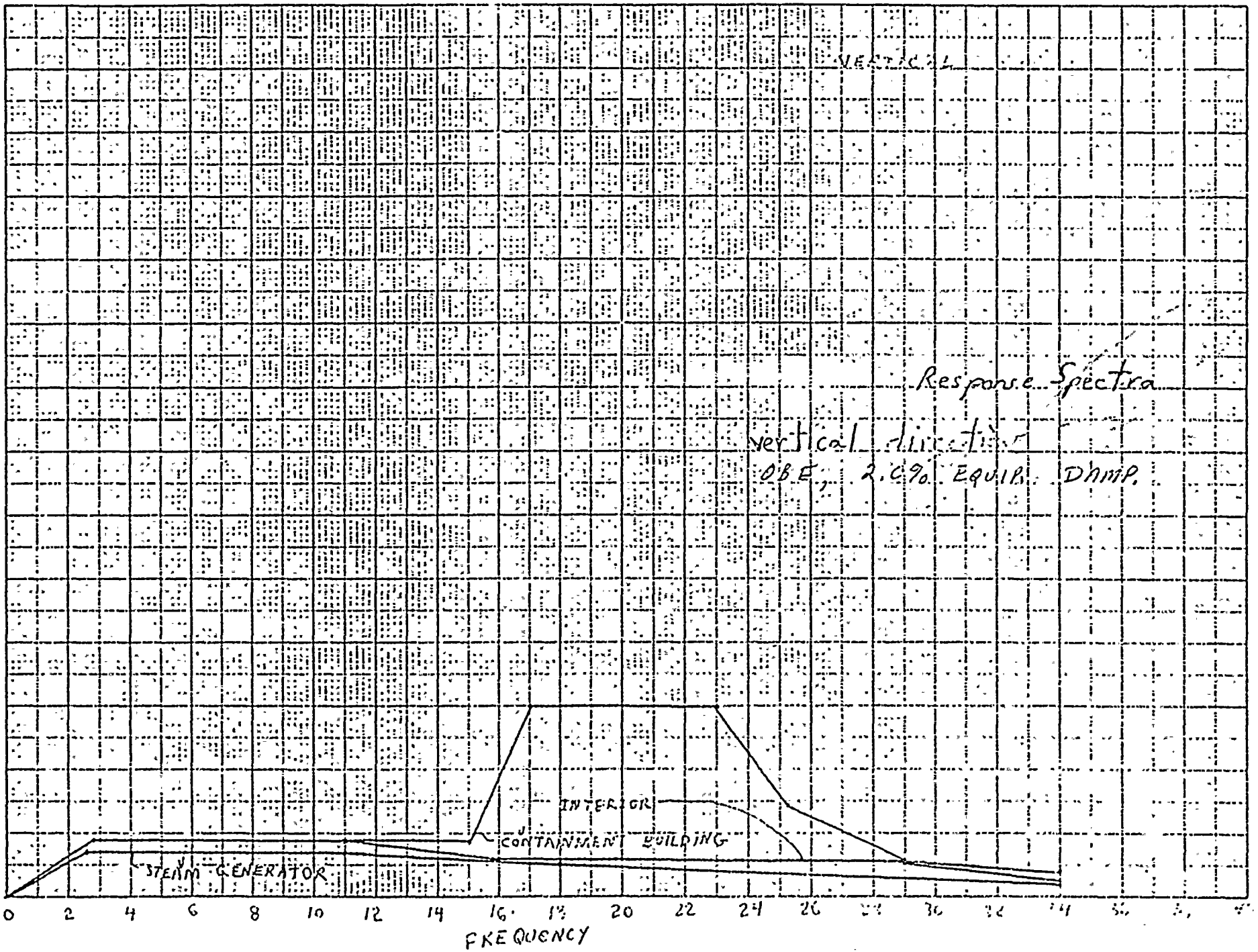
Using this value of N, f as obtained from Table 102.32,C is 1.0

According to the indicated references, the materials used and the basic allowable stress and the allowable stress range from Eq. (1) are:

Material	Ref.	S_c	S_h	Ref.	S_A
1. ASTM A155 - 65 GRADE C55 CLASS 1	ISOMETRIC C-381-350-1-C	12,400	12,400	B31.1 page 79	18600
2.					
3.					
4.					

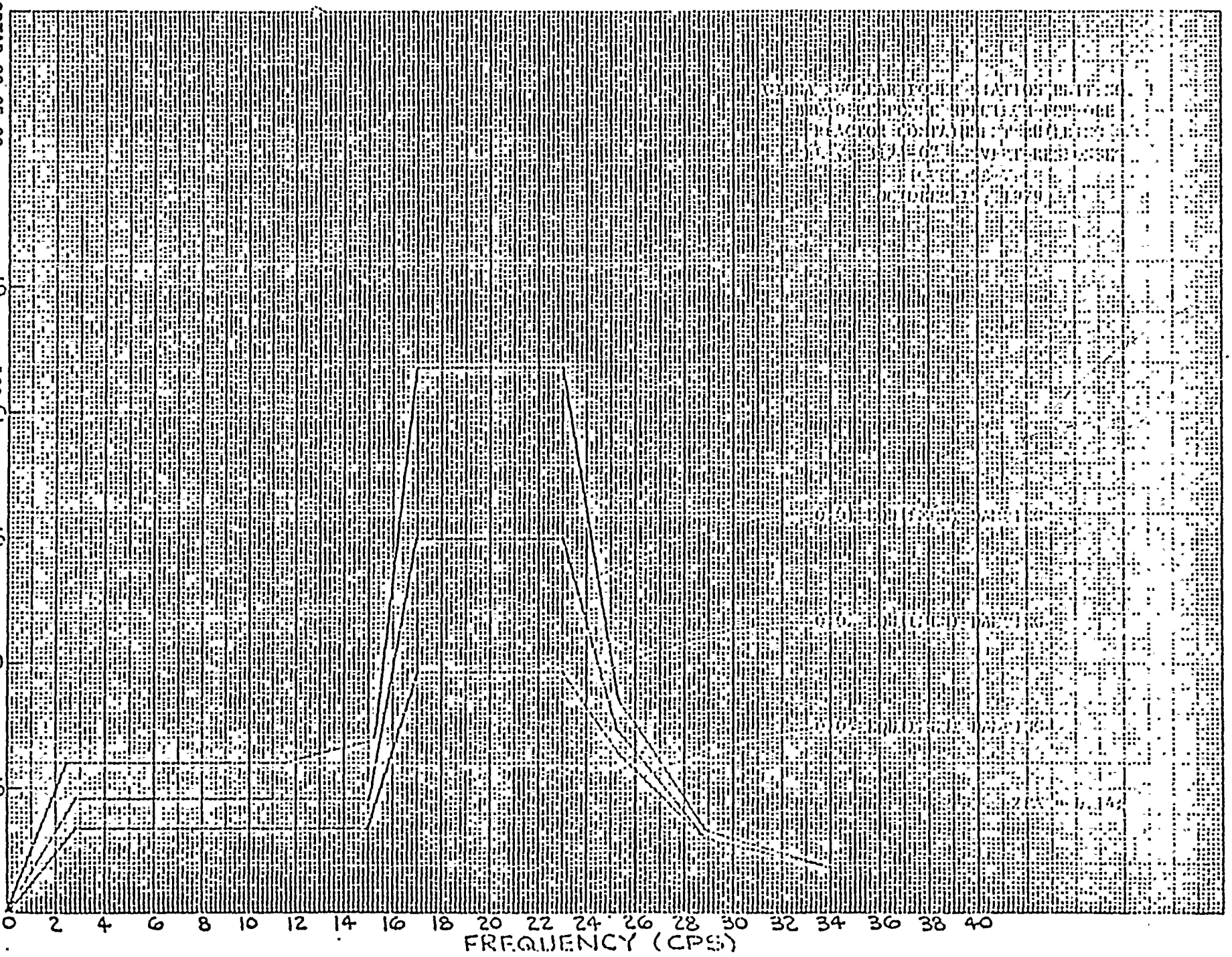

ACCELERATION
FREQUENCY
INTERIOR
CONTAINMENT
STEAM GEN
Z direction; piping coordinate system
OBE 2% EQUIP. DAMP.
0
2
4
6
8
10
12
14
16
20
22
24
26
30
32
1
2
3
4
5
7

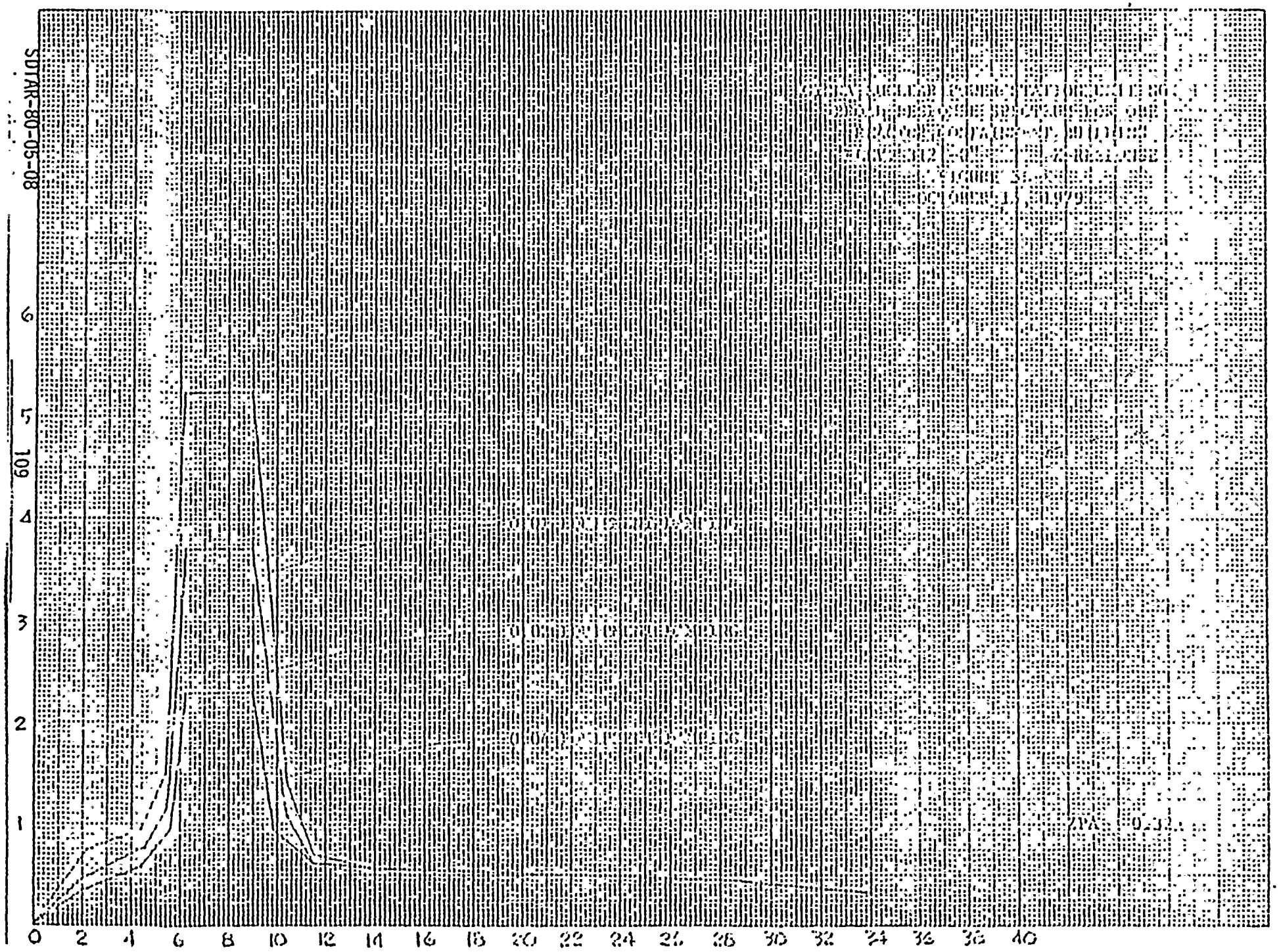

RESPONSE SPECTRA
X direction
OBE, 2.0% EQUIP. DAMP.
INTERIOR
CONTAINMENT
STEAM GENERATOR
ACCELERATION
FREQUENCY
0
2
4
6
8
10
12
14
16
18
20
22
24
1
2
3
4
5
7

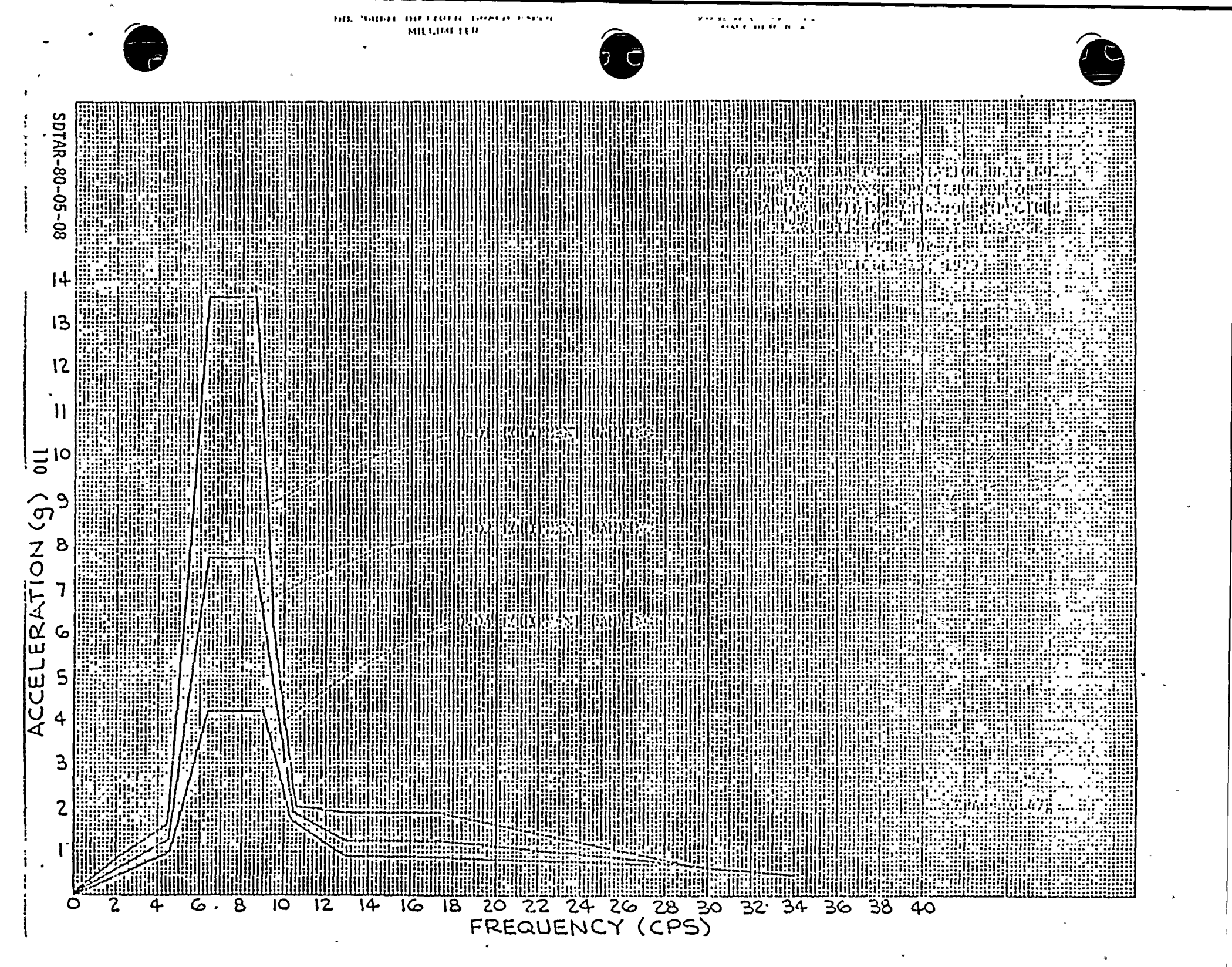

VERTICAL
Response Spectra
vertical direction
OBE, 2.0% EQUIV. DAMP.
INTERIOR
CONTAINMENT BUILDING
STEAM GENERATOR
5
4
3
2
1
0
2
4
6
8
10
12
14
16
20
22
24
FREQUENCY

SDTAR-80-05-08
107
AMPLITUDE (INCHES)
1
2
3
4
5
6
7
8
9
10
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40
FREQUENCY (CPS)

NO. 340-M DIETZGEN GRAPH PAPER
MILLIMETER
EUGENE DIETZGEN CO.
MADE IN U. S. A.

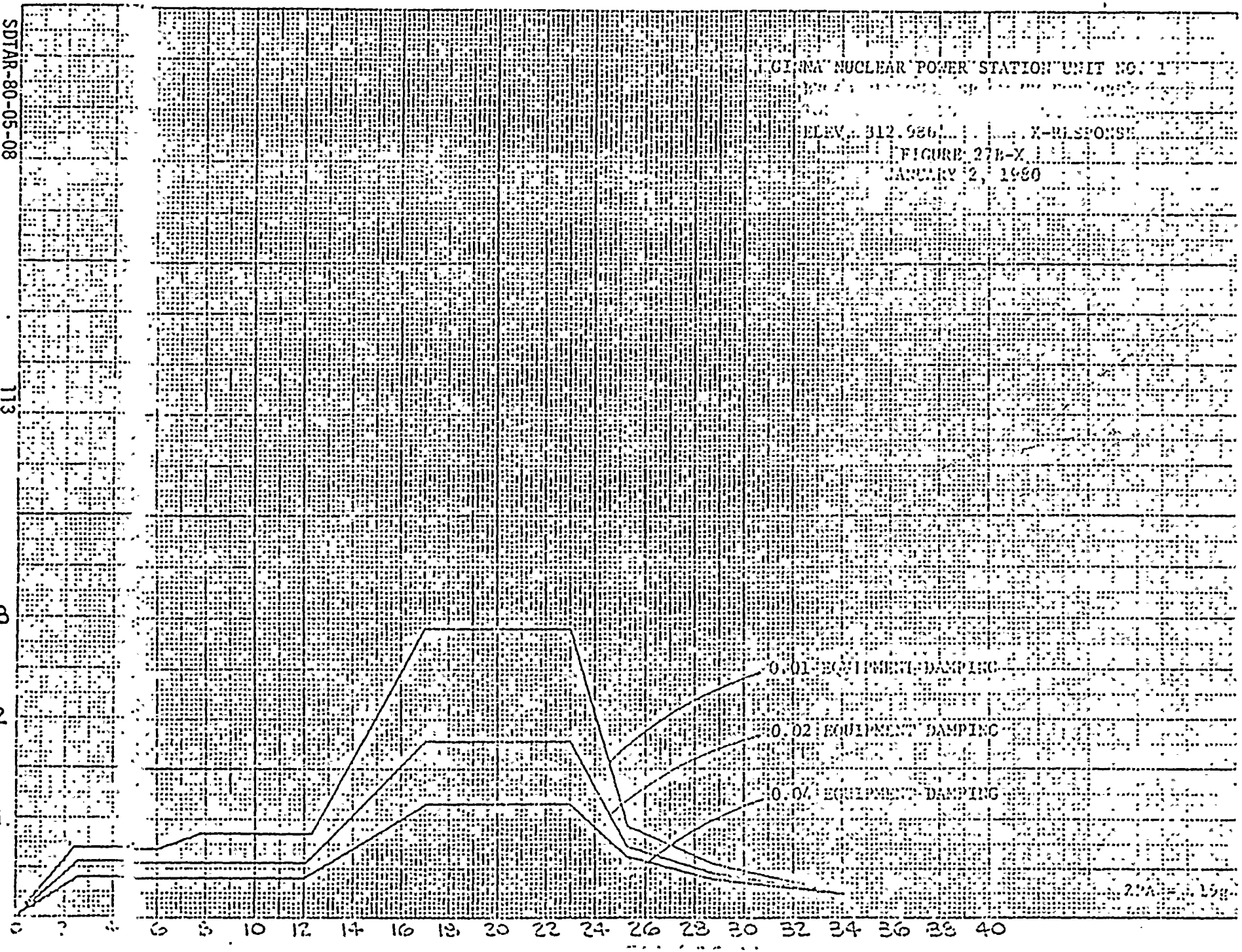



SOTAR-80-05-08
109
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40
1 2 3 4 5 6


SDTAR-80-05-08
ACCELERATION (g)
FREQUENCY (CPS)
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40
1 2 3 4 5 6 7 8 9 10 11 12 13 14

SDTAR-80-05-08
111
ACCELERATION (g)
1.0
0.5
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40
FREQUENCY (CPS)

SDTAR-80-05-08


ELEV. 312.98
X-RESPONSE
FIGURE 27B-X
JANUARY 2, 1980
0.01 EQUIPMENT DAMPING
0.02 EQUIPMENT DAMPING
0.04 EQUIPMENT DAMPING
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40

MILLIMETER

CLINNA NUCLEAR POWER STATION UNIT NO. 1

ELEV. 312.986' VERT-ELSC

FIGURE 2.5-V

JANUARY 2, 1980

ACCELERATION (g)

0.01 EQUIPMENT DAMPING

0.02 EQUIPMENT DAMPING

0.04 EQUIPMENT DAMPING

ZPA = .09g

2 3 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40

SDTAR-80-05-08

GINNA NUCLEAR POWER STATION UNIT NO. 1

ELEV. 312.92' Y-RESPONSE

FIGURE 27B-Y

JANUARY 2, 1980

ACCELERATION (g)

0.01 EQUIPMENT DAMPING

0.02 EQUIPMENT DAMPING

0.04 EQUIPMENT DAMPING

ZPA = .15g

0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40

SDTAR-80-05-08

GSE.

I.P. Kemper 2-29-80

2.0% EQUIP. DAMP. X RESPONSE

MIN STEAM.

INTERIOR CONCRETE SH.

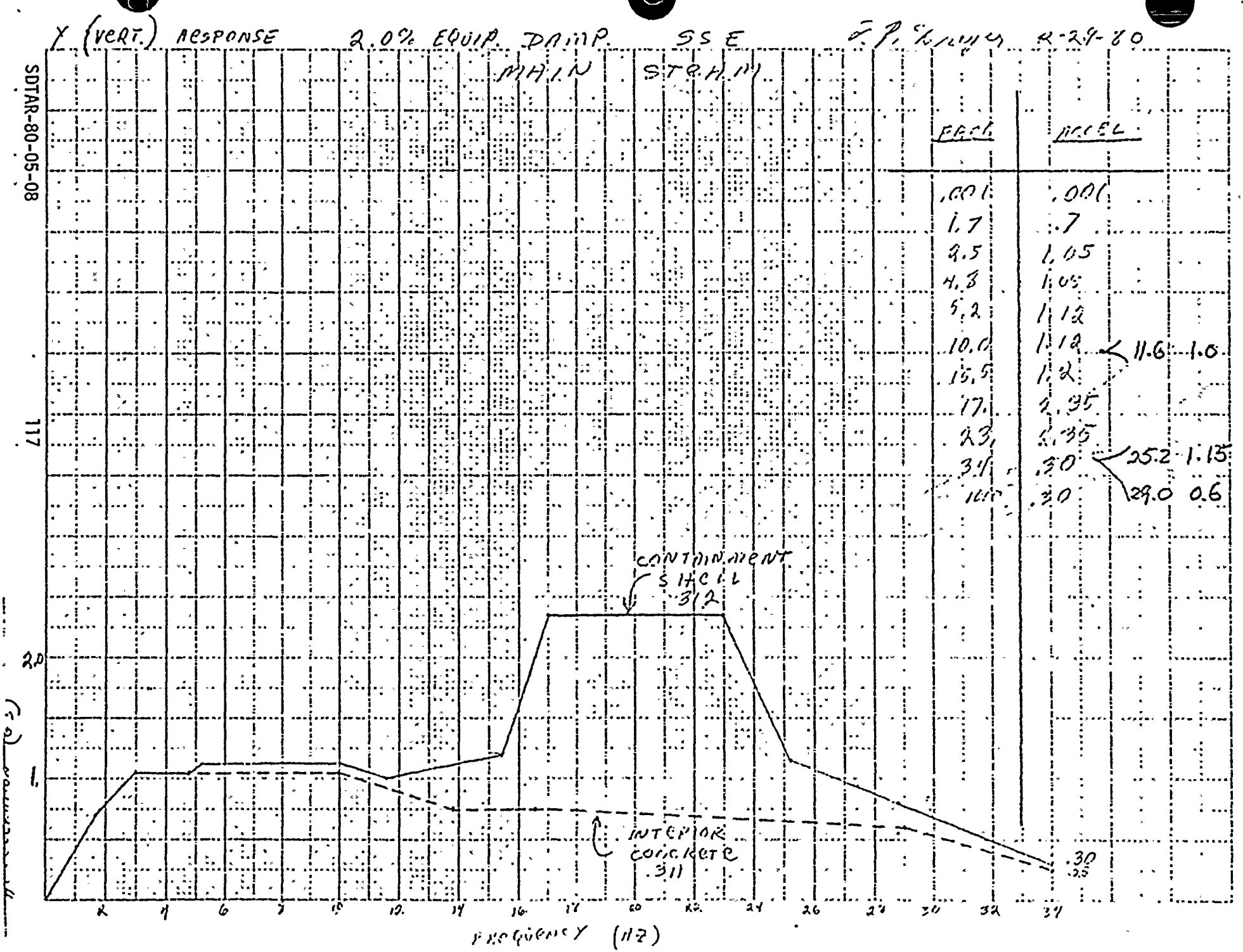
CONTAINMENT SHELL SH.

FREQ.	ACCEL.
.001	.001
2.0	1.25
2.7	1.4
4.3	2.4
5.0	3.4
5.3	5.5
6.3	10.75
9.0	16.75
10.7	4.3
14	4.3
16.	1.7
23.	1.3
34	1.11
100.	1.11

1.11 = 2 MIL

ACCELERATION (g's)

FREQUENCY (Hz)


X (VERT.) RESPONSE
2.0% EQUIP. DAMP.
SSE
MAIN STRUCTURE
EQUIPMENT R-29-80
EACH
MODEL
.001
.7
1.05
1.05
1.12
1.12
1.2
2.35
2.35
.30
.30
11.6 1.0
25.2 1.15
29.0 0.6
CONTAINMENT SHELL .312
INTERIOR CONCRETE .311
.30
.25
SDTAR-80-05-08
117
2.0
1.
FREQUENCY (HZ)

SDTAR-80-05-08

N RESPONSE 2.0% EQUIP. DAMP. SSE

T.P.S. 2-29-80

MAIN STEAM

FREQ	ACCEL
.001	.001
1.6	1.0
2.6	1.45
3.6	1.65
5.2	3.3
5.9	5.0
6.3	9.0
8.6	9.0
9.6	4.5
11.	2.7
12.5	1.95
17.5	1.95
18.4	1.1
34	.73
1000.	.73

INTERIOR CONCRETE ≥ 11

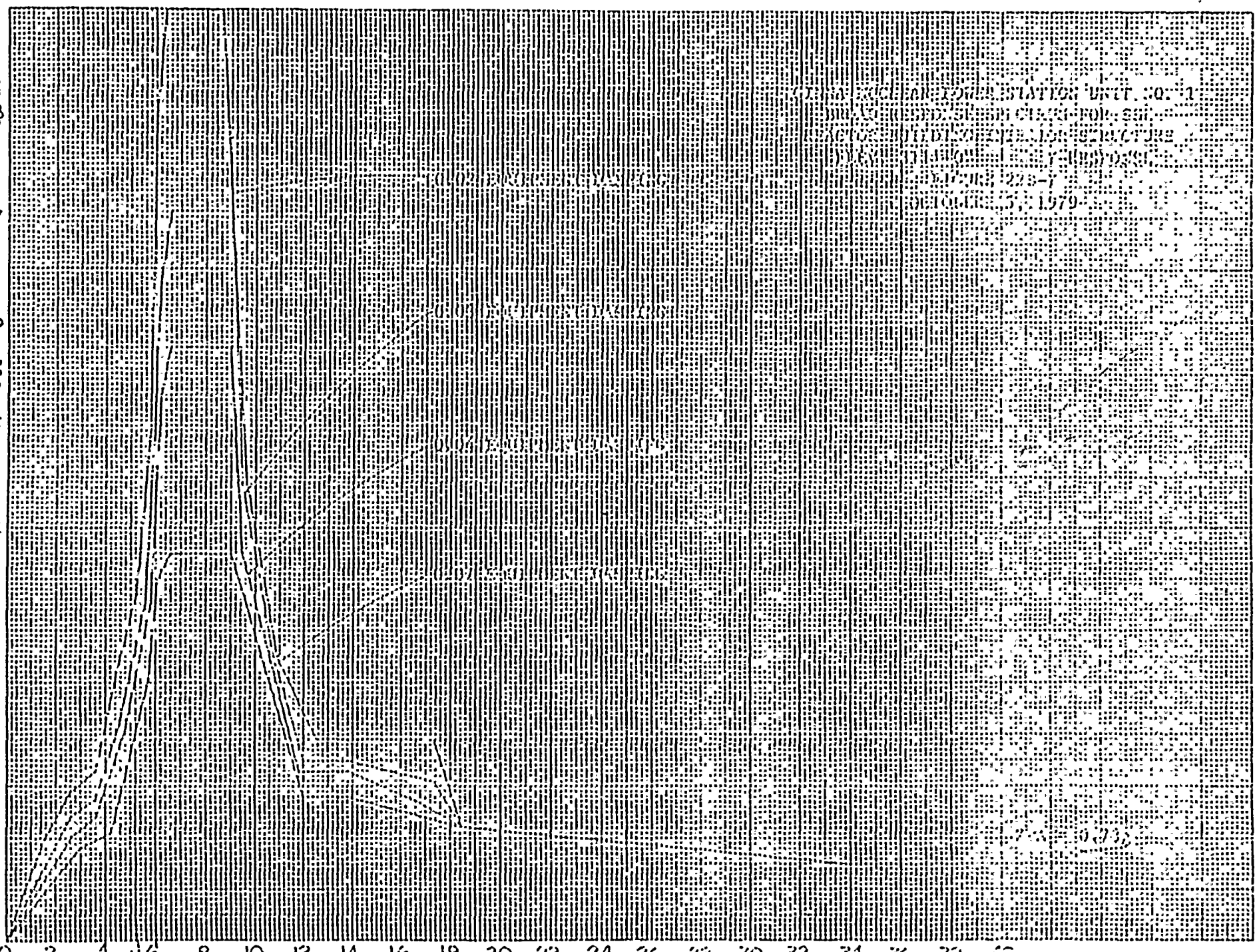
CONTAINMENT SHELL 312

.73

FREQUENCY (HZ)

118

KEUFFEL & ESSER CO.
MADE IN U. S. A.



SDTAR-80-05-88

SDTAR-80-05-08

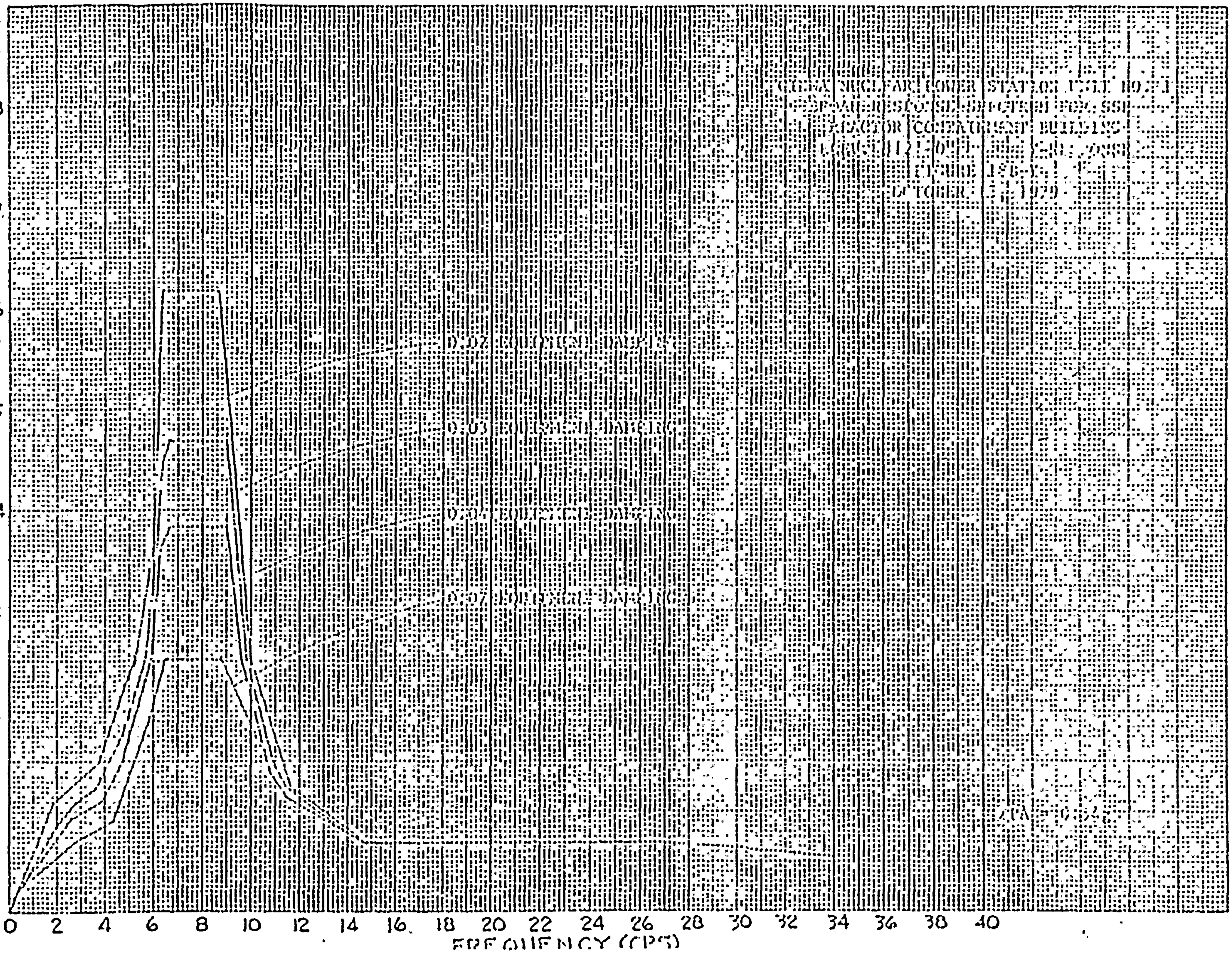
ACCELERATION (S) 120

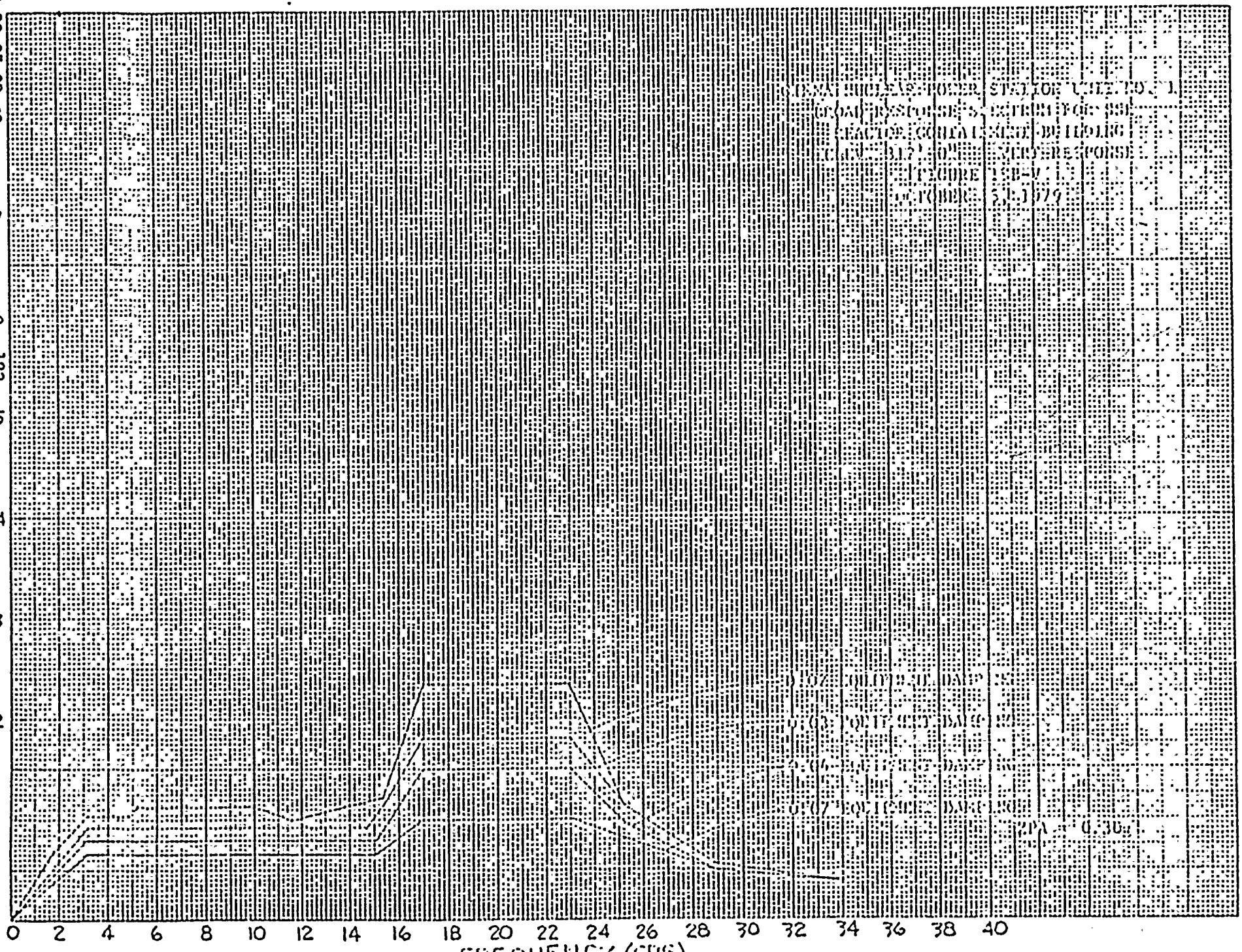
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40

ACCELERATION (g)

SDTAR-80-0508

122




0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40
FREQUENCY (CPS)
1 2 3 4 5 6 7 8

SDTAR-80-05-08

SDTAR-80-05-08

ACCELERATION (g)

8
7
6
5
4
3
2
1

0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40

MAIN STEAM DEAD WEIGHT — Y6FPDKW 6/28/80 .WESTDYN FA

CO		10.							
DE									
EX									

NOTE PAGES VERSION 2.2 USE COUNT = 51

NOTE COND 1 ACTIVATES THE NORMAL OPERATING CONDITION

AN	720'	-3.2771	67.767	-25.3279					

*****ASME SECTION III SUBSECTION NB WINTER 1975 INITIALLY ASSUMED

RE	720'	1.	1.	1.	1.	1.	1.		
LU	133'	-26.2107	64.07	-14.231					
IN	133'	127520.	127520.	127520.					
LUMP	520'	-26.2087'	65.345'	-14.2276'					
IN	520'	7583.2'	7583.2'	7583.2'					
LUMP	570'	-29.5182'	69.085'	-7.4424'					
IN	570'	3250.1'	3250.1'	3250.1'					
LUMP	580'	-31.8353'	69.085'	-2.6914'					
IN	580'	3250.1'	3250.1'	3250.1'					
LUMP	610'	-27.4748'	68.429'	3.6164'					
IN	610'	2490.7'	2490.7'	2490.7'					
LUMP	620'	-24.7735'	68.134'	4.9352'					
IN	620'	2490.7'	2490.7'	2490.7'					
LUMP	660'	-17.7842'	67.767'	-.8816'					
IN	660'	3808.1'	3808.1'	3808.1'					
LUMP	670'	-13.8016'	67.767'	-9.0472'					
IN	670'	3808.1'	3808.1'	3808.1'					
LUMP	690'	-10.0937'	67.767'	-16.6501'					
IN	690'	3283.3'	3283.3'	3283.3'					
LUMP	700'	-6.8814'	67.767'	-23.2351'					
IN	700'	3283.3'	3283.3'	3283.3'					

NOTE- MODEL SIZE FOR SEISMIC RUN- DYNAMIC DOF = 27, STATIC DOF = 27

NOTE RGE/WEP LOOP

AN	101'	0.0000'	0.000'	0.0000'					
RE	101'	1.	1.	1.	1.	1.			
AN	1102'	-6.417		-3.4844					
AN	1193'	-6.2261		3.8154					

MAIN STEAM DEAD WEIGHT — Y6FPDKW 6/28/80 WESTDYN A

LU	109'	-13.7289'	0.000'	-7.4542'					
IN	109'	13950.0	13950.0	13950.0					
LU	113'	-21.1294'	0.371	-11.4723'					
IN	113'	5537.0	5537.0	5537.0					
LU	119'	-26.2107'	6.683	-14.2313'					
IN	19'	232490.	232490.	232490.					
LU	23'	-26.2107'	30.973	-14.2313'					
IN	123'	368290.	368290.	368290.					
AN	129'	-26.2107'	3.33015	-14.2313'					

		580'	[illegible]	[illegible]	[illegible]				
		610'	-27.4758'	68.[illegible]	[illegible]				
		610'	2490.7'	2490.7'	2490.7'				
		620'	-24.7735'	68.134'	6.9352'				
IN		620'	2490.7'	2490.7'	2490.7'				
[illegible]		660'	-17.7842'	67.767'	-.8816'				
IN		660'	3808.1'	3808.1'	3808.1'				
[illegible]		670'	-13.8016'	67.767'	-9.0472'				
IN		670'	3808.1'	3808.1'	3808.1'				
[illegible]		690'	-10.0937'	67.767'	-16.6501'				
IN		690'	3283.3'	3283.3'	3283.3'				
[illegible]		700'	-6.8814'	7.767'	-23.2351'				
IN		700'	3283.3'	3283.3'	3283.3'				

NOTE- MODEL SIZE FOR SEISMIC RUN- DYNAMIC DOF = 27, STATIC DOF = 27

NOTE	RGE/WEP LOOP								
AN	101'	0.0000'	0.000'	0.0000'					
RE	131'	1.	1.	1.	1.				
AN	1102'	-6.417		-3.4844					
AN	1193'	-6.2261		3.8154					

MAIN STEAM DEAD WEIGHT — Y6FPDKW 6/28/80 WESTINGHOUSE

LU	109'	-13.7289'	0.000'	-7.4542'					
IN	109'	13950.0	13950.0	13950.0					
LU	113'	-21.1294'	0.371	-11.4723'					
IN	113'	5537.0	5537.0	5537.0					
LU	119'	-26.2107'	6.683	-14.2313'					
IN	119'	232490.	232490.	232490.					
LU	123'	-26.2107'	30.973	-14.2313'					
IN	123'	368290.	368290.	368290.					
AN	129'	-26.2107'	3.33015	-14.2313'					
RE	129'								
LU	143'	-29.8338'	0.270	-10.6705'					
IN	143'	4741.0	4741.0	4741.0					
LU	149'	-29.9995'	-2.664	-10.5079'					
IN	149'	3446.0	3446.0	3446.0					
LU	153'	-29.6214'	-7.292	-9.3160'					
IN	153'	11046.0	11046.0	11046.0					
LU	159'	-27.6121'	-8.545	-2.9760'					
IN	159'	8497.0	8497.0	8497.0					
LU	163'	-25.6027'	-7.294	3.3618'					
IN	163'	11816.	11816.	11816.					
LU	169'	-25.2247'	0.0	4.5559'					
IN	169'	88741.	206100.	88741.					
LU	173'	-25.2247	5.15	4.5559					
IN	173'	42709.		42709.					
LU	177'	-25.2247	18.708	4.5559					
IN	177'	74650.		74650.					
AN	178'	-25.2247	24.2	4.5559					
LU	183'	-14.6423'	0.0	6.0460'					
IN	183'	9432.0	9432.0	9432.0					
LU	189'	-8.9991'	0.0	5.4187'					
IN	189'	2102.0	2102.0	2102.0					
SE	101' 1102'								
PI		150.0	70.00	26.10	-0.	-0.			

MAIN STEAM DEAD WEIGHT — Y6FPDKW 6/28/80 WESTINGHOUSE

CH				26.05	7.13	484.0			
CR	101'	102'	-5.5040'	-2.9884'					
FL1	101'	102'	2.4753E8'	-4.0856E8'					
FL2	101'	102'	1.0E9'						

		149'	-29.9995'	-2.664		-10.5079'						
IN		149'	5446.0	5446.0		5446.0						
		153'	-29.6214'	-7.292		-9.3160'						
IN		153'	11046.0	11046.0		11046.0						
LU		159'	-27.6121'	-8.545		-2.9760'						
IN		159'	8497.0	8497.0		8497.0						
LU		163'	-25.6027'	-7.294		5.3618'						
IN		163'	11816.	11816.		11816.						
LU		169'	-25.2247'	0.0		4.5559'						
IN		169'	88741.	206100.		88741.						
LU		173'	-25.2247	5.15		4.5559						
IN		173'	42709.			42709.						
LU		177'	-25.2247	18.708		4.5559						
IN		177'	74650.			74650.						
AN		178'	-25.2247	24.2		4.5559						
LU		183'	-14.6423'	0.0		6.0460'						
IN		183'	9432.0	9432.0		9432.0						
LU		189'	-8.9991'	0.0		5.4187'						
IN		189'	2102.0	2102.0		2102.0						
SE	101'	1102'										
PI			150.0	70.00		26.10	-0.		-0.		-0.	

MAIN STEAM DEAD WEIGHT Y6FPDKW 6/28/80 WESTDYN P

CH						26.05	7.13		484.0			
CR	101'	102'	-5.5040'			-2.9884'						
FL1	101'	102'	2.4753E8'			-4.0856E8'						
FL2	101'	102'		1.0E9'								
FL3	101'	102'	-4.0856E8'			7.7817E8'						
FL4	101'	102'					7.8257E11'				4.0047E11'	
FL5	101'	102'							3.4500E10'			
FL6	101'	102'					4.0047E11'				2.6243E11'	

****THE SUPPORT CARDS ABOVE ARE REPRESENTED BY THE STIFFNESS MATRIX SHOWN BELOW

2.475300E+08	0.	-4.085600E+08	0.	0.	0.	
0.	1.000000E+09	0.	0.	0.	0.	
-4.085600E+08	0.	7.781700E+08	0.	0.	0.	
0.	0.	0.	7.825700E+11	0.	4.004700E+11	
0.	0.	0.	0.	3.450000E+10	0.	
0.	0.	0.	4.004700E+11	0.	2.624300E+11	

CH			51.00	11.00		25.50	-0.		-0.		-0.	
CH						25.6	7.25		542.0			
CR	102'	1102'	-.913			-.496						
SE	1102'	1102'										
CH			100.	49.		25.4						
CR	1102'	1103'		-2.25								
SK	1102'	1103'		1.0			65.4E6'		2.2			

****THE SUPPORT CARDS ABOVE ARE REPRESENTED BY THE STIFFNESS MATRIX SHOWN BELOW

1.000000E-01	0.	0.	0.	0.	0.	
0.	6.540000E+07	0.	0.	0.	0.	
0.	0.	1.000000E-01	0.	0.	0.	
0.	0.	0.	1.000000E-01	0.	0.	
0.	0.	0.	0.	1.000000E-01	0.	
0.	0.	0.	0.	0.	1.000000E-01	

CR	1103'	1102'		2.25								
SE	1102'	109'										
CH			51.	11.		25.6						
CR	1102'	103'	-1.6045			-.871						
CH			34.21	2.501		25.30	-0.		-0.		-0.	

MAIN STEAM DEAD WEIGHT Y6FPDKW 6/28/80 WESTDYN PA

CH						25.35	9.83		542.0		89.49	
CR	103'	109'	-.55.2078'	0.000'		-2.0001'						

CM			51.00		25.50	-0.	-0.		
CM					25.6	7.25	542.0		
CR	102'	1102'	-.913		-.496				
SE	1102'	1102'							
CM			100.	-49.	25.4				
CR	1102'	1103'		-2.25					
SK	1102'	1103'		1.0		65.4E6'	2.2		

****THE SUPPORT CARDS ABOVE ARE REPRESENTED BY THE STIFFNESS MATRIX SHOWN BELOW

1.0000000E-01	0.	0.	0.	0.	0.
0.	6.5400000E+07	0.	0.	0.	0.
0.	0.	1.0000000E-01	0.	0.	0.
0.	0.	0.	1.0000000E-01	0.	0.
0.	0.	0.	0.	1.0000000E-01	0.
0.	0.	0.	0.	0.	1.0000000E-01

CR	1103'	1102'		2.25					
SE	1102'	109'							
CM			51.	11.	25.6				
CR	1102'	103'	-1.6065		-.871				
CM			36.21	2.501	25.30	-0.	-0.	-0.	

MAIN STEAM DEAD WEIGHT — Y6FPDKW 6/28/80 WESTDYN

CM					25.35	9.83	542.0	89.49	
CR	103'	109'	-5.7079'	0.000'	-3.0991'				
SECTION	109'	113'							
CR	109'	9101'	-2.8535'	0.000'	-1.5493'				
FR	9101'	110'	-2.8535'	0.000'	-1.5493'				
CM			35.38	3.188	-0.	-0.	-0.	-0.	
CM								116.53	
CR	110'	111'	-.9931'		-.5392'				
HA	111'	113'				47.5		1.885	
TA	111'	113'	-.6987'	.371'	-.3793'				
SECTION	113'	119'							
CM			37.75	3.375	-0.	-0.	-0.	-0.	
CR	113'	114'	-.7004'	.372'	-.3803'				
HA	114'	115'				47.5		1.594'	
CR	115'	116'	-.6327'	.858'	-.3436'				
FR	116'	117'	-.0053'	.008'	-.0029'				
CM			43.00	6.000	25.50	-0.	-0.	-0.	
CM					25.6	7.25	542.0	0.001	
CR	117'	118'	-.7417'	1.006'	-.4027'				
CM			120.0	10.00	-0.	-0.	-0.	-0.	
CR	118'	119'	-3.0003'	4.069'	-1.6290'				
SE	119'	129'							
PI			129.3	30.					
CR	119'	129'		-3.35					
SEC	119'	123'							
CM			129.25	30.00					
CM					25.85	7.37	513.0		
CR	119'	121'	0.0000'	1.58465	0.0000'				
CM				3.75					
CM					26.84	6.87	357.2		
CR	121'	122'	0.0000'	6.5834	0.0000'				
CM			127.00	2.62					
CM					26.3	7.05	443.8		

MAIN STEAM DEAD WEIGHT — Y6FPDKW 6/28/80 WESTDYN

CR	122'	123'	0.0000'	16.1267	0.0000'				
NOTE	RGE SGUS	NODE 123							
SEC	123'	133'							
CR	123'	124'	0.0000'	2.6226	0.0000'				
CM			147.62	3.62					
CR	124'	125'	0.0000'	4.334	0.0000'				

CH									116.5
CR	110	111	-.9931		-.5392				
MA	111	113				47.5			1.885
TA	111	113	-.6987	.371	-.3793				
SECTION	113	119							
CH			37.75	3.375	-0.	-0.	-0.		-0.
CR	113	114	-.7004	.372	-.3803				
MA	114	115				47.5			1.594
CR	115	116	-.6327	.650	-.3436				
FR	116	117	-.0053	.000	-.0029				
CH			43.00	6.000	25.50	-0.	-0.		-0.
CH					25.6	7.25	542.0		0.001
CR	117	118	-.7417	1.006	-.4027				
CH			120.0	10.00	-0.	-0.	-0.		-0.
CR	118	119	-3.0003	4.069	-1.6290				
SE	119	129							
PI			129.3	30.					
CR	119	129		-3.35					
SEC	119	123							
CH			129.25	30.00					
CH					25.85	7.37	513.0		
CR	119	121	0.0000	1.58465	0.0000				
CH				3.75					
CH					26.84	6.87	357.2		
CR	121	122	0.0000	6.5834	0.0000				
CH			127.00	2.62					
CH					26.3	7.05	443.8		

MAIN STEAM DEAD WEIGHT — Y6FPDKW 6/28/80 WESTDYN P

CR	122	123	0.0000	16.1267	0.0000				
NOTE	RGE SGUS	NODE 123							
SEC	123	133							
CR	123	124	0.0000	2.6226	0.0000				
CH			147.62	3.62					
CR	124	125	0.0000	6.334	0.0000				
CH			166.0	3.50					
CR	125	126	0.0000	2.84375	0.0000				
NO	FEEDWATER CONN. - 126								
CR	126	127		20.05					
CH			32.0	1.50					
CR	127	133	0.0000	1.25	0.0000				
SEC	119	129							
CH			133.5	7.25					
CH					25.85	7.37	513.0		
CR	119	129	0.0000	-3.35285	0.0000				
NOTE	RGE SG COLUMNS								
ST 1	119	129	.6856E+04	-.1535E+03	-.1307E+05	.2181E+07	-.2207E+05	.1097E+07	
ST 2	119	129	-.1535E+03	.5129E+07	.3042E+03	.6482E+08	.5181E+05	-.9588E+08	
ST 3	119	129	-.1307E+05	.3042E+03	.2617E+05	-.4320E+07	.4372E+05	-.2174E+07	
ST 4	119	129	.2181E+07	.6482E+08	-.4320E+07	.1470E+11	-.4499E+07	-.6881E+10	
ST 5	119	129	-.2207E+05	.5181E+05	.4372E+05	-.4499E+07	.1539E+09	-.2879E+07	
ST 6	119	129	.1097E+07	-.9588E+08	-.2174E+07	-.6881E+10	-.2879E+07	.2154E+11	
NO	SG LOWER SUPPORT - 129								

CM						7.37	513.0		
CR	119'	129'	0.0000'	-3.35285	0.0000'				
NOTE RGE SG COLUMNS									
ST 1	119'	129'	.6836E+04'	-.1535E+03'	-.1307E+05'	.2181E+07'	-.2207E+05'	.1097E+07'	
ST 2	119'	129'	-.1535E+03'	.5129E+07'	.3042E+03'	.6482E+08'	.5181E+05'	-.9588E+08'	
ST 3	119'	129'	-.1307E+05'	.3042E+03'	.2617E+05'	-.4320E+07'	.4372E+05'	-.2174E+07'	
ST 4	119'	129'	.2181E+07'	.6482E+08'	-.4320E+07'	.1470E+11'	-.4499E+07'	-.6881E+09'	
ST 5	119'	129'	-.2207E+05'	.5181E+05'	.4372E+05'	-.4499E+07'	.1539E+09'	-.2879E+07'	
ST 6	119'	129'	.1097E+07'	-.9588E+08'	-.2174E+07'	-.6881E+10'	-.2879E+07'	.2154E+11'	
NO	SG LOWER SUPPORT - 129								

MAIN STEAM DEAD WEIGHT Y6FPDKW 6/28/80 WESTDYN F

****THE SUPPORT CARDS ABOVE ARE REPRESENTED BY THE STIFFNESS MATRIX SHOWN BELOW

6.856000E+03	-1.535000E+02	-1.307000E+04	2.181000E+06	-2.207000E+04	1.097000E+06
-1.535000E+02	5.129000E+06	3.042000E+02	6.482000E+07	5.181000E+04	-9.588000E+07
-1.307000E+04	3.042000E+02	2.617000E+04	-4.320000E+06	4.372000E+04	-2.174000E+06
2.181000E+06	6.482000E+07	-4.320000E+06	1.470000E+10	-4.499000E+06	-6.881000E+09
-2.207000E+04	5.181000E+04	4.372000E+04	-4.499000E+06	1.539000E+08	-2.879000E+06
1.097000E+06	-9.588000E+07	-2.174000E+06	-6.881000E+09	-2.879000E+06	2.154000E+10

SECTION	119'	143'							
CM			-0.	-0.	26.10	-0.	-0.	-0.	
CM			120.0	10.0	26.05	7.13	484.0		
CR	119'	140'	-2.4350'	-4.069'	2.3931'				
CM			43.00	6.000	-0.	-0.	-0.	-0.	
FR	140'	141'	-.6021'	-1.006'	.5913'				
CM			37.63	3.313	25.70	-0.	-0.	-0.	
CM					25.7	9.76	484.0	124.98	
CR	141'	142'	-.4212'	-.703'	.4131'				
HA	142'	143'				46.0		1.408'	
TA	142'	143'	-.1652'	-.635'	.1618'				
SECTION	143'	149'							
CR	143'	144'	-.1657'	-.637'	.1627'				
HA	144'	145'				46.0		1.817'	
CR	145'	146'	0.0000'	-.908'	0.0000'				
FR	145'	147'	0.0000'	-.010'	0.0000'				
CM			36.56	2.673	-0.	-0.	-0.	-0.	
CM								104.14	
CR	147'	149'	0.0000'	-1.379'	0.0000'				
SECTION	149'	153'							
FR	149'	150'	0.0000'	-1.379'	0.0000'				
CM			37.63	3.313	-0.	-0.	-0.	-0.	
CM								128.44	
CR	150'	151'	0.0000'	-1.998'	0.0000'				
HA	151'	153'				51.25		2.651	
TA	151'	153'	.3776'	-1.251'	1.1927'				

MAIN STEAM DEAD WEIGHT Y6FPDKW 6/28/80 WESTDYN PI

SECTION	153'	159'							
CR	153'	154'	.3780'	-1.252'	1.1941'				
HA	154'	155'				51.25		2.651'	
CR	155'	156'	.6005'	0.000'	1.8952'				
FR	156'	157'	.0028'	0.000'	.0095'				

[illegible]	[illegible]	[illegible]	-.6021	[illegible]	.5913				
CM			37.63	3.313	25.70	-0.	-0.	-0.	
CM					25.7	9.76	484.0	124.98	
CR	141	142	-.4212	-.703	.4131				
HA	142	143				46.0			1.6[illegible]
TA	142	143	-.1652	-.635	.1618				
SECTION	143	149							
CR	143	144	-.1657	-.637	.1627				
HA	144	145				46.0			1.81[illegible]
CR	145	146	0.0000	-.900	0.0000				
FR	146	147	0.0000	-.010	0.0000				
CM			36.56	2.673	-0.	-0.	-0.	-0.	
[illegible]								104.14	
CR	147	149	0.0000	-1.379	0.0000				
SECTION	149	153							
FR	149	150	0.0000	-1.379	0.0000				
CM			37.63	3.313	-0.	-0.	-0.	-0.	
CM								128.44	
CR	150	151	0.0000	-1.998	0.0000				
HA	151	153				51.25			2.651
TA	151	153	.3776	-1.251	1.1927				

SECTION	153	159							
CR	153	154	.3780	-1.252	1.1941				
HA	154	155				51.25			2.651
CR	155	156	.6005	0.000	1.8952				
FR	156	157	.0028	0.000	.0095				
CH			36.56	2.673	-0.	-0.	-0.	-0.	
CH								104.14	
CR	157	159	1.0271	0.000	3.2408				
SECTION	159	163							
FR	159	160	1.0271	0.000	3.2408				
CH			37.63	3.313	-0.	-0.	-0.	-0.	
CH								137.40	
CR	160	161	.6042	0.000	1.9051				
HA	161	163				51.25			2.572
TA	161	163	.3776	1.251	1.1927				
SECTION	163	169							
CR	163	164	.3780	1.252	1.1941				
HA	164	165				51.25			1.903
CR	165	166	0.0000	1.988	0.0000				
FR	166	167	0.0000	.010	0.0000				
CH			40.0	4.0					
CH								0.001	
CH								0.001	
CR	167	168	0.0000	0.5	0.0000				
CH			80.0	7.2					
CR	168	169	0.0000	3.5417	0.0000				

NOTE RGE PUMP COLUMNS

ST 1	168	169	.2025E+04	-.5936E+02	.1162E+05	-.1324E+07	.1649E+04	.2414E+06
ST 2	168	169	-.5936E+02	.1093E+08	-.3405E+03	-.3104E+09	.6943E+05	-.5703E+08
ST 3	168	169	.1162E+05	-.3405E+03	.6665E+05	-.7598E+07	.9461E+04	.1385E+07
ST 4	168	169	-.1324E+07	-.3104E+09	-.7598E+07	.3144E+11	.1302E+08	.1590E+10
ST 5	168	169	.1649E+04	.6943E+05	.9461E+04	.1302E+08	.1364E+09	-.9898E+06
ST 6	168	169	.2414E+06	-.5703E+08	.1385E+07	.1590E+10	-.9898E+06	.1962E+11

****THE SUPPORT CARDS ABOVE ARE REPRESENTED BY THE STIFFNESS MATRIX SHOWN BELOW

2.025000E+03 -5.936000E+01 1.162000E+04 -1.324000E+06 1.649000E+03 2.414000E+05

CR	165'	166'	0.0000'	.010'	0.0000'				
FR	166'	167'	0.0000'						
CH			40.0	4.0					
CH								0.001	
CH								0.005	
FR	167'	168'	0.0000'	0.5	0.0000'				
CH			80.0	7.2					
CR	168'	169'	0.0000'	3.5417	0.0000'				

NOTE RGE PUMP COLUMNS

ST 1	160'	169'	.2025E+04'	-.5936E+02'	.1162E+05'	-.1324E+07'	.1649E+04'	.2414E+05'
ST 2	160'	169'	-.5936E+02'	.1093E+08'	-.3405E+03'	-.3104E+09'	.6943E+05'	-.5703E+07'
ST 3	168'	169'	.1162E+05'	-.3405E+03'	.6665E+05'	-.7598E+07'	.9461E+04'	.1385E+06'
ST 4	160'	169'	-.1324E+07'	-.3104E+09'	-.7598E+07'	.3144E+11'	.1302E+08'	.1590E+10'
ST 5	168'	169'	.1649E+04'	.6943E+05'	.9461E+04'	.1302E+08'	.1364E+09'	-.9898E+06'
ST 6	168'	169'	.2414E+06'	-.5703E+08'	.1385E+07'	.1590E+10'	-.9898E+06'	.1962E+11'

MAIN STEAM DEAD WEIGHT Y6FPDKW 6/28/80 WESTDYN PAGE

****THE SUPPORT CARDS ABOVE ARE REPRESENTED BY THE STIFFNESS MATRIX SHOWN BELOW

2.025000E+03	-5.936000E+01	1.162000E+04	-1.324000E+06	1.649000E+03	2.414000E+05
-5.936000E+01	1.093000E+07	-3.405000E+02	-3.104000E+08	6.943000E+04	-5.703000E+07
1.162000E+04	-3.405000E+02	6.665000E+04	-7.598000E+06	9.461000E+03	1.385000E+06
-1.324000E+06	-3.104000E+08	-7.598000E+06	3.144000E+10	1.302000E+07	1.590000E+09
1.649000E+03	6.943000E+04	9.461000E+03	1.302000E+07	1.364000E+08	-9.898000E+05
2.414000E+05	-5.703000E+07	1.385000E+06	1.590000E+09	-9.898000E+05	1.962000E+10

SEC	169'	173'						
CR	169'	172'		3.708				
CH			63.3	3.65				
CH					26.625	9.584	325.0	
CH					26.625	9.584	325.0	
CR	172'	173'	0.0000'	1.4417	0.0000'			
SEC	173'	177'						
CR	173'	174'	0.0000'	0.075	0.0000'			
CH			37.44	1.43				
CH					27.64	6.424	150.0	
CH					27.64	6.424	150.0	
CR	174'	175'	0.0000'	6.6417	0.0000'			
CH			59.8	1.27				
CR	175'	176'	0.0000'	2.667	0.0000'			
CH			78.3	0.831				
CR	176'	177'	0.0000'	4.175	0.0000'			
SEC	177'	178'						
CR	177'	178'	0.0000'	5.49167	0.0000'			
SECTION	169'	183'						
CH			80.0	7.2	25.7	9.76	484.0	
CR	169'	180'	.7720'	0.000'	2.4344'			
FR	180'	181'	5.0599'	0.000'	-.4877'			
CH			32.46	2.373	-0.	-0.	-0.	-0.
CH					25.7	9.76	484.0	82.35
CR	181'	182'	2.3748'	0.000'	-.2285'			
CR	182'	183'	2.3748'	0.000'	-.2285'			

MAIN STEAM DEAD WEIGHT Y6FPDKW 6/28/80 WESTDYN PAGE

SECTION	183'	189'						
CR	183'	184'	2.3748'	0.000'	-.2285'			
FR	184'	185'	2.3748'	0.000'	-.2285'			
CH			33.56	3.031	-0.	-0.	-0.	-0.
CH								93.98
CR	185'	186'	.5428'	0.000'	-.0524'			
HA	186'	189'				39.0		1.623'
TA	186'	189'	.3517'	0.000'	-.1174'			
SE	189'	1193'						

[illegible]								525.0	
FR	172'	173'	0.0000'	1.6417	0.0000'				
SEC	173'	177'							
CR	173'	174'	0.0000'	0.075	0.0000'				
[illegible]			37.44	1.43					
[illegible]					27.64	6.424	150.0		
[illegible]					27.64	6.424	150.0		
CR	174'	175'	0.0000'	6.6417	0.0000'				
CM			59.8	1.27					
CR	175'	176'	0.0000'	2.667	0.0000'				
CM			78.3	0.031					
CR	176'	177'	0.0000'	4.175	0.0000'				
SEC	177'	178'							
CR	177'	178'	0.0000'	5.69167	0.0000'				
SECTION	169'	183'							
CM			80.0	7.2	25.7	9.76	484.0		
CR	169'	180'	.7720'	0.000'	2.4344'				
FR	180'	181'	5.0599'	0.000'	-.4877'				
CM			32.46	2.373	-0.	-0.	-0.	-0.	
CM					25.7	9.76	484.0	82.35	
CR	181'	182'	2.3748'	0.000'	-.2285'				
CR	182'	183'	2.3748'	0.000'	-.2285'				

SDTAR-80-05-08

MAIN STEAM DEAD WEIGHT Y6FPDKW 6/28/80 WESTDYN PAGE

SECTION	183'	189'							
CR	183'	184'	2.3748'	0.000'	-.2285'				
FR	184'	185'	2.3748'	0.000'	-.2285'				
CM			33.56	3.031	-0.	-0.	-0.	-0.	
CM								93.98	
[illegible]	185'	186'	.5428'	0.000'	-.0524'				
[illegible]A	186'	189'				39.0		1.623'	
TA	186'	189'	.3517'	0.000'	-.1174'				
SE	189'	1193'							
CR	189'	190'	.3530'	0.000'	-.1178'				
HA	190'	191'				39.0		1.319'	
CR	191'	192'	.4556'	0.000'	-.2795'				
ELBOW RADIUS REDUCED TO 38.850 INCHES									
FR	192'	196'	.0087		-.0055				
CH			51.00	11.00	26.10	-0.	-0.	-0.	
CH					26.05	7.13	484.0	0.001	
CR	196'	1193'	1.956		-1.198				
SE	1193'	1193'							
CH						7.25	542.		
PI			100.	49.	25.4				
CR	1193'	1194'		-2.25					
SK	1193'	1194'		1.0		65.4E6'	2.2		

****THE SUPPORT CARDS ABOVE ARE REPRESENTED BY THE STIFFNESS MATRIX SHOWN BELOW

1.000000E-01	0.	0.	0.	0.	
0.	6.540000E+07	0.	0.	0.	0.
0.	0.	1.000000E-01	0.	0.	0.
0.	0.	0.	1.000000E-01	0.	0.
0.	0.	0.	0.	1.000000E-01	0.
0.	0.	0.	0.	0.	1.000000E-01

CR	1194'	1193'		2.25					
SE	1193'	101'							
PI			51.	11.	26.05				
CH						7.13	484.		

MAIN STEAM DEAD WEIGHT Y6FPDKW 6/28/80 WESTDYN PAGE

CR	1193'	193'	.006		-.543				

133

FR									
CH			51.00	11.00	26.10	-0.	-0.	-0.	
CH					26.05	7.13	484.0		
CR	196'	1193'	1.956		-1.198				
SE	1193'	1193'							
CH						7.25	542.		
PI			100.	49.	25.4				
CR	1193'	1194'		-2.25					
SK	1193'	1194'		1.0		65.4E6'	2.2		

****THE SUPPORT CARDS ABOVE ARE REPRESENTED BY THE STIFFNESS MATRIX SHOWN BELOW

1.000000E-01	0.	0.	0.	0.	0.
0.	6.340000E+07	0.	0.	0.	0.
0.	0.	1.000000E-01	0.	0.	0.
0.	0.	0.	1.000000E-01	0.	0.
0.	0.	0.	0.	1.000000E-01	0.
0.	0.	0.	0.	0.	1.000000E-01

CR	1194'	1193'		2.25					
SE	1193'	101'							
PI			51.	11.	26.05				
CH						7.13	484.		

MAIN STEAM DEAD WEIGHT — Y6FPDKW 6/28/80 WESTDYN

CR	1193'	193'	.886		-.543				
CR	193'	194'	.001		-.001				
FL1	193'	194'	2.9169E8'		4.3405E8'				
FL2	193'	194'		1.0E9'					
FL3	193'	194'	4.3405E8'		7.3401E8'				
FL4	193'	194'				7.3983E11'		-4.2456E11'	
FL5	193'	194'					3.6500E10'		
FL6	193'	194'				-4.2456E11'		3.0717E11'	

****THE SUPPORT CARDS ABOVE ARE REPRESENTED BY THE STIFFNESS MATRIX SHOWN BELOW

2.916900E+08	0.	4.340500E+08	0.	0.	0.
0.	1.000000E+09	0.	0.	0.	0.
4.340500E+08	0.	7.340100E+08	0.	0.	0.
0.	0.	0.	7.398300E+11	0.	-4.245600E+11
0.	0.	0.	0.	3.650000E+10	0.
0.	0.	0.	-4.245600E+11	0.	3.071700E+11

CH			150.0	70.00	-0.	-0.	-0.	-0.	
CR	194'	101'	5.3401'		-3.2724'				
SECTION	133'	520'							
CH			46.0999'	9.0500'	28.300'				301.494'
MA		41'	100.600'	12402.	28.300'	9.110'			18603.
PR			1.090E 03'						
CH					28.300'	9.110'	1.000E-01'		
PR				1.084E 03'					
CR	133'	510'	0.0000'	1.266'	0.0000'				
CH			30.9999'	1.5000'					42.452'
CR	510'	520'	0.0000'	.010'	0.0000'				
SECTION	520'	570'							
CR	520'	521'	0.0000'	3.740'	0.0000'				
EL	521'	530'				44.780'			
CR	530'	540'	-1.6440'		3.3706'				
RE	540'	550'	-.5480		1.1235'	30.000'	1.250'		
CH			29.9999'	1.2500'					34.932'
CR	550'	560'	-.1215'		.2491'				
IT	550'	560'	2.143'						

MAIN STEAM DEAD WEIGHT — Y6FPDKW 6/28/80 WESTDYN P

CR	560'	570'	-.9960'		2.0419'				
SECTION	570'	580'							
CR	570'	580'	-2.3172'		4.7511'				

0.		0.		0.		[illegible]		0.		-4.245600E+11	
0.		0.		0.		0.		3.650000E+10		0.	
0.		0.		0.		-4.245600E+11		0.		3.071700E+11	
CM			130.0	70.00		-0.	-0.		-0.		-0.
CR	194	101	5.3401			-5.2724					
SECTION	133	520									
CM			46.0999	9.0800		28.300					301.494
MA		41	100.600	12402.		28.300	9.110				18603.
PR			1.000E 03								
CM						28.300	9.110		1.000E-01		
PR				1.004E 03							
CR	133	510	0.0000	1.266		0.0000					
CM			30.9999	1.9000							42.452
CR	510	520	0.0000	.010		0.0000					
SECTION	520	570									
CR	520	521	0.0000	3.740		0.0000					
EL	521	530					44.780				
CR	530	540	-1.6440			3.3706					
RE	540	550	-.5480			1.1235	30.000		1.250		
CM			29.9999	1.2500							34.932
CR	550	560	-.1215			.2491					
IT	550	560	2.143								

CR	560	570	-.9960			2.0419					
SECTION	570	580									
CR	570	580	-2.3172			4.7511					
FO	570	580	0.	7401.		0.	0.				0.
SECTION	580	610									
CR	580	581	-1.6440			3.3706					
EL	581	590					44.900				
CR	590	600	3.5777	-.391		1.7453					
DYMS7	590	600	.1610E+06	.6748E+00		.4629E+05	.7570E+03		.3631E+07		.3687E+03
DYMS7	590	600	.6748E+00	.7000E+01		.5343E+01	-.1490E+03		-.9380E+03		-.7289E+02
DYMS7	590	600	.4629E+05	.5343E+01		.1331E+05	.3737E+03		.1043E+07		.1820E+03
DYMS7	590	600	.7570E+03	-.1490E+03		.3737E+03	.4953E+02		-.8165E+03		.2427E+02
DYMS7	590	600	.3631E+07	-.9380E+03		.1043E+07	-.8165E+03		.8190E+08		-.4004E+03
DYMS7	590	600	.3687E+03	-.7289E+02		.1820E+03	.2427E+02		-.4004E+03		.1147E+02

****THE SUPPORT CARDS ABOVE ARE REPRESENTED BY THE STIFFNESS MATRIX SHOWN BELOW

1.000000E-01	0.	0.	0.	0.	0.
0.	1.000000E-01	0.	0.	0.	0.
0.	0.	1.000000E-01	0.	0.	0.
0.	0.	0.	1.000000E-01	0.	0.
0.	0.	0.	0.	1.000000E-01	0.
0.	0.	0.	0.	0.	1.000000E-01

CR	600	610	2.4336	-.266		1.1870					
SECTION	610	620									
CR	610	620	2.7033	-.295		1.3188					
SECTION	620	660									
CR	620	621	3.3546	-.366		1.6357					
EL	621	630					44.900				
CR	630	640	2.6305			-5.3924					
SNMS8	630	640		2.350E 05							

****THE SUPPORT CARDS ABOVE ARE REPRESENTED BY THE STIFFNESS MATRIX SHOWN BELOW

```
SECTION
CR          580'  581'   -1.6440'                      2.5706'
EL          581'  590'                                          44.900'
CR          590'  600'    3.5777'        -.391'        1.7453'
PYMS7       590'  600'  .1610E+06'   .6740E+00'   .4629E+05'   .7570E+03'   .3631E+07'   .3687E+03'
PYMS7       590'  600'  .6740E+00'   .7000E+01'   .5343E+01'  -.1490E+03'  -.9380E+03'  -.7289E+02'
PYMS7       590'  600'  .4629E+05'   .5343E+01'   .1331E+05'   .3737E+03'   .1043E+07'   .1820E+03'
PYMS7       590'  600'  .7570E+03'  -.1490E+03'   .3737E+03'   .4953E+02'  -.8165E+03'   .2427E+02'
PYMS7       590'  600'  .3631E+07'  -.9380E+03'   .1043E+07'  -.8165E+03'   .8190E+08'  -.4004E+03'
PYMS7       590'  600'  .3687E+03'  -.7289E+02'   .1020E+03'   .2427E+02'  -.4004E+03'   .1147E+02'

****THE SUPPORT CARDS ABOVE ARE REPRESENTED BY THE STIFFNESS MATRIX SHOWN BELOW
  1.000000E-01      0.              0.              0.              0.              0.
  0.              1.000000E-01      0.              0.              0.              0.
  0.              0.              1.000000E-01      0.              0.              0.
  0.              0.              0.              1.000000E-01      0.              0.
  0.              0.              0.              0.              1.000000E-01      0.
  0.              0.              0.              0.              0.              1.000000E-01

CR          600'  610'    2.4336'        -.266'        1.1070'
SECTION     610'  620'
CR          610'  620'    2.7033'        -.295'        1.3188'
SECTION     620'  660'

CR          620'  621'    3.3546'        -.366'        1.6357'
EL          621'  630'                                          44.900'
CR          630'  640'    2.6305'                     -5.3924'

SIMS8       630'  640'                2.350E 05'
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MAIN STEAM DEAD WEIGHT Y6FPDKW 6/28/80 WESTDYN PAI

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****THE SUPPORT CARDS ABOVE ARE REPRESENTED BY THE STIFFNESS MATRIX SHOWN BELOW
  1.000000E-01      0.              0.              0.              0.              0.
  0.              1.000000E-01      0.              0.              0.              0.
  0.              0.              1.000000E-01      0.              0.              0.
  0.              0.              0.              1.000000E-01      0.              0.
  0.              0.              0.              0.              1.000000E-01      0.
  0.              0.              0.              0.              0.              1.000000E-01

CR          640'  650'     .4380'                      -.8991'
FO          640'  650'  0.          7401.'  0.          0.          0.
CR          650'  660'     .5661'                     -1.1610'
SECTION     660'  670'
CR          660'  670'    3.9826'                     -8.1656'
SECTION     670'  690'
CR          670'  680'    1.9915'                     -4.0824'
RIMS10      670'  680'  1510.                                    7090.

$$$$$THE ABOVE VS CARD WILL BE INTERPRETED AS A FORCE OF      7090. LBS$$$$$
CR          680'  690'    1.7169'                     -3.5197'
SECTION     690'  700'
CR          690'  700'    3.2118'                     -6.5859'
SECTION     700'  720'
CR          700'  701'    1.0989'                     -2.2521'
EL          701'  710'                                          44.780'
CR          710'  720'    2.5067'                      .1597'
END
```

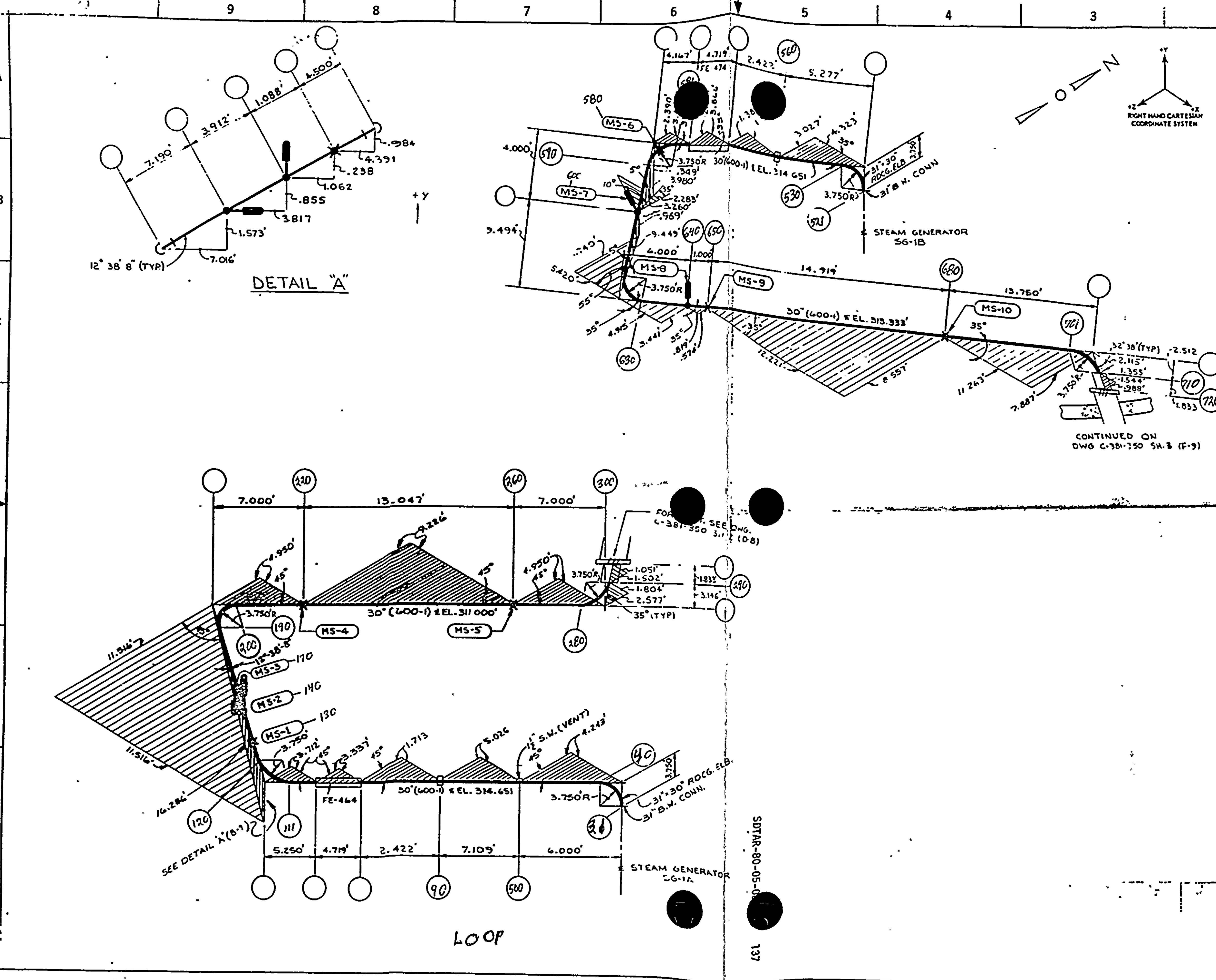

U: MAG...
... 6.C°F

OPERATING CONDITIONS

PIPING CODE:

PIPE MATERIAL	LINE SPEC	LINE SIZE	REF TEMP °F	LIN EXP. IN/100 FT.	MOD. OF ELAS. PSI x 10⁶ EH	EC
ASTM A155-65 GRADE ...	600-1	30"				

PIPE SIZE NOM.	O.D.	WALL THK.	WEIGHT LB./LINEAR FT. PIPE	CONTENT	INSULATION
30"	30.000	1.250"	383	26	30

ANCHOR BRANCH & TERMINAL POINTS	COORDINATES X	Y	Z

SYMBOLS

- RIGID HANGER Y = 0
- VARIABLE (SPRING) HGR.
- CONSTANT LOAD HGR.
- GUIDE
- HYDRAULIC RESTRAINT
- RIGID RESTRAINT
- ANCHOR
- CENTER OF GRAVITY
- MASS POINT
- U-BOLT
- WELDOLET
- FISHMOUTH
- SWEEPOLET
- TEE

NOTES:

1. DIMENSIONS –
   ☐ (a.) METERS AND DECIMALS OF METERS
   ☒ (b.) FEET AND DECIMALS OF A FOOT
   (c.) ALL DECIMALS SHALL BE CARRIED TO 3 PLACES
2. ALL VALVES & EQUIPMENT ARE ASSUMED INFLEXIBLE.

REFERENCE DWG.

TITLE	NUMBER	REV.
MAIN STEAM	D-304-014	V

PIPING ANALYSIS DIAGRAM
MAIN STEAM INSIDE CONTAINMENT
GILBERT ASSOCIATES

WORK ORDER	DWG. NO.	SHT.	REV.
04-4824	C-381-350	1	C