



EDS NUCLEAR INC.

INTERFACE CONTROL INSTRUCTIONS

CLIENT: Commonwealth Edison CompanyPROJECT: Quad Cities (Units 1 & 2) and Dresden (Units 2 & 3) Nuclear StationsJOB NUMBER(S): 0593-101, 301; 0594-101, 301

REVISION RECORD

REV.	DATE ISSUED	PREPARED	QA REVIEW	APPROVED
0	9/82	W. Tschudi	<i>T.C.L.</i>	<i>D.F. Brown</i>

DISTRIBUTION:

1. NUTECH - T. Victorine
2. CECO - G. Frizzell
3. W. F. Tschudi
4. O. W. Zuniga
5. C. Y. Wong
6. T. C. Chen

EDS - NUTECH INTERFACE CONTROL INSTRUCTIONS

CLIENT: Commonwealth Edison Company

PROJECT: IE Bulletin 79-14
Quad Cities Units 1 and 2
Dresden Units 2 and 3

JOB NUMBERS: 0593-101, 0593-301, 0594-101, 0594-301

1.0 Scope of EDS Nuclear Services

EDS will interface with NUTECH to obtain data necessary to account for the effects of interface loads on safety-related piping within EDS's scope. The interface will also involve pipe anchor location and loads transmittal to NUTECH. This interface control instruction is to address the interface requirements between the two organizations. A complete listing of the piping subject to this interface is attached (Attachment 1). This listing identifies the technical data required. The information that will be transmitted between organizations is generally as follows:

From NUTECH to EDS

79-14 Loads on EDS Piping
Pipe Anchor Locations
Support Loading

From EDS to NUTECH

Bechtel Walkdown Information
Support Modification Drawings
Pipe Anchor Loading

EDS will use the data transmitted by NUTECH as design input. Its use will be controlled according to the EDS Nuclear QA program requirements. (QAP 2.1, 2.2, 3.1) EDS will consider all data received from NUTECH as final, unless otherwise noted. See Paragraph 4.0 for the technical data requirements.

Data transmitted between EDS and NUTECH will be formally transmitted and verified by receipt acknowledgement. Revision level of the information will be controlled. Initial issue of data will be Revision 0; any subsequent revisions will be Revision 1, 2, etc. NUTECH and EDS will be responsible for transmitting all revisions of the interface data to the other organization. NUTECH drawings will be issued with alphabetic revision letters. EDS drawings will be issued with numerical revision numbers. Data transmittal forms will use revision numbers.

2.0 Project Interface Personnel

EDS Nuclear

Project Manager - W. F. Tschudi

Piping Analysis Project
Engineer - C. Y. Wong

Support Design Project
Engineer - O. W. Zuniga

NUTECH

Large Piping Project Manager
San Jose Office (SJO)
T. J. Victorine

Small Piping Project Manager
Chicago Branch Office -
G. T. Seeley

2.0 Project Interface Personnel (cont'd)

NUTECH

Engineering Managers

- Large Piping

Dresden (SJO) - T. P. Khatua
Quad Cities (SJO) N. A. McClean

- Small Piping (CBO) - J. W. Muffett

Support Design Project Engineer (SJO) - T. W. Soo Hoo
Small Piping Project Engineer (CBO) - J. A. Gavula

3.0 Communication Responsibilities

Formal Communications - All correspondence is to be signed by and addressed to the respective project manager for this interface. All design input will be transmitted by letter. EDS letter numbers will use serial numbers 0590-003-xxxx. All incoming and outgoing correspondence will be controlled as required by the EDS QA program. (QAP 2.2, 3.1) A receipt acknowledgement for data transmitted by EDS is required. Mr. G. Frizzell and Mr. R. H. Mirochna of Commonwealth Edison Company will be copied on all formal data transmittals.

Informal Communications - All telephone conversations, telecommunicated data, material distributed at meetings, etc. will be confirmed by formal transmittal within 30 days. EDS internal distribution of design input shall be in accordance with written interface instructions in effect.

4.0 Technical Interface Requirements

Attachment 1 lists all of the piping affected in this interface. This listing will be used to track schedule commitments and technical data required. As such it will be revised independently from this interface instruction.

Attachment 2 consists of sample forms which will be utilized to transmit piping displacement or loading information. All piping analyses input data will be controlled through the use of these forms.

Attachment 3 consists of a sample format which will be utilized to transmit piping support load information. This format will be utilized for load information supplied to EDS for existing supports and for load information supplied to NUTECH for anchor loading.

4.0 Technical Interface Requirements (cont'd)

NUTECH will supply the following load combinations for support evaluation:

- Maximum Level A, B, C, D Loads and Displacements
- Gravity Load
- Thermal Load

5.0 Records

The record retention of design input shall be the responsibility of the organization which produces the design input.

ATTACHMENT 1

Attachment 1

INTERFACE DATA REQUIRED

PLANT: Quad Cities Unit 1

P&ID	Line Numbers		Interface Data Req'd		Need Anchor Location	Safe Shut-down	Nutech Data to EDS	EDS Analysis Completion	EDS Design Completion	EDS Problem
	Branch Pipe	Run Pipe	TAM	SAM						
SR-34-1	-	1-1603-18"	No	No	x		9/7	10/20 ①	12/31	Q1-PSUPP-01C
SR-37/SR-39	1-1032-3"	N/A	No	No	N/A		-	9/17	-	Q1-RHRS-04B(C)
SR-37	1-1032A-2"	1-1006A-12"	N/A	N/A	N/A		-	9/17	-	Nutech will do
SR-37	1-1032B-2"	1-1006B-12"	N/A	N/A	N/A		-	9/17	-	this line
SR-37/SR-39	1-1079-3"	N/A	No	No	N/A	x	N/A	9/17	-	Q1-RHRS-13B(C)
SR-37	1-1032C-2"	1-1006C-12"	N/A	N/A	N/A	x	N/A	9/17	-	Nutech will do this line
SR-37	1-1032D-2"	1-1006D-12"	N/A	N/A	N/A	x	N/A	9/17	-	"
SR-37	1-1033A-3"	1-1006A-12"	x	x	N/A	x	10/15	↑	↑	Q1-RHRS-02B(C)
SR-37	1-1033B-3"	1-1006B-12"	x	x	N/A	x	10/15	↑	↑	Q1-RHRS-02B(C)
SR-37	1-1034A-3"	1-1006C-12"	x	x	N/A	x	9/30	↑	↑	Q1-RHRS-02B(C)
SR-37	1-1034B-3"	1-1006D-12"	x	x	N/A	x	9/30	11/3	10/31 [12/10]	Q1-RHRS-02B(C)
SR-37	1-1035A-3"	1-1016C-14"	x	x	N/A	x	11/15	(11/22 Final)	↓	Q1-RHRS-02B(C)
SR-37	1-1035B-3"	1-1016D-14"	x	x	N/A	x	11/15	↓	↓	Q1-RHRS-02B(C)
SR-37	1-1054A-3"	1-1016A-14"	x	x	N/A	x	11/15	↓	↓	Q1-RHRS-02B(C)
SR-37	1-1054B-3"	1-1016B-14"	x	x	N/A	x	11/15	↓	↓	Q1-RHRS-02B(C)
SR-39/SR-46	1-2340-4"	N/A	No	No	x		9/9	11/15 ①	-	Q1-HPCI-04B(C)
SR-39	1-1036-3"	1-1010-18"	x	x	N/A	x	9/30	11/3 (11/22 Final)	10/31 [12/10]	Q1-RHRS-02B(C)

NOTES:

- ① EDS anchor loads to NUTECH [] EDS re-evaluate re-issue supports due to Nutech interface data
- ② Preliminary data by 10/15
- ③ EDS provide isometric/support sketches

Revision 0
9/14/82

INTERFACE DATA REQUIRED

PLANT: Quad Cities Unit 1

P&ID	Line Numbers		Interface Data Req'd		Need Anchor Location	Safe Shut-down	Nutech Data to EDS	EDS Analysis Completion	EDS Design Completion	EDS Problem
	Branch Pipe	Run Pipe	TAM	SAM						
SR-39	1-1011-4"	1-1009B-18"	X	X	N/A	X	9/30	↑ 11/5 ↓	↑ 9/30 [12/10] ↓	Q1-RHRS-06B(C)
SR-39	1-1065-3"	1-1012B-16"	X	X	N/A	X	9/30			Q1-RHRS-06B(C)
SR-39	1-1066-3"	1-1012A-16"	X	X	N/A	X	11/15			Q1-RHRS-06B(C)
SR-39	1-1067-3"	1-1010-18"	X	X	N/A	X	11/15			Q1-RHRS-06B(C)
SR-39	1-1068-3"	1-1025-20"	X	X	N/A	X	11/15			Q1-RHRS-06B(C)
SR-39	1-1086-6"	1-1010-18"	X	X	N/A		10/30	12/17	12/31	Q1-RHRS-14B(C)
SR-46	1-2311-4"	1-2301-16"	X	X	N/A		10/30	12/17	1/31	Q1-HPCI-02B(C)
SR-46	1-2325-6"	1-2302-16"	X	X	N/A		10/30	12/10 (9/17) ③	3/31	Q1-HPCI-01B(C)

NOTES:

- ① EDS anchor loads to NUTECH
 ② Preliminary data by 10/15
 ③ EDS provide isometric/support sketches

[] See Sheet 1

 Revision 1
 9/28/82

INTERFACE DATA REQUIRED

PLANT: Quad Cities Unit 2

P&ID	Line Numbers		Interface Data Req'd		Need Anchor Location	Safe Shut-down	Nutech Data to EDS	EDS Analysis Completion	EDS Design Completion	EDS Problem
	Branch Pipe	Run Pipe	TAM	SAM						
SR-76-1	-	2-1603-18"	No	No	X		9/7	10/20 ①	1/31	Q2-PSUPP-01C
SR-78/SR-79	2-1079-3"	N/A	No	No	X	X	10/15	11/15	[12/10]	Q2-RHRS-08B(C)
SR-79	2-1032C-2"	2-1006C-12"	X	X	N/A	X	10/15	11/15 ①	[12/10]	Q2-RHRS-08B(C)
SR-79	2-1032D-2"	2-1006D-12"	X	X	N/A	X	10/15	11/15	[12/10]	Q2-RHRS-08B(C)
SR-79/ SR-81-1	2-1032-3"	N/A	No	No	X		10/15	(9/17) ③		
SR-79	2-1032A-2"	2-1006A-12"	X	X	N/A		10/15	11/15	[12/10]	Q2-RHRS-04B(C)
SR-79	2-1032B-2"	2-1006B-12"	X	X	N/A		10/15	③ 11/15	[12/10]	Q2-RHRS-04B(C)
SR-79	2-1033A-3"	2-1006A-12"	X	X	N/A	X	10/15	↑	↑	Q2-RHRS-02B(C)
SR-79	2-1033B-3"	2-1006B-12"	X	X	N/A	X	10/15	11/5	9/30 [12/10]	Q2-RHRS-02B(C)
SR-79	2-1034A-3"	2-1006C-12"	X	X	N/A	X	10/15	↓	↓	Q2-RHRS-02B(C)
SR-79	2-1034B-3"	2-1006D-12"	X	X	N/A	X	10/15	↑	↑	Q2-RHRS-02B(C)
SR-79	2-1035A-3"	2-1016C-14"	X	X	N/A	X	11/15	↑	↑	Q2-RHRS-02B(C)
SR-79	2-1035B-3"	2-1016D-14"	X	X	N/A	X	11/15 ②	11/5	9/30 [12/10]	Q2-RHRS-02B(C)
SR-79	2-1054A-3"	2-1016A-14"	X	X	N/A	X	11/15	↓	↓	Q2-RHRS-02B(C)
SR-79	2-1054B-3"	2-1016B-14"	X	X	N/A	X	11/15	↓	↓	Q2-RHRS-02B(C)
SR-79/ SR-81-1		2-1025-20"				X	10/15	N/A	2/31	Q2-RHRS-05C
SR-81-1/ SR-87	2-2340-4"	N/A	No	No	X	X	10/15	11/15 ①	3/31	Q2-HPCI-04B(C)

- NOTES: ① EDS anchor loads to NUTECH
 ② Preliminary data by 10/15
 ③ EDS provide isometric/support sketches

[] See Sheet 1

Revision 1
9/28/82

INTERFACE DATA REQUIRED

PLANT: Quad Cities Unit 2

P&ID	Line Numbers		Interface Data Req'd		Need Anchor Location	Safe Shut-down	Nutech Data to EDS	EDS Analysis Completion	EDS Design Completion	EDS Problem
	Branch Pipe	Run Pipe	TAM	SAM						
SR-81-1	2-1036-3"	2-1010-18"	X	X	NA	X	10/15	11/5	9/30 [12/10]	Q2-RHRS-02B(C)
SR-81-1	2-1011-4"	2-1009A-18"	X	X	N/A	X	↑	↑	↑	Q2-RHRS-06B(C)
SR-81-1	2-1065-3"	2-1012A-16"	X	X	N/A	X	↑	↑	↑	Q2-RHRS-06B(C)
SR-81-1	2-1066-3"	2-1012B-16"	X	X	N/A	X	10/15	11/9	9/30 [12/10]	Q2-RHRS-06B(C)
SR-81-1	2-1067-3"	2-1010-18"	X	X	N/A	X	↓	↓	↓	Q2-RHRS-06B(C)
SR-81-1	2-1068-3"	2-1025-20"	X	X	N/A	X	↓	↓	↓	Q2-RHRS-06B(C)
SR-81-1	2-1086-6"	2-1010-18"	X	X	N/A		10/30	1/14	[2/28]	Q2-RHRS-09B(C)
SR-87	2-2311-4"	2-2301-16"	X	X	N/A		10/30	1/14	[2/28]	Q2-HPCI-02B(C)
SR-87	2-2325-6"	2-2302-16"	X	X	N/A		10/30	1/14 (9/17) ③	2/28	Q2-HPCI-01B(C)

NOTES:

- ① EDS anchor loads to NUTECH
 ② Preliminary data by 10/15
 ③ EDS provide isometric/support sketches

[] See Sheet 1

Revision 1
 9/28/82

Sheet 4 of 6

INTERFACE DATA REQUIRED

PLANT: Dresden Unit 2

P&ID	Line Numbers		Interface Data Req'd		Need Anchor Location	Safe Shut-down	Nutech Data to EDS	EDS Analysis Completion	EDS Design Completion	EDS Problem
	Branch Pipe	Run Pipe	TAM	SAM						
SR-25	-	2-1603-18"	No	No	x		9/7	10/20 (1)	2/31	D2-PSUPP-01C
SR-25	-	2-8503-4"	No	No	N/A		-	9/17 (3)	-	D2-PSUPP-01B(C)
SR-27	-	2-1406-8"	No	No			10/15	N/A	12/31	D2-COSP-04C
SR-27	-	2-1403-10"	No	No			10/15	N/A	12/31	D2-COSP-04C
SR-29	2-1541A-3" 2-1541B-3"	2-1531-18"	x	x	N/A		10/15	11/19	4/30	D2-LPCI-02B(C)
SR-29 SR-51	2-2340-4"	N/A	No	No	x	x	10/15	11/15 (1) (9/17) (3)	[12/1]	D2-HPCI-01B(C)
SR-51	2-2315-4"	2-2302-16"	x	x	N/A		12/30	1/21	[2/28]	D2-HPCI-06B(C)
SR-51	2-2311-4"	2-2301-16"	x	x	N/A		12/30	1/31	4/30	D2-HPCI-05B(C)

NOTES: (1) EDS anchor loads to NUTECH

(2) Preliminary data by 10/15

(3) EDS provide isometric/support sketches

[] See Sheet 1

Revision 0
9/14/82

INTERFACE DATA REQUIRED

PLANT: Dresden Unit 3

P&ID	Line Numbers		Interface Data Req'd		Need Anchor Location	Safe Shut-down	Nutech Data to EDS	EDS Analysis Completion	EDS Design Completion	EDS Problem
	Branch Pipe	Run Pipe	TAM	SAM						
SR-356	-	3-1603-18"	No	No	x		9/7	10/20 ①	2/28	D3-PSUPP-01C
SR-356	-	3-8503-8"					10/15	(9/17) ③	5/31	D3-PSUPP-05B(C)
SR-360	3-1541A-3" 3-1541B-3"	3-1531-18"	x	x	N/A		10/15	11/12	3/31	D3-LPCI-02B(C)
SR-360 SR-374	3-2340-4"	N/A	No	No	x	x	10/15	11/15 (9/17) ③	[12/1]	D3-HPCI-01B(C)
SR-374	3-2315-4"	3-2302-16"	x	x	N/A		1/31	3/14	5/31	D3-HPCI-06B(C)
SR-374	3-2311-4"	3-2301-16"	x	x	N/A		1/31	2/28	5/31	D3-HPCI-05B(C)

NOTES:

①

EDS anchor loads to NUTECH

[] See Sheet 1

②

Preliminary data by 10/15

③

EDS provide isometric/support sketches

Revision 1

9/28/82

ATTACHMENT 2

DISPLACEMENT DATA AT RUN-BRANCH INTERSECTIONS

PLANT:

BRANCH PIPE LINE NUMBER:

RUN PIPE LINE NUMBER:

NUTECH DATA POINT:

REVISION: _____ DATE: _____

LOADING TYPE: Seismic Anchor Motions (SAM)

X DISPL. (IN)	Y DISPL. (IN)	Z DISPL. (IN)
XX ROTATION (RAD)	YY ROTATION (RAD)	ZZ ROTATION (RAD)

LOADING TYPE: Thermal Anchor Motions (TAM)

X DISPL. (IN)	Y DISPL. (IN)	Z DISPL. (IN)
XX ROTATION (RAD)	YY ROTATION (RAD)	ZZ ROTATION (RAD)

Where X, Y, Z are in the Global Coordinate System
with North indicated.

ATTACHMENT 3

COMMONWEALTH EDISON
QUAD CITIES UNIT 1
STANDBY GAS PIPING

EDS PROJ NO: 01-STGA-030
REVISION:1

EDS JOB NO: 1500-103

SUPPORT LOAD SUMMARY (CONTO.)

SUPP NAME	SUPP LOCN	SUPP TYPE	DIRN CODE	RESULT TYPE	RESULT UNIT	AXIS TYPE	X-AXIS	LOAD SET	Y-AXIS	LOAD SET	Z-AXIS	LOAD SET
41	1	ANCH	GLOB	FORC	(LB)	GLOB						
							380.62	FLPS(M+)	16.54	DRE(M+)	325.18	DRE(M+)
							304.37	UPS			319.78	FLPS
							228.12	NPS	-10.72	T1	319.78	FLTP
							226.79	T1	-16.54	DRE	157.18	UPS
							153.94	FLTP	-413.70	FLPS		
							152.50	DRE	-413.70	FLTP		
							1.34	NPS	-421.97	UPS	-5.41	NP
							1.34	NP	-430.24	NPS	-5.41	NPS
							1.34	NP	-430.24	NP	-5.41	NP
									-430.24	NP	-246.10	T1
							-74.92	UPS	-440.96	NPS	-251.50	NPS
							-151.17	FLTP	-446.78	FLTP	-325.18	DRE
							-151.17	FLPS	-446.78	FLTP	-330.59	FLTP
							-152.50	DRE(M-)	-446.23	UPS	-414.10	UPS
									-457.51	FLPS(M-)	-576.69	FLPS(M-)
				MOMT	(LB.FT)	GLOB	5631.12	FLPS(M+)	4460.35	FLPS(M+)	3.14	DRE(M+)
							5005.73	UPS	3249.13	UPS		
							4387.53	T1	2466.24	FLTP	-1.92	T1
							4380.34	NPS	2422.42	DRE	-3.14	DRE
							1250.78	DRE	2037.92	NPS	-541.53	FLPS
							1243.60	FLTP	1004.11	T1	-541.63	FLTP
									43.82	NPS	-543.20	UPS
							-7.10	NPS	43.82	NP	-544.77	NPS
							-7.10	NP	43.82	NP	-544.77	NP
							-7.10	NP			-544.77	NP
							-632.58	UPS	-1167.39	UPS	-544.77	NP
							-1250.78	DRE	-2378.61	FLTP	-546.69	NPS
							-1257.97	FLTP	-2378.61	FLPS	-547.91	FLTP
							-1257.97	FLPS(M-)	-2422.42	DRE(M-)	-548.25	UPS
											-549.82	FLPS(M-)
				DISP	(IN)	GLOB						
				ROTN	(RAD)	GLOB						
												NEGLEGIBLE
												NEGLEGIBLE
42	52	ANCH	GLOB	FORC	(LB)	GLOB						
							242.11	DRE(M+)	12.76	DRE(M+)	7.48	FLPS(M+)
							240.40	FLPS	4.88	T1	7.48	FLTP
							240.40	FLTP			5.37	DRE
							112.85	UPS	-12.76	DRE	4.79	UPS
									-690.14	FLPS	2.11	NP
							-1.71	NP	-704.02	FLTP	2.11	NPS
							-1.71	NPS	-705.52	UPS	2.11	NP

COMMONWEALTH EDISON
GUAD CITIES UNIT 1
STANDBY GAS PIPING

EDS PROJ NO: Q1-STGA-02C
REVISION:1

EDS JOB NO: 0590-001

LOAD SET SPECIFICATION

SET NAME	COMB TYPE	LIST OF CASES IN GROUP	
NP	DFLT	DW	
T1	DFLT		THER
NPS	DFLT	DW	THER
UPS	DFLT	DW	OBE THER
FLPS	DFLT	DW	OBE THER
OBE	DFLT		OBE
FLTP	DFLT	DW	OBE

TITLE

NORM PRIMARY
THERMAL CASE
NORM PRIM+SECONDARY
UPSET PRIM+SECOND
FAULTED PRIM+SECOND.
OBE
FAULTED PRIMARY

COMMONWEALTH EDISON CO EDS PROB NO:Q1-RHRS-02B EDS JOB NO:J590-003
 QUAD CITIES UNIT 1 REVISION 4
 RESIDUAL HEAT REMOVAL SYSTEM/FROM RHRS HEAT EXCHANGER 1B-1003 TO ANCHORS ON
 12IN AND 14IN RHRS PUMP PIPING AND TO SEAL WELD PENETRATIONS AT C.R. WALLS

SUPPORT LOAD SUMMARY

CHECKING REGION INDICATOR	= FULL	(ALL SUPPORTS)
OUTPUT DETAIL INDICATOR	= DETL	(DETAILED PRINTOUT)
COMMENTARY INDICATOR	= COMM	(COMMENTARY TO BE PRINTED)
LOAD CASE INDICATOR	= NEWC	(NEW CASES TO BE SPECIFIED)
PRESSURE DISTRIBUTION INDICATOR	=	(NO DISTRIBUTIONS TO BE SPECIFIED)
TEMPERATURE DISTRIBUTION INDICATOR	=	(NO DISTRIBUTIONS TO BE SPECIFIED)

DESIGN CHECK COMMENTARY

SUPPORT LOAD COMBINATIONS

COMB. NAME	LOAD COMBINATION	CODE DESCRIPTION
NP	GRAVITY ALONE	NORMAL PRIMARY
T1	THERMAL ALONE	THERMAL CASE 1
T2	THERMAL ALONE	THERMAL CASE 2
NPS	GRAVITY+THERMAL	NORMAL PRIMARY+SECONDARY
UPS	GRAVITY+THERMAL+DBE	UPSET PRIMARY+SECONDARY
FLPS	GRAVITY+THERMAL+DBE	FAULTED PRIMARY+SECONDARY
DBE	DBE ALONE	DBE
FLTP	GRAVITY+DBE	FAULTED PRIMARY

COMMONWEALTH EDISON CO EDS PROB NO:Q1-RHRS-028 EDS JOB NO:0590-003
 QUAD CITIES UNIT 1 REVISION 4
 RESIDUAL HEAT REMOVAL SYSTEM/FROM RHRS HEAT EXCHANGER 1B-1003 TO ANCHORS ON
 12IN AND 14IN RHRS PUMP PIPING AND TO SFAL WELD PENETRATIONS AT C.R. WALLS

LOAD SET SPECIFICATION

SET NAME	COMB TYPE	LIST OF CASES IN GROUP	TITLE
NP	DFLT	DW	NORM PRIMARY
T1	DFLT	THR1	THERMAL CASE 1
T2	DFLT	THR2	THERMAL CASE 2
NPS	DFLT	DW THR1 THR2	NORM PRIM+SECONDARY
UPS	DFLT	DW DBE THR1 THR2	UPSET PRIM+SECOND
FLPS	DFLT	DW DBE THR1 THR2	FAULTED PRIM+SECOND.
DBE	DFLT	DBE	DBE
FLTP	DFLT	DW DBE	FAULTED PRIMARY

COMMONWEALTH EDISON CO EDS PROB NO:Q1-RHRS-02B EDS JOB NO:0590-003
QUAD CITIES UNIT 1 REVISION 4
RESIDUAL HEAT REMOVAL SYSTEM/FROM RHRS HEAT EXCHANGER 1B-1003 TO ANCHORS ON
12IN AND 14IN RHRS PUMP PIPING AND TO SEAL WELD PENETRATIONS AT C.R. WALLS

SUPPORT LOAD SUMMARY

SUPP NAME	SUPP LOCN	SUPP TYPE	DIRN CODE	RESULT TYPE	RESULT UNIT	AXIS TYPE	X-AXIS	LOAD SET	Y-AXIS	LOAD SET	Z-AXIS	LOAD SET
AB	AB	ANCH	GLOB	FORC	(LB)	GLOB						
							750.27	FLPS(M+)	144.58	DBE(M+)	286.87	FLPS(M+)
							675.12	UPS	100.68	T2	286.87	FLTP
							602.34	T2	100.48	T1	277.25	DBE
							602.33	T1			148.25	UPS
							579.96	NPS			9.63	NP
							150.31	DBE	-144.58	DBE	9.63	NPS
							147.93	FLTP	-427.81	FLPS	9.63	NP
									-500.10	UPS		
									-528.49	FLTP		
							-2.38	NPS	-572.39	NPS	-267.62	FLTP
							-2.38	NP	-673.06	NP	-277.25	DBE
							-2.38	NP	-673.06	NP	-726.39	NPS
							-77.54	UPS	-673.06	NPS	-735.80	T1
							-150.31	DBE	-745.35	UPS	-736.02	T2
							-152.69	FLTP	-817.64	FLTP	-865.01	UPS
							-152.69	FLPS(M-)	-817.64	FLPS(M-)	-1003.64	FLPS(M-)
				MOMT	(LR.FT)	GLOB	1748.65	FLPS(M+)	370.49	FLPS(M+)	1062.15	FLPS(M+)
							1526.35	UPS	331.88	UPS	956.00	UPS
							1304.05	NPS	308.80	T2	850.96	T1
							1048.86	T2	308.80	T1	850.96	T2
							1048.60	T1	293.28	NPS	849.84	NPS
							699.80	FLTP	77.21	DBE	212.31	DBE
							444.61	DBE	61.69	FLTP	211.19	FLTP
							255.19	NPS				
							255.19	NP	-15.52	NPS	-1.12	NPS
							255.19	NP	-15.52	NP	-1.12	NP
							32.89	UPS	-15.52	NP	-1.12	NP
									-54.13	UPS	-107.28	UPS
							-189.42	FLTP	-77.21	DBE	-212.31	DBE
							-189.42	FLPS	-92.73	FLTP	-213.43	FLTP
							-440.61	DBE(M-)	-92.73	FLPS(M-)	-213.43	FLPS(M-)
				DISP	(IN)	GLOB						
				ROTN	(RAD)	GLOB						

NEGLECTIBLE

NEGLECTIBLE

SUPPORT LOAD SUMMARY (CONTD.)

```

-.022      T2
-.026      NPS
-.026      T1
-.036      FLTP
-.036      DBE
-.045      UPS
-.063      FLPS(M-)

```

COMMONWEALTH EDISON CO EDS PROB NO:01-PHRS-32R EDS JOB NO:0596-G03
 GUAD CITIES UNIT 1 REVISION 4
 RESIDUAL HEAT REMOVAL SYSTEM/FROM RHPS HEAT EXCHANGER 1H-1003 TO ANCHORS ON
 12IN AND 14IN RHRS PUMP PIPING AND TO SEAL WELD PENETRATIONS AT C.R. WALLS

SUPPORT LOAD SUMMARY (CONTD.)

SUPP NAME	SUPP LOCN	SUPP TYPE	DIRN CODE	RESULT TYPE	RESULT UNIT	AXIS TYPE	X-AXIS LOAD SET	Y-AXIS LOAD SET	Z-AXIS LOAD SET
55X	55	SNGL	X	FORC	(LB)	GLOB	1013.04 FLPS(M+) 930.11 DBE 904.55 FLTP 547.98 UPS 108.39 T1 82.93 NPS 42.64 T2 -25.46 NPS -25.46 NP -25.46 NP -490.51 UPS -930.11 DBE -955.57 FLTP -955.57 FLPS(M-)	.228 FLPS(M+) .172 UPS .138 T2 .116 NPS .112 DBE .105 T1 .090 FLTP -.022 NPS -.022 NP -.022 NP -.078 UPS -.112 DBE -.134 FLTP -.134 FLPS(M-)	
				DISP	(IN)	GLOB			
55Z	55	SNGL	Z	FORC	(LB)	GLOB			2199.74 FLPS(M+) 2180.84 FLTP 2048.54 DBE 1175.46 UPS 151.19 NPS 132.30 NP 132.30 NP 78.42 NPS 18.89 T1 -53.88 T2

COMMONWEALTH EDISON CO EDS PROB NO:01-RHRS-028 EDS JOB NO:0540-003
QUAD CITIES UNIT 1 REVISION 4
RESIDUAL HEAT REMOVAL SYSTEM/FROM RHRS HEAT EXCHANGER 10-12" TO ANCHORS ON
12IN AND 14IN RHRS PUMP PIPING AND TO SEAL WELD PENETRATIONS AT C.R. WALLS

SUPPORT LOAD SUMMARY (CONTD.)

SUPP NAME	SUPP LOCN	SUPP TYPE	DIRN CODE	RESULT TYPE	RESULT UNIT	AXIS TYPE
--------------	--------------	--------------	--------------	----------------	----------------	--------------

X-AXIS	LOAD SET
--------	-------------

Y-AXIS	LOAD SET
--------	-------------

Z-AXIS	LOAD SET
--------	-------------

552
(CONTD.)

-945.85	UPS
-1916.24	FLTP
-1970.12	FLPS
-2048.54	DBE(M-)

DISP	(IN)	GLOB
------	------	------

.228	FLPS(M+)
.172	UPS
.138	T2
.116	NPS
.112	DBE
.105	T1
.090	FLTP
-.022	NPS
-.022	NP
-.022	NP
-.078	UPS
-.112	DBE
-.134	FLTP
-.134	FLPS(M-)

652 65 SNGL 2

FORC	(LB)	GLOB
------	------	------

669.62	FLPS(M+)
669.62	FLTP
654.85	DBE
342.19	UPS
14.76	NP
14.76	NPS
14.76	NP
-337.79	NPS
-348.57	T2
-352.55	T1
-640.09	FLTP
-654.85	DBE
-665.21	UPS
-392.64	FLPS(M-)

DISP	(IN)	GLOB
------	------	------

.013	DBE(M+)
.013	FLPS
.013	FLTP
.016	UPS
-.013	DBE