

Docket # 50-286  
Control # 8312060165  
Date 11/30/83 of Document  
REGULATORY DOCKET FILE

# Indian Point 3 Nuclear Power Plant

## Systems Interaction Study Report

Volume 7



**New York Power  
Authority**

# **Indian Point 3 Nuclear Power Plant**

## **Systems Interaction Study Report**

**Volume 7**

**COPY NUMBER 3**

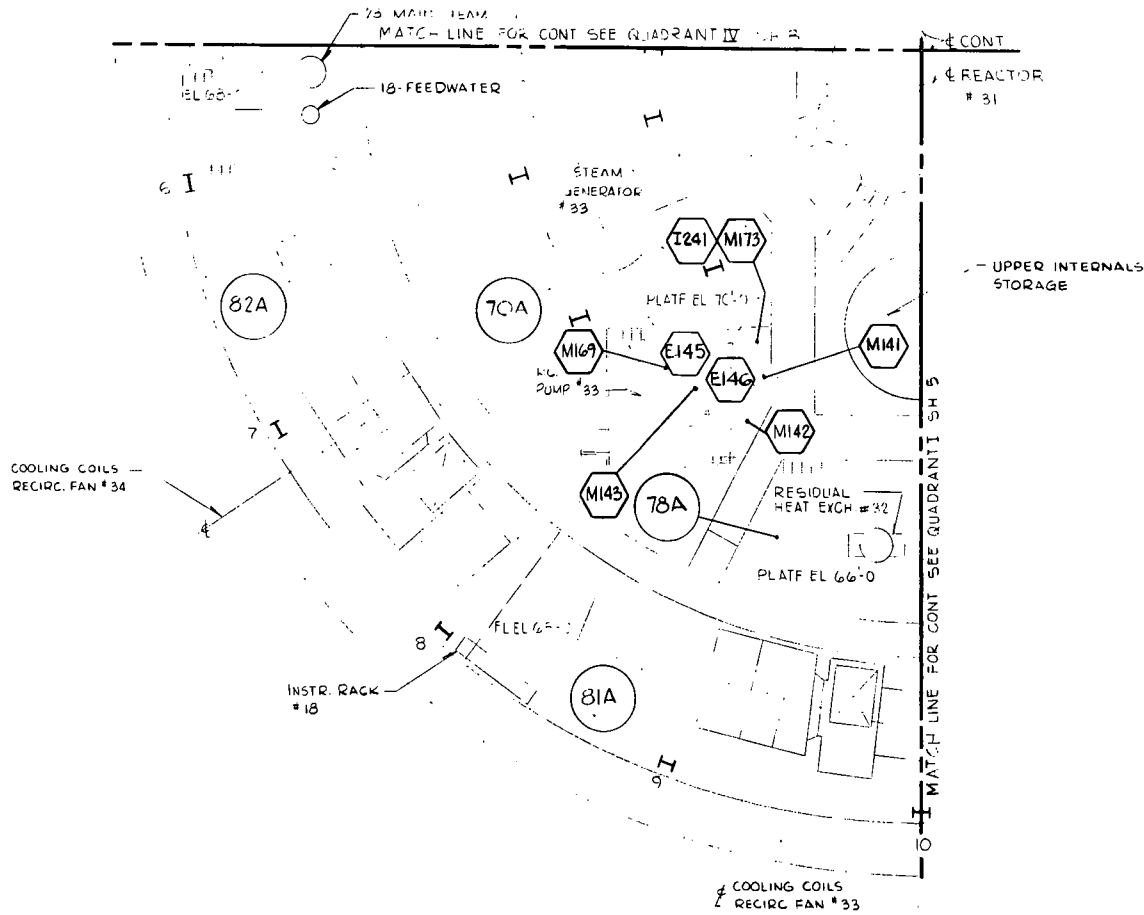


**New York Power  
Authority**



N

PICTURE NUMBER



REFERENCE DRAWINGS  
CONTAINMENT BUILDING  
GENERAL ARRANGEMENT  
U.E. & C. DRWG NO. 9321-F-25023

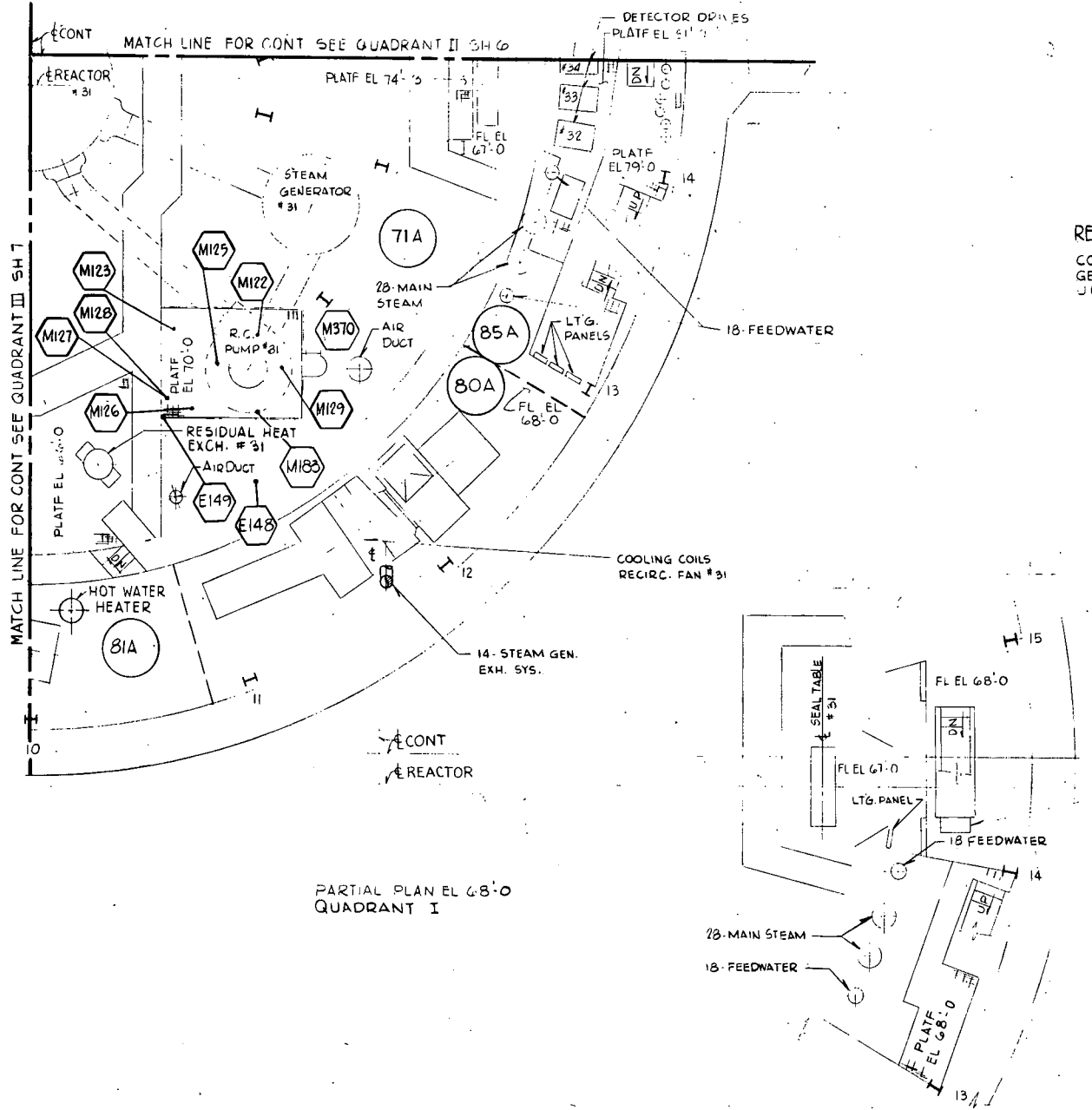
PARTIAL PLAN EL 68'-0  
QUADRANT III

INCHES  
0 1 2 3 4 5

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REV.	DATE	BY	APPROVED	EBASCO SERVICES INCORPORATED DIV. MECH. DR. DP CH. MM				APPROVED [Signature] [Signature] APR				POWER AUTHORITY STATE OF NEW YORK INDIAN POINT NO. 3 N.P.P. GENERAL ARRANGEMENT-CONTAINMENT BUILDING PLAN EL 68'-0				CVCS SYS NO. 3 5209.003 SHEET 7				
	DATE			4-16-82																

PICTURE NUMBER

REFERENCE DRAWINGS  
CONTAINMENT BUILDING  
GENERAL ARRANGEMENT  
J.E. & G. DRWG NO 9321-F-25023



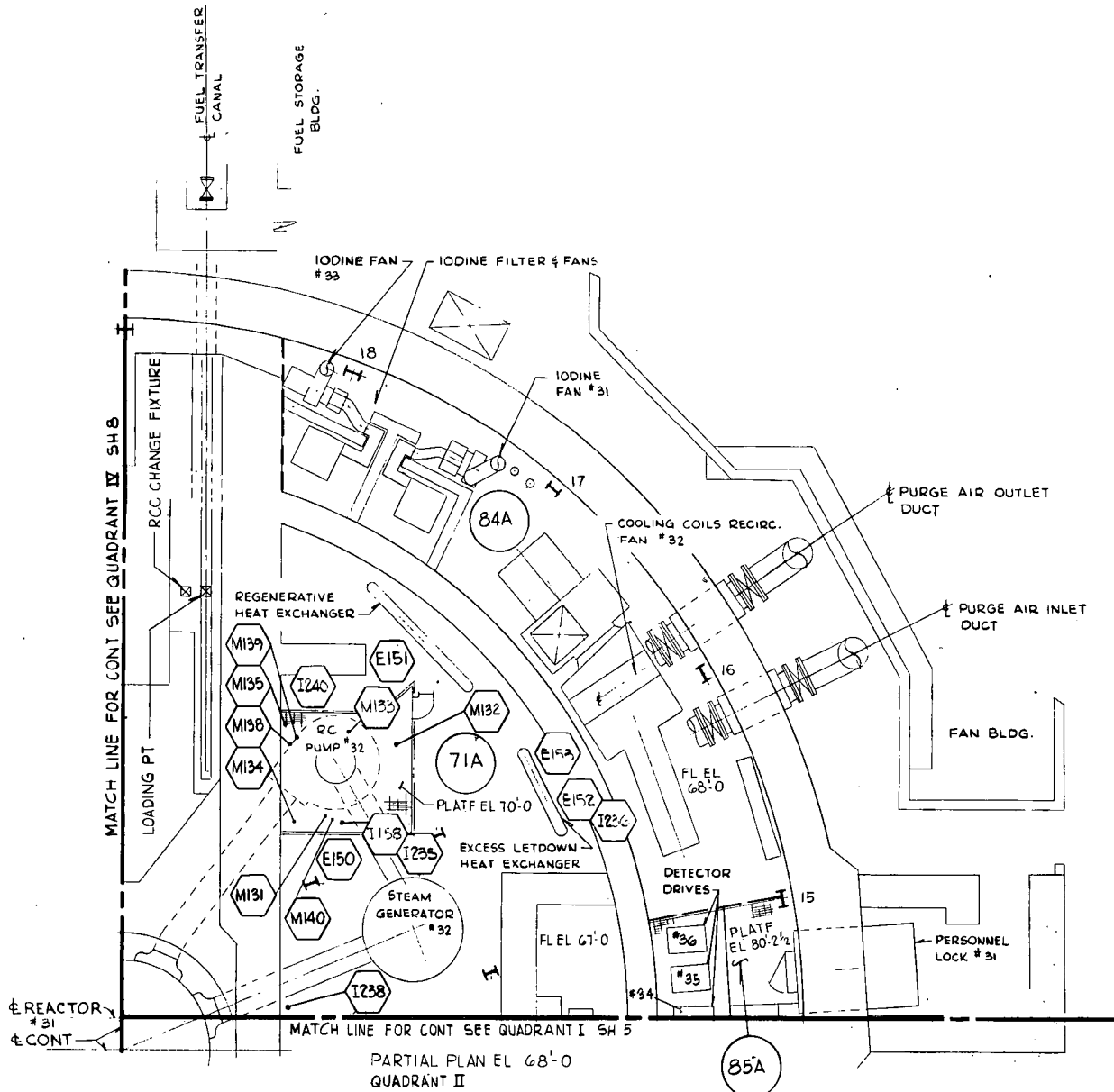
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4				DIV. MECH. DR. DP	INDIAN POINT NO. 3 N.P.P.	SYS NO. 3
3				CH. MM	GENERAL ARRANGEMENT-CONTAINMENT	5209.003
2				DATE 4-16-82	BUILDING PLAN EL 68'0	SHEET 5
1				REV. DATE BY APPROVED		



No PICTURE NUMBER

REFERENCE DRAWINGS  
CONTAINMENT BUILDING  
GENERAL ARRANGEMENT  
J E & C DRWG NO. 9321-F-25023



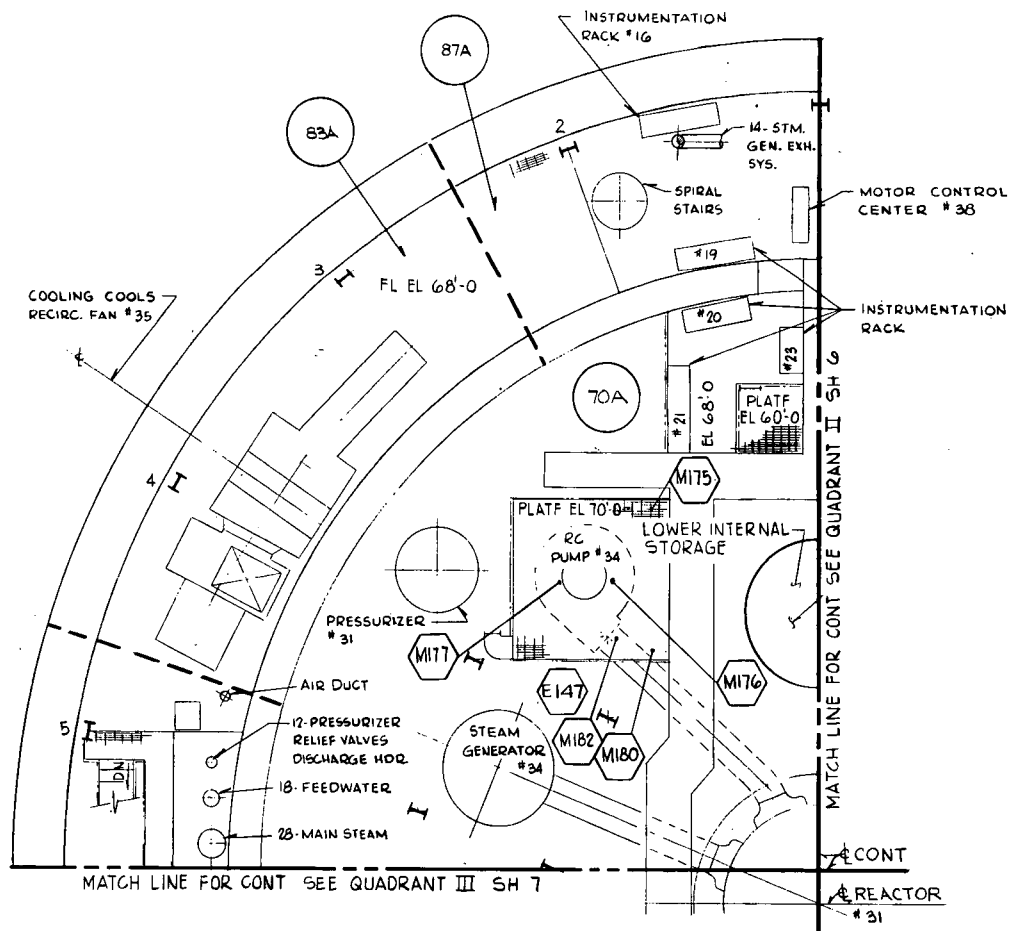
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CH. MM	
DATE 4-16-52	<i>[Signature]</i>

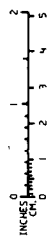
POWER AUTHORITY STATE OF NEW YORK	
INDIAN POINT NO. 3 N.P.P.	
GENERAL ARRANGEMENT - CONTAINMENT	
BUILDING PLAN EL 68'-0"	

CVCS
SYS NO. 3
5209.003
SHEET 6



REFERENCE DRAWINGS  
 CONTAINMENT BUILDING  
 GENERAL ARRANGEMENT  
 U E & C DRWG NO. 9321-F-25023

PARTIAL PLAN EL 68'-0  
 QUADRANT IV



				EBCASCO SERVICES INCORPORATED		POWER AUTHORITY STATE OF NEW YORK		CVCS	
				DIV. MECH. DR. DP		INDIAN POINT NO. 3 N.P.P.		SYS NO 3	
				CH. MM		GENERAL ARRANGEMENT - CONTAINMENT		5209.003	
				DATE 4-16-82		BUILDING PLAN EL 68'-0		SHEET 8	
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REV.	DATE	BY	APPROVED						



NO PICTURE NUMBER

SPENT FUEL PIT  
FUEL STORAGE BUILDING

SUMP

SPENT FUEL PIT  
PUMP ROOM  
FL EL 41'-0"

PIPE TUNNEL  
FL EL 41'-0"

REFERENCE DRAWINGS:  
PIPE TRENCH  
GENERAL ARRANGEMENT  
UE & C DWG NO 9321-F-25123

MATCHLINE- FOR CONT SEE SH 28

PLATF EL 44'-9"

FL EL 41'-0"

PLATF EL 54'-9"

PLATF EL 44'-9"

FL EL 41'-0"

PLATF EL 44'-0"

MATCH LINE FOR CONT SEE SH 15&11

59A

CONT BLD'G

PARTIAL PLAN EL 41'-0"

5				
4				
3				
2				
1				
REV.	DATE	BY	APPROVED	

EBASCO SERVICES INCORPORATED  
 DIV. MECH. DR. 52  
 CH. MM  
 DATE 4-19-82

APPROVED  
 RMD JAR

POWER AUTHORITY STATE OF NEW YORK  
 INDIAN POINT NO. 3 N.P.P.  
 GENERAL ARRANGEMENT OF  
 PIPE TRENCH EL 41'-0"

CVCS  
 SYS NO 3  
 5209.003  
 SHEET 16

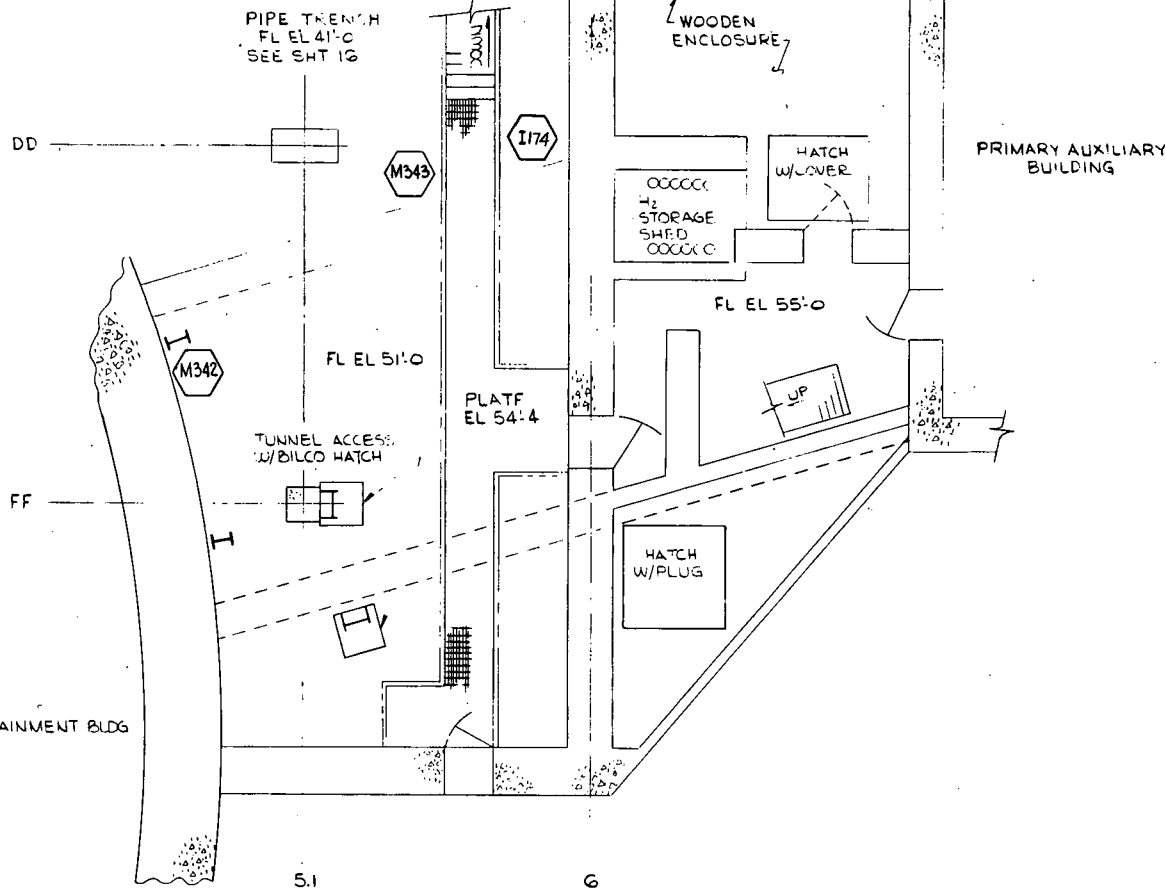
INCHES  
0 1 2 3 4 5





PICTURE NUMBER

MATCH LINE - FOR CONT SEE SHEET 18



REFERENCE DRAWINGS  
FAN ROOM  
GENERAL ARRANGEMENT  
UE 4 C DWG NO 9321-F-25183

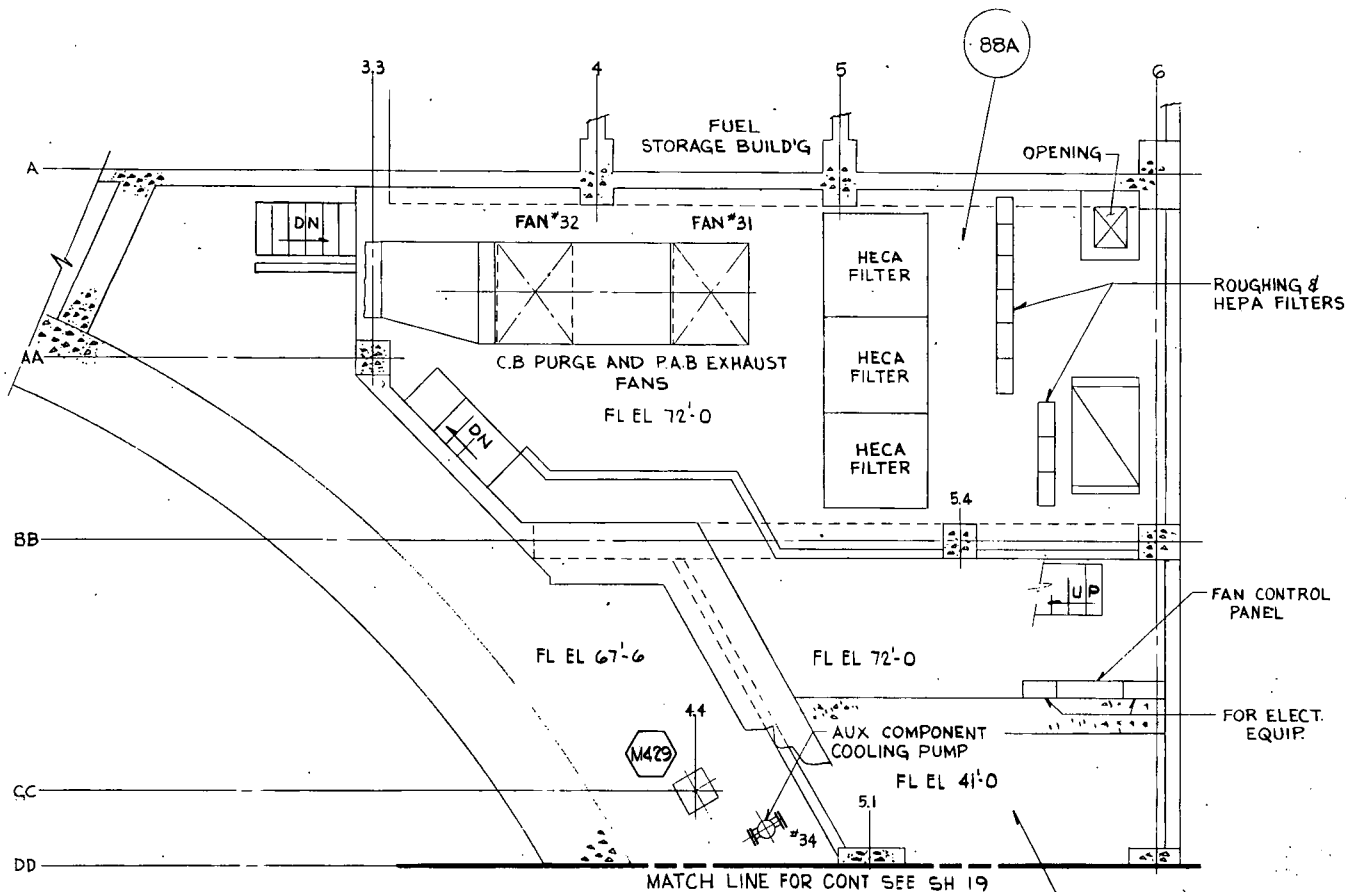
PARTIAL PLAT. EL 54'-0'

59A

3																				
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3																				
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REV	DATE	BY	APPROVED	EBASCO SERVICES INCORPORATED DIV. MECH DR. K. JENSEN CH. PM DATE 3/29/82				APPROVED 				POWER AUTHORITY STATE OF NEW YORK INDIAN POINT NO. 3 N.P.P. GENERAL ARRANGEMENT OF FAN ROOM - PLAN AT EL 54'-0'				CVCS SYS NO. 3 5209.003 SHEET 17				

N

No PICTURE NUMBER



REFERENCE DRAWINGS:  
 FAN ROOM GENERAL  
 ARRANGEMENT UE & C  
 DRWG NO. 9221-F-2083

PARTIAL PLAN EL 67'-6 & EL 72'-0

INCHES  
 2  
1  
0  
1  
2  
3  
4  
5

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4																				
3																				
2																				
1																				
REV	DATE	BY	APPROVED	EBASCO SERVICES INCORPORATED DIV. MECH. DR. <u>RJC</u> CH. <u>MM</u> DATE <u>4-19-82</u>				APPROVED <u>[Signature]</u> <u>[Signature]</u>		POWER AUTHORITY STATE OF NEW YORK INDIAN POINT NO. 3 N.P.P. GENERAL ARRANGEMENT OF FAN ROOM PLAN EL 67'-6 & 72'-0				CYCS SYS NO 3 5209.003 SHEET 20						

N

MATCH LINE FOR CONT SEE SH 27

N.P. PICTURE NUMBER

12A

8A

RESIDUAL HEAT EXCH. ROOM

FILTERS

VALVE CORRIDOR

MATCH LINE FOR CONT SEE SH 24

REFERENCE DRAWINGS:  
1. PRIMARY AUXILIARY BUILDING  
GENERAL ARRANGEMENT  
U.E.A.C. DWG. No. 9321-F-25103-11

INCHES  
0 1 2 3 4 5

E 14 + 83.10

N 59 + 08

PARTIAL PLAN EL 15'-0"

10A

5				
4				
3				
2				
1				
REV	DATE	BY	APPROVED	

EBASCO SERVICES INCORPORATED	
DIV. MECH. DR. M.A.	APPROVED
CH. MM	
DATE 4-20-82	<i>RAM AND JPR</i>

POWER AUTHORITY STATE OF NEW YORK
INDIAN POINT NO. 3 N.P.P.
GENERAL ARRANGEMENT OF PRIMARY
AUXILIARY BUILDING PLAN EL 15'-0"

CVCS
SYS NO. 3
5209.003
SHEET 23



N59108

MATCH LINE FOR CONT SEE SH 29

NO PICTURE NUMBER

5A

9

M345  
M344

REFERENCE DRAWINGS:  
PRIMARY AUXILIARY BUILDING  
GENERAL ARRANGEMENT  
UE & C DWG NO 9321-F-25103

MATCH LINE FOR CONT SEE SH 14 & SH 15

PIPE TUNNEL  
FL. EL. 32'-6"

SAFETY INJECTION PUMPS

FL. EL. 34'-0"

MATCH LINE FOR CONT SEE SH 31

PLAT. FL. EL. 43'-6 1/2"

AIR DUCT

FL. EL. 35'-0"

FLOOR EL 4'-0"

60A

ELECTRICAL TUNNEL  
FL. EL. 34'-0"

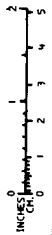
E 1493.5

FLOOR EL 44'-0"

7A

PARTIAL PLAN EL 34'-0"

MATCH LINE FOR CONT EL 44'-0"  
SEE SH 15  
MATCH LINE FOR CONT EL 34'-0"  
SEE SH 13



5																			
4																			
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REV.	DATE	BY	APPROVED	EBASCO SERVICES INCORPORATED DIV. MECH. DR. M.A. CH. MM DATE 4-21-82				APPROVED 				<b>POWER AUTHORITY STATE OF NEW YORK</b> <b>INDIAN POINT NO. 3 N.P.P.</b> GENERAL ARRANGEMENT OF PRIMARY AUXILIARY BUILDING PLAN EL 34'-0				CVCS SYS NO. 3 5209.003 SHEET 28			



E 15+82.5

PIPE TUNNEL  
FL EL 32'-6"

5A

142B

NO PICTURE NUMBER

REFERENCE DRAWINGS:  
PRIMARY AUXILIARY BUILDING  
GENERAL ARRANGEMENT  
UE 4C DWG NO 9321-F-25103

MATCH LINE FOR CONT SEE SH 14

PIPE TUNNEL  
FL EL 32'-6"

SAFETY INJECTION  
PUMP

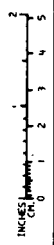
FL EL 34'-0"

9

MATCH LINE FOR CONT SEE SH 30

MATCH LINE FOR CONT SEE SH 28

PARTIAL PLAN EL 34'-0"



3			
4			
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2			
1			
REV.	DATE	BY	APPROVED

EBASCO SERVICES INCORPORATED  
 DIV. MECH. DR. MA  
 CH. MM  
 DATE 4-21-82  
 [Signature] [Signature] [Signature]

POWER AUTHORITY STATE OF NEW YORK  
 INDIAN POINT NO. 3 N.P.P.  
 GENERAL ARRANGEMENT OF PRIMARY  
 AUXILIARY BUILDING PLAN EL 34'-0"

CVCS  
 SYS NO. 3  
 5209-003  
 SHEET 29

N

PICTURE NUMBER

MATCH LINE FOR CONT SEE SH 37

SAMPLE HEAT EXCHANGER

DEMINERALIZED  
WTR STOR TK

PIPE CHASE

W445

HOOD  
&  
SINK

GAS  
ANALYZER

COND & PH  
SAMPLE RACK

SAMPLING ROOM  
FL EL 55'-0"

20A

REFERENCE DRAWINGS  
PRIMARY AUXILIARY BUILDING  
GENERAL ARRANGEMENT  
UE&C DWG NO 9321-F-25153

FL EL 55'-0"

LIGHT SWITCHGEAR

MCC = 37

MCC = 36B

MCC = 36A

AIR  
DUCT

MATCH LINE FOR CONT SEE SH 43

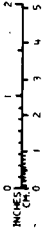
E14+93.5

EL 56'-0"

N59+08

17A

PARTIAL PLAN EL 55'-0"

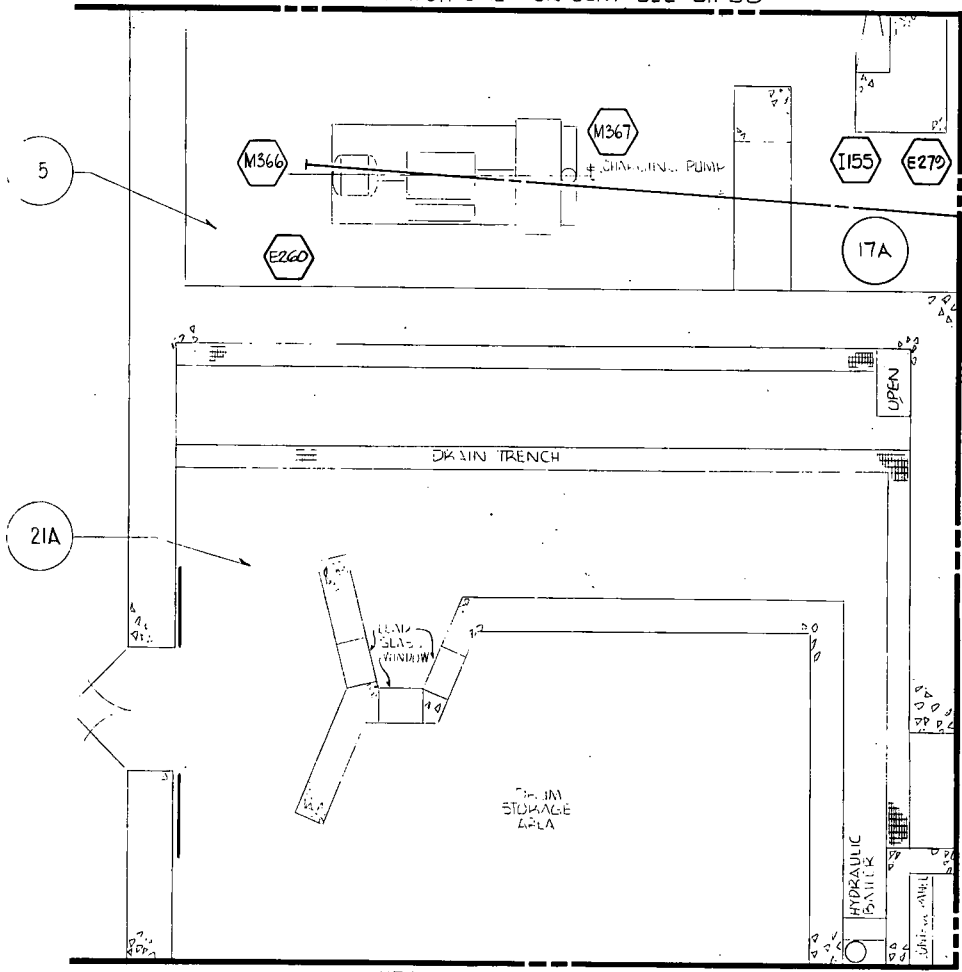


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N

NO. PICTURE NUMBER

MATCH LINE FOR CONT SEE SH 38



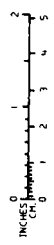
REFERENCE DRAWINGS  
 PRIMARY AUXILIARY BUILDING  
 GENERAL ARRANGEMENT  
 UE #C DWG NO 9321-F-25153

MATCH LINE FOR CONT SEE SH 42

MATCH LINE FOR CONT SEE SH 36

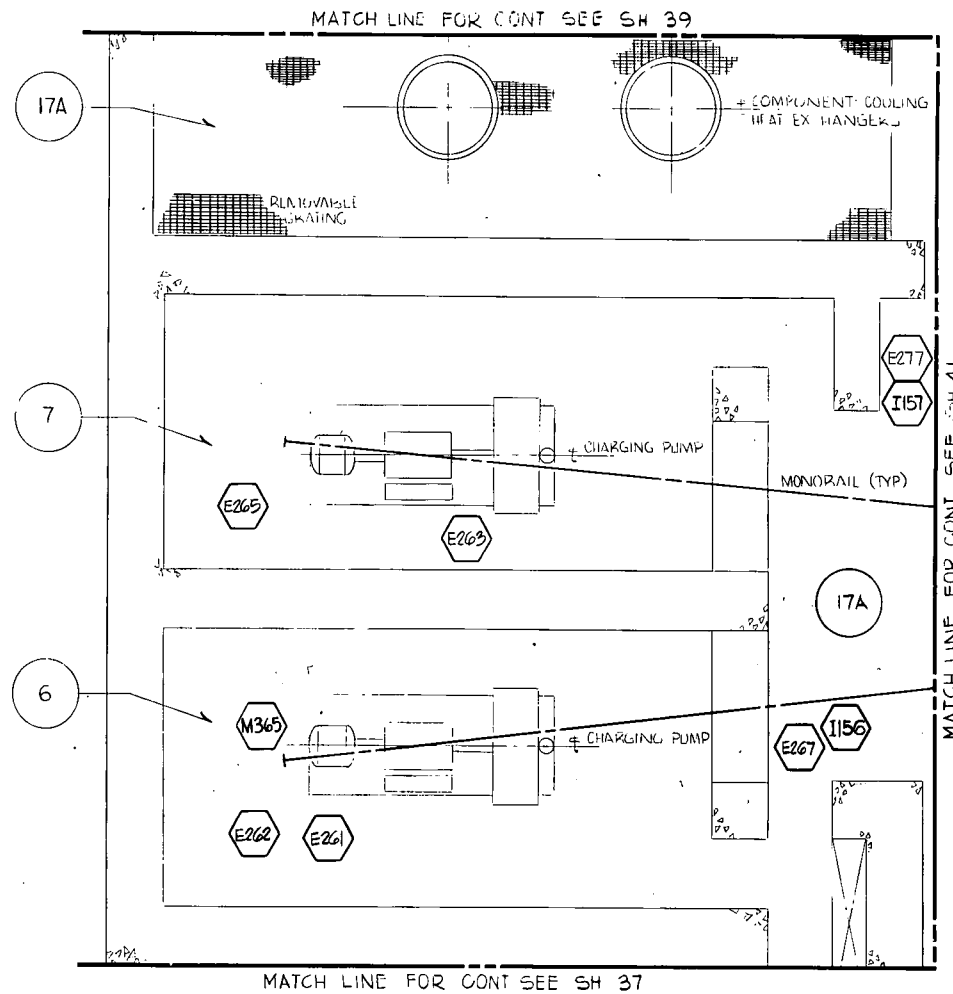
PARTIAL PLAN EL 55'-0

5					<b>EBASCO SERVICES INCORPORATED</b> DIV. MECH. DR. SR CH. MM DATE 4-22-02 <i>MM MS SR</i>	<b>POWER AUTHORITY STATE OF NEW YORK</b> <b>INDIAN POINT NO. 3 N.P.P.</b> GENERAL ARRANGEMENT OF PRIMARY AUXILIARY BUILDING PLAN EL 55'-0	CVCS SYS NO 3 5209.003 SHEET 37
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REV.	DATE	BY	APPROVED	DATE			



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NO PICTURE NUMBER



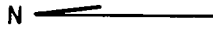
REFERENCE DRAWINGS

INCHES  
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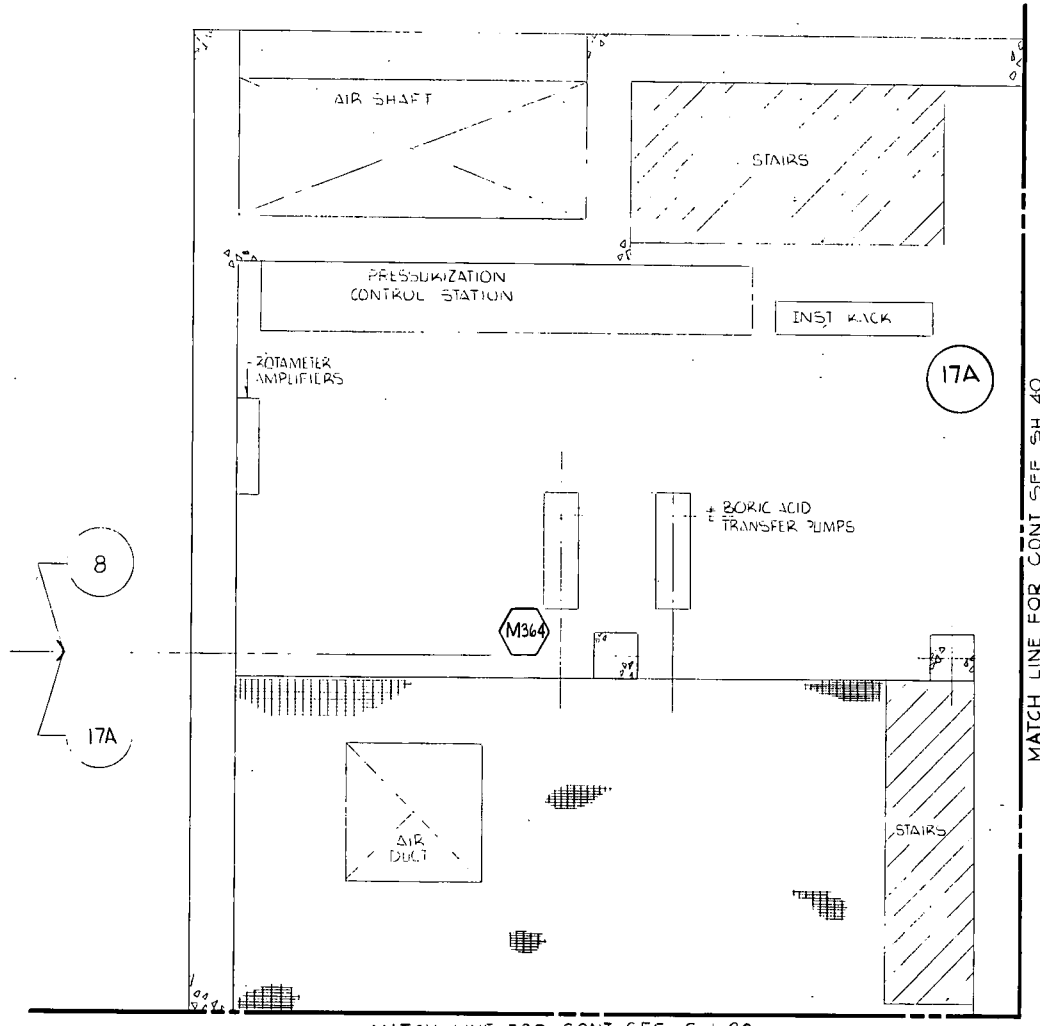
PARTIAL PLAN EL 55'-0

5					<b>EBASCO SERVICES INCORPORATED</b> DIV. MECH. DR. 52 CH. MM DATE 4-22-82 <i>[Signature]</i>	<b>POWER AUTHORITY STATE OF NEW YORK</b> <b>INDIAN POINT NO. 3 N.P.P.</b> GENERAL ARRANGEMENT OF PRIMARY AUXILIARY BUILDING PLAN EL 55'-0	CVCS SYS NO 3 5209.003 <b>SHEET 38</b>
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REV.	DATE	BY	APPROVED				





NO PICTURE NUMBER

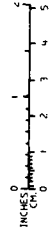


REFERENCE DRAWINGS  
 PRIMARY AUXILIARY BUILDING  
 GENERAL ARRANGEMENT  
 UE & C DWG NO 9321-F-25153

MATCH LINE FOR CONT SEE SH 40

MATCH LINE FOR CONT SEE SH 38

PARTIAL PLAN EL 55'-0

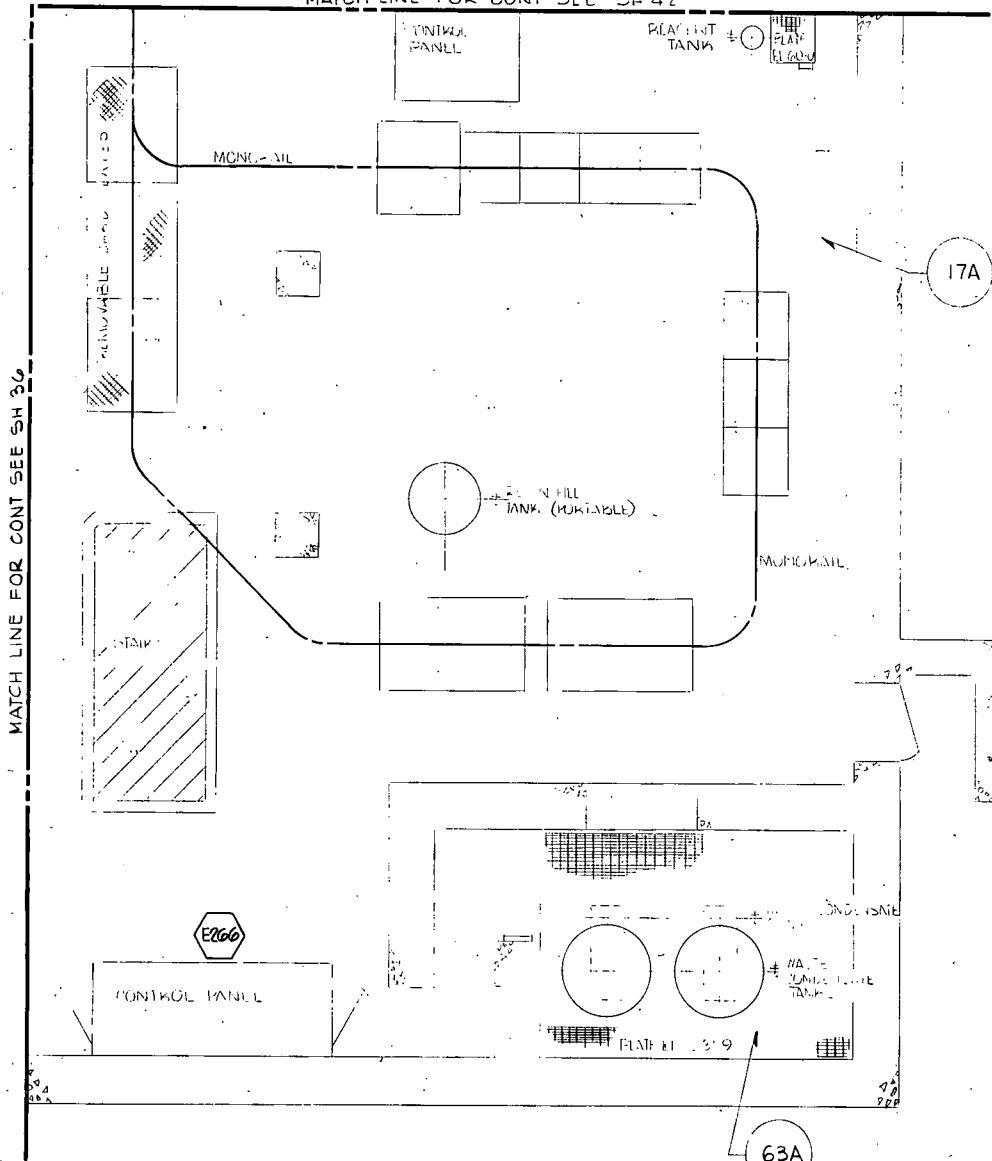


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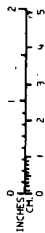
MATCH LINE FOR CONT SEE SH 42

No. PICTURE NUMBER

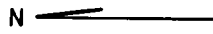


REFERENCE DRAWINGS

PARTIAL PLAN EL 55'-0



5				EBASCO SERVICES INCORPORATED	POWER AUTHORITY STATE OF NEW YORK INDIAN POINT NO. 3 N.P.P.	CVCS SYS NO 3
4				DIV. MECH. DR. SK	APPROVED	5209.003
3				CH. MM		SHEET 43
2				DATE 4-23-82		
1						
REV.	DATE	BY	APPROVED			



NO PICTURE NUMBER

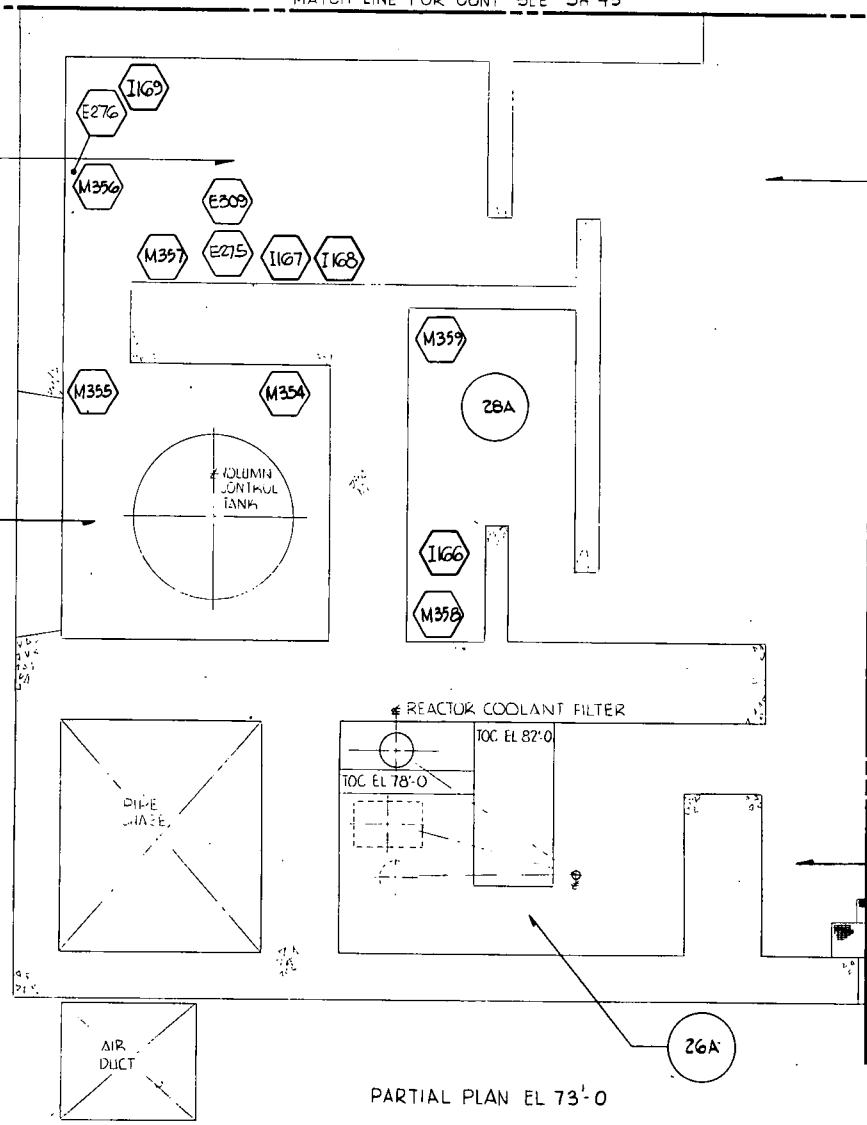
MATCH LINE FOR CONT SEE SH 45

30A

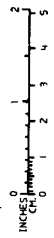
29A

27A

REFERENCE DRAWINGS  
PRIMARY AUXILIARY BUILDING  
GENERAL ARRANGEMENT  
UE & C DWG NO 9321-F-25153



PARTIAL PLAN EL 73'-0

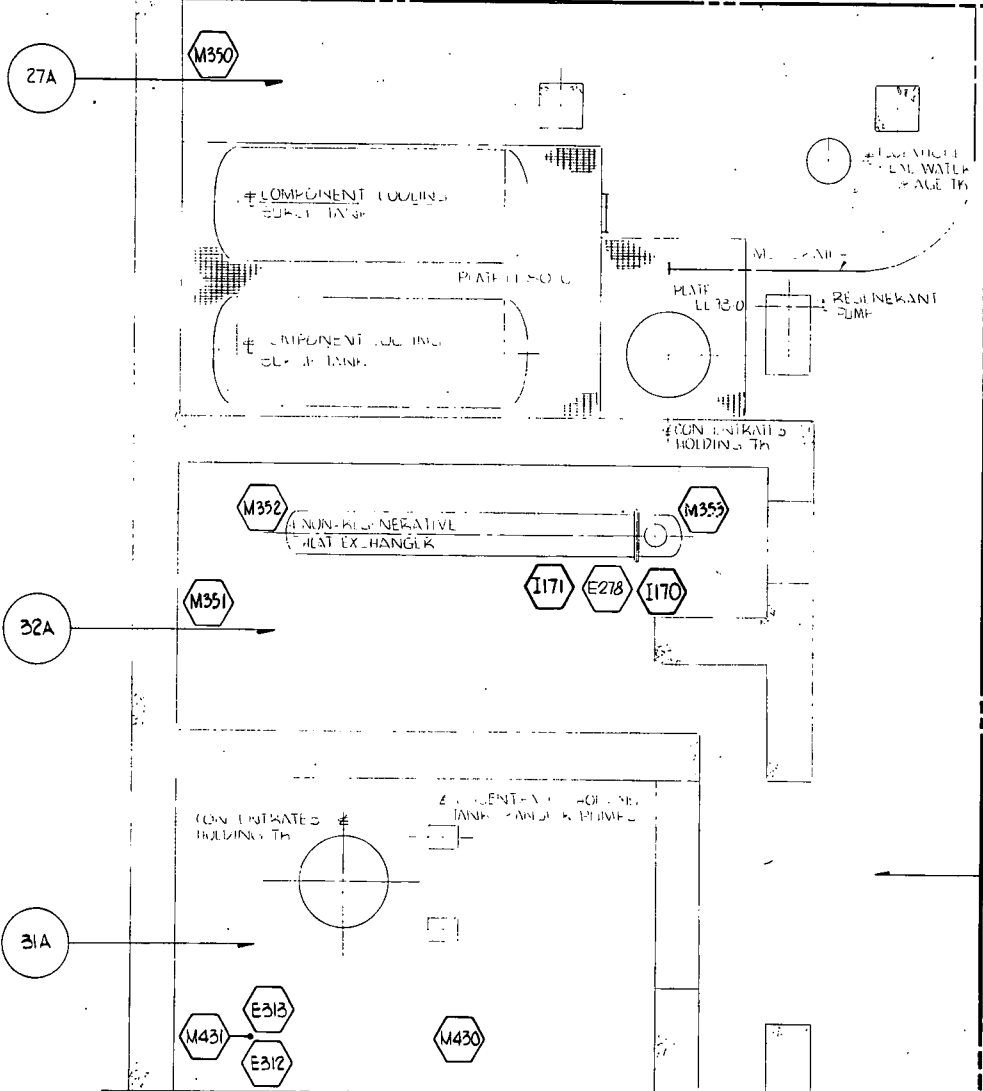


5						<b>EBASCO SERVICES INCORPORATED</b> DIV. MECH. DR. 52 CH. MM DATE 4-23-62 <i>DM</i> <i>RD</i> <i>JAL</i>	<b>POWER AUTHORITY STATE OF NEW YORK</b> <b>INDIAN POINT NO. 3 N.P.P.</b> GENERAL ARRANGEMENT OF PRIMARY AUXILIARY BUILDING PLAN EL 73'-0	CVCS SYS NO. 3 5209-003 <b>SHEET 44</b>
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3								
2								
1								
REV.	DATE	BY	APPROVED					

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No PICTURE NUMBER

MATCH LINE FOR CONT SEE SH 46

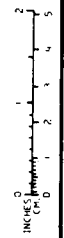


REFERENCE DRAWINGS  
 PRIMARY AUXILIARY BUILDING  
 GENERAL ARRANGEMENT  
 UE & CDWG NO 9321-F-25153

MATCH LINE FOR CONT SEE SH 48

MATCH LINE FOR CONT SEE SH 44

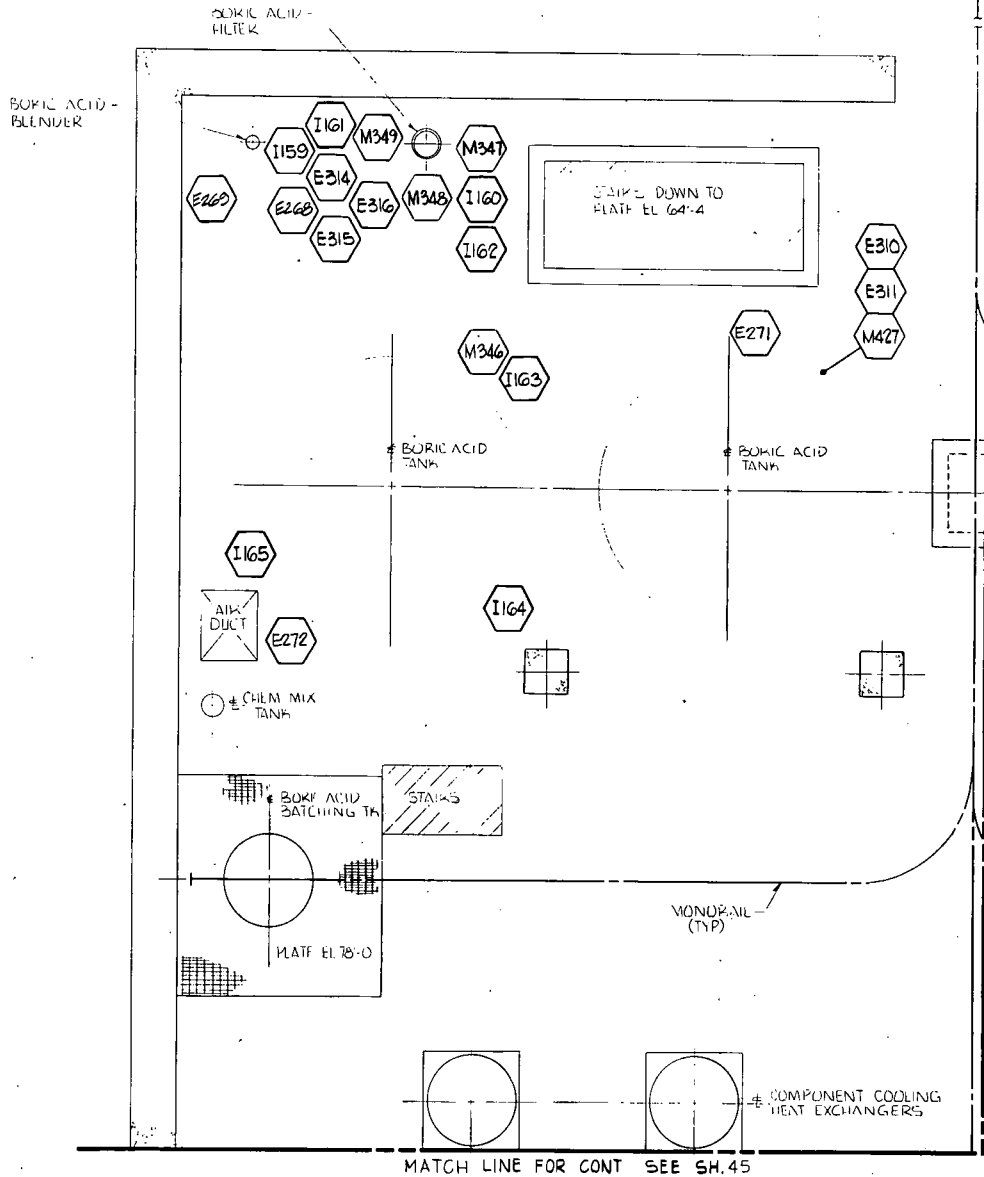
PARTIAL PLAN EL 73'-0"



5																				
4																				
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REV.	DATE	BY	APPROVED	EBASCO SERVICES INCORPORATED DIV. MECH. DR. 32 CH. MM DATE 4-23-82				APPROVED [Signature]				POWER AUTHORITY STATE OF NEW YORK INDIAN POINT NO. 3 N.P.P. GENERAL ARRANGEMENT OF PRIMARY AUXILIARY BUILDING PLAN EL 73'-0				CVCS SYS NO 3 5209.003 SHEET 45				

N

NO PICTURE NUMBER



MATCH LINE FOR CONT SEE SH.47

REFERENCE DRAWINGS:  
 PRIMARY AUXILIARY BUILDING  
 GENERAL ARRANGEMENT  
 UE & C DWG NO 9321-F-25153

INCHES  
 0 1 2 3 4 5

MATCH LINE FOR CONT SEE SH.45

PARTIAL PLAN EL 73'-0

27A

				EBASCO SERVICES INCORPORATED		POWER AUTHORITY STATE OF NEW YORK		CVCS	
				DIV. MECH. DR. 52		INDIAN POINT NO. 3 N.P.P.		SYS NO. 3	
				CH. MM		GENERAL ARRANGEMENT OF PRIMARY		5209.003	
				DATE 4-26-82		AUXILIARY BUILDING PLAN EL 73'-0		SHEET 46	
REV	DATE	BY	APPROVED						
5									
4									
3									
2									
1									

N

No PICTURE NUMBER

MATCH LINE FOR CONT SEE SH 48

27A

24A

REFERENCE DRAWINGS  
PRIMARY AUXILIARY BUILDING  
GENERAL ARRANGEMENT  
UE & C DWG NO 9321-F-25153

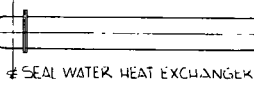
MATCH LINE FOR CONT SEE SH 44



27A

25A

M361



M360

PARTIAL PLAN EL 73'-0

INCHES  
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5				
4				
3				
2				
1				
REV	DATE	BY	APPROVED	

EBASCO SERVICES INCORPORATED  
DIV. MECH. DR. SR  
CH. MM  
DATE 4-26-82  
*[Signature]*

POWER AUTHORITY STATE OF NEW YORK  
INDIAN POINT NO. 3 N.P.P.  
GENERAL ARRANGEMENT OF PRIMARY  
AUXILIARY BUILDING PLAN EL 73'-0

CVCS  
SYS NO 3  
5209.003  
SHEET 49

## 4.0 Residual Heat Removal System

### 4.1 Function & Applicability

The Residual Heat Removal system (RHR) is required to accomplish three of the four basic safety functions as follows:

i) Achieve and Maintain Reactor Subcriticality (FT-1)\*

The RHR provides makeup liquid, from the Refueling Water Storage Tank (RWST), to the Reactor Coolant System (RCS). This is accomplished by the RHR pumps after the injection by the SIS Accumulators in the event of a large LOCA.

ii) Maintain Containment Integrity (FT-2)\*

In the event of a LOCA and after the RWST is empty, the RHR pumps can be used in lieu of the SIS recirculation pumps to recirculate the contents of the containment sumps through the Containment Spray Nozzles to reduce containment pressure and temperature.

iii) Remove Decay Heat (FT-3)\*

The RHR pumps can be used in lieu of the SIS Recirculation Pumps to maintain circulation through the Reactor and the RHR Heat Exchangers.

RHR is described in System Description No. 4.2.

### 4.2 Scope

4.2.1 For the purposes of this study, RHR includes:

- RHR Pumps
- RHR Heat Exchangers
- Containment Sump
- Piping, Valves, Instrumentation and Electrical Components as indicated in the corresponding disciplines Nonconnected and Interconnected Matrices.

The study boundaries for RHR are shown, along with CCW, on flow diagram FD 5209.04, Sheets 1 & 2. Note that component cooling (system 9) is included on this flow diagram.

4.2.2 Support systems relied upon for RHR safety related functions are indicated on the Auxiliary Diagram AD-4.

4.2.3 All devices located in the Control Room are evaluated generically as part of the Control Room review.

\* Function Tables 1 thru 3. See Volume 1 Tab entitled Functional Tables

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3  
SYSTEMS INTERACTION STUDY  
TABULATION OF POTENTIALLY UNACCEPTABLE SPATIAL INTERACTIONS

RESIDUAL HEAT REMOVAL SYSTEM  
MECHANICAL

POTENTIALLY UNACCEPTABLE INTERACTION NUMBER	FMEA		EIC		SPAN EVALUATION		
	(1)	(2)	(1)	(2)	(1)	(2)	(3)
L-4-39-1	4-M-1-A		NR		NR		
* L-4-47-1	4-M-2-P		4-002-P		NA		
L-4-48-1	4-M-3-A		NR		NR		
L-4-48-4	4-M-3-A		NR		NR		
V-4-52-2	4-M-4-A		NR		NR		
V-4-58-2	4-M-5-A		NR		NR		
V-4-65-1	4-M-6-A		4-002-P		NR		
V-4-66-1	4-M-7-A		NR		NR		
V-4-66-2	4-M-7-A		NR		NR		
V-4-67-1	4-M-8-A		NR		NR		
V-4-67-2	4-M-8-A		NR		NR		
V-4-68-1	4-M-9-A		NR		NR		
V-4-68-2	4-M-9-A		NR		NR		

- NOTES: 1) Letter following numbers mean; A - Acceptable, P - Potentially Unacceptable.  
 2) NR - Evaluation is Not Required since interaction is now acceptable.  
 3) NA - Type of evaluation is not applicable to this interaction.  
 4) Disposed of by repair in AFW pump building.  
 \* Unacceptable by all 3 types of evaluation.



POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
MATRIX PREPARATION

SYSTEM NO 4

SYSTEM NAME RESIDUAL HEAT REMOVAL SYSTEM

MATRIX CATEGORY

NON-CONNECTED \_\_\_\_\_

INTERCONNECTED X

*Sean O'Conno* 6/11/82  
PREPARED BY/DATE

*L. P. Ruggiero, Jr.* 7/12/82  
APPROVED BY/DATE

Ebasco Services Incorporated

POWER AUTHORITY OF THE STATE OF NEW YORK  
 INDIAN POINT 3 NUCLEAR POWER PLANT  
 SYSTEM INTERACTION STUDY

INTERFACING COMPONENTS

SAFETY RELATED COMPONENT EQUIPMENT	INTERFACING COMPONENTS	SAFETY (S) NONSAFETY (N)	POTENTIAL INTERACTION (IF APPLICABLE)
RESIDUAL HEAT EXCHANGER #31	LINE 8 SI-94 LINE 8 AC-9 LINE 12"-AC 53 } — COMP COOLING LINE 12"-AC 52 } VALVE 3/4"-729A } VALVE 3/4"-729B } VALVE 3/4"-754B }	S S S S S S	
RESIDUAL HEAT EXCHANGER #32	LINE 8 SI-93 LINE 8 AC-90 LINE 12"-AC-53 } — COMP COOLING LINE 12"-AC-52A } VALVE 3/4"-729C } VALVE 3/4"-729D } VALVE 3/4"-754A }	S S S S S S	
RECIRCULATION PUMP #31	LINE 8 SI-293 480V BUS 5A LINE AC-54 } — COMP COOLING LINE AC-55 }	S S S S	
RECIRCULATION PUMP	LINE 8 SI-91 480V BUS 6A LINE AC-54A } — COMP COOLING LINE AC-55A }	S S S S	
RESIDUAL HEAT REMOVAL PUMP #31	LINE 8 AC-9 LINE 14 AC-653 VALVE 728A 480V BUS 3A LINES AC-335&336- COMP COOLING	S S S S S	

Sean O'Connor 6/11/82  
 PREPARED BY/DATE

T. P. Ruggiero 7/12/82  
 APPROVED BY/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY

## INTERFACING COMPONENTS

SAFETY RELATED COMPONENT EQUIPMENT	INTERFACING COMPONENTS	SAFETY (S) NONSAFETY (N)	POTENTIAL INTERACTION (IF APPLICABLE)
RESIDUAL HEAT REMOVAL PUMP #32	LINE 8 AC-654 LINE 14 AC-10 VALVE 728B 480V BUS 6A LINE AC 658&657-COMP COOLING	S S S S S	

Sean O'Connor 6/11/82  
PREPARED BY/DATE

T. P. Ruggiero 7/12/82  
APPROVED BY/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
 INDIAN POINT 3 NUCLEAR POWER PLANT  
 SYSTEM INTERACTION STUDY

INTERFACING COMPONENTS

SAFETY RELATED COMPONENT VALVES	INTERFACING COMPONENTS	SAFETY(S) NONSAFETY(N)	POTENTIAL INTERACTION (IF APPLICABLE)
1802A MOV	LINE 10 SI-293 LINE 10 SI-293 MCC 36A	S S S	
1802B MOV	LINE 10 SI-293 LINE 10 SI-293 MCC 36B	S S S	
886A	LINE 8 SI-293 LINE 8 SI-293	S S	
886B	LINE 8 SI-91 LINE 8 SI-91	S S	
1877A	LINE 3/4 SI-293 LINE 3/4 SI-293	S S	
1877B	LINE 3/4 SI-91 LINE 3/4 SI-91	S S	
1803	LINE 2 SI-92 LINE 2 SI-92	S S	
1820	LINE 2 SI-92 LINE 2 SI-92	S S	
993	LINE 3/4 SI-711 LINE 3/4 SI-711	S S	
HCV 638 MOV	LINE 8 SI-355 LINE 8 SI-355 MCC 36B	S S S	

Sean O'Connor 6/11/82  
 PREPARED BY/DATE

T. P. Ruggiero 7/12/82  
 APPROVED BY/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
 INDIAN POINT 3 NUCLEAR POWER PLANT  
 SYSTEM INTERACTION STUDY

## INTERFACING COMPONENTS

SAFETY RELATED COMPONENT VALVES	INTERFACING COMPONENTS	SAFETY(S) NONSAFETY(N)	POTENTIAL INTERACTION (IF APPLICABLE)
747 MOV	LINE 8 SI-355	S	
	LINE 8 SI-355	S	
	MCC 36B	S	
899B MOV	LINE 8 SI-355	S	
	LINE 8 SI-355	S	
	MCC 36B	S	
FE 946D	LINE 6 SI-355	S	
	LINE 6 SI-355	S	
	VALVE 1804G	S	
	VALVE 1804H	S	
1804G	FE 946D	S	
	FT 946D	S	
1804H	FE 946D	S	
	FT 946D	S	
838A	LINE 6 SI-355	S	
	LINE 6 SI-355	S	
S-107	LINE 6 SI-355	S	
	VENT	S	
S-110	LINE 6 SI-355	S	
	VENT	S	
FE 946C	LINE 6 SI-356	S	
	LINE 6 SI-356	S	
	VALVE 1804E	S	
	VALVE 1804F	S	
1804E	FE 946C	S	
	FT 946C	S	

Sean O'Connor 6/11/82  
 PREPARED BY/DATE

T. P. Ruggiero 7/12/82  
 APPROVED BY/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
 INDIAN POINT 3 NUCLEAR POWER PLANT  
 SYSTEM INTERACTION STUDY

## INTERFACING COMPONENTS

SAFETY RELATED COMPONENT VALVES	INTERFACING COMPONENTS	SAFETY(S) NONSAFETY(N)	POTENTIAL INTERACTION (IF APPLICABLE)
1804F	FE 946C FT 946C	S S	
748C	LINE 8 SI-355 FT 638	S S	
748D	LINE 8 SI-355 FT 638	S S	
S-141	LINE 8 SI-359 VENT	S S	
733B RV	LINE 3/4 SI-507 LINE 1 RC-507	S N	4-M-2
HCV 640 MOV	LINE 8 SI-358 LINE 8 SI-358 MCC 36A	S S S	
746 MOV	LINE 8 SI-358 LINE 8 SI-358 MCC 36A	S S S	
899A MOV	LINE 8 SI-358 LINE 8 SI-358 MCC 36B	S S S	
FE 946B	LINE 6 SI-358 LINE 6 SI-358 VALVE 1804C VALVE 1804D	S S S S	
1804C	FE 946B FT 946B	S S	

Sean O'Connor 6/11/82

PREPARED BY/DATE

T. P. Ruggiero 7/12/82

APPROVED BY/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
 INDIAN POINT 3 NUCLEAR POWER PLANT  
 SYSTEM INTERACTION STUDY

## INTERFACING COMPONENTS

SAFETY RELATED COMPONENT VALVES	INTERFACING COMPONENTS	SAFETY (S) NONSAFETY (N)	POTENTIAL INTERACTION (IF APPLICABLE)
1804D	FE 946B FT 946B	S S	
838C	LINE 6 SI-358 LINE 6 SI-358	S S	
S-125	LINE 6 SI-358 VENT	S S	
838D	LINE 6 SI-361 LINE 6 SI-361	S S	
FE 946A	LINE 6 SI-361 LINE 6 SI-361 VALVE 1804A VALVE 1804B	S S S S	
1804A	FE 946A FT 946A	S S	
1804B	FE 946A FT 946A	S S	
S-131	LINE 6 SI-361 VENT	S S	
S-132	LINE 6 SI-361 DRAIN	S S	
748A	LINE 8 SI-358 FT 640	S S	
748B	LINE 8 SI-358 FT 640	S S	

Sean O'Connor 6/11/82  
 PREPARED BY/DATE

T. P. Ruggiero 7/12/82  
 APPROVED BY/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
 INDIAN POINT 3 NUCLEAR POWER PLANT  
 SYSTEM INTERACTION STUDY

## INTERFACING COMPONENTS

SAFETY RELATED COMPONENT VALVES		INTERFACING COMPONENTS	SAFETY (S) NONSAFETY (N)	POTENTIAL INTERACTION (IF APPLICABLE)
733A	RV	LINE 3/4 SI-508 LINE 1 RC-508	S N	4-M-3
1869A	MOV	LINE 6 SI-89 LINE 6 SI-89 MCC 36A	S S S	
1869B	MOV	LINE 6 SI-60 LINE 6 SI-60 MCC 36B	S S S	
S-114		LINE 8 SI-60 VENT	S S	
S-115		LINE 8 SI-60 DRAIN	S S	
744	MOV	LINE 12 AC-9 LINE 12 AC-9 MCC 36A	S S S	
A-105		LINE 12 AC-9 VENT	S S	
738A		LINE 8 AC-9 LINE 8 AC-9	S S	
739A		LINE 8 AC-9 LINE 8 AC-9	S S	
738B		LINE 8 AC-654 LINE 8 AC-654	S S	
739B		LINE 8 AC-654 LINE 8 AC-654	S S	

Sean O'Connor 6/11/82  
 PREPARED BY/DATE

T. P. Ruggiero 7/12/82  
 APPROVED BY/DATE



POWER AUTHORITY OF THE STATE OF NEW YORK  
 INDIAN POINT 3 NUCLEAR POWER PLANT  
 SYSTEM INTERACTION STUDY

## INTERFACING COMPONENTS

SAFETY RELATED COMPONENT VALVES	INTERFACING COMPONENTS	SAFETY (S) NONSAFETY (N)	POTENTIAL INTERACTION (IF APPLICABLE)
A-104	LINE 8 AC-9 VENT	S S	
A-107	LINE 8 AC-654 VENT	S S	
1866A	LINE 8 AC-9 DRAIN	S S	
1866B	LINE 8 AC-9 DRAIN	S S	
1866C	LINE 8 AC-654 DRAIN	S S	
1866D	LINE 8 AC-654 DRAIN	S S	
740B	LINE 12 AC-9 SAMPLE	S S	
740A	LINE 12 AC-9 PI-635 PC-635	S S S	
ST-65	LINE 14 AC-653 LINE 14 AC-653	S S	
ST-66	LINE 14 AC-10 LINE 14 AC-10	S S	
A-101	LINE 14 AC-10 DRAIN	S S	
A-103	LINE 14 AC-653 DRAIN	S S	

Sean O' Connor 6/11/82  
 PREPARED BY/DATE

T.P. Ruggiero 7/12/82  
 APPROVED BY/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
 INDIAN POINT 3 NUCLEAR POWER PLANT  
 SYSTEM INTERACTION STUDY

## INTERFACING COMPONENTS

SAFETY RELATED COMPONENT VALVES	INTERFACING COMPONENTS	SAFETY (S) NONSAFETY (N)	POTENTIAL INTERACTION (IF APPLICABLE)
1867A	LINE AC-653 DRAIN	S S	
1867B	LINE 14 AC-10 FLUSH CONNECTION	S S	
735A	LINE 14 AC-653 LINE 14 AC-653	S S	
735B	LINE 14 AC-10 LINE 14 AC-10	S S	
732	LINE 14 AC-10 LINE 14 AC-10	S S	
A-106	LINE 14 AC-10 DRAIN	S S	
FE 642	LINE 3 AC-337 LINE 3 AC-337 VALVE 758A VALVE 758B	S S S S	
758A	FE 642 FT 642	S S	
758B	FE 642 FT 642	S S	
743 MOV	LINE 3 AC-337 LINE 3 AC-337 MCC 36A	S S S	

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 PREPARED BY/DATE

T.P. Ruggiero 7/12/82  
 APPROVED BY/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
 INDIAN POINT 3 NUCLEAR POWER PLANT  
 SYSTEM INTERACTION STUDY

INTERFACING COMPONENTS

SAFETY RELATED COMPONENT VALVES	INTERFACING COMPONENTS	SAFETY (S) NONSAFETY (N)	POTENTIAL INTERACTION (IF APPLICABLE)
1870 MOV	LINE 3 AC-337 LINE 3 AC-337 MCC 36B	S S S	
958	LINE 3/4 AC-294 LINE 3/4 AC-294	S S	
741	LINE 12 AC-9 LINE 12 AC-9	S S	
742	LINE 8 AC-9 LINE 8 AC-9	S S	
A-102	LINE 12 AC-9 VENT	S S	
A-110	LINE 12 AC-9 VENT	S S	
A-111	LINE 8 AC-9 DRAIN	S S	
745B MOV	LINE 8 AC-90 LINE 8 AC-90 MCC 36A	S S S	
A-100	LINE 8 AC-90 VENT	S S	
745A MOV	LINE 8 AC-90 LINE 8 AC-90 MCC 36A	S S S	
730 MOV	LINE 14 AC-10 LINE 14 AC-10 MCC 36A	S S S	

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T. P. Ruggiero 7/12/82  
 APPROVED BY/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY

## INTERFACING COMPONENTS

SAFETY RELATED COMPONENT VALVES	INTERFACING COMPONENTS	SAFETY (S) NONSAFETY (N)	POTENTIAL INTERACTION (IF APPLICABLE)
731 MOV	LINE 14 AC-10	S	
	LINE 14 AC-10	S	
	MCC 36B	S	
1836 RV	LINE 2 AC-552	S	
	LINE 3 RC-552	N	4-M-4

Sean O'Connor 6/11/82  
PREPARED BY/DATE

T. P. Ruggiero 7/12/82  
APPROVED BY/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
 INDIAN POINT 3 NUCLEAR POWER PLANT  
 SYSTEM INTERACTION STUDY

## INTERFACING COMPONENTS

SAFETY RELATED COMPONENT LINES	INTERFACING COMPONENTS	SAFETY (S) NONSAFETY (N)	POTENTIAL INTERACTION (IF APPLICABLE)
8 SI-60	LINE 8 SI-60 (SI) LINE 3 AC-337 LINE 6 SI-60 LINE 6 SI-89 LINE 2 SI-29	S S S S S	
2 SI-29	LINE 2 CH-29 LINE 8 SI-60	S S	
6 SI-60	LINE 8 SI-60 LINE 8 SI-94	S S	
6 SI-89	LINE 8 SI-60 LINE 8 SI-93	S S	
8 SI-94	LINE 6 SI-60 LINE 8 SI-355 LINE 3/4 SI-797 LINE 1 SI-825 LINE 1 SI-827 RESIDUAL HEAT EXCHANGER #31	S S S S S S	
8 SI-359	LINE 8 SI-358 LINE 8 SI-355	S S	
8 SI-93	LINE 6 SI-89 LINE 8 SI-358 LINE 3/4 SI-797 LINE 1 SI-824 LINE 1 SI-826 RESIDUAL HEAT EXCHANGER #32	S S S S S S	

Sean O'Connor 6/11/82  
 PREPARED BY/DATE

T. P. Ruggiero 7/12/82  
 APPROVED BY/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
 INDIAN POINT 3 NUCLEAR POWER PLANT  
 SYSTEM INTERACTION STUDY

INTERFACING COMPONENTS

SAFETY RELATED COMPONENT LINES	INTERFACING COMPONENTS	SAFETY (S) NONSAFETY (N)	POTENTIAL INTERACTION (IF APPLICABLE)
8 SI-91	LINE 10 SI-293 LINE 3/4 SI-91 RECIRCULATION PUMP #32	S S S	
10 SI-293	LINE 8 SI-293 LINE 2 SI-92 LINE 8 SI-91 LINE 10 AC-9	S S S S	
8 SI-293	LINE 10 SI-293 LINE 3/4 SI-293 RECIRCULATION PUMP #32	S S S	
2 SI-92	LINE 10 SI-293 LINE 3/4 SI-711 RECIRCULATION SUMP	S S S	
3/4 SI-711	LINE 2 SI-92 LINE 3/4 RC-59	S S	
3/4 SI-91	LINE 8 SI-91 RECIRCULATION SUMP	S S	
3/4 SI-293	LINE 8 SI-293 RECIRCULATION SUMP	S S	
8 SI-35B	LINE 8 SI-93 LINE 3/4 SI-508 LINE 8 SI-359 LINE 6 SI-361 LINE 6 SI-358	S S S S S	
3/4 SI-508	LINE 8 SI-358 VALVE 733A	S S	

Sean O'Connor      6/11/82  
 PREPARED BY/DATE

T.P. Ruggiero      7/12/82  
 APPROVED BY/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY

INTERFACING COMPONENTS

SAFETY RELATED COMPONENT LINES	INTERFACING COMPONENTS	SAFETY(S) NONSAFETY(N)	POTENTIAL INTERACTION (IF APPLICABLE)
3/4 SI-507	LINE 8 SI-355 VALVE 733B	S S	
6 SI-361	LINE 10 SI-350 LINE 8 SI-358	S S	
6 SI-356	LINE 8 SI-355 LINE 10 SI-352	S S	
8 SI-355	LINE 8 SI-94 LINE 8 SI-359 LINE 6 SI-356 LINE 6 SI-355 LINE 3/4 SI-507	S S S S S	
6 SI-358	LINE 8 SI-358 LINE 10 SI-353	S S	
6 SI-355	LINE 8 SI-355 LINE 10 SI-351	S S	
14 AC-10	RESIDUAL HEAT REMOVAL PUMP #32 LINE 14 AC-653 LINE 12 AC-155 LINE 14 AC-57 LINE 3 AC-337 LINE 2 AC-552 PRIMARY LOOP 2 HOT LEG	S S S S S S S	
14 AC-653	LINE 14 AC-10 RESIDUAL HEAT REMOVAL PUMP #31	S S	

Sean O'Connor      6/11/82  
PREPARED BY/DATE

T. P. Ruggiero      7/12/82  
APPROVED BY/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
 INDIAN POINT 3 NUCLEAR POWER PLANT  
 SYSTEM INTERACTION STUDY

## INTERFACING COMPONENTS

SAFETY RELATED COMPONENT LINES	INTERFACING COMPONENTS	SAFETY(S) NONSAFETY(N)	POTENTIAL INTERACTION (IF APPLICABLE)
12 AC-155	LINE 14 AC-10 LINE 12 SI-155	S S	
14 SI-57	LINE 14 AC-10 CONTAINMENT SUMP	S S	
3 AC-337	LINE 14 AC-10 LINE 8 SI-60	S S	
2 AC-552	LINE 14 AC-10 VALVE 1836	S S	
8 SI-90	RESIDUAL HEAT EXCHANGER #32 LINE 10 SI-293 LINE 12 AC-9	S S S	
8 AC-9	RESIDUAL HEAT EXCHANGER #31 LINE 12 AC-9	S S	
12 AC-9	LINE 8 AC-9 LINE 8 AC-190 LINE 8 AC-654 LINE 8 AC-9	S S S S	
8 AC-9	LINE 12 AC-9 RESIDUAL HEAT REMOVAL PUMP #31	S S	
8 AC-654	LINE 12 AC-9 RESIDUAL HEAT REMOVAL PUMP #32	S S	

Sean O'Conner 6/11/82  
 PREPARED BY/DATE

T.P. Ruggiero 7/12/82  
 APPROVED BY/DATE



POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY

Interconnected System Interaction Evaluation Notes

1. Rupture of non-seismic line
2. Leakage from connecting line
3. Valve required to be closed fails open
4. Valve required to be open fails closed
5. Loss of flow or insufficient flow
6. Loss of function due to loss of motive power
7. Electrical fault

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
SYSTEMS INTERACTION EVALUATION

SYSTEM NO. 4

SYSTEM NAME RESIDUAL HEAT REMOVAL SYSTEM

EVALUATION CATEGORY

NON-CONNECTED \_\_\_\_\_

INTERCONNECTED X

Ken O'Connell 6-11-82  
INTERACTION ENGINEER/DATE

W. A. Griswold 8-10-82  
VERIFIED/DATE

Ebasco Services Incorporated

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
INTERCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

POTENTIAL INTERACTION  
NUMBER: 4-M-1

CONNECTED COMPONENT: Line 3/4 SI-797

BOUNDARY SAFETY RELATED

COMPONENT (S): Valve 864E - (Normally Closed)  
Valve 864F - (Normally Closed)

POSTULATED FAILURE (SEE NOTES): 1  
METHOD OF DETECTION:

EVALUATION OF INTERACTION:

No effect on Subject Safety System, due to Normally Closed  
Safety Class 1 Valves 864E & 864F.

X ACCEPTABLE

POTENTIALLY  
UNACCEPTABLE

Sean O'Connor 6/11/82  
INTERACTION ENGINEER/DATE

W. A. Griswold 7/12/82  
VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
INTERCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

POTENTIAL INTERACTION  
NUMBER: 4-M-2

CONNECTED COMPONENT: Line 1-RC-507

BOUNDARY SAFETY RELATED  
COMPONENT (S): Relief Valve 733B

POSTULATED FAILURE (SEE NOTES): 1  
METHOD OF DETECTION:

EVALUATION OF INTERACTION:

No effect on Subject Safety System, due to Normally Closed Safety Class 1 Valve 733 B as boundry. Line 1 RC-507 is a Relief Valve Drain Line.

X ACCEPTABLE

\_\_\_\_\_ POTENTIALLY  
UNACCEPTABLE

Sean O'Connor 6/11/82  
INTERACTION ENGINEER /DATE

W. A. Griswold 7/12/82  
VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
INTERCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

POTENTIAL INTERACTION  
NUMBER: 4-M-3

CONNECTED COMPONENT: Line 1 RC-508

BOUNDARY SAFETY RELATED  
COMPONENT (S): Relief Valve 733A

POSTULATED FAILURE (SEE NOTES): 1  
METHOD OF DETECTION:

EVALUATION OF INTERACTION:

No effect on Subject Safety System, due to Normally Closed Safety  
Class 1 Valve 733A as boundary. Line 1 RC-508 is a Relief Valve Drain Line.

X ACCEPTABLE

\_\_\_\_\_  
POTENTIALLY  
UNACCEPTABLE

Sean O'Connor 6/11/82  
INTERACTION ENGINEER / DATE

W. A. Griswold 7/12/82  
VERIFIED / DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
INTERCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

POTENTIAL INTERACTION  
NUMBER: 4-M-4

CONNECTED COMPONENT: Line 3 RC-552

BOUNDARY SAFETY RELATED  
COMPONENT (S): Relief Valve 1836

POSTULATED FAILURE (SEE NOTES): 1  
METHOD OF DETECTION:

EVALUATION OF INTERACTION:

No effect on Subject Safety System, due to Normally Closed Safety Class 1 Valve 1836. Line 3 RC-552 is a Relief Valve Drain Line.

X ACCEPTABLE

\_\_\_\_\_  
POTENTIALLY  
UNACCEPTABLE

Sean O'Connor 6/11/82  
INTERACTION ENGINEER/DATE

W. A. Griswold 7/12/82  
VERIFIED/DATE

Ebasco Services Incorporated

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
MATRIX PREPARATION

SYSTEM NO 4

SYSTEM NAME RESIDUAL HEAT REMOVAL SYSTEM

MATRIX CATEGORY

NON-CONNECTED X

INTERCONNECTED                     

*Dino Milioni* 5/17/82  
PREPARED BY/DATE

*J.P. Ruggieri* 5-20-82  
APPROVED BY/DATE

Ebasco Services Incorporated

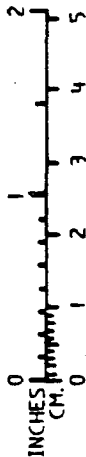
SOURCES

LINES  
(RHR SYS)

L-4

		NO INTERACTION														
1.	6 SI-361	X														

TARGETS



BUILDING: CONTAINMENT  
 FIRE ZONE: 70A  
 LOCATION:                       
 WITHIN FIRE ZONE

RESIDUAL HEAT REMOVAL SYSTEM

EBASCO SERVICES INCORPORATED		POWER AUTHORITY STATE OF NEW YORK		5209.003	
DIV. <u>MECH</u> DR. <u>DM</u>	APPROVED		INDIAN POINT No. 3		L-4
DATE <u>      </u> CH. <u>      </u>	T. P. RUGGIERO		SYSTEMS INTERACTION STUDY		SH 1 OF 13
SCALE <u>NONE</u>			INTERACTION MATRIX		



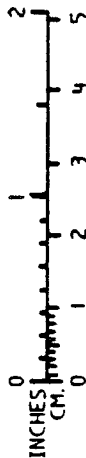
# SOURCES

LINES  
(RHR SYS)

L-4

#	LINE	1 LIGHT FIXTURE	2 RCP #32 STAND- PIPE & PIPING(72)	NO INTERACTION											
2	14-AC-10	M21	M20												
3	6 SI-356			X											

TARGETS



BUILDING: CONTAINMENT  
 FIRE ZONE: 71A  
 LOCATION : \_\_\_\_\_  
 WITHIN FIRE ZONE

EBASCO SERVICES INCORPORATED		POWER AUTHORITY STATE OF NEW YORK		5209.003
DIV. <u>MECH</u> DR. <u>DM</u>		INDIAN POINT No. 3		L-4
DATE _____ CH. _____		SYSTEMS INTERACTION STUDY		SH 2 OF 13
SCALE <u>NONE</u>		INTERACTION MATRIX		
APPROVED				
T. P. RUGGIERO				

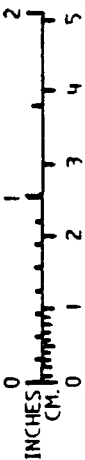
# SOURCES

LINES  
(RHR SYS)

L-4

		1	2	3															
		1"-RC-507	2-SA-34	3"-RC-552							NO INTERACTION								
4	12-AC-9										X								
5	14-AC-10	M9	M10	M10															
6	6 SI-356										X								
7	8 SI-60										X								

TARGETS



BUILDING: CONTAINMENT  
FIRE ZONE: 72A  
LOCATION: \_\_\_\_\_  
WITHIN FIRE ZONE

EBASCO SERVICES INCORPORATED		POWER AUTHORITY STATE OF NEW YORK		5209.003
DIV. MECH. DR. DM		INDIAN POINT No. 3		L-4
DATE _____ CH. _____		SYSTEMS INTERACTION STUDY		SH 3 OF 13
SCALE NONE		INTERACTION MATRIX		
APPROVED				
T. P. RUGGIERO				

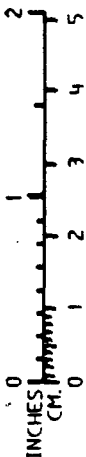
# SOURCES

LINES  
(RHR SYS)

L-4

		1	2	3	4	5	6	7							
		LIGHT FIXTURE 1	LIGHT FIXTURE 2	LIGHT FIXTURE 3	1"-RC-507	1" CONDUIT	JUNCTION BOX	1/2" CONDUIT				NO INTERACTION			
8	12-AC-9	M1	M2	M4	M5		M15	M16							
9	6 SI-356					M14									
10	8 SI-60											X			

TARGETS



BUILDING: CONTAINMENT  
 FIRE ZONE: 75A  
 LOCATION :                       
 WITHIN FIRE ZONE

EBASCO SERVICES INCORPORATED DIV. MECH DR. DM DATE _____ CH. _____ SCALE NONE	APPROVED T. P. RUGGIERO	POWER AUTHORITY STATE OF NEW YORK INDIAN POINT No. 3 SYSTEMS INTERACTION STUDY INTERACTION MATRIX	5209. 003 L-4 SH 4 OF 13
--	----------------------------	--	--------------------------------

SOURCES

LINES

L-4

		1	2	3	4	5									
		2AC-317	12RC-70	1RC-507	2AC-317	LIGHT FIXTURE	NO INTERACTION								
11	6-SI-356	M113		M-17	M-17	M-17									
12	6-SI-361		M147												
13	6-SI-358						X								
14	12-AC-9			M-17	M-17	M-17									

TARGETS



BUILDING: CONTAINMENT  
 FIRE ZONE: 76A  
 LOCATION :   
 WITHIN FIRE ZONE

EBASCO SERVICES INCORPORATED		POWER AUTHORITY STATE OF NEW YORK		5209.003
DIV. <u>MECH</u> DR. <u>DM</u>		INDIAN POINT No. 3		L-4
DATE <u>    </u> CH. <u>    </u>		SYSTEMS INTERACTION STUDY		SH 5 OF 13
SCALE <u>NONE</u>		INTERACTION MATRIX		
APPROVED				
T. P. RUGGIERO				

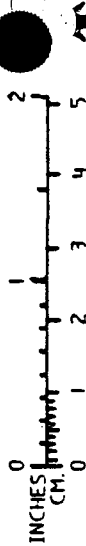
SOURCES

LINES

L-4

LINES		SOURCES																		
L-4		NO INTERACTION																		
	15	6 SI-361	X																	

TARGETS



BUILDING: CONTAINMENT  
 FIRE ZONE: 77A  
 LOCATION : \_\_\_\_\_  
 WITHIN FIRE ZONE

EBASCO SERVICES INCORPORATED			POWER AUTHORITY STATE OF NEW YORK				5209.003		
DIV. <u>MECH</u> DR. <u>DM</u>		APPROVED		INDIAN POINT No. 3				L-4	
DATE _____ CH. _____		T. P. RUGGIERO		SYSTEMS INTERACTION STUDY				SH 6 OF 13	
SCALE <u>NONE</u>				INTERACTION MATRIX					

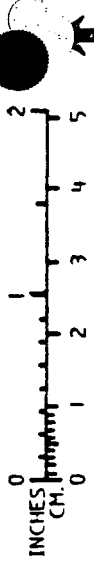
# SOURCES

LINES  
(RHR SYS)

L-4

		1	2	3	4	5	6	7	8						
		2 SI-318	LIGHT FIXTURE	IRC-508	ISI-377	2SI-317	ISI-507	LIGHT FIXTURE	FIRE PROTECTION LINE	NO INTERACTION					
16	12-AC-9									X					
17	8-AC-9									X					
18	8-AC-90	M76	M77												
19	6 SI-356			M80 M83											
20	6 SI-355			M81			M98								
21	8 SI-355						M90 M96								
22	3/4 SI-507									X					
23	6 SI-361									X					
24	6 SI-358			M92											
25	3/4 SI-508									X					
26	8 SI-359						M98	M94	M94						
27	6 SI-60			M85 M86	M87										
28	8 SI-89			M81			M98								

TARGETS



BUILDING: CONTAINMENT

FIRE ZONE: 78A

LOCATION : \_\_\_\_\_  
WITHIN FIRE ZONE

EBASCO SERVICES INCORPORATED		POWER AUTHORITY STATE OF NEW YORK		5209.003
DIV. <u>MECH</u>	DR. <u>DM</u>	APPROVED		L-4
DATE _____	CH. _____	T. P. RUGGERIO		SH 7 OF 13
SCALE <u>NONE</u>		INDIAN POINT No. 3 SYSTEMS INTERACTION STUDY INTERACTION MATRIX		

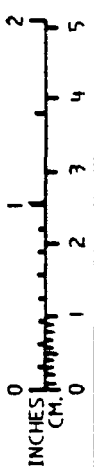
SOURCES

LINES

L-4

		1	2	3	4										
		3/8"-#30	3/8"-#24	1"-#67	S.G. BLOWDOWN SAMPLING LINE	NO INTERACTION									
29	12"-AC-9					X									
30	14"-AC-10					X									
31	3"-AC-337	M167	M167	M166	M168										
32	2"-AC-337	M167	M167	M166	M168										
33	3/4"-AC-294					X									

TARGETS



BUILDING: PRIMARY AUXILIARY BUILDING  
 FIRE ZONE: 59A  
 LOCATION: \_\_\_\_\_  
 WITHIN FIRE ZONE

EBASCO SERVICES INCORPORATED		POWER AUTHORITY STATE OF NEW YORK		5209.003
DIV. MECH DR. DM		INDIAN POINT No. 3		L-4
DATE _____ CH. _____		SYSTEMS INTERACTION STUDY		SH 8 OF 13
SCALE NONE		INTERACTION MATRIX		
		APPROVED		
		T. P. RUGGIERO		

↑

**SOURCES**

LINES

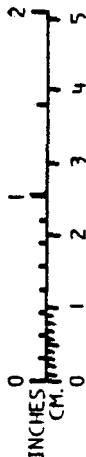
L-4

NO INTERACTION

		NO INTERACTION																
34	12"-AC-9	X																
35	14"-AC-10	X																

**TARGETS**

INCHES  
CM



→

**BUILDING:** PRIMARY AUXILIARY BUILDING  
**FIRE ZONE:** 62A  
**LOCATION:** \_\_\_\_\_  
**WITHIN FIRE ZONE**

<b>EBASCO SERVICES INCORPORATED</b>		<b>POWER AUTHORITY STATE OF NEW YORK</b>		<b>5209.003</b>
DIV. MECH DR. DM		<b>APPROVED</b>		L-4
DATE _____ CH. _____		T. P. RUGGIERO		SH 9 OF 13
SCALE NONE				

↓



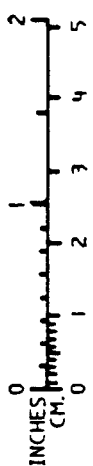
# SOURCES

LINES

L-4

		1	2	3	4	5									
		2"-136	3"-125	3"-127	2"-119	2"-592									
36	12"-AC-9	M161 M162	M161	M163 M164	M165	M165									
37	14"-AC-10	M161 M162	M161	M163 M164	M165	M165									

TARGETS



**BUILDING:** PRIMARY AUXILIARY BUILDING

**FIRE ZONE:** 5A

**LOCATION:** \_\_\_\_\_

**WITHIN FIRE ZONE**

EBASCO SERVICES INCORPORATED		POWER AUTHORITY STATE OF NEW YORK		5209.003	
DIV. MECH. DR. DM		INDIAN POINT No. 3		L-4	
DATE _____ CH. _____		SYSTEMS INTERACTION STUDY		SH 10 OF 13	
SCALE NONE		INTERACTION MATRIX			
APPROVED					
T P RIGGIERO					

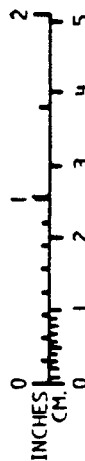
## SOURCES

LINES

L-4

		NO INTERACTION	1 LIGHT FIXTURE											
38	12"-AC-9	X												
39	3/4"-AC-707		M157											
40	8"-AC-9	X												
41	14"-AC-10	X												
42	14"-AC-653	X												
43	8"-AC-654	X												

TARGETS



BUILDING: PRIMARY AUXILIARY BUILDING

FIRE ZONE: 69A

LOCATION: ELEV. 15'-0  
WITHIN FIRE ZONE

EBASCO SERVICES INCORPORATED		POWER AUTHORITY STATE OF NEW YORK		5209.003
DIV. <u>MECH</u> DR. <u>DM</u>		APPROVED		L-4
DATE _____ CH. _____		T. P. RUGGIERO		SH 11 OF 13
SCALE <u>NONE</u>				

INDIAN POINT No. 3  
SYSTEMS INTERACTION STUDY  
INTERACTION MATRIX

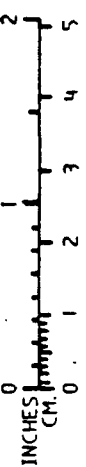
SOURCES

LINES

L-4

		1																
		LIGHT FIXTURE	NO INTERACTION															
44	14"-AC-653		X															
45	8"-AC-9	M160																
46	3/4"-AC-9		X															

TARGETS



BUILDING: PRIMARY AUXILIARY BUILDING  
 FIRE ZONE: 3  
 LOCATION: ELEV. 15'-0  
 WITHIN FIRE ZONE

EBASCO SERVICES INCORPORATED.		POWER AUTHORITY STATE OF NEW YORK		5209.003
DIV. MECH.	DR. DM.	APPROVED		L-4
DATE	CH.	T. P. RUGGIERO		SH 12 OF 13
SCALE NONE				

INDIAN POINT No. 3  
 SYSTEMS INTERACTION STUDY  
 INTERACTION MATRIX

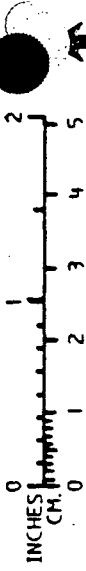
SOURCES

LINES

L-4

		1	2	3	4												
		MONORAIL	LIGHT FIXTURE	2"-725	4"-FLOOR DRN	NO INTERACTION											
47	8"-AC-654	M158	M158	M159	M159												
48	3/4"-AC-654	M158	M158	M159	M159												
49	14"-AC-10					X											

TARGETS



BUILDING: PRIMARY AUXILIARY BUILDING  
 FIRE ZONE: 4  
 LOCATION: ELEV. 15'-0  
 WITHIN FIRE ZONE

EBASCO SERVICES INCORPORATED		POWER AUTHORITY STATE OF NEW YORK		5209.003
DIV. <u>MECH</u> DR. <u>DM</u>	APPROVED		INDIAN POINT No. 3	L-4
DATE _____ CH. _____	T. P. RUGGIERO		SYSTEMS INTERACTION STUDY	SH 13 OF 13
SCALE <u>NONE</u>			INTERACTION MATRIX	

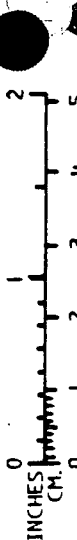
# SOURCES

VALVES

V-4

	6-SI-361														
1	838D	X													
2	S-131	X													

TARGETS



BUILDING: CONTAINMENT

FIRE ZONE: 70A

LOCATION: \_\_\_\_\_

WITHIN FIRE ZONE \_\_\_\_\_

EBASCO SERVICES INCORPORATED			POWER AUTHORITY STATE OF NEW YORK				5209.003	
DIV. <u>MECH</u> DR. <u>DM</u>	APPROVED			INDIAN POINT No. 3			V-4	
DATE _____ CH. _____	T. P. RUGGIERO			SYSTEMS INTERACTION STUDY			SH 1 OF 16	
SCALE <u>NONE</u>				INTERACTION MATRIX				

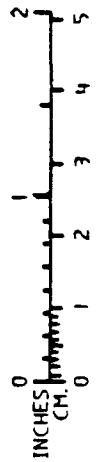
SOURCES

VALVES  
(RHR SYS)

V-4

			1																	
		NO INTERACTION	RCP #32 STAND- PIPE & PIPING (#72)																	
	14-AC-10																			
3	AC-731		M20																	
	6 SI-356																			
4	858B	X																		
5	S-121	X																		

TARGETS



BUILDING: CONTAINMENT  
 FIRE ZONE: 71A  
 LOCATION: \_\_\_\_\_  
 WITHIN FIRE ZONE

EBASCO SERVICES INCORPORATED		POWER AUTHORITY STATE OF NEW YORK		5209.003
DIV. <u>MECH</u> DR. <u>DM</u>	APPROVED		INDIAN POINT No. 3	
DATE _____ CH. _____	T. P. RUGGIERO		V-4	
SCALE <u>NONE</u>			SH 2 OF 16	
			SYSTEMS INTERACTION STUDY	
			INTERACTION MATRIX	

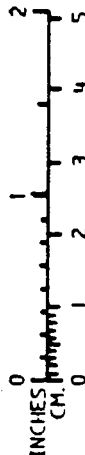
# SOURCES

VALVES  
(RHR SYS)

V-4

		1	2												
		2"-SA-34	3"-RC-552	NO INTERACTION											
	12-AC-9														
6	AC-741			X											
	14-AC-10														
7	AC-730	M10	M10												
	6 SI-356														
8	FT 946 C			X											

TARGETS



BUILDING: CONTAINMENT  
 FIRE ZONE: J2A  
 LOCATION: \_\_\_\_\_  
 WITHIN FIRE ZONE

EBASCO SERVICES INCORPORATED		POWER AUTHORITY STATE OF NEW YORK		5209.003
DIV. <u>MECH</u>	DR. <u>DM</u>	APPROVED		V-4
DATE _____	CH. _____	T. P. RUGGIERO		SH 3 OF 16
SCALE <u>NONE</u>		INDIAN POINT No. 3 SYSTEMS INTERACTION STUDY INTERACTION MATRIX		

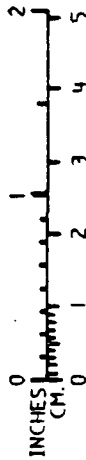
**SOURCES**

VALVES  
(RHR SYS)

V-4

		NO INTERACTION																
	12-AC-9																	
9	AC-A110 (V)	X																
10	AC-A111 (D)	X																

**TARGETS**



BUILDING: CONTAINMENT

FIRE ZONE: 75A

LOCATION: \_\_\_\_\_

WITHIN FIRE ZONE

EBASCO SERVICES INCORPORATED  
 DIV. MECH DR.DM  
 DATE \_\_\_\_\_ CH. \_\_\_\_\_  
 SCALE NONE

APPROVED  
 T. P. RUGGIERO

POWER AUTHORITY STATE OF NEW YORK  
 INDIAN POINT No. 3  
 SYSTEMS INTERACTION STUDY  
 INTERACTION MATRIX

5209.003  
 V-4  
 SH 4 OF 16



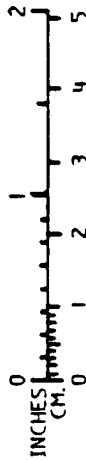
SOURCES

VALVES  
(RHR)

V-4

		NO INTERACTION																		
	6 SI-361																			
11	S-132	X																		
	6 SI-358																			
12	838C	X																		
13	FT946B	X																		
14	S-125	X																		

TARGETS



BUILDING: CONTAINMENT  
 FIRE ZONE: 76A  
 LOCATION: \_\_\_\_\_  
 WITHIN FIRE ZONE

EBASCO SERVICES INCORPORATED		POWER AUTHORITY STATE OF NEW YORK		5209.003
DIV. <u>MECH</u> DR. <u>DM</u>	APPROVED		INDIAN POINT No. 3	
DATE _____ CH. _____	T. P. RUGGIERO		V-4	
SCALE <u>NONE</u>			SYSTEMS INTERACTION STUDY	
			INTERACTION MATRIX	
			SH 5 OF 16	

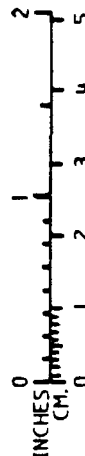
# SOURCES

VALVES

V-4

		NO INTERACTION																		
	6 SI-361																			
15	946A	X																		

TARGETS



BUILDING: CONTAINMENT  
 FIRE ZONE: 77A  
 LOCATION: \_\_\_\_\_  
 WITHIN FIRE ZONE

EBASCO SERVICES INCORPORATED		POWER AUTHORITY STATE OF NEW YORK		5209.003
DIV. <u>MECH.</u> DR. <u>DM.</u>	APPROVED		INDIAN POINT No. 3	
DATE _____ CH. _____	T. P. RUGGIERO		V-4	
SCALE <u>NONE</u>			SH 6 OF 16	
			SYSTEMS INTERACTION STUDY	
			INTERACTION MATRIX	

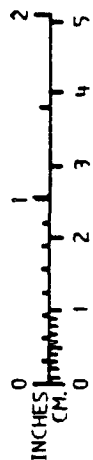
SOURCES

VALVES  
(RHR SYS)

V-4

		NO INTERACTION																	
	8-AC-9																		
16	AC-A102 (V)	X																	
17	AC-742	X																	
	8-AC-90																		
18	AC-A100 (V)	X																	
19	AC-745B	X																	
20	AC-745A	X																	
	RHR H-X 31																		
21	AC-729A (D)	X																	
22	AC-729B (D)	X																	
	RHR H-X 32																		
23	AC-729C (D)	X																	
24	AC-729D (D)	X																	

TARGETS



BUILDING: CONTAINMENT  
 FIRE ZONE: 78A  
 LOCATION: \_\_\_\_\_  
 WITHIN FIRE ZONE

EBASCO SERVICES INCORPORATED		POWER AUTHORITY STATE OF NEW YORK		5209.003
DIV. <u>MECH</u> DR. <u>DM</u>	APPROVED		INDIAN POINT No. 3	V-4
DATE _____ CH. _____	T. P. RUGGIERO		SYSTEMS INTERACTION STUDY	SH 7 OF 16
SCALE <u>NONE</u>			INTERACTION MATRIX	

SOURCES

VALVES  
(RHR)

V-4

		1																	
		1 SI-507	NO INTERACTION																
	6 SI-355																		
25	838A		X																
26	946D		X																
27	S-107		X																
28	S-110		X																
	8SI-355																		
29	MOV-747	M90 M96																	
30	MOV-899B		X																
31	FT 638		X																
32	MOTOR HCV 638	M91																	
	3/4 SI-507																		
33	733B		X																

TARGETS

INCHES  
CM

BUILDING: CONTAINMENT  
 FIRE ZONE: 78A  
 LOCATION: \_\_\_\_\_  
 WITHIN FIRE ZONE

EBASCO SERVICES INCORPORATED		POWER AUTHORITY STATE OF NEW YORK		5209.003
DIV. <u>MECH</u> DR. <u>DM</u>	APPROVED		INDIAN POINT No. 3	
DATE _____ CH. _____	T. P. RUGGIERO		V-4	
SCALE <u>NONE</u>			SH 8 OF 16	
			SYSTEMS INTERACTION STUDY INTERACTION MATRIX	

# SOURCES

VALVES  
(RHR)

V-4

		1	2	3	4	5									
		1 SI-377	2 SI-317	IRC-508	LIGHT	FIRE PROTECTION LINE	NO INTERACTION								
	6 SI-358														
34	746														
35	MOV-899A				M95	M95									
36	HCV 640														
37	FT 640			M92											
	3/4 SI-508														
38	733A														
	8 SI-359														
39	S-141														
	6 SI-60														
40	1869B	M85 M86	M87												

TARGETS

INCHES  
CM

BUILDING: CONTAINMENT  
 FIRE ZONE: 78A  
 LOCATION: \_\_\_\_\_  
 WITHIN FIRE ZONE

EBASCO SERVICES INCORPORATED		POWER AUTHORITY STATE OF NEW YORK		5209.003
DIV. <u>MECH</u> DR. <u>DM</u>	APPROVED		V-4	
DATE _____ CH _____	T. P. RUGGIERO		SH 9 OF 16	
SCALE <u>NONE</u>			SYSTEMS INTERACTION STUDY INTERACTION MATRIX	

SOURCES

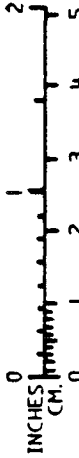
VALVES  
(RHR)

V-4

NO INTERACTION

8 SI-89																						
41	1869A	X																				

TARGETS



BUILDING: CONTAINMENT  
 FIRE ZONE: 78A  
 LOCATION: \_\_\_\_\_  
 WITHIN FIRE ZONE

EBASCO SERVICES INCORPORATED		POWER AUTHORITY STATE OF NEW YORK		5209.003
DIV. MECH	DR. DM	APPROVED		V-4
DATE _____	CH. _____	T. P. RUGGIERO		SH 10 OF 16
SCALE NONE		INDIAN POINT No. 3 SYSTEMS INTERACTION STUDY INTERACTION MATRIX		

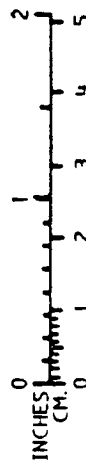
# SOURCES

VALVES

V-4

		1	2	3	4												
		3/8" - #30	3/4" - #24	1" - 67	S.G BLOWDOWN SAMPLING LINES	NO INTERACTION											
	12"-AC-9																
42	12"-AC-MOV-744						X										
43	AC-A-105 (3/4" VENT)						X										
	14"-AC-10																
44	14"-AC-732						X										
45	AC-A-106 (3/4" DRN)						X										
	3"-AC-337																
46	AC-758A (3/4" INST)						X										
47	AC-758B (3/4" INST)						X										
48	3"-AC-MOV-743	M167	M167	M166	M168												
	2"-AC-337																
49	2"-AC-MOV-1870	M167	M167	M166	M168												

TARGETS



**BUILDING:** PRIMARY AUXILIARY BUILDING

**FIRE ZONE:** 59A

**LOCATION:** EL 51'-0

**WITHIN FIRE ZONE**

EBASCO SERVICES INCORPORATED		POWER AUTHORITY STATE OF NEW YORK		5209.003
DIV. <u>MECH. DR. DM</u>	APPROVED		INDIAN POINT No. 3	V-4
DATE <u>      </u> CH. <u>      </u>	F. P. RUGGIERO		SYSTEMS INTERACTION STUDY	SH 11 OF 16
SCALE <u>NONE</u>			INTERACTION MATRIX	

SOURCES

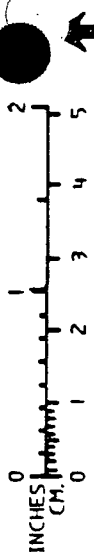
VALVES

V-4

NO INTERACTION

	3/4"-AC-294																		
50	3/4"-AC-958	X																	

TARGETS



BUILDING: PRIMARY AUXILIARY BUILDING  
 FIRE ZONE: 59A  
 LOCATION: \_\_\_\_\_  
 WITHIN FIRE ZONE

EBASCO SERVICES INCORPORATED		POWER AUTHORITY STATE OF NEW YORK		5209.003
DIV. <u>MECH</u> DR. <u>DM</u>	APPROVED		V-4	
DATE _____ CH _____	T. P. RUGGIERO		SH <u>12</u> OF <u>16</u>	
SCALE <u>NONE</u>		INDIAN POINT No. 3 SYSTEMS INTERACTION STUDY INTERACTION MATRIX		



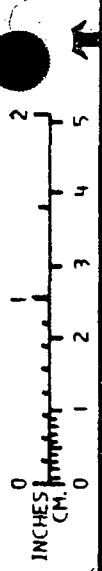
SOURCES

VALVES

V-4

		1	2															
		2"-725	LIGHT FIXTURE	NO INTERACTION														
	12"-AC-9																	
51	AC-740A (3/4" INST)			X														
	3/4"-AC-707																	
52	3/4"-AC-740B		M157															
	8"-AC-9																	
53	8"-AC-739A	M156	M157															
54	AC-A-104 (3/4" VENT)			X														
	14"-AC-10																	
55	14"-AC-735B	M156	M157															
56	AC-1867B (3/4" FLUSH CONN)	M156																

TARGETS



BUILDING: PRIMARY AUXILIARY BUILDING  
 FIRE ZONE: 69A  
 LOCATION: ELEV 15'-0  
 WITHIN FIRE ZONE

EBASCO SERVICES INCORPORATED.		POWER AUTHORITY STATE OF NEW YORK		5209.003
DIV. <u>MECH</u> DR. <u>DM</u>	APPROVED		INDIAN POINT No. 3	
DATE _____ CH. _____	T. P. RUGGIERO		V-4	
SCALE <u>NONE</u>			SYSTEMS INTERACTION STUDY	
			INTERACTION MATRIX	
			SH 13 OF 16	

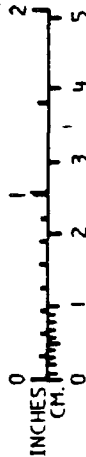
SOURCES

VALVES

V-4

		1	2											
		2"-725	LIGHT FIXTURE	NO INTERACTION										
	14"-AC-653													
57	14"-AC-735A	M156	M157											
58	AC-1867A (3/4" FLUSH CONN)		M157											
	8"-AC-654													
59	8"-AC-739B	M156	M157											
60	AC-A-107 (3/4" VENT)			X										

TARGETS



BUILDING: PRIMARY AUXILIARY BUILDING  
 FIRE ZONE: 69A  
 LOCATION: EL 15'-0  
 WITHIN FIRE ZONE

EBASCO SERVICES INCORPORATED		POWER AUTHORITY STATE OF NEW YORK		5209.003
DIV. <u>MECH</u>	DR. <u>DM</u>	INDIAN POINT No. 3		V-4
APPROVED		SYSTEMS INTERACTION STUDY		SH 14 OF 16
DATE _____	CH. _____	INTERACTION MATRIX		
SCALE <u>NONE</u>	T. P. RUGGIERO			

SOURCES

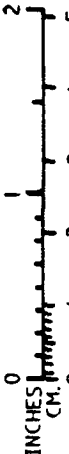
VALVES

V-4

NO INTERACTION

	14"-AC-653													
61	AC-A-103 (3/4" DRN)	X												
	8"-AC-9													
62	8"-AC-738A	X												
	3/4"-AC-9													
63	AC-1866A (3/4" DRN)	X												
64	AC-1866B (3/4" DRN)	X												

TARGETS



BUILDING: PRIMARY AUXILIARY BUILDING  
 FIRE ZONE: 3  
 LOCATION: ELEV 15'-0  
 WITHIN FIRE ZONE

EBASCO SERVICES INCORPORATED.		POWER AUTHORITY STATE OF NEW YORK		5209.003
DIV. <u>MECH</u> DR. <u>DM</u>		INDIAN POINT No. 3		V-4
DATE _____ CH _____		SYSTEMS INTERACTION STUDY		SH 15 OF 16
SCALE NONE		INTERACTION MATRIX		
		APPROVED		
		T. P. RUGGIERO		

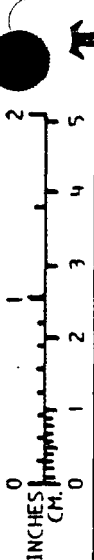
# SOURCES

VALVES

V-4

		1	2															
		MONORAIL	LIGHT FIXTURE															
	8"-AC-654																	
65	8"-AC-738B	M158	M158															
	3/4"-AC-654																	
66	AC-1866D (3/4" DRN)	M158	M158															
67	AC-1866C (3/4" DRN)	M158	M158															
	14"-AC-10																	
68	AC-A-101 (3/4" DRN)	M158	M158															

TARGETS



BUILDING: PRIMARY AUXILIARY BUILDING  
 FIRE ZONE: 4  
 LOCATION: ELEV 15'-0  
 WITHIN FIRE ZONE

EBASCO SERVICES INCORPORATED		POWER AUTHORITY STATE OF NEW YORK		5209.003
DIV. <u>MECH</u>	DR. <u>DM</u>	INDIAN POINT No. 3		V-4
DATE _____	CH. _____	SYSTEMS INTERACTION STUDY		SH 16 OF 16
SCALE <u>NONE</u>		INTERACTION MATRIX		
	APPROVED			
	T. P. RUGGIERO			

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY

NON-CONNECTED INTERACTIONS EVALUATION

1. No Interaction - Source is Class II and is therefore supported adequately. (See response to IP-3 FSAR question 5.24).
2. Acceptable - Source pipe/conduit is equal size or smaller in diameter and/or the same thickness or thinner wall than the target pipe/conduit/tubing. Paragraph 6.2.2.1a Volume I.
3. Acceptable - Source has insufficient mass to damage the target component.
4. Acceptable - Basis is engineering judgement. Specific justification is on the evaluation form.
5. Potentially Unacceptable - Discussion of specific is on the evaluation form.
6. Potentially Unacceptable - Source pipe/conduit is large enough to damage target conduit/pipe/tubing.
7. Potentially Unacceptable - Source will fall a sufficient distance, or has adequate mass such that damage to target conduit/box/instrument/tubing/panel may be possible.
8. No Interaction - Upon further investigation of the source, this portion of its system is designated Seismic I.

R2 7/22/82  
R1 6/30/82  
R0 6/26/82

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
SYSTEMS INTERACTION EVALUATION

SYSTEM NO. 4

SYSTEM NAME RESIDUAL HEAT REMOVAL SYSTEM

EVALUATION CATEGORY

NON-CONNECTED X

INTERCONNECTED                     

Sean O'Connell 6/29/82  
INTERACTION ENGINEER/DATE

W. Griswold 7-29-82  
VERIFIED/DATE

Ebasco Services Incorporated

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: CONTAINMENT

FIRE ZONE: 71A

LOCATION WITHIN FIRE ZONE:

POTENTIAL INTERACTION NO.: L-4-2-1

PHOTOGRAPH NO.: M-21

BACKGROUND NO.: 4-9

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 14-AC-10 (Shown in upper left portion of photograph)

SOURCE: LIGHT FIXTURE (Shown by arrow)

DESCRIPTION OF POSTULATED INTERACTION:

Light fixture falls and hits line 14 AC-10

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 3

X ACCEPTABLE

POTENTIALLY  
UNACCEPTABLE

Sean O'Connor 6/29/82  
INTERACTION ENGINEER/DATE

W A Griswold 7/29/82  
VERIFIED/DATE







POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: CONTAINMENT

FIRE ZONE: 72A

LOCATION WITHIN FIRE ZONE:

POTENTIAL INTERACTION NO.: L-4-5-1

PHOTOGRAPH NO.: M-9

BACKGROUND NO.: 4-10

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 14-AC-10 (14" LINE SHOWN HORIZONTALLY ACROSS CENTER OF PHOTOGRAPH)

SOURCE: 1" -RC-507 (SHOWN BY ARROW)

DESCRIPTION OF POSTULATED INTERACTION:

SEE EVALUATION NOTE 1

EVALUATION OF INTERACTION:

EVALUATION NOTE NO:

X ACCEPTABLE

POTENTIALLY  
UNACCEPTABLE

Sean O'Connor 6/29/82  
INTERACTION ENGINEER/DATE

W A Griswold 7/29/82  
VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: CONTAINMENT

FIRE ZONE: 72A

LOCATION WITHIN FIRE ZONE:

POTENTIAL INTERACTION NO.: L-4-5-2

PHOTOGRAPH NO.: M10

BACKGROUND NO.: 4-10

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 14-AC-10 (SHOWN IN LOWER PORTION OF PHOTOGRAPH)

SOURCE: 2-SA-34 (SHOWN BY ARROW ON LEFT SIDE OF PHOTOGRAPH)

DESCRIPTION OF POSTULATED INTERACTION:

LINE 2 SA-34 FALLS AND HITS LINE 14-AC-10

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 3

    X     ACCEPTABLE

\_\_\_\_\_ POTENTIALLY  
\_\_\_\_\_ UNACCEPTABLE

Sean O'Connor 6/29/82  
INTERACTION ENGINEER/DATE

W A Griswold 7/29/82  
VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: CONTAINMENT

FIRE ZONE: 72A

LOCATION WITHIN FIRE ZONE:

POTENTIAL INTERACTION NO.: L-4-5-3

PHOTOGRAPH NO.: M10

BACKGROUND NO.: 4-10

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 14-AC-10 (SHOWN IN LOWER PORTION OF PHOTOGRAPH)

SOURCE: 3" -RC-552 (SHOWN BY ARROW ON RIGHT SIDE OF PHOTOGRAPH)

DESCRIPTION OF POSTULATED INTERACTION:

SEE EVALUATION NOTE 1

EVALUATION OF INTERACTION:

EVALUATION NOTE NO:

X ACCEPTABLE

\_\_\_\_\_  
POTENTIALLY UNACCEPTABLE

Sean O'Connor 6/29/82  
INTERACTION ENGINEER/DATE

W A Griswold 7/29/82  
VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: CONTAINMENT

FIRE ZONE: 75A

LOCATION WITHIN FIRE ZONE:

POTENTIAL INTERACTION NO.: L-4-9-5

PHOTOGRAPH NO.: M14

BACKGROUND NO.: 4-9

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 6 SI-356

SOURCE: 1" CONDUIT (SHOWN BY ARROW)

DESCRIPTION OF POSTULATED INTERACTION:

1" CONDUIT FALLS AND HITS LINE 6 SI-356

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 2

X ACCEPTABLE

POTENTIALLY  
UNACCEPTABLE

Sean O'Connor 6/29/82  
INTERACTION ENGINEER/DATE

W A Griswold 7/29/82  
VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: CONTAINMENT

FIRE ZONE: 75A

LOCATION WITHIN FIRE ZONE:

POTENTIAL INTERACTION NO.: L-4-8-1

PHOTOGRAPH NO.: M1

BACKGROUND NO.: 4-9

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 12-AC-9 (NOT SHOWN ON PHOTOGRAPH)

SOURCE: LIGHT FIXTURE 1 (PARTIALLY HIDDEN, POINTED OUT BY ARROW)

DESCRIPTION OF POSTULATED INTERACTION:

LIGHT FIXTURE FALLS AND HITS LINE 12-AC-9.

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 3

X ACCEPTABLE

POTENTIALLY  
UNACCEPTABLE

Sean O'Connor 6/29/82  
INTERACTION ENGINEER/DATE

W A Griswold 7/29/82  
VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: CONTAINMENT

FIRE ZONE: 75A

LOCATION WITHIN FIRE ZONE:

POTENTIAL INTERACTION NO.: L-4-8-2

PHOTOGRAPH NO.: M2

BACKGROUND NO.: 4-9

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 12-AC-9 (NOT SHOWN IN PHOTOGRAPH)

SOURCE: LIGHT FIXTURE 2 (NOT SHOWN IN PHOTOGRAPH, POINTED OUT BY ARROW)

DESCRIPTION OF POSTULATED INTERACTION:

LIGHT FIXTURE FALLS AND HITS LINE 12-AC-9

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 3

X ACCEPTABLE

POTENTIALLY  
UNACCEPTABLE

Sean O'Connor 6/29/82  
INTERACTION ENGINEER/DATE

W A Griswold 7/29/82  
VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: CONTAINMENT

FIRE ZONE: 75A

LOCATION WITHIN FIRE ZONE:

POTENTIAL INTERACTION NO.: L-4-8-3

PHOTOGRAPH NO.: M4

BACKGROUND NO.: 4-9

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 12-AC-9 (SHOWN IN LOWER RIGHT CORNER OF PHOTOGRAPH)

SOURCE: LIGHT FIXTURE 3 (AS SHOWN)

DESCRIPTION OF POSTULATED INTERACTION:

LIGHT FIXTURE FALLS AND HITS LINE 12-AC-9

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 3

X ACCEPTABLE

\_\_\_\_\_ POTENTIALLY UNACCEPTABLE

Sean O'Connor 6/29/82  
INTERACTION ENGINEER/DATE

W A Griswold 7/29/82  
VERIFIED/DATE



POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: CONTAINMENT

FIRE ZONE: 75A

LOCATION WITHIN FIRE ZONE:

POTENTIAL INTERACTION NO.: L-4-8-4

PHOTOGRAPH NO.: M5

BACKGROUND NO.: 4-9

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 12-AC-9 (SHOWN IN CENTER OF PHOTOGRAPH)

SOURCE: 1" -RC-507 (SHOWN BY ARROW)

DESCRIPTION OF POSTULATED INTERACTION:

SEE EVALUATION NOTE 1

EVALUATION OF INTERACTION:

EVALUATION NOTE NO:

X  ACCEPTABLE

POTENTIALLY  
UNACCEPTABLE

Sean O'Connor 6/29/82  
INTERACTION ENGINEER/DATE

W A Griswold 7/29/82  
VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: CONTAINMENT

FIRE ZONE: 76A

LOCATION WITHIN FIRE ZONE:

POTENTIAL INTERACTION NO.: L-4-14-3

PHOTOGRAPH NO.: M120  
M17

BACKGROUND NO.: 4-11

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 12-AC-9 (SHOWN IN CENTER OF PHOTOGRAPH)

SOURCE: 1" -RC-507 (SHOWN BY ARROW)

DESCRIPTION OF POSTULATED INTERACTION:

SEE EVALUATION NOTE 1

EVALUATION OF INTERACTION:

EVALUATION NOTE NO:

X ACCEPTABLE

POTENTIALLY  
UNACCEPTABLE

Sean O'Connor 6/29/82  
INTERACTION ENGINEER/DATE

W A Griswold 7/29/82  
VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: CONTAINMENT

FIRE ZONE: 75A

LOCATION WITHIN FIRE ZONE:

POTENTIAL INTERACTION NO.: L-4-8-5

PHOTOGRAPH NO.: M15

BACKGROUND NO.: 4-9

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 12-AC-9 (SHOWN IN CENTER OF PHOTOGRAPH)

SOURCE: JUNCTION BOX (SHOWN BY ARROW)

DESCRIPTION OF POSTULATED INTERACTION:

JUNCTION BOX FALLS AND HITS LINE 12-AC-9

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 3

X ACCEPTABLE

POTENTIALLY  
UNACCEPTABLE

Sean O'Connor 6/29/82  
INTERACTION ENGINEER/DATE

W A Griswold 7/29/82  
VERIFIED/DATE



POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: CONTAINMENT

FIRE ZONE: 76A

LOCATION WITHIN FIRE ZONE:

POTENTIAL INTERACTION NO.: L-4-14-4

PHOTOGRAPH NO.: M17

BACKGROUND NO.: 4-11

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 12-AC-9 (12" LINE SHOWN IN CENTER OF PHOTOGRAPH)

SOURCE: 2 AC-317 (SHOWN BY BOTTOM ARROW)

DESCRIPTION OF POSTULATED INTERACTION:

LINE 2-AC-317 FALLS AND HITS LINE 12-AC-9

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 2

X ACCEPTABLE

POTENTIALLY  
UNACCEPTABLE

Sean O'Connor 6/29/82  
INTERACTION ENGINEER/DATE

W A Griswold 7/29/82  
VERIFIED/DATE



POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: CONTAINMENT

FIRE ZONE: 76A

LOCATION WITHIN FIRE ZONE:

POTENTIAL INTERACTION NO.: L-4-11-3

PHOTOGRAPH NO.: M17

BACKGROUND NO.: 4-9

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 6 SI-356 (SHOWN BY BLACK ARROW)

SOURCE: 1" RC-507 (SHOWN BY UPPER WHITE ARROW)

DESCRIPTION OF POSTULATED INTERACTION:

SEE EVALUATION NOTE 1

EVALUATION OF INTERACTION:

EVALUATION NOTE NO:

X ACCEPTABLE

~~POTENTIALLY UNACCEPTABLE~~

Sean O'Connor 6/29/82  
INTERACTION ENGINEER/DATE

W A Griswold 7/29/82  
VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
 INDIAN POINT 3 NUCLEAR POWER PLANT  
 SYSTEM INTERACTION STUDY  
 NONCONNECTED SYSTEMS INTERACTION  
 EVALUATION SHEET

BUILDING: CONTAINMENT

FIRE ZONE: 76A

LOCATION WITHIN FIRE ZONE:

POTENTIAL INTERACTION NO.: L-4-11-4

PHOTOGRAPH NO.: M17

BACKGROUND NO.: 4-11

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 6 SI-356 (SHOWN BY BLACK ARROW)

SOURCE: 2 AC-317 (SHOWN BY BOTTOM WHITE ARROW)

DESCRIPTION OF POSTULATED INTERACTION:

LINE 2-AC-317 FALLS AND HITS LINE 6-SI-356

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 2

X ACCEPTABLE

POTENTIALLY  
 UNACCEPTABLE

Sean O'Connor 6/29/82  
 INTERACTION ENGINEER/DATE

W A Griswold 7/29/82  
 VERIFIED/DATE



POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: CONTAINMENT

FIRE ZONE: 76A

LOCATION WITHIN FIRE ZONE:

POTENTIAL INTERACTION NO.: L-4-11-5

PHOTOGRAPH NO.: M17  
M120

BACKGROUND NO.: 4-11

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 6 SI-356 (SHOWN BY BLACK ARROW)

SOURCE: LIGHT FIXTURE

DESCRIPTION OF POSTULATED INTERACTION:

LIGHT FIXTURE FALLS AND HITS LINE 6 SI-356

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 3

X ACCEPTABLE

~~\_\_\_\_\_~~ POTENTIALLY UNACCEPTABLE

Sean O'Connor 6/29/82  
INTERACTION ENGINEER/DATE

W A Griswold 7/29/82  
VERIFIED/DATE



POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: CONTAINMENT

FIRE ZONE: 76A

LOCATION WITHIN FIRE ZONE:

POTENTIAL INTERACTION NO.: L-4-12-2

PHOTOGRAPH NO.: M147

BACKGROUND NO.: 4-12

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 6-SI-361 (6" LINE SHOWN IN CENTER OF PHOTOGRAPH)

SOURCE: 12RC-70 (SHOWN BY ARROW)

DESCRIPTION OF POSTULATED INTERACTION:

SEE EVALUATION NOTE 1

EVALUATION OF INTERACTION:

EVALUATION NOTE NO:

X  ACCEPTABLE

POTENTIALLY UNACCEPTABLE

Sean O'Connor   6/29/82   
INTERACTION ENGINEER/DATE

W A Griswold   7/29/82   
VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: CONTAINMENT

FIRE ZONE: 78A

LOCATION WITHIN FIRE ZONE:

POTENTIAL INTERACTION NO.: L-4-18-1

PHOTOGRAPH NO.: M76

BACKGROUND NO.: 4-11

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 8-AC-90 (8" WHITE LINE)

SOURCE: 2 SI-318 (2" WHITE LINE SHOWN BY ARROW)

DESCRIPTION OF POSTULATED INTERACTION:

LINE 2 SI-318 FALLS AND HITS LINE 8 AC-90

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 2

X ACCEPTABLE

POTENTIALLY  
UNACCEPTABLE

Sean O'Connor 6/29/82  
INTERACTION ENGINEER/DATE

W A Griswold 7/29/82  
VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: CONTAINMENT

FIRE ZONE: 78A

LOCATION WITHIN FIRE ZONE:

POTENTIAL INTERACTION NO.: L-4-18-2

PHOTOGRAPH NO.: M77

BACKGROUND NO.: 4-11

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 8-AC-90 (8" WHITE LINE)

SOURCE: LIGHT FIXTURE

DESCRIPTION OF POSTULATED INTERACTION:

LIGHT FIXTURE FALLS AND HITS LINE 8 AC-90

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 3

X ACCEPTABLE

POTENTIALLY  
~~UNACCEPTABLE~~

Sean O'Connor 6/29/82  
INTERACTION ENGINEER/DATE

W A Griswold 7/29/82  
VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: CONTAINMENT

FIRE ZONE: 78A

LOCATION WITHIN FIRE ZONE:

POTENTIAL INTERACTION NO.: L-4-19-3

PHOTOGRAPH NO.: M80

BACKGROUND NO.: 4-11

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 6 SI-356 (6" LINE SHOWN WITH VALVE IN LOWER PORTION OF PHOTOGRAPH M-80)

SOURCE: 1RC-508 (SHOWN BY ARROW)

DESCRIPTION OF POSTULATED INTERACTION:

SEE EVALUATION NOTE 1

EVALUATION OF INTERACTION:

EVALUATION NOTE NO:

  x   ACCEPTABLE

\_\_\_\_\_ POTENTIALLY  
UNACCEPTABLE

Sean O'Connor     6/29/82  
INTERACTION ENGINEER / DATE

W A Griswold     7/29/82  
VERIFIED / DATE



POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: CONTAINMENT

FIRE ZONE: 78A

LOCATION WITHIN FIRE ZONE:

POTENTIAL INTERACTION NO.: L-4-20-6

PHOTOGRAPH NO.: M98

BACKGROUND NO.: 4-4

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 6 SI-355 (SHOWN BY BLACK ARROW)

SOURCE: 1SI-507 (SHOWN BY WHITE ARROW)

DESCRIPTION OF POSTULATED INTERACTION:

SEE EVALUATION NOTE 1

EVALUATION OF INTERACTION:

EVALUATION NOTE NO:

X ACCEPTABLE

POTENTIALLY  
UNACCEPTABLE

Sean O'Connor 6/29/82  
INTERACTION ENGINEER/DATE

W A Griswold 7/29/82  
VERIFIED/DATE



POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: CONTAINMENT

FIRE ZONE: 78A

LOCATION WITHIN FIRE ZONE:

POTENTIAL INTERACTION NO.: L-4-21-6

PHOTOGRAPH NO.: M90  
M96

BACKGROUND NO.: 4-4

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 8 SI-355 (8" LINE SHOWN IN LOWER PORTION OF PHOTOGRAPH)

SOURCE: 1SI-507 (SHOWN BY ARROW)

DESCRIPTION OF POSTULATED INTERACTION:

SEE EVALUATION NOTE 1

EVALUATION OF INTERACTION:

EVALUATION NOTE NO:

      X       ACCEPTABLE

\_\_\_\_\_ POTENTIALLY  
\_\_\_\_\_ UNACCEPTABLE

Sean O'Connor      6/29/82  
INTERACTION ENGINEER/DATE

W A Griswold      7/29/82  
VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: CONTAINMENT

FIRE ZONE: 78A

LOCATION WITHIN FIRE ZONE:

POTENTIAL INTERACTION NO.: L-4-24-3

PHOTOGRAPH NO.: M92

BACKGROUND NO.: 4-7

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 6 SI-358 (SHOWN IN LOWER PORTION OF PHOTOGRAPH)

SOURCE: IRC-508 (SHOWN BY ARROW)

DESCRIPTION OF POSTULATED INTERACTION:

SEE EVALUATION NOTE 1

EVALUATION OF INTERACTION:

EVALUATION NOTE NO:

X ACCEPTABLE

POTENTIALLY  
UNACCEPTABLE

Sean O'Connor 6/29/82  
INTERACTION ENGINEER/DATE

W A Griswold 7/29/82  
VERIFIED/DATE

Ebasco Services Incorporated

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: CONTAINMENT

FIRE ZONE: 78A

LOCATION WITHIN FIRE ZONE:

POTENTIAL INTERACTION NO.: L-4-26-6

PHOTOGRAPH NO.: M98

BACKGROUND NO.: 4-4

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 8 SI-359 (8" LINE ON RIGHT SIDE OF PHOTOGRAPH)

SOURCE: 1SI-507 (SHOWN BY ARROW)

DESCRIPTION OF POSTULATED INTERACTION:

SEE EVALUATION NOTE 1

EVALUATION OF INTERACTION:

EVALUATION NOTE NO:

X ACCEPTABLE

POTENTIALLY  
UNACCEPTABLE

Sean O'Connor 6/29/82

INTERACTION ENGINEER/DATE

W A Griswold 7/29/82

VERIFIED/DATE

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POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: CONTAINMENT

FIRE ZONE: 78A

LOCATION WITHIN FIRE ZONE:

POTENTIAL INTERACTION NO.: L-4-26-7

PHOTOGRAPH NO.: M94

BACKGROUND NO.: 4-7

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 8 SI-359 (8" LINE SHOWN ON RIGHT SIDE OF PHOTOGRAPH)

SOURCE: LIGHT FIXTURE

DESCRIPTION OF POSTULATED INTERACTION:

LIGHT FIXTURE FALLS AND HITS LINE 8 SI-359

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 3

X  ACCEPTABLE

————— POTENTIALLY  
UNACCEPTABLE

Sean O'Connor    6/29/82

INTERACTION ENGINEER/DATE

W A Griswold    7/29/82

————— VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: CONTAINMENT

FIRE ZONE: 78A

LOCATION WITHIN FIRE ZONE:

POTENTIAL INTERACTION NO.: L-4-26-8

PHOTOGRAPH NO.: M94

BACKGROUND NO.: 4-7

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 8 SI-359 (8" LINE ON RIGHT SIDE OF PHOTOGRAPH)

SOURCE: FIRE PROTECTION LINE (SHOWN BY ARROW)

DESCRIPTION OF POSTULATED INTERACTION:

FIRE PROTECTION LINE FALLS AND HITS LINE 8 SI-359

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 2

X ACCEPTABLE

POTENTIALLY  
UNACCEPTABLE

Sean O'Connor 6/29/82  
INTERACTION ENGINEER / DATE

W A Griswold 7/29/82  
VERIFIED / DATE

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POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: CONTAINMENT

FIRE ZONE: 78A

LOCATION WITHIN FIRE ZONE:

POTENTIAL INTERACTION NO.: L-4-27-4

PHOTOGRAPH NO.: M85  
M86

BACKGROUND NO.: 4-4

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 6 SI-60 (6" LINE SHOWN WITH RESTRAINT)

SOURCE: 1SI-377 ( SHOWN BY ARROW)

DESCRIPTION OF POSTULATED INTERACTION:

LINE 1 SI-377 FALLS AND HITS LINE 6 SI-60.

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 2

X ACCEPTABLE

POTENTIALLY  
UNACCEPTABLE

Sean O'Connor 6/29/82  
INTERACTION ENGINEER/DATE

W A Griswold 7/29/82  
VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: CONTAINMENT

FIRE ZONE: 78A

LOCATION WITHIN FIRE ZONE:

POTENTIAL INTERACTION NO.: L-4-27-5

PHOTOGRAPH NO.: M87

BACKGROUND NO.: 4-4

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 6 SI-60 (6" LINE WITH VALVE 1869B IN LINE)

SOURCE: 2SI-317 (SHOWN IN ARROW)

DESCRIPTION OF POSTULATED INTERACTION:

LINE 2 SI-317 FALLS AND HITS LINE 6 SI-60

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 2

       X ACCEPTABLE

       POTENTIALLY UNACCEPTABLE

Sean O'Connor     6/29/82  
INTERACTION ENGINEER/DATE

W A Griswold     7/29/82  
VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: CONTAINMENT

FIRE ZONE: 78A

LOCATION WITHIN FIRE ZONE:

POTENTIAL INTERACTION NO.: L-4-28-3

PHOTOGRAPH NO.: M81

BACKGROUND NO.: 4-11

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 8 SI-89 (SHOWN WITH "S" CONFIGURATION IN CENTER OF PHOTOGRAPH)

SOURCE: 1RC-508 (SHOWN BY WHITE ARROW)

DESCRIPTION OF POSTULATED INTERACTION:

SEE EVALUATION NOTE 1

EVALUATION OF INTERACTION:

EVALUATION NOTE NO:

X

ACCEPTABLE

POTENTIALLY  
UNACCEPTABLE

Sean O'Connor 6/29/82

INTERACTION ENGINEER/DATE

W A Griswold 7/29/82

VERIFIED/DATE



POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: CONTAINMENT

FIRE ZONE: 78A

LOCATION WITHIN FIRE ZONE:

POTENTIAL INTERACTION NO.: L-4-28-6

PHOTOGRAPH NO.: M98

BACKGROUND NO.: 4-5

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 8 SI-89 (VERTICAL LINE ON LEFT SIDE OF PHOTOGRAPH)

SOURCE: 1SI-507 (SHOWN BY ARROW)

DESCRIPTION OF POSTULATED INTERACTION:

SEE EVALUATION NOTE 1

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 1

X ACCEPTABLE

POTENTIALLY  
UNACCEPTABLE

Sean O'Connor     6/29/82  
INTERACTION ENGINEER/DATE

W A Griswold     7/29/82  
VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: PRIMARY AUXILIARY BUILDING

FIRE ZONE: 59A

LOCATION WITHIN FIRE ZONE:

POTENTIAL INTERACTION NO.: L-4-31-1

PHOTOGRAPH NO.: M167

BACKGROUND NO.: 4-17

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 3"-AC-337 (NOT SHOWN ON PHOTOGRAPH)

SOURCE: 3/8"-#30 (SUPPORTED IN ANGLE IRON)

DESCRIPTION OF POSTULATED INTERACTION:

SEE EVALUATION NOTE 1

EVALUATION OF INTERACTION:

EVALUATION NOTE NO:

X ACCEPTABLE

POTENTIALLY  
UNACCEPTABLE

Sean O'Connor 6/29/82  
INTERACTION ENGINEER/DATE

W A Griswold 7/29/82  
VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: PRIMARY AUXILIARY BUILDING

FIRE ZONE: 59A

LOCATION WITHIN FIRE ZONE:

POTENTIAL INTERACTION NO.: L-4-31-2

PHOTOGRAPH NO.: M167

BACKGROUND NO.: 4-17

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 3"-AC-337 (NOT SHOWN ON PHOTOGRAPH)

SOURCE: 3/8"-#24 (3/8" TUBING INSIDE ANGLE IRON)

DESCRIPTION OF POSTULATED INTERACTION:

SEE EVALUATION NOTE 1

EVALUATION OF INTERACTION:

EVALUATION NOTE NO:

X ACCEPTABLE

POTENTIALLY  
UNACCEPTABLE

Sean O'Connor 6/29/82  
INTERACTION ENGINEER/DATE

W A Griswold 7/29/82  
VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
 INDIAN POINT 3 NUCLEAR POWER PLANT  
 SYSTEM INTERACTION STUDY  
 NONCONNECTED SYSTEMS INTERACTION  
 EVALUATION SHEET

BUILDING: PRIMARY AUXILIARY BUILDING

FIRE ZONE: 59A

LOCATION WITHIN FIRE ZONE:

POTENTIAL INTERACTION NO.: L-4-31-3

PHOTOGRAPH NO.: M166

BACKGROUND NO.: 4-17

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 3"-AC-337 (NOT SHOWN ON PHOTOGRAPH)

SOURCE: 1"-#67 (SHOWN BY ARROW)

DESCRIPTION OF POSTULATED INTERACTION:

1" WD-67 FALLS AND HITS LINE 3 AC-337

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 2

X ACCEPTABLE

POTENTIALLY  
 \_\_\_\_\_ UNACCEPTABLE

Sean O'Connor 6/29/82  
 INTERACTION ENGINEER/DATE

W A Griswold 7/29/82  
 \_\_\_\_\_ VERIFIED/DATE

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POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: PRIMARY AUXILIARY BUILDING

FIRE ZONE: 59A

LOCATION WITHIN FIRE ZONE:

POTENTIAL INTERACTION NO.: L-4-31-4

PHOTOGRAPH NO.: M168

BACKGROUND NO.: 4-17

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 3"-AC-337 (SHOWN IN LOWER RIGHT CORNER OF PHOTOGRAPH)

SOURCE: S. G. BLOWDOWN SAMPLING LINE (SHOWN BY ARROW)

DESCRIPTION OF POSTULATED INTERACTION:

STEAM GENERATOR BLOWDOWN SAMPLING LINE FALLS AND HITS LINE 3 AC-337.

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 2

X ACCEPTABLE

POTENTIALLY  
UNACCEPTABLE

Sean O'Connor 6/29/82  
INTERACTION ENGINEER/DATE

W A Griswold 7/29/82  
VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: PRIMARY AUXILIARY BUILDING

FIRE ZONE: 59A

LOCATION WITHIN FIRE ZONE:

POTENTIAL INTERACTION NO.: L-4-32-1

PHOTOGRAPH NO.: M167

BACKGROUND NO.: 4-17

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 2"-AC-337 (NOT SHOWN ON PHOTOGRAPH)

SOURCE: 3/8"-#30

DESCRIPTION OF POSTULATED INTERACTION:

SEE EVALUATION NOTE 1

EVALUATION OF INTERACTION:

EVALUATION NOTE NO:

X ACCEPTABLE

POTENTIALLY  
UNACCEPTABLE

Sean O'Connor 6/29/82  
INTERACTION ENGINEER/DATE

W A Griswold 7/29/82  
VERIFIED/DATE

Ebasco Services Incorporated

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: PRIMARY AUXILIARY BUILDING

FIRE ZONE: 59A

LOCATION WITHIN FIRE ZONE:

POTENTIAL INTERACTION NO.: L-4-32-2

PHOTOGRAPH NO.: M167

BACKGROUND NO.: 4-17

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 2"-AC-337 (NOT SHOWN ON PHOTOGRAPH)

SOURCE: 3/8"-#24 (SHOWN BY ARROWS)

DESCRIPTION OF POSTULATED INTERACTION:

SEE EVALUATION NOTE 1

EVALUATION OF INTERACTION:

EVALUATION NOTE NO:

X ACCEPTABLE

POTENTIALLY  
UNACCEPTABLE

Sean O'Connor 6/29/82  
INTERACTION ENGINEER/DATE

W A Griswold 7/29/82  
VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: PRIMARY AUXILIARY BUILDING

FIRE ZONE: 59A

LOCATION WITHIN FIRE ZONE:

POTENTIAL INTERACTION NO.: L-4-32-3

PHOTOGRAPH NO.: M166

BACKGROUND NO.: 417

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 2"-AC-337 (NOT SHOWN ON PHOTOGRAPH)

SOURCE: 1"-#67 (SHOWN BY ARROW)

DESCRIPTION OF POSTULATED INTERACTION:

1 WD-68 FALLS AND HITS LINE 2 AC-337

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 2

X ACCEPTABLE

POTENTIALLY  
UNACCEPTABLE

Sean O'Connor      6/29/82  
INTERACTION ENGINEER/DATE

W A Griswold      7/29/82  
VERIFIED/DATE



POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: PRIMARY AUXILIARY BUILDING

FIRE ZONE: 59A

LOCATION WITHIN FIRE ZONE:

POTENTIAL INTERACTION NO.: L-4-32-4

PHOTOGRAPH NO.: M168

BACKGROUND NO.: 4-17

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 2"-AC-337 (NOT SHOWN ON PHOTOGRAPH)

SOURCE: S.G. BLOWDOWN SAMPLING LINE (SHOWN BY ARROW)

DESCRIPTION OF POSTULATED INTERACTION:

STEAM GENERATOR BLOWDOWN SAMPLING LINE FALLS AND HITS LINE 2 AC-337

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 2

X ACCEPTABLE

POTENTIALLY  
UNACCEPTABLE

Sean O'Co-nor 6/29/82  
INTERACTION ENGINEER/DATE

W A Griswold 7/29/82  
VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: PRIMARY AUXILIARY BUILDING

FIRE ZONE: 5A

LOCATION WITHIN FIRE ZONE:

POTENTIAL INTERACTION NO.: L-4-36-1

PHOTOGRAPH NO.: M161  
M162

BACKGROUND NO.: 4-28

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 12"-AC-9 (12" LINE IN CENTER OF PHOTOGRAPH)

SOURCE: 2"-136 (SHOWN BY ARROW AT TOP OF PHOTOGRAPH)

DESCRIPTION OF POSTULATED INTERACTION:

2 WD-136 FALLS AND HITS LINE 12 AC-9

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 2

X ACCEPTABLE

\_\_\_\_\_ POTENTIALLY  
UNACCEPTABLE

Sean O'Connor 6/29/82  
INTERACTION ENGINEER/DATE

W A Griswold 7/29/82  
VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: PRIMARY AUXILIARY BUILDING

FIRE ZONE: 5A

LOCATION WITHIN FIRE ZONE:

POTENTIAL INTERACTION NO.: L-4-36-2

PHOTOGRAPH NO.: M161

BACKGROUND NO.: 4-28

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 12"-AC-9 (SHOWN IN CENTER OF PHOTOGRAPH)

SOURCE: 3"-125 (SHOWN BY ARROW AT RIGHT SIDE OF PHOTOGRAPH)

DESCRIPTION OF POSTULATED INTERACTION:

3 AC-125 FALLS AND HITS LINE 12 AC-9

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 2

X ACCEPTABLE

\_\_\_\_\_ POTENTIALLY  
UNACCEPTABLE

Sean O'Connor 6/29/82  
INTERACTION ENGINEER/DATE

W A Griswold 7/29/82  
VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: PRIMARY AUXILIARY BUILDING

FIRE ZONE: 5A

LOCATION WITHIN FIRE ZONE:

POTENTIAL INTERACTION NO.: L-4-36-3

PHOTOGRAPH NO.: M163  
M164

BACKGROUND NO.: 4-28

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 12"-AC-9 (12" LINE AT BOTTOM OF PHOTOGRAPH)

SOURCE: 3"-127 (SHOWN BY ARROW AT CENTER OF PHOTOGRAPH)

DESCRIPTION OF POSTULATED INTERACTION:

3 AC-127 FALLS AND HITS LINE 12-AC-9

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 2

X ACCEPTABLE

POTENTIALLY  
UNACCEPTABLE

Sean O'Connor 6/29/82  
INTERACTION ENGINEER/DATE

W A Griswold 7/29/82  
VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: PRIMARY AUXILIARY BUILDING

FIRE ZONE: 5A

LOCATION WITHIN FIRE ZONE:

POTENTIAL INTERACTION NO.: L-4-36-4

PHOTOGRAPH NO.: M165

BACKGROUND NO.: 4-28

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 12"-AC-9 (SHOWN IN CENTER OF PHOTOGRAPH)

SOURCE: 2"-119 (SHOWN BY BOTTOM ARROW)

DESCRIPTION OF POSTULATED INTERACTION:

2 WD-119 FALLS AND HITS LINE 12 AC-9

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 2

X ACCEPTABLE

POTENTIALLY  
UNACCEPTABLE

Sean O'Connor 6/29/82  
INTERACTION ENGINEER/DATE

W A Griswold 7/29/82  
VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: PRIMARY AUXILIARY BUILDING

FIRE ZONE: 5A

LOCATION WITHIN FIRE ZONE:

POTENTIAL INTERACTION NO.: L-4-36-5

PHOTOGRAPH NO.: M165

BACKGROUND NO.: 4-28

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 12"-AC-9 (SHOWN IN CENTER OF PHOTOGRAPH)

SOURCE: 2"-592 (SHOWN BY TOP ARROW)

DESCRIPTION OF POSTULATED INTERACTION:

SEE EVALUATION NOTE 1

EVALUATION OF INTERACTION:

EVALUATION NOTE NO:

X ACCEPTABLE

POTENTIALLY  
UNACCEPTABLE

Sean O'Connor 6/29/82  
INTERACTION ENGINEER/DATE

W A Griswold 7/29/82  
VERIFIED/DATE



POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: PRIMARY AUXILIARY BUILDING

FIRE ZONE: 5A

LOCATION WITHIN FIRE ZONE:

POTENTIAL INTERACTION NO.: L-4-37-2

PHOTOGRAPH NO.: M161

BACKGROUND NO.: 4-28

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 14"-AC-10 (SHOWN AT BOTTOM OF PHOTOGRAPH)

SOURCE: 3"-125 (SHOWN BY ARROW AT RIGHT SIDE OF PHOTOGRAPH)

DESCRIPTION OF POSTULATED INTERACTION:

3 AC-125 FALLS AND HITS LINE 12 AC-9

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 2

X ACCEPTABLE

POTENTIALLY  
UNACCEPTABLE

Sean O'Connor 6/29/82  
INTERACTION ENGINEER/DATE

W A Griswold 7/29/82  
VERIFIED/DATE



POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: PRIMARY AUXILIARY BUILDING

FIRE ZONE: 5A

LOCATION WITHIN FIRE ZONE:

POTENTIAL INTERACTION NO.: L-4-37-3

PHOTOGRAPH NO.: M163  
M164

BACKGROUND NO.: 4-28

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 14"-AC-10 (SHOWN IN LOWER PORTION OF PHOTOGRAPH)

SOURCE: 3"1-127 (SHOWN BY TOP ARROW)

DESCRIPTION OF POSTULATED INTERACTION:

LINE 3 AC-127 FALLS AND HITS LINE 14 AC-10

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 2

X ACCEPTABLE

\_\_\_\_\_ POTENTIALLY  
UNACCEPTABLE

Sean O'Connor 6/29/82  
INTERACTION ENGINEER/DATE

W A Griswold 7/29/82  
VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: PRIMARY AUXILIARY BUILDING

FIRE ZONE: 5A

LOCATION WITHIN FIRE ZONE:

POTENTIAL INTERACTION NO.: L-4-37-4

PHOTOGRAPH NO.: M165

BACKGROUND NO.: 4-28

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 14"-AC-10 (SHOWN IN CENTER OF PHOTOGRAPH)

SOURCE: 2"-119 (SHOWN BY BOTTOM ARROW)

DESCRIPTION OF POSTULATED INTERACTION:

LINE 2 WD-119 FALLS AND HITS LINE 14 AC-10

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 2

X ACCEPTABLE

\_\_\_\_\_ POTENTIALLY  
UNACCEPTABLE

Sean O'Connor 6/29/82  
INTERACTION ENGINEER/DATE

W A Griswold 7/29/82  
VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: PRIMARY AUXILIARY BUILDING

FIRE ZONE: 5A

LOCATION WITHIN FIRE ZONE:

POTENTIAL INTERACTION NO.: L-4-37-5

PHOTOGRAPH NO.: M165

BACKGROUND NO.: 4-28

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 14"-AC-10 (SHOWN IN CENTER OF PHOTOGRAPH)

SOURCE: 2"-592 (SHOWN BY TOP ARROW)

DESCRIPTION OF POSTULATED INTERACTION:

SEE EVALUATION NOTE 1

EVALUATION OF INTERACTION:

EVALUATION NOTE NO:

X ACCEPTABLE

POTENTIALLY  
UNACCEPTABLE

Sean O'Connor 6/29/82  
INTERACTION ENGINEER/DATE

W A Griswold 7/29/82  
VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: PRIMARY AUXILIARY BUILDING

FIRE ZONE: 69A

LOCATION WITHIN FIRE ZONE:

POTENTIAL INTERACTION NO.: L-4-39-1

PHOTOGRAPH NO.: M157

BACKGROUND NO.: 4-27

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 3/4"-AC-707

SOURCE: LIGHT FIXTURE (SHOWN BY LIGHT)

DESCRIPTION OF POSTULATED INTERACTION:

LIGHT FIXTURE FALLS AND HITS LINE 3/4 AC-707

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 5

INSUFFICIENT INFORMATION AVAILABLE UPON VISUAL INSPECTION. FURTHER INVESTIGATION NEEDED.

\_\_\_\_\_ ACCEPTABLE

\_\_\_\_\_ X \_\_\_\_\_ POTENTIALLY UNACCEPTABLE

Sean O'Connor      6/30/82  
INTERACTION ENGINEER/DATE

W A Griswold      7/29/82  
VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: PRIMARY AUXILIARY BUILDING

FIRE ZONE: 3

LOCATION WITHIN FIRE ZONE: ELEV. 15"-0

POTENTIAL INTERACTION NO.: L-4-45-1

PHOTOGRAPH NO.: M160

BACKGROUND NO.: 4-27

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 8"-AC-9 (NOT SHOWN ON PHOTOGRAPH)

SOURCE: LIGHT FIXTURE (SHOWN BY ARROW)

DESCRIPTION OF POSTULATED INTERACTION:

LIGHT FIXTURE FALLS AND HITS LINE 8 AC-9

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 3

X ACCEPTABLE

\_\_\_\_\_  
POTENTIALLY  
UNACCEPTABLE

Sean O'Connor 6/30/82  
INTERACTION ENGINEER/DATE

W A Griswold 7/29/82  
VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: PRIMARY AUXILIARY BUILDING

FIRE ZONE: 4

LOCATION WITHIN FIRE ZONE: ELEV. 15'-0

POTENTIAL INTERACTION NO.: L-4-47-1

PHOTOGRAPH NO.: M158

BACKGROUND NO.: 4-27

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 8"-AC-654 (NOT SHOWN IN PHOTOGRAPH)

SOURCE: MONORAIL ( SHOWN BY ARROW)

DESCRIPTION OF POSTULATED INTERACTION:

MONORAIL FALLS AND HITS LINE 8 AC-654

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 5

WEIGHT OF MONORAIL IS SUFFICIENT TO CAUSE DAMAGE TO LINE  
8 AC-654

\_\_\_\_\_ ACCEPTABLE

\_\_\_\_\_ X \_\_\_\_\_ POTENTIALLY  
UNACCEPTABLE

Sean O'Connor 6/30/82  
INTERACTION ENGINEER/DATE

W A Griswold 7/29/82  
VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: PRIMARY AUXILIARY BUILDING

FIRE ZONE: 4

LOCATION WITHIN FIRE ZONE: 15'-0

POTENTIAL INTERACTION NO.: L-4-47-2

PHOTOGRAPH NO.: M158

BACKGROUND NO.: 4-27

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 8"-AC-654 (NOT SHOWN IN PHOTOGRAPH)

SOURCE: LIGHT FIXTURE

DESCRIPTION OF POSTULATED INTERACTION:

LIGHT FIXTURE FALLS AND HITS LINE 8 AC-654

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 3

ACCEPTABLE

POTENTIALLY  
UNACCEPTABLE

Sean O'Connor 6/30/82  
INTERACTION ENGINEER/DATE

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VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: PRIMARY AUXILIARY BUILDING

FIRE ZONE: 4

LOCATION WITHIN FIRE ZONE: ELEV. 15'-0

POTENTIAL INTERACTION NO.: L-4-47-3

PHOTOGRAPH NO.: M159

BACKGROUND NO.: 4-27

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 8"-AC-654 (NOT SHOWN IN PHOTOGRAPH)

SOURCE: 2"-725 (SHOWN BY TOP ARROW)

DESCRIPTION OF POSTULATED INTERACTION:

SEE EVALUATION NOTE 1

EVALUATION OF INTERACTION:

EVALUATION NOTE NO:

  x   ACCEPTABLE

\_\_\_\_\_  
POTENTIALLY  
UNACCEPTABLE

Sean O'Connor 6/30/82  
INTERACTION ENGINEER/DATE

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POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: PRIMARY AUXILIARY BUILDING

FIRE ZONE: 4

LOCATION WITHIN FIRE ZONE: ELEV. 15'-0

POTENTIAL INTERACTION NO.: L-4-47-4

PHOTOGRAPH NO.: M159

BACKGROUND NO.: 4-27

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 8"-AC-654 (NOT SHOWN IN PHOTOGRAPH)

SOURCE: 4"-FLOOR DRN (SHOWN BY BOTTOM ARROW)

DESCRIPTION OF POSTULATED INTERACTION:

4" FLOOR DRAIN FALLS AND HITS LINE 8 AC-654

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 2

X ACCEPTABLE

POTENTIALLY  
UNACCEPTABLE

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POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: PRIMARY AUXILIARY BUILDING

FIRE ZONE: 4

LOCATION WITHIN FIRE ZONE: ELEV. 15'-0

POTENTIAL INTERACTION NO.: L-4-48-1

PHOTOGRAPH NO.: M158

BACKGROUND NO.: 4-27

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 3/4"-AC-654

SOURCE: MONORAIL (SHOWN BY ARROW)

DESCRIPTION OF POSTULATED INTERACTION:

MONORAIL FALLS AND HITS LINE 3/4" AC-654

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 5

WEIGHT OF MONORAIL IS SUFFICIENT TO DAMAGE LINE 3/4" AC-654

ACCEPTABLE

X

POTENTIALLY  
UNACCEPTABLE

Sean O'Connor 6/30/82  
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POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: PRIMARY AUXILIARY BUILDING

FIRE ZONE: 4

LOCATION WITHIN FIRE ZONE: ELEV. 15'-0

POTENTIAL INTERACTION NO.: L-4-48-2

PHOTOGRAPH NO.: M158

BACKGROUND NO.: 4-27

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 3/4"-AC-654

SOURCE: LIGHT FIXTURE

DESCRIPTION OF POSTULATED INTERACTION:

LIGHT FIXTURE FALLS AND HITS LINE 3/4 AC-654

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 3

X ACCEPTABLE

\_\_\_\_\_  
POTENTIALLY  
UNACCEPTABLE

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POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: PRIMARY AUXILIARY BUILDING

FIRE ZONE: 4

LOCATION WITHIN FIRE ZONE: ELEV. 15'-0

POTENTIAL INTERACTION NO.: L-4-48-3

PHOTOGRAPH NO.: M159

BACKGROUND NO.: 4-27

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 3/4"-AC-654

SOURCE: 2"-725 (SHOWN BY TOP ARROW)

DESCRIPTION OF POSTULATED INTERACTION:

SEE EVALUATION NOTE 1

EVALUATION OF INTERACTION:

EVALUATION NOTE NO:

X ACCEPTABLE

~~POTENTIALLY UNACCEPTABLE~~

Sean O'Connor 6/30/82  
INTERACTION ENGINEER/DATE

W A Griswold 7/29/82  
VERIFIED/DATE



POWER AUTHORITY OF THE STATE OF NEW YORK  
 INDIAN POINT 3 NUCLEAR POWER PLANT  
 SYSTEM INTERACTION STUDY  
 NONCONNECTED SYSTEMS INTERACTION  
 EVALUATION SHEET

BUILDING: CONTAINMENT

FIRE ZONE: 71A

LOCATION WITHIN FIRE ZONE:

POTENTIAL INTERACTION NO.: V-4-3-1

PHOTOGRAPH NO.: M20

BACKGROUND NO.: 4-10

## IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: AC-731 (NOT SHOWN ON PHOTOGRAPH)

SOURCE: RCP #32 STANDPIPE &amp; PIPING (#12) (SHOWN BY ARROW)

## DESCRIPTION OF POSTULATED INTERACTION:

SEE NOTE 1.

## EVALUATION OF INTERACTION:

EVALUATION NOTE NO:

. X ACCEPTABLEPOTENTIALLY  
UNACCEPTABLESean O'Connor 6/29/82  
INTERACTION ENGINEER/DATEW A Griswold 7/29/82  
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 INDIAN POINT 3 NUCLEAR POWER PLANT  
 SYSTEM INTERACTION STUDY  
 NONCONNECTED SYSTEMS INTERACTION  
 EVALUATION SHEET

BUILDING: CONTAINMENT

FIRE ZONE: 72A

LOCATION WITHIN FIRE ZONE:

POTENTIAL INTERACTION NO.: V-4-7-1

PHOTOGRAPH NO.: M10

BACKGROUND NO.: 4-10

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: AC-730 (PARTIALLY SHOWN IN CENTER OF PHOTOGRAPH)

SOURCE: 2"-SA-34 (SHOWN BY ARROW ON LEFT SIDE OF PHOTOGRAPH)

DESCRIPTION OF POSTULATED INTERACTION:

LINE 2 SA-34 FALLS AND HITS VALVE AC-730

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 3

LINE 2 SA-34 IS LOCATED BELOW VALVE MOTOR DAMAGE TO VALVE BODY IS NOT CREDIBLE.

   X    ACCEPTABLE

\_\_\_\_\_ POTENTIALLY  
 \_\_\_\_\_ UNACCEPTABLE

Sean O'Connor    6/30/82  
 INTERACTION ENGINEER/DATE

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POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: CONTAINMENT

FIRE ZONE: 72A

LOCATION WITHIN FIRE ZONE:

POTENTIAL INTERACTION NO.: V-4-7-2

PHOTOGRAPH NO.: M10

BACKGROUND NO.: 4-10

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: AC-730 (PARTIALLY SHOWN IN CENTER OF PHOTOGRAPH)

SOURCE: 2"-RC-552 (SHOWN BY ARROW ON RIGHT SIDE OF PHOTOGRAPH)

DESCRIPTION OF POSTULATED INTERACTION:

SEE EVALUATION NOTE 1

EVALUATION OF INTERACTION:

EVALUATION NOTE NO:

X ACCEPTABLE

POTENTIALLY  
UNACCEPTABLE

Sean O'Connor 6/30/82  
INTERACTION ENGINEER/DATE

W A Griswold 7/29/82  
VERIFIED/DATE



POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: CONTAINMENT

FIRE ZONE: 78A

LOCATION WITHIN FIRE ZONE:

POTENTIAL INTERACTION NO.: V-4-29-1

PHOTOGRAPH NO.: M90

M96

BACKGROUND NO.: 4-5

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: MOV-747 (SHOWN IN RIGHT SIDE OF PHOTOGRAPH)

SOURCE: 1 SI-507 (SHOWN BY ARROW)

DESCRIPTION OF POSTULATED INTERACTION:

SEE EVALUATION NOTE 1

EVALUATION OF INTERACTION:

EVALUATION NOTE NO:

    X     ACCEPTABLE

POTENTIALLY  
                     UNACCEPTABLE

Sean O'Connor    6/30/82  
INTERACTION ENGINEER/DATE

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INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: CONTAINMENT

FIRE ZONE: 78A

LOCATION WITHIN FIRE ZONE:

POTENTIAL INTERACTION NO.: V-4-32-1

PHOTOGRAPH NO.: M91

BACKGROUND NO.: 4-5

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: MOTOR HCV 638 (SHOWN IN CENTER OF PHOTOGRAPH)

SOURCE: 1 SI-507 (SHOWN BY ARROW)

DESCRIPTION OF POSTULATED INTERACTION:

SEE EVALUATION NOTE 1

EVALUATION OF INTERACTION:

EVALUATION NOTE NO:

X ACCEPTABLE

\_\_\_\_\_  
POTENTIALLY UNACCEPTABLE

Sean O'Connor 6/30/82  
INTERACTION ENGINEER/DATE

W A Griswold 7/29/82  
VERIFIED/DATE



POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: CONTAINMENT

FIRE ZONE: 78A

LOCATION WITHIN FIRE ZONE:

POTENTIAL INTERACTION NO.: V-4-35-5

PHOTOGRAPH NO.: M95

BACKGROUND NO.: 4-7

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: MOV-899A (SHOWN ON RIGHT SIDE OF PHOTOGRAPH)

SOURCE: FIRE PROTECTION LINE (SHOWN BY ARROW)

DESCRIPTION OF POSTULATED INTERACTION:

2" FIRE PROTECTION LINE FALLS AND HITS VALVE 899A

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 1

FURTHER INVESTIGATION. REQUIRED.

X ACCEPTABLE

POTENTIALLY  
UNACCEPTABLE

Sean O'Connor 6/30/82  
INTERACTION ENGINEER/DATE

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INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: CONTAINMENT

FIRE ZONE: 78A

LOCATION WITHIN FIRE ZONE:

POTENTIAL INTERACTION NO.: V-4-40-2

PHOTOGRAPH NO.: M87

BACKGROUND NO.: 4-9

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 1869B (SHOWN IN CENTER OF PHOTOGRAPH)

SOURCE: 2 AC-317 (SHOWN BY ARROW)

DESCRIPTION OF POSTULATED INTERACTION:

LINE 2 AC-317 FALLS AND HITS VALVE 1869B

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 3

  X   ACCEPTABLE

\_\_\_\_\_ POTENTIALLY  
UNACCEPTABLE

Sean O'Connor 6/30/82  
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VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: PRIMARY AUXILIARY BUILDING

FIRE ZONE: 59A

LOCATION WITHIN FIRE ZONE: EL 51'-0

POTENTIAL INTERACTION NO.: V-4-48-1

PHOTOGRAPH NO.: M167

BACKGROUND NO.: 4-17

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 3"-AC-MOV-743 (NOT SHOWN ON PHOTOGRAPH)

SOURCE: 3/8"-#30 (IN TRACK SHOWN BY ARROWS)

DESCRIPTION OF POSTULATED INTERACTION:

SEE EVALUATION NOTE 1

EVALUATION OF INTERACTION:

EVALUATION NOTE NO:

X  ACCEPTABLE

POTENTIALLY  
UNACCEPTABLE

Sean O'Connor 6/30/82   
INTERACTION ENGINEER/DATE

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POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: PRIMARY AUXILIARY BUILDING

FIRE ZONE: 59A

LOCATION WITHIN FIRE ZONE: EL 51'-0

POTENTIAL INTERACTION NO.: V-4-48-2

PHOTOGRAPH NO.: M167

BACKGROUND NO.: 4-17

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 3"-AC-MOV-743 (NOT SHOWN)

SOURCE: 3/4"-#24 (IN TRACK SHOWN BY ARROWS)

DESCRIPTION OF POSTULATED INTERACTION:

SEE EVALUATION NOTE 1

EVALUATION OF INTERACTION:

EVALUATION NOTE NO:

X ACCEPTABLE

\_\_\_\_\_  
POTENTIALLY UNACCEPTABLE

Sean O'Connor 6/30/82  
INTERACTION ENGINEER/DATE

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VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: PRIMARY AUXILIARY BUILDING

FIRE ZONE: 59A

LOCATION WITHIN FIRE ZONE: EL 51'-0

POTENTIAL INTERACTION NO.: V-4-48-3

PHOTOGRAPH NO.: M166

BACKGROUND NO.: 4-17

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 3"-AC-MOV-743 (NOT SHOWN IN PHOTOGRAPH)

SOURCE: 1"-67 (SHOWN BY ARROW)

DESCRIPTION OF POSTULATED INTERACTION:

1 WD-67 FALLS AND HITS VALVE AC-743

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 4

DAMAGE TO VALVE IS NOT CREDIBLE SINCE LINE WILL NOT DIRECTLY HIT VALVE.

X ACCEPTABLE

POTENTIALLY  
UNACCEPTABLE

Sean O'Connor 6/30/82  
INTERACTION ENGINEER/DATE

W A Griswold 7/29/82  
VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: PRIMARY AUXILIARY BUILDING

FIRE ZONE: 59A

LOCATION WITHIN FIRE ZONE: EL 51'-0

POTENTIAL INTERACTION NO.: V-4-48-4

PHOTOGRAPH NO.: M168

BACKGROUND NO.: 4-17

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 3"-AC-MOV-743 (NOT SHOWN IN PHOTOGRAPH)

SOURCE: S.G. BLOWDOWN SAMPLING LINES (SHOWN BY ARROW)

DESCRIPTION OF POSTULATED INTERACTION:

STEAM GENERATOR BLOWDOWN SAMPLING LINE FALLS AND HITS VALVE AC-743

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 3

X ACCEPTABLE

POTENTIALLY  
UNACCEPTABLE

Sean O'Connor 6/30/82  
INTERACTION ENGINEER/DATE

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VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: PRIMARY AUXILIARY BUILDING

FIRE ZONE: 59A

LOCATION WITHIN FIRE ZONE: EL 51'-0

POTENTIAL INTERACTION NO.: V-4-49-1

PHOTOGRAPH NO.: M167

BACKGROUND NO.: 4-17

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 2"-AC-MOV-1870 (NOT SHOWN IN PHOTOGRAPH)

SOURCE: 3/8"-#30 (SHOWN BY ARROW)

DESCRIPTION OF POSTULATED INTERACTION:

SEE EVALUATION NOTE 1

EVALUATION OF INTERACTION:

EVALUATION NOTE NO:

X  
ACCEPTABLE

POTENTIALLY  
UNACCEPTABLE

Sean O'Connor 6/30/82  
INTERACTION ENGINEER/DATE

W A Griswold 7/29/82  
VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: PRIMARY AUXILIARY BUILDING

FIRE ZONE: 59A

LOCATION WITHIN FIRE ZONE: EL 51'-0

POTENTIAL INTERACTION NO.: V-4-49-2

PHOTOGRAPH NO.: M167

BACKGROUND NO.: 4-17

## IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 2"-AC-MOV-1870 (NOT SHOWN IN PHOTOGRAPHS)

SOURCE: 3/4"-#24 (SHOWN BY ARROWS)

## DESCRIPTION OF POSTULATED INTERACTION:

SEE EVALUATION NOTE 1

## EVALUATION OF INTERACTION:

EVALUATION NOTE NO:

 ACCEPTABLE POTENTIALLY  
UNACCEPTABLESean O'Connor 6/30/82  
INTERACTION ENGINEER/DATEW A Griswold 7/29/82  
VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: PRIMARY AUXILIARY BUILDING

FIRE ZONE: 59A

LOCATION WITHIN FIRE ZONE: EL 51'-0

POTENTIAL INTERACTION NO.: V-4-49-3

PHOTOGRAPH NO.: M166

BACKGROUND NO.: 4-17

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 2"-AC-MOV-1870 (NOT SHOWN IN PHOTOGRAPH)

SOURCE: 1"-67 (SHOWN BY ARROW)

DESCRIPTION OF POSTULATED INTERACTION:

LINE 1 WD-67 FALLS AND HITS VALVE AC-1870

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 4

LINE WILL NOT DIRECTLY HIT VALVE.

         X          ACCEPTABLE

         POTENTIALLY  
         UNACCEPTABLE

Sean O'Connor 6/30/82  
INTERACTION ENGINEER/DATE

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         VERIFIED/DATE

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INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: PRIMARY AUXILIARY BUILDING

FIRE ZONE: 59A

LOCATION WITHIN FIRE ZONE: EL 51'-0

POTENTIAL INTERACTION NO.: V-4-49-4

PHOTOGRAPH NO.: M168

BACKGROUND NO.: 4-17

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 2"-AC-MOV-1870 (NOT SHOWN IN PHOTOGRAPH)

SOURCE: S.G. BLOWDOWN SAMPLING LINES (SHOWN BY ARROW)

DESCRIPTION OF POSTULATED INTERACTION:

STEAM GENERATOR BLOWDOWN SAMPLING LINE FALLS AND HITS VALVE AC-1870

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 3

X ACCEPTABLE

POTENTIALLY  
UNACCEPTABLE

Sean O'Connor 6/30/82  
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INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: PRIMARY AUXILIARY BUILDING

FIRE ZONE: 69A

LOCATION WITHIN FIRE ZONE: EL 51'-0

POTENTIAL INTERACTION NO.: V-4-52-2

PHOTOGRAPH NO.: M157

BACKGROUND NO.: 4-27

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 3/4"-AC-740B (NOT SHOWN ON PHOTOGRAPH)

SOURCE: LIGHT FIXTURE (SHOWN BY ARROW)

DESCRIPTION OF POSTULATED INTERACTION:

LIGHT FIXTURE FALLS AND HITS VALVE AC-740B

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 5

FURTHER INVESTIGATION NEEDED.

\_\_\_\_\_ ACCEPTABLE

\_\_\_\_\_ X \_\_\_\_\_ POTENTIALLY UNACCEPTABLE

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INTERACTION ENGINEER/DATE

W A Griswold 7/29/82  
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 INDIAN POINT 3 NUCLEAR POWER PLANT  
 SYSTEM INTERACTION STUDY  
 NONCONNECTED SYSTEMS INTERACTION  
 EVALUATION SHEET

BUILDING: PRIMARY AUXILIARY BUILDING

FIRE ZONE: 69A

LOCATION WITHIN FIRE ZONE: EL 15'-0

POTENTIAL INTERACTION NO.: V-4-53-1

PHOTOGRAPH NO.: M156

BACKGROUND NO.: 4-27

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 8"-AC-739A (NOT SHOWN IN PHOTOGRAPH)

SOURCE: 2"-725 (SHOWN BY ARROW)

DESCRIPTION OF POSTULATED INTERACTION:

SEE EVALUATION NOTE 1

EVALUATION OF INTERACTION:

EVALUATION NOTE NO:

X ACCEPTABLE

~~POTENTIALLY UNACCEPTABLE~~

Sean O'Connor      6/30/82  
 INTERACTION ENGINEER/DATE

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INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: PRIMARY AUXILIARY BUILDING

FIRE ZONE: 69A

LOCATION WITHIN FIRE ZONE: EL 15'-0

POTENTIAL INTERACTION NO.: V-4-53-2

PHOTOGRAPH NO.: M157

BACKGROUND NO.: 4-27

## IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 8"-AC-739A (NOT SHOWN IN PHOTOGRAPH)

SOURCE: LIGHT FIXTURE (SHOWN BY ARROW)

## DESCRIPTION OF POSTULATED INTERACTION:

LIGHT FIXTURE FALLS AND HITS VALVE 739A

## EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 3

  X   ACCEPTABLE

\_\_\_\_\_ POTENTIALLY  
UNACCEPTABLE

Sean O'Connor     6/30/82  
INTERACTION ENGINEER/DATE

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VERIFIED/DATE

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INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: PRIMARY AUXILIARY BUILDING

FIRE ZONE: 69A

LOCATION WITHIN FIRE ZONE: EL 15'-0

POTENTIAL INTERACTION NO.: V-4-55-1

PHOTOGRAPH NO.: M156

BACKGROUND NO.: 4-27

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 14"-AC-735B (NOT SHOWN IN PHOTOGRAPH)

SOURCE: 2"-725 (SHOWN BY ARROW)

DESCRIPTION OF POSTULATED INTERACTION:

SEE EVALUATION NOTE 1

EVALUATION OF INTERACTION:

EVALUATION NOTE NO:

X ACCEPTABLE

~~POTENTIALLY  
UNACCEPTABLE~~

Sean O'Connor 6/30/82  
INTERACTION ENGINEER/DATE

W A Griswold 7/29/82  
VERIFIED/DATE

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INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: PRIMARY AUXILIARY BUILDING

FIRE ZONE: 69A

LOCATION WITHIN FIRE ZONE: EL 51'-0

POTENTIAL INTERACTION NO.: V-4-55-2

PHOTOGRAPH NO.: M157

BACKGROUND NO.: 4-27

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 14"-AC-735B (NOT SHOWN ON PHOTOGRAPH)

SOURCE: LIGHT FIXTURE (SHOWN BY ARROW)

DESCRIPTION OF POSTULATED INTERACTION:

LIGHT FIXTURE FALLS AND HITS VALVE AC-735B

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 3

X ACCEPTABLE

POTENTIALLY  
UNACCEPTABLE

Sean O'Connor 6/30/82  
INTERACTION ENGINEER/DATE

W A Griswold 7/29/82  
VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: PRIMARY AUXILIARY BUILDING

FIRE ZONE: 69A

LOCATION WITHIN FIRE ZONE: EL 51'-0

POTENTIAL INTERACTION NO.: V-4-56-1

PHOTOGRAPH NO.: M156

BACKGROUND NO.: 4-27

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: AC-1867B (3/4" FLUSH CONN) (SHOWN IN LOWER PORTION OF PHOTOGRAPH)

SOURCE: 2"-725 (SHOWN BY ARROW)

DESCRIPTION OF POSTULATED INTERACTION:

SEE EVALUATION NOTE 1

EVALUATION OF INTERACTION:

EVALUATION NOTE NO:

      X       ACCEPTABLE

\_\_\_\_\_ POTENTIALLY  
UNACCEPTABLE

Sean O'Connor      6/30/82  
INTERACTION ENGINEER/DATE

W A Griswold      7/29/82  
VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: PRIMARY AUXILIARY BUILDING

FIRE ZONE: 69A

LOCATION WITHIN FIRE ZONE: EL 15'-0

POTENTIAL INTERACTION NO.: V-4-57-1

PHOTOGRAPH NO.: M156

BACKGROUND NO.: 4-27

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 14"-AC-735A (NOT SHOWN IN PHOTOGRAPH)

SOURCE: 2"-725 (SHOWN BY ARROW)

DESCRIPTION OF POSTULATED INTERACTION:

SEE EVALUATION NOTE 1

EVALUATION OF INTERACTION:

EVALUATION NOTE NO:

X ACCEPTABLE

\_\_\_\_\_  
POTENTIALLY  
UNACCEPTABLE

Sean O'Connor 6/30/82  
INTERACTION ENGINEER/DATE

W A Griswold 7/29/82  
\_\_\_\_\_  
VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: PRIMARY AUXILIARY BUILDING

FIRE ZONE: 69A

LOCATION WITHIN FIRE ZONE: EL 51'-0

POTENTIAL INTERACTION NO.: V-4-57-2

PHOTOGRAPH NO.: M157

BACKGROUND NO.: 4-27

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 14"-AC-735A (NOT SHOWN IN PHOTOGRAPH)

SOURCE: LIGHT FIXTURE (SHOWN BY ARROW)

DESCRIPTION OF POSTULATED INTERACTION:

LIGHT FIXTURE FALLS AND HITS 14" VALVE #735A

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 3

       X        ACCEPTABLE

       POTENTIALLY  
       UNACCEPTABLE

Sean O'Connor      6/30/82  
INTERACTION ENGINEER / DATE

W A Griswold      7/29/82  
       VERIFIED / DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: PRIMARY AUXILILARY BUILDING

FIRE ZONE: 69A

LOCATION WITHIN FIRE ZONE: EL 51'-0

POTENTIAL INTERACTION NO.: V-4-58-2

PHOTOGRAPH NO.: M157

BACKGROUND NO.: 4-27

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: AC-1867A (3/4" FLUSH CONN)

SOURCE: LIGHT FIXTURE

DESCRIPTION OF POSTULATED INTERACTION:

LIGHT FIXTURE FALLS AND HITS VALVE 1867A

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 5

EXTENT OF DAMAGE TO VALVE 1867A UNDETERMINABLE BY VISUAL INSPECTION.  
FURTHER INVESTIGATION NEEDED.

_____ ACCEPTABLE	X	_____ POTENTIALLY UNACCEPTABLE
------------------	---	-----------------------------------

Sean O'Connor 6/30/82  
INTERACTION ENGINEER/DATE

W A Griswold 7/29/82  
VERIFIED/DATE



POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: PRIMARY AUXILIARY BUILDING

FIRE ZONE: 69A

LOCATION WITHIN FIRE ZONE: EL 51'-0

POTENTIAL INTERACTION NO.: V-4-59-1

PHOTOGRAPH NO.: M156

BACKGROUND NO.: 4-27

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 8"-AC-654 (NOT SHOWN ON PHOTOGRAPH)

SOURCE: 2"-725 (SHOWN BY ARROW)

DESCRIPTION OF POSTULATED INTERACTION:

SEE EVALUATION NOTE 1

EVALUATION OF INTERACTION:

EVALUATION NOTE NO:

X ACCEPTABLE

~~\_\_\_\_\_~~ POTENTIALLY UNACCEPTABLE

Sean O'Connor 6/30/82  
INTERACTION ENGINEER/DATE

W A Griswold 7/29/82  
VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: PRIMARY AUXILIARY BUILDING

FIRE ZONE: 69A

LOCATION WITHIN FIRE ZONE: EL 51'-0

POTENTIAL INTERACTION NO.: V-4-59-2

PHOTOGRAPH NO.: M157

BACKGROUND NO.: 4-27

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 8"-AC-739B (NOT SHOWN ON PHOTOGRAPH)

SOURCE: LIGHT FIXTURE (SHOWN BY ARROW)

DESCRIPTION OF POSTULATED INTERACTION:

LIGHT FIXTURE FALLS AND HITS VALVE AC-739B

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 3

X  ACCEPTABLE

POTENTIALLY  
UNACCEPTABLE

Sean O'Connor 6/30/82   
INTERACTION ENGINEER/DATE

W A Griswold 7/29/82   
VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: PRIMARY AUXILIARY BUILDING

FIRE ZONE: 4

LOCATION WITHIN FIRE ZONE: ELEV 15'-0

POTENTIAL INTERACTION NO.: V-4-65-1

PHOTOGRAPH NO.: M158

BACKGROUND NO.: 4-27

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 8"-AC-738B (NOT SHOWN ON PHOTOGRAPH)

SOURCE: MONORAIL (SHOWN BY ARROW)

DESCRIPTION OF POSTULATED INTERACTION:

MONORAIL FALLS AND HITS VALVE AC-738B

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 5

EXTENT OF DAMAGE TO VALVE 738B IS UNDETERMINABLE WITHOUT FURTHER INVESTIGATION.

\_\_\_\_\_ ACCEPTABLE

\_\_\_\_\_ X \_\_\_\_\_ POTENTIALLY UNACCEPTABLE

Sean O'Connor 6/30/82  
INTERACTION ENGINEER/DATE

W A Griswold 7/29/82  
VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: PRIMARY AUXILIARY BUILDING

FIRE ZONE: 4

LOCATION WITHIN FIRE ZONE: ELEV 51'-0

POTENTIAL INTERACTION NO.: V-4-65-2

PHOTOGRAPH NO.: M158

BACKGROUND NO.: 4-27

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 8"-AC-738B (NOT SHOWN ON PHOTOGRAPH)

SOURCE: LIGHT FIXTURE

DESCRIPTION OF POSTULATED INTERACTION:

LIGHT FIXTURE FALLS AND HITS VALVE AC-738B

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 3

    X     ACCEPTABLE

\_\_\_\_\_ POTENTIALLY  
UNACCEPTABLE

Sean O'Connor 6/30/82  
INTERACTION ENGINEER/DATE

W A Griswold 7/29/82  
VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
 INDIAN POINT 3 NUCLEAR POWER PLANT  
 SYSTEM INTERACTION STUDY  
 NONCONNECTED SYSTEMS INTERACTION  
 EVALUATION SHEET

BUILDING: PRIMARY AUXILIARY BUILDING

FIRE ZONE: 4

LOCATION WITHIN FIRE ZONE: ELEV 51'-0

POTENTIAL INTERACTION NO.: V-4-66-1

PHOTOGRAPH NO.: M158

BACKGROUND NO.: 4-27

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: AC-1866D (3/4" DRN) (NOT SHOWN ON PHOTOGRAPH)

SOURCE: MONORAIL (SHOWN BY ARROW)

DESCRIPTION OF POSTULATED INTERACTION:

MONORAIL FALLS AND HITS VALVE 1866D

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 5

WEIGHT OF MONORAIL IS SUFFICIENT TO CAUSE DAMAGE TO VALVE 1866D

\_\_\_\_\_ ACCEPTABLE

X  
\_\_\_\_\_

POTENTIALLY  
UNACCEPTABLE

Sean O'Connor 6/30/82  
INTERACTION ENGINEER/DATE

W A Griswold 7/29/82  
VERIFIED/DATE

Ebasco Services Incorporated

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: PRIMARY AUXILIARY BUILDING

FIRE ZONE: 4

LOCATION WITHIN FIRE ZONE: ELEV 51'-0

POTENTIAL INTERACTION NO.: V-4-66-2

PHOTOGRAPH NO.: M158

BACKGROUND NO.: 4-27

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: AC-1866D (3/4" DRN) (NOT SHOWN ON PHOTOGRAPH)

SOURCE: LIGHT FIXTURE

DESCRIPTION OF POSTULATED INTERACTION:

LIGHT FIXTURE FALLS AND HITS VALVE 1866D

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 5

INSUFFICIENT INFORMATION AVAILABLE TO PROPERLY EVALUATE INTERACTION.  
FURTHER INFORMATION NEEDED.

\_\_\_\_\_ ACCEPTABLE

\_\_\_\_\_ X \_\_\_\_\_ POTENTIALLY UNACCEPTABLE

Sean O'Connor 6/30/82  
INTERACTION ENGINEER/DATE

W A Griswold 7/29/82  
VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: PRIMARY AUXILIARY BUILDING

FIRE ZONE: 4

LOCATION WITHIN FIRE ZONE: ELEV. 51'-0

POTENTIAL INTERACTION NO.: V-4-67-1

PHOTOGRAPH NO.: M158

BACKGROUND NO.: 4-27

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: AC-1866C (3/4" DRN)

SOURCE: MONORAIL (SHOWN BY ARROW)

DESCRIPTION OF POSTULATED INTERACTION:

MONORAIL FALLS AND HITS VALVE 1866C

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 5

MONORAIL WILL DAMAGE VALVE 1866C

\_\_\_\_\_ ACCEPTABLE

\_\_\_\_\_ X \_\_\_\_\_ POTENTIALLY UNACCEPTABLE

Sean O'Connor 6/30/82  
INTERACTION ENGINEER/DATE

W A Griswold 7/29/82  
VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: PRIMARY AUXILIARY BUILDING

FIRE ZONE: 4

LOCATION WITHIN FIRE ZONE: ELEV. 51'-0

POTENTIAL INTERACTION NO.: V-4-67-2

PHOTOGRAPH NO.: M158

BACKGROUND NO.: 4-27

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: AC-1866C (3/4" DRN) (NOT SHOWN ON PHOTOGRAPHS)

SOURCE: LIGHT FIXTURE

DESCRIPTION OF POSTULATED INTERACTION:

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 5

EXTENT OF DAMAGE UNDETERMINABLE UPON VISUAL INSPECTION. FURTHER INVESTIGATION NEEDED.

_____ ACCEPTABLE	X	_____ POTENTIALLY UNACCEPTABLE
<u>Sean O'Connor 6/30/82</u> INTERACTION ENGINEER/DATE		<u>W A Griswold 7/29/82</u> VERIFIED/DATE



POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: PRIMARY AUXILIARY BUILDING

FIRE ZONE: 4

LOCATION WITHIN FIRE ZONE: ELEV. 51'-0

POTENTIAL INTERACTION NO.: V-4-68-1

PHOTOGRAPH NO.: M158

BACKGROUND NO.: 4-27

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: AC-A-101 (3/4"DRN) (NOT SHOWN ON PHOTOGRAPH)

SOURCE: MONORAIL

DESCRIPTION OF POSTULATED INTERACTION:

MONORAIL FALLS AND HITS VALVE AC-A-101

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 5

EXTENT OF DAMAGE CAUSED BY MONORAIL TO VALVE AC-A-101 TO BE DETERMINED.

\_\_\_\_\_ ACCEPTABLE

\_\_\_\_\_ X \_\_\_\_\_ POTENTIALLY UNACCEPTABLE

Sean O'Connor 6/30/82  
INTERACTION ENGINEER/DATE

W A Griswold 7/29/82  
VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: PRIMARY AUXILIARY BUILDING

FIRE ZONE: 4

LOCATION WITHIN FIRE ZONE: ELEV 51'-0

POTENTIAL INTERACTION NO.: V-4-68-2

PHOTOGRAPH NO.: M158

BACKGROUND NO.: 4-27

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: AC-A-101 (3/4" DRN)

SOURCE: LIGHT FIXTURE

DESCRIPTION OF POSTULATED INTERACTION:

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 5

EXTENT OF DAMAGE TO VALVE AC-A-101 IS UNDETERMINABLE BY VISUAL  
INSPECTION. FURTHER INVESTIGATION NEEDED.

\_\_\_\_\_ ACCEPTABLE

\_\_\_\_\_ X \_\_\_\_\_ POTENTIALLY UNACCEPTABLE

Sean O'Connor 6/30/82  
INTERACTION ENGINEER/DATE

W A Griswold 7/29/82  
VERIFIED/DATE

Postulated Failure Modes

MECHANICAL FAILURES

- M - 1 Ruptured Pipe or Tube
- M - 2 Crimped or Collapsed Pipe or Tube
- M - 3 Loss of Function (Pump, Fan, Blowers etc. )
- M - 4 Loss of Valve Motive Power
- M - 5 Failure of or damage to Valve Actuating Mechanism
- M - 6 Other (Explain)

ELECTRICAL FAILURES

- E - 1 Open Circuit
- E - 2 Short Circuit
- E - 3 Other (Explain)

INSTRUMENTATION & CONTROL FAILURES

- C - 1 Fail High
- C - 2 Fail Low
- C - 3 Fail Open
- C - 4 Fail Closed
- C - 5 Loss of Motive Power
- C - 6 Other (Explain)

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 5 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
FMEA PREPARATION

SYSTEM NO 4

SYSTEM NAME Residual Heat Removal System

FMEA CATEGORY

NON-CONNECTED X

INTERCONNECTED \_\_\_\_\_

R. G. Chopra 2/7/83  
PREPARED BY/DATE

W. J. ... 3/21/83  
CHECKED BY/DATE

W. A. Griswold 4-21-83  
VERIFIED BY/DATE

Ebasco Services Incorporated

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 SYSTEMS INTERACTION STUDY  
FAILURE MODES AND EFFECTS ANALYSIS  
OF POTENTIALLY UNACCEPTABLE INTERACTIONS

FMEA NUMBER: 4-M-1

Interaction Number(s): L-4-39-1

Fire Zone: 69A

Target Component(s)  
Number, Description & Function:

3/4-AC-707; Local Sample Line off 12" line #9 (From RHR Pump #31 to RHR HXR #31).

Postulated Failure Mode(s)  
and Evaluation:

- M-1-(A); Loss of fluid from the 3/4" sampling line (off 12" line) is minimal.  
Line has no safety functions.
- M-2-(A); No loss of fluid. Line has no safety function.

<u>X</u> Acceptable	<u>/ 1 ( ) 2 ( ) 3 ( ) 4 ( )</u> Potentially Unacceptable/Safety Function Affected
<u>R Chopra                    2/7/83</u> EVALUATING ENGINEER/DATE	<u>T P Ruggiero    3/21/83</u> CHECKED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 SYSTEMS INTERACTION STUDY  
FAILURE MODES AND EFFECTS ANALYSIS  
OF POTENTIALLY UNACCEPTABLE INTERACTIONS

FMEA NUMBER: 4-M-2

Interaction Number(s): L-4-47-1

Fire Zone: 4

Target Component(s)  
Number, Description & Function:

8"-AC-654; RHR Pump 32 discharge to RHR HXRs.

Postulated Failure Mode(s)  
and Evaluation:

M-1-(P);  
Results in loss of RHR Pump #32 function.  
M-2-(P);

Acceptable X / 1 (X) 2 (X) 3 ( ) 4 (X)  
Potentially Unacceptable/Safety Function Affected

R Chopra 2/7/83  
EVALUATING ENGINEER/DATE

T P Ruggiero 3/21/83  
CHECKED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 SYSTEMS INTERACTION STUDY  
FAILURE MODES AND EFFECTS ANALYSIS  
OF POTENTIALLY UNACCEPTABLE INTERACTIONS

FMEA NUMBER: 4-M-3

Interaction Number(s): L-4-48-1  
L-4-48-4

Fire Zone: 4

Target Component(s)  
Number, Description & Function:

3/4-AC-654; Local Drain off RHR Discharge Line 8" #654.

Postulated Failure Mode(s)  
and Evaluation:

M-1-(A); Potential interactions are downstream of the normally closed valves  
1866C & 1866D. Valve closure would prevent fluid loss. Line has no  
safety function.

M-2-(A); No loss of fluid. Not required for safety function.

X  
Acceptable

/ 1 ( ) 2 ( ) 3 ( ) 4 ( )  
Potentially Unacceptable/Safety Function Affected

R Chopra 2/7/83  
EVALUATING ENGINEER/DATE

T P Ruggiero 3/21/83  
CHECKED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 SYSTEMS INTERACTION STUDY  
FAILURE MODES AND EFFECTS ANALYSIS  
OF POTENTIALLY UNACCEPTABLE INTERACTIONS

FMEA NUMBER: 4-M-4

Interaction Number(s): V-4-52-2

Fire Zone: 69A

Target Component(s)  
Number, Description & Function:

AC-740B; 3/4" normally closed valve of sample line 3/4-707 (off 12" line).

Postulated Failure Mode(s)  
and Evaluation:

M-4-(A); Normally closed valve will prevent any fluid loss. Safety Function  
M-5-(A); maintained.

X  
Acceptable

/ 1 ( ) 2 ( ) 3 ( ) 4 ( )  
Potentially Unacceptable/Safety Function Affected

R Chopra 2/7/83  
EVALUATING ENGINEER/DATE

T P Ruggiero 3/21/83  
CHECKED/DATE



POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 SYSTEMS INTERACTION STUDY  
FAILURE MODES AND EFFECTS ANALYSIS  
OF POTENTIALLY UNACCEPTABLE INTERACTIONS

FMEA NUMBER: 4-M-5

Interaction Number(s): V-4-58-2

Fire Zone: 69A

Target Component(s)  
Number, Description & Function:

AC-1867A; Normally closed valve on 3/4" flush conn off line 14"-659 (Suction  
line for RHR Pump #31)

Postulated Failure Mode(s)  
and Evaluation:

M-4-(A); See FMEA #4-M-4  
M-5-(A);

<u>X</u>	<u>/ 1 ( ) 2 ( ) 3 ( ) 4 ( )</u>
Acceptable	Potentially Unacceptable/Safety Function Affected
<u>R Chopra            2/7/83</u>	<u>T P Ruggiero    3/21/83</u>
EVALUATING ENGINEER/DATE	CHECKED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 SYSTEMS INTERACTION STUDY  
FAILURE MODES AND EFFECTS ANALYSIS  
OF POTENTIALLY UNACCEPTABLE INTERACTIONS

FMEA NUMBER: 4-M-6

Interaction Number(s): V-4-65-1

Fire Zone: 4

Target Component(s)  
Number, Description & Function:

8"-AC-738B; 8" check valve on discharge line (#654) of RHR Pump #32.

Postulated Failure Mode(s)  
and Evaluation:

N-5-(A) Operating mechanism is internal to valve. No loss of valve function.

<u>X</u>	<u>/ 1 ( ) 2 ( ) 3 ( ) 4 ( )</u>
Acceptable	Potentially Unacceptable/Safety Function Affected
<u>R Chopra      2/7/83</u>	<u>T P Ruggiero    3/21/83</u>
EVALUATING ENGINEER/DATE	CHECKED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 SYSTEMS INTERACTION STUDY  
FAILURE MODES AND EFFECTS ANALYSIS  
OF POTENTIALLY UNACCEPTABLE INTERACTIONS

FMEA NUMBER: 4-M-7

Interaction Number(s): V-4-66-1  
V-4-66-2

Fire Zone: 4

Target Component(s)  
Number, Description & Function:

AC-1866D; 3/4" Normally closed valve on drain line #654 off RHR discharge  
header 8" #654.

Postulated Failure Mode(s)  
and Evaluation:

M-5-(A) Valve performs no safety function.

X / 1 ( ) 2 ( ) 3 ( ) 4 ( )  
Acceptable Potentially Unacceptable/Safety Function Affected

R Chopra 2/7/83  
EVALUATING ENGINEER/DATE

T P Ruggiero 3/21/83  
CHECKED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 SYSTEMS INTERACTION STUDY  
FAILURE MODES AND EFFECTS ANALYSIS  
OF POTENTIALLY UNACCEPTABLE INTERACTIONS

FMEA NUMBER: 4-M-8

Interaction Number(s): V-4-67-1  
V-4-67-2

Fire Zone: 4

Target Component(s)  
Number, Description & Function:

AC-1866C; 3/4" normally closed valve on drain line #654 off RHR pump discharge header 8" #654.

Postulated Failure Mode(s)  
and Evaluation:

M-5-(A) Valve performs no safety function.

X  
Acceptable

/ 1 ( ) 2 ( ) 3 ( ) 4 ( )  
Potentially Unacceptable/Safety Function Affected

R Chopra 2/7/83  
EVALUATING ENGINEER/DATE

T P Ruggiero 3/21/83  
CHECKED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 SYSTEMS INTERACTION STUDY  
FAILURE MODES AND EFFECTS ANALYSIS  
OF POTENTIALLY UNACCEPTABLE INTERACTIONS

FMEA NUMBER: 4-M-9

Interaction Number(s): V-4-68-1  
V-4-68-2

Fire Zone: 4

Target Component(s)  
Number, Description & Function:

AC-A-101; 3/4" normally closed valve on drain line off RHR Pump #32  
suction line 14" #10.

Postulated Failure Mode(s)  
and Evaluation:

M-5-(A) Valve performs no safety function.

X / 1 ( ) 2 ( ) 3 ( ) 4 ( )  
Acceptable Potentially Unacceptable/Safety Function Affected

R Chopra 2/7/83  
EVALUATING ENGINEER/DATE

T P Ruggiero 3/21/83  
CHECKED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3  
SYSTEMS INTERACTION STUDY  
TABULATION OF POTENTIALLY UNACCEPTABLE SPATIAL INTERACTIONS

RESIDUAL HEAT REMOVAL SYSTEM

I & C

POTENTIALLY UNACCEPTABLE INTERACTION NUMBER	FMEA		EIC		SPAN EVALUATION		
	(1)	(2)	(1)	(2)	(1)	(2)	(3)
* I-4-8-1	4-I-1-P		78A-004-P				NA
* I-4-14-2	4-I-2-P		72A-004-P				NA
* I-4-15-2	4-I-3-P		72A-004-P				NA
* I-4-16-2	4-I-4-P		72A-004-P				NA
I-4-17-1	4-I-5-P		77A-002-P				5209-77A-009-A
I-4-18-1	4-I-6-P		77A-002-P				5209-77A-009-A
I-4-19-1	4-I-7-P		77A-002-P				5209-77A-009-A
I-4-22-1	4-I-8-P		76A-001-A				NR
* I-4-22-2	4-I-9-P		76A-005-P				NA
I-4-23-1	4-I-10-P		76A-001-A				NR
* I-4-23-2	4-I-11-P		76A-005-P				NA
I-4-24-1	4-I-12-P		76A-001-A				NR
* I-4-24-2	4-I-13-P		76A-005-P				NA
I-4-26-2	4-I-14-A			NR			NR
I-4-27-2	4-I-15-A			NR			NR
I-4-28-2	4-I-16-A			NR			NR
I-4-31-1	4-I-17-A			NR			NR

- NOTES: 1) Letter following numbers mean; A - Acceptable, P - Potentially Unacceptable.  
 2) NR - Evaluation is Not Required since interaction is now acceptable.  
 3) NA - Type of evaluation is not applicable to this interaction.  
 4) Disposed of by repair in AFW pump building.  
 \* Unacceptable by all 3 types of evaluation.

POWER AUTHORITY OF THE STATE OF NEW YORK  
 INDIAN POINT 3  
 SYSTEMS INTERACTION STUDY  
 TABULATION OF POTENTIALLY UNACCEPTABLE SPATIAL INTERACTIONS

RESIDUAL HEAT REMOVAL SYSTEM

I & C

POTENTIALLY UNACCEPTABLE INTERACTION NUMBER	FMEA		EIC		SPAN EVALUATION		
	(1)	(2)	(1)	(2)	(1)	(2)	(3)
I-4-31-2	4-I-17-A			NR			NR
I-4-32-1	4-I-18-A		12A-002-P				NR
I-4-32-2	4-I-18-A		12A-001-P				NR
I-4-33-1	4-I-19-A		12A-002-P				NR
I-4-33-2	4-I-20-A		12A-001-P				NR

- NOTES: 1) Letter following numbers mean; A - Acceptable, P - Potentially Unacceptable.  
 2) NR - Evaluation is Not Required since interaction is now acceptable.  
 3) NA - Type of evaluation is not applicable to this interaction.  
 4) Disposed of by repair in AFW pump building.  
 \* Unacceptable by all 3 types of evaluation.

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
MATRIX PREPARATION

SYSTEM NO 4

SYSTEM NAME RESIDUAL HEAT REMOVAL

MATRIX CATEGORY

NON-CONNECTED                     

INTERCONNECTED   X                    

M. Bonatoni 9/23/82  
PREPARED BY/DATE

R. Davino 9/23/82  
APPROVED BY/DATE

Ebasco Services Incorporated



POWER AUTHORITY OF THE STATE OF NEW YORK  
 INDIAN POINT 3 NUCLEAR POWER PLANT  
 SYSTEM INTERACTION STUDY

## INTERFACING COMPONENTS

SAFETY RELATED COMPONENT	INTERFACING COMPONENTS	SAFETY (S) NONSAFETY (N)	POTENTIAL INTERACTION (IF APPLICABLE)
FT946D	V1804G	S	
	V1804H	S	
	118V AC Bus 34	S	
FT946C	V1804E	S	
	V1804F	S	
	118V AC Bus 31	S	
FT638	V748C	S	
	V748D	S	
	118V AC Bus 32	S	
FT946B	V1804C	S	
	V1804D	S	
	118V AC Bus 34	S	
FT946A	V1804A	S	
	V1804B	S	
	118V AC Bus 31	S	
FT640	V748A	S	
	V748B	S	
	118V AC Bus 32	S	
PI635	V740A	S	
	PC635	S	
PC635	V740A	S	
	PI635	S	
	118V AC Bus 32	S	
FI642	V758A	S	
	V758B	S	

M Socratous/9-15-82

PREPARED BY/DATE

R Daverio/9-22-82

APPROVED BY/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY

## INTERFACING COMPONENTS

SAFETY RELATED COMPONENT	INTERFACING COMPONENTS	SAFETY (S) NONSAFETY (N)	POTENTIAL INTERACTION (IF APPLICABLE)
TE639	Line #355 118V AC Bus 32	S S	
TE641	Line #358 118V AC Bus 32	S S	
TE636	Line #654 118V AC Bus 32	S S	

M Socratous/9-15-82

PREPARED BY/DATE

R Daverio/9-22-82

APPROVED BY/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
SYSTEMS INTERACTION EVALUATION

SYSTEM NO. I-4

SYSTEM NAME RESIDUAL HEAT REMOVAL

EVALUATION CATEGORY

NON-CONNECTED \_\_\_\_\_

INTERCONNECTED X

*No evaluations required*

R Daverio 9/23/82  
INTERACTION ENGINEER/DATE

W Griswold 9-29-82  
VERIFIED/DATE

Ebasco Services Incorporated

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
MATRIX PREPARATION

SYSTEM NO 4

SYSTEM NAME RESIDUAL HEAT REMOVAL

MATRIX CATEGORY

NON-CONNECTED X

INTERCONNECTED \_\_\_\_\_

M. Socratow 9/15/82  
PREPARED BY/DATE

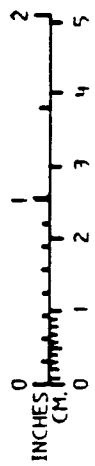
R. Daverio 9/15/82  
APPROVED BY/DATE

Ebasco Services Incorporated

SOURCES

		1	2												
		NO INTERACTION	379-1"	LIGHT ON WALL											
I-4															
	8" - #355	X													
1	FT 638	X													
2	FT 638 HP SENSING LINE	X													
3	FT 638 LP SENSING LINE	X													
4	TE 639	X													
	8" - #358														
5	TE-641		I-5												
6	FT-640			I-2											
7	FT-640 HP SENSING LINE	X													
8	FT-640 LP SENSING LINE		I-3												
	6" - #355														
9	FT - 946D	X													
10	FT - 946D HP SENSING LINE	X													
11	FT - 946D LP SENSING LINE	X													
12	FE - 946D	X													

TARGETS



BUILDING: REACTOR CONTAINMENT  
 FIRE ZONE: 78A  
 LOCATION: RHR CURTICLE  
 WITHIN FIRE ZONE

RHR SYSTEM

EBASCO SERVICES INCORPORATED		POWER AUTHORITY STATE OF NEW YORK		5209.003
DIV. <u>I&amp;C</u>	DR. <u>JB</u>	APPROVED		I-4
DATE <u>CH</u>	R. M. DAVERIO		SH 1 OF 7	
SCALE <u>NONE</u>	SYSTEMS INTERACTION STUDY INTERACTION MATRIX			

# SOURCES

		1	2												
		NO INTERACTION	STATION AIR HEADER OVERHEAD LIGHT												
	I-4														
	6" - #356														
13	FE - 946C		I-8												
14	FE-946C HP SENSING LINE			I-9											
15	FE-946C LP SENSING LINE			I-9											
16	FT - 946C			I-9											

TARGETS

INCHES  
0 1 2 3 4 5  
CH.

**BUILDING:** REACTOR CONTAINMENT  
**FIRE ZONE:** 72A  
**LOCATION:** NA  
 WITHIN FIRE ZONE

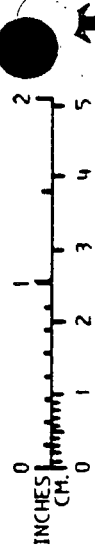
RHR SYSTEM

EBASCO SERVICES INCORPORATED	POWER AUTHORITY STATE OF NEW YORK	5209.003
DIV. I&C DR. JB	INDIAN POINT No. 3	I-4
DATE CH.	SYSTEMS INTERACTION STUDY	SH 2 OF 7
SCALE NONE	INTERACTION MATRIX	
APPROVED		
R.M. DAVERIO		

# SOURCES

#	TARGET	NO INTERACTION	3" - LINE #40	1										
	I-4 6" - #361													
17	FT - 946A		(I-1)											
18	FT - 946A HP SENSING LINES		(I-1)											
19	FT - 946A LP SENSING LINES		(I-1)											
20	FE - 946A	X												

TARGETS



**BUILDING:** REACTOR CONTAINMENT  
**FIRE ZONE:** 77A  
**LOCATION:** \_\_\_\_\_  
**WITHIN FIRE ZONE**

RHR SYSTEM

EBASCO SERVICES INCORPORATED DIV. <u>I&amp;C</u> DR. <u>JB</u> DATE _____ CH. _____ SCALE <u>NONE</u>	APPROVED _____ R.M. DAVERTO	POWER AUTHORITY STATE OF NEW YORK INDIAN POINT No. 3 SYSTEMS INTERACTION STUDY INTERACTION MATRIX	5209.003 I-4 SH <u>3</u> OF <u>7</u>
--	-----------------------------------	--	--

SOURCES

			1	2														
			NO INTERACTION	1" LINE #317	OVERHEAD LIGHT													
	I-4	6" - #358																
21		FE - 946B		I-6	I-6													
22		FE - 946B HP SENSING LINE		(I-6)	(I-7) (I-6)													
23		FE - 946B LP SENSING LINE		(I-6)	(I-7) (I-6)													
24		FT - 946B		(I-7)	(I-7)													

TARGETS

INCHES  
CM.

BUILDING: REACTOR CONTAINMENT  
 FIRE ZONE: 76A  
 LOCATION: NA  
 WITHIN FIRE ZONE

RHR SYSTEM

EBASCO SERVICES INCORPORATED		POWER AUTHORITY STATE OF NEW YORK		5209.003	
DIV. I&C DR. JB	APPROVED	INDIAN POINT No. 3		I-4	
DATE CH.	R.M. DAVERIO	SYSTEMS INTERACTION STUDY		SH 4 OF 7	
SCALE NONE		INTERACTION MATRIX			

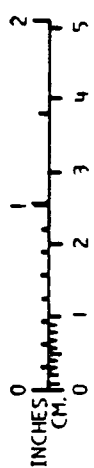




# SOURCES

		I-4																
		NO INTERACTION	1	2														
			1" - #67	S G BLOWDOWN SAMPLING TUBE TRACK														
	3" - #337																	
25	FE - 642	X																
26	FE - 642 HP SENSING LINE		I-38	I-39														
27	FE - 642 LP SENSING LINE		I-38	I-39														
28	FI - 642		I-38	I-39														

TARGETS



BUILDING: PIPE TUNNEL  
 FIRE ZONE: 62A  
 LOCATION: \_\_\_\_\_  
 WITHIN FIRE ZONE

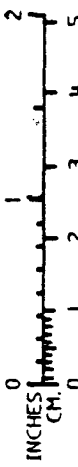
RHR SYSTEM

EBASCO SERVICES INCORPORATED		POWER AUTHORITY STATE OF NEW YORK		5209.003
DIV. <u>I&amp;C</u> DR. <u>JB</u>	APPROVED	INDIAN POINT No. 3		I-4
DATE _____ CH. _____	R.M. DAVERIO	SYSTEMS INTERACTION STUDY		SH 5 OF 7
SCALE <u>NONE</u>		INTERACTION MATRIX		

# SOURCES

		NO INTERACTION																
	I-4																	
	12" - #9																	
29	TE - 636	X																
30	PC - 635 SENSING LINE	X																

TARGETS



BUILDING: PAB  
 FIRE ZONE: 69A  
 LOCATION: \_\_\_\_\_  
 WITHIN FIRE ZONE

RHR SYSTEM

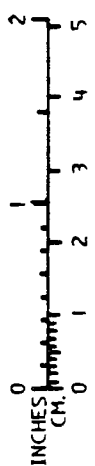
EBASCO SERVICES INCORPORATED		POWER AUTHORITY STATE OF NEW YORK		5209.003	
DIV. <u>I&amp;C</u> DR. <u>JB</u>		APPROVED		I-4	
DATE _____ CH. _____		R.M. DAVERIO		SH 6 OF 7	
SCALE NONE					

INDIAN POINT No. 3  
 SYSTEMS INTERACTION STUDY  
 INTERACTION MATRIX

SOURCES

		1	2												
		NO INTERACTION	OVERHEAD LIGHT	CONDUIT BOX											
I-4															
31	PI - 635		(I-37)	(I-37)											
32	PC - 635		(I-37)	(I-37)											
33	PC - 635 SENSING LINE		(I-37)	(I-37)											

TARGETS



BUILDING: PAB ELEV 15  
 FIRE ZONE: 12A  
 LOCATION: NA  
 WITHIN FIRE ZONE

RHR SYSTEM

EBASCO SERVICES INCORPORATED  
 DIV. I&C DR. JB  
 DATE CH  
 SCALE NONE

APPROVED  
 R.M. DAVERIO

POWER AUTHORITY STATE OF NEW YORK  
 INDIAN POINT No. 3  
 SYSTEMS INTERACTION STUDY  
 INTERACTION MATRIX

5209.003  
 I-4  
 SH 7 OF 7

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY

NON-CONNECTED INTERACTIONS EVALUATION

1. No Interaction - Source is Class II and is therefore supported adequately. (See response to IP-3 FSAR question 5.24).
2. Acceptable - Source pipe/conduit is equal size or smaller in diameter and/or the same thickness or thinner wall than the target pipe/conduit/tubing. Paragraph 6.2.2.1a Volume I.
3. Acceptable - Source has insufficient mass to damage the target component.
4. Acceptable - Basis is engineering judgement. Specific justification is on the evaluation form.
5. Potentially Unacceptable - Discussion of specific is on the evaluation form.
6. Potentially Unacceptable - Source pipe/conduit is large enough to damage target conduit/pipe/tubing.
7. Potentially Unacceptable - Source will fall a sufficient distance, or has adequate mass such that damage to target conduit/box/instrument/tubing/panel may be possible.
8. No Interaction - Upon further investigation of the source, this portion of its system is designated Seismic I.

R2 7/22/82  
R1 6/30/82  
R0 6/26/82

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
SYSTEMS INTERACTION EVALUATION

SYSTEM NO. 4

SYSTEM NAME RESIDUAL HEAT REMOVAL

EVALUATION CATEGORY

NON-CONNECTED X

INTERCONNECTED \_\_\_\_\_

PDavens 9/14/82  
INTERACTION ENGINEER/DATE

WJGriswold 9-20-82  
VERIFIED/DATE

Ebasco Services Incorporated

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Reactor Containment, El 46'

FIRE ZONE: 78A

LOCATION WITHIN FIRE ZONE: RHR Cubicle

POTENTIAL INTERACTION NO.: I4-5-1

PHOTOGRAPH NO.: I-5

BACKGROUND NO.: Sheet 11

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: TE 641

SOURCE: #379 - 1"

DESCRIPTION OF POSTULATED INTERACTION:

Source falls on target

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 3

X ACCEPTABLE

POTENTIALLY UNACCEPTABLE

R DAVERIO 9/13/82  
INTERACTION ENGINEER / DATE

W GRISWOLD 9/20/82  
VERIFIED / DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Reactor Containment, E1 46'

FIRE ZONE: 78A

LOCATION WITHIN FIRE ZONE: RHR Cubicle

POTENTIAL INTERACTION NO.: I4-6-2

PHOTOGRAPH NO.: I-2

BACKGROUND NO.: Sheet 11

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: FT 640

SOURCE: Light on Wall

DESCRIPTION OF POSTULATED INTERACTION:

Source falls on target

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 3

X ACCEPTABLE

POTENTIALLY  
UNACCEPTABLE

R DAVERIO 9/13/82  
INTERACTION ENGINEER/DATE

W GRISWOLD 9/20/82  
VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Reactor Containment, El 46'

FIRE ZONE: 78A

LOCATION WITHIN FIRE ZONE: RHR Cubicle

POTENTIAL INTERACTION NO.: I4-8-1

PHOTOGRAPH NO.: I-3

BACKGROUND NO.: Sheet 11

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: FT 640 LP Sensing Line

SOURCE: #379 - 1"

DESCRIPTION OF POSTULATED INTERACTION:

Source falls on target

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 7

ACCEPTABLE

X

POTENTIALLY  
UNACCEPTABLE

R DAVERIO 9/13/82  
INTERACTION ENGINEER/DATE

W GRISWOLD 9/20/82  
VERIFIED/DATE



POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Reactor Containment

FIRE ZONE: 72A

LOCATION WITHIN FIRE ZONE:

POTENTIAL INTERACTION NO.: I4-13-1

PHOTOGRAPH NO.: I-8

BACKGROUND NO.: Sheet 10

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: FE 946C

SOURCE: Station Air Header

DESCRIPTION OF POSTULATED INTERACTION:

Source falls on target

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 3

X ACCEPTABLE

~~POTENTIALLY  
UNACCEPTABLE~~

R DAVERIO 9/13/82  
INTERACTION ENGINEER/DATE

W GRISWOLD 9/20/82  
VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Reactor Containment

FIRE ZONE: 72A

LOCATION WITHIN FIRE ZONE:

POTENTIAL INTERACTION NO.: I4-14-2

PHOTOGRAPH NO.: I-9

BACKGROUND NO.: Sheet 10

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: FE 946C HP Sensing Line

SOURCE: Overhead Light

DESCRIPTION OF POSTULATED INTERACTION:

Source falls on target

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 7

1  
ACCEPTABLE

X POTENTIALLY  
UNACCEPTABLE

R DAVERIO 9/13/82  
INTERACTION ENGINEER/DATE

W GRISWOLD 9/20/82  
VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Reactor Containment

FIRE ZONE: 72A

LOCATION WITHIN FIRE ZONE:

POTENTIAL INTERACTION NO.: 14-15-2

PHOTOGRAPH NO.: I-9

BACKGROUND NO.: Sheet 10

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: FE 946C LP Sensing Line

SOURCE: Overhead Light

DESCRIPTION OF POSTULATED INTERACTION:

Source falls on target

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 7

\_\_\_\_\_ ACCEPTABLE

\_\_\_\_\_ X \_\_\_\_\_ POTENTIALLY UNACCEPTABLE

R DAVERIO      9/13/82  
INTERACTION ENGINEER/DATE

W GRISWOLD      9/20/82  
VERIFIED/DATE



POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Reactor Containment, El 46'

FIRE ZONE: 77A

LOCATION WITHIN FIRE ZONE:

POTENTIAL INTERACTION NO.: I4-17-1

PHOTOGRAPH NO.: I-1

BACKGROUND NO.: Sheet 12

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: FT 946A

SOURCE: 3" Line #40

DESCRIPTION OF POSTULATED INTERACTION:

Source falls on target

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 7

1  
ACCEPTABLE

X  
POTENTIALLY  
UNACCEPTABLE

R DAVERIO      9/13/82  
INTERACTION ENGINEER/DATE

W GRISWOLD      9/20/82  
VERIFIED/DATE



POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Reactor Containment, El 46

FIRE ZONE: 77A

LOCATION WITHIN FIRE ZONE:

POTENTIAL INTERACTION NO.: I4-19-1

PHOTOGRAPH NO.: I-1

BACKGROUND NO.: Sheet 12

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: FT 946A LP Sensing Lines

SOURCE: 3" Line #40

DESCRIPTION OF POSTULATED INTERACTION:

Source falls on target

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 7

1  
ACCEPTABLE

X POTENTIALLY  
UNACCEPTABLE

R DAVERIO 9/13/82  
INTERACTION ENGINEER/DATE

W GRISWOLD 9/20/82  
VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Reactor Containment

FIRE ZONE: 76A

LOCATION WITHIN FIRE ZONE:

POTENTIAL INTERACTION NO.: I4-21-1

PHOTOGRAPH NO.: I-6

BACKGROUND NO.: Sheet 11

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: FE 946B

SOURCE: 1" Line #317

DESCRIPTION OF POSTULATED INTERACTION:

Sour falls on target

EVALUATION OF INTERACTION: Source below target

EVALUATION NOTE NO: 4

X ACCEPTABLE

POTENTIALLY UNACCEPTABLE

R DAVERIO 9/13/82  
INTERACTION ENGINEER/DATE

W GRISWOLD 9/20/82  
VERIFIED/DATE



POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Reactor Containment

FIRE ZONE: 76A

LOCATION WITHIN FIRE ZONE:

POTENTIAL INTERACTION NO.: I4-21-2

PHOTOGRAPH NO.: I-6

BACKGROUND NO.: Sheet 11

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: FE 946B

SOURCE: Overhead Light

DESCRIPTION OF POSTULATED INTERACTION:

Source falls on target

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 3

ACCEPTABLE

POTENTIALLY  
 UNACCEPTABLE

R DAVERIO      9/13/82  
INTERACTION ENGINEER/DATE

W GRISWOLD      9/20/82  
VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK
INDIAN POINT 3 NUCLEAR POWER PLANT
SYSTEM INTERACTION STUDY
NONCONNECTED SYSTEMS INTERACTION
EVALUATION SHEET

BUILDING: Reactor Containment

FIRE ZONE: 76A

LOCATION WITHIN FIRE ZONE:

POTENTIAL INTERACTION NO.: I4-22-1

PHOTOGRAPH NO.: I-6

BACKGROUND NO.: Sheet 11

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: FE 946B HP Sensing Line

SOURCE: 1" Line #317

DESCRIPTION OF POSTULATED INTERACTION:

Source falls on target

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 6

Evaluation table with columns for ACCEPTABLE, POTENTIALLY UNACCEPTABLE and VERIFIED/DATE. Includes signatures of R DAVERIO and W GRISWOLD.

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Reactor Containment

FIRE ZONE: 76A

LOCATION WITHIN FIRE ZONE:

POTENTIAL INTERACTION NO.: I4-22-2

PHOTOGRAPH NO.: I-6, I-7

BACKGROUND NO.: Sheet 11

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: FE 946B HP Sensing Line

SOURCE: Overhead Light

DESCRIPTION OF POSTULATED INTERACTION:

Source falls on target

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 7

1  
ACCEPTABLE

X  
POTENTIALLY  
UNACCEPTABLE

R DAVERIO            9/13/82  
\_\_\_\_\_  
INTERACTION ENGINEER/DATE

W GRISWOLD            9/20/82  
\_\_\_\_\_  
VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Reactor Containment

FIRE ZONE: 76A

LOCATION WITHIN FIRE ZONE:

POTENTIAL INTERACTION NO.: I4-23-1

PHOTOGRAPH NO.: I-6

BACKGROUND NO.: Sheet 11

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: FE 946B LP Sensing Line

SOURCE: 1" Line #317

DESCRIPTION OF POSTULATED INTERACTION:

Source falls on target

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 6

1	X
ACCEPTABLE	POTENTIALLY UNACCEPTABLE
R DAVERIO      9/13/82	W GRISWOLD      9/20/82
INTERACTION ENGINEER / DATE	VERIFIED / DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Reactor Containment

FIRE ZONE: 76A

LOCATION WITHIN FIRE ZONE:

POTENTIAL INTERACTION NO.: I4-23-2

PHOTOGRAPH NO.: I-6 , I-7

BACKGROUND NO.: Sheet 11

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: FE 946B LP Sensing Line

SOURCE: Overhead Light

DESCRIPTION OF POSTULATED INTERACTION:

Source falls on target

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 7

1  
ACCEPTABLE

X

POTENTIALLY  
UNACCEPTABLE

R DAVERIO 9/13/82  
INTERACTION ENGINEER/DATE

W GRISWOLD 9/20/82  
VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Reactor Containment

FIRE ZONE: 76A

LOCATION WITHIN FIRE ZONE:

POTENTIAL INTERACTION NO.: I4-24-1

PHOTOGRAPH NO.: I-7

BACKGROUND NO.: Sheet 11

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: FT 946B

SOURCE: 1" Line #317

DESCRIPTION OF POSTULATED INTERACTION:

Source falls on target

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 7

	X
ACCEPTABLE	POTENTIALLY UNACCEPTABLE
R DAVERIO      9/13/82	W GRISWOLD      9/20/82
INTERACTION ENGINEER / DATE	VERIFIED / DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Reactor Containment

FIRE ZONE: 76A

LOCATION WITHIN FIRE ZONE:

POTENTIAL INTERACTION NO.: I4-24-2

PHOTOGRAPH NO.: I-7

BACKGROUND NO.: Sheet 11

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: FT 946B

SOURCE: Overhead Light

DESCRIPTION OF POSTULATED INTERACTION:

Source falls on target

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 7

1  
ACCEPTABLE

X POTENTIALLY UNACCEPTABLE

R DAVERIO 9/13/82  
INTERACTION ENGINEER/DATE

W GRISWOLD 9/20/82  
VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
 INDIAN POINT 3 NUCLEAR POWER PLANT  
 SYSTEM INTERACTION STUDY  
 NONCONNECTED SYSTEMS INTERACTION  
 EVALUATION SHEET

BUILDING: Pipe Tunnel

FIRE ZONE: 62A

LOCATION WITHIN FIRE ZONE:

POTENTIAL INTERACTION NO.: I4-26-1

PHOTOGRAPH NO.: I-38

BACKGROUND NO.: Sheet 17

## IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: FE 642 HP Sensing Line

SOURCE: 1" #67

## DESCRIPTION OF POSTULATED INTERACTION:

Source falls on target

## EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 3

<u>X</u>	ACCEPTABLE	<u>POTENTIALLY UNACCEPTABLE</u>
R DAVERIO	9/13/82	W GRISWOLD 9/20/82
INTERACTION ENGINEER/DATE		VERIFIED/DATE



POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Pipe Tunnel

FIRE ZONE: 62A

LOCATION WITHIN FIRE ZONE:

POTENTIAL INTERACTION NO.: I4-26-2

PHOTOGRAPH NO.: I-39

BACKGROUND NO.: Sheet 17

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: FE 642 HP Sensing Line

SOURCE: SG Blowdown Sampling Tube Track

DESCRIPTION OF POSTULATED INTERACTION:

Source falls on target

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 7

\_\_\_\_\_  
ACCEPTABLE

\_\_\_\_\_  
X  
POTENTIALLY UNACCEPTABLE

R DAVERIO            9/13/82  
\_\_\_\_\_  
INTERACTION ENGINEER/DATE

W GRISWOLD           9/20/82  
\_\_\_\_\_  
VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Pipe Tunnel

FIRE ZONE: 62A

LOCATION WITHIN FIRE ZONE:

POTENTIAL INTERACTION NO.: I4-27-1

PHOTOGRAPH NO.: I-38

BACKGROUND NO.: Sheet 17

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: FE 642 LP Sensing Line

SOURCE: 1" #67

DESCRIPTION OF POSTULATED INTERACTION:

Source falls on target

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 2

X ACCEPTABLE

POTENTIALLY  
UNACCEPTABLE

R DAVERIO 9/13/82  
INTERACTION ENGINEER/DATE

W GRISWOLD 9/20/82  
VERIFIED/DATE



POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Pipe Tunnel

FIRE ZONE: 62A

LOCATION WITHIN FIRE ZONE:

POTENTIAL INTERACTION NO.: I4-28-1

PHOTOGRAPH NO.: I-38

BACKGROUND NO.: Sheet 17

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: FI 642

SOURCE: 1" #67

DESCRIPTION OF POSTULATED INTERACTION:

Source falls on target

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 3

X

ACCEPTABLE

POTENTIALLY  
UNACCEPTABLE

R DAVERIO 9/13/82  
INTERACTION ENGINEER/DATE

W GRISWOLD 9/20/82  
VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Pipe Tunnel

FIRE ZONE: 62A

LOCATION WITHIN FIRE ZONE:

POTENTIAL INTERACTION NO.: I4-28-2

PHOTOGRAPH NO.: I-39

BACKGROUND NO.: Sheet 17

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: FI 642

SOURCE: SG Blowdown Sampling Tube Track

DESCRIPTION OF POSTULATED INTERACTION:

Source falls on target

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 7

\_\_\_\_\_ |  
ACCEPTABLE

\_\_\_\_\_ X \_\_\_\_\_  
POTENTIALLY  
UNACCEPTABLE

R D'AVERIO            9/13/82  
\_\_\_\_\_  
INTERACTION ENGINEER/DATE

W GRISWOLD            9/20/82  
\_\_\_\_\_  
VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Primary Auxiliary Building, El 15'

FIRE ZONE: 12A

LOCATION WITHIN FIRE ZONE:

POTENTIAL INTERACTION NO.: I4-31-1

PHOTOGRAPH NO.: I-37

BACKGROUND NO.: Sheet 27

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: PI 635

SOURCE: Overhead Light

DESCRIPTION OF POSTULATED INTERACTION:

Source falls on target

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 7

ACCEPTABLE

X

POTENTIALLY  
UNACCEPTABLE

R DAVERIO 9/13/82  
INTERACTION ENGINEER/DATE

W GRISWOLD 9/20/82  
VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Primary Auxiliary Building, E1 15'

FIRE ZONE: 12A

LOCATION WITHIN FIRE ZONE:

POTENTIAL INTERACTION NO.: I4-31-2

PHOTOGRAPH NO.: I-37

BACKGROUND NO.: Sheet 27

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: PI 635

SOURCE: Conduit Box

DESCRIPTION OF POSTULATED INTERACTION:

Source falls on target

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 7

                     ACCEPTABLE

                     X

POTENTIALLY  
                     UNACCEPTABLE

                     R DAVERIO                      9/13/82  
INTERACTION ENGINEER/DATE

                     W GRISWOLD                      9/20/82  
VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Primary Auxiliary Building, El 15'

FIRE ZONE: 12A

LOCATION WITHIN FIRE ZONE:

POTENTIAL INTERACTION NO.: I4-32-1

PHOTOGRAPH NO.: I-37

BACKGROUND NO.: Sheet 27

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: PC 635

SOURCE: Overhead Light

DESCRIPTION OF POSTULATED INTERACTION:

Source falls on target

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 7

1	X
ACCEPTABLE	POTENTIALLY UNACCEPTABLE
R DAVERIO      9/13/82	W GRISWOLD      9/20/82
INTERACTION ENGINEER/DATE	VERIFIED/DATE



POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Primary Auxiliary Building, El 15'

FIRE ZONE: 12A

LOCATION WITHIN FIRE ZONE:

POTENTIAL INTERACTION NO.: I4-32-2

PHOTOGRAPH NO.: I-37

BACKGROUND NO.: Sheet 27

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: PC 635

SOURCE: Conduit Box

DESCRIPTION OF POSTULATED INTERACTION:

Source falls on target

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 7

1  
ACCEPTABLE

X POTENTIALLY  
UNACCEPTABLE

R DAVERIO 9/13/82  
INTERACTION ENGINEER/DATE

W GRISWOLD 9/20/82  
VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Primary Auxiliary Building, El 15'

FIRE ZONE: 12A

LOCATION WITHIN FIRE ZONE:

POTENTIAL INTERACTION NO.: I4-33-1

PHOTOGRAPH NO.: I-37

BACKGROUND NO.: Sheet 27

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: PC 635 Sensing Line

SOURCE: Overhead Light

DESCRIPTION OF POSTULATED INTERACTION:

Source falls on target

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 7

                         ACCEPTABLE

                         X                          POTENTIALLY UNACCEPTABLE

R DAVERIO                      9/13/82  
INTERACTION ENGINEER/DATE

W GRISWOLD                      9/20/82  
VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Primary Auxiliary Building, El 15'

FIRE ZONE: 12A

LOCATION WITHIN FIRE ZONE:

POTENTIAL INTERACTION NO.: I4-33-2

PHOTOGRAPH NO.: I-37

BACKGROUND NO.: Sheet 27

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: PC 635 Sensing Line

SOURCE: Conduit Box

DESCRIPTION OF POSTULATED INTERACTION:

Source falls on target

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 7

1 <u>ACCEPTABLE</u>	X <u>POTENTIALLY UNACCEPTABLE</u>
<u>R DAVERIO</u> <u>9/13/82</u>	<u>W GRISWOLD</u> <u>9/20/82</u>
INTERACTION ENGINEER/DATE	VERIFIED/DATE

Postulated Failure Modes

MECHANICAL FAILURES

- M - 1 Ruptured Pipe or Tube
- M - 2 Crimped or Collapsed Pipe or Tube
- M - 3 Loss of Function (Pump, Fan, Blowers etc. )
- M - 4 Loss of Valve Motive Power
- M - 5 Failure of or damage to Valve Actuating Mechanism
- M - 6 Other (Explain)

ELECTRICAL FAILURES

- E - 1 Open Circuit
- E - 2 Short Circuit
- E - 3 Other (Explain)

INSTRUMENTATION & CONTROL FAILURES

- C - 1 Fail High
- C - 2 Fail Low
- C - 3 Fail Open
- C - 4 Fail Closed
- C - 5 Loss of Motive Power
- C - 6 Other (Explain)

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
FMEA PREPARATION

SYSTEM NO I-4

SYSTEM NAME Residual Heat Removal System

FMEA CATEGORY

NON-CONNECTED X

INTERCONNECTED           

*Henry ...* 3/19/83  
PREPARED BY/DATE

*AR Price* 3/31/83  
CHECKED BY/DATE

*W Griswold* 4.26.83  
VERIFIED BY/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 SYSTEMS INTERACTION STUDY  
FAILURE MODES AND EFFECTS ANALYSIS  
OF POTENTIALLY UNACCEPTABLE INTERACTIONS

FMEA NUMBER: 4-I-1

Interaction Number(s): I-4-8-1

Fire Zone: 78A

Target Component(s)

Number, Description & Function: FT 640 LP Sensing Line

Safety Injection Recirculation Sub-System Header Flow to Loops 3 and 4  
Cold Legs, for indication on the Auxiliary Cooling System Panel.

Postulated Failure Mode(s)  
and Evaluation:

C-1-(P) Indication is required for the operator to confirm that  
Recirculation Flow has been established to the RCS Loop.

\_\_\_\_\_ X / 1 ( ) 2 (X) 3 ( ) 4 ( )  
Acceptable Potentially Unacceptable/Safety Function Affected

G DURNIAK 3/18/83  
EVALUATING ENGINEER/DATE

J R Price 3/31/83  
CHECKED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 SYSTEMS INTERACTION STUDY  
FAILURE MODES AND EFFECTS ANALYSIS  
OF POTENTIALLY UNACCEPTABLE INTERACTIONS

FMEA NUMBER: 4-I-2

Interaction Number(s): I-4-14-2

Fire Zone: 72A

Target Component(s)

Number, Description & Function: FE 946C HP Sensing Line

Safety Injection Low Head Sub-system Flow to RCS Cold Leg Loop 2.

Postulated Failure Mode(s)  
and Evaluation:

C-1-(P) Indication is required for the operator to confirm that Safety  
Injection flow has been established to the RCS Loop.

	<u>X</u>	/ 1 ( ) 2 (X) 3 ( ) 4 ( )	
Acceptable			Potentially Unacceptable/Safety Function Affected
G Durniak 3/18/83			J R Price 3/31/83
EVALUATING ENGINEER/DATE			CHECKED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 SYSTEMS INTERACTION STUDY  
FAILURE MODES AND EFFECTS ANALYSIS  
OF POTENTIALLY UNACCEPTABLE INTERACTIONS

FMEA NUMBER: 4-I-3

Interaction Number(s): I-4-15-2

Fire Zone: 72A

Target Component(s)

Number, Description & Function: FE 946C LP Sensing Line

Safety Injection Low Head Sub-system Flow to RCS Cold Leg Loop 2.

Postulated Failure Mode(s)  
and Evaluation:

C-1-(P) See FMEA 4-I-2

	<u>X</u>	<u>/</u>	<u>1 ( )</u>	<u>2 (X)</u>	<u>3 ( )</u>	<u>4 ( )</u>
Acceptable	Potentially Unacceptable/Safety Function Affected					
G Durniak 3/18/83	J R Price 3/31/83					
EVALUATING ENGINEER/DATE	CHECKED/DATE					



POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 SYSTEMS INTERACTION STUDY  
FAILURE MODES AND EFFECTS ANALYSIS  
OF POTENTIALLY UNACCEPTABLE INTERACTIONS

FMEA NUMBER: 4-I-4

Interaction Number(s): I-4-16-2

Fire Zone: 72A

Target Component(s)

Number, Description & Function: FT 946C

Safety Injection Low Head Sub-system Flow to RCS Cold Leg Loop 2.

Postulated Failure Mode(s)  
and Evaluation:

C-1-(P) See FMEA 4-I-2

_____	X	/ 1 ( ) 2 (X) 3 ( ) 4 ( )
Acceptable	Potentially Unacceptable/Safety Function Affected	
_____	_____	
G Durniak 3/18/83	J R Price 3/31/83	
EVALUATING ENGINEER/DATE	CHECKED/DATE	

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 SYSTEMS INTERACTION STUDY  
FAILURE MODES AND EFFECTS ANALYSIS  
OF POTENTIALLY UNACCEPTABLE INTERACTIONS

FMEA NUMBER: 4-I-5

Interaction Number(s): I-4-17-1

Fire Zone: 77A

Target Component(s)

Number, Description & Function: FT 946A

Safety Injection Low Head Sub-system Flow to RCS Cold Leg Loop 4.

Postulated Failure Mode(s)  
and Evaluation:

C-1-(P) See FMEA 4-I-2

	X	/	1	( )	2	(X)	3	( )	4	( )
Acceptable	Potentially Unacceptable/Safety Function Affected									

G Durniak 3/18/83  
EVALUATING ENGINEER/DATE

J R Price 3/31/83  
CHECKED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 SYSTEMS INTERACTION STUDY  
FAILURE MODES AND EFFECTS ANALYSIS  
OF POTENTIALLY UNACCEPTABLE INTERACTIONS

FMEA NUMBER: 4-I-6

Interaction Number(s): I-4-18-1

Fire Zone: 77A

Target Component(s)

Number, Description & Function: FT 946A HP Sensing Lines

Safety Injection Low Head Sub-system Flow to RCS Cold Leg Loop 4.

Postulated Failure Mode(s)  
and Evaluation:

C-1-(P) See FMEA 4-I-2

	X	/ 1 ( ) 2 (X) 3 ( ) 4 ( )
Acceptable	Potentially Unacceptable/Safety Function Affected	
G Durniak 3/18/83	J R Price 3/31/83	
EVALUATING ENGINEER/DATE	CHECKED/DATE	

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 SYSTEMS INTERACTION STUDY  
FAILURE MODES AND EFFECTS ANALYSIS  
OF POTENTIALLY UNACCEPTABLE INTERACTIONS

FMEA NUMBER: 4-I-7

Interaction Number(s): I-4-19-1

Fire Zone: 77A

Target Component(s)

Number, Description & Function: FT 946A LP Sensing Line

Safety Injection Low Head Sub-system Flow to RCS Cold Leg Loop 4.

Postulated Failure Mode(s)  
and Evaluation:

C-1-(P) See FMEA 4-I-2

	<u>X</u>	/ 1 ( ) 2 (X) 3 ( ) 4 ( )	
Acceptable			Potentially Unacceptable/Safety Function Affected
G Durniak 3/18/83			J R. Price 3/31/83
EVALUATING ENGINEER/DATE			CHECKED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 SYSTEMS INTERACTION STUDY  
FAILURE MODES AND EFFECTS ANALYSIS  
OF POTENTIALLY UNACCEPTABLE INTERACTIONS

FMEA NUMBER: 4-I-8

Interaction Number(s): I-4-22-1

Fire Zone: 76A

Target Component(s)

Number, Description & Function: FE 946B HP Sensing Line

Safety Injection Low Head Sub-system Flow to RCS Cold Leg Loop 3.

Postulated Failure Mode(s)  
and Evaluation:

C-1-(P) See FMEA 4-I-2

	X	/ 1 ( )	2 (X)	3 ( )	4 ( )
Acceptable	Potentially Unacceptable/Safety Function Affected				
G Durniak 3/18/83 EVALUATING ENGINEER/DATE	J R Price 3/31/83 CHECKED/DATE				

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 SYSTEMS INTERACTION STUDY  
FAILURE MODES AND EFFECTS ANALYSIS  
OF POTENTIALLY UNACCEPTABLE INTERACTIONS

FMEA NUMBER: 4-I-9

Interaction Number(s): I-4-22-2

Fire Zone: 76A

Target Component(s)

Number, Description & Function: FE 946B HP Sensing Line

Safety Injection Low Head Sub-system Flow to RCS Cold Leg Loop 3.

Postulated Failure Mode(s)  
and Evaluation:

C-1-(P) See FMEA 4-I-2

Acceptable X / 1 ( ) 2 (X) 3 ( ) 4 ( )  
Potentially Unacceptable/Safety Function Affected

G Durniak 3/18/83  
EVALUATING ENGINEER/DATE

J R Price 3/31/83  
CHECKED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 SYSTEMS INTERACTION STUDY  
FAILURE MODES AND EFFECTS ANALYSIS  
OF POTENTIALLY UNACCEPTABLE INTERACTIONS

FMEA NUMBER: 4-I-10

Interaction Number(s): I-4-23-1

Fire Zone: 76A

Target Component(s)

Number, Description & Function: FE 946B LP Sensing Line

Safety Injection Low Head Sub-system Flow to RCS Cold Leg Loop 3.

Postulated Failure Mode(s)  
and Evaluation:

C-1-(P) See FMEA 4-I-2

	X / 1 ( ) 2 (X) 3 ( ) 4 ( )
Acceptable	Potentially Unacceptable/Safety Function Affected
G Durniak 3/18/83	J R Price 3/31/83
EVALUATING ENGINEER/DATE	CHECKED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 SYSTEMS INTERACTION STUDY  
FAILURE MODES AND EFFECTS ANALYSIS  
OF POTENTIALLY UNACCEPTABLE INTERACTIONS

FMEA NUMBER: 4-I-11

Interaction Number(s): I-4-23-2

Fire Zone: 76A

Target Component(s)

Number, Description & Function: FE 946B LP Sensing Line

Safety Injection Low Head Sub-system Flow to RCS Cold Leg Loop 3.

Postulated Failure Mode(s)  
and Evaluation:

C-1-(P) See FMEA 4-I-2

\_\_\_\_\_ X / 1 ( ) 2 (X) 3 ( ) 4 ( )  
Acceptable Potentially Unacceptable/Safety Function Affected

\_\_\_\_\_  
G Durniak 3/18/83  
EVALUATING ENGINEER/DATE

\_\_\_\_\_  
J R Price 3/31/83  
CHECKED/DATE



POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 SYSTEMS INTERACTION STUDY  
FAILURE MODES AND EFFECTS ANALYSIS  
OF POTENTIALLY UNACCEPTABLE INTERACTIONS

FMEA NUMBER: 4-I-12

Interaction Number(s): I-4-24-1

Fire Zone: 76A

Target Component(s)  
Number, Description & Function: FT 946B

Safety Injection Low Head Sub-system Flow to RCS Cold Leg Loop 3.

Postulated Failure Mode(s)  
and Evaluation:

C-1-(P) See FMEA 4-I-2

\_\_\_\_\_ X / 1 ( ) 2 (X) 3 ( ) 4 ( )  
Acceptable Potentially Unacceptable/Safety Function Affected

G Durniak 3/18/83  
EVALUATING ENGINEER/DATE

J R Price 3/31/83  
CHECKED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 SYSTEMS INTERACTION STUDY  
FAILURE MODES AND EFFECTS ANALYSIS  
OF POTENTIALLY UNACCEPTABLE INTERACTIONS

FMEA NUMBER: 4-I-13

Interaction Number(s): I-4-24-2

Fire Zone: 76A

Target Component(s)

Number, Description & Function: FT 946B

Safety Injection Low Head Sub-system Flow to RCS Cold Leg Loop 3.

Postulated Failure Mode(s)  
and Evaluation:

C-1-(P) See FMEA 4-I-2

\_\_\_\_\_ X / 1 ( ) 2 (X) 3 ( ) 4 ( )  
Acceptable Potentially Unacceptable/Safety Function Affected

\_\_\_\_\_  
G Durniak 3/18/83  
EVALUATING ENGINEER/DATE

\_\_\_\_\_  
J R Price 3/31/83  
CHECKED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 SYSTEMS INTERACTION STUDY  
FAILURE MODES AND EFFECTS ANALYSIS  
OF POTENTIALLY UNACCEPTABLE INTERACTIONS

FMEA NUMBER: 4-I-14

Interaction Number(s): I-4-26-2

Fire Zone: 62A

Target Component(s)

Number, Description & Function: FE 642HP Sensing Line

Local indication of flow from discharge of RHR Heat Exchangers to RHR Pumps Suction Header, for pump test only.

Postulated Failure Mode(s)  
and Evaluation:

C-1-(A)/C-2-(A) Local Flow indication is only required for testing.

X  
Acceptable

/ 1 ( ) 2 ( ) 3 ( ) 4 ( )  
Potentially Unacceptable/Safety Function Affected

G Durniak 3/18/83  
EVALUATING ENGINEER/DATE

J R Price 3/31/83  
CHECKED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 SYSTEMS INTERACTION STUDY  
FAILURE MODES AND EFFECTS ANALYSIS  
OF POTENTIALLY UNACCEPTABLE INTERACTIONS

FMEA NUMBER: 4-I-15

Interaction Number(s): I-4-27-2

Fire Zone: 62A

Target Component(s)

Number, Description & Function: FE 642LP Sensing Line

Local indication of flow from discharge of RHR Heat Exchangers to RHR  
Pumps Suction Header, for pump test only.

Postulated Failure Mode(s)  
and Evaluation:

C-1-(A)/C-2-(A) See FMEA 4-I-14

X  
Acceptable

/ 1 ( ) 2 ( ) 3 ( ) 4 ( )  
Potentially Unacceptable/Safety Function Affected

G Durniak 3/18/83  
EVALUATING ENGINEER/DATE

J R Price 3/31/83  
CHECKED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 SYSTEMS INTERACTION STUDY  
FAILURE MODES AND EFFECTS ANALYSIS  
OF POTENTIALLY UNACCEPTABLE INTERACTIONS

FMEA NUMBER: 4-I-16

Interaction Number(s): I-4-28-2

Fire Zone: 62A

Target Component(s)

Number, Description & Function: FI 642

Local indication of flow from discharge of RHR Heat Exchangers to RHR  
Pumps Suction Header, for pump test only.

Postulated Failure Mode(s)  
and Evaluation:

C-1-(A)/C-2-(A) See FMEA 4-I-14

X  
Acceptable

/ 1 ( ) 2 ( ) 3 ( ) 4 ( )  
Potentially Unacceptable/Safety Function Affected

G Durniak 3/18/83  
EVALUATING ENGINEER/DATE

J R Price 3/31/83  
CHECKED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 SYSTEMS INTERACTION STUDY  
FAILURE MODES AND EFFECTS ANALYSIS  
OF POTENTIALLY UNACCEPTABLE INTERACTIONS

FMEA NUMBER: 4-I-17

Interaction Number(s): I-4-31-1  
I-4-31-2

Fire Zone: 12A

Target Component(s)  
Number, Description & Function: PI 635

Local indication of RHR Pumps Discharge Header Pressure.

Postulated Failure Mode(s)  
and Evaluation:

C-1-(A)/C-2-(A) Local indication is not required for operation of the RHR  
Pumps.

X  
Acceptable

/ 1 ( ) 2 ( ) 3 ( ) 4 ( )  
Potentially Unacceptable/Safety Function Affected

G Durniak 3/18/83  
EVALUATING ENGINEER/DATE

J R Price 3/31/83  
CHECKED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 SYSTEMS INTERACTION STUDY  
FAILURE MODES AND EFFECTS ANALYSIS  
OF POTENTIALLY UNACCEPTABLE INTERACTIONS

FMEA NUMBER: 4-I-18

Interaction Number(s): I-4-32-1  
I-4-32-2

Fire Zone: 12A

Target Component(s)  
Number, Description & Function: PC 635

RHR Pumps Discharge Header Pressure Switch, to Hi pressure alarm on the ACS panel in the CCR.

Postulated Failure Mode(s)  
and Evaluation:

C-2-(A) High pressure protection of the RHR heat exchangers is accomplished using 3 relief valves and RCS high pressure interlocks. PC 635 performs no safety function.

X  
Acceptable

/ 1 ( ) 2 ( ) 3 ( ) 4 ( )  
Potentially Unacceptable/Safety Function Affected

G Durniak 3/18/83  
EVALUATING ENGINEER/DATE

J R Price 3/31/83  
CHECKED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 SYSTEMS INTERACTION STUDY  
FAILURE MODES AND EFFECTS ANALYSIS  
OF POTENTIALLY UNACCEPTABLE INTERACTIONS

FMEA NUMBER: 4-I-19

Interaction Number(s): I-4-33-1

Fire Zone: 12A

Target Component(s)

Number, Description & Function: PC 635 Sensing Line

RHR Pumps Discharge Header Pressure Switch, to Hi pressure alarm on the ACS panel in the CCR.

Postulated Failure Mode(s)  
and Evaluation:

C-2--(A) See FMEA 4-I-18

X  
Acceptable

/ 1 ( ) 2 ( ) 3 ( ) 4 ( )  
Potentially Unacceptable/Safety Function Affected

G Durniak 3/18/83  
EVALUATING ENGINEER/DATE

J R Price 3/31/83  
CHECKED/DATE



POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 SYSTEMS INTERACTION STUDY  
FAILURE MODES AND EFFECTS ANALYSIS  
OF POTENTIALLY UNACCEPTABLE INTERACTIONS

FMEA NUMBER: 4-I-20

Interaction Number(s): I-4-33-2

Fire Zone: 12A

Target Component(s)

Number, Description & Function: PC 635 Sensing Line

RHR Pumps Discharge Header Pressure Switch, to Hi pressure alarm on the ACS panel in the CCR.

Postulated Failure Mode(s)  
and Evaluation:

C-2-(A) See FMEA 4-I-18

X  
Acceptable

/ 1 ( ) 2 ( ) 3 ( ) 4 ( )  
Potentially Unacceptable/Safety Function Affected

G Durniak 3/18/83  
EVALUATING ENGINEER/DATE

J R Price 3/31/83  
CHECKED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
 INDIAN POINT 3  
 SYSTEMS INTERACTION STUDY  
 TABULATION OF POTENTIALLY UNACCEPTABLE SPATIAL INTERACTIONS  
 RESIDUAL HEAT REMOVAL SYSTEM  
 ELECTRICAL

POTENTIALLY UNACCEPTABLE INTERACTION NUMBER	FMEA		EIC		SPAN EVALUATION		
	(1)	(2)	(1)	(2)	(1)	(2)	(3)
E-4-1-1	4-E-1-P		78A-003-P		5209-78A-006-A		
E-4-2-1	4-E-2-P		78A-003-P		5209-78A-006-A		
E-4-3-1	4-E-2-P		78A-003-P		5209-78A-006-A		
E-4-4-1	4-E-1-P		78A-003-P		5209-78A-006-A		
E-4-9-1	4-E-1-P		78A-003-A			NR	
E-4-10-1	4-E-2-P		78A-003-A			NR	
* E-4-13-2	4-E-3-P		78A-004-P			NA	
* E-4-16-3	4-E-4-P		78A-005-P			NA	
* E-4-31-1	4-E-5-P		78A-004-P			NA	
* E-4-32-1	4-E-5-P		78A-004-P			NA	
E-4-39-1	4-E-6-A		78A-004-P			NR	
* E-4-43-2	4-E-7-P		72A-006-P			NA	
* E-4-44-2	4-E-7-P		72A-006-P			NA	
E-4-48-1	4-E-8-P		77A-002-P		5209-77A-009-A		
E-4-49-1	4-E-8-P		77A-002-P		5209-77A-009-A		
E-4-50-1	4-E-9-P		76A-001-A			NR	
E-4-51-1	4-E-9-P		76A-001-A			NR	

- NOTES: 1) Letter following numbers mean; A - Acceptable, P - Potentially Unacceptable.  
 2) NR - Evaluation is Not Required since interaction is now acceptable.  
 3) NA - Type of evaluation is not applicable to this interaction.  
 4) Disposed of by repair in AFW pump building.  
 \* Unacceptable by all 3 types of evaluation.

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3  
SYSTEMS INTERACTION STUDY  
TABULATION OF POTENTIALLY UNACCEPTABLE SPATIAL INTERACTIONS

RESIDUAL HEAT REMOVAL SYSTEM

ELECTRICAL

POTENTIALLY UNACCEPTABLE INTERACTION NUMBER	FMEA		EIC		SPAN EVALUATION		
	(1)	(2)	(1)	(2)	(1)	(2)	(3)
E-4-96-2	4-E-10-P		12A-003-P		5209-12A-044-A		
E-4-97-2	4-E-11-P		12A-003-P		5209-12A-044-A		
E-4-100-1	4-E-12-P		10A-002-A			NR	
E-4-101-1	4-E-12-P		10A-002-A			NR	
E-4-101-3	4-E-12-P		10A-003-A			NR	
E-4-101-4	4-E-12-P		10A-003-A			NR	
E-4-102-1	4-E-12-P		10A-002-A			NR	
* E-4-114-1	4-E-10-P		72A-005-P			P	
* E-4-115-1	4-E-10-P		72A-005-P			P	
* E-4-124-3	4-E-11-P		71A-008-P			NA	
* E-4-124-4	4-E-11-P		71A-009-P			NA	
* E-4-125-3	4-E-11-P		71A-008-P			NA	
* E-4-125-4	4-E-11-P		71A-009-P			NA	
* E-4-125-6	4-E-11-P		71A-011-P			NA	
E-4-135-1	4-E-13-A		59A-022-A			NR	
E-4-140-1	4-E-13-A		59A-022-A			NR	
E-4-145-2	4-E-12-P		4-001-P		5209-4-020-A		

- NOTES: 1) Letter following numbers mean; A - Acceptable, P - Potentially Unacceptable.  
 2) NR - Evaluation is Not Required since interaction is now acceptable.  
 3) NA - Type of evaluation is not applicable to this interaction.  
 4) Disposed of by repair in AFW pump building.  
 \* Unacceptable by all 3 types of evaluation.

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
MATRIX PREPARATION

SYSTEM NO E-4

SYSTEM NAME RESIDUAL HEAT REMOVAL

MATRIX CATEGORY

NON-CONNECTED X

INTERCONNECTED                     

ham 8/31/82  
PREPARED BY/DATE

J. S. Montalbano 9/2/82  
APPROVED BY/DATE

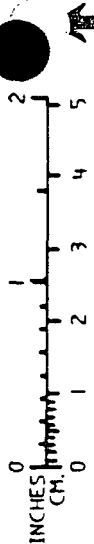
Ebasco Services Incorporated

# SOURCES

E-4

TARGETS

		No System Interaction	1	2	3												
		2" RVD Line #2AC	1" Line 379	1" Line 507													
1	Mov Box VM6 1869A	E36															
2	Mov Box VM7 1869B	E36															
3	3/4" Cnd 8NI1	E36															
4	3/4" Cnd 8NG3	E36															
5	1 1/2" Cnd 8NG2	X															
6	1" Cnd 8NG1	X															
7	1 1/2" Cnd 8NM1	X															
8	1" Cnd 8NM2	X															
9	6" Tray DB	E37															
10	6" Tray JA	E37															
11	Recirc P31 MTR		E27														
12	5" Cond 9MH		E27														
13	T Box P37		E27														
14	Recirc P32 MTR		E27														
15	5" Cond 9MG		E27														
16	Mov 1802 B Flex Cond			E28													



**BUILDING:** Reactor Containment  
**FIRE ZONE:** 78A  
**LOCATION:** Quad-III Elev 46 RHR Enclosure  
**WITHIN FIRE ZONE**

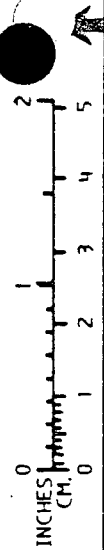
Residual Heat Removal

EBASCO SERVICES INCORPORATED		POWER AUTHORITY STATE OF NEW YORK		5209.003
DIV. <u>ELEC</u> DR. <u>RS</u>		INDIAN POINT No. 3		E-4
DATE <u>7/82</u> CH. <u>      </u>		SYSTEMS INTERACTION STUDY		SH 1 OF 23
SCALE <u>NONE</u>		INTERACTION MATRIX		
APPROVED				
J. MONTALBANO				

# SOURCES

# TARGETS

E-4	Target Description	No System Interaction																
17	2½" Cnd 8MV1	X																
18	2" Cnd 8MW1	X																
19	1" Cnd 8FD1	X																
20	Term Box WL4	X																
21	1" C8FD1 (DB)	X																
22	MOV 745B 1½" C 8GS1 (DB)	X																
23	1" C 8GJ1 (To DB)	X																
24	1" CND 8GH1 (DB)	X																
25	1½" CND 8GP1 (DB)	X																
26	¾" CND 8NJ	X																



**BUILDING:** Reactor Containment  
**FIRE ZONE:** 78A  
**LOCATION:** Quad-III Elev 68 RHR Enclosure  
**WITHIN FIRE ZONE**

Residual Heat Removal

EBASCO SERVICES INCORPORATED DIV. <u>ELEC</u> DR. <u>RM/JM</u> DATE <u>7/82</u> CH. <u>  </u> SCALE <u>NONE</u>	APPROVED <u>J. MONTALBANO</u>	POWER AUTHORITY STATE OF NEW YORK INDIAN POINT No. 3 SYSTEMS INTERACTION STUDY INTERACTION MATRIX	5209.003 E-4 SH 2 OF 23
--	----------------------------------	--	-------------------------------

# SOURCES

E-4

TAR- GETS	Description	No System Interaction	SOURCES															
			1 1" Aux Cooling Line #379															
27	Box for FT 945 B LR7	X																
28	3/4" Cnd 8MP	X																
29	Box for FT 945A LR6	X																
30	3/4" Cnd 8MN	X																
31	Box for FT 640 LH1		E38															
32	3/4" Cnd 8DV		E38															
33	Box for FT 638 KR9	X																
34	1" Cnd 8NV	X																
35	Box for FT 946D LZ9	X																
36	1" Cnd 8NW	X																
37	Box for TE 639 TD9	X																
38	3/4" Cnd 8NR	X																
39	3/4" Cnd 8NJ for TE 641		E38															
40	Mov 745A 1" C 8GL1 (To DB)	X																
41	Mov 745A 1" C 8GK2 (DA)	X																
42	Mov 745A 1 1/2" 8 GK1 (DB)	X																

**BUILDING:** Reactor Containment

**FIRE ZONE:** 78A

**LOCATION :** Quad III Elev 68 RHR Enclosure

**WITHIN FIRE ZONE**

Residual Heat Removal

EBASCO SERVICES INCORPORATED

POWER AUTHORITY STATE OF NEW YORK

5209.003

DIV. ELEC DR.RS/JM

APPROVED

INDIAN POINT No. 3

E-4

DATE 7/82 CH.

SYSTEMS INTERACTION STUDY

SH 3 OF 23

SCALE NONE

J. MONTALBANO

INTERACTION MATRIX

# SOURCES

E-4

		No System Interaction	Relief Valve Discharge 4" No. 38	3/8" #24, 1" #30 3" #40	Lighting Fixtures												
43	Box for FT 946C LZ8		E33	E34													
44	1" Cnd 8SK		E33	E34	E35												
45	Box XT9 for FIC 421	X															
46	3/4" Cnd 8LK1	X															
47	1" Cnd 8LJ1	X															

TARGETS

INCHES  
CM

BUILDING: Reactor Containment  
 FIRE ZONE: 72A  
 LOCATION: Quad II Elev 46  
 WITHIN FIRE ZONE

Residual Heat Removal

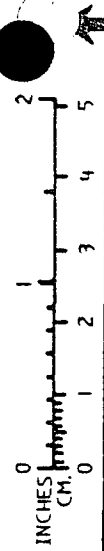
EBASCO SERVICES INCORPORATED	POWER AUTHORITY STATE OF NEW YORK	5209.003
DIV. <u>ELEC DR. JM/RS</u>	INDIAN POINT No. 3	E-4
DATE <u>7/82 CH.</u>	SYSTEMS INTERACTION STUDY	SH 4 OF 23
SCALE <u>NONE</u>	INTERACTION MATRIX	
APPROVED J. MONTALBANO		



# SOURCES

# TARGETS

		1		2													
		No System Interaction	Waste Disposal Line 3" #40	Waste Disposal Line 3/4" #24													
E-4																	
48	Box for FT 946A LC4		E31	E31													
49	3/4" Cnd 8ZM		E31	E31													



**BUILDING:** Reactor Containment  
**FIRE ZONE:** 77A  
**LOCATION:** Quad IV, Elev 46  
**WITHIN FIRE ZONE**

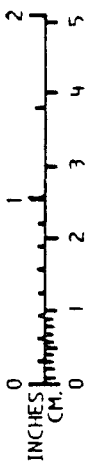
Residual Heat Removal

EBASCO SERVICES INCORPORATED DIV. <u>ELEC DRRS/JM</u> DATE <u>7/82</u> CH. _____ SCALE <u>NONE</u>	APPROVED J MONTALBANO	POWER AUTHORITY STATE OF NEW YORK INDIAN POINT No. 3 SYSTEMS INTERACTION STUDY INTERACTION MATRIX
		5209 003 E-4 SH 5 OF 23

SOURCES

TARGETS

E-4		No System Interaction	1" Line #317																	
50	Box for FT 946B LC5		E30																	
51	3/4" Cnd 8VP		E30																	



BUILDING: Reactor Containment  
 FIRE ZONE: 76A  
 LOCATION: Quad III, Elev 46  
 WITHIN FIRE ZONE

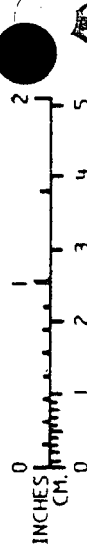
Residual Heat Removal

EBASCO SERVICES INCORPORATED	POWER AUTHORITY STATE OF NEW YORK	5209.003
DIV. <u>ELEC</u> DR. <u>RS/JM</u> APPROVED	INDIAN POINT No. 3	E-4
DATE <u>7/82</u> CH. _____	SYSTEMS INTERACTION STUDY	SH 6 OF 23
SCALE <u>NONE</u>	J MONTALBANO	
	INTERACTION MATRIX	

# SOURCES

TARGETS

No	Description	No System Interaction	1" Line 507												
E-4															
52	1 1/2" Cond SNTI (To DA)		E28												
53	1 1/2" C 8NS1 (To DB)		E28												
54	1 1/2" C 8NU1 (To DB)		E28												
55	Mov 1802A Flex C		E28												
56	1 1/2" C 9MC2 (To DB)		E28												
57	1 1/2" C 9MC1 (To DB)		E28												
58	1 1/2" C 9MD, (To DB)		E28												
59	T Box XD5		E28												
60	Mov 899A 1 1/2" Cond 8GI2 (To DA)	X													
61	Mov 899A 1" Cond 8GI1 (To DA)	X													
62	Mov 899A 1 1/2" C 8HV1 (To DB)	X													
63	Mov 899A T Box WL4	X													
64	Mov 746 1" C 8GF1 (To DB)	X													
65	Mov 746 1 1/2" C 8GR1 (To DB)	X													
66	Mov 746 1" C 8GG1 (To DB)	X													
67	Pull Box ZV4	X													



**BUILDING:** Reactor Containment

**FIRE ZONE:** 78A

**LOCATION:** Quad III, Elev 46 RHR Enclosure

**WITHIN FIRE ZONE**

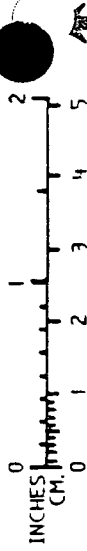
Residual Heat Removal

EBASCO SERVICES INCORPORATED. DIV. <u>ELEC</u> DR. <u>RS</u> /JM DATE <u>7/82</u> CH. _____ SCALE <u>NONE</u>	APPROVED J. MONTAÑANO	POWER AUTHORITY STATE OF NEW YORK INDIAN POINT No. 3 SYSTEMS INTERACTION STUDY INTERACTION MATRIX
		5209.003 E-4 SH 7 OF 23

# SOURCES

# TARGETS

		No System Interaction																
E-4																		
68	2½" C 8MV1 (ZV4 DB)	X																
69	Pull Box ZV5	X																
70	2" C 8MW1 (ZV DB)	X																
71	HCV 640 1½" C 8GT1 (To DB)	X																
72	HCV 640 1" C 8GM1 (To DB)	X																
73	HCV 640 1" C 8GN1 (To DB)	X																
74	Mov 747 (WL4) 1½" C 8MH1 (to DB)	X																
75	Mov 747 1" C 8MG1 (To DB)	X																
76	Mov 747 1½" C 8MG2 (To DB)	X																
77	T Box WL4	X																
78	Mov 899B (WL 4) 1½" C 8MJ1 (To DB)	X																
79	Mov 899B 1" C 8MI1 (To DA)	X																
80	Mov 899B (ZV6) 1½" C 8GV1 (To DA)	X																
81	Pull Box ZV6	X																
82	2½" C 8MY1 (ZV6 DA)	X																
83	HCV 638 (WL4) 1" C 8ML1 (To DB)	X																



**BUILDING:** Reactor Containment

**FIRE ZONE:** 78A

**LOCATION:** Quad III, Elev 46 RHR Enclosure

**WITHIN FIRE ZONE**

Residual Heat Removal

EBASCO SERVICES INCORPORATED		POWER AUTHORITY STATE OF NEW YORK		5209.003
DIV. <u>ELEC</u> DR. <u>RS/JM</u>	APPROVED	INDIAN POINT No. 3		E-4
DATE <u>7/82</u> CH. _____	J MONTALBANO	SYSTEMS INTERACTION STUDY		SH 8 OF 23
SCALE <u>NONE</u>		INTERACTION MATRIX		

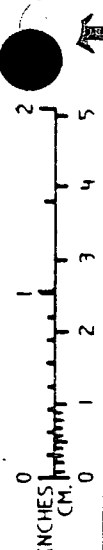


SOURCES

E-4

		No System Interaction																
84	HCV 638 (ZV6 ) 1½" C 8HD1 (To DA)	X																
85	HCV 638 (ZV7) 1" C 8MK1 (To DA)	X																
86	2" C 8MZ1(ZV7 DA)	X																

TARGETS



BUILDING: Reactor Containment  
FIRE ZONE: 78A  
LOCATION : Quad III, Elev 46 RHR Enclosure  
WITHIN FIRE ZONE

Residual Heat Removal

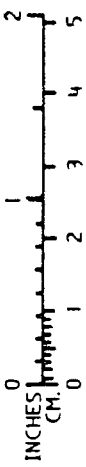
EBASCO SERVICES INCORPORATED		POWER AUTHORITY STATE OF NEW YORK		5209.003
DIV. <u>ELEC DRS/JM</u>	APPROVED	INDIAN POINT No. 3		E-4
DATE <u>7/82 CH.</u>	J MONTALBANO	SYSTEMS INTERACTION STUDY		SH 9 OF 23
SCALE <u>NONE</u>		INTERACTION MATRIX		

# SOURCES

E-4

		No System Interaction	LTC BOX & CND										
87	1" Cnd 4FF, For TE 636	X											
88	Box For TE 636 TR9	X											
89	1" Cnd 4FI	X											
90	Box W22		E190										
91	2½" Cnd 4FG		E190										

TARGETS



BUILDING: Primary Auxiliary  
 FIRE ZONE: 69A  
 LOCATION: Elev 15'  
 WITHIN FIRE ZONE

Residual Heat Removal

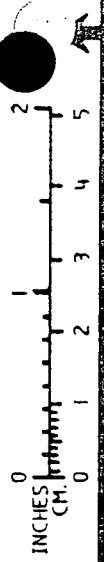
EBASCO SERVICES INCORPORATED		POWER AUTHORITY STATE OF NEW YORK		5209.003
DIV. <u>ELEC DRS/JM</u>		INDIAN POINT No. 3		E-4
DATE <u>7/82 CH</u>		SYSTEMS INTERACTION STUDY		SH10 OF 23
SCALE <u>NONE</u>		INTERACTION MATRIX		
APPROVED				
J. MONTALBANO				



# SOURCES

# TARGETS

			1												
E-4		No System Interaction	Lighting Cond & Box												
92	1" Cnd 4FF		E101												
93	2½" Cnd 4FG		E101												



BUILDING: Primary Auxiliary  
 FIRE ZONE: 3  
 LOCATION: Elev 15'  
 WITHIN FIRE ZONE

Residual Heat Removal

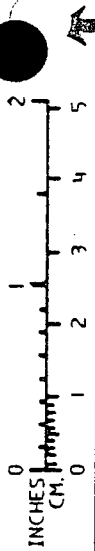
EBASCO SERVICES INCORPORATED		POWER AUTHORITY STATE OF NEW YORK		5209.003	
DIV. <u>ELEC</u> DR./RS/IN	APPROVED	INDIAN POINT No. 3		E-4	
DATE <u>7/82</u> CH.	MONTALBANO	SYSTEMS INTERACTION STUDY		SH 11 OF 23	
SCALE <u>NONE</u>		INTERACTION MATRIX			



# SOURCES

TARGETS

		No System Interaction	1															
		Lighting Cnd & Fixture																
E-4																		
94	1" Cnd 4FF		E99															
95	2½" Cnd 4FG		E99															



BUILDING: Primary Auxiliary  
 FIRE ZONE: 9A  
 LOCATION : Elev 15'  
 WITHIN FIRE ZONE

Residual Heat Removal

EBASCO SERVICES INCORPORATED  
 DIV. ELEC DR.RS/JM  
 DATE 7/82 CH. \_\_\_\_\_  
 SCALE NONE

POWER AUTHORITY STATE OF NEW YORK  
 INDIAN POINT No. 3  
 SYSTEMS INTERACTION STUDY  
 INTERACTION MATRIX

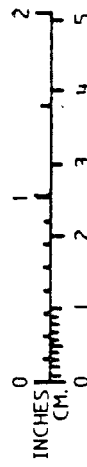
5209. 003  
 E-4  
 SH12 OF23





# SOURCES

# TARGETS



		1		2		3		4		5		6		7		8		9		10		
		No System Interaction	Lighting Fixture	4" Floor Drain FD4-4																		
E-4																						
96	2½" Cnd 4FG			E102																		
97	1" Cnd 4FF			E102																		
98	Box LP3 for PC 635			E103																		
99	1" Cnd 4FI			E103																		

**BUILDING:** Primary Auxiliary  
**FIRE ZONE:** 12A  
**LOCATION:** Elev 15'  
**WITHIN FIRE ZONE**

Residual Heat Removal

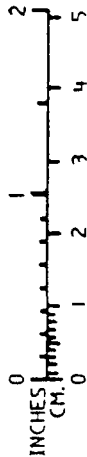
EBASCO SERVICES INCORPORATED DIV. <u>ELEC</u> DR. <u>RS/JM</u> DATE <u>7/82</u> CH. _____ SCALE <u>NONE</u>	APPROVED  J MONTALBANO	POWER AUTHORITY STATE OF NEW YORK INDIAN POINT No. 3 SYSTEMS INTERACTION STUDY INTERACTION MATRIX	5209.003 E-4 SH 13 OF 23
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# SOURCES

E-4

		No System Interaction	1 3" Line 126	2 2" Line 121	3 2" Line 119	4 2" Line 127												
100	2½" Cnd 4FG		E177	E178	E177	E177												
101	Box W23		E177	E178	E177	E177												
102	2" Cnd 4FB		E177	E178	E177	E177												
103	Box W19			E178														
104	3½" Cnd 4AG			E178														

TARGETS



**BUILDING:** Primary Auxiliary  
**FIRE ZONE:** 10A  
**LOCATION:** Elev 15'  
**WITHIN FIRE ZONE**

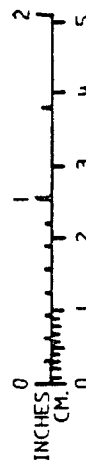
Residual Heat Removal

EBASCO SERVICES INCORPORATED		POWER AUTHORITY STATE OF NEW YORK		5209.003
DIV. <u>ELEG DR.RS/JM</u>		INDIAN POINT No. 3		E-4
DATE <u>7/82</u> CH. <u>        </u>		SYSTEMS INTERACTION STUDY		SH 14 OF 23
SCALE <u>NONE</u>		INTERACTION MATRIX		
APPROVED				
J MONTALBANO				

# SOURCES

# TARGETS

		E-4																
		No System Interaction	1 Lighting Cnd	2 Lighting Cnd	3 Lighting Cnd													
105	1" Cnd 4FF		E92		E95													
106	Box W24	X																
107	2" Cnd 4AI			E104														
108	Box W20			E104														
109	3½" Cnd 4BM			E104														



BUILDING: Primary Auxiliary  
 FIRE ZONE: 14A  
 LOCATION: Elev 15'  
 WITHIN FIRE ZONE

Residual Heat Removal

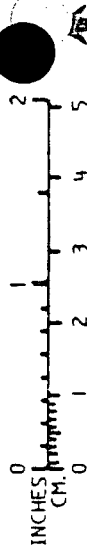
EBASCO SERVICES INCORPORATED DIV. <u>ELEC. DRRS/JM</u> DATE <u>7/82</u> CH. <u>        </u> SCALE <u>NONE</u>	APPROVED <u>J MONTALBANO</u>	POWER AUTHORITY STATE OF NEW YORK INDIAN POINT No. 3 SYSTEMS INTERACTION STUDY INTERACTION MATRIX	5209.003 E-4 SH 15 OF 23
--	---------------------------------	--	--------------------------------

SOURCES

E-4

		1																			
		No System Interaction	Speaker																		
110	2½" Cnd 4FG		E100																		
111	1" Cnd 4FF		E100																		

TARGETS



BUILDING: Primary Auxiliary  
 FIRE ZONE: 8A  
 LOCATION: Elev 15'  
 WITHIN FIRE ZONE

Residual Heat Removal

EBASCO SERVICES INCORPORATED		POWER AUTHORITY STATE OF NEW YORK		5209.003
DIV. <u>ELEC</u> DR. <u>RS/JM</u>	APPROVED		E-4	
DATE <u>7/82</u> CH. _____	J MONTALBANO		SH 16 OF 23	
SCALE <u>NONE</u>				

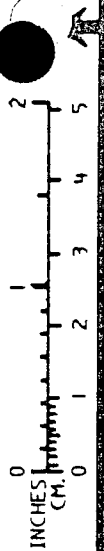
INDIAN POINT No. 3  
 SYSTEMS INTERACTION STUDY  
 INTERACTION MATRIX

# SOURCES

E-4

112	3½" Cnd 4AG	X													

TARGETS



BUILDING: Primary Auxiliary  
 FIRE ZONE: 9  
 LOCATION: Elev 34'  
 WITHIN FIRE ZONE

Residual Heat Removal

EBASCO SERVICES INCORPORATED		POWER AUTHORITY STATE OF NEW YORK		5209.003	
INDIAN POINT No. 3				E-4	
SYSTEMS INTERACTION STUDY				SH 17 OF 23	
INTERACTION MATRIX					

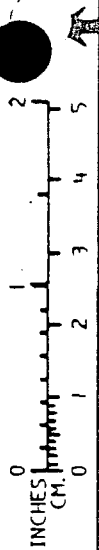
DIV. ELEC. DR. RS/JM  
 DATE 7/82 CH. \_\_\_\_\_  
 SCALE NONE

APPROVED  
 J. MONTALBANO

SOURCES

TARGETS

			1	2														
		NO INTERACTION	Station Air Line 2"	Light Fixture														
E-4	MOV 731																	
113	4" CND 8RR1	X																
	MOV 730																	
114	1" CND 8RK1		E24															
115	1-1/4" CND 8RK2		E24															
116	1" CND 9CP	X																
117	Pull Box XR6	X																
118	3" CND 8UA1	X																
119	3" CND 8UA2	X																
120	Pull Box Z24	X																
121	2" CND 9CQ			E23														



BUILDING: Reactor Containment  
 FIRE ZONE: 72A  
 LOCATION: Elev 46, Quad II  
 WITHIN FIRE ZONE

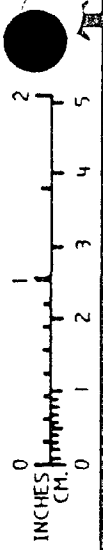
Residual Heat Removal

EBASCO SERVICES INCORPORATED	POWER AUTHORITY STATE OF NEW YORK	5209.003
DIV. <u>Elec</u> DR.RS/JM	INDIAN POINT No. 3	E-4
DATE <u>8/82</u> CH. _____	SYSTEMS INTERACTION STUDY	SH 18 OF 23
SCALE <u>NONE</u>	INTERACTION MATRIX	
APPROVED		
J F Montalbano		

# SOURCES

		1	2	3	4	5	6							
		NO INTERACTION	1" Line #381	Light	2" WD 338-01	2" WD 338-02	Deleted	1" Drain Line						
E-4	MOV 731													
122	1" CND 8QF2		E61											
123	1-1/2" CND 8QF2		E61											
124	1" CND 9CN			E26	E135	E135		E135						
125	Pull Box XQ7				E135	E135		E135						
126	4" CND 8RR1				E135	E135		E135						

TARGETS



**BUILDING:** Reactor Containment  
**FIRE ZONE:** 71A  
**LOCATION :** Inside Crane Wall, Elev 46  
**WITHIN FIRE ZONE** Quad II

Residual Heat Removal

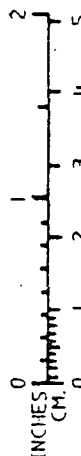
EBASCO SERVICES INCORPORATED.		POWER AUTHORITY STATE OF NEW YORK		5209.003
DIV. Elec DR,RS/JM		INDIAN POINT No. 3		E-4
DATE 8/82 CH. _____		SYSTEMS INTERACTION STUDY		SH 19 OF 23
SCALE NONE		INTERACTION MATRIX		
APPROVED				
J F Montalbano				

# SOURCES

E-4

		NO INTERACTION	1	1" LINE #67														
/ /	MOV 1870																	
127	1" CND 7HP			E96 E97														
128	1½" CND 7HN			E96 E97														
129	2" CND 7HQ			E96 E97														
/ /	MOV 743																	
130	1" CND 7JP			E97														
131	1½" CND 7JQ			E97														
132	2" CND 7JN			E97														
133	PULL BOX ZW8	X																
134	3½" CND 7JA	X																
135	PULL BOX WH5			E97														
136	3" CND 7MN1			E97														
137	3" CND 7MN2			E97														
138	PULL _OX X76	X																
139	2" CND 7JU			E97														
140	PULL BOX X77			E97														

TARGETS



**BUILDING:** PRIMARY AUXILIARY  
**FIRE ZONE:** 59A  
**LOCATION:** Piping Penet Area, EL 51'  
**WITHIN FIRE ZONE**

RESIDUAL HEAT REMOVAL

EBASCO SERVICES INCORPORATED DIV. ELEC <u>DRRS/JM</u> DATE <u>8/82</u> CH. _____ SCALE <u>NONE</u>	APPROVED J F MONTALBANO	POWER AUTHORITY STATE OF NEW YORK INDIAN POINT No. 3 SYSTEMS INTERACTION STUDY INTERACTION MATRIX
		5209.003 E-4 SH 20 OF 23



SOURCES

TARGETS

			1															
		NO INTERACTION	1" LINE #67															
E-4																		
141	2½" CND 7JV		E97															
///	MOV 744																	
142	1" CND 7JL	X																
143	1½" CND 7JM	X																
144	2" CND 7JK	X																

INCHES  
CM  
0 1 2 3 4 5

BUILDING: PRIMARY AUXILIARY

FIRE ZONE: 59A

LOCATION: Piping Penet Area, EL 51'

WITHIN FIRE ZONE

Residual Heat Removal

EBASCO SERVICES INCORPORATED

DIV. ELEC. DR.RS./JM

DATE 8/82 CH.

SCALE NONE

POWER AUTHORITY STATE OF NEW YORK

INDIAN POINT No. 3

SYSTEMS INTERACTION STUDY

INTERACTION MATRIX

5209.003

E-4

SH 21 OF 23

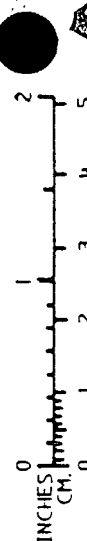
APPROVED

J F MONTALBANO

SOURCES

TARGETS

		1	2											
		NO INTERACTION	2" LINE #725	4" DRAIN LINE										
E-4														
145	RHR MTR #32		E93	E94										
146	5" CND 4CQ		E93	E94										



BUILDING: PRIMARY AUXILIARY  
 FIRE ZONE: 4  
 LOCATION: ELEV 55'  
 WITHIN FIRE ZONE

RESIDUAL HEAT REMOVAL

EBASCO SERVICES INCORPORATED		POWER AUTHORITY STATE OF NEW YORK		5209.003
DIV. <u>ELEC</u>	DR. <u>RS/JM</u>	INDIAN POINT No. 3		E-4
DATE <u>8/82</u>	CH. _____	SYSTEMS INTERACTION STUDY		SH <u>22 OF 23</u>
SCALE <u>NONE</u>		INTERACTION MATRIX		
APPROVED				
J. F. MONTALBANO				

**SOURCES**

		NO INTERACTION	1 LIGHT FIXTURE												
147	3" CND 8UA1		E25												
148	3" CND 8UA2		E25												



**TARGETS**

**BUILDING:** REACTOR CONTAINMENT

**FIRE ZONE:** 75A

**LOCATION:** QUAD I ELEV 46'  
**WITHIN FIRE ZONE**

RESIDUAL HEAT REMOVAL

EBASCO SERVICES INCORPORATED		POWER AUTHORITY STATE OF NEW YORK 5209.003	
DIV. <u>ELEC</u> DR. <u>RS</u>	APPROVED		INDIAN POINT No. 3 SYSTEMS INTERACTION STUDY INTERACTION MATRIX
DATE <u>7/82</u> CH. _____	J. F. MONTALBANO		
SCALE <u>NONE</u>		SH <u>23</u> OF <u>23</u>	

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY

NON-CONNECTED INTERACTIONS EVALUATION

1. No Interaction - Source is Class II and is therefore supported adequately. (See response to IP-3 FSAR question 5.24).
2. Acceptable - Source pipe/conduit is equal size or smaller in diameter and/or the same thickness or thinner wall than the target pipe/conduit/tubing. Paragraph 6.2.2.1a Volume I.
3. Acceptable - Source has insufficient mass to damage the target component.
4. Acceptable - Basis is engineering judgement. Specific justification is on the evaluation form.
5. Potentially Unacceptable - Discussion of specific is on the evaluation form.
6. Potentially Unacceptable - Source pipe/conduit is large enough to damage target conduit/pipe/tubing.
7. Potentially Unacceptable - Source will fall a sufficient distance, or has adequate mass such that damage to target conduit/box/instrument/tubing/panel may be possible.
8. No Interaction - Upon further investigation of the source, this portion of its system is designated Seismic I.

R2 7/22/82  
R1 6/30/82  
R0 6/26/82

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
SYSTEMS INTERACTION EVALUATION

SYSTEM NO. E-4

SYSTEM NAME RESIDUAL HEAT REMOVAL

EVALUATION CATEGORY

NON-CONNECTED X

INTERCONNECTED \_\_\_\_\_

Eugene Licari 8/30/82  
INTERACTION ENGINEER/DATE

W. Griswold 9-30-82  
VERIFIED/DATE

Ebasco Services Incorporated

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Reactor Containment  
FIRE ZONE: 78A  
LOCATION WITHIN FIRE ZONE: Quad III, EL 46' RHR Enclosure  
POTENTIAL INTERACTION NO.: E-4-1-1  
PHOTOGRAPH NO.: E36  
BACKGROUND NO.: Sheet 9

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: MOV Box VM6 1869A

SOURCE: 2" RVD Line #2AC

DESCRIPTION OF POSTULATED INTERACTION:

Source Falls on Target

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 7

ACCEPTABLE

X

POTENTIALLY  
UNACCEPTABLE

E Licari/ 8-30-82

W A Griswold/ 9-30-82

INTERACTION ENGINEER/DATE

VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Reactor Containment

FIRE ZONE: 78A

LOCATION WITHIN FIRE ZONE: Quad III, EL 46' RHR Enclosure

POTENTIAL INTERACTION NO.: E-4-2-1

PHOTOGRAPH NO.: E36

BACKGROUND NO.: Sheet 9

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: MOV Box VM7 1869B

SOURCE: 2" RVD Line #2AC

DESCRIPTION OF POSTULATED INTERACTION:

Source Falls on Target

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 7

ACCEPTABLE

X

POTENTIALLY UNACCEPTABLE

E Licari/ 8-30-82

W A Griswold/ 9-30-82

INTERACTION ENGINEER/DATE

VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Reactor Containment  
FIRE ZONE: 78A  
LOCATION WITHIN FIRE ZONE: Quad III, EL 46' RHR Enclosure  
POTENTIAL INTERACTION NO.: E-4-3-1  
PHOTOGRAPH NO.: E36  
BACKGROUND NO.: Sheet 9

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 3/4" Cnd 8N11

SOURCE: 2" RVD Line #2AC

DESCRIPTION OF POSTULATED INTERACTION:

Source Falls on Target

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 6

\_\_\_\_\_  
ACCEPTABLE

E Licari/ 8-30-82

\_\_\_\_\_  
INTERACTION ENGINEER/DATE

\_\_\_\_\_  
X  
POTENTIALLY UNACCEPTABLE

W A Griswold/ 9-30-82

\_\_\_\_\_  
VERIFIED/DATE



POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Reactor Containment  
FIRE ZONE: 78A  
LOCATION WITHIN FIRE ZONE: Quad III, EL 46' RHR Enclosure  
POTENTIAL INTERACTION NO.: E-4-4-1  
PHOTOGRAPH NO.: E36  
BACKGROUND NO.: Sheet 9

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 3/4" Cnd 8NG3

SOURCE: 2" RVD Line #2AC

DESCRIPTION OF POSTULATED INTERACTION:

Source Falls on Target

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 6

ACCEPTABLE

X

POTENTIALLY  
UNACCEPTABLE

E Licari/ 8-30-82

W A Griswold/ 9-30-82

INTERACTION ENGINEER/DATE

VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Reactor Containment

FIRE ZONE: 78A

LOCATION WITHIN FIRE ZONE: Quad III, EL 46' RHR Enclosure

POTENTIAL INTERACTION NO.: E-4-9-1

PHOTOGRAPH NO.: E37

BACKGROUND NO.: Sheet 11

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 6" Tray DB

SOURCE: 2" RVD Line #2AC

DESCRIPTION OF POSTULATED INTERACTION:

Source Falls on Target

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 5

Source may damage cables in tray

ACCEPTABLE

X POTENTIALLY UNACCEPTABLE

E Licari/ 8-30-82

W A Griswold/ 9-30-82

INTERACTION ENGINEER/DATE

VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Reactor Containment  
FIRE ZONE: 78A  
LOCATION WITHIN FIRE ZONE: Quad III, EL 46' RHR Enclosure  
POTENTIAL INTERACTION NO.: E-4-10-1  
PHOTOGRAPH NO.: E37  
BACKGROUND NO.: Sheet 11

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 6" Tray JA

SOURCE: 2" RVD Line #2AC

DESCRIPTION OF POSTULATED INTERACTION:

Source Falls on Target

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 5

Source may damage cables in tray

\_\_\_\_\_  
ACCEPTABLE

\_\_\_\_\_  
X POTENTIALLY UNACCEPTABLE

E Licari/ 8-30-82

W A Griswold/ 9-30-82

\_\_\_\_\_  
INTERACTION ENGINEER/DATE

\_\_\_\_\_  
VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Reactor Containment  
FIRE ZONE: 78A  
LOCATION WITHIN FIRE ZONE: Quad III, EL 46' RHR Enclosure  
POTENTIAL INTERACTION NO.: E-4-11-2  
PHOTOGRAPH NO.: E27  
BACKGROUND NO.: Sheet 11

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: Recirc P31 MTR

SOURCE: 1" Line 379

DESCRIPTION OF POSTULATED INTERACTION:

Source Falls on Target

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 3

X ACCEPTABLE

POTENTIALLY  
UNACCEPTABLE

E Licari/ 8-30-82

W A Griswold/ 9-30-82

INTERACTION ENGINEER/DATE

VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Reactor Containment  
FIRE ZONE: 78A  
LOCATION WITHIN FIRE ZONE: Quad III, EL 46' RHR Enclosure  
POTENTIAL INTERACTION NO.: E-4-12-2  
PHOTOGRAPH NO.: E27  
BACKGROUND NO.: Sheet 11

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 5" Cond 9MH  
SOURCE: 1" Line 379

DESCRIPTION OF POSTULATED INTERACTION:

Source Falls on Target

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 2

X ACCEPTABLE

POTENTIALLY  
UNACCEPTABLE

E Licari/ 8-30-82

W A Griswold/ 9-30-82

INTERACTION ENGINEER/DATE

VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING:                    Reactor Containment  
FIRE ZONE:                  78A  
LOCATION WITHIN FIRE ZONE:   Quad III, EL 46' RHR Enclosure  
POTENTIAL INTERACTION NO.:   E-4-13-2  
PHOTOGRAPH NO.:            E27  
BACKGROUND NO.:            Sheet    11

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET:                    T Box P37  
  
SOURCE:                    1" Line 379

DESCRIPTION OF POSTULATED INTERACTION:

Source Falls on Target

EVALUATION OF INTERACTION:

EVALUATION NOTE NO:       7

\_\_\_\_\_  
ACCEPTABLE

\_\_\_\_\_  
X  
\_\_\_\_\_  
POTENTIALLY  
UNACCEPTABLE

E Licari/ 8-30-82

W A Griswold/ 9-30-82

\_\_\_\_\_  
INTERACTION ENGINEER/DATE

\_\_\_\_\_  
VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Reactor Containment  
FIRE ZONE: 78A  
LOCATION WITHIN FIRE ZONE: Quad III, EL 46' RHR Enclosure  
POTENTIAL INTERACTION NO.: E-4-14-2  
PHOTOGRAPH NO.: E27  
BACKGROUND NO.: Sheet 11

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: Recirc P32 MTR  
  
SOURCE: 1" Line 379

DESCRIPTION OF POSTULATED INTERACTION:

Source Falls on Target

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 3

X ACCEPTABLE

POTENTIALLY  
UNACCEPTABLE

E Licari/ 8-30-82

W A Griswold/ 9-30-82

INTERACTION ENGINEER/DATE

VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Reactor Containment  
FIRE ZONE: 78A  
LOCATION WITHIN FIRE ZONE: Quad III, EL 46' RHR Enclosure  
POTENTIAL INTERACTION NO.: E-4-15-2  
PHOTOGRAPH NO.: E27  
BACKGROUND NO.: Sheet 11

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 5" Cond 9MG  
SOURCE: 1" Line 379

DESCRIPTION OF POSTULATED INTERACTION:

Source Falls on Target

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 2

X ACCEPTABLE

POTENTIALLY  
UNACCEPTABLE

E Licari/ 8-30-82

W A Griswold/ 9-30-82

INTERACTION ENGINEER/DATE

VERIFIED/DATE



POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Reactor Containment  
FIRE ZONE: 78A  
LOCATION WITHIN FIRE ZONE: Quad III, EL 46' RHR Enclosure  
POTENTIAL INTERACTION NO.: E-4-16-3  
PHOTOGRAPH NO.: E28  
BACKGROUND NO.: Sheet 11

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: MOV 1802B Flex Cond

SOURCE: 1" Line 507

DESCRIPTION OF POSTULATED INTERACTION:

Source Falls on Target

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 6

\_\_\_\_\_  
ACCEPTABLE

\_\_\_\_\_  
X POTENTIALLY UNACCEPTABLE

E Licari/ 8-30-82

W A Griswold/ 9-30-82

\_\_\_\_\_  
INTERACTION ENGINEER/DATE

\_\_\_\_\_  
VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Reactor Containment  
FIRE ZONE: 78A  
LOCATION WITHIN FIRE ZONE: Quad III, EL 68' RHR Enclosure  
POTENTIAL INTERACTION NO.: E-4-31-1  
PHOTOGRAPH NO.: E38  
BACKGROUND NO.: Sheet 7

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: Box for FT 640 LH1  
SOURCE: 1" Aux Cooling Line #379

DESCRIPTION OF POSTULATED INTERACTION:

Source Falls on Target

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 7

ACCEPTABLE

X POTENTIALLY UNACCEPTABLE

E Licari/ 8-30-82

W A Griswold/ 9-30-82

INTERACTION ENGINEER/DATE

VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Reactor Containment  
FIRE ZONE: 78A  
LOCATION WITHIN FIRE ZONE: Quad III, EL 68' RHR Enclosure  
POTENTIAL INTERACTION NO.: E-4-32-1  
PHOTOGRAPH NO.: E38  
BACKGROUND NO.: Sheet 7

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 3/4" Cnd 8DV  
SOURCE: 1" Aux Cooling Line #379

DESCRIPTION OF POSTULATED INTERACTION:

Source Falls on Target

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 6

\_\_\_\_\_  
ACCEPTABLE

\_\_\_\_\_  
X  
POTENTIALLY UNACCEPTABLE

E Licari/ 8-30-82

W A Griswold/ 9-30-82

\_\_\_\_\_  
INTERACTION ENGINEER/DATE

\_\_\_\_\_  
VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Reactor Containment  
FIRE ZONE: 78A  
LOCATION WITHIN FIRE ZONE: Quad III. EL 68' RHR Enclosure  
POTENTIAL INTERACTION NO.: E-4-39-1  
PHOTOGRAPH NO.: E38  
BACKGROUND NO.: Sheet 7

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 3/4" Cnd 8NJ for TE 641  
SOURCE: 1" Aux Cooling Line #379

DESCRIPTION OF POSTULATED INTERACTION:

Source Falls on Target

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 6

\_\_\_\_\_ ACCEPTABLE

\_\_\_\_\_ X \_\_\_\_\_ POTENTIALLY UNACCEPTABLE

E Licari/ 8-30-82

W A Griswold/ 9-30-82

\_\_\_\_\_  
INTERACTION ENGINEER/DATE

\_\_\_\_\_  
VERIFIED/DATE



POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Reactor Containment  
FIRE ZONE: 72A  
LOCATION WITHIN FIRE ZONE: Quad II, EL 46'  
POTENTIAL INTERACTION NO.: E-4-43-2  
PHOTOGRAPH NO.: E34  
BACKGROUND NO.: Sheet 10

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: Box for FT 946C LZ8

SOURCE: Lines 3/8" #24 (obscured) 1" #30 (top), and 3" #40 (middle)

DESCRIPTION OF POSTULATED INTERACTION:

Source Falls on Target

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 1 For Lines 24 & 30  
7 For Line 40

ACCEPTABLE

POTENTIALLY  
UNACCEPTABLE

X

E Licari/ 8-30-82

W A Griswold/ 9-30-82

INTERACTION ENGINEER/DATE

VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Reactor Containment  
FIRE ZONE: 72A  
LOCATION WITHIN FIRE ZONE: Quad II, EL 46'  
POTENTIAL INTERACTION NO.: E-4-44-1  
PHOTOGRAPH NO.: E33  
BACKGROUND NO.: Sheet 10

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 1" Cnd 8SK  
SOURCE: Relief Valve Discharge 4" No. 38

DESCRIPTION OF POSTULATED INTERACTION: N/A

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 1

X ACCEPTABLE

POTENTIALLY  
UNACCEPTABLE

E Licari/ 8-30-82

W A Griswold/ 9-30-82

INTERACTION ENGINEER/DATE

VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Reactor Containment  
FIRE ZONE: 72A  
LOCATION WITHIN FIRE ZONE: Quad II, EL 46'  
POTENTIAL INTERACTION NO.: E-4-44-2  
PHOTOGRAPH NO.: E34  
BACKGROUND NO.: Sheet 10

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 1" Cnd 8SK  
SOURCE: Lines 3/8" #24 (obscured), 1" #30 (top) and 3" #40 (middle)

DESCRIPTION OF POSTULATED INTERACTION:

Source Falls on Target

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 1 For Line 24 & 30  
6 For Line 40

ACCEPTABLE

X

POTENTIALLY  
UNACCEPTABLE

E Licari/ 8-30-82

W A Griswold/ 9-30-82

INTERACTION ENGINEER/DATE

VERIFIED/DATE



POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Reactor Containment

FIRE ZONE: 72A

LOCATION WITHIN FIRE ZONE: Quad II, EL 46'

POTENTIAL INTERACTION NO.: E-4-44-3

PHOTOGRAPH NO.: E35

BACKGROUND NO.: Sheet 10

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 1" Cnd 8SK

SOURCE: Lighting Fixture

DESCRIPTION OF POSTULATED INTERACTION:

Source Falls on Target

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 3

X ACCEPTABLE

POTENTIALLY  
UNACCEPTABLE

E Licari/ 8-30-82

W A Griswold/ 9-30-82

INTERACTION ENGINEER/DATE

VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Reactor Containment  
FIRE ZONE: 77A  
LOCATION WITHIN FIRE ZONE: Quad IV, EL 46'  
POTENTIAL INTERACTION NO.: E-4-48-1  
PHOTOGRAPH NO.: E31  
BACKGROUND NO.: Sheet 12

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: Box for FT 946A LC4  
SOURCE: Waste Disposal Line 3"#40 (right)

DESCRIPTION OF POSTULATED INTERACTION:

Source Falls on Target

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 7

\_\_\_\_\_ ACCEPTABLE

\_\_\_\_\_ X \_\_\_\_\_ POTENTIALLY UNACCEPTABLE

E Licari/ 8-30-82

W A Griswold/ 9-30-82

\_\_\_\_\_  
INTERACTION ENGINEER/DATE

\_\_\_\_\_  
VERIFIED/DATE



POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Reactor Containment  
FIRE ZONE: 77A  
LOCATION WITHIN FIRE ZONE: Quad IV, EL 46'  
POTENTIAL INTERACTION NO.: E-4-49-1  
PHOTOGRAPH NO.: E31  
BACKGROUND NO.: Sheet 12

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 3/4" Cnd 8ZM  
SOURCE: Waste Disposal Line 3"#40 (right)

DESCRIPTION OF POSTULATED INTERACTION:

Source Falls on Target

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 6

\_\_\_\_\_  
ACCEPTABLE

\_\_\_\_\_ X \_\_\_\_\_  
POTENTIALLY UNACCEPTABLE

E Licari/ 8-30-82

W A Griswold/ 9-30-82

\_\_\_\_\_  
INTERACTION ENGINEER/DATE

\_\_\_\_\_  
VERIFIED/DATE



POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Reactor Containment  
FIRE ZONE: 76A  
LOCATION WITHIN FIRE ZONE: Quad III, EL 46'  
POTENTIAL INTERACTION NO.: E-4-50-1  
PHOTOGRAPH NO.: E30  
BACKGROUND NO.: Sheet 11

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: Box for FT 946B LC5

SOURCE: 1" Line #317

DESCRIPTION OF POSTULATED INTERACTION:

Source Falls on Target

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 7

ACCEPTABLE

X POTENTIALLY UNACCEPTABLE

E Licari/ 8-30-82

W A Griswold/ 9-30-82

INTERACTION ENGINEER/DATE

VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
- EVALUATION SHEET

BUILDING: Reactor Containment  
FIRE ZONE: 76A  
LOCATION WITHIN FIRE ZONE: Quad III, EL 46'  
POTENTIAL INTERACTION NO.: E-4-51-1  
PHOTOGRAPH NO.: E30  
BACKGROUND NO.: Sheet 11

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 3/4" Cnd 8VP  
SOURCE: 1" Line #317

DESCRIPTION OF POSTULATED INTERACTION:

Source Falls on Target

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 6

<u>ACCEPTABLE</u>	X	<u>POTENTIALLY UNACCEPTABLE</u>
E Licari/ 8-30-82	W A Griswold/ 9-30-82	
INTERACTION ENGINEER/DATE	VERIFIED/DATE	





POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Reactor Containment  
FIRE ZONE: 78A  
LOCATION WITHIN FIRE ZONE: Quad III, EL 46' RHR Enclosure  
POTENTIAL INTERACTION NO.: E-4-53-1  
PHOTOGRAPH NO.: E28  
BACKGROUND NO.: Sheet 11

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 1½" C 8NS1  
SOURCE: 1" Line 507

DESCRIPTION OF POSTULATED INTERACTION: N/A

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 1

X  ACCEPTABLE

POTENTIALLY  
  UNACCEPTABLE

E Licari/ 8-30-82   
INTERACTION ENGINEER/DATE

W A Griswold/ 9-30-82   
VERIFIED/DATE



POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Reactor Containment  
FIRE ZONE: 78A  
LOCATION WITHIN FIRE ZONE: Quad III, EL 46' RHR Enclosure  
POTENTIAL INTERACTION NO.: E-4-55-1  
PHOTOGRAPH NO.: E28  
BACKGROUND NO.: Sheet 11

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: MOV 1802A Flex C

SOURCE: 1" Line 507

DESCRIPTION OF POSTULATED INTERACTION: N/A

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 1

X ACCEPTABLE

POTENTIALLY  
UNACCEPTABLE

E Licari/ 8-30-82

W A Griswold/ 9-30-82

INTERACTION ENGINEER/DATE

VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Reactor Containment  
FIRE ZONE: 78A  
LOCATION WITHIN FIRE ZONE: Quad III, EL 46' RHR Enclosure  
POTENTIAL INTERACTION NO.: E-4-56-1  
PHOTOGRAPH NO.: E28  
BACKGROUND NO.: Sheet 11

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 1½" C 9MC2

SOURCE: 1" Line 507

DESCRIPTION OF POSTULATED INTERACTION: N/A

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 1

X  
ACCEPTABLE

POTENTIALLY  
UNACCEPTABLE

E Licari/ 8-30-82

W A Griswold/ 9-30-82

INTERACTION ENGINEER/DATE

VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Reactor Containment  
FIRE ZONE: 78A  
LOCATION WITHIN FIRE ZONE: Quad III, EL 46' RHR Enclosure  
POTENTIAL INTERACTION NO.: E-4-57-1  
PHOTOGRAPH NO.: E28  
BACKGROUND NO.: Sheet 11

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 1½" C 9MC1  
SOURCE: 1" Line 507

DESCRIPTION OF POSTULATED INTERACTION: N/A

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 1

X ACCEPTABLE

POTENTIALLY  
UNACCEPTABLE

E Licari/ 8-30-82  
INTERACTION ENGINEER/DATE

W A Griswold/ 9-30-82  
VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Reactor Containment

FIRE ZONE: 78A

LOCATION WITHIN FIRE ZONE: Quad III, EL 46' RHR Enclosure

POTENTIAL INTERACTION NO.: E-4-58-1

PHOTOGRAPH NO.: E28

BACKGROUND NO.: Sheet 11

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 1 1/2" C 9MD

SOURCE: 1" Line 507

DESCRIPTION OF POSTULATED INTERACTION: N/A

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 1

X ACCEPTABLE

POTENTIALLY  
UNACCEPTABLE

E Licari/ 8-30-82

W A Griswold/ 9-30-82

INTERACTION ENGINEER/DATE

VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Reactor Containment  
FIRE ZONE: 78A  
LOCATION WITHIN FIRE ZONE: Quad III, EL 46' RHR Enclosure  
POTENTIAL INTERACTION NO.: E-4-59-1  
PHOTOGRAPH NO.: E28  
BACKGROUND NO.: Sheet 11

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: T Box XD5

SOURCE: 1" Line 507

DESCRIPTION OF POSTULATED INTERACTION: N/A

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 1

X  ACCEPTABLE

POTENTIALLY  
  UNACCEPTABLE

E Licari/ 8-30-82

W A Griswold/ 9-30-82

INTERACTION ENGINEER/DATE

VERIFIED/DATE





POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Primary Auxiliary

FIRE ZONE: 69A

LOCATION WITHIN FIRE ZONE: EL 15'

POTENTIAL INTERACTION NO.: E-4-91-1

PHOTOGRAPH NO.: E190

BACKGROUND NO.: Sheet 27

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 2½" Cnd 4FG

SOURCE: Lighting Box & Cnd

DESCRIPTION OF POSTULATED INTERACTION:

Source Falls on Target

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 2

X ACCEPTABLE

POTENTIALLY UNACCEPTABLE

E Licari/ 8-30-82

W A Griswold/ 9-30-82

INTERACTION ENGINEER/DATE

VERIFIED/DATE



POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Primary Auxiliary

FIRE ZONE: 3

LOCATION WITHIN FIRE ZONE: EL 15'

POTENTIAL INTERACTION NO.: E-4-93-1

PHOTOGRAPH NO.: E101

BACKGROUND NO.: Sheet 27

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 2½" Cnd 4FG

SOURCE: Lighting Cond & Box

DESCRIPTION OF POSTULATED INTERACTION:

Source Falls on Target

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 2

X ACCEPTABLE

POTENTIALLY  
UNACCEPTABLE

E Licari/ 8-30-82

W A Griswold/ 9-30-82

INTERACTION ENGINEER/DATE

VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Primary Auxiliary

FIRE ZONE: 9A

LOCATION WITHIN FIRE ZONE: EL 15'

POTENTIAL INTERACTION NO.: E-4-94-1

PHOTOGRAPH NO.: E99

BACKGROUND NO.: Sheet 27

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 1" Cnd 4FF

SOURCE: Lighting Cnd & Fixture

DESCRIPTION OF POSTULATED INTERACTION:

Source Falls on Target

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 3

X ACCEPTABLE

POTENTIALLY  
UNACCEPTABLE

E Licari/ 8-30-82

W A Griswold/ 9-30-82

INTERACTION ENGINEER/DATE

VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Primary Auxiliary

FIRE ZONE: 9A

LOCATION WITHIN FIRE ZONE: EL 15'

POTENTIAL INTERACTION NO.: E-4-95-1

PHOTOGRAPH NO.: E99

BACKGROUND NO.: Sheet 27

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 2½" Cnd 4FG

SOURCE: Lighting Cnd & Fixture

DESCRIPTION OF POSTULATED INTERACTION:

Source Falls on Target

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 3

X ACCEPTABLE

POTENTIALLY  
UNACCEPTABLE

E Licari/ 8-30-82

W A Griswold/ 9-30-82

INTERACTION ENGINEER/DATE

VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Primary Auxiliary  
FIRE ZONE: 12A  
LOCATION WITHIN FIRE ZONE: EL 15'  
POTENTIAL INTERACTION NO.: E-4-96-2  
PHOTOGRAPH NO.: E102  
BACKGROUND NO.: Sheet 27

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 2½" Cnd 4FG  
SOURCE: 4" Floor Drain FD4-4

DESCRIPTION OF POSTULATED INTERACTION:

Source Falls on Target

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 6

ACCEPTABLE

X

POTENTIALLY  
UNACCEPTABLE

E Licari/ 8-30-82

W A Griswold/ 9-30-82

INTERACTION ENGINEER/DATE

VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Primary Auxiliary  
FIRE ZONE: 12A  
LOCATION WITHIN FIRE ZONE: EL 15'  
POTENTIAL INTERACTION NO.: E-4-97-2  
PHOTOGRAPH NO.: E102  
BACKGROUND NO.: Sheet 27

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 1" Cnd 4FF

SOURCE: 4" Floor Drain FD4-4

DESCRIPTION OF POSTULATED INTERACTION:

Source Falls on Target

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 6

ACCEPTABLE

X

POTENTIALLY  
UNACCEPTABLE

E Licari/ 8-30-82

W A Griswold/ 9-30-82

INTERACTION ENGINEER/DATE

VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Primary Auxiliary  
FIRE ZONE: 12A  
LOCATION WITHIN FIRE ZONE: EL 15'  
POTENTIAL INTERACTION NO.: E-4-98-1  
PHOTOGRAPH NO.: E103  
BACKGROUND NO.: Sheet 27

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: Box LP3 for PC 635  
SOURCE: Lighting Fixture

DESCRIPTION OF POSTULATED INTERACTION:

Source Falls on Target

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 3

X ACCEPTABLE

~~POTENTIALLY  
UNACCEPTABLE~~

E Licari/ 8-30-82

W A Griswold/ 9-30-82

INTERACTION ENGINEER/DATE

VERIFIED/DATE



POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Primary Auxiliary  
FIRE ZONE: 12A  
LOCATION WITHIN FIRE ZONE: EL 15'  
POTENTIAL INTERACTION NO.: E-4-99-1  
PHOTOGRAPH NO.: E103  
BACKGROUND NO.: Sheet 27

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 1" Cnd 4FI  
  
SOURCE: Lighting Fixture

DESCRIPTION OF POSTULATED INTERACTION:

Source Falls on Target

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 3

X ACCEPTABLE

~~POTENTIALLY UNACCEPTABLE~~

E Licari/ 8-30-82

W A Griswold/ 9-30-82

INTERACTION ENGINEER/DATE

VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Primary Auxiliary

FIRE ZONE: 10A

LOCATION WITHIN FIRE ZONE: EL 15'

POTENTIAL INTERACTION NO.: E-4-100-1

PHOTOGRAPH NO.: E177

BACKGROUND NO.: Sheet 23

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 2½" Cnd 4FG

SOURCE: 3" Line 126 (top left arrow)

DESCRIPTION OF POSTULATED INTERACTION:

Source Falls on Target

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 6

ACCEPTABLE

X

POTENTIALLY  
UNACCEPTABLE

E Licari/ 8-30-82

W A Griswold/ 9-30-82

INTERACTION ENGINEER/DATE

VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET.

BUILDING: Primary Auxiliary

FIRE ZONE: 10A

LOCATION WITHIN FIRE ZONE: EL 15'

POTENTIAL INTERACTION NO.: E-4-100-2

PHOTOGRAPH NO.: E178

BACKGROUND NO.: Sheet 23

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 2½" Cnd 4FG

SOURCE: 2" Line 121 (both arrows)

DESCRIPTION OF POSTULATED INTERACTION: N/A

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 1

X ACCEPTABLE

~~POTENTIALLY UNACCEPTABLE~~

E Licari/ 8-30-82

W A Griswold/ 9-30-82

INTERACTION ENGINEER/DATE

VERIFIED/DATE





POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Primary Auxiliary

FIRE ZONE: 10A

LOCATION WITHIN FIRE ZONE: EL 15'

POTENTIAL INTERACTION NO.: E-4-101-1

PHOTOGRAPH NO.: E177

BACKGROUND NO.: Sheet 23

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: Box W23

SOURCE: 3" Line 126 (top left arrow)

DESCRIPTION OF POSTULATED INTERACTION:

Source Falls on Target

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 7

ACCEPTABLE

POTENTIALLY  
UNACCEPTABLE

E Licari/ 8-30-82

X  
W A Griswold/ 9-30-82

INTERACTION ENGINEER/DATE

VERIFIED/DATE



POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Primary Auxiliary

FIRE ZONE: 10A

LOCATION WITHIN FIRE ZONE: EL 15'

POTENTIAL INTERACTION NO.: E-4-101-3

PHOTOGRAPH NO.: E177

BACKGROUND NO.: Sheet 23

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: Box W23

SOURCE: 2" Line 119 (top middle arrow)

DESCRIPTION OF POSTULATED INTERACTION:

Source Falls on Target

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 7

ACCEPTABLE

X

POTENTIALLY  
UNACCEPTABLE

E Licari/ 8-30-82

W A Griswold/ 9-30-82

INTERACTION ENGINEER/DATE

VERIFIED/DATE



POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Primary Auxiliary

FIRE ZONE: 10A

LOCATION WITHIN FIRE ZONE: EL 15'

POTENTIAL INTERACTION NO.: E-4-101-4

PHOTOGRAPH NO.: E177

BACKGROUND NO.: Sheet 23

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: Box W23

SOURCE: 2" Line 127 (top right arrow)

DESCRIPTION OF POSTULATED INTERACTION:

Source Falls on Target

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 7

\_\_\_\_\_ ACCEPTABLE

\_\_\_\_\_ X \_\_\_\_\_ POTENTIALLY UNACCEPTABLE

E Licari/ 8-30-82

W A Griswold/ 9-30-82

\_\_\_\_\_  
INTERACTION ENGINEER/DATE

\_\_\_\_\_  
VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Primary Auxiliary

FIRE ZONE: 10A

LOCATION WITHIN FIRE ZONE: EL 15'

POTENTIAL INTERACTION NO.: E-4-102-1

PHOTOGRAPH NO.: E177

BACKGROUND NO.: Sheet 23

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 2" Cnd 4FB

SOURCE: 3" Line 126 (top left arrow)

DESCRIPTION OF POSTULATED INTERACTION:

Source Falls on Target

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 6

ACCEPTABLE

X

POTENTIALLY  
UNACCEPTABLE

E Licari/ 8-30-82

W A Griswold/ 9-30-82

INTERACTION ENGINEER/DATE

VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Primary Auxiliary

FIRE ZONE: 10A

LOCATION WITHIN FIRE ZONE: EL 15'

POTENTIAL INTERACTION NO.: E-4-102-2

PHOTOGRAPH NO.: E178

BACKGROUND NO.: Sheet 23

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 2" Cnd 4FB

SOURCE: 2" Line 121 (both arrows)

DESCRIPTION OF POSTULATED INTERACTION: N/A

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 1

X ACCEPTABLE

POTENTIALLY  
UNACCEPTABLE

E Licari/ 8-30-82

INTERACTION ENGINEER/DATE

W A Griswold/ 9-30-82

VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Primary Auxiliary

FIRE ZONE: 10A

LOCATION WITHIN FIRE ZONE: EL 15'

POTENTIAL INTERACTION NO.: E-4-102-3

PHOTOGRAPH NO.: E177

BACKGROUND NO.: Sheet 23

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 2" Cnd 4FB

SOURCE: 2" Line 119 (top middle arrow)

DESCRIPTION OF POSTULATED INTERACTION:

Source Falls on Target

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 2

X ACCEPTABLE

POTENTIALLY  
UNACCEPTABLE

E Licari/ 8-30-82

W A Griswold/ 9-30-82

INTERACTION ENGINEER/DATE

VERIFIED/DATE



POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Reactor Containment  
FIRE ZONE: 71A  
LOCATION WITHIN FIRE ZONE: Quad II, EL 46' Inside Crane Wall  
POTENTIAL INTERACTION NO.: E-4-124-3  
PHOTOGRAPH NO.: E135  
BACKGROUND NO.: Sheet 10

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 1" Cnd 9CN  
SOURCE: 2" WD 338-01 (upper right)

DESCRIPTION OF POSTULATED INTERACTION:

Source Falls on Target

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 6

_____ ACCEPTABLE	X	_____ POTENTIALLY UNACCEPTABLE
E Licari/ 8-30-82	W A Griswold/ 9-30-82	
_____ INTERACTION ENGINEER/DATE	_____ VERIFIED/DATE	

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Reactor Containment  
FIRE ZONE: 71A  
LOCATION WITHIN FIRE ZONE: Quad II, EL 46' Inside Crane Wall  
POTENTIAL INTERACTION NO.: E-4-123-1  
PHOTOGRAPH NO.: E61  
BACKGROUND NO.: Sheet 10

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 1½" Cnd 8QF2  
SOURCE: 1" Line #381

DESCRIPTION OF POSTULATED INTERACTION: N/A

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 1

X ACCEPTABLE

POTENTIALLY  
~~UNACCEPTABLE~~

E Licari/ 8-30-82

W A Griswold/ 9-30-82

INTERACTION ENGINEER/DATE

VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Primary Auxiliary  
FIRE ZONE: 10A  
LOCATION WITHIN FIRE ZONE: EL 15'  
POTENTIAL INTERACTION NO.: E-4-103-2  
PHOTOGRAPH NO.: E178  
BACKGROUND NO.: Sheet 23

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: Box W19  
SOURCE: 2" Line 121

DESCRIPTION OF POSTULATED INTERACTION: N/A

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 1

X  ACCEPTABLE

POTENTIALLY UNACCEPTABLE

E Licari/ 8-30-82   
INTERACTION ENGINEER/DATE

W A Griswold/ 9-30-82   
VERIFIED/DATE



POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Primary Auxiliary

FIRE ZONE: 10A

LOCATION WITHIN FIRE ZONE: EL 15'

POTENTIAL INTERACTION NO.: E-4-104-2

PHOTOGRAPH NO.: E178

BACKGROUND NO.: Sheet 23

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 3½ " Cnd 4AG

SOURCE: 2" Line 121

DESCRIPTION OF POSTULATED INTERACTION: N/A

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 1

X ACCEPTABLE

POTENTIALLY  
~~UNACCEPTABLE~~

E Licari/ 8-30-82

W A Griswold/ 9-30-82

INTERACTION ENGINEER/DATE

VERIFIED/DATE



POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Primary Auxiliary

FIRE ZONE: 14A

LOCATION WITHIN FIRE ZONE: EL 15'

POTENTIAL INTERACTION NO.: E-4-105-3

PHOTOGRAPH NO.: E95

BACKGROUND NO.: Sheet 24

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 1" Cnd 4FF

SOURCE: Lighting Cnd

DESCRIPTION OF POSTULATED INTERACTION:

Source Falls on Target

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 2

X ACCEPTABLE

POTENTIALLY  
UNACCEPTABLE

E Licari/ 8-30-82

W. A Griswold/ 9-30-82

INTERACTION ENGINEER/DATE

VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Primary Auxiliary  
FIRE ZONE: 14A  
LOCATION WITHIN FIRE ZONE: EL 15'  
POTENTIAL INTERACTION NO.: E-4-107-2  
PHOTOGRAPH NO.: E104  
BACKGROUND NO.: Sheet 24

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 2" Cnd 4AI  
SOURCE: Lighting Cnd

DESCRIPTION OF POSTULATED INTERACTION:

Source Falls on Target

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 2

X ACCEPTABLE

POTENTIALLY  
UNACCEPTABLE

E Licari/ 8-30-82

W A Griswold/ 9-30-82

INTERACTION ENGINEER/DATE

VERIFIED/DATE







POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Primary Auxiliary  
FIRE ZONE: 8A  
LOCATION WITHIN FIRE ZONE: EL 15'  
POTENTIAL INTERACTION NO.: E-4-111-1  
PHOTOGRAPH NO.: E100  
BACKGROUND NO.: Sheet 23

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 1" Cnd 4FF

SOURCE: Speaker

DESCRIPTION OF POSTULATED INTERACTION:

Source Falls on Target

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 3

X ACCEPTABLE

POTENTIALLY  
UNACCEPTABLE

E Licari/ 8-30-82

W A Griswold/ 9-30-82

INTERACTION ENGINEER/DATE

VERIFIED/DATE



POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING:                   Reactor Containment  
FIRE ZONE:                   72A  
LOCATION WITHIN FIRE ZONE:     Quad II, EL 46'  
POTENTIAL INTERACTION NO.:   E-4-114-1  
PHOTOGRAPH NO.:            E24  
BACKGROUND NO.:            Sheet 10

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET:                    1" Cnd 8RK1  
  
SOURCE:                    Station Air Line 2"

DESCRIPTION OF POSTULATED INTERACTION:

Source Falls on Target

EVALUATION OF INTERACTION:

EVALUATION NOTE NO:     6

\_\_\_\_\_ ACCEPTABLE

X

POTENTIALLY  
UNACCEPTABLE

E Licari/ 8-30-82

W A Griswold/ 9-30-82

\_\_\_\_\_  
INTERACTION ENGINEER/DATE

\_\_\_\_\_  
VERIFIED/DATE



POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Reactor Containment  
FIRE ZONE: 72A  
LOCATION WITHIN FIRE ZONE: Quad II, EL 46'  
POTENTIAL INTERACTION NO.: E-4-121-2  
PHOTOGRAPH NO.: E23  
BACKGROUND NO.: Sheet 10

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 2" Cnd 9CQ  
SOURCE: Light Fixture

DESCRIPTION OF POSTULATED INTERACTION:

Source Falls on Target

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 3

X ACCEPTABLE

POTENTIALLY  
~~UNACCEPTABLE~~

E Licari/ 8-30-82

W A Griswold/ 9-30-82

INTERACTION ENGINEER/DATE

VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Reactor Containment  
FIRE ZONE: 71A  
LOCATION WITHIN FIRE ZONE: Quad II, EL 46' Inside Crane Wall  
POTENTIAL INTERACTION NO.: E-4-122-1  
PHOTOGRAPH NO.: E61  
BACKGROUND NO.: Sheet 10

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 1" Cnd 8QF2

SOURCE: 1" line #381

DESCRIPTION OF POSTULATED INTERACTION: N/A

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 1

X ACCEPTABLE

~~POTENTIALLY UNACCEPTABLE~~

E Licari/ 8-30-82

W A Griswold/ 9-30-82

INTERACTION ENGINEER/DATE

VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Reactor Containment  
FIRE ZONE: 71A  
LOCATION WITHIN FIRE ZONE: Quad II, EL 46' Inside Crane Wall  
POTENTIAL INTERACTION NO.: E-4-124-2  
PHOTOGRAPH NO.: E26  
BACKGROUND NO.: Sheet 10

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 1" Cnd 9CN  
SOURCE: Light

DESCRIPTION OF POSTULATED INTERACTION:

Source Falls on Target

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 3

X ACCEPTABLE

POTENTIALLY  
~~UNACCEPTABLE~~

E Licari/ 8-30-82

W A Griswold/ 9-30-82

INTERACTION ENGINEER/DATE

VERIFIED/DATE



POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Reactor Containment  
FIRE ZONE: 71A  
LOCATION WITHIN FIRE ZONE: Quad II, EL 46' Inside Crane Wall  
POTENTIAL INTERACTION NO.: E-4-124-6  
PHOTOGRAPH NO.: E135  
BACKGROUND NO.: Sheet 10

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 1" Cnd 9CN  
SOURCE: 1" Drain Line (center arrow)

DESCRIPTION OF POSTULATED INTERACTION:

Source Falls on Target

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 2

X \_\_\_\_\_ ACCEPTABLE

\_\_\_\_\_ POTENTIALLY  
UNACCEPTABLE

E Licari/ 8-30-82  
\_\_\_\_\_  
INTERACTION ENGINEER/DATE

W A Griswold/ 9-30-82  
\_\_\_\_\_  
VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Reactor Containment  
FIRE ZONE: 71A  
LOCATION WITHIN FIRE ZONE: Quad II, EL 46' Inside Crane Wall  
POTENTIAL INTERACTION NO.: E-4-125-3  
PHOTOGRAPH NO.: E135  
BACKGROUND NO.: Sheet 10

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: Pull Box XQ7  
SOURCE: 2" WD 338-01 (top right)

DESCRIPTION OF POSTULATED INTERACTION:

Source Falls on Target

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 7

\_\_\_\_\_  
ACCEPTABLE

E Licari/ 8-30-82

\_\_\_\_\_  
INTERACTION ENGINEER / DATE

X  
\_\_\_\_\_  
POTENTIALLY  
UNACCEPTABLE

W A Griswold/ 9-30-82

\_\_\_\_\_  
VERIFIED / DATE



POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Reactor Containment  
FIRE ZONE: 71A  
LOCATION WITHIN FIRE ZONE: Quad II, EL 46' Inside Crane Wall  
POTENTIAL INTERACTION NO.: E-4-125-4  
PHOTOGRAPH NO.: E135  
BACKGROUND NO.: Sheet 10

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: Pull Box XQ7  
SOURCE: 2" WD 338-02 (top left)

DESCRIPTION OF POSTULATED INTERACTION:

Source Falls on Target

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 7

\_\_\_\_\_ ACCEPTABLE

\_\_\_\_\_ X \_\_\_\_\_ POTENTIALLY UNACCEPTABLE

E Licari/ 8-30-82

W A Griswold/ 9-30-82

\_\_\_\_\_  
INTERACTION ENGINEER/DATE

\_\_\_\_\_  
VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Reactor Containment  
FIRE ZONE: 71A  
LOCATION WITHIN FIRE ZONE: Quad II, EL 46' Inside Crane Wall  
POTENTIAL INTERACTION NO.: E-4-125-6  
PHOTOGRAPH NO.: E135  
BACKGROUND NO.: Sheet 10

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: Pull Box XQ7  
SOURCE: 1" Drain Line (center arrow)

DESCRIPTION OF POSTULATED INTERACTION:

Source Falls on Target

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 7

ACCEPTABLE	X	POTENTIALLY UNACCEPTABLE
E Licari/ 8-30-82		W A Griswold/ 9-30-82
<u>INTERACTION ENGINEER/DATE</u>		<u>VERIFIED/DATE</u>



POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Reactor Containment  
FIRE ZONE: 71A  
LOCATION WITHIN FIRE ZONE: Quad II, EL 46' Inside Crane Wall  
POTENTIAL INTERACTION NO.: E-4-126-4  
PHOTOGRAPH NO.: E135  
BACKGROUND NO.: Sheet 10

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 4" Cnd 8RR1  
SOURCE: 2" WD 338-02 (top left)

DESCRIPTION OF POSTULATED INTERACTION:

Source Falls on Target

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 2

X  ACCEPTABLE

~~POTENTIALLY UNACCEPTABLE~~

E Licari/ 8-30-82

W A Griswold/ 9-30-82

INTERACTION ENGINEER/DATE

VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Reactor Containment  
FIRE ZONE: 71A  
LOCATION WITHIN FIRE ZONE: Quad II, EL 46' Inside Crane Wall  
POTENTIAL INTERACTION NO.: E-4-126-6  
PHOTOGRAPH NO.: E135  
BACKGROUND NO.: Sheet 10

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 4" Cnd 8RR1  
SOURCE: 1" Drain Line (center arrow)

DESCRIPTION OF POSTULATED INTERACTION:

Source Falls on Target

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 2

  X   ACCEPTABLE

~~POTENTIALLY UNACCEPTABLE~~

E Licari/ 8-30-82

W A Griswold/ 9-30-82

INTERACTION ENGINEER/DATE

VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Primary Auxiliary  
FIRE ZONE: 59A  
LOCATION WITHIN FIRE ZONE: Piping Penet Area, EL 51'  
POTENTIAL INTERACTION NO.: E-4-127-1  
PHOTOGRAPH NO.: E96, E97  
BACKGROUND NO.: Sheet 17

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 1" Cnd 7HP  
SOURCE: 1" Line #67, (E97)

DESCRIPTION OF POSTULATED INTERACTION:

Source Falls on Target

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 2

X ACCEPTABLE

~~POTENTIALLY UNACCEPTABLE~~

E Licari/ 8-30-82  
INTERACTION ENGINEER/DATE

W A Griswold/ 9-30-82  
VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Primary Auxiliary  
FIRE ZONE: 59A  
LOCATION WITHIN FIRE ZONE: Piping Penet Area, EL 51'  
POTENTIAL INTERACTION NO.: E-4-128-1  
PHOTOGRAPH NO.: E96, E97  
BACKGROUND NO.: Sheet 17

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 1½" Cnd 7HN

SOURCE: 1" Line #67 (E97)

DESCRIPTION OF POSTULATED INTERACTION:

Source Falls on Target

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 2

X ACCEPTABLE

POTENTIALLY  
UNACCEPTABLE

E Licari/ 8-30-82

W A Griswold/ 9-30-82

INTERACTION ENGINEER/DATE

VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Primary Auxiliary  
FIRE ZONE: 59A  
LOCATION WITHIN FIRE ZONE: Piping Penet Area, EL 51'  
POTENTIAL INTERACTION NO.: E-4-129-1  
PHOTOGRAPH NO.: E96, E97  
BACKGROUND NO.: Sheet 17

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 2" Cnd 7HQ

SOURCE: 1" Line #67 (E97)

DESCRIPTION OF POSTULATED INTERACTION:

Source Falls on Target

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 2

X ACCEPTABLE

~~POTENTIALLY UNACCEPTABLE~~

E Licari/ 8-30-82

W A Griswold/ 9-30-82

INTERACTION ENGINEER/DATE

VERIFIED/DATE



POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Primary Auxiliary  
FIRE ZONE: 59A  
LOCATION WITHIN FIRE ZONE: Piping Penet Area, EL 51'  
POTENTIAL INTERACTION NO.: E-4-130-1  
PHOTOGRAPH NO.: E97  
BACKGROUND NO.: Sheet 17

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 1" Cnd 7JP

SOURCE: 1" Line #67

DESCRIPTION OF POSTULATED INTERACTION:

Source Falls on Target

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 2

X ACCEPTABLE

POTENTIALLY  
UNACCEPTABLE

E Licari/ 8-30-82

W A Griswold/ 9-30-82

INTERACTION ENGINEER/DATE

VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Primary Auxiliary  
FIRE ZONE: 59A  
LOCATION WITHIN FIRE ZONE: Piping Penet Area, EL 51'  
POTENTIAL INTERACTION NO.: E-4-131-1  
PHOTOGRAPH NO.: E97  
BACKGROUND NO.: Sheet 17

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 1½" Cnd 7JQ  
SOURCE: 1" Line #67

DESCRIPTION OF POSTULATED INTERACTION:

Source Falls on Target

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 2

X ACCEPTABLE

POTENTIALLY  
UNACCEPTABLE

E Licari/ 8-30-82

W A Griswold/ 9-30-82

INTERACTION ENGINEER/DATE

VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Primary Auxiliary  
FIRE ZONE: 59A  
LOCATION WITHIN FIRE ZONE: Piping Penet Area, EL 51'  
POTENTIAL INTERACTION NO.: E-4-132-1  
PHOTOGRAPH NO.: E97  
BACKGROUND NO.: Sheet 17

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 2" Cnd 7JN

SOURCE: 1" Line #67

DESCRIPTION OF POSTULATED INTERACTION:

Source Falls on Target

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 2

X ACCEPTABLE

POTENTIALLY  
UNACCEPTABLE

E Licari/ 8-30-82

W A Griswold/ 9-30-82

INTERACTION ENGINEER/DATE

VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Primary Auxiliary  
FIRE ZONE: 59A  
LOCATION WITHIN FIRE ZONE: Piping Penet Area, EL 51'  
POTENTIAL INTERACTION NO.: E-4-135-1  
PHOTOGRAPH NO.: E97  
BACKGROUND NO.: Sheet 17

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: Pull Box WH5

SOURCE: 1" Line #67

DESCRIPTION OF POSTULATED INTERACTION:

Source Falls on Target

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 7

ACCEPTABLE

X

POTENTIALLY  
UNACCEPTABLE

E Licari/ 8-30-82

W A Griswold/ 9-30-82

INTERACTION ENGINEER/DATE

VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Primary Auxiliary  
FIRE ZONE: 59A  
LOCATION WITHIN FIRE ZONE: Piping Penet Area, EL 51'  
POTENTIAL INTERACTION NO.: E-4-136-1  
PHOTOGRAPH NO.: E97  
BACKGROUND NO.: Sheet 17

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 3" Cnd 7MN1

SOURCE: 1" Line #67

DESCRIPTION OF POSTULATED INTERACTION:

Source Falls on Target

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 2

X ACCEPTABLE

~~POTENTIALLY UNACCEPTABLE~~

E Licari/ 8-30-82  
INTERACTION ENGINEER/DATE

W A Griswold/ 9-30-82  
VERIFIED/DATE



POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Primary Auxiliary  
FIRE ZONE: 59A  
LOCATION WITHIN FIRE ZONE: Piping Penet Area, EL 51'  
POTENTIAL INTERACTION NO.: E-4-139-1  
PHOTOGRAPH NO.: E97  
BACKGROUND NO.: Sheet 17

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 2" Cnd 7JU

SOURCE: 1" Line #67

DESCRIPTION OF POSTULATED INTERACTION:

Source Falls on Target

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 2

X ACCEPTABLE

POTENTIALLY  
UNACCEPTABLE

E Licari/ 8-30-82

W A Griswold/ 9-30-82

INTERACTION ENGINEER/DATE

VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Primary Auxiliary  
FIRE ZONE: 59A  
LOCATION WITHIN FIRE ZONE: Piping Penet Area, EL 51'  
POTENTIAL INTERACTION NO.: E-4-140-1  
PHOTOGRAPH NO.: E97  
BACKGROUND NO.: Sheet 17

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: Pull Box X77

SOURCE: 1" Line #67

DESCRIPTION OF POSTULATED INTERACTION:

Source Falls on Target

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 7

ACCEPTABLE

X

POTENTIALLY  
UNACCEPTABLE

E Licari/ 8-30-82

W A Griswold/ 9-30-82

INTERACTION ENGINEER/DATE

VERIFIED/DATE



POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Primary Auxiliary  
FIRE ZONE: 59A  
LOCATION WITHIN FIRE ZONE: Piping Penet Area, EL 51'  
POTENTIAL INTERACTION NO.: E-4-141-1  
PHOTOGRAPH NO.: E97  
BACKGROUND NO.: Sheet 17

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 2½" Cnd 7JV

SOURCE: 1" Line #67

DESCRIPTION OF POSTULATED INTERACTION:

Source Falls on Target

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 2

X ACCEPTABLE

POTENTIALLY  
UNACCEPTABLE

E Licari/ 8-30-82

W A Griswold/ 9-30-82

INTERACTION ENGINEER/DATE

VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Primary Auxiliary  
FIRE ZONE: 4  
LOCATION WITHIN FIRE ZONE: EL 55'  
POTENTIAL INTERACTION NO.: E-4-145-1  
PHOTOGRAPH NO.: E93  
BACKGROUND NO.: Sheet 27

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: RHR MTR #32  
SOURCE: 2" Line #725 (top)

DESCRIPTION OF POSTULATED INTERACTION: N/A

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 1

X ACCEPTABLE

~~POTENTIALLY UNACCEPTABLE~~

E Licari/ 8-30-82

W A Griswold/ 9-30-82

INTERACTION ENGINEER/DATE

VERIFIED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Primary Auxiliary  
FIRE ZONE: 4  
LOCATION WITHIN FIRE ZONE: EL 55'  
POTENTIAL INTERACTION NO.: E-4-145-2  
PHOTOGRAPH NO.: E94  
BACKGROUND NO.: Sheet 27

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: RHR MTR #32

SOURCE: 4" Drain Line

DESCRIPTION OF POSTULATED INTERACTION:

Source Falls on Target

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 5

Source may damage motor housing

ACCEPTABLE

POTENTIALLY  
UNACCEPTABLE

E Licari/ 8-30-82

X  
W A Griswold/ 9-30-82

INTERACTION ENGINEER/DATE

VERIFIED/DATE



POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
NONCONNECTED SYSTEMS INTERACTION  
EVALUATION SHEET

BUILDING: Primary Auxiliary  
FIRE ZONE: 4  
LOCATION WITHIN FIRE ZONE: EL 55'  
POTENTIAL INTERACTION NO.: E-4-146-2  
PHOTOGRAPH NO.: E94  
BACKGROUND NO.: Sheet 27

IDENTIFICATION OF INTERACTION COMPONENTS:

TARGET: 5" Cnd 4CQ

SOURCE: 4" Drain Line

DESCRIPTION OF POSTULATED INTERACTION:

Source Falls on Target

EVALUATION OF INTERACTION:

EVALUATION NOTE NO: 2

X ACCEPTABLE

POTENTIALLY  
UNACCEPTABLE

E Licari/ 8-30-82

W A Griswold/ 9-30-82

INTERACTION ENGINEER/DATE

VERIFIED/DATE





Postulated Failure Modes

MECHANICAL FAILURES

- M - 1 Ruptured Pipe or Tube
- M - 2 Crimped or Collapsed Pipe or Tube
- M - 3 Loss of Function (Pump, Fan, Blowers etc. )
- M - 4 Loss of Valve Motive Power
- M - 5 Failure of or damage to Valve Actuating Mechanism
- M - 6 Other (Explain)

ELECTRICAL FAILURES

- E - 1 Open Circuit
- E - 2 Short Circuit
- E - 3 Other (Explain)

INSTRUMENTATION & CONTROL FAILURES

- C - 1 Fail High
- C - 2 Fail Low
- C - 3 Fail Open
- C - 4 Fail Closed
- C - 5 Loss of Motive Power
- C - 6 Other (Explain)



POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 NUCLEAR POWER PLANT  
SYSTEM INTERACTION STUDY  
FMEA PREPARATION

SYSTEM NO E-4

SYSTEM NAME Residual Heat Removal System

FMEA CATEGORY

NON-CONNECTED X

INTERCONNECTED \_\_\_\_\_

hah 2/28/83

PREPARED BY/DATE

Raj B. Chopra 3/10/83

CHECKED BY/DATE

W Griswold 5-19-83

VERIFIED BY/DATE

JR Pic 4/19/83  
Mary Anne 3/15/83

Ebasco Services Incorporated

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INDIAN POINT 3 SYSTEMS INTERACTION STUDY  
FAILURE MODES AND EFFECTS ANALYSIS  
OF POTENTIALLY UNACCEPTABLE INTERACTIONS

FMEA NUMBER: 4-E-1

Interaction Number(s): E-4-1-1  
E-4-4-1  
E-4-9-1

Fire Zone: 78A

Target Component(s)

Number, Description & Function:

Box VM6, 3/4" Conduit 8NG3, 1" Conduit 8NG2, 1-1/4" Conduit 8NG1, 6" Tray DB.

These route power and control cables for MOV-1869A on discharge side of  
containment recirculation pumps via suction manifold of safety injection pumps.

Postulated Failure Mode(s)  
and Evaluation:

- M-2-(P) Open or short circuit of the cables connected to MOV-1869A would
- E-1-(P) disrupt recirculation via suction manifold of safety injection pumps
- E-2-(P)

	X	/ 1 (X) 2 ( ) 3 ( ) 4 (X)
Acceptable	Potentially Unacceptable/Safety Function Affected	

R Sahu 2/28/83  
EVALUATING ENGINEER/DATE

R Chopra 3/10/83  
CHECKED/DATE

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FMEA NUMBER: 4-E-2

Interaction Number(s): E-4-2-1  
 E-4-3-1  
 E-4-10-1

Fire Zone: 78A

Target Component(s)  
 Number, Description & Function:

Box VM7, 3/4" Conduit 8NJ1, Tray JA  
 These house power & control cables for MOV-1869B on discharge side of contain-  
 ment recirculation pumps via suction manifold of safety injection pumps.

Postulated Failure Mode(s)  
 and Evaluation:

M-2-(P) Open or short circuit of the cable connected to MOV-1869B would  
 E-1-(P) disrupt recirculation via suction manifold of safety injection pumps.  
 E-2-(P)

	X	/ 1 (X) 2 ( ) 3 ( ) 4 (X)
Acceptable	Potentially Unacceptable/Safety Function Affected	
R Sahu 2/28/83	R Chopra 3/10/83	
EVALUATING ENGINEER/DATE	CHECKED/DATE	

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FMEA NUMBER: 4-E-3

Interaction Number(s): E-4-13-2

Fire Zone: 78A

Target Component(s)  
Number, Description & Function:

T. Box P37 for Recirculation Pump Motor #31, which assures long-term core cooling of reactor.

Postulated Failure Mode(s)  
and Evaluation:

M-2-(P) Open or short circuit of the cables connected to Motor #31 would  
E-1-(P) result in the failure of Recirculation Pump #31.  
E-2-(P)

	X	/ 1 (X) 2 ( ) 3 ( ) 4 (X)
Acceptable	Potentially Unacceptable/Safety Function Affected	
R Sahu 2/28/83	R Chopra 3/10/83	
EVALUATING ENGINEER/DATE	CHECKED/DATE	

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OF POTENTIALLY UNACCEPTABLE INTERACTIONS

FMEA NUMBER: 4-E-4

Interaction Number(s): E-4-16-3

Fire Zone: 78A

Target Component(s)  
Number, Description & Function:

Flexible conduit housing cables for MOV-1802B which is one of the valves on inlet side of Residual Heat Exchangers #31 and #32.

Postulated Failure Mode(s)  
and Evaluation:

- M-2-(P) Open or short circuit of the cables connected to MOV-1802B could
- E-1-(P) affect the flow to Residual Heat Exchangers #31 and #32.
- E-2-(P)

Acceptable	X / 1 (X) 2 (X) 3 ( ) 4 (X) Potentially Unacceptable/Safety Function Affected
R Sahu 2/28/83 EVALUATING ENGINEER/DATE	R Chopra 3/10/82 CHECKED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
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OF POTENTIALLY UNACCEPTABLE INTERACTIONS

FMEA NUMBER: 4-E-5

Interaction Number(s): E-4-31-1  
E-4-32-1

Fire Zone: 78A

Target Component(s)  
Number, Description & Function:

Box LH1, 3/4" conduit 8DV houses cable for FT-640, monitors flow from RHR Heat Exchanger #32.

Postulated Failure Mode(s)  
and Evaluation:

M-2-(P) Open or short circuit of the cables connected to FT-640 would result  
E-1-(P) in the loss of indication of flow from Heat Exchanger #32 in CCR.  
E-2-(P)

Acceptable X / 1 ( ) 2 (X) 3 ( ) 4 ( )  
Potentially Unacceptable/Safety Function Affected

R Sahu 2/28/83  
EVALUATING ENGINEER/DATE

G Durniak 3/15/83  
CHECKED/DATE

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FMEA NUMBER: 4-E-6

Interaction Number(s): E-4-39-1

Fire Zone: 78A

Target Component(s)  
Number, Description & Function:

3/4" Conduit 8NJ for TE-641 which monitors discharge temperature of RHR Heat Exchanger #32.

Postulated Failure Mode(s)  
and Evaluation:

- M-2-(P) Open or short circuit of the cables connected to TE-641 would result
- E-1-(P) in the loss of temperature input to recorder TR-636 in CCR ACS Panel.
- This E-2-(P) does not affect safety related functions.

<u>X</u>	<u>/ 1 ( ) 2 ( ) 3 ( ) 4 ( )</u>
Acceptable	Potentially Unacceptable/Safety Function Affected

R Sahu 2/28/83  
EVALUATING ENGINEER/DATE

G Durniak 3/15/83  
CHECKED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
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OF POTENTIALLY UNACCEPTABLE INTERACTIONS

FMEA NUMBER: 4-E-7

Interaction Number(s): E-4-43-2  
E-4-44-2

Fire Zone: 72A

Target Component(s)  
Number, Description & Function:

Box LZ8, 1" Conduit 8SK houses cables for FT-946C, which measures the flow to  
RCS Loop 2.

Postulated Failure Mode(s)  
and Evaluation:

M-2-(P) Short or open circuit of the cables connected to FT-946C would result  
E-1-(P) in the loss of indication in CCR. This may lead to the non-detection  
E-2-(P) of a break in RCS pipe.

	X	/ 1 ( ) 2 ( ) 3 (X) 4 ( )
Acceptable	Potentially Unacceptable/Safety Function Affected	
R Sahu 2/28/83	G Durniak 3/15/83	
EVALUATING ENGINEER/DATE	CHECKED/DATE	



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FMEA NUMBER: 4-E-8

Interaction Number(s): E-4-48-1  
E-4-49-1

Fire Zone: 77A

Target Component(s)  
Number, Description & Function:

Box LC4, 3/4" Conduit 8ZM house cables for FT-946A, which measures flow to RCS Loop #4.

Postulated Failure Mode(s)  
and Evaluation:

M-2-(P) Short or open circuit of the cables connected to FT-946A would result  
E-1-(P) in the loss of indication in CCR. This may lead to the non-detection  
E-2-(P) of a break in RCS pipe.

\_\_\_\_\_ / X / 1 ( ) 2 ( ) 3 (X) 4 ( )  
Acceptable Potentially Unacceptable/Safety Function Affected

R Sahu 2/28/83  
EVALUATING ENGINEER/DATE

G Durniak 3/15/83  
CHECKED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
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FMEA NUMBER: 4-E-9

Interaction Number(s): E-4-50-1  
E-4-51-1

Fire Zone: 77A

Target Component(s)  
Number, Description & Function:

Box LC5, 3/4" Conduit 8VP house cables for FT-946B, which monitors flow to  
RCS Loop #3.

Postulated Failure Mode(s)  
and Evaluation:

- M-2-(P) Short or open circuit of the cables connected to FT-964B would result
- E-1-(P) in the loss of indication in CCR. This may lead to the non-detection
- E-2-(P) of a break in RCS pipe.

	X	/ 1 ( ) 2 ( ) 3 (X) 4 ( )
Acceptable	Potentially Unacceptable/Safety Function Affected	

R Sahu 2/28/83  
EVALUATING ENGINEER/DATE

G Durniak 3/15/83  
CHECKED/DATE

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FMEA NUMBER: 4-E-10

Interaction Number(s): E-4-96-2

Fire Zone: 12A

Target Component(s)  
Number, Description & Function:

2-1/2" Conduit 4FG housing cables for FIC-645, FIC-646 and PC-635.

Postulated Failure Mode(s)  
and Evaluation:

- E-1-(P) Open or short circuit of the cables may result in the failure of
- E-2-(P) FIC-645, FIC-646, and PC-635.

High pressure protection of the RHR heat exchangers is accomplished by using 3 relief valves and RCS high pressure interlocks. PC-635 performs no safety function.

Loss of the low-flow alarm for the RHR pump cooling water may induce the operator into assuming normal flow and may contribute to the consequent loss of the RHR function.

_____	X	/ 1 ( ) 2 (X) 3 ( ) 4 ( )
Acceptable	Potentially Unacceptable/Safety Function Affected	

R Sahu 4/18/83  
EVALUATING ENGINEER/DATE

J R Price 4/19/83  
CHECKED/DATE

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FMEA NUMBER: 4-E-11

Interaction Number(s): E-4-97-2

Fire Zone: 12A

Target Component(s)  
Number, Description & Function:

1" Conduit 4FF housing cables connecting TC-636.

Postulated Failure Mode(s)  
and Evaluation:

E-1-(P) Damage to the conduit may result in the failure of TC-636. TC-636 is  
E-2-(P) required to obtain the cooldown rate.

	X	/ 1 ( ) 2 (X) 3 ( ) 4 ( )
Acceptable	Potentially Unacceptable/Safety Function Affected	
R Sahu 4/18/83	J R Price 4/19/83	
EVALUATING ENGINEER/DATE	CHECKED/DATE	

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FMEA NUMBER: 4-E-12

Interaction Number(s): E-4-100-1  
E-4-100-1, 3, 4  
E-4-102-1

Fire Zone: 10A

Target Component(s)  
Number, Description & Function:

2-1/2" Conduit 4FG, Box W23 and 3" conduit 4FB routing cables to FIC-645,  
FIC-646 and PC-635.

Postulated Failure Mode(s)  
and Evaluation:

E-1-(P) See FMEA 4-E-10  
E-2-(P)

\_\_\_\_\_ X / 1 ( ) 2 (X) 3 ( ) 4 ( )  
Acceptable Potentially Unacceptable/Safety Function Affected

\_\_\_\_\_  
R Sahu 4/18/83  
EVALUATING ENGINEER/DATE

\_\_\_\_\_  
J R Price 4/19/83  
CHECKED/DATE

POWER AUTHORITY OF THE STATE OF NEW YORK  
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FMEA NUMBER: 4-E-13

Interaction Number(s): E-4-114-1  
E-4-115-1

Fire Zone: 72A

Target Component(s)  
Number, Description & Function:

1" Conduit 8RK1 and 1-1/4" Conduit 8RK2. These route power and control cables for MOV-730 for RHR normal loop suction.

Postulated Failure Mode(s)  
and Evaluation:

- M-2-(P) Open or short circuit of the cables connected to MOV-730 would make it
- E-1-(P) inoperable and bring about the consequent loss of RHR function.
- E-2-(P)

	X	/ 1 (X) 2 (X) 3 ( ) 4 (X)
Acceptable	Potentially Unacceptable/Safety Function Affected	

R Sahu 2/28/83  
EVALUATING ENGINEER/DATE

R Chopra 3/10/83  
CHECKED/DATE

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FMEA NUMBER: 4-E-14

Interaction Number(s): E-4-124-3, 4  
 E-4-125-3, 4, 6

Fire Zone: 71A

Target Component(s)  
 Number, Description & Function:

1" Conduit 9CN, Pull Box XQ7. These route cable for MOV-731. For RHR pump normal loop suction.

Postulated Failure Mode(s)  
 and Evaluation:

M-2-(P) Open or short circuit of the cables connected to MOV-731 would make it  
 E-1-(P) inoperable and bring about the consequent loss of RHR function.  
 E-2-(P)

---

 Acceptable

X / 1 (X) 2 (X) 3 ( ) 4 (X)

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 Potentially Unacceptable/Safety Function Affected

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 R Sahu 2/28/83  
 EVALUATING ENGINEER/DATE

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 R Chopra 3/10/83  
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FMEA NUMBER: 4-E-15

Interaction Number(s): E-4-145-2

Fire Zone: 4

Target Component(s)  
Number, Description & Function:

RHR Motor #32 for RHR Pump #32.

Postulated Failure Mode(s)  
and Evaluation:

M-2-(P) Non-operation of the motor would result in the failure of RHR Pump #32  
which is needed for RHR.

	<u>X</u>	/ 1 ( ) 2 (X) 3 ( ) 4 ( )	
Acceptable			Potentially Unacceptable/Safety Function Affected
 R Sahu 2/28/83			 R Chopra 3/10/83
EVALUATING ENGINEER/DATE			CHECKED/DATE



POWER AUTHORITY OF THE STATE OF NEW YORK  
INDIAN POINT 3 SYSTEMS INTERACTION STUDY  
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FMEA NUMBER: 4-E-16

Interaction Number(s): E-4-135-1  
E-4-140-1

Fire Zone: 59A

Target Component(s)  
Number, Description & Function:

Pull Box WH5, Pull Box X77 Route Cable from MOV-1870 and MOV-743 on RHR minimum recirculation lines.

Postulated Failure Mode(s)  
and Evaluation:

- M-2-(P) Open or short circuit of the cable connected to MOV-1870 and MOV-743
- E-1-(P) may result in their failure. These valves are not essential for safe
- E-2-(P) shutdown.

X  
Acceptable

/ 1 ( ) 2 ( ) 3 ( ) 4 ( )  
Potentially Unacceptable/Safety Function Affected

R Sahu 2/28/83  
EVALUATING ENGINEER/DATE

R Chopra 3/10/83  
CHECKED/DATE