

496.

RELATED CORRESPONDENCE

JUNE 1, 1984
DOCKETED
NRC

'84 JUN -4 10:50

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In The Matter of)	
METROPOLITAN EDISON COMPANY)	Docket No. 50-289 SP
(Three Mile Island Nuclear Station,)	(Restart)
Unit No. 1))	

NOTICE TO THE COMMISSION,
APPEAL BOARD, LICENSING
BOARD AND PARTIES

In the course of reviewing documents related to the O-VV incident in July 1979, Licensee has discovered a VV make-up training test taken in May 1979, in which the last page of VV's response appears to be someone else's product. Enclosed is the test with the response in question (Enclosure (1)) and, for response format comparison purposes, a second VV test (Enclosure (2)) and a test by individual O (Enclosure (3)) in which responses to the same question appear.

Respectfully submitted,

Ernest L. Blake, Jr.
Ernest L. Blake, Jr., P.C.
Counsel for Licensee

cc: Attached Service List

DS03

TRAINING ASSIGNMENT ADMINISTRATIVE FORM

2.2 A

1. Lesson/Course: Emergency Procedure Review Employee No. 5 8 Completion Date 9

2. Name: VV MO. DAY 07 09 79

3. Classification: Supv of Ops - II

CATALOG NUMBER				LESSON ID	
C	A	T	TYPE	SUBJECT	ID
15	A				26
1145	010	010	13	08	1

COURSE DURATION HOURS	
27	31
<u>0101210</u>	

MODE PREFIX	
32	34
<u>MUP</u>	

MODE PREFIXES
Makeup - MUP
Correspondence -

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35 COMMENTS 53
EMERGENCY PROCEDURE REVIEW 13

4. Reason for assignment

- FSR Requirement
- Lecture Missed Type OR
- Test Not Taken
- < 80% on Test

Cycle: 5
 Cycle Completion Date: 1 March 79
 Time Period: 8/21/78 to 9/24/78
 Type of License (RO/SRO): R-6

5. Instructor Assigned: N.D. Brown Instructions:

Please review the below designated Emergency Procedures and take the attached test, closed book. Signify completion by signature:
Oper at Controls (1038), Control Top (1037), Hand Calc Tilt on
Imbal (1202-7)(2103-111), CRD Failures (1202-8)(2203-1.1
2203-1.3), Loss of OTSG Feed (1202-26A/B)(2203-2.2),
Unant. Criticality (1203-10)(2202-12), Loss of Burner (2203-1.1)
Signature / s / VV Date 8/12/78

6. RETURN TO TRAINING DEPARTMENT BY: ASAP

7. Method of Evaluation: (Check at least one)
 a) Written Test Score: 68.6%
 b) Oral Spot Check
 c) Other (Explain):

8. N.D. Brown, 7/9/79
 Instructor's Signature Date Supervisor of Training Date

EMERGENCY PROCEDURES TEST
CYCLE 5 REQUAL
SRO ANSWER ALL QUESTIONS

14.5 08.003 CB

7.7
 $\frac{16.8}{24.5} = 68.6\%$

- List 5 indications of an asymmetric rod fault.
 - What is your action upon discovery of a stuck control rod in Gp 7?
 - What gives a motor fault alarm?
- SRO
- After verifying a rod as being stuck what is ^{the} follow-up action? 1.0
 - Draw the asymmetric rod runback circuit. 2.0
 - On the attached figure (Unit I or Unit II control room as applicable) mark the area that an "operator at the controls" should not normally leave for routine operations. 1.0
- (NOTE: X-license answer for both units)

PTS
SRO X-
2.0
1.0
1.0
1.0

- SRO
- An "Operator at the controls" may leave the routine operations area and briefly enter the nonroutine operations area of the control room. List (3) three conditions which warrant an "Operator at the controls" to enter the nonroutine operations area. *alarm, investigate abnormal or suspect abnormal conditions to initiate corrective action as necessary affecting safety.* 2.0
 - Briefly explain the purpose of CAUTION tags. *equipment protection* 1.0
 - Given the following information, calculate the quadrant power tilt. Use the attached data sheet: 2.0

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Recorder Point Number	Detector Reading	Recorder Point Number	Detector Reading
1-1	124	1-16	124
1-9	125	1-17	117
1-10	125	1-18	119
1-11	125	2-1	124
1-12	125	2-2	125
1-13	117	2-3	125
1-14	118	2-4	124
1-15	124	2-5	123

- SRO
- List the allowable tilt values for:
 - Symmetrical (full) incore system *SS 3.67 9.7*
 - Minimum incore system *1.72 3*
 - Power range channels *2.9 5.4*
 - Explain the required actions if the applicable quadrant power tilt limit is exceeded. (assume that corrective actions do not decrease the tilt.) *NIA* 1.5

-0.25 11-2
-0.75 11-1
-1.0

11. What is the required frequency for monitoring:
- a) Quadrant power tilt ^{> 75% power} *any 7 days within minutes and within 15 hrs.* -0.5
 - b) Axial power imbalance ^{> 40% power} *any 12 hrs within minutes at the 1 hr.* -0.5
12. Following a loss of feed to both OTSG's, flow should be limited to 2.25 gpm. 2.5
13. How do you recover from a dry steam generator? *EP @ 2 1/2" of < 25"* -1.0
14. List the power supplies and location of *supply* for main feedwater block valves. -1.0
15. Name at least two causes for unanticipated criticality. *BD & TD* -1.0
16. What are the indications of a boron dilution accident in progress? -1.0

Total points	X-L	24.5
	SRO	17.25
	CRO	12.25

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Reference Procedures:

- AP 1028 Operator at the Controls
- AP 1037 Caution Tags
- EP (1203-7)(2103-1.1) Hand Calculation of Tilt & Imbalance
- EP (1202-8)(2203-1.2; 2203-1.3) CRD Equipment Failures
- EP (1202-26 A/B)(2202-2.2) Loss of OTSG Feed
- EP (1203-10)(2202-1.2) Unanticipated Criticality
- EP (2203-1.1) Loss of Boron

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QUADRANT POWER TILT - MINIMUM INCORE DETECTORS

1) Fill in the following incore valves:

Quadrant	Core Location	Axial Level	(Recorder - Detector) Point No. Reading	Quadrant Sums
XY	C10	2	(1-11) <u>125</u>	XY = <u>497</u> Quadrant 1
XY	F13	2	(1-12) <u>125</u>	
XY	E9	6	(2-5) <u>123</u>	
XY	G11	6	(1-1) <u>124</u>	
YZ	L13	2	(1-13) <u>117</u>	YZ = <u>471</u> Quadrant 2
YZ	O10	2	(1-14) <u>118</u>	
YZ	K11	6	(1-17) <u>117</u>	
YZ	M9	6	(1-18) <u>119</u>	
ZW	O6	2	(1-15) <u>124</u>	ZW = <u>497</u> Quadrant 3
ZW	L3	2	(1-16) <u>124</u>	
ZW	M7	6	(2-1) <u>124</u>	
ZW	K5	6	(2-2) <u>125</u>	
WX	F3	2	(1-9) <u>125</u>	WX = <u>499</u> Quadrant 4
WX	C6	2	(1-10) <u>125</u>	
WX	G5	6	(2-3) <u>125</u>	
WX	E7	6	(2-4) <u>124</u>	

2) Core Total = (WX) + (XY) + (YZ) + (ZW) = 1964

3) Quadrant Average Power (QAVE) = Core Total ÷ 4 = 491

4) Quadrant Tilt, % = $\left[\frac{\text{Quadrant Sum}}{\text{QAVE}} - 1 \right] \times (100\%)$:

Quadrant 1 XY Tilt = +0.0122%

Quadrant 2 YZ Tilt = -0.040%

Quadrant 3 ZW Tilt = +0.0122%

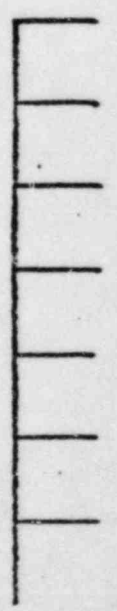
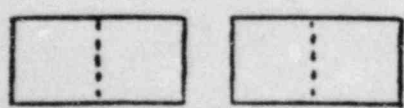
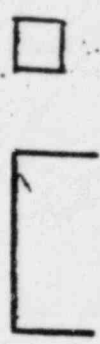
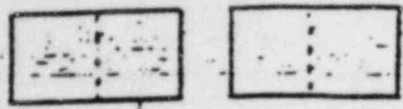
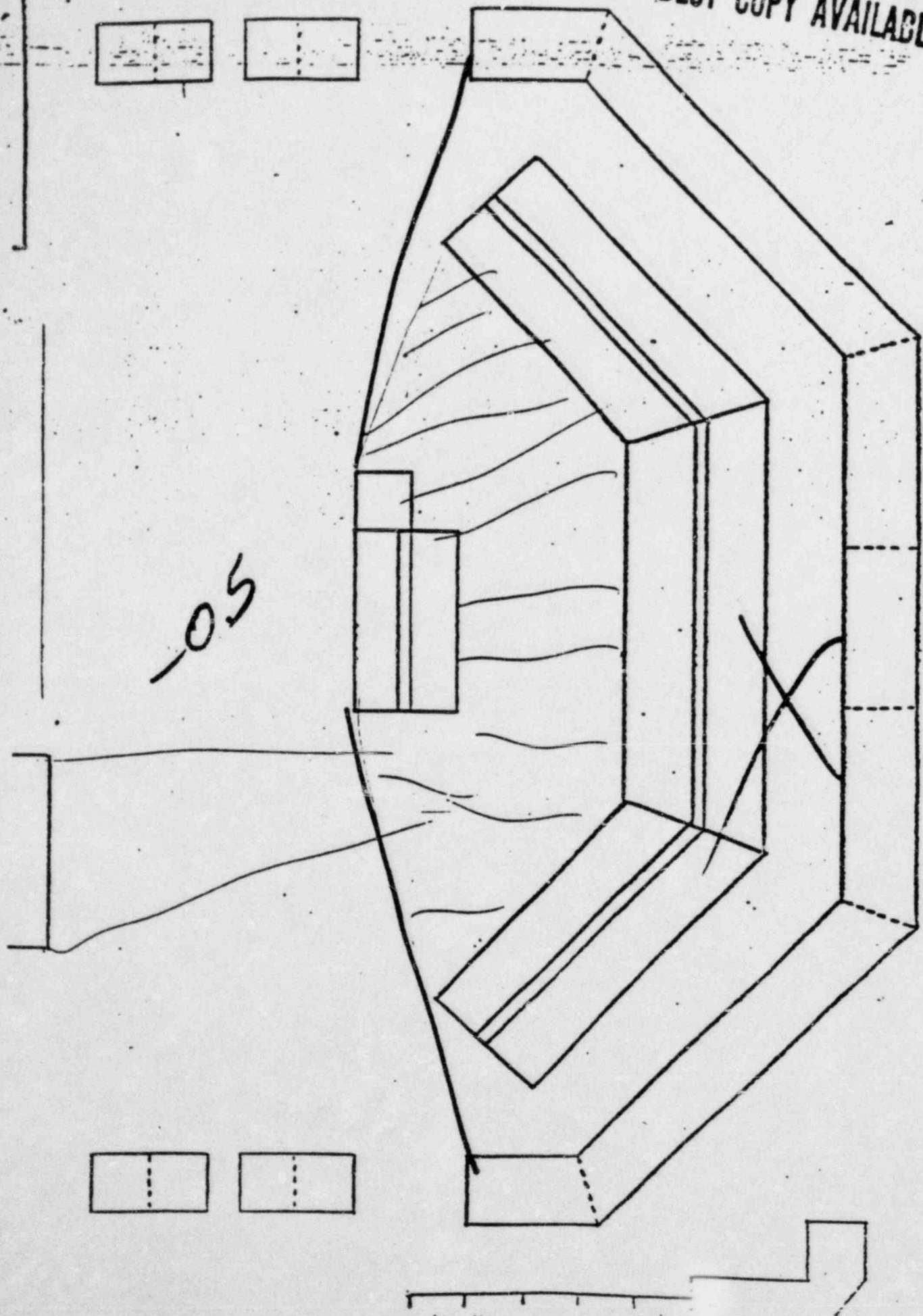
Quadrant 4 WX Tilt = +0.162%

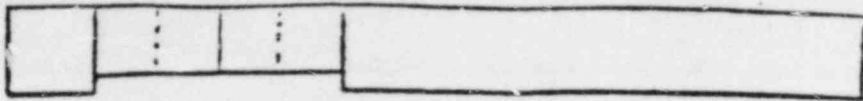
OK

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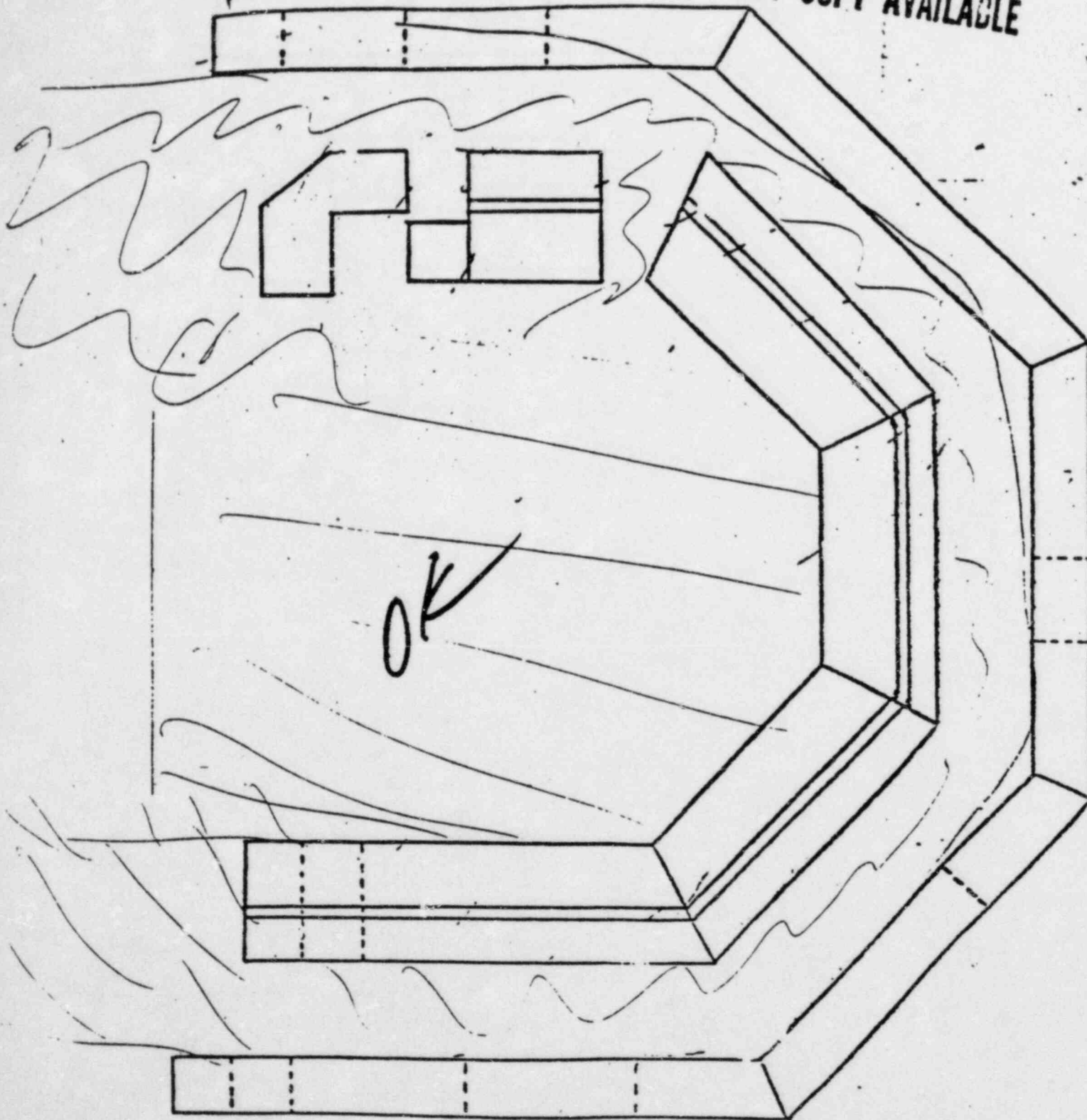
UNIT 1
CONTROL ROOMS

05

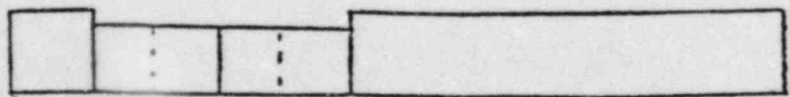
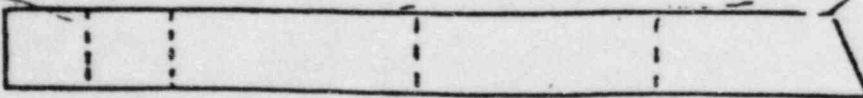




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CONTROL ROOMS



- 1. Reopen hood panel on \checkmark
- yellow light on back panel \checkmark
- CRD failure alarm clear on back panel \checkmark
- Possible ICS number \checkmark
- PI on back panel and computer \checkmark
- Possible 6/7 fault on \checkmark

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- 2. Transfer 2 to manual. \checkmark
- Transfer red to aux power supply. \checkmark
- attempt to move 2nd dog gear (20mm) then out. \checkmark
- If moves - return to manual.
- If no move - reduce power to 60% allowable for 24 combiter.

X $\textcircled{0.2}$ d-1

- 3. Unrecommended red motion \checkmark
- or out when 2 wheel free \checkmark

$\textcircled{0.25}$

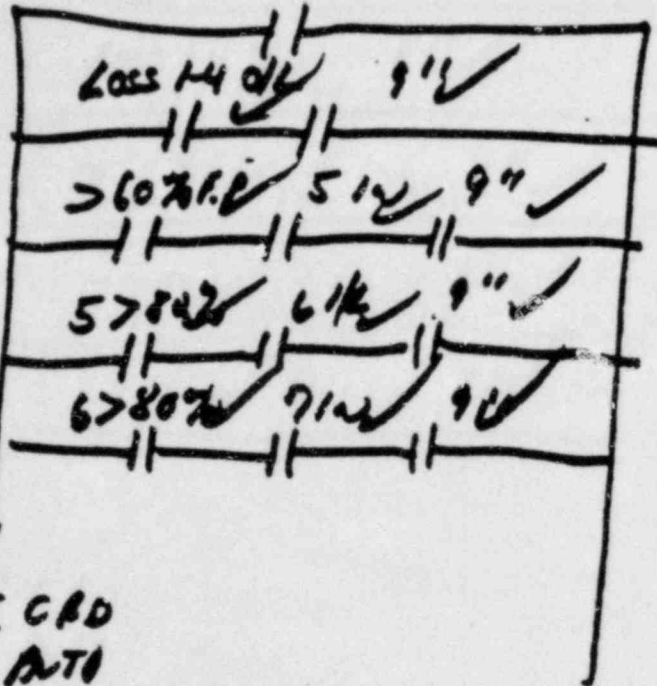
- 4. Check Quad Thrift & action \checkmark
- check/replace fuses to motor
- take phase current readings
- If increased - try to move OK
- check API at nearest zone loop
- Determine shielder margin \checkmark
- If mechanical check to hold steady

index $\textcircled{0.25}$

5. See attached

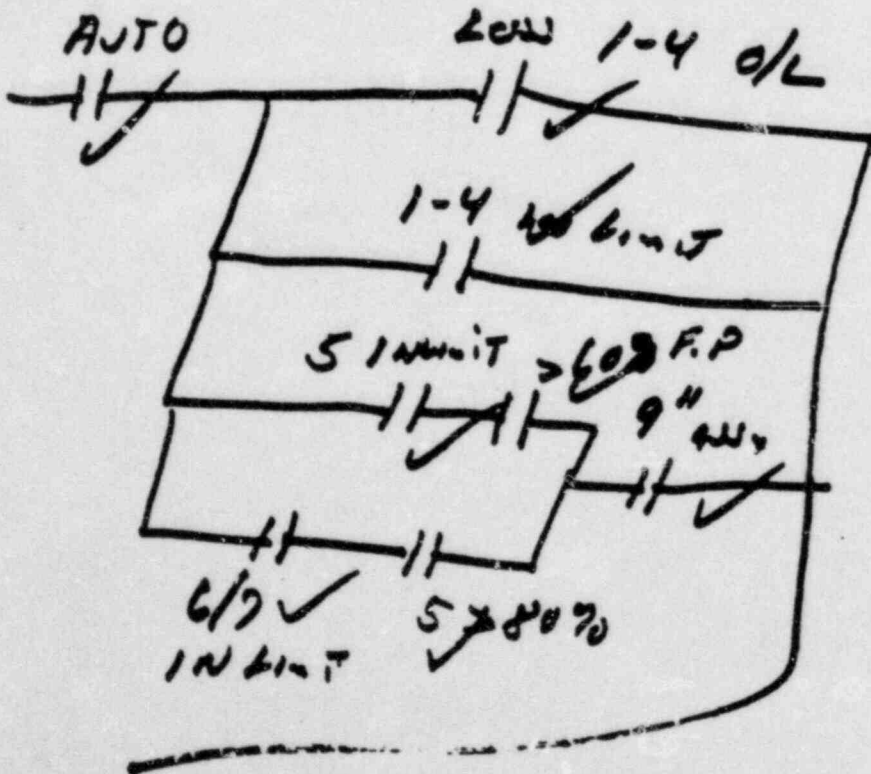
~~U-I~~ U-I

1-4 IN LIMIT



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U-I



TRAINING ASSIGNMENT ADMINISTRATIVE FORM

2.2.A

1. Lesson/Course: Emergency Procedure Review Employee No. 4 8 Completion Date 9 14
2. Name: VV MO. 27 DAY 18 YR. 79
3. Classification: Supervisor of Ops - Unit 2

CATALOG NUMBER				LESSON ID	
C	A	T	A	T	S
15	A	TYPE	SUBJECT	ID	26
11450	0	01013	CR	1	

COURSE DURATION	
HOURS	
27	31
0101240	

MODE PREFIX	
32	34
MUP	

MODE PREFIXES
 Makeup - MUP
 Correspondence - CCS

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35	COMMENTS	59
	EMERGENCY PROCEDURE REVIEW GROUP 13	

4. Reason for assignment
- ESR Requirement
 Lecture Missed Type _____
 Test Not Taken
 < 80% on Test
- Cycle: 5
 Cycle Completion Date: 1 March 79
 Time Period: 8/21/78 to 9/24/78
 Type of License (RO/SRO): SRO/XL

5. Instructor Assigned: N.D. Brown Instructions: _____

Please review the below designated Emergency Procedures and take the attached test, closed book. Signify completion by signature below

Oper. at Controls (1028), Caution Tag (1037), Hand Calc Tilt and Imbal. (1203-7) (2103-1.11), CRD Failures (1202-8) (2203-1.2; 2203-1.3), Loss of OTSG Feed (1202-26A/B) (2202-2.2), Unant. Criticality (1203-10) (2202-1.2), Loss of Buren (2203-1.1)

Signature _____ Date _____

6. RETURN TO TRAINING DEPARTMENT BY: ASAP

7. Method of Evaluation: (Check at least one)
- a) Written Test Score: 84.9%
- b) Oral Spot Check Results Sat
- c) Other _____ (Explain): _____

8. Nicholas Brown, 7/26/79
 Instructor's Signature Date Supervisor of Training Date

EMERGENCY PROCEDURES TEST
 CYCLE 5 REQUAL
 SRO ANSWER ALL QUESTIONS

14.5 08.003 C B

$\frac{20.8}{24.5} = 84.9\%$

7/18/75

1. List 5 indications of an asymmetric rod fault.
2. What is your action upon discovery of a stuck control rod in Gp 7?
3. What gives a motor fault alarm?

SRO 2-1
 20 1.25
 1.0 1.0
 .75 .75

- SRO
4. After verifying a rod as being stuck what is ^{the} follow-up action?
 5. Draw the asymmetric rod runback circuit.

2.0 1.0
 2.0 4

6. On the attached figure (Unit I or Unit II control room as applicable) mark the area that an "operator at the controls" should not normally leave for routine operations.
 (NOTE: X-license answer for both units)

1.0

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- SRO
7. An "Operator at the controls" may leave the routine operations area and briefly enter the nonroutine operations area of the control room. List (3) three conditions which warrant an "Operator at the controls" to enter the nonroutine operations area. *See figure, 6-104.*

2.75

8. Briefly explain the purpose of CAUTION tags.

2.0

9. Given the following information, calculate the quadrant power tilt. Use the attached data sheet:

2.0

Recorder Point Number	Detector Reading	Recorder Point Number	Detector Reading
1-1	124	1-16	124
1-9	125	1-17	117
1-10	125	1-18	119
1-11	125	2-1	124
1-12	125	2-2	125
1-13	117	2-3	125
1-14	118	2-4	124
1-15	124	2-5	123

- SRO
10. a) List the allowable tilt values for:
 1. Symmetrical (full) incore system.
 2. Minimum incore system.
 3. Power range channels.

2.75

- b) Explain the required actions if the applicable quadrant power tilt limit is exceeded. (assume that corrective actions do not decrease the tilt.)

1.5

11. What is the required frequency for monitoring:

- a) Quadrant power tilt *1 hr > 15 min* *any 7 days* *the 1 hr* .5
- b) Axial power imbalance *1 hr > 40 min* *any 7 days* *the 1 hr* .5

12. Following a loss of feed to both OTSG's, flow should be limited to 500 gpm. .25

13. How do you recover from a dry steam generator? *5* *2000* *2200* *6000* *2000* .10

14. List the power supplies and location of ~~supply~~ for main feedwater block valves. .5

15. Name at least two causes for unanticipated criticality. *with* *and* .5

16. What are the indications of a boron dilution accident in progress? *low* .10
low boron, low water, high level, low steam, low pressure, low level

Total points	X-L	24.5
	SRO	17.25
	CRD	12.25

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Reference Procedures:

- AP 1028 Operator - at the Controls
- AP 1037 Caution Tags
- EP (1203-7)(2103-1.1) Hand Calculation of Tilt & Imbalance
- EP (1202-8)(2203-1.2; 2203-1.3) CRD Equipment Failures
- EP (1202-26A/B)(2202-2.2) Loss of OTSG Feed
- EP (1203-10)(2202-1.2) Unanticipated Criticality
- EP (2203-1.1) Loss of Boron

DATA SHEET 1

QUADRANT POWER TILT - MINIMUM INCORE DETECTORS

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1) Fill in the following incore valves:

Quadrant	Core Location	Axial Level	(Recorder - Detector) Point No. Reading	Quadrant Sums
XY	C10	2	(1-11) <u>125</u>	XY = <u>497</u> Quadrant 1
XY	F13	2	(1-12) <u>125</u>	
XY	E9	6	(2-5) <u>123</u>	
XY	G11	6	(1-1) <u>124</u>	
YZ	L13	2	(1-13) <u>117</u>	YZ = <u>471</u> Quadrant 2
YZ	O10	2	(1-14) <u>118</u>	
YZ	K11	6	(1-17) <u>117</u>	
YZ	M9	6	(1-18) <u>119</u>	
ZW	O6	2	(1-15) <u>124</u>	ZW = <u>497</u> Quadrant 3
ZW	L3	2	(1-16) <u>124</u>	
ZW	M7	6	(2-1) <u>124</u>	
ZW	K5	6	(2-2) <u>125</u>	
WX	F3	2	(1-9) <u>125</u>	WX = <u>499</u> Quadrant 4
WX	C6	2	(1-10) <u>125</u>	
WX	G5	6	(2-3) <u>125</u>	
WX	E7	6	(2-4) <u>124</u>	

2) Core Total = (WX) + (XY) + (YZ) + (ZW) = 1964

3) Quadrant Average Power (QAVE) = Core Total ÷ 4 = 491

4) Quadrant Tilt, % = $\left[\frac{\text{Quadrant Sum}}{\text{QAVE}} - 1 \right] \times (100\%)$:

Quadrant 1 XY Tilt = _____ % X

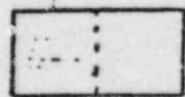
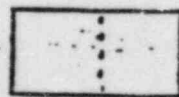
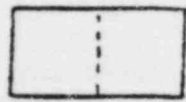
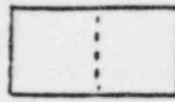
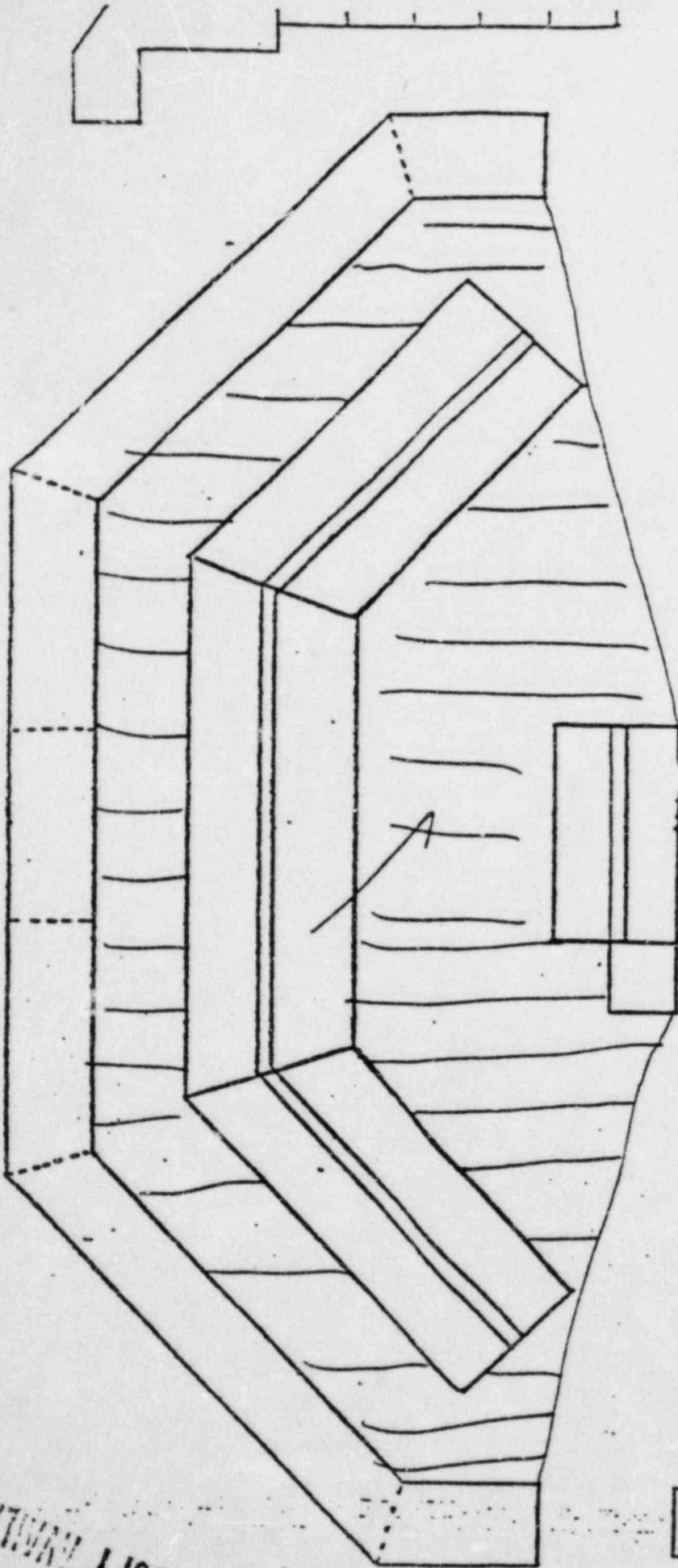
Quadrant 2 YZ Tilt = _____ % X

Quadrant 3 ZW Tilt = _____ % X

Quadrant 4 WX Tilt = _____ % X

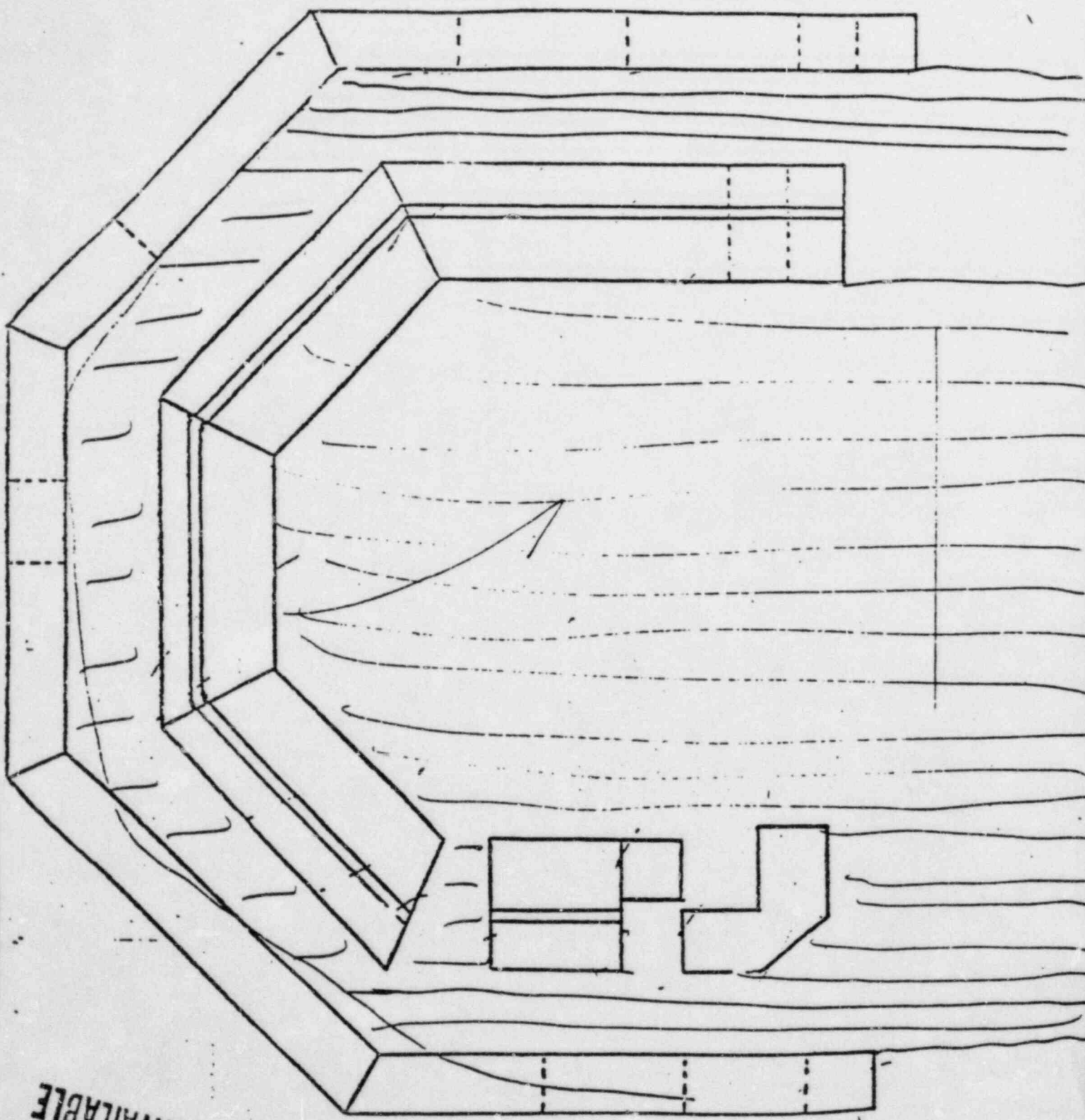
not completed.
-0.8

UNIT 1
CONTROL ROOMS

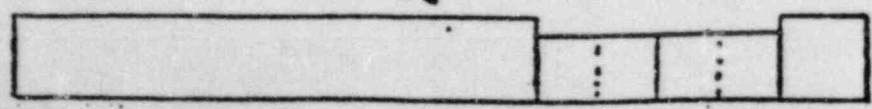
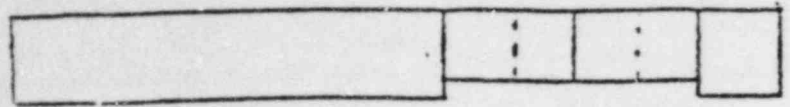


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3 UNIT LUMINIL KUL ROOMS



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- 1. a) asymmetric rod fault on ϕ ✓
- b) fault lamps on PI panel ✓
- c) CEO pattern asymmetric on star panel ✓
- d) possible ICS subbank ✓
- e) PI meters and/or computer ✓

2. Unit I

Unit II

reduce power to < 60% if required ✓
 attempt to insert the water in "injection"
 watch Tilt ✓
 v.l. to reduce Q/CO/flow setpt.

1/2 for 2 command.
 1/2 for Unit P/S
 Jog in (20 sec) then out
 If work - change 1/2 for manual P/S ✓
 If no work - reduce power to 60% allowed

3. Programmer motor recovery on OUT direction when not commanded

loss of power to programmer motor control
 also Unit 2 command - no motor $\frac{1}{2}$

-0.25

4. Unit I

Unit II

maintain power < 60% allowable... ✓
 SOM. check inside with of stick and ✓
 position OK
 Operate other rods ✓
 operate with rod with hand limits &
 keep group within 7" of set rod.

watch Tilt ✓
 check phase phase
 read current to each coil ≈ 15 amps
 if mechanical - try to operate in
 if no go manually - 6 hrs.
 check API vs zone ref. after
 you are in action started.

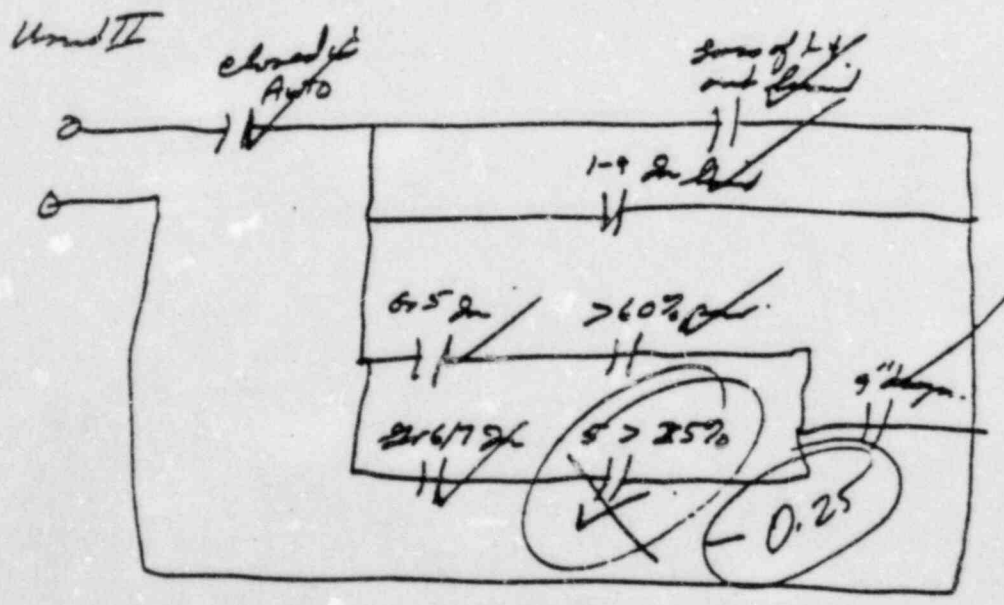
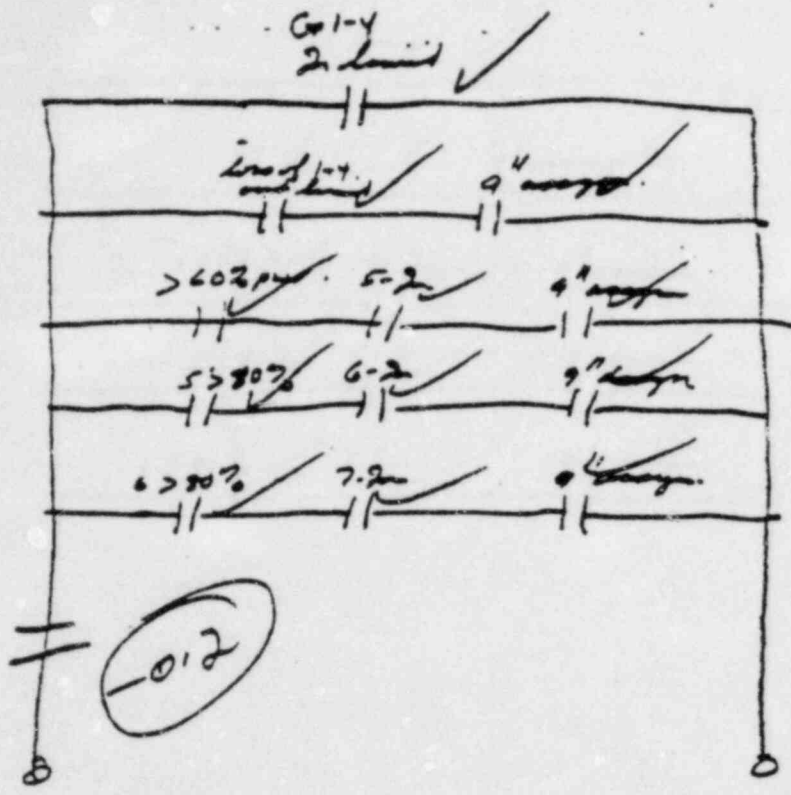
X
-0.125

XXX
-1.375

Total Q4
-0.5

5. Unit 2

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Total Q5
-0.45

6. See attached

OK

7. a) Investigate alarm ✓
- i) Respond to alarm ✓
- c) Emergency response OK

8. Information of off-normal condition or specific information for the operator about a piece of equipment! ✓

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9. see attached.

	Unit I	Unit II	max
10.4) 1. Sym	+ 3.52 %	3.20 ✓	7.71
2. Min.	+ 1.90 % ✓	1.72 ✓	3.71
3. OOC	+ 1.96 % ✓	0.96 ✓	5.88

11. (i) Reduce P_{max} to below the upper limit cutoff. PLO is reduced 2% for each 1% cut in excess of limit. 2% L 48CP's 2% for each 1% 0.1

Unit I { within 4 hrs - reduce $\Delta P/\Delta t$ flow set to 2% for 1% greater than limit
 not withdrawal limits reduced 2% for 1% > limit ✓
 operational imbalance limits, reduced 2% for 1% > limit ✓

* If Sym +16.80, min +9.50 or OOC +14.20% - go to hot alert

Reduce P_{max} to PLO - 2% for 1% > limit & 4 hrs to reduce $\Delta P/\Delta t$ and $\Delta P/\Delta t$ 2/1/2h

24 hrs reduce P_{max} to less than 60% allowable for RCP with also $\Delta P/\Delta t$ 6.5% with 4 hrs.

If > ~~transient~~ but < ^{Transient allowed} ~~limit~~ 30 minutes, stop then alert & ↑

If > ~~transient~~ but < ^{withd.} ~~limit~~ go to CO of ~~allowable~~ & alert

If > ~~max~~ - ≤ 15% in 2 hrs.

11. Unit I Unit II
 Alert every hour > 15% every 7 days unless monitor drops, then every 12 hours

Alert every 2 hours > 40% every 12 hrs unless monitor drops, then every hour.

12. 360 gpm. Unit I. ✓
X U-2 0.15

-10 not in the procedure & trial the amount

13. If log - get power below 9% if not triggered & use EF @ 360 gpm - less 5' use to 25" indicated on S.U. range - then use normal feed.

14. Unit I
IC ES Values at 281 - FNA ✓

Unit II
2-41B ✓ 305 TB Run by hot water
2-31B ✓ 305 TB 30 ✓

15. Alarm reduction, rod motion, and/or temperature change - ECCS.

16. chemical analysis ✓
concrete increasing ✓
heating with lead alarm in MUT & Bay 2
Feed & bleed cable alarm ✓
if lead off - lead increase - fuel after control.

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OK

EMERGENCY PROCEDURES TEST
CYCLE 5 REQUAL
SRO ANSWER ALL QUESTIONS

14.5.08.003 CB

*Handed
by
Brown*
21.9
24.5
91.38
2.6

pts
20 X-1
25 1.25
1.0
1.0
1.0

- 1. List 5 indications of an asymmetric rod fault. 1.0
- 2. What is your action upon discovery of a stuck control rod in GP-7? 1.0
- 3. What gives a motor fault alarm? .75
- 4. After verifying a rod as being stuck what is ^{the} follow-up action? 1.0
- 5. Draw the asymmetric rod runback circuit. 2.0
- 6. On the attached figure (Unit I or Unit II control room as applicable) mark the area that an "operator at the controls" should not normally leave for routine operations. 1.0
(NOTE: X-license answer for both units)
- 7. An "Operator at the controls" may leave the routine operations area and briefly enter the nonroutine operations area of the control room. List (3) three conditions which warrant an "Operator at the controls" to enter the nonroutine operations area. 1.75
- 8. Briefly explain the purpose of CAUTION tags. 1.0
- 9. Given the following information, calculate the quadrant power tilt. Use the attached data sheet: 2.0

Recorder Point Number	Detector Reading	Recorder Point Number	Detector Reading
1-1	124	1-16	124
1-9	125	1-17	117
1-10	125	1-18	119
1-11	125	2-1	124
1-12	125	2-2	125
1-13	117	2-3	125
1-14	118	2-4	124
1-15	124	2-5	123

- SRO
- 10. a) List the allowable tilt values for: 1.75
 1. Symmetrical (full) incore system.
 2. Minimum incore system.
 3. Power range channels.
 - b) Explain the required actions if the applicable quadrant power tilt limit is exceeded. (assume that corrective actions do not decrease the tilt.) 1.5

11. What is the required frequency for monitoring:
- a) Quadrant power tilt .5
 - b) Axial power imbalance .5
12. Following a loss of feed to both OTSG's, flow should be limited to gpm. .25
13. How do you recover from a dry steam generator? 1.0
14. List the power supplies and location of supply for main feedwater block valves. .5
15. Name at least two causes for unanticipated criticality. .5
16. What are the indications of a boron dilution accident in progress? 1.0

Total points	X-L	24.5
	SRO	17.25
	CRO	12.25

Reference Procedures:

- AP 1028 Operator at the Controls
- AP 1037 Caution Tags
- EP (1203-7)(2103-1.1) Hand Calculation of Tilt & Imbalance
- EP (1202-8)(2203-1.2; 2203-1.3) CRD Equipment Failures
- EP (1202-26A/B)(2202-2.2) Loss of OTSG Feed
- EP (1203-16)(2202-1.2) Unanticipated Criticality
- EP (2203-1.1) Loss of Boron

DATA SHEET 1

QUADRANT POWER TILT - MINIMUM INCORE DETECTORS -

1) Fill in the following incore valves:

Quadrant	Core Location	Axial Level	(Recorder - Detector) Point No. Reading	Quadrant Sums
XY	C10	2	(1-11) <u>125</u>	XY = <u>497</u> Quadrant 1 ✓
XY	F13	2	(1-12) <u>125</u>	
XY	E9	6	(2-5) <u>123</u>	
XY	G11	6	(1-1) <u>124</u>	
YZ	L13	2	(1-13) <u>117</u>	YZ = <u>471</u> Quadrant 2
YZ	O10	2	(1-14) <u>118</u>	
YZ	K11	6	(1-17) <u>117</u>	
YZ	M9	6	(1-18) <u>119</u>	
ZW	O6	2	(1-15) <u>124</u>	ZW = <u>497</u> Quadrant 3
ZW	L3	2	(1-16) <u>124</u>	
ZW	M7	6	(2-1) <u>124</u>	
ZW	K5	6	(2-2) <u>125</u>	
WX	F3	2	(1-9) <u>125</u>	WX = <u>499</u> Quadrant 4
WX	C6	2	(1-10) <u>125</u>	
WX	G5	6	(2-3) <u>125</u>	
WX	E7	6	(2-4) <u>124</u>	

2) Core Total = (WX) + (XY) + (YZ) + (ZW) = 1964

3) Quadrant Average Power (QAVE) = Core Total ÷ 4 = 491 ✓

4) Quadrant Tilt, % = $\left[\frac{\text{Quadrant Sum}}{\text{QAVE}} - 1 \right] \times (100\%) :$

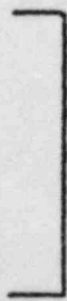
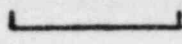
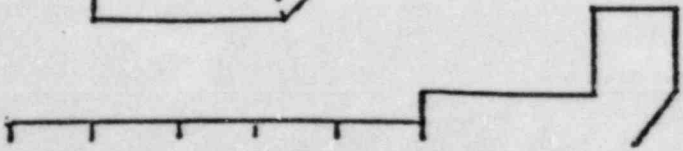
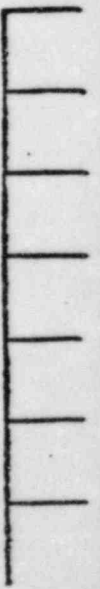
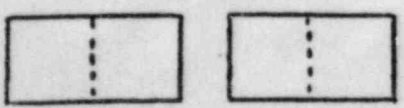
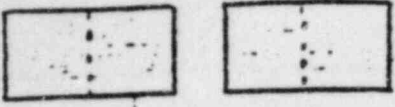
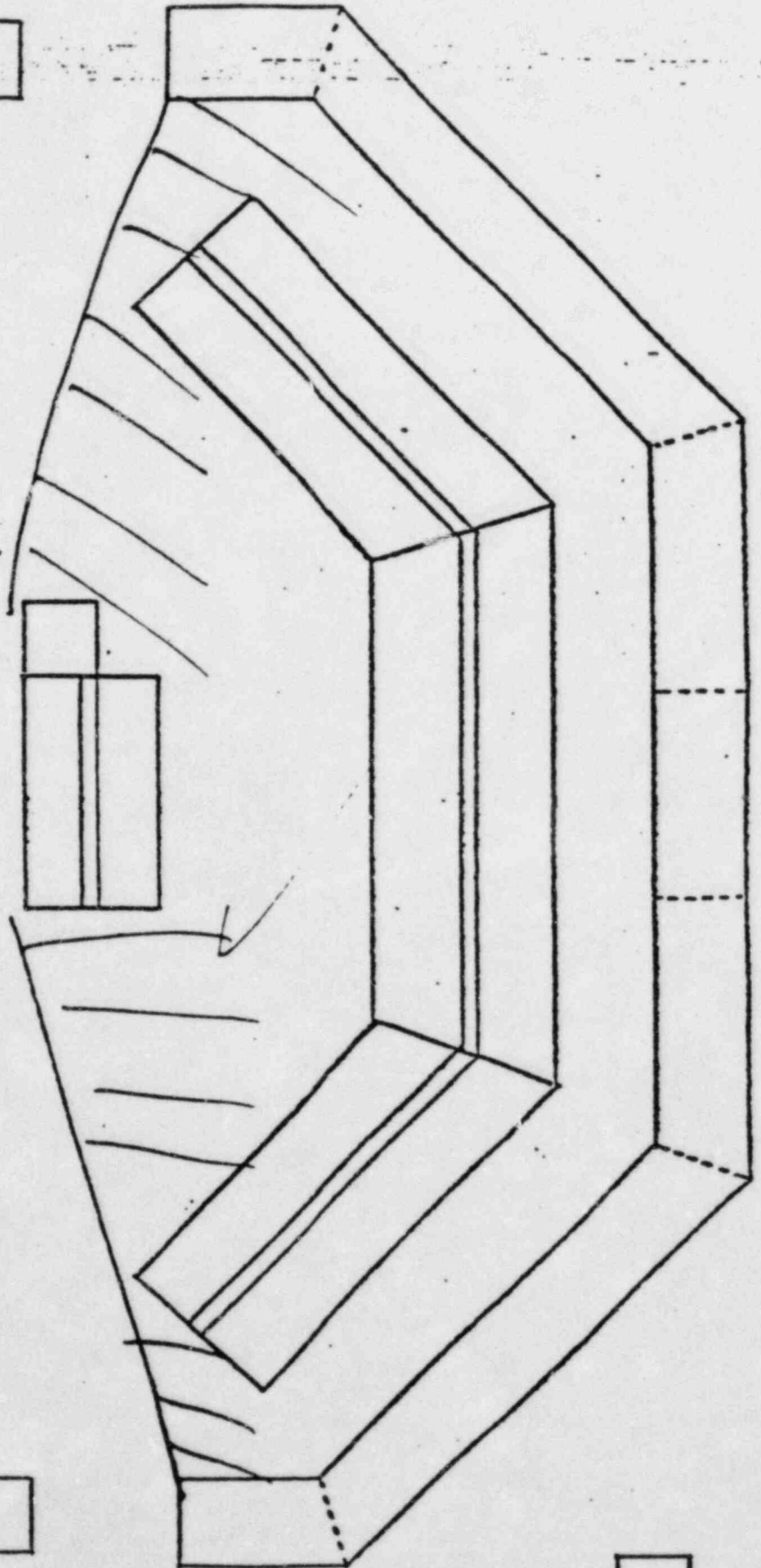
Quadrant 1 XY Tilt = +1.22 %

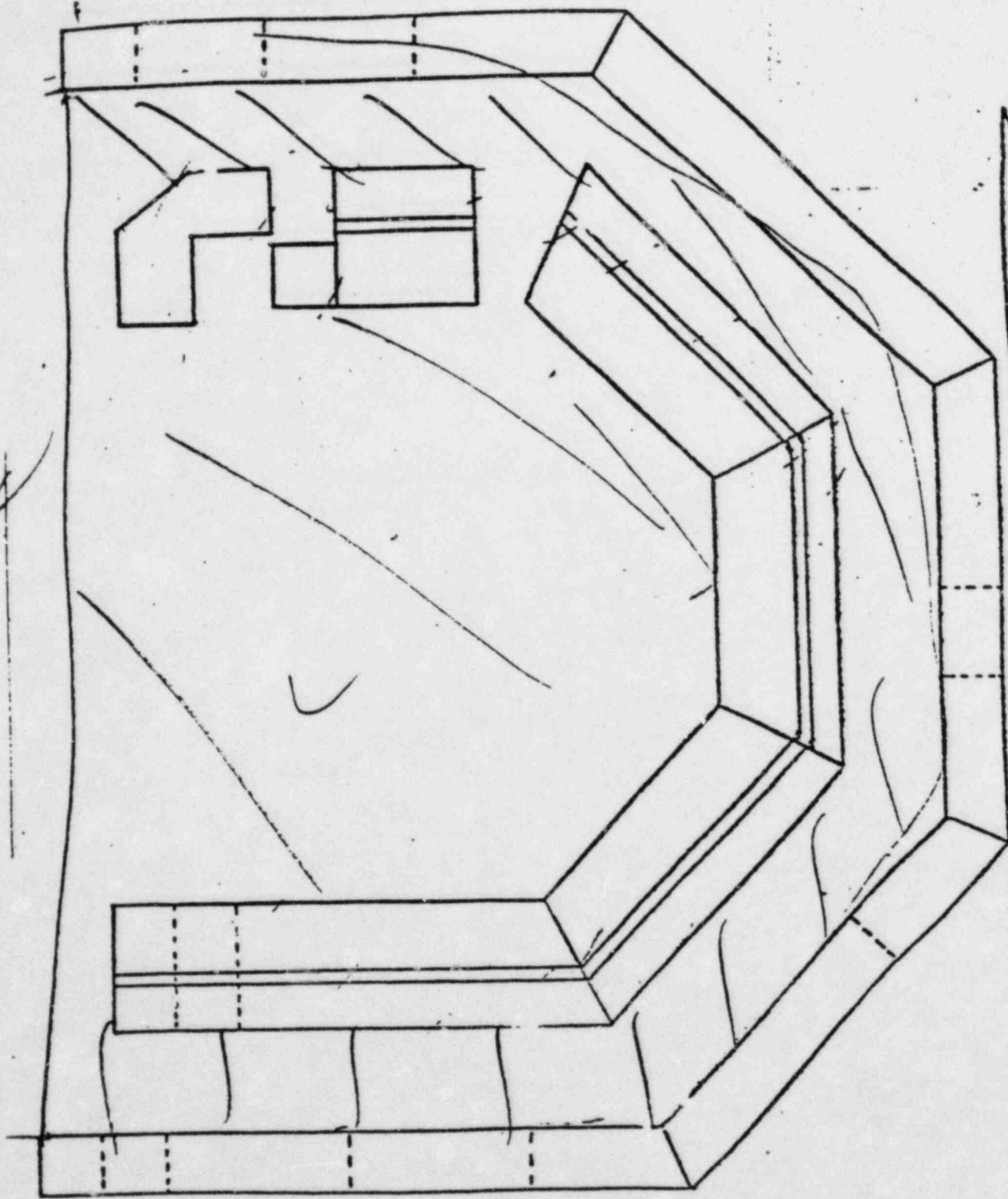
Quadrant 2 YZ Tilt = +4.07 % ✓

Quadrant 3 ZW Tilt = +1.22 % ✓

Quadrant 4 WX Tilt = +1.62 % ✓

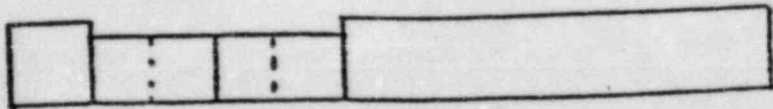
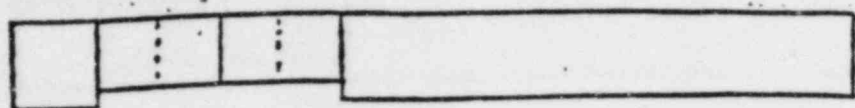
UNIT 1
CONTROL ROOM





3 UNIL & UNIKUL ROOMS

OK



- ① Any rod lifts on CWD part ✓
 on a mac fault, lifts on P1 part ✓
 possible, required in 1CS ✓
 overlaid alarm ✓
 P.I part show rod misalignment - ✓

UNIT I

- ② a) issue number if applicable ✓
 b) try to move rod ✓
 c) monitor tilt, if > 13.64 reduce power below the power level cutoff 2% for each 1% tilt > 3.64 .
 - d) within 4 hours reduce O/S/F setpoint 2% for each 1% tilt.

Note - get E.P. out & do follow up action

UNIT II

- ③ a) issue number if applicable (0.25)
 b) any 1CS station in but on the bank of applicable
 c) get E.P. out & do follow up action

- ③ Movement without a command, movement is opposite direction of command ✓ (0.25)

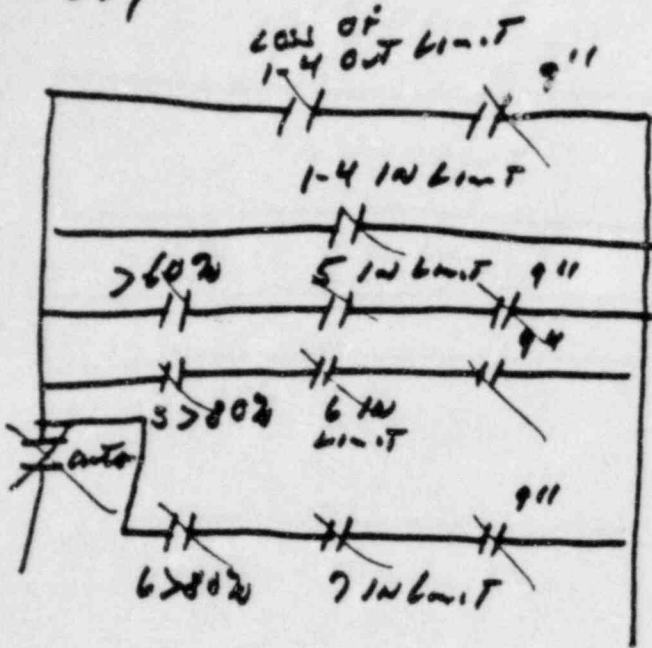
U-I

- ④ a) maintain power at 60% ✓
 b) exercise all rods with bar (0.25)
 c) ...

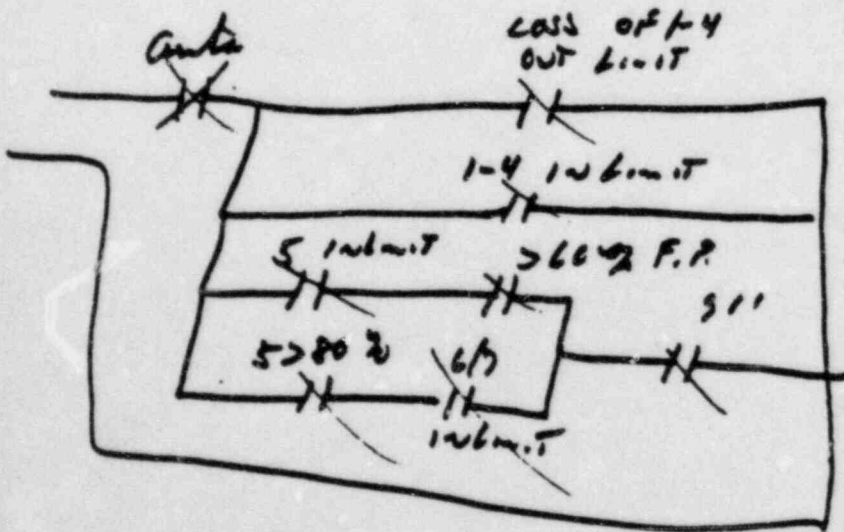
UNIT II

- ④ a) word file & master with list
- b) sub from a A+0CC plan
- c) tab current reading

⑤ U-1



U-II



⑥ See attached

DATE: _____

⑦ 2 engines, a alarm
✓ fuel readout a routine check of fuel
✓ bleed, a fuel - pump down. a/c drain fuel -
(normal op)

⑧ Try an information tape which tells
the operator that there is something
precaution with his equipment but that it
may not be out of service.

⑨ be attached

⑩ $\frac{U-I}{3.52} \times 0.25$ Fall 1 year - $\frac{U-II}{2.3}$ S/S 6-1-195
+ 1.90 - " " - + 1.72
+ 1.96 - O.O.C. - + 1.96

U-I
Reduce power to power level cutoff & the
margin 2.90 for fuel 1.70 in excess of limit
below P.L.C. Let it but with 4 hr
a) reduce O/S/E trip returns 2.90 for fuel
1.70 limit
b) reduce CRD withdrawal limits &
inlet. limits 2.90 for fuel 1.70 limit
in excess of limit. Q. Dub. Curve 0.2

U-II
Let within S/S limit with 2 hours a
reduce power including the P/L for the
P/L combination 2.90 for fuel 1.70 limit

in terms of S/S limit & which 4 have
value of $\Delta\phi / F$ and high ϕ try separate 22 for end
190 in terms of S/S limit. (0.4)

(11) Unit I - one try 2 hr $> 15\%$
Unit II - one try 2 days $> 15\%$ unless monitor is
OK then one 1/2 hr

Unit I - one 1/2 hr $> 40\%$ F.P.
Unit II - one 1/2 hr $> 40\%$ unless monitor is OK
then one 1/2 hr

(12) 360 gpm /

(13) Unit I
Established feed then normal feed when a startup feed
value at 2" / min

Unit II

One F.F.W. value is established flow at 2" / min
when at 25" go back to normal F.W. flow
path.

(14) Unit I - 1CESU/CC - 280' F.H. B.C.S.

Unit II - 2-41EA 242EB - ~~242EB~~ 205 hr. (1.0)

(15) Red jacket, low vibration

(16) Low vibration, low vibration

(17) ~~DRS~~

with 10s in auto road driving in
S.F. pool a FTC but going up doing refueling

DEPT. OF COMMERCE

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

Before the Commission

In the Matter of)
METROPOLITAN EDISON COMPANY)
(Three Mile Island Nuclear)
Station, Unit No. 1))

Docket No. 50-289 SP
(Restart-Management
Phase)

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