Commonwealth Edison
One First National Plaza, Chicago, Illinois
Address Reply to: Post Office Box 767
Chicago, Illinois 60690

July 23, 1984

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Subject: Byron Generating Station
Operating Shift Staffing for Unit 1
NRC Docket Nos. 50-454/455

References (a): May 25, 1984 letter from D. G. Eisenhut to D. L. Farrar

(b): March 19, 1984 letter from T. R. Tramm to H. R. Denton

Dear Mr. Denton:

Reference (a) requested that we provide the following information concerning the experience level of individuals assigned to shift operating positions at Byron Station and the planned use of shift advisors.

Shift Advisors

Byron Station does intend to use Shift Advisors to supplement those shifts which do not meet the Hot Participation Experience requirements stated in the referenced NRC letter. Two of our Shift Foreman have completed a six week Hot Participation Experience program at Zion Station, and two more Shift Foreman will have completed this program by July 31, 1984. Presently, two of our licensed Shift Engineers meet the Hot Participation requirements for Shift Supervisors. Two other supervisors also meet those requirements, but are presently in SRO license training. Upon completion of the July NRC Exams we expect to have a total of four people who meet the Hot Participation Experience requirements for Shift Supervisors.

Overall, then, we will have enough experienced personnel to cover 4 shifts without the need of a Shift Advisor. The two remaining shifts will have a Shift Advisor assigned.

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Operating Shift Experience

Reference (b) provided information regarding the experience level of individuals assigned to shift operating positions as of 3-19-84. In the last several months, we have had some personnel changes due to resignations, etc. We have therefore updated our Operating Shift Experience forms to reflect these changes, plus the additional 10 weeks of shift experience due to the fuel load date slipping to September 15, 1984, additional shift crew simulator time, and the 6 weeks of Hot Participation Experience. Attachement A contains the updated information on Operating Shift Experience.

Following is an item by item response to Enclosure 2 of the referenced NRC letter.

1) A resume of each Shift Advisor is included in Attachment B.

2) Copies of the procedures which apply to the Shift Advisor position are provided in Attachment C.

3) Attachment D presents the Shift Advisor training program.

4) The written exam given to the Shift Advisors is enclosed in Attachment E.

5) Attachment F provides a description of, and notes regarding, the Shift Advisors oral exam.

6) The shift crew training program on Shift Advisors is in Attachment G.

7) Medical qualifications are in Attachment H.

8) Evaluation procedures (rough draft) are enclosed in Attachment I.

Please direct any further questions regarding this matter to this office.

Very truly yours,

Greg Alexander

Greg Alexander
Nuclear Licensing Administrator

cc: L. N. Olshan

Attachment

9011N

ATTACHMENT A

OPERATING SHIFT EXPERIENCE

DATE 6-25-84

PLANT NAME BYRON

UTILITY COMMONWEALTH EDISON

O.L. DATE 8-15-84

OPERATING SHIFT EXPERIENCE

JOB TITLE: ADMINISTRATION (NOTE 2)

NUCLEAR POWER PLANT EXPERIENCE FOR OPERATING SHIFT POSITIONS (NOTE 1)

ENTER DATA: MONTHS/MONTHS X WEIGHTING FACTOR

TYPE OF EXPERIENCE	WEIGHTING FACTOR	MAXIMUM CREDIT	1	2	3	4	5	6	7	8	9	10
1. SAME TYPE COMMERCIAL SRO *	1.00	NO LIMIT			22/22	9/9						
2. OTHER COMMERCIAL SRO	.75	NO LIMIT	12/9									
3. SAME TYPE COMMERCIAL RO	1.00	NO LIMIT										
4. OTHER COMMERCIAL RO	0.75	NO LIMIT										
5. NAVY (MILITARY) NUCLEAR		36 MONTHS										
(RO, EWS, EOOW, PPWS)	0.50			46/23		38/17						
(OTHER)	0.25											
6. SIMULATOR		12 MONTHS										
(REFERENCE PLANT)	5.00	(12 MONTHS)			0.33/1.65	0.75/3.75						
(SIMILAR)	3.00	(9 MONTHS)		0.75/2.25	0.75/2.25	0.75/2.25						
** 7. NUCLEAR PLANT EXPERIENCE ON SHIFT (OWN PLANT)		24 MONTHS										
(LESS THAN 1 1/2 YEARS PRIOR TO F.L.)	0.75	(12 MONTHS)										
(MORE THAN 1 1/2 YEARS PRIOR TO F.L.)	0.50	(12 MONTHS)										
8. LICENSED CLASSROOM TRAINING AND EXAM (OWN PLANT)	0.50	9 MONTHS			10/5							
9. PARTICIPATION AT OPERATING PLANT	0.75	12 MONTHS										
10. OTHER NUCLEAR PLANT EXPERIENCE	0.25	12 MONTHS	173/12	134/12	147/12	116.5/12						
11. CONDUCTING LICENSE TRAINING	0.25	9 MONTHS										
12. DEGREE (ENGINEERING, APPLIED SCIENCE OR EQUIVALENT)		12 MONTHS	12	12	12	12						
(BACHELORS DEGREE)		(12 MONTHS)										
(ASSOCIATES DEGREE)		(6 MONTHS)										
TOTAL NUCLEAR PLANT EXPERIENCE:			33	49.25	54.9	56						

HOT PARTICIPATION EXPERIENCE	1	2	3	4	5	6	7	8	9	10
TIME > 20% PWR/BWR (WKS)			68.75	28.12						
STARTUP & SHUTDOWN (YES/NO)			YES	YES						
MONTHS ON SHIFT			22	9						

NOTE 1: SEE "INSTRUCTIONS FOR USE OF NUCLEAR POWER PLANT EXPERIENCE FACTORS FOR OPERATING SHIFT POSITIONS (OL APPLICANTS)"

NOTE 2: INCLUDE ALL SHIFT SUPERVISORS (SS), SHIFT SRO'S, REACTOR OPERATORS (RO) AND SHIFT TECHNICAL ADVISORS (STA).

CHECK ONE OF THE FOLLOWING:

☐ a. Shift advisors must be used to satisfy the "hot participation experience" requirements of the utility plan.

☒ b. Shift advisors will probably be required, at least for some shifts.

☐ c. Do not plan to use shift advisors unless some unforeseen circumstance arises.

* THIS TIME IS BASED ON 75% AVAILABILITY OF C.E.CO. ZION NUCLEAR POWER STATION.

** SHIFT EXPERIENCE PROJECTED THROUGH SEPT. 15, 1984

DATE 6-25-84

PLANT NAME BYRON

UTILITY COMMONWEALTH EDISON

O.L. DATE 8-15-84

OPERATING SHIFT EXPERIENCE

NUCLEAR POWER PLANT EXPERIENCE FOR OPERATING SHIFT POSITIONS (NOTE 1)

JOB TITLE: SHIFT ENGINEER (SS)(SRO
(NOTE 2)

ENTER DATA: MONTHS/MONTHS X WEIGHTING FACTOR

TYPE OF EXPERIENCE	WEIGHTING FACTOR	MAXIMUM CREDIT	1	2	3	4
1. SAME TYPE COMMERCIAL SRO	1.00	NO LIMIT				
2. OTHER COMMERCIAL SRO	.75	NO LIMIT				
3. SAME TYPE COMMERCIAL RO *	1.00	NO LIMIT	36/36	96/96		
4. OTHER COMMERCIAL RO	0.75	NO LIMIT				
5. NAVY (MILITARY) NUCLEAR		36 MONTHS				
(RO, EWS, EOOW, PPWS)	0.50		31/15.5			
(OTHER)	0.25		6/1.5	66/16.5		54/13.5
6. SIMULATOR		12 MONTHS				
(REFERENCE PLANT)	5.00	(12 MONTHS)	0.33/1.65	0.33/1.65	0.33/1.65	0.33/1.65
(SIMILAR)	3.00	(9 MONTHS)	0.75/2.25	0.75/2.25	0.75/2.25	0.75/2.25
** 7. NUCLEAR PLANT EXPERIENCE ON SHIFT (OWN PLANT)		24 MONTHS				
(LESS THAN 1 1/2 YEARS PRIOR TO F.L.)	0.75	(12 MONTHS)	15/11.25	15/11.25	12/9	15/11.25
(MORE THAN 1 1/2 YEARS PRIOR TO F.L.)	0.50	(12 MONTHS)	42/12	40/12	40/12	38/12
8. LICENSED CLASSROOM TRAINING AND EXAM (OWN PLANT)	0.50	9 MONTHS	10/5	10/5	10/5	10/5
9. PARTICIPATION AT OPERATING PLANT	0.75	12 MONTHS				
10. OTHER NUCLEAR PLANT EXPERIENCE	0.25	12 MONTHS	14/3.5	4/1	38/9.5	35/8.75
11. CONDUCTING LICENSE TRAINING	0.25	9 MONTHS				
12. DEGREE (ENGINEERING, APPLIED SCIENCE OR EQUIVALENT)		12 MONTHS				
(BACHELORS DEGREE)		(12 MONTHS)			12	
(ASSOCIATES DEGREE)		(6 MONTHS)				
TOTAL NUCLEAR PLANT EXPERIENCE:			88.65	145.65	51.4	54.4

HOT PARTICIPATION EXPERIENCE

	1	2	3	4
TIME > 20% PWR/BWR (WKS)	144	384		
STARTUP & SHUTDOWN (YES/NO)	YES	YES		
MONTHS ON SHIFT	36	96		

NOTE 1: SEE "INSTRUCTIONS FOR USE OF NUCLEAR POWER PLANT EXPERIENCE FACTORS FOR OPERATING SHIFT POSITIONS (OL APPLICANTS)"

NOTE 2: INCLUDE ALL SHIFT SUPERVISORS (SS), SHIFT SRO'S, REACTOR OPERATORS (RO) AND SHIFT TECHNICAL ADVISORS (STA).

* BASED ON 75% AVAILABILITY OF CECo's ZION NUCLEAR POWER STATION.

** SHIFT EXPERIENCE PROJECTED THROUGH SEPT. 15, 1984

CHECK ONE OF THE FOLLOWING:

☐ a. Shift advisors must be used to satisfy the "hot participation experience" requirements of the utility plan.

☒ b. Shift advisors will probably be required, at least for some shifts.

☐ c. Do not plan to use shift advisors unless some unforeseen circumstance arises.

DATE 6-25-84

PLANT NAME BYRON

UTILITY COMMONWEALTH EDISON

O.L. DATE 8-15-84

OPERATING SHIFT EXPERIENCE

NUCLEAR POWER PLANT EXPERIENCE FOR OPERATING SHIFT POSITIONS (NOTE 1)

JOB TITLE: STATION CONTROL ROOM ENGINEER (SCRE)
(NOTE 2)

ENTER DATA: MONTHS/MONTHS X WEIGHTING FACTOR

TYPE OF EXPERIENCE	WEIGHTING FACTOR	MAXIMUM CREDIT	1	2	3	4	5	6	7	8	9	10
1. SAME TYPE COMMERCIAL SRO	1.00	NO LIMIT										
2. OTHER COMMERCIAL SRO	.75	NO LIMIT										
3. SAME TYPE COMMERCIAL RO	1.00	NO LIMIT										
4. OTHER COMMERCIAL RO	0.75	NO LIMIT										
5. NAVY (MILITARY) NUCLEAR		36 MONTHS										
(RO, EWS, EOOW, PPWS)	0.50											
(OTHER)	0.25											
6. SIMULATOR		12 MONTHS										
(REFERENCE PLANT)	5.00	(12 MONTHS)	0.33/1.65	0.33/1.65	0.33/1.65	0.33/1.65	0.33/1.65	0.33/1.65				
(SIMILAR)	3.00	(9 MONTHS)	0.75/2.25	0.5/1.5	0.75/2.25	0.75/2.25	0.75/2.25	0.75/2.25				
**7. NUCLEAR PLANT EXPERIENCE ON SHIFT (OWN PLANT)		24 MONTHS										
(LESS THAN 1 1/2 YEARS PRIOR TO F.L.)	0.75	(12 MONTHS)	8/6	3.5/2.63	8/6	10/7.5	8/6	10/7.5				
(MORE THAN 1 1/2 YEARS PRIOR TO F.L.)	0.50	(12 MONTHS)										
8. LICENSED CLASSROOM TRAINING AND EXAM (OWN PLANT)	0.50	9 MONTHS	10/5	10/5	10/5	10/5	10/5	10/5				
9. PARTICIPATION AT OPERATING PLANT	0.75	12 MONTHS										
10. OTHER NUCLEAR PLANT EXPERIENCE	0.25	12 MONTHS	34/8.5	13/3.25	48/11.5	45/11.25	43/10.25	23/5.75				
11. CONDUCTING LICENSE TRAINING	0.25	9 MONTHS										
12. DEGREE (ENGINEERING, APPLIED SCIENCE OR EQUIVALENT)		12 MONTHS										
(BACHELORS DEGREE)		(12 MONTHS)	12	12	12	12	12	12				
(ASSOCIATES DEGREE)		(6 MONTHS)										
TOTAL NUCLEAR PLANT EXPERIENCE:			35.4	26.03	38.4	39.65	37.15	34.15				

HOT PARTICIPATION EXPERIENCE

	1	2	3	4	5	6	7	8	9	10
TIME > 20% PWR/BWR (WKS)										
STARTUP & SHUTDOWN (YES/NO)										
MONTHS ON SHIFT										

NOTE 1: SEE "INSTRUCTIONS FOR USE OF NUCLEAR POWER PLANT EXPERIENCE FACTORS FOR OPERATING SHIFT POSITIONS (OL APPLICANTS)"

NOTE 2: INCLUDE ALL SHIFT SUPERVISORS (SS), SHIFT SRO'S, REACTOR OPERATORS (RO) AND SHIFT TECHNICAL ADVISORS (STA).

** SHIFT EXPERIENCE PROJECTED THROUGH SEPT. 15, 1984

CHECK ONE OF THE FOLLOWING:

- ☐ a. Shift advisors must be used to satisfy the "hot participation experience" requirements of the utility plan.
- ☒ b. Shift advisors will probably be required, at least for some shifts.
- ☐ c. Do not plan to use shift advisors unless some unforeseen circumstance arises.

DATE 10-22-84
PLANT NAME BYRON
UTILITY COMMONWEALTH EDISON
O.L. DATE 8-15-84

OPERATING SHIFT EXPERIENCE

NUCLEAR POWER PLANT EXPERIENCE FOR OPERATING SHIFT POSITIONS (NOTE 1)

JOB TITLE: SHIFT FORMAN (SF)-(SRO)
(NOTE 2)

ENTER DATA: MONTHS/MONTHS X WEIGHTING FACTOR

TYPE OF EXPERIENCE	WEIGHTING FACTOR	MAXIMUM CREDIT	1	2	3	4	5	6	7	8	9	10
1. SAME TYPE COMMERCIAL SRO *	1.00	NO LIMIT	1.5/1.5		1.5/1.5		1.5/1.5	1.5/1.5			54/54	
2. OTHER COMMERCIAL SRO	.75	NO LIMIT										
3. SAME TYPE COMMERCIAL RO *	1.00	NO LIMIT									32/32	22/22
4. OTHER COMMERCIAL RO	0.75	NO LIMIT										
5. NAVY (MILITARY) NUCLEAR		36 MONTHS										
(RO, EWS, EOOW, PPWS)	0.50				60/30							
(OTHER)	0.25							54/13.5	49/12.25			
6. SIMULATOR		12 MONTHS										
(REFERENCE PLANT)	5.00	(12 MONTHS)	0.33/1.65	0.33/1.65	0.33/1.65	0.33/1.65	0.33/1.65	0.25/1.25	0.25/1.25	0.33/1.65	0.75/3.75	0.75/3.75
(SIMILAR)	3.00	(9 MONTHS)	0.5/1.5	0.5/1.5	0.5/1.5	0.75/2.25	0.5/1.5	0.5/1.5	0.5/1.5	0.75/2.25	0.5/1.5	0.5/1.5
** 7. NUCLEAR PLANT EXPERIENCE ON SHIFT (OWN PLANT)		24 MONTHS										
(LESS THAN 1 1/2 YEARS PRIOR TO F.L.)	0.75	(12 MONTHS)	6/4.5	9/6.75	5.5/4.1	15/11.25	9/6.75	8/6	15/11.25			8.5/6.4
(MORE THAN 1 1/2 YEARS PRIOR TO F.L.)	0.50	(12 MONTHS)	4/2	4/2	4/2	42/12	4/2	4/2	25/12.5	25/12.5		42.5/21.25
8. LICENSED CLASSROOM TRAINING AND EXAM (OWN PLANT)	0.50	9 MONTHS	10/5	10/5	10/5	10/5	10/5	10/5	10/5	10/5		
9. PARTICIPATION AT OPERATING PLANT	0.75	12 MONTHS										
10. OTHER NUCLEAR PLANT EXPERIENCE	0.25	12 MONTHS	10/2.5	10/2.5	7.5/1.87	20/5	32/8	5/1.25	10/2.5	51/12.75	43/10.75	47/11.75
11. CONDUCTING LICENSE TRAINING	0.25	9 MONTHS										
12. DEGREE (ENGINEERING, APPLIED SCIENCE OR EQUIVALENT)		12 MONTHS										
(BACHELORS DEGREE)		(12 MONTHS)										
(ASSOCIATES DEGREE)		(6 MONTHS)	6									
TOTAL NUCLEAR PLANT EXPERIENCE:			23.15	19.4	46.12	37.15	24.9	30.5	46.25	34.15	102	66.65

HOT PARTICIPATION EXPERIENCE

	1	2	3	4	5	6	7	8	9	10
TIME > 20% PWR/BWR (WKS)	6		6		6	6			344	88
STARTUP & SHUTDOWN (YES/NO)									Yes	Yes
MONTHS ON SHIFT									86	22

NOTE 1: SEE "INSTRUCTIONS FOR USE OF NUCLEAR POWER PLANT EXPERIENCE FACTORS FOR OPERATING SHIFT POSITIONS (OL APPLICANTS)"

NOTE 2: INCLUDE ALL SHIFT SUPERVISORS (SS), SHIFT SRO'S, REACTOR OPERATORS (RO) AND SHIFT TECHNICAL ADVISORS (STA).

* BASED ON 75% AVAILABILITY OF CECO'S ZION NUCLEAR POWER STATION

** SHIFT EXPERIENCE IS PROJECTED THROUGH SEPT. 15, 1984

CHECK ONE OF THE FOLLOWING:

☐ a. Shift advisors must be used to satisfy the "hot participation experience" requirements of the utility plan.

☒ b. Shift advisors will probably be required, at least for some shifts.

☐ c. Do not plan to use shift advisors unless some unforeseen circumstance arises.

DATE 6-22-07
PLANT NAME BYRON
UTILITY COMMONWEALTH EDISON
O.L. DATE 8-15-84

OPERATING SHIFT EXPERIENCE

NUCLEAR POWER PLANT EXPERIENCE FOR OPERATING SHIFT POSITIONS (NOTE 1)

JOB TITLE: NUCLEAR STATION OPERATOR / EQUIPMENT OPERATOR (RO)
(NOTE 2)

ENTER DATA: MONTHS/MONTHS X WEIGHTING FACTOR

TYPE OF EXPERIENCE	WEIGHTING FACTOR	MAXIMUM CREDIT	1	2	3	4	5	6	7	8	9	10
1. SAME TYPE COMMERCIAL SRO	1.00	NO LIMIT										
2. OTHER COMMERCIAL SRO	.75	NO LIMIT										
3. SAME TYPE COMMERCIAL RO	1.00	NO LIMIT										
4. OTHER COMMERCIAL RO	0.75	NO LIMIT										
5. NAVY (MILITARY) NUCLEAR		36 MONTHS										
(RO, EWS, EOOW, PPWS)	0.50											
(OTHER)	0.25											
6. SIMULATOR		12 MONTHS										
(REFERENCE PLANT)	5.00	(12 MONTHS)	0.33/1.65	0.33/1.65	0.5/2.5	0.33/1.65	0.25/1.25	0.33/1.65	0.25/1.25	0.33/1.25	0.25/1.25	0.25/1.25
(SIMILAR)	3.00	(9 MONTHS)	0.75/2.25	0.5/1.5	0.75/2.25	0.5/1.5	0.5/1.5	0.75/2.25	0.5/1.5	0.75/2.25	0.5/1.5	0.5/1.5
** 7. NUCLEAR PLANT EXPERIENCE ON SHIFT (OWN PLANT)		24 MONTHS										
(LESS THAN 1 1/2 YEARS PRIOR TO F.L.)	0.75	(12 MONTHS)	15/11.25	15/11.25	15/11.25			15/11.25	7/5.25	15/11.25	7/5.25	7/5.25
(MORE THAN 1 1/2 YEARS PRIOR TO F.L.)	0.50	(12 MONTHS)	42/12	2/1.0	42/12			42/12		42/12		
8. LICENSED CLASSROOM TRAINING AND EXAM (OWN PLANT)	0.50	9 MONTHS	10/5	10/5	10/5	10/5	10/5	10/5	10/5	10/5	10/5	10/5
9. PARTICIPATION AT OPERATING PLANT	0.75	12 MONTHS										
10. OTHER NUCLEAR PLANT EXPERIENCE	0.25	12 MONTHS	12/3	44/11	20/5	31.5/7.88	30.5/7.63		48/12		48/12	43/10.75
11. CONDUCTING LICENSE TRAINING	0.25	9 MONTHS										
12. DEGREE (ENGINEERING, APPLIED SCIENCE OR EQUIVALENT)		12 MONTHS										
(BACHELORS DEGREE)		(12 MONTHS)										
(ASSOCIATES DEGREE)		(6 MONTHS)										
TOTAL NUCLEAR PLANT EXPERIENCE:			35.15	31.4	38	16.03	15.38	32.15	25	31.75	25	23.75

HOT PARTICIPATION EXPERIENCE

	1	2	3	4	5	6	7	8	9	10
TIME > 20% PWR/BWR (WKS)										
STARTUP & SHUTDOWN (YES/NO)										
MONTHS ON SHIFT										

NOTE 1: SEE "INSTRUCTIONS FOR USE OF NUCLEAR POWER PLANT EXPERIENCE FACTORS FOR OPERATING SHIFT POSITIONS (OL APPLICANTS)"

NOTE 2: INCLUDE ALL SHIFT SUPERVISORS (SS), SHIFT SRO'S, REACTOR OPERATORS (RO) AND SHIFT TECHNICAL ADVISORS (STA).

** SHIFT EXPERIENCE IS PROJECTED THROUGH SEPT. 15, 1984

CHECK ONE OF THE FOLLOWING:

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☒ b. Shift advisors will probably be required, at least for some shifts.

☐ c. Do not plan to use shift advisors unless some unforeseen circumstance arises.

DATE 6-25-84
PLANT NAME BYRON
UTILITY COMMONWEALTH EDISON
O.L. DATE 8-15-84

OPERATING SHIFT EXPERIENCE

JOB TITLE: NUCLEAR STATION OPERATOR/EQUIPMENT OPERATOR (RO)
(NOTE 2)

ENTER DATA: MONTHS/MONTHS X WEIGHTING FACTOR

NUCLEAR POWER PLANT EXPERIENCE FOR OPERATING SHIFT POSITIONS (NOTE 1)

TYPE OF EXPERIENCE	WEIGHTING FACTOR	MAXIMUM CREDIT	1	2	3	4	5	6	7	8	9	10
1. SAME TYPE COMMERCIAL SRO	1.00	NO LIMIT										
2. OTHER COMMERCIAL SRO	.75	NO LIMIT										
3. SAME TYPE COMMERCIAL RO	1.00	NO LIMIT										
4. OTHER COMMERCIAL RO	0.75	NO LIMIT										
5. NAVY (MILITARY) NUCLEAR		36 MONTHS										
(RO, EWS, EOOW, PPWS)	0.50											
(OTHER)	0.25											
6. SIMULATOR (REFERENCE PLANT)	5.00	12 MONTHS (12 MONTHS)	0.25/1.25	0.25/1.25	0.33/1.65	0.25/1.25	0.33/1.65					
(SIMILAR)	3.00	(9 MONTHS)	0.5/1.5	0.75/2.25	0.75/2.25	0.5/1.5	0.75/2.25					
** 7. NUCLEAR PLANT EXPERIENCE ON SHIFT (OWN PLANT) (LESS THAN 1 1/2 YEARS PRIOR TO F.L.)	0.75	24 MONTHS (12 MONTHS)	4/3	7/5.25	15/11.25		15/11.25					
(MORE THAN 1 1/2 YEARS PRIOR TO F.L.)	0.50	(12 MONTHS)			42/12		16/8					
8. LICENSED CLASSROOM TRAINING AND EXAM (OWN PLANT)	0.50	9 MONTHS	10/5	10/5	10/5	10/5	10/5					
9. PARTICIPATION AT OPERATING PLANT	0.75	12 MONTHS										
10. OTHER NUCLEAR PLANT EXPERIENCE	0.25	12 MONTHS	29/7.25	70/12	12/3	25/6.25	36/9					
11. CONDUCTING LICENSE TRAINING	0.25	9 MONTHS										
12. DEGREE (ENGINEERING, APPLIED SCIENCE OR EQUIVALENT) (BACHELORS DEGREE) (ASSOCIATES DEGREE)		12 MONTHS (12 MONTHS) (6 MONTHS)										
TOTAL NUCLEAR PLANT EXPERIENCE:			18	25.75	35.15	14	37.15					

HOT PARTICIPATION EXPERIENCE

	1	2	3	4	5	6	7	8	9	10
TIME > 20% PWR/BWR (WKS)										
STARTUP & SHUTDOWN (YES/NO)										
MONTHS ON SHIFT										

NOTE 1: SEE "INSTRUCTIONS FOR USE OF NUCLEAR POWER PLANT EXPERIENCE FACTORS FOR OPERATING SHIFT POSITIONS (OL APPLICANTS)"

NOTE 2: INCLUDE ALL SHIFT SUPERVISORS (SS), SHIFT SRO'S, REACTOR OPERATORS (RO) AND SHIFT TECHNICAL ADVISORS (STA).

** SHIFT EXPERIENCE IS PROJECTED THROUGH SEPT. 15, 1984

CHECK ONE OF THE FOLLOWING:

- ☐ a. Shift advisors must be used to satisfy the "hot participation experience" requirements of the utility plan.
- ☒ b. Shift advisors will probably be required, at least for some shifts.
- ☐ c. Do not plan to use shift advisors unless some unforeseen circumstance arises.

DATE 6-25-84

PLANT NAME BYRON

UTILITY COMMONWEALTH EDISON

O.L. DATE 8-15-84

OPERATING SHIFT EXPERIENCE

JOB TITLE: TRAINING
(NOTE 2)

NUCLEAR POWER PLANT EXPERIENCE FOR OPERATING SHIFT POSITIONS (NOTE 1)

ENTER DATA: MONTHS/MONTHS X WEIGHTING FACTOR

TYPE OF EXPERIENCE	WEIGHTING FACTOR	MAXIMUM CREDIT	1	2	3	4	5	6	7	8	9	10
1. SAME TYPE COMMERCIAL SRO	1.00	NO LIMIT										
2. OTHER COMMERCIAL SRO	.75	NO LIMIT	6/4.5									
3. SAME TYPE COMMERCIAL RO	1.00	NO LIMIT										
4. OTHER COMMERCIAL RO	0.75	NO LIMIT	48/36									
5. NAVY (MILITARY) NUCLEAR		36 MONTHS										
(RO, EWS, EOOW, PPWS)	0.50		60/30			40/20	40/20	40/20				
(OTHER)	0.25		12/3			36/9	12/3	12/3				
6. SIMULATOR		12 MONTHS										
(REFERENCE PLANT)	5.00	(12 MONTHS)	0.33/1.65	2.0/10	2.0/10	0.75/3.75	2.5/12.50					
(SIMILAR)	3.00	(9 MONTHS)	0.75/2.25	0.75/2.25	0.75/2.25	0.5/1.5	0.25/0.75	0.25/0.75				
* * 7. NUCLEAR PLANT EXPERIENCE ON SHIFT (OWN PLANT)		24 MONTHS										
(LESS THAN 1 1/2 YEARS PRIOR TO F.L.)	0.75	(12 MONTHS)										
(MORE THAN 1 1/2 YEARS PRIOR TO F.L.)	0.50	(12 MONTHS)	8/4		17/8.5							
8. LICENSED CLASSROOM TRAINING AND EXAM (OWN PLANT)	0.50	9 MONTHS	10/5	2/1	2/1	10/5						
9. PARTICIPATION AT OPERATING PLANT	0.75	12 MONTHS										
10. OTHER NUCLEAR PLANT EXPERIENCE	0.25	12 MONTHS	42/10.5	19/4.75	14/35	28/7	26/6.5	22/5.5				
11. CONDUCTING LICENSE TRAINING	0.25	9 MONTHS		41/10.25	41/10.25		1/.25					
12. DEGREE (ENGINEERING, APPLIED SCIENCE OR EQUIVALENT)		12 MONTHS										
(BACHELORS DEGREE)		(12 MONTHS)										
(ASSOCIATES DEGREE)		(6 MONTHS)		6								
TOTAL NUCLEAR PLANT EXPERIENCE:			96.9	64.75/28.25	76.75/67.0	46.25	81.75/42.0	29.25				

HOT PARTICIPATION EXPERIENCE

	1	2	3	4	5	6	7	8	9	10
TIME > 20% PWR/BWR (WKS)	24									
STARTUP & SHUTDOWN (YES/NO)	YES									
MONTHS ON SHIFT	6									

NOTE 1: SEE "INSTRUCTIONS FOR USE OF NUCLEAR POWER PLANT EXPERIENCE FACTORS FOR OPERATING SHIFT POSITIONS (OL APPLICANTS)"

NOTE 2: INCLUDE ALL SHIFT SUPERVISORS (SS), SHIFT SRO'S, REACTOR OPERATORS (RO) AND SHIFT TECHNICAL ADVISORS (STA).

* * SHIFT EXPERIENCE IS PROJECTED THROUGH SEPT. 15, 1984

CHECK ONE OF THE FOLLOWING:

☐ a. Shift advisors must be used to satisfy the "hot participation experience" requirements of the utility plan.

☒ b. Shift advisors will probably be required, at least for some shifts

☐ c. Do not plan to use shift advisors unless some unforeseen circumstance arises.

ATTACHMENT B

SHIFT ADVISOR RESUMES'

SHIFT TECHNICAL ADVISOR RESUME

1. Previous Nuclear Power Plant Experience

PWR:

Facility Salem Generating Station

License Held (Month/Year)

	FROM	TO
RO	May 1977	May 1982
SRO	-	-

Other Positions Held (Non-License)(Month/Year)

	FROM	TO
Equipment Operator	Sept. 1972	August 1976

BWR:

Facility

License Held (Month/Year)

	FROM	TO
RO	---	----
SRO		

Other Positions Held (Non-License)(Month/Year)

	FROM	TO
---	---	---

2. Simulator

Name Westinghouse Location Zion, Illinois

Certification (Month/Year)
Jan. 1977

RO	Yes
SRO	

3. Military (U.S. Navy-Nuclear)

Indicate number of months that you were qualified in the following positions:

RO --

EWS --

EOOW --

PPWS --

Other Fossil

4. Education

High School:

Graduate(Circle) YES NO GED

Degree:

	Major	
Engineering	No	
Applied Science	NO	
Bachelors (Circle)	YES	NO
Associates(Circle)	YES	NO

5. Operating on shift experience

Indicate number of months/weeks you have spent on shift during the following plant evolutions:

>20% power	yes, most of my license time 3 yrs. total	
Startup (Circle)	YES	NO
Shutdown(Circle)	YES	NO
Months on shift	6 yrs as RO at Salem Total Time 8 or 9 yrs.	

6. Other related experience or education

(See Attached)

Signature Nicholas J Malato

Operating Engineer Review TJ Tulen

6. Other related experience or education

Simulator Test Director on (Gould Simulator System)
South Texas Project Melville, New York

Arkansas Nuclear Unit 1 Unit 2

Washington Nuclear Public Power Unit 3

Instruction in emergency and operation procedures at simulators in
Indian Point, Buchanan, New York
Surry, Surry Virginia
SNPSS, Pittsburgh, Penny. w

During the period May 1977 to May 1982 I functioned as a Nuclear Control Operator at Salem Generating Station Unit 1 and 2. Approximately 3 to 3½ years of this time either one or both units at Salem were greater than 20% RTP. This time frame includes operation at 100% RTP and numerous load transients between 20 to 100% RTP.

Also, on both Salem 1 and 2 I participated in pre-operational testing of equipment, cold hydro testing of RCS, hot functional testing, initial core loading, low power physic testing, power escalation, commercial operation, refueling and return to power.

While at 20% or greater power I was involved in several plant problems which include but are not limited to the following, loss of instrument bus power, loss of station air, failure of various instrumentation and control failures, loss of RCP, loss of charging pump, loss of boric acid transfer pump, loss of circulation water pump, loss of feedwater pump, condenser tube leaks, numerous reactor trips for various reasons, and two safety injection actuations due to technican errors.

During this same period I attended simulator training on Westinghouse simulators in Zion, Illinois and Pittsburgh, Penn. and at Indian Poiint simulator in Buchanan, New York and Surry simulator in Surry, Virginia.

I believe that with my knowledge and previous operating experience I may be of value to Byron as a shift advisor during the day to day routine operation and abnormal conditions of operation such as those described above.

SHIFT TECHNICAL ADVISOR RESUME

1. Previous Nuclear Power Plant Experience

PWR:

Facility Turkey Point Plant Units 3 & 4 Florida PWR & Light

License Held (Month/Year)

	FROM	TO
RO	10/1/81	2/7/84
SRO		

Other Positions Held (Non-License)(Month/Year)

	FROM	TO
In training for RO	7/80	10/81

BWR:

Facility

License Held (Month/Year)

	FROM	TO
RO		
SRO		

Other Positions Held (Non-License)(Month/Year)

	FROM	TO

2. Simulator

Name VEPCO Simulator (Westinghouse PWR) Location Surry, Virginia

Certification (Month/Year)

	Start-up Certification
RO	5/81
SRO	

3. Military (U.S. Navy-Nuclear)

Indicate number of months that you were qualified in the following positions:

RO	68
EWS	0
EOOW	0
PPWS	0
Other	-

4. Education

High School: 12

Graduate(Circle) YES NO GED

Degree:

	Major	
Engineering		
Applied Science		
Bachelors (Circle)	YES	NO
Associates(Circle)	YES	NO

5. Operating on shift experience

Indicate number of months/weeks you have spent on shift during the following plant evolutions:

>20% power	95-100 wks	
Startup (Circle)	YES	NO
Shutdown(Circle)	YES	NO
Months on shift	29 months.	

6. Other related experience or education

(See Attached)

Signature Roger T Carlson

Operating Engineer Review [signature]

6 <u>Other related experience or education</u>

During the period 10/81 thru 2/84 I operated Turkey Poiint Units 3 & 4 above 20% PWR approximately 95-100 wks. This 95-100 wks included both base loaded operation at 100% power as well as numerous load transients between 20-100% power.

I also participated in two hot funcional testing programs and return to 100% power following STM generator replacement on both units 3 & 4. This I believe will be of value in the Shift Advisor Program. While at power 20% I have been involved with several plant problems including, but not limited to. - loss of instrument bus power, loss of feedwater regulating valve control, failure of both pressurizer spray valves in the open position, station blackout, loss of instrument air, failures of various channels of primary plant, secondary plant, and nuclear instrumentation, failure of an RHR PP, loss of RCP while operating at 100% PWR, steam generator tube leaks, condenser tube leaks, loss of secondary plant components such as FW PP, condensate PP, and heater drain pump.

I believe that with my knowledge, as a previously licensed reactor operator, I may be of value to Byron station in the Shift Advisor capacity both as to routine day to day plant operation and abnormal conditions of operation such as those enumerated above.

Also to be included under operating plant experience is the 5 months spent on shift as an unlicensed observer in the control room while in license training and while awaiting receipt of my license.

While not directly comparable to a commercial power plant my 68 months spent as a reactor operator in the US Navy was good experience for basic reactor response while at power and many lessons learned there can be directly transferrable to commercial operation (i.e. secondary plant operation, importance of procedural compliance, radiation protection training, etc.)

SHIFT TECHNICAL ADVISOR RESUME

1. Previous Nuclear Power Plant Experience

PWR:

Facility Trogan

License Held (Month/Year)

	FROM	TO
RO		
SRO	10/75	10/77

Other Positions Held (Non-License)(Month/Year)

	FROM	TO	Unit
Test Group Supervisor	1/83	4/83	Callaway
Startup Engineer	2/81	1/83	Callaway
Supervising Test Eng.	2/80	2/81	Satsop

BWR:

Facility LaCrosse Boiling Water Reactor

License Held (Month/Year)

	FROM	TO
RO	1/68	3/71
SRO		

Other Positions Held (Non-License)(Month/Year)

	FROM	TO	Unit
Test Group Sup.	6/79	2/80	WNP-2
Senior Test Eng.	9/77	6/79	WNP-2

2. Simulator

Name Zion Location Zion, Illinois

Certification (Month/Year)

RO	
SRO	5/19/72

3. Military (U.S. Navy-Nuclear)

Indicate number of months that you were qualified in the following positions:

RO ______________
EWS ______________
EOOW ______________
PPWS ______________
Other Electrical Operator

4. Education

High School:

Gradua-e(Circle) YES NO GED

Degree:

Major

Engineering ______________
Applied Science ______________
Bachelors (Circle) YES NO
Associates(Circle) YES NO

5. Operating on shift experience

Indicate number of months/weeks you have spent on shift during the following plant evolutions:

>20% power 21 months (PWR-Trogan)
Startup (Circle) YES NO
Shutdown(Circle) YES NO
Months on shift 23 months (PWR-Trogan)

6. Other related experience or education

See Attached)

Signature William F. Muenich

Operating Engineer Review [signature]

6. Other related experience or education

Startup experience at WNP-2, Satsop and Callaway-Listed under item #1.

During the period 10/75 thru 9/77 I was a Shift Supervisor at the Trogan Nuclear plant, I participated in the hot functional test program, low ppower physics test and power ascention testing through 100% commercial power run. Have approximately 18 months of experience in above 20% power level.

I believe that due to my experience from hot functional testing through 100% power run will be of value in the shift advisors program.

I have been involved in some of the abnormal situations as listed below during my time at Trogan, loss of instrument air, loss of onsite power, drop rods, condenser tube leaks, loss of various primary and secondary plant equipment.

I believe that with my knowledge as a previous licensed SRO at a similar type plant in the everyday operation that I am qualified to handle normal and emergency situations and can be of value to the Byron Operating crew.

While not directly comparable to operation of a four loop Westinghouse PWR, have worked as a licensed RO at a BWR for approximately 3 years, also worked as a Startup Engineer on various type plants of which two years were spent at Callaway Nuclear Station which is a similar type plant.

SHIFT TECHNICAL ADVISOR RESUME

1. Previous Nuclear Power Plant Experience

PWR:

Facility Palisades Nuclear Station

License Held (Month/Year)

	FROM	TO
RO	Aug 77	~~Aug 83~~
SRO		

Other Positions Held (Non-License)(Month/Year)

	FROM	TO
Aux. Operator	June 74	Aug. 77

BWR:

Facility

License Held (Month/Year)

	FROM	TO
RO		
SRO		

Other Positions Held (Non-License)(Month/Year)

	FROM	TO

2. Simulator

Name CE PWR Location Windsor, Ct.

Certification (Month/Year) June 1977

RO	X
SRO	

6. <u>Other related experience or education</u>

I held an RO license on the Palisades Nuclear Station from Aug. 1977 to Aug. 1983. During this time period I operated the unit above 20% power for approximately 25 months. In those 25 months I experienced several load transients including reactor trips from 100% power, loss of feedwater controls, loss of condenser vacuum, loss of all AC power from 100% power, loss of instrument air, RCP seal failures, ets. I have also participated in four refueling outages - two as a licensed operator.

Some other duties included conducting auxiliary operacor training, NGET, Operations and Maintenance Dept. CRDM Mockup training and Operations Dept. requalification training.

I have also had military training in the Navy Nuclear Power Program. As an Engine room Supervisor I gained experience in steam plant operations as well as casualty training.

During the last two years I have worked on shift at Byron Station in the Shift Foreman capacity and performed the duties and responsibilities as described in BAP 200-A2-4. I also participated in various flushing and testing activities including integrated hot functional testing here at Byron.

I firmly believe that my knowledge and experience as a previously licensed reactor operator will benefit the Byron Station Shift Advisor Program.

3. Military (U.S. Navy-Nuclear)

Indicate number of months that you were qualified in the following positions:

RO __________
EWS __________
EOOW __________
PPWS __________
Other ERS - 24 mos.

4. Education

High School:

Graduate(Circle) YES NO GED

Degree:

	Major
Engineering	
Applied Science	
Bachelors (Circle)	YES NO
Associates(Circle)	YES NO

5. Operating on shift experience

Indicate number of months/weeks you have spent on shift during the following plant evolutions:

>20% power	25 mos.
Startup (Circle)	YES NO
Shutdown(Circle)	YES NO
Months on shift	30 mos.

6. Other related experience or education

(See attached)

Signature James F. Hassinger

Operating Engineer Review TJ Taylor

ATTACHMENT C

PROCEDURES CONCERNING SHIFT ADVISORS

SHIFT MANNING

A. STATEMENT OF APPLICABILITY

The purpose of this procedure is to describe the Criteria for Shift Staffing.

B. REFERENCES

1. Technical Specification Figure 6.2-1
2. Technical Specification 6.2.2
3. 10CFR50.54
4. 10CFR50, Appendix R
5. CECo. G.S.E.P. Figure 4.2-2
6. S.E.R. 13.1.3
7. NSD Directive NSDD-A09
8. NUREG 0654, Table B-1

C. MAIN BODY

1. The Minimum Shift Manning for the Station is shown in the table below:

POSITION	NUMBER OF INDIVIDUALS REQUIRED TO FILL POSITION *		
	Both Unit In MODES 1, 2, 3, or 4	1 Unit In Modes 1, 2, 3, or 4 & 1 Unit In Modes 5 or 6	Both Units In Modes 5 & 6
SE	1	1	1
SF(Licensed)	1	1	None
NSO	3	3	1
EA	4	4	1
SCRE	1	1	None
Rad-Chem Personnel	2	2	2

*The Shift Manning may be one less than the minimum requirements of the above table for a period of time not to exceed 2 hours in order to accommodate unexpected absence of on-duty shift crew members provided immediate action is taken to restore the Shift Manning to within the minimum requirements of the table. This provision does not permit any shift crew position to be unmanned upon shift change due to oncoming shift personnel being late or absent.

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2. In addition, the following experience levels are required on each shift:

POS	POWER PLANT (YRS)		SRO	ON-SHIFT AT OPERATING PWR		
	TOTAL	NUCLEAR	LICENSE	>20% POWER	S/U & S/D	6 MONTHS
SE	4	2	YES	6 Wks	X	Either
SF	3	2	YES	6 Wks	N/A	SE or SF

If either the SE or SF experience levels are not met, a Shift Advisor * is also required to be on shift.

This requirement commences at initial criticality.

* A Shift Advisor is defined as a person with one year on shift as a licensed SRO at an operating plant of the same type, or a person with an RO license as evaluated by the NRC on a case-by-case basis.

3. A site Fire Brigade of at least 5 members* shall be maintained onsite at all times. The Fire Brigade will not include the Shift Engineer, the Station Control Room Engineer, and 2 other members of the minimum shift crew necessary for safe shutdown of the Unit or any personnel required for other essential functions during a fire emergency.

NOTE

The SCRE may go into the plant to participate in shift activities. While the SCRE is out of the control room, an SRO licensed supervisor must relieve him. In addition, during such absence from the control room, he must be available within 10 minutes.

NOTE

The Nuclear Station Operators shall not under any circumstances leave the controls area for any reason without obtaining a qualified relief operator. Prior to assuming responsibility, the Relief Operator shall be properly briefed on the plant status. The Relief Operator will be informed of any evolutions in progress that might affect plant operation, any special instructions that are in effect, and the overall status of the plant. The Nuclear Station Operator will be briefed by the Relief Operator upon his return.

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*Fire Brigade composition may be less than the minimum requirements for a period of time not to exceed 2 hours in order to accomodate unexpected absence provided immediate action is taken to fill the required positions.

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4. A supervisor will be on site at all times who is trained as a fire chief. |

5. Shift manning assignments during periods of core alterations shall include a licensed SRO or SRO (Limited) to directly supervise the core alterations. |

6. Station Management and Technical Support are either present or on call at all times. The Shift Engineer has the authority to call out all required personnel, regardless of discipline. |

7. The Shift Technical Advisor position will be filled by a technical graduate who has successfully completed the required STA training. Normally, the Station Control Room Engineer who is licensed at the SRO level, a technical graduate, and has completed required STA training, will fill this position. |

8. Commencing at criticality each shift will be manned with at least one individual with prior commercial PWR experience for at least one year after initial criticality, including the attainment of 100 percent power. |

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FINAL

CONDUCT OF OPERATIONS

A. STATEMENT OF APPLICABILITY:

The purpose of this procedure is to provide operating personnel with specific guidance as to their expected conduct in operations. This procedure addresses additional responsibilities other than those that may be delineated in other sections of the BAP.

B. REFERENCES:

1. INPO Good Practice OP-204
2. SER 13.1.2.2 Item 1.A.1.1
3. 10 CFR 50.54
4. Dennis Galle Ltr. Re: Procedure Change Regarding Importance of Finding Root Cause of Scram Prior to Startup Dated 4-13-83.
5. Vice President's Instruction No. 1-0-17
6. ANSI N.18.7-1976
7. NSD Directive NSDD-A09
8. OPEX 83-53
9. Byron Ltr #83-918

C. MAIN BODY:

General Responsibilities

1. The responsibility of the Shift Engineer shall be to maintain a broad perspective of operational conditions affecting the safety of the plant as a matter of highest priority at all times.
2. The Shift Engineer should not become involved in any single operation that distracts him when multiple operations are required in the control room. During plant transients or an emergency he should not become totally involved in any single operation to the extent he loses his overall perspective of plant evolutions.
3. During events that require implementation of GSEP, the Shift Engineer is the Station Director until properly relieved.
4. During accident situations the Shift Engineer is in direct charge of the control room. The Shift Foreman relieves the Station Control Room Engineer so the SCRE can perform STA functions.
5. The Shift Engineer has the authority to call out all required personnel, regardless of discipline.

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6. The Shift Engineer is responsible for appraising his assigned personnel for fitness for duty after shift turnover as soon as practicable.

7. During the shift, the Shift Engineer and the Shift Foreman/Shift Advisor shall be made aware of any significant changes in plant status in a timely manner by the Station Control Room Engineer.

8. During the shift, the Shift Engineer and Shift Foreman shall remain abreast of current plant status. In addition, the Shift Foreman shall return to the control room two or three times per shift, where practicable, to confer with the Station Control Room Engineer regarding plant status. Where not practicable to return to the control room, the Shift Foreman shall periodically check with the Station Control Room Engineer for a plant status update. In no case should the Shift Foreman be required to abandon duties important to reactor operation to return to the control room, unless specifically ordered to do so by the Shift Engineer.

9. If any surveillance/test or other condition indicates that a system is not operable as required by the Technical Specifications, the Shift Engineer is to immediately begin the action required by the Technical Specifications as stated in the applicable LCOAR procedure, log the condition and notify the Operating Engineer or Assistant Superintendent.

10. Licensed operators on duty are responsible for achieving and monitoring abnormal plant shutdown and Engineered Safety Features System actuation when required.

11. Licensed plant personnel are responsible for conducting operations within Technical Specification Safety Limits and Limiting Conditions for operations.

12. Operations personnel shall be attentive to the condition of the plant at all times. They must be alert to ensure that the plant is operating safely and take action to prevent any progress toward a condition that might be unsafe.

13. All operating personnel must believe and respond conservatively to instrument indications unless the indications are proven to be incorrect.

14. An operator may place a controller in the manual mode from the automatic mode whenever, in the operator's judgement, continued automatic operation is unsafe, or whenever it may cause any unnecessary transients. This should only be done when conditions are "stable and under control", or when it is apparent that continued operation would aggravate or worsen the plant condition.

15. Operations personnel have the authority to depart from approved procedures where necessary to prevent or reduce injury to personnel, including the public or damage to the facility. Any such departure is to be documented and reported to the Assistant Superintendent of Operations.

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16. Except for training purposes, only licensed operators are permitted to manipulate controls that affect reactor power or reactivity on the Main Control Board or Remote Shutdown panel. For training purposes a licensed operator must be in attendance and concur prior to any manipulations.

17. All Operating personnel must be alert and remain within their immediate areas of responsibility until properly relieved and be responsible for monitoring the instrumentation and controls located within their areas. They are responsible for taking timely and proper actions to ensure safe operation of the plant.

18. Any plant evolution outside the control room that may affect reactor power must not be performed without the knowledge and consent of the unit operator (NSO).

19. Personnel shall not change any setpoints or control settings, etc. inside control panels unless authorized using BAP 400-3 or BAP 400-13 as appropriate.

20. In-plant operators should report the completion of assigned tasks promptly to the center desk operator.

21. The Operators will keep their Shift Supervisor informed of any abnormal equipment operation or major evolutions.

22. When replacing fuses caution should be taken to ensure fuses are replaced like for like.

23. Reading of unauthorized, uncontrolled material by operating personnel is prohibited.

24. The Shift Advisor will provide advice and recommendations concerning plant operations to the Shift Engineer. If the Shift Advisor does not feel that his advice has been given Adequate weight by the Shift Engineer, he may confer with the Unit/Duty Operating Engineer. If the problem has not been resolved with the Operating Engineer, he may contact the Assistant Superintendent for Operating. If the problem still cannot be resolved, the Shift Advisor may contact the Station Superintendent. The decision of the Station Superintendent is final.

Reactor Trip

1. When a reactor trip occurs, the Shift Engineer will take the following action:

   a. Ensure that the plant is placed in a safe condition by directing that the necessary operations are performed in accordance with approved procedures.

   b. Notify the Station Control Room Engineer, if necessary.

   c. Determine the subsequent action to be taken and notify the Operating Assistant Superintendent or Station duty person on call and other appropriate personnel and agencies.

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d. Ensure reactor trip documentation is complete (BGP 100-A13).

2. The Shift Engineer is responsible for determining the circumstances, analyzing the root cause and determining that operations can proceed safely before the reactor is returned to power after a trip or an unscheduled or unexplained power reduction. Permission must be obtained from the Station Superintendent or his designee prior to startup.

Operations during Abnormal or Emergency Conditions

1. The Operator shall believe the instruments until the indications are proven false. When operations are not as expected, return to a known safe condition. If conditions warrant, reduce power level as required until the cause of the condition has been determined and the status of the core is known to be in a safe condition. Operators are to initiate a manual reactor trip or an Engineered Safety Features System actuation if system parameters for a reactor trip or E.S.F. actuation exceed their actuation setpoint and automatic actuation does not occur or anytime when in their judgement it is necessary.

2. If circumstances arise which may require operations outside of the technical specifications, procedures, or operating orders the operator shall notify the Shift Engineer for approval, if there is sufficient time to contact him, or the licensed Senior Reactor Operator immediately available. Always proceed in a conservative manner.

3. When a definite hazard exists or when there is uncertainty as to whether an unstable condition exists, operators shall consider the following mandatory:

   a. The safety of personnel and equipment is a responsibility to be considered primary to system load, efficiency or other factors.

   b. Interlocks and other safety equipment shall be properly maintained, tested at regular intervals, and kept in service at all times*.

   c. Equipment shall not be operated in a manner to intentionally avoid the proper functioning of this protective equipment.

   d. Operation of equipment under unstable conditions shall not be continued, when analysis indicates that a trip is the proper course.

   e. If an immediate trip is necessary the System Power Supply Office should be notified immediately.

4. Control Room Division of Responsibility

   a. Normal shift supervisor manning will usually consist of 1 Shift Engineer (SE), 1 Shift Foreman (SF) with an SRO, and 1 Station Control Room Engineer (SCRE). See BAP 300-2 for minimum manning.

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b. During normal operation the SCRE acts as both the STA and SRO in the control room.

c. In the event of a casualty the first available SRO in the control room will direct recovery and procedure flow. Note that initially this could be the SCRE. The SCRE will be relieved as soon as possible so that he may assume the role of the Station.

*Some emergency procedures may allow for bypassing some safety functions in order to maintain the plant in a safe condition.

d. If the SCRE is the SRO in the control room he must be relieved within 10 minutes to act as the STA.

e. The SF will usually relieve the SCRE of line functions and take over as the SRO.

f. The SE will have to classify and initiate GSEP as acting Station Director. In addition he could relieve the SCRE of line functions.

g. The STA function of independent observer will be executed by monitoring of the status trees either by computer or manually, observing the flow through the procedure, and observation of any other parameter deemed appropriate. If a non-Green path is observed in the BSTs the SCRE will notify the SRO in charge (SE, SF) of the condition. Other non-expected conditions will also be communicated to the SRO in charge.

h. The RO will perform all immediate actions, and follow the appropriate subsequent steps of the emergency procedures, usually under direction of an SRO.

Switching Orders

1. The Shift Engineer shall be informed prior to any switching operation requested by the Load Dispatcher. If the Load Dispatcher states that it is an emergency switching operation, prior approval is not required, but the Shift Engineer will be notified as soon as possible.

2. A Supervisor qualified in Hi Voltage Switching shall accompany the operator when live switching operations or transfer trip testing is being conducted.

3. Operations personnel will make regular observation of the 34KV and 345KV transmission lines when weather and operating conditions are favorable for icing. When icing is observed, necessary action will be taken to prevent further ice buildup on the conductors and static wires.

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Generator Load Changes

1. Load Changes requested by SPSO - Load changes requested by the System Power Supply Office (SPSO) are directed to the SE or NSO. When the NSO receives the request, he will notify the SE and receive SE approval for the load change. SPSO is notified by the NSO when the load change is completed or if the SE disapproves of the request.

2. Load Changes requested by Station - Normally load change requests by the station are made to SPSO by the OE. Notification should be made as early as possible. Communication to the shift is through the daily order book.

3. Load Changes while on EGC - When the unit is on EGC the range of Load Changes is set by the NSO and the changes are controlled by the EGC computer.

Housekeeping

1. The control room will be maintained in a clean and orderly condition in the interest of safe and efficient operations. All dusting and cleaning of control consoles, instrument panels, and computer consoles will be performed by NSO's It may at times be advisable not to clean or dust in some areas of the control room during plant power conditions because of risk of bumping or otherwise moving critical controls.

2. The Shift Engineer's Office shall also be maintained in a clean and orderly condition. The frequency and areas to be cleaned will be delineated by the Shift Supervisor.

Control Room Conduct

1. All personnel shall be alert and capable of performing their assigned duties in a professional manner at all times. Of particular note are operators who are tied to a duty station (including control room operators); such personnel must be attentive to their panels in order to professionally execute their duties. Examples of actions and performance which will not be tolerated are:

   a. Sleeping

   b. Habitual or chronic lack of attentiveness

   c. Card playing, games, or other distractions from prescribed duties.

   d. Alcohol or drug use.

   e. So-called practical jokes which could reduce the ability of persons or equipment to perform as required.

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f. Any other acts which could adversely affect the ability of individuals or equipment to perform their intended safety functions.

ANYONE FAILING TO ADHERE TO THESE REQUIREMENTS WILL BE SUBJECT TO SEVERE DISCIPLINARY ACTION, INCLUDING THE POSSIBILITY OF DISCHARGE FROM THE COMPANY.

2. The only reading material allowed will be professional, job-related literature approved by the Station Superintendent. Examples of reading material not allowed are newspapers, novels, non-professional magazines and other non-job-related material. The SCRE has the authority to ban any material, as defined above, from the control room.

3. No radios or television capable of receiving commercial broadcasts will be permitted in the plant except as authorized by the Station Superintendent.

ANYONE FAILING TO COMPLY WITH ABOVE MENTIONED WILL BE SUBJECT TO DISCIPLINARY MEASURES COMMENSURATE WITH THE SEVERITY OF THE VIOLATION, TAKING INTO ACCOUNT THE SIGNIFICANCE OF THE INFRACTION. DISCIPLINARY ACTION COULD INVOLVE WARNINGS, DISCIPLINARY SUSPENSION, OR DISCHARGE, ANY OF WHICH STEPS COULD BE REPEATED OR BYPASSED.

4. The above elements are not all inclusive. They do, however, outline specific performance requirements for certain elements of nuclear plant operations which indicate the seriousness with which the Company views such actions. Our objective is a professional atmosphere - one in which operators and their supervisors continue to gain in knowledge of the plant and its operations while performing normal evolutions and routines.

5. Access to the control room shall follow the provisions as delineated in BAP 900-10.

6. All personnel are to request permission from the appropriate Unit NSO prior to entrance into the "at the controls" area. No one has special approval for entrance into this area, however, the NRC, QA and observers have the right of access for control board walkdowns, observations of evolutions, etc. The Shift Engineer, Shift Foreman, Station Control Room Engineer, and the NSO have the authority to restrict access to or remove personnel from the control room during routine and emergency operation.

7. All necessary plant-related technical/administrative control room business must be conducted at the center desk and in such a manner that neither Unit NSO attentiveness nor the professional atmosphere will be compromised.

8. No unauthorized or uncontrolled notes, pictures, graphs, prints, etc. will be used as operator aids in the control room or in the plant.

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9. Paragraph "k" of 10 CFR 50.54 states "An operator or senior operator licensed pursuant to part 55 of this chapter shall be present at the controls at all times during the operation of the facility." In order to comply with this paragraph, an operator will be considered to be at the reactor controls if the operator has visual contact with the unit annunciator panels. An operator is not at the controls when behind the panels or out of the control room. Therefore, before an operator can leave the controls, a licensed operator must assume control of the unit. One reactor operator cannot assume control of both units simultaneously.

10. The control room should not be used as a lunchroom or meeting room except for operators and testing coordination meetings held during plant construction.

Shift/Evolution Briefings

1. Briefings shall be conducted by the Shift Engineer or his designee for individuals involved in an evolution that is to be performed. The detail of the briefing is dependent on the degree of complexity, routineness, logistics, or number of people involved.

2. The individual who is to perform the activity is responsible to adequately review the procedure, to fully understand what he is doing, and to be cognizant of all the limitations, precautions and requirements.

3. Evolutions involving many individuals, especially from two or more departments or disciplines, may require large formal briefings or preplanning sessions. If the evolution is complex and involves close coordination, the briefing session shall be coordinated by the Operating Engineer or his designee and should include:

   a. a review of the appropriate section of the procedure by key parties

   b. examination of each individual's specific involvement and responsibility

   c. discussion of expected results or performance; review of limitations, hold points, emergency action to be taken if contingencies arise.

   d. ensure that everyone understands the interface and communications required.

Communications

1. The page system should be used to announce emergencies and unexpected events, and to relay information regarding a change in plant status (e.g. - the starting of a large piece of equipment). It is not to be used for horseplay.

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2. Operator communications should be clear and concise. Complex orders or orders involving specific equipment numbers should be repeated back by the operator performing the task.

Records

1. Refer to BAP 300-4.

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POSITION DESCRIPTION

SHIFT ENGINEER

REPORTS TO: Assistant Superintendent Operating

SUPERVISES: Shift Foreman, Shift Control Room Engineer, Auxiliary Services Foreman, Shift Advisor.

FUNCTIONAL RELATIONSHIPS:

Operating Engineers, Master Mechanic, Master Electrician, Master IM, Storekeeper, Tech Staff Supervisor, Security Administrator, Training Supervisor, Rad/Chem Supervisor, Maintenance Foreman, Stationmen Foreman, Division Load Dispatcher, System Power Supply Office, Fuel Handling Foremen, Radwaste Scheduler/Planner & Outage Coordinator.

BASIC FUNCTIONS:

The Shift Engineer is responsible for operating the plant in compliance with the plant's operating license and the plant's operating procedures.

PRIMARY RESPONSIBILITIES:

1. The Shift Engineer is in charge of the entire plant operation and is responsible for the plant being operated and fueled in a safe and reliable manner. He has the authority to order the plant shut down, if he deems it necessary for safety.

2. Supervise the Shift Foremen, Shift Advisors and Station Control Room Engineer to ensure proper performance of their assigned duties.

3. Ensure shift operations are conducted in a safe and professional manner and in accordance with plant procedures and operating license.

4. Coordinate the activities of Operations, Chemistry, Health Physics, Maintenance, Instrumentation and Control, and Security groups to accomplish the operating objectives for his shift.

5. Notify higher management authority as required by plant reporting and notification requirements.

6. Analyze the circumstances, determine the root cause, ascertain whether operations can proceed safely, and obtain approval from the Station Superintendent or his designated alternate before the reactor is returned to criticality after a trip or scram.

7. Analyze the circumstances, determine the root cause, ascertain whether operations can proceed safely after a substantial unscheduled or unexplained power excursion.

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8. Supervise the on-site Operating Department functions required by the Generating Stations Emergency Plan (GSEP), Radiation Control Standards, the Security Plan and their respective implementing procedures.

9. Act as GSEP Station Director during site emergencies and incidents in accordance with GSEP until properly relieved.

10. Frequently inspect job sites or areas of responsibilities in the plant to ensure that appropriate and effective radiological procedures and controls are being utilized and that radiological deficiencies are identified and reported to the Rad-Chem Department.

11. Authorize the removal of equipment and systems from service for maintenance, testing, or operational activities.

12. Authorize the return to service of equipment and systems following maintenance, testing or operational activities.

13. Ensure proper implementation of the Out-of-Service and Caution Card Procedures.

14. Act as custodian of plant keys assigned to the Operating Department.

15. Review shift logs for accuracy and completeness.

16. Ensure his shift is properly manned including timekeeping, overtime call-out and meal authorization.

17. Initiate deviation reports of reactor trips and abnormal activities and NRC notification of reportable occurrences as required by plant procedures.

18. Supervise implementation of radiological waste management program with respect to shift operations.

19. Ensure completion and review of all surveillance/shift routines assigned to his shift.

20. Authorize temporary alterations.

21. Monitor qualification, mental, and physical condition of the operating shift personnel.

22. Authorize access to the site during weekends, holidays and off-hour shifts.

23. Authorize temporary procedure changes within the bounds established by Station Administrative Procedures.

24. Ensure proper shift turnover.

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25. Ensure proper High Voltage Switching Operations at the station for equipment under jurisdiction of the Division Load Dispatcher.

26. Conduct evaluation of operator performance.

PRINCIPAL WORKING RELATIONSHIPS:

1. Assistant Superintendent Operating - daily.

2. Operating Engineers - as necessary.

3. Master Mechanic - resolve maintenance problems as necessary.

4. Master Electrician - resolve maintenance problems as necessary.

5. Master IM - resolve maintenance problems as necessary.

6. Storekeeper - maintain operating consumable products.

7. Tech Staff Supervisor - resolve long term or generic operating problems.

8. Rad/Chem Supervisor - maintain plant radiological and chemical specs.

9. Operating Foreman - conduct plant operations.

10. Shift Advisor - assimilate advice, assign duties.

11. Maintenance Foreman - authorize maintenance work start.

12. IM Foreman - authorize maintenance work start.

13. Electrical Foreman - authorize maintenance work start.

14. Tech Staff Engineers - resolve long term or generic problems.

15. Rad/Chem Foreman - maintain plant radiological and chemical specs.

16. Stationmen Foreman - maintain plant cleanliness.

17. Division Load Dispatcher - operate High Voltage Equipment as necessary.

18. System Load Control - provide necessary generating capacity.

19. Training Supervisor - provide necessary training to maintain shift proficiency.

20. Shift Operators - accomplish shift objectives.

21. Fuel Handling Foremen - Coordination of operators during refuel outages.

22. Radwaste Scheduler/Planner - Implement operations in Radwaste determined by Scheduler/Planner to be necessary.

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<u>MEASUREMENT YARDSTICKS</u>:

1. Unit availability.

2. Unit Derating.

3. Feedback from maintenance personnel.

4. Annual Station Report.

5. License Event Report.

<u>QUALIFICATION REQUIREMENTS</u>:

ANSI N18.1

<u>REFERENCES</u>:

NSD Directive NSDD-A09.

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POSITION DESCRIPTION

STATION CONTROL ROOM ENGINEER

REPORTS TO: Shift Engineer

SUPERVISES: Nuclear Station Operators, Equipment Attendants, Equipment Operators

FUNCTIONAL RELATIONSHIPS:

Shift Foreman, Shift Advisors, Maintenance Foreman, Tech Staff Engineers, Fuel Handling Foreman, Auxiliary Services Foreman

BASIC FUNCTIONS:

Assist the Shift Engineer with his duties and is responsible for all duties assigned to him by the Shift Engineer.

Provide advanced technical assistance to the operating shift complement during all operating conditions.

PRIMARY RESPONSIBILITIES:

1. Coordinates equipment operations necessary to support the objectives of the shift.
2. The Station Control Room Engineer has the authority to order the plant to be shut down, if he deems it necessary for safety.
3. Maintains indepth knowledge of plant and equipment status.
4. Coordinates unusual or abnormal plant operations from the Control Room.
5. Coordinates normal equipment operations and directs plant evolutions from the control room while directly interfacing with the Shift Foreman.
6. Principally maintains direct supervisory contact with the reactor operations and evolutions controlled from the control room.
7. Directly verifies that proper shift manning levels are maintained in the control room.
8. Reviews requests for equipment Out-of-Service and coordinates necessary pre-maintenance testing and post-maintenance testing.
9. Verifies that system operation is in accordance with approved procedures.
10. Assists the Shift Engineer in initiating deviation reports and NRC notifications as required by plant operations.

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11. Assists the Shift Engineer in review of applicable temporary procedure changes.

12. Assists the Shift Engineer in requests for maintenance of equipment and maintenance of the Work Request log.

13. Assists the Shift Engineer with proper implementation of the Out-of-Service, Hold, and Caution CArd Procedures.

14. Verifies that proper shift turnover occurs in the Control Room.

15. Conducts shift operator personnel Performance Evaluations.

16. Conducts applicable on-shift operator training as necessary to maintain shift operations proficiency.

17. Assures safe and professional conduct of shift operations.

18. Removes himself from normal operating in-line supervisory responsibility and steps back during abnormal operations to assume a role of overview with the specific responsibility of monitoring the maintenance of core cooling and containment integrity.

19. Ascertain, during transients and accidents, whether the plant is responding to the incident as predicted in the Safety Analysis Report.

20. Ascertain during transients that there is adequate core cooling. In the event that critical parameters become unavailable due to instrument failures, perform calculation or through other means determine the approximate values for the parameters in question.

21. Investigate the cause(s) of abnormal or unusual events occurring on assigned shift and assess any adverse effects therefrom. Recommend changes to procedures or equipment as necessary to prevent recurrence.

22. Evaluate the effectiveness of plant procedures in terms of terminating or mitigating accidents and make recommendations to the Shift Engineer when changes are needed.

23. Make a qualitative assessment of plant parameters during and following an accident in order to ascertain whether core damage has occurred.

24. Assist the operations staff in interpreting and applying the requirements of Technical Specifications.

25. Perform an early review of the planned activities for the upcoming shift to ascertain whether special considerations or precautions are warranted and make appropriate recommendations to the Shift Engineer. This review should include scheduled surveillance tests and major maintenance items.

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PRINCIPAL WORKING RELATIONSHIPS:

1. Operating Foreman - Coordinate plant evolutions.

2. Maintenance Foreman - Authorize work start.

3. Tech Staff Engineers - Resolve generic problems.

4. Rad/Chem Foreman - Maintain radiological and chemical specs.

5. Shift Operators - Accomplish shift objectives.

6. Fuel Handling Foremen - Assure safe core alterations.

MEASUREMENT YARDSTICKS:

1. Unit availability.

2. Unit derating.

3. Annual station reports.

4. Feedback from Maintenance personnel.

5. Feedback from Shift Engineer and Operating Foreman.

6. Feedback from Shift Operators.

7. License Event Reports.

QUALIFICATION REQUIREMENTS:

ANSI N18.1

REFERENCES

NSD Directive NSDD-A09

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POSITION DESCRIPTION
SHIFT ADVISOR

REPORTS TO: Shift Engineer

SUPERVISES: Equipment Attendants, Equipment Operators

FUNCTIONAL RELATIONSHIPS:

Shift Control Room Engineer, Auxiliary Service Foreman, Maintenance Foreman, I.M. Foreman, Electrical Foreman, Tech Staff Engineers, Rad Chem Foreman, Stationmen Foreman.

BASIC FUNCTIONS:

Assist the Shift Engineer with his duties and is responsible for all duties assigned to him by the Shift Engineer; provide advice and recommendations on plant operations to the Shift Engineer.

PRIMARY RESPONSIBILITIES:

1. Maintain in-depth knowledge of plant and equipment status.
2. Observe and/or assist in plant evolutions as directed by the Shift Engineer.
3. Assist in resolving Tech Spec related problems.
4. The Shift Advisor does not have the authority to order plant shutdown.

PRINCIPAL WORKING RELATIONSHIPS:

1. Shift Engineer - provide advice on plant evolutions.
2. Shift Control Room Engineer - coordinates plant evolutions.
3. Auxiliary Services Foreman - coordinate primary and secondary plant evolutions.
4. Maintenance Foreman - authorize maintenance work start.
5. Tech Staff Engineers - resolve plant generic operating problems.
6. Rad Chem Foreman - maintain radiological and chemical specs.

MEASUREMENT YARDSTICKS:

1. Feedback from maintenance personnel.
2. Feedback from Shift Engineer.
3. Feedback from Shift Operators.

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CONTROL ROOM ACCESS

A. STATEMENT OF APPLICABILITY:

The purpose of this procedure is to outline Control Room access during normal and emergency conditions.

B. REFERENCES:

1. FSAR Appendix E, REQUIREMENTS RESULTING FROM TMI-2 ACCIDENT.

2. Frank Palmer letter dated March 3, 1980, "Access to Vital Areas by QA Personnel".

C. MAIN BODY:

1. Unlimited access to the Control Room will be allowed to the following personnel during normal operations.

   a. Station Superintendent

   b. Assistant Superintendents

   c. Shift Overview Superintendent

   d. Operating Engineer

   e. Technical Staff Supervisor

   f. Shift Engineer

   g. Shift Foreman

   h. Senior Resident Inspectors and/or site Resident Inspector(s).

   i. Nuclear Station Operator.

   j. Shift Technical Advisor/Shift Control Room Engineer

   k. Station Quality Assurance Engineer

   l. Station Security Administrator

   m. Equipment Operator

   n. Shift Advisor

2. Routine access to the Control Room will be allowed to personnel displaying a valid Station Security Badge, only for performance of their required duties.

3. Access to the Control Room for other personnel may be granted by Station Management personnel listed above for specific purposes only, during normal operation.

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a. Personnel with visitor badges must be escorted by persons who have a proper security badge.

b. The management person who grants access to the Control Room for specific purposes (such as training) must notify the Shift Engineer or Shift Foreman or the SRO in the Control Room to inform him that permission has been granted to enter the Control Room and the reason for the person's entry.

c. If the individual requiring access does not have a security badge with proper clearance to allow entry into the control room notify the security shift supervisor.

4. In the event of an emergency, the Shift Engineer or his designated alternate shall establish himself in the Control Room as directly responsible for the operation of the plant.

   a. Any recommendations toward the plant operation during an emergency shall be made through the Shift Engineer or his designated alternate.

   b. Any personnel entering the Control Room during an emergency shall first gain permission to do so from the Shift Engineer or his designated alternate, except for those personnel listed in step C.1 above.

5. Under normal or emergency conditions, the Shift Engineer or his designated alternate has the authority to exclude or remove non-essential personnel from the Control Room when their presence is hampering the operation of the Control Room.

6. When communications are required between the Control Room and On-Site Technical Support Center or On-Site Operations Support Center, they should be established by means of the telephone or a messenger.

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FINAL

ATTACHMENT D

SHIFT ADVISOR TRAINING PROGRAM

SHIFT ADVISOR TRAINING PROGRAM

A. STATEMENT OF APPLICABILITY:

The purpose of this procedure is to outline how the Byron Station Shift Advisor Training Program is to be conducted.

B. REFERENCES:

1. Licensed Operator Training Lesson Plans.

2. Shift Advisor Certification Guide, BTP 100-T107.

3. Shift Advisor Oral Exam Document, BTP 100-T108.

C. MAIN BODY:

1. The Byron Station Shift Advisor Training Program shall be conducted by the Byron Station Training Department.

2. Personnel to receive Shift Advisor training shall be identified by Byron Station Operating Department.

3. The Shift Advisor Training Program will consist of two phases and will be concluded with the certification of the trainee as a certified Shift Advisor.

4. Phase I of the Shift Advisor Training Program under the direction of the Byron Station Training Department shall consist of:

   a. Classroom instruction covering:

      1). Reactor Coolant System
      2). Reactor Coolant Pumps
      3). Pressurizer System
      4). Nuclear Fuel
      5). Excore Nuclear Instrumentation System
      6). Reactor Rod Control System
      7). Digital Rod Position Indication
      8). Reactor Make-up Control System
      9). Chemical Volume and Control System
      10). Boron Thermal Regeneration System
      11). AC/DC Electrical Distribution
      12). Main Generator
      13). Emergency Diesel Generators
      14). Emergency Core Cooling System
      15). Containment Spray System
      16). Component Cooling Water System
      17). Essential Service Water System
      18). Non-Essential Service Water System
      19). Circulating Water System
      20). Main Steam System

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21). Steam Dump System
22). Condensate/Feedwater Systems
23). Auxiliary Feedwater System
24). Turbine Controls and Auxiliary System
25). MSR Control
26). Reactor Protection System
27). Engineered Safety Features Actuation System
28). Radiation Monitoring Systems
29). Fuel Handling
30). Gaseous Radwaste System
31). Liquid Radwaste System
32). Byron General Operating Procedures (BGP's)
33). Byron Abnormal Operating Procedures (BOA's)
34). Generating Station Emergency Plan (GSEP)
35). Radiation Standards
36). Reactor Trip Root Cause Determination
37). Byron Emergency Procedures (BEP's)
38). Byron Administrative Procedures (BAP's)
39). BOS LCOAR
40). Byron Technical Specification

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b. Phase I is to be conducted in two segments, the first being 20 days with a written quiz being conducted following each 5 days, as a maximum, of classroom instruction. The second segment of Phase I shall immediately follow Phase II and shall be 5 days in length and is comprised of a comprehensive written final exam and an oral exam.

1). The oral exam shall be comprised of two training department personnel, one operating department personnel, and one trainee. The minimum length of the exam is two hours and requires all examiners to agree on trainee passing the SHIFT ADVISOR ORAL EXAM.

2). The Shift Advisor Oral Exam Document BTP 100-T108 shall be used to document the trainee's oral exam. BTP 100-T108 is comprised of three sections.

a). Section I - is used to document the topics covered during the oral exam. Each topic must be identified as being discussed satisfactorily/unsatisfactorily in the S/U column provided.

b). Section II - is the "Comments" section for the examiners to note any strengths/weaknesses of the trainee.

c). Section III - will be used to indicate the results of the oral exam and also provide a location for the signatures of the examiners. The Training Supervisor's signature is required for final approval.

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5. Phase II of the Shift Advisor Training Program under the direction of Byron Station Operating Department shall immediately follow the first segment of Phase I. Phase II shall be 10 days in length with the trainee being assigned to a shift or shifts as appropriate to complete the Shift Advisor Certification Guide BTP 100-T107.

6. Upon successful completion of Phases I and II the trainee shall be recognized by the facility as a certified Shift Advisor.

   a. Successful completion of Phase I is determined by the trainee having:

      1). Achieved an overall examination score average of 80% or higher with no one examination score less than 70%.

      2). Passed Oral Exam.

   b. Successful completion of Phase II is to be determined by both the completion of the Shift Advisor Certification Guide BTP 100-T107 and the submission of this guide to the Byron Training Department.

7. Classroom instruction shall be documented using course code <u>Y-SATP</u>, file number <u>1.6.1001</u> and keyword <u>SHIFT ADV. WK   XX-X</u>.

8. The Shift Advisor comprehensive written final exam shall be documented using course code <u>Y-SATP</u>, file number <u>1.6.1001</u>, and keyword <u>SHIFT ADV. FINAL XX-X</u>.

9. The Shift Advisor oral exam shall be documented using course code <u>Y-SATP</u>, file number <u>1.6.1001</u>, and keyword <u>SHIFT ADV. ORAL XX-X</u>. The Shift Advisor Oral Exam Document is also required for proper documentation.

10. The completion of Phase II, Shift Advisor Certification Guide, shall be documented using course code <u>Y-SATP</u>, file number <u>1.6.1001</u>, and keyword <u>SHIFT ADV. CT GD XX-X</u>.

11. A certificate of completion shall be issued to each trainee upon certification for successful completion of "Shift Advisor Training Program." This shall be documented using course code <u>Y-SATP</u>, file number <u>1.6.1001</u>, and keyword <u>SHIFT ADV. CERT XX-X</u>.

* XX-X - represents the last two digits of the calendar year followed by the sequential number of the class in that year.

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SHIFT ADVISOR

CERTIFICATION GUIDE

I. Outline of Shift Advisor Certification Guide

A. The Shift Advisor Certification Guide is to be utilized by the student to gain practical experience training as a supplement to the in-classroom portion of the program.

1. The certification guide is a document listing specific evolutions which the student is to perform, simulate, or observe under the supervision of the Shift Engineer or his designates.

2. For each of the specific evolutions listed there is a signature/date blank provided for the Shift Foreman or SCRE to fill in, verifying satisfactory completion by the student.

3. Upon completion of all the evolutions, the Shift Engineer is to review a random sample of the listed evolutions. This review serves as a spot check of the student's retention and affords a specific time frame in which key safety points or procedures relative to the evolutions may be emphasized. There is a signature/date blank provided for the Shift Engineer as well as a comments section in which any items regarding the students knowledge level or performance may be made.

B. In <u>all</u> cases each student shall have completed the Shift Advisor Certification Guide and submitted it to the Training Department prior to being certified as Shift Advisor.

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SHIFT ADVISOR CERTIFICATION CHECKOFF

AUXILIARY FEEDWATER (AF)

	Signature/Date
1. Explain the function of the Auxiliary Feedwater System and its design features.	________ SF/SCRE
2. Walk through the flowpaths of Auxiliary Feedwater System, both normal and emergency, along with expected flow rates. Draw a one line diagram of the Auxiliary Feedwater System.	________ SF/SCRE
3. Discuss system interconnections and support systems; both mechanical and electrical.	________ SF/SCRE
4. Walk through the locations of the components of the Auxiliary Feedwater System.	________ SF/SCRE
5. Discuss Auxiliary Feedwater System's normal operations and abnormal operations.	________ SF/SCRE
6. Discuss the Safety System Actuating Signals.	________ SF/SCRE

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System Knowledge Satisfactory SE ________

Date ________

Comments:

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SHIFT ADVISOR CERTIFICATION CHECKOFF

COMPONENT COOLING (CC)

Signature/Date

1. Explain the purpose of the system. ______________________ SF/SCRE

2. Discuss the following major components in the plant:

   a. Surge tanks ______________________ SF/SCRE

   b. Component cooling pumps ______________________ SF/SCRE

   c. Component cooling heat exchangers ______________________ SF/SCRE

System Knowledge Satisfactory SE ______________________

Date ______________________

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SHIFT ADVISOR CERTIFICATION CHECKOFF

CONTAINMENT SPRAY (CS)

Signature/Date

1. Explain the function of Containment Spray. ______________________ SF/SCRE

2. Walk through Containment Spray flow path and identify chemical addition and what the chemicals do. ______________________ SF/SCRE

3. Explain auto and manual operation. ______________________ SF/SCRE

4. Explain the method of Containment Spray sump water removal to Rad Waste. ______________________ SF/SCRE

5. Explain why the Containment Spray is a part ESF and what activates it. ______________________ SF/SCRE

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System Knowledge Satisfactory SE ______________________

Date ______________________

Comments:

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SHIFT ADVISOR CERTIFICATION CHECKOFF

CHEMICAL AND VOLUME CONTROL SYSTEM (CV)

	Signature/Date
1. Explain the functions of the CVCS.	SF/SCRE
2. Walk down available flowpaths of the CVCS.	SF/SCRE
3. Discuss operation, control and interlocks associated with the CVCS.	SF/SCRE
4. Discuss chemistry control of the Reactor Coolant System.	SF/SCRE
5. Discuss the functions of letdown and charging.	SF/SCRE
6. Discuss the significance of the centrifugal charging pumps.	SF/SCRE
7. Discuss the purpose of emergency boration and locate the manual emergency borate valve.	SF/SCRE
8. Discuss normal parameters of the CVCS.	SF/SCRE
9. Discuss the use of regenerative and non-regenerative heat exchangers.	SF/SCRE
10. Discuss "Flow Balance" as it pertains to the CVCS.	SF/SCRE
11. Discuss the purpose of the excess letdown.	SF/SCRE
12. Discuss the major components of the CVCS.	SF/SCRE

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13. Discuss seal injection flow (start-up and normal). ______________ SF/SCRE

14. Discuss the functions of the letdown orifices. ______________ SF/SCRE

System Knowledge Satisfactory SE ______________

Date ______________

Comments:

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SHIFT ADVISOR CERTIFICATION CHECKOFF

DIESEL GENERATOR (DG)

Signature/Date

1. Explain the function of (DG), loads supplied and under what conditions it is used. ______________________ SF/SCRE

2. Walk through the flowpath of the diesel fuel oil systems. Know location of major valving and piping. ______________________ SF/SCRE

3. When the alarm sounds in (DG) Room, why should you evacuate the area immediately? ______________________ SF/SCRE

System Knowledge Satisfactory SE ______________________

Date ______________________

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SHIFT ADVISOR CERTIFICATION CHECKOFF

MAIN FEEDWATER SYSTEM (FW)

Signature/Date

1. Walk through the flowpath of the Main Feedwater System.
   ______________________ SF/SCRE

2. Discuss when the Turbine Driven Feed Pumps are placed on the turning gear and its interlocks.
   ______________________ SF/SCRE

   a. Discuss how to manually engage the turning gear.
      ______________________ SF/SCRE

   b. Discuss why the Turbine is placed on the turning gear after stopping the feed pump.
      ______________________ SF/SCRE

3. Basically describe the flow path of EH fluid from the EH pumps to the stop valves and governor valves, locating the HP accumulators and interface valve.
   ______________________ SF/SCRE

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4. Describe the steam flow into the Feedwater Turbines at various power levels.
   ______________________ SF/SCRE

System Knowledge Satisfactory SE ______________________

Date ______________________

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SHIFT ADVISOR CERTIFICATION CHECKOFF

MAIN STEAM SYSTEM (MS)

Signature/Date

1. Explain the function of the Main Steam System. ______ SF/SCRE

2. Explain the functions of the Steam Dump Control System. ______ SF/SCRE

3. Walk through the flow path of the Main Steam System to the Main Turbine. Know locations of all major components. ______ SF/SCRE

4. Explain the basic construction of the Steam Generator and how steam is produced. ______ SF/SCRE

5. Explain shrink and swell of the Steam Generator during a Turbine load increase and decrease. ______ SF/SCRE

FOR INFO ONLY

6. Explain the operation of the Steam Dump Control System in the TAVG and STEAM PRESSURE modes and know the locations of the controls on the Main Control Board. ______ SF/SCRE

7. Explain the operation of the cooldown mode of operation with only three steam dump valves armed. ______ SF/SCRE

8. Explain the Steam Generator Water Level Control System and where its parameter can be read on the Main Control Board. ______ SF/SCRE

9. Explain the Reactor trips (and their significance) associated with the Steam Generator. Also, explain main steam inputs for safeguards actuations. ______ SF/SCRE

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B. O. S. R

(4159P)

Signature/Date

10. Explain the importance of the Main Steam safety valves, atmospheric reliefs and Main Steam isolation valves and the safety valve setpoints. ______________ SF/SCRE

11. Explain the chemistry control of the Main Steam System, the safety precautions involved and locations of the components involved. ______________ SF/SCRE

12. Explain the function and location of the steam traps in the Main Steam System. ______________ SF/SCRE

System Knowledge Satisfactory - FOR INFO ONLY SE ______________

Date ______________

Comments:

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(4159P)

SHIFT ADVISOR CERTIFICATION CHECKOFF

REACTOR COOLANT SYSTEM (RC)

Signature/Date

1. Explain the functions of the Reactor Coolant System.

    ______________ SF/SCRE

2. Walk through the flowpath of the Reactor Coolant System for any of the loops.

    ______________ SF/SCRE

3. Explain the penetrations into the Reactor Coolant loops and their functions.

    ______________ SF/SCRE

4. Explain the baisc construction of a Reactor Coolant loops and their functions.

    ______________ SF/SCRE

FOR INFO ONLY

5. Explain the chemistry control in the primary plant, the safety precautions involved and locations of the components involved to add chemicals.

    ______________ SF/SCRE

6. Explain the functions of the Pressurizer System.

    ______________ SF/SCRE

7. Walk through the flow paths into and out of the pressurizer and the significance of the following:

    a. Spray valves
    b. Spray bypass valves
    c. Power operated relief valve
    d. Safety valve
    e. Pressurizer relief tank operation

    ______________ SF/SCRE

System Knowledge Satisfactory SE ______________

Date ______________

Comments:

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(4159P)

SHIFT ADVISOR CERTIFICATION CHECKOFF

RESIDUAL HEAT REMOVAL (RH)

Signature/Date

1. What is the purpose of the Residual Heat Removal System, both normal and emergency. ______________________ SF/SCRE

2. What are the sources of suction for the RHR Pumps? ______________________ SF/SCRE

3. What are the different flow paths for the RHR System? ______________________ SF/SCRE

4. Where are the major components located? ______________________ SF/SCRE

5. What systems does the RHR System interconnect to and why? ______________________ SF/SCRE

FOR INFO ONLY

6. What are the power supplies to the RHR Pumps? ______________________ SF/SCRE

7. Where are the local indications for system flow and temperature. ______________________ SF/SCRE

System Knowledge Satisfactory SE ______________________

Date ______________________

Comments:

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(4159P)

SHIFT ADVISOR CERTIFICATION CHECKOFF

SAFETY INJECTION SYSTEM (SI)

Signature/Date

1. Explain the purpose of the Safety Injection System. ______________ SF/SCRE

2. Discuss and locate the following major system components: ______________ SF/SCRE

   a. RWST ______________ SF/SCRE

   b. Centrifugal charging pumps ______________ SF/SCRE

   c. Safety injection pumps ______________ SF/SCRE

   d. Accumulators ______________ SF/SCRE

   e. Containment recirculation sumps ______________ SF/SCRE

FOR INFO ONLY

3. Discuss the flow paths associated with the injection and recirculation.

4. Name the sources of borated water and what are their boron concentrations. ______________ SF/SCRE

5. Why is boric acid used? ______________ SF/SCRE

System Knowledge Satisfactory SE ______________

Date ______________

Comments:

APPROVED
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B. O. S. R.

(4159P)

SHIFT ADVISOR CERTIFICATION CHECKOFF

ESSENTIAL SERVICE WATER SYSTEM (SX)

Signature/Date

1. Explain the purpose of the Essential Service Water System and name loads the System feeds. ____________________ SF/SCRE

2. Name sources of normal, emergency, and backup makeup water to the Essential Service Water cooling towers. ____________________ SF/SCRE

3. Explain local control of the Essential Service Water cooling tower fans and the interlocks with their respective riser valves. ____________________ SF/SCRE

System Knowledge Satisfactory SE ____________________

Date ____________________

Comments:

FOR INFO
ONLY

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APR 27 1984

B. O. S. R

ATTACHMENT E

SHIFT ADVISOR WRITTEN EXAM

BYRON STATION
OPERATIONS TRAINING
EXAM

GROUP Shift Advisor

MODULE

WEEK FINAL

NAME

DATE 6/26/84

TOTAL POINTS 15.7

TOTAL MISSED

FINAL SCORE

INSTRUCTIONS TO TRAINEE

1. Answer "multiple choice" questions by circling the most correct answer.
2. Answer "Fill in the Blank" and "Matching" questions on the space provided on the exam sheet.
3. Answer "Short Answer" and "List" questions on a separate sheet of paper. One answer per page, and write on one side of the paper only.
4. Use BLACK INK for taking exam.
5. You must do your own work, and without the aid of any texts or notes. Time Limit: 3 hours.
6. I have done my own work without the assistance of text book or notes.

Signature

1. State the Reactor Coolant System Pressure Safety Limit, include LCO and Action statement(s). (0.75)

2. State the Pressurizer Pressure/Temperature Limitations as specified in Tech Specs. (0.6)

3. Complete the following table with respect to Ex-core N.I. (0.75)

	SOURCE RANGE	INTERMEDIATE RANGE	POWER RANGE
Type Detectors			
Total No.Detectors			
Level Meter Scale			
Compensation Method			
Level Trips			

4. How would rod motion be affected for an "Urgent Failure" Alarm in the: (0.3)

   a. Logic Cabinet
   b. Power Cabinet

5. Label all the attached Unit 1 drawing. Identify all transformers, buses, breakers, and power sources. (0.95)

6. On the output of the Main Generator two potential transformers exist per phase. Explain the affect on Main Generator power operation if: (0.5)

   a. 1 Regulating PT is inadvertantly racked out. (0.25)
   b. 1 Metering PT is inadvertantly racked out. (0.25)

7. What automatic actions occur when the E.O. inadvertantly racks out Bus 142 P.T., when the SAT is supplying the bus? (0.5)

8. Describe the difference on the Main Feedwater System on a Safety Injection and a Reactor Trip with Low Tave (0.5)

9. a. How is minimum flow to the S/G's ensured during an Aux. Feed Line Break, and what is this flow(gpm)? (0.3)

b. List the signals that automatically start the Aux. Feed pumps. (0.6)

10. a. State the Tech Spec requirement for Boron concentration during refueling. (0.3)

b. What operator action is required if one of these limits is not met. (0.1)

11. What Feedwater Valves close on Feedwater Isolation? (0.35)

12. Give 4 indications in the control room if all three orifice isolation valves for the letdown system were inadvertantly open. Consider only CVCS indications. (Assume no operator actions.) (0.4)

13. What signal(s) causes the CC surge tank vent valves to auto close, and where is/are the signal(s) generated? (0.3)

14. a. What are the "arming" signals for the steam dumps? (0.4)

b. Explain how steam dump operation would be affected if all Circ Water pumps tripped. (0.2)

15. List <u>all</u> signals which will initiate a safety injection, including setpoints and coincidence. (1.0)

16. Other than Radiation Monitors. List four symptoms of excessive primary plant leakage, per BOA PRI-1. (1.0)

17. What conditions require initiation of BOA-ENV 1, Operation During Tornado or Sustained Wind Conditions? (0.5)

18. BGP precautions state that all but one charging pump must be placed OOS when RCS temperature is less than 350°F. Explain why? (0.5)

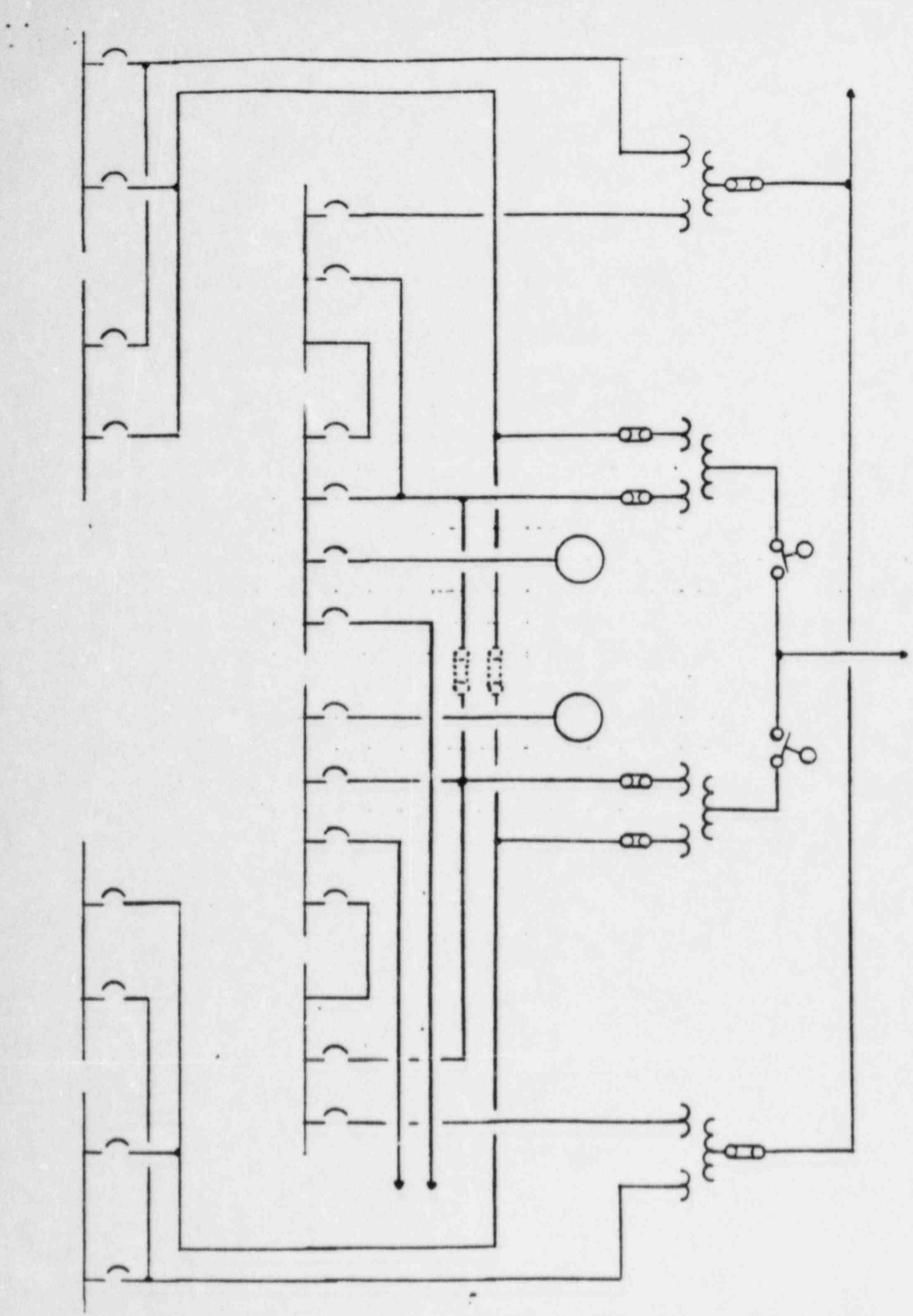
19. The RCP seal leakoff valves must not be opened unless the RCS is at least 100 psig. Why does this precaution exist, and what undesirable effects could this result in? (1.0)

20. List the 18 immediate actions for BEP-0. (0.9)

21. During recovery from a Steam Generator Tube Rupture in BEP-3, the operator is instructed to isolate AF flow to the ruptured S/G once it's level is in the narrow range. Why must AF flow be maintained to the ruptured, S/G until the U-tubes are covered. (1.5)

22. a. Define weekly whole body dose, and what is the administrative limit at Byron Station? (0.5)
    b. Define daily whole body dose, and what is the administrative limit at Byron Station? (0.5)

23. Per BAP 300-18, Removing and Returning Equipment Out of Service, where may the master out-of-service cards be placed? (0.5)



1. The Reactor Coolant System pressure shall not exceed 2735 psig. (0.2)

   a. Modes 1 and 2 - whenever the RCS pressure has exceeded 2735 psig, be in Hot Standby with the RCS pressure within its limits within 1 hour, and comply with the requirements of Spec. 6.5.1 (0.3)

   b. Modes 3, 4 and 5 - whenever the RCS pressure has exceeded 2735 psig, reduce the RCS pressure to within its limits within 5 minutes, and comply with Spec. 6.5.1. (0.25)

2. The pressurizer temperature shall be limited to:

   a. A maximum Heatup of 100°F in any 1 hour period, (0.2)

   b. A maximum Cooldown of 200°F in any 1 hour period, and (0.2)

   c. A maximum spray water temperature differential of 320°F (0.2)

3.

	SOURCE RANGE	INTERMEDIATE RANGE	POWER RANGE
Type Detectors	BF_3	CIC	UIC
Total No.Detectors	2	2	8
Level Meter Scale	10^0-10^6 cps	10^{-11}-10^{-3}amps	0-120% pwr
Compensation Method	discrimination	reverse current	NONE
Level trips	10^5 cps	amps @25% pwr	25% power 109% power

4. a. All rod motion would be inhibited except for an "Urgent Failure" in the shutdown banks C, D, and E which would inhibit motion on Shutdown Banks C, D, and E. (0.2)

   b. All rods in the affected Power Cabinet rod motion would be inhibited. (0.1)

5. All labeling, see attached drawing. (.025 ea)

6. a. If the Regulating PT is opened the feedback signal to the voltage regulator will be lost and voltage control will be switched to manual. (0.2)

b. If the Metering PT is opened on one phase the relays which are supplied the metering PT will sense a generator fault due to a loss of phase and trip the generator. (0.3)

7. 1) D/G starts (0.2)
2) SAT feeder break opens (0.1)
3) Load Strip (0.1)
4) D/G closes on to Bus (0.1)
5) Loads do <u>not</u> sequence due to UV condition still existing. (0.1)

8. On a Safety Injection the Main Feed pumps are tripped automatically along with a Feedwater Isolation. A Reactor Trip with Low Tave the Main Feed pumps are <u>not</u> tripped (go on recirc) but a Feedwater Isolation also occurs. (0.5)

9. a. Flow restricting orifices are in the Aux. Feed lines which prevents a total loss of aux. feed. 160 gpm. (0.1)

b. 1. Safety Injection (0.1)
2. UV on 2/4 RCP Buses (0.1)
3. Lo-Lo S/G level 2/4 Instruments 1/4 S/G's (0.2)
4. UV on Respective ESF Bus - Motor Driven only (0.2)

10. a. 2000 ppm boron or a Keft $\leq$ .95 whichever is more restrictive (0.3)

b. Emergency Borate (0.1)

11. 1) FW009's (FW Isolation Valve)
2) FW034's
3) FW035's -----------CLOSE (0.05 each)
4) Feed Reg Valve
5) Bypass Feed Reg Valves
6) FW039's
7) FW043's

12. 1) Letdown flowrate increased (0.1 each)
2) Charging flow increased (to maintain Pzr Level)
3) VCT Level increases
4) LCV 112A would open to HUT's
5) Higher temperature in letdown line would cause TCV 130 to go full open, and TCV129 would divert around the Mixed Bed Demineralizers.

6) PCV131 would open to maintain proper back pressure
7) Charging Return Temp (downstream of Regen HX) would increase.

Only 4 required for full credit.

13. A high radiation signal from a radiation monitor in one of the outlet headers of the CC HX's will automatically close both CC surge tank vent valves. (0.3)

14. a. 1. C-7, Load Rejection, or (0.1)
2. C-8, Turbine Trip, or (0.1)
3. Steam Dumps in Steam Pressure Mode, (0.1)

and

4. C-9, Condenser Available (0.1)

b. With all circ water pumps tripped C-9 will not be satisfied and steam dump operation is inhibited. (0.2)

15. 1) Manual (0.15), 1/2 switches (0.1)
2) Pzr Low Pressure (0.1), 2/4(0.075), 1830 psig (0.075)
3) Low Steamline Pressure (0.1), 2/3(0.075), 640 psig (0.075)
4) Containment High I (0.1), 2/3 (0.075), 5 psig (0.075)

16. 1) Increase sump/cavity pump run times
2) Abnormal PRT conditions
3) Reactor Vessel flange leakoff high temperature
4) Abnormal CNMT parameters
5) Increased Charging Flow during Normal Operation
6) Increased VCT makeup frequency

Only 4 required (0.25 pts each)

17. 1) Sustained wind speed of greater than 60 mph, or (0.25)

2) Tornado Warning in effect. (0.25)

18. This provides assurance that a mass addition pressure transient can be relieved by the operation of a single PORV. (0.5)

19. -To prevent blowing stagnant unfiltered water into the RCP seal area. (0.5)

-This could result in seal damage when the RCP is started. (0.5)

20. (0.05 each)

1) Verify Reactor Trip
2) Verify Turbine Trip
3) Verify ESF Buses Energized
4) Check if SI is actuated
5) Verify FW Isolation
6) Verify Phase A and CNMT Vent. Isolation
7) Verify AF Pumps Running
8) Verify AF Valve Alignment
9) Verify ECCS Pumps Running
10) Verify ECCS Valve Alignment
11) Verify CC Pumps Running
12) Verify SX Pumps Running
13) Verify Diesel Generator Running
14) Verify RCFC's Running
15) Verify ECCS flow
16) Verify AF Flow
17) Verify RCS Heat Removal
18) Check CNMT Pressure

21. -If the tubes are exposed to the steam space in the S/G, it will condense the steam. (0.5)

-This will result in a decrease in S/G pressure. (0.5)

-The resulting effect is that break flow into the S/G will increase. (0.5)

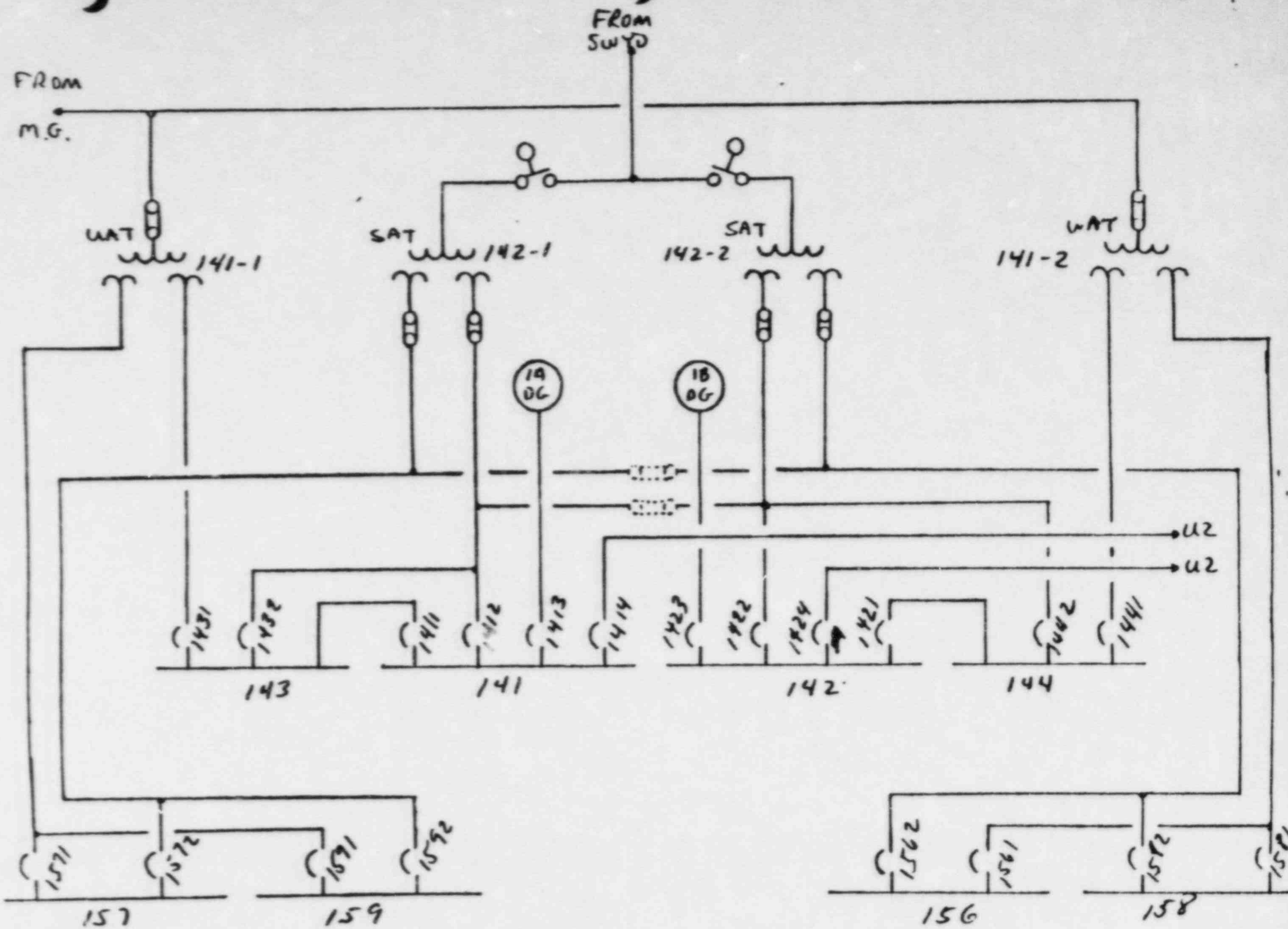
22. a. That whole body dose equivalent received during the (0.5) seven day period commencing at 0001 Monday and terminating at 2400 Sunday. 300mR

b. That whole body dose equivalent received in a 24 hour (0.5) period commencing with the start of the workers shift. 50mR

23. -an OOS peg board (0.25)

OR

--on file with the master equipment outage form (0.25)



FROM SWYD
FROM M.G.
WAT
141-1
SAT
142-1
SAT
142-2
WAT
141-2
1A DG
1B DG
U2
U2
1431
1432
1411
1412
1413
1414
1423
1422
1424
1421
1442
1441
143
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SHIFT ADVISOR TRAINING PROGRAM

	WEEK 1	WEEK 2	WEEK 3	WEEK 4	FINAL	AVE
Anderson	96.34	88.2	98.4	83.5	93.0	91.9
Hassinger	79.12	80.0	98.0	92.4	93.0	88.5
Mallato	72.36	78.6	89.0	86.5	72.3	79.8
Minerick	85.37	84.3	84.1	89.2	89.0	86.4

ATTACHMENT F

SHIFT ADVISOR ORAL EXAM

APPROVED

APR 27 1984

B. O. S. R.

BTP 100-T108
Revision 0

SHIFT ADVISOR
ORAL EXAM DOCUMENT

NAME Roger Anderson COMPANY PLD DATE GIVEN 6/28/84

I. TOPICS COVERED

	TOPICS	S	U
	RCP seals		
	RCP starting duties and order		
	Open RCP seal bypass valve		
1	Flow response when starting RCP's		
	Natural circulation indication and concerns		
2	Removing natural circulation		
	Response of plant to an SI		
	ECCS flows and pressures		
	CC pump response on SI		
3	ECCS pump runout protection		
	Reason for hot leg recirc		
	Explain how instrument bus inverter works		
	Indications of a loss of instrument bus		
	Explain rod control inputs & operation		
4	How to crosstie buses 141 and 241		
	Discuss ESF bus power supplies		
	Problems concerning breaker 1412 overcurrent trip		
	Diesel generator auto starts		
	Diesel generator emergency mode trips & normal		
5	Explain what a turbocharger does		
	Diesel generator ratings		
	Buses 158 & 157 feeds		
	AF system		
	Loss of heat sink		
	BEP-0		
	SG ~~tube~~ leak - no SI		
	Tech Spec leak limits of RCS		
	ATWS		
	Response to fire		
6	Why no manual SI on ATWS		
	SCRE and STA positions		
	Out of service procedure		
	OTΔT		
	Urgent rod control failures		
	Dropped rod recovery and indications		
	Minimum temperature of criticality		
	Nuclear instruments and power supplies		
	Deviation reports and Licensee Event Reports		
	Identify safety related area monitors and auto actions		
7	Portable rad monitors		
	Radiation limits		
	RWP requirements		
	Primary source		
	Sources of SX makeup		

(4155P)

II COMMENTS:

III. ORAL EXAM RESULTS

A. An oral exam was conducted on trainee Roger Anderson.
The recommendation(s) of the examiners are

Mr. Anderson may begin duties as a Shift Advisor. Was very Knowledgable in the areas marked satisfactory.

B. Examiners Signatures

Training Department (1)

Training Department (2)

Operating Department

Approved
Training Supervisor

APPROVED
APR 27 1984
B. O. S. R.

APPROVED

APR 27 1984

B.O.S.R.

BTP 100-T108
Revision 0

SHIFT ADVISOR
ORAL EXAM DOCUMENT

NAME Jim Hassinger COMPANY LQC DATE GIVEN 6/28/84

I. TOPICS COVERED

	TOPICS	S	U
	NPSH response on FCU		
	4Kv and 6.9Kv lineup		
	Out of service procedure		
	Jumper / Lifted leads		
	DG auto starts		
	DG trips		
	Instrument inverter operation		
	Instrument bus power lineup		
1	Loss of AF after reactor trip		
	Emergency procedure usage		
	BCA-1		
2	How ΦA isolation affects plant		
	What causes ΦA isolation and its effects		
	RCP seal injection		
	CVCS functions		
3	Loss of CC to RCP's		
	OTΔT trips		
	OTΔT indications		
	Flow of signal through reactor protection		
	Effects of overcurrent on breaker 1412		
	RCP starting duties		
4	RCP start interlocks		
	Bubble formation in vessel		
	Reason for vessel head vent		
	FW isolation		
	FW flowpath and water-hammer prevention system		
5	Reason for water hammer prevention		
	Restricted area		
	Tech Spec for water levels in refueling		
	LCOAR		
	Minimum temperature for criticality		
	Emergency boration		
	Concerns below 350° in RCS		
	Low temperature overpressurization protection-RCS		
	C-7		
	Steam generation		
	Fire response		
	Reason for CC surge tank baffle		
	Make-up to CC surge tank		
6	Power supplies to nuclear instruments		
	Deviation reports and Licensee Event Reports		
	Tech Spec on source range		

(4155P)

II COMMENTS:

III. ORAL EXAM RESULTS

A. An oral exam was conducted on trainee Jim Hassinger.
The recommendation(s) of the examiners are
Mr. Hassinger should begin duties as a shift advisor. His overall knowledge level is very good.

B. Examiners Signatures

Training Department (1)

Training Department (2)

Operating Department

Approved
Training Supervisor

APPROVED
APR 27 1984
B. O. S. R.

(4155P)

APPROVED

APR 27 1984

B.O.S.R.

BTP 100-T108
Revision 0

SHIFT ADVISOR
ORAL EXAM DOCUMENT

NAME Nick Malato COMPANY W DATE GIVEN 6/29/84

I. TOPICS COVERED

	TOPICS	S	U
	Draw normal lineup for 4Kv & 6.9Kv bus		
	Reason for buses 157 and 159 feeds of SAT		
	Why is the cross-tie between 141 and 143		
	Auto starts of DG		
	Auto closure of DG to bus		
	Overcurrent trip effects of breaker 1412		
1	DG controls		
2	Instrument bus inverter		
3	Indication of loss of instrument bus		
4	RCP seal injection		
5	Loss of CC to RCP, normal operations		
	RCP start duties		
6	RCS flow on sequential RCP start and RCS flow indication		
	RCS flow rx trips		
7	Natural circulation indications		
8	Concern on core bypass flow		
	Void in vessel detect		
	Plant response to SI and immediate actions of BEP-0		
	CC pumps		
9	Subsequent BEP-0 actions		
	Emergency procedure usage and descriptions		
	Loss of heatsink indications and response		
	SG tube leak - no SI		
	SG tube leak limit		
	Emergency boration		
	MSIV actuation		
	SG safety setpoints		
10	SG safety Tech Spec		
	Steam dump operation		
	Nuclear instruments		
	SI signals		
	What causes ΦB isolation		
	What happens on ΦB isolation		
	RCP trip criteria in BEP's		
	Makeup to SX		
	NDCT operation		
	Rod control outward failure, urgent failures		
	Indication of dropped rod		
	Dropped rod recovery		
11	RWP		
	ATWS, reactor trip breaker operations		
	OOS procedure, rod limits		
12	Fire response		
13	High rad barriers and entry		

(4155P)

II. COMMENTS:

III. ORAL EXAM RESULTS

A. An oral exam was conducted on trainee Nick Malato.
The recommendation(s) of the examiners are
Mr. Malato should not be assigned the duties of a Shift Advisor. His knowledge is spotty and overall inadequate at this time.

FOR INFO ONLY

B. Examiners Signatures

Training Department (1)

Training Department (2)

Operating Department

Approved
Training Supervisor

APPROVED
APR 27 1984
B. O. S. R.

(4155P)

APPROVED

APR 27 1984

B.O.S.R.

BTP 100-T108
Revision 0

SHIFT ADVISOR
ORAL EXAM DOCUMENT

NAME William Minerich COMPANY PLD DATE GIVEN 6/29/84

I. TOPICS COVERED

TOPICS	S	U
Loss of AF during trip recovery		
Instrument buses and inverters		
DC bus feeds and loads		
Loss of DC bus		
Explain float and equalize to DC bus		
AF system		
Water hammer prevention system diagram + operation		
FW isolation		
1 AF nozzle subcooling		
MSIV actuation		
2 MSIV Tech Spec		
Tech Spec modes of operation		
Tech Spec 3.0.3		
3 Tech Spec on water level in refueling		
Bases for above		
4 LCOAR		
5 RCP start duty		
CV response to SI		
CV response to valve 459 closing		
Excess letdown		
O_2 control in RCS		
6 Iodine spike in RCS		
CC		
ECCS		
RWP		
Extended RWP		
Discuss Teletector		
7 Can dose be set with G-M		
OOS procedure		
SR		
8 PR fuses		
SSPS, ESFAS		
Emergency boration		
Stop RCS depressurization if sprays open		
Indications of void in vessel		
Void removal		
General actions in BEP-2		
SG tube leak with no SI		
Identify safety-related area monitors and actions		
Aux bldg vent stack monitor		
Primary Source		
Fuel arrang & use of guide tubes		
DNBR parameters		

(4155P)

II. COMMENTS:

III. ORAL EXAM RESULTS

A. An oral exam was conducted on trainee ______________.
The recommendation(s) of the examiners are
Mr. Minerich may begin duties as a Shift Advisor. He is knowledgable in areas marked satisfactory.

B. Examiners Signatures

Training Department (1)

Training Department (2)

Operating Department

Approved
Training Supervisor

APPROVED
APR 27 1984
B. O. S. R.

(4155P)

ATTACHMENT G

SHIFT CREW TRAINING PROGRAM

The training program presented to the operating shift crews regarding the role of the shift advisor will be accomplished by procedure revision training. The licensed requalification training program includes training on revised procedures, and also the non-licensed operators will be trained on these revised procedures. The specific procedures that deal with the shift advisors are:

BAP 300-22	Conduct of Operations
BAP 300-2	Shift Manning
BAP 200-A2-7	Position Description-SCRE
BAP 200-A2-3	Position Description -SE
BAP 200-A2-10	Position Description -S/A
BAP 900-10	Control Room Access.

All operating shift crews will receive this training by August 3, 1984. Any new personnel added to the shift crews will receive training on these procedures during their initial training program.

ATTACHMENT H

MEDICAL QUALIFICATIONS

All Shift Advisors have been previously licensed and therefore have passed the NRC medical qualification for a reactor operators license.

General good health is adequate for the shift advisors to perform their present duties.

ATTACHMENT I

SHIFT ADVISORS EVALUATION PROCEDURES

SHIFT ADVISOR PROGRESS REVIEW

A. STATEMENT OF APPLICABILITY:

This procedure describes the implementation of the Shift Advisor Progress Review.

B. REFERENCES:

1. BAP 299-T1 Byron Station Management Progress Review Form

C. MAIN BODY:

```
*********************************************************************
*                              NOTE                                 *
* Completed evaluations contain material of a sensitive nature.  As *
* outlined in this procedure, every effort should be made to ensure *
* proper routing (hand carried) and avoid unauthorized disclosure of *
* information.                                                      *
*********************************************************************
```

1. All Shift Advisors will be reviewed every February, June and October, on the 3rd Monday of the month.

2. The observing supervisor shall complete the progress review form with the employee, update the responsibilities and measurement standards for the next approval period and then hand carry the completed forms to the Department Head by the appraisal due date. The employee is encouraged to add any comments as a result of the review prior to signing the review form.

```
*********************************************************************
*                              NOTE                                 *
* Only the following sections of BAP 299-T1 apply to Shift Advisor  *
* progress review:  Parts I, II.B, and V.                           *
*********************************************************************
```

3. The Department Head shall review the completed portion(s) of the Progress Review Form and initiate feedback as necessary to the cognizant Supervisor to resolve employee or supervisor comments.

4. Upon completion of the review, the Department Head will sign and hand carry the Progress Review Form to the cognizant Assistant Superintendent. The Assistant Superintendent will review the appraisal, sign, and submit to the Personnel Administrator who will have the Progress Review Form filed in the individual's personnel file.

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( )

5. Protection of Completed Forms

   a. Completed forms shall be marked CONFIDENTIAL at the top of each page.

   b. Completed forms shall be kept in a locked file when not in use.

   c. Access to completed forms will be granted to a person's department head, the Assistant Superintendent, and Station Superintendent. The Station Superintendent may release the forms to personnel considering an employee for promotion or transfer.

6. Progress review for Shift Advisors will include, but is not limited to, the following areas:

   a. Communication.

   b. Attitude.

   c. Ability to mesh with the shift crew.

   d. Ability to provide useful technical information and recommendations to the Shift Engineer.

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BYRON STATION
MANAGEMENT PROGRESS REV'EW

NAME: ____________________ DATE: ____________________

JOB TITLE: ____________________

DEPARTMENT: ____________________ CONFIDENTIAL INFORMATION (When Completed)

REPORTS TO: ____________________

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I. RESPONSIBILITIES, MEASUREMENT STANDARD, PERFORMANCE ACHIEVED

PRIMARY RESPONSIBILITIES	MEASUREMENT STANDARD	PERFORMANCE ACHIEVED

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I. - (Continued)

PRIMARY RESPONSIBILITIES	MEASUREMENT STANDARD	PERFORMANCE ACHIEVED

SUMMARY EVALUATION OF PERFORMANCE:

☐ OUTSTANDING

Exceptable achievement goals and expectations. Excellent overall performance.

☐ SUPERIOR

Major goals and expectations achieved effectively. Consistent high performance.

☐ +COMPETENT -

Achieved essential goals and expectations. Successful performance.

☐ BELOW EXPECTATIONS

Achievement of goals and expectations is below acceptable level. Requires major improvement.

☐ UNACCEPTABLE

Has not achieved goals and expectations. Has not responded to corrective efforts.

☐ NEW: Review is limited because individual is new in position. (Less than 6 months).

(0940P)

II. REQUIREMENTS/QUALIFICATION FOR PRESENT POSITION

A. List requirements that the individual must meet for the position which is currently held, i.e., SRO, N45.2.6 qualifications, ANSI 18.1, ANS 3.2

Requirements Status

B. List requirements for future position individual is being trained for (ANSI 18.1, ANS 3.2, N45.2.6, Position Description.

Requirements Status

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III. IDENTIFICATION OF AREAS FOR TRAINING AND DEVELOPMENT

A. Using the above Evaluation of Performance and Capacity for Advancement as a guide, please analyze this individual's present ability to perform. Review the following areas and check H, A, or D to indicate: H-Highest order; A-Adequate; or D-which indicates training and development is recommended in this area. Mark NA if Not Applicable.

MANAGERIAL

1. PLANNING

Formulating clear, coordinated objectives ___
Preparing work schedules budgets ___
Establishing policies ___

2. ORGANIZING

Identifying & organizing work load ___
Developing cooperative work relationships ___
Delegating responsibility authority ___
Accepting responsibility ___
Meeting objectives in timely manner ___
Requiring minimum additional guidance ___
Accepting additional job related responsibility ___

3. LEADING

Applying problem solving techniques ___
Performing coaching of subordinates ___
Providing support to peers ___
Following procedures & policies ___
Developing & training subordinates ___
Performing staffing, interviewing & selection activities ___

4. CONTROLLING

Measuring progress & performance ___
Evaluating performance by regular appraisal & counselling ___
Correcting performance/ deficiencies ___
Providing feedback mechanism ___
Assuring supervisory follow-through ___
Meeting schedules ___
Meeting budget & cost controls ___

PERSONAL

1. DEVELOPMENT OF NEW IDEAS, METHODS & CONCEPTS ___
2. ANTICIPATION, PREPARATION, AND FOLLOW THROUGH OF POTENTIAL PROBLEMS ___
3. SCHEDULING & UTILIZATION OF TIME ___
4. JOB KNOWLEDGE

Technical ___
Knowledge of assigned areas ___
General plant ___

5. ATTENDANCE ___
6. TARDINESS ___
7. ACCEPTS ADDITIONAL NON-JOB TASKS (I.E. TOURS, SPEECHES) ___

WORKING WITH PEOPLE

1. WRITTEN EXPRESSION-LETTER, REPORTS AND INSTRUCTIONS ___
2. ORAL EXPRESSION

Presentation ___
Instructions ___
Conference ___
Leadership ___

3. LISTENING
4. INTERFUNCTIONAL RELATIONS

With supervisor ___
With peer ___
With subordinates ___
With other depts.:
Union ___
Management ___

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III. - (Continued)

B. Summary

Major Strengths:

Major Weaknesses:

Additional Comments:

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IV. CAREER GOALS AND PLAN (List Short Term (ST) and Long Term (LT) chronologically)

A.

WHAT	WHERE	WHEN	WHY

The Supervisor must discuss these career plans to ensure understanding of the individual's reason for consideration of career paths. Further guidance should be obtained for the Dept. Head or Asst. Superintendent.

B. CAPACITY FOR ADVANCEMENT

ADVANCEMENT POTENTIAL AT THIS TIME:

A. PROMOTABLE TO POSITION ____________________

[ ] HOW? [ ] WHEN? ____________________

B. ALSO, PROMOTABLE TO ____________________

[ ] HOW? [ ] WHEN? ____________________

C. Basis for promotion consideration: ____________________

OTHER SUGGESTIONS:

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IV. (Continued)

C. CAREER TRAINING AND DEVELOPMENT

PROGRAM	DATE	RESULTS	COMMENTS
1. Work Experience (Change in)			
2. Plant visits (Off site)			
3. Task Force/Comitee			
4. CECo Training			
a. Technical			
b. Sup. for Results			
c. MBO/KT (KT DA)			
d. Coaching (KT Perf. Stds.)			
e. Other			
5. School or Univ. Courses			
6. Lectures, Workshops			
7. Reading Assign/Home Study			
8. Other			

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V. SIGNATURES

A). Appraisal Prepared by: ______________________ ______________________ ______________________
NAME TITLE DATE

B). Appraisal Review Held On: ______________ ______________________________
DATE EMPLOYEE'S SIGNATURE

C). Employee's Comments:

D). Department Head Review: ____
Signature/Date

E). Asst. Supt. Review: ____
Signature/Date

F). Sta. Supt. Review: ____
Signature/Date

G). Additional Comments:

____
Signature/Date

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