

JAN 09 1991

LETTER DISTRIBUTED TO THE TRAINING MANAGERS
OF THE FOLLOWING FACILITIES:

Braidwood, Docket Nos. 50-456/50-457
Clinton, Docket No. 50-461
Davis-Besse, Docket No. 50-346
Fermi, Docket No. 50-341
Monticello, Docket No. 50-263
Zion, Docket Nos. 50-295/50-304

The purpose of this letter is to provide information concerning the Generic Fundamentals Examination Section (GFES) of the operator licensing written examination to be administered on February 6, 1991. The BWR GFES will be administered at 9:00 a.m. and the PWR GFES will be administered at 1:00 p.m. local time at the location specified in Enclosure 1. Included with this letter are:

- * a map of the area including the location where the examinations will be administered; (Enclosure 1)
- * a list of lodgings in the immediate area; (Enclosure 1)
- * The name of the regional contact and telephone number; (Enclosure 1)
- * preliminary instructions for those taking the examination; (Enclosure 2)
- * Equation Sheet. (Enclosure 3)

Please ensure that all participants receive a copy of the instructions.

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PDR ADOCK 05000263
V PDR

JAN 0 0 1991

A master copy of each version of the examination with answers, a table of the scores for each candidate, and a copy of the answer sheet for each participant will be sent to the facility training department.

Sincerely,
ORIGINALS SIGNED BY T. BURDICK FOR:
Geoffrey C. Wright, Chief
Operations Branch

Enclosures:

- 1. Map of exam administration area
- 2. Preliminary instructions to participants
- 3. Equation Sheet

cc w/enclosures:

- DCD/DCB (RIDS)
- P. Doyle, LOLB

RIII
Bailey/cg
01/9/91

RIII
Jordan *ml*
01/9/91

RIII
B
Burdick
01/9/91

RIII
Sfor
Wright
01/9/91

U. S. NRC REGION III GENERIC FUNDAMENTALS EXAMINATION ADMINISTRATION



*BWR EXAMINATION SITE
 U. S. Nuclear Regulatory
 Commission, Region III
 Roosevelt Glen Corporate
 Center, Building 4
 799 Roosevelt Road
 Glen Ellyn, IL 60137
 ARRIVE BY 8:30 A.M.

BWR EXAMINATION DATE
 February 6, 1991
 9:00 A.M.

REGION III CONTACT
 R. M. Bailey
 708/790-5184

AREA LODGING

- 1. Radisson Hotel
 2100 Butterfield Road
 Downers Grove, IL
 708/971-2000
- 2. Holiday Inn
 Glen Ellyn-Lombard
 1250 Roosevelt Road
 Glen Ellyn, IL
 708/629-6000

- 3. Holiday Inn-Crown Plaza
 3000 Warrenville Rd.
 Lisle, IL
 708/505-1000
- 4. Dillon Inn
 3031 Finley Road
 Downers Grove, IL
 708/810-9500

- 5. Hyatt Hotel
 1400 Corporetum Dr.
 Lisle, IL
 708/852-1234
- 6. Hilton Inn
 3003 Corporate West Dr.
 Lisle, IL
 708/369-0900

U. S. NRC REGION III GENERIC FUNDAMENTALS EXAMINATION ADMINISTRATION



*PWR EXAMINATION SITE

U. S. Nuclear Regulatory
Commission, Region III
Roosevelt Glen Corporate
Center, Building 4
799 Roosevelt Road
Glen Ellyn, IL 60137

ARRIVE BY 12:30 P.M.

PWR EXAMINATION DATE

February 6, 1991
1:00 P.M.

REGION III CONTACT

R. M. Bailey
708/790-5184

AREA LODGING

- | | | |
|--|---|---|
| <p>1. Radisson Hotel
2100 Butterfield Road
Downers Grove, IL
708/971-2000</p> | <p>3. Holiday Inn-Crown Plaza
3000 Warrenville Rd.
Lisle, IL
708/505-1000</p> | <p>5. Hyatt Hotel
1400 Corporetum Dr.
Lisle, IL
708/852-1234</p> |
| <p>2. Holiday Inn
Glen Ellyn-Lombard
1250 Roosevelt Road
Glen Ellyn, IL
708/629-6000</p> | <p>4. Dillon Inn
3031 Finley Road
Downers Grove, IL
708/810-9500</p> | <p>6. Hilton Inn
3003 Corporate West Dr.
Lisle, IL
708/369-0900</p> |

Enclosure 2

Pre-Examination Instructions for the Generic Fundamentals
Examination Section of the Written Examination

The following instructions apply for the Fundamentals Examination Section (GFES) of the Written Operator Licensing Examination to be administered February 6, 1991.

- A. Identification - All participants must present photo identification (i.e. facility photo-badge, state driver's license, etc.) and sign a roster sheet before receiving an examination.
- B. Information Provided with the Examination - Each examination package will include an examination, a copy of the steam tables, an 'Equations and Constants' Sheet, a 'machine gradable' answer sheet and instructions on filling out the answer sheet. All material must be turned in at the completion of the examination.
- C. Use of Calculators - Use of personal pocket calculators and slide rules will be permitted during the examination. NRC will not supply calculators, so the participant should ensure that batteries are new or have been recently charged. No other examination aids will be permitted.
- D. Examination Administration - The examination will be administered using the criteria contained in ES-201 of NUREG 1021 "Operator Licensing Examiner Standards" as modified by instructions provided at the time the examination is administered.
- E. Decision to Withdraw - If for any reason a participant decides to withdraw from the examination, please inform the regional contact R. M. Bailey at 708-790-5184 before January 30, 1991.
- F. Examination Duration - The time designated to complete the examination is 2-1/2 hours. All participants will be required to hand in their examinations 2-1/2 hours after the start of the examination. Late arrivals will be permitted to take the examination, but will be required to hand in their examinations at the same time as the other applicants.

EQUATION SHEET

$$\dot{Q} = \dot{m} c_p \Delta T$$

$$\text{Cycle Efficiency} = \frac{\text{Net Work (out)}}{\text{Energy (in)}}$$

$$\dot{Q} = \dot{m} \Delta h$$

$$\text{SCR} = S/(1 - K_{\text{eff}})$$

$$\dot{Q} = UA \Delta T$$

$$\text{CR}_1 (1 - K_{\text{eff}})_1 = \text{CR}_2 (1 - K_{\text{eff}})_2$$

$$\text{SUR} = 26.06/r$$

$$M = 1/(1 - K_{\text{eff}}) = \text{CR}_1/\text{CR}_0$$

$$\text{SUR} = \frac{26.06 (\lambda_{\text{eff}} \rho)}{(\bar{\beta} - \rho)}$$

$$M = \frac{(1 - K_{\text{eff}})_0}{(1 - K_{\text{eff}})_1}$$

$$P = P_0 10^{\text{SUR}(t)}$$

$$\text{SDM} = (1 - K_{\text{eff}})/K_{\text{eff}}$$

$$P = P_0 e^{(t/r)}$$

$$\text{Pwr} = W_f \dot{m}$$

$$r = (l^*/\rho) + [(\bar{\beta} - \rho)/\lambda_{\text{eff}} \rho]$$

$$r = l^*/(\rho - \bar{\beta})$$

$$\rho = (K_{\text{eff}} - 1)/K_{\text{eff}}$$

$$l^* = 1 \times 10^{-5} \text{ seconds}$$

$$\rho = \Delta K_{\text{eff}}/K_{\text{eff}}$$

$$\lambda_{\text{eff}} = 0.1 \text{ seconds}^{-1}$$

$$1 \text{ Curie} = 3.7 \times 10^{10} \text{ dps}$$

$$1 \text{ kg} = 2.21 \text{ lbm}$$

$$1 \text{ hp} = 2.54 \times 10^3 \text{ BTU/hr}$$

$$1 \text{ Mw} = 3.41 \times 10^6 \text{ BTU/hr}$$

$$1 \text{ BTU} = 778 \text{ ft-lbf}$$

$$^{\circ}\text{F} = 9/5 ^{\circ}\text{C} + 32$$

$$^{\circ}\text{C} = 5/9 (^{\circ}\text{F} - 32)$$