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 sill 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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Multiple Listings

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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.

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

RLII

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Wright

01/9/91

TEYZ

Enclosures:

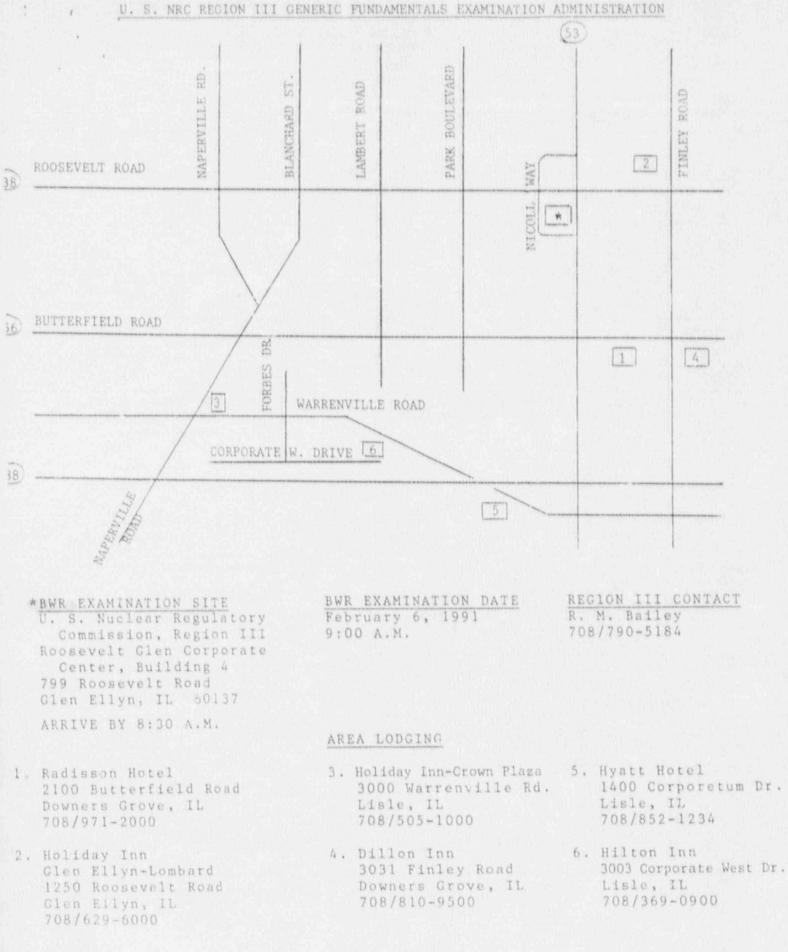
1. Map of exam administration area

- 2. Preliminary instructions to participants
- 3. Equation Sheet

cc w/enclosures: DCD/DCB (RIDS) P. Doyle, LOLB

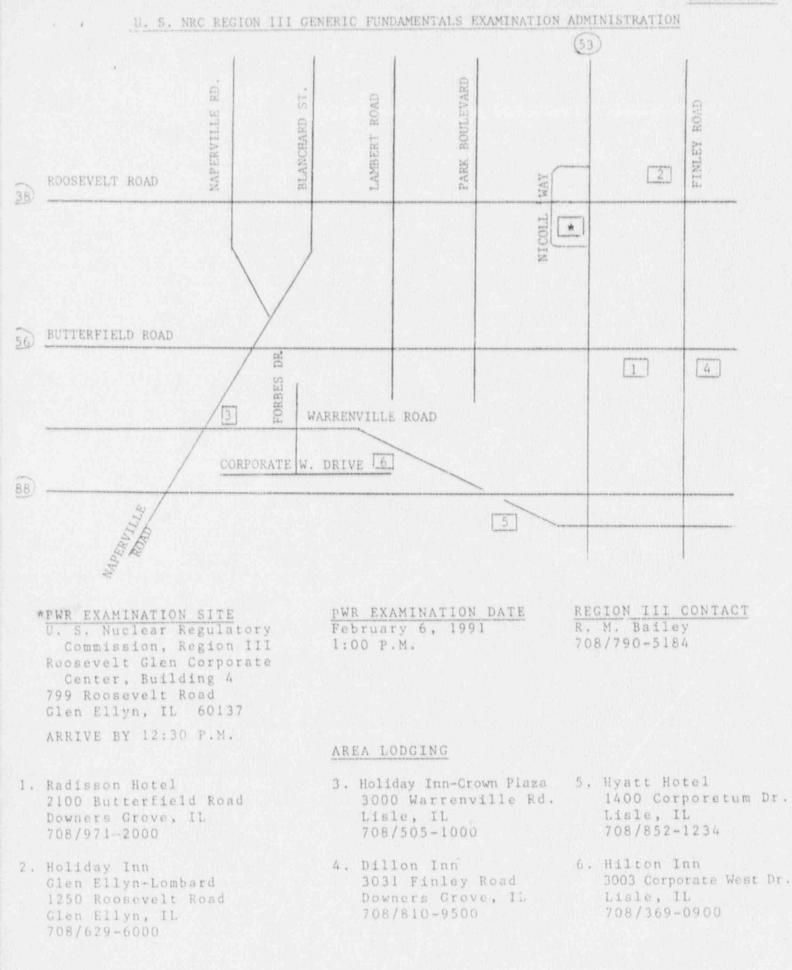
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Enclosure 1



Enclosure 1

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.

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- 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 <u>must</u> 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.

Enclosure 3

EQUATION SHEET

4.4.4

. . . .

$\dot{Q} = \dot{m} c_p \Delta T$	Cycle Efficiency = Net Work (out) Energy (in)
$\dot{Q} = \dot{m} \Delta h$	$SCR = S/(1 - K_{eff})$
φ = ua at	$CR_1 (1 - K_{eff})_1 = CR_2 (1 - K_{eff})_2$
SUR = 26.06/r	$M = 1/(1 - K_{eff}) = CR_1/CR_0$
$SUR = \frac{26.06 \ (\lambda_{eff} \ \rho)}{(\overline{\beta} \ - \ \rho)}$	$M = \frac{(1 + K_{eff})_0}{(1 - K_{eff})_1}$
$P = P_0 10^{SUR(t)}$	SDM = (1 - K _{eff})/K _{eff}
$P \leftrightarrow P_0 e^{(t/r)}$	Pwr – W _f m
$r = (1^*/\rho) + [(\overline{\beta} - \rho)/\lambda_{eff}^{\rho}]$	$\tau = 1^* / (\rho + \overline{\beta})$
$\rho = (K_{eff} - 1)/K_{eff}$	$1^* = 1 \times 10^{-5}$ seconds
$\rho \sim \Delta K_{eff}/K_{eff}$	$\lambda_{eff} = 0.1 \text{ seconds}^{1}$

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1 Curie	= 3.7 x 10 ¹⁰ dps	1 kg = 2.21 1bm
1 hp	$= 2.54 \times 10^3 BTU/hr$	$1 Mw = 3.41 \times 10^{6} BTU/hr$
1 BTU	= 778 ft-1bf	°F = 9/5 °C + 32
°.C	= 5/9 (°F - 32)	