

OCT 19 1988

Docket No. 50-254  
Docket No. 50-265

Commonwealth Edison Company  
ATTN: Mr. Cordell Reed  
Senior Vice President  
Post Office Box 767  
Chicago, IL 60690

Dear Mr. Reed:

SUBJECT: OPERATOR AND SENIOR OPERATOR LICENSING EXAMINATIONS

In a telephone conversation between Mr. Bob Svaleson, Licensing Instructor, and Mr. David Hills, Principle Examiner, arrangements were made for the administration of examinations at the Quad Cities Nuclear Power Plant.

The written and oral examinations are scheduled for the week of February 6, 1989.

In order for us to meet this schedule, it will be necessary for the facility to furnish the approved reference material listed in Enclosure 1, "Reference Material Requirements for Reactor/Senior Reactor Operator Licensing Examinations" at least 60 days prior to the examination date. Any delay in receiving approved properly bound and indexed reference material will result in a delay in administering the examinations. Mr. Svaleson has been advised of our reference material requirements, the number of reference material sets that are required, and the examiners' names and addresses where each set is to be mailed.

The facility management is responsible for providing adequate space and accommodations in order to properly conduct the written examinations. Enclosure 2, "Requirements for Administration of Written Examinations," describes our requirements for conducting these examinations. Mr. Svaleson has also been informed of these requirements.

Enclosure 3 contains the Rules and Guidelines that will be in effect during the administration of the written examination. The facility management is responsible for ensuring that all applicants are aware of these Rules.

The facility staff review of the written examination will be conducted in accordance with requirements specified in Enclosure 4, "Requirements for Facility Review of Written Examination." Mr. Svaleson has been informed of these requirements.

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All reactor operator and senior reactor operator license applications should be submitted at least 60 days prior to the first examination dates so that we will be able to review the training and experience of the applicants, process the medical certifications, and prepare final examiner assignments after applicant eligibility has been determined. If the applications are not received at least 30 days prior to the examination dates, it is likely that a postponement will be necessary.

This request for information was approved by the Office of Management and Budget under Clearance Number 3150-0101, which expires May 31, 1989. Comments on burden and duplication may be directed to the Office of Management and Budget, Reports Management Room 3208, New Executive Office Building, Washington, D.C. 20503.

Thank you for your consideration in this matter. If you have any questions regarding the examination procedures and requirements, please contact Mr. Davis Hills at 312-790-5600.

Sincerely,

ORIGINAL SIGNED BY GEOFFREY C. WRIGHT

Geoffrey C. Wright, Chief  
Operations Branch

Enclosures:

1. Reference Material Requirements  
for Reactor/Senior Reactor Operator  
Licensing Examinations
2. Requirements for Administration  
of Written Examinations
3. NRC Rules and Guidelines For  
Written Examinations
4. Requirements for Facility Review  
of Written Examinations

See Attached Distribution

Yes  
RIII  
DCH  
Hills/mnj  
7-8-89

RIII  
mjf  
Jordan

RIII  
Wright

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Distribution

cc w/enclosures:

H. Bliss, Nuclear

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T. Ross, Project Manager, NRR

K. E. Perkins, Branch Chief, OLB

M. A. Ring, Section Chief, DRP

## ENCLOSURE 1

### REFERENCE MATERIAL REQUIREMENTS FOR REACTOR/SENIOR REACTOR OPERATOR LICENSING EXAMINATIONS

1. Existing learning objectives, Job Performance Measures and lesson plans (including training manuals, plant orientation manual, system descriptions, reactor theory, thermodynamics, etc.)

Training materials should include all substantive written material used for preparing applicants for initial RO and SRO licensing. The written material should include learning objectives and the details presented during lectures, rather than outlines. Training materials should be identified by plant and unit, bound, and indexed. FAILURE TO PROVIDE COMPLETE, PROPERLY BOUND AND INDEXED PLANT REFERENCE MATERIAL MAY RESULT IN THE RETURN OF THE MATERIAL TO THE PERSON WHO IS THE HIGHEST LEVEL OF CORPORATE MANAGEMENT WHO IS RESPONSIBLE FOR PLANT OPERATIONS (E.G., VICE PRESIDENT OF NUCLEAR OPERATIONS). ACCOMPANYING THE MATERIAL WILL BE A COVER LETTER EXPLAINING THE DEFICIENCIES IN THE REFERENCE MATERIAL AND THE FACT THAT THIS WAS THE REASON THE EXAMINATIONS WERE CANCELLED OR POSTPONED. Training materials which include the following should be provided:

- System descriptions including descriptions of all operationally relevant flow paths, components, controls and instrumentation. System training material should draw parallels to the actual procedures used for operating the applicable system.
- Complete and operationally useful descriptions of all safety-system interactions and, where available, BOP system interactions under emergency and abnormal conditions, including consequences of anticipated operator error, maintenance error, and equipment failure.
- Training material used to clarify and strengthen understanding of emergency operating procedures.
- Comprehensive theory material that includes fundamentals in the area of theory of reactor operation, thermodynamics, heat transfer and fluid flow, as well as specific application to actual in-plant components. For example, mechanical theory material on pumps should include pump theory as well as descriptions of how these principles actually apply to major plant pumps and the systems in which they are installed (i.e., Reactor Coolant Pumps, all ECCS pumps, Recirculation pumps, Feedwater pumps and Emergency Feedwater pumps). Reactor Theory material should include descriptions that draw explicit ties between the fundamentals and the actual operating limits followed in the plant (i.e., reactor theory material should contain explanations how principles relate to the actual curves used by operators to verify shutdown margin or calculate an ECP).

Component theory material should include that applicable to valves, sensors, detectors, controllers and positioners, pumps, motors and generators, heat exchangers and condensers, demineralizers and ion exchangers, breakers, relays and disconnects.

- Training material for specific tasks, transients, evolutions, and procedures.
  - Training material for mitigating core damage.
  - Training material for incorporating lessons learned into the training program.
2. Complete Procedure Index (including surveillance procedures, etc.) for all plant procedures
  3. All administrative procedures (as applicable to reactor operation or safety)
  4. All integrated plant procedures (normal or general operating procedures)
  5. Emergency procedures (emergency instructions, abnormal or special procedures. Includes emergency operating procedure basis.)
  6. Standing orders (important orders that are safety-related and may supersede the regular procedures)
  7. Surveillance procedures (procedures that are run frequently, i.e., weekly or that can be run on the simulator or that are conducted by Operations personnel.)
  8. Fuel-handling and core-loading procedures, (initial core-loading procedure, when appropriate. Includes all administrative procedures as well as procedures describing actual usage of equipment for any core alterations as defined in Technical Specifications.)
  9. Annunciator/alarm procedures
  10. Radiation protection manual (radiation control manual or procedures)
  11. Emergency plan implementing procedures
  12. Technical Specifications (and interpretations. Also includes Facility Operating License)
  13. System operating procedures
  14. Piping and instrumentation diagrams, electrical single-line diagrams, or flow diagrams

15. Technical Data Book, and/or plant curve information as used by operators and facility precautions, limitations, and set points (PLS) for the facility
16. Questions and answers specific to the facility training program which may be used in the written or operating examinations (i.e., Facility Exam Bank)
18. Nuclear design reports for current cycles.
19. Job task analysis for both SROs and ROs.
20. List of Unit 1 and Unit 2 differences.
21. Safe Shutdown Procedures.

The above reference material should be approved, final issues and should be so marked. If a plant has not finalized some of the material, the Chief Examiner shall verify with the facility that the most complete, up-to-date material is available and that agreement has been reached with the licensee for limiting changes before the administration of examination. All procedures and reference material should be bound with appropriate indices or tables of contents so that they can be used efficiently. Failure to provide complete, properly bound and indexed plant reference material could result in cancellation or rescheduling of the examinations.

ENCLOSURE 2

REQUIREMENTS FOR ADMINISTRATION OF WRITTEN EXAMINATIONS

1. A single room shall be provided for administration of the written examination. The location of this room and supporting restroom facilities shall be such as to prevent contact with all other facility and/or contractor personnel during the written examination. If necessary, the facility should make arrangement for the use of a suitable room at a local school, motel, or other building. Obtaining this room is the responsibility of the licensee.
2. Minimum spacing is required to ensure examination integrity as determined by the Chief Examiner. Minimum spacing should be one applicant per table, with a three foot space between tables.
3. Suitable arrangements shall be made by the facility if the applicants are to have lunch, coffee or other refreshments. These arrangements shall comply with Item 1 above and shall be reviewed by the examiner and/or proctor.
4. The facility licensee shall provide pads of 8-1/2 by 11 inch lined paper in unopened packages for each applicant's use in completing the examination. The examiner shall distribute these pads to the applicants.
5. Applicants may bring pens, pencils, calculators or slide rules into the examination room. Only black ink or dark pencils should be used for writing answers to questions.
6. The licensee shall provide one set of steam tables for each applicant. The examiner shall distribute the steam tables to the applicants. No wall charts, models, and/or other training materials shall be present in the examination room. No other equipment or reference material shall be allowed unless provided by the examiner.

### ENCLOSURE 3

#### PROCEDURES FOR THE ADMINISTRATION OF WRITTEN EXAMINATIONS

1. Check identification badges and construct floor plan showing applicants names and relative locations.
2. Pass out examinations and all handouts. Remind applicants not to review examination until instructed to do so.

#### READ THE FOLLOWING INSTRUCTIONS VERBATIM:

During the administration of this examination the following rules apply:

1. Cheating on the examination means an automatic denial of your application and could result in more severe penalties.
2. After the examination has been completed, you must sign the statement on the cover sheet indicating that the work is your own and you have not received or given assistance in completing the examination. This must be done after you complete the examination.

#### READ THE FOLLOWING INSTRUCTIONS:

1. Restroom trips are to be limited and only one applicant at a time may leave. You must avoid all contacts with anyone outside the examination room to avoid even the appearance or possibility of cheating.
2. Use black ink or dark pencil only to facilitate legible reproductions.
3. Print your name in the blank provided in the upper right-hand corner of the examination cover sheet.
4. Fill in the date on the cover sheet of the examination (if necessary).
5. Use only the paper provided for your answers.
6. Print your name in the upper right-hand corner of the first page of each section of the answer sheet and initial each succeeding page.
7. Consecutively number each answer sheet.
8. Write "End of Category \_\_" at the end of your answers to a category.
9. Start each category on a new page.
10. Write on only one side of the paper.
11. Write "Last Page" on the last answer sheet.



12. Number each answer to correspond with the question, for example, 1.4, 6.3.
13. Skip at least three lines between each answer.
14. Separate completed answer sheets from the pad and place them face down on your desk or table.
15. Use abbreviations only if they are commonly used in facility literature. Avoid using symbols such as < or > signs to avoid a simple transposition error resulting in an incorrect answer. Write it out.
16. The point value for each question is indicated in parentheses after the question. The amount of blank space on an examination question page is NOT an indication of the depth of answer required.
17. Show all calculations, methods, or assumptions used to obtain an answer and justify your answer for any short answer or essay questions, whether indicated in the question or not.
18. Partial credit may be given. Therefore, ANSWER ALL PARTS OF THE QUESTION AND DO NOT LEAVE ANY ANSWER BLANK.
19. Proportional grading will be applied. Any additional wrong information that is provided may count against you. For example, if a question is worth one point and asks for four responses, each of which is worth 0.25 points, and you give five responses, each of your responses will be worth 0.20 points. If one of your five responses is incorrect, 0.20 will be deducted and your total credit for that question will be 0.80 instead of 1.00 even though you got the four correct answers.
20. All true/false questions have two parts. First, select either true or false. Second, explain your choice. If your explanation is incorrect, no credit will be given for a correct true/false choice. This is to preclude guessing.
21. If the intent of a question is unclear, ask questions of the examiner only.
22. When you complete your examination, you shall:
  - a. Assemble your examination as follows:
    - (1) Examination questions on top.

- (2) Examination aids - figures, tables, etc.
- (3) Answer pages including figures which are part of the answer.
- b. Turn in your examination and all pages used to answer the examination questions. Log the stop time on your coversheet.
- c. Turn in all scrap paper and the balance of the paper that you did not use for answering the questions.
- d. When you are done and have turned in your examination, leave the examination area (DEFINE THE AREA). If you are found in this area while the examination is still in progress, your license may be denied or revoked.

ENCLOSURE 4

REQUIREMENTS FOR FACILITY REVIEW OF WRITTEN EXAMINATIONS

1. At the option of the Section Chief, the facility may review the written examination up to two weeks prior to its administration. This review may take place at the facility or in the Regional office at the option of the Chief Examiner. The Chief Examiner will coordinate the details of the review with the facility.

Whenever this option of examination review is utilized, the facility reviewers will sign the following statement prior to being allowed access to the examination.

a. Pre-Examination Security Agreement

I \_\_\_\_\_ agree that I will not knowingly divulge any information concerning the replacement (or initial) examination scheduled for \_\_\_\_\_ to any unauthorized persons. I understand that I am not to participate in any instruction involving those reactor operator or senior reactor operator applicants scheduled to be administered the above replacement (or initial) examination from now until after the examination has been administered.

\_\_\_\_\_  
Signature/Date

In addition, the facility staff reviewers will sign the following statement after the written examination has been administered.

b. Post-Examination Security Agreement

I \_\_\_\_\_ did not, to the best of knowledge, divulge any information concerning the written examination administered on \_\_\_\_\_ to any unauthorized persons. I did not participate in providing any instruction to those reactor operator and senior reactor operator applicants who were administered the examination from the time that I was allowed access to the examination.

\_\_\_\_\_  
Signature/Date

2. Regardless of whether the above examination review option is exercised, immediately following the administration of the written examination, the facility will be provided a copy of the examination with all changes that were made during the examination administration for their review.

If the facility did not review the examination prior to its administration, they will have five (5) working days from the day of the written examination to submit formal comments. If the facility reviewed the examination prior to its administration, any additional comments must be given to an examiner prior to his/her leaving the site at the end of the week of the written examination administration. In either case, the comments will be addressed to the responsible Regional Office by the highest level of corporate management for plant operations, e.g., Vice President for Nuclear Operations. A copy of the submittal will be forwarded to the Chief Examiner, as appropriate. Comments not submitted within the required time frame will be considered for inclusion in the grading process on a case-by-case basis by the Regional Office Section Chief. Should the comment submittal deadline not be met, a long delay in grading the examinations may occur.

3. The following format should be adhered to for submittal of specific comments:
  - a. Listing of NRC Question, answer and reference
  - b. Facility comment/recommendation
  - c. Reference (to support facility comment)

- NOTES:
1. No change to the examination will be made without submittal of a reference to support the facility comment. Any supporting documentation that was not previously supplied, should be provided.
  2. Comments made without a concise facility recommendation will not be addressed.