

OCT 26 1989

Docket No. 50-213

Connecticut Yankee Atomic Power Company  
ATTN: Mr. E. J. Mroczka  
Senior Vice President - Nuclear  
Engineering and Operations  
P. O. Box 270  
Hartford, Connecticut 06141

Gentlemen:

SUBJECT: REACTOR OPERATOR AND SENIOR REACTOR OPERATOR LICENSING EXAMINATIONS  
AND RETAKE OF ONE REQUALIFICATION EXAMINATION

In a telephone conversation between Mr. Joseph M. D'Antonio, Operator Examiner and Mr. R. Heidecker, arrangements were made for the administration of licensing examinations and for the retake of one requalification examination. These examinations are scheduled for the week of January 15, 1990.

To meet the above schedule, it will be necessary for you to furnish the reference material listed in Enclosure 1, "Reference Material Requirements" by November 15, 1989. Any delay in receiving approved, properly bound and indexed reference material, or the submittal of inadequate or incomplete reference material may result in the examination being rescheduled.

For the requalification program evaluation, the NRC examiners will administer the operating and written examinations. The NRC examiners will discuss with the appropriate facility personnel and operators the schedule and the process for these examinations. For the examiners to adequately prepare for this visit, it will be necessary for the facility to furnish the approved items listed in Item 19 of Enclosure 1, "Reference Material Requirements" by November 15, 1989. The NRC reserves the right to postpone NRC administered requalification examinations if the facility generated materials are inadequate for examination preparation.

It is requested that an employee be provided to complete the requalification examination team. The employee shall be an active (per the requirements of 10 CFR 55.53(e) or (f)) SRO from the Haddam Neck Nuclear Power Plant Operations Department. If desired by the facility, and agreed to by the Chief Examiner, an additional employee from the Training Department may be a member of the examination team. This employee shall preferably be an active (per the requirements of 10 CFR 55.53(e) or (f)) SRO, but may be a facility or INPO certified instructor. These individuals must not be scheduled for an NRC administered examination during this visit, or participate as instructors once selected. The facility representatives will be required to certify that they did not knowingly compromise any portion of the examination.

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The facility representatives shall be restricted (1) from knowingly communicating by any means the content or scope of the examination to unauthorized persons and (2) from participating in any facility programs such as instruction, examination, or tutoring in which an identified requalification examinee(s) will be present. These restrictions shall apply after their first involvement with the examination or knowledge of its contents.

In addition to these individuals, the assignment of a simulator operator is requested 14 days prior to the scheduled requalification examination date. The simulator operator will be under examination security restrictions similar to those above.

The facility management is responsible for providing adequate space and accommodations to properly develop and conduct the written examinations. Enclosure 2, "Requirements for Administration of Written Examinations," describes our requirements for administering the written examinations.

Enclosure 3, contains the "NRC Rules and Guidance for Examinees" that will be in effect during the administration of the written examinations. The facility management is responsible for ensuring that all operators are aware of these rules.

The requalification examinations and the subsequent evaluation of the facility requalification program will be performed in accordance with ES-601. Enclosure 4, "Administration of Requalification Examinations", describes our requirements for developing and conducting the examinations. Also, a facility operations management representative (as a minimum, first level above shift supervisor) should observe the simulation facility examination process at the site.

The facility staff review of the written examination for the replacement examinations will be conducted in accordance with requirements specified in Enclosure 5, "Requirements for Facility Review of Written Examinations."

To better document simulator examinations, the Chief Examiner will have the simulator operator record predetermined plant conditions (i.e., plant pressure, temperature, etc.), for each simulator scenario. The applicants will be responsible for providing this information, with any appeal of a simulator operating examination. Therefore, your training staff should retain the original simulator examination scenario information until all applicants who took examinations have either passed the operating examination, accepted the denial of their license or requalification examination failure, or filed an appeal.

All completed senior reactor operator license applications should be submitted at least 30 days before the first examination dates so that we will be able to review the training and experience of the candidates, 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 before the examination dates, it is likely that a postponement will be necessary.

Mr. R. Heidecker has been informed of the above requirements.

This request is covered by Office of Management and Budget Clearance Number 3150-0101 which expires May 31, 1992. The estimated average burden is 7.7 hours per response, including gathering, xeroxing and mailing the required material. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Records and Reports Management Branch, Division of Information Support Services, Office of Information Resources Management, U.S. Nuclear Regulatory Commission, Washington, D. C. 20555; and to the Paperwork Reduction Project (3150-0101), Office of Management and Budget, 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 the undersigned at (215) 337-5211.

Sincerely,

Peter W. Eselgroth, Chief  
PWR Section  
Operations Branch  
Division of Reactor Safety

Enclosures:

1. Reference Material Requirements
2. Requirements for Administration of Written Examinations
3. NRC Rules and Guidelines for Written Examinations
4. Administration of Requalification Examinations
5. Requirements for Facility Review of Written Examinations

cc w/encls:

W. D. Romberg, Vice President, Nuclear Operations  
D. B. Miller, Station Superintendent  
D. J. Nordquist, Director of Quality Services  
R. M. Kacich, Manager, Generation Facilities Licensing  
S. E. Scafe, Station Superintendent, Millstone  
R. Heidecker, Training Manager  
Gerald Garfield, Esquire  
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bcc w/encls:  
Region I Docket Room (with concurrences)  
J. Dyer, EDO  
A. Wang, LPM, NRR  
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M. Conner, SALP Reports Only  
J. Shedlosky, SRI, Haddam Neck  
W. Raymond, SRI, Millstone 1&2  
Chief Examiner  
Assigned Examiners  
OL Facility File  
DRS Files (2)

bcc w/o enclosures:  
Management Assistant, DRMA

DRS:RI  
Prell/ajh  
10/23/89

DRS:RI  
Espigroth  
10/23/89

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10/16/89



## ENCLOSURE 1

### REFERENCE MATERIAL REQUIREMENTS

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

A copy of the facility Job and Task Analysis (JTA), specifying the knowledges and abilities required of an operator at the facility. Each particular knowledge and/or ability will include an importance rating correlating it to ensuring the health and the safety of the public. If a JTA is not furnished, the Knowledges and Abilities Catalog for Nuclear Power Plant Operators, NUREG 1122 (1123) will be used to establish content validity for the examination.

All Job Performance Measures (JPMs) used to ascertain the competence of the operators in performing tasks within the control room complex and, as identified in the facility JTAs, outside of the control room, i.e., local operations.

Training materials shall include all substantive written material used for preparing applicants for initial RO and SRO licensing. The written material shall include learning objectives and the details presented during lectures, rather than outlines. Training materials shall be identified by plant and unit, bound, tabbed, and indexed. Training materials which include the following shall 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.
2. Complete Procedure Index (including surveillance procedures, etc.)
  3. All Administrative Procedures (as applicable to reactor operation or safety)
  4. All integrated plant procedures (normal or general operating procedures)
  5. All emergency procedures (emergency instructions, abnormal or special procedures)

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)
8. Fuel-handling and core-loading procedures, (initial core-loading procedure, when appropriate)
9. All annunciator/alarm procedures
10. Radiation protection manual (radiation control manual or procedures)
11. Emergency plan implementing procedures
12. Technical Specifications (and interpretations, if available) for all units for which licenses are sought.
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. Licensee Event Reports for the previous two years.
17. Examination Question Bank specific to the facility training program which may be used in the written or operating examinations. In particular, multiple choice questions for the written examination.
18. The following information on the plant reference simulation facility
  - a. List of all preprogrammed initial conditions
  - b. List of all preset malfunctions with a clear identification number. The list shall include cause and effect information. Specifically, for each malfunction a concise description of the expected result, or range of results, that will occur upon implementation shall be provided. Additionally, an indication of which annunciators are to be initially expected should be given.
  - c. A description of simulator failure capabilities for valves, breakers, indicators and alarms.
  - d. Where the capability exists, an explanation of the ability to vary

the severity of a particular malfunction shall be provided, i.e., ability to vary the size of a given LOCA or steam leak, or the ability to cause a slow failure of a component such as a feed pump, turbine generator or major valve (e.g., drifting shut of a main feed-water control valve).

- e. An identification of modeling conditions/problems that may impact the examination.
  - f. Identification of any known performance test discrepancies not yet corrected.
  - g. Identification of differences between the simulator and the reference plant's control room
  - h. Copies of facility generated scenarios that expose the applicants to situations of degraded heat removal capability and containment challenges (PWR and BWR). (Voluntary).
  - i. Simulator instructors manual (voluntary by licensee).
  - j. Description of the scenarios used for the training class (voluntary by licensee).
19. The following items must be provided to the NRC 60 days prior to the date of the requalification examinations:
- a. Proposed RO and SRO requalification examination test items. (A minimum of 350 per section of the examination).

Since the written examination is open reference, examination items must meet the following:

- a. Items that require only memorization or recall are not permitted;
- b. Items should require that the examinee comprehend, interpret, integrate, or apply available information;
- c. Items should contain situations, aspects, or conditions that do not duplicate lesson plans or references; and
- d. Items should require examinees to locate and use references.

The written examination will be composed of two sections, each designed to be completed in 1½ hours. Each section will be separate. Section A will be administered on a static simulator; Section B will be administered in a classroom setting. Section A is designed to evaluate the operator's knowledge of plant systems, integrated plant operations, and instrumentation and controls. In addition, recognition of Technical Specification LCOs and the operator's ability to diagnose postulated events should be

evaluated. Section B of the written examination is designed to evaluate the ability of the operator to analyze a given set of conditions and determine the proper procedural and/or administrative guidance.

b. A minimum of 15 scenarios

The scenarios should sample areas such as LERs, emergency and abnormal procedures, and design and procedural changes that exercise the crew's ability to use facility procedures in accident prevention and mitigation. The scenarios should evaluate each crew member as appropriate to his/her license, and shall exercise their abilities in the use of Emergency Operating Procedures, Technical Specifications, and the Emergency Plan. The scenario's net time (not including time spent on briefings, setup or simulation facility problems) should average 50 minutes, based upon real time performance.

c. For the plant walk-through examination

1. A list of systems and topics appropriate to the plant walk-through examination that were covered during the requalification cycle and are important to safety.
2. Seventy-five (75) job performance measures.

These performance measures should be in-plant operator functions, that are required for the safe operation of the facility. They shall include acceptable performance criteria.

- d. A sampling plan shall be provided by the facility which indicates the relative emphasis of topics which were included in the most recent requalification training cycle and indicates the sampling of topics that will be tested by the proposed test items.
- e. Any additional reference material required for requalification examination preparation that was not included in items 1 through 18 above.

The above reference material shall be approved, final issues and shall 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 the examinations. All procedures and reference material shall 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 arrangements 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. No wall charts, models, and/or other training materials shall be present in the examination room.
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 8½ 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 other equipment or reference material shall be allowed unless provided by the examiner.

### ENCLOSURE 3

#### NRC RULES AND GUIDANCE FOR EXAMINEES

1. Use black ink or dark pencil ONLY to facilitate legible reproductions.
2. Print your name in the blank provided on the cover sheet of the examination.
3. Fill in the date on the cover sheet of the examination, if necessary.
4. Answer each question on the examination. If additional paper is required, use only the lined paper provided by the examiner. Do not write on the back.
5. Use abbreviations only if they are commonly used in facility literature.
6. The point value for each question is indicated in parentheses after the question and can be used as a guide for the depth of answer required.
7. Show all calculations, methods or assumptions used to obtain an answer to a mathematical problem, whether asked for in the question or not.
8. Unless solicited, the location of references need not be stated.
9. Partial credit may be given for other than multiple choice questions. Therefore, ANSWER ALL PARTS OF THE QUESTION AND DO NOT LEAVE ANY ANSWERS BLANK.
10. Partial credit will NOT be awarded for questions using multiple choice selection formatting. The correct answer must stand on its own merit.
11. 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.
12. Ensure that all information you wish to have evaluated as a part of your answer is on your answer sheet. Scrap paper will be disposed of immediately following the examination without review.
13. If parts of the examination are not clear with respect to their intent, ask questions of the examiner only.
14. You must sign the statement on the cover sheet that indicates the work on the examination is your own and that you have not received or been given any assistance in completing the examination. This must be signed AFTER the examination has been completed.

15. Restroom trips are to be limited and only one examinee at a time may leave. You must avoid all contact with anyone outside the examination room to avoid even the appearance or possibility of examination compromise.
16. Cheating on the examination would result in automatic denial or revocation of your license and could result in more severe penalties.
17. (Requalification Examinations only). Each section of the examination is designed to take approximately 90 minutes to complete. You will be given two hours to complete each section for a total of four hours. Each question has been time validated, with the allotted time based on an average of knowledgeable persons answering the question. You should be aware that the times DO NOT allow for looking up or verifying each answer.
18. (Requalification Examinations only). Due to the existence of questions that will require all examinees to refer to the same indications or controls, particular care must be taken to maintain individual examination security and avoid any possibility of compromise or appearance of cheating.
19. When you are finished and have turned in your completed examination, leave the examination area.

#### ENCLOSURE 4

##### ADMINISTRATION OF REQUALIFICATION EXAMINATIONS

1. Approximately 20% of the facility licensed operators shall be selected for evaluation. Normally, the crew currently in the requalification cycle will be selected. A random sample without replacement will be used to preclude a satisfactory operator from being subject to the reexamination by the NRC during the term of the license. The sample will include other shifts made up of licensed personnel who are not routinely performing shift duties.
2. The simulator and a simulator operator(s) will be provided for examination development. The date(s) and duration of time needed to develop the examinations will be agreed upon by the chief examiner and the facility.
3. The reference material used in the simulator will be reviewed by the chief examiner, no material will be made available that is solely used for training.
4. Items 1 and 2 from Enclosure 2, "Requirements for Administration of Written Examinations" apply to Section B of the written examination.
5. Copies of reference material for Section B of the written examination will be provided for each candidate. The reference material will be reviewed by the chief examiner and will consist of Technical Specifications, operating/abnormal procedures, administrative procedures, Emergency Plans as available to the plant operators.
6. Video taping capabilities can be utilized. The facility should contact the chief examiner for restrictions related to its usage.
7. Since common tasks and detailed systems knowledge will be probed during the walk through portion of the operating test, operators will be requested not to discuss the walk through with other examinees until after the complete examination has been administered.
8. An attempt will be made to distinguish between RO and SRO knowledge and abilities to the extent that such a distinction is supported by the facility training materials.



ENCLOSURE 5

REQUIREMENTS FOR FACILITY REVIEW OF WRITTEN EXAMINATIONS

1. At the option of the Chief Examiner, 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. The Chief Examiner will coordinate the details of the review with the facility. An NRC examiner will always be present during the review.

When this option of examination review is utilized, the facility reviewers will sign the following statement prior to being allowed access to the examination. The examination or written notes will not be retained by the facility.

a. Pre-Examination Security Agreement

I \_\_\_\_\_ agree that I will not knowingly divulge any information concerning the replacement 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 examination from now until after the examination has been administered. I understand that violation of this security agreement could result in the examination being voided.

\_\_\_\_\_  
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 staff shall be provided a marked up copy of the examination and the answer key. The copy of the written examination shall include pen and ink changes made to questions during the examination administration.

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 on site 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 examination 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 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.
4. A two hour post examination review may be held at the discretion of the Chief Examiner. If this review is held, the facility staff should be informed that only written comments that are properly supported will be considered in the grading of the examination.

## ENCLOSURE 1

### REFERENCE MATERIAL REQUIREMENTS

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

A copy of the facility Job and Task Analysis (JTA), specifying the knowledges and abilities required of an operator at the facility. Each particular knowledge and/or ability will include an importance rating correlating it to ensuring the health and the safety of the public. If a JTA is not furnished, the Knowledges and Abilities Catalog for Nuclear Power Plant Operators, NUREG 1123 will be used to establish content validity for the examination.

All Job Performance Measures (JPMs) used to ascertain the competence of the operators in performing tasks within the control room complex and, as identified in the facility JTAs, outside of the control room, i.e., local operations.

Training materials shall include all substantive written material used for preparing applicants for initial SRO licensing. The written material shall include learning objectives and the details presented during lectures, rather than outlines. Training materials shall be identified by plant and unit, bound, tabbed, and indexed. Training materials which include the following shall be provided:

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- 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.

2. Complete Procedure Index (including surveillance procedures, etc.)
3. All Administrative Procedures (as applicable to reactor operation or safety)
4. All integrated plant procedures (normal or general operating procedures)
5. All emergency procedures (emergency instructions, abnormal or special procedures)



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)
8. Fuel-handling and core-loading procedures, (initial core-loading procedure, when appropriate)
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10. Radiation protection manual (radiation control manual or procedures)
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12. Technical Specifications (and interpretations, if available) for all units for which licenses are sought.
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. Licensee Event Reports for the previous two years.
17. Examination Question Bank specific to the facility training program which may be used in the written or operating examinations. In particular, multiple choice questions for the written examination (voluntary by licensee).
18. The following information on the plant reference simulation facility
  - a. List of all preprogrammed initial conditions
  - b. List of all preset malfunctions with a clear identification number. The list shall include cause and effect information. Specifically, for each malfunction a concise description of the expected result, or range of results, that will occur upon implementation shall be provided. Additionally, an indication of which annunciators are to be initially expected should be given.
  - c. A description of simulator failure capabilities for valves, breakers, indicators and alarms.



- d. Where the capability exists, an explanation of the ability to vary the severity of a particular malfunction shall be provided, i.e., ability to vary the size of a given LOCA or steam leak, or the ability to cause a slow failure of a component such as a feed pump, turbine generator or major valve (e.g., drifting shut of a main feed-water control valve).
  - e. An identification of modeling conditions/problems that may impact the examination.
  - f. Identification of any known performance test discrepancies not yet corrected.
  - g. Identification of differences between the simulator and the reference plant's control room
  - h. Copies of facility generated scenarios that expose the applicants to situations of degraded heat removal capability and containment challenges (voluntary by licensee).
  - i. Simulator instructors manual (voluntary by licensee).
  - j. Description of the scenarios used for the training class (voluntary by licensee).
19. The following items must be provided to the NRC 60 days prior to the date of the requalification examinations:

- a. Proposed RO and SRO requalification examination test items. (A minimum of ~~20~~<sup>350</sup> per section of the examination).

Since the written examination is open reference, examination items must meet the following:

- a. Items that require only memorization or recall are not permitted;
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knowledge of plant systems, integrated plant operations, and instrumentation and controls.

In addition, recognition of Technical Specification LCOs and the operator's ability to diagnose postulated events should be evaluated. Section B of the written examination is designed to evaluate the ability of the operator to analyze a given set of conditions and determine the proper procedural and/or administrative guidance.

- b. A minimum of 15 scenarios.

The scenarios should sample areas such as LERs, emergency and abnormal procedures, and design and procedural changes that exercise the crew's ability to use facility procedures in accident prevention and mitigation. The scenarios should evaluate each crew member as appropriate to his/her license, and shall exercise their abilities in the use of Emergency Operating Procedures, Technical Specifications, and the Emergency Plan. The scenario's net time (not including time spent on briefings, setup or simulation facility problems) should average 50 minutes, based upon real time performance.

- c. For the plant walk-through examination:

1. A list of systems and topics appropriate to the plant walk-through examination that were covered during the requalification cycle and are important to safety.
2. Seventy-five (75) job performance measures.

These performance measures should be in-plant and control room operator functions, that are required for the safe operation of the facility. They shall include acceptable performance criteria.

- d. A sampling plan shall be provided by the facility which indicates the relative emphasis of topics which were included in the most recent requalification training cycle and indicates the sampling of topics that will be tested by the proposed test items.
- e. Any additional reference material required for requalification examination preparation that was not included in items 1 through 18 above.

The above reference material shall be approved, final issues and shall 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 the examinations. All procedures and reference material shall 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 arrangements 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. No wall charts, models, and/or other training materials shall be present in the examination room.
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 other equipment or reference material shall be allowed unless provided by the examiner.



### ENCLOSURE 3

#### NRC RULES AND GUIDANCE FOR EXAMINEES

1. Use black ink or dark pencil ONLY to facilitate legible reproductions.
2. Print your name in the blank provided on the cover sheet of the examination.
3. Fill in the date on the cover sheet of the examination, if necessary.
4. Answer each question on the examination. If additional paper is required, use only the lined paper provided by the examiner. Do not write on the back side of the page.
5. Use abbreviations only if they are commonly used in facility literature.
6. The point value for each question is indicated in parentheses after the question and can be used as a guide for the depth of answer required.
7. Show all calculations, methods or assumptions used to obtain an answer to a mathematical problem, whether asked for in the question or not.
8. Unless solicited, the location of references need not be stated.
9. Partial credit may be given for other than multiple choice questions. Therefore, ANSWER ALL PARTS OF THE QUESTION AND DO NOT LEAVE ANY ANSWERS BLANK.
10. Partial credit will NOT be awarded for questions using multiple choice selection formatting. The correct answer must stand on its own merit.
11. 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.
12. Ensure that all information you wish to have evaluated as part of your answer is on your answer sheet. Scrap paper will be disposed of immediately following the examination without review.
13. If parts of the examination are not clear with respect to their intent, ask questions of the examiners.
14. You must sign the statement on the cover sheet that indicates the work on the examination is your own and that you have not received or been given any assistance in completing the examination. This must be signed AFTER the examination has been completed.



15. Restroom trips are to be limited and only one examinee at a time may leave. You must avoid all contact with anyone outside the examination room to avoid even the appearance or possibility of examination compromise.
16. Cheating on the examination would result in automatic denial or revocation of your license and could result in more severe penalties.
17. (Requalification Examinations only) Each section of the examination is designed to take approximately 90 minutes to complete. You will be given two hours to complete each section for a total of four hours. Each question has been time validated, with the allotted time based on an average of knowledgeable persons answering the question. You should be aware that the times DO NOT allow for looking up or verifying each answer.
18. (Requalification Examinations only) Due to the existence of questions that will require all examinees to refer to the same indications or controls, particular care must be taken to maintain individual examination security and avoid any possibility of compromise or appearance of cheating.
19. When you are finished and have turned in your completed examination, leave the examination area.

## ENCLOSURE 4

### ADMINISTRATION OF REQUALIFICATION EXAMINATIONS

1. Approximately twenty percent of the facility licensed operators shall be selected for evaluation. Normally, the crew currently in the requalification cycle will be selected. A random sample without replacement will be used to preclude a satisfactory operator from being subject to the re-examination by the NRC during the term of the license. The sample will include other shifts (s) made up of licensed personnel who are not routinely performing shift duties.
2. The simulator and a simulator operator(s) will be provided for examination development. The date(s) and duration of time needed to develop the examinations will be agreed upon by the Chief Examiner and the facility.
3. The reference material used in the simulator will be reviewed by the Chief Examiner. No material will be made available that is solely used for training.
4. Items 1 and 2 from Enclosure 2, "Requirements for Administration of Written Examinations" apply to Section B of the written examination.
5. Copies of reference material for Section B of the written examination will be provided for each candidate. The reference material will be reviewed by the Chief Examiner and will consist of Technical Specifications, operating/abnormal procedures, administrative procedures, Emergency Plans as available to the plant operators.
6. Video taping capabilities can be utilized. The facility should contact the chief examiner for restrictions related to its usage.
7. Since common tasks and detailed systems knowledge will be probed during the walk through portion of the operating test, operators will be requested not to discuss the walk through with other examinees until after the complete examination has been administered.
8. An attempt will be made to distinguish between RO and SRO knowledge and abilities to the extent that such a distinction is supported by the facility training materials.

ENCLOSURE 5

REQUIREMENTS FOR FACILITY REVIEW OF WRITTEN EXAMINATIONS

1. At the option of the Chief Examiner, 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. The Chief Examiner will coordinate the details of the review with the facility. An NRC examiner will always be present during the review.

When this option of examination review is utilized, the facility reviewers will sign the following statement prior to being allowed access to the examination. The examination or written notes will not be retained by the facility.

a. Pre-Examination Security Agreement

I \_\_\_\_\_ agree that I will not knowingly divulge any information concerning the replacement 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 examination from now until after the examination has been administered. I understand that violation of this security agreement could result in the examination being voided.

\_\_\_\_\_  
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 staff shall be provided a marked up copy of the examination and the answer key. The copy of the written examination shall include pen and ink changes made to questions during the examination administration.

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 on site 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 examination 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 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.

4. A two hour post examination review may be held at the discretion of the Chief Examiner. If this review is held, the facility staff should be informed that only written comments that are properly supported will be considered in the grading of the examination.