UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

July 10, 2019

Mr. John P. Foster
Director of Reactor Operations
Nuclear Reactor Laboratory
Massachusetts Institute of Technology
138 Albany Street, MS NW12-110
Cambridge, MA 02139

SUBJECT: EXAMINATION CONFIRMATION LETTER NO. 50-020/OL-19-03, MASSACHUSETTS INSTITUTE OF TECHNOLOGY

Dear Mr. Queirolo:

Arrangements have been made for the administration of operator licensing examinations at the Massachusetts Institute of Technology Research Reactor. The written and operating examination are scheduled for the week of September 9, 2019.

To meet this schedule, please furnish the material listed in Enclosure 1, "Reference Material for Reactor/Senior Operator Licensing Examinations," in either hard copy to the address below or e-mail to Paulette.Torres@nrc.gov as soon as possible.

ATTN: Paulette Torres
M/S O-12 D-20
U.S. Nuclear Regulatory Commission
11555 Rockville Pike
Rockville, MD 20852-2738

Enclosure 2, "Administration of Written Examinations," describes your responsibilities for conducting written examinations. Enclosure 3, "Procedures for the Administration of Written Examinations," describes applicant responsibilities during the administration of the written examination. Please ensure that all applicants are aware of these rules.

Your review of the written examination will be conducted in accordance with the procedures specified in Enclosure 4, "Facility Review of Written Examinations."

Signed operator license applications in accordance with 10 CFR 55 Subpart D, "Applications," certifying that all applicants have successfully completed the facility licensee's requirements to be licensed as an operator or senior operator and that all applicants meet the medical requirements, must be submitted at least 14 days before the start date of the examination. This will allow the chief examiner time to review and process the applications. If this review cannot be completed in time to decide an applicant's eligibility, that applicant will not be permitted to sit for the examination. Therefore, it is recommended that license applications be timely provided to ensure an appropriate level of review.

The U.S. Nuclear Regulatory Commission (NRC) has posted copies of the application forms, "Personal Qualification Statement—Licensee" (NRC Form 398), and "Certification of Medical History by Facility Licensee" (NRC Form 396), on the agency's Web site. The forms are in Adobe Acrobat® format. https://www.nrc.gov/reading-rm/doc-collections/forms/nrc398.pdf https://www.nrc.gov/reading-rm/doc-collections/forms/nrc396.pdf

Paperwork Reduction Act Statement

This letter contains information collection requirements that are subject to the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.). These information collections were approved by the Office of Management and Budget (OMB), approval numbers 3150-0018, 3150-0024 and 3150-0090.

The burden to the public for these mandatory information collections is estimated to average 7.45 hours per combined response for completing the information collections. Send comments regarding this burden estimate or any other aspect of these information collections, including suggestions for reducing the burden, to the Records and FOIA/Privacy Services Branch (T-5 F52), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by Internet electronic mail to INFOCOLLECTS@NRC.GOV; and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0018), Office of Management and Budget, Washington, DC 20503.

The NRC may not conduct or sponsor, and a person is not required to respond to, a request for information or an information collection requirement unless the requesting document displays a currently valid OMB control number.

If you have any questions regarding the examination procedures and requirements, please contact me at (301) 415-5656, or e-mail at Paulette.Torres@nrc.gov.

Sincerely,

Paulette A. Torres

Paulette Torres, Chief Examiner
Research and Test Reactors Oversight Branch
Division of Licensing Projects
Office of Nuclear Reactor Regulation

Docket No. 50-020

Enclosures:
1. Reference Material for Reactor/Senior Operator Licensing Examinations
2. Administration of Written Examinations
3. Procedures for the Administration of Written Examinations
4. Facility Review of Written Examinations

cc w/o enclosures: See next page

cc:

City Manager
City Hall
Cambridge, MA 02139

Department of Environmental Protection
One Winter Street
Boston, MA 02108

Mr. Jack Priest, Director
Radiation Control Program
Department of Public Health
529 Main Street
Schrafft Center, Suite 1M2A
Charlestown, MA 02129

Mr. John Giarrusso, Chief
Planning and Preparedness Division
Massachusetts Emergency Management Agency
400 Worcester Road
Framingham, MA 01702-5399

Test, Research and Training
Reactor Newsletter
Attention: Amber Johnson
Dept of Materials Science and Engineering
University of Maryland
4418 Stadium Drive
College Park, MD 20742-2115

Ms. Sarah M. Don, Reactor Superintendent
Massachusetts Institute of Technology
Nuclear Reactor Laboratory
Research Reactor
138 Albany Street, MS NW12-116B
Cambridge, MA 02139

REFERENCE MATERIAL FOR REACTOR/ SENIOR REACTOR OPERATOR LICENSING EXAMINATIONS

1) Training materials including all substantive written material used to prepare applicants for initial reactor operator and senior reactor operator licensing. The material should include learning objectives, if available, and details presented during lectures, rather than outlines. Training materials should be identified, bound, and indexed. Training materials should include the following:

   (a) System descriptions including descriptions of all operationally relevant flowpaths, components, controls, and instrumentation. System training material should draw parallels to the actual procedures used for operating an applicable system.

   (b) Learning objectives, student handouts, and lesson plans (including training manuals, facility orientation manual, system descriptions, reactor theory, thermodynamics).

   (c) Complete and operationally useful descriptions of all safety-system interactions and secondary interactions under emergency and abnormal conditions, including consequences of anticipated operator error, maintenance error, and equipment failure.

   (d) Training material used to clarify and strengthen understanding of emergency operating procedures.

2) Complete Procedure Index (including temporary procedures).

3) All administrative procedures as applicable to reactor operation or safety.

4) All integrated facility procedures, normal or general operating procedures, and procedures for experiments.

5) All emergency procedures, emergency instructions, and abnormal or special procedures.

6) Standing orders or procedures changed by reactor supervision and important orders or changes that are safety related and may supersede the regular procedures.

7) A list of all reactor facility surveillances, with copies of all **COMPLETED** surveillances which require the collection of data (e.g., heat balance, rod drop times).

8) Fuel-handling and core-loading procedures and initial core-loading procedure (if appropriate).

9) Any annunciator/alarm procedures, as applicable.

10) Radiation protection manual and radiation control manual or procedures.

11) Emergency plan and any emergency plan implementing procedures (EPIPs).

12) Safety analysis report, technical specifications, and interpretations, if available.

13) System operating procedures, including experiments.

14) Piping and instrumentation diagrams, electrical single-line diagrams, and flow diagrams.

15) Technical data book, and/or facility curve information, as used by operators and facility precautions, limitations, and setpoints.

16) Questions and answers specific to the facility training program, which may be used in the written or operating examinations (voluntary by facility licensee).

17) Facility modification authorizations, which were authorized since the last revision to the safety analysis report.

18) Additional material as requested by the examiners to develop examinations that meet the requirements of the research and test reactor examiner standards and regulations.

The above reference material should be approved, final issues and be so marked. If a facility has not finalized some of the material, the chief examiner should 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 examination.

ADMINISTRATION OF WRITTEN EXAMINATIONS

1) A single room must be provided for administration of the written examination. This room and supporting restroom facilities should be located so as to prevent contact with other facility personnel during the written examination.

2) Minimum spacing is necessary to ensure examination integrity. The chief examiner will determine whether the room has adequate area to support minimum spacing between examination applicants to ensure examination integrity.

3) The chief examiner will review any arrangements made by the facility to give the applicants lunch, coffee, or other refreshments. These arrangements shall comply with Item 1 above.

4) The facility licensee may provide pads of 8.5 by 11-inch lined paper in unopened packages for the applicant's use in completing the examination. The examiner will distribute these pads as needed.

5) Applicants may bring pens, pencils, calculators, or slide rules into the examination room. Black ink or dark pencils should be used for writing answers to questions.

6) The chief examiner must approve any wall charts, models, training materials, equipment, or reference material present in the examination room.

7) The chief examiner will give the facility staff a copy of the written examination with answer key at the beginning of the examination. The facility staff will then have 5 working days to submit formal written comments with supporting documentation regarding written examination questions and answers to the chief examiner.

PROCEDURES FOR THE ADMINISTRATION OF WRITTEN EXAMINATIONS

1) Verify candidate identity.

2) Pass out examinations and handouts. Instruct applicants not to review examination until instructed to do so.

READ THE FOLLOWING INSTRUCTIONS VERBATIM:

1) Cheating on the examination means an automatic denial of your application and could result in more severe penalties.

2) When you have completed your examination, you must sign the statement at the bottom of the cover sheet. This indicates that the work is your own and you have not received or given assistance in completing the examination.

READ THE FOLLOWING INSTRUCTIONS:

With the start of the examination, you must comply with the following rules. These rules are in effect within the examination area, until the last candidate has handed in his or her examination:

1) Restroom trips are limited to only one applicant at a time. You must avoid all contact with anyone outside the examination room to preclude even the appearance 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 corner of the examination cover sheet and each answer sheet.

4) Mark your answers on the answer sheet(s) provided.

5) The point value for each question is shown in brackets after the question.

6) If the intent of a question is unclear, ask questions of the examiner or proctor only.

7) There is a time limit of 1 hour per section of the written examination. For example, a one-section retake examination has a 1-hour time limit, while a normal three-section initial examination has a 3-hour time limit.

8) You must achieve a grade of 70 percent or greater in each category to pass the examination.

9) When turning in your examination, assemble the completed examination with examination questions, examination aids, answer sheets, and all scrap paper. Give the proctor your answer sheet(s) along with the signed cover sheet. Take all other material collected with you out of the examination area.

10) After turning in your examination, leave the examination area. If you are observed in this area while the examination is still in progress, your license may be denied or revoked.

11) During the examination you will be evaluated for your actions as if you were the actual watchstander. Please operate the reactor as if you were licensed, with the exception that you should announce your actions, and then pause momentarily to give the operator of record time to correct you or stop you, if necessary, before you actually perform the action. In addition, the examiner will be observing that you meet all conditions of your license, (e.g., wearing corrective lenses to perform licensed duties).

FACILITY REVIEW OF WRITTEN EXAMINATIONS

1. At the option of the appropriate NRC management, the facility may review the written examination up to 2 weeks before its administration. This review may take place at the facility or an NRC office. The chief examiner will coordinate the details of the review with the facility. An NRC examiner will be present at all times during the review. The facility staff may not retain copies of the examination or any written notes. When using this option, the facility reviewers must sign the following statement before being allowed access to the examination.

a. Pre-examination Security Agreement:

I_____acknowledge that I have acquired specialized knowledge
[Print Name]
concerning the examination scheduled for_____at _____
[Print Date]
[Print Facility Name]
as of the date of my signature below. I agree that I will not knowingly divulge any information concerning this examination to any unauthorized persons. I understand that I am not to participate in any instruction involving those applicants scheduled to be administered the above examination from this date until after the examination has been administered. I further understand that violation of the conditions of this agreement may result in the examinations being canceled and/or enforcement action against myself or the facility licensee by whom I am employed or represent.

_____
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 my knowledge, divulge any
[Print Name]
Information concerning the examinations administered during the week of
_____ at_____or provide any instruction to those applicants
[Print Date] [Print Facility Name]
who were administered the examination from the date I entered into this security agreement until the completion of examination administration.

_____
Signature/Date

2. The facility staff will be provided a copy of the examination and the answer key at the beginning of the examination. A copy will be kept of any pen and ink changes made to questions during the examination administration.

If members of the facility staff did not review the examination before its administration, they will have 5 working days from the day of the written examination to submit formal comments. If the facility staff reviewed the examination before its administration, they must submit any additional comments before the examiner leaves the facility. The reactor supervisor will address the comments to the chief examiner. The NRC will consider comments submitted after the required period on a case-by-case basis. This may cause delays in grading the examinations.

3. The facility licensee should submit comments in the following format:

   - list the question section and number and state the comment along with a recommendation for correction (e.g., delete, two correct answers)
   - support the comment with a reference and provide a copy of the reference if it was not included in the original reference material submitted

NOTES:

1) No change to the examination will be made without a reference to support the facility comment. Provide any supporting documentation not previously supplied.

2) Comments made without a concise facility recommendation will not be addressed.

3) Comments not submitted within the requested time will be included in the grading process on a case-by-case basis as determined by the NRC. Comments not submitted within the requested time will delay the examination grading process.

4) NRC policy is to delete a multiple-choice question that has no correct answer or more than two correct answers and to give credit for either response for questions that have two correct answers.

SUBJECT: EXAMINATION CONFIRMATION LETTER NO. 50-020/OL-19-03, MASSACHUSETTS INSTITUTE OF TECHNOLOGY DATED JULY 10, 2019.

DISTRIBUTION:
PUBLIC
AMendiola
GCastro
P. Boyle
XYin
M.Takacs

ADAMS Accession No.: ML19191A151 **Package: ML19191A146** **NRR-079**

OFFICE	NRR/DLP/PROB:CE	NRR/DLP/PROB:OLA	NRR/DLP/PROB:BC
NAME	PTorres	ZTaru	AMendiola
DATE	07/02/2019	07/09/2019	07/10/2019

OFFICIAL RECORD COPY