



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

December 29, 2017

Mr. Bryan C. Hanson  
Senior Vice President  
Exelon Generation Company, LLC  
President and Chief Nuclear Officer  
Exelon Nuclear  
4300 Winfield Road  
Warrenville, IL 60555

SUBJECT: THREE MILE ISLAND NUCLEAR STATION, UNIT 1 – APPROVAL OF  
CERTIFIED FUEL HANDLER TRAINING AND RETRAINING PROGRAM  
(CAC NO. MF9960; EPID L-2017-LLL-0013)

Dear Mr. Hanson:

By letter dated July 10, 2017 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML17191A451), Exelon Generation Company, LLC (Exelon or the licensee), requested U.S. Nuclear Regulatory Commission (NRC) approval of the Exelon Certified Fuel Handler (CFH) Training and Retraining Program for use at Three Mile Island Nuclear Station, Unit 1 (TMI).

By letter dated June 20, 2017 (ADAMS Accession No. ML17171A151), the licensee submitted a Notification of Permanent Cessation of Power Operations for TMI. In this letter, Exelon provided notification to the NRC of its intent to permanently cease power operations at TMI no later than September 30, 2019.

By letter dated September 6, 2016 (ADAMS Accession No. ML16222A787), the NRC approved the Exelon CFH Training and Retraining Program for use at the Oyster Creek Nuclear Generating Station; Clinton Power Station; and Quad Cities Nuclear Power Station, Units 1 and 2.

After certifications of permanent cessation of operations and of permanent removal of fuel from the reactor vessel for TMI are submitted in accordance with Title 10 of the *Code of Federal Regulations* (10 CFR) 50.82(a)(1)(i) and (ii), the 10 CFR Part 50 license no longer authorizes operation of the reactor or placement or retention of fuel in the reactor vessel. As a result, licensed reactor operators will no longer be required to support plant activities. Instead, approval of a CFH Training and Retraining Program is requested to facilitate activities associated with decommissioning and irradiated fuel handling and management.

The licensee requested NRC approval of the TMI CFH Training and Retraining Program to ensure that the monitoring, handling, storage, and cooling of irradiated fuel is performed in a safe manner. As defined in 10 CFR 50.2, a CFH is a non-licensed operator who has qualified in accordance with a fuel handler training program approved by the NRC. Non-licensed personnel are trained in accordance with 10 CFR 50.120.

B. Hanson

- 2 -

The NRC has reviewed the submittal and based on the enclosed safety evaluation, approves the TMI CFH Training and Retraining Program as requested.

If you have any questions, please contact me at 301-415-2048 or by e-mail to [Justin.Poole@nrc.gov](mailto:Justin.Poole@nrc.gov).

Sincerely,

A handwritten signature in black ink, appearing to read 'J. Poole', with a long horizontal flourish extending to the right.

Justin C. Poole, Project Manager  
Plant Licensing Branch I  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket No. 50-289

Enclosure:  
Safety Evaluation

cc w/enclosure: Distribution via Listserv



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

CERTIFIED FUEL HANDLER TRAINING AND RETRAINING PROGRAM

EXELON GENERATION COMPANY, LLC

THREE MILE ISLAND NUCLEAR STATION, UNIT 1

DOCKET NO. 50-289

1.0 INTRODUCTION

By letter dated June 20, 2017 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML17171A151), Exelon Generation Company, LLC (Exelon or the licensee) submitted a Notification of Permanent Cessation of Power Operations for Three Mile Island, Unit 1 (TMI). In this letter, Exelon provided notification to the U.S. Nuclear Regulatory Commission (NRC or the Commission) of its intent to permanently cease power operations no later than September 30, 2019.

By letter dated July 10, 2017 (ADAMS Accession No. ML17191A451), Exelon requested NRC approval of the Exelon Certified Fuel Handler (CFH) Training and Retraining Program for use at TMI. By letter dated September 6, 2016 (ADAMS Accession No. ML16222A787), the NRC approved the Exelon CFH for use at the Oyster Creek Nuclear Generating Station (Oyster Creek); Clinton Power Station (Clinton); and Quad Cities Nuclear Power Station, Units 1 and 2 (Quad Cities).

After certifications of permanent cessation of power operations and permanent removal of fuel from the reactor vessel for TMI are submitted in accordance with Title 10 of the *Code of Federal Regulations* (10 CFR), Part 50, Section 82(a)(1)(i) and (ii), and pursuant to 10 CFR 50.82(a)(2), the 10 CFR Part 50 license will no longer authorize reactor operation or placement or retention of fuel in the reactor vessel. As a result, licensed reactor operators will no longer be required to support plant operating activities. Instead, approval of a CFH Training and Retraining Program is requested to facilitate activities associated with decommissioning and irradiated fuel handling and management.

The proposed CFH Training and Retraining Program is to be used to satisfy training requirements for the plant personnel responsible for supervising and directing the monitoring, storage, handling, and cooling of irradiated nuclear fuel in a manner consistent with ensuring the health and safety of the public. Section 10 CFR 50.2, "Definitions," requires that CFHs be qualified in accordance with an NRC-approved training program.

2.0 REGULATORY EVALUATION

Pursuant to 10 CFR 50.120(b), each holder of an operating license shall establish, implement, and maintain a training program derived from a systems approach to training (SAT) (as defined

in 10 CFR 55.4), providing for the training and qualification of, among other nuclear power plant personnel, non-licensed operators. As stated in 10 CFR 50.2, "*Certified fuel handler* means, for a nuclear power reactor facility, a non-licensed operator who has qualified in accordance with a fuel handler training program approved by the Commission." Under 10 CFR 50.54(y), at a nuclear power reactor facility for which the licensee has certified that operations have permanently ceased and fuel has been permanently removed from the reactor vessel, a CFH is authorized to approve taking reasonable action that departs from a license condition or a technical specification in an emergency when this action is immediately needed to protect the public health and safety and no action consistent with license conditions and technical specifications that can provide adequate or equivalent protection is immediately apparent.

In its Proposed Rule, "Decommissioning of Nuclear Power Reactors," published in the *Federal Register* on July 20, 1995 (60 FR 37374), the Commission explained that a certified fuel handler at a permanently shutdown and defueled nuclear power reactor undergoing decommissioning has the requisite knowledge and experience to evaluate plant conditions and make such judgements. The Final Rule, published in the *Federal Register* on July 29, 1996 (61 FR 39278), adopted a definition of "Certified Fuel Handler" in 10 CFR 50.2.

The regulatory framework concerning operator and fuel handler staffing was discussed by the NRC staff in SECY-00-145, "Integrated Rulemaking Plan for Nuclear Power Plant Decommissioning," Attachment 1, "Integrated Rulemaking Plan for Emergency Planning, Insurance, Safeguards, Staffing and Training, and Backfit at Decommissioning Nuclear Power Plants" dated June 28, 2000 (ADAMS Accession No. ML003721626), which states, in part:

The certified fuel handler is intended to be the onshift licensee representative who is not only responsible for safe fuel handling operations at a decommissioning plant, but is always present on shift to ensure the safe maintenance and storage of spent fuel and the overall safety of any decommissioning-related activities at the facility.

In addition, the certified fuel handler must be qualified in accordance with a certified fuel handler training program approved by the Commission. However, there are no regulations besides the definition that specifies the training requirements for the certified fuel handler.

Considering the definition of CFH in 10 CFR 50.2 and the background provided by the Final Rule, "Decommissioning of Nuclear Power Reactors," published in the *Federal Register* on July 29, 1996, which added the definition plus the insights provided in SECY-00-145, the NRC staff determined that an acceptable CFH training program should ensure that the trained individual has requisite knowledge and experience in spent fuel handling and storage and reactor decommissioning, and is capable of evaluating plant conditions and exercising prudent judgment for emergency action decisions. In addition, since the CFH is defined as a non-licensed operator, the NRC staff also used the criteria in 10 CFR 50.120, "Training and qualification of nuclear power plant personnel," and assessed the program against the elements of a SAT provided in the definitions section of 10 CFR 55.4.

Following the issuance of the 1996 decommissioning rule, the NRC commenced the review and approval of CFH training programs for permanently shutdown and defueled reactors consistent with the requirements in the rule. Nuclear power plants that are permanently shut down and defueled would reassess their staffing plans related to decommissioning organization structure; retaining, reassigning, or releasing staff; and meeting minimum staffing requirements in

technical specifications and regulatory required programs (e.g., emergency response organizations, fire brigade, security, etc.). The effort balanced personnel and plant status commensurate with the reduced risk once the certifications associated with permanent cessation of operations and permanent defueling had been submitted. Included in the effort was the transition from licensed operators to CFHs. With a simplified operating configuration in the permanently shutdown and defueled condition, licensed operators were replaced with CFHs following NRC approval of the CFH training program. Consistent with these changes, the training and requalification programs required by 10 CFR Part 55, "Operators' Licenses," were modified to reflect the reduced staffing levels and responsibilities of the operations staff.

Past practice of the NRC staff included reviewing the proposed CFH training program to confirm that the program was based on a systems approach to training as defined in 10 CFR 55.4. Examples of such precedents include NRC safety evaluations for Maine Yankee Atomic Power Plant, dated November 26, 1997 (Legacy Library Accession No. 9712040233), and for Zion Nuclear Power Station, Units 1 and 2, dated July 20, 1998 (Legacy Library Accession No. 9807240263). In more recent years, the NRC staff has approved CFH training programs for Kewaunee Power Station, dated May 12, 2014 (ADAMS Accession No. ML14104A046); Crystal River Unit 3 Nuclear Generating Plant, dated June 26, 2014 (ADAMS Accession No. ML14155A181); San Onofre Nuclear Generating Station, Units 2 and 3, dated August 1, 2014 (ADAMS Accession No. ML13268A165); Vermont Yankee Nuclear Power Station, dated October 1, 2014 (ADAMS Accession No. ML14162A209); Oyster Creek, Clinton, and Quad Cities, dated September 6, 2016 (ADAMS Accession No. ML16222A787); James A. Fitzpatrick Nuclear Power Plant, dated October 17, 2016 (ADAMS Accession No. ML16259A347); and Pilgrim Nuclear Power Station, dated April 12, 2017 (ADAMS Accession No. ML17058A325).

The regulatory requirements and guidance that the NRC staff used in its review of the proposed CFH Training and Retraining Program for TMI is as follows:

- 10 CFR 50.2, which states, in part, that *Certified fuel handler* means, for a nuclear power reactor facility, a non-licensed operator who has qualified in accordance with a fuel handler training program approved by the Commission.
- 10 CFR 50.120(b), which states, in part, that:
  - (2) The training program must be derived from a systems approach to training as defined in 10 CFR 55.4, and must provide for the training and qualification of the following categories of nuclear power plant personnel:
    - (i) Non-licensed operator.
    - ...
  - (3) The training program must incorporate the instructional requirements necessary to provide qualified personnel to operate and maintain the facility in a safe manner in all modes of operation. The training program must be developed to be in compliance with the facility license, including all technical specifications and applicable regulations. The training program must be periodically evaluated and revised as appropriate to reflect industry experience as well as changes to the facility,

procedures, regulations, and quality assurance requirements. The training program must be periodically reviewed by licensee management for effectiveness. Sufficient records must be maintained by the licensee to maintain program integrity and kept available for NRC inspection to verify the adequacy of the program.

- 10 CFR 55.4, "Definitions," which states, in part, that *Systems approach to training* means a training program that includes the following five elements:
  - (1) Systematic analysis of the jobs to be performed.
  - (2) Learning objectives derived from the analysis which describe desired performance after training.
  - (3) Training design and implementation based on the learning objectives.
  - (4) Evaluation of trainee mastery of the objectives during training.
  - (5) Evaluation and revision of the training based on the performance of trained personnel in the job setting.

### 3.0 TECHNICAL EVALUATION

The NRC staff reviewed the specific elements of the proposed CFH Training and Retraining Program for TMI against the regulatory requirements of 10 CFR 50.120, consistent with previous NRC staff reviews and approvals of decommissioning reactor CFH training programs, together with the elements of a systems approach to training as defined in 10 CFR 55.4.

In its July 10, 2017, letter, Exelon stated that the proposed TMI CFH Training and Retraining Program is identical to the program that was previously approved by the NRC for use at Oyster Creek, Clinton, and Quad Cities. The NRC staff reviewed the proposed TMI CFH Training and Retraining Program and compared it to the program previously approved by the NRC for Oyster Creek, Clinton, and Quad Cities. Any differences are described in the evaluation below.

#### 3.1 CFH Training Program Broad-Scope Objectives

Based on the discussion of the applicable regulatory requirements in Section 2.0, the NRC staff used the following three broad scope objectives as criteria for an acceptable CFH Training and Retraining Program:

- (1) Safe conduct of decommissioning activities.
- (2) Safe handling and storage of spent fuel.
- (3) Appropriate response to plant emergencies.

The proposed CFH Training and Retraining Program, as provided in the Attachment to Exelon's submittal, was reviewed by the NRC staff. The licensee stated, in part, that the approval of a CFH Training and Retraining Program "is needed to facilitate activities associated with decommissioning and irradiated fuel handling and management."

In the CFH Training and Retraining Program in the licensee's submittal, Section 1, "Purpose," Subsection 1.2, states that the CFH Training and Retraining Program will apply to Oyster Creek, Clinton, and Quad Cities, and TMI once the certifications of permanent cessation from operations and of removal of fuel from the reactor have been submitted to the NRC for these

facilities. This section was updated from the program previously reviewed by NRC staff to include TMI. Section 3.2, "Initial Training," Subsection 3.2.2, "Fundamentals Training," states that the fundamentals training phase of the CFH Training and Retraining Program consists of lecture and/or self-study of several topics. The selection of topics will be based on a job analysis for the CFH tasks and functions and will include, among others, radiological safety principles and monitoring, facility/system design and function, and facility administrative and safety procedures, as appropriate, for the current plant status. Further, as described in Subsection 3.2.3, "On-The-Job Training (OJT)," the OJT phase of the CFH Training and Retraining program will include hands-on training of shift operations such as shift turnover, shift recordkeeping, removal and return of equipment to service, and specified watch standing activities. The OJT will also include training on the facility license, and the content, bases, and importance of the facility's technical specifications. The NRC staff finds the inclusion of these topics in the initial training program to be consistent with objective (1) above.

The proposed CFH initial training program also includes lectures and/or self-study of topics appropriate to the monitoring, handling, storage, and cooling of nuclear fuel, including topics on thermodynamics, heat transfer, fluid mechanics, electrical theory, and mechanical components operation. The OJT phase of the CFH Training Program includes watch-standing activities, such as operation of systems/components used to provide handling, storage, cooling, and monitoring of fuel. The NRC staff finds the inclusion of this information to be consistent with objective (2) above.

Further, the OJT phase of the proposed CFH initial training program includes training on normal, abnormal, and emergency procedures, accident analysis, and the facility's emergency plan. The NRC staff finds the inclusion of this information to be consistent with objective (3) above.

In the CFH Training and Retraining Program in the licensee's submittal dated July 20, 2017, Section 3.3, "Retraining Program," states that all CFHs will participate in the retraining program. The CFH retraining phase will consist of lectures and/or self-study of topics appropriate to the monitoring, handling, storage, and cooling of nuclear fuel. The content of the retraining program will be based upon the tasks selected during program development for the retraining cycle. Retraining will typically include a review of changes associated with the facility and procedures, as well as problem areas associated with the monitoring, handling, storage, and cooling of nuclear fuel, and selected topics from the initial training program. The NRC staff finds the inclusion of these topics in the retraining program to be consistent with the broad scope objectives.

Based on the above, the NRC staff concludes that the proposed CFH Training and Retraining Program for TMI meets all of the three broad scope objectives.

### 3.2 CFH Training and Retraining Program Evaluation

The NRC staff reviewed the specific elements of the proposed CFH Training and Retraining Program for TMI against the regulatory requirements of 10 CFR 50.120(b)(2) and (b)(3), consistent with previous NRC staff reviews and approvals of decommissioning reactor CFH training programs, and has summarized the results of this review below.

#### 3.2.1 Use of a Systems Approach to Training (SAT)

Section 50.120(b)(2) of 10 CFR, states, in part, that, "The training program must be derived from a systems approach to training as defined in 10 CFR 55.4...." The licensee stated in its

July 10, 2017, letter that, “The Exelon CFH Training and Retraining Program will ensure that the qualifications of personnel are commensurate with the tasks to be performed and the plant conditions requiring response.” Further, Exelon stated that the CFH Training and Retraining Program will “align with the provisions of 10 CFR 50.120” and provides “adequate confidence that appropriate SAT based training of personnel who will perform CFH duties is conducted to ensure the facility is maintained in a safe and stable condition.”

Section 3.1, “General Guidelines,” Subsection 3.1.1 of the CFH Training and Retraining Program states:

The Certified Fuel Handler Training and Retraining Program contained herein describes the training program to be implemented by Exelon Generation to ensure the monitoring, handling, storage, and cooling of spent nuclear fuel is performed in a manner consistent with ensuring the public health and safety for Exelon Generation facilities that have transitioned to a permanently defueled status.

Also, Section 3.1, Subsection 3.1.2, states, in part:

The Certified Fuel Handler Training and Retraining Program describes the personnel to whom the program applies, the areas in which training is provided, what constitutes certification, how certification is maintained, and required qualification (e.g., medical).

Further, Subsections 3.1.6 and 3.1.9 state that the CFH Training and Retraining Program is based on a SAT process and consists of an initial training program and a requalification training program, which are described in the submittal.

The NRC staff reviewed the proposed CFH Training and Retraining Program to ensure that it includes all five of the required elements of a SAT-based program, which are:

- (1) Systematic analysis of the jobs to be performed,
- (2) Learning objectives derived from the analysis, which describe desired performance after training,
- (3) Training design and implementation based on the learning objectives,
- (4) Evaluation of trainee mastery of the objectives during training, and
- (5) Evaluation and revision of the training based on the performance of trained personnel in the job setting.

Section 3.2.2.2 “Fundamentals Training,” of the proposed CFH Training and Retraining Program states that the selection of topics for the fundamentals training phase of the program will be based on a job analysis for the CFH tasks and functions. The job analysis will be performed by an incumbent Senior Reactor Operator, training Subject Matter Expert, and Site Decommissioning Transition Planning Organization Operations Lead, in accordance with the requirements of TQ-AA-221, “Exelon Nuclear Training – Analysis Phase.” This procedure outlines a graded approach to evaluating job tasks and includes Difficulty, Importance, and Frequency ratings for each new job task. The proposed CFH Training and Retraining Program further states that learning objectives will be derived from the analysis to describe the desired performance after training.

During review of the CFH Training and Retraining Program for Oyster Creek, Clinton, and Quad Cities, the NRC staff reviewed Exelon Procedure TQ-AA-221, and Procedure TQ-AA-222, "Exelon Nuclear Training – Design Phase." Procedure TQ-AA-221 describes the activities performed in the analysis phase of the SAT process and provides specific guidance to ensure that the outcome of the analysis phase includes an approved task/topic list representing the tasks performed by each affected work group and a determination of which tasks/topics require initial and/or continuing training. Procedure TQ-AA-222 describes the activities performed in the design phase of the SAT process and provides guidance on the development of learning objectives, determination of training settings, preparation of training program procedures, development of evaluation instruments, and design of qualification structures. The NRC staff finds the licensee's plan to use these procedures to conduct a systematic analysis of jobs to be performed and to derive learning objectives from that analysis to be consistent with SAT elements 1 and 2.

Section 3.3, Subsection 3.3.1, "Course Schedule," of the proposed CFH Training and Retraining Program states that all CFHs will participate in the retraining program. The content of the retraining program will be based upon the tasks selected during program development for the retraining cycle. A retraining plan will be developed and approved by the Plant Manager (or designee). The training plan will be developed utilizing the SAT process.

The NRC staff finds this approach to be consistent with SAT elements 1 and 2.

SAT element 3 requires that the training design and implementation be based upon the learning objectives. Section 3.2, Subsection 3.2.2.1, states that training materials will be designed based on the learning objectives.

The NRC staff had previously reviewed Exelon Procedure TQ-AA-223, Revision 7, "Exelon Nuclear Training – Development Phase," during its review of the CFH Training and Retraining Program for Oyster Creek, Clinton, and Quad Cities. Procedure TQ-AA-223 describes the activities performed in the development phase of the training system development process. It provides specific guidance on the development of approved training material to ensure that learning objectives are achieved.

The NRC staff reviewed the licensee's process to design and implement training based upon the learning objectives and finds it to be consistent with SAT element 3.

Section 3.2, Subsection 3.2.2.1, of the proposed CFH Training and Retraining Program states that a comprehensive exam at the end of the course will provide assurance of mastery of the skills, knowledge, and abilities required for successful performance of the CFH job and associated tasks. Further, Subsection 3.2.4, "Candidate Evaluation," states that a comprehensive final examination is to be administered at the end of the initial training program. The comprehensive examination will include a written and an operating examination. The written examination requires a minimum score of 80 percent to pass. The operating examination will consist of Job Performance Measures (JPMs), and each JPM will be scored on a pass/fail basis. Passing criteria for an individual JPM is that the examinee successfully completes the assigned task in accordance with the governing procedure without missing any critical steps. The critical tasks for each JPM will be defined in accordance with NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," Revision 11, or later (ADAMS Accession No. ML17038A432). The operating examination requires passing a minimum of 80 percent of the administered JPMs to pass. The use of NUREG-1021, Revision 11, or later, is a change from what was originally approved for Oyster Creek, Clinton, and Quad Cities.

Section 3.3, Subsection 3.3.1, states that participants in the CFH retraining program must pass a biennial written examination and an annual operating examination to maintain their qualification. The written examination requires a minimum score of 80 percent to pass. The operating examination will consist of JPMs, and each JPM will be scored on a pass/fail basis. The operating examination requires passing a minimum of 80 percent of the administered JPMs to pass. As with the initial training program, the use of NUREG-1021, Revision 11, or later, is a change from what was originally approved for Oyster Creek, Clinton, and Quad Cities.

The NRC staff had previously reviewed Exelon Procedure TQ-AA-224, Revision 9, "Exelon Nuclear Training – Implementation Phase," during its review of the CFH Training and Retraining Program for Oyster Creek, Clinton, and Quad Cities. Procedure TQ-AA-224 describes activities performed in the implementation phase of the SAT process. It provides specific guidance on the major activities of the implementation phase, including implementation of a training plan, conduct of training, conduct of in-training evaluation, and documentation of training.

The NRC staff reviewed the licensee's process to evaluate the trainee mastery of the objectives during training and retraining and finds it to be consistent with SAT element 4.

Section 3.4, "Program Evaluation," of the CFH Training and Retraining Program states that routine assessments of the effectiveness and accuracy of the training program are conducted by appropriate management personnel at the facility in a permanently defueled condition during and at the end of each 2-year training cycle. Evaluation results are reviewed by a station oversight board as defined in site procedures, and any required changes, as determined by the station oversight board, are incorporated into the program.

The NRC staff had previously reviewed Exelon Procedure TQ-AA-225, Revision 4, "Exelon Nuclear Training – Evaluation Phase," during its review of the CFH Training and Retraining Program for Oyster Creek, Clinton, and Quad Cities. Procedure TQ-AA-225 describes the activities performed in the evaluation phase of the training system development process. It provides specific guidance for the conduct of the activities during the evaluation phase, including monitoring feedback, evaluating training effectiveness, and initiating corrective actions.

The NRC staff reviewed the licensee's process to evaluate and revise the training based on the performance of trained personnel and finds it to be consistent with SAT element 5.

Based on the above, the NRC staff concludes that the proposed CFH Training and Retraining Program includes the five elements of 10 CFR 55.4, and thus, complies with 10 CFR 50.120(b)(2).

### 3.2.2 Compliance with the Requirements of 10 CFR 50.120(b)(3)

The NRC staff also verified that the proposed CFH Training and Retraining Program meets the requirements of 10 CFR 50.120(b)(3). Specifically, 10 CFR 50.120(b)(3) requires that the training program:

- a. Incorporate the instructional requirements necessary to provide qualified personnel to operate and maintain the facility in a safe manner in all modes of operation;
- b. Be developed to be in compliance with the facility license, including all technical specifications and applicable regulations;

- c. Be periodically evaluated and revised as appropriate to reflect industry experience, as well as changes to the facility, procedures, regulations, and quality assurance requirements;
- d. Be periodically reviewed by licensee management for effectiveness; and
- e. Ensure the licensee maintains and keeps available sufficient records to maintain program integrity and allow for NRC inspection to verify the adequacy of the program.

The NRC staff reviewed the proposed CFH Training and Retraining Program and confirmed that each of the 10 CFR 50.120(b)(3) requirements is satisfied as discussed below:

- Section 3.2, Subsection 3.2.2.1, states that the job analysis for the CFH tasks and functions will be conducted by an incumbent Senior Reactor Operator, training Subject Matter Expert, and Site Decommissioning Transition Planning Organization Operations Lead. Learning objectives will be derived from the analysis to describe the desired performance after training, and training materials will be designed based on the learning objectives. Subsection 3.2.4.1 states that a comprehensive final examination must be administered at the end of the initial training program, consisting of a written examination and an operating examination described in Appendices A and B, respectively. Further, Section 3.3, Subsection 3.3.1.4, states that participants in the CFH retraining phase of the program will be required to pass a biennial written examination and an annual operating examination to maintain their qualification, with examination areas described in Appendices A and B, respectively. Appendices A and B of the proposed CFH Training and Retraining Program provide a compendium of instructional areas that the licensee has identified as required instructional areas necessary to ensure that the CFHs will be trained in all areas necessary to maintain the facility and operate equipment in a safe manner. The NRC staff finds that this satisfies element “a” above.
- Section 3.1, Subsection 3.1.2, states that the training program shall comply with the applicable American National Standards Institute/American Nuclear Society standard requirements for the qualification and training of plant personnel, as specified in the facility’s technical specifications, and shall be consistent with the level of hazard at the facility and ensure that the facility is maintained in a safe and stable condition. The NRC staff finds that this is consistent with element “b” above.
- Section 3.4 states that the training program must be periodically evaluated and revised as appropriate to reflect industry experience, as well as changes to the facility, procedures, regulations, and quality assurance requirements. Routine assessments of the effectiveness and accuracy of the training program are required to be conducted by appropriate management personnel at the facility in a permanently defueled condition during and at the end of each 2-year training cycle. Evaluation results are required to be reviewed by a station oversight board. Resolution of any discrepancies identified by the evaluation will be verified by the station oversight board, and any required changes, as determined by the board, are required to be incorporated into the program. The NRC staff reviewed the provisions for evaluating and revising the CFH Training and Retraining Program and finds that they satisfy the program evaluation requirements of elements “c” and “d” above.

- Section 3.5, "Record Retention," states that records associated with the proposed CFH Training and Retraining Program will be retained in a retrievable format until there is no longer a need for the CFH position at the facility (i.e., when all fuel is permanently transferred to a dry fuel storage facility). Further, Section 3.6, "Evaluating Changes to the Certified Fuel Handler Training and Retraining Program," states that changes may be made to the training program elements without NRC approval, as long as the following are applicable: (1) suitable proficiency in the performance of the program's activities is maintained; and (2) changes are documented in an accessible manner that will allow the NRC to verify the adequacy of the program in accordance with 10 CFR 50.120. The NRC staff finds that this is consistent with element "e" above.

#### 4.0 CONCLUSION

The NRC staff's review of the proposed CFH Training and Retraining Program for TMI determined that the program adequately addresses the safe conduct of decommissioning activities, the safe handling and storage of spent fuel, appropriate response to plant emergencies, and is consistent with the SAT processes defined by 10 CFR 55.4 and the requirements of 10 CFR 50.120(b)(2) and (3). Based on the above findings, the NRC staff approves the CFH Training and Retraining Program for TMI pursuant to 10 CFR 50.2. Because the program is based on SAT, as described in Section 3.6 of the CFH Training and Retraining Program, the licensee may change elements of the program without NRC approval, as long as the following are applicable:

- (1) Suitable proficiency in the performance of the program's activities is maintained; and
- (2) Changes are documented in an accessible manner that will allow the NRC to verify the adequacy of the program in accordance with 10 CFR 50.120.

Principal Contributor: J. Poole

Date: December 29, 2017

SUBJECT: THREE MILE ISLAND NUCLEAR STATION, UNIT 1 – APPROVAL OF  
CERTIFIED FUEL HANDLER TRAINING AND RETRAINING PROGRAM  
(CAC NO. MF9960; EPID L-2017-LLL-0013) DATED DECEMBER 29, 2017

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DATE	08/22/2017	08/21/2017	11/24/2017
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