



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

August 17, 2021

Mr. David P. Rhoades
Senior Vice President
Exelon Generation Company, LLC
President and Chief Nuclear Officer (CNO)
Exelon Nuclear
4300 Winfield Road
Warrenville, IL 60555

SUBJECT: BYRON STATION, UNIT NOS. 1 AND 2, AND DRESDEN NUCLEAR POWER STATION, UNITS 1, 2, AND 3 – APPROVAL OF CERTIFIED FUEL HANDLER TRAINING AND RETRAINING PROGRAM (EPID L-2020-LLL-0022)

Dear Mr. Rhoades:

By letter dated September 24, 2020 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML20269A233), Exelon Generation Company, LLC (Exelon, the licensee) submitted a request for U.S. Nuclear Regulatory Commission (NRC) approval of its Certified Fuel Handler (CFH) Training and Retraining Program for use at Byron Station, Unit Nos. 1 and 2 (Byron), and Dresden Nuclear Power Station, Units 1, 2, and 3 (Dresden).

By letter dated September 2, 2020 (ADAMS Accession No. ML20246G613), the licensee submitted a Notification of Permanent Cessation of Power Operations for Byron. In this letter, the licensee provided notification to the NRC of its intent to permanently cease power operations at Byron no later than September 30, 2021.

By letter dated September 2, 2020 (ADAMS Accession No. ML20246G627), the licensee submitted a Notification of Permanent Cessation of Power Operations for Dresden. In this letter, the licensee provided notification to the NRC of its intent to permanently cease power operations at Dresden no later than November 30, 2021.

After certifications of permanent cessation of operations and of permanent removal of fuel from the reactor vessels for Byron and Dresden are submitted in accordance with Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.82(a)(1)(i) and (ii), pursuant to 10 CFR 50.82(a)(2), the 10 CFR Part 50 licenses will no longer authorize operation of the reactors or placement or retention of fuel in the reactor vessels. 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 needed to facilitate activities associated with decommissioning and irradiated fuel handling and management.

The licensee requested NRC approval of the Byron and Dresden CFH Training and Retraining Program to ensure that the monitoring, storage, handling, 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 been 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. The licensee will rely upon CFHs to supervise and direct the monitoring, storage, handling, and cooling of irradiated fuel in a manner consistent with ensuring the health and safety of the public.

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

If you have any questions, please contact me at 301-415-1129 or via e-mail at Russell.Haskell@nrc.gov.

Sincerely,

/RA/

Russell S. Haskell, Project Manager
Plant Licensing Branch III
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. STN 50-454, STN 50-455,
50-010, 50-237, and 50-249

Enclosure:
Safety Evaluation

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UNITED STATES
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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
REGARDING CERTIFIED FUEL HANDLER TRAINING AND RETRAINING PROGRAM
EXELON GENERATION COMPANY, LLC
BYRON STATION, UNIT NOS. 1 AND 2
DRESDEN NUCLEAR POWER STATION, UNITS 1, 2, AND 3
DOCKET NOS. STN 50-454, STN 50-455, 50-010, 50-237, AND 50-249

1.0 INTRODUCTION

By letter dated September 24, 2020 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML20269A233), Exelon Generation Company, LLC (Exelon, the licensee) submitted a request for U.S. Nuclear Regulatory Commission (NRC, the Commission) approval of its Certified Fuel Handler (CFH) Training and Retraining Program for use at Byron Station, Unit Nos. 1 and 2 (Byron), and Dresden Nuclear Power Station, Units 1, 2, and 3 (Dresden).

By letter dated September 2, 2020 (ADAMS Accession No. ML20246G613), the licensee submitted a Notification of Permanent Cessation of Power Operations for Byron. In this letter, the licensee provided notification to the NRC of its intent to permanently cease power operations at Byron no later than September 30, 2021.

By letter dated September 2, 2020 (ADAMS Accession No. ML20246G627), the licensee submitted a Notification of Permanent Cessation of Power Operations for Dresden. In this letter, the licensee provided notification to the NRC of its intent to permanently cease power operations at Dresden no later than November 30, 2021.

After certifications of permanent cessation of operations and of permanent removal of fuel from the reactor vessels for Byron and Dresden are submitted, in accordance with Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.82(a)(1)(i) and (ii), pursuant to 10 CFR 50.82(a)(2), the 10 CFR Part 50 licenses will no longer authorize operation of the reactors or placement or retention of fuel in the reactor vessels. As a result, licensed reactor operators will no longer be required to support plant activities. Instead, the licensee will rely upon CFHs to

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supervise and direct the monitoring, storage, handling, and cooling of irradiated fuel in a manner consistent with ensuring the health and safety of the public. The licensee has submitted the proposed CFH Training and Retraining Program to satisfy the training requirements at Byron and Dresden. 10 CFR 50.2, "Definitions," requires that CFHs be qualified in accordance with an NRC-approved training program.

2.0 REGULATORY EVALUATION

2.1 Regulatory Framework for Certified Fuel Handler Training Programs

The NRC discussed operations staffing for permanently shutdown reactor facilities 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). Attachment 1 to SECY-00-145 discusses the role of a CFH at a decommissioning facility as one who is intended to be the on-shift licensee representative responsible for safe fuel handling operations, as well as the safe maintenance and storage of spent fuel and the overall safety of any decommissioning-related activities at the facility.

10 CFR 50.2 defines a CFH as "a non-licensed operator who has qualified in accordance with a fuel handler training program approved by the Commission." Attachment 1 to SECY-00-145 acknowledges, however, that "there are no regulations besides the definition [in 10 CFR 50.2] that specify the training requirements for the certified fuel handler." Considering the definition of CFH in 10 CFR 50.2 and the insights provided in SECY-00-145, the NRC has 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.

Additionally, because a CFH is defined as a non-licensed operator, the NRC staff determined that certain criteria in 10 CFR 50.120, "Training and qualification of nuclear power plant personnel," should apply (as detailed in the next section of this safety evaluation). 10 CFR 50.120(b)(2) requires, in part, that the training program for a non-licensed operator must be derived from a systems approach to training (SAT), as defined in 10 CFR 55.4. Since the NRC began reviewing CFH training programs for decommissioning sites, starting with its review of the CFH training program for Maine Yankee Atomic Power Plant, dated November 26, 1997 (Legacy Library Accession No. 9712040233), the staff has consistently reviewed proposed CFH training programs to confirm that these programs are based on an SAT.

2.2 Specific Regulatory Criteria for Certified Fuel Handler Training Programs

In accordance with the definition of SAT in 10 CFR 55.4, CFH training programs are expected to include 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; and
- (5) evaluation and revision of the training based on the performance of trained personnel in the job setting.

10 CFR 50.120(b)(3) also states that training programs for non-licensed operators (such as those for CFHs) 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;
- be developed to be in compliance with the facility license, including all technical specifications and applicable regulations;
- be periodically evaluated and revised as appropriate to reflect industry experience as well as changes to the facility, procedures, regulations, and quality assurance requirements; and
- be periodically reviewed by licensee management for effectiveness.

Additionally, sufficient records must be maintained by the licensee to maintain program integrity, and these records must be available for NRC inspection to verify the adequacy of the program.

3.0 TECHNICAL EVALUATION

The NRC staff reviewed the specific elements of the proposed CFH Training and Retraining Program for Byron and Dresden 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 an SAT as defined in 10 CFR 55.4.

3.1 Licensee Discussion

In its submittal dated September 24, 2020, the licensee stated that the proposed CFH Training and Retraining Program for Byron and Dresden is nearly identical to its program that was previously approved by the NRC for use at other Exelon sites.

For example, similar precedence for previously NRC-approved actions include:

- By letter dated December 29, 2017 (ADAMS Accession No. ML17228A729), the NRC approved the Exelon CFH Training and Retraining Program for use at Three Mile Island Nuclear Station, Unit 1.
- 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 (Oyster Creek); Clinton Power Station, Unit No. 1; and Quad Cities Nuclear Power Station, Units 1 and 2.

The licensee's submittal describes the following proposed administrative changes to the previously approved program:

- References to Oyster Creek have been removed from the program, as Exelon no longer holds the license for Oyster Creek.
- Byron and Dresden have been added to the program.
- References to training and qualification requirements contained in the facilities' Technical Specifications have been replaced with references to the Exelon Decommissioning Quality Assurance Program because this is where these requirements will be contained.
- References have been updated.

The licensee provided the mark-up of the Exelon CFH Training and Retraining Program with these proposed changes as Attachment 1 to its submittal.

In the submittal, Exelon stated:

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. 10 CFR 50.120, "Training and qualification of nuclear power plant personnel," requires training programs to be established, implemented, maintained, and derived using a Systems Approach to Training (SAT) as defined in 10 CFR 55.4.

Additionally, Exelon stated:

The CFH Training and Retraining Program provides confidence that appropriate SAT based training of personnel who will perform CFH duties is conducted to ensure the facilities are maintained in a safe and stable condition.

3.2 NRC Staff Review

The NRC staff reviewed the licensee's proposed changes to the Exelon CFH Training and Retraining Program, provided as Attachment 1 to the submittal, and verified that other than the proposed addition of Byron and Dresden to the program, the proposed changes were administrative in nature and, therefore, acceptable.

As referenced above in Section 3.1 of this safety evaluation, the NRC previously approved the use of the Exelon CFH Training and Retraining Program at Oyster Creek, Clinton Power Station, Unit No. 1, Quad Cities Nuclear Power Station, Units 1 and 2, and Three Mile Island Nuclear Station, Unit 1.

During the NRC's prior review of the Exelon CFH Training and Retraining Program (ADAMS Accession No. ML16222A787), the NRC staff concluded that the program met the following three broad-scope objectives for an acceptable CFH training and retraining program:

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

The NRC staff also concluded that the program included the five elements of an SAT outlined in 10 CFR 55.4 (as discussed in Section 2.2 above) and thus complied with the requirement of 10 CFR 50.120(b)(2) that the program be derived from an SAT.

Finally, the NRC staff concluded that the program satisfied each of the 10 CFR 50.120(b)(3) requirements.

In reviewing the licensee's submittal requesting approval for the use at Byron and Dresden of the previously NRC-approved Exelon CFH Training and Retraining Program, the NRC staff determined that the proposed changes to the program do not constitute substantial changes that affect the program meeting the broad-scope objectives or the program's compliance with the elements/criteria described in 10 CFR 50.120 and 10 CFR 55.4 and, therefore, that they are acceptable.

Based on its determination that the Exelon CFH Training and Retraining Program, as proposed to be amended, would remain in compliance with the specified regulatory requirements as cited above, the NRC staff concludes that the program is acceptable for use at Byron and Dresden.

4.0 CONCLUSION

The NRC staff's previous review of the Exelon CFH Training and Retraining Program determined that the program adequately addresses the safe conduct of decommissioning activities, the safe handling and storage of spent fuel, the appropriate response to plant emergencies, and is consistent with the SAT elements as defined by 10 CFR 55.4 and the requirements of 10 CFR 50.120(b)(2) and (b)(3). Because of this and the staff's determination that the licensee's proposed changes to the program are administrative in nature, the staff concludes that the use at Byron and Dresden of the program meets the applicable

regulatory requirements. Therefore, the staff approves the CFH Training and Retraining Program, as proposed, for Byron and Dresden pursuant to 10 CFR 50.2.

Principal Contributor: J. Vazquez

Date: August 17, 2021

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