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10 CFR 50.90

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U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

Quad Cities Nuclear Power Station, Units 1 and 2
Renewed Facility Operating License Nos. DPR-29 and DPR-30
NRC Docket Nos. 50-254 and 50-265

Subject: License Amendment Request – Proposed Changes to Technical
Specifications Section 5.0 Administrative Controls for Permanently Defueled
Condition

- References:
1. Letter from Michael P. Gallagher (Exelon Generation Company, LLC) to U.S. Nuclear Regulatory Commission, "Certification of Permanent Cessation of Power Operations," dated June 20, 2016 (ML16172A151)
 2. Letter from U.S. NRC to Bryan C. Hanson (Exelon Generation Company, LLC) to U.S. Nuclear Regulatory Commission, "Oyster Creek Nuclear Generating Station; Clinton Power Station, Unit No. 1; and Quad Cities Nuclear Power Station, Units 1 And 2 – Approval Of Certified Fuel Handler Training And Retraining Program (CAC NOS. MF8109, MF8138, MF8139, AND MF8140)," dated September 6, 2016 (ML16222A787)

In accordance with 10 CFR 50.90, "Application for amendment of license, construction permit, or early site permit" Exelon Generation Company, LLC (EGC) requests amendments to Appendix A, Technical Specifications (TS), of Renewed Facility Operating License Nos. DPR-29 and DPR-30 for Quad Cities Nuclear Power Station (QCNPS), Units 1 and 2.

On June 2, 2016, EGC announced that it plans to close QCNPS, Unit 1 and Unit 2 due to deteriorating economics. Under the terms of this announcement, EGC agreed to permanently cease operations at QCNPS by June 1, 2018. By letter dated June 20, 2016 (Reference 1), EGC provided formal notification to the U.S. Nuclear Regulatory Commission (NRC) pursuant to 10 CFR 50.4(b)(8) and 10 CFR 50.82(a)(1)(i) of EGC's determination to permanently cease operations at QCNPS by June 1, 2018.

Once the certifications for permanent cessation of operations and removal of fuel from the reactor vessel are docketed for QCNPS in accordance with 10 CFR 50.82(a)(1)(i) and (ii), and pursuant to 10 CFR 50.82(a)(2), the 10 CFR 50 license will no longer authorize operation of the reactor or placement or retention of fuel in the reactor vessel. The basis for this proposed License Amendment Request (LAR) is that certain TS administrative controls may be revised or removed to reflect the permanently defueled condition.

Specifically, this LAR proposes changes to the organization, staffing, and training requirements contained in Section 5.0, "Administrative Controls" of the QCNPS TS. This proposed amendment also supports implementation of the Certified Fuel Handler training program that was approved by the NRC and communicated by letter dated September 6, 2016 (Reference 2).

Attachment 1 to this letter provides a detailed description and evaluation of the proposed changes to the TS. Attachment 2 contains the marked-up TS pages depicting the proposed changes.

EGC has concluded that the proposed changes present no significant hazards consideration under the standards set forth in 10 CFR 50.92, "Issuance of amendment."

The proposed changes have been reviewed and approved by the QCNPS Plant Operations Review Committee in accordance with the requirements of the EGC Quality Assurance Program.

EGC requests review and approval of this proposed amendment by October 20, 2017, to support the current schedule for the QCNPS transition to a permanently defueled facility. Once approved, the amendment shall be implemented within 60 days from the effective date of the amendment. EGC requests that the approved amendment become effective following the docketing of the certifications required by 10 CFR 50.82(a)(1) that QCNPS has been permanently shutdown and defueled.

There are no regulatory commitments contained within this submittal.

In accordance with 10 CFR 50.91 "Notice for public comment; State consultation," paragraph (b), EGC is notifying the State of Illinois of this application for license amendment by transmitting a copy of this letter and its attachments to the designated State Official.

If you have any questions concerning this submittal, please contact Mr. Paul Bonnett at (610) 765-5264.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 20th day of October 2016.

Respectfully,

A handwritten signature in black ink, appearing to read "Michael P. Gallagher". The signature is fluid and cursive, with a long horizontal stroke at the end.

Michael P. Gallagher
Vice President, License Renewal & Decommissioning
Exelon Generation Company, LLC

Attachments: 1. Evaluation of Proposed Changes
2. Markup of Proposed Technical Specifications Pages

cc: NRC Regional Administrator, Region III
NRC Senior Resident Inspector – Quad Cities Nuclear Power Station
Illinois Emergency Management Agency – Division of Nuclear Safety

Attachment 1
License Amendment Request
Quad Cities Nuclear Power Station, Units 1 and 2
Docket No. 50-254 and 50-265

EVALUATION OF PROPOSED CHANGES

Subject: Proposed Changes to Technical Specifications Section 5.0

- 1.0 SUMMARY DESCRIPTION
- 2.0 DETAILED DESCRIPTION
- 3.0 TECHNICAL EVALUATION
- 4.0 REGULATORY EVALUATION
 - 4.1 Applicable Regulatory Requirements/Criteria
 - 4.2 Precedent
 - 4.3 No Significant Hazards Consideration
 - 4.4 Conclusion
- 5.0 ENVIRONMENTAL CONSIDERATION
- 6.0 REFERENCES

1.0 SUMMARY DESCRIPTION

Pursuant to 10 CFR 50.90, "Application for amendment of license, construction permit, or early site permit," Exelon Generation Company, LLC (Exelon), proposes changes to Appendix A, Technical Specifications (TS) of Renewed Facility Operating License Nos. DPR-29 and DPR-30 for Quad Cities Nuclear Power Station (QCNPS), Unit 1 and Unit 2, respectively.

On June 2, 2016, Exelon announced that it plans to close QCNPS, Unit 1 and Unit 2 due to deteriorating economics. Under the terms of this announcement, Exelon agreed to permanently cease operations at QCNPS by June 1, 2018. By letter dated June 20, 2016 (Reference 1), Exelon provided formal notification to the U.S. Nuclear Regulatory Commission (NRC) pursuant to 10 CFR 50.4(b)(8) and 10 CFR 50.82(a)(1)(i) of Exelon's determination to permanently cease operations at QCNPS by June 1, 2018.

Once the certifications for permanent cessation of operations and removal of fuel from the reactor vessel are docketed for QCNPS in accordance with 10 CFR 50.82(a)(1)(i) and (ii), and pursuant to 10 CFR 50.82(a)(2), the 10 CFR 50 license will no longer authorize operation of the reactor or placement or retention of fuel in the reactor vessel.

In order to support activities at QCNPS once the site is in a permanently shutdown and defueled condition, some administrative controls may no longer be applicable and can be deleted or revised. Therefore, this License Amendment Request (LAR) proposes changes that would delete or revise certain organization, staffing, and training requirements contained in Section 5.0, "Administrative Controls," of the QCNPS TS to further support plant activities and decommissioning efforts following permanent cessation of operations.

By letter dated September 6, 2016 (Reference 2), the NRC approved the Certified Fuel Handler training program for QCNPS. This proposed LAR will support implementation of the Certified Fuel Handler training program since licensed reactor operators will no longer be required to support plant operations. The proposed changes would not become effective until the required 10 CFR 50.82(a)(1)(ii) certification that QCNPS has been permanently defueled has been submitted.

In the development of the proposed TS changes, Exelon reviewed the TS requirements from other plants that have permanently shutdown, primarily Vermont Yankee (Reference 4), Kewaunee (Reference 7), Millstone Unit 1 (Reference 5), and Zion (Reference 6). Exelon also evaluated the applicable guidance in NUREG-1433, "Standard Technical Specifications - General Electric Plants (BWR/4)" (Reference 3).

This LAR provides a discussion and description of the proposed TS changes, a technical evaluation of the proposed TS changes and information supporting a finding of No Significant Hazards Consideration (NSHC).

2.0 DETAILED DESCRIPTION

The specific changes affecting TS Section 5.0 are described in this section with supporting technical evaluation that is presented in Section 3.0.

TS Section 1.1 - Definitions	
Proposed TS	
<u>Term</u> CERTIFIED FUEL HANDLER	<u>Definition</u> A CERTIFIED FUEL HANDLER is an individual who complies with provisions of the CERTIFIED FUEL HANDLER training program required by Specification 5.3.2.
<u>Term</u> NON-CERTIFIED OPERATOR	<u>Definition</u> A NON-CERTIFIED OPERATOR is a non-licensed operator who complies with the qualification requirements of Specification 5.3.1, but is not a CERTIFIED FUEL HANDLER.
TS Section 5.1 - Responsibility	
Current TS	Proposed TS
5.1.1 The station manager shall be responsible for overall unit operation and shall delegate in writing the succession to this responsibility during his absence.	5.1.1 The station manager shall be responsible for overall unit facility operation and shall delegate in writing the succession to this responsibility during his absence.
5.1.2 A unit supervisor shall be responsible for the control room command function (Since the control room is common to both units, the control room command function for both units can be satisfied by a single unit supervisor). During any absence of the unit supervisor from the control room while the unit is in MODE 1, 2 or 3, an individual with an active Senior Reactor Operator (SRO) license shall be designated to assume the control room command function. During any absence of the unit supervisor from the control room while the unit is in MODE 4 or 5 or defueled, an individual with an active SRO license or Reactor Operator license shall be designated to assume the control room command function.	5.1.2 A unit shift supervisor shall be responsible for the control room shift command function (Since the control room is common to both units, the control room command function for both units can be satisfied by a single unit supervisor). During any absence of the unit supervisor from the control room while the unit is in MODE 1, 2 or 3, an individual with an active Senior Reactor Operator (SRO) license shall be designated to assume the control room command function. During any absence of the unit supervisor from the control room while the unit is in MODE 4 or 5 or defueled, an individual with an active SRO license or Reactor Operator license shall be designated to assume the control room command function.
TS Section 5.2 - Organization	
Current TS	Proposed TS
5.2.1 <u>Onsite and Offsite Organizations</u> Onsite and offsite organizations shall be established for unit operation and corporate management, respectively. The onsite and offsite organizations shall include the positions for activities affecting safety of the nuclear power plant.	5.2.1 <u>Onsite and Offsite Organizations</u> Onsite and offsite organizations shall be established for unit operation facility staff and corporate management, respectively. The onsite and offsite organizations shall include the positions for activities affecting safety of the nuclear power plant safe storage and handling of spent nuclear fuel .

<p>a. <i>Lines of authority, responsibility, and communication shall be defined and established throughout highest management levels, intermediate levels, and all operating organization positions. These relationships shall be documented and updated, as appropriate, in organization charts, functional descriptions of departmental responsibilities and relationships, and job descriptions for key personnel positions, or in equivalent forms of documentation. These requirements, including the generic titles of those personnel fulfilling the responsibilities of the positions delineated in these Technical Specifications, shall be documented in the Quality Assurance Manual.</i></p> <p>b. <i>The station manager shall be responsible for overall safe operation of the plant and shall have control over those onsite activities necessary for safe operation and maintenance of the plant.</i></p> <p>c. <i>A corporate officer shall have corporate responsibility for overall plant nuclear safety and shall take any measures needed to ensure acceptable performance of the staff in operating, maintaining, and providing technical support to the plant to ensure nuclear safety.</i></p> <p>d. <i>The individuals who train the operating staff, or perform radiation protection or quality assurance functions, may report to the appropriate onsite manager; however, these individuals shall have sufficient organizational freedom to ensure their independence from operating pressures.</i></p>	<p>a. Lines of authority, responsibility, and communication shall be defined and established throughout highest management levels, intermediate levels, and all operating facility organization positions. These relationships shall be documented and updated, as appropriate, in organization charts, functional descriptions of departmental responsibilities and relationships, and job descriptions for key personnel positions, or in equivalent forms of documentation. These requirements, including the generic titles of those personnel fulfilling the responsibilities of the positions delineated in these Technical Specifications, shall be documented in the Quality Assurance Manual.</p> <p>b. The station manager shall be responsible for overall safe operation of the plant facility and shall have control over those onsite activities necessary for safe operation storage and maintenance of the plant spent nuclear fuel.</p> <p>c. A corporate responsible officer shall have corporate responsibility for overall plant nuclear safety the safe storage and handling of spent nuclear fuel and shall take any measures needed to ensure acceptable performance of the staff in operating, maintaining, and providing technical support to the plant to ensure nuclear safety facility to ensure safe management of spent nuclear fuel.</p> <p>d. The individuals who train the operating staff CERTIFIED FUEL HANDLERS, or perform radiation protection or quality assurance functions, may report to the appropriate onsite manager; however, these individuals shall have sufficient organizational freedom to ensure their independence from operating pressures ability to perform their assigned functions.</p>
<p>5.2.2 Unit Staff</p> <p><i>The unit staff organization shall include the following:</i></p> <p>a. <i>A total of three non-licensed operators for the two units is required in all conditions. At least one of the required non-licensed operators shall be assigned to each unit.</i></p>	<p>5.2.2 Unit Facility Staff</p> <p>The unit facility staff organization shall include the following:</p> <p>a. A total of three non-licensed operators for the two units is required in all conditions. At least one of the required non-licensed operators shall be assigned to each unit. Each duty shift</p>

<p>b. <i>Shift crew composition may be less than the minimum requirement of 10 CFR 50.54(m)(2)(i) and Specifications 5.2.2.a and 5.2.2.f for a period of time not to exceed 2 hours in order to accommodate unexpected absence of on-duty shift crew members provided immediate action is taken to restore the shift crew composition to within the minimum requirements.</i></p> <p>c. <i>A radiation protection technician shall be on site when fuel is in the reactor. The position may be vacant for not more than 2 hours, in order to provide for unexpected absence, provided immediate action is taken to fill the required position.</i></p> <p>d. <i>Deleted.</i></p> <p>e. <i>The operations manager or shift operations supervisor shall hold an SRO license.</i></p> <p>f. <i>The Shift Technical Advisor (STA) shall provide advisory technical support to the shift manager in the areas of thermal hydraulics, reactor engineering, and plant analysis with regard to the safe operation of the unit. In addition, the STA shall meet the qualifications specified by the Commission Policy Statement on Engineering Expertise on Shift.</i></p>	<p><i>shall be composed of at least one shift supervisor and two NON-CERTIFIED OPERATORS. The NON-CERTIFIED OPERATOR position may be filled by a CERTIFIED FUEL HANDLER.</i></p> <p>b. Shift crew composition may be less than the minimum requirement of 10 CFR 50.54(m)(2)(i) and Specifications 5.2.2.a and 5.2.2.f for a period of time not to exceed 2 hours in order to accommodate unexpected absence of on-duty shift crew members provided immediate action is taken to restore the shift crew composition to within the minimum requirements <i>and the following conditions are met:</i></p> <p style="padding-left: 40px;"><i>1) No fuel movement is in progress;</i> <i>2) No movement of loads over the spent fuel is in progress.</i></p> <p><i>This provision does not permit any shift crew position to be unstaffed upon shift change due to the absence or tardiness of an oncoming shift crew member.</i></p> <p>c. A radiation protection technician shall be on site when fuel is in the reactor <i>during the movement of fuel and during movement of loads over fuel.</i> The position may be vacant for not more than 2 hours, in order to provide for unexpected absence, provided immediate action is taken to fill the required position.</p> <p>d. Deleted. <i>Oversight of fuel handling operations shall be provided by a CERTIFIED FUEL HANDLER.</i></p> <p>e. The operations manager or shift operations supervisor shall hold an SRO license. <i>The shift supervisor shall be a CERTIFIED FUEL HANDLER.</i></p> <p>f. The Shift Technical Advisor (STA) shall provide advisory technical support to the shift manager in the areas of thermal hydraulics, reactor engineering, and plant analysis with regard to the safe operation of the unit. In addition, the STA shall meet the qualifications specified by the Commission Policy Statement on Engineering Expertise on Shift. <i>At all times when nuclear fuel is stored in the spent fuel pools, at least two persons qualified to stand watch in the control room (NON-CERTIFIED OPERATOR or CERTIFIED FUEL</i></p>
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	HANDLER) shall be present in the control room.
TS Section 5.3 - Unit Staff Qualifications	
Current TS	Proposed TS
<p>5.3 Unit Staff Qualifications</p> <p>5.3.1 Each member of the unit staff shall meet or exceed the minimum qualifications of ANSI N18.1-1971, with the following exceptions: 1) the radiation protection manager or lead radiation protection technician who shall meet or exceed the qualifications for "Radiation Protection Manager" in Regulatory Guide 1.8, September 1975, and 2) the licensed operators who shall comply only with the requirements of 10 CFR 55.</p>	<p>5.3 Unit Facility Staff Qualifications</p> <p>5.3.1 Each member of the unit facility staff shall meet or exceed the minimum qualifications of ANSI N18.1-1971, with the following exceptions: 4) the radiation protection manager or lead radiation protection technician who shall meet or exceed the qualifications for "Radiation Protection Manager" in Regulatory Guide 1.8, September 1975, and 2) the licensed operators who shall comply only with the requirements of 10 CFR 55.</p> <p>5.3.2 A NRC-approved training and retraining program for CERTIFIED FUEL HANDLER shall be maintained.</p>
TS Section 5.4 Procedures	
Current TS	Proposed TS
<p>5.4.1 Written procedures shall be established, implemented, and maintained covering the following activities:</p> <p>a. The applicable procedures recommended in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978;</p> <p>b. The emergency operating procedures required to implement the requirements of NUREG-0737 and NUREG-0737, Supplement 1, as stated in Generic Letter 82-33, Section 7.1;</p> <p>c. Fire Protection Program implementation; and</p> <p>d. All programs specified in Specification 5.5.</p>	<p>5.4.1 Written procedures shall be established, implemented, and maintained covering the following activities:</p> <p>a. The applicable procedures applicable to safe storage of nuclear fuel recommended in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978;</p> <p>b. The emergency operating procedures required to implement the requirements of NUREG-0737 and NUREG-0737, Supplement 1, as stated in Generic Letter 82-33, Section 7.1; Deleted</p> <p>c. Fire Protection Program implementation; and</p> <p>d. All programs specified in Specification 5.5.</p>

The proposed changes are shown on the marked-up QCNPS TS pages included as Attachment 2.

3.0 TECHNICAL EVALUATION

This technical evaluation is for administrative changes to QCNPS TS Section 5.0, "Administrative Controls." All reformatting and renumbering is in accordance with Section 5.0 of the BWR/4 Standard Technical Specifications (STS), NUREG-1433, Revision 4 (Reference 3).

The reformatting, renumbering, and rewording process involves no technical changes to the existing TS, except where specifically noted. Editorial rewording, (either adding or deleting) is made consistent with STS except where noted to make the specification germane with a permanently defueled reactor.

The majority of the accident events discussed in Chapter 15 of the QCNPS Updated Final Safety Analysis Report (UFSAR) are not applicable to the reactor in its decommissioned state. The remaining Chapter 15 events applicable to QCNPS during decommissioning are:

- Design Basis Fuel Handling Accidents Inside Containment and Spent Fuel Storage Buildings (the specific concern is dropping a fuel bundle over the Spent Fuel Pool; not the Reactor Vessel)
- Postulated Liquid Releases Due to Liquid Tank Failures

The Design Basis Fuel Handling Accident (FHA) is the limiting Chapter 15 dose event for QCNPS in its decommissioned state.

TS Section 1.1 – Definitions

The definition of the terms Certified Fuel Handler and Non-Certified Operator are being added to ensure consistent understanding and application. Further discussion of the Certified Fuel Handler and Non-Certified Operator are included in several proposed TS Section 5 amendments below.

TS Section 5.1 – Responsibility

TS Section 5.1 "Responsibility," provides a description and requirements regarding certain key operational management responsibilities. The section includes certain requirements associated with reactor operation that will no longer be permitted following docketing of the certifications required by 10 CFR 50.82(a). Therefore, those requirements are not needed for a permanently defueled condition because 10 CFR 50.82(a)(2) prohibits Exelon from operating the plant or placing fuel in the reactor vessel.

TS 5.1.1 – TS 5.1.1 is being revised to more appropriately refer to "facility" operation, rather than "unit" operation.

The terms "unit" and "unit operation" are typically associated with an operating reactor. The proposed administrative change revises these terms, where applicable in this TS Section, with terms such as "facility" or "facility staff," which are considered more appropriate in representing the permanently shutdown and defueled condition.

The station manager will be the senior position at the facility and will be duly authorized with sufficient authority to carry out the specific responsibilities as described in TS 5.2.1.b. When the station manager is absent from the facility, he/she will delegate in writing the succession of responsibility to a principal alternate manager. ANSI N18.1-1971 states, "In an organization which includes one or more persons who are designated as principal alternates for the plant manager and who meet the nuclear power plant experience and AEC examination requirements established for the plant manager, the requirements of the plant manager may be reduced, such that only one of his ten years of experience need to be nuclear power plant experience and he need not be eligible for AEC examination." The description of the delegation of authority process will be established and maintained in the Quality Assurance Manual.

TS 5.1.2 – TS 5.1.2 identifies the responsibilities for the control room command function associated with Modes of plant operation, including the defueled condition, and is based on personnel positions and qualifications for an operating plant. It identifies the need for a delegation of authority for command in an operating plant when the principal assignee leaves the control room.

This section is being revised to eliminate the Mode dependency for this function and personnel qualifications associated with an operating plant. The proposed change establishes the shift supervisor as having command of the shift. The duty shift is specified in TS 5.2.2.a as one shift supervisor and two non-certified operators. Associated activities (e.g., fuel handling) do not necessarily rely on the main control room (MCR). The MCR will remain the physical center of the command function; however, since control of activities may be performed either remotely from the MCR or locally in the plant, the location of the command center is functionally where the shift supervisor is located. The proposed TS change recognizes that the delegation of command and control is unnecessary once QCNPS is in the permanently defueled condition with fuel in the Spent Fuel Pool (SFP). Any event involving loss of pool cooling would evolve slowly enough that no immediate response would be required to protect the health and safety of the public or station personnel. Adequate communications capability is provided to allow facility personnel to safely manage storage and handling of irradiated fuel without reliance on the MCR for the command function.

TS Section 5.2 – Organization

The terms "unit," "unit operation," and "plant" are typically associated with an operating reactor. The proposed administrative change revises these terms, where applicable in this TS Section, with terms such as "facility" or "facility staff," which are considered more appropriate in representing the permanently shutdown and defueled condition.

The terms "safe storage and maintenance of spent nuclear fuel," "safe storage and handling of spent nuclear fuel," and "safe management of spent nuclear fuel" are considered analogous to the terms "nuclear safety" and "safety of the nuclear power plant" for a facility that will be in the permanently defueled condition. The proposed changes in this TS Section serve to narrow the focus of nuclear safety concerns to those associated with safely maintaining spent nuclear fuel. These changes remove the implication that QCNPS can return to operation once the final certification required by 10 CFR 50.82(a)(1)(ii) is submitted to the NRC.

TS 5.2.1 "Onsite and Offsite Organizations" - The introduction to TS 5.2.1 identifies that organizational positions are established that are responsible for the safety of the nuclear plant. The section includes certain requirements associated with reactor operation that will no longer be permitted following docketing of the certifications required by 10 CFR 50.82(a). Therefore, those requirements are not needed for a permanently defueled condition because 10 CFR 50.82(a)(2) prohibits Exelon from operating the plant or placing fuel in the reactor vessel.

TS 5.2.1.a – The proposed TS change administratively changes the term "operating" organization to "facility" organization.

TS 5.2.1.b – This TS identifies the organizational position responsible for safe operation of the nuclear plant and for control of activities necessary for the safe operation and maintenance of the plant.

To reflect the change in safety concerns from an operating plant to a permanently defueled plant, the responsibility for the control of activities necessary for the "safe operation and

maintenance of the plant” is changed to the responsibility for “safe storage and maintenance of the spent nuclear fuel.”

TS 5.2.1.c – This TS identifies the organizational position responsible for overall nuclear plant safety.

To reflect the change in safety concerns from an operating plant to a permanently defueled plant, the responsibility for ensuring “nuclear safety” is changed to the responsibility for ensuring “safe storage, handling, and management of spent nuclear fuel.” The proposed change replaces the term “corporate” officer with “responsible” officer. “Responsible officer” is defined in 10 CFR 50.2 whereas “corporate officer” is not. The responsible officer will be a corporate position. By replacing “corporate” officer with “responsible” officer, the corporate individual vested with executive authority over facility activities will be clearly defined.

TS 5.2.1.d – This paragraph addresses the requirement for organizational independence of the personnel who train the operations staff, radiation protection personnel, and quality assurance personnel from operating pressures.

The proposed change replaces the term "operating staff" with "CERTIFIED FUEL HANDLERS" as defined in TS 1.1, "Definitions." In the defueled condition, the primary responsibility of managing safe storage of the spent nuclear fuel will be performed by the Certified Fuel Handlers. Additionally, since the plant will not be permitted to operate, the phrase "their independence from operating pressures" is being changed to "their ability to perform their assigned functions." These changes reflect the changed function of the previous operating staff to a focus on safe handling and storage of spent nuclear fuel, and to remove the implication that QCNPS can return to operation once the certifications required by 10 CFR 50.82(a)(1) are submitted to the NRC.

TS 5.2.2 "Unit Staff" – The title of this subsection and the introductory statement for TS 5.2.2 is being revised to more appropriately refer to "Facility" Staff, rather than "Unit" Staff to reflect the permanently shutdown and defueled condition.

TS 5.2.2.a – TS 5.2.2.a requires a total of three non-licensed operators be assigned for the two units in all conditions. This requirement is being deleted to reflect a permanently defueled reactor.

TS 5.2.2.a is being replaced by a new requirement for each on duty shift to be composed of a minimum shift crew composition of at least one shift supervisor and two Non-certified Operators. The Non-certified Operator position may be filled by either a Non-certified Operator or by a Certified Fuel Handler. Since plant operations can never recur at QCNPS once the certifications required by 10 CFR 50.82(a)(1) are submitted to the NRC, the minimum staffing requirement is changed to a minimum crew compliment of one shift supervisor and two Non-certified Operators. The number and complexity of operating systems of an operating plant will be reduced to the systems required to provide and support spent fuel pool cooling. The new proposed crew compliment is sufficient to monitor spent fuel pool parameters, such as pool level and temperature, while maintaining the ability to ensure spent fuel handling operations are carried out in a safe manner. Moreover, the spectrum of credible accidents and operational events, and the quantity and complexity of activities required for safety have been greatly reduced from that at an operating plant. The shift supervisor will be qualified as a Certified Fuel Handler in accordance with proposed TS

5.2.2.e. In this position, this individual will retain command and control responsibility for operational decisions and will be responsible for the functions required for event reporting and emergency response.

TS 5.2.2.b – This section addresses the conditions under which the minimum shift compliment may be reduced due to unexpected circumstances. It allows for shift crew composition to be less than the minimum requirement of 10 CFR 50.54(m) and Specifications 5.2.2.a and 5.2.2.f for a period of time, not to exceed 2 hours, in order to accommodate unexpected absence of on-duty shift crew members, provided immediate action is taken to restore the shift crew composition to within the minimum requirements.

This paragraph is being revised to remove references to 10 CFR 50.54(m)(2)(i) and TS 5.2.2.f. Once the certifications required by 10 CFR 50.82(a)(1) have been submitted, the requirements of 10 CFR 50.54(m) will no longer be applicable because the QCNPS Part 50 license no longer will authorize operation of the reactor or emplacement or retention of fuel in the reactor vessel. These certifications also obviate need for the operators' licenses specified in 10 CFR 55 and the requirement for the Shift Technical Advisor (STA) position discussed in TS 5.2.2.f. Additional provisions are added to ensure that shift crew composition is not below the minimum requirements when fuel movement is in progress and movement of loads over the spent fuel is in progress. This provision will not apply to a shift crew position during shift turnover due to the absence or tardiness of the oncoming shift crew member.

TS 5.2.2.c – This section establishes the requirement for a person qualified in radiation protection measures to be onsite when fuel is in the reactor. To reflect a permanently defueled condition, this requirement is being modified to require an individual qualified in radiation protection measures to be present on-site during the movement of fuel and during the movement of loads over fuel. Following docketing of the certification of permanent removal of fuel from the reactor vessel to the SFP, fuel will no longer be permitted to be emplaced or retained in the vessel. The modified TS reflect those remaining activities where individuals qualified in radiation protection measures are required to be present.

TS 5.2.2.d – This paragraph was previously deleted. This section is revised to establish the requirement for oversight of fuel handling operations in the SFP to be performed by a Certified Fuel Handler. Oversight of fuel handling operations indicates that the responsible Certified Fuel Handler will authorize commencement of fuel handling activities, monitor the progress of fuel movements, and take appropriate actions in response to emergencies. Fuel moves and heavy load moves that could affect the safe handling and storage of spent nuclear fuel would be approved by the shift supervisor. Proposed TS 5.2.2.e requires the shift supervisor to be a Certified Fuel Handler.

TS 5.2.2.e – This section establishes the requirement for the operations manager or a middle manager to hold an SRO license. This paragraph is being deleted. Once the certifications required by 10 CFR 50.82(a)(1) have been submitted, the requirements of 10 CFR 50.54(m) will no longer be applicable because the QCNPS Part 50 license no longer will authorize operation of the reactor or emplacement or retention of fuel in the reactor vessel. These certifications also obviate the need for the operators' licenses specified in 10 CFR 55. Therefore, there is no longer a need for operations management staff to hold an SRO license.

This proposed change adds the requirement that the shift supervisor be a Certified Fuel Handler. This requirement ensures that the senior individual on shift is appropriately trained

and qualified, in accordance with the NRC-approved Certified Fuel Handler training program, to supervise shift activities. The QCNPS management structure will not require positions above the shift manager to be a Certified Fuel Handler or attend equivalent training. QCNPS has determined that, once the plant is permanently shutdown and defueled, the time available to mitigate credible events is expected to be greater than that for current design basis events. As such, management oversight of the plant can be performed by individuals meeting the applicable requirements of ANSI N18.1-1971 (as required by TS 5.3.1) and need not be qualified as Certified Fuel Handlers.

TS 5.2.2.f – This section establishes the requirements for the Shift Technical Advisor (STA) position. This paragraph is deleted to remove the requirements for the STA since that position is only required for a plant authorized for power operations. Once the certifications required by 10 CFR 50.82(a)(1) have been submitted, the requirements of this specification will no longer be applicable because the QCNPS Part 50 license no longer will authorize operation of the reactor or emplacement or retention of fuel in the reactor vessel.

The proposed change to this section reflects the requirement for having two qualified watch standers (either a Non-certified Operator or Certified Fuel Handler) in the control room when fuel is stored in the QCNPS spent fuel pools. Since there are two spent fuel pools (i.e., a Unit 1 spent fuel pool and a Unit 2 spent fuel pool) this proposed change will ensure there is one qualified watch stander available for each Unit. This reflects the reduced requirement for control room personnel training and qualification for a plant authorized for nuclear fuel storage only. The NRC approved the QCNPS Certified Fuel Handler training program in Reference 2. Non-certified Operators will support the facility through performance of tasks not requiring qualification as a Certified Fuel Handler. The training and qualification for the Non-certified Operator will be determined in accordance with the requirements of 10 CFR 50.120, "Training and qualification of nuclear power plant personnel," which requires training programs to be derived using a Systems Approach to Training (SAT) as defined in 10 CFR 55.4. Although the requirements of 10 CFR 50.120 apply to holders of an operating license issued under Part 50, and the QCNPS license will no longer authorize operation following submittal of the certifications required by 10 CFR 50.82(a)(1), the Non-certified Operator training program nonetheless aligns with those requirements. This process ensures that the Non-certified Operator will be qualified to perform the functions necessary to monitor and ensure safe storage of fuel. The SAT process requires (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. There will be a sufficient number of individuals qualified as Non-certified Operators or Certified Fuel Handlers to staff the facility twenty-four hours per day, seven days per week. Additional on-shift staffing will be provided to satisfy applicable security, fire protection, and emergency preparedness requirements.

The MCR will remain the physical center of the command function. However, since control of activities may be performed either remotely from the control room or locally in the plant, the location of the command center is functionally where the shift supervisor is located, in accordance with proposed TS 5.1.2. Activities performed from the MCR that have the

potential to affect forced cooling of spent nuclear fuel include changing the electrical power distribution system alignment.

All spent fuel handling activities including starting and stopping cooling water pumps are performed locally in the Reactor Building or in the Radwaste Control Room. Indications and/or alarms are also received locally and in the Main and Radwaste Control Rooms that would be indicative of spent fuel pool abnormalities. The shift supervisor is responsible for directing response to those abnormalities, from either the MCR or locally in accordance with applicable response procedures.

For any condition, incident, or event that occurs when the Non-certified Operators are in the control room alone and is not within the scope of qualifications that are possessed by the Non-certified Operators, the shift supervisor will be immediately contacted for direction by phone, radio, and/or plant page system. This philosophy is deemed acceptable because the necessity to render immediate actions to protect the health and safety of the public is not challenged.

TS Section 5.3 - Unit Staff Qualifications

The section title for TS 5.3 is being revised to more appropriately refer to "Facility" Staff Qualifications, rather than "Unit" Staff Qualifications.

TS 5.3.1 – This section establishes that each member of the unit staff meet or exceed the minimum qualifications specified in ANSI N18.1 - 1971. The TS provided an exception that required licensed operators to meet the requirements of 10 CFR 55. Following the certifications required by 10 CFR 50.82(a)(1) being submitted to the NRC, QCNPS will not be required to have operators licensed pursuant to 10 CFR 55; therefore, the exception no longer applies and the requirement is being removed. The term "unit" is being changed to "facility" to be more appropriate with a defueled condition, which is consistent with other changes in this LAR.

TS 5.3.2 – TS 5.3.2 is being added to establish that an NRC-approved Certified Fuel Handlers Training and Retraining Program shall be maintained. The Certified Fuel Handler training program ensures that the qualifications of fuel handlers are commensurate with the tasks to be performed and the conditions requiring response. 10 CFR 50.120, "Training and qualification of nuclear power plant personnel," requires training programs to be derived using a SAT as defined in 10 CFR 55.4. Although the requirements of 10 CFR 50.120 apply to holders of an operating license issued under Part 50, and the QCNPS license will no longer authorize operation following submittal of the certifications required by 10 CFR 50.82(a)(1), the Certified Fuel Handler training program nonetheless aligns with those requirements. The Certified Fuel Handler training program provides adequate confidence that appropriate SAT based training of personnel who will perform the duties of a Certified Fuel Handler is conducted to ensure the facility is maintained in a safe and stable condition. The NRC approved the QCNPS Certified Fuel Handler training program in Reference 2.

TS Section 5.4 - Procedures

This section provides a description of the requirements regarding administration of written procedures. TS 5.4 will remain applicable with the reactor permanently defueled. As such, it is being retained and revised to reflect a permanently defueled condition. Relevant procedures, drawings and instructions will continue to be controlled per 10 CFR 50, Appendix B, Criterion VI, "Document Control." Activities involving security and emergency planning and preparedness will continue to be controlled by procedure.

TS 5.4.1.a - The applicability of this TS is being revised to address only procedures applicable to the safe storage of nuclear fuel recommended in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978. The proposed change reduces the scope of the TS to requiring only the establishment, implementation, and maintenance of written procedures applicable to the safe storage of nuclear fuel. This change recognizes the reduced requirements associated with the protection of stored nuclear fuel as opposed to the operation of the nuclear power plant. This change is consistent with that approved for Crystal River Unit 3 (Reference 8).

TS 5.4.1.b - This TS requires emergency operating procedures that implement the requirements of NUREG-0737 and NUREG-0737, Supplement 1. NUREG-0737, "Clarification of TMI Action Plan Requirements," November 1980 (ADAMS Accession No. ML051400209), and NUREG-0737, Supplement 1, "Clarification of TMI Action Plan Requirements: Requirements for Emergency Response Capability," January 1983 (ADAMS Accession No. ML102560009), as stated in Generic Letter 82-33, "Supplement 1 to NUREG-0737 – Requirements for Emergency Response Capability," dated December 17, 1982 (ADAMS Accession No. ML031080548), incorporated into one document all Three Mile Island (TMI) related items approved for implementation by the NRC at that time. This included the use of human factored, function oriented, emergency operating procedures to improve human reliability and the ability to mitigate the consequences of a broad range of initiating events for operating reactors, and subsequent multiple failures or operator errors, without the need to diagnose specific events.

TS 5.4.1.b is proposed for deletion because the emergency operating procedures discussed therein only pertain to accidents and events resulting from reactor operation. The referenced procedures will no longer be required for a permanently shutdown and defueled reactor. This change is consistent with that approved for Kewaunee Power Station (Reference 7).

There are no changes proposed to TS 5.4.1.c and d.

4.0 REGULATORY EVALUATION

4.1 Applicable Regulatory Requirements/Criteria

The proposed changes have been evaluated to determine whether applicable regulations and requirements continue to be met. Exelon has determined that the proposed changes do not require any exemptions or relief from regulatory requirements.

10 CFR 50.82 "Termination of license."

"(a) For power reactor licensees —

(1) (i) When a licensee has determined to permanently cease operations the licensee shall, within 30 days, submit a written certification to the NRC, consistent with the requirements of § 50.4(b)(8);

(ii) Once fuel has been permanently removed from the reactor vessel, the licensee shall submit a written certification to the NRC that meets the requirements of § 50.4(b)(9) and;

(2) Upon docketing of the certifications for permanent cessation of operations and permanent removal of fuel from the reactor vessel, or when a final legally effective order to permanently cease operations has come into effect, the 10 CFR part 50 license no longer authorizes operation of the reactor or emplacement or retention of fuel into the reactor vessel."

By letter dated June 20, 2016 (Reference 1), Exelon provided formal notification to the NRC pursuant to 10 CFR 50.82(a)(1)(i) of Exelon's contingent determination to permanently cease operations at QCNPS by June 1, 2018.

10 CFR 50.36 "Technical specifications."

"(c) Technical specifications will include items in the following categories:

(5) *Administrative Controls*. Administrative controls are the provisions relating to organization and management, procedures, recordkeeping, review and audit, and reporting necessary to assure operation of the facility in a safe manner."

The particular administrative controls to be included in the TS generally are requirements the NRC deems necessary to support the safe operation of a facility that are not already covered by other regulations. Although 10 CFR 50.36 includes these requirements, they are predominately specified in support of an operating plant. Once QCNPS is in a permanently shutdown and defueled condition, certain administrative controls described in the TS will no longer be required and can be deleted or modified as reflected in this LAR.

"(6) *Decommissioning*. This paragraph applies only to nuclear power reactor facilities that have submitted the certifications required by § 50.82(a)(1) and to non-power reactor facilities which are not authorized to operate. Technical specifications involving safety limits, limiting safety system settings, and limiting control system settings; limiting conditions for operation; surveillance requirements; design features; and administrative controls will be developed on a case-by-case basis."

As noted above, by letter dated June 20, 2016 (Reference 1), Exelon provided formal notification to the U.S. Nuclear Regulatory Commission (NRC) pursuant to 10 CFR 50.4(b)(8) and 10 CFR 50.82(a)(1)(i) of Exelon's determination to permanently cease operations at QCNPS by June 1, 2018. Upon submittal of the final certification pursuant to 10 CFR 50.82(a)(1)(ii) QCNPS will no longer be licensed to operate. The proposed changes delete or modify certain QCNPS TS administrative controls that are no longer applicable to a permanently shutdown and defueled facility.

10 CFR 50.54 "Conditions of licenses."

"(m)(1) A senior operator licensed pursuant to part 55 of this chapter shall be present at the facility or readily available on call at all times during its operation, and shall be present at the facility during initial start-up and approach to power, recovery from an unplanned or unscheduled shut-down or significant reduction in power, and refueling, or as otherwise prescribed in the facility license."

In 10 CFR 50.54(m), the NRC established the requirement for having ROs and SROs licensed pursuant to 10 CFR 55 based on plant conditions. Since the initial certification has been submitted pursuant to 10 CFR 50.82(a)(1)(i) (Reference 1) and once the final certification required by 10 CFR 50.82(a)(1)(ii) has been submitted, the requirements of 10 CFR 50.54(m) will no longer be applicable since the 10 CFR 50 license at QCNPS will no longer authorize operation of the reactor or emplacement or retention of fuel in the reactor vessel. These certifications also obviate the need for the operators' license specified in 10 CFR 55; therefore, there is no longer a need for operations management staff to hold an SRO license. The shift supervisor will be qualified as a Certified Fuel Handler defined in 10 CFR 50.2. In this position, this individual will retain command and

control responsibility for operational decisions and will be responsible for the functions required for event reporting and emergency response.

10 CFR 50.2 "Definitions."

"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."

"Responsible officer means, for the purposes of § 50.55(e) of this chapter, the president, vice-president, or other individual in the organization of a corporation, partnership, or other entity who is vested with executive authority over activities subject to this part."

By letter dated September 6, 2016 (Reference 2), the NRC approved the QCNPS Certified Fuel Handler training program. This program meets the requirements pursuant to 10 CFR 50.2.

10 CFR 55.2 "Scope."

"The regulations in this part apply to --

(a) Any individual who manipulates the controls of any utilization facility licensed under parts 50, 52, or 54 of this chapter,

(b) Any individual designated by a facility licensee to be responsible for directing any licensed activity of a licensed operator.

(c) Any facility license."

As noted above, since the initial certification has been submitted pursuant to 10 CFR 50.82(a)(1)(i) (Reference 1) and once the final certification required by 10 CFR 50.82(a)(1)(ii) has been submitted, QCNPS will no longer be authorized to operate. Therefore, there is no longer a need for operations staff to hold RO or SRO licenses and the requirements of 10 CFR 55.2 would not be applicable.

4.2 Precedent

The proposed changes are consistent with the existing TS administrative control requirements currently in effect for the permanently shutdown and defueled Vermont Yankee Nuclear Power Station, for which an amendment was issued on December 22, 2014 (Reference 4); for the permanently shutdown and defueled Kewaunee Power Station, for which an amendment was issued on February 13, 2015 (Reference 7); for the permanently shutdown and defueled Millstone Nuclear Power Station, Unit 1, for which an amendment was issued on November 9, 1999 (Reference 5); for the permanently shutdown and defueled Zion Nuclear Power Station, for which an amendment was issued on December 30, 1999 (Reference 6); and for the permanently shutdown and defueled Crystal River Nuclear Plant, Unit 3, for which an amendment was issued on July 11, 2014 (Reference 8).

4.3 No Significant Hazards Consideration

Exelon has evaluated whether or not a significant hazards consideration is involved with the proposed amendment by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of amendment," as discussed below:

The proposed changes would revise and/or remove certain requirements contained within Technical Specification (TS) Section 5.0, Administrative Controls, of the Quad Cities Nuclear Power Station (QCNPS) TS. The TS requirements being changed would be applicable once it has been certified that all fuel has permanently been removed from the QCNPS reactor in accordance with 10 CFR 50.82(a)(1)(ii). Once the final certification is docketed documenting the permanent cessation of operations and permanent fuel removal, the 10 CFR 50 license for QCNPS will no longer authorize operation of the reactor or placement of fuel in the reactor vessel, in accordance with 10 CFR 50.82(a)(2).

The discussion below addresses each of these criteria and demonstrates that the proposed amendment does not constitute a significant hazard.

1. Does the proposed amendment involve a significant increase in the probability or consequences of an accident previously evaluated?

Response: No.

The proposed changes would not take effect until QCNPS has permanently ceased operation and entered a permanently defueled condition. The proposed changes would revise the QCNPS TS by deleting or modifying certain portions of the TS administrative controls described in Section 5.0 of the TS that are no longer applicable to a permanently shutdown and defueled facility.

The proposed changes do not involve any physical changes to plant structures, systems, and components (SSCs) or the manner in which SSCs are operated, maintained, modified, tested, or inspected. The proposed changes do not involve a change to any safety limits, limiting safety system settings, limiting control settings, limiting conditions for operation, surveillance requirements, or design features.

The deletion and modification of provisions of the facility administrative controls do not affect the design of SSCs necessary for safe storage of spent irradiated fuel or the methods used for handling and storage of such fuel in the Spent Fuel Pool (SFP). The proposed changes are administrative in nature and do not affect any accidents applicable to the safe management of spent irradiated fuel or the permanently shutdown and defueled condition of the reactor.

In a permanently defueled condition, the only credible accidents are the Design Basis Fuel Handling Accidents Inside Containment (the specific concern is dropping a fuel bundle over the Spent Fuel Pool; not the Reactor Vessel) and Spent Fuel Storage Buildings and Postulated Liquid Releases Due to Liquid Tank Failures. Other accidents such as Loss of Coolant Accident, Loss of Feedwater, and Reactivity and Power Distribution Anomalies will no longer be applicable to a permanently defueled reactor plant.

The probability of occurrence of previously evaluated accidents is not increased, since extended operation in a permanently defueled condition will be the only operation allowed, and therefore, bounded by the existing analyses. Additionally, the occurrence of postulated accidents associated with reactor operation is no longer credible in a permanently defueled reactor. This significantly reduces the scope of applicable accidents.

The proposed changes in the administrative controls do not affect the ability to successfully respond to previously evaluated accidents and do not affect radiological assumptions used in the evaluations. The proposed changes narrow the focus of nuclear safety concerns to those associated with safely maintaining spent nuclear fuel. These changes remove the implication that QCNPS can return to operation once the final certification required by 10 CFR 50.82(a)(1)(ii) is submitted to the NRC. Any event involving safe storage of spent irradiated fuel or the methods used for handling and storage of such fuel in the SFP would evolve slowly enough that no immediate response would be required to protect the health and safety of the public or station personnel. Adequate communications capability is provided to allow facility personnel to safely manage storage and handling of irradiated fuel. As a result, no changes to radiological release parameters are involved. There is no effect on the type or amount of radiation released, and there is no effect on predicted offsite doses in the event of an accident.

Therefore, the proposed changes do not involve a significant increase in the probability or consequence of an accident previously evaluated.

2. Does the proposed amendment create the possibility of a new or different kind of accident from any accident previously evaluated?

Response: No.

The proposed changes to delete and/or modify certain TS administrative controls have no impact on facility SSCs affecting the safe storage of spent irradiated fuel, or on the methods of operation of such SSCs, or on the handling and storage of spent irradiated fuel itself. The proposed changes do not result in different or more adverse failure modes or accidents than previously evaluated because the reactor will be permanently shut down and defueled and QCNPS will no longer be authorized to operate the reactor. The proposed changes will continue to require proper control and monitoring of safety significant parameters and activities.

The proposed changes do not result in any new mechanisms that could initiate damage to the remaining relevant safety barriers in support of maintaining the plant in a permanently shutdown and defueled condition (e.g., fuel cladding and SFP cooling). Since extended operation in a defueled condition will be the only operation allowed, and therefore bounded by the existing analyses, such a condition does not create the possibility of a new or different kind of accident.

The proposed changes do not alter the protection system design or create new failure modes. The proposed changes do not involve a physical alteration of the plant, and no new or different kind of equipment will be installed. Consequently, there are no new initiators that could result in a new or different kind of accident.

Therefore, the proposed changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Does the proposed amendment involve a significant reduction in a margin of safety?

Response: No.

The proposed changes involve deleting and/or modifying certain TS administrative controls once the QCNPS facility has been permanently shutdown and defueled. As specified in 10 CFR 50.82(a)(2), the 10 CFR 50 license for QCNPS will no longer authorize operation of the reactor or emplacement or retention of fuel into the reactor vessel following submittal of the certifications required by 10 CFR 50.82(a)(1). As a result, the occurrence of certain design basis postulated accidents are no longer considered credible when the reactor is permanently defueled.

The only remaining credible accidents are the Design Basis Fuel Handling Accidents Inside Containment and Spent Fuel Storage Buildings (the specific concern is dropping a fuel bundle over the Spent Fuel Pool; not the Reactor Vessel) and the Postulated Liquid Releases Due to Liquid Tank Failures. The proposed changes do not adversely affect the inputs or assumptions of any of the design basis analyses that impact the Design Basis Fuel Handling Accidents.

The proposed changes are limited to those portions of the TS administrative controls that are not related to the safe storage and maintenance of spent irradiated fuel. These proposed changes do not directly involve any physical equipment limits or parameters. The requirements that are proposed to be revised and/or deleted from the QCNPS TS are not credited in the existing accident analysis for the remaining applicable postulated accidents; therefore, they do not contribute to the margin of safety associated with the accident analysis. Certain postulated DBAs involving the reactor are no longer possible because the reactor will be permanently shut down and defueled and QCNPS will no longer be authorized to operate the reactor.

Therefore, the proposed changes do not involve a significant reduction in the margin of safety.

Based on the above, Exelon concludes that the proposed amendment does not involve a significant hazards consideration under the standards set forth in 10 CFR 50.92(c), and, accordingly, a finding of no significant hazards consideration is justified.

4.4 Conclusion

In conclusion, based on the considerations discussed above: 1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, 2) such activities will be conducted in compliance with the Commission's regulations, and 3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

5.0 ENVIRONMENTAL CONSIDERATION

The proposed amendment involves deleting or modifying certain TS administrative controls in support of proposed decommissioning efforts to reflect the permanently shutdown and defueled condition at QCNPS. The proposed amendment does not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluent that may be released offsite, or (iii) a

significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed amendment meets the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c)(9).

In addition, the proposed changes involve changes to recordkeeping, reporting, or administrative procedures or requirements. Accordingly, the proposed amendment meets the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c)(10).

Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed amendment.

6.0 REFERENCES

1. Letter from Michael P. Gallagher (Exelon Generation Company, LLC) to U.S. Nuclear Regulatory Commission, "Certification of Permanent Cessation of Power Operations," dated June 20, 2016 (ML16172A151)
2. Letter from U.S. NRC to Bryan C. Hanson (Exelon Generation Company, LLC) to U.S. Nuclear Regulatory Commission, "Oyster Creek Nuclear Generating Station; Clinton Power Station, Unit No. 1; and Quad Cities Nuclear Power Station, Units 1 And 2 – Approval Of Certified Fuel Handler Training And Retraining Program (CAC NOS. MF8109, MF8138, MF8139, AND MF8140)," dated September 6, 2016 (ML16222A787)
3. NUREG-1433, "Standard Technical Specifications - General Electric Plants (BWR/4)," Revision 4
4. Letter from U.S. NRC to Entergy Nuclear Operations, Inc., "Vermont Yankee Nuclear Power Station - Issuance of Amendment to Renewed Facility Operating License RE: Changes to the Administrative Controls Section of the Technical Specifications (TAC No. MF2991)," dated December 22, 2014 (ML14217A072)
5. Millstone Power Station, Unit 1, License Amendment 106 to Facility Operating License No. DPR-21, dated November 9, 1999 (ADAMS Accession Nos. ML993330283 and ML993330269)
6. Zion Nuclear Station, Units 1 and 2, License Amendments 180 and 167 to Facility Operating License Nos. DPR-39 and DPR-48, respectively, dated December 30, 1999 (ADAMS Accession Nos. ML003672704 and ML003672696)
7. Letter from U.S. NRC to Dominion Energy Kewaunee, Inc., "Kewaunee Power Station - Issuance of Amendment for Permanently Shutdown and Defueled Technical Specifications and Certain License Conditions (TAC No. MF1952)," dated February 13, 2015 (ML14237A045)
8. Letter from U.S. NRC to Crystal River Nuclear Plant, "Crystal River Unit 3 - Issuance of Amendment to the Facility Operating License Regarding Changes to the Administrative Controls Section of the Technical Specifications (TAC No. MF1504)," dated July 11, 2014 (ML14097A145)

Attachment 2

Proposed Technical Specifications (Marked-Up Pages)

**Quad Cities Nuclear Power Station
Facility Operating License No. DPR-29 and DPR-30
NRC Docket No. 50-254 and 50-265**

Changes to the staffing and training requirements for the QCNPS staff contained in Section 5.0, Administrative Controls, of the QCNPS Technical Specifications (TS).

TS Pages

1.1-1
1.1-4
5.1-1
5.2-1
5.2-2
5.3-1
5.4-1

CERTIFIED FUEL HANDLER

A CERTIFIED FUEL HANDLER is an individual who complies with provision of the CERTIFIED FUEL HANDLER training program required by Specification 5.3.2.

1.0 USE AND APPLICATION

1.1 Definitions

-----NOTE-----

The defined terms of this section appear in capitalized type and are applicable throughout these Technical Specifications and Bases.

TermDefinition

ACTIONS

ACTIONS shall be that part of a Specification that prescribes Required Actions to be taken under designated Conditions within specified Completion Times.

AVERAGE PLANAR LINEAR
HEAT GENERATION RATE
(APLHGR)

The APLHGR shall be applicable to a specific planar height and is equal to the sum of the LHGRs for all the fuel rods in the specified bundle at the specified height divided by the number of fuel rods in the fuel bundle at the height.

CHANNEL CALIBRATION

A CHANNEL CALIBRATION shall be the adjustment, as necessary, of the channel output such that it responds within the necessary range and accuracy to known values of the parameter that the channel monitors. The CHANNEL CALIBRATION shall encompass all devices in the channel required for channel OPERABILITY and the CHANNEL FUNCTIONAL TEST. Calibration of instrument channels with resistance temperature detector (RTD) or thermocouple sensors may consist of an in-place qualitative assessment of sensor behavior and normal calibration of the remaining adjustable devices in the channel. The CHANNEL CALIBRATION may be performed by means of any series of sequential, overlapping, or total channel steps.

CHANNEL CHECK

A CHANNEL CHECK shall be the qualitative assessment, by observation, of channel behavior during operation. This determination shall include, where possible, comparison of the channel indication and status to other indications or

(continued)

1.1 Definitions (continued)

LINEAR HEAT GENERATION RATE (LHGR)	The LHGR shall be the heat generation rate per unit length of fuel rod. It is the integral of the heat flux over the heat transfer area associated with the unit length.
LOGIC SYSTEM FUNCTIONAL TEST	A LOGIC SYSTEM FUNCTIONAL TEST shall be a test of all logic components required for OPERABILITY of a logic circuit, from as close to the sensor as practicable up to, but not including, the actuated device, to verify OPERABILITY. The LOGIC SYSTEM FUNCTIONAL TEST may be performed by means of any series of sequential, overlapping, or total system steps so that the entire logic system is tested.
MINIMUM CRITICAL POWER RATIO (MCPR)	The MCPR shall be the smallest critical power ratio (CPR) that exists in the core for each class of fuel. The CPR is that power in the assembly that is calculated by application of the appropriate correlation(s) to cause some point in the assembly to experience boiling transition, divided by the actual assembly operating power.
MODE	A MODE shall correspond to any one inclusive combination of mode switch position, average reactor coolant temperature, and reactor vessel head closure bolt tensioning specified in Table 1.1-1 with fuel in the reactor vessel.
OPERABLE—OPERABILITY	A system, subsystem, division, component, or device shall be OPERABLE or have OPERABILITY when it is capable of performing its specified safety function(s) and when all necessary attendant instrumentation, controls, normal or emergency electrical power, cooling and seal water, lubrication, and other auxiliary equipment that

(continued)

NON-CERTIFIED
OPERATOR

A NON-CERTIFIED OPERATOR is a non-licensed operator who complies with the qualification requirements of Specification 5.3.1, but is not a CERTIFIED FUEL HANDLER.

5.0 ADMINISTRATIVE CONTROLS

5.1 Responsibility

facility



- 5.1.1 The station manager shall be responsible for overall ~~unit~~ operation and shall delegate in writing the succession to this responsibility during his absence.

shift



shift



- 5.1.2 A ~~unit~~ supervisor shall be responsible for the ~~control room~~ command function ~~(Since the control room is common to both units, the control room command function for both units can be satisfied by a single unit supervisor).~~ During any absence of the unit supervisor from the control room while the unit is in MODE 1, 2, or 3, an individual with an active Senior Reactor Operator (SRO) license shall be designated to assume the control room command function. During any absence of the unit supervisor from the control room while the unit is in MODE 4 or 5 or defueled, an individual with an active SRO license or Reactor Operator license shall be designated to assume the control room command function.

5.0 ADMINISTRATIVE CONTROLS

5.2 Organization

5.2.1 Onsite and Offsite Organizations

Onsite and offsite organizations shall be established for ~~unit operation~~ and corporate management, respectively. The onsite and offsite organizations shall include the positions for activities affecting ~~safety of the nuclear power plant~~.

safe storage and handling of spent nuclear fuel

facility staff

facility

a. Lines of authority, responsibility, and communication shall be defined and established throughout highest management levels, intermediate levels, and all ~~operating~~ organization positions. These relationships shall be documented and updated, as appropriate, in organization charts, functional descriptions of departmental responsibilities and relationships, and job descriptions for key personnel positions, or in equivalent forms of documentation. These requirements, including the generic titles of those personnel fulfilling the responsibilities of the positions delineated in these Technical Specifications, shall be documented in the Quality Assurance Manual.

responsible

facility

b. The station manager shall be responsible for overall safe operation of the ~~plant~~ and shall have control over those onsite activities necessary for safe ~~operation and maintenance of the plant~~.

the safe storage and handling of spent nuclear fuel

storage

spent nuclear fuel

c. A ~~corporate~~ officer shall have corporate responsibility for ~~overall plant nuclear safety~~ and shall take any measures needed to ensure acceptable performance of the staff in operating, maintaining, and providing technical support to the ~~plant to ensure nuclear safety~~.

facility to ensure safe management of spent nuclear fuel

CERTIFIED FUEL HANDLERS

d. The individuals who train the ~~operating~~ staff, or perform radiation protection or quality assurance functions, may report to the appropriate onsite manager; however, these individuals shall have sufficient organizational freedom to ensure their ~~independence from operating pressures~~.

Facility

ability to perform their assigned functions

5.2.2 ~~Unit~~ Staff

The ~~unit~~ staff organization shall include the following:

(continued)

facility

Each duty shift shall be composed of at least one shift supervisor and two NON-CERTIFIED OPERATORS. The NON-CERTIFIED OPERATOR position may be filled by a CERTIFIED FUEL HANDLER.

Organization
5.2

5.2 Organization

5.2.2 Unit Staff (continued)

Facility

- a. ~~A total of three non-licensed operators for the two units is required in all conditions. At least one of the required non-licensed operators shall be assigned to each unit.~~
- b. Shift crew composition may be less than the minimum requirement of ~~10 CFR 50.54(m)(2)(i) and Specifications 5.2.2.a and 5.2.2.f~~ for a period of time not to exceed 2 hours in order to accommodate unexpected absence of on-duty shift crew members provided immediate action is taken to restore the shift crew composition to within the minimum requirements.
- c. ~~A radiation protection technician shall be on site when fuel is in the reactor. The position may be vacant for not more than 2 hours, in order to provide for unexpected absence, provided immediate action is taken to fill the required position.~~
- d. Deleted.
- e. ~~The operations manager or shift operations supervisor shall hold an SRO license.~~
- f. ~~The Shift Technical Advisor (STA) shall provide advisory technical support to the shift manager in the areas of thermal hydraulics, reactor engineering, and plant analysis with regard to the safe operation of the unit. In addition, the STA shall meet the qualifications specified by the Commission Policy Statement on Engineering Expertise on Shift.~~

during the movement of fuel and during movement of loads over fuel

The shift supervisor shall be a CERTIFIED FUEL HANDLER.

Oversight of fuel handling operations shall be provided by a CERTIFIED FUEL HANDLER.

At all times when nuclear fuel is stored in the spent fuel pools, at least two persons qualified to stand watch in the control room (NON-CERTIFIED OPERATOR or CERTIFIED FUEL HANDLER) shall be present in the control room.

and the following conditions are met:

- 1) No fuel movement is in progress;
- 2) No movement of loads over the spent fuel is in progress.

This provision does not permit any shift crew position to be unstaffed upon shift change due to the absence or tardiness of an oncoming shift crew member

Facility

~~Unit~~ Staff Qualifications
5.3

Facility

5.0 ADMINISTRATIVE CONTROLS

5.3 ~~Unit~~ Staff Qualifications

facility

5.3.1 Each member of the ~~unit~~ staff shall meet or exceed the minimum qualifications of ANSI N18.1-1971, with the following exceptions: ~~1) the radiation protection manager or lead radiation protection technician who shall meet or exceed the qualifications for "Radiation Protection Manager" in Regulatory Guide 1.8, September 1975, and 2) the licensed operators who shall comply only with the requirements of 10 CFR 55.~~

5.3.2 A NRC approved training and retraining program for the CERTIFIED FUEL HANDLER shall be maintained.

5.0 ADMINISTRATIVE CONTROLS

5.4 Procedures

5.4.1 Written procedures shall be established, implemented, and maintained covering the following activities:

- a. The ~~applicable~~ procedures recommended in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978;
 - b. ~~The emergency operating procedures required to implement the requirements of NUREG-0737 and NUREG-0737, Supplement 1, as stated in Generic Letter 82-33, Section 7.1;~~
 - c. Fire Protection Program implementation; and
 - d. All programs specified in Specification 5.5.
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applicable to safe storage of nuclear fuel

Deleted