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

March 9, 2017

Mr. Bryan C. Hanson
President and Chief Nuclear Officer
Exelon Nuclear
4300 Winfield Road
Warrenville, IL 60555

SUBJECT: NINE MILE POINT NUCLEAR STATION, UNIT 1 – ISSUANCE OF AMENDMENT RE: PARTIAL LENGTH FUEL ROD BURNUP (CAC NO. MF9046)

Dear Mr. Hanson:

The U.S. Nuclear Regulatory Commission (NRC or the Commission) has issued the enclosed Amendment No. 226 to Renewed Facility Operating License No. DPR-63 for the Nine Mile Point Nuclear Station, Unit 1 (NMP1). The amendment consists of changes to the licensing basis in response to your application dated January 3, 2017 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML 17003A065).

The amendment revises the NMP1 licensing basis to allow for the use of release fractions listed in Tables 1 and 3 of NRC Regulatory Guide 1.183, "Alternative Radiological Source Terms for Evaluating Design Basis Accidents at Nuclear Power Reactors" (ADAMS Accession No. ML003716792), for partial length fuel rods that are operating above the peak burnup limit through the end of Operating Cycle 22. In addition, the changes revise the NMP1 licensing basis to allow movement of irradiated fuel bundles containing PLRs that have been in operation above 62,000 megawatt days per metric tons of uranium (MWD/MTU).

A copy of the related Safety Evaluation is also enclosed. Notice of Issuance will be included in the Commission's biweekly *Federal Register* notice.

Sincerely,

Michael L. Marshall, Jr., Senior Project Manager
Plant Licensing Branch I
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-220

Enclosures:
1. Amendment No. 226 to DPR-63
2. Safety Evaluation

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

NINE MILE POINT NUCLEAR STATION, LLC

EXELON GENERATION COMPANY, LLC

DOCKET NO. 50-220

NINE MILE POINT NUCLEAR STATION, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 226
Renewed License No. DPR-63

1. The U.S. Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by Exelon Generation Company, LLC (Exelon, the licensee) dated January 3, 2017, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, by Amendment No. 226, Renewed Facility Operating License No. DPR-63 is hereby amended to revise the NMP1 licensing basis with the new evaluation for the consequences of Design-Basis Accidents using the Alternative Source Term methodology as described in License Amendment Request dated January 3, 2017. The revision would allow a limited number of GE11 partial length fuel rods to exceed the 62,000 megawatt days per metric tons of uranium (MWD/MTU) maximum rod burnup limit.

3. This license amendment is effective as of the date of its issuance and shall be implemented within 30 days.

FOR THE NUCLEAR REGULATORY COMMISSION

James G. Danna, Chief
Plant Licensing Branch I
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Date of Issuance: March 9, 2017

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 226

TO RENEWED FACILITY OPERATING LICENSE NO. DPR-63

EXELON GENERATION COMPANY, LLC

NINE MILE POINT NUCLEAR STATION, UNIT 1

DOCKET NO. 50-220

1.0 INTRODUCTION

By letter dated January 3, 2017 (the submittal) (Reference 1), Exelon Generation Company, LLC (Exelon, the licensee) submitted a request for changes to the Nine Mile Point Nuclear Station, Unit 1 (NMP1), licensing basis. The requested changes would allow a limited number of GE11 partial length fuel rods (PLRs) currently residing in the NMP1 Cycle 22 reactor core to exceed the 62,000 megawatt days per metric tons of uranium (MWD/MTU) maximum rod burnup limit specified for use of the release fractions listed in Tables 1 and 3 of U.S. Nuclear Regulatory Commission (NRC or the Commission) Regulatory Guide (RG) 1.183, "Alternative Radiological Source Terms for Evaluating Design Basis Accidents at Nuclear Power Reactors" (Reference 2). In addition, the proposed change would revise the NMP1 licensing basis to allow movement of irradiated fuel bundles containing PLRs that have been in operation above 62,000 MWD/MTU. In its submittal, the licensee provides a technical basis for concluding that the RG 1.183 release fractions will continue to be valid for NMP1 through the end of NMP1 Cycle 22 and for subsequent movement of affected fuel assemblies.

2.0 REGULATORY EVALUATION

When most currently operating nuclear power plants, including NMP1, were initially licensed, part of their design bases included an evaluation of the radiological consequences of design-basis accidents (DBAs). These evaluations were typically based on source terms described in Technical Information Document (TID) 14844, "Calculation of Distance Factors for Power and Test Reactor Sites" (Reference 3). Subsequent advances in understanding the timing, magnitude, and chemical form of fission product releases from severe nuclear power accidents led to the rule documented in Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.67, "Accident source term." This new rule established requirements that licensees could use to revise the source term used in design-basis radiological analyses.

RG 1.183, issued in July 2000, established NRC guidance for an acceptable alternative source term (AST) methodology to meet the requirements of 10 CFR 50.67. The existing approach using the TID-14844 source term was evaluated and found to be adequate, so licensees were not required to reanalyze current licensing bases. However, licensees had the option of adopting the guidance in RG 1.183 to reanalyze some or all DBAs. Section 3 of RG 1.183 describes an AST that is acceptable to the NRC staff and clearly indicates that after the NRC

has approved an implementation of an AST, subsequent changes will require NRC staff review under 10 CFR 50.67 (i.e., a license amendment).

The licensee elected to implement an AST for the NMP1 loss-of-coolant accident (LOCA), main steam line break (MSLB) event, fuel handling accident (FHA), and control rod drop accident (CRDA). The NRC approved implementation of AST for these DBAs by License Amendment No. 194 for NMP1 in the year 2007 (Reference 4). This implementation included adoption of the release fractions provided in Tables 1 and 3 of RG 1.183 (Section 3.2). Both tables contain notes that indicate that, among other things, the acceptability of the release fractions are limited to "currently approved Light-Water Reactor fuel with a peak burnup up to 62,000 MWD/MTU." The term "peak burnup" is not explicitly defined in RG 1.183, but NUREG/CR-6703, "Environmental Effects of Extending Fuel Burnup Above 60 GWD/MTU" (Reference 5), completed shortly after RG 1.183 was finalized, makes it clear that in the updated final safety analysis report (UFSAR), the NRC staff has generally interpreted this term to mean the maximum average fuel rod burnup.

The NRC staff review was performed consistent with Section 15.0.1 (Revision 0) to the Standard Review Plan (SRP) (Reference 6). The applicable regulations, as described in the SRP, are listed below, along with their applicability to NMP1.

Section 50.67 of 10 CFR presents requirements that must be met for reevaluations of the consequences of DBAs with the AST. RG 1.183 provides an AST that would be acceptable to the NRC staff to use in meeting the requirements of 10 CFR 50.67, which the licensee adopted in its AST implementation.

A number of other regulatory requirements are potentially applicable if there is a change in the radiological consequences of the DBAs being evaluated with the AST (see Section II of SRP 15.0.1 for a list). The licensee provided a justification in which the potential radiological impacts of the proposed operating condition are bounded by the current licensing basis. Since the limiting radiological consequences are unchanged, the NRC staff did not repeat the evaluation for those regulatory requirements that was performed for the initial AST implementation.

3.0 TECHNICAL EVALUATION

The licensee provided an evaluation that demonstrates that the release fractions, radioisotope inventories, and dose consequences are bounded by the current radiological consequences analyses of record. As a result, no further analyses or reviews of the radiological consequences would need to be performed. Therefore, the NRC staff's review focused on the licensee's justification for its conclusion that the aforementioned key inputs to the radiological consequence analyses do not need to use higher (more conservative) values. Since the licensee only utilizes the AST methodology for the LOCA, MSLB, FHA, and CRDA analyses, these were the only DBAs considered by the NRC staff.

3.1 Potential Impacts of Proposed Change

Increasing the burnup of a fuel rod has several impacts that may affect the release fractions and/or the radioisotope inventory during different phases of a DBA. They include:

1) An increase in the cumulative number of fissions that have occurred in the fuel rod, which results in more fission products. This directly increases the total amount of radioisotope inventory available for release.

2) Changes in the fuel pellet geometry, which may result in a change in the percentage of noble gasses, iodine, and cesium produced by fission that migrate from the fuel matrix to the gap. This affects the release fraction for these isotopes during the gap release phase of a DBA.

3) Increased fragmentization of the fuel pellet geometry, which may result in the potential for ejection of fuel fragments when the cladding fails. This affects the release fraction for the gap release phase of a DBA.

4) An increase in fuel rod pressure, which may increase the probability of failure. This would affect the quantity of radioisotopes assumed to have been released.

Each of these possible impacts to the release fractions and/or radioisotope inventory for the four DBAs are evaluated in the following subsections.

3.2 LOCA Radiological Consequences

In its submittal, the licensee included an analysis of the impact to the radiological consequences due to a LOCA as part of the attached evaluation of the proposed change. In summary, the licensee performed a cycle-specific evaluation for NMP1 Cycle 22 that substitutes the activity for all 344 PLRs in the GE11 batch with the activity corresponding to the same number of full length rods (FLRs). The licensee used the Table 1 release fractions in RG 1.183 for this evaluation, with the justification that the axial burnup distributions for the PLRs were bounded by the corresponding axial burnup distributions for the lower two-thirds of the highest burnup GE11 FLRs. Therefore, if the PLRs are treated as FLRs, the lower burnup upper portion of the FLRs would bring the average rod burnup below the 62,000 MWD/MTU limit.

The current design-basis LOCA radiological consequences analysis for NMP1, consistent with RG 1.183, assumes a maximum hypothetical accident in which all fuel rods are assumed to fail. RG 1.183 indicates that the core average inventory should be used, given that the assumed operating conditions at the time of the accident will bound allowed operation to end of cycle (including emergency core cooling system evaluation uncertainties). PLRs exceeding a burnup of 62,000 MWD/MTU would not result in a significant change in the available radioisotope inventory for release because the inventory available in the PLRs would be included in the total calculation of the core radioisotope inventory. The licensee's cycle-specific dose evaluation performed for the radiological consequences due to a LOCA may incorporate additional conservatism, but it was not necessary to support a safety determination on the proposed NMP1 Cycle 22 operation. Therefore, the NRC staff did not use the licensee's cycle-specific dose evaluation to support the conclusion in this safety evaluation.

Fuel pellet geometry changes as a result of burnup are the primary motivation behind the 62,000 MWD/MTU burnup limit in use of the release fractions in RG 1.183. NUREG/CR-6703 was published shortly after RG 1.183 was issued and investigated release fractions for high burnup fuel. The findings supported the acceptability of the RG 1.183 release fractions for fuel with peak rod burnups of up to 62,000 MWD/MTU. At that time, the regulatory guidance did not consider the use of PLRs in boiling-water reactor fuel assemblies. Fuel pellet geometry changes are strongly dependent on local burnup characteristics. In its submittal, the licensee provided an evaluation demonstrating that the rod average burnup of the PLRs that will exceed the 62,000 MWD/MTU regulatory limit are bounded by the average burnup of the lower two-thirds of FLRs in the GE11 fuel. Therefore, the finding in NUREG/CR-6703 supporting use of the release fractions remains applicable.

After issuance of NUREG/CR-6703, some experiments raised a concern about the potential for fuel fragment dispersion through a breach in the cladding, aided by increased fragmentation of the fuel pellets at high burnups and fuel fragment relocation due to ballooning of the cladding prior to failure. NUREG-2121 (Reference 7) reviewed the available data on this phenomenon and addressed the potential impact on release fractions and concluded that the existing NRC guidance was acceptable. Since this phenomenon would also be correlated with local burnup characteristics, the discussion in the prior paragraph would be equally applicable to support use of the release fraction in RG 1.183 for the PLRs in NMP1 Cycle 22.

Finally, an increased probability for cladding failure during a LOCA due to higher internal rod pressure would not change the conclusions of the NMP1 evaluation, since the licensee's methodology already assumes that all fuel fails. Therefore, the licensee's evaluation bounds any increase in probability for cladding failure due to higher internal rod pressure.

The NRC staff finds that the licensee has demonstrated that: (1) the intent of the 62,000 MWD/MTU peak rod burnup limit for applicability of the release fractions is met for the PLRs, given that they are bounded by adjacent FLRs, and (2) the core inventory available for release during the postulated LOCA event is determined based on the average core exposure, which remains bounded by the analysis of record. Therefore, the proposed operation of NMP1 Cycle 22 with PLRs exceeding a peak rod burnup limit of 62,000 MWD/MTU, as described in the submittal, is acceptable with respect to the postulated radiological consequences from a LOCA.

3.3 MSLB Radiological Consequences

The licensee, in its submittal, does not explicitly discuss the MSLB analyses. However, the NMP1 UFSAR indicates that the dose consequences of the MSLB event are determined using an AST methodology. Also, the UFSAR indicates that the MSLB event will not result in fuel rod failures. Therefore, the release fractions from Table 3 are not used in the radiological consequence evaluation for a MSLB event. As a result, the MSLB dose consequences are not affected by the PLRs exceeding the 62 gigawatt days per metric ton of uranium (GWD/MTU) burnup limit.

3.4 FHA Radiological Consequences

The licensee, in its submittal, included an analysis of the impact to the radiological consequences due to a FHA. The licensee explained that a design-basis FHA involving GE11 fuel would result in 140 damaged fuel rods, which is consistent with the discussion of the FHA in Chapter XV, Section 3.2 of the NMP1 UFSAR. The licensee stated that in the radiological consequence analysis of the FHA for NMP1, two fuel assemblies' worth of fuel rods are assumed to fail, which is also consistent with the UFSAR. Since the GE11 fuel assembly design has the equivalent of 71 FLRs, the FHA radiological consequence analysis would bound a fuel activity input of up to 142 failed FLRs from GE11 fuel. Therefore, even if the activity corresponding to FLRs is substituted for any PLRs among the 140 failed rods during a FHA, the total activity would be bounded by the FHA radiological consequence analysis of record for NMP1.

This treatment of all failed rods as FLRs effectively increases the inventory release for any PLRs involved in the FHA by about 50 percent relative to the actual available inventory for the GE11 PLRs, which is more than sufficient to bound any increase in the total inventory for the few fuel assemblies affected by the FHA due to the higher average rod burnup of the PLRs.

The discussion in paragraphs 3 and 4 of Section 3.2 of the NMP1 UFSAR applies to a FHA. The probability of increased release due to fuel fragment dispersion through a cladding breach was not explicitly considered in NUREG-2121 for the FHA. The failure mechanism is different in that the cladding would not be expected to balloon prior to failure; the ability of the fuel to undergo axial relocation is more limited. Therefore, the findings in NUREG-2121 are applicable to a FHA.

Finally, the mechanism for fuel damage during a FHA is mechanical failure due to the impact force of the fuel assembly being dropped on top of other fuel assemblies. This mechanism is not strongly affected by the rod internal pressure as long as it remains within the mechanical design limits for the GE11 fuel assembly design. Therefore, the small potential increases in internal rod pressure expected for the proposed rod average burnups on the PLRs would have no impact on the probability of fuel rod failure due to a FHA. The licensee continues to be responsible for ensuring that the mechanical design limits for the GE11 fuel assembly design are met.

The NRC staff finds that the licensee has demonstrated that: (1) the intent of the 62,000 MWD/MTU peak rod burnup limit is met for the PLRs given that they are bounded by the axial burnup distribution of the lower two-thirds of limiting GE11 FLRs; and (2) the total available inventory for release from a FHA involving GE11 fuel is bounded by the current FHA radiological consequences analysis of record for NMP1. Therefore, the proposed movement of fuel from NMP1 Cycle 22 with PLRs exceeding a peak rod burnup limit of 62,000 MWD/MTU, as described in Reference 1, is acceptable with respect to the postulated radiological consequences from a FHA.

3.5 CRDA Radiological Consequences

In its submittal, the licensee included a discussion of the impact to the radiological consequences due to a CRDA. The licensee indicated that a design-basis CRDA involving GE11 fuel would result in a core damage fraction of less than 2.54 percent. The CRDA radiological consequences analysis of record is based on a core damage fraction of 2.58 percent. The 0.04 percent of margin is equivalent to about 15 GE11 FLRs. A review of the NMP1 UFSAR indicates that the licensee performs its analysis consistent with GESTAR II. If necessary, the licensee will perform a CRDA analysis to determine the number of fuel rods which reach applicable enthalpy thresholds to assume failure, and compute an equivalent core damage fraction. There are 40 PLRs projected to exceed the 62 GWD/MTU burnup limit, plus three more that are projected to approach the limit. The aforementioned 0.04 percent of margin in the core damage fraction between the design-basis CRDA for GE11 fuel and the NMP1 CRDA radiological consequences analysis of record is sufficient to treat about 45 PLRs as FLRs for the purpose of computing the total potential activity release from failed fuel, more than expected to exceed the burnup limit.

As a result of the approach used by the licensee in the NMP1 design basis for analysis of the radiological consequences due to a CRDA, the potential increase in activity due to the increased burnup of the PLRs can be justified using a similar rationale to that in paragraph 1 of Section 3.4 of the NMP1 UFSAR. Similarly, the impact of release of fission gasses from the fuel matrix due to fuel pellet geometry changes and the potential for fuel fragment dispersion through a cladding breach are addressed using a similar discussion to paragraphs 3 through 5 of Section 3.2 of the NMP1 UFSAR.

Finally, the criteria for determining the number of fuel rod failures due to a CRDA event are defined as part of the application of the analysis methodology for the CRDA event, rather than as part of the dose consequences analysis. Therefore, any rod mechanical impacts, including the rod internal pressure, would be addressed in the CRDA analysis to determine the estimated number of fuel rod failures to compare to the assumed core damage fraction in the CRDA radiological consequences analysis of record.

The NRC staff finds that the licensee has demonstrated that the release fractions from Table 3 of RG 1.183 are acceptable for use, given that the local burnup characteristics of the PLRs are bounded by the local burnup characteristics of the highest burnup FLRs for the same fuel assembly design, and the total available inventory for release from a CRDA involving GE11 fuel is bounded by the current NMP1 CRDA radiological consequences analysis of record. Therefore, the proposed operation of NMP1 Cycle 22 with PLRs exceeding a peak rod burnup limit of 62,000 MWD/MTU, as described in the submittal, is acceptable with respect to the postulated radiological consequences from a CRDA.

3.6 Technical Conclusions

As discussed in this section, the licensee provided an evaluation in its submittal to demonstrate the acceptability of allowing PLRs to exceed the 62,000 MWD/MTU burnup limit provided in RG 1.183 for use of the data in Tables 1 and 3. As part of NMP1 AST implementation, NRC approval is required to exceed the area of applicability described in the RG 1.183. Based on the discussion provided in Sections 3.2 through 3.5 above, the NRC staff finds that the licensee has demonstrated that its current radiological analyses of record for the LOCA, MSLB, FHA, and CRDA events bound the potential radiological consequences resulting from the proposed increase in the average rod burnup for PLRs. Therefore, the current radiological analyses of record for NMP1 continue to demonstrate that the requirements of 10 CFR 50.67 are met.

The demonstration is limited to GE11 fuel for the FHA, and NMP1 Cycle 22 for the LOCA, MSLB, and CRDA. Therefore, NRC approval of this license amendment will allow for movement of the affected GE11 fuel assemblies, as well as continued operation of NMP1 Cycle 22. The licensee is only requesting approval to exceed the 62,000 MWD/MTU for GE11 fuel expected to exceed this limit in NMP1 Cycle 22. Therefore, the NRC staff did not perform a generic evaluation for any other situations in which PLRs may exceed the RG 1.183 burnup limit.

4.0 FINAL NO SIGNIFICANT HAZARDS CONSIDERATION

The NRC's regulations in 10 CFR 50.92 state that the NRC may make a final determination that a license amendment involves no significant hazards consideration if operation of the facility in accordance with the amendment, would not: (1) involve a significant increase in the probability or consequences of an accident previously evaluated; or (2) create the possibility of a new or different kind of accident from any accident previously evaluated; or (3) involve a significant reduction in a margin of safety.

As required by 10 CFR 50.91(a), the licensee, in its submittal, provided its analysis of the issue of no significant hazards consideration, which is presented below:

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

Response: No.

The proposed change would allow the use of the release fractions listed in Tables 1 and 3 of NRC RG 1.183 for PLRs which are currently in the NMP1 Cycle 22 reactor core that are expected to exceed the 62,000 MWD/MTU rod peak burnup limit specified in Footnotes 10 and 11 of NRC RG 1.183 prior to the end of the operating cycle. In addition, the proposed change would revise the NMP1 licensing basis to allow movement of irradiated fuel bundles containing PLRs that have been in operation above the 62,000 MWD/MTU limit. The proposed change does not involve any physical changes to the plant design and is not an initiator of an accident. The proposed change does not adversely affect accident initiators or precursors, and does not alter the design assumptions, conditions, or configuration of the plant or the manner in which the plant is operated or maintained. Therefore, the proposed change does not affect the probability of a loss-of-coolant accident or control rod drop accident. In addition, the proposed change does not affect the probability of a fuel handling accident because the method and frequency of fuel movement activities are not changing.

Analyses have been performed that demonstrate that the power and burnup for a PLR is bounded by the power and burnup in the same axial portion of neighboring FLRs. Therefore, since the FLR operating characteristics bound the PLR, and since the power and burnup of the FLRs comply with the limits specified in Footnotes 10 and 11 of NRC RG 1.183, the PLRs may operate beyond the 62,000 MWD/MTU burnup limit and meet the intent of NRC RG 1.183. There are no changes in the dose consequences of the analyses of record for the fuel handling accident, control rod drop accident and loss-of-coolant accident.

Therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

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

Response: No.

The proposed change would allow the use of the release fractions listed in Tables 1 and 3 of NRC RG 1.183 for PLRs which are currently in the NMP1 Cycle 22 reactor core that are expected to exceed the 62,000 MWD/MTU rod peak burnup limit specified in Footnotes 10 and 11 of NRC RG 1.183 prior to the end of the operating cycle. In addition, the proposed change would revise the NMP1 licensing basis to allow movement of irradiated fuel bundles containing PLRs that have been in operation above the 62,000 MWD/MTU limit. The proposed change does not introduce any changes or mechanisms that create the possibility of a new or different kind of accident. The proposed change does not install any new or different type of equipment, and installed equipment is not being operated in a new or different manner. No new effects on existing equipment are created nor are any new malfunctions introduced.

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

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

Response: No.

The proposed change would allow the use of the release fractions listed in Tables 1 and 3 of NRC RG 1.183 for PLRs which are currently in the NMP1 Cycle 22 reactor core that are expected to exceed the 62,000 MWD/MTU rod peak burnup limit specified in Footnotes 10 and 11 of NRC RG 1.183 prior to the end of the operating cycle. In addition, the proposed change would revise the NMP1 licensing basis to allow movement of irradiated fuel bundles containing PLRs that have been in operation above the 62,000 MWD/MTU limit. Analyses have been performed that demonstrate that the power and burnup for a PLR is bounded by the power and burnup in the same axial portion of neighboring FLRs. There is no change in the dose consequences of the fuel handling accident, control rod drop accident or loss-of-coolant accident analyses of record. The margin of safety, as defined by 10 CFR 50.67 and NRC RG 1.183, has been maintained.

Therefore, the proposed change does not involve a significant reduction in a margin of safety.

The NRC staff has reviewed the licensee's analysis and, based on this review concludes that the three standards of 10 CFR 50.92(c) are satisfied. Therefore, the NRC staff has made a final determination that no significant hazards consideration is involved for the proposed amendment and that the amendment should be issued as allowed by the criteria contained in 10 CFR 50.91.

5.0 STATE CONSULTATION

In accordance with the Commission's regulations, the New York State official was notified of the proposed issuance of the amendment on February 17, 2017. The State official had no comments.

6.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The NRC staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration, and there has been no public comment on such finding (82 FR 8871). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

7.0 CONCLUSION

The NRC staff has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) there is reasonable assurance that 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.

8.0 REFERENCES

1. Exelon Generation letter from James Barstow, Director - Licensing & Regulatory Affairs, Exelon Generation Company, LLC, to NRC Document Control Desk, Re: "License Amendment Request - Proposed Changes Regarding Partial Length Fuel Rod (PLR) Burnup," January 3, 2017 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML17003A065).

2. NRC Regulatory Guide 1.183, Revision 0, "Alternative Radiological Source Terms for Evaluating Design Basis Accidents at Nuclear Power Reactors," July 2000 (ADAMS Accession No. ML003716792).

3. U.S. Atomic Energy Commission (now NRC) Technical Information Document 14844, "Calculation of Distance Factors for Power and Test Reactors," March 23, 1962 (not publicly available).

4. NRC letter from Marshall J. David, Project Manager, Plant Licensing Branch I-1, Division of Operating Reactor Licensing, Office of Nuclear Reactor Regulation, to Keith J. Polson, Vice President Nine Mile Point, Re: "Nine Mile Point Nuclear Station, Unit No. 1 – Issuance of Amendment Re: Implementation of Alternative Radiological Source Term," December 19, 2007 (ADAMS Accession No. ML073230597).

5. NUREG/CR-6703, "Environmental Effects of Extending Fuel Burnup Above 60 GWd/MTU," published January 2001 (ADAMS Accession No. ML010310298).

6. NUREG-0800, "USNRC Standard Review Plan," Section 15.0.1, Rev. 0, "Radiological Consequence Analyses Using Alternative Source Terms," July 2000 (ADAMS Accession No. ML003734190).

7. NUREG-2121, "Fuel Fragmentation, Relocation, and Dispersal During the Loss-of-Coolant Accident," published March 2012 (ADAMS Accession No. ML12090A018).

Principal Contributor: S. Krepel

Date: March 9, 2017

SUBJECT: NINE MILE POINT NUCLEAR STATION, UNIT 1 – ISSUANCE OF AMENDMENT RE: PARTIAL LENGTH FUEL ROD BURNUP (CAC NO. MF9046) DATED MARCH 9, 2017

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ADAMS Accession Number: ML17055A451 *by safety evaluation dated 2/13/2017

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