

RS-10-074

April 02, 2010

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

Clinton Power Station, Unit 1  
Facility Operating License No. NPF-62  
NRC Docket No. 50-461

Subject: Request for NRC Approval of Changes to the Clinton Power Station (CPS)  
Emergency Plan

- References:
1. Letter from Jeffrey L. Hansen (Exelon Generation Company, LLC) to U. S. NRC, "Request for NRC Approval of Changes to the Clinton Power Station Emergency Plan," dated June 19, 2009
  2. Federal Register Notice (FRN) No. 74 FR 42699, "Proposed Generic Communication; NRC Regulatory Issue Summary 2005-02, Revision 1, Clarifying the Process for Making Emergency Plan Changes," dated August 24, 2009

In Reference 1, Exelon Generation Company, LLC (EGC) submitted proposed changes for NRC review and approval to the Emergency Plan for Facility Operating License No. NPF-62 in accordance with 10 CFR 50.54, "Conditions of licenses," paragraph (q). The proposed changes would revise the Exelon Nuclear Radiological Emergency Plan Annex for Clinton Station, Table B-1, "Minimum Staffing Requirements for the On-Shift Clinton Station ERO," to increase the Non-Licensed Operator staffing from two to four, allow in-plant protective actions to be performed by personnel assigned other functions, and replace a Mechanical Maintenance person with a Non-Licensed Operator. The proposed changes were reviewed considering the requirements of 10 CFR 50.47, "Emergency plans," paragraph (b), 10 CFR 50, Appendix E, "Emergency Planning and Preparedness for Production and Utilization Facilities," and other applicable NRC documents. This review determined that the proposed changes to the staffing requirements constituted a decrease in effectiveness of the emergency plan because they affect on-shift staffing levels implemented to address a specific staffing deficiency.

According to NRC guidance and additional information contained in Reference 2, emergency plan changes that require prior NRC approval in accordance with 10 CFR 50.54(q) need to be submitted as license amendment requests in accordance with 10 CFR 50.90, "Application for amendment of license, construction permit, or early site permit." Therefore, EGC requests continued review and approval of the changes to the CPS Emergency Plan submitted in Reference 1 in accordance with 10 CFR 50.90.

The Attachment provides a discussion of the proposed changes and reference to the appropriate sections of Reference 1. The proposed changes have been reviewed by the CPS Plant Operations Review Committee and approved by the Nuclear Safety Review Board in accordance with the requirements of the EGC Quality Assurance Program.

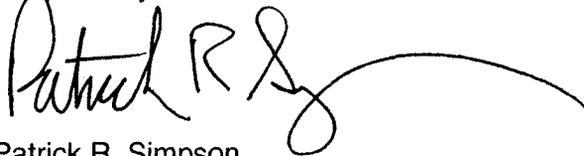
EGC requests approval of the proposed changes by June 19, 2010. Once approved, the changes will be implemented within 30 days.

There are no regulatory commitments contained in this letter.

Should you have any questions concerning this letter, please contact Mr. Mitchel A. Mathews at (630) 657-2819.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 2nd day of April 2010.

Respectfully,

A handwritten signature in black ink, appearing to read "Patrick R. Simpson", with a long, sweeping horizontal line extending to the right.

Patrick R. Simpson  
Manager - Licensing  
Exelon Generation Company, LLC

Attachment: Evaluation of Proposed Changes

ATTACHMENT  
Evaluation of Proposed Changes

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

ATTACHMENT  
Evaluation of Proposed Changes

## 1.0 SUMMARY DESCRIPTION

In Reference 1, Exelon Generation Company, LLC (EGC) requested NRC review and approval of proposed changes to the Clinton Power Station (CPS) Emergency Plan in accordance with 10 CFR 50.54, "Conditions of licenses," paragraph (q). Specifically, the changes revised the Exelon Nuclear Radiological Emergency Plan Annex for Clinton Station, Table B-1, "Minimum Staffing Requirements for the On-Shift Clinton Station ERO," to increase the Non-Licensed Operator (NLO) staffing from two to four, allow in-plant protective actions to be performed by personnel assigned other functions, and replace a Mechanical Maintenance person with an NLO. These proposed changes are considered reasonable since in accordance with Exelon Nuclear procedure TQ-AA-113, "ERO Training and Qualification," all personnel assigned ERO duties receive initial training, qualification, and re-qualification to ensure these personnel achieve and maintain proficiency in the skills and knowledge necessary to perform their assigned emergency response duties.

Subsequent to the submittal of Reference 1, and according to recent NRC guidance and additional information contained in Reference 2, the NRC requested that emergency plan changes such as those proposed in Reference 1 that are currently being reviewed by the NRC be submitted under a license amendment request in accordance with 10 CFR 50.90, "Application for amendment of license, construction permit, or early site permit." Therefore, EGC requests continued NRC review and approval of the changes proposed in Reference 1 as an operating license amendment request in accordance with 10 CFR 50.90.

## 2.0 DETAILED DESCRIPTION

The detailed description of the proposed changes is located in Section I, "Introduction," and Section II, "Background," of Attachment 1 to Reference 1.

The marked-up changes to Exelon Nuclear Radiological Emergency Plan Annex for Clinton Station, Table B-1, "Minimum Staffing Requirements for the On-Shift Clinton Station ERO," are provided in Attachment 2 to Reference 1. In summary, CPS proposes the following revisions to the CPS Emergency Plan Table B-1:

- Increase NLO staffing from two to four. The on-shift staff must be capable of taking emergency actions to safely shut down the reactor, mitigate accident consequences, notify augmented ERO staff, perform firefighting, and provide medical assistance if needed. Increasing the number of NLO staffing improves the response of site personnel whose emergency plan role is to assist with operator and maintenance response to the emergency event and provides an increased number of personnel for repair and corrective actions.
- Allow In-Plant Protective Actions to be performed by personnel assigned to other functions. For this change, CPS is proposing to remove the two on-shift Radiation Protection (RP) personnel assigned for In-Plant Protective Actions. These on-shift positions were added in 1998 as a corrective action due to issues with timeliness of personnel staffing during an emergency event. The addition of pre-staged electronic dosimetry along with other technological advances incorporated by CPS has reduced the burden on RP personnel assigned emergency response functions. Therefore, CPS proposes to allow these In-Plant Protective Actions to be performed by on-shift RP personnel assigned other functions.

ATTACHMENT  
Evaluation of Proposed Changes

- Replace Mechanical Maintenance person with an NLO. A review determined that the need for maintenance personnel during the first 90 minutes of an emergency condition is limited to those actions associated with the Emergency Operating Procedures or for troubleshooting or abnormal system alignment to operate equipment that did not respond as expected during an event. NLOs are trained and qualified to perform the tasks required during this time period.

### 3.0 TECHNICAL EVALUATION

A detailed technical evaluation of the proposed change is located in Section III, "Justification," of Attachment 1 to Reference 1. In summary, the proposed changes to the CPS Emergency Plan Table B-1, "Minimum Staffing Requirements for the On-Shift Clinton Station ERO," were evaluated against the following criteria:

- NUREG-0654, Revision 1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," Table B-1 staffing guidance
- Functional areas and tasks listed in NUREG-0654
- Plant operations during design basis accidents
- RP personnel tasks associated with design basis accidents
- Radiological accident assessment

The reallocation of functions between ERO responders and the addition of two NLOs does not reduce the minimum number of on-shift staffing, nor does it reduce or impede the tasks that are required to be performed during an emergency event. Since NUREG-0654, Table B-1, allows in-plant protective actions to be performed by personnel assigned other functions during the early stages of an emergency event, the proposed changes to CPS Table B-1 would still satisfy the planning standard established by NUREG-0654.

These changes still exceed the number of on-shift staffing personnel as defined by NUREG-0654 and do not reduce the functionality of tasks required to be performed. Therefore, from an ERO performance stand point this change does not reduce the effectiveness of the Emergency Plan.

However, the proposed change may be perceived as a decrease in effectiveness based on the removal of two of the three RP personnel that were added to the CPS Emergency Plan Table B-1 in 1998 as a corrective action to support timely minimum staffing. The addition of RP personnel in 1998 was done in response to the failure of CPS to achieve required minimum staffing within the specified time frame during a classified event. But the process improvements associated with the activation of the ERO as described in Reference 1 ensure emergency responders will be available on-site in the allotted time frame. Additionally, CPS has successfully demonstrated the capability to fully staff and activate the ERO facilities, with the proposed staffing, in a September 16, 2004, off hours augmentation drive-in drill.

ATTACHMENT  
Evaluation of Proposed Changes

## **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.

The regulation in 10 CFR 50.54(q) provides direction to licensees seeking to revise their emergency plan. The requirements related to nuclear power plant emergency plans are given in the standards in 10 CFR 50.47, "Emergency plans," and the requirements of 10 CFR 50, Appendix E, "Emergency Planning and Preparedness for Production and Utilization Facilities."

EGC has determined that the proposed changes do not require any exemptions or relief from regulatory requirements and do not affect conformance with any 10 CFR 50, Appendix A, "General Design Criteria for Nuclear Power Plants," (GDC) differently than described in the Updated Safety Analysis Report (USAR).

### **4.2 No Significant Hazards Consideration**

In accordance with 10 CFR 50.90, "Application for amendment of license, construction permit, or early site permit," Exelon Generation Company, LLC (EGC) requests an amendment to Facility Operating License No. NPF-62 for Clinton Power Station (CPS), Unit 1. Specifically, the proposed changes modify the CPS Emergency Response Organization (ERO) Staffing. The CPS Emergency Plan is described in Section 13.3 of the CPS Updated Safety Analysis Report (USAR). In accordance with 10 CFR 50.54, "Conditions of licenses," paragraph (q), EGC requests NRC approval of proposed changes to the Exelon Nuclear Radiological Emergency Plan Annex for Clinton Station. These proposed changes revise Table B-1, "Minimum Staffing Requirements for the On-Shift Clinton Station ERO," to increase the Non-Licensed Operator (NLO) staffing from two to four, allow in-plant protective actions to be performed by personnel assigned other functions, and replace a Mechanical Maintenance person with a NLO

The proposed changes have been reviewed considering the requirements of 10 CFR 50.47, "Emergency plans," paragraph (b), 10 CFR 50, Appendix E, "Emergency Planning and Preparedness for Production and Utilization Facilities," and other applicable NRC documents. The review determined that the proposed changes to Table B-1 constitute a decrease in effectiveness because they affect shift staffing levels implemented to address a specific staffing deficiency.

EGC 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:

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

Response: No.

ATTACHMENT  
Evaluation of Proposed Changes

The proposed changes to the CPS Emergency Plan Table B-1, "Minimum Staffing Requirements for the On-Shift Clinton Station ERO," were evaluated against plant operations during design basis accidents, Radiation Protection (RP) personnel tasks associated with design basis accidents, and the CPS radiological accident assessment. The reallocation of functions between ERO responders and the addition of two NLOs does not reduce the minimum number of on-shift staffing, nor does it reduce or impede the tasks that are required to be performed during an emergency event. This change does not reduce the functionality of tasks required to be performed; therefore, since all personnel will be trained and qualified to perform all assigned tasks, this change does not reduce the effectiveness of the ERO's performance or the CPS Emergency Plan in mitigating the consequences of any accident.

The probability of a reactor accident requiring implementation of the CPS Emergency Plan has no relevance in determining whether the proposed change reduces the effectiveness of the CPS Emergency Plan. The Planning Basis section of NUREG-0654, Revision 1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," describes how to address the likelihood of an event during the development of an emergency response plan. According to NUREG-0654, Revision 1:

*The overall objective of emergency response plans is to provide dose savings (and in some cases immediate life saving) for a spectrum of accidents that could produce offsite doses in excess of Protective Action Guides (PAGs). No single specific accident sequence should be isolated as the one for which to plan because each accident could have different consequences, both in nature and degree. Further, the range of possible selection for a planning basis is very large, starting with a zero point of requiring no planning at all because significant offsite radiological accident consequences are unlikely to occur, to planning for the worst possible accident, regardless of its extremely low likelihood.*

Therefore, while the proposed changes will not impact the probability or consequences of any previously evaluated accident, EGC did not consider the risk insights regarding any specific accident initiation or progression in evaluating the proposed change.

Process improvements made by CPS associated with the activation of the ERO will ensure emergency responders will be available on-site in the allotted timeframe. Additionally, CPS successfully demonstrated the capability to fully staff and activate the ERO facilities in a September 16, 2004, off-hours augmentation drive-in drill. This drill confirmed that the CPS ERO is capable of being staffed, with the proposed staffing, in the allotted amount of time.

The proposed changes do not adversely affect accident initiators or precursors nor alter the design assumptions, conditions, and configuration, or the manner in which the plant is operated and maintained. The proposed changes do not adversely affect the ability of structures, systems, or components (SSCs) to perform their intended safety functions in mitigating the consequences of an initiating event within the assumed acceptance limits.

ATTACHMENT  
Evaluation of Proposed Changes

The proposed changes do not affect the source term, containment isolation, or radiological release assumptions used in evaluating the radiological consequences of any accident previously evaluated. Further, since the changes are simply a reallocation of responsibilities from one group of trained and qualified individuals to another, the proposed changes do not increase the types and amounts of radioactive effluent that may be released offsite, nor significantly increase individual or cumulative occupational or public radiation exposures.

Therefore, the probability of an accident is not impacted, nor is there a significant impact on the consequences of an accident previously evaluated, introduced by the proposed changes.

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 do not involve the addition or modification of any plant equipment. Moreover, the proposed changes will not alter the design configuration, or method of operation of plant equipment beyond its normal functional capabilities. CPS ERO functions will continue to be performed as required. The proposed modification of ERO assignments does not create any new credible failure mechanisms, malfunctions, or accident initiators.

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

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

Response: No.

The proposed changes do not alter or exceed a design basis parameter or safety limit for any system or component. No change to the setpoint or environmental condition of any SSC or the manner in which any SSC is operated is proposed. The proposed changes do not affect any of the assumptions used in any accident analysis, nor do they affect any operability requirement for equipment important to plant safety. The requirements of 10 CFR 50.47, "Emergency plans," paragraph (b) and 10 CFR 50, Appendix E, "Emergency Planning and Preparedness for Production and Utilization Facilities," will continue to be met.

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

Based on the above, EGC 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.

ATTACHMENT  
Evaluation of Proposed Changes

### 4.3 Conclusions

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

In accordance with 10 CFR 51.21, "Criteria for and identification of licensing and regulatory actions requiring environmental assessments," and 10 CFR 51.35, "Finding of no significant impact," the following information is provided in support of an environmental assessment and finding of no significant impact for the proposed change.

The proposed changes would modify the on-shift Emergency Response Organization (ERO) staffing. Specifically, the proposed changes revise the Exelon Nuclear Radiological Emergency Plan Annex for Clinton Station, Table B-1, "Minimum Staffing Requirements for the On-Shift Clinton Station ERO," to increase the Non-Licensed Operator (NLO) staffing from two to four, allow in-plant protective actions to be performed by personnel assigned other functions, and replace a Mechanical Maintenance person with a NLO.

The proposed changes are needed to allow an increase in the NLO staffing from two to four, allow in-plant protective actions to be performed by personnel assigned other functions, and replace a Mechanical Maintenance person with a NLO.

The principal alternative to the proposed change would be to deny the requested change and require adherence to the current ERO staffing requirements. Denial of the requested change would result in no change in environmental impacts.

Regarding alternative use of resources, approval of the requested change will not involve the use of resources not previously considered in the Final Environmental Statement for Clinton Power Station (i.e., Reference 3).

The proposed changes (i.e., approval of the license amendment request) will not significantly increase the probability or consequences of accidents, no changes are being made in the types or quantities of any radiological effluents that may be released offsite, and there is no significant increase in occupational or public radiation exposure. Therefore, there are no significant radiological environmental impacts associated with the proposed changes.

The proposed changes do not affect non-radiological plant effluents and have no other environmental impact. Therefore, there are no significant non-radiological environmental impacts associated with the proposed action.

The environmental impacts of the proposed changes and the alternative are similar. Based on the assessment presented above, the proposed changes will not significantly affect the quality of the human environment.

ATTACHMENT  
Evaluation of Proposed Changes

**6.0 REFERENCES**

1. Letter from Jeffrey L. Hansen (Exelon Generation Company, LLC) to U. S. NRC, "Request for NRC Approval of Changes to the Clinton Power Station Emergency Plan," dated June 19, 2009
2. Federal Register Notice (FRN) No. 74 FR 42699, "Proposed Generic Communication; NRC Regulatory Issue Summary 2005-02, Revision 1, Clarifying the Process for Making Emergency Plan Changes," dated August 24, 2009
3. NUREG-0854, "Final Environmental Statement Related to the Operation of Clinton Power Station, Unit No. 1," dated May 1982