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10 CFR 50.90

January 18, 2001

Docket Nos. 50-352  
50-353License Nos. NPF-39  
NPF-85

U.S. Nuclear Regulatory Commission  
Attn: Document Control Desk  
Washington, DC 20555

Subject: Limerick Generating Station, Units 1 & 2  
License Change Application ECR 00-01846 (01-01-0)  
Clarification of TS Table 1.2

Dear Sir or Madam:

Exelon Generation Company, LLC (Exelon) hereby submits License Change Application (LCA) ECR 00-01846, in accordance with 10 CFR 50.90, requesting changes to the Limerick Generating Station, Units 1 and 2 Facility Operating Licenses.

The proposed changes will revise the Units 1 and 2 Technical Specifications (TS) Table 1.2, "Operational Conditions," to allow placing the reactor mode switch to the REFUEL position during Operational Conditions 3 and 4 while a control rod is being moved, provided the one-rod-out interlock is operable.

Attachment 1 to this letter describes the proposed changes and provides justification for the changes including the basis for Exelon's determination that the proposed changes do not involve a significant hazards consideration. Attachments 2 and 3 to this letter provide the "marked-up" and "camera-ready" Technical Specifications pages, respectively. This information is being submitted under affirmation, and the required affidavit is enclosed. This change is needed to support the upcoming refueling outage for LGS Unit 2. As such, we request your approval of this change on or before April 4, 2001.

There are no commitments contained within this letter.

We request that if approved, the changes become effective within 30 days of issuance.

If you have any questions concerning this matter, please do not hesitate to contact us.

Very truly yours,



James A. Hutton  
Director - Licensing

Enclosures: Affidavit, Attachments 1, 2 &amp; 3

cc: H. J. Miller, Administrator, Region I, USNRC  
A. L. Burritt, USNRC Senior Resident Inspector, LGS  
R. R. Janati, Commonwealth of Pennsylvania w/ enclosures

A001

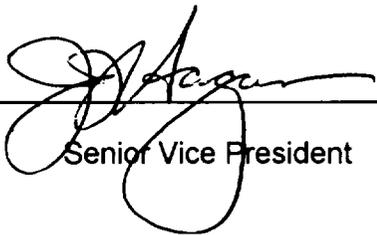
COMMONWEALTH OF PENNSYLVANIA :

: ss.

COUNTY OF CHESTER :

J. J. Hagan, being first duly sworn, deposes and says:

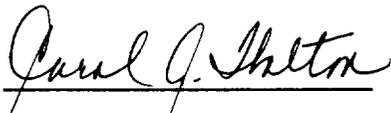
That he is a Senior Vice President of Exelon Generation Company, LLC; the Applicant herein; that he has read the attached License Change Application ECR 00-01846, for Limerick Generating Station Licenses NPF-39 and NPF-85, and knows the contents thereof; and that the statements and matters set forth therein are true and correct to the best of his knowledge, information and belief.

  
Senior Vice President

Subscribed and sworn to

before me this 18<sup>th</sup> day

of January 2001.

  
Notary Public

Notarial Seal  
Carol A. Walton, Notary Public  
Tredyffrin Twp., Chester County  
My Commission Expires May 28, 2002  
Member, Pennsylvania Association of Notaries

**ATTACHMENT 1**

**LIMERICK GENERATING STATION  
UNITS 1 AND 2**

**Docket Nos. 50-352  
50-353**

**License Nos. NPF-39  
NPF-85**

**LICENSE CHANGE APPLICATION  
ECR 00-01846**

**"Revision of TS Table 1.2 to Provide Clarification"**

**Supporting Information - 4 Pages**

## Introduction

Exelon Generation Company, LLC, Licensee under Facility Operating License Nos. NPF-39 and NPF-85 for the Limerick Generating Station (LGS), Units 1 and 2, requests that the Technical Specifications (TS) contained in Appendix A to the Operating License be amended to allow placing the reactor mode switch to the REFUEL position during Operational Conditions 3 and 4 while a control rod is being moved, provided the one-rod-out interlock is operable.

This License Change Application provides a discussion of the proposed TS changes, a safety assessment of the proposed TS changes, information supporting a finding of No Significant Hazards Consideration and information supporting an Environmental Assessment.

## Background

Technical Specification Table 1.2 defines the reactor mode switch positions and average coolant temperature for the five Operational Conditions at Limerick Generating Station (LGS), Units 1 & 2. The "\*\*\*\*" footnote to Table 1.2 is applicable only to Operational Conditions 3 and 4. In the existing specifications, this footnote permits the reactor mode switch to be placed in the REFUEL position with the plant shutdown and the reactor head tensioned while a single rod is being recoupled, provided the one-rod-out interlock is OPERABLE. In addition, the "##" footnote to Table 1.2 allows for a single control rod drive to be removed while in Cold Shutdown in accordance with the provisions of Specification 3.9.10.1. These provisions allow a control rod to be uncoupled from its drive for drive replacement or maintenance without the reactor head being removed.

## Safety Assessment

The one-rod-out interlock associated with the refuel position of the reactor mode switch provides protection against inadvertent criticality. This one-rod-out restriction is enforced by a redundant logic circuit that uses the all-rods-in signal and a rod selection signal to prevent the selection of a second control rod for movement when any other control rod is not fully inserted. Operability of the one-rod-out interlock is required by Specification 3.9.1 for Operational Condition 5.

Since the mode switch in the SHUTDOWN position blocks rod movement, the movement of the switch to REFUEL (or to STARTUP/HOT STANDBY or RUN) is necessary to move a rod for recoupling (e.g., after repairs on the control rod drive) or other maintenance and testing activities. Rod movement in the REFUEL position is limited to one rod by the redundant logic of the one-rod-out interlock.

Technical Specification 3.1.1 requires shutdown margin to be maintained in Operational Conditions 1, 2, 3, 4, and 5. Shutdown margin is the amount of reactivity by which the reactor would be subcritical assuming all control rods are fully inserted except for the single control rod having the highest reactivity worth which is assumed fully withdrawn. The one-rod-out interlock, together with the requirements for adequate shutdown margin during refueling, provides protection against inadvertent criticality.

Technical Specification Table 1.2 currently allows very limited conditions under which a control rod may be withdrawn in Operational Conditions 3 and 4. Consequently, post-maintenance and surveillance testing on control rod drives is a critical path activity during plant startup after a refueling outage. This change would permit the performances of control rod drive testing during Cold Shutdown and Hot Shutdown, thereby shortening the critical path schedule. While the proposed change will increase the frequency of single control rod withdrawals in Operational Conditions 3 and 4 by expanding the allowance contained in the "\*\*\*\*" footnote to include the performance of testing and maintenance activities (e.g., rod exercises), it will not increase the probability of withdrawal events since the withdrawals would have been performed under existing Technical Specifications in Operational Conditions 1, 2, 4, or 5.

The proposed change to Technical Specification Table 1.2 is similar to existing approved Technical Specification Table 1.2 in La Salle County Generating Station's TS (prior to implementation of Improved Standard Technical Specifications). Based on the above analysis, there is reasonable assurance that operation of LGS Units 1 & 2, in the proposed manner, will not endanger the public health and safety and that issuance of the proposed amendment will not be inimical to the common defense and security.

#### Conclusion

The shutdown margin required by Technical Specification 3.1.1 ensures the reactor will be maintained subcritical even with the highest worth rod fully withdrawn. The one-rod-out interlock is automatically imposed whenever the reactor mode switch is placed in the REFUEL position. The provisions assure that the reactor will remain subcritical during single rod movement with the mode switch in the REFUEL position. These revisions are in accordance with previous staff approval and existing licensee Technical Specifications, provide needed flexibility for maintenance and testing of rods, are not significantly different from the current permitted operations of rod withdrawal and do not increase the probability of a rod withdrawal event.

#### Information Supporting a Finding of No Significant Hazards Consideration

We have concluded that the proposed changes to the LGS, Units 1 and 2, TS do not involve a Significant Hazards Consideration. In support of this determination, an evaluation of each of the three (3) standards set forth in 10 CFR 50.92 is provided below.

1. The proposed TS change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

This revision would allow a single control rod to be withdrawn under control of the reactor mode switch REFUEL position one-rod-out interlock in Operational Conditions 3 and 4. This change does not affect any existing accident initiators. The one-rod-out interlock is explicitly assumed in the safety analysis for Control Rod Removal Error During Refueling Accident. The one-rod-out interlock, together with the requirements for adequate shutdown margin, provides protection against inadvertent criticality. The "\*\*\*\*" note in Table 1.2 requires the one-rod-out interlock to be operable prior to withdrawal of a control rod in Operational Conditions 3 and 4. The Control Rod Drop Accident assumes the reactor is in a rod pattern with the highest reactivity rod worth. In Operational Conditions 3 and 4, withdrawing only one control rod

bounds these assumptions because of the verification of adequate shutdown margin. There is no change to the coupling integrity of the control rod during this accident. Although this change would allow an increase in the frequency of single control rod withdrawals in Operational Conditions 3 and 4, the probability of the previously analyzed accidents is not affected. These activities are already permitted by the existing Technical Specifications in Operational Conditions 1, 2, 4, and 5.

The onsite and offsite radiological consequences of previously analyzed accidents in Operational Conditions 3 and 4 are not affected by this proposed change. This change does not affect any existing accident mitigators. The shutdown margin combined with the refueling interlocks prevent a rod withdrawal error while in refueling thereby preventing inadvertent criticality. There is no impact on the ability of the Reactor Protection System (RPS) circuitry to mitigate a Control Rod Drop Accident as described in the SAR nor is there an increase in the number of fuel failures from this accident.

Based on the above, the probability and consequences of previously analyzed accidents are not significantly increased.

2. The proposed TS change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

There are no new accident initiators created by the proposed change to Table 1.2. Single control rods can be withdrawn in Operational Conditions 3 and 4 under the existing Technical Specifications to permit control rod recoupling. The proposed change would merely expand this provision to other control rod maintenance and testing activities performed in Operational Conditions 3 and 4. The withdrawal of individual control rods in Operational Conditions 3 and 4 is a mode of operation permitted under limited circumstances by the existing Technical Specifications.

The additional control rod maintenance and testing activities which could be performed in Operational Conditions 3 and 4, are already permitted by the existing Technical Specifications in Operational Conditions 1, 2, 4, and 5.

Based on the above, this change does not create the possibility of a new or different kind of accident from any previously evaluated.

3. The proposed TS change does not involve a significant reduction in a margin of safety.

The Technical Specifications currently permit single control rod withdrawal for the purpose of control rod recoupling when in Operational Conditions 3 or 4 if the one-rod-out interlock is OPERABLE. This change merely allows additional activities for which a single control rod may be withdrawn when in Operational Conditions 3 or 4, with the same restriction that the one-rod-out interlock be OPERABLE.

The operability requirements for the one-rod-out interlock and the shutdown margin requirements of Technical Specification 3.1.1 ensure the reactor will be maintained subcritical during single control rod withdrawals. Therefore, this change will not involve a significant reduction in the margin of safety.

### **Information Supporting an Environmental Assessment**

An environmental assessment is not required for the proposed change since the proposed change conforms to the criteria for "actions eligible for categorical exclusion" as specified in 10 CFR 51.22(c)(9). The proposed change will have no impact on the environment. The proposed change does not involve a significant hazards consideration as discussed in the preceding section. The proposed change does not involve a significant change in the types or significant increase in the amounts of any effluents that may be released offsite. In addition, the proposed change does not involve a significant increase in individual or cumulative occupational radiation exposure.

### **Conclusion**

The Plant Operations Review Committee and the Nuclear Safety Review Board have reviewed the proposed changes to the LGS, Units 1 and 2, TS and have concluded that they do not involve an unreviewed safety question, and will not endanger the health and safety of the public.

**ATTACHMENT 2**

**LIMERICK GENERATING STATION  
UNITS 1 AND 2**

**Docket Nos. 50-352  
50-353**

**License Nos. NPF-39  
NPF-85**

**LICENSE CHANGE APPLICATION  
ECR 00-01846**

**List of Attached Marked Up Pages**

**Unit 1  
1-10**

**Unit 2  
1-10**

DEFINITIONS

TABLE 1.2  
OPERATIONAL CONDITIONS

<u>CONDITION</u>	<u>MODE SWITCH POSITION</u>	<u>AVERAGE REACTOR COOLANT TEMPERATURE</u>
1. POWER OPERATION	Run	Any temperature
2. STARTUP	Startup/Hot Standby	Any temperature
3. HOT SHUTDOWN	Shutdown# ***	> 200°F
4. COLD SHUTDOWN	Shutdown# ## ***	≤ 200°F ****
5. REFUELING*	Shutdown or Refuel** #	NA

#The reactor mode switch may be placed in the Run or Startup/Hot Standby position to test the switch interlock functions provided that the control rods are verified to remain fully inserted by a second licensed operator or other technically qualified member of the unit technical staff.

##The reactor mode switch may be placed in the Refuel position while a single control rod drive is being removed from the reactor pressure vessel per Specification 3.9.10.1.

\*Fuel in the reactor vessel with the vessel head closure bolts less than fully tensioned or with the head removed.

\*\*See Special Test Exceptions 3.10.1 and 3.10.3.

\*\*\*The reactor mode switch may be placed in the Refuel position while a single control rod is being ~~recoupled~~ provided that the one-rod-out interlock is OPERABLE.

*moved*

\*\*\*\*See Special Test Exception 3.10.8.

Refer to PORC  
Position # 2, 13, 53

DEFINITIONS

TABLE 1.2

OPERATIONAL CONDITIONS

<u>CONDITION</u>	<u>MODE SWITCH POSITION</u>	<u>AVERAGE REACTOR COOLANT TEMPERATURE</u>
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##The reactor mode switch may be placed in the Refuel position while a single control rod drive is being removed from the reactor pressure vessel per Specification 3.9.10.1.

\*Fuel in the reactor vessel with the vessel head closure bolts less than fully tensioned or with the head removed.

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\*\*\*The reactor mode switch may be placed in the Refuel position while a single control rod is being ~~recoupled~~ provided that the one-rod-out interlock is OPERABLE.

*Moved*

\*\*\*\*See Special Test Exception 3.10.8.

**Refer to PORC  
Position # 2, 13, 53**

**ATTACHMENT 3**

**LIMERICK GENERATING STATION  
UNITS 1 AND 2**

**Docket Nos. 50-352  
50-353**

**License Nos. NPF-39  
NPF-85**

**LICENSE CHANGE APPLICATION  
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**List of Camera Ready Pages**

Unit 1  
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DEFINITIONS

TABLE 1.2

OPERATIONAL CONDITIONS

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##The reactor mode switch may be placed in the Refuel position while a single control rod drive is being removed from the reactor pressure vessel per Specification 3.9.10.1.

\*Fuel in the reactor vessel with the vessel head closure bolts less than fully tensioned or with the head removed.

\*\*See Special Test Exceptions 3.10.1 and 3.10.3.

\*\*\*The reactor mode switch may be placed in the Refuel position while a single control rod is being moved provided that the one-rod-out interlock is OPERABLE.

\*\*\*\*See Special Test Exception 3.10.8.

DEFINITIONS

TABLE 1.2

OPERATIONAL CONDITIONS

<u>CONDITION</u>	<u>MODE SWITCH POSITION</u>	<u>AVERAGE REACTOR COOLANT TEMPERATURE</u>
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\*Fuel in the reactor vessel with the vessel head closure bolts less than fully tensioned or with the head removed.

\*\*See Special Test Exceptions 3.10.1 and 3.10.3.

\*\*\*The reactor mode switch may be placed in the Refuel position while a single control rod is being moved provided that the one-rod-out interlock is OPERABLE.

\*\*\*\*See Special Test Exception 3.10.8.