



October 4, 1996

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

Subject: Zion Station Units 1 and 2  
Application for Amendment to Facility  
Operating Licenses DPR-39 and DPR-48  
NRC Docket Nos. 50-295 and 50-304

- Reference:
- 1) John Mueller to U.S. Nuclear Regulatory Commission, letter dated August 9, 1996, Application for Amendment to Facility Operating Licenses DPR-39 and DPR-48.
  - 2) Conference Call between Combustion Engineering and NRC/NRR on September 17, 1996

This letter transmits, pursuant to 10 CFR 50.90, a supplement to a previous application for an amendment to Appendix A of the Zion Unit 1 and 2 Facility Operating License, DPR-39 and DPR-48 (Ref. 1) to modify the F\* Distance Definition. This supplement is being submitted to address NRC staff comments (Reference 2) concerning the F\* Distance Definition.

The purpose of the supplemental changes is to clarify that the proposed F\* Distance Definition is applicable to tubes that are rerolled below the mid-plan of the tubesheet and have no degradation in the rerolled expansion joints.

This supplement to the application for amendment is comprised of the following attachments to this letter:

Attachment A provides a description and safety analysis of the proposed supplemental changes to the Technical Specifications.

Attachment B provides an annotated copy and a clean copy of the affected pages of the Current Technical Specifications (CTS), including the supplemental changes.

Attachment C provides a conclusion that the previously submitted Significant Hazards Considerations for the proposed changes to the Technical Specifications remains valid.

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Attachment D provides a conclusion that the previously submitted Environment Assessment of the proposed changes to the Technical Specifications remains valid.

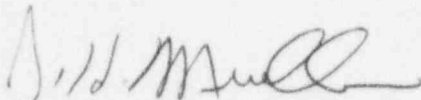
These proposed supplemental changes have been reviewed and approved by Zion Station Onsite and Offsite Review personnel in accordance with Commonwealth Edison procedures.

To the best of my knowledge and belief, the statements contained in this amendment application are true and correct. In some respects these statements are not based on my personal knowledge, but obtained information furnished by other Commonwealth Edison employees, contract employees, and consultants. Such information has been reviewed in accordance with company practices, and I believe it to be reliable.

Commonwealth Edison is notifying the State of Illinois of this application for amendment by transmitting a copy of this letter and its attachments to the designated state official.

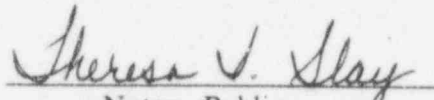
Please direct any questions you may have concerning this submittal to this office.

Respectfully,



J. H. Mueller  
Site Vice President  
Zion Station

Subscribed and Sworn to before me, a Notary Public in and for  
the State of Illinois and County of Lake  
this 4th day of October, 1996.

  
Notary Public



Attachments

cc: NRC Regional Administrator - RIII  
Zion Station Project Manager - NRR  
Senior Resident Inspector - Zion Station  
Office of Nuclear Facility Safety - IDNS  
IDNS Resident Inspector  
Master Files  
Reg. Assurance File  
DCD Licensing

**ATTACHMENT A**

**ZION NUCLEAR GENERATING STATION**

**DESCRIPTION AND SAFETY ANALYSIS  
FOR PROPOSED CHANGES TO  
APPENDIX A TECHNICAL SPECIFICATIONS  
FACILITY OPERATING LICENSES  
DPR-39 AND DPR-48**

**SUPPLEMENT TO LICENSE AMENDMENT REQUEST 96-04**

## **DESCRIPTION OF PREVIOUSLY PROPOSED CHANGE**

In Reference 1, Commonwealth Edison Company proposed to amend Appendix A, Technical Specifications, of Facility Operating Licenses DPR-39 and DPR-48 to revise the definition of F\* Distance. This proposed change was submitted to eliminate the reference to eddy current uncertainty and remove the footnote that specifies the timeframe that it is applicable. The change was in response to technical information contained in previously NRC approved WCAP-14211.

## **DESCRIPTION OF SUPPLEMENT TO PROPOSED CHANGE**

The current wording for the proposed F\* Distance Definition does not provide the applicability for the technical specification definition. Although the proposed BASES discusses F\* Distance in terms of process, and states that it is not applicable to the original factory hard roll, it is not clear in the definition that F\* is applicable to rerolled tubes. The new definition wording will be clarified by stating that the F\* Distance Definition is applicable only to tubes that are rerolled below the mid-plane of the tubesheet and have no degradation in the rerolled expansion joints.

## **NEED FOR THE SUPPLEMENT**

This supplement to the proposed F\* Distance Definition is being submitted to address NRC staff comments concerning clarification of the applicability of the definition.

## **CURRENT TECHNICAL SPECIFICATIONS REQUIREMENTS AND BASES**

The current definition of the F\* Distance is as follows:

"F\* Distance is the length of undegraded tube required to resist pullout. This distance is measured from the bottom of the upper hard roll transition toward the bottom of the tubesheet and has been conservatively determined to be 1.05 inches (not including eddy current uncertainty).#"

where the footnote reads:

"# Valid for Z1R14 and thru Z1C15"

The F\* Distance was developed to allow for an alternative to tube plugging or sleeving for dispositioning indications that occur in the tubesheet region. The F\* Distance defines a length of undegraded expanded tube in the tubesheet which is sufficient to ensure structural integrity and maintain any potential leakage (resulting from defects occurring further down in the tubesheet) to well below the Technical Specification limit and Safety Analysis assumptions. For Zion, the F\* Distance which was determined by analysis is 1.05 inches. The F\* Distance was premised on the fact that the tubesheet provides reinforcement of the expanded portion of the tube, provides resistance to the tube rupture and collapse, and limits potential leakage of throughwall tube cracks. WCAP-14211, which was previously approved

and reviewed by the NRC, describes in detail the analysis and testing performed to demonstrate acceptability of the F\* Distance.

## DESCRIPTION AND BASES OF SUPPLEMENTAL PROPOSED CHANGES

The original proposed amendment will alter the definition of the F\* in Section 4.3.1.B.4.A.11 to remove the uncertainty term from the specified distance. It will specify that the F\* Distance will be determined by the use of a mechanical tool and the footnote that specifies the timeframe of applicability will be eliminated. Also, it identifies that the F\* Distance will always be used in conjunction with a mechanical expansion process to ensure that 1.05 inches of undegraded tubing exists. The new specification will read:

"F\* Distance is the length of undegraded tube required to resist pullout. The distance is measured from the bottom of the upper hard roll transition toward the bottom of the tubesheet and has been conservatively determined to be 1.05 inches. The determination of the F\* Distance is satisfied by the mechanical tool (rolling pin) used to install the joint having an effective length of greater than or equal to 1.05 inches."

Bases 3.3.1 & 4.3.1 will be deleted and replaced with the following which clarifies the application of eddy current uncertainty when sizing the F\* Distance and when locating indications within the F\* Distance.

The F\* Distance will be controlled by process control. For a new additional roll expansion, the requirement will be at least 1.05 inches of new hard roll. This is controlled by the length of the rolling pin used during the mechanical installation of the new hard roll joint. The distance from the original roll transition zone is also controlled by the process in that the lower end of the new roll expansion is located approximately one inch above the original factory hard roll expansion. In the case of the new roll, eddy current examination will confirm that there are no indications in the new roll region and that there is a new roll region with well defined upper and lower expansion transitions. The F\* Distance is not applicable to the original factory hard roll.

The supplement to the propose amendment will add the following sentence to the F\* Distance Definition: The F\* Distance is applicable only to tubes that are rerolled below the mid-plane of the tubesheet and have no degradation in the rerolled expansion joints. This supplement to the proposed definition is to clarify that the F\* Distance Definition is applicable only to tubes that have been rerolled, and is not applicable to original factory hard roll.