



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

November 1, 1994

Docket File

50-295

Mr. D. L. Farrar  
Manager, Nuclear Regulatory Services  
Commonwealth Edison Company  
Executive Towers West III, Suite 500  
1400 OPUS Place  
Downers Grove, IL 60515

SUBJECT: REVIEW OF TENDON SURVEILLANCE REPORTS OF ZION NUCLEAR POWER  
STATION, UNITS 1 AND 2

Dear Mr. Farrar:

The Structural Aging (SAG) Program conducted by Oak Ridge National Laboratory (ORNL) for the staff has the objective of preparing a document that will provide the Nuclear Regulatory Commission (NRC) with potential structural safety issues and acceptance criteria for use in nuclear power plant continued service evaluations. The SAG program focus is on concrete and concrete-related materials comprising safety-related (Category I) structures in light-water reactor facilities.

Part of the SAG program involves an evaluation of pre-stressed concrete containment tendon systems. The ability of pre-stressed concrete nuclear power plant containments to withstand the loadings that would develop as a result of a loss-of-coolant accident depends on the continued integrity of the tendons. In this country, the condition and functional capability of unbonded post-tensioning systems must be periodically assessed. This is accomplished, in part, through an inservice inspection program that must be developed and implemented for each containment. Requirements for containment tendon surveillance programs in this country are provided in documents such as Regulatory Guide 1.35, Regulatory Guide 1.35.1, ASME Section XI Subsection IWL, and the Standard Technical Specifications for Tendon Surveillances.

Although the performance of the post-tensioning systems has been very good, there have been instances of anchor head failures, missing button heads, lower than predicted pre-stressing forces, and corrosion. To complete the SAG program tendon performance assessment, ORNL issued a subcontract to Dr. Howard Hill, a private consultant. The objective of Dr. Hill's work is to prepare a report in which potential issues related to aging of post-tensioning systems in nuclear power plant pre-stressed concrete containments are discussed.

In the interest of efficiency, Dr. Hill plans to visit Precision Surveillance, Inc., in East Chicago, Indiana, instead of visiting individual plant sites. Precision Surveillance, Inc. has performed many tendon surveillances for various licensees. However, licensees must give their approval to Mr. Ron Hough of Precision Surveillance, Inc. to allow Dr. Hill to review the various tendon surveillance reports at Precision Surveillance, Inc.

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D. L. Farrar

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The staff requests authorization for Mr. Ron Hough of Precision Surveillance, Inc. to allow the staff's contractor, Dr. Hill, to examine the tendon surveillance reports and extract data from them. Dr. Hill would review the Zion Nuclear Power Station, Units 1 and 2, containments post-tensioning system surveillance and retensioning. The review is scheduled to be performed in the offices of Precision Surveillance, Inc., in East Chicago, Indiana, on November 4 and 5, 1994. If you authorize this request, please notify Mr. Ron Hough (219-397-5826) that he may give Dr. Hill access to the reports. This arrangement will help the contractor to maximize resources, complete his review of tendon system performance, and minimize the burden on licensees.

Sincerely,

Original signed by:

Clyde Y. Shiraki, Project Manager  
Project Directorate III-2  
Division of Reactor Projects - III/IV  
Office of Nuclear Reactor Regulation

Docket Nos. 50-295 and 50-304

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Mr. D. L. Farrar  
Commonwealth Edison Company

Zion Nuclear Power Station  
Unit Nos. 1 and 2

cc:

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