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 AUTH. NAME AUTHOR AFFILIATION  
 KEISER, H. W. Pennsylvania Power & Light Co.  
 RECIP. NAME RECIPIENT AFFILIATION  
 ADENSAM, E. BWR Project Directorate 3

SUBJECT: Forwards relief request re one time relief from performing post-maint leak rate testing on Reactor Water Cleanup Valve 1F004 per in-service testing program. Required test will be performed no later than third refueling & insp outage.

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Pennsylvania Power & Light Company

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Harold W. Keiser  
Vice President-Nuclear Operations  
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FEB 18 1987

Ms. E. Adensam, Project Director  
Director of Nuclear Reactor Regulation  
BWR Project Directorate No. 3  
Division of Licensing  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

SUSQUEHANNA STEAM ELECTRIC STATION  
RELIEF REQUEST: IN-SERVICE TESTING PROGRAM  
PLA-2801 FILE R41-2

Docket No. 50-387

Reference: Letter, PLA-2797, H. W. Keiser to E. Adensam, dated February 4, 1987.

Dear Ms. Adensam:

Attached is a request for one time relief from performing the post-maintenance leak rate testing on Reactor Water Cleanup Valve 1F004 as required by the Susquehanna SES Unit 1 In-Service Testing Program. This request supersedes the referenced letter in its entirety.

If you have any questions, please contact Mr. R. Sgarro at (215) 770-7855.

Very truly yours,

H. W. Keiser  
Vice President - Nuclear Operations

Attachment

cc: Document Control Desk (original)  
NRC Region 1  
L. R. Plisco - NRC  
M. C. Thadani - NRC

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RELIEF REQUEST

System: Reactor Water Cleanup (RWCU)  
P&ID: M-144  
Valve: HV-1F004  
Category: A  
Class: 2  
Function: Containment Isolation

**Impractical Test Requirement:**

Leak Rate test to satisfy post-maintenance operational readiness requirements pursuant to IWV-3000.

**Basis for Relief:**

Maintenance necessary to functionally restore the valve can be accomplished with the unit operating but leak rate test implementation requires the unit to be shut down. The leak test to verify the containment isolation function requires that the RWCU System be out-of-service and in order to satisfy Technical Specification 3.6.1.2e, a 49.5 psig hydrostatic leakage test must be performed. This requires the unit to be in Operational Condition 4 (cold shutdown).

**Justification for Relief:**

Prior to the valve maintenance, an alternative test was performed to evaluate water leakage through the 1F004 valve. During this test, a control volume bounded by the 1F004 valve and the two RWCU pump suction valves (1F005A and B) was filled with water, and vented to remove as much air as possible. The inboard containment isolation valve (1F001) was then opened, exposing the 1F004 to reactor pressure (>900 psig), and a pressure trace was recorded as the control volume pressurized. Utilizing this trace and the conservative relationship of:

$$\text{flow rate} = (\text{constant}) (\sqrt{\Delta P}),$$

pressure vs. leak rate curves were derived and leakage through the 1F004 valve was estimated. Following completion of maintenance, the same test was performed; the two tests allowed a qualitative assessment of pre and post-work leakage.

MEMORANDUM

TO : SAC, [illegible]

FROM : [illegible]

SUBJECT: [illegible]

DATE: [illegible]

[illegible]

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The last leak test performed on the 1F004 valve resulted in essentially zero leakage, and the balance of the hydrostatically tested valves indicated less than 0.3 gpm. The Technical Specifications allow no more than 3.3 gpm total for all of the hydrostatically tested valves. The alternative method approximated leakage attributable to the 1F004 valve at about 3 gpm prior to valve maintenance. Although the method is not as accurate as the required test, it assured us that leakage was within limits. Post-maintenance testing resulted in negligible leakage.

The leak rate test required by the SSES Unit 1 IST Program will be performed at the first outage of sufficient duration which necessitates containment entry, but no later than the Unit 1 third refueling and inspection outage, which is currently scheduled to begin September 5, 1987.

CONFIDENTIAL

The first part of the document discusses the general principles of the project. It outlines the objectives and the scope of the work. The second part describes the methodology used in the study. This includes the data collection methods and the analysis techniques. The third part presents the results of the study. These results are compared with previous research and discussed in the context of the project's goals. The final part of the document provides conclusions and recommendations for future work.

The results of the study show that there is a significant correlation between the variables being studied. This finding is consistent with the hypothesis of the study. The data also indicates that there are several factors that influence the outcome of the project. These factors are discussed in detail in the following sections. The overall findings of the study are summarized in the table below.

### CONCLUSIONS

In conclusion, the study has shown that the proposed model is effective in predicting the outcome of the project. The results are statistically significant and provide a clear understanding of the factors that influence the project's success. The findings of this study can be used to inform future research and to improve the design of similar projects.