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 AUTH. NAME AUTHOR AFFILIATION
 CURTIS, N.W. Pennsylvania Power & Light Co.
 RECIP. NAME RECIPIENT AFFILIATION
 SCHWENCER, A. Licensing Branch 2

SUBJECT: Forwards evaluation re fuel lift for SER Item 15.

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The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that every entry should be clearly documented and supported by appropriate evidence. This ensures transparency and accountability in the financial process.

Furthermore, it is noted that regular audits are essential to identify any discrepancies or errors. By conducting these audits, organizations can prevent fraud and ensure that their financial statements are reliable and accurate.

In conclusion, the document stresses that a robust system of record-keeping and auditing is crucial for the long-term success and integrity of any organization.

The second section of the document provides a detailed overview of the various financial instruments and their uses. It covers topics such as bonds, stocks, and derivatives, explaining how each instrument functions and the risks associated with them.

Bonds are described as debt securities that provide a steady stream of income through interest payments. Stocks, on the other hand, represent ownership in a company and offer the potential for capital appreciation. Derivatives are more complex instruments that derive their value from the underlying assets, often used for hedging purposes.

The document also discusses the importance of diversification in investment portfolios. By spreading investments across different asset classes and sectors, investors can reduce the overall risk of their portfolios and potentially achieve higher returns over the long term.

Additionally, it highlights the role of financial advisors in helping individuals and institutions make informed investment decisions. These advisors provide valuable insights and guidance based on their expertise and knowledge of the market.

Finally, the document touches upon the importance of staying updated on market trends and economic indicators. This allows investors to make timely adjustments to their portfolios and respond to changing market conditions.



Pennsylvania Power & Light Company

Two North Ninth Street • Allentown, PA 18101 • 215 / 770-5151

Norman W. Curtis
Vice President-Engineering & Construction-Nuclear
215 / 770-5381

MAY 17 1982

Mr. A. Schwencer, Chief
Licensing Branch No. 2
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Docket Nos. 50-387
50-388

SUSQUEHANNA STEAM ELECTRIC STATION
SER ITEM 15
ER 100450 FILE 841-2
PLA-1095

Dear Mr. Schwencer:

In accordance with SER Item 15, fuel lift has been analyzed for Susquehanna SES and has been found to be within acceptable limits. The results of the Susquehanna SES fuel lift analysis are attached.

This letter closes SER Item 15.

Very truly yours,

N. W. Curtis
Vice President-Engineering & Construction-Nuclear

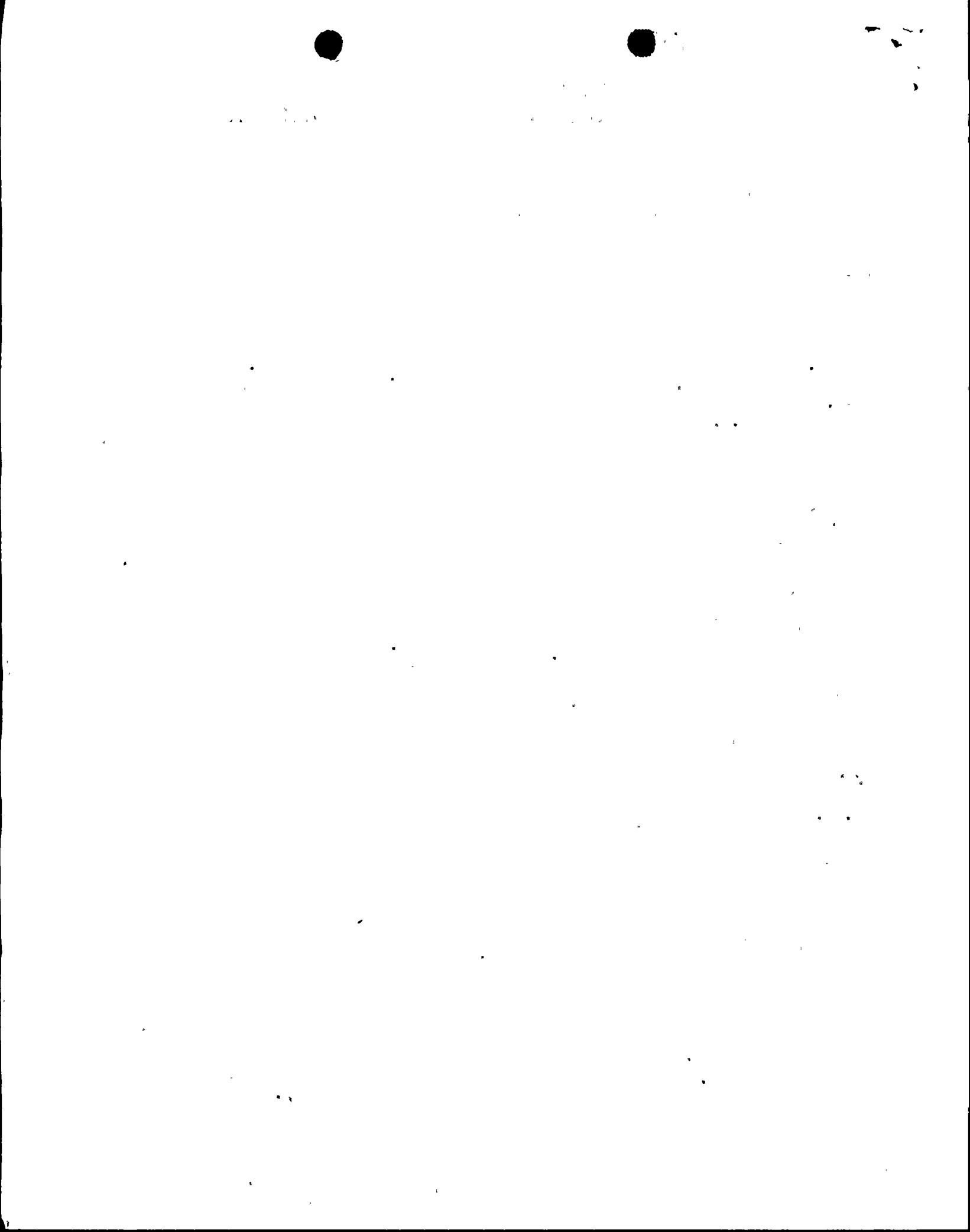
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Attachment

cc: R. Perch - NRC

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SUSQUEHANNA FUEL LIFT ANALYSIS

INTRODUCTION

Table 1 Summary of Results is provided to confirm fuel lift analysis results expected in SSES Safety Evaluation Report Section 4.2.3.4, April, 1981.

TECHNICAL OVERVIEW

The fuel bundles in the reactor core are supported horizontally by the fuel-support casting and core-plate at their lower end and by the top-guide at their upper end. In the vertical direction, the fuel bundle weight is supported by a system composed of fuel-support casting, control-rod guide tube, control-rod-drive housing upper portion and RPV bottom head. During postulated abnormal conditions, the upward forces acting on the bundles increase and can potentially exceed the hold-down forces. In this event, the bundle would lift upward and, upon reseating the fuel supports, produce impact forces. An analysis has been performed to determine the magnitude of fuel lift and to assure fuel design acceptability.

METHODOLOGY

The dynamic analysis required to assess the amount of lift and associated impact forces is by nature a non-linear and complex process. The non-linearity is due to the hydrodynamic effects, frictional forces and the gaps between the components.

SUMMARY OF RESULTS

Fuel lift has been analyzed for Susquehanna and has been found to be within acceptable limits. The results of the Susquehanna fuel lift analysis are summarized in Table 1.

TABLE 1 SUMMARY OF RESULTS

DESIGN CONDITION	CASE NO.	LOAD COMBINATION	TYPE OF HORIZONTAL	GAP OPENING OF ELEMENT W6 (x10 ⁻³ inch) (1)	FUEL* LIFT	CORE** PLATE LOAD (LBS) (2)
UPSET	1	N+ΔP _u +OBE+SRV _{max} +S _s	MAX	0.0	NO	45.
			MIN	0.0	NO	41.
EMERGENCY	2	N+ΔP _u +SRV _{ads} +CHUGGING	MAX	0.0	NO	88.
			MIN	12.0	NO	165.
FAULTED	4	N+ΔP _u +SSE+SRV _{ads} +CHUGGING	MAX	3.0	NO	264.
			MIN	2.2	NO	190.
FATIGUE	10	N+ΔP _u +SRV _{ads} +S _s	MAX	0.0	NO	35.
			MIN	0.0	NO	34.

(1) Separation between Fuel Support Casting and Lower Tie Plate

(2) Load on ELEMENT Y4

° Acceptance Criterion:

Vertical lift-off forces must not disengage the lower tie plate from the fuel support casting such that the resulting loss of lateral fuel bundle positioning could interfere with control blade insertion.

** Loads per fuel assembly

