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 CRUTCHFIELD, D. Operating Reactors Branch 5

SUBJECT: Forwards assessment of SEP Topic II-4.D, "Stability of Slopes," per NRC 810417 ltr. Slopes near plant site are in stable condition.

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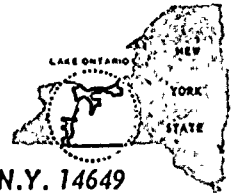
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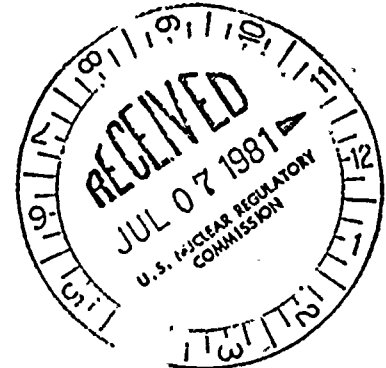


JOHN E. MAIER
VICE PRESIDENT

TELEPHONE
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June 30, 1981

Director of Nuclear Reactor Regulation
Mr. Dennis M. Crutchfield, Chief
Operating Reactors Branch No. 5
Division of Licensing
U. S. Nuclear Regulatory Commission
Washington, DC 20555



Subject: SEP Topic II-4.D, Stability of Slopes
R. E. Ginna Nuclear Power Plant
Docket No. 50-244

Dear Mr. Crutchfield:

Attached is Rochester Gas and Electric assessment of SEP Topic II-4.D, "Stability of Slopes." The format for this assessment was derived from the NRC staff's assessment of this topic for the Palisades plant, transmitted by letter dated April 17, 1981 from Dennis M. Crutchfield, NRC, to David P. Hoffman, Consumers Power Company.

Very truly yours,

John E. Maier
John E. Maier

Attachment

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Attachment

SEP Safety Topic Evaluation R. E. Ginna Nuclear Power Plant Unit I Topic II-4.D Stability of Slopes

Introduction

In order to assure that all safety related structures, systems and components are adequately protected against the failure of natural or man-made slopes, the possibility of movement of these slopes is evaluated by comparing forces resisting failure to those causing failure. The scope of this safety topic evaluation is to review the condition of existing slopes, including geotechnical properties, ground water table, etc., and, using current review criteria as a basis, to evaluate adequacy of these slopes.

Current Review Criteria

The current review criteria for this specific safety topic are:

1. SRP 2.5.5
2. Appendix A to 10CFR Part 100

Related Safety Topics and Interfaces

1. SEP Topic II-3.A Hydrology Description
2. SEP Topic II-4, Geology and Seismology
3. SEP Topic III-1, Classification of Structures, Components, and Systems

Evaluation

The final grading of the plant site has left only two slight onsite slopes. One slope toe, elevation 260, is located approximately two hundred feet northwest of the Turbine Building and extends out nearly one hundred and fifteen feet while rising fifteen feet to elevation 275. The second slope is located east of the Screen House, elevation 255, and extends to elevation 265. Both slopes are graded at approximately 7.5 horizontal to 1 vertical. These slopes are located in silty clay soil with occasional scatterings of sand and gravel throughout. The water table is approximately five to twenty feet below the surface. The figure supplied via Reference 6 is a plot plan showing rock surface and ground water contours.

The factor of safety for the stability of these slopes can be estimated based upon infinite slope theory. Based on the information provided in Reference 7, the friction angle of silty clay is estimated to be 32 degrees. Using a friction angle of 32



degrees and the slope of 7.5 horizontal to 1 vertical, the factor of safety is computed to be 4.7, in accordance to the methodology presented in Reference 8. This factor of safety greatly exceeds the factor of safety value of 1.5 that is recommended in SRP 2.5.5. RG&E thus concludes that, because of the 4.7 factor of safety, the absence of any potentially adverse ground water conditions, and the good performance of these slopes since construction, the onsite slope conditions can be considered stable.

Conclusion

Based on the information provided in the references and the above evaluation, we conclude that the slopes at the R. E. Ginna site are in stable condition.

The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that every entry should be supported by a valid receipt or invoice. This ensures transparency and allows for easy auditing of the accounts.

In the second section, the author details the various methods used to collect and analyze data. This includes both primary and secondary research techniques. The primary research involves direct observation and interviews with key stakeholders, while secondary research involves reviewing existing literature and reports.

The third part of the document focuses on the results of the data analysis. It shows that there is a clear trend towards digitalization in the industry. This is supported by the fact that more companies are investing in software solutions and online platforms.

Finally, the document concludes with a series of recommendations for future research and practice. It suggests that further studies should be conducted to explore the long-term effects of digitalization on the industry. Additionally, it recommends that companies should continue to invest in technology and training to stay competitive in the market.

References

1. Dames & Moore, "Geologic and Geophysical Investigations, Ginna Site, Ontario, New York" prepared for Rochester Gas & Electric Corporation, February, 1974.
2. Dames & Moore "Proposal, Site Evaluation Study, Proposed Power Plant, Rochester, New York", Rochester Gas & Electric Corporation.
3. Rochester Gas and Electric Corporation, "Brookwood Nuclear Station Unit No. 1, Preliminary Facility Description and Safety Analysis Report", March, 1966.
4. "Rochester Gas and Electric Corporation, R. E. Ginna, Nuclear Power Plant Unit No. 1, Environmental Report" Volume 2, August, 1972, Submitted to United States Atomic Energy Commission, Docket No. 50-244.
5. Rochester Gas and Electric Corporation "Robert Emmett Ginna,, Nuclear Power Plant Unit No. 1, Final Facility Description and Safety Analysis Report" Volume 1, November, 1968.
6. Letter, John E. Maier, RG&E, to Dennis M. Crutchfield, NRC, SEP Topics III-3.A, II-3.A, II-3B. II-3.B.1, and II-3.C, dated May 1, 1981.
7. Soil Mechanics, Lambe and Whitman, P. 307.
8. Soil Mechanics and Foundations, Parcher and Means, P. 483.