CONNECTICUT YANKEE ATOMIC POWER COMPANY

BERLIN, CONNECTICUT
P. O. BOX 270 HARTFORD, CONNECTICUT 06101

TELEPHONE
203-666-6911

June 22, 1981

Docket No. 50-213
A01452

Director of Nuclear Reactor Regulation
Attn: Mr. Dennis M. Crutchfield, Chief
Operating Reactors Branch #5
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

References: (1) D. G. Eisenhut letter to SEP Plant Licensees, dated January 14, 1981.
(2) W. G. Counsil letter to D. G. Eisenhut, dated February 27, 1981.

Gentlemen:

Haddam Neck Plant
SEP Topic II-4.F, Settlement of Foundations and Buried Equipment

As part of the redirection of the Systematic Evaluation Program, Reference (1), Connecticut Yankee Atomic Power Company (CYAPCO) committed to develop Safety Assessment Reports (SAR's) for certain SEP topics which would be submitted for Staff review. CYAPCO detailed this commitment and provided a schedule for submittal of SAR's in Reference (2). In accordance with this commitment, CYAPCO hereby provides the Safety Assessment Report for SEP Topic II-4.F, Settlement of Foundations and Buried Equipment, which is included as Attachment 1.

We trust the Staff will appropriately use this information to develop a Safety Evaluation Report for this SEP topic.

Very truly yours,

CONNECTICUT YANKEE ATOMIC POWER COMPANY

W. G. Counsil
Senior Vice President

Docket No. 50-213

Attachment 1

Safety Assessment Report

SEP Topic II-4.F, Settlement of Foundations and Buried Equipment

June, 1981

Haddam Neck Plant

SEP Safety Assessment Report

Topic 11-4.F Settlement of Foundations and Buried Equipment

1.0 INTRODUCTION

This topic reviews the protection of safety-related structures, systems, and components against excessive settlement.

2.0 CRITERIA

Appendix A to 10 CFR Part 100 states:

> The geologic, seismic, and engineering characteristics of a site and its environs shall be investigated in sufficient scope and detail to provide reasonable assurance that they are sufficiently well understood to permit an adequate evaluation of the proposed site, and to provide sufficient information to support the determinations required by these criteria and to permit adequate engineering solutions to actual or potential geologic and seismic effects at the proposed site.

3.0 DISCUSSION

The major structures are founded directly on bedrock. Minor structures are founded either on rock, on piles driven into the rock, or in a few places on spread footings on compacted granular fill. The bedrock is a strong granite gneiss. During construction, the overburden was excavated to permit a thorough examination and removal of weathered or excess rock material to assure a sound foundation for each of the conditions noted above. The bedrock extends from ground level to about 10 to 20 feet below ground level over most of the plant area. At the most northerly end and at the river's edge, the rock is 30 to 50 feet below ground surface.

Specifications of the backfill used during construction were not available during this review. Careful inspection of all structures and major equipment has revealed no observable settlement to date. CYAPCO concludes, based on these inspections in conjunction with the underlying competent bedrock, that excessive settlement has been satisfactorily precluded for all structures and all buried equipment.

3.1 ASSOCIATED SEP TOPICS

- o 11-4.D Stability of Slopes
- o 111-1 Classification of Structures, Components, and Systems
- o 111-7.B Design Codes, Criteria, and Load Combinations

4.0 CONCLUSIONS

Based on this review, with particular emphasis to the fact that no observable settlement problems have been noted to date, CYAPCO concludes that safety-related structures, systems, and components are adequately protected against excessive settlement.

5.0 REFERENCES

1. Standard Review Plan Section:

   2.5.4 Stability of Subsurface Materials and Foundations

2. Appendix A to 10 CFR Part 100