Duquesne Light

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August 24, 1984

United States Nuclear Regulatory Commission
Washington, DC 20555

ATTENTION: Mr. George W. Knighton, Chief
Licensing Branch 3
Office of Nuclear Reactor Regulation

SUBJECT: Beaver Valley Power Station - Unit No. 2
Docket No. 50-412
Response to Draft SER Open Item No. 179

Gentlemen:

This letter forwards the attached response to the NRC Geotechnical Engineering Section's Draft SER Open Item No. 179.

DUQUESNE LIGHT COMPANY

By E. J. Woolever
E. J. Woolever
Vice President

JDO/wjs
Attachment

cc: Ms. M. Ley, Project Manager (w/a)
Mr. E. A. Licitra, Project Manager (w/a)
Mr. G. Walton, NRC Resident Inspector (w/a)

COMMONWEALTH OF PENNSYLVANIA)
) SS:
COUNTY OF ALLEGHENY)

On this 24th day of August, 1984, before me, a Notary Public in and for said Commonwealth and County, personally appeared E. J Woolever, who being duly sworn, deposed and said that (1) he is Vice President of Duquesne Light, (2) he is duly authorized to execute and file the foregoing Submittal on behalf of said Company, and (3) the statements set forth in the Submittal are true and correct to the best of his knowledge.

Anita Elaine Reiter
Notary Public

ANITA ELAINE REITER, NOTARY PUBLIC
ROBINSON TOWNSHIP, ALLEGHENY COUNTY
MY COMMISSION EXPIRES OCTOBER 20, 1985

A001
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Draft SER Open Item No. 179 (Section 2.5.4.3.5) - Soil Damping Values

As stated in Section 2.5.4.1.2, the engineering properties of the in situ sands and gravels were not determined by laboratory tests because of the inability to obtain undisturbed samples of these granular materials. In the soil structure interaction analysis of the Reactor Containment, the applicant varied the soil shear modulus value by ±30 percent, but has not so varied the damping value. The applicant has been asked to justify not varying the soil damping value by ±30 percent because of the uncertainty involved in the soil properties and the presence of thick clay lenses.

Response:

Variations of soil properties and dampings are accounted for in the soil-structure interaction analysis of structures at BVPS-2 by peak-broadening the resulting floor response spectra by +25 and -20 percent of the corresponding period (FSAR Section 3.7B.2.9). Peak-broadening is recognized by SRP 3.7.2, Section II.9, as being an acceptable method for considering variations of structural properties, dampings, soil properties, and soil-structure interactions. This SRP section states that the peak width should be increased by a minimum of ±15 percent to be acceptable if no special study is performed for this purpose. Since the BVPS-2 criteria used for peak-broadening floor response spectra are considerably more conservative than those specified in SRP 3.7.2, further variations in the soil properties used in the soil-structure interaction analyses were not considered.