TERA

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

Docket No. 50-334

JUN 14 1979

LICENSEE: Duquesne Light Company

Facility: Beaver Valley Unit No. 1

SUBJECT: MEETING SUMMARY - PIPESTRESS REANALYSIS

The licensee and Stone and Webster Engineering Corporation met with the staff on May 24, 1979 to discuss the amplified response spectra (ARS) developed with consideration of soil structure interactions. The proposed ARS is to be used in the pipestress reanalysis for the Beaver Valley, Unit No. 1. The list of attendees is shown on Enclosure 1.

Stone and Webster (S&W) presented the information on the Beaver Valley site. This information is included in the May 23, 1979 letter from Mr. C. N. Dunn to the NRC on the ARS proposed and in Enclosure II on the soil properties and location. The soil properties for the proposed ARS and the ongoing liquafaction review are reported by S&W to be the same.

Following a discussion by the NRC staff, the licensee was informed that the proposed ARS would be acceptable if calculated stresses were increased by 20% in the fundamental period range of 0.4 to 0.55 sec. This corresponds to the natural frequency range of the peak acceleration as presented in the PSAR. In further investigation by S&W, only one system is effected; the raw water system. Further delays in the reanalysis are not expected.

Dave Wigginton

Dave Wigginton, Project Manager
Operating Reactors Branch #1
Division of Operating Reactors

Enclosures:
List of Attendees
Soil Properties and Location

cc: w/enclosures
See next page

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Docket Files
NRC PDR
Local PDR
ORB1 Reading
NRR Reading
H. Denton
E. Case
V. Stello
D. Eisenhut
B. Grimes
R. Vollmer
A. Schwencer
D. Ziemann
P. Check
G. Lainas
D. Davis
B. Grimes
T. Ippolito
R. Reid
V. Noonan
G. Knighton
D. Brinkman
Project Manager
OELD
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ACRS (16)
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ENCLOSURE 1

BEAVER VALLEY PIPESTRESS MEETING

LIST OF ATTENDEES

NAME	ORGANIZATION
D. Wigginton	ORB#1-NRR
J. P. Knight	NRC/DSS
Steve Lewis	NRC/OELD
P. A. Wild	Stone & Webster
K. A. Condon	Stone & Webster
S. C. Rossier	Stone & Webster
J. T. Christian	Stone & Webster
A. S. Lucks	Stone & Webster
J. J. Carey	Duquesne Light Co.
G. W. Moore	Duquesne Light Co.
B. W. Churchill	Shaw, Pittman
J. Martore	NRC
J. Kane	NRC
J. M. Giannelli	NRC
F. P. Schauer	NRC
H. E. Polk	NRC/DSS/SEB
P. Chan	NRC/DSS/SEB
P. T. Kuo	NRC/DSS/SEB
J. Greeves	NRC
L. Heller	NRC

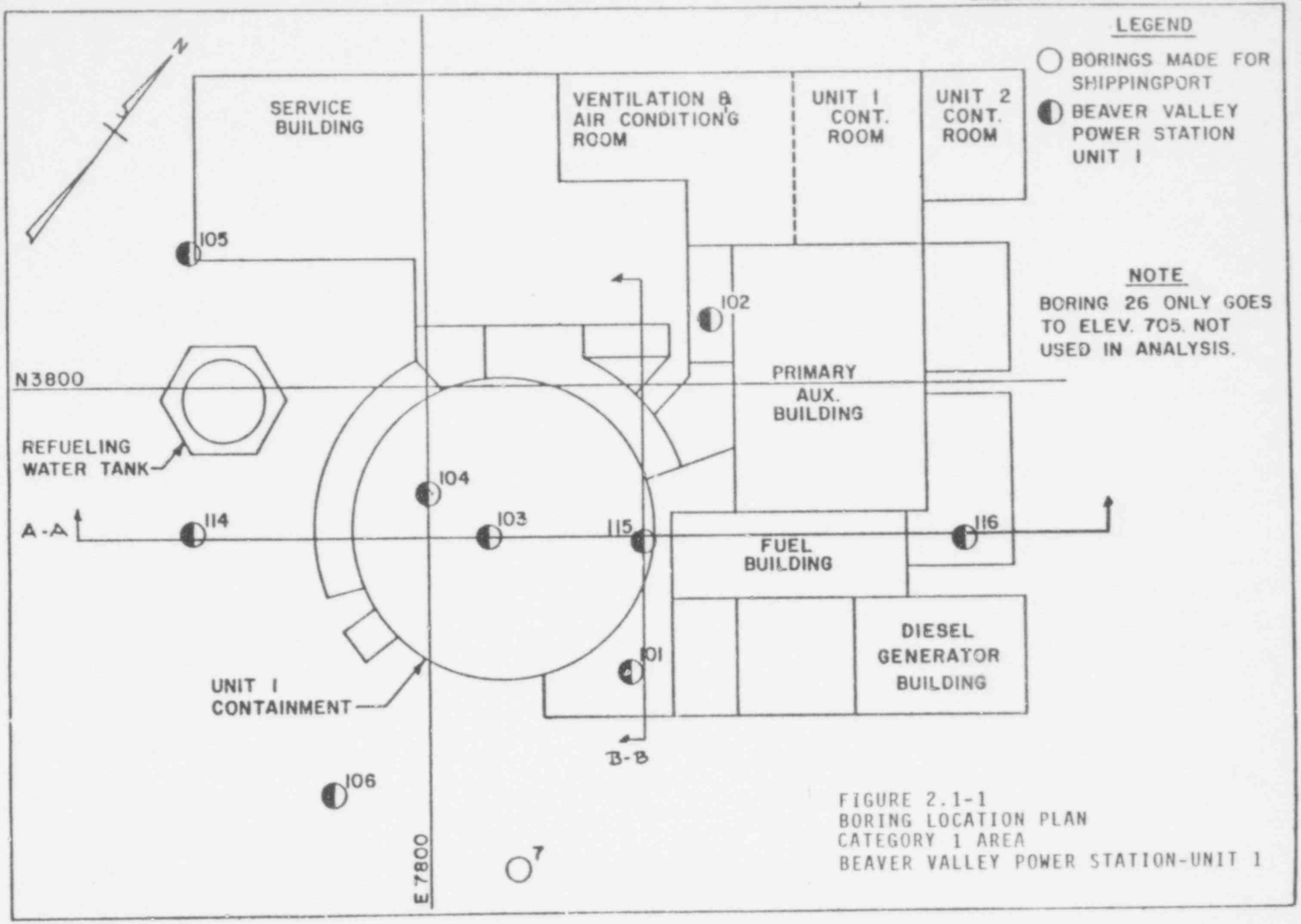


FIGURE 2.1-1
BORING LOCATION PLAN
CATEGORY 1 AREA
BEAVER VALLEY POWER STATION-UNIT 1

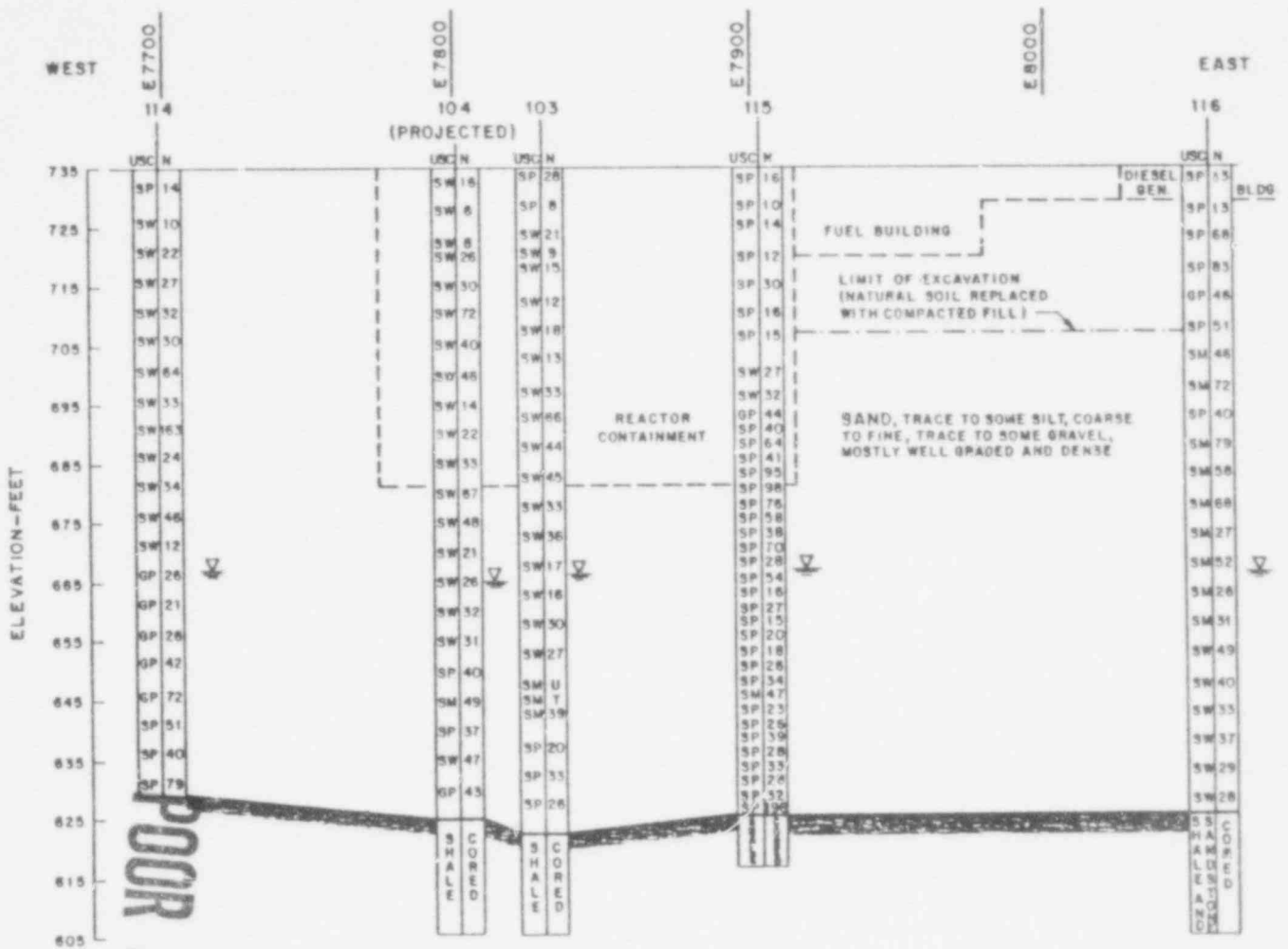
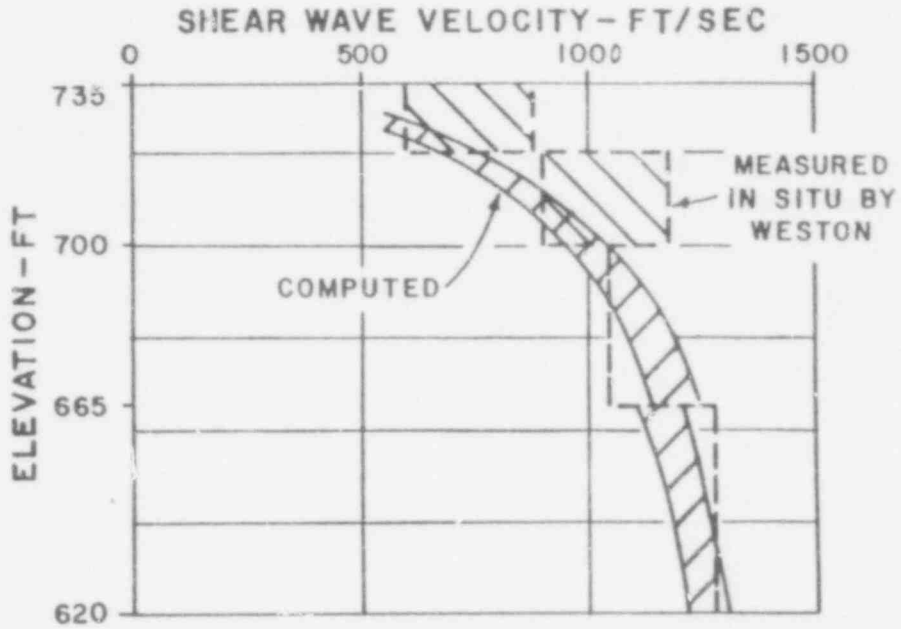


FIGURE 2.2-1
EAST-WEST SOIL PROFILE
SECTION 1-1
BEAVER VALLEY POWER STATION-UNIT 1



VALUES ASSUMED FOR COMPUTING C_S

e = 0.58	e = 0.46
S = 50 % γ_t = 120 pcf	S = 50 % γ_t = 125 pcf
S = 100 % γ_t = 130 pcf	S = 100 % γ_t = 135 pcf
G_s = 2.70	

FIGURE 2.4-1
MEASURED AND COMPUTED VALUES
OF SHEAR WAVE VELOCITY
BEAVER VALLEY POWER STATION-UNIT 1

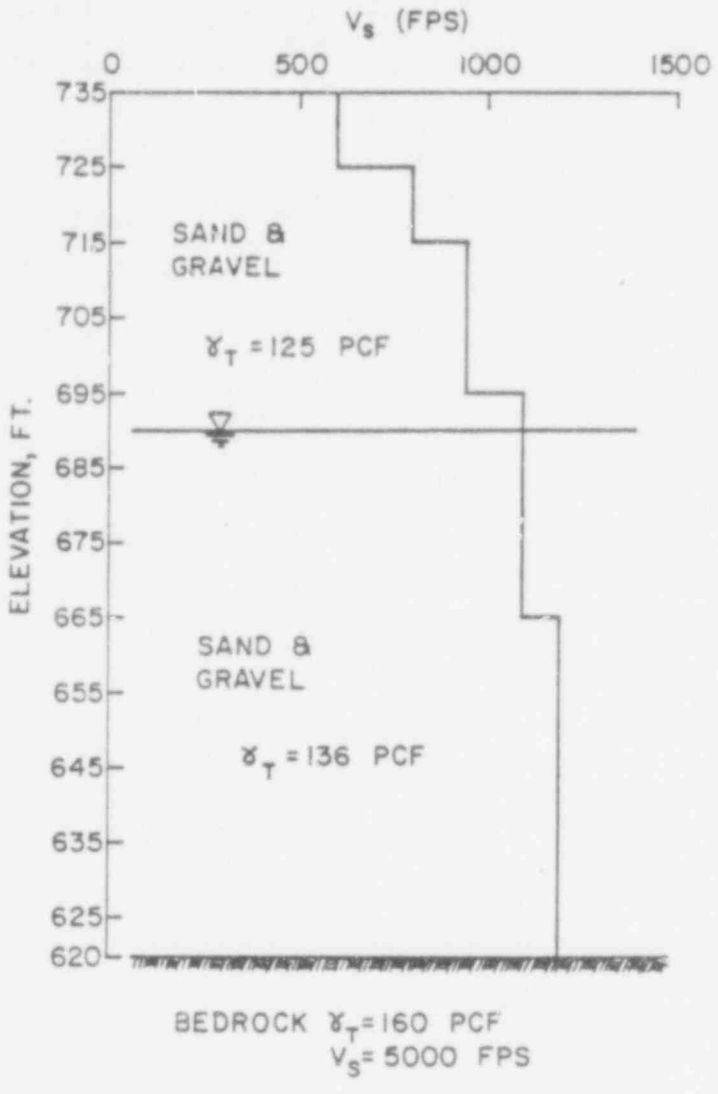


FIGURE 2.4-2
FREE FIELD SOIL PROFILE
BEAVER VALLEY POWER STATION-UNIT 1

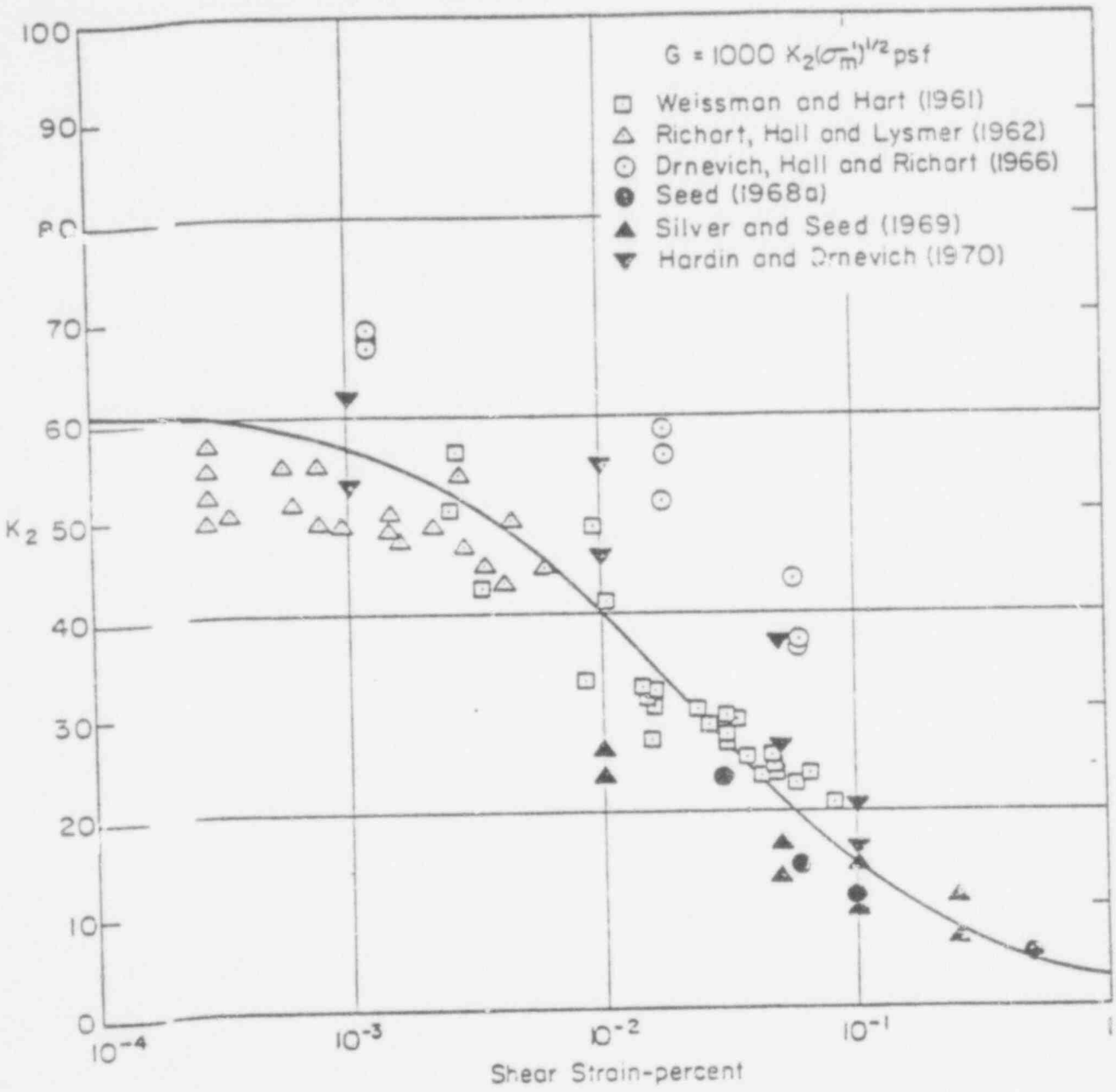


Fig. 5.2 SHEAR MODULI OF SANDS AT RELATIVE DENSITY OF ABOUT 75 %.

(From Seed and Idriss, 1970c)

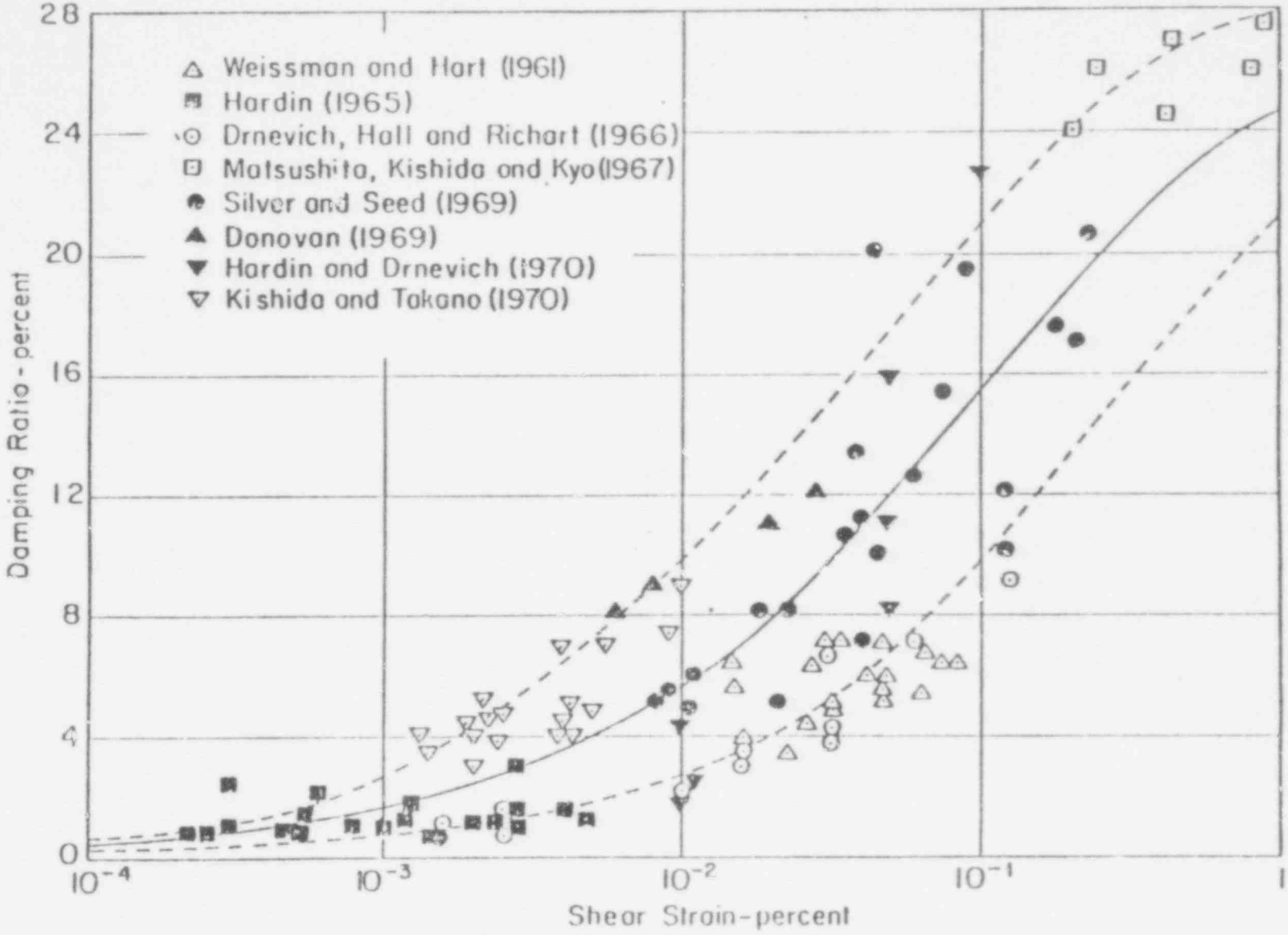


Fig. 5.9 DAMPING RATIOS FOR SANDS.

(From Seed and Idriss, 1970c)

TABLE 1

PERCENT VARIATION FROM AVERAGE K_2 CURVE CORRESPONDING TO $\pm$ ONE STANDARD DEVIATION OF ALL DATA POINTS SHOWN ON FIG. 5.2 (REF. 1)

Shear Strain Range, %	$\pm$ Percent of Average K_2 Value in Range Corresponding to $\pm$ One Standard Deviation, %
10^{-4} to 10^{-3}	$\pm$ 14.1
10^{-3} to 6×10^{-3}	$\pm$ 17.8
6×10^{-3} to 2×10^{-2}	$\pm$ 30.8
2×10^{-2} to 10^{-1}	$\pm$ 53.0

NOTES:

1. See Figure 1

2. Standard Deviation is Function of Variability of Data Shown on Figure 1 and Variation of Maximum Shear Moduli Values Measured at Beaver Valley Power Station 1 & 2.

3. $G = 1000\ K_2\ (\sigma'_M)^{1/2}$, PSF

   Where G = Shear Modulus At Particular Strain

   σ'_M = Mean Principal Effective Stress, PSF