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OFFICE MEMORANDUM

ALAMOS SCIENTIFIC LABORATORY
UNIVERSITY OF CALIFORNIA
LOS ALAMOS, NEW MEXICO

Bill
18 August 1952 (3)

TO : A. C. Graves, J-Division Leader

DATE: 18 August 1952

FROM : H. K. Stephenson, J-Division

SUBJECT:

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Following my recent trip to Scripps Institute and as I reported to you verbally the other day, there is considerable worry about the MIKE shot's creating a seismic sea wave in the Pacific. This is serious enough that the Scripps staff wants to disclaim responsibility for estimating the effect of the shot.

A rather simple calculation establishes the fact that the displacement of solid material which could be caused by the MIKE shot will transfer enough energy to the water to cause a tsunami. As I reported to you a rock displacement of one square mile and two hundred meters deep will generate an energy of about 10^{22} ergs. The energy of the large destructive tsunamis in the Pacific falls in the range of 10^{22} to 10^{23} ergs.

Although the probabilities are in our favor the generation of such a wave in the Pacific would have very serious consequences. Once such a wave is started it passes across thousands of miles of ocean basin with almost no loss of energy. The fact that there is a finite possibility of generating such a wave should make us exceedingly careful in our final planning for the IVY test.

Since consideration of such problems comes within the realm of soils mechanics I propose that we invite three men who are world known experts in this field and get their best advice on the effects of energies such as the MIKE shot will generate. Only one of these men, Casagrande, is to my knowledge Q-cleared, but I think that this is serious enough that we should make some arrangement to discuss this problem with all three of the men.

The following is a list of the men and their addresses:

- Prof. Karl Terzaghi, Harvard University, Cambridge, Mass.
- Dr. Arthur Casagrande, Harvard University, Cambridge, Mass.
- Dr. Juul Hvorslev, Army Engineers Experiment Station, Vicksburg, Miss.

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(4)
July 1983

FROM A. L. Hayes GROUP J-DO DATE 8/30/85

Before reading this document, sign as indicated below:

NAME	DIV. AND GROUP	SIGNATURE	DATE
<u>W. E. Ogle</u>	<u>J-DO</u>		
<u>Bill - Al would appreciate your comments on this</u>			
		<u>On</u>	
	<u>Done verbally</u>		

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