

GENERAL INFORMATION

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~~CONFIDENTIAL PROJECT SUMMARY (U)~~

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OPERATING DATA (SECRET) NUMBER Log 53-68A

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PROJECT NUMBER: 7.1

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PROJECT TITLE: Electromagnetic Radiation Calibrations

SPONSOR: Headquarters USAF ORGANIZATION: AFOSR-1

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DEPARTMENT OF ENERGY DECLASSIFICATION REVIEW	
1ST REVIEWER-DATE: 6/16/94	DETERMINATION [CIRCLE NUMBER(S)]
AUTHORITY: DAOC EADC EADD	1. CLASSIFICATION RETAINED
NAME: M.L. KOLBAY/WG	2. CLASSIFICATION CHANGED TO: <u>TOP SECRET</u>
2ND REVIEWER-DATE: 6/16/94	3. CONTAINS NO DOE CLASSIFIED INFO
AUTHORITY:	4. COORDINATE WITH: <u>AFIAC</u>
NAME: P.A. Cannon	5. CLASSIFICATION CANCELLED
	6. CLASSIFIED INFO BRACKETED
	7. OTHER (SPECIFY):

DEPARTMENT OF ENERGY DECLASSIFICATION REVIEW	
1ST REVIEW DATE: 11/3/94	DETERMINATION [CIRCLE NUMBER(S)]
AUTHORITY: DAOC EADC EADD	1. CLASSIFICATION RETAINED
NAME: <u>W.D. Schmidt</u>	2. CLASSIFICATION CHANGED TO:
2ND REVIEW DATE:	3. CONTAINS NO DOE CLASSIFIED INFO
AUTHORITY: AAD	4. COORDINATE WITH:
NAME:	5. CLASSIFICATION CANCELLED
	6. CLASSIFIED INFO BRACKETED
	7. OTHER (SPECIFY): <u>AFIAC memo</u>

OBJECTIVE:
a. To study pulse shape, frequency distribution, and other characteristics of electromagnetic pulses emitted at the time of an atomic explosion particularly with reference to bomb yield for different types of test weapons and experimental nuclear explosions for evaluation of the significance of the signals received in the Atomic Energy Detection System.

b. To determine the requirements for specific detection equipment for deployment and use in the Atomic Energy Detection System.

STATUS:

Electromagnetic pulses from atomic detonations have been recorded at various locations up to several hundred miles from the test site and in various ranges from a few kilocycles up to several megacycles beginning with BUSTER/JANUS (Restricted), but so far little is known of correlation between pulse characteristics and bomb characteristics. It is expected that the data to be obtained from Operation IVY (Secret) and UPSHOT/KNOXOLE (Secret) will furnish additional information which may considerably change the experimental plans for Operation CASTLE (Secret).

PROCEDURE:

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It is planned to operate several electromagnetic stations at various distances up to a few thousand miles from the test site. Participating agencies will be Air Weather Service, the Central Radio Propagation Laboratory of the National Bureau of Standards, and the University of Texas.

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Since adequate close-in data is needed for proper interpretation of data recorded at the stations, it is expected that in addition to the distance stations, AFWAC will operate one close-in station unless arrangements for making the necessary measurements can be made with Los Alamos Scientific Laboratory.

SUPPORT REQUIRED:

Only the close-in station mentioned above will be in the area defined as coming under the jurisdiction of the Task Force. An essential requirement in support of this project is listed below as Item (f).

- a. Personnel: Forward echelon - 3 civilians
- b. Instrumentation: None
- c. On-site Construction required from AEC Contractors: None
- d. Air & Rail Transportation: Air and rail transportation from the East Coast of the U.S. to the close-in site for three (3) civilians and 1.5 tons of equipment
- e. Funds:

	R&D	Extra-Military
Total Estimated Cost	\$125,000	0
Funds Available	0	0
Test Agency Funds Required	\$125,000	0

f. Others: For the success of this project it will be necessary to have in operation an alert system similar to the IYI AFBADAS. It will also be necessary to know the time of detonation to within 1 ms in order to make the fact.

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