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UNIVERSITY OF CALIFORNIA
LOS ALAMOS, NEW MEXICO

OFFICE MEMORANDUM

TO : Commanding General, Field Command, AFSWP, Sandia Base ATTN: H. A. Fulton, Lt. Col., AGC, Adjutant General

DATE: 28 November 1952

FROM : Test Director, LASL

PUBLICLY RELEASABLE
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8/28/91

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JA BROWN FSS-16 8/28/91

SUBJECT : RADIO FREQUENCY REQUIREMENTS

REFERENCE: FCDWET 311.23, 19 November 1952, Subject "Radio Frequency Requirements"

We have given your letter of 19 November 1952 careful study. The information contained in the frequency tabulation will be consolidated in the Test Director's preliminary frequency chart for Upshot/Knothole; copy of this chart will be furnished to DWET.

Some of the questions which will require further discussion with representatives of DWET and with AEC Communications personnel are as follows:

1. Four Frequencies for Program 7. AFOAT-1 (Program 7) was furnished two frequencies during Buster/Jangle for transmission of timing signals from the HF Transmitter Site at NPG. This organization also operated a sizeable HF transmitting layout at Indian Springs. During Tumbler/Snapper, timing signals were transmitted over a telephone tie-line from NPG to Indian Springs; it is our understanding that these signals were then transmitted from AFOAT-1's radio facilities at Indian Springs, using 3.440, 5.065, 8.055, and 13.095 MC. The timing signal frequencies were also used regularly for voice transmission.

   The request now made is for four frequencies between 3 and 18 MC (possibly the same four used on Tumbler/Snapper) to be assigned to Program 7, and used for timing signals and voice transmission to be transmitted from AEC's HF Transmitter Site at NPG. This arrangement would free a telephone line from NPG to Indian Springs for other use.

   The HF Transmitter Site at NPG can transmit a maximum of five frequencies simultaneously, and has a maximum of twenty (20) channels. At the present time, four, and possibly five, of the existing transmitters are committed for simultaneous operation, twelve (12) frequency channels are committed for Air-Ground, Rad-Safe, and Microbarographic Communications, and negotiations are in process for establishing one channel for Program 27. Since Program 7 ordinarily requires simultaneous transmission on more than one frequency, it does not appear that the NPG HF radio equipment can meet Program 7's full needs. This is unfortunate, since other agencies are interested in using the telephone tie-line if it were released.

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2. Request for HF Frequency by Project 5.1. You have pointed out that the establishment of a fifth VHF net at NPG will eliminate this requirement. We agree with this and your previous reasons for establishment of a fifth VHF net. The Test Director's Office will ask AEC to establish this net.

3. Requests for Use of the 162-172 MC Band by Projects 6.9 and 4.1. This question has been the subject of a considerable amount of discussion. All of the AEC VHF-FM facilities at NPG operate in this band. We have a request from Project 28.1 for use of 162.425 MC and 171.525 MC for telemetering purposes. Project 28.1 personnel have discussed the matter with Commander Terry of Project 6.9, and believe that their conflicting interests can be handled satisfactorily. Project 4.1 needs to use the band for less than 30 minutes, and can probably do so without serious interruption. However, this office needs to know whether 4.1's transmitters can be shut off at H $\not\leq$ 20 Minutes or must keep operating until batteries run down.

4. Radar Frequencies. As stated in your letter, all of the radar frequencies shown must be discussed with the various agencies involved.

A new agreement on Air-Ground VHF-AM frequencies has been reached by AEC, Sandia Corporation, DWET, and SWC representatives in a meeting held 20 November 1952 at Albuquerque. Agreement is as follows: 149.4 MC, 140.22 MC, and 143.10 MC shall be the primary, secondary, and tertiary frequencies in the order given for communications with SWC aircraft at NPG. 142.74 MC is a Navy Tower frequency and will not be used, except in cases where no other channel is available. Since 149.4, 140.22, and 143.10 MC are presently installed in the radio facilities at NPG, and have been used satisfactorily on previous operations, the Test Director's Office concurs in this agreement.

The multiplicity of VHF-AM frequencies shown as requirements for projects 1.3, 4.1, and 5.1, should not conflict with the requirement that all planes in the area must be able to communicate with the CP Radio Control Room.

The remaining frequency requirements shown appear to cause no problems or conflicts, and will be included with the Test Director's frequency requirements.

FOR THE TEST DIRECTOR:

B C Lyon

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