Jammarstrom
May 24, 1965

SECRET

[redacted] ANTENNA REQUIREMENTS

Currently there is the question of what direction and what steps should be taken in solving our immediate and long range antenna problems.

At the present time antennas are needed for the second stage of up-dating of the sites. These are on order from TACO and should go to all sites by the end of the summer. These for the time being will mount on the existing antenna structures. A need also around the end of the summer is for antenna rotators for the [redacted] to allow them to move indoors. In addition the overall antenna system should be studied from the basis of AZ-EL tracking, gain necessary for [redacted] work, providing a reliable method of polarization selection and the minimizing of side-lobe levels.

Several possibilities exist for considersation. Since the Yagi's are on order and can be mounted on the existing structures the only considerations are the move indoors in the [redacted] and the study of the over-all antenna systems. One solution is to ship the rotators from Hybla Valley to the [redacted] when needed and order now a rotator with AZ-EL controls for test testing and evaluation at Hybla. This would be with arrays of our design and stressing the use of the Yagi's which are now on order from TACO. A second solution is to send the rotators from Hybla to the [redacted] when needed and now order an antenna system including positioners, rotators, antennas, all specified as carefully as possible including RFI, windloading, sidelobes etc,

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to have a complete operational system delivered to NRL for test and evaluation. A third possibility is to order AZ-EL rotators now for shipment to the [redacted] for the move indoors. These would be fitted here with the Yagi's now on order and sent to the [redacted] Additional AZ-EL rotators would be ordered for test and evaluation at Hybla with different types of antenna arrays.

I personally would like to recommend a course of action combining solutions one and two. This would be to send the rotators from Hybla to the [redacted] when needed for the move indoors, order two AZ-EL rotators for the mounting of various arrays of our design, stressing the use of the existing Yagi's, and the ordering of a single complete system carefully specified. Taking the above suggested approach while more costly in the initial phases will solve the immediate needs in the [redacted] and will allow the comparison of how the overall job can best be done. Whether by our own design and efforts of by an outside firm selected by a synopsized bidding on a tightly written specification can be decided from actual field tests between the different systems and with the cost differences, time differences, man effort differences, etc. all taken into consideration.