

National Radio Astronomy Observatory

Socorro, New Mexico June 21, 1984

To: VLBA Electronics & Site Group

From: A. R. Thompson

Subject: Meeting on Antenna Building Requirements

A meeting was held on June 20 to discuss requirements for the antenna building as determined mainly by considerations related to the electronics. People involved were Balister, Brundage, D'Addario, Peery, Thompson and Weinreb. The following notes summarize the main conclusions.

The maser should be located in the electronic equipment room with the IF and LO racks. This room will have about 30 units of insulation in the walls, ceiling and floor, and no exterior windows. The floor should consist of a concrete slab that is separate from the building foundation, to provide isolation from mechanical vibration. There will be thermal insulation and a computer floor on top of the slab. The internal dimensions of the room will be at least 12 ft. x 16 ft. Temperature controlled air will be distributed to the racks through ducts beneath the computer floor. It was suggested that the temperature control should be effected by reheating cooled air using independently controlled heaters at the output of each duct. The goal for temperature control is $\pm 0.2^{\circ}\text{C}$. If further stabilization is found to be necessary for the maser rack, an enclosure can be built around it within the equipment room.

The control room and the equipment room should each be screened with mesh to obtain about 30 dB of RFI isolation. Metal panels for bulkhead feedthrough of cables into these rooms should be provided. There should also be a bulkhead panel between the rooms beneath the computer floor. If possible the floor level in the storage and general areas of the building should be at the same level as the computer floor in the equipment and control rooms.

An area for storage of about 1 week's supply of tapes is required. (The figure of 60 days' supply of tapes mentioned in the meeting refers to the Array Operations Center). The tapes should be stored in the same environment as the recorder which is located in the computer room. The length of the building can be adjusted to provide adequate tape storage at the end of the computer room.

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The building will be on the north side of the antenna and there will be 10-20 ft. of space between the two.

Considerations of security and temperature stability suggest that it would be advantageous to have no exterior windows. Buck Peery agreed to determine the opinions of the Operations Group on this point, and also upon the necessity of providing a lunch room and small kitchen facility. There do not appear to be any particular fire hazards associated with the building (paint, lubricating oil, etc. will be stored in a separate small shed).

ART/bt