January 15, 1965

HIGH RESOLUTION SCREEN

STAT

[redacted]

The UV projection lens designed for the program by [redacted] is being made by [redacted]. There was considerable delay because [redacted] could not measure the index of refraction of the glass blanks in the UV region required by the design.

STAT [redacted] finally made the index of refraction measurements using a phosphor-coated plate produced on this program to make the UV line visible for measurement. [redacted] is proceeding to make the optical elements but with spherical surfaces. They will not asperize the surfaces on a fixed price purchase. [redacted] has requested authorization to place a time and material order with [redacted] to aspherize the elements as required by the design.

The lens can be used with spherical surfaces and still give high resolution if it is stopped down. It will be assembled and tested in this manner before proceeding with aspherizing. [redacted] the lens designer, expects [redacted] to finish the elements by the end of January.

A large [redacted] projector with 2500-watt mercury arc lamp was erected to illuminate 12" x 12" phosphor-coated plates with UV. Absorption filters were used to eliminate the visible, but they were not very efficient. When looking directly into the projector, a strong bright central spot of violet came through making it impossible to view the phosphor screen straight on. The visible green image from the phosphor produced by the ultraviolet illumination was visible on the glass plate from all angles.

Declass Review by NGA.

STAT For the next phase, [redacted] will use high-efficiency dichroic filters which will much more effectively separate the ultraviolet from the visible light.

STAT [redacted] stated that some promising new inorganic phosphors had been found by [redacted] STAT in connection with some of their recent proprietary research work. They think maybe the new inorganics will be three times as bright as any phosphor yet tried.

STAT [redacted] is working diligently to define the next phase of the program based on instructions received by [redacted] STAT on his trip to Washington, D. C., on January 8, 1965. There will be four major aspects of the work:

1. Chemical and Electrochemical Study of Screen Material.
2. Bandwidth Limited and Special Purpose Optics.
3. Light Sources.
4. Computer Interface Display.

STAT [redacted] is being purchased from [redacted] STAT
STAT [redacted] Final negotiations are now in progress.

STAT [redacted]