

EX-1387
COPY 1 OF 2

January 17, 1963

25X1A

M. [redacted] [signature]

STATINTL TO:

[redacted]

FROM:

SUBJECT: Window Group Activities 1/11/63 - 1/17/63

F P.E.

Non-Vacuum Window

Protective covers for the presently installed windows have been completed and are awaiting shipment to the Area.

Some basic jiggging necessary for a basic test pertaining to the new concept of the non-vacuum window is being fabricated.

Vacuum Window

A second tight 7 x 10 vacuum window was completed to two plate glass glazings.

Six 7 x 10 foils were fabricated and tested as leak tight. These are now at Ohio where lacquerer aluminum faceplates are being attached.

A modification of the method of attaching the bellows to the frame was accomplished which seems to produce a very satisfactory bellows to frame seal. The jig necessary to finally confirm the adequacy of our new technique is in Ohio and therefore this technique cannot be regarded as satisfactory until it is tested. This test will be accomplished next Saturday.

The use of flanges with copper gaskets was decided upon as a means of attaching one pump and valve assembly to as many 7 x 10 tight windows as we care to test. The flanges have been fabricated and the complete assembly is being brazed together.

The modification in our test plan incorporating the use of the Vac-Ion pump and valve necessitates the use of a supporting structure to hold it with relation to the window and our test plate. This structure has been designed and is being fabricated.

The test plate for thermal cycling the 7 x 10 window is currently being checked out and the tight fused silica-BK-7 assembly which was returned from the customer will be used for the initial cycling test.

A considerable amount of time was spent detailing various aspects of this program to Harry Polster.

[redacted]

PFF:lc

STATINTL

January 10, 1963

STATINTL

TO: [REDACTED]

FROM: [REDACTED]

SUBJECT: Window Group Activities - 1/2/63 - 1/10/63

Non-Vacuum Window

Protective covers for the presently installed windows are being fabricated.

A detailed analysis of a modification which would significantly improve the performance of our present non-vacuum windows was completed. It was decided to construct a third non-vacuum window using the spare glass now at the Area. This modified window would replace one of the present non-vacuum windows. The replaced non-vacuum window would then be similarly modified if Area tests bear out our analyses.

Vacuum Window

We have, for the first time, completely assembled a 7 x 10 window using quartz and BK-7. All the components which were used in this assembly were good, and were leak tight. The welding of the tight frame to glass was very good. The seam appears by visual inspection to be excellent. The tube was attached to the bellows subsequent to the glass welding operation. The entire assembly was leak checked and found to be completely tight.

It should be noted that the above window was made with aluminum which had been etched on the surface that was ultimately attached to glass. The reason for this was that we did not have any good frames with aluminum that has been protected by the lacquer processes we recently developed. We know that we increase the reliability of our ultrasonic weld with lacquer protected aluminum. We are proceeding at a maximum rate to make another 7 x 10 assembly which incorporates the protected aluminum. Furthermore, we are bringing along the parts for the 14 x 20 window as rapidly as is consistent with our 7 x 10 effort so as to minimize the time that will be required to make our first 14 x 20.

In view of the above encouraging progress, I am omitting detailed comments on the usually reported progress in the 7 x 10 frame and window construction details.

Window Group Activities

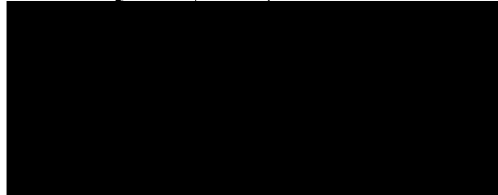
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1/10/63

Vac-Ion Pump: It has been found that the reduced sensitivity to helium of the pressure gage used in our vac-ion pump tests resulted in pressure readings a factor of 10 lower than those which actually existed. This means that whereas we reported tests as 10^{-3} Torr, they were actually performed at 10^{-2} Torr. We had concluded that had we been able to operate at 10^{-4} , the vac-ion pump would have sufficiently capacity for helium pumping for our application. Correcting for the error indicates that the pump operates satisfactorily for our application at an actual helium pressure of 10^{-3} Torr.

Miscellaneous: The program of investigating alternate sealing techniques is continuing on a low priority basis.

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December 28, 1962

STATINTL

TO: 

FROM: 

SUBJECT: Window Group Activities - Period 12/21/62 - 12/27/62

Vacuum Window

Work has continued in practice welding aluminum which has been lacquer protected and cleaned.

No reply has been received from our inquiry to Alcoa. We have contacted a firm which does electro polishing and sent a sample piece of aluminum to be cleaned in this manner, so that we can evaluate it for suitability in resistance and ultrasonic welding.

Cleaning experiments have continued in-house.

Hydrogen Brazing: This effort continues satisfactorily. The four 7 x 10 frames which were made at Quality Heat Treat last week were all checked leak tight.

Resistance Welding: Protected aluminum faceplates are being attached to 7 x 10 frames. No report has been received on this activity at this writing.

Induction Welding: Work continues on attaching the bellows to the frame, with recent results more encouraging.

Vac-Ion Pump: Discussions were held with Varian Associates, with regard to change in pump design for increased helium pumping efficiency. The various alternatives are being summarized for review.

Miscellaneous: An analytical analysis pertaining to the use of liquid gallium as a sealing medium was performed, and a report shall be issued shortly.

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