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7 June
W.S.P.

7 June 1944

R. Cornog

R. W. Henderson

Double Skin Fat Man Casings

CLASSIFICATION CANCELLED
PER DOC REVIEW JAN. 1973

Referring to your telephone conversation of 6 June with Mr. Hittell in Detroit in which he questioned the advisability of using 3/8" Allen head cap screws rather than 5/16" to attach the outer skin to the dural casing, it is recognized that he has a good point which is worth considering. Hittell believes that the close proximity of the counterbored holes in the outer skin to the edges of the plate will result, in some cases, in the counterboring tool breaking through the edge of the plate & leaving a sharp ragged edge, or, in the event that it doesn't break through, the thin metal wall remaining will be distorted by the counterboring tool to the extent that it will impair the clearance necessary between the adjacent outer case triangles which are needed for thermal compensation effects.

Although the 3/8" cap screw design could most certainly be made to work, adherence to it might result in excess trimming and hand fitting on assembly which is to be avoided. Accordingly we recommend that the cap screws be changed from 3/8 - 16 to 5/16 - 18, and that the clearance holes and counterbores be changed to correspond with this smaller cap screw with the same allowance for lateral shifting of the outer skin due to thermal effects, as was provided in the case of the 3/8" cap screws.

In view of the complexity of the pentagon design inner case with its numerous clearance holes in the stiffening ribs to permit passage of the primacord trains, it is believed that delivery can be expedited without unduly sacrificing flexibility if we require that these holes be provided in only 6 of the 18 double skin casings now on order. There is some doubt at present as to whether or not it will be quicker and cheaper to drill these primacord holes or to core them when cast. We believe this is a point which should be settled by Mr. Chadwick's office after he has consulted with the various contractors concerned. From our standpoint either cored or drilled holes will be satisfactory. Having checked with the various parties concerned we believe that 6 double skin casings, complete with primacord holes will satisfy our needs. If, as work progresses, it becomes necessary to increase this number we can drill the necessary holes in our own shops. Many of the tests now contemplated will not require primacord trains, and consequently the time and money involved in providing these holes in all 18 casings represents a considerable waste, which could very possibly materially delay delivery of the completed order.

We will appreciate it if you will transmit this information to the Detroit office.

RWH:br
cc: W.S. Parsons ✓
G.B. Kistiakowsky
K.T. Bainbridge
Lt. Schaffer
N. Ramsey

R. W. Henderson

VERIFIED UNCLASSIFIED

M. Poudroz 1/26/98

PUBLICLY AVAILABLE
LANL Classification
MP 1/26/98

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