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RECOMMENDATIONS OF THE INITIATOR ADVISORY COMMITTEE

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[redacted]

DEPARTMENT OF ENERGY DECLASSIFICATION REVIEW	
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RECOMMENDATIONS OF THE INITIATOR ADVISORY COMMITTEE

According to its directive the committee is to express an opinion on two points:

1. Whether a modulated initiator is feasible and should be incorporated in the first design of the gadget.

2. Which design is preferred for the initiator.

On the first point, the committee is unanimous in answering in the affirmative. On the second point, two of the members voted for the urchin with particular emphasis on the jet action of the device. Fermi dissented and expressed first preference for the Nicodemus.

The committee drew up specific designs for the three preferred initiators, the urchin, the melon-seed and the Nicodemus. These designs are given below together with arguments for the dimensions chosen. It is the recommendation of the committee to stop work on all types except these three, and to give priority to the jet action, and to the urchin initiator generally, over the other two.

Some of the designs, however, have a larger surface available.

It is the opinion of the committee that enginsering designs and engineering tests should be started immediately. It is felt that tests should be made of the thickness of Au plating necessary to reduce the neutron backgroun

[redacted]

[redacted] DOE [illegible]

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DESIGN FOR URCHIN

[redacted]

DOE [illegible]

[redacted] DOE b(3)

The design incorporates the following features: DOE b(3)

[redacted]

DOE b(3)

[redacted]

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[redacted]

[redacted] DOE b(3)

[redacted]

[redacted]

While the calculations given here are for our preferred design, we think that for comparison with other initiators it should be taken into account that the surface area available is twice as large as required. Therefore, the initiator could be scaled down by a factor of .7 in linear dimensions.

Fermi, the main advocate of the Nicodemus, argued against this design because it would be much less sturdy. The other members of the committee concurred.

DOE b/3

DESIGN FOR MELON-SEED

The design for this initiator is given in Fig. 2. Its features are as follows:

[redacted]

DOE b/3

[redacted]

[redacted] DOE b(3)

[redacted]

[redacted]

[redacted]

[redacted] DAE 6(3)

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