

Subject: Feedback on Sonofusion review
Date: Mon, 6 Mar 2006 13:29:52 -0500
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Seth,

The purpose of this e-mail is to convey my thoughts on the phase I Sonofusion project following the recent meeting at Purdue. We are nearing the end of the project and there isn't the possibility of additional funding from DARPA, so nothing in this message should be taken as a directive to undertake tasks not now funded. Only a contracting Officer can authorize additional funding.

1. The go/no-go decision in phase I to progress to phase II was to verify acoustic cavitations inertial confinement fusion (Sonofusion) in deuterated acetone by doing a 'carbon copy' experiment of the Oakridge experiment at your lab at UCLA. This milestone has not been met and given the funding remaining, it may not be possible to do so. From a scientific point of view, the hypothesis that the conditions for D-D fusion in acoustically cavitated deuterated acetone has been neither proved or disproved. The fact that the milestone for independent verification at UCLA was not met, means no phase II funding for Sonofusion from DARPA.

2. I think much has been learned about how difficult it is to produce conditions for D-D fusion in deuterated acetone and I hope there is a way to publish the work as a way of informing the rest of the community that is interested in this technical approach. Good DARPA projects are inherently high risk and don't regret funding this project even though the go/no-go milestone may not be met.

3. At the review, we discussed the possibility of setting up a "Known Good Cell" along with reagents from Purdue in your laboratory at UCLA. If there were available funding and such a cell did in fact exist, this might be a useful experiment. You will have to work this out with your subcontractors.

4. Demonstration of Sonofusion in your laboratory using a working fluid other than deuterated acetone would not constitute accomplishment of the milestone for your go/no-go decision. It would however give me some basis on which to argue for more support in this area. I expect this would also require publication of the results in a manner that would allow others to reproduce your results, and further independent verification.

5. I think running the Taleyarkhan cell with a stirrer to impart rotational inertia to the bubble would be interesting as it should delay the breakup of the collapsing bubble and perhaps impart higher energy in the final collapse. This is just a

Sincerely,

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