Erratum: Nuclear Emissions during Self-Nucleated Acoustic Cavitation [Phys. Rev. Lett. 96, 034301 (2006)]

R. P. Taleyarkhan, C. D. West, R. T. Lahey, Jr., R. I. Nigmatulin, R. C. Block, and Y. Xu

(Received 24 March 2006; published 2 May 2006)

DOI: 10.1103/PhysRevLett.96.179903 PACS numbers: 78.60.Mq, 25.45.−z, 28.20.−v, 28.52.−s, 99.10.Cd

In the published Letter, we stated that the detector used for monitoring thermal neutrons was a boron trifluoride (BF_3) detector mounted inside of a 20-cm-dia. polyethylene moderator. Upon disassembly of the outer coverings we noted that the thermal neutron detector used for the study was actually a lithium iodide scintillator, Model 42-5 manufactured by Ludlum Industries, Sweetwater, Texas. This fact was confirmed with the manufacturer. Both boron and lithium based detectors employ the same principle for detection, i.e., thermal neutron absorption followed by an energetic alpha ionizing particle which leads to a voltage pulse that then is recorded as indication for the presence of a neutron. However, the lithium iodide scintillation detector is more sensitive to gamma rays than a BF_3 proportional counter; this has been displayed in the supplement to our Letter (Fig. 2). Gamma rays from neutron capture in the hydrogen of the polyethylene can lead to measurable pulse height signals in the lithium iodide detector but, since these signals are from neutrons, the gamma signals are an additional measure of neutron production in the cavitation chamber.

We would like the readership to be aware of this change and regret the oversight which was based on incorrect information from a person's recollection who loaned this apparatus for the study. This clarification does not affect the data, analyses, nor the conclusions we presented in the above-mentioned manuscript.

