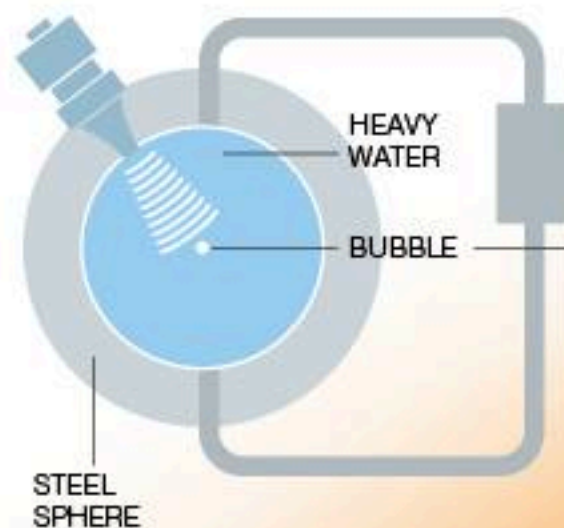


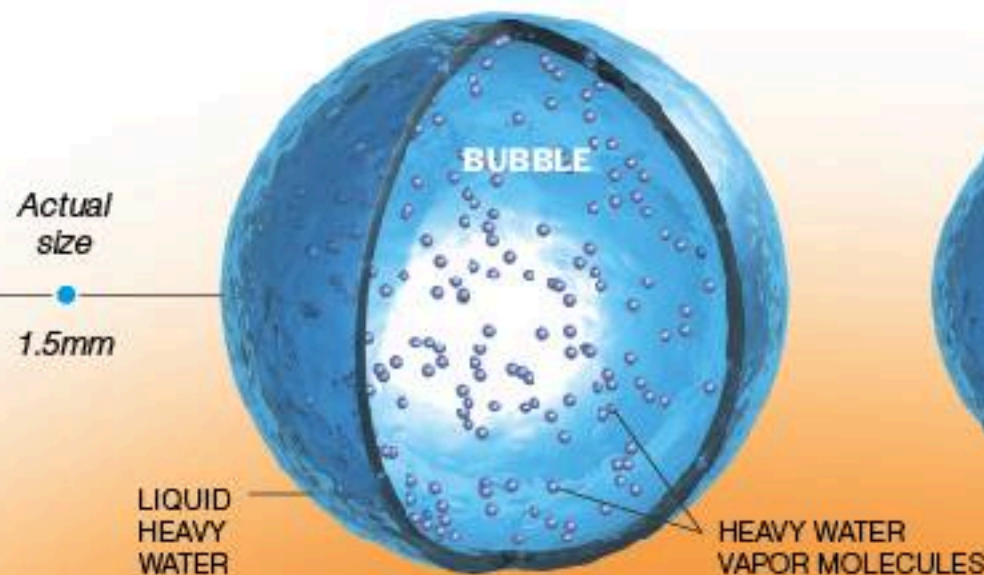
Sound And Fury

Scientists are pursuing a mysterious phenomenon called sonoluminescence, that may be capable of raising the temperature of gas trapped in a tiny bubble to 10 million degrees Celsius — enough, in principle, to ignite fusion. At right, one design to use sound waves to create and collapse tiny bubbles.

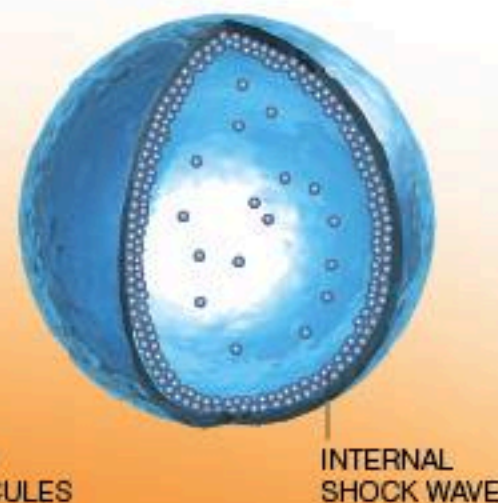
1 Sound waves bombard heavy water in a steel sphere until the pressure rips a tear, or small bubble, in the center of the tank.



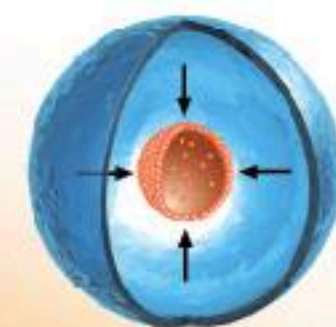
2 The bubble rapidly grows.



3 As sound waves continue to hit the bubble, an internal shock wave is created.



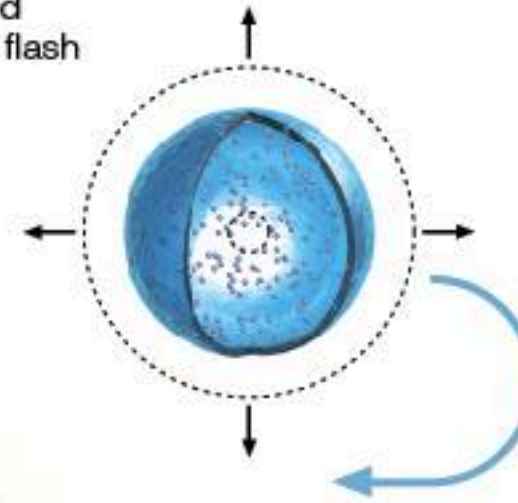
4 The shock wave converges and dramatically heats the heavy water molecules, compressing them to high densities.



5 The imploding shock wave crashes in on itself, heating the heavy water molecules inside to an astronomical temperature and emitting a brief flash of light.



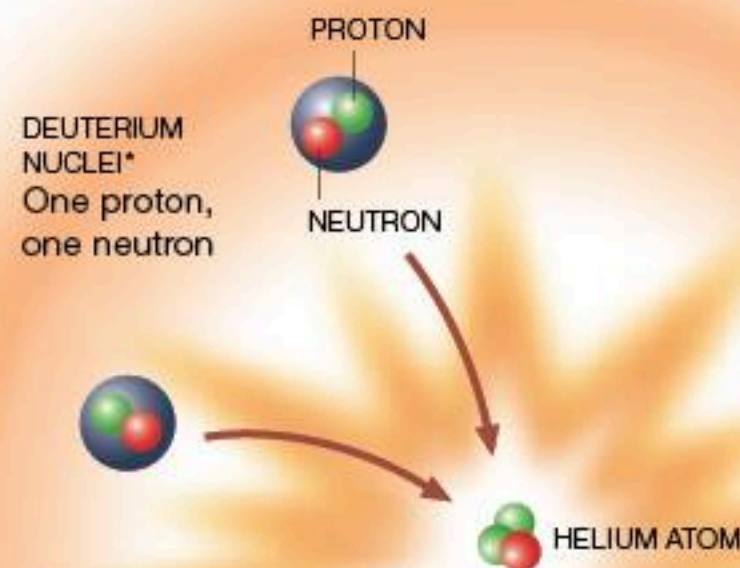
6 The bubble expands and the process starts over.



LIQUID HEAVY WATER

CREATING FUSION

Scientists hope to create temperatures high enough to cause the atoms to fuse into a helium atom.



NEUTRON
If successful, scientists should be able to detect neutrons emitting from the reactor.

Light that escapes from the bubble includes ultraviolet radiation produced only at high temperatures.

*Once this method is shown to work, one deuterium and one tritium, a version of hydrogen with one proton and two neutrons, would be used in fusion.