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Should We Nuke the BP Oil Well?

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In-depth Report: THE BP OIL SLICK

CBS News, the Christian Science Monitor, CNN and Reuters have all asked whether BP should nuke its leaking oil well.

Indeed, some high-level Russian nuclear scientists and oil industry experts have suggested such that approach to stop the Gulf oil gusher. Here is archival footage of the Russians killing a gas leak with a nuclear device.

And Obama's energy secretary and Nobel prize winning physicist Steven Chu included the man who helped develop the first hydrogen bomb in the 1950s on the 5-man brain trust tasked with stopping the oil.

And oil industry expert Matt Simmons proposes the use of a tactical nuclear device every time he is interviewed on national television.

However, even the history of Russia's successful use of nuclear devices to stop gushers has some important caveats.

As the Reuters article notes:

> Vladimir Chuprov from Greenpeace's Moscow office is even more insistent that BP not heed the advice of the veteran Soviet physicists. Chuprov disputes the veterans' accounts of the peaceful explosions and says several of the gas leaks reappeared later. "What was praised as a success and a breakthrough by the Soviet Union is in essence a lie," he says.
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> [Former long-time Russian Minister of nuclear energy and veteran Soviet physicist Viktor] Mikhailov agrees that the USSR had to give up its program because of problems it presented. "I ended the program because I knew how worthless this all was," he says with a sigh. "Radioactive material was still seeping through cracks in the ground and spreading into the air. It wasn't worth it."

The Christian Science Monitor points out:

> The Russians previously used nukes at least five times to seal off gas well fires. … Komsomoloskaya Pravda suggested that the United States might as well take a chance with a nuke, based on the historical 20% failure rate. Still, the Soviet experience with nuking underground gas wells could prove easier in retrospect than trying to seal the Gulf of Mexico's oil well disaster that's taking place 5,000 feet below the surface. The Russians were using nukes to extinguish gas well fires in natural gas fields, not sealing oil wells gushing liquid, so there are big differences, and this method has never been tested in

> such conditions.

The CBS News article points out that not all of the Russians nukes worked:

> But not each use of nuclear energy did the trick. A 4 kiloton charge set off in Russia's Kharkov region failed to stop a gas blowout. "The explosion was mysteriously left on the surface, forming a mushroom cloud," the paper reported.

Indeed, several experts have said that nuking the well might make the situation worse.

The Reuters article notes:

> There is a chance any blast could fracture the seabed and cause an underground blowout, according to Andy Radford, petroleum engineer and American Petroleum Institute senior policy adviser on offshore issues.

The CNN report notes that nuking the leaking well could conceivably destabilize other oil wells miles away.

The New York Times writes:

> Government and private nuclear experts agreed that using a nuclear bomb would be ... risky technically, with unknown and possibly disastrous consequences from radiation ....
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> A senior Los Alamos scientist, speaking on the condition of anonymity because his comments were unauthorized, ridiculed the idea of using a nuclear blast to solve the crisis in the gulf.
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> "It's not going to happen," he said. "Technically, it would be exploring new ground in the midst of a disaster — and you might make it worse."

And one of the world's top physicists – string theorist Michio Kaku – writes:

> I think this is a bad idea, from a physics point of view. Let me say that my mentor while I was in high school and at Harvard, Edward Teller, father of the H-bomb, was a firm advocate of using nuclear weapons to dig out canals and other grand engineering projects.
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> Underground, we then have a hollow sphere of vaporized gas, with walls that have been glassified from the sand. This hollow sphere is stable from a few hours to a few days, but eventually the weight of the rock collapses the sphere. The result is a sudden collapse of the sphere, often releasing radioactive gas into the environment.
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> If this takes place under the sea floor (which has never been done before), there are bound to be complications. First, there would be the release of

dangerous, water-soluble chemicals such as radioactive iodine, strontium, and cesium, which would contaminate the food chain in the Gulf. Second, the "seal" created by the glassified sand is probably unstable. And third, it might actually make the problem worse, creating many mini leaks on the ocean floor. Determining the precise effect of such an underwater blast would depend on crucial computer simulations of the various layers of rock under the seafloor, which has never been done before.

In other words, this would bea huge science experiment, with unintended consequences. Furthermore, with hurricane season upon us, and predictions of eight or more hurricanes for this season, it means that seawater several hundred feet below the surface of the water could be churned up and then deposited over the South. This seawater, containing oils and radioactive fission products, would magnify the environmental problem.

In summary, it is not a good idea to use nukes to seal up oil leaks.

Moreover, President Bill Clinton told CNN on Sunday (starting 3:13 into video) that he has looked into the issue, and that a nuke is not needed. He said the Navy can use conventional explosives to seal the well. As the former commander-in-chief, Clinton is probably getting such information from someone high up in the Navy.

For more on the nuclear option, see this.
