Nuclear Reactor Melt Down Without the Chinese Syndrome

It is rare, but sometimes it occurs a nuclear reactor melt down. The melted nuclear material is collected together in the floor of the structure, and as it is accumulated, its radioactivity becomes increased and uncontrolled.

Eventually, although the high quality of the reactor container, the nuclear material temperature reaches thousands of centigrade degrees and also melts the bottom of the container and reaches the soil and the water under it, spreading the radioactivity uncontrollably. It was popularly known as the “Chinese syndrome” years ago.

I propose a structure to be built under all new nuclear reactors destined to eventually receive and contain this nuclear melted material, able to cool it and keep it for thousands years, avoiding the above explained risk of spreading the radioactive material.

I propose a huge block of concrete with barium, or other resistant to radiation material, made with small tubes and cavities into it, like a sponge, intended to receive and disperse the melted and hot radioactive material, isolating it in small portions and impending its concentration, in order to reduce the self-stimulating radioactivity and temperature. It can be built in the bottom or under the reactor container.

Its design must stimulate by gravity the dispersion of the melted nuclear material, instead the actual design of the reactors vases bottom, which stimulate its concentration and respective increase of its radioactivity and temperature.

This structure will increase the safeness and the cost of the nuclear reactor; it is useless until the moment you need it. But when unexpectedly everything fails and the nuclear reactor melts down, it is catastrophic if you don't have it, as it already occurred on the Three Mile Island reactor in 1979, on Chernobyl reactor in 1986, on the Fukushima reactor one month ago, besides others.

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