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Robert Bruce Hayes: Impact of WIPP leak negligible

Las Cruces Sun-News

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The recent radiation event at the Waste Isolation Pilot Plant has the potential to scare people who do not understand radiation and nuclear concepts. To the extent that you are able to believe scientists and engineers are able to quantify and characterize radiation fields and sources, you can be assured that the public and environmental effects from the event were negligible in every meaningful sense of the word. The Department of Energy and the operating contractor have been extremely open with all information including offsite dose consequences which have been posted publicly on the WIPP website very shortly after they were attained. These results show the most conservative bounding doses which could have been received by individuals standing next to the air sampling locations represented on the map. The largest potential dose was at the site boundary where a maximum dose around 3 mrem was possible (if you stood by the air sampler for the full 15 hours). This is not much higher than the daily radiation dose a U.S. citizen receives on average from all sources combined including radon, radiation from natural radioactivity in the dirt, cosmic radiation and natural potassium in your body.

All nearby occupied dwellings received a maximum potential dose near 0.1 mrem, which is near the average dose a US citizen receives in just one hour from all sources combined. These are all much smaller than the yearly dose all of us have to receive just to live due to having a healthy content of naturally radioactive potassium in our blood to insure our cells can get water into and out of them as need be. Some radioactivity was released during the event, but the remaining radioactivity deposited on the ground was so small, it was literally undetectable on site or offsite using the most sensitive radiation detectors available. The only reason it was even detectable at all offsite was the concentration effect designed into the air samplers used by both the WIPP and New Mexico State University which have all been reporting measurement results consistent with each other despite independent sampling, measurement and information release criteria. The highest contamination levels predicted offsite right at the fence are so low, they are effectively identical to the values which were already there prior to building the WIPP due to global fallout from historical atmospheric nuclear weapons testing (levels further out would be even lower).

Fear has historically been one of the greatest dangers when it comes to any upset condition at a nuclear facility. The only deaths recorded from the very large radioactivity release from Fukushima were due to unnecessary evacuations resulting in deaths from clinical issues like accidents and hospital patients not receiving proper care during the move.

Full disclosure, I was at the WIPP site for two weeks after the event and have been keenly aware of all the radiation measurements, characterization and assessments which took place there. The event is truly an operational nightmare for a facility which had always prided itself on a stellar record of disciplined operations and excellence in mission execution. Today, the goal is recovery into a condition where they can lick their wounds, learn from their mistakes and eventually try to serve this great nation once again in the cleanup of radioactive waste generated in the production of nuclear weapons.

Being able to say that the impact on the environment was negligible is not a defense of their efforts nor a justification for continuing operations but rather a confession of missing the mark they have for years so earnestly strived for. There is absolutely no question in any of their minds that any release would fall short of their mission objective to never do that even at levels which were utterly inconsequential or non-impactive in any way.

The workers there have in every way and do continue to desire to serve their community and loved ones there and elsewhere because the mission is right and the goal is good to safely and permanently remove radioactive waste from the biosphere with no releases or overexposures at all. Hopefully people will look to the experts for good information rather than turning to fear and panic.

Robert B. Hayes is a certified health physicist, a licensed NM professional engineer in nuclear engineering with a masters degree in physics and a PhD in nuclear engineering. A resident of Hobbs, he is a research affiliate with the MIT Physics Department Laboratory for Nuclear Science.

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