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Interim Storage Partners LLC's Consolidated Interim Spent Fuel Storage Facility

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General Comment

Even routine or incident-free shipments of irradiated nuclear fuel carry health risks to workers and innocent passers by. This is because it would take so much radiation shielding to completely hold in the gamma radiation, being emitted by the highly radioactive waste, that the shipments would be too heavy to move economically. So NRC has compromised, and allows for or permits a certain amount of hazardous gamma radiation to stream out of the shipping container.

NRCs regulations allow for up to 10 millirem per hour (mR/hr) of gamma radiation to be emitted, about six feet (two meters) away from a shipping casks exterior surface. Thats about one to two chest X-rays worth of gamma radiation, per hour of exposure.

Since the radiation dissipates with the square root of the distance, this means that NRCs regulations allow for up to 200 mR/hr, at the surface of the casks exterior. Thats 20 to 40 chest X-rays worth of gamma radiation, per hour, which NRC allows to stream out, right at the casks surface.

NRC has done a cost-benefit analysis the cost, to human health; the benefit, to the nuclear power industrys bottom line and deemed these exposure levels acceptable or permissible. (Permissible or acceptable should never be confused with safe or harmless exposures to 200 mR/hr, or even 10 mR/hr, still carry health risks. After all, any level of radiation, no matter how small, has long been confirmed to cause cancer. For more information, see: https://web.archive.org/web/20160325141005/http://www.nirs.org/press/06-30-2005/1)

The humans actually harmed by these exposures to hazardous radioactivity related to the industrys NRC-approved, unnecessary shipments, for example might beg to differ! But of course, any negative health impacts associated with irradiated nuclear fuel shipments will not be closely tracked (or tracked at all) by NRC, or any other government agency for that matter. NRC and industry almost always downplay the health risks, and would almost certainly deny any connection between such exposures and negative health outcomes.

Six feet away could affect a person standing beside a train track, as the train goes by. Some real world examples of this situation include the Takoma Metro Station near Takoma Park, Maryland the Red Line Metro Station platform is right beside the CSX railway, which is targeted for trains to haul irradiated nuclear fuel from the Calvert Cliffs, MD and North Anna, VA nuclear power plants, such as bound for WCS, TX.

Although further than six feet away, residences located immediately adjacent to these same CSX rail lines in Tacoma, D.C. mean that those living there could well be exposed to gamma radiation, although at a lower dose rate (again, the dose rate decreases inversely with the square root of the distance). However, residents can be expected to be present in their homes a lot more often than commuters standing on a Metro platform including during sleep hours, when trains carrying irradiated nuclear fuel could still go by. And of course, residents along these tracks, would also be commuters standing on the platform, leading to multiple exposures in their daily (and nightly) lives, for years on end during a WCS shipping campaign.

Trains pausing next to commuter platforms or residences will prolong these potentially hazardous exposures. Paused trains even ones carrying ones carrying hazardous cargos are commonplace in the U.S. Pauses can sometimes last a long time. Lead cars stuck by paused trains at railroad crossings could mean the occupants of those cars are exposed to gamma radiation. Even a rolling train car would emit a certain dose as it passed by, to lead car occupants stopped nearest the tracks.

Similar situations will arise across the U.S. Innocent passers by, whose daily lives bring them in close proximity to railways or waterways that would be used to ship irradiated nuclear fuel, mean that ordinary people would be exposed to hazardous gamma radiation in some amount greater than zero perhaps repeatedly, over the course of years during a WCS, TX shipping campaign.

The 200 mR/hr acceptable dose rate at the surface of shipping casks would most likely impact workers locomotive engineers, railway workers, inspectors, security guards, etc.