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Radioactive Contamination of proposed nuclear site at Hinkley Point, Somerset

In a report by Chris Busby and Cecily Collingridge for Green Audit, analysis is presented showing the presence of enriched uranium contamination on the site proposed for the new nuclear reactors [1]. Examining gamma spectroscopy radioactivity data tables that formed part of the Environment Impact Statement EIS supplied by developers EDF Energy, it was possible to show that the 2square kilometer site contained approximately 10 tonnes of enriched uranium reactor fuel. Uranium levels in soil samples were up to 4 times higher than average levels expected in the area as defined by Environment Agency reports. Isotopic ratios for the two key components, U238 and U235, which should not deviate from the value in nature of 21.3 were found to be as low as 12.5 signaling enriched uranium reactor fuel. Both the concentration and the activity ratio trends with sample depth were significant, showing that the excess enriched uranium was on the surface and had been deposited from the air. Deep samples showed only much lower concentrations of natural uranium. There also appeared to be a trend with distance from the sea; Hinkley Point is built on the coast.

The authors draw attention to the importance of this discovery for human health. Earlier studies found increased rates of child and adult leukemia, breast and other cancers, and infant mortality in Burnham-on-Sea downwind of the Hinkley Point site. Studies worldwide have found excess child leukemia near many nuclear sites. Prof Busby, who is Scientific Secretary of the European Committee on Radiation Risk (ECRR) said: "These data are a revelation. Maybe it is Enriched Uranium that is the source of these health effects. Curiously, Uranium is not routinely measured near nuclear power stations despite the fact that it is the fuel. We know from United Nations publications that these power stations release large amount of radionuclides, including uranium, to the environment. What this shows is that it does not harmlessly disperse, but it is in the air nearby to be inhaled by people who live there." Cecily Collingridge, who lives nearby, and whose curiosity led to the study, said: "The first thing we must do is stop all work on the site. If this contamination becomes airborne, workers and local people can inhale atomic reactor fuel particles. The origin of the enriched uranium must be independently investigated with more sampling and proper analysis".

[1] Chris Busby and Cecily Collingridge (2011) Evidence of significant enriched uranium atomic fuel contamination of the Hinkley Point proposed nuclear site in Somerset and its potential implications. Occasional Paper 2011/1 Aberystwyth: Green Audit

The above report can be found on www.llrc.org and www.stophinkley.org websites.

(A summary for lay readers is included at the end of the report, after Refs)

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