

BRIEFING – Tim Deere-Jones

Portishead inshore marine disposal site listed as possible dump site for 900,000 tonnes of EdF's Hinkley C radioactive mud. (Colleagues will shortly be issuing a media Press Release on this issue)

In a surprise move, EdF the French nuclear company building the new PWR nuclear generating site at Somerset's Hinkley Point, has announced that the Portishead marine disposal site LU070 is now a possible dumping ground for the radioactively contaminated seabed sediment it is seeking to dredge from Bridgwater Bay in order to sink cooling water intake and outfall tunnels for the new reactors at Hinkley Point.

Despite major opposition from the Welsh public, in 2018 the Welsh Government permitted EdF to dump large quantities of Hinkley C dredged mud at the Cardiff Grounds inshore disposal site, only 2 miles off the Cardiff city sea front, after EdF insisted that it was the only suitable site available in the Bristol Channel. However, EdF has recently announced its intention to apply to the Marine Management Organisation for a license to dump at Portishead, while also making an further application to dump at the welsh site. No reason has been given for the Portishead proposal.

Historically the Portishead site was used for the disposal of port and harbour navigation channel dredging and there is no evidence that it was ever used for the disposal of controversial wastes. According to the MMO, the site has been disused for some years but is still "open" for disposal permit applications.

In the context of the local tidal and residual current dynamics it is expected that radioactivity dumped at LU070 is likely to impact upon the local shoreline and the tidal reaches of local rivers including the Avon.

Background to the proposal:

It has since emerged that, in the run up to their first dump at the Cardiff Grounds, **EdF had rejected a proposal from the Environment Agency to use a proposed deep water offshore disposal site at the Holms Deep near the centre of the Bristol Channel.** This site had the advantage of being more distant and offshore from shorelines than either the Cardiff Grounds site or the Portishead LU070 site. The Holms Deep site is also deeper and seems likely to offer a better tidal and current regime more likely to carry the radioactive sediment out to the open sea more quickly than the Portishead or Cardiff sites. However, EdF rejected this site in 2012 without providing any scientific justification.

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EdF claim that the Bridgwater Bay sediment is "not radioactive under law", but campaigners point out that UK Government's official radioactivity monitoring reports annually confirm the presence of man-made radioactivity, derived largely from 50+ years of discharges to sea from the Hinkley reactors, including Plutonium, Caesium 137, Tritium, Technetium99, Carbon14 in the Bridgewater Bay sedimentary and marine environment. (REF 1)

The “not radioactive under law” definition was adopted in 1979 following a lobbying exercise by the International Atomic Energy Agency (the overarching nuclear industry body dedicated, according to its own publicity, to “promote the peaceful use of nuclear energy”) and that as such, it is now both out of date and clearly not based on an independent scientific consensus. (Ref 2)

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EdF claim that the Bridgwater Bay sediment is “just like any other Bristol Channel sediment”. This is a completely baseless claim in respect of the radioactivity levels expected to be present in the sediment in the Bay.

Neither EdF nor any other organisation has comparable radiological data from other areas of the Bristol Channel where there has been very limited radiological analysis, with samples only taken from the vicinity of Bristol Channel licensed nuclear site out falls at Hinkley Point, Oldbury/Berkeley above the Aust Severn Crossing and Cardiff where a medical radioactive isotopes factory has it’s discharges.

A study of the official Government reports of Government Agency analysis of marine/estuarine samples from these three sites shows that only at Hinkley (Bridgwater Bay) have the sediments been the subject of multi radionuclide analysis. In this context it is clear that the EdF claim is without scientific verification and has no basis in fact. Campaigners in Wales did ask for radiological sampling of Welsh coastal sediments both before and after the dump at Cardiff, but this request was also refused by EdF. Campaigners note that had this request been granted it would have clarified the truth, or otherwise, of the EdF claim.

I can confirm that the general water body movement/residual currents along the Somerset coast is west to east and that Portishead is down-stream of the Hinkley radioactive effluent discharge pipelines which have been discharging over 50 radionuclides for over 50 years. It is inevitable that some of that radioactivity will be present, and would be detectable, in the Portishead shoreline intertidal sediments. However, there is absolutely no evidence of any attempt by the nuclear industry or the relevant Government Agencies to assess the baseline concentrations of man made radioactivity in the Portishead/Avonmouth region.

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Campaigners opposed to further dumping in Wales marshalled a large tranche of scientific evidence in opposition to the proposal for a second dump and through their representations to Natural Resources Wales (NRW), the Welsh environmental protection agency, forced EdF to conduct more rigorous radiological analysis of the sediments to be dredged than was undertaken before the 2018 dump.

NRW and the Welsh Government rejected calls from the campaigners to carry out radioactivity studies on the Welsh coast after the radioactively contaminated mud had been dumped. However, an independent review of Government reporting of radioactivity concentrations on the Somerset coast following marine environmental construction activity and disturbance of sea bed and intertidal sediments at Hinkley during the 3 year period before the 2018 dredge and dump revealed a steady and positive rise in shoreline radioactivity levels and a 215% increase in the dose to

“representative” coastal persons coinciding with the disturbance of radioactively contaminated sediments. (Ref 3) It is expected that these impacts are similar to those expected on shorelines impacted by the proposed sediment dumping.

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With 30 years of work experience of marine radioactive pollution issue I can confirm that radioactivity attached to marine sediments suspended in the water column will tend to deposit out in areas of fine sediment deposition along sheltered coastlines and in coastal and estuarine intertidal areas (mud flats and salt marshes).

Having been involved in the initiation of a radiological survey of the tidal stretches of the River Parrett in 2015, (which had not been undertaken before despite the proximity of the river to the Hinkley Point site) I can confirm that Hinkley radioactivity was detected in sediments up to 17 kms inland along the river corridor, and that regular dredging of the river had involved the dumping of the dredge wastes on the river bank and the spreading of some of those dredge arisings onto agricultural land, risking contact doses to river side users, inhalation doses and entry of marine radioactivity into the agricultural food chain.

I can also confirm that the UK nuclear industry’s own studies in the UK have demonstrated that marine sedimentary micro-particles, contaminated with at least 5 radio-isotopes including Caesium and Plutonium are confirmed to blow ashore in sea spray and marine aerosols in onshore winds and that some studies indicate that such radioactivity can travel up to 10 miles inland and is confirmed to enter the agricultural food chain via contaminated pasture grass. The fact that it is airborne for such distances strongly implies the risk of inhalation doses.

It is also clear that suspended sediments also transfer from the sea to the land as a result of inundation of coastal zones during storm surge and high tides. Where coastal salt marsh grazing grass and soil downstream of radioactive waste discharges have been analysed they are shown to contain man made radioactivity. Where stock fed on such pastures is analysed it too is shown to be contaminated with site specific radioactivity. These phenomena are highly likely to impact sites close too and downstream of marine dumps of radioactively contaminated sediments.

The degree of impact and the magnitude of dose will remain a matter of conjecture in the absence of actual empirical studies. This is why campaigners in Wales fought so hard for baseline (pre-dump) monitoring and post dump monitoring to take place and were so disappointed when that request was refused. Many now believe that the refusal to provide such relevant information was of benefit to the nuclear industry who preferred the public NOT to be aware of what was being imposed upon the.

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I am a marine Pollution Researcher & Consultant with 30 years + working experience. I am an honours graduate of the Dept of Maritime Studies at Cardiff University where I studied a modular degree course with a strong focus towards marine pollution studies. My dissertation subject was the Sea to land Transfer of marine pollutants. I have worked for most of the UKs and many of Europe’s leading Environmental NGOs (Greenpeace International, Friends of the Earth, European

Climate Foundation, WWF, and UK and European Associations of Local Authorities (NFLA and KIMO).

I'm happy to respond to any queries, provide additional info as requested and offer zoom seminars etc to interested parties.

REFS: Ref 1: "Radioactivity in Food and the Environment 2019" RIFE 25. Table 3.5 (a). Page 125

Ref 2: "IAEA-TECDOC-244: CONSIDERATIONS CONCERNING "DE MINIMIS" QUANTITIES OF RADIOACTIVE WASTE SUITABLE FOR DUMPING AT SEA UNDER A GENERAL PERMIT REPORT OF AN ADVISORY GROUP MEETING ORGANIZED BY THE INTERNATIONAL ATOMIC ENERGY AGENCY AND HELD IN VIENNA 2-6 JULY 1979

Ref 3: "Post 2018 HPC sediment radioactivity analysis review" : available from Tim Deere-Jones (Marine Radioactivity Research and Consultancy) : timdj@talktalk.net

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