



Press Release

20 December 2011

New breast cancer mortality figures show a 43% greater risk at Burnham-on-Sea

A worrying new report by Prof Chris Busby of Green Audit (1) shows a 43% greater risk of dying from breast cancer for women living in Burnham-on-Sea. The result of the analysis, which covers the period 2005-8, is lower than the doubling of risk found in earlier periods but is still statistically significant. Burnham-on-Sea is situated downwind of the nuclear power stations at Hinkley Point in Somerset and the proposed site for new nuclear development.

Women will be concerned with this further evidence of continuing effects associated with radioactive discharges following earlier studies, particularly as they are not afforded sufficient protection from radiation under current regulations nor in the tools used in risk assessments.

An American Briefing Paper published earlier this year by the Nuclear Information and Resource Service entitled '**Atomic radiation is more harmful to women**' (2) brought to public attention findings that were under-reported in the Biological Effects of Ionizing Radiation (BEIR) VII, Phase 2 report, "Health Risks from Exposure to Low Levels of Ionizing Radiation," published by the National Academy Press in 2006, Washington, DC. It found that harm to women (cancer) is 50% higher than the comparable harm to men from radiation doses that fall within the legal limit to the public over a lifetime. Furthermore, the findings described were only relating to external (gamma) radiation – *there is a gap in knowledge with regard to internal exposure*. Non-cancer impacts were not included.

This new report on Burnham breast cancer mortality follows a shocking revelation of cancer around the Wylfa nuclear power station on Anglesey aired yesterday (Monday 19th December) on the Welsh TV channel S4C, which had commissioned the analysis (3).

Stop Hinkley believes that it would be outrageous if health authorities fail to now instigate an in-depth programme of investigations into the health of the populations most impacted by Hinkley Point, adult and child – looking at non-cancerous as well as cancerous diseases – or refuse to release incidence data to independent researchers.

“It is a matter of urgency that a full health audit is done before any decision is reached by the Environment Agency on EDF’s application for an Environmental Permit to discharge radioactivity into our environment.” said Nikki Clark of Stop Hinkley. “How many more studies does it take to make the authorities wake up? EDF failed to assess the health impacts adequately by using an obsolete software package (4) to calculate doses in their discharge permit application and decision-makers appear to be sleep-walking with regard to health.”

One desirable avenue for exploration would be to have blood samples from both healthy and ill volunteers from Burnham analysed for chromosome aberrations. There are methodologies (5) that can test for recent as well as retrospective radiation exposures and reveal the type, be it alpha, beta or gamma radiation. Blood tests should be offered as a matter of routine to anyone who becomes sick to aid diagnosis as well as offer some hope of recompense if radiation exposure is confirmed.

The ‘Breast Cancer Mortality in Burnham on Sea; an update for 2005-2008’ report is available on the Stop Hinkley website at www.stophinkley.org.

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Notes to Editor:

- (1) ‘Breast Cancer Mortality in Burnham on Sea; an update for 2005-2008’ by Prof. Chris Busby of Green Audit is appended in full below.
- (2) An American Briefing Paper published earlier this year by the Nuclear Information and Resource Service (www.nirs.org) entitled ‘**Atomic radiation is more harmful to women**’ brought to public attention findings that were in the Biological Effects of Ionizing Radiation (BEIR) VII, Phase 2 report, “Health Risks from Exposure to Low Levels of Ionizing Radiation,” published by the National Academy Press in 2006, Washington, DC. that have been under reported and ignored and which also concluded that there was NO SAFE DOSE. It found that:
“harm to women (cancer) is 50% higher than the comparable harm to men from radiation doses that fall within the legal limit to the public over a lifetime. Let’s be clear: radiation kills men--but it kills significantly **more** women. *Both cancer incidence and death are 50% higher for women.* Non-cancer health impacts were not included in the analysis”... and “The fact that this information has not been widely reported has deprived women of our right to know about this threat and protect ourselves from this harm. Further, this situation violates the Right to Free Prior and Informed Consent as recognized throughout the UN Declaration on the Rights of Indigenous Peoples and other

international human rights instruments, norms and standards;5 particularly Article 19:

States shall consult and cooperate in good faith with the indigenous peoples concerned through their own representative institutions in order to obtain their free, prior and informed consent before adopting and implementing legislative or administrative measures that may affect them.

To our knowledge, no women, indigenous or otherwise, have given “informed consent” to a striking lack of protection from ionizing radiation.”

- (3) http://www.s4c.co.uk/bydarbedwar/e_index.shtml
- (4) PC-CREAM 98, (Consequences of Releases to the Environment Assessment Methodology) a software modeling package used to undertake radiological impact assessments by calculating exposure doses. The Health Protection Agency is no longer committed to supporting this dated version that is 13 years old. It does not take into account subsequent research findings, including a growing body of evidence that show detrimental effects from low level exposure (e.g. the BEIR VII report aforementioned) or later ICRP recommendations regarding dose co-efficients.
- (5) To identify radiation exposure biologically, the cytogenetic method is the most widely used and best studied method. It is based on the analysis of the frequency of chromosome aberrations in blood lymphocytes of the human organism exposed to radiation. By comparing the frequency of cells with chromosome aberrations with a calibration curve it is possible to estimate the irradiation dose. Radiation may cause two types of chromosome aberrations: unstable (dicentric, centric rings) and stable (translocations). Measuring the former in peripheral blood lymphocytes is the most used method. As a rule, the frequency of dicentric permits estimating the dose of irradiation at early periods after exposure.

Due to the elimination of cells with unstable chromosome aberrations over time though, retrospective dose assessment by the frequency of dicentric is not always possible. The method for retrospective assessment of irradiation doses is analysis of the stable translocations by the FISH method. The frequency of translocations remains constant for a long period (years) after irradiation.

Breast Cancer Mortality in Burnham on Sea; an update for 2005-2008

Chris Busby
21st October 2011

The recent application from EdF energy to build a new nuclear power station at the Hinkley Point site has resulted in further interest in the matter of the local effects on health caused by historic radioactivity released from the plant. Green Audit has carried out a number of studies of the area downwind and local to the plant and has established the existence of a breast cancer cluster in the wards of Burnham on Sea which is the largest population centre directly downwind of the plant and adjacent to the contaminated mudflats at the mouth of the River Parrett (Busby et al 2000, 2001, Busby and Rowe 2002, Busby et al 2007, Busby 2008). The 2008 study brought in a separate indicator of genetic damage in examining the levels of infant mortality and stillbirths downwind of the Hinkley site. In summary, these studies all show the existence of significant genetic damage to people living downwind of the nuclear site, manifested as statistically significant increased risk of cancer, particularly breast cancer, and also infant mortality.

This brief report updates the situation with regard to breast cancer mortality and uses the official statistical tables on mortality by cause in wards of England and Wales VS4D.

Results for the two wards of Burnham on Sea, Burnham North and Burnham South are given in Table 1 below. Age Standardised Mortality Ratios were based on England and Wales mortality rates tables for 2004 ONS Series DH2 No 31 Table 4 and 2001 census populations.

Table 1 Deaths from breast cancer C50 in Burnham North and Burnham South combined for 2005-2008

Ward	Observed/ expected	Relative Risk
Burnham North	12/9.7	1.24
Burnham South	13/7.8	1.67
Both wards	25/17.5	1.43

Poisson p-value = 0.05

It appears that the breast cancer cluster identified in the earlier mortality studies continues in the most recent data at a slightly reduced though still statistically significant level. In the period 2005-2008 there was a 43% excess risk for mortality which is lower than the doubling of the risk of dying of breast cancer found in earlier periods.

C. Busby Oct 21st 2011

Busby C, Dorfman P, Rowe H (2000) *Cancer Mortality and Proximity to Hinkley Point Nuclear Power Station in Somerset: Part I Breast Cancer*. Occasional Paper 2000/2 Aberystwyth: Green Audit

Busby C C, Bramhall R and Dorfman P (2001) *Environmental risk methodology and Breast cancer mortality near Bradwell nuclear power station in Essex 1995-1999. Occasional Paper 2001/8* Aberystwyth: Green Audit

Busby C and Rowe H (2002) Cancer in Burnham on Sea North. Results of the PCAH questionnaire. Occasional Paper 2002/5. Green Audit: Aberystwyth

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Infant and Perinatal Mortality and Stillbirths near Hinkley Point Nuclear Power Station in Somerset, 1993-2005. Occasional Paper 2007/6 Green Audit: Aberystwyth
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Busby C C (2008) Breast Cancer Incidence in Burnham on Sea, Somerset 1994-2004. Further evidence of effects from radioactive discharges from Hinkley Point Nuclear Power Station. *Green Audit. Research Note 06/2008 Sept 23rd 2008* Aberystwyth: Green Audit