Low Level Radiation and Health Conference

In brief, the Low Level Radiation and Health Conference was set up in 1985 by members of the public keen to find out more about these issues and so 2010 will see it celebrate 25 years since it started. Since its inception, the conference has been organised annually by a different voluntary group of members of the public and the event has rotated to different parts of the UK.

The conference is a unique event bringing together members of the nuclear industry, Government organisations, monitoring agencies, Local authorities, medics, academic researchers, health workers, environmental health officers, campaigners and interested lay people. It is an educational event which aims to provide up to the minute research via presentations by a range of people from government, regulators, industry and academics thus making these issues accessible to as broad a range of people as possible by keeping the costs as low as reasonably practicable.

Dr Alice Stewart (AMS) – the doyenne of low level radiation research - gave her support unstintingly from the beginning realising that her name would give some authority to the event. She also regularly presented her latest findings at it. In 1994 we named a keynote lecture in her honour.

1985: No 1: Gloucester organised by SCAR, Barbara French and Sue Havely-

Alice talks on the Medical Effects of Radiation.

1986: No 2: Barrow, Cumbria organised by Cumbrians Opposed to a Radioactive Environment (CORE) AMS presentation on Pre-natal X-rays and A-bomb data

1987: No 3: Grantham

1988: No 4: Stirling

1989: No 5: Norwich, East Anglia organised by member of the East Anglian Alliance Against Nuclear power (EAANP)

1990: No 6: Bangor, organised by members of the Welsh Anti Nuclear Alliance (WANA) with support from Gwynedd County Council

1991: No 7: Bristol, hosted by Bristol City Council and organised by the Conference Organising Group comprising Low Level Radiation and Health, SCAR, Bristol City Council, Ann Case (radiographer) and Brian and Ros Rome; AMS speaks on Hanford data and the workforce

1992: No 8: Newcastle organised by John Urquhart, Librarian at Newcastle University

1993: No 9: Liverpool organised with local help from Graham Thorne

1994: No 10: Glasgow - Organised by Rita Holmes and Margaret Crankshaw. Opening lecture dedicated Alice and called the Alice Stewart lecture Alice in attendance together with Faith.
1995 No 11 **Carlisle**, organised by CORE, AMS speaks on possible fallacies in cancer risk estimates.

1996 **Portsmouth University**: Conference on Radiation and Health near nuclear power stations, July 9-12, organised by Dr Michael Schmidt jointly with the German Society for Radiation Protection and Alice Stewart gave presentation on A-bomb survivors.

1997 No 12: **Bristol**, University of West of England organised by Paul Dorfman et al

1998 No 13: **Greenwich** organised by Rebecca Harrison, AMS speaks about neglected aspects of Atomic Bomb Survivors

1999 No 14: **Lancaster** University organised by CORE, Janine Alys-Smith

2000 No 15: **Reading**, NAG including Pam Vassie and Di McDonald

2001 No 16: Workshop presentation on ethics, **Manchester** organised by Dr Cat Euler - Dr Deborah Oughton, Associate Professor, Dept of Chemistry and Biotechnology

2002 No 17: **Dublin**, Dr Carmel Mothersill, Radiation and Environmental Science Centre, Dublin Institute of Technology

2003 None held


2006: No 19: **Hamilton, Canada**, Professor Colin Seymour, *Low Dose Radiation and Risk*

2008: No 20: **University of Cumbria**, Ambleside, Dr Wolfgang-Ulrich Mueller, Institute for Medical Radiation Biology, University of Essen, *Radiation-induced Pregnancy Effects*

2010: No 21: **Silver Anniversary** co-hosted with the Nuclear Free Local Authorities (NLFA) at the Quaker Meeting Hall, Manchester, June 19th.

**Alice Stewart lecture**

*Childhood leukemia in the vicinity of German Nuclear Power facilities - results and consequences of the KiKK study.* Professor Wolfgang Weiss (German Federal Office for Radiation Protection) given by Dr Alfred Koerblein when Prof. Weiss could not get to the airport after his train was in collision. Everyone on board well.
Alice Stewart lectures

When I rang Alice in 1994 I was careful to point out that we wanted her to live for ages. Such lectures are usually named after someone when they have died. When I asked her if we could instigate such a lecture she burst out laughing and said she’d be delighted and that it was the first honour given to her in the UK. As members of the public we were so proud, as scientists and health workers we were astonished at this lack of national recognition. The lectures have been given by the following eminent scientists:

1994:  Dr Tom Wheldon, Glasgow: *Radiation and Cancer genes*

1995:  Dr Eric Wright, Medical Research Council - *Alpha particle irradiation and genomic instability*

1996:  Presentations at Portsmouth included one by Alice on her work on A-Bomb survivors and risk factors

1997:  Dr Alan Irwin, Brunel University - *Citizen Science*

1998  Professor Andrew Blowers, Open University and a member of RWMAC – *Nuclear waste issues*

1999  Dr Rosalie Bertell, Institute for Public Health, Toronto spoke on *Breast Cancer and Radiation*. Alice was unable to attend for once and sent her regards to everyone

2000  Dr Carol Barton, haematologist *Royal Berkshire Hospital study on Aldermaston + Burghfield*

2001  Dr Deborah Oughton on *Ethics and radiation* at workshop

2002  Dr Steve Wing, University of Carolina on *Epidemiological studies*

2003:  None given

2004:  Dr Keith Baverstock formerly of World Health Organisation gave the opening lecture, 20 years on – *Science, ethics and politics in the low dose debate*

2006:  Professor Colin Seymour from McMaster University, Hamilton, Canada

*Low Dose Radiation and Risk*

2008:  Dr Wolfgang-Ulrich Mueller, Institute for Medical Radiation Biology, University of Essen, *Radiation-induced Pregnancy Effects*

2010:  Professor Wolfgang Weiss (German Federal Office for Radiation Protection) *Childhood leukemia in the vicinity of German Nuclear Power facilities - results and consequences of the KikK study.*
PS

I would like to add one issue to the letter already submitted with regard to the Fukushima review and that is to compare the evidence submitted at the time of the Hinkley Point Public Inquiry - the last PI into a proposed new nuclear power station - with what has happened in Japan. Were possible accidents flagged up? Have the issues raised been addressed? I realise that the proposed new nuclear power stations are of a different design to that considered at Hinkley Point but how were the concerns about safety addressed? Were they taken on board? For example, Chris Gifford a former Mines Inspector with the NII gave evidence concerning the numbers of skilled people available, staff who would need to address the decommissioning of the Magnox, the decommissioning of the AGR, the running of the PWR, the oversight of the nuclear sub fleet let alone any new design or legacy waste issues. He was concerned that the knowledge about the older fleet resided in staff now retired and raised concerns about how would that get passed on The EA has done some work on sharing knowledge which would be worth examining. I also realise that there has been some work done to address the skills gap and yet NII have still needed to advertise widely for additional staff who, in turn, would need to be trained up for a 4th type of reactor. This may be a step too far and put too much pressure on a small specialist staff.

Please also find attached a note outlining the Low Level Radiation and Health Conference which was started by members of the public in 1985 and a chronology of health effects following the Three Mile accident in the US.

Yours faithfully,

Jill Sutcliffe
Dr Jill Sutcliffe
Low Level Radiation and Health Conference

On 15 April 2011 12:58, Jill Sutcliffe

Hello,

Please find attached a letter outlining some of the issues which we think need to be addressed in the report which has been commissioned to learn lessons in light of the accident in Japan.

Best wishes,

Jill

Dr Jill Sutcliffe
Low Level Radiation and Health Conference secretariat
A CHRONOLOGY OF HEALTH PROBLEMS RELATED TO THREE MILE ISLAND

Submitted by webEditor on Sun, 02/01/2009 - 20:43

The record indicates that in reporting to state and federal officials on March 28, 1979, TMI managers did not communicate information in their possession that they understood to be related to the severity of the situation. The lack of such information prevented state and federal officials from accurately assessing the condition of the plant.

In addition, the record indicates that TMI managers presented state and federal officials misleading statements – statements that were inaccurate and incomplete, that conveyed the impression the accident was substantially less severe and the situation more under control than what the managers themselves believed and what was, in case, the fact. (“Reporting of Information Concerning The Accident At Three Mile Island,” A Report Prepared by the Majority Staff of the Committee On Interior and Insular Affairs of the U.S. House of Representatives, 97th Congress, First session, March 1981.)

For 11 days, in June and July 1980, MetEd illegally vented 43,000 curies of radioactive Krypton-85 (beta and gamma, with a 10-year half life) and other radioactive gasses into the environment without having scrubbers in place (6).

In November 1980, the United States Court of Appeals for the District of Columbia ruled that the krypton venting (June-July, 1980) was illegal. In February 1981, a $20 million fund was set up to pay over 15,000 claims for affected area residents and business within the 25-mile radius of TMI. Another $5 million was set up to establish the TMI Public Health Fund. However, several years after the establishment of the TMI Public Health Fund (1986), TMI-Alert and area political representatives unsuccessfully petitioned the federal court to remove the Fund’s administrators due to nepotism and poor communication with the community. The lead attorney in the class action, David Berger of Philadelphia, received $1,389,06 ($25-$260 per hour); his family law firm billed $175,056 and an additional $20,112 for report preparation. Legal bills totalled $2.5 million, which was less than the $4 million the attorney requested from the Court. Judge Sylvia Rambo received the fees.

March, 1982: The American Journal of Public Health reported: “During the first two quarters of 1978, the neonatal mortality rate within a 10-mile radius of Three Mile Island was 8.6 and 7.6 per 1,000 live births, respectively. During the first quarter of 1979, following the startup of accident-prone Unit 2, the rate jumped to 17.2; it increased to 19.3 in the quarter following the accident at TMI and returned to 7.8 and 9.3, respectively, in the last two quarters of 1979.” (Dr. Gordon MacLeod, Secretary, Pennsylvania Department of Health).

In February 1983 11,000 claims for lost wages and evacuation expenses were settled for $2.35 million.

July 24-27, 1984, during the 159-ton reactor head lift, which was delayed due to polar crane failure, GPU vented radioactive gases into the environment despite pledges by the company and the NRC that no radioactive releases would occur. This
is the time there has been direct access to Unit-2’s damaged fuel. GPU was fined $40,000 by the NRC for this violation.

**November 6, 1984** - Research conducted by the Department of Energy (DOE) on reactor damage during the accident, indicates temperatures may have reached in excess of 4,800 degrees. (See February 9, 1990, for follow-up research.)

1985 “ TMI's owners and builders had paid more than $14 million for out-of-court settlements of personal injury lawsuits. The largest settlement was for a child born with Down's Syndrome.($12,250 million paid to 280 plaintiffs and Orphans Court Cases.)

On **July 12, 1985**, two workers who participated in the initial phase of the cleanup and contracted cancer, joined 2,500 area residents suing GPU.

**August, 1985**: Marc Sheaffer, a psychologist at the Uniformed Services University of the health Sciences in Bethesda, released a study linking TMI-related stress with immunity impairments. (See August, 1987 and April, 1988, for related studies.)

**August, 1987**: James Rooney and Sandy Prince of Embury of Penn State University reported that chronically elevated levels of psychological stress have existed among Middletown residents since the accident. (See August, 1985 and April, 1988, for related studies.)

**April, 1988**: Andrew Baum, professor of medical psychology at the Uniformed Services University of the health Sciences in Bethesda discussed the results of his research on TMI residents in Psychology Today. “When we compared groups of people living near Three Mile Island with a similar group elsewhere, we found that the Three Mile Island group reported more physical complaints, such as headaches and back pain, as well as more anxiety and depression. We also uncovered long-term changes in levels of hormones...These hormones affect various bodily functions, including muscle tension, cardiovascular activity, overall metabolic rate and immune-system function...” (See August, 1985 and August, 1985, for related studies.)

1989: After ten years of defuelling activities, 5,000 TMI workers have received “measurable doses” of radiation exposure.

**June, 1991**: Columbia University's Health Study (Susser-Hatch) published results of their findings in the American Journal of Public Health. The study actually shows a more than doubling of all observed cancers after the accident at TMI-2, including: lymphoma, leukemia, colon and the hormonal category of breast, endometrium, ovary, prostate and testis. For leukemia and lung cancers in the six to 12 km distance, the number observed was almost four times greater. In the 0-six km range, colon cancer was four times greater. The study found “a statistically significant relationship between incidence rates after the accident and residential proximity to the plant.” (See August, 1996 for Wing Study.)

By 1993, TMI-2 had evaporated 2.3 million gallons of accident generated radioactive generated water, including tritium a radioactive form of hydrogen (half life; 12.
5 years), into the atmosphere despite legal objections from community-based organizations.

**June 4, 1996** - U.S. District Judge Sylvia H. Rambo granted summary judgment to GPU and its co-defendants in consolidated proceedings of more than 2,000 personal injury claims arising from the March 1979 accident at TMI. (See August 1996, November 2, 1999 and June 12, 2000 for related health suit activities.)

**August, 1996** - A study by the University of North Carolina-Chapel-Hill, authored by Dr. Steven Wing, reviewed the Susser-Hatch (Columbia University) study released in June 1991. Dr. Wing reported “...there were reports of erythema, hair loss, vomiting, and pet death near TMI at the time of the accident... Accident doses were positively associated with cancer incidence. Associations were largest for leukemia, intermediate for lung cancer, and smallest for all cancers combined. Inhaled radionuclide contamination could differentially impact lung cancers, which show a clear dose-related increase.” (See June 4, 1996, November 2, 1999 and June 12, 2000, for related developments on TMI health claims.)

By 1996, the plant’s owners, co-defendants and insurers have paid over $80 million in health, economic and evacuation claims, including a $1.1 million settlement for a baby born with Down's Syndrome.

**November 2, 1999** - The Third Circuit Court of Appeals “revived the rest of the lawsuits [1,990], citing those individuals constitutional right to have their cases heard by a jury.” The Circuit Court upheld U.S. District Chief Judge Sylvia H. Rambo’s “ruling on the expert testimony and the dismissal of the 10 [test cases].” (Pennsylvania Law Weekly, June 12, 200). (Also refer to June 4 and August 1996 and June 12, for United States Supreme Court rejection of GPU’s appeals.)

**June 12, 2000**: The US Supreme Court, without comment, rejected an appeal by GPU to throw out 1,990 health suits. (Please refer to June 4 and August 1996 and November 2 1999, and May 2, 2001, for related developments.)

**May 2, 2001**: The Third Circuit Court ruled that “new theories” to support medical claims against Three Mile island will not be allowed. (Please refer to June 4 and August 1996 and November 2 1999, and July 12, 2000, for related developments.)

Thyroid cancer, **1995-2002**: Dr. Roger Levin, chief division of otolaryngology/head and neck surgery, Pinnacle Health System in Harrisburg, and clinical associate professor of surgery, Penn State College of Medicine. Levin did his research so he could join The Triological Society, a society for ear, nose and throat specialists and head and neck surgeons. His paper is scheduled to be published in the society’s peer-reviewed journal, *The Laryngoscope*, in an upcoming month.

**Findings**: In reviewing state health data, Levin found more thyroid cancer cases than expected in York County for every year except one between 1995 and 2002. One plausible reason could be people were exposed to radiation during the 1979 Three Mile Island accident, he said.

**November, 2003**: “Objectivity and Ethics in Environmental Health Science” was published by Dr. Steve Wing, Department of Epidemiology, School of Public Health.
UN-Chapel Hill. Dr. Wing discussed “research into health effects of the 1979 accident at Three Mile Island...as an example of how scientific explanations are shaped by social concepts, norms and preconceptions” (*Environmental Health Perspectives*, Volume 111, Number 1 , November 2003, pp. 1809-1818).

Dr. Wing concluded:

Many rural people living near TMI [Three Mile Island] had modest levels of formal schooling and little experience in being assertive with government and industry officials. Those that spoke about their experiences of physical problems from the accident endured ridicule. The Aamodts [Marjorie and Norman] were able to influence the TMI Public Health Fund’s sponsored research on physical impacts of the accident by initiating their own survey, researching government record, and petitioning the NRC. Other residents who lived within the 10-mile area also conducted surveys, constructed disease maps, and documented damage to plants and animals (Osborn 1996; TMI Alert 1999.)

However, when health studies were undertaken through official channels, citizens who believed that they had been affected by accident emissions and their supporters were not included in the framing of the questions, study design, analysis, interpretation or communication of results. The studies themselves were funded by the nuclear industry and conducted under court-ordered constraints, and a priori assumptions precluded interpretation and observations as support for the hypotheses under investigation... The naive approach to objectivity, represented in the Daubert criteria, contends that scientists can produce unbiased evidence by standing apart from legal conflicts and adhering to normative science. The problem with this position is that scientific questions and the details of the specific working hypotheses emerge from conflicts, which also influence the assumptions that frame methodologies used to produce evidence and interpretations of the meaning of evidence... Pretending that there are no assumptions embedded in scientific methodology conceals and reinforces existing inequalities”