

The Ecologist Digest

Nuclear Power: Bombs, Accidents and the Arms Race

German Nuclear Power: Closures and Delays. Robert Walgate. *Nature*, Vol. 290, March 5th 1981.

Four German nuclear power stations, representing a third of the country's 10,000 MW of nuclear power, are to close for at least a year for the complete replacement of their primary cooling circuits. The Bonn Nuclear Safety Commission ordered the closures after deliberating for three years over the issue. Small leaks and cracks had developed in the primary circuits of the four boiling water reactors (BWR) and appeared to be spreading by stress corrosion — the combined effect of mechanical and thermal stress and chemical corrosion. The Bonn Nuclear Safety Commission has concluded that uneven quality, poor choice of materials, and a thin gauge of steel for the pipework were to blame and that the circuits must be replaced to avoid the danger of a potentially catastrophic cooling failure. The cost of replacement has been estimated at £250 million with an equal sum for the loss of electricity sales.

DOE Pursuit of Reprocessing expected, *Science*, Vol. 211, February 27th 1981.

Among the few government programmes exempted from President Reagan's budget cuts is Department of Energy's support for the nuclear fuel reprocessing plant at Barnwell, South Carolina. Energy Secretary, James Edwards, says that he endorses the completion of the plant, previously a victim of President Carter's fears over the proliferation of nuclear weapons. Edwards is expected to follow the advice of the Reagan transition teams that looked into the non-proliferation and reprocessing issues. The teams, which included representatives of the nuclear industry, recommended that the DOE fund research to support the potential acquisition of the Barnwell plant from Allied General Nuclear Services, an oil consortium that owns it at present. The idea is that Barnwell be operated under contract "as a large scale spent fuel recovery (plant) and an international plutonium storage and safeguards demonstration."

Don't Pay for Nuclear Power. SCRAM Energy Bulletin, February/March 1981.

There are now over 10,000 people taking part in a consumer campaign in Germany which involves withholding the 'nuclear portion' of electricity bills and paying the money into trust accounts. The campaign, known as Strobo, has been running for over

three years and has resulted in hundreds of court cases. So far, two cases have been won, the judgments being based on a clause in the German Civil Law Code which states that a partner in a contract has the right to withhold money owed if the other partner has failed to fulfil his obligations. In West Germany, electricity companies have the obligation to look after the welfare of their customers — and it is this obligation that the courts say has been broken. Reasons given to support this view were the continuous emission of radiation during normal operation of reactors; the threat to the environment should an accident occur; and the lack of effective medical therapy to deal with radiation damage.

SCRAM are initiating a similar campaign in Scotland, withholding 20 per cent of electricity bills until the South of Scotland Electricity Board guarantee to stop all work on the Torness nuclear reactor site: cease production of nuclear-generated electricity; develop and use more environmentally, socially and economically acceptable means of energy production; and show a genuine commitment to conservation. The Board's reaction has been to threaten those with more than £10 of arrears with disconnection. The money has then been paid by a trust fund set up by SCRAM.

Assassins halt Nuclear Plant Construction, Harry Debelius. *The Times*, February 11th 1981.

The company which is building a nuclear power plant near Bilbao has suspended construction until further notice after three years of Basque terrorist attacks on its installations and staff, culminating in the assassination in early February of the project's chief engineer, Senor Jose-Maria Ryan. A spokesman for the firm, Iberduero, said the decision was made out of consideration for the 'anguish' of Senor Ryan's colleagues. The Basque terrorist organisation, ETA, had issued a warning that other officials in the company would be shot if construction continued. ETA have also made attacks on electricity supply lines and on a transformer station.

Some Public Health Lessons from Three Mile Island, Gordon K. Macleod. *Ambio*, Vol. 10, No. 1, 1981.

On March 28th 1979, the day the nuclear reactor at Three Mile Island began to run wild, Dr. Gordon Macleod had been the secretary of health for the state of Pennsylvania for just twelve days. In the crisis that followed, he discovered that the state's public health services were totally unprepared for dealing with the health effects of a serious nuclear accident. In the chaos that followed the accident at TMI, important public health decisions were delayed or impeded by conflicts between the nuclear engin-

eers and physicists on the one hand and the public health authorities on the other. For example, the decision to advise pregnant women to leave the area was delayed for three days because radiation physicists and engineers did not agree with the recommendation. During those three days, some 100,000 to 200,000 people left the area, including many hospital workers: indeed, only one of the hospitals in the TMI area was capable of handling potential victims of the accident. "It seemed that no-one outside of professional health circles could appreciate the potential for health hazards of the Three Mile Island accident unless they saw people being carried off vomiting from radiation sickness," writes Macleod. "Since there was no blast, there was no health hazard. That was the attitude that seemed to reign among nuclear engineers and radiation health physicists throughout the accident." Since the accident, cases of hypothyroidism have increased ten fold in areas immediately downwind from the TMI reactor.

Despite Reagan's Push, Nuclear is Doomed, Jim Harding. Not Man Apart (The Nuclear Blowdown), April 1981.

Electrical World, the McGraw-Hill monthly trade journal that calls itself 'the electric utility magazine', has predicted a dim future for the nuclear power industry despite promises of multi-billion dollar subsidies from the Reagan administration. In its January 1981 issue, Electrical World comments, "The prospect of a new and apparently pro-nuclear administration raises the seductive thought that there will be a revitalisation of the nuclear programme. This is unlikely to happen. The major stumbling block to the nuclear industry has not been government policy so much as it has been inadequate finances — and there isn't much a new administration can do about that. The immense capital demands of nuclear power over a decade of anticipated high inflation raise a hurdle which few companies would care to risk even if in good financial health. And few today are in what might pass for good financial health."

Florida Power and the \$40,000 Cup of Coffee, Jim Harding. Not Man Apart, (The Nuclear Blowdown), April 1981.

On January 29th, officials of the US Nuclear Regulatory Commission found no-one at the controls of Florida Power and Light's Turkey Point 4 reactor and, after an investigation, have ordered the utility to pay a fine of 40,000 dollars. Vic Stello, Director of the NRC's Office of Inspection and Enforcement, told the utility that 'operator absence, distractions or inattentiveness while assigned to the reactor controls won't be tolerated by the NRC.' Florida Power and Light officials have assured the NRC that the incident will not be repeated, adding that the operator was absent only for the time needed to fill his coffee cup. Officials for the utility commented that in their view 'there wasn't any danger that an accident or an emergency could have been worsened by the absence of this man'.

Does Nuclear Power provide Reliable Electricity? Charles Komanoff. Critical Mass, December 1980.

US nuclear power plants have suffered a significant decline in performance since early 1979, raising doubts about reactor operating reliability and further eroding the economics of nuclear power. The 62 licensed commercial-sized reactors (over 400 MW capacity) averaged slightly under 57 per cent 'capacity factor' from January 1979 to June 1980. This is the industry's poorest operating record over any sustained period in five years, and is over four percentage points below the 61 per cent cumulative average through 1978. Design errors, equipment failure and the accident at Three Mile Island have led to widespread shut-downs. The 39 large plants (over 800 MW) which are more representative of reactors being built and planned, have been especially affected, averaging only 51 per cent capacity factor during the past 18 months. The downturn was especially pronounced in the first half of 1980, with a performance average of 51 per cent, and only 48 per cent for the large plants. Babcock and Wilcox plants have been plagued by 'too sensitive' reactor cooling design that has magnified minor control perturbations into large-scale mishaps at six out of nine operating plants. They were troubled by valve and pump breakdowns and control system problems before Three Mile Island and averaged only 60 per cent capacity through 1978. That figure is now down to 54 per cent. With major modifications likely to be required in instrument, control and cooling systems, and with utilities reconsidering their commitments to the company's partially completed plants, the curtain may be falling on nuclear power for Babcock and Wilcox. Westinghouse reactors had only 56 per cent average capacity factor during 1979 and the first six months of 1980, their lowest rating since 1968 when only two of their reactors were operating.

Nuclear Dump Sites Uncovered. Natural Life News. Winter 1980/81.

Two dumps have been discovered containing nuclear wastes that are possibly leaking contaminants into the Niagara River on the border of the United States and Canada. The Lake Ontario Ordnance Works — as one of the sites is called — and a field near Tonawanda, New York State, were both used as dumps for tonnes of radioactive sludge during the 1940s — waste from the Manhattan project. Government reports, leaked to the press, suggest that there is a possibility that the wastes will contaminate the Niagara River and, consequently, the water supplies for three municipalities.

Fine of £500 over Radiation Burns, The Times. February 27th 1981.

British Nuclear Fuels Ltd has been fined £500 for failing to provide safe working conditions at its Windscale plant. The company pleaded guilty to a charge under the Health and Safety at Work Act over an incident in which a radiographer received three severe radiation burns to his hand whilst using an

x-ray source to examine welds. The radiographer received a dose estimated at 2000-2500 rems to each burn on his hand.

A Brush with Radioactivity, Christopher White. The Daily Mail, March 16th 1981.

A nuclear power worker from Hinkley Point, Somerset, started an alert after borrowing some paint brushes from the plant. His car and his living room were found to be contaminated. The alert began after the worker checked in for his shift and a routine check showed traces of radioactive material under his finger nails. A spokesman for the Central Electricity Generating Board said: "An inquiry has been started, I understand the levels of radioactivity are low but we have not been able to put a figure on it. Naturally there is concern whenever contamination is found outside the station." It was not known how the brushes were removed from the plant without their radioactivity being detected.

Warhead Work began before Trident chosen, David Fairhall, The Guardian, March 6th 1981.

The Atomic Weapons Research Establishment at Aldermaston began preliminary design work on a nuclear warhead for the Trident ballistic missile in the mid-1970s — although the Government's decision to replace Polaris missiles by the £5,000 million Trident system was not announced until July 1980. It appears that several of the underground nuclear tests conducted by Britain in the United States since 1974, which were assumed at the time to be connected with the Polaris programme, were in fact anticipating Trident. The revelations raise a delicate political point: why was money being used to develop the missile without parliament even giving the official go-ahead?

Nuclear Ban Motion backed by 59 Councils, Peter Evans, The Times, March 17th 1981.

Fifty-nine local authorities have backed a resolution by Manchester City Council opposing nuclear weapons. The resolution calls on authorities throughout Britain to urge the government to "refrain from the manufacture or positioning of any nuclear weapons . . . within the boundaries of our city" and asked them to make similar statements. Some of the authorities are also questioning the Government's efforts to beef up our civil defence plans. "We should not be doing civil defence at all," says Mr. John Kotz, deputy leader of the labour controlled council at Hackney. "It is an absolute waste of time." The scale of support for the Campaign for Nuclear Disarmament amongst local authorities suggests that the issue will figure prominently in the local elections taking place in May. Although few authorities are likely to have nuclear weapons positioned within their boundaries, the opposition of the 57 councils has taken the initiative away from the Government's own plans to launch a campaign explaining the case for nuclear weapons.

Swiss Nuclear Power; Sanctions Bite, Geoff Milnes. Nature, Vol. 290, March 19th 1981.

There is growing concern in Switzerland about uranium supplies for the country's nuclear power programme. Indigenous deposits are too small to reduce foreign dependence and the efforts of the chief suppliers, Canada and the United States, to prevent nuclear proliferation have led to acts which the Swiss consider to verge on blackmail. Although the pro-nuclear lobby maintains that the long-term prospects are 'not unfavourable' and the present supply hitch is merely a temporary inconvenience, there are signs that the country's independence, self-determination and neutrality will be threatened if nuclear power becomes a major element in its energy mix — just as today they are threatened by an overwhelming dependence on imported oil. The present plan is for 7000 MWe in nuclear capacity by the end of the century. With the average life of a reactor estimated at 30 years, total requirements for uranium to fuel the country's nuclear programme will be some 40,000 tonnes. An extensive search for indigenous supplies of uranium has revealed some deposits but the average grade is too low and none are economic to exploit. Thus, it appears that Swiss reactors will be completely dependent on imported fuel. The present dispute with Canada illustrates the issues involved. Since 1958, Canada has been the main supplier of natural uranium under a bilateral treaty. In 1977, however, the Canadian government refused permission for the transfer of yellow cake to fuel fabrication plants in the USA. Since 1977, almost 1000 tonnes of uranium have been blocked and Swiss utilities have been forced to buy alternative supplies on the international market — at far higher prices. The reason for the blockade is the reluctance of the Swiss government to give in to Canada's demand for inspection and control rights with respect to some Swiss government to give in to Canada's demand for nuclear device in 1974, Canada has insisted that every effort must be made to prevent sensitive materials, good and technologies of 'essentially' Canadian origin from being passed on to Third World countries without Canadian permission. Nor are such political problems seen as the only threat to uranium supplies: there is a fear that the development of nuclear power in other countries will keep the world uranium market under pressure — and minor users like Switzerland at a constant disadvantage.

German Nuclear Power: Local Difficulties, David Dickson. Nature, Vol. 289, February 12th 1981.

West German Chancellor Helmut Schmidt will need to do some political juggling if he is to maintain the credibility of his plans to expand West Germany's nuclear power programme. This dilemma stems from a decision by local members of his own Social Democrat Party (SPD) in Hamburg that the city should not contribute 50 per cent of the costs of a new nuclear power station planned for Brockdorf. Hamburg's mayor, Herr Hans Ulrich Klose, argues that it is

more important to base future energy policy on energy conservation than on increasing electricity production. "How can we encourage energy saving when we blindly push ahead with nuclear power which may well prove superfluous to our needs?" he asks. The political problems raised by Hamburg's actions have further exacerbated tensions at a national level, where Herr Schmidt needs a viable energy policy to maintain the SPD's coalition with the Free Democratic Party, but is finding his position on nuclear energy out of line with that of a large proportion of his own party.

Chemicals, Drugs, Pollution

Herbicide is 'real-risk' to Birds and People, New Scientist, February 12th 1981.

A recent series of experiments by two Australian scientists have shown that chicken eggs exposed to small doses of the herbicide 2,4,5-T often develop into chicks with impaired learning abilities. The chemical killed some of the embryos outright.

Humans are approximately three times more sensitive to 2,4,5-T than chicks. The scientists gave single doses of the herbicide to chick eggs at two points during incubation; the eighth or the fifteenth days. The doses ranged from 7 to 53 mg/kg body weight. These doses were high enough to kill some of the embryos: for example, half the chicks given 53 mg/kg on day 15 of incubation died. The herbicide caused birth defects — such as depigmentation of the feathers or abnormal development of the legs — in another ten per cent. The scientists, C.A. Sanderson and L.J. Rogers of Monash University, tested those chicks which were not obviously damaged to discover any effects the herbicide may have had on their behaviour. They found that 2,4,5-T affected three areas of behaviour: the general activity in an unfamiliar environment; the number of times the chicks jumped; and their ability to discriminate visually between food grains and small pebbles. The 2,4,5-T exerted these teratogenic effects on behaviour *only* when the chicks received the dose on the 15th day of incubation — giving 2,4,5-T on the 8th day of incubation had no statistically significant effect. On the 8th day of incubation, the chick embryo is rapidly forming its nerve cells. By the 15th day, this process is nearly complete and the nerve cells are making connections — synapses — with other nerve cells. The scientists say "the brain therefore seems to be most sensitive to 2,4,5-T at a time of maximum synaptic formation." It is not known whether the damage was caused by 2,4,5-T itself or its dioxin contaminant. However the 2,4,5-T used in the experiments contained less dioxin than commercial Australian 2,4,5-T (although more than that found in British preparations of the herbicide). The scientists claim that the experiments indicate that the herbicide poses "a real risk to bird species" and possibly humans also. They cite previous, inconclusive research which showed that the yearly birth rate of babies with defects of the neural tubes in New

South Wales correlated well with how much 2,4,5-T farmers had used in the previous year. The highest rates of these abnormalities occurred nine months after the peak spraying periods. This evidence — together with the rough estimate that humans are three times more sensitive to 2,4,5-T than chicks — leads the scientists to warn that "our findings therefore imply a risk to the human species".

Ban on Use of 2,4-D. Environmental Science and Technology, Vol 15, No. 1, January 1981.

The US National Parks Service has ordered a halt to the use of 2,4-D in parks and recreation areas under its control. The weedkiller, implicated in increased rates of birth defects and spontaneous abortions in areas where it is heavily used, will only be sprayed in future when no other means are available and the control of weeds is deemed essential. An NPS spokesman said the decision was based on the view that "It's better to err on the side of conservatism and not use a potentially dangerous chemical unless we find that our fears are unfounded."

Workers Face higher Cancer Risk from Herbicide Sprays. Anthony Tucker, The Guardian, April 6th 1981.

Workers who use the herbicides 2,4,5-T and 2,4-D have a substantially increased risk of developing malignant cancer of the soft tissues, according to a new Swedish study. The study shows that those exposed to the herbicides face a sevenfold increase in the risk of contracting cancer — for those exposed to 2,4,5-T the risk is seventeen times higher. An important finding is that 2,4,5-T appears to exert its effect whether or not it is contaminated with dioxin. The study was carried out by epidemiologists and cancer specialists of the university hospitals of Lund and Umea, and one of the department of occupational medicine at Linköping. It arose out of an earlier finding at cancer centres that there appeared to be an unusually high proportion of people with a history of occupational exposure to chemicals turning up as sufferers from soft-tissue tumours. A comparison was made between a random group and all cases of soft-tissue tumours diagnosed between 1974 and 1978. Only people who were at some time employed in industries using phenoxy herbicides were defined as "exposed". On that basis, a significant increase in the risk of contracting cancer appeared to emerge.

The Effects of Acid Rain on Adirondack Lakes. Environmental Science and Technology, Vol 15, No. 2, February 1981.

The effects of acid rain on Adirondack Lakes is more widespread than previously reported according to a four year study by the New York State Department of Environmental Conservation. On the 849 lakes and ponds studied, 212 were found to be too acid to support fish and 256 were close to that condition. "Most of these waters which have been devastated by acid rain were once great brook-trout fisheries," said Robert Flacke, the commissioner of environmental conservation. "Unless the federal government acts now to insure consistency and equity in enforcing federal regulations, we can only look forward to continued destruction." New York officials blame coal-

burning in upwind Midwestern states for their acid rain problems and charge that the Environmental Protection Agency has been lax, particularly in allowing Ohio utilities to burn high-sulphur coal.

Cancer Study Points to Coffee, New Scientist, March 19th, 1981.

Drinking coffee appears to be linked with pancreatic cancer, according to Dr. Brian MacMahon of Harvard University. Researchers from the Harvard School of Public Health questioned 369 patients with the disease and 644 other hospital patients who were used as controls. They found a weak link between pancreatic cancer and smoking cigarettes, no link between the disease and indulging in alcohol, cigars, pipes or tea — but they did find evidence that drinking two cups of coffee a day doubles the risk of the cancer. Pancreatic cancer is the fourth most common cancer in the US, claiming about 20,000 lives a year. The results of MacMahon's study have been disputed by the National Coffee Association which says that extensive research sponsored by the coffee industry "has shown no correlation between coffee consumption and pancreatic cancer or any other cancer for that matter."

Canada Investigates the Valium-Cancer Link, New Scientist, March 26th 1981.

Canadian government scientists are to carry out the first full investigation into the claim that Valium speeds up the growth of cancers. Concern over the drug arose first when Dr. David Horrobin, a British scientist based in Montreal, published the results of a study which he claimed showed the tranquiliser to be a cancer promotor. Horrobin says that the Canadian medical research authorities have refused him funds for further studies and that he lost his £20,000-a-year research job because of his work with valium. He claims that when he fed valium to rats with implanted breast cancer, the tumours grew to three times the size of tumours in a control group of rats not receiving the drug. Horrobin says that valium promotes tumours only at low doses — doses that are disturbingly close to those for humans. Hoffman-La Roche, which manufactures the drug, have challenged Horrobin's results, dismissing them as 'inconclusive and trivial'. But doctors at the Canadian Health Protection Branch believe the claims are worth investigating. "We can't close our eyes and not investigate", says Dr. Ian Henderson. The Canadian study will last a year and consist of both library research and bacterial and animal tests.

Row Over Western Exports of Banned Pesticides to Africa, Marcus Linear, The Observer, March 1st 1981. Also Vole, March 1981.

The United Nation's Food and Agriculture Organisation has been accused of backing a massive £885 million programme to eradicate tsetse fly in Africa in order to support the ailing pesticide industry in the West. The pesticides being used in the tsetse eradication programme include DDT and other organochlorine pesticides banned in the West. The programme has come under severe attack, with much of the criticism coming from within FAO itself. Privately, officials believe that the area of tsetse fly infestation has actually increased. (The FAO no longer

refers to an 'eradication programme' but to a 'control programme'.) Secondly, if the programme were to succeed on the scale projected, Africa would lose much of its tropical forest as more and more land was cleared and turned over to cattle ranching. Many FAO officials share the view that pesticide elimination of tsetse can never be achieved and would be a disaster if it were. Javier Prats-Llaurado, director of FAO's Forest Resources Division, says unequivocally: "I don't believe the production of beef in these areas is motivated by any sufficiently dramatic human crisis to justify risking an ecological disaster. There are better ways of utilising resources for human purposes." It is also pointed out that most Africans are unable to afford commercially ranched cattle meat — and that ranching deprives them of the wild 'bush-meat' that at present provides a major source of protein for the mass of the rural population.

Drug was Sold despite Tests that Showed it could Blind, Oliver Gillie, The Sunday Times, February 22nd 1981.

An anti-diarrhoea drug was sold for thirteen years in Britain despite evidence of dangerous side effects and expert advice that it should not be sold. A woman who says that she lost her sight and was partially paralysed after taking the drug, Quixalin, is to receive substantial damages after taking the manufacturer to court early in February. The case has revealed disturbing evidence that the manufacturers, E.R. Squibb and Sons, took insufficient account of the results of their own experiments with the drug. In 1959, a Scots doctor told Squibb that Quixalin damaged the eyesight of rabbits. In 1962, Squibb itself found that the drug blinded and killed two calves and, in 1963, it killed two dogs and paralysed the hindquarters of others. Nevertheless, the same year, Squibb launched the drug abroad and the next year, 1964, it applied for approval of its veterinary use in Britain. In 1965, it obtained approval to sell the drug for human use. Squibb has always denied negligence. It said in its court pleadings that it knew of no case of adverse effects in humans which could be associated with the use of Quixalin "anywhere in the world". However a second case of eye damage to a person associated with the drug was reported to the company in 1975 but was not disclosed by it in the court action because, Squibb says, it escaped its pretrial searches. Squibb is still selling Quixalin abroad.

Doctors Warned on Debendox, George Brock, The Sunday Times, February 22nd 1981.

The government is to warn doctors about prescribing the controversial anti-nausea drug Debendox to pregnant mothers. The warning will recommend that the use of any drug, including Debendox, 'should be avoided if at all possible' during early pregnancy. Marketed as Bendectin, the drug is widely used in America where a test case alleging that it is a cause of birth defects is about to go through the courts for a second time. A spokesman for Richardson-Merrell, Debendox's manufacturers in Britain, said in future the company would not be promoting the drug, but it would be available to any GP who wanted to prescribe it. Since the American court case, sales of the drug had fallen to ten per cent of previous sales and risen very slightly over the past year.

Vaccine blamed in Measles Epidemic, Martha Honey, The Guardian, March 6th 1981.

An unusually severe measles epidemic in Dar-es-Salam, Tanzania, may be linked to an ineffective and improperly administered vaccine. Although statistics are still being compiled, the outbreak has reached 'alarming proportions' according to the Minister of Health, Dr. Aaron Chidup. Measles, which takes a particularly virulent form where there is malnutrition, poor sanitation and overcrowding, is endemic in Tanzania. But the present outbreak is, said one doctor, the worst he had ever seen. While medical officials are trying to measure the level and causes of the epidemic, there is suspicion that the vaccine being used to inoculate children against the disease is ineffective. Doctors report that many vaccinated children have succumbed to the disease and a number have died.

Ethylene Oxide potentially Carcinogenic says ICEF, ENDS Report, February 1981.

Ethylene oxide should be regarded as a potential human carcinogen and as being capable of causing chromosomal abnormalities, according to the International Federation of Chemical, Energy and General Workers' Union (ICEF). The Federation's Secretary General, Mr. Charles Levinson, has called for the substance, used as a base for the production of ethylene glycols and their ethers and acetates, to be tested for its potential health effects, and for a wider analysis of the available epidemiological exposure data. A health hazard alert on the substance was issued in 1978 by ICEF, which warned that it should be considered as a carcinogen of the blood. Since then, a study by 20 US and European companies which manufacture ethylene oxide has found that female rats exposed to the substance at levels of 10, 33 and 100 parts per million for six hours per day, five days a week, all developed mononuclear cell leukemia at a far greater frequency than control animals. Male rats exposed at the two higher levels showed an increase of peritoneal mesothelioma. Other evidence includes an epidemiological study of 75 workers at the American Hospital Supply Corporation, which has now withdrawn twelve workers suffering chromosomal abnormalities from exposure to ethylene oxide and introduced a 10 ppm exposure limit — as against a limit of 50 ppm adopted in both the USA and the UK. The ICEF also claims that a Swedish study showed a massive increase in leukemia among workers exposed to ethylene oxide, and other studies have shown that blood disorders or abnormalities could be caused by long-term, low level exposure.

New Studies link Chlorination and Cancer, Thomas Maugh 11, Science, Vol 211, February 13th 1981.

New studies have strengthened the evidence for an association between rectal, colon and bladder cancer and chlorinated water, according to a recent report from the US President's Council on Environmental Quality. The studies show that individuals who drink chlorinated surface water generally bear a greater risk of developing one of these forms of cancer than do individuals who drink well water, chlorinated or not. In most cases, this risk ratio was found to vary between 1.13 and 1.93, indicating a 13 to 93 per cent increase in tumour incidence. The increased

risk did not arise from the chlorine itself, but from carcinogens produced by the action of chlorine on naturally occurring organic compounds in the water, particularly humic acids from the soil. Chlorinated drinking water first gave cause for concern about 6 years ago when it was observed that some chemicals commonly found in such water — especially the trihalogenated methanes — produce tumours in laboratory animals. The new report reviews five recent epidemiological studies involving 11,398 people.

White Sands, Warm Winds . . . and Toxic Wastes? Marjorie Sun, Science, Vol 211, January 23rd 1981.

The Bahamas and other Latin-American countries could become the dumping ground for American chemical trash, which a company in Alabama plans to collect and export. The US State Department, worried that shipping wastes to Third World countries could prove embarrassing to the United States, has already met with the Bahamian ambassador to notify him of the company's plans. The company, Ashvins of Birmingham, applied for permission to begin collecting wastes just before stricter federal controls on hazardous wastes went into effect in November 1980. A private contract is being negotiated with a Bahamian firm to accept consignments of waste. The policy of the Bahamian government, however, has been to refuse hazardous wastes from other countries. The Permanent Secretary of the Ministry of Health, Harold Munnings, has said it is unlikely he will recommend that foreign waste be allowed into the country: "Why should we inherit someone else's problem?" he asks. Despite this problem, Ashvins is determined to press ahead with its plans. "Critics have called Ashvins 'a shady operation' ", said a spokesman. "But it's a business venture like anything else. People get spooked when you mention hazardous wastes."

Another big Toxic Waste Bill for Hooker Chemicals, ENDS Report, February 1981.

Hooker Chemicals has agreed to pay 300 million dollars for cleaning up a chemical waste landfill site in New York State. The company, a subsidiary of Occidental Petroleum, is already spending 15 million dollars to neutralise a toxic waste dump in Michigan, and is defending a number of suits including a 635 million dollar claim over the notorious Love Canal dump. The new agreement was signed with the US Department of Justice and the US Environmental Protection Agency in respect of Hooker's Hyde Park landfill site some five miles from Love Canal. The agreement provides for the installment of a leachate treatment system, for landscaping the site, and for long-term monitoring of the effectiveness of remedial measures. If the agreement is approved by a district court, Hooker and Occidental will be protected from further claims by Federal, State and Local government relating to the Hyde Park site.

Reagan Rescinds Carter's Order on Hazardous Exports, New Scientist, March 5th 1981.

President Reagan has reversed ex-President Carter's eleventh hour decree to prevent US companies exporting dangerous products. In a brief memo to the

State and Commerce Departments, the agencies that would have enforced Carter's order, Reagan says the decree would prove 'cumbersome' and would have handicapped American exports. Reagan's administration claims that a new policy on dangerous products is not necessary because the president already has the power to ban the export of hazardous substances.

Aussies Pave the Way for Lead-Free Petrol, New Scientist, March 5th 1981.

Australia has decided to introduce lead-free petrol by 1985 on the grounds that lead in car exhausts poses a hazard to health. The Australian Transport Advisory Council — a committee of the transport ministers of the federal and state governments — has agreed that all vehicles sold after January 1st 1985 should be designed to run on lead-free petrol and that they should meet 1975 US emission standards. Lead-free petrol at 91.5 octane should be widely available by mid-1985. The decision to switch to lead-free petrol follows several years of controversy during which the oil and motor industry and independent research groups have issued conflicting reports on the effects of leaded petrol. Reports warning of the adverse effects of lead on health include one issued in 1979 showing high levels of lead in children in urban areas of Sydney and another that recently showed high lead concentrations in the milk teeth of young children in an inner city suburb of Melbourne. In January 1980, it was concluded that up to 20 per cent of the lead burden in the bodies of urban Australians came from lead in the air, particularly in areas subject to heavy pollution.

Is Safety too Expensive, Jill Rakusen and Elaine Potter, The Sunday Times, April 4th 1981.

For the first time since the thalidomide tragedy, the regulations governing drug testing in Britain are to be relaxed. The proposals, which were made without public discussion or reference to Parliament, were described by Patrick Jenkin, Secretary of State for Social Services, as 'a water-shed in drug regulations.' Concern has been expressed, however, that the new moves are being made not for safety reasons but because too strict regulations are apparently leading the pharmaceutical industry to conduct a growing number of clinical trials abroad. Although the changes are not in themselves so radical as to ferment widespread anxiety about drug safety procedures, the secrecy in which they have been deci-

ded has given rise to concern. The Association of Community Health Councils — the official watchdog for patients within the NHS — has expressed doubts on a number of fronts. In particular it is worried that the interests of industry, rather than any great concern for patient benefit, seem to have been the motive force behind the changes, and that the new regulations could encourage drug companies to use the UK as a testing ground for the development of all new drugs.

Germ War Trial for Pentagon, William Scobie, The Observer, March 29th 1981.

Since March 1977, when a Senate 'human rights' sub-committee forced the US Army to reveal that it conducted 239 'open air' germ warfare tests between 1949 and 1969, files on BW (as the Pentagon terms biological warfare) have been piling up in the law offices of Edward Nevin III, a respected San Francisco attorney. They range from a treatise on Hannibal's shelling of enemy ships with jars of poisonous snakes to a US military scheme to flood the New York subway with bacterial effluvia. No story in Nevin's dossier is stranger than the account — taken from documents released under the freedom of information act — of the Army's war games off San Francisco Bay. Six times in one week, in 1950, the unsuspecting city was subjected to BW assaults. On the last test, a temperature inversion held a man-made cloud of bacteria-laden mist over the bay area for hours. The 43 Army sampling stations on shore found large numbers of bacteria-bearing particles as far as 23 miles inland. When the collection period was extended from two to four hours, scientists found a 20-fold higher incidence. The Pentagon maintains that the test agents used — bacilli golbigii and serratia marcescens — were harmless. Nevin claims official documents show that serratia was known to be pathogenic 'in large doses'. Four days after the last test, Nevin's father developed pneumonia, dying five weeks later. The cause of death was officially given as 'bacterial endocarditis secondary to serratia marcescens pneumonia.' In an outbreak of flu-like disease in San Francisco, 18 people were treated in hospital. Tests showed traces of the serratia bacteria in their bodies. The Nevins have sued the Pentagon claiming that their grandfather was a victim of the McCarthy era's Cold War mentality. Win or lose, they believe the trial may help prevent any repetition of such bizarre incidents under a new Administration that is sending the Pentagon on its greatest peacetime spending spree.

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