

SOME NOTES ON THE NUCLEAR SCOPING PAPER

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PUBLIC ATTITUDE TO NUCLEAR POWER

1. Public opinion of nuclear power is conditioned by memories of past happenings. Corporate and Government management of affairs which either affect them directly or which would have done so if they happened here. When some new societal risk starts to develop it is at first ignored, next denied, and then concealed until concealment is no longer possible. Sometimes this technique is successful and the existence of the hazard does not become public knowledge for thirty years or more.

CHERNOBYL

2. In the case of the Chernobyl accident what is needed is the publication of an accurate and objective account of the consequences, both so far and as they may reasonably be expected to ensue. Statements like "only 34 people died as a result", display a breath-taking disregard of the actual facts.

BSE

3. The Phillips report is an object lesson of the sequence described above, responsible in no mean degree for the low ebb of public confidence in official science and technology. Will the conclusions and recommendations be ignored?

FOOT AND MOUTH

4. Following the 1973 outbreak of foot and mouth sickness, the conclusions and recommendations of the subsequent inquiry can be seen to be comparable with those of Phillips. However they were ignored and not implemented, and this crass stupidity has led to the present agricultural disaster. It was avoidable.

LYNMOUTH

5. It appears, thirty years later, that the nine inches of rain which fell causing Lynmouth to be very severely damaged, was caused by R.A.F. cloud seeding in order to evaluate experimentally the possibility of using heavy rain as tactical measure immobilising vehicles on the battlefield.

SICK SOLDIERS

6. Organophosphorus insecticides and depleted uranium high velocity shells were a hazard to the Gulf war soldiers. British soldiers with bad health have had a much harder time to obtain satisfaction than Allied soldiers similarly affected. Leaves a bad taste in the public mouth. It appears also that a (service) man submitted thirty years and more ago, for common cold research, died of nerve gas.

BRITISH NUCLEAR SUBMARINES

7. Over the years the reliability of British nuclear submarines has been impaired by cracking in the chosen grade of stainless steel piping used in their power supplies. This culminated within the last twelve months in one such submarine being immobilised in Gibraltar by a high pressure steam leak, until the local

people objected to its presence, and all but two of the sister ships were admitted to be affected by a 'type fault' involving similar piping.

RUSSIAN NUCLEAR SUBMARINES

8. The TV news pictures of radioactive smoke and Russian sailors escaping from a large hole in the side of the 'Komsomolets' will not be forgotten by anyone seeing them. The 'Kursk' is at present being salvaged, minus the front end. Guaranteed to maintain the public awareness of official reticence in such matters.

OTHER NUCLEAR 'INCIDENTS'

9. I recall that at the Sizewell 'B' public inquiry it was conceded by the old CEBG that as a result of the discharge of 20,000 curies (600,000,000,000,000 becquerels) of iodine 131 at the time of the Windscale fire, some 33 people could reasonably be expected to suffer death from thyroid cancer earlier than would otherwise have been the case. To name only one. There should be published, in addition to the Chernobyl accident analysis, called for above, a comprehensive data base of the consequences of nuclear accidents.

IHLW FROM PWR

10. The amount in radioactivity terms of long lived fission products will not be significantly different as between PWR fuel and any other for a given lifetime heat output. Which is what matters. Neither will the long term build up of the transuranic powerful radiation emitters be significantly different. These are the cause of the thousand years problems.

HIGH TEMPERATURE REACTORS

11. The OECD 'Dragon' high temperature reactor operated successfully in the UK. The US Peach Bottom high temperature reactor suffered from problems which were not attributable to the reactor type. One of the attractions is that volatile fission products can be removed continuously during operation. Once removed they cannot be involved in a reactor accident. There remains the problem of their safe handling, storage and disposal, up front you might say. The high temperature reactor system lends itself to closed circuit gas turbine possibilities, direct turbine drive from nuclear heating to mechanical load.

FAST REACTORS

12. No mention of fast reactors. It is worth noting that nuclear weapons tests underground and under the sea bed have conclusively demonstrated that containment of a nuclear reactor explosion is perfectly practicable. If you can afford it. The liquid metal cooled fast reactor system has the highest power density of any known reactor system and fuel has been utilized to a much higher burn-up than any other system. The cost of safety-reliability is the problem.

CONCLUSION

13. The conclusion reached by the Government in its White Paper CM 2860 stands firm in the face of the present state of the nuclear engineering economics. The original nuclear drive was for weapons and that drive presses no more. Oil and coal will never run out, only their price will rise. Eventually the time of nuclear - or thermonuclear - will come, when the economics balance.