

**EAST AYRSHIRE COUNCIL**

**COMMUNITY SERVICES COMMITTEE – 4 APRIL 2001**

**LOW FREQUENCY ELECTROMAGNETIC FIELDS AND THE RISK OF  
CANCER**

**Report by Director of Community Services**

**1. PURPOSE OF REPORT**

- 1.1 To advise the Committee of the publication of the Report of an Advisory Group on Non-ionising Radiation, Low Frequency Electromagnetic Fields and the Risk of Cancer.
- 1.2 The report was published in March 2001 and in part relates to the proximity of power lines and associated relative risks.

**2. BACKGROUND**

- 2.1 Earlier studies into the risk of cancer included “Electromagnetic Fields and the Risk of Cancer. Report of an Advisory Group on Non-ionising Radiation” published in 1992 with supplementary reports of the Advisory Group in 1993 and 1994.
- 2.2 At that time further investigatory work was commissioned to identify risks associated with electromagnetic fields including power lines.
- 2.3 The Advisory Group chaired by Sir Richard Doll is an independent group to the board of the National Radiological Protection Board and has published its report on Electromagnetic Fields and the Risk of Cancer (March 2001).
- 2.4 The Advisory Group provides in its report a comprehensive review of experimental and epidemiological studies relevant to an assessment of the possible risk of cancer resulting from exposures to power frequency electromagnetic fields that have been published since the first report in 1992.

**3. DISCUSSION**

- 3.1 The report summarises the extent of exposure to power frequency electromagnetic fields at home and at work and reviews recent epidemiological investigations of cancer incidences in humans.
- 3.2 The report provides an improved measurement based approach to exposure assessments for epidemiological studies

- 3.3 The report contains detailed reviews of:
- (i) Sources and Measurements of electromagnetic fields
  - (ii) Biological studies on cells
  - (iii) Animal and Volunteer studies
  - (iv) Epidemiological Studies on domestic exposure to electromagnetic fields
  - (v) Occupational Exposures.
- 3.4 The conclusions of the Report state that the question of whether exposure to electromagnetic fields can influence the development of cancer cannot at present be completely resolved.
- 3.5 The report also concludes that an implied annual risk of leukaemia in childhood possibly due to proximity to power lines may increase from one in twenty thousand to one in ten thousand.
- 3.6 There is no evidence that residential exposure is involved in the development of cancer in adults.
- 3.7 Unless further research indicates that the Report findings are due to chance or some other effect the possibility remains that intense and prolonged exposure to magnetic fields can increase the risk of leukaemia in children.
- 3.8 The Report also recommends further detailed research both experimentally and epidemiologically into electromagnetic fields and the risk of cancer.
- 3.9 Various concerns have previously been expressed regarding the proximity to electricity pylons in the Shortlees area.

#### **4. FINANCIAL IMPLICATIONS**

- 4.1 Nil

#### **5. LEGAL AND POLICY IMPLICATIONS**

- 5.1 Nil

#### **6. CONCLUSIONS**

- 6.1 The Report of the Advisory Group chaired by Sir Richard Doll, on Non-ionising Radiation Low Frequency Electromagnetic Fields assesses the associated risk of cancer through experimental and epidemiological studies.
- 6.2 The Report has concluded that the power frequency electromagnetic fields are not a cause for cancer in general.

- 6.3 However, some epidemiological studies do indicate a possible small risk of leukaemia in children associated with prolonged exposure to higher levels of power frequency magnetic fields.
- 6.4 The Report recommends further epidemiological and experimental research into the risks associated with low frequency electromagnetic fields.

## **7. RECOMMENDATIONS**

- 7.1 The Committee is invited to:-
- (i) support the recommendation that further research into the risks associated with low frequency electromagnetic fields be carried out; and
  - (ii) note the contents of the report.

William Stafford  
**Director of Community Services**

WS/PLT/EHG

14 March 2001

### **LIST OF BACKGROUND PAPERS**

1. Electromagnetic Fields and the Risk of Cancer. Report of an Advisory Group on Non-ionising Radiation. (2001)(NRPB)
2. Electromagnetic Fields and the Risk of Cancer. Report of an Advisory Group on Non-ionising Radiation. (1992)(NRPB)
3. Electromagnetic Fields and the Risk of Cancer. Supplementary Report by the Advisory Group on Non-ionising Radiation. (May 1993)
4. Electromagnetic Fields and the Risk of Cancer. Supplementary Report by the Advisory Group on Non-ionising Radiation. (1994)(NRPB)

Any person wishing to inspect the background paper listed above should telephone 01563 576111 and ask to speak to John Crawford, Head of Protective Services.

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**AGENDA**