



NORTH CARLTON CHILDREN'S CENTRE

SUBSTATION PARENT INFORMATION SHEET

BACKGROUND INFORMATION

For the Yarra City Council, the health and safety of children attending North Carlton Children's Centre, the community and staff is paramount.

The Council undertook a risk assessment of an electricity substation co-located at the North Carlton Children's Centre when it was finalising arrangements for the transfer of ownership of land from Melbourne City Council during 2004 - 2005. This involved Council commissioning testing to consider any risks associated with the substation being located on site.

Testing was undertaken over 2005 and 2006 to measure exposure to low frequency magnetic fields. Consultants Noel Arnold and Associates concluded that **"...the risks associated with this co-location are not the type that places the adult and child occupants of the building at immediate health and safety risks."** Further independent testing was completed by Microforce Scientific Consultancy Services and was completed on 28 September 2005.

In line with the 'Prudent Avoidance' approach recommended in the report, Council has undertaken a Health Risk Assessment as well as remediation works to further minimise the uncertain risk of extremely low frequency (ELF) magnetic fields.

Key Points

- Council is satisfied advice from expert consultant and an independent expert is that the existence of a sub-station and other ELF levels does not pose an unacceptable or immediate health or safety risk.
- Council is committed to human health as a primary concern and has undertaken immediate works to mitigate risk.
- The community's right to be informed is understood and advice is available to parents on enrolment and the broader community.



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QUESTIONS AND ANSWERS

What remediation strategy has City of Yarra undertaken to address the safety issues to children and staff?

Although the report found current management practices are generally considered to be adequate, remediation work was carried out at the Centre to further reduce risks associated with the existence of the Substation. This work is based on the modelling report carried out by Noel Arnold and Associates and involved the installation of shielding at the site.

The physical remediation work to reduce exposure levels to Extremely Low Frequency Magnetic Fields (EMF) associated with the co-location of a Citipower Sub-station was conducted at North Carlton Children's Centre (the Centre) between the 5th and 8th of August 2005. Council completed the works under its policy of prudent avoidance even though a Noel Arnold & Associates Report indicated that the Centre was considered safe and did not pose a health risk to children and other occupants of the site.

Works undertaken included:

- Shielding - a flat shielding plate was installed on the floor of Room 3 (3-5 years) which extends 3.5 meters in an Easterly direction. Computer modelling 2mm thick foils laid in flooring, 3.5 metres beyond cables to the length of the room reducing readings to 6 mg. Field hits shield and dissipate as it travels reducing readings.
- Outside in playground- excavated down to cable and inserted inverted shields in channel arrangement over cables so currents were directed down into the ground.

A further report has found that the works have been successful in significantly reducing exposure levels. On the basis of professional advice, Council does not consider the levels to present a health risk to children or staff at the Centre. No further physical works are contemplated.

What EMF levels were measured at the Centre?

The Noel Arnold report dated June 2005 refers to levels measured in Room 3 and the Manager's office at the centre. Room 3 shares a wall with the substation and is used by staff and children in the 3 – 5 year old program. The EMF level was measured at 10.3 - 13.9 milligauss (mG). In comparison; the EMF level in the manager's office was 5.9 mG. Copies of all reports are available on Council's website.

What are the levels after mitigation works?

Based on the results of validation surveys carried out by Noel Arnold after remediation works levels of field strengths have been successful in significantly reducing the field strengths in each of the three areas where work was undertaken. In room three the average field strengths have been reduced from 13.9 mG to 5.8 mG. Shielding in the playground has reduced levels from 45 – 48 mG down to 12 – 19 mG.

What are typical exposure levels in the average home?

When household appliances are in use the EMF fields can often be up to a hundred mG or more in the vicinity of the appliance. These typical household levels are still below the interim Australian guideline levels and have not been demonstrated to pose any health risks. The following table provides some examples of levels found in and around the home.

| Appliances and Activities | Typical EMF levels |
|------------------------------------|---------------------------|
| Hairdryer | 10-70 mG |
| Electric blanket | 5-30 mG |
| Refrigerator | 2-5 mG |
| Television | 0.2-2 mG |
| Standing beneath street powerlines | 0.5-12 mG |
| Visiting a shopping centre | 0.1-5 mG |

What are the Australian guidelines for EMF levels for workers?

The Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) has released Proposed Exposure Limits for public comment. These Proposed standards were released in December 2006 and are yet to be finalised but do propose standards for both occupational exposed personal and the general public.

For workers at the centre, the proposed exposure standard recommends maximum daily exposure level is 1000 mG.

What are the Australian guidelines for EMF levels for the public, including children?

ARPANSA has also proposed an Exposure Standard to protect public health, including children's health. The proposed exposure standard recommends maximum daily exposure level is also 1000 mG .

Are workers or children at risk from EMF measured at the centre?

No. The levels measured are well bellow the NHMRC guidelines for both worker and public exposure to EMF.

For further advice on EMF and health:

Contact the Radiation Safety Program, Department of Human Services on 9637 4167.

For further reading we recommend the following website addresses:

<http://www.betterhealth.vic.gov.au>

<http://www.arpansa.gov.au>

How can I access further information?

Detailed reports are posted on Councils website at:

<http://www.yarracity.vic.gov.au/Services/Family & Children/>

Council has effectively completed all testing and remediation on the site and will continue to keep you informed if further information comes to hand.

Council contacts

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