

CAPS RESPONSE TO HEALTHWISE STUDY 2004

The recent Healthwise Cancer and Mortality Study 2004, as reported in the Alcoa Employee Update, showed two significant health findings in Alcoa's WA operations - higher mortality rate and cancer incidence of mesothelioma, and a higher incidence rate of thyroid/endocrine cancer. Mesothelioma is highly correlated with past asbestos exposure. Alcoa reported that their panel of experts determined that asbestos exposure was not associated with work at Alcoa. (1) However, in the book, Managing Health in the Aluminum Industry (1997), Joe Damiano of Alcoa in Pittsburgh, stated that there is a possible health risk through **significant exposure in bauxite refining to asbestos and mineral fibres in thermal insulation.** (2)

The incidence rate of thyroid/endocrine gland cancer in Alcoa's WA office workers was higher than the general population, which was reportedly an unexpected finding that requires further monitoring. (1) Thyroid cancer is highly correlated with past exposure to radiation. According to Damiano, bauxite mining involves minor exposure to radioactive isotopes of radium, thorium, and uranium. But the Bayer process, a method of liquor burning to extract aluminium from the bauxite used at Wagerup, does pose a radiation risk. Damiano states:

Most Bayer plants process very large quantities of bauxite, and we should not overlook the possibility that some of the trace elements in bauxite could concentrate and create identifiable exposures...the naturally occurring radioactive materials present in bauxite will concentrate in the Bayer process, and our investigations have shown that those elements partition to the bauxite residue rather than the alumina product. (2)

Much of the residue resulting from the Bayer processing of bauxite at Wagerup is disposed in mudlakes. The use of this residue, also known as red mud, as a method of retaining phosphorous in sandy soils has been studied in the past several years by scientists in WA and South Africa. The residue was found to contain higher levels of thorium and uranium than the surrounding soil, and there has been some concern that leaching of these elements into aquifers could pose health risks. (3)

According to the University of Toronto Radiation Protection Service Training Module, acute (short term) exposure to high levels of radiation cause fairly immediate effects. However, continuous low-level exposure to radiation causes delayed effects that may appear over a period of 2 to 10+ years after exposure. These long-term effects include **thyroid cancer**, as well as leukaemia, bone cancer, lung cancer, and genetics effects that result in malformed offspring.

In the case of inhaled or ingested exposure to radioactive materials, such as through dust inhalation or drinking water, a single “acute” event can cause a long period of chronic exposure internally, irradiating the tissues where the material has fixed. (4) A CSIRO report earlier this year recommended a more in-depth study of the effects of bauxite residue and called for advice to interpret radioactive data collected from dust filters in Yarloop. (5)

The chemical cocktail being emitted by Alcoa is known to contain many carcinogens. Benzene, which is ever present in this cocktail, is linked with leukaemia and Goodpastures Syndrome, an auto-immune disease that leads to progressive kidney dysfunction and bloody sputum. Alcoa has acknowledged emissions of 261 chemicals, and has been found to emit 10 other unidentified substances. (5) Cancer links between the public and these substances require further study and immediate action.

However, in the case of the two major findings of the Healthwise report in WA, mesothelioma and thyroid cancer, Alcoa has previously acknowledged the presence of asbestos and radioactivity in the process of bauxite refining. Yet their recent public responses to the Healthwise report clearly ignore or deny this previous knowledge, and the management of these health risks has apparently been neglected on site at Wagerup.

References:

1. Healthwise Cancer and Mortality Study 2004 report - Alcoa Employee Update.
2. Damiano, J. *What do we need to monitor in the workplace?* in Managing Health in the Aluminum Industry (Priest and O'Donnell, eds., Middlesex University Press, London, 1997), a compilation of the proceedings of the International Conference on Managing Health Issues in the Aluminum Industry, held in Montreal, Canada, October 26-29, 1997.
3. Snars, K., Gilkes, R, and Hughes, J. *Effect of bauxite residue (red mud) on availability of phosphorous in very sandy soils.* Presented at the 17th World Conference on Soil Science, Thailand, 17-21 August 2002.
4. University of Toronto Radiation Protection Service Training Module (28/2/04).
5. CSIRO Wagerup Air Quality Review, May 2004.