

DEVELOPMENT OF RISK ASSESSMENT MODEL FOR ALARA SUBSTANCES

FOREST INDUSTRY HEALTH RESEARCH PROGRAM

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The FIHRP Forest Industry Health Research Program has completed a research project looking at ALARA (As Low As Reasonably Achievable) substances present in pulp and paper mills and has developed a risk assessment model for the comparison of products containing ALARA substances. A copy of the report is now available to members titled: **“Development of Risk Assessment Model for ALARA Substances”**. To request a copy, call Agi Lee at the Pulp and Paper Forum at (604) 777-1533, send a fax to (604) 777-1567, or e-mail alee@paperforum.com. Non-members of the Forum may be charged for the reports. **Member companies can download a copy of the report from the Forum web site: www.paperforum.com**

As of April 15, 1998, the Workers' Compensation Board of British Columbia (WCB) states that for certain substances, measures must be taken to keep a worker's exposure to a level “As Low As Reasonably Achievable” (ALARA). These ALARA designated substances include probable and known carcinogens, reproductive toxins and sensitizers.

The objectives of this project were: to identify products that contain ALARA substances used in the two participating mills; to develop an ALARA Substance Comparative Risk Assessment Model; and to recommend controls for ALARA substances used in these mills.

To meet the objectives of this project, the Material Safety Data Sheets (MSDS) for two mills were reviewed to identify controlled products used at each mill that contain ALARA substances (ALARA products). In addition, a walk through was conducted at each mill to identify which work groups used the ALARA products and to determine, for representative ALARA products, what the products were used for, how frequently they were used, how much was used, what the potential for exposure was and what control measures were currently used by the mill.

Using the information collected at the mills, an ALARA comparative risk assessment model was developed. The ALARA comparative risk assessment model considers seven factors as outlined below:

- Route of Exposure and Exposure Controls
- ALARA Hazard Level
- Non-ALARA Hazard Level
- Frequency of Product Use
- Duration of Product Use
- Amount of Product Used
- Number of Employees Exposed to the Product

Using this model, numerical values are determined for each of the seven factors using the MSDS for the product, site specific information on usage and controls, and the Workers' Compensation Board (WCB) Exposure Limits. By multiplying these values a numerical risk value can be obtained for the ALARA product.

The ALARA Comparative Risk Assessment Model developed during this project is intended to allow mills to comparatively assess the level of risk presented by various ALARA products and to prioritize the focus of their control efforts.

In addition to developing the ALARA Comparative Risk Assessment Model, the data collected on site was utilized to determine what control measures are currently used in the mills for ALARA products and to make general recommendations on where mills should focus their control efforts for these products. Based on the findings of this assessment, several recommendations were made regarding controls currently used for ALARA Products.