A REPORT ON THE DEVELOPMENT OF "TECHNICAL RECOMMENDATIONS DOCUMENTS FOR THE CANADIAN WOOD PRESERVATION AND WOOD PROTECTION FACILITIES"

by

Gautam Das

Conservation and Protection
Environment Canada
Hull, Quebec
Canada

The wood preservation and wood protection industry uses chemicals which are similar. However, because the methods of applications of preservatives are different in wood preservation (pressure treatment) and wood protection (surface treatment) plants, their problems need to be resolved separately.

As a part of a federal strategy to protect the environment and human health from potentially toxic commercial chemicals in use in Canada, Environment Canada (EC) decided to develop Technical Recommendations (TR) documents for the Canadian Wood Protection and Preservation facilities. These TR documents define design and operational measures which will protect the environment and worker health. The measures are based on current knowledge of existing technology and current knowledge of physical, chemical and biological properties of the preservative chemicals.

A significant amount of background information has been included in the TR documents in order to provide readers with the factual basis which supports the suggested designs and recommended operational practices. Although the recommendations are specific, the focus is on achieving the objectives of protecting the environment and workers from harmful exposure to preservative chemicals. Site-specific circumstances may require the modification of certain recommendations in order to best achieve these objectives.

WOOD PROTECTION INDUSTRY

Wood protection refers to the treatment of freshly cut lumber with chemicals to prevent the growth of sapstain and mould fungi. In 1981, circumstances in British Columbia (B.C.) motivated Environment Canada and the Ministry of Environment B.C. to establish a Wood Protection Task Force to develop a document which is essentially a compendium of recommendations inteded to ensure that worker safety and the quality of the environment are maintained without sacrificing the production of stain and mould-free wood products.

In 1984, a document titled "Chlorophenate Wood Protection" was jointly published by EC and Ministry of Environment B.C. The document is referred to as "B.C. Code". This document lists recommendations for treatment facilities, handling of treated lumber, worker safety, first aid procedures and disposal practices for treated wood wastes, sludge, chemicals and their solutions, as well as empty containers. Procedures for handling chemical spills are outlined. This was previously reported in the IRG/WP/3302 document.

The "B.C. Document" has been favourably received by industry in British Columbia and has been used as a guide to good practices in that province.

There are several hundreds of wood protection plants (a significant number of them are small) in Canada. In 1984 EC management decided that the industry across the country should adopt good housekeeping and handling practices and properly treat or dispose of any toxic chemicals which could cause serious ground water contamination.

A consultant was retained by EC to prepare a national TR document (based on the B.C. Code) The draft national document was distributed to all known wood protection plants, regional lumber associations, provincial agencies and EC regional offices for review and comment. Unfortunately, no comments were received from the industry. There is no industrial association in Canada which represents the Canadian wood protection industry.

The operators of the wood protection plants in the provinces of New Brunswick and Quebec were invited to discuss the TR document. Several useful comments were received which were incorporated in the TR document. The national TR document has now been completed and is expected to be printed by spring of this year. Although specifically intended for the use of chlorophenates, the recommendations are also suggested as being applicable for other sapstain control chemicals as they become available on the market until suitable recommended practices can be generated for these new products.

The chemical suppliers routinely provide the hazard information for their product. However, it seems that the plant operators are not fully aware of the occupational and environmental hazards associated with the use of chlorophenates. There is a definite need to better inform the wood protection plant owners/operators about the hazards of the preservative chemicals.

Hence, an information package (video tape with narration) is now being prepared in consultation with appropriate Federal agencies, Provincial agencies, including Occupational Health and Safety commissions, and industry representatives. It is certain, that once the information package is delivered to the plant operators/owners, the need for the use of the TR document will be better understood.

WOOD PRESERVATION INDUSTRY

The wood preservation industry uses a variety of chemicals including creosote, pentachlorophenol and aqueous solutions of copper arsenate salts for the long term protection of wood against decay. In addition, many plants apply fire retardant chemicals such as borates, ammonium compounds and organophosphates. The majority of the wood preserving chemicals are broad spectrum toxic substances which may have deleterious effects on both the environment and human health.

Phase I of the project conducted during 1983 was the preparation of a report by consultants entitled "Characterization and Assessment of Wood Preservation Facilities in British Columbia" The report presents an overview and assessment of all available information on 15 wood preservation plants in British Columbia. The report includes a detailed description on the unit operations and processes employed at wood preservation plants, including transportation and off-loading of chemicals, chemical mixing and handling, preservative operations, waste treatment systems and treated wood storage.

In addition, the report includes sections on the assessment of chemical control measures, potential environmental impacts and measures for workers protection.

The consultants visited four wood preservation plants in Eastern Canada and prepared a report based upon personal observations and upon information provided to them by plant and government personnel. An overview report summarizing a general assessment of the industry which is based on the findings of the above-mentioned project was prepared. Detailed descriptions of facilities and assessments are provided in the following reports titled:

- Characterization and Assessment of Wood Preservation Facilities in
  British Columbia, January 1984

- Description and Assessment of Four Eastern Canadian Wood Preservation Facilities, March 1984

- Overview Assessment of selected Canadian Wood Preservation Facilities, March 1984

These internal reports are available from Environment Canada.

Phase II of the project, which was initiated during November 1984, was the development of the Technical Recommendations Documents. It was decided that five separate TR documents would be developed for five major types of preservatives used in Canada:
Pentachlorophenol, Creosote, Ammonical-Copper-Arsenate, Chromated-Copper-Arsenate and Pentachlorophenol-Thermal.

In 1984, a Wood Preservation Industry Technical Steering Committee (TSC) was formed. The members of the committee included representatives of federal and provincial governments, industry and labour unions. Outside consultants were retained to function as members of the TSC and to author the TR documents. The overall responsibility of the TSC was to direct the consultants in the preparation of TR documents.

The TR documents provide consistent guidelines for the design and operation of wood preservation facilities and the following topics are discussed in the documents: the need for wood preservation, overview of wood preservation facilities, description of wood preservatives (production and use, physical and chemical properties and environmental and human health effects), considerations for site selection, personnel protection, suggested approach for design and operation of wood preservation facilities, process emissions, transportation of preservatives and wastes, and spill and fire contingency planning.

EC plans to conduct surveys to establish a baseline of the current state of the art in pollution abatement and worker safety.

The TR documents are expected to be printed by this summer. It is the intention of EC that these documents be reviewed periodically and will be revised and updated.

As companions to the TR documents, EC intends to produce in cooperation with the Canadian Institute of Treated Wood (CITW), two training information packages (for oil and waterborne preservatives) with written and video tape content. The purpose of these packages is to heighten the awareness for plant procedures to safeguard air, water and soil quality.

EC and CITW will co-ordinate a one day "information seminar" in Vancouver to preceed the CITW Fall General Meeting. The purpose of the seminar is to formally present the Recommendations documents, to preview the "training information packages", to have the principal provincial authorities (B.C., Ontario, Quebec) outline how their individual jurisdictions will intend to use the "model" recommendations. It would be an opportunity for the industry representatives to present their plans and programs to comply with the objectives of the TR documents.

The Strategy

It is recognized that all of the recommendations may not be feasible for some operators to use but it is to be hoped that all concerned will endeavour to act on the recommendations pertinent to their operations with particular emphasis on the safety aspects of handling the treatment chemicals.

Although the TR documents are not part of any environmental legislation they reflect the intent of the Federal Acts and Provincial Acts and other pertinent federal and provincial government regulations. It is expected that the TR documents will provide consistent guidelines for the design and operation of Canadian wood protection and preservation facilities. It is the intent of Environment Canada that new facilities will voluntarily comply with all provisions in the document. However, in regard to existing facilities, it is expected that companies will make practicable modifications necessary to meet the objectives of the document.

Probably the current legislation (such as Fisheries Act, Environmental Contaminant Act, Pest Control Products Act and Regulations, etc.) provide an adequate framework for many aspects of the use of wood preservative chemicals. However it seems that considerable disparities exist in implementation of these acts, particularly within and among provincial agencies. The waste disposal area has no adequate legislation.

The most effective means of achieving more consistent implementation would be to devise a national Code of Good Practices. Such a code would provide a common ground within which both government and industry could assure that the impact on human health and environment is reduced to the lowest possible level. At present, the TR documents are not intended to be published as "code" by EC. It is expected that the wood preservation and protection facilities would demonstrate that they are progressing toward the improvement of environmental safeguards. In two to three years time should this demonstration be unsatisfactory, EC would plan to revise the "Technical Recommendations Documents" to "Code of Good Practices"