

PROGRESS REPORT ON THE DEVELOPMENT OF THE CODE OF GOOD PRACTICES
FOR THE CANADIAN WOOD PRESERVATION AND WOOD PROTECTION INDUSTRY

by Gautam Das
Industrial Programs Branch
Environmental Protection Service
Environment Canada

Introduction

The Environmental Protection Service (EPS) of the Department of the Environment (DOE) in very general terms is charged with the responsibility of ensuring that human activities are conducted in a way that will achieve and maintain a state of the environment necessary for the health and well-being of man, the health and diversity of species and of ecosystems, and the sustained use of natural resources for social and economic benefit. To ensure that a desirable environmental quality is achieved EPS has several broad objectives, including the following:

1. To develop national control documents to ensure that environmental quality objectives are attained.
2. To encourage the development and transfer of information relating to new and/or improved pollution control technology.
3. To provide the principal point of contact within the Federal government for industry, provinces and the public for environmental protection matters.

Human activities impose significant toxic chemical threats to the environment. EPS has the lead environmental quality responsibility within the department and thereby has a duty to ensure, within DOE and the government as a whole, the maintenance of a rationalized and effective effort to resolve the toxic chemicals problems.

EPS is also responsible for ensuring that the public, industry and other governments are aware of and respond to their responsibilities with regard to toxic chemicals. While the level of awareness is increasing, the response is as yet inadequate.

Fisheries Act

One of the first legislative measures adopted by Canada's parliament, the Fisheries Act, provides the federal government with the power to control the discharge of substances deleterious to fish, man's use of fish, or fish habitat. This federal statute was revised in 1970 and again in 1977. The earlier amendments strengthened significantly the provisions of the Fisheries Act for pollution control by permitting preventative measures, including the development of regulations under which the deposit of wastes can be controlled.

Regulations: Regulations are legal requirements. They will specify numerical limits that limit the discharge of substances. In the absence of Regulations, the general provisions of the Fisheries Act do not permit the discharge of any amount of deleterious substances. Compliance with the Regulations therefore exempts an operation from prosecution under general provisions of the Fisheries Act for discharging substances specifically referred to in the Regulations. No such protection is afforded by Guidelines or Codes of Practice.

Guidelines: A guideline is not a specific law. It is a statement indicating what practices will be considered by the Environmental Protection Service to be in compliance with the spirit of the law.

Failure to comply with a guideline is not itself an offence; however, it may mean that the law itself (e.g. the general prohibition of the deleterious discharges expressed in the Fisheries Act) is being violated.

Codes of Practice: The Codes of Practice is a technical document. It is an expression of what the Environmental Protection Service feels is good practice in the design and operation of a plant, to minimize pollution discharges. The Codes of Practice provides a guide for those professionals responsible for environmental control, emphasizing control practices that should be considered at all stages of the operation of a plant.

Codes of Practice will not become part of the law; however, the general provisions of the Fisheries Act could be used for enforcement if the Code is violated and deleterious substances are deposited as a result.

There are other statutes such as the Environmental Contaminants Act and Clean Air Act which may not be of direct concern to the Canadian wood preservation and protection industry, but should be mentioned for a more complete and thorough understanding of the mandate of EPS.

Environmental Contaminants Act

This Act, for which the Ministers of National Health and Welfare and of the Environment have joint responsibility, is administered by EPS. It enables EPS to gather information on substances that may contaminate the environment so as to ensure that appropriate control mechanisms exist for such contaminants. If adequate legislative or regulatory provisions do not exist elsewhere, such measures can be implemented under this Act.

Manufacturers and importers of chemical compounds are required to submit data on their product to EPS. The results of these data and other investigations form the basis of a government decision as to the nature of environmental risk of the substance.

Clean Air Act.

Pursuant to this Act the Department of the Environment has the potential to control air pollution on a national level. National emission standards for all stationary sources of air pollution can be established when emissions from such sources would constitute a danger to the health of persons.

EPS Activities for Canadian Wood Preserving and Wood Protection Industry.

Why is the EPS interested in the Wood Preservation and Wood Protection Industry?

Chemicals that are used to preserve wood, such as creosote, pentachlorophenol, copper, chromium, zinc or arsenic salts, are toxic chemicals and deleterious if released to the environment in sufficient quantities. Therefore there is an environmental need to ensure that the industry adopts good housekeeping and handling practices and properly treats or disposes of any toxic chemical.

Although the effluent volumes discharged from wood preservation and protection plants are not particularly large, the effluents can contain high concentrations of toxic substances and, in addition, any sloppy housekeeping practices may result in serious contamination of groundwater which has the potential of travelling to nearby streams and rivers.

Another reason for the EPS interest is the national nature of the industry. Wood preserving plants, like the railway or perhaps because of the railways, stretch from coast to coast.

As you all know, the wood preservation and protection industry in Canada uses chemicals which are similar and, at certain concentrations, can be deleterious or toxic to plant and animal life. However, because the methods of application of preservatives are different in wood preservation and wood protection plants, their problems need to be evaluated separately.

Wood Preservation Industry.

There are about 71 wood preservation plants in Canada. Ontario has 23 plants, followed by B.C. which has 19 plants. Other plants are distributed as follows: Alberta (9), Saskatchewan (6), Quebec (6), Manitoba (3), N.B. (2), N.S. (2) and Nfld. (1). Some of these plants are part of other large industrial complexes.

As indicated, due to the nature of the application operations and the chemicals used there is a high potential for the release of toxic chemicals into the environment. However, in Canada there is little information available on the types and quantities of chemicals used, operational practices, and wastes generated. Similarly, there is a paucity of information on the toxic chemical loadings into the environment from air emissions, effluents and solid wastes or the levels of these chemical

contaminants in the receiving environment in the vicinity of the Canadian plants.

In 1982 EPS Pacific regional office in Vancouver, B.C. initiated a study to compile a comprehensive inventory and characterization, of fifteen wood preserving plants in B.C.

In order to provide national scope for the assessment, a similar characterization study of four representative wood preservation facilities in Eastern Canada was commissioned last year by EPS, Ottawa.

Dr. Frank A. Henning and Dr. Dennis E. Konasewich (the consultants from Vancouver) undertook these studies under scientific contracts funded and directed by EPS.

The objectives of both studies were to gather information about the design and operation of existing wood preservation plants and to assess the effectiveness of in-house and external agency controls for preventing chemical releases to the workplace and to the environment. The assessment is primarily based on observations made by the contractors during site visits to each of the nineteen operating wood preservation facilities and on detailed discussions with facility management and operators. Interviews were also conducted with:

- * wood preservative chemical suppliers,
- * industry associations,
- * personnel from regulatory agencies, Ministries of Departments of the Environment,
- * numerous expert individuals from international regulatory agencies and industry associations.

An overview assessment of the wood preservation facilities which were studied and detailed description of facilities and assessments are provided in separate reports entitled:

- * Characterization and Assessment of Wood Preservation Facilities in British Columbia (EPS, Pacific Region, January 1984), and
- * Description and Assessment of Four Eastern Canadian Wood Preservation Facilities (EPS, Ottawa, March 1984)
- * Overview Assessment of Selected Canadian Wood Preservation facilities (EPS, Ottawa 1984)

These reports were prepared by Dr. Henning and Dr. Konasewich and will soon be available. On the basis of their visits, it was concluded that:

- As an industry, wood preservation facilities attempt a high degree of self-regulatory control of contaminant releases.
- The storage of large quantities of toxic and/or flammable materials at each facility may result in severe environmental consequences if proper control measures are not undertaken.
- With reasonable safeguards, the environmental and human health impact could be significantly reduced.
- Existing control requirements of the use of wood preservation chemicals are not adequate and there are considerable disparities, particularly within and among different provincial agencies.
- The most effective and consistent means of monitoring and assessing the releases of wood preservative chemicals to the environment would be to develop a Code of Good Practices for the industry, which will provide an appropriate level of environmental and worker protection.

EPS management have decided to develop a Code of Good Practices for the Canadian Wood Preservation Industry. The Code will address factors such as the design of plant facilities, operation and maintenance, handling, storing and transporting preservative chemicals, spill containment and clean-up procedures, waste disposal practices and workers' health and education.

A Technical Steering Committee (TSC) has been formed with national representation from industry. The TSC is chaired by EPS Pacific Region and the membership includes representatives from: industry, industrial associations, EPS-H.Q., B.C. Ministry of Environment, Workers Compensation Board of B.C., International Woodworkers Union of American and EPS consultants. The representatives from other EPS - Regional offices and provincial governments are participating in the TSC meetings as observers.

The TSC is developing a document consisting of two basic components:

- i. Technical recommendation (TR) for the design and operation of the Canadian wood preservation plants, considering the current available technology.
- ii. Other aspects like occupational health, legislation, etc.

The two meetings of the TSC were held in Vancouver and the work for the development of the TR document is in progress. The title of the final document produced by the TSC will be "Technical Recommendations for the Design and Operations of Canadian Wood Preservation Plants" and is expected to be completed by March

1985. The table of contents (abbreviated) of the TR document is as follows:

- 1.0 Design Requirements
- 2.0 Site Selection Criteria
- 3.0 Pre-Facility Assessment
- 4.0 Routine Monitoring Requirements
- 5.0 Site Closure
- 6.0 Recommended Operating Practices
- 7.0 Spill Contingency Planning
- 8.0 Wood Preservative Chemicals

This is a suggested Table of Contents and not a format. It indicates the specific areas which the TSC members believe should be included in the document. The TSC members would decide the level of detail for consideration of those items. Once the TR document is completed, the "Code of Good Practices for the Canadian Wood Preservation Industry" will be developed under the direction of EPS - Ottawa and in conjunction with public consultation process and socio-economic impact studies. The code is anticipated to be finalized by December 1985.

Wood Protection Industry

Since most of the Canadian wood protection plants are located in B.C., in 1981 the EPS Pacific Regional office established the British Columbia Chlorophenolate Wood Protection Task Force to investigate the use of chlorophenolates at wood protection facilities in B.C. and to develop practical measures for environmental and health protection. The members of the Task Force included representatives of federal and provincial government agencies, forest industry companies and forest industry labour unions. The EPS retained Dr. Henning and Dr. Konasewich to conduct a technical review of wood protection practices in British Columbia and to develop a draft "Code of Good Practice" for the design and operation of wood protection facilities. The Code provides recommendations for workers' health and safety and for the storage, transportation and disposal of chlorophenolate liquids and contaminated water and solid wastes.

The draft referred to as the "Code of Good Practice" was presented to the Task Force by the contractors during August 1981. This initiated a two-year review process by the Task Force which included input from other experts in both industry and government. The result of this comprehensive development and review process is the completion of the document entitled "Chlorophenolate Wood Protection - Recommendations for Design and Operation", which was published jointly by Environment Canada and the B.C. Ministry of Environment in December 1983. This document is referred to as the "B.C. Wood Protection Code".

A significant amount of background information has been included in the B.C. code which will help the users to understand the rationale for the recommendation of the design and operational practices..

Again, because of the highly toxic chemicals used in the wood protection industry, early this year EPS management decided to expeditiously assess the B.C. code on the wood protection industry and make the necessary adjustments to apply it nationally. As you all know, and I am sure appreciate, the code needs to be adjusted with the cooperation of industry and provincial governments and with assistance and support from EPS regional offices.

As a first step, the B.C. code has been distributed through the EPS regional offices to the provinces, industry representatives and the National Industrial Association for their review and comments. The comments were expected to be received by September 1984. But unfortunately, we have not received any comments from the industry representatives. Hence, we are proposing to retain a consultant who will visit a few representative wood protection plants in eastern Canada and discuss the B.C. code with them.

The contractors would then incorporate the comments received and would revise the terms in the document, as necessary, which would then be considered as a draft "Code of Good Practices for the Canadian Wood Protection Industry". This draft is scheduled to be completed by December 1984.

Once this draft is completed it will again be distributed to all concerned for their final review and comments before it is published as a national code.

Seminars

The wood preservation and protection industry represent an important part of Canada's resource-based economy. Once these code development activities are completed, EPS plans to organize a seminar. Such a seminar will serve a very useful purpose by providing an atmosphere in which the industry and the governmental representatives can more effectively inform each other of their respective functions and also discuss their concerns and plans with respect to pollution abatement.

Conclusions

In closing, I would like to say that it is important for the Federal Government and Provincial Governments to cooperate in their activities, it is equally important, indeed vital, that a high degree of cooperation with the wood preservation and wood protection industry be developed by EPS to ensure that the interests of all Canadians in a clean environment can be protected while maintaining healthy and vigorous industrial organizations which can live and prosper.

Some statements and factual information presented in this paper have been obtained from various EPS sources and the reports prepared by the EPS consultants.