United States Department of State

Washington, D.C. 20520

October 3, 1997

Mr. James Chandler
Acting Secretary,
United States Section
International Joint Commission
1250 23rd Street NW, Suite 100
Washington, DC 20440

Dear Mr. Chandler:

I have the honor to transmit to you the United States response to the recommendations of the International Joint Commission's Eighth Biennial Report on Great Lakes Water Quality. These IJC recommendations have been very useful in addressing many issues on the priority agenda of the Great Lakes Water Quality Agreement.

This year marks the 25th anniversary of the Agreement. For the past quarter century it has served as a model for addressing environmental challenges in similar water bodies throughout the world. The United States and Canada, and the International Joint Commission, are justifiably proud of the binational progress we have made toward achieving the goals of the Agreement. We look forward to continuing close governmental and IJC cooperation to help restore and protect the Great Lakes Basin ecosystem.

Please do not hesitate to contact my office if the Commission has any questions or requires additional information regarding these US responses.

Sincerely,

Eric A. Kunsman
Director
Office of Canadian
Affairs

Enclosure:
Text of United States response

cc: Mr. William Nitze, EPA
Mr. David Ullrich, EPA
Ms. Vickie Thomas, EPA

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Canadian Commissioners
INFO: advisers
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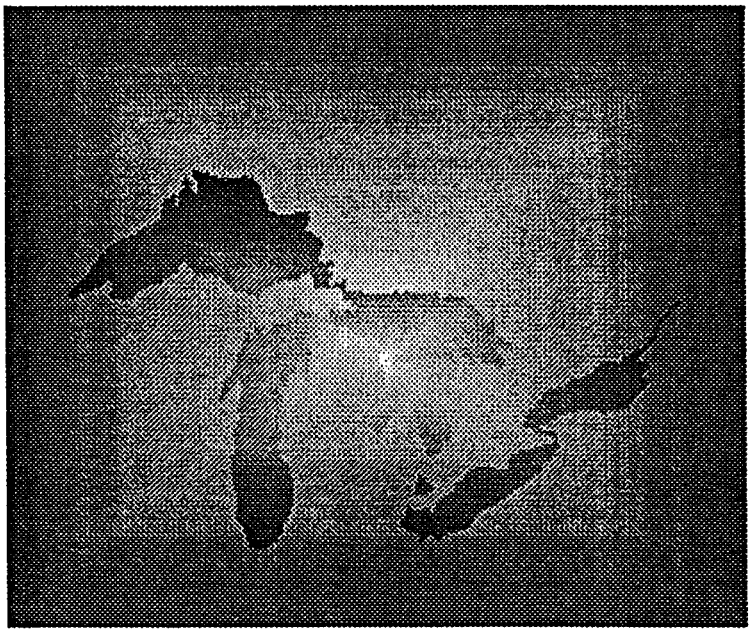
United States Response to Recommendations in the International Joint Commission's Eighth Biennial Report on Great Lakes Water Quality



US Department of State
and
US Environmental Protection Agency
Great Lakes National Program Office
Chicago, Illinois

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INTRODUCTION

The United States (U.S.) recognizes the important contributions that the International Joint Commission (the Commission or "IJC") has made in promoting efforts to preserve and enhance the Great Lakes ecosystem. The Commission's ***Eighth Biennial Report on Great Lakes Water Quality***, coming on the eve of the 25th anniversary of the signing of the Great Lakes Water Quality Agreement (the Agreement), contains thoughtful, significant conclusions about the state of the ecosystem and recommendations for action by the U.S. and Canada (the Parties).

As the Commission points out, the Parties have committed significant efforts and expenditures to arrest and reverse trends that are threatening the Great Lakes, its wildlife, and its human populations. These efforts have resulted in the greatest example of successful environmental restoration in the world. Indeed, the Great Lakes have served as the world's laboratory for environmental protection and restoration. The Parties take pride in their cooperative efforts in working toward solutions to urgent and often complex Great Lakes issues. The U.S. wishes to assure the Commission of its firm commitment to continue these efforts.

The Commission's ***Eighth Biennial Report*** stresses the need to continue the Parties' efforts in reducing and virtually eliminating, persistent toxics from the Great Lakes. The U.S. remains committed to this effort, and has signed the Great Lakes Binational Toxics Strategy with Canada to advance these commitments.

The Commission recommends coordinated global actions to address atmospheric sources of pollutants to the Great Lakes. The U.S. and Canada are actively engaged in national, binational, regional multilateral, and global efforts to address persistent organic pollutants. Indeed, the world community can benefit from the leading-edge research, modeling, and control programs that the Great Lakes community has pioneered.

The Commission expresses concern over the way in which reductions in government funding may affect Agreement activities. The U.S. is aware of the need for vigilance and innovation to protect and to more efficiently utilize limited resources. The U.S. commitment to the Great Lakes remains firm and undiminished. Every reasonable effort is being made to minimize any negative impacts from the current funding scenarios. The fundamental question to ask, however, is not whether there will be reductions in government funding, but whether there will be reductions in the efforts to protect and restore the Great Lakes ecosystem. The U.S. will strive to ensure that any reductions in government funding will be offset by increased efficiencies in government programs and through increased participation from all Great Lakes stakeholders.

It is important to note that this response, while highlighting a small selection of representative activities, reflects the wide universe of programs being undertaken by the large number of U.S. Great Lakes partners. These partners include Federal, State, Tribal and local agencies as well as public, private and non-profit businesses and organizations. This vast array creates a synergy which has led to the significant improvements achieved in the Great Lakes Basin.

The U.S. feels that it is important to reiterate that habitat loss, exotic species, and toxic substances should be given equal importance in working to restore and protect the integrity of the basin's ecosystem. Such activities will be reported on in the forthcoming ***U.S. Progress Report to the IJC.***

On behalf of the entire U.S. Great Lakes community, the U.S. Department of State and U.S. Environmental Protection Agency (U.S. EPA) are pleased to present this Nation's response to the Commission's ***Eighth Biennial Report on Great Lakes Water Quality***.

RESPONSE TO RECOMMENDATIONS

The Commission recommends to the Governments, and where appropriate, others:

1. a) *Identify and review proposed reductions in regulations, monitoring and enforcement programs and scientific research concerning the Great Lakes Basin Ecosystem, particularly reductions in environmental and natural resource agencies;*

   b) *identify and review all proposed legislative and regulatory initiatives expected to reduce requirements for environmental and natural resource protection within the Great Lakes basin;*

   c) *assess the impacts of these initiatives on the requirements of the Boundary Waters Treaty and Great Lakes Water Quality Agreement; and*

   d) *report to the Commission their findings and specifically whether Agreement-related programs will be reduced below the levels that will achieve the objectives of the Great Lakes Water Quality Agreement.*

The U.S. supports the intent of this recommendation. The U.S. understands the Commission's concern about the potential impacts of proposed reductions in government programs on fulfillment of responsibilities under the Agreement. The Federal and State agencies involved in Agreement-related activities do analyze the potential impacts of changes in resources on a continuous basis. However, because the U.S. remains fully committed to meeting all requirements of the Boundary Waters Treaty and the Agreement, despite the potential repositioning of resources, the U.S. believes that a detailed analysis and reporting of findings is not needed.

There is, however, significant analysis being conducted under the terms of the Binational Toxics Strategy. As described in the Strategy's analytical framework section, the U.S. (and Canada) will be analyzing current regulations, initiatives and programs which manage or control substances in order to assess how existing laws, regulations and programs influence the presence of these substances in the Basin, and their long-range transport across states, provinces, regions and international borders. Through this process, the Parties will be able to identify the gaps in their respective domestic regulations, programs, and initiatives that offer the opportunity for the most effective and appropriate reductions of these substances.

Given potential budgetary constraints and the public and Congressional commitment to balanced budgets, agencies may not enjoy the levels of funding which they had in the past. In light of these potential changes, the U.S. has already taken steps to improve coordination, both domestically and binationally, to identify and eliminate potential redundancies in programs, and to prioritize activities based on risk to human health and the environment. In addition, much progress is being made through ever widening stakeholder involvement in an increasing number of innovative

voluntary efforts to reduce pollution. The U.S. will continue to aggressively pursue these kinds of actions.

The U.S. asks the Commission to note that all Federal agencies are routinely involved in reviewing proposed legislation and budgets. They make recommendations and raise concerns whenever their ability to meet their mandated responsibilities is threatened. They do this on a case-by-case basis as legislation is drafted and when they are asked to comment on potential impacts to meet statutory responsibilities and other obligations.

The crux of the current budgetary processes is that the Federal government is reinventing itself by revising regulations based on new scientific evidence, proposing new regulations based on this evidence, and removing regulations which are out of date, redundant, or not needed. This will lead to the streamlined delivery of environmental programs to the public ***without*** lowering protection levels.

Another way by which the U.S. is minimizing the impacts of potentially reduced operating budgets is to effectively share resources amongst Great Lakes partners. One example is the binational evaluation of the potential for sharing vessels available throughout the Great Lakes. A Joint Vessel Use Meeting was held in March 1997 to address this subject.

Finally, the U.S. asks the Commission to note that despite current trends in reductions in some government programs, a number of legislative and budgetary actions have been taken which preserve, and even enhance, Great Lakes programs. Some examples of continuing programs and new initiatives include:

- The Great Lakes Water Quality Guidance, a major enhancement in environmental protection for the Great Lakes, will be implemented by the eight Great Lakes States as well as by interested Indian Tribes.

- The Safe Drinking Water Act of 1996 will bring higher standards of protection.

- The Water Resources Development Act of 1996 authorized several programs dealing with sediment remediation.

- U.S. EPA's proposed FY 1998 budget has been increased over FY 1997 levels.

- The National Invasive Species Act of 1996 will help to control the unintentional introduction of exotic species into the Great Lakes and will provide research and demonstrations of new technologies for combating aquatic nuisance species.

- The Food Quality Protection Act of 1996 will replace conflicting and outdated pesticide residue standards with a single, rigorous health-based standard for all food.

- The Great Lakes Fish and Wildlife Restoration Act of 1990 produced the "Great Lakes Fishery Resources Restoration Study: Report to Congress" which contains 32 specific resource restoration recommendations.

- The 1996 Farm Bill provides financial incentives and technical assistance for soil conservation and water quality programs on privately owned lands with a special emphasis on environmentally sensitive areas.

- House Bill H.R. 1481 proposes reauthorization of the Great Lakes Fish and Wildlife Restoration Act and establishes a project funding mechanism.

- The President's FY 1998 budget includes $1,000,000 for the U.S. Geological Survey's Biological Resources Division and $578,000 for U.S. Fish and Wildlife Service Great Lakes habitat and species restoration work.

The U.S. remains confident that the ongoing use of effective coordination and targeting of resources will allow it to continue to meet the goals of the Agreement. We will be reporting to the Commission regarding our progress in the next version of the ***U.S. Biennial Progress Report*** in late 1997.

2. *a) Continue to target persistent toxic chemicals for virtual elimination from production and commerce;*

The U.S. fully supports this recommendation, and is continuing to vigorously pursue actions targeting reduction and virtual elimination of discharges of identified persistent toxic chemicals (and others) which pose an unacceptable threat to human health and the environment. Whether this is accomplished through the vigorous implementation and enforcement of mainline, media-specific statutes, through a series of new and innovative pollution prevention programs which extol the value of preventing pollution and which seek to create new and innovative partnerships for reduction with the regulated community, or through the development of important new regulations and significant international agreements, the commitment remains the same: the reduction and virtual elimination of targeted persistent toxic chemicals.

b) continue enforcing performance requirements or standards for known uses and locations of these substances as minimum interim requirements; and

The U.S. fully supports this recommendation, and has developed and implemented standards for persistent toxic substances and will continue to refine and reissue them as the state of the scientific knowledge advances. Through the use of permits for controlling water discharges and air emissions, the U.S. has made significant reductions in the levels of these substances in the environment. There is also a variety of new and innovative initiatives which will continue to set and enforce standards which will further reduce the level of these substances in the environment. The following examples illustrate this approach.

The Great Lakes Water Quality Guidance, a cooperative effort among the United States Environmental Protection Agency (U.S. EPA), the eight Great Lakes States and others, consists of minimum water quality standards, antidegradation policies, and implementation procedures for the Great Lakes System. When fully implemented, the Guidance should bring about a one million pound annual reduction in the amount of contaminants entering the Great Lakes.

Under the Clean Air Act Amendments of 1990, Maximum Achievable Control Technology (MACT) standards for municipal waste combustors have been issued which will significantly reduce the emissions of statutorily prescribed persistent toxic substances from these facilities. Full implementation of this standard is expected to reduce dioxin emissions from these facilities by at least 99 percent. In addition, MACT standards addressing the same pollutants have been proposed for medical waste incinerators and are expected to be finalized by mid-1997. These actions will significantly reduce atmospheric deposition of pollutants to the Great Lakes Basin from these sources.

Significant decreases in point source discharges have been brought about through the Great Lakes Enforcement Strategy, an important Federal/State partnership to protect the Great Lakes. Point source loadings of selected critical pollutant loadings to the Great Lakes have dramatically decreased from FY 1992 to FY 1994. Overall, there was a reduction of over **188,000 pounds** of the selected critical pollutants and approximately **8.75 million pounds of oil and grease** (please note: petroleum-based oil and grease reductions typically result in concurrent reductions in toxics when present in wastewater).

The innovative Pulp and Paper Cluster Rule under the Clean Water and Clean Air Acts is developing regulations which will address persistent toxic substances for both water discharges and air emissions from paper mills.

The Safe Drinking Water Act Amendments of 1996 give U.S. EPA and States the flexibility needed to develop and implement drinking water standards which are based on the priorities and risks which occur in a specific geographic area. This should present a significant improvement in the levels of protection and associated cost-savings. Specific improvements applicable to the Great Lakes include more stringent safety standards for the filtration of surface water and a new source water protection program. These changes should better protect residents of the Great Lakes region from the risk of cryptosporidium, which was responsible for a major water borne outbreak in the City of Milwaukee in the Spring of 1993.

Under its ***National Agenda to Protect Children's Health from Environmental Threats***, U.S. EPA's national policy will be to ensure that all standards that the Agency sets are protective enough to address the potentially heightened risks faced by children, so as to prevent environmental health threats whenever possible, and that the most significant current standards are re-evaluated as new scientific knowledge emerges. The Agency will select -- with public input and environmental peer review -- five of its most significant public health and environmental standards to reissue on an expedited basis under this new policy.

Approximate information on reductions in the release of toxic pollutants is made available to the public through the Toxics Release Inventory (TRI) which, since its inception in 1988, has shown a 43 percent decline in releases of reportable substances from monitored facilities. The number of substances covered by the TRI list is being expanded, and consideration is being given to lowering the reporting threshold for substances that bioaccumulate, in recognition that they pose threats even in small amounts.

c) ***complete and implement a Binational Persistent Toxics Virtual Elimination Strategy that targets all substances meeting the Agreement definitions of persistent and toxic, for zero discharge to the environment of the Great Lakes basin.***

The U.S. fully supports this recommendation, and is pleased to announce the April 1997 signing of the Great Lakes Binational Toxics Strategy. The Strategy is designed to make a major contribution to achieving the virtual elimination from the Great Lakes Basin of persistent toxic substances (particularly those which bioaccumulate) resulting from human activity, so as to protect and ensure the health and integrity of the Great Lakes ecosystem. The actions to be taken under the Strategy, while largely voluntary in nature, will be complemented by other existing or proposed regulatory and non-regulatory initiatives.

The Strategy focuses actions first on those substances that have been identified for priority action by multiple selection processes (U.S., Canadian, Binational, and International). Based on available information, the two countries set reduction challenges for the Level I substances on the path toward virtual elimination. The U.S. and Canada also identified Level II substances for which one country or the other has grounds to indicate persistence in the environment, potential for bioaccumulation, and toxicity, but for which there was not yet sufficient consideration by both nations to merit binational virtual elimination goals.

The Parties and their partners feel that it is imperative that the Strategy focus on achievable, tangible milestones on the path toward virtual elimination during the initial ten years of Strategy implementation. However, the Parties view the Strategy as a "living" document. As new information becomes available and interim targets are met, the Parties may revise the milestones, using a public consultation process. In addition, new chemicals of concern may be added to the Level I or Level II lists of chemicals targeted for action under the Strategy. The Parties will continually reevaluate what steps will be needed to achieve virtual elimination of persistent toxic substances, especially those which bioaccumulate, from the Great Lakes basin.

The Parties, with the full involvement of Great Lakes States and stakeholders, are beginning the process of developing the implementation plan for the Strategy. All stakeholders will be encouraged to participate fully in the implementation process. This process, however, will not delay those actions called for under the Strategy which are already being implemented or have been completed. Many of these actions are summarized in the Strategy.

It is important to note that the Great Lakes States, in partnership with their local industries and citizenry, have been among the leaders in the march toward virtual elimination. Innovative State pollution prevention programs, particularly for mercury, have laid the groundwork for the successful implementation of the Binational Toxics Strategy.

3. ***Lead targeted discussions among governments at all levels, business, labour and other appropriate organizations in a variety of economic sectors, to identify obstacles to and opportunities concerning the deliberate transition from the production and/or use of persistent toxic chemicals to more environmentally and humanly sustainable alternatives.***

The U.S. strongly supports this recommendation and remains committed to working with all sectors of society in order to identify and implement actions that will be highly protective of human health and the environment and which will also produce a robust and sustainable economy. Over the last several years, an important change has been taking place in this Nation's national strategy for protecting the environment. In addition to traditional approaches to environmental protection, the U.S. EPA is building cooperative partnerships with a variety of groups which are demonstrating that voluntary goals and commitments achieve real environmental results in a timely and cost-effective way. A number of National Advisory Committees for Environmental Policy and Technology (public stakeholder committees), and other public groups are having high levels of input into these processes.

The results of the environmental partnership programs are promising. Thousands of organizations are working cooperatively with U.S. EPA under some three dozen initiatives to set and reach environmental goals such as conserving water and energy and reducing greenhouse gases, toxic emissions, solid wastes, indoor air pollution, and pesticide risk. The partners are making pollution prevention a central consideration in doing business. Partnership also means that U.S. EPA is working cooperatively with the private sector to provide stakeholders with effective tools to address environmental issues. And these partners are achieving measurable environmental results often more quickly and with lower costs than would be the case with regulatory approaches. U.S. EPA views these partnership efforts as one of the keys to the future success of environmental protection. The U.S. is pleased with the progress of these national and regional collaborative efforts, and is committed to expanding their implementation and to highlighting the success of our partners. Some examples of these innovative and effective voluntary partnership programs are presented below.

National Programs

The goal of the 33/50 Program was to reduce the releases of 17 targeted Toxics Release Inventory (TRI) pollutants 50% by the end of 1995, with an interim goal of 33% reductions by the end of 1992. The 33% goal was met by participating companies one year early because of the creative efforts in the industrial sector. The 50% goal, representing more than a 700 million pound reduction, was also reached.

Programs such as Green Lights, Energy Star Buildings, Energy Star Office, and Energy Star Residential, seek to reduce energy consumption, which, in turn, reduces energy utility emissions. The Green Lights Program is the flagship of U.S. EPA's voluntary Energy Star programs. It is a non-regulatory program created to reduce air pollution and help organizations save energy by encouraging the installation of energy-efficiency lights and by providing technical assistance.

U.S. EPA's Design for the Environment (DfE) Program was created to promote the incorporation of environmental considerations into the design and redesign of products, processes, and technical and management systems. As an example, U.S. EPA has joined with the metal finishing industry and other Federal agencies in a voluntary effort to foster the integration of environmental protection concerns into the basic business-oriented activities of metal finishing shops, including providing information about less polluting materials and process alternatives.

Selected Great Lakes Programs

The Great Lakes Binational Toxics Strategy has received broad-based support from Great Lakes stakeholders. The dialogs that have been opened through the process of developing the Strategy have already borne positive results. For example, the chlor-alkali industry has already volunteered a 50% reduction of mercury emissions during the next 10 years.

Under the Lake Superior Zero Discharge Demonstration Program, the Western Lake Superior Sanitary District is working in partnership with communities to build pollution prevention capabilities. The District has recently released a manual (March 1997) for wastewater treatment plant operators to identify potential sources of mercury at their facilities. As of February 1996, the District's mercury discharge had decreased by over 90%. Improvements in the sorting of refuse-derived fuel burned at the facility's sludge incinerator have also brought about almost a 70 percent reduction in the amount of mercury emitted.

Since 1991, the year the Great Lakes Auto Project began, releases of 65 listed Great Lakes persistent toxics (GLPT) from auto company facilities (as reported under in the Toxic Release Inventory) have declined by 15 percent. If the reported releases of zinc at two foundries are excluded from the data, releases of GLPTs decreased by 37%, and by 55% when normalized for production volumes. These reductions have been mainly accomplished through the use of specific pollution prevention actions, process improvements, and recycling. Working with the Auto Project Advisory Group, the auto companies decided to expand the pollution prevention project to their remaining U.S. facilities. The Great Lakes Auto Project matured into a U.S. Auto Project that has a national focus and targets all materials of concern. It is important to note that 74% of U.S. automotive manufacturing facilities are located in the Great Lakes States.

The Council of Great Lakes Governors, the Environmental Defense Fund, and the Printing Industries of America spearheaded an effort to identify pollution prevention opportunities for the lithographic printing industry in the Great Lakes basin. The Great Printers Project brought together representatives of government, industry, technical assistance programs, labor, and environmental groups to focus on the common goals of environmental protection and economic

strength. The States of Illinois, Michigan, Minnesota and Wisconsin are currently conducting pilots to implement project recommendations.

The goal of the Great Lakes Alternative Cleaning Education Program was to demonstrate the commercial viability of a water based cleaning technique as an alternative to traditional dry cleaning that relies on chlorinated solvents. This was accomplished through the operation of a wet cleaning demonstration shop, which was used to actively promote an industry-wide shift to cleaning techniques.

4. ***Adopt toxics management strategies that target broad classes of chemicals and contain "reverse onus" provisions that require proponents of the production, use or import of chemicals to demonstrate:***

   a) zero discharge for persistent toxic substances deemed essential for use; and

   b) emissions of other toxic materials to the Great Lakes environment at less than toxic amounts.

The U.S. supports the intent of this recommendation. The U.S. considers that the use of existing programs and regulations, in concert with new and innovative partnerships, and advancements in our scientific knowledge of toxics will provide the right combination of tools to reduce the use and discharge of persistent toxic substances, and the emissions of other toxic materials at less than toxic amounts. This is the "sectoral" approach as exemplified by U.S. EPA's partnership programs with industries and other levels of government.

The U.S. targets the large classes of compounds referred to as bioaccumulative chemicals of concern (BCCs) which are the most egregious compounds affecting the health of the Great Lakes Basin ecosystem. Through the requirements of the Great Lakes Water Quality Guidance and the Great Lakes Binational Toxics Strategy, as well as the continued implementation of mainline toxic reduction and elimination programs, the U.S. expects to make marked progress towards reducing and virtually eliminating the discharge of this class of compounds.

The U.S. toxic substance strategy includes programs based upon two statutes, the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) and the Toxic Substance Control Act (TSCA), which provide "reverse onus" on manufacturers regarding the introduction of new chemicals into production and use.

Generally, no pesticide may be registered or re-registered unless it performs its intended function without posing any unreasonable adverse effects on man or the environment. Under FIFRA, the U.S. is re-registering pesticides to ensure that previously registered products measure up to current scientific and regulatory standards. The re-registration program has resulted in the reduction of registered pesticides to approximately 20,000 products, representing 620 active ingredients. Other initiatives have promoted the introduction of safer alternative pest control measures and the implementation of risk reduction through negotiated agreements.

TSCA provides for regulation of chemical substances and mixtures with the objective of protecting public health and the environment from unreasonable risk of injury to health or the environment from the manufacture, processing, distribution in commerce, use, or disposal of chemical substances or mixtures. This can be accomplished by a range of activities including, where appropriate, requiring testing of chemicals, imposing certain restrictions on activities involving new chemicals, or imposing restrictions on activities involving existing chemicals, such as limiting the amounts of a chemical substance which can be used in a mixture or prohibiting the substance's manufacture.

Under the TSCA New Chemicals Program, all new chemical substances are evaluated by U.S. EPA, prior to manufacture or import, to determine if they pose a threat to human health or the environment. If the review indicates that the chemical substance may pose a risk to health or the environment and/or lacks sufficient toxicological information, U.S. EPA may either restrict the conditions of manufacture, processing, use, distribution in commerce, and/or disposal of the chemical, or require the manufacturer to collect data that will better characterize the substances toxicity and risk. About 10 percent of the new chemicals are regulated or restricted through this program before their introduction into commerce.

Endocrine Disruptors

There is evidence which suggests that domestic animals and wildlife have suffered adverse consequences from exposure to environmental chemicals that interact with the endocrine system. These problems have primarily been identified in species exposed to relatively high levels of organochlorine compounds, including DDT and its metabolites, PCBs and dioxins, although other chemicals may be involved. Whether similar effects are occurring in the general human or wildlife populations from ambient environmental levels or whether there are synergistic effects is currently unknown. While the endocrine disruptor hypothesis is of sufficient validity to warrant further attention, the considerable scientific uncertainty relating to the issue signifies the need for additional research before any definitive conclusions can be drawn.

Several U.S. Federal agencies are currently engaged in a wide range of research activities relating to endocrine disruptors that include studies of exposure and effects, as well as the mechanisms of endocrine disrupting chemicals. Suspected endocrine disruptors are also being evaluated for their linkage to cancer, reproductive, neurological, and immunological effects and to determine exposures in wildlife and human populations. Much of this research will be applicable to the Great Lakes.

U.S. EPA has already taken action to stop the use in this country of a number of the more environmentally persistent chemicals that have raised concerns about possible endocrine disrupting effects. While these regulatory actions taken were not driven by endocrine effects, the net result of these actions will be to limit future human and wildlife exposure in the U.S. and, hence, reduce any potential endocrine effects. U.S. EPA recognizes that many of these chemicals

may continue to be used in other countries and is working with the international community to limit their production, distribution, and use.

Additional steps planned by U.S. EPA include a reassessment of the four organochlorine pesticides that remain on the U.S. market, with the goal of identifying any potential combined or cumulative effects. In addition, U.S. EPA is in the process of updating and harmonizing its testing guidelines for evaluating the developmental and reproductive effects of pesticides and industrial chemicals in accordance with the Food Quality Protection Act. These updated guidelines will include parameters that would enable U.S. EPA to perform a more complete assessment of a chemical's potential as an endocrine disruptor.

In September 1994, U. S. EPA released for public review and comment a draft reassessment of the risk associated with dioxins, a group of chemical compounds which exhibit a number of toxic effects, including endocrine effects. While the reassessment has been underway, the U. S. EPA has continued to move forward to control 95% of all known sources of dioxins through a variety of air emissions standards, including standards for municipal and medical waste incinerators.

In February 1997, Illinois became the first State to develop its own strategy to address emissions of chemicals thought to disrupt the endocrine system. The strategy will help identify chemicals and their sources as well as quantities of potential endocrine-disrupting chemicals introduced into the environment.

The U.S. remains committed to reducing the use and discharge of persistent toxic substances and will continue to explore new and innovative methods as we strive for the goal of virtual elimination.

5. ***Continue to take a strong leadership role in multinational discussions aimed at preventing, controlling and eliminating persistent toxic chemicals in global production and commerce.***

The U.S. fully supports this recommendation. This Nation, in consultation and coordination with Canada and other nations, is engaged in a number of ongoing multilateral initiatives which have the goal of further controlling and preventing the use of, and pollution from, persistent toxic substances, many of which are also addressed in the Agreement and the Great Lakes Binational Toxics Strategy. Some of the major efforts in which the U.S. is providing leadership are illustrated below.

Under the United Nations Economic Commission for Europe Convention on Long Range Transboundary Air Pollution (LRTAP), multilateral work is underway to develop protocols on persistent organic pollutants (POPs), many of which have been identified as being of concern in the Great Lakes. Cooperation under LRTAP will potentially conclude this protocol within a year which would include a range of pollution prevention and pollution control objectives. A protocol for heavy metals, which is currently expected to cover lead, mercury, and cadmium, is also being developed and is anticipated in 1998.

At the global level, member governments of the United Nations Environment Programme (UNEP) decided at the 19th Session of the Governing Council to begin formal negotiation of a global treaty on persistent organic pollutants in 1998. Twelve POPs, also of concern in the Great Lakes and under LRTAP, are targeted for initial action in the global negotiations. Studies relating to this global effort are also underway in the Intergovernmental Forum of Chemical Safety (IFCS) and other international organizations whose input will be critical to the success of the global agreement.

In the Commission for Environmental Cooperation (CEC), formed under the North American Agreement on Environmental Cooperation, Canada, Mexico, and the U.S. are advancing regional action plans for the management or phase-out of four persistent toxic substances of significance to the Great Lakes (DDT, chlordane, PCBs, and mercury). In the CEC, the three countries are also developing new cooperation on North American air pollutants of common concern, which is expected to include work on certain air toxics.

The common goal of all these programs is to further protect human health and the environment from the adverse effects of persistent toxics substances. As these multilateral efforts reach critical phases of decision-making and actions at national and international levels, the U.S. and Canada hope to realize environmental results that will contribute to Agreement goals, as well as other binational environmental goals to better protect local, regional and international environments from persistent toxic substances.

6. ***Maintain legislative and regulatory baselines and identify goals sufficient to achieve the provisions of the Great Lakes Water Quality Agreement, as well as facilitate and encourage voluntary efforts by industries, communities and their own agencies to reduce discharges.***

The U.S. fully supports this recommendation. Legislative and regulatory baselines are being maintained either through the reauthorization and strengthening of existing legislation (with the support of the latest and best scientific information), or through the regulatory processes of rulemaking, enforcement, and compliance assurance. New or reauthorized environmental laws, regulations, and programs such as the Safe Drinking Water Act, the Water Resources Development Act, the National Invasive Species Act, the Food Quality Protection Act, the Great Lakes Water Quality Guidance, the Clean Air Act Amendments of 1990, and the Great Lakes Enforcement Strategy, and ongoing Congressional discussions regarding the reauthorization of Superfund and the Clean Water Act, will either maintain, or in most cases, strengthen existing legislative and regulatory baselines.

The community of Great Lakes public and private agencies and organizations have a number of organizing bodies in place to insure that the coordination, prioritization, and implementation required to achieve the provisions of the Agreement are taking place. Such bodies exist at the binational level (the Binational Executive Committee, or "BEC"), at the individual lake basin level (the Lakewide Management Plan, or "LaMP" Management Committees and Public Forums), and

at the site specific level (Remedial Action Plan, or "RAP" Management Committees and Citizen Advisory Groups). This multi-tiered, multi-stakeholder approach brings a high level of involvement and coordination to the Great Lakes decision-making process.

The U.S. strongly agrees with the second part of this recommendation. Pollution prevention and voluntary initiatives are two hallmarks of the U.S. environmental protection strategy. The actions taken to implement these laudable goals are more fully explained in our response to Recommendation 3.

7. ***Support the restoration of Areas of Concern, help develop local knowledge and capacity for effective action in communities and professions such as education and health care providers, and continue to support the efforts of stakeholders involved in the restoration of Areas of Concern.***

The U.S. fully supports this recommendation and continues to provide a broad range of financial and technical resources and support to help restore Areas of Concern (AOCs), including fostering stakeholder involvement, information exchange, and education.

Restoration of Areas of Concern

The U.S. continues to provide resources for restoration efforts in AOCs. The U.S. EPA, U.S. Fish and Wildlife Service, the U.S. Army Corps of Engineers (the "Corps"), the USDA Natural Resources Conservation Service (NRCS), and others provide direct technical support and support through grants and cost-sharing with State and local sponsors. Actions taken to date have already resulted in significant reductions in loadings of toxics from point and nonpoint sources. Parallel efforts to address nutrients and suspended sediment problems have also made substantial progress in restoring beneficial uses. The current efforts by the NRCS in the Maumee River Basin to reduce sediment loadings is a good example. Supplemental funding from the U.S. Army Corps of Engineers provides incentives to farmers to adopt soil saving practices.

The recently enacted Water Resources and Development Act of 1996 contains several new provisions that the U.S. will be able to employ to assist RAP efforts. The Act authorizes the Corps to provide technical assistance for ecosystem and watershed planning, sediment testing, and environmental protection and restoration. In addition, the Act authorizes the Corps to undertake actual remediation and restoration activities on its own, as well as through cost-sharing with State and local partners.

The characterization and cleanup of contaminated bottom sediments is another essential element of improving both AOCs and lakewide pollutant problems. The Assessment and Remediation of Contaminated Sediments (ARCS) Program, undertaken by U.S. EPA with the cooperation of a variety of Federal, State, and private partners, developed an integrated, comprehensive approach to assessing the extent and severity of sediment contamination, the risks associated with that contamination, selected promising treatment technologies, and demonstrated their effectiveness

on site. To date, ARCS staff have helped States determine the nature and extent of sediment contamination by conducting a total of 29 sediment surveys which covered fifteen U.S. and two connecting channels AOCs.

The U.S. continues to pursue programs for remediating contaminated sites in Great Lakes AOCs, using a wide range of regulatory approaches and an increasing emphasis on partnerships. A major effort is the State/U.S. EPA environmental initiative for the Grand Calumet River/Indiana Harbor Canal, which has resulted in consent decrees for sediment cleanup with a growing number of potentially responsible parties. These consent decrees have also included effluent reduction requirements and RCRA requirements which point to the need to address both point and area source reductions in AOCs. Superfund actions are also being used to address problems in the following AOCs: Waukegan Harbor, IL; Sheboygan Harbor, WI; Manistique River/Harbor, MI; River Raisin, MI; Ashtabula, OH; and the St. Lawrence River (Massena), NY.

Another approach for remediating Areas of Concern are Natural Resource Damage Assessments (NRDAs). For example, the U.S. Fish and Wildlife Service is working with the State of Michigan and the Saginaw Chippewa Tribe on a NRDA for Saginaw River and Bay. The purpose of the NRDA is to address the long-term contamination of the Saginaw River and Bay ecosystem by polychlorinated biphenyls and related compounds. Negotiations are continuing on a settlement which will combine source control with restoration of injured natural resources and the services which they provide.

Education

The U.S. views environmental education at all levels of society as an important means to insure continued progress in restoration of AOCs and for continuing stewardship of the Great Lakes. U.S. EPA provides support to these activities through technical assistance, grants, workshops, curricula development projects, and partnerships as illustrated by the following examples.

Environment Canada and U.S. EPA have revised the Great Lakes Atlas, a valuable educational tool that has been very well received by schools, private institutions, and by members of the public. The Atlas provides fundamental environmental and socioeconomic information on the Great Lakes.

U.S. EPA is making environmental education information, materials, and educational software available on the Internet, via the use of the Great Lakes Information Network (GLIN), a computer bulletin board on Great Lakes issues which is accessible by the public. In addition, the Great Lakes Computer Center provides an Internet accessible database to support regional information systems including Great Lakes Envirofacts, which consists of U.S. EPA facility information in an easily accessible format, the Regional Air Pollutant Inventory Development System (RAPIDS), and the database of the Lake Michigan Mass Balance.

U.S. EPA is placing special emphasis on reaching communities that may have not benefitted from environmental education opportunities in the past. Methods for achieving this important goal

include the Environmental Justice and Environmental Education Grant programs. Targeted risk communication materials have been developed and distributed to populations which are heavy consumers of Great Lakes fish and to medical professionals who serve these populations, which include Asian immigrants, expectant mothers, Native Americans, charter boat captains, and urban poor.

The U.S. is supporting educators through teacher training and curricula development. An example of this type of teacher outreach and training program is U.S. EPA's "Great Minds, Great Lakes" program which has taken place aboard the Agency's research vessel, the *R.V. Lake Guardian*, throughout the basin. U.S. EPA conducts Great Lakes educational workshops for teachers in advance of them bringing their classes onboard ship for the "Great Minds, Great Lakes" program.

U.S. EPA is supporting the Great Lakes Unique Habitats Project, a multimedia educational campaign designed to help promote a stewardship ethic and protection activities for the globally unique habitats found in the Great Lakes basin. This project will produce a children's book and musical tape on the Great Lakes ecosystem aimed at ages 8-12, public service announcements on the Great Lakes, and a television special focusing on the unique natural communities located in the Great Lakes.

U.S. EPA has entered into a cooperative agreement with a consortium of nonprofit organizations and universities headed by the North American Association for Environmental Education to deliver environmental education training and related support to education professionals in all 50 states, including the Great Lakes Region. The Environmental Education and Training Partnership Program will reach over 40,000 teachers, non-formal educators, state and local education officials, and others in 1996 and 1997. The program is also improving access to quality environmental education materials and information on programs by expanding and linking existing environmental education databases through the "EE-Link" web site.

Support to Health Care Professionals

The Agency for Toxic Substance and Disease Registry (ATSDR), U.S. EPA, and other organizations are funding a variety of projects to develop core curricula in environmental medicine and occupational health aimed at educating health care professionals about environmental risks. These professionals can then serve as environmental educators, helping to increase public awareness of health concerns in their Great Lakes communities. Two examples are highlighted here.

ATSDR and the National Academy of Sciences/Institute of Medicines are cooperating on a project entitled "Educating Health Professionals in Environmental Health". The purpose of this project is to investigate and recommend how to develop, implement, and finance medical and nursing curricula activities in environmental health.

Through a grant to the American College of Occupational and Environmental Medicine, U.S. EPA is supporting the development of a core curriculum in environmental medicine aimed at educating health care professionals about environmental risks.

Information Exchange

Local RAP newsletters exist for most of the U.S. AOCs, and are usually written by the Public Advisory Committees (PAC), with support from the State RAP programs. In many States, local PACs hold annual State PAC meetings, which are open to the public and which highlight RAP activities via the production of annual updates and presentations. To insure that all of these sources of RAP information receive the most widespread distribution possible, U.S. EPA is actively incorporating formal RAP documents and other related information onto the Internet via GLIN. This information can then be publicly accessed, thus allowing PACs to share information about successes all across the basin, facilitating duplication of successes. U.S. EPA hopes in the future to disseminate all RAP documents and newsletters via the Internet.

Stakeholder Involvement

The U.S. recognizes and supports the concept that a successful RAP process requires meaningful public participation. The majority of the AOCs have active PACs, representing a broad range of stakeholder interests, which are involved in all stages of the RAP process. The Federal and State Governments in the basin are vigorously pursuing high levels of public participation in all AOCs.

The Waukegan Harbor Citizens Advisory Group (CAG) is a good example of effective public participation. The CAG continues its effective involvement even though their primary mission — completion of the Remedial Action Plan — was completed over a year ago. The Waukegan CAG has contributed in many ways to helping accomplish the activities described in the Stage II portion of the RAP. PCB content in fish is a major issue. However, funding problems jeopardized the State's capability to sample and analyze fish after the harbor's PCB-contaminated sediments were dredged. To resolve this problem, the CAG helped obtain grant money for the Illinois EPA to conduct the needed fish monitoring. Two rounds of subsequent fish analyses demonstrated dramatic decreases in PCB concentrations in fish flesh.

While the eight Great Lakes States have the lead in preparing and implementing the RAPs, it is recognized that all levels of stakeholders have varying amounts of resources and expertise to bring to bear in the AOCs. The U.S. believes that balanced involvement of all stakeholders which incorporates the strengths and resource that each can bring to the process is vital to the success of the RAP program.

8. ***Join in supporting and adopting common protocols and fully protective health standards as a basis for the declaration of uniform sports fish advisories throughout the Great Lakes basin.***

With some qualifications, the U.S. endorses this recommendation as one of the crucial methods of protecting human health throughout the Great Lakes Basin. Any harmonization of State and Provincial sport fish advisories must take into account their respective domestic laws, regulations, and program requirements. The U.S. has implemented and encouraged a variety of programs at both the State and Federal levels which will insure that progress is being made towards full realization of this important goal. The U.S. believes that any common fish advisory between the two Parties be based upon modern health risk assessment methods, such as developed in 1993 by the Great Lakes States.

The U.S. is particularly concerned about adverse health impacts on those populations (e.g., Native Americans, anglers, and urban poor) which consume moderate to high levels of certain, more highly contaminated Great Lakes fish. In addition, some segments of the population are particularly vulnerable, especially developing fetuses, nursing infants, young children, and women planning to have children. Recent studies of Great Lakes fish consumers sponsored by ATSDR and others have found that maternal consumption of moderate to high levels of contaminated fish prior to birth and during pregnancy can result in long lasting if not permanent neurological and intellectual deficits in children. Children are also more vulnerable than adults to the toxic effects of chemicals, by virtue of exposure and physiological sensitivity.

States issue fish consumption advisories to warn recreational and subsistence anglers and other members of the public of the risks associated with consuming contaminated non-commercial fish in a particular water body. To promote consistency in State-issued fish advisories, the Council of Great Lakes Governors agreed to develop a common method for issuing fish consumption advisories for the Great Lakes (shared waters). A task force of State experts recommended an approach in 1993 which considered the higher rates of local fish consumption and effects upon the developing child. Potential cancer effects and impacts on the immune system were also considered. The Protocol was completed in 1993. Currently, seven of the Great Lakes States apply the Uniform Protocol or one which is either equivalent or more protective. U.S. EPA has also issued a supplementary fish consumption advisory for Michigan, reflecting the Uniform Protocol.

To improve the comparability and consistency of State-issued fish consumption advisories and accuracy in reporting, U.S. EPA published guidance in 1993 for States to use in developing advisories and when notifying recreational and subsistence anglers of potential risks from contaminated fish. U.S. EPA periodically sponsors conferences and technical training sessions, and serves as a national clearing-house for related information to assist States with their fish advisory programs. U.S. EPA also consolidates the State advisories in a national database available free of charge, on the Internet, and releases an annual report.

The Great Lakes Water Quality Guidance requires the eight Great Lakes States and Indian Tribes to adopt consistent, Great Lakes-specific water quality criteria for toxic pollutants in their water quality standards. Included are criteria to protect aquatic life and wildlife which will be used to establish ambient concentrations of pollutants which, if not exceeded, will protect fish and other

aquatic life from adverse effects and will lead to lower levels in fish and other wildlife of those contaminants which trigger consumption advisories.

Included in the Guidance are criteria to protect human health for eighteen pollutants. These criteria will be used to establish ambient concentrations which, if not exceeded, will protect humans from adverse health impacts from chemical pollutants due to consumption of aquatic organisms and water. Human health criteria are based on fish consumption rates (15 g/day) which may be higher than the rates used elsewhere in the country, but more accurately reflect the fish consumption rates of people in the Great Lakes Basin. Moreover, the human health criteria can be modified on a site-specific basis to provide additional protection appropriate for highly exposed sub-populations.

Also included in the Guidance are bioaccumulation factors which will be used to define bioaccumulative chemicals of concern (BCCs), which are a suite of chemicals subject to more stringent regulatory controls. Among the BCCs are several (e.g., PCBs and mercury) which frequently trigger fish consumption advisories in the Great Lakes.

ATSDR, in collaboration with U.S. EPA and several Great Lakes States, is sponsoring a study which is designed to investigate and characterize the association between the consumption of contaminated Great Lakes fish and short- and long-term harmful health effects. The research conducted by this study will help delineate the relationships among contaminant levels in the environment, exposure pathways, tissue levels, and potential human health effects; it will allow for evaluation and interpretation of data across all human health studies to facilitate a basin wide analysis on the pollution problem in the Great Lakes; and it will provide a model for other ecosystem level studies intended to determine human health impacts of hazardous wastes.

Through the BEC, the U.S. and Canada have discussed fish advisories and may initiate discussions and/or a task force to review and consider options for harmonization. Such a review would have to take the respective domestic laws and regulations into account as discussions ensue.

9. ***Develop a strategy to address the influence of air pollution on the Great Lakes ecosystem, including a bilateral process to:***

   a) ***identify primary and secondary air pollutants transported to the Great Lakes basin from both sides of the Canadian - U.S. boundary;***

   b) ***develop scientific data and criteria on exposure and related effects within the Great Lakes basin;***

   c) ***determine common acceptable levels of exposure consistent with emerging scientific knowledge of effects and the precautionary approach to regulation; and***

d) agree on control programs consistent with Agreement provisions, including virtual elimination of persistent toxic substances. These programs should include achievable timetables for implementation and prevent increased emissions due to other regulatory decisions governing sources such as transportation and thermal power generation.

The U.S. supports these recommendations. This section discusses some of the activities which are being undertaken to address atmospheric deposition to the Great Lakes. These efforts are focused on monitoring, modeling, and inventorying emissions of toxics. In addition, a variety of international activities are highlighted.

Monitoring

It has been recognized since the early 1980s that atmospheric deposition is a major contributor of some toxics to the Great Lakes. Research done since then has confirmed this. In the past several years it has also been recognized that there is a large scientific uncertainty around toxic chemical transformations in the atmosphere as well as long and short-range transport and deposition. While we have learned much about environmental levels and have made some estimates of loadings to the Lakes, the true nature of the impact of atmospheric deposition is not yet well known. Ongoing monitoring has occurred through the Integrated Atmospheric Deposition Network (IADN). IADN includes five master stations, one per lake, which have been collecting wet and dry toxic deposition samples since 1992. IADN is designed to monitor a background, or "continental" signal, away from local or urban influences. Other complementary stationary stations around the Lakes and ship-based intensive collection efforts are measuring urban influence or collecting data for other special studies. Monitoring provides data necessary for validating models.

But IADN cannot address certain key questions needed for accurate loadings estimates to the Lakes, such as air-water exchange, the impact of long-range versus short-range transport of toxics, and source attribution. As a result, in conjunction with ongoing projects, the U.S. has jointly funded with Canadian Federal and local governmental and research institutions, cutting-edge research in the U.S. to begin to address the questions that still remain. These studies will produce, for the first time, information on these questions and will enable the revision of current modeling algorithms to more accurately reflect true environmental conditions.

Modeling

Models which predict the behavior of toxic pollutants from their points of emission to their eventual deposition are needed for the development of sensible strategies to reduce the contribution of the air pathway to toxic contamination of the Great Lakes. These models may also take into account the physical and chemical transformations which affect the probability that pollutants are removed from the air and deposited in the water. The U.S. is developing dispersion and deposition models which will serve this purpose. In addition, these models can be further used as inputs to a mass balance model, which considers the fate of the pollutants in the water column as well.

Emission Inventories

Air emission inventories, typically based on mathematical estimates of pollutants from sources through the use of emission factors, are being developed by the United States. These inventories include pollution from point, area, and mobile sources, and describe both the amounts and types of pollution being emitted from sources. U.S. EPA, the Great Lakes States, and the Great Lakes Commission are working together to create the Great Lakes Regional Air Toxics Emissions Inventory, and the Regional Air Pollutant Inventory Development System (RAPIDS), which is a computerized database of inventory data.

Research

A search of the IJC's Research Inventory showed that the total number of atmospheric projects in the Great Lakes now numbers seventeen. These numbers do not include projects under the U.S. Clean Air Act, the Great Waters Program, and those managed by the U.S. EPA's Great Lakes National Program Office for IADN. Great Waters projects focus on developing atmospheric deposition estimates to the Great Lakes and creating a predictive mass balance model to assess the effect of toxic reduction efforts. These studies, which will be reported to Congress in a Great Waters biennial report, are in support of U.S. EPA's Lake Michigan Mass Balance Study, which will provide many answers to the questions above.

Research on the effects of atmospheric deposition focuses indirectly on the problem by studying the effects of toxics known to come primarily from atmospheric deposition. For example, U.S. EPA's Great Lakes National Program Office is conducting a study to determine the mechanism of mercury uptake and methylation in Great Lakes fish. In addition, the Agency's Office of Research and Development has a project in place to assess the air/water exchange of toxaphene in the upper Great Lakes.

Emerging Issues

Available data on which to base an analysis of air quality and deposition trends in the Great Lakes, while quite limited and not sufficient to establish trends, suggests modest declines for some pollutants but stable or increasing concentrations for others, such as mercury and polyaromatic hydrocarbons. Several industry trends may be contributing to this. For example, changes in the structure of the electric power industry, as regulatory agencies adopt policies to encourage competition in electricity markets, have caused concern that shifts in the sources of electrical power generation may lead to increased deposition of mercury and other pollutants to the Great Lakes.

Pollution Control Measures

The U.S. has statutory authority under the Great Waters Program to create more stringent regulations to regulate sources of toxics to the Great Lakes, if U.S. EPA determines that other Clean Air Act Amendments authorities to control emissions of air toxics are not adequate to

prevent effects from atmospheric deposition. In order to evaluate the most appropriate approach, research is needed to determine the impact of sources to the Great Lakes and to determine the best toxics reduction approach. Under existing statutory authority, sources are being addressed under technology based regulations. Municipal waste combustors have been addressed recently and medical waste incinerators will be regulated, too. Within eight years of the effective date of these regulations, U.S. EPA must determine whether they are stringent enough to prevent environmental effects and to protect the public health with an ample margin of safety. As stated in the first Biennial Report to Congress, the U.S. intends to accelerate the development of more stringent controls of Great Waters pollutants of concern when the required knowledge has been provided by the research studies. In addition, if technology-based standards are not stringent enough, EPA must promulgate further risk-based standards to protect public health and the environment.

United States - Canada Cooperation

To accelerate action toward reducing and eliminating Great Lakes air toxics of concern, the Great Lakes Binational Toxics Strategy for persistent toxic substances is being implemented. A key component of the Strategy is the setting of target reduction levels. An integral part of determining the success of the strategy will be the monitoring and surveillance program under Annex 15, which includes IADN. IADN is capable of tracking long-term trends in toxics concentration and deposition to the Great Lakes. The network has existed since 1990 and now has over four years of quality toxics data from which to estimate loadings to the Great Lakes.

Multilateral International Cooperation

The U.S. and Canada are cooperating in a number of multilateral international and global efforts which are described in the follow paragraphs.

Commission for Environmental Cooperation

The Commission for Environmental Cooperation (CEC) was established to address transboundary and regional environmental concerns in North America. The CEC plans to develop cooperative long-term air quality monitoring, modeling, and assessment programs in North America through the promotion, collection, and exchange of data and through the development and application of appropriate models between and among the U.S., Canada and Mexico. The CEC has facilitated the development of regional action plans for the phase-out or management of PCBs, DDT, chlordane and mercury.

U.N. Economic Commission for Europe Convention on Long-Range Transboundary Air Pollution

Protocols on persistent organic pollutants (POPs) and heavy metals are being developed as part of the UN Economic Commission for Europe Convention on Long-Range Transboundary Air Pollution (LRTAP). The POPs protocol will potentially be concluded within a year. The heavy

metals protocol, which is currently expected to cover lead, mercury, and cadmium, is anticipated to be completed in 1998. Both protocols will consider a variety of response action obligations, such as banning some pesticides, use restrictions, or requiring best available technology for emissions control.

Negotiation of a Global POPs Treaty and related Global Chemical Safety Forums

Member governments of the United Nations Environment Programme (UNEP) decided at the 19th Session of the UNEP Governing Council to begin formal negotiation of a global treaty on persistent organic pollutants. Negotiations are to begin in early 1998 taking into account the conclusions and recommendations of the Ad Hoc Working Group on POPs of the Intergovernmental Forum on Chemical Safety (IFCS), and are to be concluded in the year 2000. Persistent organic pollutants targeted for initial action are PCBs, dioxins/furans, aldrin, dieldrin, DDT, endrin, chlordane, hexachlorobenzene, mirex, toxaphene, and heptachlor. The UNEP Governing Council has directed the formation of an International Negotiating Committee (INC) and the formation of an expert group to develop science-based criteria and a procedure for identifying additional POPs as candidates for future international action.

10. Address radioactive materials consistent with other substances that meet the Agreement definitions of toxic and persistent, support the development and maintenance of inventories of radionuclide emissions to the Great Lakes, and ensure the continued reporting of pertinent data from environmental radiation monitoring systems.

The U.S. does not fully support the first part of this recommendation. As we have stated in our response to the Commission's ***Seventh Biennial Report on Great Lakes Water Quality***, the majority of the long-lived radionuclides detected in the Great Lakes Basin occur naturally. The U.S. does employ a comprehensive, multimedia regulatory process which addresses anthropogenic sources and potential releases from a variety of nuclear facilities within and outside of the basin. But these anthropogenic sources are insignificant when compared to naturally occurring radionuclides. Average radiation exposure to Great Lakes residents (human and wildlife) from all anthropogenic activities is a negligible fraction of natural background exposure and well below the acute or chronic effects level.

The U.S. does address anthropogenic sources through a variety of statutory programs and Federal and State agencies which regulate actual emissions to the atmosphere and surface waters from all licensed facilities. These emissions have been kept well below the regulatory dose limits, which have been developed to ensure the protection of human health and the environment. Existing and proposed Great Lakes environmental management and protection programs such as LaMPs and RAPs allow for the addition of new substances on a case-by-case basis. Radionuclides could be addressed by these programs if they are of concern in a particular Lake basin or AOC.

The Nuclear Regulatory Commission (NRC) is the major licensing/regulatory agency with the jurisdiction over civilian nuclear reactors. The NRC monitors the performance of reactors throughout the country. In addition, the NRC contracts with State agencies to perform independent radiation monitoring around nuclear power reactors. Safe operation of nuclear facilities is the responsibility of NRC licensees, but regulatory oversight of licensee safety is the responsibility of the NRC. Over the past ten years, the general trend of industry performance indicators, including collective radiation exposure and "significant events" has been steadily downward. This has largely been due to the collective efforts of both the NRC and the nuclear industry to protect public safety and health and the environment. On occasion, reactors may vent small quantities of radionuclides to the air or discharge radionuclides into surface waters or to sanitary sewers. Effluent concentrations are addressed by NRC regulations and are at levels which are protective of human health. The NRC monitors such events and the record shows that overall emissions from plants have been decreasing. The U.S. EPA and NRC have a number of Memorandums of Understanding in place which insure joint cooperation to help limit radionuclide emissions to safe levels.

In addition, there are several hundred facilities on the U.S. side of the Great Lakes Basin which use low-level radioactive materials. These facilities, which include hospitals, radio-pharmacies, research facilities and universities, are regulated by the NRC or Agreement States under the Atomic Energy Act of 1954, as amended, and by U.S. EPA under the Clean Air Act of 1990, National Emission Standards for Hazardous Air Pollutants, subpart I. The standards in place are so conservative that any real impacts of potential emissions to the Great Lakes should be minimal. The U.S. EPA tracks these facilities and compiles an inventory for emissions of these materials.

The U.S. actively monitors and inventories radiation through the Environmental Radiation Ambient Monitoring System (ERAMS), a nationally distributed and integrated network of hundreds of monitoring stations that regularly collect air, water, precipitation, and milk samples for analysis of radioactivity over each geographical region, each State, and major population centers. This system constitutes this Nation's comprehensive environmental monitoring program and the single major resource of environmental radiation data. The program's objectives are to provide a means of estimating ambient levels of radioactive pollutants, to follow trends in environmental radioactivity levels, and to assess the impact of fallout and other intrusions of radioactive materials. These data are published by U.S. EPA's National Air and Radiation Environmental Laboratory in a quarterly report entitled ***Environmental Radiation Data***. The ERAMS network has been used to track environmental releases of radioactivity from nuclear weapons tests and nuclear accidents. ERAMS data are also used by the NRC and NRC licensed nuclear power plants to establish background data which is used as a baseline to insure compliance with NRC release limits.

The ERAMS 2000 program review is currently addressing not only a revitalization of the traditional uses and operations of ERAMS, but also significant new areas of need and potential applications, including:

- reorienting the system to provide community based monitoring around specific sites;

- expanding the sampling network to meet cross-media monitoring needs of other U.S. EPA programs and agencies;

- increasing U.S. EPA participation in the World Health Organization's development of a Global Environmental Monitoring system; and

- reviewing the effectiveness of the ***Environmental Radiation Data*** quarterly report and developing alternate reporting techniques that focus on public understanding and scientific validity.

This review will help increase the efficiency, utility and effectiveness of the system. U.S. EPA remains committed to the maintenance, improvement, and effectiveness of this important ERAMS program from both a policy and resources standpoint. During the system review, the need for additional monitoring sites in the Great Lakes Basin will be discussed. As a natural complement to this recommendation, U.S. EPA staff are discussing the issue of joint monitoring stations with staff from Health Canada.

The U.S. will examine the feasibility of conducting and maintaining a basin wide inventory of radionuclides with our Canadian counterparts under the BEC framework. The ongoing discussions taking place between U.S. EPA and Health Canada regarding the ERAMS program have already provided a beginning for future BEC discussions.

The U.S. is pleased to note that the spent fuel storage issue on the U.S. side of the basin is moving towards resolution. In October 1996, the Clinton Administration agreed to accept for disposal spent nuclear fuel stored at more than 100 commercial reactors in 34 States. The U.S. Department of Energy is to begin to store these wastes at a centralized location by Jan. 31, 1998. Since there is currently no storage place to put these wastes, an interim Federal storage facility may need to be identified in advance of a decision on a permanent repository. The safe removal of these many tons of radioactive wastes out of the Great Lakes Basin (as a first step towards permanent storage) will help protect the lives of the human and wildlife inhabitants of the region.