

REPORT

Final Workshop on the Regional Halon Management Plan for the English Speaking Caribbean

14th and 15th April, 2003

Port-of-Spain, Trinidad & Tobago

Organized by the United Nations Environment Programme, Regional Office for Latin America and the Caribbean (UNEP/ROLAC), in cooperation with Environment Canada, the Environmental Management Authority of Trinidad and Tobago and the University of the West Indies St. Augustine, Engineering Institute.

Sponsored by the Multilateral Fund for the Implementation of the Montreal Protocol and Environment Canada.

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INTRODUCTION

Nations of the English-Speaking Caribbean are party to the United Nations Montreal Protocol on Substances that Deplete the Ozone Layer, which mandates the elimination of the production and import of all ozone-depleting substances, including halons, in order to protect the earth's ozone layer. A comprehensive and integrated national strategy for cost-effective halon phase-out and management is critical for low-volume halon consuming countries of the Caribbean to meet the Montreal Protocol's 2002 halon consumption freeze and future halon reduction targets. A Halon Bank Management Plan (HBMP) provides such a compliance strategy by enabling a country to:

- Maintain its current level of fire protection safety;
- Avoid economic disruption;
- Gradually reduce its dependence on halons; and
- Ensure identification of, and provision for critical uses of halons.

At its 26th meeting in November 1998, the Executive Committee of the Montreal Protocol's Multilateral Fund approved a Canadian bilateral project to develop a regional halon bank management plan for the English-Speaking Caribbean. The project assists the following countries classified as having a low level of installed halon capacity: Bahamas, Barbados, Grenada, Guyana, Jamaica, and Trinidad & Tobago. UNEP is assisting the Government of Canada with the implementation of this project.

One of the project elements included the development of a Final technical workshop and consensus about the regional HBMP clearinghouse. As part of this project, two workshops were previously held in Bahamas and Guyana. This report provides a summary of the final workshop held under the project, it has been convened in Trinidad and Tobago to discuss the establishment of a halon information clearing house for the Caribbean region, the synthesis report and address to cover the needs for technical information previously identified in the last two workshops, including information on halon alternatives, recovery and recycling and decommissioning of non-essential halon systems.

1. Agenda

MONDAY 14TH APRIL

09:00 - 09:15 **Registration**

09:15 - 09:30 **Welcome**

Dr. Clement Sankat, Director of the Engineering Institute, University of the West Indies

Mr. Glen Goddard - Manager, Environmental Resources Management, Environmental Management Authority. Trinidad & Tobago

Ms. Artie Dubrie- Programme Officer, United Nations Environment Programme (UNEP) - Regional Office for Latin America and the Caribbean

Ms. Joy Brathwaite, Communication and Coordination Support Specialist UNDP Trinidad & Tobago, United Nations System.

Mr. Philippe Chemouny ,Manager, Montreal Protocol Program Environment Canada

09:30- 09:40 **Background on Montreal Protocol** *Artie Dubrie, UNEP*

09:40- 10:15 **Halons and Background on the Regional Halon Management Plan for the Caribbean** *Philippe Chemouny, Environment Canada*

10:15 - 11:00 **Laws/Policies/Procedures set by the Fire Service for Decommissioning of Halon Systems and Safety issues**
Noel Jones, --- CANCELED

11:00 - 11:15 Coffee-break

11:15- 12:15 **Halon recovery, recycling, reclamation and disposal - options for the Caribbean** *Erik Petersen, Montreal Protocol Operations/POPs Unit, World Bank*
Adam Richardson, Levitt -Safety

12:15 - 13:15 Lunch

13:15 - 14:00 **Halon alternatives** *Erik Pedersen, Montreal Protocol Operations/POPs Unit, World Bank*

14:00 - 15:15 **Selection of available halon alternatives for the Caribbean**

Ian Cole, Cole & Associates

Julian Templer, CEO, National Safety Ltd

Robert Gabay, Safety Manager with Cable and Wireless Ja.Ltd.

Adam Richardson, Levitt-Safety

15:15 - 15:30 Coffee-break

15:45 - 16:15 **Establishment of a halon information clearing house for the Caribbean**

Gregory Farah, Safe-Tec --- **CANCELLED**

Ian Cole, Cole & Associates

Karina Martinez, UNEP

16:15 - 16:45 **Working group on the development, implementation and management on halon information clearing house**

16:45 - 17:15 **Development of legislation on trade control of imports of new halons**

Veronica Alleyne, Jamaica

Artie Dubrie, UNEP

17:15 - 17:30 **Closing remarks**

TUESDAY 15TH APRIL

9:00 - 12:00 **Theory on decommissioning of halon systems and use of halon 1211 recovery pumps.** *Adam Richardson, Levitt-Safety*

Erik Petersen, Montreal Protocol Operations/POPs Unit, World Bank

12:00-13:00 Lunch

13:00-15:00 **Practical demonstrations on decommissioning of halon systems and use of halon 1211 recovery pumps. Video.**

Adam Richardson, Levitt-Safety

Erik Pedersen, Montreal Protocol Operations/POPs Unit, World Bank

14:00-15:00 **Discussion on next steps for the Regional Halon Management Plan and Path forward on policy and legislation actions.**

Held by the NOU's, Environment Canada and UNEP/ROLAC

15:00-16:00 **Closure**

2. Participants

The workshop was attended by National Ozone Unit (NOU) Officers¹, stakeholders from the national fire sectors of each participating country participating in the project: Bahamas, Barbados, Guyana, Grenada, Jamaica and Trinidad & Tobago.

From UNEP/ROLAC OzonAction programme were Ms. Artie Dubrie and Ms. Karina Martinez. Attendance also included Mr. Philippe Chemouny represented from Environment Canada, Mr. Erik Pedersen from the World Bank and Mr. Adam Richardson, from the Canadian company Levitt-Safety., as well as two representatives from the Dominican Republic participating under a UNDP Halon Management Project.

¹ The representative of Barbados was not able to attend

3. Objectives

The objectives of the workshop were as follows:

- To provide information on the Montreal Protocol on substances that deplete the Ozone Layer, including its global requirements mandates for the phase-out and management of halon.
- To provide technological options regarding recovery, recycling, reclamation and disposal of halon and the availability of these technologies to the region.
- To provide information on ozone friendly alternatives to halons available to the countries of the region, taking into consideration the socio-economic and cultural styles that the participating countries will have bring to the adaptation of newly introduced technologies
- To provide training and information exchange on the decommissioning of halon systems and associated safety issues, halon system maintenance and recovery and recycling, with the further objective that participating governments and users would be able to adapt into their national needs and applications the training/information package developed at the workshop.
- To discuss the establishment of a Regional Halon Information Clearing House, including the identification of its roles and functions, management modalities, mode of operation, and promotional requirements, etc.
- To identify national legislative and regulatory instruments required to ensure the sustainable phase-out and management of halon in the region.
- To provide governments and major users with information and knowledge to successfully manage their own halon phase-out, with the ongoing information assistance to be provided by the proposed Clearing-House in Trinidad and Tobago.

4. Summary of the meeting

a) Opening

The workshop was opened by representatives of the University of the West Indies, the Environment Management Authority of Trinidad & Tobago, Environment Canada, the Regional Office for Latin America and the Caribbean of the United Nations Environment Programme (UNEP/ROLAC), and the Office of the Resident Coordinator of the UN System in Trinidad & Tobago.

The following sections provide brief descriptions of the presentations made at the workshop and discussion held. Copies of the presentations are available at the UNEP/ROLAC office.

b) Background on the Montreal Protocol

Ms. Artie Dubrie (UNEP/ROLAC) gave an overview about of the background of the Montreal Protocol and its implications for the Caribbean Region, and the role of UNEP/ROLAC in assisting countries of the region toward meeting and sustaining compliance with the Protocol.

c) Halons and Background on the Regional Halon Management Plan for the Caribbean

Mr. Philippe Chemouny (Environment Canada) followed providing a historical overview with specific information about of the development of the project, the Regional Halon Management Plan for the Caribbean, including the objectives of the project, progress and accomplishments to date, considerations for the future and the main elements of remaining activities to be undertaken. In particular, he emphasized the need to discuss the development of a halon clearing house for the Caribbean region, an activity which was already agreed to by all the six countries participating in the project.

d) Halon recovery, recycling, reclamation and disposal - options for the Caribbean

Mr. Erik Pedersen's (World Bank) presentation focused on national halon phase-out strategies which have had successful results in countries such as the U.S.A., Australia, Japan and the European Union. He also provided brief explanations about some of the commonly used concepts, such as of halon recycling, reclamation and recovery. Mr. Adam Richardson (Levitt-Safety) presented on the case history of Canada with respect to the halon phase-out, including the regulations and policy measures adopted.

e) Halon alternatives

Continuing on the agenda, Mr. Erik Petersen presented a detailed review of halon alternatives such as: inert gases, water mist and CO₂ fire extinguishers, including their environmental and human impacts, properties and the technological advantages and disadvantages of each one. He also provided some guidelines on the selection of halon substitutes and made recommendations on how to ensure the phase-out of halon.

f) Selection of available halon alternatives for the Caribbean

The Private sector representatives from Jamaica and Trinidad and Tobago gave presentations on available halon alternatives presently existing within their respective countries. They discussed the various factors involved in the selection of alternatives and focused on the important demand of their shareholders and stakeholders clients to achieve an environmentally responsible behavior in their activities. A representative from Cable and Wireless, Jamaica, provided an overview of the halon inventories owned by the company in various Caribbean countries and on the company's plans to completely eliminate its dependence on halons.

On the presentation of Mr. Adam Richardson, he spoke about the clean extinguishing agents for occupied areas, such as: FE-13, Novec 1230, FM-200 and Inergen, produced by different companies. He also mentioned the launching of a new technology called *N₂ towers*, based on an inert gas generator for fire suppression in occupied areas. Among the properties of this option could be mentioned the following include: those towers can be recharged on site and the technology has zero ozone depleting (ODP) and zero global warming potential (GWP). This alternative is still under revision by the United States Environment Protection Agency, for possible approval under the Significant New Alternative Program (SNAP). Further information is included in the presentation of Mr. Richardson.

g) Establishment of a halon information clearing house for the Caribbean

With respect to the establishment of Halon Information Clearing House for the Caribbean (HICH), Ms. Karina Martinez (UNEP/ROLAC) and Mr. Ian Cole (Cole and Associates, Trinidad & Tobago) focused on the need to specify how the HICH could be managed, its geographical location, basic functions and the challenges to be considered by the managers of the HICH. This issue was further discussed by a working group and conclusions were presented at the end of the workshop.

h) Working group on the development, implementation and management on halon information clearing house

To this end, Representatives of the different countries were requested to participate in a working group on the development, implementation and management on the proposed halon information clearing house. Conclusions and suggestions of this group were presented at the end of the day. Representatives agreed that a clearing house could be established in Trinidad and Tobago, but had different views on the scope of the work of the clearing house and how it should be managed. It was agreed to continue discussion on this topic the following day.

i) Development of legislation on trade the control of imports of new halons

While the above-mentioned working group met, the rest of the participants attended a presentation given by Ms. Artie Dubrie (UNEP/ROLAC) who covered on the topics of data reporting of ozone-depleting substances under the Montreal Protocol, the status of the region, the 2002 freeze agreement on import/export and the production of halons mandated by the Protocol.

Mrs. Veronica Alleyne (Jamaica) informed to the participants specifically about the experience of Jamaica in the development of legislation to control and eliminate imports of halons.

j) Closing remarks of the first day

The closing remarks of the first day were focused on issues concerning the establishment of the clearing house, including how it would be set up and how the data would be maintained. In general, a number of participants suggested that eliminating the use of halons, should be eliminated as soon as possible. In addition, participants proposed felt that the main purpose of the Halon Information Clearing-House (HICH) would be for the management to maintain and update existing national inventories of halon stocks from the Caribbean and provide information to halon users, and not to manage a physical halon bank in the region or coordinate the import/export of halon to a particular site for recycling and reclamation.

It was suggested that the roles of the national ODS officers from each country, governments and other private sector stakeholders, with respect to the management of the clearing house, needed to be better specified.

k) Theory on decommissioning of halon systems and use of halon 1211 recovery pumps.

Mr. Adam Richardson made a presentation on the guidelines for the decommissioning halon 1211 and 1301 systems, focusing on safety recommendations and risk properties of both kinds of halons. Participants were shown a video on the use of a halon pump for the recovery/recycling of halon 1211. Mr. Richardson provided further explanations on the use of the pump

l) Practical demonstrations on decommissioning of halon systems and use of halon 1211 recovery pumps. Video.

No practical demonstration of the halon 1211 recovery pump could be held, as the pump could not be calibrated for use in time for the workshop. However, based on the video presentations and detailed explanations of Mr. Richardson, some key stakeholders in the fire industry felt confident that they could use the pump appropriately. Mr. Richardson indicated his availability to provide further information and direction if required.

m) Discussion on next steps for the Regional Halon Management Plan and Path forward on policy and legislation actions.

On the second day of the event, participants were requested to consider responses to the following four 4 questions. These were:

- What are the needs of the industry with respect to the management of halons?
- How could the remaining halon stock be managed in an environmentally sound manner?
- What role could the information clearing house play in this process?
- Who should manage this information clearing-house?

Many participants felt that industry in their respective countries did not want to continue using halons and that the trend is to install alternative (non-halon) technologies. Concerns were therefore expressed on about the unavailability of funds and technical support from the Multi Lateral Fund for the safe destruction of halons and technical support in low-volume consuming countries (LCVCs). Presently, the only option for disposal is atmospheric venting. Other participants argued that some industries, particularly small businesses, would probably continue using halon for some time, as they do not have the financial means to switch to alternatives at the present time.

With respect to the appropriate management of existing halon stocks, the participants proposed some important issues such as the appropriate management of existing halons; participants emphasized the importance of education and public awareness, as well as avoidance of the import of new and recycled halons in order to discourage extended dependence of halons and halon- related technologies. In this respect, it was felt by some that a regional clearing house could serve the role of a regional Caribbean information centre, but this lead to the conclusion that it is that each country should have its own preferred to developed management plan for local managing its halon inventory. within each country and the HICH becomes a data information centre serving the Caribbean Region.

If national halon banks were to be established, then countries will have to consider the requirements of properly physical managing such as including facilities, and related issues such as: national legislation e.g. Air Pollution

and Ozone regulations. In general, it was felt that national physical halon banks would probably not be worth the management effort, given the relatively small quantities of halons in the region.

On the issue of the responsibility for managing the clearing-house, participants proposed the creation of a central information centre for the region and the establishment of more than one regional clearinghouse. Also that the National Ozone Offices of each country should have a central role in providing information and managing the central database. As the central data information exchange centre, UNEP/ROLAC could have a supervisory function. The information could be posted on a web page, linked to UNEP's. Also it was mentioned that the web page of the HalonTrader.org could be used as an existent information tool.

If national physical halon banks were to be established, then countries have to consider the requirements of properly managing such facilities, including the cost of management and related national legislation (e.g. air pollution and ozone regulations). In general, it was felt that national physical halon banks would probably not be worth the management effort, given the relatively small quantities of halons in the region.

On the issue of the responsibility of managing the clearing-house, participants proposed that National Ozone Units of each country should have a central role in providing information and managing the central database. UNEP/ROLAC could have a supervisory function. The information could be posted on a web page, linked to UNEP's web page of the Halon Trader. This clearing house may encourage voluntary information-sharing on halon stocks and establish links with already established halon traders systems in other countries. It could also promote a public awareness and education campaign specific to halons aimed at supporting countries efforts to reduce their reliance on halons.

In order to support the HICH work of the clearing house, some participants suggested the formulation of a non-governmental organization (NGOs) to represent the fire protection sector. Suggestions were also made to explore existing regional- NGOs such as the Fire Chief Association. Trinidad and Tobago is currently exploring the establishment of an NGO to represent fire protection service providers. This NGO could then play a central role in the management of the clearing house.

Following discussions concerning the clearing-house among all participants, the NOUs of each participating country met with the representatives of UNEP and Environment Canada to develop some conclusions. These conclusions were then presented to the larger group and agreement was reached on a basic approach to establishing the clearing house. This approach is described below.

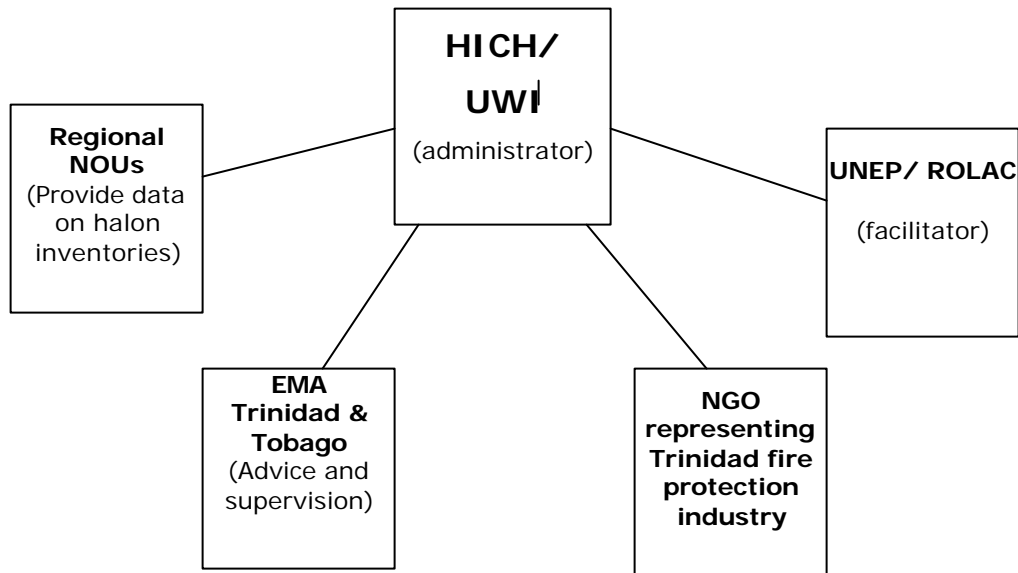
In a working group within the NOU officers of Bahamas, Guyana, Grenada, Jamaica and Trinidad & Tobago; as well as one representative of the Fire sector from Grenada proposed that the clearinghouse should provide information to identify technical or competent people to deal with for the

entire Caribbean, also that an NGO would be expected to provide technical management.

5. CONCLUSIONS

The following proposal structure was agreed for the Halon Information Clearing House (HICH), (see diagram 1 below). It would be housed at the University of the West Indies, St Augustine, Trinidad and Tobago (UWI). The UWI would be responsible for its overall administration and management. An NGO, representing the Trinidad fire protection industry would provide ongoing technical advice to the UWI, in particular with respect to responding to technical inquiries. The Environmental Management Authority (EMA) of Trinidad and Tobago would have a more general advisory and supervisory function, while the National Ozone Units (NOUs) of each participating country (as well as of other interested Caribbean countries) would provide the UWI with information on their national halon stocks and inventories, including the companies using halons and the amount of halons held. UNEP would help facilitate the development of the HICH and transfer resources to the UWI for initial establishment of the clearing house. UNEP would also provide advice on the substitutes to halon alternatives and the maintenance of halon inventory systems.

Diagram 1



HICH- Halon Information Clearing House

UWI – University of West Indies

NOUs- National Ozone Officers

UNEP/ROLAC - United nations Environment Programme, Regional Office for Latin America and Caribbean

NGO – Non-Governmental Organization

The recommendations for the scope and responsibilities of the information clearing house are as follows:

Establishment of Halon ICH work proposed to be:

1. Maintenance and periodic updating of a data base of halons users and inventories in the region, to be disseminated via a web page, which could will be linked to UNEP's halon trader web page.
2. Provision of information to halon users on where they could sell market unneeded halon, find recycled and/or reclaimed halons and on related legal requirements for importing/exporting halons;
3. Provision of information on certified /licensed technicians for servicing of halon systems or collection of unused halons;
4. Provision of information on alternatives to halon fire suppression;
5. Provision of various other technical information, such as information on halons decommissioning, trade of practice, on halons responsible maintenance of halon systems, codes of good practices etc.

In summary, participants emphasized the important roles of the University of the West Indies and the on the clearing house, as well as the respective National Ozone Officers of all the participating countries in the establishment and administration of the clearing house.

It was suggested that, based on a credible proposal to be submitted by the UWI to UNEP/ROLAC and Environment Canada, the UWI would receive a contribution to begin development of the HICH. Continued operation of the HICH would obviously require a commitment from the UWI, and the potential proposed Trinidad fire protection NGO, to provide ongoing in-kind administration and technical support. Since the HICH will provide only information, but not be directly involved in the buying or selling of halons, it will not have the opportunity to rise funding from its activities. In-kind contributions from these organizations will therefore be fundamental to the sustainability of the HICH.

It was also agreed that the UWI would submit a proposal to UNEP/ROLAC and Environment Canada by the end of May 2003. Work on the development of the HICH should begin by the end of August 2003 and be completed by the end of the year. This is of course contingent on all participating countries completing their halon surveys and providing the required information to the UWI. Finally, it was suggested that countries of the region, not participating in the project, will be invited to also submit information on their halon users and inventories to the UWI, at the next UNEP/ROLAC's meetings of the ozone officers from the English-Speaking Caribbean Region.

ANNEX I
IMPLEMENTATION OF THE DECISIONS TAKEN

No.	RECOMMENDATIONED ACTIVITY	RESPONSIBLE ORGANIZATION	DEADLINE
1	Surveys have to be completed in Barbados, Bahamas and Grenada, to justify and support the feed information into the clearing house HICH proposal.	ODS officers from Barbados, Bahamas and Grenada	As soon as possible
2	Concrete proposal for the establishment of for the clearinghouse HICH	ODS Officers University of the West Indies, with possible support from the EMA, Trinidad and Tobago and fire protection sector	May end of May 2003
3	Evaluation of proposal and final decisions on management of the HICH	ODS officers University of the West Indies, UNEP/ROLAC and Environment Canada	next meeting of ODS officers in June 2003
4	Start Initiate activities of the HICH	ODS officers from participating countries University of the West Indies, with support from fire protection industry NGO, and UNEP/ROLAC and Environment Canada	July/August 2003.

ANNEX II
LIST OF PARTICIPANTS AND SPEAKERS

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ANNEX III
LIST OF PRESENTATIONS²

NAME OF DOCUMENT	SPEAKER
Agent comparisons	IAN COLE
Clearinghouse for Caribbean	KARINA MARTINEZ
Decommissioning & Recycling of halon	ADAM RICHARDSON
Development of Halon legislation	VERONICA ALLEYNE
Halon in stock	ROBERT GABAY
Halon phase-out history in Canada	ADAM RICHARDSON
Regional Halon Bank Management Plan Project 2003	ARTIE DUBRIE
Trinidad Halon Alternatives	ADAM RICHARDSON
Trinidad Halon recovery, recycling, reclamation and disposal	ERIK PEDERSEN
Trinidad Halon substitutes	ERIK PEDERSEN
Trinidad Halon Workshop Presentation	PHILIPPE CHEMOUNY

² These presentations are available at the UNEP/ROLAC office in Mexico.