

2008 ANNUAL REPORT  
of  
**THE BIOLOGICAL AND CHEMICAL DEFENCE REVIEW COMMITTEE**

November 2008

**TABLE OF CONTENTS**

Summary .....	1
Introduction .....	1
Committee Activities -- 2008 .....	2
Discussion .....	3
Conclusions .....	4
Recommendations .....	5
Annexes	
<b>A:</b> Implementation of Barton Report Recommendations	
<b>B:</b> Implementation of BCDRC Report Recommendations	
<b>C:</b> Acronyms and Abbreviations	

**SUMMARY**

In this report, the BCDRC recounts its activities in 2008. Its assessment of the state of implementation of the 1988 Barton Report recommendations, and of the progress made on its own recommendations from previous years are presented as annexes. Following a discussion of some observations with respect to a government audit of the Committee's mandate, about visits to Defence R&D Canada (DRDC) Valcartier and 5<sup>e</sup> Groupe-brigade mécanisé du Canada at CFB Valcartier and about the Chemical Weapons Convention (CWC), the BCDRC makes four recommendations.

---

**INTRODUCTION**

The policy of the government of Canada is to press for global, comprehensive and verifiable treaties to ban all biological and chemical weapons. Even so, the threat from such weapons persists. Accordingly, Canada has an obligation to ensure that members of the Canadian Forces (CF) have adequate training and equipment to protect themselves against exposure to chemical and biological agents. This protection is required for deployments on foreign soil and, as the threat of terrorist action exists in Canada, it is also required for any military response to domestic emergencies.

The Canadian public has the right to be assured that Canada's policy of maintaining only a defensive capability in this field is fully respected at all times, and that any research, development and training activities undertaken pose no threat to public safety

or the environment.

To facilitate this assurance, the Biological and Chemical Defence Review Committee (BCDRC) was established by the Minister of National Defence in May, 1990. The Committee is mandated to review annually the research, development and training activities in biological and chemical defence (BCD) undertaken by the Department of National Defence (DND) to ensure that they are defensive in nature and conducted in a professional manner with no threat to public safety or the environment.

The BCDRC is usually comprised of a chairperson and two members representing disciplines relevant to BCD such as chemistry, microbiology and toxicology. The Chairperson is appointed for a term of five years by the Deputy Minister of National Defence (DM) and the Chief of the Defence Staff (CDS) from amongst the existing Committee members. Committee members

are recommended by learned Canadian scientific societies and are chosen by the Chairperson. The present members are:

Chair	Dr. Kenneth L. Roy Professor Emeritus University of Alberta (Microbiology)
Member	Dr. Pierre G. Potvin Professor York University (Chemistry)
Member	Dr. Sheldon H. Roth Professor University of Calgary (Toxicology and Pharmacology)

Commencing in 1990, Annual Reports have been submitted. All have been made available to the public and many are reproduced on the BCDRC Internet web page (<http://www.bcdrc-cepdbc.forces.gc.ca/arra/index-eng.asp>). The reports use many military and government abbreviations and acronyms. The abbreviations are used only after the full terms they represent are spelled out at least once. However, to make the reports easier for the reader, the abbreviations are summarized in Annex C.

### COMMITTEE ACTIVITIES – 2008

During 2008, the BCDRC made its annual visits to DND establishments involved in the BCD program. These establishments included:

- National Defence Headquarters (NDHQ) with briefings from or meetings with:
  - DRDC Corporate Centre, including meetings with the Assistant Deputy Minister (Science and Technology), the Director for Human Performance and several members of his staff;
  - DRDC Centre for Security Science with briefings from the Deputy Director General/Director of the Chemical, Biological, Radiological/Nuclear Research and Technology Initiative (CRTI), a federal

government program led by DRDC;

- The Directorate for Arms Proliferation Control Policy (DAPC Pol) including a briefing about the Chemical Weapons Convention (CWC) and the Biological and Toxins Weapons Convention (BTWC) and Canada's participation in them;
- The Canadian Forces Health Services Group/Director Health Services Operations/Operational Medicine (CF H Svcs Gp Op Med);
- The Directorate for Combat Systems Engineering and Management (DCSEM); specifically DCSEM 5 which manages Chemical Biological, Radiation and Nuclear (CBRN) projects;
- The Directorate for Joint Capability Production (DJCP); specifically DJCP 5: CBRN Requirements and Projects;
- 5<sup>e</sup> Groupe-brigade mécanisé du Canada, located at CFB Valcartier, Quebec to receive briefings about the brigade's CBRN training and equipment;
- DRDC Suffield, Alberta, with briefings about the responsibilities, resources and activities of the research establishment and the BCD program. The Committee also heard about the status of the Counter Terrorism Technology Centre (CTTC) and was briefed about some CRTI projects in which Suffield participates. The Committee toured some facilities and met with scientists from several research groups in the establishment. Time was made available to allow any member or groups of members to approach the Committee to discuss matters of concern. While at DRDC Suffield, the BCDRC met with the director general, the deputy director general/head of CTTC, the acting head of the BCD program and other members of the senior staff. The Committee held discussions with the General Safety Officer and the Environmental Safety Officer; and
- DRDC Valcartier with briefings about remote detection of chemical and biological threats.

In addition:

- in June, Dr. Roy attended the Public Security Science and Technology Summer Symposium in Edmonton;
- in November, Drs. Roy and Roth attended the CBRN Defence Workshop in Kingston, Ontario; and
- in February Dr. Potvin attended a serial of the Senior Officers' NBCD Course at the CF NBC School, CFB Borden, Ontario.

The BCDRC reviewed DND's 2008 BCD Research and Development (R&D) Program and determined that it was in accordance with current Canadian Government policy. Current R&D contracts and publications lists were examined. In addition, the DRDC accountability document was scrutinized.

To enhance the perspective of the concerns of Canadians in Canada's BCD activities, the Committee invites any group of concerned citizens to meet and discuss issues. Any group or individual that wishes to make representation to the Committee should contact the executive officer. Contact information is found in the Introduction section of the web site.

In the past, during meetings with groups of citizens and of the media, some concerns about DND's BCD program have been identified and reasoned responses were given by the Committee at those times. These comments were repeated in the BCDRC annual report until 2001 (the 2001 and earlier reports are available on this web site). Please refer to these reports for explanations of the difference between offensive and defensive biological and chemical research and means of obtaining information about BCD from DND.

## **DISCUSSION**

The BCDRC wishes to thank all of the organizations that it visited in 2008. As usual the Committee received cordial welcomes and was able to engage in open and honest discussions at all establishments visited.

The 2008 BCDRC visits to Defence establishments were conducted concurrent with a cyclical review by the Department of National Defence of the Committee's mandate. The cyclical review has been followed by an audit by the Chief of Review Services at NDHQ. The aim of this review process is to determine whether the BCDRC should continue after the termination of its current mandate on 31 March 2010. During our meetings this year and during the subsequent reviews, there has been some considerable discussion about the future of the BCDRC. More than once, a concern was voiced that the BCDRC was becoming an advocate of the DND CBD program and of DRDC. The Committee disagrees with that assessment. The members of the BCDRC are university professors, respected in their fields. When they join the Committee, they have scant knowledge of the DND or of the BCD program. They may have had, during their first months on the Committee, a preconceived notion that science in DND establishments may not be comparable to research in university laboratories. Their observations during visits are otherwise unbiased. Their impressions of defence science change after visiting the research establishments. Generally, they are impressed by what they observe.

The members of the BCDRC are conscious of their role as representatives of the public and take their mandate seriously to ensure that the BCD program in Canada is completely defensive and that the public is safe from misuse in the program. Reactions during the visits are generally favourable, and the committee has been impressed by the scientific research. Compliments regarding the program may be absent in the Committee's annual report and perhaps it is time for some advocacy. Below are a few examples of work that has impressed the BCDRC.

This year, for the first time, the Committee visited DRDC Valcartier where research is conducted into the stand-off detection and identification of chemical and biological threats, using advanced optics and sensitive, multi-wavelength detectors, in concert with similar research to detect toxic compounds and IED explosives. The committee was impressed by this

leading-edge research.

Annually, the Committee has visited DRDC Suffield and has witnessed developments from the ideas stage, through experimental research to equipment being used in the field. One such product is Reactive Skin Decontamination Lotion (RSDL), a liquid decontaminant that improves the survival of soldiers in a BCW environment. Now DRDC is experimenting with cooling the skin to further reduce the effects of agents such as mustard. Suffield is also working on new materials for regular combat uniforms that will be resistant to BCW threats as well as research into medical countermeasures for typical biological agents and antidotes for chemical nerve agent poisoning. These solutions are often delivered by inoculation, however an inhaler is being developed that is designed to be effective against such diseases as plague and anthrax.

DRDC has an expanding role in protecting the public from the threat of chemical and biological incidents. The DRDC Centre for Security Science works with 20 other government departments to develop the means and the procedures for protecting the public from a planned CB attack or from an industrial accident resulting in a CB hazard.

The work of DRDC is explained on its web site at <http://www.drdc-rddc.gc.ca>. There are also links to the Valcartier and Suffield establishments.

The BCDRC made its first visit to 5 Brigade, a francophone Army formation. The Committee realizes that The Canadian Forces cannot concentrate a lot of effort on BCD when it is fighting a non-BC war in Afghanistan. Therefore, it was impressed by the level of BCD expertise in the brigade. The committee was told that a lack of bilingual instructors at the CF NBC School makes it more difficult for francophone units and formations to keep sufficient people trained in CBRN specialties. There are fewer course serials open to French-speaking candidates than there are to English-speaking candidates. The Committee is aware that a continuing problem at the school is the withdrawal of candidates from courses to do higher-

priority tasks. Courses are sometimes cancelled shortly before they are to run or they are conducted with fewer than the ideal number of students. However, the criticism from Valcartier may be accurate: the French-speaking soldier may be at a disadvantage when the number of course serials open to them is considered.

The Chemical Weapons Convention (CWC) is a global disarmament treaty that bans development, production, acquisition, stockpiling, retention, transfer and use of chemical weapons. The convention may be read on the internet at [www.opcw.org/chemical-weapons-convention/](http://www.opcw.org/chemical-weapons-convention/). The convention was ratified by Canada in 1995 and entered into force in 1997. There are 184 states that have joined the CWC. At the second review conference of the convention, held in The Hague in April 2008, the effectiveness of the CWC was in danger of being weakened. The convention prevents the proliferation of chemical weapons partly by restricting trade in chemicals that may be used in the development of these weapons. Unfortunately, these chemicals are often dual-use or multi-use materials which are essential for industrial development. A group of 118 non-aligned states and China are objecting to the existing conditions in the CWC that prevent them from acquiring chemical equipment and knowledge that are essential to their emergence as developed nations. Canadian representatives at the review conference helped forge a last-minute agreement that allowed the outcome of the meeting to be termed a qualified success. The issue has not disappeared and threatens the continuation of the CWC which until now has been the best example of how international cooperation can lead to effective arms control.

## **CONCLUSIONS**

The audit of the BCDRC mandate to annually review the DND biological and chemical defence program has led to considerable discussion among committee members about what the committee has accomplished and whether it delivers an unbiased assessment of the BCD programme. During the last

19 years, the BCDRC recommendations have made a significant contribution to the conduct of the BCD programme in DND. The Committee members are impressed with the science they see within DRDC and they have witnessed no violations of Canada's commitment to conduct research in the biological and chemical fields that is strictly defensive. Reporting these findings factually does not indicate a bias towards the DND.

Research in the BCD field in DRDC Valcartier and Suffield is complementary. The research program makes outstanding contributions to BCD.

The Committee is confident that 5 Brigade maintains a level of knowledge about BCD that allows it to train for BCW if the need arises. The perceived lack of opportunities to train French-speaking students at the CF NBC School should be resolved.

It is essential that the CWC continue in force to prevent the proliferation of chemical weapons.

## **RECOMMENDATIONS**

It is recommended that the BCDRC continue to function after 2010 so that it can continue to monitor the BCD programme, provide external perspective, comment and make suggestions on it.

It is recommended that the research work in DRDC Suffield and DRDC Valcartier be closely coordinated and the scientists involved have the opportunity to see first-hand the work being conducted at the other establishment.

It is recommended that the CF NBC School consider periodically sending a French-speaking instruction team to CFB Valcartier to conduct school courses.

It is recommended that DND continue to offer support and encouragement to DFAIT to maintain the effectiveness of the Chemical Weapons Convention.