
2024 ANNUAL REPORT

Biological and
Chemical Defence
Review Committee

H.-B. (Bernie) Kraatz, Ph.D.,
FRSC (Chair)

Jonathan Van Hamme, Ph.D.

Christine Vande Velde, Ph.D.

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Biological and Chemical Defence Review Committee

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2024 ANNUAL REPORT

BIOLOGICAL AND CHEMICAL DEFENCE

REVIEW COMMITTEE

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INTRODUCTION

The policy of the Government of Canada is to press for global, comprehensive, and verifiable treaties banning all biological and chemical weapons. To this end, Canada is a State Party to the Convention on the Prohibition of the Development, Production, and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on their Destruction (the Biological and Toxin Weapons Convention or BTWC) and, to the Convention on the Prohibition of the Development, Production, Stockpiling, and Use of Chemical Weapons and on their Destruction (the Chemical Weapons Convention or CWC).

However, for as long as the threat from such weapons endures, be they in the hands of state, or potentially, non-state actors, the Government has a recognized obligation to ensure that members of the Canadian Armed Forces (CAF) are equipped and trained to protect themselves from exposure to biological and chemical warfare (BCW) agents. Such protection is required not only during operational deployments abroad, but also in the context of military support to responses to terrorist incidents at home or other domestic emergencies involving these agents.

This said, the Canadian public, as well as the international community, have the right to be assured that the Government's policy of maintaining only a defensive capability in this field is fully respected and that any related research, development, or training activities undertaken are conducted in a professional manner with minimal risk to public safety or the environment.

To facilitate this assurance, the Minister of National Defence, in May 1990, directed the establishment of the Biological and Chemical Defence Review Committee (BCDRC or, "the Committee") as an adjunct to the Defence Science Advisory Board. Today, the BCDRC operates at arm's length from government. Its mandate is to provide an independent, third-party review of the Biological and Chemical Defence (BCD) research, development, and training activities undertaken by the Department of National Defence (DND) and the CAF with a view to assessing whether they are defensive in nature and conducted in a professional manner with minimal risk to public safety or the environment.

The BCDRC normally comprises three experts in scientific disciplines relevant to BCD such as chemistry, microbiology, and toxicology or neurology. One of these is selected by the Committee to serve as Chair. New members are appointed by the Chair based on nominations from such professional societies and associations as the Royal Society of Canada, the Canadian Society of Microbiologists, the Chemical Institute of Canada, the Society of Toxicology of Canada, and the Canadian Association for Neuroscience. The Chair also arranges for an administrative staff member to function as the Committee's Executive Officer.

Committee membership, as of 1 April 2024, is:

Dr. H.B. (Bernie) Kraatz FRSC (Committee Chair)

Professor of Chemistry

University of Toronto

Dr. Jonathan Van Hamme

Professor of Microbiology

Thompson Rivers University

Dr. Christine Vande Velde

Professor of Neurosciences

Université de Montréal and Université de Montréal Hospital Research Centre

Brigadier-General (Ret'd) James Selbie serves as Executive Officer to the Committee.

The Committee's annual cycle of activity includes:

- briefings in Ottawa on BCD issues by officials from National Defence Headquarters (NDHQ) and Global Affairs Canada (GAC)
- visits to government (mostly DND) research and development (R&D) facilities such as the Defence Research and Development Canada (DRDC) research centre at Suffield, Alberta (which we visit every year) and to selected CAF education and training establishments, operational formations, and units where BCD activity takes place
- attendance at selected BCD exercises, training courses, workshops, seminars, symposia, etc., conducted by the CAF or DND
- publication in the public domain of an Annual Report with key observations, conclusions, and recommendations

The Committee's Annual Reports, dating back to 1991, are available on its website (www.bcdrc.ca). No report was produced in 2010 due to a delay in renewing the Committee's mandate.

The work of the Committee is funded by a contribution from the Government of Canada Department of National Defence.

SUMMARY

Having detected no evidence to the contrary during its 2024 visit and verification programme, the Committee concludes that:

- Canada’s policy of maintaining a purely defensive biological and chemical warfare capability is fully respected by the DND and the CAF.
- the BCD research, development, and training activities undertaken by the DND and the CAF are compliant with Canada’s obligations as a State Party to the BTWC and to the CWC
- the BCD research, development, and training activities undertaken by the DND and the CAF, as observed by the Committee, pose minimal risk to public safety or the environment
- there is no covertness or duplicity within the BCD program

While the Committee believes that the BCD program is, by and large, conducted in a professional manner, it does, from time to time, discern the need for improvement to occupational health, safety, and environmental protection practices and procedures, or to other aspects of program direction and management, which it expresses in the form of general observations or specific recommendations.

Of special importance this year, was the decision taken by ADM (DRDC), informed by the results of a risk management review, to lift the suspension or restriction of certain chemical defence-related research and development as well as training activities that he had imposed following our 2023 visit to SRC.

The Committee this year offers two new recommendations. We will also continue to pursue with DND and CAF authorities mutually satisfactory resolution of the nine open recommendations made in previous annual reports.

COMMITTEE ACTIVITIES 2024

Committee activities in 2024 comprised the following:

- **CBRNE Convergence Canada Conference (Gatineau 12-13 April)** The Committee Executive Officer attended this year’s conference as an observer. Organized by the publisher of CBRNe World magazine, the conference convenes representatives of Allied government agencies, academia, and industry to exchange information and insights pertaining to the countering of chemical, biological, radiological, nuclear, and explosive (CBRNe) threats by way of practice, science, and technology.
- **DRDC Suffield Research Centre (SRC) (Suffield 7-9 May)** Meeting with the Centre Director and staff, we followed a programme incorporating the following presentations and discussions:
 - an overview presentation and discussion of SRC’s role, mission, and tasks; organization; resource allocation; notable activities and initiatives

undertaken over the past year; inter-departmental and international involvement; and other issues of note

- a classified discussion of aspects of the current BCW agent threat having a significant impact on current research and development activity
- an overview presentation and discussion of the current BCD research and development program and associated projects underway at SRC
- a review of all BCD research and development contracts awarded to outside agencies and presentations on selected contracts by the contractors
- an update of the actions taken after the decision in 2023 to suspend or restrict certain chemical defence-related activities at SRC.
- discussions of their work with members of the Bio-Threat Defence, Chemical Threat Defence, and Casualty Management Sections
- an update on the oversight of potential dual-use research of concern for biological work
- a review and discussion of microbiological, viral, and toxin holdings, including management protocols and procedures
- inspection of selected microbiological, viral and toxin holdings and laboratory facilities
- a review and discussion of chemical holdings, including management protocols and procedures
- inspection of selected chemical holdings
- an update on the Centre's compliance with the Controlled Drugs and Substances Act and its attendant regulations
- a review and discussion of transfers from SRC of chemical agents or pathogenic biological materials during the period 1 May 23– 30 April 24
- a presentation and discussion of the BCD training program and other activities at the Counter Terrorism Technology Centre
- a review and discussion of the current safety program and related issues including:
 - a summary of any biological or chemical hazardous occurrences or “near misses” over the past year and the action taken in response to same
 - status of the fire protection program
 - status of the respiratory protection program
 - status of the agent worker certification program

- status of the acetylcholinesterase (AChE) surveillance program
- status of the Integrated Emergency Response Plan
- status of the Safety and Environmental Management System
- meetings with the Chairs of the General Safety & Health, CBR Joint Occupational Health & Safety, Biological, and Chemical Safety Committees
- separate meetings with the Technical, Biological, and Chemical Safety Officers
- observation of an emergency response exercise involving the Casualty Management Section
- a meeting with the CFB Suffield Medical Officer for the purpose of updating our understanding of the readiness of the Suffield Medical Centre (1 Field Ambulance Detachment Suffield) to respond to chemical or biological warfare agent casualties
- a meeting with the Suffield Research Centre Medical Advisor for the purpose of updating our understanding of the medical aspects of the Centre's health and safety program
- a review and discussion of the current infrastructure development program, specialist equipment, and other notable corporate services issues
- a review and discussion of the current environmental stewardship program including a separate private meeting with the Environmental Officer
- a review and discussion of the discovery and disposal of any legacy munitions suspected to contain chemical or biological warfare agent
- a review and discussion of the current physical and information security program
- an update on the further development of SRC's CBRN Risk Management Framework
- a review and discussion of any recent local developments in connection with open recommendations contained in the BCDRC's 2023 Annual Report
- a meeting with the Base Commander
- a debriefing of the Centre Director on preliminary observations and conclusions
- **1 Canadian Field Hospital (1 CFH) (Petawawa 13 May)** The Committee met with the Acting Commanding Officer and staff who explained the hospital's capabilities and limitations with respect to the treatment of BCW agent casualties. We also

toured the medical equipment and supplies warehouse and vehicle maintenance facility.

- **Central Medical Equipment Depot (CMED) (Petawawa 13 May)** The Committee met with the Commanding Officer and staff of the Depot and toured its pharmaceutical procurement, storage, packaging, and distribution facilities with an emphasis on arrangements for BCD-related medical countermeasures (MCM).
- **Canadian Joint Incident Response Unit (CJIRU) (Trenton 14 May)** The Committee met with the Commanding Officer and principal subordinates and was updated on the unit's role and its capability, capacity, and readiness to conduct operations in accordance with same.
- **1st Canadian Division Headquarters (Kingston 14 May)** During this, the Committee's first visit to the Headquarters, members met with the Chief of Staff and subordinate staff who explained the HQ's role, and its capability, capacity, and readiness to conduct operations in a chemical or biological warfare environment.
- **Royal Military College of Canada (RMCC) (Kingston 14 May)** The Committee met with the Commandant, the Principal, and members of the faculty who presented BCD-related research and development work currently being conducted at the College in support of DRDC or other DND/CAF entities.
- **Assistant Deputy Minister (Policy) (NDHQ Ottawa 15 May)** With the assistance of GAC representatives, the Committee was briefed on changes to the strategic security environment and CBRN defence policy, as well as the status of the CWC and BTWC, including an update on compliance by the DND and the CAF. Recent biological and chemical weapons counter-proliferation support and other activities, conducted under the auspices of the GAC-led Weapons Threat Reduction Program, were also discussed.
- **Directorate of Scientific and Technical Intelligence (DSTI) (NDHQ Ottawa 15 May)** The Committee was briefed on the current biological and chemical warfare agent threat assessment.
- **Royal Canadian Mounted Police (RCMP) Chemical, Biological, Radiological, Nuclear and Explosive (CBRNE) Operations Section (Ottawa 15 May)** The Officer-in-Charge and other senior members explained to the Committee the Section's mandate as the RCMP's national policy centre for explosives and CBRN response. We were also provided a tour of CBRNE training and response facilities and met members assigned to the Section.
- **DRDC Centre for Security Science (CSS) (NDHQ Ottawa 16 May)** The Committee received an update on the status of biological and chemical projects within the CBRNE Security line of effort of the Canadian Safety and Security Program (CSSP) as well as other Centre activities conducted with domestic and international partners.

- **Directorate of Joint CBRN Defence (D JCBRN D) (NDHQ Ottawa 16 May)** The Director of JCBRN D updated the Committee on the role and organization of the Directorate; the status of the BCD equipment procurement projects; calls for R&D proposals; the evolution of policy and doctrine; and Exercise PRECISE RESPONSE – the live-agent training exercise for NATO nations normally held annually at SRC. A representative of the Strategic Joint Staff was also present at this meeting and provided a status report concerning the response to our 2022 recommendation concerning reported issues with the governance and management of the CBRN defence enterprise.
- **Canadian Forces Health Services Group Headquarters (CFHS Gp HQ) (NDHQ Ottawa 16 May)** The Committee met the Surgeon General and was briefed on BCD-related activities over the past year including clinical training initiatives, R&D; international collaboration, regulatory affairs, and the status of the Strategic Medical Countermeasures Program (SMCP). The Committee’s observations made during its visits to 1 CFH and CMED were also discussed.
- **DRDC Corporate Office (NDHQ Ottawa 17 May)** The Assistant Deputy Minister Defence Research and Development Canada (ADM (DRDC)) chaired a discussion of current issues with DRDC Corporate Office subject matter experts. Agenda items included an update on the implementation of the Defence and Security Science & Technology (DSST) Program; the CBRN defence and security lines of effort within the program; corporate, domestic, and international research delivery vehicles; the status of responses to recommendations in the Committee’s 2023 Annual Report; and preliminary observations made during the 2024 round of visits.
- **DRDC Environment, Health & Safety (EHS) Council (NDHQ Ottawa 13 June)** The Committee Executive Officer attended the Council’s meeting as an observer. The Council meets, as required, to review and prioritize high-level EHS issues within DRDC, inform the ADM of emerging risks, and provide strategic direction and guidance to management action plans.
- **Exercise PRECISE RESPONSE (Suffield Research Centre 24 July)** The Committee observed the conduct of PRECISE RESPONSE, a live agent training exercise carried out annually at Suffield in support of NATO.
- **CBRN Defence Symposium (NDHQ Ottawa 19-20 November)** The Committee Executive Officer attended this year’s symposium as an observer. Hosted by D JCBRN D and attended by representatives of most of the key stakeholders in the CAF/DND CBRN defence community, the symposium agenda included stakeholder updates of current activities and issues and guided discussions of CBRN defence capability development including science and technology support and procurement challenges.

OBSERVATIONS

General

Authorities at all the headquarters, units, and agencies we visited welcomed the Committee warmly and extended their complete and proactive cooperation. Presentations were relevant, focused, and detailed, and the discussions that followed were free-flowing and transparent.

Threat

The briefings that the Committee received from Canadian Armed Forces Intelligence Command/Directorate of Scientific and Technical Intelligence attested to continued credible biological and chemical warfare threats from both state and non-state actors, which speak to the importance of reliable intelligence and appropriate defensive preparedness.

Compliance with Policy & International Conventions

DND/CAF chemical and biological defence policy is set out in Defence Administrative Order and Directive (DAOD) 8006-0 (accessible on-line).

At the end of our visit to the DRDC Corporate Office on 17 May, the Committee received written certification from the Director General R&D Science and Engineering, Director General R&D Program and ADM (DRDC) that the projects in the FY 2024-25 DRDC R&D program related to BCD, for which they are responsible, are compliant with the provisions of DAOD 8006-0 (CBRN Defence) and DAOD 8006-1 (CBRN Defence Operations, Training and Capability Development and Sustainment).

The Committee asks for and receives information on current R&D projects, including those undertaken by DRDC contractors. This information includes detailed project descriptions, resource allocations and progress reports. In our view, all projects are in keeping with the provisions of applicable conventions, defence policy, and the BCD program.

In accordance with the provisions of the Chemical Weapons Convention, the Organization for the Prohibition of Chemical Weapons (OPCW), from time to time, conducts verification inspections of Canadian chemical defence R&D facilities. The most recent of these, two inspections of the Canadian National Single Small-scale Facility (CNSSSF) at the SRC, were conducted in September and October of 2019. During our 2021 visit to Suffield, we examined the reports of both and determined that the OPCW inspection team raised no issues of concern. Since returning from our 2024 visit to SRC, we learned that the OPCW conducted an inspection 16-20 September 2024. We look forward to viewing the inspection report during our next visit.

It should be noted that no equivalent verification regime exists with respect to the Biological and Toxin Weapons Convention.

Occasionally, due to historical activities at CFB Suffield, munitions meriting treatment as suspected legacy chemical weapons are found on the restricted-access experimental

proving ground (EPG) or in the military training area at Suffield. These munitions are reported to NDHQ and the OPCW and permission is requested for their destruction. The latest information the Committee has in this connection is the report of discovery of a suspect 4.2-inch mortar bomb during the summer of 2022 and its subsequent destruction on 3 May 2023.

Defensive Capability

During discussions with DND and CAF officials, the Committee had the opportunity to receive information and ask questions about capability requirements and procurement plans; R&D facilities and activity; in-service equipment and other materiel; doctrine; and training. In all instances, the Committee was satisfied that these pertained solely to the defensive functions of BCW threat assessment; agent detection, identification, and monitoring; information management (*e.g.*, warning and reporting); protection; hazard management (*e.g.*, decontamination); and MCM. The Committee assesses such functions as being consistent with the maintenance of a purely defensive capability.

Lifting of the Suspension or Restriction of Certain Chemical Defence-related Activities at SRC

During our 2023 visit to SRC and as noted in our annual report for that year, the Committee made several safety-related observations. While some of these observations pertained to procedures and information management practices, others focused on infrastructure and equipment. Members noted a significant decrease in SRC employees' confidence in their ability to safely accomplish their duties given the current state of the facilities in which they are required to work. Concerns centered on activities involving the handling of high toxicity chemicals and included:

- perceived inadequacy of available engineering risk controls (*e.g.*, fume hoods, glove boxes, ventilation, and air conditioning)
- lack of redundancy of engineering controls
- failure of engineering controls due to power failures, sometimes during critical laboratory procedures
- lack of real-time monitoring to validate engineering controls effectively mitigate potential exposure to toxic chemicals.

We shared these observations with the Acting Centre Director at the conclusion of our visit and with ADM (DRDC) and his senior leadership team during our visit to DRDC HQ on 2 June 2023.

We learned that these and related concerns were further communicated to the Director General Research and Development Science and Engineering (DG RDSE) by SRC section heads and safety officers during the former's visit to the Centre in early July 2023. In general, we understand that the issues raised were consistent with past and repeated observations of the limitations imposed by infrastructure and equipment on compliance with modern hazardous chemical handling practices. Juxtaposed with these limitations is the reality that such standard risk controls as elimination and substitution are at odds

with the practical requirement to handle chemical warfare agents and other hazardous materials in order to accomplish the Centre's mission of providing scientific support to the CAF. It was also emphasized that administrative controls (policies, procedures, information management systems, training, etc.) and personal protective equipment (PPE) are essential, however, to be fully effective, they must be accompanied by robust engineering controls.

We were also made aware of the results of a partial occupational hygiene hazard assessment conducted in July 2022 by a qualified occupational hygienist (on loan from another DND establishment). He observed that surveyed chemical risks assessed as "low" to "medium" after the application of controls could revert to their original assessment of "very high" should engineering controls fail. The report recommended the completion of chemical-specific occupational hygiene assessments; a quantitative assessment-based evaluation of the efficacy of existing engineering and administrative controls; and, in the meantime, the integration of regular air monitoring as a layer of quality assurance.

The key component of a definitive solution to these deficiencies is the recapitalization of the laboratories at Suffield. As explained in our past annual reports, DND has launched a major capital project to construct a new chemical/biological laboratory facility, however, it is not slated to be fully operational and certified until December 2034 (assuming that final funding is approved, and that the project timelines do not "slip").

In the meantime, efforts to maintain or improve existing engineering controls have been frustrated by an impaired government procurement system which sees long delays attached to the supply of critical items such as fume hood filter cartridges and special services for their installation and repair.

In view of this situation, ADM (DRDC), acting on the advice of the Acting Centre Director at Suffield and DG RDSE, decided at the end of July 2023, to suspend or restrict certain chemical defence-related research and development as well as training activities pending completion of a risk management review. This suspension was expected to last a minimum of four months during which time an action plan, aimed at allowing the resumption of these activities in a confirmed safe manner, would be executed.

Central to this action plan has been the formation of a team operating under the guidance of the Acting Centre Director and Head of the Chemical Threat Defence Section and comprising local infrastructure engineers, scientists, technologists, safety officers, a project management specialist, and the Centre's corporate services head.

According to officials, the team's scope of work includes:

- conduct of targeted hazard assessments to determine the efficacy of existing and proposed risk controls
- examination of administrative and PPE controls to determine if a modification to either would permit the resumption of paused activities at a "low" level of risk

- review of the state of engineering controls to verify deficiencies and assess the projected impact of the currently forecasted program of work on the resolution of stated issues
- development of alternative courses of action to address engineering control issues
- liaison with Real Property Operations Unit (West) (RPOU(W)) to determine whether the infrastructure components of required engineering control improvements are within local authorities and resource allocations
- liaison with DRDC Director Corporate Services to identify and overcome barriers to the procurement support required to maintain laboratory facilities in operational status
- assistance with the development of communications products in support of the action plan
- assistance with the development of options for interim measures to allow the resumption of activities
- assistance with the mobilization of DND/CAF support for required actions

Similarly, officials have launched separate, parallel, or supporting initiatives including the following:

- a review and update of SRC's health and safety management system with a view to ensuring that SRC managers fully understand their health and safety responsibilities and accountabilities (led by the Acting Centre Director)
- creation of a repository of health and safety documents easily accessible by all employees (led by Associate Director – Centre Business Management)
- completion of the review of SRC's respiratory protection program (led by the Acting Centre Director)
- identification of options for the expansion of physicians on site at SRC with a view to guaranteeing continuity of medical support (led by the Head of the Casualty Management Section)
- a DRDC corporate-level review of the procurement function with a view to ensuring that health and safety at SRC, including hazardous material management and animal care, are adequately supported (led by DG RDSE and the Chief of Staff (COS) to ADM (DRDC))
- a review of SRC's organizational structure and positional roles and responsibilities with a view to ensuring that training activities are adequately supported (led by the Acting Centre Director)
- identification of all modifications to SRC's Buildings 1 and 10 necessary for safe operations until such time as the new laboratory complex is completed (led by SRC's Technical and Equipment Support Engineer)

In announcing his decision, the ADM (DRDC) acknowledged that the interruption of activities at Suffield challenges Canada's chemical defence program including international commitments in this realm. He further stated, however, that it is a necessary measure, in the short term, to prevent further erosion of safety with potentially catastrophic consequence. Moreover, it would provide an opportunity for focussed work to address safety concerns and thus ultimately strengthen DRDC's ability to deliver the desired outcomes of its CBRN defence program.

The BCDRC strongly commended and supported this decision representing as it did recognition of the seriousness of unmitigated health and safety risks that we and others have repeatedly identified, as well as a determination to address them comprehensively and conclusively.

During our 2024 visit, we learned the risk management review has been completed. A tiered approach to safety postures has now been adopted, and some improvements to administrative and engineering controls have been implemented. Work has resumed on the authority of the ADM (DRDC).

The conduct of the risk management review and the design of the resulting conditions-based resumption plan involved many subject matter experts from within and without the Chemical Threat Defence Section. However, the extent to which the plan, notably its increased dependence on administrative controls, has restored employee confidence in their ability to safely accomplish their duties is not yet known – a fact acknowledged by the Centre Director and identified by him as a priority issue to address. We will continue to monitor closely this issue.

We were also told that over the past twelve months, the situation at SRC has attracted significant attention from stakeholders and authorities outside of DRDC accompanied by statements of support for its rectification. There has been a notable increase in building maintenance support from RPOU(W) and the project to recapitalize the Centre's laboratories is gaining momentum.

Still, we understand that it will be another seven to ten years before the new laboratory complex is operational. In the meantime, the maintenance of capability and safe working conditions will remain a challenge necessitating close attention by stakeholders at all levels.

Complicating matters is a Canadian Forces Fire Marshal mandated project to enhance the fire separation features of Building 1, and which is scheduled to begin in 2025. Apparently, this work could take twelve months or more to complete and due to its nature, including a potential requirement for asbestos abatement, will disrupt research activities in the building. Before renovation commences, careful planning and coordination will be required to ensure that CWA synthesis and disbursement requirements are fulfilled, and alternate chemical storage arrangements are put in place. On the other hand, while disruptive, this project could, potentially, be exploited for the purpose of correcting engineering control deficiencies in parallel with the installation of fire barriers.

We noted that the option of installing a temporary chemical laboratory in another building, pending completion of the major laboratory recapitalization project, has been examined and deemed, at this juncture, to be cost-prohibitive.

We observe that a prolonged disruption to research could lead to skill fade amongst those involved in the synthesis and handling of chemical agents and that would be difficult to remedy while giving rise to increased risk of accidents. As such and given the importance of sustaining research and live agent training for the benefit of NATO and other clients, the Committee recommends that a detailed plan be developed and implemented to minimise and mitigate mission disruption.

The separate, parallel, or supporting initiatives listed above are ongoing. We include updates of these elsewhere in this report.

Other Safety, Occupational Health & Related Observations

Risk Management Framework

The risks of harm to the workforce and environment at SRC or damage or loss to other resources dedicated to its programme of work are multitudinous and often highly potent unless effectively controlled. As such, the conduct of Canada's BCD program is subject to the provisions of a broad array of legislation, regulations, policies, standards, orders, directives, and guidance intended to uphold the safety and well-being of defence personnel and the public, and to protect and preserve the environment.

To manage the execution of its responsibilities in this connection, DRDC has formulated a Safety and Environmental Management System (SEMS) in accordance with ISO 45001:2018 (Occupational Health & Safety Management Systems) and ISO 14001:2015 (Environmental Management Systems). Moreover, it has directed the design and implementation of corresponding systems at each of its research centres including SRC. Given the complexities of the situation at SRC, separate occupational health and safety and environmental management systems are maintained.

The challenge confronting leaders in effectively tracking risks and ensuring the full implementation of all appropriate administrative and engineering risk controls, including ascertaining their effectiveness, is a formidable one with the demands of these functions often stretching or exceeding their capacity to respond. For some time, SRC has been seeking to develop an information management tool which would overlay the formal management systems with the purpose of flagging critical risk issues to the focussed attention of the Centre Director. During our 2023 visit, we were shown an outline of a proposed "risk management dashboard" that will incorporate the following key areas and indicators of risk:

- Infrastructure (facilities, inventory, permits, licenses, threat assessments)
- Procedures (health and safety, environment, incident reporting)
- Personnel (training, security)
- Activity oversight (program planning, activity approval)

Construction of the dashboard continues. We believe this is a sensible initiative and look forward to its completion and adoption.

High Potency Material Management

The overriding safety concern of the Committee during its visits to SRC is the appropriate management of high potency and other hazardous materials used in BCD research and development and in training activities. Such management follows a life-cycle approach, which addresses risks within the stages of initial selection, procurement or synthesis, transportation, handling, storage, use, decontamination, and disposal.

Inspections of Holdings

The Committee conducted physical inspections of CL2 microbiological and toxin holdings. The organization of the holdings was observed to be much improved this year. As previously reported, the toxin inventory requires further effort to validate the integrity of current stocks and ensure they align with current and future program requirements, integrate the inventory database with that of other biologicals, and to establish ownership by current researchers. These efforts are also in progress. A subset of toxins being used in current projects has been verified, aliquoted, and catalogued. We note the continued presence of historical environmental soil samples from Wood Buffalo National Park. As these do not relate to any current research at SRC, we recommend they be destroyed. We also toured the CL3 facility which was shut down for maintenance.

Control and accounting procedures for chemical holdings were verified by physical and remote video-enabled inspection and found to be in good order. Efforts continue to reduce the quantity of agents used in training through the modification of scenario requirements and the reuse of material. It was explained that certain micro-amounts of CWA need to be retained for historical record purposes for potential assistance to future attribution, analysis, and other forensic work.

The Committee continues to emphasize the importance of consistent compliance with the Centre's policy of recording agent use from "cradle to grave". Efforts to reduce old or surplus holdings are not without technical and administrative challenges. The Committee will continue to monitor this situation.

The Centre's licence under the Controlled Substances and Drugs Act has been renewed and will remain valid until 1 August 2027.

Update of Safety Publications

The manual titled "DRDC Suffield Safety Manual, Volume 2A: Biological defence and animal care workplace safety" is in draft. It will incorporate all Human Pathogens and Toxins Act and Regulations requirements, and Canadian Biosafety Standard, 3rd Edition requirements. It will be published early in 2025 following a compliance review by PHAC and CFIA regulators.

The manual titled "Safety, Operations and Maintenance Manual for the Containment Level 3 (CL3) Containment Facilities at Defence Research and Development Canada – Suffield Research Centre, 5th Edition" is being revised to incorporate all new Human

Pathogens and Toxins Act and Regulations requirements, and Canadian Biosafety Standard, 3rd Edition requirements. It will be published in 2025 following a compliance review by PHAC and CFIA regulators.

The manual titled “Standard Operating Procedures for Acquisition, Management, Accounting and Usage of Risk Group 2 and Risk Group 3 Biomaterials and Toxins at DRDC Suffield, 2nd Edition” is currently under revision and will be published in 2025.

Agent Worker Certification

The Agent Worker Certification program is regarded as fit for purpose by the Chemical Threat Defence and Field Operations Section. Feedback from the Casualty Management Section awaits completion of the program by the first member of that section to seek certification. Documentation is mature and a final test has been added to measure retention. Recent candidates have completed all modules of training in fewer than six months, as compared to up to twelve months in the past.

Transfers of Material

There were no transfers of chemical agents or pathogenic biological materials in or out of the Centre during the period 30 April 2023 to 30 April 2024.

Hazardous Material Disposal

No hazardous material was disposed of in FY 2023-24 due to a shortage of staff. In-house disposal of legacy items including chemical agents and contaminated jars was planned for June 2024. A master list of items for external disposal has been compiled, and bids invited from potential contractors.

The upgrade of the incinerator supporting Building 10 has been completed. The incinerator in Building 569 was expected to be up and running in time for the 2024 training season.

Safety & Health Committees

General Safety & Health Committee

The General Safety and Health Committee (GSHC), chaired by the Centre Director, deals with matters of policy and recommendations for improvements to safety and occupational health programs.

Chemical, Biological & Radiological Joint Occupational Health & Safety Committee

In accordance with the Canada Labour Code, non-management employees make up at least half of the Chemical, Biological and Radiological Joint Occupational Safety & Health (CBR JOSH) Committee and one of these serves as committee co-chairperson. The Committee’s responsibility is to advise the employer on work organization and work practices for safety, and to provide employees with leadership in protecting the health and safety of all. In discharging this responsibility, CBR JOSH receives and reviews all chemical and biological-related hazardous occurrence reports and oversees follow-up action to correct the condition(s) that gave rise to the occurrence or to otherwise prevent its repetition. Matters beyond the capability or authority of the Committee to resolve are

forwarded to the attention of the General Safety and Health Committee. We believe the Committee functions satisfactorily.

Of the eleven hazardous occurrences of which we were made aware in 2023, two caused us notable concern:

- “during Ex PRECISE RESPONSE 2022, an exercise participant sampled a small quantity of nerve agent from a fume hood in the mobile chemistry laboratory; the sample vial leaked, and the material spilled on his gloves and on the floor”
- “during Ex PRECISE RESPONSE 2022 a quantity of a cyanide salt contained in a dummy improvised explosive device was left in a locker at the Cameron Centre – by a non-SRC, but qualified individual, who had been enlisted to oversee some aspects of training due to a shortage of available SRC staff (This incident, which we were told was not reported until three months after its occurrence, is under separate investigation, by order of the Acting Centre Director)”

During our 2024 visit, we appreciated the opportunity to discuss with the appropriate manager, the follow-up to these most serious occurrences: the nerve agent spill in the mobile chemistry laboratory; and the delayed reporting of the improper storage of a high-toxicity chemical (cyanide salt).

Regarding the spill, we learned the following:

- Cameron Centre Emergency Response Team (ERT) exercises were conducted in June 2023 and January 2024. A further exercise was to be held at the end of May or the beginning of June 2024.
- Exercise scenarios are derived from past incidents or are based on issues with the potential to give rise to incidents during forthcoming training activities. These may range from a small spill of agent to a contaminated boot to heat stress injuries. Responses are discussed in the form of a “table-top exercise” (TTX) followed by a full-fledged response exercise with role players and staff in place.
- During actual training at the Cameron Centre, emergency response is addressed during each morning’s coordination meeting between exercise staff and training audience representatives.
- Should control be lost of any highly toxic material, the Field Trials Officer (FTO) is immediately notified. Training is paused at other sites covered by the Cameron Centre ERT.
- The Chemical Training Safety Officer (CTSO) acts to regain control of the material or orders evacuation of the scene pending the development of a deliberate plan to address the situation. The FTO is kept advised and coordinates the response of the ERT as the situation unfolds.
- Once the safety staff has notified the FTO that the material no longer presents a hazard, the FTO may allow training to resume.

- These procedures are captured in a revised Standard Operating Procedure (SOP).

Regarding the improper storage incident, we learned that:

- All exercise control and safety staff (from SRC and visiting units alike) are provided with a written description of their role and responsibilities which they are required to sign as having read and understood. Responsibilities include the maintenance of control of, and accounting for, all hazardous materials.
- A Chemical Practice Approval Form (PAF) has been introduced which stipulates the material authorized for use during a training serial, where it may be placed, and other relevant details.
- Chemical PAFs are distributed to the CTSO overseeing the scenario, the FTO, head of the decontamination team, and Exercise Control.
- A daily general safety meeting occurs prior to the commencement of any training. During this meeting, the use of any live agent or other hazardous material is discussed to ensure awareness of their presence by all involved.
- A safety staff morning coordination meeting follows, during which are underlined potential hazards based on experience with scenarios and the materials used.
- Upon completion of training, the FTO is back briefed on the current state of the scenario site, i.e., how much chemical warfare agent (CWA) or other hazardous material was destroyed or returned to storage, if any hazardous material is in an open state or if it has been secured and if so, where. If hazardous material is left on site, a template is put in place prohibiting personnel entry without authorization and PPE.
- CTSO's fill out a Chemical Training Hot Wash Form upon completion of scenarios. These are collected and their content is reviewed by the CSTO Coordinator, or their designated proxy.
- Final exercise control and safety staff meet to discuss any unresolved issues arising from the day's training.
- For exercises involving the participation of non-SRC mobile laboratories, all distributed samples of CWA or other hazardous materials are tracked by SRC DRDC to ensure their safe handling and to maintain an appropriate chain of custody. All samples and daughter products are logged. At the end of each day, all samples (neat and daughters) are reported to the FTO. As samples are destroyed, the sample log is updated accordingly to help ensure that all material is accounted for at the end of the exercise.
- These procedures are captured in the same revised SOP as mentioned above.

The Committee believe these measures are reasonable and should help ensure an effective response to, or prevent the reoccurrence of, the types of incidents that caused us concern last year.

We have been told that since our last visit, eight biological or chemical-related hazardous occurrences had been reported to the CBR JOSH Committee:

- during the process of returning the CL-3 laboratory to operational status following its annual maintenance shutdown, it was discovered that the biometric access control system had not been reactivated, thus allowing a contractor to access, without authorization, the laboratory anteroom
- during a laboratory clean-up, a hazardous chemical reaction occurred during the cleaning of unlabelled jars thought to contain only water – no injuries were incurred
- a contractor gained unauthorized entry to the CL-2 laboratory and attempted the unauthorized change of filters in the CL-3 laboratory HVAC system leading to a loss of differential pressure and the triggering of hazard alarms – at the time, no work was ongoing in the CL-3 laboratory and hence there was no loss of containment
- during an Exercise PRECISE RESPONSE 2023 biological dry training scenario, SRC exercise control/safety personnel temporarily lost custody of a non-hazardous biological live culture plate pointing to a departure from stipulated monitoring and security protocols
- during an Exercise PRECISE RESPONSE 2023 chemical live agent training scenario, a non-Canadian member of the training audience detected a malfunction of their non-Canadian respirator while undergoing decontamination – no concerns had been registered during the actual handling of live agent – the member was transferred to the Base Medical Clinic for observation and later released no ill-effects having been noted
- during a live agent training exercise involving adjacent chemical, biological and radiological “hot zones”, Chemical Training Safety Officers entered the designated chemical “hot zone” without PPE (as had been authorized by exercise control) to set up the scenario (no chemical live agent was present at the time) – nevertheless, as training was underway at the time in the biological “hot zone”, concern was raised over the “optics” of entering a “hot zone” without PPE
- a culture flask being prepared to receive cell cultures was dropped on the floor causing a spill of non-hazardous material
- while changing out a compressed gas cylinder in Building 10, the cylinder cage door struck an employee’s arm causing some bruising and lacerations

These reports testify to the existence at SRC of a formal system of recording hazardous occurrences and using this information to correct possible deficiencies in safety policy or practice. It should be noted that in some cases, occurrences are reported even though there was no actual safety infraction thanks to on-the-spot intervention. In other instances, situations that could give rise to a hazardous occurrence are reported with a view to their future avoidance. In all cases, the willingness of employees at SRC to report

occurrences and effective and efficient follow-up by supervisors and managers should be viewed as leading performance indicators of a positive safety culture.

Biological Safety Committee

We believe the Biological Safety Committee continues to operate effectively. The committee is currently seized of three issues: maintenance of a dynamic vaccination program, cell culture designation and placement in the CL1 and CL2 laboratories, and management of potentially polio-infected materials.

Chemical Safety Committee

The Chemical Safety Committee is now operating effectively. The committee is seized of several issues:

- review of research and field trial proposals as part of the OnTAP system (we learned that proposals are now reviewed as a cloud-supported process)
- review of local chemical safety-related policies and standard operating procedures (SOP) such as those related to the conduct of field trials and the movement of agent from the CNSSSF to other locations within SRC
- new specifications for PPE and recommended PPE for scenarios
- entitlement and access to sufficient local stocks of PPE and other safety items (material management is a centralized function)
- formation of a “‘Significant Quantities’ Sub-committee” to review the toxicological effects of all compounds used in research and training (other than CWA) with a view to ensuring that appropriate safety postures are adopted
- fume hood safety
- update of chemical safety manual

Safety Officers

Since our visit to SRC in May, we have learned that a reorganization of safety officers has occurred brought about by the resignation of the former part-time Chemical Safety Officer. The occupational hygienist-qualified employee transferred to SRC to fill the position of Technical Safety Officer (TSO) (formerly titled, General Safety Officer) has been appointed full-time Acting Chemical Safety Officer (CSO). This individual has also assumed, also on a temporary basis, the responsibilities of the Regulatory Compliance Officer in anticipation of the retirement at the end of this year of the incumbent. Another public service employee, with experience as a general safety officer at CFB Suffield, had been redeployed to SRC to serve as Acting Technical Safety Officer but has recently decided to return to his former position. The position of Biological Safety Officer (BSO) is unchanged.

While we are pleased that the duties of CSO are now being filled on a full-time basis, albeit in an acting capacity and by a non-chemist, we are concerned by the emergence of a new vacancy in the TSO position and of the workload being borne by the Acting CSO. The

Committee will closely monitor this situation and advocate for the full staffing of all safety related positions by qualified personnel.

Dual-use Research of Concern

The Human Pathogens and Toxins Regulations (HPTRs), as administered by the Public Health Agency of Canada (PHAC), require that institutions undertaking research involving pathogens and toxins prepare a Plan for Administrative Oversight (PAO). This PAO must cover ten elements, including those that describe the identification, assessment, management, and control of risks associated with Dual-Use Research of Concern (DURC).

In January 2024, the Biological Safety Committee further updated DURC guidance document it issued in May 2023. This document describes the DURC review process for biological work conducted at DRDC SRC (or elsewhere under DRDC's direction) and provides guidance for evaluation by the Committee of DURC as part of OnTAP. This guidance is applied to Statements of Work (SoWs) and similar documentation for DURC work conducted externally to DRDC, including that which involves only theoretical work or paper studies (*i.e.*, no laboratory-based activities). The application of this guidance helps to ensure that the biological research conducted at DRDC SRC or elsewhere under its direction remains defensive in nature. A training session on DURC was also held.

We were told that OnTAP review revealed no case of DURC at SRC during the past year.

Risk to Civilian Employees Supporting Live Agent Training

As reported in 2022, there is concern over the risk borne and accumulated by civilian personnel involved in live-agent training activities at the Cameron Centre (*e.g.*, safety officers and decontamination team members). Specific issues include:

- whether civilians should be required to endure the same risks as military members during live-agent training
- the transitory risk faced by military members compared to longer exposures and accumulated risk experienced by civilian staff
- risk threshold definitions, assessments, and monitoring
- modelling and risk assessment of training scenarios, including real-time environmental modelling
- differences in military and civilian operating concepts
- matching appropriate PPE to specific hazards and risks
- requirement for the inclusion of periods of rest during training
- health-related decision-making during field exercises
- approaches for collecting and storing data on individual activities over a career

The Head of the Chemical Threat Defence Section and the Chemical Safety Officer are championing the need to address this concern. It is argued that a legislatively and policy-compliant, adequately resourced, bespoke integrated safety and health system is

required for the benefit of civilians involved in live agent training. In 2023, the Committee recommended that this proposal be reviewed by central authorities and a formal health and safety system for affected civilian employees be implemented, as deemed appropriate.

DND responded by stating that SRC has modified and improved its health and safety system, including changes with primarily civilian personnel in mind, to address concerns around exposure to agents and accumulated risk and that these are being communicated to employees.

During our 2024 visit, we were told that various aspects of employee concern are still being studied. For instance:

- Available heat stress guidelines for the formulation of appropriate work-rest cycles are male- and military personnel-centric. The CSO will look at how these might be adapted to meet the needs of a diverse civilian population.
- Modelling of certain training scenarios indicates that splash hazard has hitherto been underestimated in comparison with vapour hazard. As a result, procedures are being modified and hazard mitigation measures (*e.g.*, availability of rinse water) are being put in place.
- PPE worn by civilians in the face of various hazards will be reviewed. In the meantime, employees are invited to consult with their physician to discuss any issues that would preclude them wearing such equipment.

We also understand that it is intended that future iterations of Exercise PRECISE RESPONSE occur in June when more moderate daytime temperatures may be expected.

Information Management

Unimpeded and speedy access to up-to-date, relevant, complete, accurate and logically organized occupational health and safety information by all who require it in the performance of their duties, is an essential administrative control when it comes to the management of risk.

During our 2024 visit, we heard expressed by senior management the following points:

- Occupational health and safety information at SRC is disadvantageously compartmentalized with some information held on local servers while other information is held on a variety of centralized servers and networks (*e.g.*, DWAN, DRENet, DRENet 1, GC Docs, Office 365)
- Government of Canada policy is to eliminate local servers, however, the speed of access to central servers is impeded by limited bandwidth and security level
- While it is recognized that information management remains a centralized corporate function, there should be a “tear line” that would see occupational health and safety-related information permitted to reside on local servers where it can be managed in accordance with local needs and speedy access assured

- On the bright side, the first, and junior, of two recently authorized information management positions, has been filled. However, the senior position has yet to attract a candidate – due possibly, to the qualifications stipulated and the remoteness of SRC.

While we are agnostic as to the form of the solution, the Committee does share the belief that properly managed occupational health and safety information (and, for that matter, environmental protection information) is a vital administrative control which merits continuous effort and attention.

Fire Protection

Given that the 70-year-old main building is not up to modern building code standards, attention to all aspects of a comprehensive fire protection program is crucial. The standard DND fire protection program is in effect at SRC. It incorporates a system of building fire wardens, scheduled inspection and testing of fire alarms and firefighting equipment, and regular fire drills. At present, Building 1 is a “single fire compartment”. In accordance with the recommendations of the last CF Fire Marshal’s inspection, a project to create multiple fire compartments in the building by means of the installation of fire breaks is scheduled to begin during the summer of 2025. The Committee recognizes the importance of this project but harbours concern over its impact on the Centre’s execution of its mission should research face a lengthy disruption and agent handling skills erode.

Respiratory Protection

In 2021, we observed that as required by law, SRC had started work to implement a respiratory protection program applicable to employees required to wear supplied air-breathing systems or filtering respirators during the performance of their duties. Components of this program include:

- program administration roles and responsibilities
- occupational and workplace risk assessments and inspections to determine what devices are required to be worn and by whom
- initial and periodic occupational health assessments from Health Canada to gauge the fitness of employees to wear a stipulated device
- user training
- mask fit testing
- provisions for procurement, cleaning, inspection, maintenance, and storage of respirators
- appropriate record keeping

As indicated above, in parallel with the chemical defence-related activity risk management review, the Acting Centre Director is leading this effort. This involves completing occupational health assessments, and selection of new, or confirmation of existing PPE, in accordance not only with the provisions of the provisions of CAN/CSA

Z94.4 (Selection, Uses and Care of Respirators) revised in 2018, but also CAN/CGSB/CSA-Z1610 (Protection of First Responders From CBRN Events) newly issued in 2021. The addition of this new standard will allow the program to integrate both chemical and biological (CB) and non-CB requirements. Proof of any newly selected respirator against workplace hazard air samples will also be required. This work is targeted for completion by Spring 2025. The Acting Centre Director assured us that as implementation and validation of a fully legislation and standards-compliant Respiratory Protection Program is pursued, the existing functional program remains in place.

Acetylcholinesterase Monitoring

The AChE monitoring program for chemical agent workers mentioned in previous reports is now at a steady state with an evolved policy, demonstrated test capability, a good set of encrypted baseline data, and the intention to establish a randomized data audit mechanized to demonstrate that the program continues to function properly. We understand that the manufacture of the current monitoring instrument has been discontinued. Alternative devices under development by or already licensed in allied nations have been identified and will be procured for evaluation and potential use at SRC.

Medical Advisor

Essential to the operation of an occupational health program at SRC is access to a licensed physician who, in addition to advising the Centre Director on medical and occupational health matters, is in a position to fulfill the requirements of provincial and federal public health authorities for the authorization and procurement of such components of the program as specialized vaccines, and medical countermeasures appropriate to ongoing research and instruments such as that used for AChE monitoring.

At present, the SRC Medical Advisor is a contracted physician with excellent knowledge and experience of the medical aspects of biological and chemical warfare agents. He is also a contracted physician with the CFB Suffield medical section and has recently volunteered to serve on the Province of Alberta's CBRN Working Group.

The Medical Advisor's contract extends to 2026. SRC is exploring options for the further sustainment of this critical function. Ideally, the Medical Advisor would be an indeterminate full or part-time employee instead of a contractor and thus able to access computers and networks. Available working hours and access to controlled substances would also be improved.

Infrastructure & Equipment

Laboratory Modernization

The project schedule estimates that project development and definition activities (including completion of design) will continue until June 2026 when a submission will be made to cabinet seeking approval for project implementation with a response to same expected by March 2027. As such, the project remains at risk until then. Should approval be forthcoming, the new facilities are planned to achieve initial operating capability (IOC)

by December 2032 and be fully operational and certified by December 2034. We will continue to follow closely and report on the progress of this project.

Other Infrastructure Projects

SRC's Casualty Management Section is housed in Building 10 – a separate structure at a distance from Building 1. While the Section will eventually be housed in the new laboratory complex, as an interim measure, significant renovations to the building were launched in 2022 to address instances of non-compliance with Canadian Council on Animal Care (CCAC) standards; in particular, the requirement for separation of laboratories and offices from the vivarium and the separation of species therein. The vivarium was also meant to see additional improvements including individually ventilated cages with “in and out” HEPA filters, separate and redundant ventilation systems for rodent animal handling rooms (AHR), night lighting for rodent AHR, and ‘Arcoplast’ washable ceilings for rodent AHR.

Disturbingly, as we learned during our 2023 visit and confirmed again this year, work on this project has essentially halted due to major cost increases which have triggered new approval requirements. There may also be a necessity to retender the design work. In the meantime, it has been determined that the newly installed HVAC system does not work properly resulting in unacceptable temperature fluctuations in the vivarium and elsewhere, as well as flooding and damage to major equipment due to the failure, in March 2024, of a newly installed humidification system. The building's boiler and main air handler will need to be replaced within three to five years. Fume hood and make-up air unit failures in the laboratories have been reported.

As it stands, facilities in Building 10 may not meet CCAC guidelines. With a CCAC visit expected in April 2025, there is a well-founded concern that the CCAC may return this laboratory to probationary status or, indeed, suspend its accreditation. CCAC will need to observe meaningful progress toward compliance for it to allow animal work to continue.

The design of the proposed new neurobehavioural facility now valued at \$27M million is 90% complete. This building is proposed as a partial solution to the cited deficiencies of B10. As such, we question whether its design considers all necessary provisions related to animal housing and their associated costs. Should project implementation be approved, a construction contract is expected to be let in FY 2024-25.

Sustainment of Existing Infrastructure

Last year we stated that given the concerning state of engineering controls in the existing main laboratories (Building 1), it is the opinion of the Committee that barring a major intervention to bring the most affected parts of the building up to modern safety standards, or the identification and acceptance of alternative interim solutions, the future of Canada's BCD program is at steadily increasing risk. In view of this sentiment, we were pleased to be told this year that the critical relationship between RPOU(W) and SRC has grown stronger of late, and that some important repairs and renovations have recently been made. This said, the relationship tends to ebb and flow as senior staff in the RPOU(W) are posted in and out on a typically short (two-year cycle) necessitating a

continual education effort on the part of SRC to instill in newcomers an understanding of the distinctive nature of some of its infrastructure and of the unique hazards associated with the activities it supports.

Scientific Equipment

As indicated above, there is a need to improve key infrastructure in the Centre's chemical laboratory.

Security

As does fit-for-purpose infrastructure, effective physical and information security programs contribute importantly to the safety of activities at SRC.

Improving the Centre's capability and capacity for secure computing and communications remains a priority objective given its "reach-back" support role, and the "new normal" of less travel and more on-line meetings. Last year it was explained that work had started on a secure VTC facility with completion to occur not later than the end of 2024. At the time of this year's visit, we were told that the facility would be technically ready within a week or two but would, thereafter, still require accreditation before it could be used. An operational facility will obviate the current need to drive to Edmonton to access this capability.

Installation of a new fire alarm system was to have begun in July 2024, with completion scheduled for May 2025.

Replacing the current text message method of mass notification, a proprietary solution was to be implemented during the summer of 2024.

A critical incident response exercise has been planned for the fall of 2024 which will be used to verify the utility of the solution.

Last year we heard that the time required to repair building access control system malfunctions far exceeds the stated security standard due to slow procurement of required goods or services. This year we learned that RPOU(W) has assumed responsibility for system maintenance and that they have arranged a standing service contract for same. SRC requirements have been included in a recently launched RPOU(W)-led project to upgrade all CFB Suffield intrusion alarms. This project is estimated to take approximately two years to implement.

The individual security clearance system is still not meeting the advertised standard of service with Enhanced Reliability clearances taking 12-24 months to obtain and Level 2 clearances taking more than two years. We understand that the federal government has contracted a company to improve the overall security clearance system.

International visitors also remain challenged to secure visit request approval in a timely manner.

The conduct of a Harmonized Threat and Risk Assessment (TRA) is under consideration. Harmonized TRA Methodology presents the traditional TRA as a project conducted in five distinct phases. The first phase establishes both the mandate and scope of the project.

The next three ascertain the risk environment with an examination of assets and their values, as well as threats and vulnerabilities within the scope of the assessment. The last phase provides recommendations regarding the acceptability of residual risks and, if necessary, identifies mitigation strategies and safeguards.

A new issue introduced to us this year is the stated possibility of CFB Suffield moving to an “open base” posture. Such a posture (which is in place at some other bases across the country) would see restrictions on public access to the base much reduced during all or some hours of the day. The stimulus for this consideration is the reported reduction to the Base’s operating budget which has led the Base Commander to identify the local Commissionaires security contract as a source of potential economy. It was explained that should this possibility come to pass, concern for operational security and public safety would mean that significant expenditure would be required to erect security fences around select SRC facilities and establish additional perimeter access control points and the like. Discussion with the Acting Centre Director and Base Commander revealed that they are seeking direction or guidance that specifies minimum physical security requirements for a base such as Suffield and which could be cited as protection against budget cuts of this nature or to justify expenditure on building perimeter security. The Committee urges caution and trusts that no action will be taken which would compromise the physical security and safety of operations of the vital strategic asset that is SRC and its Experimental Proving Ground.

Emergency Preparedness & Response

Emergency Medical Support

Given the nature of the R&D undertaken at SRC, not only the occupational health but also the potential emergency medical support needs of the Centre are specialized and complex. For several years, we have, in our reports, underlined the essential importance of maintaining an emergency medical response capability at SRC tailored to its distinctive needs. During past annual visits, we have observed problematic aspects of the Centre’s situation in this regard and, notwithstanding the diligent efforts of authorities to overcome associated challenges, have noticed a tendency for issues to re-emerge due to changed circumstances; the *ad hoc* or temporary nature of solutions to problems; or, more fundamentally, the lack of a shared and accepted understanding of requirements, roles, and responsibilities by both the providers and recipients of support services.

These observations led to the inclusion in the Committee’s 2016 report of the recommendation that an appropriate high-level authority, with the participation of relevant stakeholders, conduct a comprehensive assessment of occupational health and emergency medical support needs, including verification that these needs are being met. The objective of this undertaking would be to ensure the long-term adequacy and stability of these essential supports to the work of SRC. We further suggested this same authority should take the lead in designing and implementing cooperative, long-term solutions to any gaps so identified.

While this recommendation *per se* has not been acted upon, we were pleased, during our 2022 visit to hear the SRC Director, the Base Commander, and CAF medical authorities agree on the need for, and express their intention to put in place, a service level agreement (SLA) covering provision of emergency medical support to SRC. As such, we have closed our 2016 recommendation in favour of a new recommendation urging the rapid negotiation and implementation of the intended SLA. This said, we are surprised and disheartened that thirty months later and eight years after we first raised the issue, the SLA has yet to be concluded.

Notwithstanding this prolonged delay, we were told during our meeting with the SRC Medical Advisor and the Base Surgeon (senior medical officer) that from a practical perspective, the medical support situation is good. Emergency medical support to SRC civilian personnel, if required (*i.e.*, in case of imminent loss of “life, limb, or eyesight”), will be provided by CAF physicians who possess the appropriate training. Communication on this point between SRC and CAF medical authorities is much improved. A pharmacist has been retained who works half days throughout the week. Stocks of MCM are sufficient with no deficiencies and immunization of BTDS personnel is also sufficient.

The SRC Medical Advisor reported that he believes that the ability and readiness of the Medicine Hat Regional Hospital are better than they have been for some time. However, the hospital has not been able to obtain a supply of Reactive Skin Decontamination Lotion (RSDL) due to a provincial health ministry policy that stipulates that if such an item is provided to one hospital, it must be provided to all hospitals. From his seat on the Alberta Health CBRN Board, the Medical Advisor continues to push for the inclusion of RSDL on hospital “crash carts” across the province. In the meantime, RSDL will be provided to the Medicine Hat Regional Hospital by the CFB Suffield Clinic in the event of need.

Integrated Emergency Response Plan

An updated Integrated Emergency Response Plan (IERP) was issued in September 2022.

Emergency Response Exercise – Casualty Management Section

Exercises are vital to the validation of the IERP and to maintain the effectiveness and efficiency of response. During this year’s visit, we observed a Casualty Management Section emergency response exercise in Building 10.

The exercise scenario constituted the attainment of a long-standing ambition at SRC in that for the first time it incorporated the entirety of the response from the immediate reaction at the point of injury (dermal exposure to nerve agent in a laboratory), through on-site decontamination of the casualty by the CFB Suffield Fire Department (the SRC decontamination team being deemed unavailable for the purpose of the exercise), evacuation by provincial ambulance to Medicine Hat, and finally, reception and medical assessment at Medicine Hat Regional Hospital (MHRH) in accordance with its CBRN-protocols. Senior managers from Alberta Health Services Emergency Medical Services (AHS EMS) joined Committee members in observing decontamination and evacuation activities, while the CMS Section Head and Base Surgeon accompanied the ambulance to Medicine Hat to observe and participate in actions at the hospital.

A “hot wash-up” session was conducted with participants after the exercise was ended during which lessons were identified and discussed freely and professionally. All agreed that the aim of the exercise which was to test the interoperability of the various agencies involved was fully achieved. The enthusiastic participation of the AHS EMS was gratifying while the response witnessed at the MHRH was most impressive involving as it did the hospital’s decontamination team, emergency room staff, senior clinicians, and pharmacy staff. Indeed, the performance of these agencies provided strong evidence of the existence of a fundamentally capable evacuation and treatment system beyond the purely local components of same which we have typically observed during past exercises.

Among lessons identified as requiring attention were the following:

- lack of easy communication between the CMS Section internal emergency response team and outside entities
- required early communication to the fire department of the type of assistance required (*i.e.*, decontamination versus fire suppression hence, pulling the fire alarm is not advised in such circumstances)
- required reinforcement of the fire department’s decontamination capability and readiness (*e.g.*, procurement of a mobile shower facility, annual building tours, and additional specialized decontamination training)
- inability of the provincial 911 system to recognize building addresses on the Base

We will ask about follow-up to these lessons during future visits.

Environmental Protection

Due Diligence Environmental Effects Determinations

We were told that completed Due Diligence Environmental Effects Determinations (DDEED) are internal documents that do not expire, and which may be applied to new activities at the same site with the same scope and which are not subject to any new legal or policy requirement. Existing DDEED are being reviewed to determine if there has been any change in scope in the associated activities, and to update approving signatories. New impact assessments are being conducted for sites without valid DDEED. These assessments include a duty to consult with potentially impacted Indigenous communities. An example of this requirement is the proposed gas-forming reaction testing facility.

Incorporation of Environmental Considerations in OnTAP

Environmental considerations are incorporated in the On-line Turbo Approval Process (OnTAP) for the approval and renewal of R&D field trials and other activities. These considerations include existing DDEED, potential impact on historical and active species at risk, soil and vegetation management, spill prevention and response, waste disposal, and mitigation measures for any identified risks.

Species at Risk

SRC produces an annual work plan in conjunction with CFB Suffield aimed at mitigating the impact of Centre operations on Species at Risk (SAR). Within the base's boundaries are known to exist eight endangered species, eleven threatened species and eleven species of special concern. During the past year, the base was surveyed for their presence and SAR buffer-zones established where appropriate. The SRC Environmental Officer is of the view that far from constituting a threat, activity at Suffield contributes to the well-being of SAR. This is an opinion the Committee shares given the proactive stance we have observed Suffield authorities take regarding their protection.

The plight of one of these species, the Western Tiger Salamander, has held the Committee's interest for several years. A population of the amphibians was relocated from an underwater explosive test pond in 2019. Informal surveys of the test pond and the relocation area in 2020, 2021 and 2022 resulted in zero observations. In 2023, we were told that funding had been secured and a statement of work drafted for the conduct of a formal survey to include water sampling for environmental DNA analysis to assess further the continued presence of this species in either location. We were delighted to learn this year that an eDNA survey indicated the presence of salamanders in both the test pond and at Wyld Creek, the relocation site. In addition, we were shown buckets of well-fed salamanders.

Also of concern, have been past reports of Ferruginous Hawks being electrocuted on high-risk electrical poles. RPOU(W) was asked to investigate ways of protecting the hawks from this hazard and has since bird-proofed power poles and arrestor poles, riser poles and inline switches.

Contaminated Sites Management

DND policy with respect to contaminated sites located on SRC's Experimental Proving Ground is that they be fenced and signed. SRC's Environmental, Health and Safety Group manages this work in collaboration with the Directorate of Contaminated Sites at NDHQ. Since 2020, twenty-three registered and suspected sites have been reviewed for required repairs to fences and signs and necessary work completed. Fencing standards have recently been modified to mitigate the risks associated with unexploded ordnance. We were pleased to note that a new Environmental Technologist, previously employed by BATUS, has joined the Group.

Spill Response

The threshold for mandatory reporting of a spill has been reduced from 20 litres to two litres. No hazardous spills have been reported to the Environmental Officer since our last visit. Twenty-two SRC personnel have received large spill response training.

Environment, Health, & Safety Council

The Committee appreciates the standing invitation extended it to participate in this high-level forum chaired by ADM (DRDC). The Acting Centre Director of SRC took advantage of the June 2024 meeting to update his colleagues on the completion of the risk

management review, the identification and implementation of required engineering and administrative controls, and the subsequent decision to resume certain previously suspended or restricted chemical defence-related activities.

The BCDRC Executive Officer, on behalf of the Committee, commended the response to the safety concerns we raised in 2023 and restated our intention to monitor closely the implementation and sustainment of the evolving risk control regime at Suffield. He also underlined the Committee's belief in the vital importance of effectively communicating to affected employees the full nature and extent of these measures.

Other Observations

The following observations pertain to the professional conduct of Canada's BCD program. The Committee defines "professional conduct", in this context, as the effective, efficient, and economical application of requisite expertise and resources in defence of the CAF against biological and chemical warfare agents be it with respect to capability, capacity, or readiness.

SRC/CFB Suffield

Base Relations

Productive relations between SRC and CFB Suffield authorities are essential to the success of their respective missions. As in recent years, our meetings with the Base Commander, the Centre Director, the Corporate Services Manager and other SRC staff have been denoted by a common refrain, that being that relations remain good with a focus on collaboration and mutually beneficial outcomes.

Both authorities are attempting to discern what will be the total impact of the United Kingdom's decision to draw down British Army activities at CFB Suffield. Clearly the Canadian share of base operating costs will increase dramatically. At the same time, the base's responsibilities are set to expand to include the provision of support to all Army units south of Red Deer and throughout British Columbia. We learned that in the short term, at least, this situation will result in a mismatch between the funds the base requires to meet its obligations and the funds it is allocated by higher headquarters. This fiscal year, we were told the gap amounts to \$2.1M (\$5.1M was requested by the base, \$3.0M was provided). As mentioned above, this shortfall has led the Base Commander to seek economies across the various support functions for which he is responsible - such as base perimeter security. We also understand that Canadian Army career managers are attaching lower priority to replacing military personnel who are posted away from the base. These issues notwithstanding, the Base Commander made it clear that he intends to do everything in his power to maintain essential levels of support for SRC.

Support to Readiness

As we reported again last year, as valued as SRC's support to readiness appears to be, tension persists between the delivery of training and the conduct of the science and technology research and development program. This is due largely to the requirement to enlist scientists and technologists to serve as instructors, mentors and safety officers

during live agent and live tissue training. Training also creates additional demand for CWA synthesis. Beyond these needs, for certain activities, SRC is faced with the necessity of securing specialist and general-purpose personnel from training clients and regional reserve units. That these requirements are met, is often only due to the personal contacts and powers of persuasion of the training staff.

During this year's visit, we heard that there is a growing demand for live agent training in the context of conventional military operations as opposed to counter-terrorism scenarios. There is also renewed interest in the provision of training in a broader range of topics to military laboratory personnel, and to domestic first responder organizations via the Centre for Security Science and the RCMP. In this latter connection, Canada's hosting of the annual meeting of the G7 group of nations in 2025 and the playing of 2026 FIFA World Cup matches in Toronto and Vancouver may well generate additional specific requests for assistance.

So too, is there a desire to exploit Exercise PRECISE RESPONSE (live agent training for NATO and allied forces) as a test bed for various BCD research and development initiatives in collaboration with allied science and technology establishments. Finally, we note the desire of Canadian Forces Health Services to once again conduct CBRN clinical training at SRC.

In view of the above, we continue to believe that a high-level examination of the role of the SRC in supporting the readiness of the CAF and other domestic and allied entities is warranted. Should its readiness support role be verified, the Centre should be appropriately organized and adequately resourced to do so without impinging on its research and development function or relying on informal support arrangements.

Exercise PRECISE RESPONSE

Since 2004 (except in 2020 and 2021 due to the COVID 19 pandemic), Canada has annually provided its NATO Allies the opportunity to undergo CBRN defence live-agent training at SRC. It has done so as its contribution to the generation of a CBRN Defence Battalion as part of the NATO Response Force. This training takes the form of a field exercise (named PRECISE RESPONSE) of three weeks duration and sees the participation of up to four hundred personnel from thirteen nations, including, for the first time, Finland and Sweden. Also undergoing training this year, were members of the OPCW. Exercise control and support staff amount to a further fifty or so, mainly Canadian, civilian and military personnel. The purpose of the exercise is to allow participants to practice CBRN defence doctrine, tactics, techniques, and procedures, to promote CBRN defence inter-operability amongst NATO armed forces, and, recently, to serve as a testbed for CBRN defence research and development initiatives. Following a week of safety briefings, laboratory instruction and dry training, participants formed into national task forces initially, and then multi-national task forces, and spent two weeks planning and executing scenario-based missions requiring them to carry out such functions and tasks as:

- tactical command and control
- CBRN reconnaissance, detection, and identification

- counter-improvised dispersion device (CIDD) procedures
- sampling and packaging of toxic material
- evidence handling and control
- contamination control
- decontamination
- casualty extraction, medical triage, and casualty management

Supporting the task forces are mobile biological, chemical and radiological laboratories deployed by select countries.

The Committee visited PRECISE RESPONSE on “Visitors Day” in the company of senior CAF officers and military representatives from other participating nations. All to whom we spoke, exercise participants and national representatives alike, described the exercise as being well-executed and offering great and distinctive value of a sort not easily replicated elsewhere. The ease with which we observed troops from the various nations work together left us with the impression that the exercise objective of promoting interoperability was handily achieved. We would add that the effective, efficient, and safe conduct of such a large-scale event, one denoted by the necessary presence of highly toxic material, is a tribute to the professional competence and exemplary dedication of the training and scientific staff of SRC. Moreover, it seems to us that PRECISE RESPONSE constitutes a singular Canadian contribution to NATO deserving within the CAF/DND of wide recognition and continuing support.

Procurement & Material Management

Problems with the timely procurement of laboratory supplies and other goods and services continue to severely hamper scientific and training productivity and, consequently, employee morale is also suffering due to frustration over their critical work being slowed or halted. At the time of our 2023 visit, at SRC alone, there was a backlog of 600 procurement orders.

During that visit, DRDC’s Associate Director, Procurement and Materiel Management described initiatives which had been launched to improve the procurement situation. These included:

- movement toward commodity-based national procurement teams rather than regional teams
- allowing procurement card use by non-procurement staff
- a focused effort to hire more procurement staff
- introduction of a procurement prioritization tool
- encouragement of direct engagement between procurement staff and their clients to facilitate customer feedback

This year we were kindly provided an update to the situation which indicated the following:

- the backlog of procurement orders has been reduced to approximately 450
- current priorities for DRDC procurement are to:
 - improve responsiveness to research centres
 - develop existing staff and finalize hiring of new staff
 - streamline the “ePRO” procurement prioritization tool and update its dashboard function to increase transparency for clients
 - simplify procurement practices to include eliminating the need for corporate ranking of research centre priorities
 - leverage the integration of the DRDC corporate procurement and material management function
 - increase engagement with research centres
- there has been success on the staffing front:
 - occupancy of DRDC procurement positions has increased
 - eight “centre responsive” staff have been hired and their focus distributed across five research centres
 - three of these are dedicated to SRC (there were six procurement positions at SRC prior to centralization of this function)
- the payment card system has been rethought and improved:
 - Centre Directors can determine if and how to use it (*e.g.*, extent of decentralization of card issuance)
 - initially, use of the card will be limited to Canadian suppliers only, not for hazardous material, and for amounts less than \$5000
- the key performance indicator (KPI) for the procurement function will be the time taken from submission of the order by the customer to delivery of the item (“flash to bang”)
- a baseline standard for the KPI will be determined this year (it was noted that ADM (Material) uses 120 days)

We commend this thoughtful and determined effort to improve procurement and look forward to gauging its success during our next visit to SRC.

With respect to material management, staff at SRC told us that it was often difficult to obtain PPE and other safety supplies from the centrally controlled supply facility at Suffield due to a lack of stock or disputes over entitlement. It was suggested that approved tables of supply entitlement for civilian employees at Suffield be drawn up similar to existing Canadian Forces Field Equipment Tables for military units and

personnel. This would aid the supply facility in demanding, holding, and issuing items in accordance with recognized needs.

Operational Capability

SRC possesses a mobile chemical laboratory (MCL) which was originally procured to support the security of the 2010 Vancouver Olympics. It has since been used as a component of the RCMP-led National CBRNE Team and in support of live agent training at Suffield including Exercises PRECISE RESPONSE and FIRE DRAKE. Maintenance of this facility is conducted on an ad hoc basis using local resources. During our visit, it was suggested that the MCL be treated as a unique strategic-level CAF/DND operational capability and, as such, receive baseline funding for its maintenance and recapitalization. This would ensure its readiness to fulfill emerging operational requirements such as support to the security of the G7 Summit in 2025 or FIFA World Cup Matches in 2026. We heard a similar argument in favour of designating as an operational capability SRC's scientific reach-back function in support of specialized CAF units, and to conventional forces deployed to theatres where there is a threat of the use of CBR weapons. The Committee believes these are sensible suggestions that merit consideration by DRDC headquarters and the Strategic Joint Staff.

Centre for Security Science

The Canadian Safety and Security Program (CSSP) traces its origins to the aftermath of the September 2001 terrorist attacks. The program, co-managed by the CSS and Public Safety Canada, not only remains relevant, but also compellingly demonstrates the leverage to be gained from modest expenditures when these are coordinated with other agencies and allied nations in pursuit of common interests across public safety, national security, and even defence domain boundaries. In this connection, the activities of the CSS continue to serve as a valuable catalyst for cooperation and collaboration.

We received an overview of the public safety and national security roles of the CSS followed by an update of the Centre's projects in the CSSP's biological and chemical defence portfolios and of its contribution to capability-based planning and inter-agency incident response exercises by way of highly realistic scenario development. We also learned of CSS participation, for the first time, in the Innovation for Defence Excellence and Security (IDEaS) program, and the opportunity this affords the Centre to access academia and industry expertise in the context of closer integration of DRDC's defence and security interests. With respect to international safety and security collaboration, we heard that Canada is holding its own, within available resources.

DRDC Corporate Office

Defence and Security Science & Technology Program

CBRN Defence is a "line of effort" within the Defence and Security Science & Technology (DSST) Program's so-called "People" Strategic Focus Area (SFA). There is also CBRN-related activity in the "Enable Safety & Security" SFA led by the CSS (as described above).

The scope of activity on this line of effort comprises:

- provision of critical evidence-based information on CBRN threats/hazards to enable planning and development of policy, doctrine, and tactics
- delivery of enabling, integrated technologies that provide rapid detection, identification, and monitoring of CBRN threats/hazards
- development of protection technologies that minimize the harm to personnel, equipment, and infrastructure from exposure to CBRN material
- provision of specialized CBRN training and reach-back capability as needed to support CAF readiness for, and conduct of operations
- provision of science and technology to mitigate and reduce the immediate and long-term health effects of exposure to these hazards

Specific investments are being made, or will be made, in the following areas:

- risk analyses on CBRN threats/hazards and capability gap assessments
- threat characterization
- support to acquisition to fill any immediate capability gaps for CBRN detection
- novel technologies for rapid detection, identification, and monitoring of CBRN threats/hazards
- development of innovative materials, systems, and prototypes for next-generation CBRN combat uniforms including novel solutions for the provision of CBR protection to personnel requesting religious/spiritual accommodation (*i.e.*, facial hair or headdress)
- development of technologies for decontamination and hazard management
- individual and collective CBRN defence training incorporating live-agent and live-tissue
- support to operations, including reach-back expertise
- MCM against biological threats (broad spectrum)
- MCM against chemical threats
- diagnostic technologies
- novel platforms for MCM development

The sponsors of this work are CFINTCOM's Directorate of Scientific and Technical Intelligence, CANSOFCOM, the Canadian Army's Directorate of JCBRN Defence, and Canadian Forces Health Services Group's Strategic Medical Countermeasures Program.

New R&D requirements are solicited annually from all DND/CAF "Level 1" authorities (*i.e.*, Commanders of Commands (e.g. Commander RCAF) and Assistant Deputy Ministers) and incorporated in the DSST Program Plan.

DRDC delivers CBRN defence science and technology via six vehicles:

- DRDC Research Centres at Suffield and Valcartier, and the DRDC Centre for Security Science for joint public safety and security requirements
- national innovation programs including the Innovation for Defence Excellence and Security Program (IDEaS) and Innovation Solutions Canada (ISC)
- Public Health Agency of Canada National Microbiology Laboratory in the case of, for example, animal efficacy studies for counter-COVID MCM
- National Research Council in the case of, for example, novel chemical and biological agent sensor work
- Royal Military College of Canada in the case of, for example, soldier protection against CBRN hazards
- SLAs/MOUs with other Government departments, industry, and academia

The CBR MOU between Australia, Canada, the United States, and the United Kingdom remains DRDC's primary mechanism for chemical and biological defence strategic alignment and collaboration with allies. Working groups in the threat and hazard assessment (Assess), decision-making support (Inform), and physical protection and decontamination (Protect), domains identify research and development tasks and coordinate their execution by the member nations. The Medical Countermeasures Consortium, a partnership between defence and public health, addresses defence and public health medical countermeasures requirements to protect against CBR threats, emerging infectious diseases and pandemic influenza. The CBR MOU is up for renewal in 2025.

Canada is cooperating with the UK and the Netherlands on the development of a new nerve agent countermeasure.

Tri-lateral MOUs also exist, or are planned, with Sweden and the Netherlands for research project arrangements for areas not being directly addressed under the CBR MOU including aspects of hazard evaluation of genetic engineering of micro-organisms, biological and chemical hazard assessment, safer handling of highly toxic compounds, and the medical management of chemical casualties.

With respect to NATO, Canada participates in panels revising publications related to CBRN decontamination requirements and the sampling and identification of CBR agents. It is also represented on several NATO Science and Technology Organization Research Task Groups looking into such matters as surface and ground chemical contamination detection and avoidance, nanopore sequencing, and presymptomatic diagnostics.

There are 63.7 full-time equivalent (FTE) science workers dedicated to the CBRN defence program at DRDC laboratories – an increase of 10.6 FTE over FY 23/24. Approved funding for the program decreased from \$7.546 million in FY 2023-24 to \$4.802 million in FY 2024-25.

Discussion with ADM (DRDC) & Staff

Following presentation of the DSST Program, the Committee shared its observations made during its visits to DRDC entities including our commendation of the actions taken thus far to remediate our chemical safety concerns at SRC. While considerable work remains to be done to comprehensively and conclusively address the risk control deficiencies we noted during our 2023 visit, we believe that the situation has been stabilized and agree with the decision of ADM (DRDC) to resume chemical defence-related research activities as specific conditions permit. This said, we believe it essential that the support of stakeholders and authorities outside of DRDC, for risk remediation, be sustained with a view to maintaining a safe environment for all working at, or making use of, the facilities at SRC. The discussion which ensued clearly indicated that our observations and recommendations continue to be received seriously, attentively, and appreciatively.

Canadian Forces Intelligence Command, ADM (Policy) & Global Affairs Canada

Free exchange, transparency and frankness again denoted our talks with intelligence and policy staff at NDHQ and with officials from GAC. They provided briefings not only on the threat landscape and the status of the BTWC and CWC, but also, the Australia Group and the Weapons Threat Reduction Program (WTRP). The WTRP encapsulates Canadian activities undertaken in support of our country's membership in the Global Partnership Against the Spread of Weapons and Materials of Mass Destruction.

Threat & Threat Analysis Capability

The briefings the Committee received from the intelligence staff attested to continued credible BCW agent threats from both state and non-state actors, which necessitate appropriate defensive preparedness. In recent years, we have noted that the monitoring and ongoing assessment of the threat landscape relies upon the expertise of an exceedingly small number of experts – a situation exacerbated by the retirement of employees without replacement. This led to our recommendation in 2022 that resources dedicated to the analysis of the biological and chemical threat facing the CAF be reviewed to ensure their sufficiency. We were most pleased, therefore, to learn in 2023 of the new or impending hiring of additional analysts and then, this year, to be briefed by some of these new personnel. Given this improvement in the situation, we will close our recommendation as having been implemented.

We hope that these new resources will position CFINTCOM to respond positively to the desire we have heard expressed during our visits to the DRDC Corporate Office and CFHS Group Headquarters, for more CBRN and medical intelligence input to the formulation of the Defence and Security Science & Technology Program and the direction of the Strategic Countermeasures Program.

Biological & Toxins Weapons Convention

As a State Party to the Biological & Toxins Weapons Convention (BTWC), Canada is obliged to:

- neither develop, possess, nor acquire biological weapons (BW) nor facilitate their production by another
- put in place national implementation legislation, extending the BW prohibition to citizens
- assist if another State is attacked with a BW
- provide the fullest possible exchange in the life sciences

It should be noted that the Convention does permit State Parties to acquire and retain small quantities of agents and toxins for “prophylactic, protective and other peaceful purposes”. This provision underlies Canada’s research into defences against BW.

GAC officials told us that the following issues continue to limit the effectiveness of the BTWC or otherwise give rise to concern:

- lack of universality of adherence – ten states remain outside the Convention and not all States Parties have effectively implemented it
- lack of the institutional infrastructure and verification regime possessed by the CWC – instead, it essentially relies on good-faith adherence by States. (A four-person Implementation Support Unit serves as treaty secretariat and “declaration” of confidence-building measures (CBM) by States improves transparency by sharing information on CL4 laboratories, biological defence research programs, disease outbreaks that deviate from normal patterns, scientific publications of relevance, declarations of past offensive programs post-1946, and vaccine production capacity. Canada regularly submits CBMs and makes them available to the public.)
- financial viability – lack of a working capital fund
- biological research intended for peaceful purposes could be misused or exploited to develop or to produce biological weapons – so-called dual-use research of concern or DURC. It is also becoming difficult to prevent biological weapons proliferation without impeding research in the life sciences. Canada now funds a position in the World Health Organization dedicated to this issue.

Chemical Weapons Convention

The Chemical Weapons Convention (CWC) is a global disarmament treaty which bans the development, production, acquisition, stockpiling, retention, transfer, and use of Chemical Weapons (CW). It has provisions for declarations and inspections of chemical production facilities, and oversees the destruction of CW and CW production facilities.

It should be noted that the Convention does permit the production and use, by States Parties, of limited amounts of chemicals that can be used as weapons themselves or used for the manufacture of weapons for research, medical, pharmaceutical or chemical weapon defence testing purposes. This provision underlies Canada’s research into defences against CW.

The Organisation for the Prohibition of Chemical Weapons (OPCW) administers the Convention and operates a comprehensive verification scheme which incorporates declarations of compliance; on-site inspections of permitted facilities that produce, process, or consume, import, or export certain listed chemicals; and investigations of allegations of use of CW. The OPCW records that, as of September 2023, 100% of all States Parties' declared CW has been destroyed, though concerns remain about undeclared chemical weapons.

Canada implements the CWC through the Canadian National Authority. The Canadian National Authority serves as the liaison with the OPCW and other states parties.

As we heard from GAC officials, Canada continues to play an active role in the affairs of the OPCW participating in the CWC Conference of States Parties and sharing a seat on the OPCW Executive Council with Australia and New Zealand.

Canada's policy is to continue to look for ways to support the financial, technical, and operational well-being and effectiveness of the Chemical Weapons Convention.

Australia Group

The Australia Group is an informal arrangement which aims to allow exporting or transshipping countries to minimise the risk of assisting chemical and biological weapon (CBW) proliferation. The Group meets annually to discuss ways of increasing the effectiveness of participating countries' national export licensing measures to prevent would-be proliferators from obtaining materials for CBW programs.

Participants in the Australia Group do not undertake any legally binding obligations: the effectiveness of their cooperation depends solely on a shared commitment to CBW non-proliferation goals and the strength of their respective national measures. Key considerations in the formulation of participants' export licensing measures are:

- they should be effective in impeding the production of chemical and biological weapons
- they should be practical, and reasonably easy to implement, and
- they should not impede the normal trade of materials and equipment used for legitimate purposes

The Group currently comprises 43 members including Canada and the European Union but excluding China and Russia.

All states participating in the Australia Group are parties to the Chemical Weapons Convention (CWC) and the Biological and Toxin Weapons Convention (BTWC) and strongly support efforts under those Conventions to rid the world of CBW.

As with the BTWC and the CWC, Canada actively participates in the affairs of the Group.

Canada's Weapons Threat Reduction Program

We remain impressed by the Weapons Threat Reduction Program (WTRP) and the extent of its projects and activities undertaken in conjunction with partner countries,

international organizations, NGOs, and other government departments aimed at mitigating threats posed by CBRN weapons and related materials. (The wider international collaboration is known as the Global Partnership Against the Spread of Weapons and Materials of Mass Destruction (GP)).

The GP works in every region to prevent terrorists and states of proliferation concern from acquiring weapons of mass destruction (WMD) and related CBRN materials including support for UNSCR 1540 (2004) (which obligates all States to institute domestic legal-regulatory measures and controls to prevent the proliferation of nuclear, chemical, and biological WMD, their means of delivery, and related materials to non-State actors). It also supports universalization and implementation of key conventional arms control treaties.

Objectives of the Canadian WTRP are:

- building international capacity to prevent, detect, and respond to weapons of mass destruction threats
- securing or destroying dangerous CBRN materials and improving security at storage facilities
- improvement, universalization, and national implementation of key non-proliferation, arms control, and disarmament (NACD) regimes (e.g., the BTWC and the CWC)
- strengthening global networks and supporting international NACD institutions and initiatives
- building partner capacity to meet international obligations

The WTRP has delivered more than \$1.6 billion in programming since 2002 and is currently funded at \$73.4 million annually with occasional supplements from other Government of Canada priority efforts. In 2023-24, there were 143 active projects including global initiatives and local projects in Sub-Saharan Africa and the Middle East, Latin America and the Caribbean, South-east Asia and Ukraine.

With respect to biological security, the WTRP pursues collaboration between the security and health sectors at the “health-security” interface where respective interests and responsibilities coincide, *i.e.*, strengthened public health capability to respond to natural outbreaks equals strengthened preparedness for deliberate outbreaks. Its portfolio includes:

- securing and accounting for biological pathogens
- prevention of the deliberate misuse of pathogens
- enhancement of regional surveillance networks
- reinforcement of biological non-proliferation instruments
- promotion of responsible conduct in biological sciences

Examples of new biological security programming this year include:

- Mitigation of Biological Threats in the ASEAN Region (Phase III) (\$10M) – Strengthening ASEAN’s capabilities in biosafety, biosecurity, and diagnostic laboratories; regional health security preparedness and response; disease surveillance, field epidemiology and health security intelligence; and operations at the health-security interface
- GP Initiative to Counter WMD Disinformation (\$3.1M) – Supporting efforts to counter Russia’s false WMD allegations in the context of its illegal war in Ukraine
- Enhanced Security and Sustainability for Biological Laboratory in Sierra Leone (\$1.95M) – Supporting the GP’s Signature Initiative to Mitigate Biological Threats in Africa (SIMBA) specifically by supporting capacity building, training, and security upgrades for the Canadian-funded laboratory in Sierra Leone

Regarding chemical security, the WTRP’s portfolio includes assisting States Parties to the Chemical Warfare Convention to implement their obligations, addressing emerging threats posed by chemical weapons, and supporting chemical weapons destruction activities.

Examples of new chemical security programming this year include:

- Support to the OPCW’s Syria Operations (\$1.0M) – Support to the OPCW’s efforts to address persistent CW threats posed by the Syrian Arab Republic, increase accountability of state and non-state actors and attribute responsibility
- Support to the OPCW’s Ukraine Assistance Program (\$750K) – Acquisition and delivery of CW detection, identification and monitoring equipment to the State Security Service of Ukraine and capacity building training on same

Directorate of Joint CBRN Defence

During our visit to Canadian Joint Operations Command Headquarters in 2022, we heard that the war in Ukraine, specifically Russian threats to employ weapons of mass destruction and the consequent need to meet the CBRN defence needs of Canadian forces deployed on Operation REASSURANCE (as part of NATO’s deterrence and assurance measures in central and eastern Europe), had drawn the attention of force protection staff to the state of the CBRN defence “enterprise” within the CAF.

They were of the strong opinion that a strategic level vision of required CBRN defence capability, capacity, and readiness on the part of the CAF, especially amongst the conventional forces, is lacking. This applied to both potential domestic and continental, as well as expeditionary operations. Also missing, it was suggested, was a definition of the CBRN defence enterprise and clarity around high-level authority, responsibility, and accountability for the implementation of the vision and governance of the enterprise. It was also stated that there is seemingly no designated point of contact for CBRN defence matters within the Strategic Joint Staff – that element of NDHQ responsible for the

provision of military analysis and advice to the Chief of the Defence Staff (CDS) within the realms of operations, plans, support, and strategic initiatives.

Director Joint CBRN Defence (D JCBRN D) echoed and amplified these concerns when we visited his directorate that same year. Direction and guidance for the conduct of CBRN defence by DND and the CAF are contained in two keystone documents (last updated in 2019):

- Defence Administrative Orders & Directives 8006-0 Chemical, Biological, Radiological & Nuclear Defence
- Defence Administrative Orders & Directives 8006-1 Chemical, Biological, Radiological & Nuclear Defence Operations, Training and Capability Development and Sustainment

Notwithstanding the reasonable thoroughness and clarity of this direction and guidance, we heard the view that the CBRN defence enterprise has been performing activities across the force governance functions (force development, force generation, force employment, force sustainment, and force management) in an *ad hoc* manner without a coherent purpose or desired end-state. The force management function, responsible for the orchestration of the other functions, in accordance with strategic-level direction and guidance, is impaired. Consequently, the enterprise has been allowed to erode, resulting in a widening capability gap that threatens the CAF's ability to operate in a CBRN threat environment.

Aggravating factors were said to include:

- CBRN defence is a low priority
- lack of CBRN defence expertise at operational and strategic levels
- key stakeholders are not being held accountable for their DAOD-stipulated CBRN defence responsibilities
- some responsibilities and authorities are misaligned with current CAF organization
- commanders are not adequately identifying capability deficiencies nor defining requirements resulting in poor investment decisions
- little or no collective CBRN defence training is occurring resulting in widespread skill fade
- since the disbandment of the Nuclear, Biological and Chemical (NBC) Defence Company in favour of investment in the special operating forces' CJIRU CBRN, the conventional forces have lacked a CBRN defence general support capability

To rectify this situation, D JCBRN D advocated the launch of a CBRN defence enterprise renewal initiative led by the Strategic Joint Staff that, *inter alia*, would review and update

the CBRN defence DAODs; define the enterprise; ensure the correct definition and alignment of authorities, responsibilities, and accountabilities (ARA); and then, most importantly, hold authorities accountable for the discharge of their responsibilities. It was further advised that the initiative take close account of the ongoing NATO CBRN policy review in which ADM (Policy) and GAC were participating. Noting that the CJOC HQ staff had independently expressed a similar need, we saw merit in this proposal and included a recommendation to that effect in our 2022 report.

During our 2023 visit, in the company of D JCBRN D, we met with the Strategic Joint Staff's Director General Operations who concurred with the 2022 characterization of the situation. We heard that general knowledge of CBRN defence is lacking, and that readiness is poor due to lack of equipment, training, and qualified staff. It was further indicated that the root causes of this situation may include:

- lack of common understanding of the desired end state (which is essential to the effectiveness of an ends, ways, and means-based strategy)
- lack of understanding of threat and capabilities and corresponding CAF vulnerabilities
- lack of alignment of authorities, responsibilities, and accountabilities with the interests/priorities of various stakeholders
- inadequacy of force structure for general support CBRN defence

We were left to understand that the SJS would prepare advice for the CDS that defines the problem facing the CBRN defence portfolio and proposes issuance of a CDS/DM Directive which would explain the necessity of re-energizing the CBRN defence function, define the relevant strategic end-state, stipulate the necessary alignment of governance, guide the implementation of new NATO CBRN policy, adjust DAODs, and state the requirement for an appropriate CBRN defence capability development roadmap.

In view of the above, the Committee was very pleased to learn this year, during our visit to D JCBRN D and at the CBRN Defence Symposium, of the substantial progress that has and is being made to improve this situation. Some of the most salient advances may be summarized as:

- creation of a CBRN defence desk within the SJS which we have observed to be occupied by a most energetic and effective incumbent
- implementation of the new NATO CBRN Defence Concept in the context of Canadian policy and doctrine
- development and promulgation of a new strategic-level CBRN Defence vision and corresponding direction and guidance (promulgation is expected to occur in the spring of 2025)
- corresponding revision of DAODs 8006-0 and 8006-1

We note that drafting of these documents has included a pointed and sustained effort to enumerate and incorporate input from all DND and CAF stakeholders in the CBRN defence function. We look forward to their promulgation, which we understand is to occur in 2025.

During our visit, we also enjoyed a thorough explanation and discussion of the joint biological and chemical defence program, touching on policy and plans, capability and capacity, readiness, and domestic and international collaboration. We noted with special interest, plans for the doctrinally guided reinforcement of the CBRN defence capability and capacity of the Canadian-led multinational brigade in Latvia.

Finally, we were told of the ongoing review and revision of RUBICION – the contingency plan for CAF support to the mitigation of the effects of CBRN incidents in Canada.

The Committee appreciated this year, the opportunity to observe the proceedings of the CBRN Defence Symposium. In bringing together representatives of most DND/CAF stakeholders in the CBRN Defence function (as well as Public Safety Canada) to exchange reports on their current situations, socialize emerging issues, and discuss in open forum capability development including S&T support and procurement efficacy, the symposium seems to us to be an invaluable tool for the alignment of thought, word and deed. For the Committee, attendance deepens our understanding of the CBRN defence enterprise, expands our network of expert contacts, and allows us to refresh observations made during our visits and meetings earlier in the year.

1 Canadian Division Headquarters

This year's visit was the Committee's first to the Headquarters since its stand-up in 2010. We did so with a view to gaining an understanding of its role, and its capability, capacity, and readiness to conduct operations in accordance with that role in a chemical or biological warfare environment. Thanks to the presentation and explanations provided us in Kingston, we easily achieved our aim. We learned that given the HQ's mission of being prepared to command and control forces in foreseen contingencies, at home and abroad, in which CBRN could be a condition of the battlespace, it is reasonable to deduce the requirement for it to perform certain CBRN defence functions such as: planning, warning and reporting; oversight of the defensive readiness of assigned forces; and, integration in multi-national CBRN defence structures. This said, we perceived that there is a lack of the strategic and operational level direction and guidance (including prioritization) and resources (including expertise) necessary to develop and maintain these capabilities at a stipulated appropriate level. On a positive note, we were informed of the intention to undertake remedial measures within the scope of the HQ's own powers, such as designating the Joint Engineer staff branch as the lead for CBRN matters, re-establishing CBRN expertise within the staff, and participating in multi-national CBRN warning and reporting exercises. As to higher-level direction and guidance, we understand that the Strategic Joint Staff's ongoing review of the governance of the CAF's CBRN defence enterprise will be of assistance to the formulation of same.

Canadian Joint Incident Response Unit

The programme assembled this year by the Commanding Officer and his staff allowed us to easily achieve our aim of updating our understanding of CJIRU's role, and its capability, capacity, and readiness to conduct operations. As during past visits, we appreciated the openness and candour that denoted the unit's presentation, and the discussion which followed. We were struck by the exceptional expertise, professionalism, and maturity exhibited by all whom we met.

We especially noted the importance the unit attaches to the support provided by DRDC SRC – be it live agent training opportunities, specialized CBRN medical training, or reach-back expertise – and its desire that SRC's ability to do so be sustained, if not reinforced. In this connection, we were pleased to learn that the recent posting of a CANSOFCOM liaison officer to SRC is generating dividends. We also learned of the broadening of CJIRU's role to include additional aspects of technical exploitation of collected material with a view to providing commanders with a better understanding of an adversary's capabilities and intentions. Our opinion of the unit remains high, and our perception of the essential value of its contribution to the security and defence of Canada is reinforced, especially as the international norms restraining the use of biological and chemical weapons are eroded.

1 Canadian Field Hospital

Over several years, the Committee has observed uncertainty around the intended use and utility of the transportable collective protection (COLPRO) system held by 1 CFH (one of six or so procured as part of the CBRN Omnibus Equipment Project for distribution across the CAF). During this year's visit, we were therefore not surprised to be told that it was the unit's intention to return the system to the central supply depot as being difficult to maintain and of little apparent use. This said, COLPRO's problematic history speaks to an apparent lack of clarity with respect to the requirement for the Hospital to operate in an environment in which the use of biological or chemical weapons is a threat, including the provision of treatment to biological and chemical warfare agent casualties. We shared this concern during our visit to Canadian Forces Health Services Group Headquarters asking if approved medical policy and doctrine existed covering this subject. Later in the year (at the CBRN Defence Symposium), we were told that in fact, such a doctrinal publication had been written, but never promulgated, and that this oversight would be corrected as soon as possible. Also at the Symposium, a representative of D JCBRN Defence stated that the operating concept for the COLPRO system would be verified, and the results communicated to all users. We look forward to ascertaining the status and results of these intended actions during our next round of visits.

We learned that 1 CFH is required to maintain a 30-day supply of short shelf-life medical consumables and that this posed a challenge for the small number of supply technicians in the unit as well as resulting in significant wastage as items were disposed of at the end of their shelf life. Apparently, prior to the COVID pandemic, the requirement was to maintain a more manageable 10-day supply. We believe this situation merits attention.

Finally, we observed that the Hospital's fleet of vehicles – especially its specialist vehicles (e.g., heavy transport tractors and combat ambulances) – are in a poor state of repair due to age and lack of parts, and that this state of affairs impairs the unit's deployability.

Central Medical Equipment Depot

Our visit to CMED this year again focused on arrangements for the secure storage and distribution of biological and chemical defence-related medical countermeasures. As we have observed in past reports, we believe that the location, condition, and capacity of the Depot merit its replacement and relocation, noting that the direction of the Strategic Medical Countermeasures Program (SCMP) and the growth of the Canadian presence in Latvia suggest that even more demands will soon be placed on this unit. We were told during our visit, however, that new, even more urgent requirements have emerged elsewhere, pushing CMED recapitalization to 34 from 19 on the list of infrastructure project priorities. The extent to which this will delay the CMED project is unknown which makes more crucial the success of efforts, briefed to us, aimed at securing interim storage facilities in, or near, CFB Petawawa. Having viewed the presence in the Depot's parking lot of refrigerated transport trailers being used for storage of temperature-sensitive pharmaceutical supplies and being told of the need to maintain a all-ranks duty roster of personnel for the purpose of day and night refueling of the generators powering the trailers, we left the facility with a heightened concern over the sustainability of such arrangements and a deeper sense of appreciation of the commitment of CMED personnel to achieving their mission under such markedly sub-optimal conditions.

In view of the above, we were gratified to learn, later in the year, that funds have been allocated to accelerate the procurement of an interim storage facility near CFB Petawawa and, to begin the definition phase of the project to build a replacement facility – likely at 8 Wing, Trenton.

CFHS Group Headquarters

Surgeon General

The Surgeon General expressed his appreciation for the work of the Committee and acknowledged the issues we observed at CMED and 1 CFH, stating that the cost of preparedness is steep but should nevertheless be regarded as essential insurance against emerging risks which are increasingly numerous and acute. He also pointed out the critical importance of an approved policy base and clear strategic direction with respect to the level of medical capability, capacity, and readiness to be maintained in the face of CBRN threats and, of course, the provision of the resources necessary to comply with same.

Operational Medicine Section

Responsibility for medical CBRN defence matters within CFHS Group HQ lies with the Operational Medicine Section which, additionally, is responsible for combat casualty care issues, the military blood supply program, and regulatory affairs (including the regulation of BCD-related pharmaceuticals and medical devices). It also provides direction and guidance for the management of SMCP. During our visit, we received the following news and updates about the Section's activities during the past year.

Medical CBRN Doctrine

Efforts to revitalize operational medicine doctrine continue.

CBRN Clinical Training

In 2022, we were told that CFHS Group would continue to send medical personnel abroad (UK and US) for CBRN clinical training although there may be *ad hoc* opportunities for team-based training of medical technicians posted to CFB Suffield.

This year we learned that a formal Canadian CBRN clinical training course would be held at SRC in September, and at least every second year thereafter with the possibility of international participation. We applaud this decision, recognizing as it does, the exceptional facilities and expertise available at Suffield.

CBRN Collective Training

We learned that shortly before our visit, NATO's biennial major multi-national military medical care exercise, VIGOROUS WARRIOR, involving 32 countries and 1200 active participants had concluded in Hungary. This exercise also incorporated Exercise CLEAN CARE which is focused on the reception and treatment of CBRN casualties. We understand that Canada chose to limit its participation in CLEAN CARE. We hope to gain a better understanding of this decision during our 2025 visit and to determine Canada's intention with respect to involvement in the next exercise slated to occur in 2026.

CBRN Research & Development

Notable research and development activities currently under the direction of CFHS include contribution to the development of a 3-in-1 (atropine, HI-6 and azivafone) auto-injector, clinical trial of an intravenous HI-6 formulation, evaluation of potential prophylaxis against SARS-CoV-2, and the development of a bioscavenger therapeutic for post-exposure treatment of nerve agent poisoning.

International Collaboration

International collaboration continues within two frameworks. The first is that of NATO's Committee of Chiefs of Medical Services (COMEDS) where contributions are made to the CBRN Medical Working Group, which conducts "deep dive" CBRN medical risk assessments and capability gap analysis. The Working Group's current "deep dive" is in support of NATO's new CBRN Defence Policy Implementation Plan with tasks to develop CBRN Medical Support Guidelines, CBRN Medical Education, Training, Exercise and Evaluation (ETEE) Guidelines and a Biological Preparedness/Response Concept.

The second framework is that provided by the Chemical, Biological and Radiological Memorandum of Understanding (CBR MOU) between Australia, Canada, the United Kingdom, and the United States within which the CBRN Medical Counter Measures Consortium operates, and research and capability development efforts are coordinated. We were told that the nations have, in the past year, updated their Statements of User Requirements which are used to align the agreed R&D program of work and assigned tasks with national requirements.

CMED Replacement

Further to the observations we made during our visit to CMED, we were provided a copy of the CAF's "Operational Sustainment Modernization Strategy – Tranche 2: Health Services Modernization". The purpose of this strategy is to assist with the transformation of the CF Health System to meet the intent of the Strong, Secure and Engaged Defence Policy. This transformation is stated as being, "Fully dependent on the establishment of a strategically sited, GMP compliant, and modernized medical logistics framework ... that allows for the storage and strategic stockpiling of blood products, vaccines, and other medical counter measures. This requires a medical health supply chain, distribution, and storage centre networks, and a modernized electronic medical supply system of record that supports Damage Control Resuscitation and Damage Control Surgical compatibility and a resilient blood program". Presumably, this recognition will constitute part of the impetus required eventually to push the CMED replacement project over the finish line.

Regulatory Affairs

In our view, Regulatory Affairs remains proactive, diligent, and effective in ensuring adherence to Health Canada and DND regulations and policies for the reporting, accounting, and handling of unlicensed medical products; advising on regulations for their use; and seeking regulatory approval for them, where applicable and feasible. The section is also effective in providing product development support to the Strategic Medical Countermeasures Program (SCMP), DRDC research, the Medical Countermeasures Consortium, manufacturers, and allies.

This year, we again received an updated and thorough explanation of the regulatory environment, regulatory challenges associated with the small market for CBRN MCM and the unique situation of the CAF vis a vis securing access now for use in unknowable future conflict or emergency situations, Health Canada regulatory mechanisms for accessing unlicensed drugs, and the status of Surgeon General Restricted Products.

We also received a summary of Regulatory Affairs Section activities in support of its mandated functions.

One issue of concern mentioned again this year is the urgent requirement to revamp the system for tracking, from "cradle to grave", unlicensed medical products. Health Canada mandates such a system and can ask for an accounting of authorized products at any time they deem appropriate. We learned that the Section is working with the Military Personnel Command Contracting Team to complete a Request for Information for release to industry.

Strategic Medical Countermeasures Program

We were comprehensively briefed on Strategic Medical Countermeasures Program (SMCP) administration, and activities pertaining to the identification, definition, sustainment, and regulatory compliance of medical products in the strategic stockpile of medical countermeasures.

The SMCP continues to progress well in the direction of its operational targets due to its solid governance and management, support from the senior echelons of CFHS Group and Military Personnel Command and extensive networking across DND/CAF and other government departments.

This said, certain impediments to the full desired effectiveness of the program were mentioned. These include continued baseline funding uncertainty, deficient stockpile storage capability and capacity (see observations related to CMED above) and limited medical intelligence support regarding evolved or emerging threats. All of these were noted in last year's report. Also a continuing challenge, is the degraded ability of SRC to support funded research and development tasks due to DRDC's impaired procurement function.

ADM (Review Services) has completed its conduct of a formal evaluation of the SMCP within the context of Joint CBRN defence. The scope of the evaluation included an assessment of:

- the relevance of the program in the current threat environment
- the SMCP's ability to acquire and sustain a high-readiness strategic stockpile
- the support which enablers provide to the program

The evaluation found that:

- within the current defence and security environment, the SMCP is relevant as evidence indicates that CBRN events are a persistent and growing threat against which, the CAF must be prepared to defend
- unstable funding has impacted the program's ability to procure stockpile products and currently it will not be possible for the SMCP to meet established planning assumptions
- gaps in intelligence, insufficient infrastructure, and the lack of timely and reliable stockpile data hinder the Program's ability to ensure the availability of necessary MCM

The evaluation report recommends that:

- a risk-based, financially supported decision on personnel planning numbers be taken to enable the Program to calculate the quantity of stockpile of stockpile items to be procured
- interim solutions be implemented to mitigate infrastructure-related risks to stockpile readiness and security
- interim measures be put in place to ensure the availability of reliable data on stockpile levels which can be fed into longer-term solutions

A management action plan is to be developed and implemented through the balance of this fiscal year.

Royal Military College

During our first visit to RMC since 2018, we fully achieved our aim of gaining understanding of BCD-related research and development work currently being conducted at the College in support of DRDC or other DND/CAF entities. We were impressed by the research underway into novel materials for protection against, and decontamination of, chemical warfare agents and other chemicals, as well as hazard assessments of toxic gas-forming reactions and decommissioned CS gas huts. We were also pleased to find the Department of Chemistry and Chemical Engineering's CBRN Protection Group as active and productive as ever in developing PPE for the CAF, providing advice on procurement and deployment support matters, and lending expertise and leadership to the agreement of national and NATO standards. Finally, we learned of a strategic initiative, one which we applaud, to establish an Institute for Defence Research at the College, with the intent, *inter alia*, of supporting new researchers and helping them partner with other DND and CAF entities. We have no concerns with any of the research and development work presented to us.

RCMP CBRNE Operations Section

The Committee is grateful to have received from the RCMP an invitation to visit their CBRNE Operations Section in Ottawa. This was our first ever visit to the Section, notwithstanding the fact that we have often met individual members at Exercise FIRE DRAKE and the CBRNE Convergence Conference or heard discussion of their work during visits to Canadian Special Operations Forces Command (CANSOFCOM) and our annual meetings with DRDC's Centre for Security Science. As such, we were excited by the opportunity to meet them officially and to learn at first hand, the specifics of their mandate and organization, and to discuss topical issues of common interest.

The RCMP's CBRNE Operations Section is the national policy centre for explosives and CBRN response. CBRNE Operations is responsible for providing national standards, advice and training to regional Explosive Disposal Units (EDUs), CBRNE specialized responders and internal RCMP CBRN first responders. The Section also provides expertise in the criminal context of a CBRNE event, data analysis and research, as well as development of specialized tools and techniques to advance CBRNE response capability.

The Section comprises four principal components (with responsibilities as indicated):

- National Headquarters (NHQ) Explosive Disposal Unit
 - the development, maintenance, and provision of operational policy, advice, and training for the tactical use of explosives; detection and render-safe procedures for CBRNE devices; and post-blast analysis
 - the conduct of R&D for the tactical use of explosives; detection and render-safe procedures for CBRNE devices; and post-blast analysis
 - provision of operational CBRNE response to the City of Ottawa (jointly with the City of Ottawa Police), the National Capital Region, the RCMP's "C" Division (i.e., Province of Quebec) and eastern Nunavut Territory

- provision of expertise in support of criminal investigations involving CBRNE materials and devices
- conduct of high-risk assessments and searches, securing and rendering safe a CBRNE event, and forensic examination related to national-security incidents involving a CBRNE threat
- CBRNE Specialized Response Program
 - the development, maintenance, and provision of operational policy, advice, and training for safe operation in contaminated areas (hot and warm zones) in a CBRNE event
 - the coordination and mobilization of the National CBRNE Response Team in support of local police of jurisdiction (POJ) and various emergency plans (e.g., Federal Emergency Operational Plan, RCMP CBRNE Emergency Operational Plan)
 - provision of services to RCMP divisions and local POJ via Regional CBRNE Coordinators located in Greater Vancouver, Edmonton, Ottawa, and Halifax
 - conduct of high-risk assessments and searches, securing and rendering safe CBRNE events, and forensic examination related to national-security incidents involving a CBRNE threat
 - Delivery of Police Explosive Technician and CBRNE Specialized Response training to RCMP members and other law enforcement agencies
 - Provide expertise for RCMP criminal investigations related to CBRNE material and/or devices
- CBRN First Responder Program
 - as the national policy centre applicable solely to cold zone operations during a CBRN event, the provision to designated RCMP employees of CBRN-specific training, specialized CBRN equipment, and national program directives
 - provision of counsel, program performance reports, and technical documentation to RCMP senior executives and internal/external partners
 - development, implementation, and sustainment of national policy and course training standards at the instructor and user levels
 - coordination and delivery of instructor-level training (Train-the-Trainer) with a view to facilitating division training autonomy
 - procurement, storage, and distribution of CBRN equipment
 - life-cycle management of CBRN equipment including refurbishment of general service respirators

- research and evaluation of emerging CBRN equipment and technologies in support of the national program
- CBRNE Training Unit
 - delivery of explosives and CBRN training to Canadian and international law enforcement agencies, security personnel, and the First Responder Community
 - development, maintenance, and delivery of national operational training for police explosive technicians and CBRNE first responders
 - provision of national operational training for safe operation in contaminated areas (hot and warm zones) during a CBRNE event

Our visit incorporated discussion with the officers in charge of the section, as well as the staff sergeants responsible for the units and programs. This was followed by a tour of the CBRNE training facility, and the NHQ Explosive Disposal Unit's mobile laboratory/equipment vehicle. All with whom we spoke, were open and forthright in their explanations and exuded professional competence, confidence, and dedication. We left with several insights which will valuably inform the future work of the Committee.

Amongst these was a new understanding of the division of responsibility between the RCMP and local POJ, with respect to CBRNE incidents. It is the POJ who bear responsibility for the initial response to such incidents, with the RCMP, in the form of the National CBRNE Response Team, becoming involved only when the incident is the subject of a National Security investigation or if it exceeds the capacity of the POJ to deal with it. In such cases, the primary goals of the National CBRNE Response Team are to render the scene safe, and to collect evidence to aid in attribution and prosecution. Dealing with any site contamination, or other threats to public safety caused by the incident, is the responsibility of municipal and provincial authorities, not the RCMP. The RCMP also serves as a source of subject matter expertise for municipal and provincial authorities to draw upon, although it was noted this "reach back" capability has diminished in recent years with the demise of the RCMP managed, "Canadian Bomb Data Centre".

We were told that the CBRNE incident response capability of police forces and other first response agencies across the country, varies considerably, from good to rudimentary. Consequently, the RCMP continues to detect a significant demand for the provision of CBRNE training from first response agencies in various parts of the country, where the necessary expertise is not available locally, or provincially. Since the cancellation of the federal First Responder Training Program in 2012, no such training has been available on a national basis, although the RCMP recently attempted, informally, to match continuing interest with an offer of a two-week course, based on that provided to its internal First Responders (*i.e.*, "Train the Trainer"). Unfortunately, without an official mandate, sufficient training staff, or dedicated funding, it has not been possible to sustain this initiative, and so the course offering has been "paused". It was suggested that this is a matter deserving the attention of Public Safety Canada.

We were pleased to learn the Section is proud of, and values, its close collaboration with DND and the CAF; be it with CANSOFCOM on National CBRNE Team matters, SRC regarding live agent training, or DRDC generally, and RMC, with respect to respiratory protection R&D.

At the conclusion of our visit, we heard expressed the view that national CBRNE response preparedness would most benefit from three initiatives:

- development by the provinces of CBRNE preparedness action plans
- creation of a federal mandate (with resources) for the RCMP to support the provinces with their CBRNE preparedness
- creation of a national central repository of information related to CBRNE technical issues and events, available to first responders, and others within the national public safety community

Based on what we observed during our visit to the RCMP CBRNE Operations Section, and what we have learned during our encounters with other stakeholders across the CBRN defence enterprise in recent years, these seem to be most worthy suggestions.

CONCLUSIONS

Having detected no evidence to the contrary during its 2024 visit and briefings, the Committee concludes that:

- Canada's policy of maintaining a purely defensive biological and chemical warfare capability, is fully respected by the DND and the CAF
- the BCD research, development, and training activities undertaken by DND and the CAF, are fully compliant with Canada's obligations as a State Party to the BTWC and CWC
- the BCD research, development, and training activities undertaken by DND and the CAF, pose minimal risk to public safety or the environment
- while there is always room for improvement, the BCD program is conducted in a professional manner
- there is no coyness or duplicity within the BCD programme

RECOMMENDATIONS

The Committee this year offers two new recommendations. We will continue, however, to pursue with DND and CAF authorities the mutually satisfactory resolution of the eight open recommendations made in the reports of previous years:

1. Given that the historical environmental soil samples from Wood Buffalo National Park held by SRC do not relate to any current research at SRC, these should be destroyed beyond any small representative sample that may be required to be kept in the library of materials maintained for future reference purposes.

2. Given the importance of sustaining research and live agent training for the benefit of NATO and other clients, a detailed plan should be developed and implemented to minimize and mitigate mission disruption caused by the fire engineering work proposed for Building 1.

STATUS OF COMMITTEE RECOMMENDATIONS

Please see Annex A for DND/CAF responses to Committee recommendations.

ANNEXES

A – Status of Committee Recommendations

B – Acronyms and Abbreviations

STATUS OF COMMITTEE RECOMMENDATIONS

1. **(2014)** *We encourage acceleration of the final approval and funding of the project to replace DRDC Suffield's BSL 3 suites in Building 1 in an expedient manner compatible with safe continuation of the biological program in both the short and long term. [This recommendation has been reworded to better reflect the situation in 2019]*

DND/CAF Response (July 2015): "During 2014, DRDC reviewed the original 2004 requirement and has invested significant effort to revise the Statement of Requirement (SOR), update the project identification documents (SS(ID)), and review the main options for presentation to a senior review board (SRB) in April 2015. This will be the first official stage in getting what amounts to a new \$14M project into the DND infrastructure investment plan."

BCDRC Comment (December 2015): We commend this effort and will closely monitor further progress of this vital undertaking. In the meantime, we urge that the maintenance of critical systems in Building 1 continue to receive diligent attention.

DND/CAF Response Update (September 2016): "DND/CAF has initiated a process for the replacement of the biological laboratories at the DRDC Suffield Research Centre for handling of risk group 2 and 3 biological agents. This project has been identified in internal development and acquisition plans and is undergoing options analysis and review. Taking into account administrative processes, the anticipated timeline to update existing facilities is 3-5 years. While this process continues, DRDC continues to exercise its extensive preventative maintenance program."

BCDRC Comment (December 2016): We acknowledge the additional complications introduced by the transfer of real property responsibilities to ADM IE but continue to urge priority attention to this project. We will continue to monitor and report progress.

DND/CAF Response Update (April 2017): "During the transfer of responsibilities to ADM (IE), the review of outstanding infrastructure projects resulted in a significant improvement in the recapitalization of the Suffield Chemical and Biological Laboratories as it has become the highest rated ADM(S&T) project within the ADM(IE) major construction queue. While it still remains in the unfunded queue, it is expected that this improvement will result in concrete action in the near future. The interim replacement of the biological laboratories continues through the capital equipment program."

BCDRC Comment (December 2017): Continuing to see, as we do, serious infrastructure issues, we applaud the appointment of a Project Manager who will be instrumental to moving the project forward.

DND/CAF Response Update (April 2018): "During the transfer of responsibilities to ADM (IE), the review of outstanding infrastructure projects resulted in a significant improvement in the recapitalization of the Suffield Chemical and Biological Laboratories, as it has become the highest rated ADM (S&T) project within the ADM (IE) major

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construction queue. While it still remains in the unfunded queue, it is expected that this improvement will result in concrete action in the near future. The interim replacement of the biological laboratories continues through the capital equipment program; a Statement of Requirements is currently being drafted for this replacement.”

BCDRC Comment (December 2018): While both projects are gaining momentum, there is concern that despite their intimate connection, the MBCF project risks becoming delinked from the longer-range laboratory re-capitalization (which is ranked as DND’s number one priority project within its price range). Were this to occur and the MBCF project abandoned, the continuity of the biological defence programme would be threatened, given the likelihood that the aging current bio-containment facility will fail before the laboratory recapitalization project is completed. The lack of a bio-containment facility at SRC, even temporarily, would jeopardize Canada’s ability to meet its domestic responsibilities and international commitments.

DND/CAF Response Update (February 2019): “During the transfer of responsibilities to ADM (IE), the review of outstanding infrastructure projects resulted in a significant improvement in the recapitalization of the Suffield Chemical and Biological Laboratories, as it has become the highest rated ADM (S&T) project within the ADM (IE) major construction queue. While it still remains in the unfunded queue, it is expected that this improvement will result in concrete action in the near future. SRC was visited by ADM (IE)’s Project Director for SRC’s recapitalization project and a member of his support team from Defence Construction Canada to meet key staff and discuss the information needed over the next 24 months that will form the package required to enable project definition. The interim replacement of the biological laboratories continues through the major capital equipment program; however, there are currently insufficient human resources within ADM (S&T) to complete the requirements needed to advance progress to the next stage with ADM (Mat).”

BCDRC Comment (December 2019): At DRDC Corporate Office, the Committee was updated on potential strategies for the replacement of the aging Containment Level 3 suites. The recommendation will remain open. The Committee will continue to stress the critical importance of infrastructure renewal to safety of operations and continuation of the programs.

DND/CAF Response Update (April 2020): “The efforts towards recapitalization of the Suffield Chemical and Biological Laboratories (Recap) are continuing, with the ‘Identification’ and ‘Options Analysis’ phases occurring to develop a Statement of Requirements and cost estimation, respectively. This is planned to occur over a 24-month period beginning in Fall 2020. Both of these will result in the selection of a course of action for the ‘Design’ phase. Additionally, a site for the new facility has been selected and approved. With Recap now advanced, its timeline is converging with that anticipated for the Modular Bio Containment Facility (MBCF). As such, options for coordinating the two efforts are currently under consideration.”

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BCDRC Comment (December 2020): This year, we were told that the separate MBCF project has been side-lined in favour of building the new laboratory complex, possibly in stages. The rationale for this change is that the planned completion date for the two projects has been converging with the MBCF due to be commissioned only a few years before the larger project. The new, unified endeavour is titled the Laboratory Modernization Project. A modified site has been selected and contracts for preliminary studies (environmental impact, topographic, geophysical, *etc.*) have been awarded. Current estimated cost is \$275-350M with occupancy anticipated to occur within 12-15 years. Given this timeline, contingency plans for catastrophic failure of the existing infrastructure are apparently being developed. We will be interested to learn more about these plans as we believe that it is likely the aging biocontainment facility will fail before the modernization project is completed. The lack of a such a facility at SRC, even temporarily, would jeopardize Canada's ability to meet its domestic responsibilities and international commitments.

DND/CAF Response Update (April 2021): "The efforts towards the Modernize Chemical and Biological Research Laboratories DRDC Suffield project are continuing. The 'Identification' and 'Options Analysis' phases to develop a Statement of Requirements and cost estimation, respectively, are planned over a 24-month period via contract which has been awarded. The contractor that will carry out this work is currently completing the security process. Both phases will result in the selection of a course of action for the 'Design' phase. The Modular Bio Containment Facility (MBCF) project is currently on hold since the Modernize project is making progress. Both projects draw on the same scientific staff. Their timelines are converging and their commissioning is expected to be a few months apart. The Independent Review Panel for Defence Acquisition (IRPDA) provided advice on the 'Modernize' project, which resulted in bolstering the project documents with a better description of the capability gaps. The Panel also emphasized the urgency of moving this project forward with an accelerated timeline, if possible."

BCDRC Comment (December 2021): The February 2020 chemical spill incident made more acutely apparent than ever before, the present-day inadequacies of the design of the 66-year-old main laboratory/administration building at Suffield - and how these deficiencies heighten the risk of the occurrence of accidents of this sort and the possibility of consequent serious injury or death. The Committee has long underlined these inadequacies and recommended the acceleration of the project to modernize the biological and chemical research laboratories at SRC. The Independent Review Panel for Defence Acquisition has also emphasized the urgency of moving this project forward. We understand that the Associate Deputy Minister of National Defence having been briefed on this incident by DRDC senior leadership, is now seized of the same imperative. We therefore hope this project will proceed swiftly to completion. DND's ADM (IE) has invited us to discuss this project when we next visit NDHQ. We welcome this opportunity and will share what we learn in our 2022 report.

DND/CAF Response Update (August 2022): "The efforts towards the Modernize Chemical and Biological Research Laboratories DRDC Suffield (Modernize) project are continuing.

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The 'Identification' and 'Options Analysis' phases to develop a Statement of Requirements (SOR) and cost estimation, respectively, are planned over a 24-month period via contract to an infrastructure consulting firm. Both phases will result in the selection of a course of action for the 'Design' phase. Thus far, the selected firm has held numerous discussions with DRDC Suffield Research Centre (SRC) and Assistant Deputy Minister (Infrastructure and Environment) (ADM(IE)) staff to gather pertinent information, leading to development of a draft Statement of Operational Requirements for which feedback has been provided. Additional meetings and discussions are scheduled between DRDC SRC and the Contractor over the coming weeks and months to further refine the document. Further, the Contractor is tasked with conducting a Business Case Options Analysis, wherein four options are presented. Finally, the Independent Review Panel for Defence Acquisition (IRPDA) provided advice on the 'Modernize' project at the IRP1 meeting; DRDC and ADM(IE) are now preparing for the IRP2 meeting. Overall, this project is progressing ahead of schedule given that the original deadline for SOR development was October 2022."

BCDRC Comment (January 2023): Our meeting with the Chief of Staff to the ADM (IE), confirmed that solid progress is being made. The project schedule estimates that development and definition activities (including completion of design) will continue until June 2026 when a submission will be made seeking approval for project implementation with a response to same expected by March 2027. As such, the project remains at risk until then. Should approval be forthcoming, the new facilities are planned to achieve initial operating capability (IOC) by December 2032 and be fully operational and certified by December 2034. We commend the work behind these recent advances will continue to follow closely and report on further progress.

DND/CAF Response Update (March 2024): "The efforts towards the Modernize Chemical and Biological Research Laboratories DRDC Suffield Research Centre (Modernize) project are continuing. The 'Identification' and 'Options Analysis' phases to develop a Statement of Requirements (SOR) and cost estimation, respectively, are nearing completion. A detailed functional space program has been developed that addresses all relevant scientific research needs of DRDC's Suffield Research Centre. This work will result in a selection of a course of action for the 'Design' phase. The project team is preparing documentation required to seek Ministerial approval in order to commence Design work. Finally, DRDC and ADM(IE) are now preparing for another engagement with the Independent Review Panel for Defence Acquisitions to allow the Panel to provide advice to the Minister of National Defence on the work conducted to date."

BCDRC Comment (March 2024): We will continue to monitor and report the progress of this project.

DND/CAF Response Update (September 2024): The efforts towards the Modernize Chemical and Biological Research Laboratories DRDC Suffield Research Centre (Modernize) project are continuing and have seen good momentum this past year. The 'Business Case Options Analysis' phase to develop a cost estimation has been completed and the construction of a replacement modern laboratory facility is the most prudent

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course of action. The project has had steady progress, is supported at a senior level and has an IOC/FOC in the early 2030s.

BCDRC Comment (December 2024): The Committee acknowledges this important progress and will continue to monitor further developments. In the meantime, we point to the acute deficiencies regarding engineering risk controls and environmental controls in Buildings 1 and 10 and urge that interim measures be taken to ensure program work can continue until the replacement facility is completed.

DND/CAF Response Update (April 2026): “The Defence Team has reviewed the Report. We will take the two new recommendations under careful consideration and will continue our work on your previous recommendations.”

Status: OPEN

2. (2017) *Given the unique and essential capability of the Central Medical Equipment Depot, the operational importance of its gaining Good Manufacturing Practice accreditation; and, the potential value of collaboration with the Public Health Agency of Canada; consideration should be given to the replacement and relocation of this facility with a view to overcoming the shortfalls and impediments posed by its current state and location.*

DND/CAF Response (April 2018): “CF H Svcs Gp appreciates that BCDRC is emphasizing this in its report and fully agrees with this recommendation. The current condition, capacity and location of the CMED facility poses several risks to the ongoing management of our medical stockpile.

A Good Manufacturing Practices-compliant (GMP) facility and a Health Canada issued Establishment License are essential to ensuring the quality of the various medical products that the Group imports, stores, distributes and potentially shares with other government departments and allied partners. A licensed facility, with a robust quality assurance system in place should minimize the risk of operationally essential medical resources becoming compromised.

A strategic level partnership between CF H Svcs Gp and PHAC has recently been formalized between the Surgeon General and the VP of Health Security Infrastructure Branch at PHAC. Ongoing efforts will be applied to exploring short term solutions while scoping an ongoing collaborative partnership that would be focused on common infrastructure requirements and coordinated inventory management and procurement.

CMED replacement has been identified as a requirement and has been included in the DND infrastructure plan. However, given the current prioritization of the project, we anticipate that it will be at least ten years before the facilities are replaced and relocated. CF H Svcs must accept and manage these risks but our ability to mitigate them remains limited. Although our strengthened partnership with PHAC may introduce other risk mitigation opportunities, the limitations of the current CMED facility may prevent a full realization of the benefits of this partnership. The ideal solution to the problem would be

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an acceleration of the approval and funding of this project and early efforts are taking place to elevate its position on the departmental prioritization list.”

BCDRC Comment (December 2018): We are encouraged by the support voiced for this recommendation by CFHS Gp HQ and other NDHQ authorities. CMED replacement is now identified as a requirement and is included as priority 32 of 144 departmental infrastructure projects. Notwithstanding this placement, construction is many years off. In the meantime, we commend the Group’s intention to continue to strengthen its partnership with PHAC, and, in so doing, to look for opportunities to mitigate some of the risks associated with CMED’s current situation. We will closely monitor developments beginning with our next visit to CMED in 2019.

DND/CAF Response Update (February 2019)

“Notes from Canadian Forces Health Services:

Canadian Forces Health Services Group (CF H Svcs Gp) appreciates that BCDRC is emphasizing this in its report and fully agrees with this recommendation. The current condition, capacity, and location of the CMED facility poses several risks to the ongoing management of our medical stockpile. A Good Manufacturing Practices-compliant (GMP) facility and a Health Canada issued Establishment License are essential to ensuring the quality of the various medical products that the Group imports, stores, distributes and potentially shares with other Government departments and allied partners. A licensed facility, with a robust quality assurance system in place should minimise the risk of operationally essential medical resources being compromised.

A strategic level partnership between CF H Svcs Gp and PHAC has recently been formalized between the Surgeon General and the VP of Health Security Infrastructure Branch at PHAC. Ongoing efforts will be applied to exploring short term solutions while scope an ongoing collaborative partnership that would be focused on common infrastructure requirements and coordinated inventory management and procurement.

CMED replacement has been identified as a requirement and has been included in the DND infrastructure plan. However, given the current prioritization of the project, we anticipate that it will be at least ten years before the facilities are replaced and relocated. CF H Svcs Gp must accept and manage these risks but our ability to mitigate them remains limited. Although our strengthened partnership with PHAC may introduce other risk mitigation opportunities, the limitations of the current CMED facility prevent a full realization of the benefits of this partnership. The ideal solution to the problem would be an acceleration of the approval and funding of this project and early efforts are taking place to elevate its position on the departmental prioritization list.

In November 18, a briefing note was sent to ADM (IE) requesting approval to engage in a strategic infrastructure collaboration between DND and the Public Health Agency of Canada (PHAC) on a shared medical warehouse on CFB Trenton. This project continues to be 35th on the priority list for ADM (IE) and 3rd for Military Personnel Command’s infrastructure requirements. The importance of this project to CF H Svcs and the CAF will continue to be emphasized.”

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BCDRC Comment (December 2019): Renovations to mitigate the shortfalls of the existing facility continue including a proposal to construct a GMP certifiable room to permit exchange of products with PHAC. We encourage expedient funding of this proposal.

DND/CAF Response Update (April 2020): “The replacement of the Central Medical Equipment Depot (CMED) continues to be a high priority for the CF Health Services. A number of joint activities between CF Health Services and the Public Health Agency of Canada have occurred in support of the new CMED facility. Site options in Trenton have been developed and are pending final review. Overall, good progress has occurred in the project to construct a new CMED facility.”

BCDRC Comment (December 2020): We remain strong in our support of the need to replace and relocate the CMED, but understand this may not occur for many years – the project being 35th on the relevant list of CAF infrastructure priorities. In the meantime, we are happy that renovations to bring the laboratory room up to GMP standards are underway. We commend the efforts of CFHS Group to address the risk to which this situation gives rise and hope that the current heightened public awareness of the importance of appropriate medical equipment and pharmaceutical supply and distribution facilities will be of benefit in this connection.

DND/CAF Response Update (April 2021): “Initial design requirements developed in 2018 delineated the need for the facility to be compliant with current Good Manufacturing Practices as described in GUI-0069 Health Canada Guideline. The project staff have been engaged in the identification of potential siting locations, and are currently working with DND Real Property Managers as to the footprint best suited to the facilities’ requirements. However, completion of the project depends on where it figures on the list of Departmental priorities and availability of funds. DND is maintaining engagement with the Public Health Agency of Canada (PHAC) about possible collaboration with the construction of this facility that could serve both organisations’ purposes. Of note, renovations are nearing completion on the CMED laboratory room with temperature mapping scheduled for February 2021 and again in summer 2021. It will be used as an interim approach while the capital project for a new facility continues to progress through the DND project process.”

BCDRC Comment (December 2021): We remain strong in our opinion that the location, condition, and capacity of the CMED merit its replacement and relocation noting that the direction of the Strategic Medical Countermeasures Program (SMCP) suggests that even more demands will soon be placed on this unit. This said, we were impressed by the interim measures that have been, or soon will be implemented at the Depot to address the most pressing concerns over condition and capacity.

DND/CAF Response Update (August 2022): “The Central Medical Equipment Depot (CMED) remains highly prioritized for a new building project on the Military Personnel Command list of priority projects, but with the current capital pressure on ADM(IE), the timeline for the CMED project is in the 10-year range. The Department of National Defence continues to pursue the building replacement project, and the Canadian Forces Health Services Directorate of Health Services Delivery has re-engaged with the Public

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Health Agency of Canada on the feasibility of interoperability for storage of critical medical counter-measures. CMED is also actively pursuing increasing its storage capacity in the current facility by re-occupying space currently used by other units.”

BCDRC Comment (January 2023): We understand this project is now 18th on the relevant list of CAF infrastructure priorities, but that the timeline for completion remains in the ten-year range. We look forward to an update on interim renovations and expanded storage space during our next in-person visit to the Depot.

DND/CAF Response Update (March 2024): “The Central Medical Equipment Depot (CMED) continues to be highly prioritized on the Military Personnel Command list of priority projects for a new building project, but due to ongoing capital pressure on ADM(IE) the timeline for the CMED project is still in the 10-year range. The Department of National Defence continues to pursue the building replacement project, and the Canadian Forces Health Services (CFHS) Directorate of Health Services Delivery has been re-engaging with the Public Health Agency of Canada (PHAC) on the feasibility of developing new common warehouse infrastructure and capabilities. CFHS has initiated a formal analysis of the current and future infrastructure requirements of CMED. CFHS is committed to sharing its medical warehouse infrastructure requirements with PHAC so that they may be included during the identification and options analysis phase for any new infrastructure project(s) under consideration by PHAC. CMED is also actively pursuing increasing its storage capacity in the current facility by re-occupying space currently used by other units.”

BCDRC Comment (March 2024): We commend efforts to collaborate with PHAC over the long-term as well as short-term initiatives to sustain the Depot’s capability pending its recapitalization. We will visit CMED again in 2024.

DND/CAF Response Update (September 2024): The Central Medical Equipment Depot (CMED) continues to be a high priority project. However, due to concurring high priority projects, CMED has not received any funding. As a result, we are evaluating alternative infrastructure options for the short-, medium-, and long-term to meet the demands of various programs and the primary lines of effort supported by CMED to provide medical logistics support to CAF operations. The Department of National Defence continues to pursue the building replacement project, and has been re-engaging with the Public Health Agency of Canada (PHAC) on the feasibility of developing new common warehouse infrastructure and capabilities.

BCDRC Comment (December 2024): We acknowledge this situation while noting with approval the recent decisions to release funding for the procurement of interim storage facilities in Petawawa, and the beginning of project definition for the replacement facility.

DND/CAF Response Update (April 2026): “The Defence Team has reviewed the Report. We will take the two new recommendations under careful consideration and will continue our work on your previous recommendations.”

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3. (2022) *Given the nature of the R&D undertaken at the Suffield Research Centre, a service level agreement for the provision by the CAF of emergency medical support to the Centre should be implemented as rapidly as possible.*

DND/CAF Response (March 2024): “A service level agreement to govern the provision of CAF emergency medical support to Suffield Research Centre is being drafted. In the interim, emergency medical support to the Centre by the CAF will continue to be facilitated through ministerial approval and direct coordination between the Centre and CAF Health Services elements in Suffield and Edmonton.”

BCDRC Comment: (March 2024): It is now seven years since we raised the issue of emergency medical support to SRC and eighteen months since we were informed of the intention to conclude a service level agreement (SLA). While we acknowledge the interim measures that are in place, we hope to learn during our next visit that a more formal and enduring solution in the form of an SLA is in place.

DND/CAF Response Update (September 2024): A service level agreement to govern the provision of CAF emergency medical support to Suffield Research Centre is still being drafted. In the interim, emergency medical support to the Centre by the CAF will continue to be facilitated through ministerial approval and direct coordination between the Centre and CAF Health Services elements in Suffield and Edmonton. In addition, a new contract was implemented for the CBRN Medical Officer coverage, to ensure continuity.

BCDRC Comment (December 2024): The Committee acknowledges the stability of the current emergency medical support situation at SRC but urges the conclusion of the SLA – which to our minds, should be a straightforward matter. Until that is done, we will keep this recommendation open and continue to monitor the situation.

DND/CAF Response Update (April 2026): “The Defence Team has reviewed the Report. We will take the two new recommendations under careful consideration and will continue our work on your previous recommendations.”

Status: OPEN

4. (2022) *Given the key role of intelligence in steering research and development, resources dedicated to the analysis of the biological and chemical threat facing the CAF should be reviewed to ensure their sufficiency.*

DND/CAF Response (March 2024): “Staffing actions are underway to hire personnel in both the chemical and biological expertise areas in the Directorate of Technical and Scientific Intelligence. Due to security clearance requirements, the incoming personnel will likely take up to two years to become fully operational. In the interim, resource deficits are being mitigated through several actions: retaining a retired expert intelligence analyst on casual contract to maintain some level of continuity, continued collaboration with other national intelligence agencies as well as with other DND/CAF organization (D JCRBN D for instance) to maintain awareness of threats as well as increased collaboration and information sharing with FVEY agencies in this area.”

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BCDRC Comment (March 2024): We commend the determined staffing actions that have recently been undertaken and look forward to learning of their full completion.

DND/CAF Response Update (September 2024): Within the Directorate of Technical and Scientific Intelligence, a new Team Lead for Countering Weapons of Mass Destruction was hired in early 2023 and has been fully operational for the past 12 months. Staffing actions to hire additional personnel in both the chemical and biological expertise areas within the Directorate are ongoing with one bio position being filled in 2023. Due to security clearance requirements, the incoming personnel will likely take up to two years to become fully operational. In the interim, resource deficits are being mitigated through several actions: retaining a retired expert intelligence analyst on casual contract to maintain some level of continuity, continued collaboration with other national intelligence agencies as well as with other DND/CAF organization (D JCRBN D for instance) to maintain awareness of threats as well as increased collaboration and information sharing with FVEY agencies in this area.

BCDRC Comment (December 2024): We commend the measures which have been taken to ensure that sufficient resources are dedicated to the analysis function and will close this recommendation as having been implemented.

Status: CLOSE

5. ***(2022) The role of the Suffield Research Centre in supporting the readiness of the CAF and allied entities should be verified and if confirmed, the Centre should be appropriately organized and adequately resourced to do so without impinging on its research and development function.***

DND/CAF Response (March 2024): “DRDC is part way through a multi-year process of improving program governance, including converging demands into a common operating picture. As part of this process, efforts are ongoing to define long-term requirements in both research and training areas of activity, as they pertain to CBRN defence. Additionally, Director General (Research and Development) Science and Engineering is currently implementing a new capability management process that will be fully in place during the course of FY23-24. This process will be applied to confirm the scientific capability requirements at each DRDC research centre, including Suffield, and ensure that they have the required resources and are appropriately configured to fulfill their mandate.”

BCDRC Comment (March 2024): We are pleased that this issue is acknowledged and that a solution is being sought. During our 2023 visit to SRC, we heard that there is a growing demand for live agent training in the context of conventional military operations as opposed to counter-terrorism scenarios. There is also a desire to exploit Exercise PRECISE RESPONSE (live agent training for NATO and allied forces) as a test bed for various BCD research and development initiatives in collaboration with allied science and technology establishments. Such emerging factors should be considered during any reassessment of SRC’s research and training capability requirements. We will observe PRECISE RESPONSE again in 2024 and look forward to discerning further developments regarding this topic.

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DND/CAF Comment Update (September 2024): DRDC is part way through a multi-year process of improving program governance, including converging demands into a common operating picture. As part of this process, efforts are ongoing to define long-term requirements in both research and training areas of activity, as they pertain to CBRN defence through engagement with CAF stakeholders. Additionally, Director General (Research and Development) Science and Engineering is continuing to implement its new capability management process. This process will be applied to confirm the scientific capability requirements at each DRDC research centre, including Suffield, and ensure that they have the required resources and are appropriately configured to fulfill their mandate. In addition, SRC continues to explore opportunities to leverage training activities for enhancement of the research program.

BCDRC Comment (December 2024): While we acknowledge the ongoing process within DRDC and the CAF, the Committee believes that this situation is still far from resolution and, as such, will continue to be a source of tension at SRC. We do, however, share the view that there is synergy between training and R&D which might be exploited to the benefit of both. We will continue to monitor developments.

DND/CAF Response Update (April 2026): “The Defence Team has reviewed the Report. We will take the two new recommendations under careful consideration and will continue our work on your previous recommendations.”

Status: OPEN

6. (2022) *Given that problems with the timely procurement of laboratory supplies and other goods and services are severely hampering scientific and training productivity at SRC, the procurement function within DRDC should be examined and reformed as necessary, with a view to ensuring that procurement processes, assigned resources, and authorities are congruent with the needs of front-line staff.*

DND/CAF Response (March 2024): “DRDC Procurement has undergone a year of significant transition where we have seen a number of major change events including staff tum-over, limited hiring capability due to salary pressures, a new procurement service delivery model, interim restructuring and a new prioritization tool. Outside of DRDC, there have been other factors which have impacted procurement operations. Specifically, DND enacted an update to its Defence Resource Management Information System (DRIMS) which records and enables financial, procurement and asset management transactions, among other functions. The modifications resulted in considerable additional effort to codify all assets prior to procurement. While this will result in better accounting of the Department's asset holdings, the operational impact was a significant slowdown of procurement processing times.

As with any major transition period, this one presents significant opportunities for reinventing/modifying our tools and processes to better support front-line staff. Of note is an expanded use of payment cards; a centre-led model for managing procurement resources to allow flexibility and facilitate the reallocation of resources to the organization's highest priorities; a new tool to allow individual requests to be prioritized

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equitably across all of the organization and recent approvals to start staffing vacant procurement positions. Most of these initiatives have been under development since the middle of FY22-23 and will be implemented in FY23-24.”

BCDRC Comment (March 2024): This is clearly a challenging situation, and we commend the thought and determination behind the initiatives that have been launched to ameliorate it. That said, we wonder how their effectiveness will be measured and will pursue the answer to this question during our next visit.

DND/CAF Response Update (September 2024): DRDC Procurement has undergone a year of significant transition. A number of new measures have been implemented in order to increase support, including at Suffield Research Centre. Overall procurement staffing has increased to 80% and three (3) positions have been hired to execute low-dollar value procurements and client- support functions at Suffield. These positions are now completing training and will be responsive to local priorities, as defined by the Centre Director. The expanded use of payment cards; a centre-led model for managing procurement resources to allow flexibility and facilitate the reallocation of resources to the organization's highest priorities has also been highly effective.

To further support and improve the communications between the procurement staff and the clients in all Centres, the Procurement Section has been staffing Client Service positions who will become the point of contact for the Centre in all procurement matters. The position for SRC was staffed in January 2024 and the incumbent will be starting to fulfill their role in June. It is fully anticipated that SRC will see the positive impacts of these procurement changes this fiscal year as new procurement employees become fully operational.

BCDRC Comment (December 2024): We acknowledge and commend the array of additional actions taken this past year aimed at improving the procurement function in support of Suffield and other Research Centres. We note, with special interest, the identification of a key performance indicator (KPI) for the function (i.e., the time taken from submission of the order by the customer to delivery of the item) and the intention to agree, this year, a baseline standard (e.g., 120 days). The Committee looks forward to learning of the results of the application of this KPI during our next round of visits. Until then, we will keep open this recommendation.

DND/CAF Response Update (April 2026): “The Defence Team has reviewed the Report. We will take the two new recommendations under careful consideration and will continue our work on your previous recommendations.”

Status: OPEN

7. (2022) *Given reported issues with the governance and management of the CBRN defence enterprise, support should be given to the proposal for a renewal initiative led by the Strategic Joint Staff that, inter alia, would review and update the CBRN defence DAODs; define the enterprise; ensure the correct definition and alignment of responsibilities, authorities, and accountabilities; and then, most importantly, hold authorities accountable for the discharge of*

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their responsibilities. In so doing, it is further advised that close account be taken of the ongoing NATO CBRN policy review in which ADM (Policy) and GAC are participating.

DND/CAF Response (March 2024): “The efforts to keep the DAOD 8006 series effective and relevant are ongoing. In October 2022, a routine staff and stakeholder review of the DAOD was conducted. Change proposals will be considered routinely by the appropriate offices of responsibility. Specific changes will be duly considered and appropriate action taken. NATO's Chemical, Biological, Radiological and Nuclear (CBRN) Defence Policy (2022) issued and agreed by all NATO members in July 2022 will be implemented by the CAF through existing planning processes and its capability plans. Canada is fully in agreement with the core principles and commitments of enhancing its military CBRN capabilities and resilience, which are consistent with the Government of Canada's Defence Policy. The Government notes and endorses, in particular, that "national capability development plans will support the full and timely implementation of CBRN defence capabilities, in particular those required by the Alliance in line with the NATO Defence Planning Process””

BCDRC Comment (March 2024): During our 2023 meeting with the Strategic Joint Staff (SJS) we were given to understand they will prepare advice for the CDS that defines the problem facing the CBRN defence portfolio and proposes issuance of a CDS/DM Directive which would explain the necessity of re-energizing the CBRN defence function, define the relevant strategic end-state, stipulate the necessary alignment of governance, guide the implementation of new NATO CBRN policy, adjust DAODs, and state the requirement for an appropriate CBRN defence capability development roadmap. We will continue to monitor this issue and look forward to gauging progress during our next round of visits.

DND/CAF Response Update (September 2024): The efforts to keep the DAOD 8006 series effective and relevant are ongoing. DAOD change proposals are being reviewed and considered for submission. NATO's Chemical, Biological, Radiological and Nuclear (CBRN) Defence Policy (2022) issued and agreed by all NATO members in July 2022 will be implemented by the CAP through existing planning processes and its capability plans. Canada is fully in agreement with the core principles and commitments of enhancing its military CBRN capabilities and resilience, which are consistent with the Government of Canada's Defence Policy. The Government notes and endorses, in particular, that "national capability development plans will support the full and timely implementation of CBRN defence capabilities, in particular those required by the Alliance in line with the NATO Defence Planning Process.

BCDRC Comment (December 2024): The Committee has been encouraged by the actions we understand are underway to implement this recommendation and which are due for completion in the first half of 2025. We hope to be able to close this recommendation as having been implemented, following our next round of visits. Until then, we will continue to monitor the situation.

DND/CAF Response Update (April 2026): “The Defence Team has reviewed the Report. We will take the two new recommendations under careful consideration and will continue our work on your previous recommendations.”

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Status: OPEN

8. (2023) Given the status of DRDC's Suffield Research Centre as a strategic national asset in a worryingly unstable global security environment, and thus deserving of superior stewardship, we support the decision of ADM (DRDC) to suspend or restrict certain chemical defence activities at SRC pending completion of a risk management review. Moreover, we commend the remediation action plan that has been launched and recommend that it receive the prompt and tangible support of stakeholders and authorities outside of DRDC with a view to restoring, as quickly as possible, and maintaining a safe environment for all working at, or making use of its facilities.

DND/CAF Response (September 2024): An extensive review of the risks associated with chemical defence activities has taken place and adjustments, primarily to administrative controls, have been implemented. In addition, a conditions-based resumption plan has been developed, was endorsed by ADM(DRDC) and is currently being executed for implementation. Over the past 12 months, DRDC has had significant engagement with stakeholders and external authorities with a view to securing support for improvements of engineering controls at SRC. Support is being provided with considerable uplift in maintenance and momentum of work on the Chemical/Biological laboratory recapitalization project. While progress is being made, challenges remain due to the high cost of infrastructure and lengthy timelines involved in design work and procurement.

BCDRC Comment (December 2024): The Committee commends the conduct of the risk management review, and the design, and implementation to date, of the resulting conditions-based resumption plan. However, the extent to which the plan, notably its increased dependence on administrative controls, has restored employee confidence in their ability to safely accomplish their duties is not yet known – a fact acknowledged by the Centre Director and identified by him as a priority issue to address. Moreover, work continues to address engineering control deficiencies. We will, therefore, keep this recommendation open while continuing to monitor closely the situation at SRC.

DND/CAF Response Update (April 2026): “The Defence Team has reviewed the Report. We will take the two new recommendations under careful consideration and will continue our work on your previous recommendations.”

Status: OPEN

9. (2023) Given the concerns voiced by employees and local managers over the risk borne and accumulated by civilian personnel (e.g., safety officers and decontamination team members) involved in live-agent training at the Suffield Research Centre, consideration should be given to the creation and implementation of a bespoke health and safety system for the benefit of civilian personnel so-employed.

DND/CAF Response (September 2024): Suffield Research Centre has made significant effort to modify and improve its health and safety system, including changes being implemented primarily with civilian personnel in mind. This corresponds with a training acceptance of risk vice an operational acceptance of risk (i.e. acceptable level of risk is lower due to ability to preplan and less moral imperative to achieve exercise objectives).

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A series of documents have been developed to outline risk management approaches and communicate them to employees for transparency. The risk management approaches that were developed consider the risk of exposure in an occupational context and include measures designed to prevent cumulative effects.

BCDRC Comment (December 2024): The Committee commends this pragmatic approach to addressing employee concerns; however, we will wait until after the next cycle of live agent training before gauging its success.

DND/CAF Response Update (April 2026): “The Defence Team has reviewed the Report. We will take the two new recommendations under careful consideration and will continue our work on your previous recommendations.”

Status: OPEN

10. (2024) *Given that the historical environmental soil samples from Wood Buffalo National Park held by SRC do not relate to any current research at SRC, these should be destroyed beyond any small representative sample that may be required to be kept in the library of materials maintained for future reference purposes.*

DND/CAF Response Update (April 2026): “The Defence Team has reviewed the Report. We will take the two new recommendations under careful consideration and will continue our work on your previous recommendations.”

Status: OPEN

11. (2024) *Given the importance of sustaining research and live agent training for the benefit of NATO and other clients, a detailed plan should be developed and implemented to minimize and mitigate mission disruption caused by the fire engineering work proposed for Building 1.*

DND/CAF Response Update (April 2026): “The Defence Team has reviewed the Report. We will take the two new recommendations under careful consideration and will continue our work on your previous recommendations.”

Status: OPEN

ACRONYMS AND ABBREVIATIONS

AChE – acetylcholinesterase

ADM (DRDC) – Assistant Deputy Minister – Defence Research and Development Canada

ADM (IE) – Assistant Deputy Minister (Infrastructure and Environment)

ADM (RS) – Assistant Deputy Minister (Review Services)

ASEAN – Association of Southeast Asian Nations

AWC – Agent Worker Certification

BATUS – British Army Training Unit Suffield

BCD – Biological and Chemical Defence

BCDRC – Biological and Chemical Defence Review Committee

BCW – Biological and Chemical Warfare

BTDS – Biological Threat Defence Section

BTWC – Biological and Toxin Weapons Convention

CAF – Canadian Armed Forces

CANSOFCOM – Canadian Special Operations Forces Command

CDS – Chief of the Defence Staff

CSSP – Canadian Safety and Security Program

CSCAH – Canadian Science Centre for Human and Animal Health

CBM – Confidence Building Measures

CBRN – chemical, biological, radiological, and nuclear

CBRNE – chemical, biological, radiological, nuclear, and explosive

CSS – Centre for Security Science

CFB – Canadian Forces Base

CFFCA – Canadian Forces Firefighting and CBRN Academy

CFHS Group – Canadian Forces Health Services Group

CFHS Group HQ – Canadian Forces Health Services Group Headquarters

CFINTCOM – Canadian Forces Intelligence Command

CJOC – Canadian Joint Operations Command

CJIRU – Canadian Joint Incident Response Unit

COLPRO – Collective Protection

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CMED – Central Medical Equipment Depot

CMS – Casualty Management Section

CNSSSF – Canadian National Single Small-scale Facility

CDTS – Chemical Threat Defence Section

CTTC – Counter Terrorism Technology Centre

CWC – Chemical Weapons Convention

DAOD – Defence Administrative Order and Directive

DCTF – Damage Control Training Facility

DG RDSE – Director General Research and Development Science and Engineering

D JCBRN D – Director Joint CBRN Defence

DND – Department of National Defence

DRDC – Defence Research and Development Canada

DSSTP – Defence and Security Science & Technology Program

DURC – Dual Use Research of Concern

DDEED - Due Diligence Environmental Effects Determinations

EPG – Experimental Proving Ground

FTE – Full-time Equivalent

FY – fiscal year

GAC – Global Affairs Canada

GLP – Good Laboratory Practice

GMP – Good Manufacturing Practice

GP - Global Partnership Against the Spread of Weapons and Materials of Mass Destruction

GSO – General Safety Officer

IERP – Integrated Emergency Response Plan

MBCF – Modular Biological Containment Facility

MCM – medical countermeasures

NCFAD - National Centre for Foreign Animal Disease

NML – National Microbiology Laboratory

NATO – North Atlantic Treaty Organization

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NDHQ – National Defence Headquarters

ONTAP – On-line Turbo Approval Process

OPCW – Organization for the Prohibition of Chemical Weapons

PPE – Personal Protective Equipment

PAO – Plan for Administrative Oversight

PHAC – Public Health Agency of Canada

RCMP – Royal Canadian Mounted Police

RPOU(W) – Real Property Operations Unit (West)

S&T – science and technology

SEMS – Safety and Environmental Management System

SJS – Strategic Joint Staff

SLA – Service Level Agreement

SOP – Standard Operating Procedure

SMCP – Strategic Medical Countermeasures Program (formerly BWTMCM – Biological Warfare Threat Medical Countermeasures project)

SRC – Suffield Research Centre

SJS – Strategic Joint Staff

TSO – Technical Safety Officer

TRC – Toronto Research Centre

VRC – Valcartier Research Centre

WMD – Weapons of Mass Destruction

WTRP – Weapons Threat Reduction Program