



Royal Canadian Gendarmerie royale
Mounted Police du Canada

**RETURN BIDS TO:
RETOURNER LES COUMMISSIONS A:**

Visitor Center – RCMP/Centre des Visiteurs– GRC
73 Leikin Drive, Bldg., M1, Mailstop #15
Ottawa, Ontario K1A 0R2
Attn: Shannon Plunkett

**REQUEST FOR PROPOSAL
DEMANDE DEPROPOSITION**

**Proposal To: Royal Canadian Mounted
Police**

We hereby offer to sell to Her Majesty the Queen in right of Canada, in accordance with the terms and conditions set out herein, referred to herein or attached hereto, the goods, services, and construction listed herein and on any attached sheets at the price(s) set out therefor.

**Proposition aux : Travaux Publics et
Services Gouvernementaux Canada**

Nous offrons par la présente de vendre à Sa Majesté la Reine du chef du Canada, aux conditions énoncées ou incluses par référence dans la présente et aux appendices ci-jointes, les biens, services et construction énumérés ici sur toute feuille ci-annexée, au(x) prix indiqué(s).

Comments - Commentaires

Title – Sujet Noise Flash Diversionary Devices		Date August 17, 2015
Solicitation No. – N° de l'invitation 201501095		
Solicitation Closes– L'invitation prend fin		
At /à :	2:00 PM	EDT (Eastern Standard Time)
On / le : September 8, 2015		
F.O.B. – F.A.B Destination	GST - HST See herein — Voir aux présentes	Duty– Droits See herein — Voir aux présentes
Destination of Goods and Services– Destinations des biens et services See herein — Voir aux présentes		
Invoicing Instructions (To be specified at contract award)		
Address Inquiries to – Adresser toute demande de renseignements à Julie Davis (julie.davis@rcmp-grc.gc.ca)		
Telephone No. –No. de téléphone 613-843-3797		Facsimile No. – No. de télécopieur 613-825-0082
Delivery Required– Livraison exigée See herein — Voir aux présentes		Delivery Offered – Livraison proposée
Vendor/Firm Name, Address and Representative – Raison sociale, adresse et représentantdu fournisseur/de l'entrepreneur:		
Telephone No. –No. de téléphone		Facsimile No. – No. de télécopieur
Name and title of person authorized to sign on behalf of Vendor/Firm (type or print) – Nom et titre de la personne autorisée à signer au nom du fournisseur/de l'entrepreneur (taper ou écrire en caractères d'imprimerie)		
Signature		Date

PART 1 - GENERAL INFORMATION

1. Security Requirement

There is no security requirement associated with the requirement.

2. Requirement

The objective of this RFP is to establish an approved Product List (Source List) of pre-qualified Suppliers.

The requirement is detailed at Annex A, Statement of Operational Requirement, of the resulting contract clauses.

3. Debriefings

Bidders may request a debriefing on the results of the bid solicitation process. Bidders should make the request to the Contracting Authority within 15 working days of receipt of the results of the bid solicitation process. The debriefing may be in writing, by telephone or in person.

4. Procurement Ombudsman

The Office of the Procurement Ombudsman (OPO) was established by the Government of Canada to provide an independent avenue for suppliers to raise complaints regarding the award of contracts under \$25,000 for goods and under \$100,000 for services. You have the option of raising issues or concerns regarding the solicitation, or the award resulting from it, with the OPO by contacting them by telephone at 1-866-734-5169 or by e-mail at boa.opo@boa.opo.gc.ca. You can also obtain more information on the OPO services available to you at their website at www.opo-boa.gc.ca.

PART 2 - BIDDER INSTRUCTIONS

2. Standard Instructions, Clauses and Conditions

All instructions, clauses and conditions identified in the bid solicitation by number, date and title are set out in the *Standard Acquisition Clauses and Conditions Manual* (<https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual>) issued by Public Works and Government Services Canada.

Revision to Departmental Name: As this solicitation is issued by Royal Canadian Mounted Police (RCMP), any reference to Public Works and Government Services Canada or PWGSC or its Minister contained in any term, condition or clause of this solicitation, including any individual SACC clauses incorporated by reference, will be interpreted as reference to RCMP or its Minister.

Bidders who submit a bid agree to be bound by the instructions, clauses and conditions of the bid solicitation and accept the clauses and conditions of the resulting contract.

- a) The 2003 (2014-09-25) Standard Instructions - Goods or Services - Competitive Requirements, are incorporated by reference into and form part of the bid solicitation.

Section 01 – Integrity Provisions – Delete subsection 1.4 and 1.5 in their entirety.

Subsection 5.4 of 2003, Standard Instructions - Goods or Services - Competitive Requirements, is amended as follows:

Delete: sixty (60) days

Insert: three hundred and sixty five (365) days

2.1 SACC Manual Clauses

A9130T (2014-11-27) Controlled Goods Program

B1000T (2014-06-26) Condition of Material

2.2 Submission of Bids

Bids must be submitted only to RCMP Bid Receiving Unit by the date, time and place indicated on page 1 of the bid solicitation.

Due to the nature of the bid solicitation, bids transmitted electronically or by facsimile to RCMP will not be accepted.

2.3 Enquiries - Bid Solicitation

All enquiries must be submitted in writing to the Contracting Authority no later than seven (7) calendar days before the bid closing date. Enquiries received after that time may not be answered.

Bidders should reference as accurately as possible the numbered item of the bid solicitation to which the enquiry relates. Care should be taken by bidders to explain each question in sufficient detail in order to enable Canada to provide an accurate answer. Technical enquiries that are of a proprietary nature must be clearly marked "proprietary" at each relevant item. Items identified as "proprietary" will be treated as such except where Canada determines that the enquiry is not of a proprietary nature. Canada may edit the questions or may request that the Bidder do so, so that the proprietary nature of the question is eliminated, and the enquiry can be answered with copies to all bidders. Enquiries not submitted in a form that can be distributed to all bidders may not be answered by Canada.

2.4 Applicable Laws

Any resulting contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in Ontario.

Bidders may, at their discretion, substitute the applicable laws of a Canadian province or territory of their choice without affecting the validity of their bid, by deleting the name of the Canadian province or territory specified and inserting the name of the Canadian province or territory of their choice. If no change is made, it acknowledges that the applicable laws specified are acceptable to the bidders.

PART 3 - BID PREPARATION INSTRUCTIONS

3. Bid Preparation Instructions

Canada requests that bidders provide their bid in separately bound sections as follows:

Section I: Mandatory Technical Bid (4 hard copies)
Section II: Financial Bid (1 hard copy)
Section III: Certifications (1 hard copy)

Prices must appear in the financial bid only. No prices must be indicated in any other section of the bid.

Canada requests that bidders follow the format instructions described below in the preparation of their bid:

- a) use 8.5 x 11 inch (216 mm x 279 mm) paper;
- b) use a numbering system that corresponds to the bid solicitation.

In April 2006, Canada issued a policy directing federal departments and agencies to take the necessary steps to incorporate environmental considerations into the procurement process [Policy on Green Procurement](http://www.tpsgc-pwgsc.gc.ca/ecologisation-greening/achats-procurement/politique-policy-eng.html) (<http://www.tpsgc-pwgsc.gc.ca/ecologisation-greening/achats-procurement/politique-policy-eng.html>). To assist Canada in reaching its objectives, bidders are encouraged to:

- a) use paper containing fibre certified as originating from a sustainably-managed forest and/or containing minimum 30% recycled content; and
- b) use an environmentally-preferable format including black and white printing instead of colour printing, printing double sided/duplex, using staples or clips instead of cerlox, duotangs or binders.

Section I: Mandatory Technical Bid

In their technical bid, bidders should explain and demonstrate how they propose to meet the requirements and how they will carry out the Work.

The technical bid consists of the following:

- a) Completed and signed page 1 of the RFP;
- b) Completed Annex C, Mandatory Technical Criteria;
- c) Documentation (e.g. data sheets, web site information, etc.) to substantiate compliancy to Mandatory Technical Criteria

Section II: Financial Bid

- a) Bidders must submit their financial bid in accordance with Annex B, Basis of Payment. The total amount of Goods and Services Tax (GST) or Harmonized Sales Tax (HST) is to be shown separately, if applicable.
- b) SACC Manual Clauses C3011T (2013-11-06), Exchange Rate Fluctuation Criteria

Section III: Certifications

Bidders must submit the certifications required under Part 5.

PART 4 - EVALUATION PROCEDURES AND BASIS OF SELECTION

4. Evaluation Procedures

- a) Bids will be assessed in accordance with the technical evaluation criteria.
- b) An evaluation team composed of representatives of Canada will evaluate the bids.

4.1 Technical Evaluation

4.1.1 Mandatory Technical Criteria

To be considered responsive, a bid must meet all of the mandatory requirements as detailed at Annex C, Mandatory Technical Criteria. All Mandatory criteria must be met through way of cross-referencing with product literature, and or certifications supplied with the bid. If in some instance(s) this is not available, the bidder is to note how their product meets the requirement. Bids not meeting all of the mandatory requirements will be given no further consideration.

Suppliers demonstrating all technical capabilities will be requested to submit samples. Samples will be used to validate products against the technical specifications in accordance with test products detailed in Annex A. These samples will be purchased by the RCMP in accordance with the Basis of Payment, Annex B. These samples will remain the property of the RCMP. Companies whose products meet all of the laboratory testing will be placed on the approved product list (Source List).

4.2 Financial Evaluation

- 1. Bidders must submit pricing in accordance with Annex B, Basis of Payment, with their bid at bid closing.
- 2. The evaluated price is the extended price, calculated by multiplying the Quantity by the Unit Price offered by the Bidder.
- 3. The price of the bid will be evaluated in Canadian dollars, the Goods and Services Tax or the Harmonized Sales Tax excluded DDP destination, Canadian customs duties and excise taxes included.

2. Basis of Selection

The RCMP will purchase samples from all technically compliant bidders.

PART 5 - CERTIFICATIONS

Bidders must provide the required certifications and associated information to be awarded a contract.

The certifications provided by bidders to Canada are subject to verification by Canada at all times. Canada will declare a bid non-responsive, or will declare a contractor in default in carrying out any of its obligations under the Contract, if any certification made by the Bidder is found to be untrue whether made knowingly or unknowingly, during the bid evaluation period or during the contract period.

The Contracting Authority will have the right to ask for additional information to verify the Bidder's certifications. Failure to comply and to cooperate with any request or requirement imposed by the Contracting Authority may render the bid non-responsive or constitute a default under the Contract.

1. Certifications Precedent to Contract Award

The certifications listed below should be completed and submitted with the bid, but may be submitted afterwards. If any of these required certifications is not completed and submitted as requested, the Contracting Authority will inform the Bidder of a time frame within which to provide the information. Failure to comply with the request of the Contracting Authority and to provide the certifications within the time frame provided will render the bid non-responsive.

1.1 Integrity Provisions - Associated Information

By submitting a bid, the Bidder certifies that the Bidder and its Affiliates are in compliance with the provisions as stated in the Standard Instructions identified in this solicitation. The associated information required within the Integrity Provisions will assist Canada in confirming that the certifications are true.

1.2 Federal Contractors Program for Employment Equity - Bid Certification

By submitting a bid, the Bidder certifies that the Bidder, and any of the Bidder's members if the Bidder is a Joint Venture, is not named on the Federal Contractors Program (FCP) for employment equity "[FCP Limited Eligibility to Bid](http://www.labour.gc.ca/eng/standards_equity/eq/emp/fcp/list/inelig.shtml)" list (http://www.labour.gc.ca/eng/standards_equity/eq/emp/fcp/list/inelig.shtml) available from [Employment and Social Development Canada \(ESDC\) - Labour's](#) website.

Canada will have the right to declare a bid non-responsive if the Bidder, or any member of the Bidder if the Bidder is a Joint Venture, appears on the "[FCP Limited Eligibility to Bid](#)" list at the time of contract award.

Canada will also have the right to terminate the Contract for default if a Contractor, or any member of the Contractor if the Contractor is a Joint Venture, appears on the "[FCP Limited Eligibility to Bid](#)" list during the period of the Contract.

The Bidder must provide the Contracting Authority with a completed annex [Federal Contractors Program for Employment Equity - Certification](#), before contract award. If the Bidder is a Joint Venture, the Bidder must provide the Contracting Authority with a completed annex Federal Contractors Program for Employment Equity - Certification, for each member of the Joint Venture.

2. Additional Certifications Precedent to Contract Award

The certifications listed below should be completed and submitted with the bid, but may be submitted afterwards. If any of these required certifications is not completed and submitted as requested, the Contracting Authority will so inform the Bidder and provide the Bidder with a time frame within which to meet the requirement. Failure to comply with the request of the Contracting Authority and meet the requirement within that time period will render the bid non-responsive.

2.1 Former Public Servant – Certification

Contracts awarded to former public servants (FPS) in receipt of a pension or of a lump sum payment must bear the closest public scrutiny, and reflect fairness in the spending of public funds. In order to comply with Treasury Board policies and directives on contracts with FPS, bidders must provide the information required below before contract award.

Definitions

For the purposes of this clause, "former public servant" is any former member of a department as defined in the [Financial Administration Act](#), R.S., 1985, c. F-11, a former member of the Canadian Armed Forces or a former member of the Royal Canadian Mounted Police. A former public servant may be:

- a. an individual;
- b. an individual who has incorporated;
- c. a partnership made of former public servants; or
- d. a sole proprietorship or entity where the affected individual has a controlling or major interest in the entity.

"lump sum payment period" means the period measured in weeks of salary, for which payment has been made to facilitate the transition to retirement or to other employment as a result of the implementation of various programs to reduce the size of the Public Service. The lump sum payment period does not include the period of severance pay, which is measured in a like manner.

"pension" means a pension or annual allowance paid under the [Public Service Superannuation Act](#) (PSSA), R.S., 1985, c.P-36, and any increases paid pursuant to the [Supplementary Retirement Benefits Act](#), R.S., 1985, c.S-24 as it affects the PSSA. It does not include pensions payable pursuant to the [Canadian Forces Superannuation Act](#), R.S., 1985, c.C-17, the [Defence Services Pension Continuation Act](#), 1970, c.D-3, the [Royal Canadian Mounted Police Pension Continuation Act](#), 1970, c.R-10, and the [Royal Canadian Mounted Police Superannuation Act](#), R.S., 1985, c.R-11, the [Members of Parliament Retiring Allowances Act](#), R.S., 1985, c.M-5, and that portion of pension payable to the [Canada Pension Plan Act](#), R.S., 1985, c.C-8.

Former Public Servant in Receipt of a Pension

As per the above definitions, is the Bidder a FPS in receipt of a pension? **Yes () No ()**

If so, the Bidder must provide the following information, for all FPS in receipt of a pension, as applicable:

- a. name of former public servant;
- b. date of termination of employment or retirement from the Public Service.

By providing this information, Bidders agree that the successful Bidder's status, with respect to being a former public servant in receipt of a pension, will be reported on departmental websites as part of the published proactive disclosure reports in accordance with [Contracting Policy Notice: 2012-2](#) and the [Guidelines on the Proactive Disclosure of Contracts](#).

Work Force Adjustment Directive

Is the Bidder a FPS who received a lump sum payment pursuant to the terms of the Work Force Adjustment Directive? **Yes () No ()**

If so, the Bidder must provide the following information:

- a. name of former public servant;
- b. conditions of the lump sum payment incentive;
- c. date of termination of employment;
- d. amount of lump sum payment;
- e. rate of pay on which lump sum payment is based;
- f. period of lump sum payment including start date, end date and number of weeks;
- g. number and amount (professional fees) of other contracts subject to the restrictions of a work force adjustment program.

For all contracts awarded during the lump sum payment period, the total amount of fees that may be paid to a FPS who received a lump sum payment is \$5,000, including Applicable Taxes.

PART 6 - RESULTING CONTRACT CLAUSES

1. Security Requirement

There is no security requirement associated with the requirement.

2. Requirement

The Contractor must provide the items detailed at Annex A, Statement of Operational Requirement.

3. Standard Clauses and Conditions

All clauses and conditions identified in the Contract by number, date and title are set out in the [Standard Acquisition Clauses and Conditions](http://ccua-sacc.tpsgc-pwgsc.gc.ca/pub/acho-eng.jsp) (<http://ccua-sacc.tpsgc-pwgsc.gc.ca/pub/acho-eng.jsp>) Manual issued by Public Works and Government Services Canada.

Revision to Departmental Name: As this contract is issued by Royal Canadian Mounted Police (RCMP), any reference to Public Works and Government Services Canada or PWGSC or its Minister contained in any term, condition or clause of this solicitation, including any individual SACC clauses incorporated by reference, will be interpreted as reference to RCMP or its Minister.

3.1 General Conditions

2010A (2014-11-27), General Conditions - Goods (Medium Complexity), apply to and form part of the Contract.

Section 01 – Integrity Provisions – Delete subsection 1.4 and 1.5 in their entirety.

4. Term of Contract

4.1 Delivery Date

All the deliverables must be received within 30 calendar days from award of Contract.

4.2 Source List Validity Period

The Source List will remain valid until March 31, 2020. On an annual basis, RCMP will advise Industry of the existence of its Source List on the Government Electronic Tendering Service (BuyandSell.gc.ca).

The Source List may be extended for up to two (2) additional one (1) year periods at the RCMP's sole discretion.

Once a Source List has been established, the RCMP will compete all requirements to all suppliers who have pre-qualified and are listed on the Source List by issuing a RFQ.

4.3 On-going Opportunity for Qualification

A Notice will be posted every other year on the Government Electronic Tendering Service (GETS) to allow new suppliers to become qualified. Existing qualified suppliers, will not be required to re-submit.

5. Authorities

5.1 Contracting Authority

The Contracting Authority for the Contract is:

Name: Julie Davis
Title: Procurement Officer
Royal Canadian Mounted Police, HQ Procurement and Contracting
Address: 73 Leikin Drive, Ottawa, Ontario K1A 0R2
Telephone: 613-843-3797
Facsimile: 613-825-0082
E-mail address: julie.davis@rcmp-grc.gc.ca

The Contracting Authority is responsible for the management of the Contract and any changes to the Contract must be authorized in writing by the Contracting Authority. The Contractor must not perform work in excess of or outside the scope of the Contract based on verbal or written requests or instructions from anybody other than the Contracting Authority.

5.2 Technical Authority

The Technical Authority for the Contract is: (To be specified at contract award)

The Technical Authority named above is the representative of the department or agency for whom the Work is being carried out under the Contract and is responsible for all matters concerning the technical content of the Work under the Contract. Technical matters may be discussed with the Technical Authority, however the Technical Authority has no authority to authorize changes to the scope of the Work. Changes to the scope of the Work can only be made through a contract amendment issued by the Contracting Authority.

5.3 Contractor's Representative - (To be filled in by the Bidder)

General Enquiries

Name: _____
Title: _____
Address: _____
Telephone No: _____
Facsimile No: _____
E-mail address: _____

Delivery Follow-up

Name: _____
Title: _____
Address: _____
Telephone No: _____
Facsimile No: _____
Email address: _____

6. Payment

6.1 Basis of Payment – Firm Unit Price(s)

In consideration of the Contractor satisfactorily completing all of its obligations under the Contract, the Contractor will be paid a firm unit price(s), in accordance with Annex B, Basis of Payment for a cost of \$ _____ (To be specified at contract award). Customs duties are included and Goods and Services Tax or Harmonized Sales Tax is extra, if applicable.

Canada will not pay the Contractor for any design changes, modifications or interpretations of the Work, unless they have been approved, in writing, by the Contracting Authority before their incorporation into the Work.

6.2 Method of Payment

SACC Manual clause H1000C (2008-05-12) Single Payment

7. Invoicing Instructions

7.1 The Contractor must submit invoices in accordance with the section entitled "Invoice Submission" of the general conditions. Invoices cannot be submitted until all work identified in the invoice is completed.

7.2 Invoices must be distributed as follows:

- a) The original and one copy must be forwarded to the Technical Authority identified under the section entitled "Authorities" of the Contract for certification and payment.
- b) Upon request, one copy must be forwarded to the Contracting Authority identified under the section entitled "Authorities" of the Contract.

8. Certifications

Compliance with the certifications provided by the Contractor in its bid is a condition of the Contract and subject to verification by Canada during the term of the Contract. If the Contractor does not comply with any certification or it is determined that any certification made by the Contractor in its bid is untrue, whether made knowingly or unknowingly, Canada has the right, pursuant to the default provision of the Contract, to terminate the Contract for default.

9. Applicable Laws

The Contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in Ontario.

10. Priority of Documents

If there is a discrepancy between the wording of any documents that appear on the list, the wording of the document that first appears on the list has priority over the wording of any document that subsequently appears on the list.

- a) these Articles of Agreement;
- b) the general conditions 2010A (2014-11-27) General Conditions - Goods (Medium Complexity);
- c) Annex A, Statement of Operational Requirement;
- d) Annex B, Basis of Payment;
- e) the Contractor's bid dated _____. (To be specified at contract award)

11. SACC Manual Clauses – Delivery

A9131C (2014-11-27) Controlled Goods Program
B7500C (2006-06-16) Excess Goods

11.1 Shipping Instructions – Delivery at Destination

Goods must be consigned to the destination specified in the Contract and delivered:

- a. Delivered Duty Paid (DDP Nepean, Ontario Incoterms 2000 for shipments from a commercial contractor.

11.2 Delivery Location for Samples - (If/when requested)

(Exact location to be specified at contract award)

Nepean, Ontario
K1A 1M1

12. Inspection and Acceptance

The Technical Authority is the Inspection Authority. All reports, deliverable items, documents, goods and all services rendered under the Contract are subject to inspection by the Inspection Authority or representative. Should any report, document, good or service not be in accordance with the requirements of the Statement of Operational Requirement and to the satisfaction of the Inspection Authority, as submitted, the Inspection Authority will have the right to reject it or require its correction at the sole expense of the Contractor before recommending payment.

12.1 Lot and Quality Control Testing

The RCMP reserves the right to future random lot product testing at anytime on products ordered.

13. SACC Manual Clauses

G1005C (2008-05-12) Insurance

14. Procurement Ombudsman

14.1 Dispute Resolution Services

The parties understand that the Procurement Ombudsman appointed pursuant to Subsection 22.1(1) of the *Department of Public Works and Government Services Act* will, on request, and consent of the parties, to participate in an alternative dispute resolution process to resolve any dispute between the parties respecting the interpretation or application of a term or condition of this contract and their consent to bear the cost of such process, provide to the parties a proposal for an alternative dispute resolution process to resolve their dispute.

The Office of the Procurement Ombudsman may be contacted by telephone at 1-866-734-5169 or by e-mail at boa.opo@boa.opo.gc.ca.

14.2 Contract Administration

The parties understand that the Procurement Ombudsman appointed pursuant to Subsection 22.1(1) of the *Department of Public Works and Government Services Act* will review a complaint filed by [*the supplier or the contractor or the name of the entity awarded this contract*] respecting administration of this contract if the requirements of Subsection 22.2(1) of the *Department of Public Works and Government Services Act* and Sections 15 and 16 of the *Procurement Ombudsman Regulations* have been met, and the interpretation and application of the terms and conditions and the scope of the work of this contract are not in dispute.

The Office of the Procurement Ombudsman may be contacted by telephone at 1-866-734-5169 or by e-mail at boa.opo@boa.opo.gc.ca.

Solicitation No. - N° de l'invitation
201501095
Client Ref. No. - N° de réf. du client
201501095

Amd. No. - N° de la modif.
File No. - N° du dossier
201501095

Buyer ID - Id de l'acheteur
Q14
CCC No./N° CCC - FMS No./N° VME

ANNEX A –

Statement of Operational Requirement – Noise Flash Diversionary Device (NFDD)

1. Title

Statement of Operational Requirement - Noise Flash Diversionary Device (NFDD)

2. Objective

The objective of this document is to describe the requirements for a Noise Flash Diversionary Device (NFDD) that will provide the Royal Canadian Mounted Police (RCMP) Emergency Response Teams (ERT) with an additional less lethal option to resolve high risk incidents.

3. Scope

This Statement of Operational Requirement (SOR) was developed by the RCMP to identify the specific NFDD safety and operational requirements for use by RCMP ERT. The requirements identified in this SOR are unique to RCMP ERT and do not represent NFDD requirements of any other police organization.

4. General Information

NFDDs provide law enforcement teams with an additional option to bring high-risk incidents to a safer and more successful conclusion. NFDD devices are often described as “flashbang” devices, in that their primary function is to provide a brilliant flash of light along with a loud report (explosive noise); these are significant diversionary and disorienting effects for people who are not expecting this event, which allows law enforcement personnel an opportunity for situational intervention. These devices are not intended to cause harm to persons if designed and operated properly.

The NFDD will be used by trained law enforcement personnel only, and only when authorized. These devices may be used in conjunction with other devices that are a part of specialized equipment available for use in situations requiring intervention. They may be used at any time of the day, indoors or outdoors, and as such may be exposed to extreme weather conditions. They can easily be carried in one hand.

Operational NFDDs are single-use devices, and do not require assembly before use.

In addition to operational NFDDs which are described above, NFDDs specifically designed for use in training operations, are also available. Training NFDDs differ somewhat in their construction and performance from operational NFDDs, as described below. They often consist of reusable bodies and separate fuzes and are assembled just prior to use.

Additional information is presented in Appendix 1 - Background Information

The acquired operational and training versions of the NFDD shall be subjected to independent laboratory testing to ensure that they meet the constructional, performance and marking requirements. Samples of the versions of NFDD will be subjected to the tests described in Appendix 2 – Laboratory Testing of NFDD – Description of Tests and Criteria. The results of the tests shall be judged against the requirements in this document.

5. Administrative Requirements

5.1 Training – (Must be made available once companies and products are on the source list. To be contracted for at a later date).

The supplier must provide “train the trainer” training covering how to use the devices, safe storage, and deployment, render safe procedures and safe disposal of NFDD devices, as well as training relating to any safety equipment to be used when handling NFDDs, and handling of a misfired NFDD device in accordance with manufacturer’s procedures. Training shall be provided by the vendor in-person instructor in a classroom setting for up to 30 trainees at a site which will be determined at a later time. The vendor must provide printed training materials for each train the trainer candidate in the English language (the RCMP will have the documents translated into French). The vendor must also provide end user instructions covering the same topics as train the trainer. The vendor must supply sufficient NFDD’s to conduct ‘live fire’ training for NFDD – operational and training devices. The vendor must also supply the Material Safety Data Sheets (MSDS) for all devices. All printed matter relating to the training must also be supplied electronically in Microsoft Word.

5.2 Post-delivery Communication

The vendor shall provide, on a timely and ongoing basis, information on product safety issues, recall notices and other notices that apply to the purchased product.

5.3 Authorization

The devices must meet authorization standards (and must be authorized before commercial quantities are distributed in Canada) as specified in the Explosives Act (administered by Natural Resources Canada, Explosives Regulatory Division). See Appendix 4.

5.4 Contract Quality Assurance

The vendor shall ensure that the supplied products are of acceptable quality. The manufacturer shall be ISO 9000:2000 certified. Demonstrated equivalence will be considered.

6. Constructional Requirements

6.1 Operational NFDD Constructional Requirements

Operational NFDDs shall:

- a) Have an overall cylindrical shape;
- b) Have a maximum height of 150 mm;
- c) Have a maximum weight of 660 g;
- d) Have a diameter not less than 38 mm;
- e) Have a diameter not exceeding 51 mm;
- f) Be provided with an standard threaded socket on the base to allow attachment to off-the-shelf accessories (e.g. flashbangpole, lanyard);
- g) Be neutral in colour with a non-shiny finish (e.g. grey, beige, tan, camouflage green);
- h) Be equipped with a safety lever which, when deployed, initiates device function after a time delay;
- i) Be equipped with a pin and attached pull ring, which secures the safety lever in place until the NFDD is armed by pulling the ring and pin completely out of the device;
- j) Be provided with a pull ring securing mechanism to prevent accidental arming of the device.

6.2 Training NFDD Constructional Requirements

Training NFDDs shall comply with the constructional requirements for operational NFDDs (see above) as stated in Section 6.1 and in addition, training NFDDs shall:

- a) Have a means to indicate the number of times the device has been used (as stated in Section 7.3, training NFDDs are required to be reloadable);
- b) Have an overall colour which is distinctly different from the colour of the operational NFDD (e.g. UN blue).

7. Performance Requirements

7.1 General Performance Requirements

All NFDDs shall:

- a) Not become a projectile when deployed or functioned;
- b) Remain substantially intact during and after functioning, and not produce shrapnel or dangerous projectiles;
- c) Require a force of 20 to 50 N¹ to completely remove the pull ring (without lever depressed and without twisting action);
- d) Be able to withstand a temperature range of -50 °C to +40 °C;
- e) Have a time delay of 1.5±0.3 s from the instant the safety lever is released, to explosion (units with other delays will also be considered but the acceptable tolerance on the stated delay will be ±20%);
- f) Have a low risk for igniting nearby materials commonly found in residences and offices (e.g., clothing, bedding, furniture, paper) when deployed;
- g) Not sustain significant damage or function when dropped 3 m to a hard surface and, if apparently operable after the drop, will function reliably after being subjected to the impact.
- h) Be able to withstand exposure to water (rain, splash, short duration immersion) and humidity during use.

7.2 Operational NFDD Performance Requirements

Operational NFDDs shall:

- a) Be intended as a one-time use device;
- b) Produce a report having an sound pressure, measured 1.5 m from the device, of not less than 120 dB² and not more than 185 dB;
- c) Produce a flash of light having a minimum intensity of 4 x 10⁶ cd³.

¹ newton. SI unit of force. 1 N is approximately .22 pound-force (lbf).

² decibel – logarithmic unit to express air pressure against a reference pressure of 20 µPa (micropascals)

³ candela. SI unit of luminous intensity. A candela is the luminous intensity, in a given direction, of a source that emits monochromatic radiation of frequency 540 × 10¹² hertz and that has a radiant intensity in that direction of (1/683) watt per steradian. The unit replaces the traditional unit – candlepower, and is approximately equal to 1 candlepower.

7.3 Training NFDD Performance Requirements

Training NFDDs shall:

- a) Be reloadable not less than 20 times with the intended training charge;
- b) Produce a report having sound pressure, measured 1.5 m from the device, of not less than 100 dB and not more than 150 dB;
- c) Produce not more than 1×10^6 cd when deployed/functioned.

8. Device Markings and Packaging

All devices and packaging shall comply with the marking requirements as stated in Natural Resources Canada, Explosives Regulatory Division document "General Standard for the Authorization and Classification of Explosives", Revision 2, November 2011.

Training NFDDs shall be marked "Restricted to Training Only – Réservé uniquement à la formation".

9. Documentation

NFDD devices shall be supplied with documentation providing:

- a) MSDS (material safety data sheets) as described by the Workplace Hazardous Materials Information System (WHMIS), or equivalent information as described by the Globally Harmonized System (GHS) (in English, one paper copy and one copy in electronic format (PDF or MS Word);
- b) Instructions for safe handling and use (in English, one paper copy and one copy in electronic format (PDF or MS Word);
- c) Instructions for safe disposal (in English, one paper copy and one copy in electronic format (PDF or MS Word);
- d) Instructions for handling a misfire (in English, one paper copy and one copy in electronic format (PDF or MS Word);
- e) Documentation as required by Natural Resources Canada, Explosives Regulatory Division document "General Standard for the Authorization and Classification of Explosives", Revision 2, November 2011 (in English or French, one paper copy or one copy in electronic format (PDF or MS Word).

10. Appendix 1 – Background Information

(This Appendix is informational. It does not provide mandatory requirements)

This document describes the operational requirements for a Noise Flash Diversionary Device (NFDD) that will provide the Royal Canadian Mounted Police (RCMP) Emergency Response Teams (ERT) with an additional less lethal option to resolve high-risk incidents where the potential risk to both officer and public safety exceeds the response capabilities of regular police personnel. In responding to these events, ERT deploys with a vast array of highly specialized tactical equipment, firearms and munitions which include and are not limited to NFDD's.

This Statement of Operational Requirement (SOR) was developed by the RCMP to identify the specific NFDD requirements for use by RCMP ERT. The requirements identified in this SOR are unique to RCMP ERT and do not represent NFDD requirements of any other police organization.

These specifications were prepared on the basis that, to date, there has been no independent testing on any of the devices purchased by the RCMP to verify the specifications and data supplied by the vendor. Data supplied with the devices by the manufacturers has been taken at face value. Additionally, research across Canada has revealed that there are no standards or specifications that could be used by any procuring agency to evaluate such devices.

The RCMP ERT is mandated to resolve high-risk incidents where the potential risk to both officers and public exceeds the response capabilities of regular police personnel. All deployments demand that ERT members be thoroughly familiar with the various types of equipment that is being utilized. Furthermore the Canada Labour Code (CLC) requires the RCMP to provide specific training on the equipment that members may be required to use. The ultimate goal of the ERT is to preserve life and avoid any unnecessary escalation that may lead to either loss of life or injury to anyone.

The ERT program consists of 19 full and part-time teams combined. The teams are located across Canada in each of the Provinces and Territories. ERT teams may be called upon to respond to an incident individually or in conjunction with ERT teams from neighbouring jurisdictions, whether they are municipal, provincial or national. In view of this reality all ERT members are trained to the same standards and to the greatest degree possible. They must utilize the same equipment in order to be able to inter-operate. To function effectively each member must be trained and equipped the same so that standardized training across the program can be delivered. A member who forms part of an ERT Team in a particular jurisdiction may be transferred at any time to a team in another region of the country or may be temporarily assigned. In order for their training to be effective, teams must utilize the same equipment and training, and to that end this document standardizes the requirements for NFDDs.

In circumstances where a subject is armed and barricaded in a structure and clearly intends to inflict self-harm or harm to others, the ERT Team must carefully consider all of the alternatives available. One option is to take no action beyond communications – wait and see if the subject opens an opportunity for ERT to move in safely. This approach can take a long time and has a high risk and probability of the suspect(s) acting out. There is also the increased risk that the subject will use a weapon against others and or law enforcement. There is also possibility that lethal force by police is the action desired by the subject(s), this action can have very undesirable results. The aim of the ERT Team is to end the situation quickly and with the least amount of harm to the subject(s), citizens or ERT Team members.

This Appendix briefly describes, out of many possible situations, the option of using an NFDD during an ERT deployment where it may be considered as providing a tactical advantage. The ultimate intention of any operation is to preserve all life and avoid any unnecessary escalation that may lead to either injury or death.

There are many situations where actions or inactions of a suspect result in unexpected and unsatisfactory outcomes. Members must continually assess event outcomes in order to create tactical advantage. In circumstances where it is warranted, a more urgent response may be required to address the situation.

Each ERT Team Member utilizes the Incident Management Intervention Model (IMIM). The IMIM is the framework by which RCMP officer's assess and manage risk through justifiable and reasonable intervention. It is not a "use of force continuum". It does not suggest a linear path of use of force. Rather, it helps officers choose the appropriate intervention option, based on the subject's behaviour and the totality of the situation. It promotes continuous risk assessment and centers on the RCMP problem solving model known as CAPRA (CAPRA stands for Clients / Acquire & Analyze / Partnerships / Response / Assess). The IMIM also helps officers identify the subject's behaviour and then select the best option to control the situation effectively. The legal basis for action stems from Section 25.1 of the Criminal Code of Canada, which states:

"Everyone who is required or authorized by law to do anything in the administration or enforcement of the law is, if he acts on reasonable grounds, justified in doing what he is required or authorized to do and in using as much force as is necessary for that purpose."

It is important to note that NFDDs may not be utilized if the situation involves:

- Children or elderly in immediate area where the device is being deployed;
- Presence of accelerants (flammable materials, liquids or vapours).

It must be noted that there may be exceptional cases where the use of a NFDD is the only option available to preserve lives.

The following four scenarios describe how NFDDs may (or may not) be used. These are illustrative examples only.

Scenario 1 – Dynamic Entry

An ERT Team is utilized in the execution of a Controlled Drugs & Substances Act (CDSA) warrant at a home located in a residential area. Collected intelligence indicates that the subject is expected to be in the residence. There appears to be no other occupants inside. In order to have the tactical advantage, a NFDD may be deployed after breaching the main door. The chosen point of entry to the home is the main door. The door is breached by the first ERT Member and he/she steps aside. The Diversion Device Designate then deploys the diversionary device. The deployed device detonates and ERT Team enters the residence and subdues the suspect.

Scenario 2 - Hostage Rescue / Domestic Violence

An ERT Team is utilized to preserve life at a residence located in a residential area. Crisis negotiators have provided intelligence data that 911 operators received communications from a person who advised that their spouse is holding them against their will and has a weapon. The subject has suicidal tendencies. All communications have been severed by the suspect and the negotiators believe that the subject will bring grievous harm to the hostage and to themselves. The subject and hostage are located in the master bedroom of the residence. There are no other occupants known to be inside. In order to have the tactical advantage a NFDD may be deployed after breaching the master bedroom door. The chosen point of entry to the residence is the main door and then the master bedroom door. The bedroom door is breached by the first ERT Member and he/she steps aside. The diversionary device designate then deploys the diversionary device. The deployed device detonates and provides the distraction so that the ERT Team can enter the master bedroom and subdue the suspect.

Scenario 3 - Risk too high to Deploy NFDD upon Entry – Diversionary Device Designate Stand Down

This scenario is similar to scenario 2 until the ERT reaches the bedroom door. The bedroom door is breached by the first ERT member and he/she steps aside. The diversionary device designate then goes to deploy the diversionary device and realizes after priming the device that there are children located in the immediate area of deployment. The diversionary device designate steps aside and removes him/her to a predetermined location where the device is allowed to safely function. Alternative measures are then used to subdue the subject.

Scenario 4 - High Risk Vehicle Take Down

An ERT Team is utilized to preserve life in an urban area with a high population density. An undercover unit has radioed intelligence data via the Communications Center that several high risk persons wanted on a Canada Wide Warrant are travelling on a city main street in a vehicle. The intentions of the individuals are unknown but intelligence has indicated that there is a very high possibility that the persons intend to cause grievous harm to others. Using pre-determined tactics for a high risk vehicle stop, the vehicle is stopped, and the ERT TEAM deploys an NFDD as a tactical advantage to preserve life and prevent grievous harm to suspects and the general public.

NFDDs will be used by ERT trained personnel only, in urban and rural settings. When warranted the ERT Member may deploy the NFDD to end a high-risk situation to preserve life as well as protect the Public. The NFDD will be operated and deployed by an ERT member trained in the proper handling and deployment of NFDDs upon the order of the ERT commander. The device could be used in conjunction with other devices that are a part of the specialized equipment of an ERT trained team/member.

The device will be used by ERT teams operating indoors or outdoors in all weather conditions.

11. Appendix 2 – Laboratory Testing of NFDD – Descriptions of Tests and Criteria

The technical assessment of the NFDD devices shall be performed by the Canadian Explosives Research Laboratory (CERL). CERL is accredited to the requirements of ISO 17025.

NFDD Test 1: Basic Examination of device (mass, dimensions, configuration, labelling/markings, packaging)

Purpose

To visually inspect and document physical characteristics of submitted devices to ensure compliance with ANNEX 1 - STATEMENT OF REQUIREMENT - NOISE FLASH DIVERSIONARY DEVICE (NFDD), Explosives Regulatory Division (ERD) standards for the authorization and classification of explosives and manufacturers declared technical specifications.

Evaluation criteria

This test is non-destructive and devices shall be used in testing provided that specifications are met, as outlined in ANNEX 1 - STATEMENT OF REQUIREMENT - NOISE FLASH DIVERSIONARY DEVICE (NFDD), ERD standards for the authorization and classification of explosives and manufacturer's declared technical specifications. All criteria must be met to proceed with testing.

Samples

Five operational devices and five training devices shall be randomly selected for examination.

Methodology

For each device being examined, provide and record a unique sample identification number on the description data sheet. Identify the device as *Operational* or *Training*. Record the shape, colour, markings, and labeling. Visually inspect the safety lever, pin, pull ring, pull ring securing mechanism, counters (for training devices), and base for accessory attachment. Include comments on the description data sheet. Digitally image the device including the sample identification number. Record the mass of the device. Record the height and diameter of the device. Note: For training devices, height and mass shall be assessed with the training fuse installed. Training devices shall be assembled by laboratory personnel prior to testing.

References

1. *Annex 1 - Statement of Operational Requirement - Noise Flash Diversionary Device (NFDD)*.
2. *General Standard for the Authorization and Classification of Explosives*, Revision 2, Document# XP5000-07-07-E, Explosives Regulatory Division, Natural Resources Canada, Government of Canada, November 2011.
3. CERL TST 110, *Packaging description and evaluation*, Revision 1, 2010-01-04.
4. CERL TST 111, *Sample Description*, Revision 0, 2010-01-04.

NFDD Test 2: Fragmentation of device upon functioning

Purpose

To ensure that the device does not produce fragments capable of causing collateral effects. To ensure compliance with ANNEX 1 - STATEMENT OF OPERATIONAL REQUIREMENT - NOISE FLASH DIVERSIONARY DEVICE (NFDD) and that the device, as manufactured, can be authorized in Canada according to the Explosives Regulatory Division (ERD) standards for the authorization and classification of explosives.

Evaluation criteria

The device shall function in accordance with the requirements of NFDD Test 4 and the manufacturer's declared technical specifications. The device, when functioned, shall not produce fragments capable of perforating Kraft paper backed rigid polystyrene foam witness panels (12.7 mm nominal thickness) placed 1.8 m from the device. The device shall not produce any hole >6 mm in the witness panel.

Samples

Three randomly selected training devices and three randomly selected operational devices shall be tested.

Methodology

The device shall be weighed pre and post functioning to corroborate witness panel evidence. High speed video shall also be used.

If required, assemble training devices for test.

For each device being evaluated, provide and record a unique sample identification number on the applicable data sheet. Record additional information (manufacturer, lot #, etc.) and comment as needed. Identify the device as Operational or Training.

Digitally image the device including the sample identification number.

Ensure proper personal protective equipment is utilized.

For safety, visually inspect the safety lever, pin, pull ring, and pull ring securing mechanism for defects or abnormalities.

Prepare the witness panels (dimensions 2.4 m X 0.6 m X 12.7 mm; (H X W X D)) with Kraft paper. Place and secure the witness panels vertically in a semicircle radius 1.8 m from the device holder. Record and document the position of the witness panels.

Refer to methodology in *NFDD Test 4: Functioning of device*.

Once functioned, re-engage lock-out of power to remote firing apparatus. Exit the firing shelter when safe to do so and retrieve the functioned device. Retrieve pull pin from remote firing device. Weigh and record the mass of the device including pin. Inspect the 1.8 m diameter test area for the device. Record and document position of device as found and save the data records.

For training devices, ensure that the body is intact and reloadable and that the counter advanced, if applicable, with use.

References

1. *Annex 1 - Statement of Operational Requirement - Noise Flash Diversionary Device (NFDD).*
2. E-LABS INC., *Performance Characterization Study: Noise Flash Diversionary Devices (NFDDs)*, Document No.: 205642, National Institute of Justice, Award No. 2002-DT-CS-K001, 2004.

NFDD Test 3: Thrust of device upon functioning

Purpose

To ensure the device releases its blast pressure equally in radial and axial directions.

Evaluation criteria

The device shall function as designed and in accordance with the requirements of Test 4, and as stated in the manufacturer's declared technical specifications. The device, when functioned, must not move laterally outside of the 2 m diameter firing area from its unconfined starting point at ground level. No part of the device shall become a projectile while functioning.

Samples

Three randomly selected training devices and three randomly selected operational devices shall be tested.

Methodology

If required, assemble training devices for test.

For each device being evaluated, provide and record a unique sample identification number on the applicable data sheet. Record additional information (manufacturer, lot #, etc.) and comment as needed. Identify the device as Operational or Training.

Digitally image the device including the sample identification number.

For safety, visually inspect the safety lever, pin, pull ring, and pull ring securing mechanism for defects or abnormalities.

Ensure proper personal protective equipment is utilized.

Position and secure the remote firing apparatus in the test area ensuring that the firing apparatus arm is positioned at ground level such that the device can be held in place until the pin is pulled.

Refer to methodology in *NFDD Test 4: Functioning of device*.

Disengage the pull ring power lock-out and initiate the servo motor to pull the pin.

After functioning re-engage lock-out of power to remote firing apparatus. Exit the firing shelter when safe to do so and retrieve the functioned device. Inspect the 2 m diameter test area for the device. Record and document position of device as found. Retrieve pull pin from remote firing device. Weigh and record the mass of the device including pin. Save the data records.

For training devices, ensure that the body is intact and reloadable and that the counter advanced, if applicable, with use.

References

1. *Annex 1 - Statement of Operational Requirement - Noise Flash Diversionary Device (NFDD)*.

NFDD Test 4: Functioning of device

Purpose

This test functions an NFDD as part of procedures that are used to assess a particular aspect of NFDD performance. It is used for tests relating to delay, duration, sound level, luminance, and force of pin extraction. These tests help to ensure the safety and effectiveness of the device and to ensure that the device, as manufactured, can be authorized in Canada according to the Explosives Regulatory Division (ERD) standards for the authorization and classification of explosives.

Evaluation criteria

The device must function as designed and in accordance with the manufacturer's declared technical specifications.

Samples

Six randomly selected training devices and six randomly selected operational devices shall be selected for testing.

Methodology

If required, assemble training devices for test.

For each device being evaluated, provide and record a unique sample identification number on the applicable data sheet. Record additional information (manufacturer, lot #, etc.) and comment as needed. Identify the device as Operational or Training.

Digitally image the device including the sample identification number.

Ensure proper personal protective equipment is utilized.

For safety, visually inspect the safety lever, pin, pull ring, and pull ring securing mechanism for defects or abnormalities.

Secure the testing area.

Position and secure the remote firing apparatus in the test arena ensuring that the firing apparatus arm is positioned at 1.2 m above the ground.

Prepare the data acquisition systems (DAQs), trigger, high speed cameras, sensor stands and accessory devices for test.

Record and document the position of the testing area including the position of cameras and sensor stands and position of remote firing apparatus. Ensure sensors are positioned at 1.2 m above the ground.

Weigh and record the mass of the device.

Orient the device vertically and install the device in the firing apparatus bracket ensuring the pull ring power lock-out is engaged before connecting the clip to the pull ring of the device.

Exit the testing area and enter the firing shelter for safety.

Start the data acquisition.

Disengage the pull ring power lock-out and initiate the servo motor to pull the pin. At this point the device should function after the built-in time delay for the device has expired.

After functioning, stop the data acquisition and verify data records for: force to extract the pin; time delay between pin extraction/lever lift to flash; duration of flash; luminance of flash, peak sound pressure and event duration.

Re-engage lock-out of power to remote firing apparatus. Exit the firing shelter when safe to do so and retrieve the functioned device. Retrieve pull pin from remote firing device. Weigh and record the mass of the device including pin. Record and document and save the data records.

For training devices, ensure that the body is intact and reloadable and that the counter advanced, if applicable, with use.

References

1. *Annex 1 - Statement of Operational Requirement - Noise Flash Diversionary Device (NFDD).*
2. E-LABS INC., *Performance Characterization Study: Noise Flash Diversionary Devices (NFDDs)*, Document No.: 205642, National Institute of Justice, Award No. 2002-DT-CS-K001, 2004.

NFDD Test 5: Exposure of device to cold with subsequent functioning

Purpose

To subject the device to cold temperatures ($-50^{\circ}\text{C} \pm 3^{\circ}\text{C}$) for an extended period of time (16 h) and to evaluate the functioning of the device (NFDD Test 4) immediately after exposure.

Evaluation criteria

The device shall not ignite, function or explode during acclimatization. The device shall function in accordance with the requirements of NFDD Test 4 at the specified cold temperature, and as designed and stated in ANNEX 1 - STATEMENT OF OPERATIONAL REQUIREMENT - NOISE FLASH DIVERSIONARY DEVICE (NFDD) and manufacturer's declared technical specifications.

Samples

Three training devices and three operational devices shall be randomly selected for test.

Methodology

For each device being evaluated, provide and record a unique sample identification number on the applicable data sheet. Record additional information (manufacturer, lot #, etc.) and comment as needed. Identify the device as Operational or Training. For safety, visually inspect the safety lever, pin, pull ring, and pull ring securing mechanism for defects or abnormalities. Digitally image the device including the sample identification number.

Weigh and record the mass of each device.

Affix a thermocouple to the outside casing of each device positioned near the centre of the device using metallic tape. Place the prepared devices centrally within the temperature controlled environmental chamber. Place a second thermocouple suspended centrally [or in sand] within the chamber to monitor the ambient chamber temperature during the acclimatization period. Acquire the thermocouple data using the Tempscan data acquisition system interfaced to a networked personal computer. Set the chamber temperature to $-50^{\circ}\text{C} \pm 3^{\circ}\text{C}$. Set the timer to turn the chamber off after 16 hours. Ensure that the cooling cycle commences at a time of day such that functioning tests can be conducted without delay following completion of the cooling cycle. Start the chamber cooling and secure the testing facility. Monitor the ambient and device temperatures remotely. When the cooling cycle is complete, remove one device from the chamber. Visually inspect the device and document its appearance. Weigh and record the mass of the device. Place cold device in cooler and transport to the test site. Without delay, function the device (NFDD Test 4) and repeat test with remaining devices.

References

1. *Annex 1 - Statement of Operational Requirement - Noise Flash Diversionary Device (NFDD).*
2. CERL TEST No. AC19, *UN 4(a) – Thermal Stability Test for Unpackaged Articles and Packaged Articles*, Rev. 7 (2013-05-23).

NFDD Test 6: Exposure of device to heat with subsequent functioning

Purpose

To subject the device to elevated temperatures ($40^{\circ} \pm 3^{\circ}\text{C}$) for an extended period of time (16 h) and to evaluate the functioning of the device (NFDD Test 4) immediately after exposure.

Evaluation criteria

The device shall not ignite, function or explode during acclimatization. The device shall function in accordance with the requirements of NFDD Test 4 at the specified elevated temperature, and as designed as stated ANNEX 1 - STATEMENT OF OPERATIONAL REQUIREMENT - NOISE FLASH DIVERSIONARY DEVICE (NFDD) and manufacturer's declared technical specifications.

Samples

Three training devices and three operational devices shall be randomly selected for test.

Methodology

For each device being evaluated, provide and record a unique sample identification number on the applicable data sheet. Record additional information (manufacturer, lot #, etc.) and comment as needed. Identify the device as Operational or Training.

Digitally image the device including the sample identification number.

For safety, visually inspect the safety lever, pin, pull ring, and pull ring securing mechanism for defects or abnormalities.

Weigh and record the mass of the device.

Affix a thermocouple to the outside casing of each device positioned near the centre of the device using metallic tape. Place the prepared devices centrally within the temperature controlled environmental chamber. Place a second thermocouple suspended centrally [or in sand] within the chamber to monitor the ambient chamber temperature during the acclimatization period. Acquire the thermocouple data using the Tempscan data acquisition system interfaced to a networked personal computer. Set the chamber temperature to $40^{\circ}\text{C} \pm 3^{\circ}\text{C}$. Set the timer to turn the chamber off after 16 hours. Ensure that the heating cycle commences at a time of day such that functioning tests can be conducted without delay at the time the heating cycle has finished. Start the chamber heating and secure the testing facility. Monitor the ambient and device temperatures remotely for signs of ignition, explosion or self-heating/decomposition. When the heating cycle is complete, remove one device from the chamber. Visually inspect the device and document its appearance. Weigh and record the mass of the device. Place warm device in insulated box and transport to the test site. Without delay, function the device (NFDD Test 4) and repeat test with remaining devices.

References

1. *Annex 1 - Statement of Operational Requirement - Noise Flash Diversionary Device (NFDD)*.
2. *Recommendations on the Transport of Dangerous Goods - Manual of Tests and Criteria*, Fourth revised edition, United Nations, New York and Geneva 2009 ST/SG/AC.10/11/Rev.5.
3. CERL TEST No. AC19, *UN 4(a) – Thermal Stability Test for Unpackaged Articles and Packaged Articles*, Rev. 7 (2013-05-23).

NFDD Test 7: Exposure of device to water (Submersion) with subsequent functioning

Purpose

To subject the device to water immersion and to evaluate the functioning of the device (NFDD Test 4) immediately after exposure and after drying for 24 hours.

Evaluation criteria

The device must not ignite, function or explode while immersed in water. Following water immersion, the device shall function in accordance with the requirements of NFDD Test 4 and as designed and as stated in ANNEX 1 - STATEMENT OF OPERATIONAL REQUIREMENT - NOISE FLASH DIVERSIONARY DEVICE (NFDD) and manufacturer's declared technical specifications.

Samples

Three samples of operational devices shall be randomly selected for testing. An additional three samples of training devices shall be randomly selected for immersion, drying, and functioning testing.

Methodology

For each device being evaluated, provide and record a unique sample identification number on the applicable data sheet. Record additional information (manufacturer, lot #, etc.) and comment as needed. Identify the device as Operational or Training. Digitally image the device including the sample identification number.

For safety, visually inspect the safety lever, pin, pull ring, and pull ring securing mechanism of each device for defects or abnormalities.

Note: For the immersion and subsequent function test, prepare one device at a time.

Weigh and record the mass of each device.

Prepare labelled buckets and fill with tap water to fill mark. Place devices resting on their side in the filled bucket. Record the start time. Using a ruler, measure the water depth to the top of the device resting on its side and adjust the water level to 0.3 m. Record and document the position of the device within the bucket.

Remove the device from the water after 10 minutes. Visually inspect the device and document its appearance. Weigh and record the mass of the device.

Without delay, function the device (NFDD Test 4).

For the immersion, drying, and functioning tests, allow devices to dry for 24 hours under ambient conditions following water immersion. Weigh and record the mass of the device after drying. Record ambient conditions.

Visually inspect the device and document its appearance.

Function the device (NFDD Test 4).

Solicitation No. - N° de l'invitation
201501095
Client Ref. No. - N° de réf. du client
201501095

Amd. No. - N° de la modif.
File No. - N° du dossier
201501095

Buyer ID - Id de l'acheteur
Q14
CCC No./N° CCC - FMS No./N° VME

References

1. *Annex 1 - Statement of Operational Requirement - Noise Flash Diversionary Devise (NFDD).*

NFDD Test 8: 3 m Free fall drop of device with subsequent functioning

Purpose

To determine the immediate effect and subsequent functioning of the device after a free fall drop of 3 m.

Evaluation criteria

The device shall not function upon impact on a 75 mm thick steel target plate from 3 m drop and shall remain intact. Following impact, the device shall function in accordance with the requirements of NFDD Test 4, and as designed and stated in in ANNEX 1 - STATEMENT OF OPERATIONAL REQUIREMENT - NOISE FLASH DIVERSIONARY DEVICE (NFDD) and manufacturer's declared technical specifications.

Note: If the damage to the device during the free fall drop test is deemed to be a safety concern, functioning of the device (NFDD Test 4) shall be at the discretion of the testing laboratory.

Samples

Three operational and three training devices shall be randomly selected for testing.

Methodology

The device shall be dropped from an upright position.

For each device being evaluated, provide and record a unique sample identification number on the applicable data sheet. Record additional information (manufacturer, lot #, etc.) and comment as needed. Identify the device as *Operational* or *Training*. For safety, visually inspect the safety lever, pin, pull ring, and pull ring securing mechanism of each device for defects or abnormalities. Digitally image the device including the sample identification number.

Weigh and record the mass of the device.

Adjust and mark the predetermined drop height (3 m) on the CERL 12 m drop tower. The drop distance is to be measured from the bottom of the device to the ground level. Attach the device to the drop hook and hoist the device to the drop height. Record and document the position of the device including information how the device is attached to the drop hook. Move to the safe area and remotely release the device. Wait a minimum of 5 minutes before re-entering the restricted area.

Document and digitally image the device and impact area.

Weigh and record the mass of the device after the free fall.

Function the device (NFDD Test 4).

References

1. *Annex 1 - Statement of Operational Requirement - Noise Flash Diversionary Device (NFDD).*
2. CERL TEST No. AC70, *UN 4(b)(ii) – Twelve Metre Drop Test for Articles and Solid Substances*, Rev. 6 (2012-09-28).
3. CERL TST 30-11, *Detonators – Drop Resistance – 5 m Free fall*, Revision 1, 2009-12-21.

NFDD Test 9: Incendivity of device upon functioning

Purpose

To ensure the device does not have the potential to cause collateral damage by fire when functioned.

Evaluation criteria

The device shall function in accordance with the requirements of NFDD Test 4, and as designed as stated in the manufacturer's declared technical specifications. During test the device shall be functioned on top of and in contact with standard household materials. The witness materials shall not ignite. Ignition shall be defined by visible flames or smoke continuing for at least one (1) minute after the device is functioned.

Samples

Three operational and three training devices shall be randomly selected for testing.

Methodology

For each device being evaluated, provide and record a unique sample identification number on the applicable data sheet. Record additional information (manufacturer, lot #, etc.) and comment as needed. Identify the device as *Operational* or *Training*.

Digitally image the device including the sample identification number.

For safety, visually inspect the safety lever, pin, pull ring, and pull ring securing mechanism of each device for defects or abnormalities.

Ensure proper personal protective equipment is utilized.

Position and secure the remote firing apparatus in the test area ensuring that the firing apparatus arm is positioned near ground level such that the device can be held in place until the pin is pulled and the bracket opens to release the device onto the witness materials.

Refer to methodology in *NFDD Test 4: Functioning of device*.

Once functioned, re-engage lock-out of power to remote firing apparatus. Exit the firing shelter when safe to do so and retrieve the functioned device. Retrieve pull pin from remote firing device. Weigh and record the mass of the device including pin. Inspect the witness materials. Record and document and save the data records.

References

1. *Annex 1 - Statement of Operational Requirement - Noise Flash Diversionary Device (NFDD)*.
2. *Recommendations on the Transport of Dangerous Goods - Manual of Tests and Criteria*, Fourth revised edition, United Nations, New York and Geneva 2009 ST/SG/AC.10/11/Rev.5.
3. E-LABS INC., *Performance Characterization Study: Noise Flash Diversionary Devices (NFDDs)*, Document No.: 205642, National Institute of Justice, Award No. 2002-DT-CS-K001, 2004.

NFDD Test 10: Evaluation of device flash charge mass

Purpose

To ensure that the device's main powder (flash) charge mass is in accordance with the manufacturers declared technical specifications. To ensure that the device, as manufactured, can be authorized in Canada according to the Explosives Regulatory Division (ERD) standards for the authorization and classification of explosives.

Evaluation criteria

The manufacturer shall declare the charge mass and its tolerances and shall provide technical information/instructions to allow safe disassembly of the device. The devices shall be disassembled and charge mass shall be verified. Charge mass shall meet the declared charge mass and tolerance.

Samples

Two operational and two training devices shall be randomly selected for testing.

Methodology

For each device being evaluated, provide and record a unique sample identification number on the applicable data sheet. Record additional information (manufacturer, lot #, etc.) and comment as needed. Identify the device as *Operational* or *Training*. Digitally image the device including the sample identification number.

For safety, visually inspect the safety lever, pin, pull ring, and pull ring securing mechanism of each device for defects or abnormalities. Review the technical schematics and instructions before dismantling. Ensure personal safety and use best practices following standard operating procedures when dismantling the device.

Weigh, record and document the mass of the charge.

Label and store sample for *NFDD Test 11: Chemical analysis of device flash charge*.

References

1. *Annex 1 - Statement of Operational Requirement - Noise Flash Diversionary Device (NFDD)*.
2. *General Standard for the Authorization and Classification of Explosives*, Revision 2, Document# XP5000-07-07-E, Explosives Regulatory Division, Natural Resources Canada, Government of Canada, November 2011.
3. CERL TST – 64, *Fireworks and Pyrotechnics*, Rev.4 (2011-11-03).

NFDD Test 11: Chemical analysis of device flash charge

Purpose

To determine the chemical composition of the main powder (flash) charge using a variety of analytical techniques.

Evaluation criteria

The manufacturer shall declare the chemical composition of the charge and its tolerances. The charge from the device disassembled in *NFDD Test 10: Evaluation of device flash charge mass* shall be used for the chemical analysis. Multiple chemical analyses may be performed as per CERL test and standard operating procedure (SOP) to verify charge chemical composition. Undeclared chemical composition(s) shall be deemed as non-compliant with these requirements.

Samples

The samples disassembled in Test 10 shall be used for Test 11.

Methodology

For each sample being evaluated, provide and record a unique sample identification number on the applicable data sheet. Record additional information (manufacturer, lot #, etc.) and comment as needed as outlined in applicable CERL SOPs. Identify the device as *Operational* or *Training*.

Digitally image the sample including the sample identification number.

Refer to specific analytical procedures as outlined in CERL tests and standard operating procedures for applicable analytical test.

References

1. *Annex 1 - Statement of Operational Requirement - Noise Flash Diversionary Device (NFDD)*.
2. *General Standard for the Authorization and Classification of Explosives*, Revision 2, Document# XP5000-07-07-E, Explosives Regulatory Division, Natural Resources Canada, Government of Canada, November 2011.
3. CERL SOP 3002 - Varian Vista-MPX Inductively Coupled Plasma Spectrometer, Rev. 2, 2012-09-06.
4. CERL TST-140, *Inductively Coupled Plasma (ICP) Spectroscopic Analysis of Extracts of Firework and Pyrotechnic Compositions*, Rev. 0 (2010-06-09).
5. CERL SOP 3006 - Standard Operating Procedure for the Rigaku ZSX Mini II WDXRF Spectrometer, Rev. 2, 2010-1-28.
6. CERL TST-127, *Ion Chromatographic Analysis of Anions in Aqueous Extracts of Fireworks Compositions* – Rev. 1 (2011-09-15).
7. CERL SOP 3007 - Basic Operation of the Dionex Ion Chromatograph, Rev. 4, 2013-07-17.

NFDD Test 12: Thermal Stability of device with subsequent functioning (after cooling)

Purpose

To evaluate the thermal stability of the device when subjected to elevated thermal conditions of 75°C for 48 hours and to evaluate the functioning of the device after exposure and cooling to ambient temperature.

Evaluation criteria

The temperature of the device shall not increase greater than 3°C above the test temperature of 75°C for the duration of the test. The device shall not ignite, function or explode during the thermal stability test. The device shall function in accordance with the requirements of NFDD Test 4, and as designed as stated in ANNEX 1 - STATEMENT OF OPERATIONAL REQUIREMENT - NOISE FLASH DIVERSIONARY DEVICE (NFDD) and manufacturer's declared technical specifications.

Samples

Two randomly selected operational devices and two randomly selected training devices shall be tested.

Methodology

For each device being evaluated, provide and record a unique sample identification number on the applicable data sheet. Record additional information (manufacturer, lot #, etc.) and comment as needed. Identify the device as *Operational* or *Training*.

For safety, visually inspect the safety lever, pin, pull ring, and pull ring securing mechanism for defects or abnormalities.

Digitally image the device including the sample identification number.

Weigh and record the mass of the device.

Affix a thermocouple to the outside casing of the device positioned near the centre of the device using heat resistant metallic tape. Place the prepared device centrally within the temperature controlled oven. Place a second thermocouple suspended centrally [or in sand] within the oven to monitor the ambient temperature of the oven during test. Acquire the thermocouple data using the Tempscan data acquisition system interfaced to a networked personal computer. Set the timer to turn off the oven after 48 hours. Set the oven to 75°C. Start the oven and secure the testing facility. Monitor oven and sample temperatures remotely for signs of ignition, explosion or self-heating/decomposition. Before handling, allow the device to cool for an additional 12 hours to ambient conditions. Visually inspect the device and document its appearance. Weigh and record the mass of the device.

References

1. *Annex 1 - Statement of Operational Requirement - Noise Flash Diversionary Device (NFDD).*
2. *Recommendations on the Transport of Dangerous Goods - Manual of Tests and Criteria*, Fourth revised edition, United Nations, New York and Geneva 2009 ST/SG/AC.10/11/Rev.5.
3. CERL TEST No. AC19, *UN 4(a) – Thermal Stability Test for Unpackaged Articles and Packaged Articles*, Rev. 7 (2013-05-23).

Appendix 3 - Summary of type and number of devices required.

NFDD Test #	Test Description	# Operational Units	# Training Units
1	Examination	-	-
2	Fragmentation	3	3
3	Thrust	3	3
4	Functioning	6	6
5	Cold exposure	3	3
6	Heat exposure	3	3
7	Water exposure	3	3
8	Drop – impact	3	3
9	Incendivity	3	3
10	Charge mass	2	2
11	Chemical Analysis - charge	-	-
12	Thermal Stability	2	2
Total		31	31

(The estimated time frame for sample testing is approximately 180 days).

13. Appendix 4 – Authorization of Explosives in Canada (Mandatory)

All NFDDs must be authorized to allow them to be imported into or manufactured, transported, possessed or used in Canada. The process requires that the distributor or manufacturer submit an application for authorization to Natural Resources Canada, Explosives Regulatory Division. The testing described in Appendix 2 includes tests that are normally required for authorization. The authorization process involves classification and testing of explosives to determine their suitability for use in Canada. NFDDs are generally classified as Type D explosives (military and law enforcement). As a result, their distribution will be restricted to police forces and military forces. The authority for this authorization process is derived from the Canada Explosives Act.

Potential suppliers can apply through the Explosives Regulatory Division for permission to ship unauthorized products to the laboratory for testing.

For further information on the process for obtaining authorization, refer to the Canada Department of Natural Resources web site, at <http://www.nrcan.gc.ca/explosives>. This site provides information on testing, authorization, importation, storage, use, sale, transfer, marking, transport, fees and other aspects involving explosives in Canada.

ANNEX B

BASIS OF PAYMENT

The following table (Table 1) will be used for the purpose of purchasing samples to conduct testing as described in Annex A. *Vendor must deliver within 30 calendar days ARO.*

Table 1 – 30 Days ARO

Item	Firm Unit Price	Unit of Issue	Quantity
Operational NFDD	\$	Each	31
Training NFDD	\$	Each	31
Training Fuze	\$	Each	31

*applicable Federal/Provincial Taxes are not to be included with pricing for the purposes of this evaluation.

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ANNEX C

MANDATORY TECHNICAL CRITERIA

Bidders must provide cross-reference information below to identify the page(s) where each mandatory specification detailed in Annex A, Statement of Operational Requirement is demonstrated in their technical bid. Canada reserves the right to verify any and all information.

Reference	Requirement	Bid documentation complies (Yes/No) circle	Proposed	Page reference in bid	Test reference. NFDD Test No.	Test results complies (Yes/No) circle
5	Administrative Requirements					
5.1	Training	Yes/No			n/a	n/a
5.2	Post-delivery Communication	Yes/No			n/a	n/a
5.3	Authorization (meets specifications)	Yes/No			n/a	n/a
5.4	Contract Quality Assurance (ISO 9000:2000 certified (this must be evidenced by providing a certified copy of the ISO 9000:2000 certificate; or equivalence this must be evidenced by a detailed report that has been certified by a quality assurance expert who has recently evaluated the vendors quality assurance program.	Yes/No			n/a	n/a

6	Constructional Requirements					
6.1	Operational NFDD Constructional Requirements					
a	overall cylindrical shape	Yes/No			1	Yes/No
b	maximum height of 150 mm	Yes/No			1	Yes/No
c	maximum weight of 660 g	Yes/No			1	Yes/No
d	diameter not less than 38 mm	Yes/No			1	Yes/No
e	diameter not exceeding 51 mm	Yes/No			1	Yes/No
f	standard threaded socket on the base to allow attachment to off-the-shelf accessories (e.g. flashbangpole, lanyard)	Yes/No			1	Yes/No
g	neutral in colour with a non-shiny finish (e.g. grey, beige, tan, camouflage green)	Yes/No			1	Yes/No
h	equipped with a safety lever which, when deployed, initiates device function after a time delay	Yes/No			1	Yes/No
i	equipped with a pin and attached pull ring, which secures the safety lever in place until the NFDD is armed by pulling the ring and pin completely out of the device	Yes/No			1	Yes/No

j	provided with a pull ring securing mechanism to prevent accidental arming of the device	Yes/No			1	Yes/No
6.2	Training NFDD Constructional Requirements					
a	means to indicate the number of times the device has been used (as stated in Section 8, training NFDDs are required to be reloadable)	Yes/No			1	Yes/No
b	overall colour which is distinctly different from the colour of the operational NFDD (e.g. UN blue).	Yes/No			1	Yes/No
7	Performance Requirements					
7.1	General Performance Requirements					
a	projectile when deployed or functioned	n/a			3	Yes/No
b	substantially intact during and after functioning, and not produce shrapnel or dangerous projectiles	n/a			2	Yes/No
c	force of 20 to 50 N to completely remove the pull ring (without lever depressed and without twisting action)	n/a			4	Yes/No
d	withstand a temperature range of -50 °C to +40 °C	n/a			5 and 6	Yes/No
e	Have a time delay of 1.5±0.3 s from the instant the safety lever is released, to explosion (units with other delays will also be considered but the	Yes/No			4	Yes/No

	acceptable tolerance on the stated delay will be $\pm 20\%$)					
f	Have a low risk for igniting nearby materials commonly found in residences and offices (e.g., clothing, bedding, furniture, paper) when deployed	n/a			9	Yes/No
g	Must not sustain significant damage or function when dropped 3 m to a hard surface and, if apparently operable after the drop, will function reliably after being subjected to the impact.	n/a			8	Yes/No
h	Able to withstand exposure to water (rain, splash, short duration immersion) and humidity during use.	n/a			7	Yes/No
7.2	Operational NFDD Performance Requirements					
a	Must be a one-time use device.	Yes/No				n/a
b	Produce a report having a sound pressure, measured 1.5 m from the device, of not less than 120 dB and not more than 185 dB.	Yes/No			4	Yes/No
c	Must have a flash of light having a minimum intensity of 4×10^6 cd.	Yes/No			4	Yes/No
7.3	Training NFDD Performance Requirements					
a	Must be reloadable not less than 20 times with the intended training charge.	Yes/No			n/a	n/a
b	Produce a report having sound pressure, measured	Yes/No			4	Yes/No

	1.5 m from the device, of not less than 100 dB and not more than 150 dB.					
c	Produce a flash of light not more than 1×10^6 cd when deployed/functioned.	Yes/No			4	Yes/No
8	Device Markings					
a	Must comply with the marking requirements as stated in Natural Resources Canada, Explosives Regulatory Division document "General Standard for the Authorization and Classification of Explosives", Revision 2, November 2011.	Yes/No			1	Yes/No
b	Training NFDDs must be marked "Restricted to Training Only – Réservé uniquement à la formation".	Yes/No			1	Yes/No
9	Documentation					
a	Proponent must provide copies of all MSDS (material safety data sheets) as described by the Workplace Hazardous Materials Information System (WHMIS), or equivalent information as described by the Globally Harmonized System (GHS) (in English, one paper copy and one copy in electronic format (PDF or MS Word).	Yes/No			n/a	n/a
b	Proponent must supply written instructions for safe handling and use (in English, one paper copy and one	Yes/No			n/a	n/a

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	copy in electronic format (PDF or MS Word).					
c	Proponent must supply written Instructions for safe disposal (in English, one paper copy and one copy in electronic format (PDF or MS Word)).	Yes/No			n/a	n/a
d	Proponent must supply written Instructions for safely handling misfire (in English, one paper copy and one copy in electronic format (PDF or MS Word)).	Yes/No			n/a	
e	Proponent must supply all documentation as required by Natural Resources Canada, Explosives Regulatory Division document "General Standard for the Authorization and Classification of Explosives", Revision 2, November 2011(in English or French, one paper copy or one copy in electronic format (PDF or MS Word)).	Yes/No			n/a	n/a

Note: Factors not considered in the mandatory requirements may be elucidated during the laboratory testing. The buyer reserves the right to select offer that are safe for use and best suit operational need

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