Building India's CBRN Shield: DRDO's New Centre of Excellence

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Summary

The article examines India's evolving preparedness in addressing the Chemical, Biological, Radiological, and Nuclear (CBRN) threats. The focus of the article is on DRDO's newly inaugurated CBRN Field Training and Demonstration Centre in Delhi. The article argues that the facility represents a significant shift from fragmented, agency-specific preparedness toward a more integrated national response architecture by training military, disaster-response, and civilian agencies under one framework.

The term CBRN (Chemical, Biological, Radiological and Nuclear) defence refers to the measures, technologies, training, and doctrines developed to protect personnel and populations from these threats. The mechanisms used for this purpose include the processes related to detection, protection, decontamination, medical countermeasures, and consequence management methods. The use of CBRN materials or weapons could cause massive & extinctive harm to humanity, causing casualties much faster than conventional weapons. Their indiscriminate nature, combined with the potential to cause large-scale disruption with minimal warning, makes them particularly dangerous, as their effects can cascade across societies, economies, and critical infrastructure.[1] The attacks may not always be by an adversary, but can be any in-house incident/accident involving CBRN agents causing catastrophic effects. Presently, India itself hosts Asia's largest chemical industries, 24 operating nuclear power reactors with 17 more under implementation[2], and an exponentially growing pharmaceutical and biotechnology sector. These structural features pose equal real risk exposure. India's strategic culture has historically framed its nuclear posture in the language of deterrence and non-proliferation. For decades, India has been constantly reviewing the threats posed by CBRN weapons and simultaneously taking incredible steps towards building its CBRN handling capabilities, training the contingency handlers and agencies[3].

The New Development: DRDO's CBRN Centre of Excellence

As a strategic signal of India's evolving posture towards CBRN preparedness, on 6 May 2026, DRDO (Defence Research and

Development Organisation) formally opened the CBRN Field Training and Demonstration Centre at Burari plains in New Delhi. The inauguration was done by the Secretar1y of the Department of Defence Research & Development and Chairman of DRDO, Dr Samir V Kamat. Also present were Director General (Soldier Support System) Dr Upendra Kumar Singh, Director General (Production Coordination and Services Interaction) Dr Chandrika Kaushik, Director General (Resource and Management) Dr Ravindra Singh, and several senior scientists and dignitaries.[4]

The centre forms part of the broader upcoming DRDO-CBRN Centre of Excellence being developed under the Institute of Nuclear Medicine and Allied Sciences — INMAS - DRDO's principal mandated laboratory, engaged for R&D across radiation sciences, imaging technologies, & CBRN-related defence technologies.[5]

The PIB release describes the facility comprising several distinct but interconnected components enriched with the latest technologies and techniques. A dedicated radiological and nuclear test-bed facility will allow for realistic simulation of emergency scenarios under controlled conditions, meaning that responders can train against actual radiological parameters rather than theoretical reconstructions. A heavy ion research facility adds a scientific dimension to the centre, enabling the study of how heavy ions interact with biological and material systems, with direct applications in radiation medicine and detector development. Emergency medical response units are integrated into the complex, providing the infrastructure for rapid triage and casualty decontamination. Real-time field response units, providing deployable teams capable of operating at the site of an actual CBRN incident and coordinating multi-agency response in the field.[6]

The centre's dedicated mandate is to effectively train through structured programs & workshops for the crisis responders of the Ministry of Defence (MoD)- all defense forces, the Ministry of Home Affairs (MHA), National Disaster Response Team (NDRF), the National Disaster Management Authority (NDMA), Civil emergency responders, and several other agencies involved in CBRN preparedness.[7]

India's CBRN response space has been historically divided into ministerial silos. The military trains its own forces. NDRF has its own CBRN teams. State police and civil defence have their own, far more limited, capacity. The new Burari centre, for the first time under a single DRDO institutional roof, represents a convergent training architecture that reaches across all simultaneously. This is a structural change, not merely an addition of facilities, but a step ahead towards integration of response teams.

The military dimension has also been moving on a parallel track. Learning lessons from Operation Sindoor and other global conflicts, DRDO's INMAS has simultaneously initiated work for developing a CBRN ambulance, which is a specialised vehicle for medical logistics and pre-hospital care in nuclear & radiological environments. The imperative aim is to create a CBRN ambulance built on a civilian chassis but armored with military-grade features, an air sanitization system, advanced filtration, a quick & effective sterilization system, internal pressure adjustment systems to prevent the spread of contamination, personal protective equipment for medical staff, decontamination capability, and ruggedness for difficult terrain.[8] In a separate development, DRDO's

Vehicle Research and Development Establishment transferred the technology for the CBRN Reconnaissance Vehicle to ten Indian industries in June 2025, reinforcing the push to Atmanirbhar Bharat in defence CBRN equipment.[9]

All these developments denote that progress in CBRN preparedness is constantly remarkable. The new Burari centre is a genuine investment, an addition to a preparedness architecture that India has been building for decades. It comprises of well institutional ecosystem which lay mark a meaningful structural step towards closing the gap in the integration of various CBRN handling institutions. It would provide the institutional anchor for the joint exercises, shared protocols, and real-time information sharing that is a critical requirement of inter-agency CBRN responders. It will form strong pillars in India's CBRN preparedness landscape. With the dynamics changing continuously in the shape and size of the CBRN threats, a requirement arises for India to keep pace and constantly upgrade its Infrastructural and Training Capabilities, just as it has done now with the set up of Burari Centre.

Endnotes:

1 ET Online, "DRDO Chief inaugurates CBRN training lab in Delhi to tackle threats know what they are", *The Economic Times*,06 May 2026.

2 Department of Atomic Energy, "Parliament Question: Expansion of Nuclear Power Capacity", *Press Information Bureau, Government of India*, 05 Feb 2026.

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R.Krishna Kumar, "CBRN disaster-handling centres to be set up in four metros", *The Hindu*, 20 March 2016.

4 Press Information Bureau Delhi, "DRDO opens CBRN Field Training & Demonstration Centre in Delhi", *Ministry of Defense*, 06 May 2026.

5 "Institute of Nuclear Medicine and Allied Sciences (INMAS) — DRDO Laboratory Profile", India Science, Technology and Innovation Portal, Government of India, ND.

6 N2, Surendra Singh,TNN, "To Prepare for nuclear exigencies,DRDO opens CBRN centre in Delhi", *Times Of India*, 07 May 2026.

7 ibid.

8 Vijay Mohan,Tribune News Service, " Op Sindoor Lesson: DRDO to develop specialized ambulance for use in nuclear environment", *The Tribune*, 13 July 2025.

9 "DRDO Transfers 9 Defence Technologies to 10 Indian Firms", *News on Air, Government of India*, 8 June 2025.