



Department of Defense INSTRUCTION

NUMBER 3150.09

April 8, 2015

Incorporating Change 4, December 8, 2023

USD(A&S)

SUBJECT: The Chemical, Biological, Radiological, and Nuclear Survivability Policy

References: See Enclosure 1

1. PURPOSE. In accordance with the authority in DoD Directive (DoDD) 5135.02 (Reference (a)), this instruction reissues DoD Instruction (DoDI) 3150.09 (Reference (b)) and:

a. Implements policy in accordance with section 1053 of Public Law 108-375 (Reference (c)) and as established in DoDD 5000.01 (Reference (d)), DoDI 5000.02 (Reference (e)), DoDD S-5210.81 (Reference (f)), Chairman of the Joint Chiefs of Staff (CJCS) Instruction (CJCSI) 3222.01C (Reference (g)), CJCSI 5123.01I (Reference (h)), DoDD 3020.40 (Reference (i)), and the CJCS Manual for the Operation of the Joint Capabilities Integration and Development System (JCIDS) (Reference (j)).

b. Establishes policy, assigns responsibilities, and establishes procedures for the execution of the DoD Chemical, Biological, Radiological, and Nuclear (CBRN) Survivability Policy (including electromagnetic pulse (EMP)).

c. Establishes the policy to identify all mission-critical systems (MCS) and specify the subsets that must survive and operate in chemical, biological, and radiological (CBR) environments, nuclear environments, or combined CBRN environments.

d. Describes how CBRN MCS will be identified, reviewed, and considered in the context of Reference (h); the Defense Acquisition System established in References (d) and (e); the mission assurance construct established in Reference (i); balanced survivability assessments (BSAs) described in DoDI O-3000.08 (Reference (k)); and the Missile Defense Agency Systems Engineering Plan (SEP) (Reference (l)), as appropriate.

e. Requires that CBRN survivability be reported annually.

f. Aligns and coordinates with the mission assurance construct from Reference (i) and DoDI 3020.45 (Reference (m)) in accordance with Reference (j) to support mission assurance of DoD capabilities and forces.

g. Establishes the CBRN Survivability Oversight Group (CSOG) in accordance with DoDI 5105.18 (Reference (n)) to oversee execution of the DoD CBRN Survivability Policy.

2. APPLICABILITY. This instruction applies to the OSD, the Military Departments, the Office of the CJCS and the Joint Staff, the Combatant Commands (CCMDs), the Office of Inspector General of the Department of Defense, the Defense Agencies, the DoD Field Activities, and all other organizational entities within the DoD (referred to collectively in this instruction as the “DoD Components”).

3. POLICY. It is DoD policy that:

a. The force will be equipped to survive and operate in CBR or nuclear environments as a deterrent to adversary use of weapons of mass destruction against the United States, its allies, and its interests consistent with the DoD Strategy for Countering Weapons of Mass Destruction (Reference (o)), Joint Publication 3-40 (Reference (p)), and DoDD 2060.02 (Reference (q)). The ability of the force to operate in these environments must be known and assessed on a regular basis, and MCS that must survive and operate in CBR environments, nuclear environments, or combined CBRN environments will be specified.

b. All Acquisition Category 1 programs expected to operate in the environments identified in paragraph 3.a. of this section are designated CBRN MCS and must be CBRN survivable in accordance with the applicable key performance parameters (KPPs). A cost-informed assessment of CBRN survivability alternatives must be conducted and results presented to the Joint Requirements Oversight Council (JROC) and the Defense Acquisition Board (DAB). The JROC will approve requirements for CBRN survivability or mitigations involving any combination of doctrine, organization, training, materiel, leadership and education, personnel, and facilities, and the DAB will approve the acquisition strategy.

c. CBRN MCS are survivable in accordance with the CBRN survivability requirements identified in their requirements documents (e.g., initial capabilities document (ICD), capability development document (CDD), capability production document (CPD)). The attributes and values establishing the threshold and objective requirements and whether the system or infrastructure is mission-critical will be stated clearly in the system or infrastructure’s requirements documents.

(1) Material measures or remediation of CBRN survivability vulnerabilities will be used to ensure CBRN survivability of DoD CBRN MCS.

(2) The CBRN survivability of MCS should be assessed regularly throughout the system or infrastructure’s life cycle to ensure that CBRN survivability is maintained (or improved), as necessary.

d. As directed by the DAB, all CBRN MCS under development as DoD acquisition programs must include in the SEP how the design incorporates the CBRN survivability

requirements and how progress toward these requirements is tracked and documented over the acquisition life cycle. Legacy CBRN MCS undergoing requirements document reviews must also include CBRN threats, the CBRN mission-critical designation, and CBRN survivability in the requirements documents.

e. Mission-critical nuclear command and control (NC2) communications system equipment, other mission-critical National Leadership Command Capability (NLCC) systems as required, and nuclear and EMP-survivable MCS must be nuclear hardened, have a hardness assurance (HA) program, and have a continuing hardness maintenance and hardness surveillance (HM/HS) program. The program must be consistent with definitions outlining NC2 and HM/HS requirements in References (f) and (g), CJCSI 6810.01C (Reference (r)), and DoDD S-3710.01 (Reference (s)).

4. RESPONSIBILITIES. See Enclosure 2.

5. PROCEDURES. See Enclosure 3.

6. RELEASABILITY. **Cleared for public release.** This instruction is available on the Directives Division Website at <https://www.esd.whs.mil/DD/>.

7. SUMMARY OF CHANGE 4. This change is administrative and removes mention of DD Form 2931, "CBRN Mission-Critical Report (MCR)," which is no longer in use.

8. EFFECTIVE DATE. This instruction is effective April 8, 2015.



Frank Kendall
Under Secretary of Defense for
Acquisition, Technology, and Logistics

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ENCLOSURE 1

REFERENCES

- (a) DoD Directive 5135.02, “Under Secretary of Defense for Acquisition and Sustainment (USD(A&S)),” July 15, 2020
- (b) DoD Instruction 3150.09, “The Chemical, Biological, Radiological, and Nuclear (CBRN) Survivability Policy,” September 17, 2008, as amended (hereby cancelled)
- (c) Section 1053 of Public Law 108-375, “Ronald W. Reagan National Defense Authorization Act for Fiscal Year 2005,” October 28, 2004
- (d) DoD Directive 5000.01, “The Defense Acquisition System,” September 9, 2020
- (e) DoD Instruction 5000.02, “Operation of the Adaptive Acquisition Framework,” January 23, 2020
- (f) DoD Directive S-5210.81, “United States Nuclear Weapons Command and Control, Safety, and Security (U),” April 24, 2017
- (g) Chairman of the Joint Chiefs of Staff Instruction 3222.01C, “Chairman of the Joint Chiefs of Staff Requirements for Electromagnetic Pulse Protection of Critical Nodes and Systems (U),” August 8, 2019
- (h) Chairman of the Joint Chiefs of Staff Instruction 5123.01I, “Charter of the Joint Requirements Oversight Council and the Implementation of the Joint Capabilities Integration and Development System,” October 30, 2021
- (i) DoD Directive 3020.40, “Mission Assurance (MA),” November 29, 2016, as amended
- (j) Chairman of the Joint Chiefs of Staff Manual for the Operation of the Joint Capabilities Integration and Development System, October 30, 2021
- (k) DoD Instruction O-3000.08, “Balanced Survivability Assessments (BSAs),” January 5, 2010, as amended
- (l) Missile Defense Agency Ballistic Missile Defense System Engineering, Systems Engineering Plan (SEP), Revision 2.0, December 31, 2013¹
- (m) DoD Instruction 3020.45, “Mission Assurance Construct,” August 14, 2018, as amended
- (n) DoD Instruction 5105.18, “DoD Intergovernmental and Intragovernmental Committee Management Program,” July 10, 2009, as amended
- (o) DoD Strategy for Countering Weapons of Mass Destruction, June 2014
- (p) Joint Publication 3-40, “Joint Countering Weapons of Mass Destruction,” November 27, 2019
- (q) DoD Directive 2060.02, “DoD Countering Weapons of Mass Destruction (WMD) Policy,” January 27, 2017
- (r) Chairman of the Joint Chiefs of Staff Instruction 6810.01C, “Critical Nuclear Command, Control, and Communications Systems and Facilities (U),” August 29, 2019
- (s) DoD Directive S-3710.01, “(U) National Leadership Command Capability (NLCC),” May 27, 2015²
- (u) DoD Directive 5137.02, “Under Secretary of Defense for Research and Engineering (USD(R&E)),” July 15, 2020

¹ Available through the Missile Defense Agency

² Available on the SIPRNET or through the Office of the Deputy Assistant Secretary of Defense for Nuclear Matters

- (v) DoD CBRN Survivability Security Classification Guide, February 17, 2017³
- (w) Defense Acquisition Guidebook, March 28, 2021
- (x) DoD Directive 5105.71, “Department of Defense Test Resource Management Center (TRMC),” March 8, 2004
- (y) Presidential Policy Directive 40, “National Continuity Policy,” July 15, 2016
- (z) DoD Directive 5144.02, “DoD Chief Information Officer (DoD CIO),” November 21, 2014, as amended
- (aa) North Atlantic Treaty Organization Standardization Agreement 4145, “Nuclear Survivability Criteria for Armed Forces Material and Installations – Allied Engineering Publication (AEP)-04,” April 1975²
- (ab) North Atlantic Treaty Organization Standardization Agreement 4521, “Chemical, Biological, Radiological, and Nuclear (CBRN) Contamination Survivability Factors in the Design, Testing and Acceptance of Military Equipment - AEP-7,” April 4, 2012²
- (ac) DoD Directive 5134.09, “Missile Defense Agency (MDA),” September 17, 2009
- (ad) Missile Defense Agency Standard 003 “Nuclear, Biological, and Chemical Contamination Survivability (NBCCS) Standard,” December 1, 2004¹
- (ae) DoD Directive 5160.05E, “Roles and Responsibilities Associated with the Chemical and Biological Defense (CBD) Program (CBDP),” September 8, 2017, as amended
- (af) Test Operating Procedure 8-2-502, “Chemical, Biological, and Radiological Contamination Survivability: Material Effects Testing,” June 22, 2012⁴

³ Available through the Joint CBRN Defense Program Analysis and Integration Office

⁴ Available through the U.S. Army Test and Evaluation Command

ENCLOSURE 2

RESPONSIBILITIES

1. USD(A&S). The USD(A&S):

- a. Confirms that CBRN survivability is integrated into the Defense Acquisition System as established in References (d) and (e).
- b. Manages and validates the acquisition, operation, maintenance, and sustainment (i.e., life cycle management) of systems, infrastructure, and required CBRN test facilities.
- c. Directs the President of the Defense Acquisition University (DAU) to incorporate CBRN survivability into the programs of instruction.

2. ASSISTANT SECRETARY OF DEFENSE FOR NUCLEAR, CHEMICAL, AND BIOLOGICAL DEFENSE PROGRAMS (ASD(NCB)). Under the authority, direction, and control of the USD(A&S), the ASD(NCB):

- a. Oversees and coordinates the execution of the DoD CBRN Survivability Policy. Maintains the CBRN Survivability Security Classification Guidance (Reference (v)).
 - (1) Appoints a point of contact (POC) for nuclear survivability.
 - (2) Oversees Joint CBRN Defense Program Analysis and Integration Office (PAIO) implementation of this instruction.
- b. Advises the Secretary of Defense on the technical aspects of CBRN survivability.
- c. Constitutes and chairs the CSOG in accordance with the guidance in Enclosure 4 of this instruction.
- d. Serves as a member of acquisition overarching integrated product teams (OIPT) and appoints a representative to the integrated process teams under acquisition OIPTs.
- e. Advises the Milestone Decision Authority (MDA) on the adequacy of the CBRN survivability and hardening of each CBRN MCS program.
- f. Advises the JROC and the USD(A&S), through the appropriate Functional Capabilities Board (FCB), the Joint Capabilities Board (JCB), and the DAB, on the adequacy of the CBRN survivability and hardening requirements of each CBRN MCS program addressed by the JROC.
- g. Provides assistance regarding technical aspects of CBR contamination survivability and nuclear and life cycle nuclear survivability for CBRN MCS to DoD Components and sponsors

on the programs that are approaching a milestone decision or with requirements documents under review.

(1) Provides best business practices related to CBR contamination survivability and nuclear and life cycle nuclear survivability to the Assistant Secretary of Defense for Acquisition (ASD(A)) for inclusion in the Defense Acquisition Guidebook (DAG) (Reference (w)).

(2) In coordination with the ASD(A), the functional leads, and the Director, Defense Threat Reduction Agency (DTRA), helps develop education materials related to CBRN survivability for inclusion in the systems planning, research, development, and engineering (SPRDE); test and evaluation (T&E); and program management (PM) curriculums at DAU.

h. Oversees CBRN survivability research, development, test, and evaluation (RDT&E).

i. Establishes CBRN defense T&E standards in support of CBRN survivability in conjunction with the Director, Developmental Test, Evaluation, and Assessments (D,DTE&A). Leads the process to develop CBR contamination survivability test methodologies and standards through the Chemical Biological Defense Program (CBDP) T&E Executive.

j. Assesses the T&E infrastructure and identifies essential requirements to support DoD CBRN Survivability Policy initiatives in conjunction with the Director, Test Resource Management Center (TRMC).

k. Maintains and updates the Chemical Biological Materials Effects (CBME) Database that addresses associated phenomenologies and materials effects.

l. Serves as the DoD POC for coordination and exchange of information with other Federal departments on CBRN survivability issues related to CBRN MCS.

m. Serves as the DoD POC for reports to Congress on the progress of the execution of the CBRN Survivability Policy for CBRN MCS.

n. Represents DoD on international panels, such as the North Atlantic Treaty Organization (NATO), developing standards and criteria for CBRN survivability.

o. Identifies intelligence collection priorities and requirements consistent with the DoD CBRN Survivability Policy and coordinates with the Director, Defense Intelligence Agency (DIA).

p. Provides guidance to the Military Departments and Missile Defense Agency regarding the CBRN mission-critical reports (MCRs), including focus areas from the Joint Staff, Defense Agencies, and other DoD offices regarding the CBRN MCRs.

q. Provides all CBRN MCRs to the Military Departments and Missile Defense Agency.

r. Provides the CBRN MCRs, Military Departments' CBRN MCR Reviews, and Missile Defense Agency's CBRN MCR Review to the CSOG members and applicable DoD offices within 30 days of receipt of the CBRN MCR Reviews for use as applicable in accordance with Enclosure 2 of this instruction.

s. Provides the Joint Staff and CCMD assessments to the CSOG members and applicable DoD offices within 30 days of receipt for use as applicable in accordance with Enclosure 2.

t. Serves as the principal advisor, on behalf of the USD(A&S), for implementing the DoD CBRN Survivability Policy.

3. DIRECTOR, DTRA. Under the authority, direction, and control of the USD(A&S) and through the ASD(NCB), the Director, DTRA:

a. Appoints a POC to advise ASD(NCB) in leveraging the technology based programs that support CBRN survivability and coordinates on CBRN survivability RDT&E.

b. Helps the DoD Components test for and assess the adequacy of CBRN survivability.

(1) Helps the ASD(NCB) develop test methodologies, standards, and experiments to support CBR contamination survivability efforts.

(2) Develops survivability standards, hardened electronics, testing protocols, and experimental environments that reflect realistic nuclear weapons effects to support nuclear survivability programs.

c. Provides guidance and technical assistance to DoD Components for nuclear effects testing, simulators, or simulation, including coordinating the use of Department of Energy assets.

d. Conducts BSAs of U.S. and allied mission-critical functions, systems, networks, architectures, assets, and infrastructure against a broad spectrum of threat and hazard environments to enhance their survivability and operability in accordance with Reference (k).

e. Provides lessons learned on CBR contamination survivability and nuclear survivability, including important trends and observations from BSAs, to sponsors, combat developers and materiel developers.

f. In coordination with the ASD(A), the functional leads, and the ASD(NCB), helps develop education materials related to CBRN survivability for inclusion in the SPRDE, T&E, and PM curriculums at DAU.

g. Establishes and sustains an education program on nuclear weapon effects to help engineers and program, project, and product managers implement a nuclear survivability program.

h. Provides technical support on CBRN survivability matters to the ASD(NCB).

(1) Helps develop modeling and simulation (M&S) and RDT&E supporting CBR contamination survivability.

(2) Develops M&S and RDT&E supporting nuclear survivability.

(3) Provides technical training and modeling support to Combatant Commander (CCDR) staffs, Military Departments, Joint Staff, and other DoD Components on nuclear environments, the nuclear survivability posture of mission-critical equipment, and the likely consequences for mission assurance under approved war plans.

i. Reviews requirements documents for CBRN MCS including construction initiatives to ensure that CBRN survivability is addressed as part of the survivability or protection KPPs.

j. Reviews BSA designs of planned hardened facilities at appropriate design stages in accordance with Reference (k).

k. Provides representation to the CSOG and supporting working groups.

4. ASD(A). Under the authority, direction, and control of the USD(A&S), the ASD(A):

a. Monitors DoD CBRN Survivability Policy activities for applicability to or impact on current and future strategic and tactical acquisition programs and portfolios.

b. Includes CBRN survivability best practices recommended by ASD(NCB) in the DAG as appropriate.

c. Provides representation to the CSOG and supporting working groups, when required.

5. USD(R&E). In accordance with Reference (u), the USD(R&E):

a. Supports the research and development programs for CBRN survivability. Develops and advocates budget requests for research and technology to enhance CBRN survivability, including technologies for T&E.

b. Confirms that the developmental test policy requires the assessment of CBRN survivability requirements for CBRN MCS on the OSD T&E oversight list, assessing systems and infrastructure in accordance with CBRN survivability requirements identified within requirements documents and T&E master plans (TEMPS).

c. In coordination with the Director of Operational Test and Evaluation (DOT&E), confirms that the DoD can test and certify to full threat level environments, as practical.

- d. Monitors DoD CBRN survivability policy for impact on current and future T&E policy and guidance and T&E workforce training and education.
- e. Assists the ASD(NCB) to develop and review developmental test protocols in support of CBRN survivability requirements.
- f. Provides technical reports to the CSOG, as requested by the ASD(NCB).
- g. Provides representation to the CSOG and supporting working groups.

6. DIRECTOR, MISSILE DEFENSE AGENCY. Under the authority, direction, and control of the USD(R&E), the Director, Missile Defense Agency:

- a. Submits an annual CBRN MCR in accordance with Enclosure 5 of this instruction, identifying its MCS and CBRN MCS and assessing the current survivability status of its CBRN MCS.

- b. Reviews the Military Departments' CBRN MCRs for gaps and limitations in the CBRN survivability of the systems and infrastructure upon which the Missile Defense Agency relies. Provides a summary of the review to the Office of the ASD(NCB) (OASD(NCB)) within 45 days of receipt of the Military Departments' CBRN MCRs.

- c. Provides representation to the CSOG and supporting working groups.

7. DIRECTOR, TRMC. Under the authority, direction, and control of the USD(R&E) and as established by DoDD 5105.71 (Reference (x)), the Director, TRMC:

- a. Helps ASD(NCB), in coordination with the CBDP T&E Executive, to assess the T&E infrastructure.

- b. Analyzes the Military Departments' and Missile Defense Agency's CBRN MCRs for test infrastructure capability gaps and limitations.

- c. Verifies that the DoD Strategic Plan for T&E Resources addresses CBRN test capability resource requirements (test facilities, simulators, and simulations), including CBRN test capabilities, gaps, and needs for investment in upgrades to existing facilities or new capabilities.

- d. Assesses infrastructure and resources that support CBRN survivability T&E.

- e. Provides representation to the CSOG and supporting working groups.

8. UNDER SECRETARY OF DEFENSE FOR POLICY (USD(P)). The USD(P):

- a. Coordinates policy implications on arms control, deployment considerations, and allied perceptions of CBRN survivability issues and initiatives, including incorporation of survivability requirements in shared systems and infrastructure, such as those employed by the North American Aerospace Defense Command.
- b. Identifies and assesses new and evolving policy and strategy trends that may impact the CBRN survivability of CBRN MCS.
- c. Prepares written CBRN survivability policy guidance for related war games, scenarios, and simulations to inform CCDRs, the Military Departments, and other related military planning functions.
- d. Oversees development of international partnership capacity as it relates to CBRN survivability of CBRN MCS.
- e. Provides representatives to the CSOG and supporting working groups.

9. ASSISTANT SECRETARY OF DEFENSE FOR HOMELAND DEFENSE AND HEMISPHERIC AFFAIRS (ASD(HD&HA)). Under the authority, direction, and control of the USD(P), the ASD(HD&HA):

- a. Coordinates on policy implications on continuity matters, including the DoD implementation of the Presidential Policy Directive-40 (Reference (y)).
- b. Serves as the principal advisor, on behalf of the USD(P), to implement DoD CBRN Survivability Policy for homeland defense, critical infrastructure, and continuity matters.
 - (1) Ensures that CBRN survivability is addressed in homeland defense instructions including mission assurance and continuity.
 - (2) Supports the alignment of CBRN survivability with changes and advancements in mission assurance consistent with Reference (i) and Reference (m).
- c. Analyzes the Military Departments' and Missile Defense Agency's CBRN MCRs in the context of the mission assurance construct.
- d. Ensures CBRN threats and hazards are included in the Department's mission assurance assessments and incorporated into the risk management process in accordance with Reference (m).
- e. Provides representatives to the CSOG and supporting working groups.

10. UNDER SECRETARY OF DEFENSE FOR PERSONNEL AND READINESS (USD(P&R)). The USD(P&R):

- a. Coordinates on personnel and readiness implications of CBRN survivability issues and initiatives.
- b. Provides representation to the CSOG and supporting working groups, when required.

11. UNDER SECRETARY OF DEFENSE FOR INTELLIGENCE AND SECURITY(USD(I&S)). The USD(I&S):

- a. Coordinates on intelligence implications of CBRN survivability issues and initiatives.
- b. At least once every 3 years, reviews and validates potential CBRN threats and informs users of those reviews.
- c. Ensures that validated CBRN threat assessments are current.
- d. Provides representatives to the CSOG and supporting working groups.

12. DIRECTOR, DIA. Under the authority, direction, and control of the USD(I&S), the Director, DIA:

- a. Sets priorities for DoD intelligence collection requirements and ensures they reflect the coordinated DoD CBRN Survivability Policy.
- b. Ensures that the Military Departments and Missile Defense Agency include CBRN threats in all system threat assessment reports as appropriate.
- c. Provides threat assessments consistent with the DoD CBRN Survivability Policy.
- d. Provides representatives to the CSOG and supporting working groups.

13. UNDER SECRETARY OF DEFENSE (COMPTROLLER)/CHIEF FINANCIAL OFFICER, DEPARTMENT OF DEFENSE (USD(C)/CFO). The USD(C)/CFO assesses the budgetary effects of DoD CBRN Survivability Policy issues and initiatives.

14. DoD CHIEF INFORMATION OFFICER (DoD CIO). The DoD CIO:

- a. Implements DoD CBRN Survivability Policy for information technology, including national security systems, in accordance with DoDD 5144.02 (Reference (z)).

b. Ensures that CBRN survivability is planned, developed, evaluated, and maintained for DoD information networks (DODIN) capabilities on which critical DoD missions rely.

c. Provides electromagnetic environmental effects policy and guidance for acquisition programs associated with DoD CIO areas of responsibility and coordinates the integration of these criteria consistent with nuclear survivability policy.

d. Incorporates elements of the mission assurance risk management process as they relate to DODIN capabilities and NLCC systems to enhance CBRN survivability and mission assurance.

e. Reviews the Military Departments' and Missile Defense Agency's CBRN MCRs and provides recommendations to ASD(NCB) as necessary.

f. Provides representation to the CSOG and supporting working groups.

15. DIRECTOR, DEFENSE INFORMATION SYSTEMS AGENCY (DISA). Under the authority, direction, and control of the DoD CIO, the Director, DISA:

a. Monitors DoD CBRN Survivability Policy activities for applicability to or impact on programs under DISA management and oversight.

b. Provides technical support to the DoD CIO and ASD(NCB) on nuclear-related information systems used to provide assured connectivity to CBRN MCS throughout the entire CBRN effects threat spectrum.

c. Incorporates elements of the mission assurance risk management process as they relate to current and future command, control, and communications programs to enhance CBRN survivability and mission assurance.

d. Provides technical evaluation support to the DoD CIO, ASD(HD&HA), ASD(NCB), and the CJCS on CBRN-related effects to the DODIN from failure of critical non-DoD support services. These support services include, but are not limited to, electrical grid, coolant services, access to DODIN facilities, and sustainability from local communities and their support services.

e. Provides representation to the CSOG and supporting working groups.

16. DOT&E. The DOT&E:

a. In coordination with D,DTE&A, confirms that CBRN survivability is evaluated and assessed for CBRN MCS on the OSD T&E Oversight List, assessing systems and infrastructure per CBRN survivability requirements identified within requirements documents. Assesses systems and infrastructure in accordance with CBRN survivability requirements and KPPs identified in requirements documents and TEMPs.

b. Assists the ASD(NCB) to develop and review operational test protocols to support CBRN survivability requirements.

c. Provides representatives to the CSOG and supporting working groups.

17. DIRECTOR OF COST ASSESSMENT AND PROGRAM EVALUATION (DCAPE). The DCAPE:

a. Ensures that the programmatic impacts of validated CBRN survivability requirements are addressed in analysis of alternatives (AoA) study guidance, as appropriate.

b. Provides representatives to the CSOG and supporting working groups.

18. SECRETARIES OF THE MILITARY DEPARTMENTS. The Secretaries of the Military Departments:

a. Ensure that Service CBRN Survivability Policy and procedures are in accordance with this instruction.

b. Implement and maintain established Service CBRN Survivability Policy procedures that:

(1) Identify MCS, as informed by the CJCS and CCDRs, and which of these MCS are required to be CBRN-survivable. Each Military Department's CBRN MCR will include any MCS for which that Military Department is the executive agent.

(2) Coordinate all requirements for CBRN survivability and defense capabilities with the CJCS.

(3) Ensure that doctrine and training to support the DoD CBRN Survivability Policy are reflected in force-on-force simulations and developing estimates of the CBR contamination, nuclear, and EMP survivability of MCS that support CCMD war plans.

(4) Validate sponsor's designation of CBRN MCS in capabilities documents. For those systems or infrastructure (or associated functions) designated as CBRN mission-critical, ensure that CBRN survivability requirements are documented in the requirements documents. The Secretary of the Navy delegates the validation of requirements documents for Marine Corps systems and infrastructure to the Commandant of the Marine Corps.

(5) Identify legacy CBRN MCS and develop and implement a plan to assess their CBRN survivability limitations. For those assessed as inadequate, develop materiel solutions (e.g., hardening) or tactics, techniques, and procedures (TTP) to mitigate the risks, define materiel limitations, and communicate these limitations to the user.

(6) Establish and maintain an HA and an HM/HS program for those CBRN MCS that are hardened or are inherently hard for nuclear survivability.

(7) Maintain a preventive maintenance checks and services program for those systems hardened for CBR contamination survivability and monitor the structures in accordance with the operations and maintenance manuals that were provided when the structures were built.

c. Submit an annual CBRN MCR, in accordance with Enclosure 5 of this instruction, identifying their MCS and CBRN MCS, and assess the current survivability status of their CBRN MCS. The Secretary of the Navy delegates the direct reporting of Marine Corps systems and infrastructure to the Commandant of the Marine Corps.

d. Review the other Military Departments' and Missile Defense Agency's CBRN MCRs for gaps and limitations in the CBRN survivability of the systems and infrastructure upon which the Military Departments rely. Provide a summary of the review to the OASD(NCB) within 45 days of receipt of the CBRN MCRs.

e. Establish CBRN survivability criteria for threshold and objective requirements in accordance with Service standards; NATO Standardization Agreement 4145 (Reference (aa)); NATO Standardization Agreement 4521 (Reference (ab)); or CSOG guidance for current and anticipated agents identified by USD(I&S) and JCIDS guidance.

f. Test and evaluate CBRN survivability of CBRN MCS to ensure threshold requirements are met. T&E will be in accordance with ASD(NCB) testing protocols as applicable. Identify CBRN survivability vulnerabilities and develop and implement risk mitigation TTP or materiel solutions.

g. Provide representatives to the CSOG and supporting working groups.

19. CJCS. The CJCS:

a. Implements the DoD CBRN Survivability Policy.

(1) Appoints a POC to coordinate the DoD CBRN Survivability Policy.

(2) Ensures that joint doctrine and training are consistent with the DoD CBRN Survivability Policy in Joint Force Development activities.

(3) Ensures development and coordination of the requirements under this instruction with activities of the mission assurance construct in accordance with Reference (i) and Reference (m).

(4) For those systems and infrastructure covered by References (f), (r), and (s), ensures that nuclear survivability (including EMP hardening) is designated a KPP under the survivability KPP.

(5) Approves any decision to reduce NC2 system critical asset survivability requirements in coordination with the USD(P), USD(A&S), and DoD CIO.

b. For JROC interest programs, validates the system or infrastructure's CBRN mission-critical designation and ensures justification is included in its requirements documents (i.e., ICD, CDD, and CPD).

c. Staffs the CBRN MCRs, Military Departments' CBRN MCR Reviews, and Missile Defense Agency's CBRN MCR Review with the CCMDs.

d. Reviews the CBRN MCRs, Military Departments' CBRN MCR Reviews, and Missile Defense Agency's CBRN MCR Review and provides an assessment to the ASD(NCB) on the posture of DoD to operate successfully in CBR environments and nuclear environments.

e. If necessary, provides written guidance to the Military Departments and Missile Defense Agency for the development of the CBRN MCRs, including which systems and infrastructure should be added to the MCRs based upon the CCDRs' review and assessment.

f. Identifies survivability shortfalls of legacy systems to Military Departments and CCMDs.

g. Provides representatives to the CSOG and supporting working groups.

20. CCDRs. The CCDRs, through the CJCS:

a. Include CBRN events and survivability in operational planning, training, force-on-force simulations and war games, and the conduct of activities for all force postures and develop estimates of the CBR contamination, nuclear, and EMP survivability of MCS that support CCMD war plans, as necessary based on threat assessments.

b. Identify to the CJCS CBRN MCS under the operational control of the CCDR, whether legacy or in development, that should be CBRN-survivable.

c. Review Service-developed TTP for adequacy to mitigate the risks of those CBRN MCS assessed as vulnerable until materiel solutions are available.

d. Review the Military Departments' and Missile Defense Agency's annual CBRN MCRs, Military Departments' CBRN MCR Reviews, and Missile Defense Agency's CBRN MCR Review for adequacy in supporting the CCMD's operational, contingency, and other plans, which may require operations in CBR contaminated environments or nuclear environments. Provide an assessment of the CBRN MCRs to the CJCS with recommendations for additions or deletions.

e. Review and identify any defense critical infrastructure (DCI) that should be CBRN-survivable to ensure mission assurance and provide to the CJCS as part of the assessment described in paragraph 20c of this enclosure.

f. Provide representatives to the CSOG and supporting working groups, as required.

ENCLOSURE 3

PROCEDURES

1. The procedures in this enclosure are in accordance with References (d) and (e). The Missile Defense Agency follows the acquisition process established in Reference (l), DoDD 5134.09 (Reference (ac)), and Missile Defense Agency Standard 003 (Reference (ad)). Other Defense Agencies may supplement References (d) and (e) as approved by the appropriate authority.

2. Sponsors may use the decision tool in Figure 1 of this instruction to decide whether a system or infrastructure is mission-critical and CBRN mission-critical.

a. The Joint Staff will provide guidance on the identification of MCS, as needed, to amplify the decision tool. The Joint Staff will also provide coordination and oversight of the CBRN survivability initiatives and issues to JROC and CCMDs and ensure that multi-Service CBRN MCS have integrated CBRN survivability requirements. The system or infrastructure's CBRN mission-critical designation and justification will be included in its requirements documents.

b. The CBRN survivability requirement and attributes will be supported by threat assessments, analysis, and the operational concept in the projected operating environment.

(1) A CBRN threat analysis will be included in the Threat Summary section in the ICD, CDD, and CPD.

(2) The CBRN MCS designation will be included in all CDDs and CPDs for MCS.

(3) The Joint Staff will review CBRN MCS requirements documents to ensure that CBRN threats are included in the ICD and that the CBRN mission-critical designation and CBRN survivability attributes are included in the CDD and CPD.

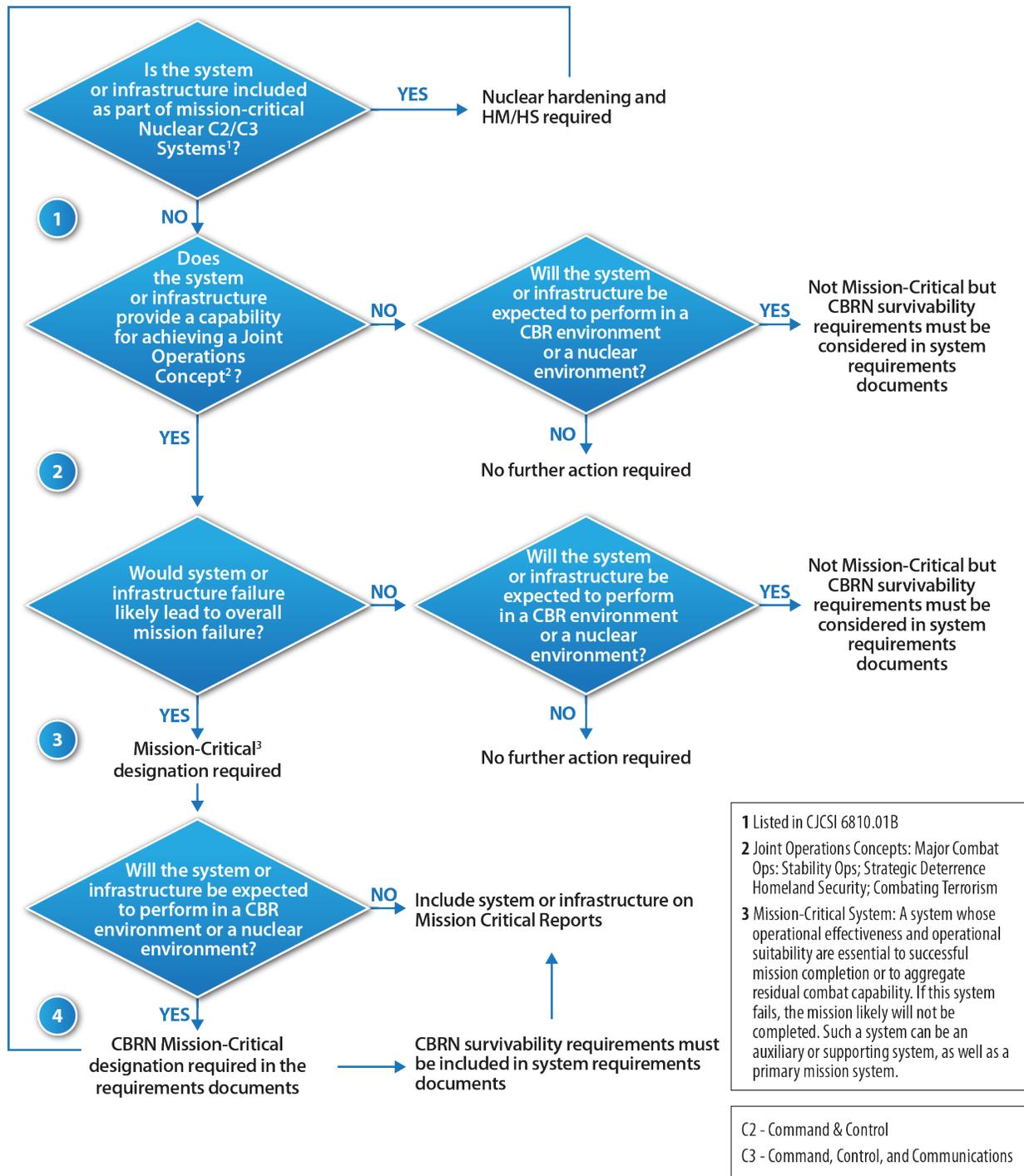
c. AoAs support the determination of appropriate KPPs, key system attributes, and other attributes for CBRN survivability, where appropriate.

d. The concept of operations will describe how the desired capability is likely to be employed in CBR environments, nuclear environments, or combined CBRN environments for inclusion in the CDD or CPD.

3. The attributes and values establishing the threshold and objective requirements will be clearly stated in the CDD and CPD. The standards used to establish the criteria will be clearly stated in the TEMP. The CBDDP T&E Executive and Director, DTRA, will support development of TEMPs. The CBDDP T&E Executive is the delegated approval authority for test standards for CBRN defense materiel that require the use of chemical, biological, or radiological warfare agents or their simulants in accordance with DoDD 5160.05E (Reference (ae)).

a. The sponsor will include objective, quantitative, measurable, and testable CBRN survivability performance attributes with threshold and objective requirements. Where appropriate, the CBRN-related attributes will be included in the force protection or survivability KPPs.

Figure 1. Representative Mission-Critical and CBRN Mission-Critical Survivability Decision Tool



b. The Joint Staff ensures that CBRN mission-critical infrastructure and equipment of the NC2 communication system are nuclear hardened and CBRN-survivable in accordance with References (f), (r), and (s) as well as applicable military standards. For systems and infrastructure covered by References (f), (r), and (s), nuclear survivability (including EMP hardening) must be included in the survivability KPP.

4. The sponsor will submit requirements documents for review to the gatekeeper of the JCIDS process in accordance with Reference (h).

a. The review process will ensure that all requirements documents submitted state the system or infrastructure's CBRN mission-critical designation. In accordance with Reference (h), DoD stakeholders may review requirements documents in the JCIDS process and provide comments through the Knowledge Management/Decision Support system.

b. For programs designated as JROC or JCB interest, JROC or JCB will validate the designation as CBRN mission-critical; change the designation, as necessary; and validate the CBRN survivability requirements. JROC or JCB will also validate the CBRN survivability requirements if they have been identified as a KPP included in the force protection or survivability KPP.

c. If the comment submitter and program sponsor are unable to reach resolution regarding CBRN mission-critical designation of a non-JROC interest system or infrastructure, parties will bring the discrepancy to the appropriate FCB for adjudication.

d. The JROC, JCB, and FCBs will invite the OIPT lead, ASD(NCB), and DoD CIO (for acquisition programs associated with DoD CIO areas of responsibility) to JROC, JCB, and FCB meetings involving CBRN MCS.

e. The Military Departments' validation authority will validate CBRN survivability requirements for non-JROC or -JCB interest MCS. CBRN survivability will be demonstrated through a combination of tests, evaluations, assessments, studies, and analyses, as described in the TEMP.

5. Nuclear weapons systems, NC2 systems (as identified by the Joint Staff) and associated facilities and equipment are CBRN MCS and must be CBRN-survivable and nuclear hardened in accordance with References (f), (r), and (s).

6. To change CBRN survivability KPPs, the sponsors will revalidate the requirements document through the JCIDS process.

a. As early as possible in the system or infrastructure definition or development, the sponsor or materiel developer may seek a change in CBRN survivability requirements that are impractical or unaffordable to implement.

b. Any changes in CBRN survivability requirements will be approved by the same authority that approved the requirements document(s), unless otherwise delegated by the original validation authority. Requests for waiver or deviation from existing CBRN survivability requirements must be granted by the same approval authority.

7. PMs of systems or programs designated as CBRN mission-critical will document progress toward CBRN survivability requirements in the applicable Service CBRN MCR.

a. The SEP will document how the design will incorporate the CBRN survivability requirements and how progress toward these requirements will be tracked and documented over the acquisition life cycle. Program managers will ensure the SEP describes how the design will incorporate the CBRN survivability requirements and how progress toward these requirements will be tracked and documented over the acquisition life cycle.

b. To maximize DoD's return on investment, reduce risk, and reduce development and life cycle costs, the materiel developers should seek the guidance of the CBRN subject matter experts, products, and programs in the OASD(NCB).

8. Materiel developers will work with the operational test agencies, the office of the D,DTE&A, the office of the CBDP T&E Executive, DTRA, and the Military Services to develop T&E strategies and TEMPs that realistically assess the CBRN survivability capabilities against requirements validated in the ICD, CDD, and CPD.

a. Materiel developers:

(1) Should apply lessons learned on successful implementation of CBRN survivability measures in legacy acquisition programs.

(2) Will provide CBR survivability T&E data to sponsors and the Defense Technical Information Center for subsequent inclusion in the CBME database using the process outlined in Test Operating Procedure 8-2-502 (Reference (af)).

(3) Will provide all T&E data to the D,DTE&A and DOT&E for those programs under OSD T&E oversight.

b. The Military Departments will ensure that the TEMP describes how the T&E strategy will meet validated CBRN survivability requirements stated in the CDD and CPD for all CBRN MCS.

9. MDAs will ensure the SEP documents how the CBRN survivability requirements are incorporated and how progress is tracked and documented. The ASD(NCB) will advise the MDA concerning CBRN survivability requirements for each CBRN MCS program.

a. In accordance with Reference (ae), the Secretary of the Army is the DoD Executive Agent for the CBDP. The Secretary of the Army:

(1) Through the Joint Program Executive Office for Chemical, Biological, Radiological, and Nuclear Defense, provides technical advice on CBR contamination survivability to materiel developers.

(2) Through the CBDP T&E Executive:

(a) Provides CBRN defense test standards for CBRN survivability.

(b) Supports the assessment of T&E infrastructure and the identification of essential requirements to support DoD CBRN Survivability Policy initiatives.

b. The tracking of CBRN survivability requirements in the SEP:

(1) Provides the MDA the ability to assess a system or infrastructure's compliance with CBRN survivability requirements.

(2) Documents the program office's CBRN survivability strategy as well as how this strategy leads to successful deployment of a CBRN-survivable system. Considering CBRN survivability requirements early in the acquisition process where the design can be influenced, and re-assessing periodically thereafter as the design matures, is critical to fielding a CBRN-survivable system.

10. The Director, Joint CBRN Defense PAIO:

a. Advises the ASD(NCB) on system-level CBR contamination survivability and helps the ASD(NCB) as outlined in Reference (ae).

b. Develops the scope of and maintains the CBME database.

ENCLOSURE 4

CSOG

1. The ASD(NCB) chairs the CSOG and calls meetings to:
 - a. Review and monitor the execution of the DoD CBRN Survivability Policy.
 - b. Review DoD CBRN Survivability Policy goals and evaluate progress in achieving those goals.
 - c. Consider the feasibility of proposed concepts and review ongoing CBRN survivability projects.
 - d. Ensure that CBRN survivability receives proper emphasis during the development of the defense planning guidance.
 - e. Monitor CBRN survivability RDT&E.
 - f. Monitor CBRN survivability testing programs and facilities.
 - g. Ensure coordination and prevent duplication between DTRA and the Military Departments' CBRN survivability activities and DISA command, control, and communications activities and programs that are related to but outside the scope of this instruction.
 - h. Facilitate the exchange of information among participants.
 - i. Refer recommendations for action by the USD(A&S) or others as appropriate.
 - j. Create principal level working groups for CBR contamination survivability (chaired by the Deputy Assistant Secretary of Defense for Chemical and Biological Defense) and for nuclear survivability (chaired by Deputy Assistant Secretary of Defense for Nuclear Matters). The principal level working groups are composed of full-time or permanent part-time Federal officers or employees.
2. The following officials will appoint a full-time or permanent part-time Federal officer or employee to serve as a member to the CSOG and support, as needed, the subordinate principal level working groups for CBR contamination survivability and for nuclear survivability:
 - a. ASD(A).
 - b. ASD(HD&HA).
 - c. CJCS.

- d. Commandant of the Marine Corps.
- e. Deputy Assistant Secretary of Defense for Nuclear Matters.
- f. Deputy Assistant Secretary of Defense for Chemical and Biological Defense.
- g. DCAPE.
- h. Director, DIA.
- i. Director, DISA.
- j. D,DTE&A
- k. Director, DTRA.
- l. Director, Engineering Policy and Systems.
- m. Director, TRMC.
- n. DoD CIO.
- o. DOT&E.
- p. Director, Missile Defense Agency.
- q. Secretaries of the Military Departments.
- r. USD(A&S) (may be represented by the CSOG Chair).
- s. USD(I&S).
- t. USD(P).
- u. USD(R&E).
- v. Chief of Space Operations.

3. The following and others, as required, may be invited by the CSOG Chair to send representatives to CSOG or support the CSOG:

- a. CBDP T&E Executive.
- b. Central Intelligence Agency.
- c. CCMDs.

- d. Department of Energy or National Nuclear Security Administration.
- e. Department of State.
- f. Joint CBRN Defense PAIO.
- g. Federal Bureau of Investigation.
- h. Office of the General Counsel of the Department of Defense.
- i. Joint Program Executive Office for Chemical, Biological, Radiological, and Nuclear Defense.
- j. National Security Agency.
- k. Office of the USD(C)/CFO.
- l. Office of the USD(P&R).
- m. U.S. Strategic Command Combined Intelligence Center.
- n. White House Military Office.

ENCLOSURE 5

CBRN MCR PREPARATION AND REVIEW PROCESS

1. The annual CBRN MCRs are to be used for managing CBRN survivability of programs and to enable senior-level oversight of the CBRN survivability posture across the DoD. The CBRN MCR preparation and review process is described in Figure 2 of this enclosure. The CBRN MCRs will be classified in accordance with Reference (v).

2. The reports identify the Military Departments' and Missile Defense Agency's MCS and CBRN MCS, and assess the current survivability status of their CBRN MCS. Reporting NC2 systems (as defined in Reference (r) and DISA's Program Tracking Report) is mandatory. DCI will be incorporated as applicable.

3. When completing their reports, the Military Services and Missile Defense Agency should consider:

a. Recommendations made by the CCMD, Joint Staff, OSD, and applicable Defense Agencies.

b. Reporting MCS by category (e.g., General Purpose Forces, command and control, Missile Defense, NC2, Nuclear Delivery).

c. Reporting MCS within each category in an order such as from most mature to least mature, including follow-on increments, upgrades, and systems.

4. When preparing and reviewing the CBRN MCRs:

a. The ASD(NCB) provides guidance to the Military Departments and Missile Defense Agency regarding the CBRN MCRs, including focus areas from the Joint Staff, Defense Agencies, and other DoD offices, regarding the CBRN MCRs.

(1) OASD(NCB) reviews CBRN-related documents from the Military Departments and the Missile Defense Agency.

(2) OASD(NCB) provides the CBRN MCRs, Military Departments' CBRN MCR Reviews, and Missile Defense Agency's CBRN MCR Review to the CSOG members and applicable DoD offices within 30 days of receipt of the CBRN MCR Reviews for use as applicable in accordance with Enclosure 2.

(3) OASD(NCB) provides the Joint Staff and CCMD assessments to the CSOG members and applicable DoD offices within 30 days of receipt for use as applicable in accordance with Enclosure 2.

b. The Military Departments will prepare their CBRN MCRs annually for January 31 submission to the ASD(NCB).

(1) For each CBRN MCS, the report will identify the system's or infrastructure's operating environment, status of each system's or infrastructure's performance against its CBRN survivability requirements, if it has been made CBR contamination-survivable, nuclear-survivable, or CBRN-survivable as applicable, and test infrastructure gaps and limitations. The report will identify survivability limitations and any plans to increase mission capability in CBR environments, nuclear environments, or combined CBRN environments.

(2) For each legacy system or DCI that is a CBRN MCS, the report will also identify any CBRN survivability limitations.

(3) For each CBRN MCS, the plan for achieving system survivability will be documented in the SEP. The plan to evaluate survivability will be documented in the TEMP.

c. Missile Defense Agency submits its CBRN MCR annually by January 31 to the ASD(NCB).

(1) For each CBRN MCS, the report will identify the system's or infrastructure's operating environment, status of each system's or infrastructure's performance against its CBRN survivability requirements, if it has been made CBR contamination-survivable, nuclear-survivable, or CBRN-survivable as applicable, and test infrastructure gaps and limitations. The report will identify survivability limitations and any plans to increase mission capability in CBR environments, nuclear environments, or combined CBRN environments.

(2) For each legacy system or DCI that is a CBRN MCS, the report will also identify any CBRN survivability limitations.

d. The Military Departments and Missile Defense Agency review all CBRN MCRs for gaps and limitations in the CBRN survivability of the systems and infrastructure upon which the Military Departments and Missile Defense Agency rely and provide a general officer-level, flag officer-level, or Senior Executive Service summary of the review to the OASD(NCB) within 45 days of receipt of the CBRN MCRs.

e. The Joint Staff, in consultation with the CCDRs, provides a general officer-level, flag officer-level, or Senior Executive Service assessment of the CBRN MCRs to the ASD(NCB) by August 31.

(1) The Joint Staff staffs the CBRN MCRs, Military Departments' CBRN MCR Reviews, and Missile Defense Agency's CBRN MCR Review with the CCMDs.

(2) The CCDRs review the CBRN MCRs, Military Departments' CBRN MCR Reviews, and Missile Defense Agency's CBRN MCRs Review for adequacy in supporting CCMDs' operational, contingency, and other plans, which may require operations in CBR-contaminated environments, nuclear environments, or combined CBRN environments.

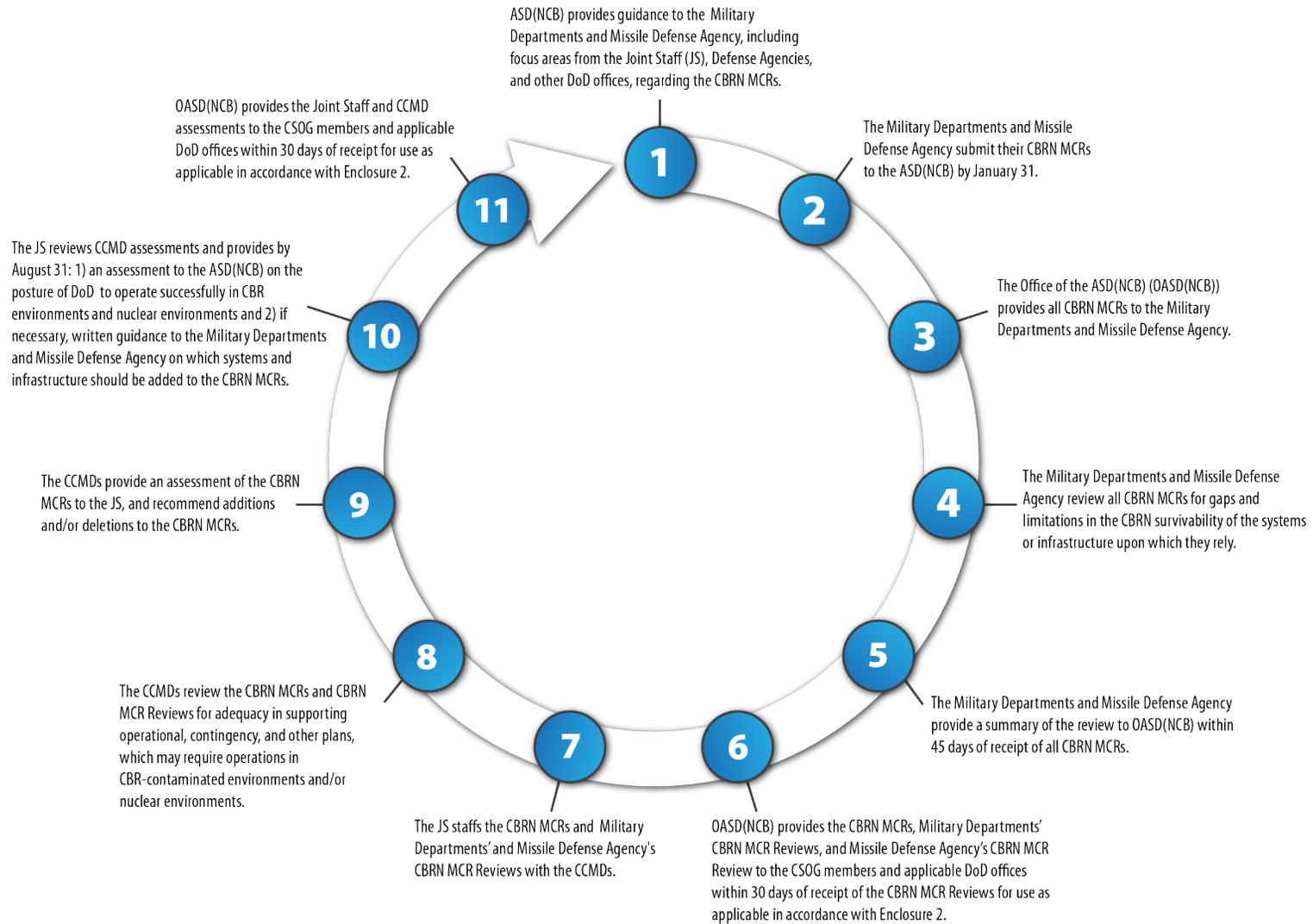
(3) The CCDRs provide a general officer-level or flag officer-level assessment of the MCRs to the Joint Staff. This includes the assessments of the CCDRs on the ability to execute their approved war plans in CBR environments, nuclear environments, or combined CBRN environments and their recommendations regarding systems, facilities, and infrastructure that should be included in future CBRN MCRs as CBRN MCS.

(4) The Joint Staff reviews the CCDRs' assessments and provides:

(a) An assessment to the ASD(NCB) on the posture of DoD to operate successfully in CBR environments and nuclear environments.

(b) If necessary, written guidance to the Military Departments and Missile Defense Agency on which systems and DCI should be added to the MCRs.

Figure 2. CBRN MCR Preparation and Review Process



GLOSSARY

PART I. ABBREVIATIONS AND ACRONYMS

AEP	Allied Engineering Publication
AoA	analysis of alternatives
ASD(A)	Assistant Secretary of Defense for Acquisition
ASD(HD&HA)	Assistant Secretary of Defense for Homeland Defense and Hemispheric Affairs
ASD(NCB)	Assistant Secretary of Defense for Nuclear, Chemical, and Biological Defense Programs
BSA	balanced survivability assessment
CBDP	Chemical and Biological Defense Program
CBME	chemical biological materials effects
CBR	chemical, biological, and radiological
CBRN	chemical, biological, radiological, and nuclear
CCDR	Combatant Commander
CCMD	Combatant Command
CDD	capability development document
CJCS	Chairman of the Joint Chiefs of Staff
CJCSI	Chairman of the Joint Chiefs of Staff Instruction
CPD	capability production document
CSOG	CBRN Survivability Oversight Group
DAB	Defense Acquisition Board
DAG	Defense Acquisition Guidebook
DAU	Defense Acquisition University
DCAPE	Director of Cost Assessment and Program Evaluation
DCI	defense critical infrastructure
DD	Department of Defense (form)
D,DTE&A	Director, Developmental Test, Evaluation, and Assessments
DIA	Defense Intelligence Agency
DISA	Defense Information Systems Agency
DoD CIO	DoD Chief Information Officer
DoDD	DoD directive
DoDI	DoD instruction
DODIN	DoD information networks
DOT&E	Director of Operational Test and Evaluation
DTRA	Defense Threat Reduction Agency
EMP	electromagnetic pulse
FCB	Functional Capabilities Board

HA	hardness assurance
HM/HS	hardness maintenance and hardness surveillance
ICD	initial capabilities document
JCB	Joint Capabilities Board
JCIDS	Joint Capabilities Integration and Development System
JROC	Joint Requirements Oversight Council
KPP	key performance parameters
MCR	mission-critical report
MCS	mission-critical system
MDA	Milestone Decision Authority
M&S	modeling and simulation
NATO	North Atlantic Treaty Organization
NC2	nuclear command and control
NLCC	National Leadership Command Capability
OASD(NCB)	Office of the Assistant Secretary of Defense for Nuclear, Chemical, and Biological Defense Programs
OIPT	overarching integrated product team
PAIO	Program Analysis and Integration Office
PM	program management
POC	point of contact
RDT&E	research, development, test, and evaluation
SEP	systems engineering plan
SPRDE	systems planning, research, development, and engineering
T&E	test and evaluation
TEMP	Test and Evaluation Master Plan
TRMC	Test Resource Management Center
TTP	tactics, techniques, and procedures
USD(A&S)	Under Secretary of Defense for Acquisition and Sustainment
USD(C)/CFO	Under Secretary of Defense (Comptroller)/Chief Financial Officer, Department of Defense
USD(I&S)	Under Secretary of Defense for Intelligence and Security
USD(P)	Under Secretary of Defense for Policy
USD(P&R)	Under Secretary of Defense for Personnel and Readiness
USD(R&E)	Under Secretary of Defense for Research and Engineering

PART II. DEFINITIONS

Unless otherwise noted, these terms and their definitions are for the purpose of this instruction.

BSA. Defined in Reference (k).

CBR contamination survivability. The capability of a system and its crew to withstand a CBR contaminated environment, including decontamination, without losing the ability to accomplish the assigned mission. The three main principles of CBR contamination survivability are hardness, decontaminability, and compatibility.

CBR environments. The environment created by chemical, biological, or radiological contamination.

CBR hardness. The capability of materiel or a system to withstand the damaging effects of CBR contamination and any decontaminants and procedures required to decontaminate it.

CBRN MCS. An MCS with operational concepts requiring employment and survivability in CBR environments or nuclear environments.

CBRN survivability. The capability of a system to avoid, withstand, or operate during and after exposure to a CBRN environment (and decontamination process) without losing the ability to accomplish the assigned mission. CBRN survivability is concerned with contamination that includes fallout and initial nuclear weapon effects, including blast, EMP, and other initial radiation and shockwave effects.

combat developer. Command or agency that formulates doctrine, concepts, organization, materiel requirements, and objectives. May be used generically to represent the user community role in the materiel acquisition process.

compatibility. Defined in Reference (ab).

decontaminability. Defined in Reference (ab).

decontamination. The process of making any person, object, or area safe by absorbing, destroying, neutralizing, making harmless, or removing chemical or biological agents or removing radioactive material clinging to or around it.

DCI. Defined in Reference (i).

defense critical system. Defined in Reference (ab).

DODIN. The globally interconnected, end-to-end set of information capabilities and associated processes for collecting, processing, storing, disseminating, and managing information on-demand to warfighters, policy makers, and support personnel, including owned and leased communications and computing systems and services, software (including applications), data, and security.

EMP. The electromagnetic radiation from a nuclear explosion caused by Compton-recoil electrons and photoelectrons from photons scattered in the materials of the nuclear device or in a surrounding medium. The resulting electric and magnetic fields may couple with electrical or electronic systems to produce damaging current and voltage surges. Depending on the burst type, can cause power spikes ranging from several hundred volts per meter up to more than one million volts per meter. Can cause component or sub-system burnout or degradation and system upset.

EMP survivability. The capability of a system to withstand exposure to an EMP environment without losing the ability to accomplish its designated mission throughout its life cycle. EMP survivability may be accomplished by hardening, timely re-supply, redundancy, mitigation, techniques (including operational techniques), or a combination thereof.

fallout. The residual radiation hazard from a nuclear explosion. Includes radioactive dust and debris created when the bomb explodes. It consists of hot particles (small highly radioactive particles) which present significant health hazard when ingested or entered into the body by other means.

functional leads. Each education specialty has a functional lead. That individual manages the array of educational requirements associated with the specialty to ensure that acquisition community members have the right training to serve in the positions to which they are assigned.

HA. The procedures applied during production of a hardened system (and through periodic validation testing, as required) to make sure that the hardness built into the system is retained throughout the life of the system.

hardness maintenance. Procedures applied during the operational phase of a hardened system to make sure that the hardness built into the system is retained throughout the life of the system.

hardness surveillance. Inspection and test procedures that are conducted during the operational life of the system to ensure that the designed hardness of the system is not degraded through operational use, logistic support, or maintenance actions.

initial nuclear radiation. The neutron, gamma, and x-ray radiation occurring immediately following a nuclear burst.

legacy system or infrastructure. Systems or infrastructure with operations and maintenance funding.

materiel developer. The organization responsible for research, development, and acquisition of materiel systems or infrastructure in response to capabilities documents.

MCS. A system whose operational effectiveness and operational suitability are essential to successful mission completion or to aggregate residual combat capability. If this system fails, the mission likely will not be completed. Such a system can be an auxiliary or supporting system, as well as a primary mission system.

mission assurance. A process to protect or ensure the continued function and resilience of capabilities and assets – including personnel, equipment, facilities, networks, information and information systems, infrastructure, and supply chains – critical to the performance of DoD mission essential functions in any operating environment or condition.

NC2. The exercise of authority and direction by the President and designated commanders over assigned and attached forces.

NC2 system. The combination of facilities, equipment, communications, procedures, and personnel essential for planning, directing, and controlling nuclear weapons, weapons systems, and associated operations.

NLCC. Defined in Reference (s).

nuclear environments. The environment created by initial nuclear weapon effects (e.g., air blast, thermal radiation, initial nuclear radiation, and EMP) and by radiation in space.

nuclear hardening. The employment of any design or manufacturing technique to an item or system or infrastructure that allows it to resist malfunction (temporary or permanent) and degraded performance induced by nuclear weapon effects.

nuclear survivability. The capability of a system or infrastructure to withstand exposure to nuclear environments without suffering loss of ability to accomplish its designated mission throughout its life cycle. Nuclear survivability may be accomplished by hardening, timely re-supply, redundancy, mitigation techniques (including operational techniques), or a combination. Includes EMP survivability.

operational test agencies. The Army Test and Evaluation Command, the Navy Operational Test and Evaluation Force, the Air Force Operational Test and Evaluation Center, the Marine Corps Operational Test and Evaluation Activity, and the Joint Interoperability Test Command.

preventive maintenance checks and services. The care, servicing, inspection, detection, and correction of minor faults before these faults cause serious damage, failure, or injury.

sponsor. Defined in Reference (j).