
CHAPTER 16

DIRECTED NUCLEAR ENERGY SYSTEMS AND NUCLEAR DIRECTED ENERGY WEAPONS

A. General Information

This chapter provides guidance for determining if historical records, containing DOE NSI, pertaining to directed nuclear energy systems (DNES) and nuclear directed energy weapons (NDEW) are to be declassified or have their classification retained beyond 25 years in accordance with the provisions of E.O. 12958. *Documents containing RD and FRD are not addressed by this document and retain present classification.*

DNES and NDEW are two types of directed energy systems which were associated with the Strategic Defense Initiative, popularly referred to as the "Star Wars" program. While the information created in these two areas dates from the 1970s, there is still some sensitivity to information that may be of assistance to potential enemies of the U.S. Therefore, some historical records containing information concerning DNES and NDEW are to have their classification retained beyond 25 years. Classified information in these programs can be either NSI or RD.

The DNES relies on a nuclear reactor to provide the energy necessary to create various energy beams that could be directed for military use. Thus, DNES is a system capable of repeated use. It is an integral system designed to use controlled, nonexplosive, fission nuclear reactions to generate a directed energy beam. The "directed" portion of a DNES refers to the laser output of the system.

The NDEW program generally refers to a weapon system that is for one time use but produces a high-energy-density. An exploding nuclear device provides the energy to drive a military system such as an x-ray laser. An

NDEW may use one or more forms of the prompt output of a nuclear explosion (e.g., x-rays, gamma rays, or neutrons) and convert it to another form of energy with directional characteristics. The directed output energy from an NDEW could be in the form of x-rays, optical photons, microwaves, atomic particles, or macroscopic particles for kinetic energy systems.

B. Broad Guidance

Information on a DNES system that reveals classified design characteristics of the nuclear reactor power source is RD, whereas classified information related to other elements of the system is NSI. Information on a DNES system that reveals the status of the technical achievement in broad qualitative statements, the level of effort of the DNES program, program goals (qualitative statements only), or the lasing medium nickname is unclassified, however, information that goes beyond these areas remain classified.

Also unclassified are generic laser system information not revealing other classified information, general features of equipment, computer information not revealing design features, hypothetical studies, or nonnuclear energy schemes found unsuitable for scaling for practical DNES applications. All other DNES information should retain its classification.

In general, most information on NDEW is RD. Information pertaining to the driver (a nuclear weapon) of the NDEW is RD. However, some information on energy conversion schemes for in-laboratory operation may be NSI.

Information on in-laboratory energy conversion schemes unsuitable for directed

energy weapons (DEW) or which cannot be scaled for application to DEW is unclassified. But if the information relates to in-laboratory energy conversion schemes which, though driven by a source other than a nuclear explosion, might still be scalable to directed energy weapons, it is NSI. In such cases, if the potential application is an NDEW, it should have its classification retained, whereas if the potential application is a nonnuclear DEW, the information should be referred to the DoD.

Historical records, 25 years or older, containing DOE/NNSA DNES and/or NDEW NSI not covered by the specific guidance below are unclassified. This does not include records containing information classified by statute such as RD and FRD (AEA of 1954, as amended). These records shall be

handled, protected, classified, downgraded, and declassified in accordance with the provisions of the AEA and regulations issued under that Act. Reviewers who are not authorized by DOE/NNSA to classify or declassify such documents should not attempt final determinations. Refer to appendix A for information on identifying and handling documents containing potential RD/FRD. In all cases where there is a question concerning the sensitivity of the information, it should be referred to the DOE HQ classification office for a classification determination.

Topics describing information likely to contain or closely related to RD or FRD are marked "(potential for RD/FRD)".

C. Topics

16.0 DIRECTED NUCLEAR ENERGY SYSTEMS AND NUCLEAR DIRECTED ENERGY WEAPONS

16.1 DNES

16.1.1 The fact that specific DOE/NNSA laboratories conducted work on DNES programs, such as Centaurus and Falcon, which were SDI related **U**

16.1.2 The fact that DNES could have lethal ranges of thousands of kilometers and could serially engage multiple targets, and, hence is a high leverage system **U**

16.1.3 Information that reveals status of technical achievement

16.1.3.1 Broad, general, qualitative statements **U**

16.1.3.2 Otherwise **Retain Classification (potential for RD/FRD) [25X4; 50]**

16.1.4 Implicit programmatic information (e.g., people, dollars, meetings, travel, construction, equipment procurement), not revealing program goals or status of technical achievement **U**

16.1.5 Levels of effort for a specific DNES program **U**

16.1.6 Program goals or objectives directed toward a DNES weapon system

16.1.6.1 Qualitative information on program goals or objectives which will not assist others in DNES development, contribute to feasibility assessment of DNES developments, or reveal programmatic directions **U**

16.1.6.2 Otherwise **Retain Classification (potential for RD/FRD) [25X4; 50]**

16.1.7 The basic physics of controlled fission and of lasers **U**

16.1.8 The fact that there are many similarities between the DNES nuclear power source and reactors **U**

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16.2 NDEW

16.2.1 Energy conversion schemes for in-laboratory operation (i.e., driven by source other than a nuclear explosion)

16.2.1.1 When such schemes are not suitable for DEWs (whether nuclear or nonnuclear driven), for example certain laser driven soft x-ray lasers whose design cannot be scaled for practical application in an NDEW and not classified by other guidance

U

16.2.1.2 When such schemes are representative of potential DEWs

16.2.1.2.1 NDEWs

Retain
Classification
(potential for
RD/FRD)
[25X4; 50]

16.2.1.2.2 Nonnuclear DEWs

Refer

NOTE: Refer to DoD for review.

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