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UNITED STATES
ATOMIC ENERGY COMMISSION
WASHINGTON, D.C. 20545

November 12, 1970

Chairman Seaborg
Commissioner Ramey
Commissioner Johnson
Commissioner Thompson
Commissioner Larson

THRU: for General Manager S.J. Bloch

GUIDANCE TO LASER CLASSIFICATION PANEL

At Information Meeting 1069 on October 19, 1970, the Commission considered the establishment of a Laser Classification Panel.* At that meeting, Commissioner Thompson requested that the guidance to the panel be specific and limited. In attempting to establish the limits of the guidance, Commissioner Thompson has requested that the following questions be considered by the Commission as to their appropriateness for guiding the Laser Classification Panel.

1. Should experiments and experimental plans utilizing laser initiated external inertial confinement and compression continue to be classified as Secret Restricted Data?

2. Should theoretical calculations and experiments toward achieving pure fusion nuclear explosions including microexplosions of fuel pellets as well as information confirming the feasibility of pure fusion devices continue to be classified Secret Restricted Data?

3. Is it reasonable to classify information on lasers or on plasmas on the basis of numerical limits. For example, is it reasonable to classify as Secret Defense Information information on lasers which are capable of power outputs of 10^5 joules or more in ten nanoseconds or less? Are such limits practical?** Does the Panel feel that some basis other than power and time should be adopted as defining the classified areas? If not, are there some other dividing lines of power and time which the Panel feels would be more appropriate?

*Secretariat Note: See SECY-490.

**Enclosed are examples of other classification guidance using numerical limits as a basis.

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The Commission

4. Can any theoretical calculations and experiments involving the use of laser radiation for the following purposes which are now Secret Restricted Data be unclassified: (1) symmetrically implode materials to a ten-fold or greater compression, (2) obtain a density in hydrogen and its isotopes as great or greater than one gram atom per cubic centimeter, (3) produce a pulse of thermonuclear yield having a peak specific power output density anywhere greater than 10^{15} watts per cubic centimeter, or (4) produce a pulse of TN yield having a specific power output density of anywhere greater than 10^{15} w/cm^3 if DT were substituted for relatively inert isotopes where such power output densities were not achieved?

5. Can the present Secret Restricted Data classification now in effect on information concerning the time-shaping of the laser output which is utilized to produce a more efficient implosion of nuclear capsules be relaxed to any degree?

Central to the theme of the above questions for consideration of the panel are the questions of classification of the essential concepts of thermonuclear weapons. Does the Commission with due regard to the broad scope of such questions wish to ask the Laser Classification Panel to also consider the following:

1. Should the utilization of radiation pressure as a means of initiating external inertial confinements and implosions continue to be classified as Secret Restricted Data?

DOE 6(3)

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C. L. Marshall, Director
Division of Classification

Enclosure:
Memorandum to Commissioner Thompson fm.
M. L. Nash, C, AEC HQ, dtd. 11/3/70
Subject: AEC CLASSIFICATION GUIDANCE BASED ON NUMERICAL LIMITS

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UNITED STATES
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WASHINGTON, D.C. 20545

NOV 3, 1970

Commissioner Thompson

for ~~THRU~~: General Manager

AEC CLASSIFICATION GUIDANCE BASED ON NUMERICAL LIMITS

In response to your verbal request, listed below are topics from AEC classification guides currently in use in which the classification determination is dependent upon a specific numerical limit. The topics listed do not cover all of the areas in which this form of classification guidance is in use, but are examples of guidance in various programs where a number serves as a dividing line between classified and unclassified information. We will be glad to provide any additional information on this matter if you have any questions.

1. CG-W-3, "Joint AEC/DOD Nuclear Weapons Classification Guide"

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2. CG-WX-1, "AEC/DOD X-Ray Classification Guide"

Topic 3.12 classifies "Radiation effects studies in any laboratory environment of greater than 1×10^5 rad (Au) surface dose in a single pulse of less than one microsecond duration or greater than 1×10^{13} rad (Au)/sec surface dose rate" as Secret-Restricted Data, Group 1 (Secret-Defense Information, Group 3 for non-nuclear systems); subsequent topics 3.222 and 3.232

~~RESTRICTED DATA~~

~~This document con[illegible] in the At[illegible] transmittal [illegible] of its contents [illegible] to [illegible] authorized person is prohibited.~~

~~GROUP 1~~
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2. CG-WX-1, "AEC/DOD X-Ray Classification Guide" (cont'd)

   declassify laboratory studies when the effects are less than the criteria established in topic 3.12.

3. CG-PGD-1, "Classification Guide for Gaseous Diffusion Plant Operations"

   Deleted DOE 6(2)

4. The classification guidance on sputtering techniques classifies metal deposition rates by

   Topic 4.1 "AEC developed sputtering techniques applicable to the deposition of metals on flat or open-ended cylindrical substrates where: the metal deposition rate exceeds 1 micron per minute or the thickness deposited exceeds 100 microns and the atomic number of the material deposited is 90 or greater"; however, where the metal deposition rate is less than the criteria previously cited, the technique is unclassified.

5. CG-RAN-4, "Classification Guide for the Manned Aircraft Nuclear Propulsion (ANP) Program"

   Topic 5.3.3.3.1 states "The mere fact that the reactor may attain a temperature of 2000°F" is unclassified; topic 5.3.3.3.2 classifies "All other reactor operating temperatures in excess of 2000°F" as Confidential-Restricted Data, Group 1.

Murray L. Nash

Murray L. Nash, Acting Director
Division of Classification