National Security Information Fundamental Classification Guidance Review

Report to the Information Security Oversight Office
June 2017

United States Department of Energy
Washington, DC 20585

Message from the Senior Agency Official

I am pleased to forward the Department of Energy's National Security Information (NSI) Fundamental Classification Guidance Review (FCGR) report. In this report, the Department provides the results of its 2017 FCGR and shows how this review was a continuation of efforts begun in 2012 when DOE completed its first FCGR. While work on NSI classification guidance is never finished, as new national security programs emerge and others are shut down, we believe the Department has significantly enhanced the clarity and accuracy of its NSI classification guidance. As a result of these reviews, improved classification guidance will result in improved derivative classification and declassification decisions and decrease unintentional over-classification. The Department will continue to improve its process of protecting the Nation's NSI under its purview in a manner consistent with Executive Order 13526.

I appreciate the opportunity to further the Government's goals for greater openness while protecting national security interests. If you have questions or need additional information, please contact the Director, Office of Technical Guidance within the Office of Classification, Edith Chalk, at (301) 903-1185. My office will post a copy of this report at https://www.energy.gov/ehss/environment-health-safety-security.

Sincerely,

Andrew C. Lawrence

Andrew C. Lawrence
Acting Associate Under Secretary for
Environment, Health, Safety and Security

Executive Summary

On March 17, 2016, the Information Security Oversight Office (ISOO) provided guidance concerning the FY 2017 Fundamental Classification Guidance Review (FCGR). From March 2016 to June 2017, DOE revalidated the recommendations from its first FCGR completed in 2012. DOE also reviewed all the new classification guidance issued since the 2012 report. DOE validated over 1,600 NSI classification topics and verified that its classification guidance:

- conforms to current operational and technical circumstances,
- meets the standards for classification under Executive Order (E.O.) 13526, and
- meets their intent as written.

Major highlights of this review include:

- a 20 percent decrease in the total number of NSI topics,
- a 27 percent decrease in the total number of topics with exempt declassification instructions,
- a 32 percent decrease in the number of event-based declassification instructions, and
- a 23 percent increase in the number of duration-based declassification instructions.

See Appendix A for more detailed results.

In addition, the Department reviewed and revised CG-HR-4, *Historical Records Declassification Guide*. This guide provides updated guidance for DOE systematic reviews of historical record collections for declassification and identifies all DOE information exempt from automatic declassification at 25- or 50-year durations.

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I. Background

DOE Order 475.2B, *Identifying Classified Information*, establishes the DOE program to identify information classified under the Atomic Energy Act and E.O. 13526, so that it can be protected against unauthorized dissemination. Each headquarters (HQ) and field element that generates classified documents or material must maintain a classification program that ensures the identification of classified information through the accurate and accountable application of National and Agency requirements. DOE documents and material are reviewed and classified by Derivative Classifiers (DCs), who are trained and certified in DOE classification policy and authorized to classify documents and material for specific organizations in specific subject areas. Declassification of documents and material requires separate training and certification as a Derivative Declassifier (DD). DOE relies upon a hierarchy of classification officials in HQ and field elements to oversee classification programs and verify that classified information is correctly identified. These classification officials are essential to ensure consistent implementation of the DOE classification program.

The DOE Office of Classification (OC) develops, approves, and distributes all DOE classification guidance. Within the DOE OC, the Office of Technical Guidance (OTG) works with programs at HQ, the national laboratories, field sites, other agencies, and foreign countries to continuously review existing guidance and to develop new guidance as programmatic needs arise. This process (Figure 1) employs operations, policy, and classification subject matter experts (SMEs) to identify and determine the appropriate classification of NSI. The Director, OC, is the approval authority for all DOE classification guidance. This ensures consistent guidance throughout DOE.

The development and production of clear and accurate guidance is often lengthy. It typically involves the coordination of a large amount of information with numerous stakeholders. During guidance development, DOE may issue classification bulletins to quickly inform DCs and DDs of declassifications and original classification decisions. Since bulletins are smaller in scope, bulletins take less time to develop than a classification guide. When possible, OTG transmits guidance electronically to ensure DCs and DDs have new approved guidance as quickly as possible.

Within the DOE OC, the Office of Policy and Quality Management maintains a rigorous training program. Instructor-led training is conducted in such diverse areas as: nuclear material production, nuclear directed energy weapons, directed nuclear energy systems, inertial confinement fusion, atomic vapor laser isotope separation, gaseous diffusion isotope separation, gas centrifuge isotope separation, nuclear weapon design, nuclear weapon utilization, nuclear weapon testing, and safeguards and security. In these training courses, students are taught how to apply topics from a classification guide and how to apply the appropriate markings to a document containing classified or sensitive information. Students must cite the applicable classification guide topic and make a determination as to the classification level, classification category, applicable caveat(s), and declassification instruction for each exercise question. Biannual recertification is required for every certified DC and DD which includes successful completion of a computer-based training course or review of a PowerPoint briefing and successful completion of its associated examination. The certified classifier must also

successfully pass a classification guide performance-based test (PBT) for each area for which he or she is certified every 4 years. This ensures students achieve and maintain the requisite skill to make quality classification decisions. In the past 5 years, OC administered 2,800 classification guide PBTs for over 750 DOE and National Nuclear Security Administration (NNSA) Headquarters DCs for initial certification or recertification.

OC maintains a rigorous on-site evaluation program of the DOE's classification and Unclassified Controlled Nuclear Information (UCNI) programs required by E.O.s, Government regulations, and DOE directives. The on-site evaluations provide the Associate Under Secretary for Environment, Health, Safety and Security, who has been designated under Section 5.4(d) of E.O. 13526 as the DOE Senior Agency Official (SAO) for National Security Information (NSI), with a mechanism for assessing the effectiveness of the NSI program within DOE. The SAO incorporates the results of the on-site evaluations into an annual report to the Director of the Information Security Oversight Office in accordance with 32 CFR 2001.60(f). OC plans four site visits per year, and each site is visited every four years. During each on-site evaluation, OC staff interviews DCs and UCNI Reviewing Officials to ensure their guidance is sufficient, up-to-date, and that they have the proper guidance to make accurate decisions. OC also reviews a statistically significant representation of the site's classified documents to ensure DCs are applying guidance correctly. To ensure the classification process is constantly improving, feedback of the on-site assessments is provided to the classification analysts in the OTG, the training department, and to the Classification Officer of the field activity. The assessment program provides assurance that the field activities maintain high quality classification programs.

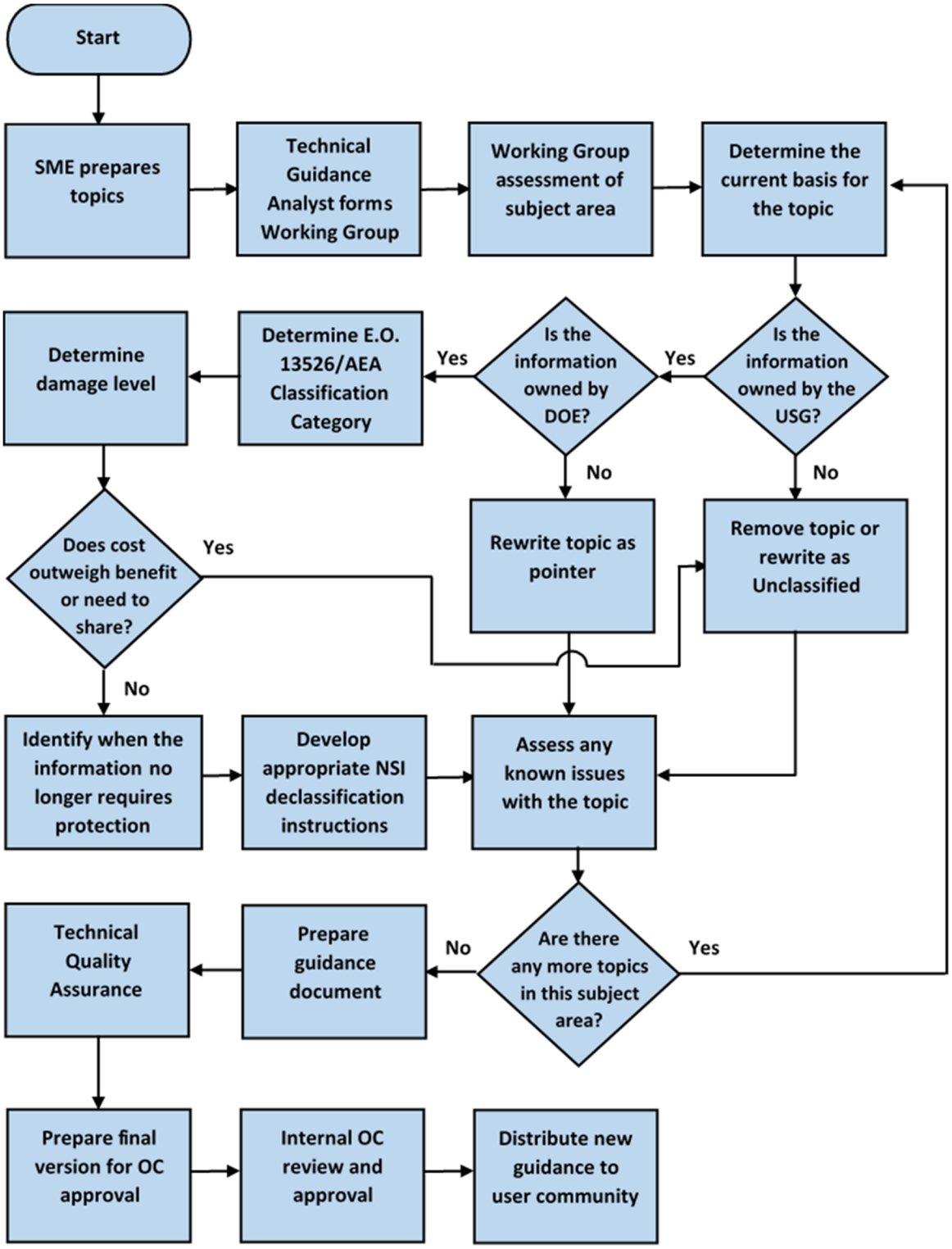

Figure 1. Department of Energy, Office of Classification, Security Classification Guide Review and Update Process

II. 2017 FCGR Process

For the 2017 FCGR, DOE OC reviewed approximately 1,600 NSI topics in 75 classification guides and 15 classification bulletins. This review focused primarily on the reexamination of the recommendations made in the 2012 FCGR report and the certification of their continued relevance.

The 2017 FCGR process accomplished the following:

1. Identified the total number of NSI topics, event-driven and date-driven declassifications, and exemptions from automatic declassification.

2. Revalidated the 2012 FCGR report recommendations (to include review of revised guidance published after the 2012 FCGR report) and confirmed that the resulting revised guidance accurately incorporates the 2012 working group recommendations. (See Appendix B)

3. Verified new guidance published after the 2012 FCGR report meets the standards for classification under E.O. 13526 and meets its intent as written.

4. Verified that all NSI topics have a documented basis for classification which meets the standards for classification under section 1.4 of E.O. 13526.

5. Confirmed that every NSI topic with an exemption from automatic declassification has an Interagency Security Classification Appeals Panel (ISCAP) approved basis from CG-HR-4.

6. Reaffirmed the use of keystones as a concept to understand the fundamental portions of information requiring protection.

7. Confirmed that all NSI topics have an associated keystone.

8. Eliminated any unused keystones.

9. Identified new keystones.

III. 2017 FCGR Results

From the start of the 2012 review, the overall number of topics with an exemption from automatic declassification has significantly decreased, from 79 percent in 2012 to 65 percent in 2017 as a percentage of total classification topics.

Also, DOE classification guidance now includes significantly fewer topics with exemptions from automatic declassification and an event-based declassification, preferring instead to use fixed durations. The principal reason for this change was the realization that declassification events were often vague or too difficult to determine whether they occurred years or decades later.

While program offices could often justify why declassification of specific information at 25 years could still cause damage, they struggled to correctly resolve when an event occurred to allow the information to be declassified. In response to this, DOE guidance has moved to the use of durations for exempt information, as they are definitive. To date, topics with exemptions from automatic declassification and an event-driven declassification have decreased from 74 to 45 percent of guidance, while date-driven declassifications have increased from 5 percent to 20 percent over the same period.

DOE has sought to minimize the duplication of topics found in guidance essentially covering the same information. Eliminating duplication avoids potential inconsistencies among many topics and the cost of keeping those topics synchronized. As these have decreased, the overall number of topics pointing the derivative classifier to another topic (pointer topic) for a determination has increased. The percentage of guidance pointer topics has increased from 24 percent in 2012 to 25 percent by 2016, and then to 28 percent as of June 1, 2017. This rise reflects the decrease in the repetition of classification topics in guidance.

Likewise, referrals to guidance from other agencies have gone down in both number and as a percentage (11 percent to 8 percent) of guidance. Rather than have several discrete topics for other agency information, DOE guidance groups a subject area with other agency equities into one or a few topics. This reduces the number of topics for other agency referrals that require maintenance and update.

At the start of the 2017 FCGR on March 17, 2016, there were 80 active guides and bulletins. By the close of the 2017 FCGR, there were 74 active guides and bulletins. During the 2017 FCGR 10 new guides and bulletins were created and 16 guides and bulletins were cancelled. In addition, between July 27, 2012, and March 17, 2016, five guides and bulletins were cancelled. Table 1 summarizes the changing characteristics of classification guidance from the end of the 2012 FCGR (July 27, 2012) to the end of the 2017 FCGR (June 1, 2017), including any new approved guidance.

	Prior Work End of 2012 FCGR to Start of 2017 FCGR			2017 FCGR Review Start to End of 2017 FCGR			Net Change 2012 vs. 2017
	7/27/2012	**3/17/2016**	**Change**	**3/17/2016**	**6/1/2017**	**Change**	
No. Guides	69	67	-2	67	65	-2	-4
No. Bulletins	10	13	+3	13	9	-4	-1
25Xn [EV]	1,276	1026	-250	1026	625	-401	-651
25Xn [DUR]	93	217	+124	217	277	+60	+184
50X1-HUM	0	14	+14	14	14	0	+14
50X2/50X2-WMD	0	34	+34	34	34	0	+34
[EV]	203	271	+68	271	260	-11	+57
[DUR]	146	164	+20	164	193	+29	+49
Total NSI topic No.	1,708	1,599	-109	1,599	1,286	-313	-422

Table 1. Guidance changes

Legend:

1. 25Xn (EV) = event-based declassification, information exempted from automatic declassification at 25 years by exemption n.
2. 25Xn (DUR) = duration-based declassification, information exempted from automatic declassification at 25 years by exemption n.
3. 50X1-HUM = ISCAP approved exemption from automatic declassification at years by exemption 1 and determined to reveal the identity of a confidential human source or a human intelligence source.
3. 50X2 = ISCAP approved exemption from automatic declassification at 50 years by exemption 2.
4. 50X2-WMD = ISCAP approved exemption from automatic declassification at 50 years by exemption 2 and determined to be key design concept for a WMD.
5. (EV) = event-based declassification, information automatically declassified at 25 years.
6. (DUR) = duration-based declassification, information automatically declassified at (DUR) years.

LIST OF ACRONYMS

AEA	Atomic Energy Act
AEC	Atomic Energy Commission
AU	Office of Environment, Health, Safety and Security
BPA	Bonneville Power Administration
CII	Critical Infrastructure Information
COMSEC	Communication Security
DBT	Design Basis Threat
DC	Derivative Classifier
DD	Derivative Declassifier
DOE	U.S. Department of Energy
DoD	U.S. Department of Defense
DOS	U.S. Department of State
E.O.	Executive Order
FBI	Federal Bureau of Investigation
FCGR	Fundamental Classification Guidance Review
FRD	Formerly Restricted Data
FY	Fiscal Year
GSP	Graded Security Protection
HQ	Headquarters
IC	Intelligence Community
ISCAP	Interagency Security Classification Appeals Panel
IND	Improvised Nuclear Device
ISER	Office of Infrastructure Security & Energy Restoration
ISOO	Information Security Oversight Office
MC&A	Material Control and Accountability
NNSA	National Nuclear Security Administration
NSA	National Security Agency
NSI	National Security Information
OC	Office of Classification
OCA	Original Classification Authority
ODSA	Officially Designated Security Authority
ODFSA	Officially Designated Federal Security Authority
OGA	Other Government Agency
OST	Office of Secure Transportation
OTG	Office of Technical Guidance
PBT	Performance-based Test
PF	Protective Force
PMA	Power Marketing Administration

RD	Restricted Data
S	Secret
SAP	Special Access Program
SCG	Security Classification Guide
SME	Subject Matter Expert
SNM	Special Nuclear Material
SPR	Strategic Petroleum Reserve
SR	Secure Railcar
SST	Safe Secure Trailer
STE	Secure Terminal Equipment
TS	Top Secret
TSCM	Technical Security Countermeasures
TSS	Transportation Security System
UCNI	Unclassified Controlled Nuclear Information
VA	Vulnerability Assessment
WMD	Weapons of Mass Destruction

APPENDIX A

DOE FY 2017
Fundamental Classification Guidance Review

Section A: Identifying Information			
Agency:	U.S. Department of Energy (DOE)	**Date:**	June 1, 2017
Name and Title/Position of Senior Agency Official:	Andrew C. Lawrence Acting Associate Under Secretary for Environment, Health, Safety and Security		
Name, Title/Position, Phone Number, and E-mail Address of FCGR Point of Contact:	Ms. Edith Chalk, Director Office of Technical Guidance DOE Office of Classification, DOE/AU-62 19901 Germantown Rd. Germantown, MD 20874 301-903-1185 Edie.Chalk@hq.doe.gov		

Section B: Original Classification Authority (OCA)	
B-1. Number of OCAs in your agency.	15
B-2. Date of last validation of OCA positions.	6/1/2017
B-3. How many OCAs have approved and signed CGs?	1

Section C: Classification Guides (CG)	
C-1. Total number of guides and bulletins (as of June 1, 2017). There are 65 guides and 9 bulletins	74
C-2. Number of guides and bulletins with NSI topics reviewed.	90
C-3. Number of guides and bulletins cancelled.	16
C-4. Number of guides consolidated. There were 8 consolidated to two new guides	8
C-5. Number of guides superseded or replaced.	55
C-6. Was there a determination that new guides were required as a result of this review? However there were new guides added because of programmatic need.	No
C-7. Number of modifications made to classification duration.	257

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We included topics with a change from "EV" to a duration, with new declassification instructions, with any change in duration. This does not include those topics for which an exemption was entirely removed. Those topics are in C-8 below. This again reflects work accomplished since the final 2012 FCGR report to the date of this report.	
C-8. Number of declassification exemptions removed. This again reflects work accomplished since the final 2012 FCGR report to the date of this report.	43

Section D: Review Process	
D-1: Was a working group formed to conduct the review? The working group process is used in the development and major revision of all new and updated classification guides within the DOE OC.	Yes
D-2. If yes, did the working group include subject matter experts, classification and declassification experts, and users of the guides? Please describe the process in your attached narrative. DOE continuously uses working groups in its ongoing review and update of classification guides. The composition of these working groups varies based upon the complexity of the guidance document being produced or updated. Whenever a new CG is developed, SMEs are always employed in concert with classification specialists. The CG author, who is a staff member in the DOE OC, is the lead for the working group. In addition, over the past 5 years, the DOE OC has continued to implement the 2012 FCGR recommendations. OC staff revalidated the 2012 FCGR recommendations to ensure NSI topics were evaluated against the criteria listed in section D-4. In response to programmatic requests since the conclusion of the 2012 FCGR, new SCGs were also developed by OC staff and subject matter experts (SMEs). These NSI topics were also evaluated against the criteria listed in section D-4.	
D-3: If no, please describe the process used to conduct the review in your attached narrative.	N/A
D-4. During the review process, did you consider the following:	
D-4a. Should the information retain its current level of classification?	Yes
D-4b. Should any information be downgraded or declassified?	Yes
D-4c. Is the current duration of classification appropriate?	Yes
D-4d. Are current exemptions from automatic declassification valid?	Yes
D-4e. Does each guide contain the following (IAW CFR 2001.15):	
D-4e(1). Identification of the subject matter. Every guide has a specific title that clearly identifies the subject matter. See the attached listing of DOE classification guides reviewed as part of this FCGR.	Yes
D-4e(2). Approval by the appropriate OCA by name and position, or personal identifier. Every guide has dated signatures on the title page of all agencies involved in the approval of the guide.	Yes
D-4e(3). Agency point of contact for questions regarding the guide. Every guide provides basic explanation of the classification process and provides a DOE contact for questions or comments	Yes

APPENDIX A

D-4e(4). Date of issuance or review. Every guide contains both the original approval date on the signature page and a change page listing all the dates of changes to that guide. An overall review is a part of any change made to the guide.	Yes
D-4e(5). Precise statement of each element of information that requires protection. Topics are tied to "keystone" concepts that require protection. The linkage to the keystone concept is reflected in embedded electronic records that are attached to each topic.	Yes
D-4e(6). The level of classification for each element of information. There has been a significant reduction in ranges of classification for topics and, in all cases, there is a NOTE associated with the ranged topic that either provides direct guidance for each level of classification, redirection to another guide, or direction to consult with a classification officer.	Yes
If applicable, handling caveats.	Yes
D-4e(7). See D-4e(5) above.	Yes
D-4e(8). The concise reason for classification as described in E.O. 13256, section 1.4	Yes
D-5. Have past and recent classification and declassification decisions been incorporated?	Yes
D-4e(9). A specific date or event for declassification. **D-6. Have you cross-referenced information with other guides (internal and external) and conducted a horizontal coordination to ensure consistency?** The guide revision process involves a technical quality assurance process where every topic is checked for consistency with current classification standards (to include all DOE guidance, classification policies and regulations, and available other agency SCGs). During all SCG development, review and revision, OC identifies and records similar or identical topics in other guides to ensure consistency.	Yes

Section E: Training	
E-1. Have agency personnel received any training in the use of CGS? Within the DOE Office of Classification, the Office of Policy and Quality Management has a rigorous training program which is supervised by one Federal Manager and run by a contractor Senior Trainer and five full time contractor training instructors. The training staff provides instructor-led training certification courses for all DOE and National Nuclear Security Administration (NNSA) Headquarters Derivative Classifiers, all DOE and NNSA Derivative Declassifiers, and all DOE and NNSA Classification Officers and Classification Representatives. In these courses, ranging from one day to three days, respectively, the student is taught how to apply topics from a classification guide and how to apply the appropriate markings to a document containing classified or sensitive information. The training staff provides instructor-led training courses in many highly technical and diverse areas where the student is taught the technical material and is then tested in how to apply classification guidance from the classification guide for that area. The student must cite the applicable classification guide topic and make a determination as to the classification level,	Yes

classification category, applicable caveat(s), and declassification instruction for each exercise question. Instructor-led training is conducted in such diverse areas as the following: nuclear material production, nuclear directed energy weapons, directed nuclear energy systems, inertial confinement fusion, atomic vapor laser isotope separation, gaseous diffusion isotope separation, gas centrifuge isotope separation, nuclear weapon design, nuclear weapon utilization, nuclear weapon testing, and safeguards and security. These courses range from 4 hours to week in duration. Derivative Classifier certification for Headquarters DOE and NNSA personnel consists of completing the 1-day Derivative Classifier training course and its associated examination, and completing a classification guide performance based test (PBT) in each area for which they are requesting certification. For each of these classification guides PBTs, the candidate is given sentences, paragraphs, and/or multiple choice questions and must determine the classification level, classification category, applicable caveat(s), and declassification instruction for that question, and cite the application guide topic from the classification guide for which that candidate is being tested. Certification of a broad-based derivative classifier consists of successful completion of over thirty different classification guide PBTs covering nearly fifty classification guides. Biannual recertification is required for every certified Derivative Classifier (DC) and Derivative Declassifier. Recertification is completed every two years and includes successful completion of a computer based training course or review of a PowerPoint briefing and successful completion of its associated examination. The certified classifier must additionally successfully pass a classification guide PBT for each area for which he or she is certified every four years. The Office of Classification, Office of Policy and Quality Management maintains a classification guide performance based test for each of our classification guides. In the past 5 years we have graded 2660 classification guide PBTs for 694 DOE and NNSA Headquarters Derivative Classifiers for initial certification or recertification.	
E-2. Have agency personnel received any training in the development of CGs? Within DOE, CGs are developed/reviewed/approved within OC. Most of this work is done in the Office of Technical Guidance (OTG) where senior SMEs provide on-the-job training to newer staff members. The OTG staff also receive formal classification training from the Office of Policy and Quality Management.	Yes
E-3. Are OCAs involved in the development process of the CGs?	Yes

Appendix B – 2012 FCGR Working Group Reports Updated for 2017 FCGR

Appendix B

Working Group 1 – Physical Security Systems and Vulnerabilities

Scope

Physical security systems and associated vulnerabilities information encompasses physical security system designs and operations, including sensors, barriers, and the guard protective force (PF), for Department of Energy (DOE) sites and facilities, protecting nuclear weapons, special nuclear material (SNM), classified information, and other assets.

Background

As part of the 2012 FCGR, *Classification and UCNI Guide for Safeguards and Security Information* (CG-SS-5), was approved on July 22, 2016. It implemented the 2012 FCGR recommendations and superseded CG-SS-4, *Evaluation of Commercial Technologies for Use as Security Subsystems* (TNP-22), *Guidance for Security Protective Force Command and Control Systems* (TNP-26), and *Guidance for Force-on-Force (FoF) Exercise Times* (TNP-54).

The 2017 FCGR did not identify any issues that needed correction or update in the guide. Since approval of CG-SS-5, DOE has updated the design basis threat order. This and issues identified during development (such as typographical errors and clarifications of the intent of topics) of a training course for derivative classifiers (DC) on use of the guide have necessitated the writing of Change 1 to the guide.

Summary of 2012 FCGR Analysis

A total of 178 National Security Information (NSI) safeguards and security (S&S) topics consisted of physical security systems, operations, and associated vulnerabilities (see pie chart for detail). The following six keystones were identified:

- Exploitable Design Information - Adversary exploitation would lower expected performance of a DOE developed or modified element/component.
- Assessed Performance - Performance values calculated, used, or determined in Vulnerability Assessment (VA) analysis that would assist adversary attack optimization.
- Deficient Performance - Performance values calculated or determined in VA analysis that would assist adversary attack optimization by exploitation of the weakness or deficiency.
- Planned Response - Assists adversary attack optimization.
- Targeting Information - Assists adversary identifying or locating a vulnerable asset, or timing an attack when an asset is vulnerable.
- Novel Method/Technique - DOE developed method/technique that defeats or degrades performance/functioning of a security element/component.

E.O. 13526 sections 1.4(f), (g), and (h) apply to all topics associated with the protection of SNM. Acquisition of SNM is perhaps the most important step in constructing a nuclear weapon or improvised nuclear device (IND). For all topics associated with the protection of classified information, sections 1.4(g) and (h) apply because much of DOE classified information is Restricted Data (RD)–information extremely valuable to weapons of mass destruction (WMD) proliferators. For all NSI exempted from 25-year declassification, 25X2 applies.

Appendix B

Many classified topics in CG-SS-4 were based on a small set of topics that, while not identified as such, functioned as classified keystones. For example, dozens of topics for physical security components based classification on a vulnerability table or method/technique topics. Elimination of many of these "pointer" topics improved guide clarity and usability.

2012 FCGR Recommendations

- Only exempt from automatic declassification at 50 years (50X2-WMD) information about a specified physical security component/element. For a security component expected to be used for more than 50 years, guidance for that specific component will be developed and approved with a 50X2-WMD exemption.
- Downgrade maximum NSI classification for physical security systems and vulnerabilities to Secret, because it is neither practical nor reasonable to expect a DC to make these judgments. An exception requiring Top Secret (TS) will be handled with a specific original classification.
- Cancel guidance for non-Office of Secure Transportation (OST) inter-site shipments of Category I/II SNM. Specific shipment guidance should instead be developed and approved when needed based on an original classification. Shipment information concerning one or a series of them should be protected pending development of specific guidance tailored to its particular circumstances.
- Replace vulnerability with Protection Effectiveness (P_E) determinations (quantitative analyses validated through performance-based testing) for more objective derivative classifications.
- Replace a vulnerability determination for Category II or lesser quantities of SNM, classified information/matter, and other Government property, with a determination by the official security authority at a site/facility responsible for the protection of an asset that protection is unacceptable under the Deficient Performance keystone. Declassify when the official security official determines protection is acceptable, and do not exempt from automatic declassification at 25 years.
- Classify under the Deficient Performance keystone, the fact of credible roll-up to Category I, II, or III SNM quantity for a location only authorized to contain a lower category of SNM, and to declassify when corrected.
- Classify DOE developed/modified security alarm management and control system designs or operational characteristics that can be exploited by an adversary to lower its expected performance, to exempt this under 25X2, and declassify when the security alarm management and control system is no longer used under the Exploitable Design Information keystone.
- Limit classification of duress alarms, concealed sensors, and DOE developed/modified sensors to design or operational characteristics whose exploitation would lower expected performance under the Exploitable Design Information keystone, and to change the declassification from when the sensor is no longer related to an installed sensor or one considered for installation to when exploitation would no longer lower expected performance at any DOE site/facility.
- Set a single classification level for DOE developed or modified active or passive delay/deterrent/denial system design, location, details of construction, or operational characteristics that can be exploited by an adversary to lower the expected performance

of the active delay/deterrent/denial system under the Exploitable Design Information keystone.
- Classify the qualitative and quantitative assessment of the consequences of adversary exploitation of a deficiency and related assessed performance values, and exempt the quantitative values under 25X2 for any element/component still in use.
- Delete redundant guidance for intrusion alarm reporting/assessment, passive/active delay function, tamper alarm function, and tactical communications, as this is already addressed by method/technique guidance.
- Classify "novel" methods/techniques.
- Replace an overall system analysis for a method/technique with an individual element/component level analysis, and delete necessary/sufficient classification level determinations. Set a single classification level for a specific element type (e.g., method to degrade intrusion detection sensors).

Classify combinations or codes providing direct access to Category I or II SNM under the Exploitable Design Information keystone.

Implementation

By approving CG-SS-5, DOE validated and implemented all 2012 FCGR recommendations with the following exceptions or changes. Each of these exceptions or changes, as can be seen, resulted in fewer NSI classification topics and/or a shorter duration for classification. One hundred and fourteen physical security NSI topics were eliminated (see pie chart for details):

- Interagency Security Classification Appeals Panel (ISCAP) disapproved use of 50X2-WMD for physical security components/elements, but did authorize 50X2; 75 for declassification review only. CG-HR-4 was updated accordingly. The maximum duration for an NSI classification topic in CG-SS-5 is 50 years. As of this report, no physical security components/elements expected to be used or used for more than 50 years requiring specific classification guidance have been identified in the DOE complex.
- Classification of the fact of credible roll-up a higher SNM category was limited to a Category I and II SNM quantity for a location only authorized to contain a lower category of SNM with the additional restriction that P_E be less than high.
- No DOE developed/modified security alarm management and control system designs or operational characteristics requiring classification were identified in use or in development for use in the DOE complex. Therefore, no topics were included in CG-SS-5 to classify these systems. If one were to be developed, it will be addressed with a specific original classification.
- With the exception of classifying the exact locations of a concealed alarm or a duress alarm switch (to activate it), no DOE developed/modified sensor designs or operational characteristics requiring classification were identified in use or development for use in the DOE complex. Therefore, no topics were included in CG-SS-5 to classify these alarms. If one were to be developed, it will be addressed with a specific original classification.

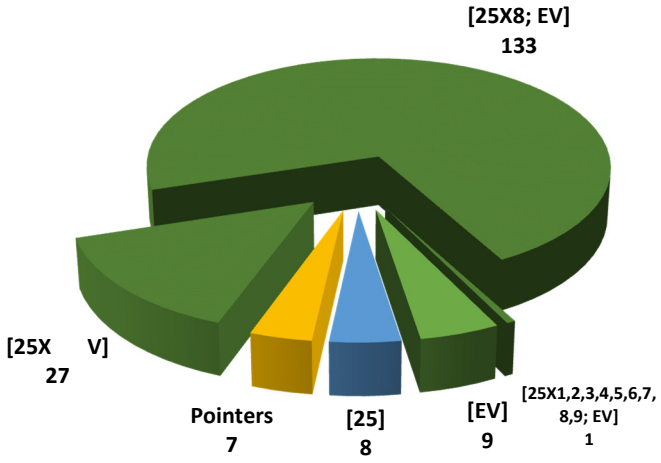
- No DOE developed/modified active or passive delay/deterrent/denial system designs, locations, details of construction, or operational characteristics requiring classification were identified in use or in development for use in the DOE complex. Therefore, no topics were included in CG-SS-5 to classify these systems. If one were to be developed, it will be addressed with a specific original classification.
- DCs will not classify "novel" methods/techniques. Instead, they will refer them to DOE OC for potential original classification.

Other improvements incorporated in CG-SS-5 for physical security information include the following:

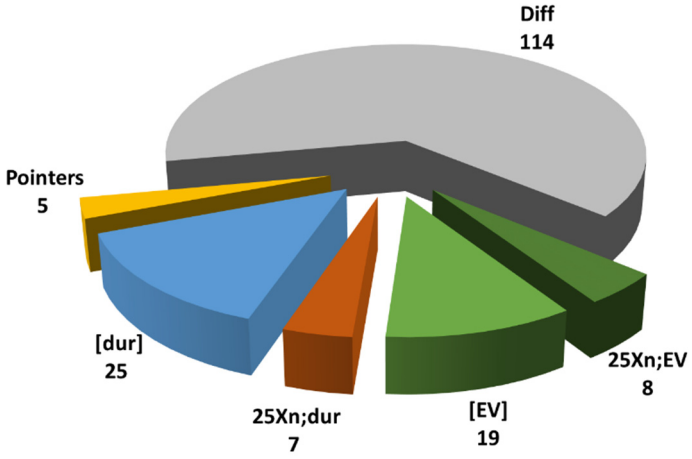
- Clear identification in topical guidance of exactly what VA information is classified.
- No topics with classification ranges.
- A shift where possible from event-driven declassification to a specified duration for classification.
- Events for declassification are clear and more easily determined by a DC.
- CG-SS-5 physical security system and vulnerability guidance was reviewed and validated for the 2017 FCGR.

Working Group 1 - Physical Security Systems and Vulnerabilities

2012 Guidance Attributes



2017 Guidance Attributes



Appendix B

Working Group 2 - Special Access Programs

Scope

Executive Order 13526 authorizes the Secretary or Deputy Secretary of Energy to create unique security cells called "special access programs" (SAPs) within the Department, but only upon the specific finding that: "…(1) a vulnerability of, or threat to, specific information is exceptional; and (2) normal criteria for determining eligibility for access to information classified at the SAP are not deemed sufficient to protect the information from unauthorized disclosure; or (3) the program is required by statute." Many routine operational and security functions that would otherwise be unclassified usually are classified when structured for a SAP. DOE has a policy general guideline, which identifies information that is unclassified for SAPs in general, but requires a DC to use specific SAP security classification guidance to classify SAP information.

Background

CG-SAP-1, *Classification Guide for Special Access Programs* superseded guidance found in CG-SS-4A, *Annex to Classification and UCNI Guide for Safeguards and Security Information*, during the 2012 FCGR, implementing all its recommendations.

During the 2017 FCGR, a 2016 ISOO inspection at Lawrence Livermore National Laboratory (LLNL) identified an issue with the usability of the classification topics in CG-SAP-1. Proper use of the guide topics required access to specific SAP security classification guides (SCG) to determine the classification level. CG-SAP-1 was cancelled on May 5, 2017. The information addressed by the topics will now be better and more correctly handled in each specific SAP SCG. The analysis below was validated and still applies to this type of information in specific SAP SCGs.

While CG-SAP-1 was cancelled because we understand the value in recognizing in general what is, may be, or is not classified about SAP security controls, we issued GG-SAP-1. This is a general guideline, and not a classification guide. CG-SAP-1 identifies unclassified information about an SAP, but cannot be used to classify information. Instead it refers the DC to specific SAP SCGs.

Summary of 2012 FCGR Analysis

The 50 topics in CG-SS-4A identified the aspects of security controls for an unspecified SAP that in general required protection through classification. These topics classified information because of the enhanced security controls in place as part of the SAP. This information was to be declassified when the programs were declassified. All of the NSI topics in this guide were found to be consistent with sections 1.4(e) and 1.4(f) of E.O. 13526.

The following keystone was identified:

- Information classified because of the enhanced security controls in place.

CG-SS-4A was not always clear as to why a topic was classified. In addition, the declassification events did not align with the reason for classification. Information related to an SAP is classified when that information is determined to be part of the security controls for the SAP. Once these controls are removed from the information, classification is no longer required unless the information itself is classified. At the same time, the existence of an SAP may be declassified while the information handled by the SAP remains classified. For these reasons, the declassification events for SAP information should either be "when the enhanced protection measures have been removed" or "when the enhanced protection measures have been removed and the information is not classified by other DOE classification guidance," depending on whether the information in and of itself is classified.

2012 FCGR Recommendations

- Better definition for why the information requires protection.
- Include a more appropriate and easily determinable declassification event.
- Update the wording of topical guidance for consistency and clarity.

Implementation

All of the 2012 FCGR recommendations had been implemented with the approval of CG-SAP-1. The recommendations had been reviewed and coordinated with the appropriate subject matter experts. All recommendations were validated and implemented as appropriate resulting in the elimination of 36 NSI topics.

During the 2017 FCGR, CG-SAP-1 was cancelled on May 5, 2017, resulting in the elimination of the remaining 18 NSI topics. However, similar topics are found in specific SAP SCGs and the rationale for classification from the 2012 FCGR remains valid.

Concurrent with the cancellation of CG-SAP-1, *General Guideline for Special Access Programs* (GG-SA-1), was issued to provide the user with general topical areas that are unclassified, may be classified, or are classified for SAP security controls. GG-SAP-1 is NOT a SCG and cannot be used for derivative classification. Every SAP will have its own unique security classification guidance with topics derived from this general guideline.

Appendix B

Working Group 3 - Technical Security Countermeasures

Scope

Current security classification guidance for technical surveillance countermeasures (TSCM) activities at DOE sites and facilities encompasses information related to the TSCM equipment, training, personnel, and operations used to protect and detect technical surveillance at DOE sites and facilities containing nuclear weapons, special nuclear material (SNM), classified information, or other assets.

Background

As part of the 2012 FCGR, CG-TSCM-1, *Classification Guide for Technical Surveillance Countermeasures Information*, was approved on January 19, 2012, superseding guidance in CG-SS-4A, *Annex to Classification and UCNI Guide for Safeguards and Security Information*.

In 2015, Change 1 to CG-TSCM-1 added topical guidance for in-place monitoring systems, clarifying what unclassified information required security controls, with no new NSI classification topics.

During the 2017 FCGR, a 2016 ISOO inspection at LLNL identified an issue in how DOE DCs were using the exempt topics for operational characteristics of the TSCM program. To clarify the intent of these topics, additional topics that identified unclassified information were added to CG-TSCM-1, change 2 and is in the process of approval.

Summary of 2012 FCGR Analysis

There are three TSCM classification keystones:

- Date of service.
- Capabilities/limitations of the TSCM program.
- Identification of a vulnerability/hazard.

CG-SS-4A contained 27 NSI topics for TSCM. The guidance had several inconsistencies that led to over-classification of information. The structure and phrasing of some topics caused confusion as to which topic was applicable to a particular piece of information. This led to the application of a topic with an incorrect classification level and an incorrect duration of classification.

The capabilities of the TSCM program slowly change with the introduction and replacement of techniques and equipment. However, the replacement of a single (or a few) techniques or pieces of equipment does not alter the capabilities of the program drastically enough to prevent disclosure of the now former capabilities from revealing exploitable information about the current capabilities. Because of this, it is not possible for a DC to determine how many techniques or pieces of equipment need to change before the linkage between former and current capabilities is broken. The identification of a vulnerability/hazard was determined to no longer be sensitive once the vulnerability/hazard is corrected.

Appendix B

2012 FCGR Recommendations

CG-TSCM-1, approved on January 18, 2012, incorporated all recommendations from the 2012 FCGR. These consisted of clear identification of keystones: shifting to declassification dates rather than events when possible, eliminating redundant topics, additional topics to classify means by which capabilities or limitations were revealed, using clear declassification events, and more precise classification topics to limit over-classification. This resulted in the following:

- Topics with event-driven declassifications reduced from eight to four.
- All 18 topics with exemptions from automatic declassification became date-driven.
- Nine redundant topics eliminated.
- Ten topics added to aid identification of mechanisms that would reveal the capabilities/limitations of the TSCM program (keystone 2).
- Ten keystone 1- and 2-based topics divided into twenty-four topics to more discretely identify classified information requiring protection, resulting in the classification of less information.

These changes resulted in new guidance that contained 49 NSI topics.

Implementation

During the 2012 FCGR, TSCM classification guidance was reviewed and coordinated with the appropriate subject matter experts. CG-TSCM-1 was approved on January 18, 2012, implementing all the 2012 FCGR recommendations.

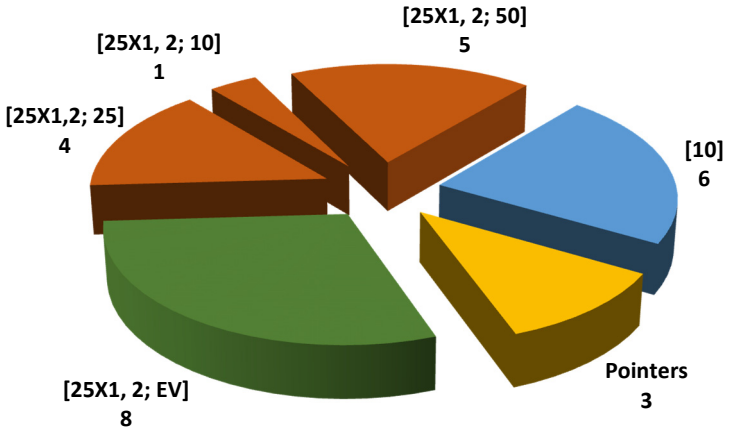
CG-TSCM-1 Change 1 was reviewed for the 2017 FCGR. Several issues were identified during that review and in the ISOO inspection. To address those issues, the following changes were recommended:

- Clarify classification of a TSCM team member associated a specified service.
- Clarify classification of other than an exact date of service.
- Standardize use of several terms in the topics.

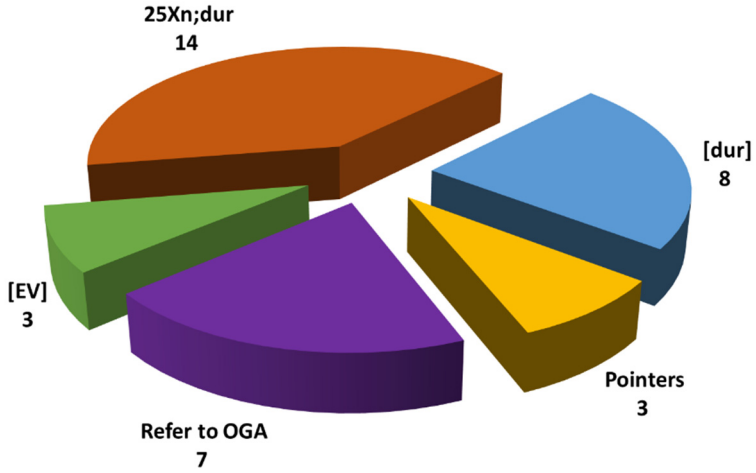
CG-TSCM-1, Change 2 (in the process of approval) corrected these issues in the guidance, allowing completion of the 2017 FCGR for TSCM information.

Working Group 3-Technical Security Countermeasures

2012 Guidance Attributes



2017 Guidance Attributes



Appendix B

Working Group 4 - Critical Infrastructure Information

Scope

Homeland Security Presidential Directive 7: *Critical Infrastructure Identification, Prioritization, and Protection* identifies the Department of Energy (DOE) as the sector lead for energy, including the production refining, storage, and distribution of oil and gas, and electric power (except for commercial nuclear power facilities). In this role, the Department performs vulnerability analyses of these facilities and makes recommendations on how to improve their security. DOE interests also include the Strategic Petroleum Reserve (SPR), the Power Marketing Administrations (PMAs), and the Federal Energy Regulatory Commission (an independent agency within DOE).

Background

Several classification guides were reviewed during the 2012 FCGR. *Classification and UCNI Guide for Safeguards and Security Information* (CG-SS-4) addressed the performance of vulnerability assessments of commercial facilities. Specific classification guides also addressed classification concerns at the SPR and Bonneville Power Administration (BPA), one of the PMAs. The SPR and BPA guides interpreted the broad CG-SS-4 topics in order to apply appropriate classification levels based on the damage to national security that unauthorized disclosure of the information would have for SPR and BPA. Two classification bulletins, *Guidance for International Energy System Reliability Analyses* (TNP-31) and *Guidance for Reliability, Survivability, Resiliency Analyses* (TNP-35), addressed activities conducted by DOE's Office of Infrastructure Security & Energy Restoration (ISER) (OE-30). These bulletins also interpreted the CG-SS-4 guidance for proper application to the ISER programs.

Following the recommendations from the 2012 FCGR, and based on feedback from the guide users, CG-BPA-1 was cancelled on January 12, 2016, and CG-SPR-4 was cancelled on October 25, 2016. CG-SS-5, approved on July 22, 2016, superseding CG-SS-4, does not contain derivative classification topics for critical infrastructure information (CII).

The 2017 FCGR identified no current need for CII derivative classification guidance.

Summary of 2012 FCGR Analysis

Because CG-SS-4 topics served as the basis for classification of DOE CII, the topics were examined to determine what CII should be classified by DOE. No keystones were identified for the information. The application of CG-SS-4 CII topics required a subjective determination by a derivative classifier that the information impacts national security. In practice, this necessitates a judgment reserved for an original classification authority. Organizations that work with CII, such as OE-30, should make use of original classification authority, when necessary, to make original classification determinations for specific CII.

A classification determination requires that the unauthorized disclosure of CII causes describable damage to national security. Most DOE efforts in this area involve conducting business with,

coordination with, assisting, or regulating the commercial sector, or government (including state and local) organizations with strong links to the commercial sector, to improve the security and reliability of their networks and systems. While there are many possible scenarios with consequences that may arguably damage national security, in most cases classification only encumbers DOE communications with the commercial/private entities and delays or prevents the implementation of corrective or compensatory measures for identified vulnerabilities. DOE work had not identified any energy sector vulnerabilities or scenarios that clearly and demonstrably damaged national security. In addition, safety information that must be made available to state and local governments as a part of safety and other regulatory requirements cannot be classified.

2012 FCGR Recommendations

DOE does not currently have the need to derivatively classify any energy-related CII. This determination does not prevent DOE from exercising original classification authority for specific CII in the future, if it can be clearly demonstrated that damage to national security would occur if the information were disclosed. It also does not preclude another agency, such as the Department of Homeland Security or the Department of Defense, from classifying CII. This determination will affect CII topics in CG-SS-4, CG-BPA-1, CG-SPR-4, TNP-31, and TNP-35.

Therefore, it is recommended to:

- Remove derivative classification determinations for CII from DOE classification guidance.
- Add clarifying language to DOE classification guidance clearly stating that original classification determinations will be made for new CII where there is a potential that disclosure of the information will cause definable damage to national security, such as a defined monetary loss, a defined loss of life, a defined loss of property, or a defined cost of recovery.

Implementation

The 2012 FCGR recommendations were reviewed and coordinated with the appropriate subject matter experts.

CG-BPA-1 was canceled on January 12, 2016.

CG-SPR-4 was canceled on October 25, 2016. A general notification, TNP-65, *Use of Safeguards and Security Guidance at the Strategic Petroleum Reserve*, was issued October 25, 2016, which authorized SPR to use CG-SS-5 for security information concerning their sites and facilities.

While TNP-31 is included in this working group, its purpose is to protect foreign government information collected as part of foreign infrastructure analysis. To protect the foreign government information, DOE DCs need derivative guidance. It was determined that the guidance was needed to allow protection of this information when requested by the foreign government. While work in this area is not currently occurring, the guidance needs to be

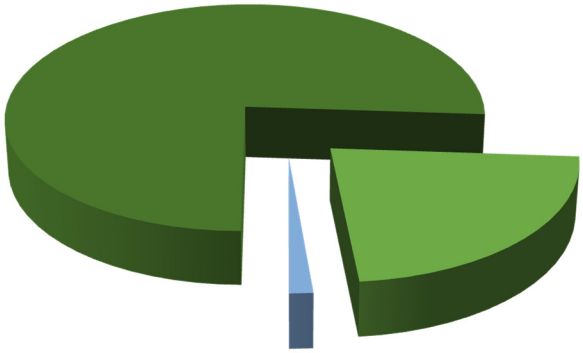
maintained to allow DCs to properly classify extracts from older documents. There is no basis for DOE CII.

TNP-35 is in the process of being canceled.

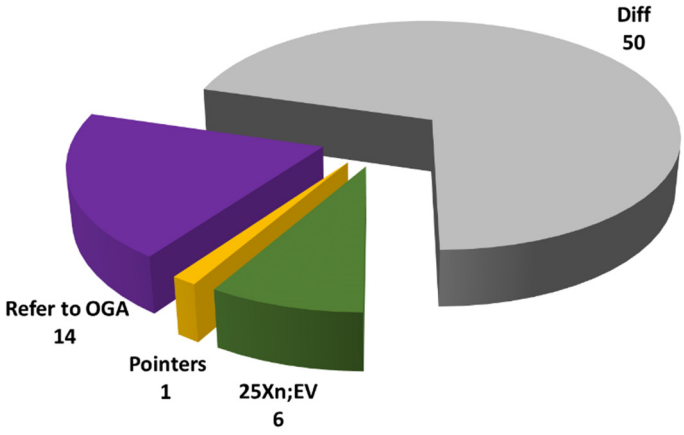
For the 2017 FCGR, all recommendations were validated and implemented as detailed above, resulting in the elimination of 50 NSI topics. DOE CII information whose disclosure could potential will continue to be evaluated on a case-by-case basis for original classification, but otherwise are referred to DHS for potential classification.

Working Group 4- Critical Infrastructure

2012 Guidance Attributes



2017 Guidance Attributes



Appendix B

Working Group 5 - Transportation Safeguards System

Scope

The Transportation Security System (TSS) is operated and managed by the Office of Secure Transportation (OST), which is under the direction of the National Nuclear Security Administration (NNSA). The mission of the OST is the safe and secure transportation of government-owned special nuclear material (SNM) nationwide in support of the DOE/NNSA nuclear research and production programs.

Classification guidance for the TSS encompasses information related to the shipment and receipt of nuclear materials, the operations of the OST, the design and operation of the Safe Secure Trailer (SST) and support vehicles, and the design and operation of the Secure Railcar (SR) and support vehicles.

Background

The guidance reviewed in the 2012 FCGR was in the *Transportation Safeguards System Classification and Unclassified Controlled Nuclear Information Guide* (CG-TSS-3). It contained 152 NSI topics. CG-TSS-3 was superseded by CG-OST-1, CG-TSS-4, CG-TSS-4A, and CG-SST-1.

CG-OST-1, CG-TSS-4, CG-TSS-4A, and CG-SST-1 were reviewed for the 2017 FCGR.

Summary of 2012 FCGR Analysis

Three keystones that required protection are:

- Targeting information that would be useful in planning an attack by identification of a shipment, contents, or the timing and location of a shipment.
- Design information that if exploited by an adversary would result in lowering the expected performance of the component.
- Information that would assist an adversary in planning or executing a successful attack by lowering the performance of a security system or component.

It was determined that targeting information required protection before and while a shipment was occurring. Because a trip may include shipments to multiple sites, and OST does not classify the routes available for use, the duration of classification for this information needs to extend until the trip has completed. If the receiver of a shipment declassified the targeting information after shipment arrival, an attacker could determine the route being used for the remaining shipments in a trip and plan an attack accordingly. Because the receiver does not need to know and cannot determine when the trip will be completed, a 30-day duration following departure of OST from a site was chosen for this information to allow for completion of the all trip segments prior to declassification of the targeting information.

Exploitable design information for a component requires protection until the component is no longer used in an active transport system. Access to this design information would allow an

adversary to develop and test methods that would lower the expected performance of these components and therefore increase the likelihood of a successful attack. The current systems in use are evolutions of systems originally fielded in the early 1970s, a duration of 50 years does not provide sufficient protection for the information. Because access to this design information would impair the effectiveness of the defenses in place and would aid an adversary in gaining access to a nuclear weapon, this information meets the criteria of E.O. 13526, Section 3.3(h)(1)(B) to be exempt from declassification at 50 years. Justification for these topics was sent to the Interagency Security Classification Appeals Panel (ISCAP), via the Information Security Oversight Office (ISOO), for approval on November 13, 2012. The 50X2-WMD was rejected, but a modified request for 50X2;75 was approved for declassification guidance and for certain SST design information

Separate from design information, other information about tactics and defense strategies used by OST requires protection through classification. Exploitation of this information by an adversary in the planning or execution of an attack would result in a higher likelihood of a successful attack. Because this type of information changes over time, it does not require the same duration of classification as the design information for components. However, this information is still more evolutionary in nature than revolutionary, and information about tactics and strategies no longer in use provides insight into the current tactics. For this reason, the information requires a duration of classification in excess of 25 years. Its disclosure would reveal information that would assist in the development, production, or use of a WMD, it meets the requirements for exemption from automatic declassification at 25 years. As these strategies evolve over time, no single event will occur that would prevent previous tactics and strategies from revealing sensitive information about tactics and strategies currently in use. It was determined that classifying the information for 50 years should allow enough time for tactics and strategies to change where the older tactics and strategies do not provide insight into the tactics and strategies currently in use.

2012 FCGR Recommendations

Rewrite the guidance to reflect the classification of the keystones identified, resulting in the following changes:

- Fifty-two topics would be eliminated.
- Three topics would be declassified.
- One topic would change from NSI to FRD to correct an error in information equity.
- Ten topics would point to other guidance.
- Sixty-three topics would be exempt from automatic declassification at 50 years.
- Fifteen topics would be exempt from automatic declassification at 25 years.
- Seven topics would be declassified by an event that occurred within 25 years of the classification determination.

Appendix B

Implementation

The 2012 FCGR recommendations were reviewed and coordinated with the appropriate subject matter experts. DOE approval of CG-TSS-4, CG-TSS-4A, CG-OST-1, and CG-SST-1 on July 5, 2013, implemented all the 2012 FCGR recommendations and eliminated 74 NSI topics.

CG-TSS-4 addresses shipper and receiver information for OST shipments and was last revised on November 29, 2016, with Change 1. The current guidance contains seven topics that point to other guidance and ten topics with an event-driven declassification.

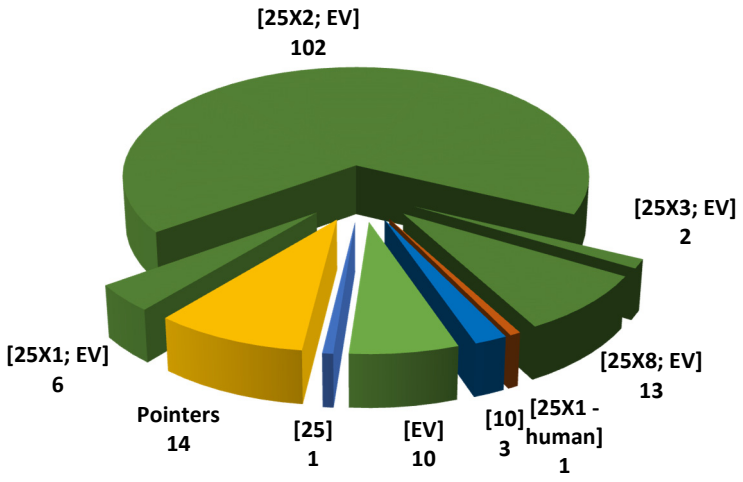
CG-SST-1 addresses the classification of the design of the SST. The current guidance contains 38 topics that exempt information from automatic declassification at 25 years with declassification occurring at 50 years. The guidance also contains two topics that point to other guidance.

CG-TSS-4A addresses the classification of the design of the SR. The current guidance contains 21 topics that exempt information from automatic declassification at 25 years with declassification occurring at 50 years.

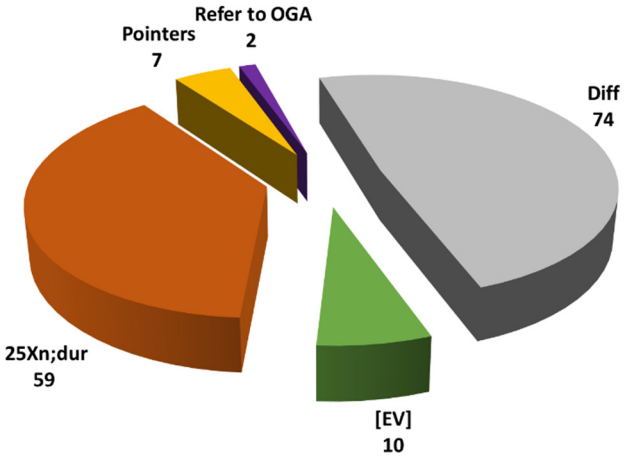
Guidance in CG-OST-1, CG-TSS-4, CG-TSS-4A, and CG-SST-1 was reviewed and validated for the 2017 FCGR.

Working Group 5 - Transportation Safeguards and Security

2012 Guidance Attributes



2017 Guidance Attributes



Appendix B

Working Group 6 - Cyber Security

Scope

Current guidance for cyber security addresses the classification of information about an Information Technology (IT) system that makes it possible to gain unauthorized access to the classified information on the IT system. Within the Department of Energy (DOE), IT systems that process classified information provide potentially lucrative targets for compromise. In conjunction with the security measures required by DOE regulations at IT facilities processing classified information, necessary precautions must be taken to protect information pertaining to security measures, where such information might assist a perpetrator in subverting the measures and penetrating the system. Accordingly, the basic principle underlying classification policy for IT system security is to protect information that is of meaningful assistance in gaining unauthorized access to the classified information being processed on an IT system.

Background

The security classification guidance reviewed for the 2012 FCGR was contained in the *Classification and UCNI Guide for Safeguards and Security Information* (CG-SS-4).

CG-SS-4 was superseded on July 22, 2016, by CG-SS-5. Cyber security guidance in CG-SS-5 was then reviewed for the 2017 FCGR.

Summary of 2012 FCGR Analysis

CG-SS-4 did not clearly explain how this information assists an outsider in gaining unauthorized access to classified information.

Two keystones were identified requiring protection:

- Information that could be exploited by an outside adversary to gain access to classified information on a system.
- Information that reveals a link to a foreign intelligence service.

Application of the first keystone required defining "could be exploited by an adversary." Classification provides very limited controls on access to the information by an insider. Exploitable does not mean all information that would be useful; rather it is limited to information whose exploitation would clearly result in a national security consequence. While there is a great deal of information that could provide some assistance in gaining access to the information on a classified system, classification would significantly impair operations and incur substantial costs. Classification is reserved for information that provides significant assistance to an outsider. Other controls can be applied to information that would be useful in gaining access, but does not meet the thresholds required to be designated as classified information. Also, classification of a security problem does not mitigate the underlying need to fix the problem. A determination of whether to classify information requires an assessment by the information owner of the risk assumed in disclosing the information against the cost of protection of the information and the impact on the ability of the Department to meet its mission. Because IT

systems change significantly in a short time, a maximum classification duration of 10 years was assigned to this information.

DOE has not declared any IT systems as mission critical. Because of this, this keystone does not apply to information that would allow an adversary to disable a classified IT system. If, in the future, the Department does declare an IT system as mission critical, an original classification determination will needed to classify information that would allow for the disablement of that system.

Information protected by the second keystone would primarily be the equity of another agency. However, there may be some subset of this information that would be classified by DOE. It includes information identifying the source of a suspected intrusion and countermeasures in place to address these attempts. In addition, because it deals with the identity of the intruder rather than the target, this keystone applies to both classified and unclassified systems.

As these keystones serve as the underlining basis for the classification of information related to cyber security, all the topics in the cyber security guidance should reflect the classification level and duration of these keystones. The topical guidance was then examined to determine how best to apply these keystones to information generated at DOE.

A system-specific password or user generated personal identification number (PIN) code for access to a DOE/National Nuclear Security Administration (NNSA) classified IT system is classified because it is an exploitable element of the security for the IT system. Possession of an authenticator for a DOE/NNSA classified IT system will allow an adversary to reduce the delay time associated with the security for that system provided by the authenticator. While authenticators function as a minor component of security compared to other elements of the security system (the other elements include physical barriers to the classified IT system and encryption technologies that prevent access to the data stream), they are a component of security that can be easily classified to provide some additional control on access to information on the IT system. In a small number of cases, the authenticator is the only barrier to access of the information on the classified IT system. For these few instances, the authenticator requires a higher level of classification to reflect what information possession of the authenticator will provide direct access.

An authenticator cannot be Restricted Data (RD) because, as security information, an authenticator does not meet the definition of RD from the Atomic Energy Act (AEA). However, section 8-303 i (1) of DoD 5220.22-M, *National Industrial Security Program Operating Manual (NISPOM),* dated February 28, 2006, to which DOE is a signatory, requires passwords to be protected at the level and category of the information to which they provide access. This means, in practice, that while a password may have a lower classification level than the information on the classified IT system, it requires storage and handling commensurate with the level and category of the information on the classified IT system. In addition, the authorization provided by a security clearance to access information of a particular classification level and category does not authorize access to an authenticator that provides access to information of the same classification level and category. Security policies may place additional restrictions, such as limits on the sharing of passwords or PIN codes, independent from the classification.

Information regarding a plan and/or schedule for conducting an upcoming IT system security test for the purpose of assessing computer security measures is classified when such knowledge would significantly assist in an attack on a classified IT system. Because classification does not provide a significant barrier to access of the information by an insider, this information must significantly assist an outside adversary in an attack in order to be classified. Information about a completed test is classified when this information can be used to determine exploitable information about a future test.

Information about methods to circumvent existing hardware and supporting software that provides security for a classified network is owned by the NSA and should be referred to that agency for classification determinations.

2012 FCGR Recommendations

Rewrite the guidance to reflect the classification of the keystones. In addition, clarify that while authenticators cannot be classified RD, they will be protected as such in accordance with the NISPOM. Topics should be added to refer information that reveals a link to a foreign intelligence service to the cognizant counterintelligence organizations. This would result in the following changes in guidance:

- Ten topics would be eliminated because of redundancy.
- Two topics would be changed from a 25-year duration to an event or 10 years, whichever occurs first.
- One topic would implement two classification determinations by providing instructions to refer the information to another agency.

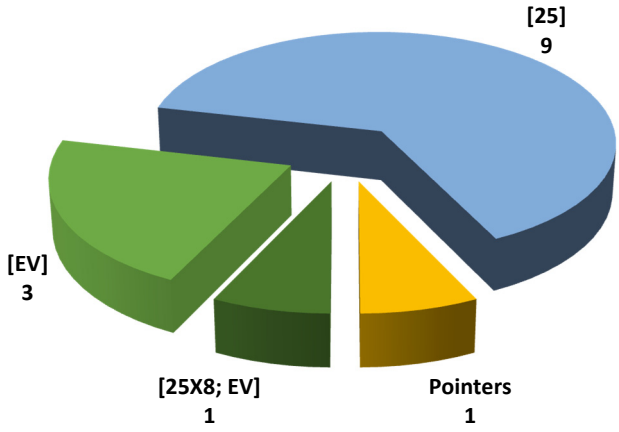
Implementation

The 2012 FCGR recommendations were reviewed and coordinated with the appropriate subject matter experts. All recommendations were implemented with the approval of CG-SS-5, except that three topics have instructions for referral to another agency rather than one. Overall, nine NSI topics were eliminated.

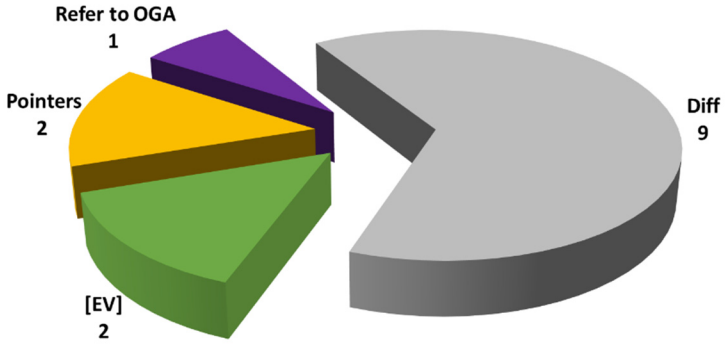
This guidance in CG-SS-5 was reviewed and validated in the 2017 FCGR.

Working Group 6 - Cyber Security

2012 Guidance Attributes



2017 Guidance Attributes



Appendix B

Working Group 7 - Information Security

Scope

DOE information security guidance addresses the classification of compromise information, information related to investigations of security incidents, the loss of classified matter, combinations, classification change notices, operational security assessments, and the fact of a missing item of SNM.

Background

Classification and UCNI Guide for Safeguards and Security Information (CG-SS-4) topics addressing non-Information Technology information security were reviewed for the 2012 FCGR.

CG-SS-5 was approved on July 22, 2016, superseding CG-SS-4 guidance for information security. This CG-SS-5 guidance was then reviewed for the 2017 FCGR.

Summary of 2012 FCGR Analysis

For some CG-SS-4 NSI topics, it was not clear how information would cause damage to national security if disclosed. Other topics identified some information as NSI that should be protected as Restricted Data or Formerly Restricted Data.

The following three keystones were identified for the information:

- Information that would assist an adversary in acquiring classified information.
- Information that would assist an adversary in acquiring material (SNM, a weapon, a part).
- Information that can damage foreign relations.

In the event of a suspected overt theft, the Emergency Operations Center (EOC) and the Tactical Operations Center (TOC) at the site would be activated. The protective force staffs the TOC, which supports the security incident commander in tactical matters. During this response, the IC determines how information will be controlled. This includes what information can be transmitted over unencrypted radios and what information can be shared with local law enforcement. The incident commander bases these determinations on assumptions of what the target of the theft is and a judgment that release of the information will assist in disruption of the suspected theft or the recapture or recovery of the stolen matter. After disruption of the theft or recapture or recovery of the matter, the site manager determines what information to release about the incident to local law enforcement and the local government through the EOC.

After the incident, the information released by the incident commander and the site manager will be examined to determine whether in can be returned to Government control. An original classification authority will decide what information to classify related to an incident based on the results of this examination.

A determination that a classified document is missing occurs after the Government has concluded there was no act of theft and has performed an exhaustive search with the assistance of other agencies and local and state law enforcement of all potential locations of the document. As the resources of the Government were not able to locate the document with all available information, it is not credible for an adversary to locate the document with the same information. Because of this, most of the information about a document determined to be missing is not classified.

Information that significantly assists an adversary in locating classified information in the open literature or public domain (such as a website, book, or a periodical) where the information is immediately available and there is no Government restriction to accessing the information is classified. Once the information contained in a document has been compromised, placing the document back under Government security controls does not recover the information. If the Government is unable to re-control the information through a mechanism such as a nondisclosure agreement, information that allows an adversary to locate the document, including information that identifies the document, is classified.

Combinations for security container locks that contain classified information are classified at the level of the information inside the container. Combinations cannot be RD or FRD as combinations are security components and do not meet the definition for RD or FRD in the AEA. The determination to protect the information at the level of the information inside the container comes from the National Industrial Security Program Operating Manual (NISPOM) to which DOE is a signatory. See section 5-308 of the NISPOM for details. The NISPOM does not contain protection requirements for SNM, but the combinations for security containers that contain a Category I or II quantity of SNM are classified to limit dissemination of the combination between employees at the facility.

2012 FCGR Recommendations

Rewrite the guidance to reflect the working group analysis. These changes would result in guidance with 29 NSI topics.

Implementation

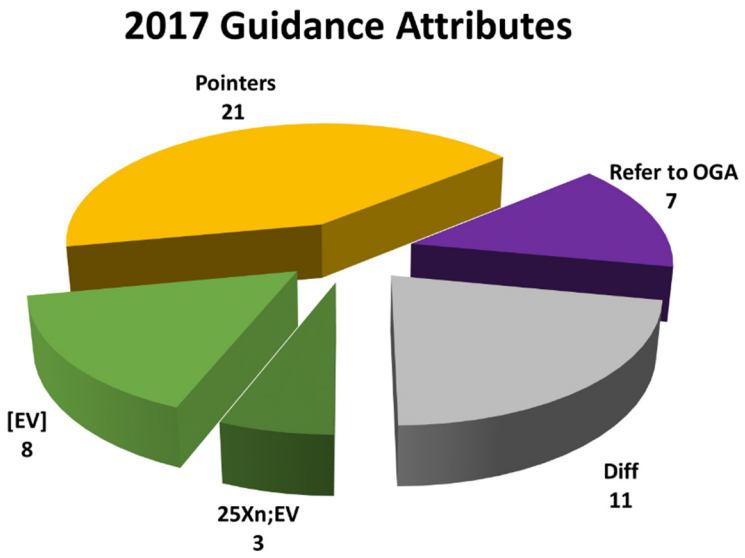
The 2012 FCGR recommendations were reviewed and coordinated with the appropriate subject matter experts. CG-SS-5 was approved on July 22, 2016, and implemented most of the 2012 FCGR recommendations. The following summarizes the differences from the recommendations, which were identified during the extensive development and concurrence process for the guide:

- Two topics declassified.
- Additional redundant topics identified for a total of 28 topics eliminated.
- Only three topics required to be exempt from automatic declassification at 25 years.
- Three additional topics needed to address upgrade notices. Therefore, rather than five topics having an event-driven declassification there are eight.
- As recommended, 21 topics point to other DOE guidance.

Due to these changes, the CG-SS-5 contains 39 topics for information security instead of 29.

CG-SS-5 was reviewed and validated for the 2017 FCGR.

Working Group 7 - Information Security



Appendix B

Working Group 8 - TEMPEST, COMSEC, and Cryptology

Scope

Communications security (COMSEC) is the measures and controls taken to deny unauthorized individuals information derived from telecommunications while ensuring the authenticity of such telecommunications. These measures include TEMPEST, a short name referring to the investigation, study, and control of compromising emanations from telecommunications and automated information systems equipment, and cryptology, the science and study of codes and cipher systems. With the introduction of Secure Terminal Equipment (STE) in government, the Atomic Energy Commission (AEC), the predecessor agency to the Department of Energy (DOE), developed classification guidance with the concurrence of the National Security Agency (NSA), the owners of the STE information. Currently, DOE does not have classification guidance for COMSEC.

Background

In 1985, DOE decided to combine a variety of safeguards and security classification guidance into a single document, CG-SS-1, *Safeguards and Security Classification Guide*. The topics from the STE guidance were updated and coordinated with NSA before being incorporated as a chapter in this guide. CG-SS-1 had been updated several times since 1985 and as of the 2012 FCGR, was now the *Classification and UCNI Guide for Safeguards and Security Information* (CG-SS-4), Change 6.

The CG-SS-4 COMSEC guidance was reviewed for the 2012 FCGR and determined to fully be an NSA equity. When CG-SS-5 superseded CG-SS-4 on July 22, 2016, this eliminated all DOE COMSEC classification guidance. At that time, DOE shifted to use of NSA SCGs, which DOE uses with NSA approval, for classification of TEMPEST, COMSEC, and Cryptology Information to protect measures in place to deny unauthorized individuals information derived from telecommunications of the U.S. Government that is related to national security.

Summary of 2012 FCGR Analysis

CG-SS-4 contained 102 topics that addressed the classification of TEMPEST, COMSEC, and Cryptology Information. The NSA, the equity owner for this information, reviewed the guidance in CG-SS-4 as part of that agency's FCGR activities. They recommended removing the topics from DOE guidance as they have made their classification guides available electronically.

2012 FCGR Recommendations

- Remove the topics from DOE guidance in accordance with the NSA recommendation.

Implementation

The 2012 FCGR recommendation was reviewed and coordinated with the appropriate subject matter experts.

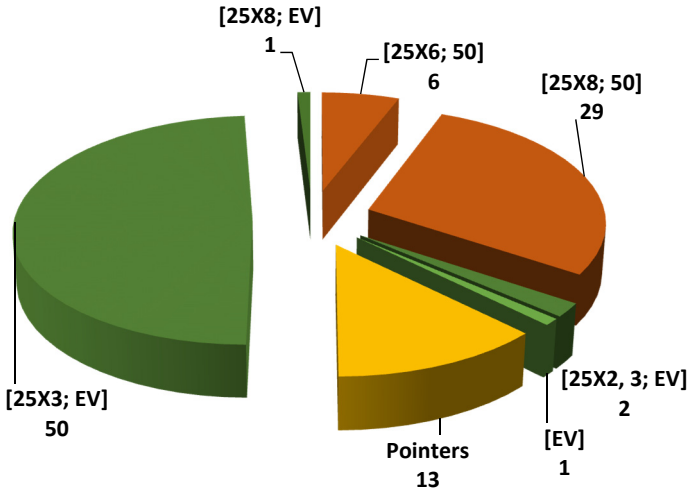
Appendix B

When CG-SS-5 was approved, CG-SS-4 TEMPEST, COMSEC, and Cryptology Information topics were not carried over into CG-SS-5. It does contain descriptions of what constitutes potentially classified TEMPEST, COMSEC, and Cryptology information. DOE started use of NSA SCGs at this time as authorized by NSA.

This was reviewed and validated for the 2017 FCGR.

Working Group 8 - TEMPEST, COMSEC, and Cryptology

2012 Guidance Attributes



Appendix B

Working Group 9 - Material Control and Accountability

Scope

As part of its responsibilities under the Atomic Energy Act of 1954, as amended, the Department of Energy (DOE) maintains inventories of special nuclear materials (SNM) required to execute various national security missions. These materials are difficult to obtain and are required to build several types of weapons of mass destruction (WMD). The U.S. Government considers proper control and accounting of these materials to be an important aspect of proliferation prevention efforts. DOE operates a Nuclear Material Control and Accountability (MC&A) program to ensure this is accomplished. Certain MC&A information could provide significant assistance to persons or organizations attempting to obtain SNM for unauthorized uses. It is the policy of the U.S. Government to classify this information to prevent damage to national security.

Background

For the 2012 FCGR, MC&A guidance in CG-SS-4 was reviewed. It contained 57 NSI topics, covering inventory quantities, accounting capabilities, physical control of SNM, deficiencies in program performance, and methods/techniques to defeat systems.

On July 22, 2016, CG-MC&A-1, *Classification and Unclassified Controlled Nuclear Information Guide for Material Control & Accountability*, superseded MC&A classification guidance found in CG-SS-4. CG-MC&A-1 was reviewed for the 2017 FCGR.

Summary of 2012 FCGR Analysis

Identified five NSI keystone concepts requiring protection in order to ensure the proper safeguarding and security of SNM inventories as follows:

- Diversion Detection Threshold – Identification of the quantity that can be diverted without detection from a SNM inventory.
- Targeting Information – Assists the adversary in selection, targeting, or timing of an attack against an asset.
- Deficient Performance – Determined by the Officially Designated Federal Security Authority or Officially Designated Security Authority, performance less than that required for the protection system to function at design effectiveness.
- Exploitable Design Information – Adversary exploitation of its design or operational characteristics would lower expected performance of a DOE developed or modified security element/component.
- Novel Method/Technique – a DOE developed method/technique that defeats or degrades performance/functioning of a security element/component.

Determined most NSI generated by MC&A programs was used to determine the diversion detection threshold, as well as for computing deviations from expected inventory quantities. All measurements that made up an inventory and the associated analyses were classified by CG-SS-4, but data met NSI classification requirements only when all the measurements for an inventory

activity were consolidated and the analyses were performed to calculate the diversion detection threshold. All individual measurements should be treated as unclassified, unless classified by another program, such as RD for nuclear weapon SNM component masses. The ability of installed measurement systems in DOE facilities to detect diversion had not improved significantly over time, so data from over 50 years ago could potentially aid in planning a diversion attempt. The compiled measurement data sets and calculated diversion detection thresholds are more correctly exempted as 50X2-WMD when the information can aid a diversion attempt on a measurement system currently in service.

Similar to limitations on the ability to measure a quantity of SNM, there is an inability to exactly calculate or measure the amount of holdup that accumulates in a material processing operation, such as a plutonium purification process. Knowledge of holdup uncertainty values could aid in the selection of a target for diversion activities. The value of this information was considered to be similar to knowledge of measurement diversion detection thresholds, so an exemption of 50X2-WMD was considered appropriate when the information aids a diversion attempt on a process that is in service.

CG-SS-4 topics related to system deficiencies and diversion scenarios did not clearly identify who determines when a deficiency exists or at what classification level it should be protected.

Identified need for specific MC&A guidance for exploitable design information of DOE designed or modified equipment used in SNM protection systems, as CG-SS-4 contained no topics that addressed MC&A-related security equipment.

Another area that was identified as containing equities currently approaching or passing 50 years of age involves methods for defeating Tamper Indicating Devices (TIDs). The department uses various types of TIDs to secure containers, vaults, and security equipment used to protect SNM. Some of these TID designs are now over 50 years old, and DOE developed techniques for surreptitious defeat of these devices must be protected to maintain the effectiveness of these devices.

2012 FCGR Recommendations

The guidance should be rewritten to reflect the following recommendations of the working group. The revised topic language improves the usability and correctness of MC&A related topics.

- Clarify that diversion detection thresholds are only classified for Category I/II quantities (or for credible rollup scenarios) in active/processing inventories.
- Exempt the diversion detection thresholds for Category I/II quantities in active/processing inventories from automatic declassification under 50X2-WMD.
- Classify holdup calculation uncertainty values when they exceed a Category II quantity and exempt from automatic declassification under 50X2-WMD.
- Clarify security official identification for declaration of credible MC&A deficiencies and diversion scenarios.

Implementation

2012 FCGR recommendations for MC&A information were reviewed and coordinated with the appropriate subject matter experts. CG-MC&A-1 was approved on July 22, 2016, superseding MC&A guidance in CG-SS-4 and implementing most of the 2012 FCGR recommendations. The following summarizes the differences from or updates to the recommendations, which were identified during the extensive development and concurrence process for the guide:

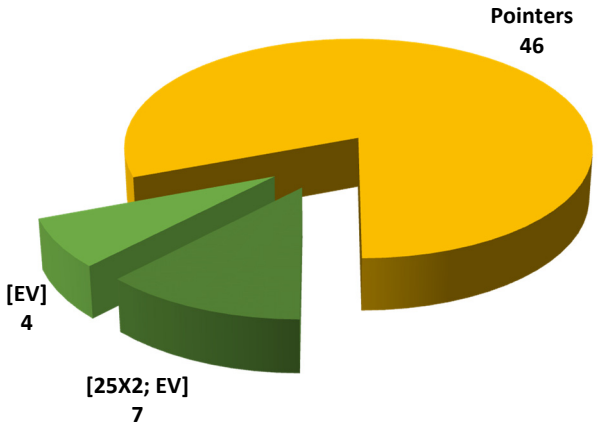
- 25X2;50 exemption instead of 50X2-WMD for diversion detection thresholds. 50x2-WMD exemption was rejected by ISCAP
- 25X2;50 exemption instead of 50X2-WMD for holdup calculation uncertainty. 50x2-WMD exemption was rejected by ISCAP
- Identified the Officially Designated Federal Security Authority/Officially Designated Security Authority as the "security official."

This eliminated 5 NSI topics.

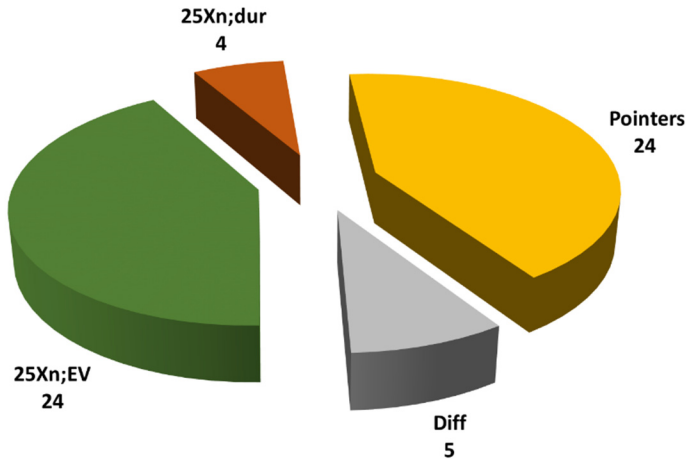
CG-MC&A-1 topical guidance was reviewed and validated in the 2017 FCGR.

Working Group 9 - Material Control and Accountability

2012 Guidance Attributes



2017 Guidance Attributes



Appendix B

Working Group 10 – Graded Security Protection

Scope

Graded Security Protection (GSP) and Design Basis Threat (DBT) encompass information related to the protection of vital assets at Department of Energy (DOE) sites and facilities. The DBT Policy was approved in November 2016 superseding the GSP Policy which itself superseded an earlier DBT policy dated August 2008. Because the new DBT will be phased in at various DOE sites and facilities on different implementation schedules over the next few years, either policy may be in effect at a given location. Current DOE classification guidance provides coverage for information for both the DBT and GSP.

DOE protection programs are required to provide effective protection against credible malevolent attacks and other hostile actions against a broad range of national security assets. DOE policy further requires a performance-based approach demonstrating protection effectiveness. Because DOE resources are limited, higher levels of protection and different protection strategies are implemented for assets of greater national security concern. DOE policy mandates a graded protection and risk management approach. Provision at every asset level is made for informed acceptance of risk by the appropriate level of management. Part of this risk management is the use of classification to protect those details about DOE protection planning that would assist significantly a DOE adversary in devising and executing a successful attack on a DOE facility, resulting in damage to national security.

Background

The DOE NSI guidance reviewed in the 2012 FCGR consisted of 41 topics, found in *Classification and UCNI Guide for Safeguards and Security Information* (CG-SS-4), *Annex to Classification and UCNI Guide for Safeguards and Security Information* (CG-SS-4A), and *Supplemental Guidance for the Graded Security Protection Policy* (TNP-37).

On July 22, 2016, *Changes to DBT/GSP Classification* (TNP-57), was approved, superseding GSP/DBT guidance in CG-SS-4 and CG-SS-4a.

TNP-37 and TNP-57 NSI guidance was reviewed for the 2017 FCGR.

Summary of 2012 FCGR Analysis

Identified the following keystones for GSP (DBT) information:

- Intelligence Sourced Capability – Inclusion or exclusion of an adversary characteristic/capability is based on and would reveal intelligence collection, analysis, or an assessment classified by DOE or, more likely, by another Intelligence Community (IC) agency. The declassification event is when the intelligence information is declassified; therefore, 25X1 applies. Because an intelligence sourced capability is unlikely to allow the identification of a human intelligence source, 50Xl-HUM is unlikely to apply.
- Requirement Deficiency – Determination that a facility cannot meet a GSP protection requirement for a specific asset. Assists adversary attack optimization by exploitation of

deficiency. Because neither the GSP requirements, the GSP adversary characteristics, the facility installed physical security systems, nor the protective force capabilities and planned response remain static, declassification at 25 years is appropriate.

- IND Information - Non-RD information about improvised nuclear devices (INDs) used in VA scenarios. This information is SNSI under E.O. 13526 (h) and exempt under 50X2-. WMD.
- Four other keystones concerning adversary capabilities whose descriptions are classified. A 25X2 exemption may apply to a specified adversary under these keystones, if exploitation of the information would lead to potential national security consequences.

One CG-SS-4A topic was determined to likely meet the requirement for a 50-year exemption as WMD key design information. Generic adversary capabilities identified in most CG-SS-4 topics were not specific enough for a DC to apply to the specific, detailed descriptions of adversary capabilities now found in the GSP (DBT) and associated documents. Many of the CG-SS-4A topics were specific enough for use, but the declassification at 25 years was found to be in error because these specified capabilities will likely remain among adversary capabilities.

Because almost all DOE assets addressed by the GSP (DBT) would assist in the development, acquisition, or use of WMD, the proper exemptions should be 25X1 for any Intelligence Sourced Capability and 25X2 for capabilities under any of the other proposed capability keystones. The declassification for an intelligence sourced capability occurs when the underlying intelligence is declassified. The declassification for other capabilities is a policy office determination for the GSP (DBT) that the capability no longer meets the conditions of its keystone.

Overall, the current guidance did not provide a DC with enough information to make proper classification determinations. Adversary characteristics, capabilities, and requirements, and the GSP policy itself were spread over three documents and frequently changed.

2012 FCGR Recommendations

- To consolidate all GSP classification guidance in one guide, CG-GSP-1.
- To only exempt specified adversary capabilities from automatic classification under 50X2-WMD on a case-by-case basis.
- For all other adversary capabilities and characteristics, to only classify, by topic, keystone capabilities.
- To require the Office of Security Assistance to maintain an adversary capabilities list with each specific adversary capability derivatively classified using one or more of the GSP adversary capabilities keystone topics.
- To reduce duration of classification for information meeting the requirement deficiency keystone to no more than 25 years because neither the GSP requirements, the GSP adversary characteristics, the facility installed physical security systems, nor the protective force capabilities and planned response remain static. Exceptional cases will be handled with specific original classifications.

The number of classification topics would be reduced from 41 topics to 23 topics. Of these, only five topics would be exempted from automatic declassification at 25 years.

Implementation

The 2012 FCGR recommendations were reviewed and coordinated with the appropriate subject matter experts.

Because the DOE Office of Security had been developing the DBT policy for over 5 years to replace the GSP and the timetable for approval and final form of the policy was uncertain, DOE developed a classification bulletin to provide interim guidance for both the GSP and the draft DBT adversary capabilities, also incorporating declassifications of several specific adversary capabilities.

TNP-57 was approved on July 22, 2016, superseding GSP (DBT) NSI guidance in CG-SS-4 and CG-SS-4A. TNP-57 breaks down in detail all adversary capabilities and only classifies specific capabilities. All classified adversary capabilities are exempted as 25X2; 50.

The new DBT policy was approved in November 2016. A new NSI classification guide is currently in development to supersede both TNP-37 and TNP-57.

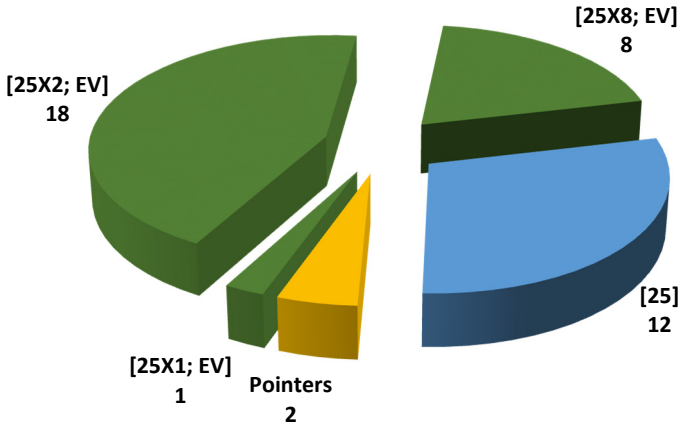
TNP-57 implemented many of the 2012 FCGR recommendations. The following summarizes the differences from the recommendations, which were identified during the extensive development and concurrence process for this bulletin:

- Eliminated Intelligence Sourced Capability keystone and three classified adversary capability keystones after determining they were not needed during TNP-57 development.
- IND Information keystone determined not eligible for 50X2-WMD exemption and changed to 25X2.
- Did not consolidate guidance in one guide. Instead NSI guidance is in two bulletins, which will be superseded with an NSI guide with an RD annex.
- No specified adversary capabilities are exempted from automatic classification under 50X2-WMD.
- Rather than the DBT policy office maintaining the classified adversary capabilities list, this was incorporated into TNP-57 and will be included in the new classification guide under development.

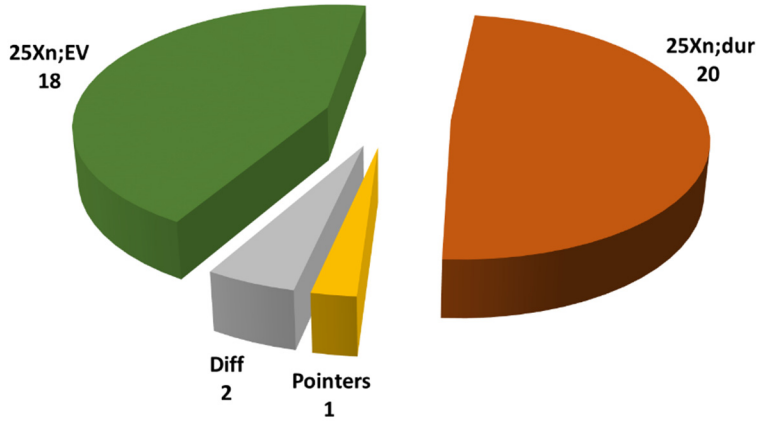
TNP-37 and TNP-57 were reviewed and validated for the 2017 FCGR.

Working Group 10 - Graded Security Protection

2012 Guidance Attributes



2017 Guidance Attributes



Appendix B

Working Group 11a – Intelligence

Scope

Executive Order (E.O.) 12333, *United States Intelligence Activities*, assigns to the Department of Energy (DOE) certain responsibilities in the areas of intelligence (IN). DOE provides expert technical, analytical and research assistance to other agencies in the IC, conducting analyses of both open source information and intelligence information collected by other U.S. Government agencies. DOE analyses of foreign nuclear programs typically use Restricted Data (RD); the results of these analyses are RD, and guidance in this area is outside the scope and purview of this fundamental review.

Transclassified Foreign Nuclear Information (TFNI) is intelligence information concerning the atomic energy programs of other nations that was RD but has been removed from the RD category under an agreement between DOE and the Director of National Intelligence (DNI). This transclassification was formalized under E.O. 13526 and is exempt from automatic declassification.

Background

A total of 73 topics for DOE intelligence program information, found in *Classification and UCNI Guide for Safeguards and Security Information* (CG-SS-4), *Annex to Classification and UCNI Guide for Safeguards and Security Information* (CG-SS-4A), and *DOE Classification Guide for Intelligence Information* (CG-IN-1), were reviewed for the 2012 FCGR.

CG-SS-5 was approved on July 22, 2016, superseding CG-SS-4. CG-SS-5 did not carry forward the intelligence guidance in CG-SS-4 because it was determined during the FCGR that CG-SS-5 would be a better tool for the derivative classifiers in the complex if it focused on security information.

TNP-63, *Security and Counterintelligence Guidance*, was approved on April 4, 2017, superseding intelligence guidance in CG-SS-4A.

CG-IN-2, *DOE Classification Guide for Intelligence*, is in the process of approval.

Summary of 2012 FCGR Analysis

Identified the following three keystones for IN:

- Two keystones whose descriptions are classified and which would require referral to other Government agencies following declassification of DOE's equity.
- TFNI Identification – Raw foreign nuclear intelligence information for which comparable United States information is RD. Any analysis or confirmation of TFNI that uses or reveals RD is RD. This keystone is completely exempt from automatic declassification. It may not be declassified until DOE declassifies the corresponding RD information. The information may remain classified for other reasons as determined by IC agencies.

Many of the topics provided instructions for other IC agency equities. Since these DOE guides

were not joint guides with other agencies, other agency classified information was better addressed in notes or cautions to topics.

The conditions identified in many of the CG-IN-1 topics were not specific enough for a DC to apply consistently. In attempting to address information that had many unique facets that would or would not make it classified with broad topics, the guidance inadvertently placed the DC in the position of determining the level of damage caused to national security by the release of the information. In addition, the information covered by the topics generally fell under the cognizance of additional agencies in the IC. If DOE were to generate specific information that met the conditions in these topics and damage national security, an original classification authority for IN should classify the information, which would then be the basis for new derivative classification guidance.

During the 2012 FCGR, additional original classification authorities were granted to key personnel in the DOE Office of Intelligence. DCs who identify information they believe damages national security should protect it as classified and submit it to an original classifier for an original classification determination. These original determinations will be collected in either a classification bulletin, a specific program classification guide, or as a change to the DOE overall intelligence program guide.

All intelligence guidance in CG-SS-4 and CG-SS-4A was determined to duplicate guidance in CG-IN-1.

2012 FCGR Recommendations

- Delete the three IN topics in CG-SS-4 and the one IN topic (points to CG-IN-1) in CG-SS-4A and replace with a summary of intelligence guidance in CG-SS-4 or its successor.
- Delete the 40 IN topics that either are not specific enough for DC use, require the DC to exercise OC judgments, or point to other agency guidance or source documents for classification and declassification.
- Delete 21 topics about Sensitive Compartmented Information Facility (SCIF) security (already covered by safeguards and security guidance).
- Delete four other agency human source topics because this is not a DOE equity.
- Add two keystone topics whose descriptions are classified.
- Add a keystone topic for TFNI Identification.
- Retain the overall IN budget classification topic with declassification instruction for referral to DNI with the DOE equity declassified at 25 years.

Implementation

The 2012 FCGR recommendations were reviewed and coordinated with the appropriate subject matter experts.

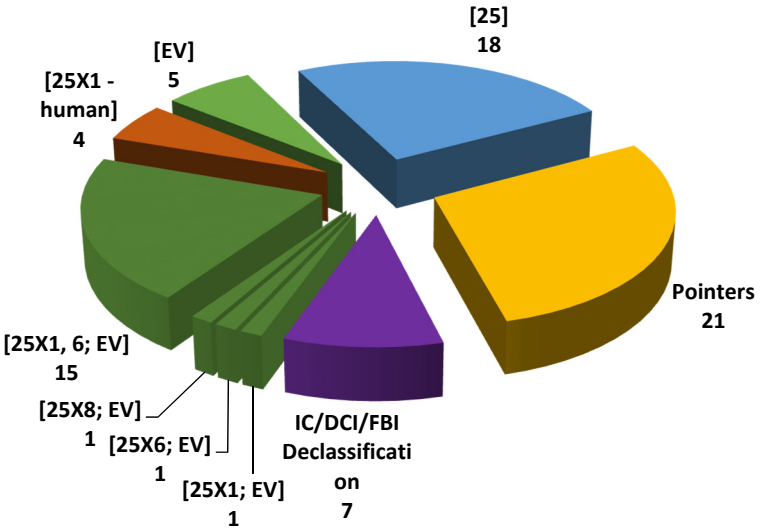
Appendix B

Approval of CG-IN-2 will implement of all 2012 FCGR recommendations. CG-IN-2 focuses on the classification of DOE equities. Topics concerning non-DOE equities, non-DOE IN functions, and information addressed by other DOE classification guides, such as safeguards & security, were eliminated.

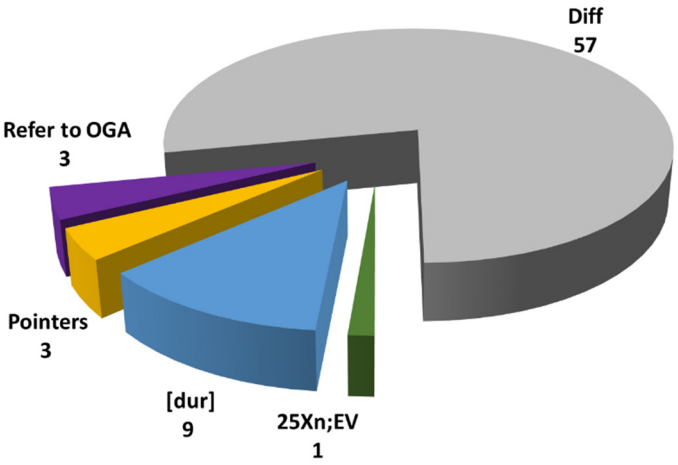
CG-IN-2 was reviewed and validated for the 2017 FCGR.

Working Group 11A- Intelligence

2012 Guidance Attributes



2017 Guidance Attributes



Appendix B

Working Group 11b – Counterintelligence

Scope

Executive Order (E.O. 12333, *United States Intelligence Activities*, assigns to the Department of Energy (DOE) certain responsibilities in the areas of counterintelligence (CI). DOE produces and disseminates, within DOE, foreign political, economic, military, or facility threat-related CI information. It conducts CI activities to protect DOE information, personnel, and assets from international terrorist actions and from intelligence collection on the behalf of foreign powers or entities. DOE CI activities are required to detect and deter insiders who act on behalf of a foreign intelligence service (FIS) or international terrorist entity.

Background

A total of 144 topics for DOE counterintelligence program information, found in *Classification and UCNI Guide for Safeguards and Security Information* (CG-SS-4), *Annex to Classification and UCNI Guide for Safeguards and Security Information* (CG-SS-4A), and *DOE Classification Guide for Counterintelligence Information* (CG-CI-1), were reviewed for the 2012 FCGR.

TNP-63, *Security and Counterintelligence Guidance*, was approved on April 4, 2017, superseding counterintelligence guidance in CG-SS-4A.

CG-CI-2 is in the process of approval and will superseding CG-CI-1 and TNP-63.

Summary of 2012 FCGR Analysis

Identified the following six keystones:

- Three keystones whose descriptions are classified.
- Source Identification – Information from and/or the identity of individuals whose disclosures of information put them at risk of retaliation, including endangering the lives of the individuals, their friends, or family. This keystone ensures that DOE abides by Director of National Intelligence (DNI) policy to protect IC agency sources by classifying any DOE generated information that could reveal them. Any DOE information that allows the identification of other IC agency sources is classified under E.O. 13526 1.4 (c) and DOE will exempt from automatic declassification under 50X1-HUM.
- CI Identification – Information that identifies or describes the specific activities or indicators of an FIS agent or a DOE employee acting on the behalf of an FIS. This is a joint equity between DOE and FBI. The DOE equity is classified under E.O. 13526 1.4 (c). This information may be exempted by DOE from automatic declassification under 25X1 for 50 years, though specific information may be declassified far earlier, dependent on the particular circumstances, such as the need by the FBI for the information to be disclosed pursuant to an espionage prosecution.

- Exploitable Design Information – Adversary exploitation would lower expected performance of a DOE developed or modified element/component. Because this is used for CI activities, E.O. 13526 1.4 (c) applies and may be exempted from automatic declassification at 25 years under 25X1 because it would impair the effectiveness of an intelligence method currently in use.

Many of the CI topics reviewed in the 2012 FCGR addressed information for which DOE shares equity with other IC agencies or organizations, primarily FBI. None of these classification guides was a joint guide. Information that is solely classified by another IC agency should not be classified by DOE.

The conditions were are too broad for a DC to apply consistently. In attempting to address information that has many unique facets that would or would not make it classified, these topics inadvertently placed the DC in the position of determining the level of damage caused to national security by the release of the information. In addition, the information generally fell under the cognizance of additional agencies in the IC. Rather than retaining broad topics, a DOE original classification authority (OCA) for CI should classify specific information about a DOE CI method, source, or activity that meets the requirements for classification; this original classification will then be the basis for DOE derivative classification guidance for that specific information.

During the 2012 FCGR, additional original classification authorities were granted to key personnel in the DOE Office of Intelligence and Counterintelligence. DCs who identify information that they believe damages national security should protect it as classified and submit it to an OCA for an original classification determination. These original determinations will be collected in either a classification bulletin, a specific program classification guide, or as a change to the overall DOE CI program guide (CG-CI-1 or its successor).

Much of the CI information particularly that associated with an investigations or inquiry, may be a joint equity with the FBI. Many of the decisions about classification and declassification are, by necessity, case-specific. Rather than attempting to provide broad classification guidance for DC use and to specific CI cases, DOE guidance should instruct the DC to protect information as Secret National Security Information pending an original classification determination by a DOE OCA.

All CI guidance in CG-SS-4 and CG-SS-4A was determined to duplicate guidance in CG-CI-1.

2012 FCGR Recommendations

- Delete 27 CI topics in CG-SS-4A and all current CI topics in CG-SS-4 (a total of 9); replace with a CI summary section in CG-SS-4 or its successor.
- Delete most CG-IN-1 topics concerning DOE relationships, associations, or agreements with other IC agencies, foreign nationals, or foreign governments because they were not specific enough (will be addressed by CI original classification determinations for each specific relationship, association, or agreement).
- Delete all topics already covered by safeguards and security or other approved DOE guidance.

- Delete all topics that only classify based on other agency guidance, an agreement with a foreign country, or source documents.
- Delete most current topics for polygraphs. Modify topic for polygraph equipment for consistency with the Exploitable Design Information keystone. Most other polygraph related information (reason, answers to questions, indications of deception, etc.) is captured by other keystone based topics.
- Delete all current CI-cyber topics as they are dependent on other agency classification or are not specific enough for DC use.
- Retain the overall CI budget classification topic with declassification instruction for referral to DNI with the DOE equity declassified at 25 years.
- Retain five topics based on one or more of the classified keystones.
- Retain a topic for classification of information relating to activities of FIS or indications of targeting or collection under the CI Identification keystone, the DOE equity exempt under 25X1.
- Retain a topic for classification of administrative investigations, preliminary inquiries or incidents of CI concern under the CI Identification keystone, the DOE equity exempt under 25X1.
- Classify all information from a contact report or CI debriefing and exempt from automatic declassification at 25 years under 25X1;50 using the CI Identification keystone to prevent adversary identification of those with specific indications of FIS activities by compilation of all contact reports or debriefings that do not contain such information, or indicate when FIS activities have not been detected.
- Retain topics for classification of identification of other IC agency human sources under the Source Identification keystone and exempt from automatic declassification with 50X1-HUM.

Implementation

The 2012 FCGR recommendations were reviewed and coordinated with the appropriate subject matter experts.

CG-CI-2 Change 2 is in the process of approval and will implement the 50X1-HUM recommendation.

CG-SS-5 superseded CG-SS-4 on July 22, 2016. It incorporated a CI summary section and did not carry forward any CI topics from CG-SS-4. This was the first of two steps in implementation of eliminating CI topics from safeguards and security guidance. In the second step, CG-SS-4A was superseded with the approval of TNP-63 on April 4, 2017. TNP-63 carried forward 3 unique CI topics. Twenty-four other CG-SS-4 CI topics were eliminated as duplicative of CG-CI-1. This was another partial implementation of eliminating CI topics from safeguards and security guidance.

CG-CI-2 will supersede TNP-63 and CG-CI-1. A total of 42 NSI topics were eliminated compared to the start of the 2012 FCGR. This completed implementation of most of the 2012 FCGR recommendations. The following summarizes the differences from or updates to the

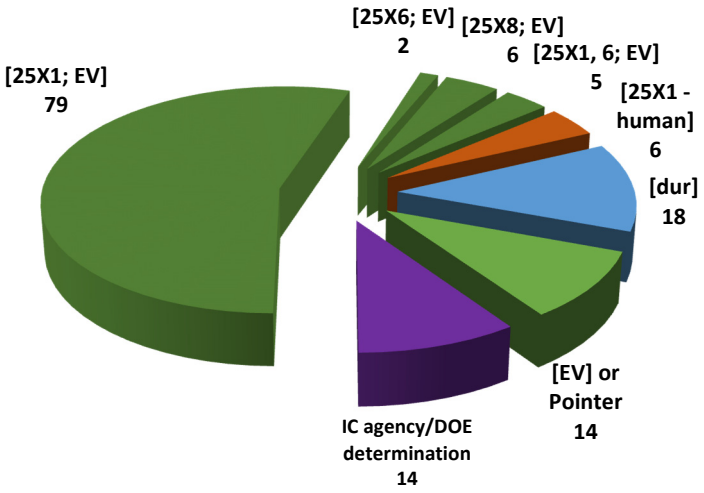
recommendations, which were identified during the extensive development and concurrence process for the guide:

- Determined Exploitable Design Information keystone is not needed. NSI topic for polygraph equipment was eliminated.
- Guidance was expanded to cover foreign intelligence entities, not just foreign intelligence services.

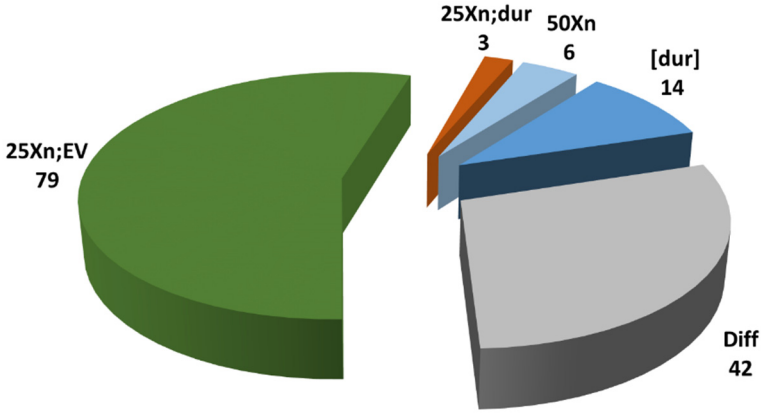
CG-CI-2 was reviewed and validated for the 2017 FCGR.

Working Group 11B - Counterintelligence

2012 Guidance Attributes



2017 Guidance Attributes



Appendix B

Working Group 12 – Enrichment

Scope

Classification guidance for the separation and enrichment of plutonium and uranium isotopes is addressed in several Department of Energy (DOE) guidance documents. The majority of information contained in the classification guidance is Restricted Data (RD) under the Atomic Energy Act of 1954 as amended, as the information involves the various methods and technologies to separate the isotopes of uranium and plutonium. However, there are security related topics in the guides that are identified as NSI.

Background

The guidance reviewed in the 2012 FCGR was contained in five guides : the *Classification Guide for Isotope Separation by the Gas Centrifuge Process* (CG-IGC-1), the *Joint NRC/DOE Classification Guide for Uranium Isotope Separation by the Gaseous Diffusion Process* (CG-PGD-5), the *DOE Classification Guide for the Plasma Separation Process* (CG-PSP-1), the *Classification Guide for the Separation of Plutonium Isotopes by the AVLIS Method* (CG-SIS-1), and the *Classification and UCNI Guide for Uranium Isotopes Separation by the Atomic Vapor Laser Isotope Separation Process* (CG-UAV-2) . Together in 2012, these guides contained 52 National Security Information (NSI) topics: two topics, exempt from automatic declassification at 25 with an event-driven declassification; 50 topics that point to other guidance.

Summary of 2012 FCGR Analysis

Analysis revealed the following:

- CG-PGD-5 – Contained thirty-seven topics that pointed to topics in either the classification guide *Classification and UCNI Guide for Safeguards and Security Information* (CG-SS-4) or Nuclear Regulatory Commission (NRC) guidance. Derivative classifiers at United States Enrichment Corporation (USEC) indicated they use the topics in CG-PGD-5 at the direction of the Nuclear Regulatory Commission (NRC). The NRC then determined no adverse impact would result from removing these topics from CG-PGD-5, and USEC was approved to use CG-SS-4 for the classification of security related gaseous diffusion information. The NRC agreed topics could be removed from CG-PGD-5 and that it no longer needs to be a joint guide.
- CG-IGC-1 – Contained two NSI topics; one pointed to a topic in CG-SS-4, and one topic classified details of a procurement as Secret NSI, regardless of the material or equipment involved.
- CG-PSP-1 – Contained nine NSI topics; one topic pointed to a topic in CG-SS-4; eight topics pointed to one topic in CG-IGC-1.
- CG-UAV-2 – Contained three topics; two topics in CG-UAV-2 pointed to other topics in that guide; one topic pointed to a topic in CG-SS-4
- CG-SIS-1 – Contained one topic addressing an equity belonging to another agency which confirmed the classification was correct.

Appendix B

2012 FCGR Recommendations

- Delete all 37 safeguards and security related topics from CG-PGD-5 and re-issue the guide as a DOE guide.
- Restructure the single unique topic in CG-IGC-1 into two subtopics, so that the general methodology behind cover/disassociated procurements, along with the definition of a cover/disassociated operation, be declassified; and the details of a particular cover/disassociated operation remain classified at the Secret level. In addition, a caution to warn of RD associations should be added to the Secret subtopic.
- Two topics, exempt from automatic declassification at 25 years with an event-driven declassification, thirteen topics will point to other guidance, and thirty-seven redundant topics will be eliminated.

Implementation

The 2012 FCGR recommendations were reviewed and coordinated with the appropriate subject matter experts.

CG-PGD-6 superseded CG-PGD-5 on April 18, 2017. All 37 safeguards and security topics have been eliminated. This is now a DOE-only guide.

CG-IGC-1 Change 3 was approved May 8, 2017. One NSI topic was eliminated in Change 3.

CG-PSP-1 Change 1 was approved on April 21, 2017. This eliminated 8 NSI topic. One remaining NSI topic was updated to refer to other guidance.

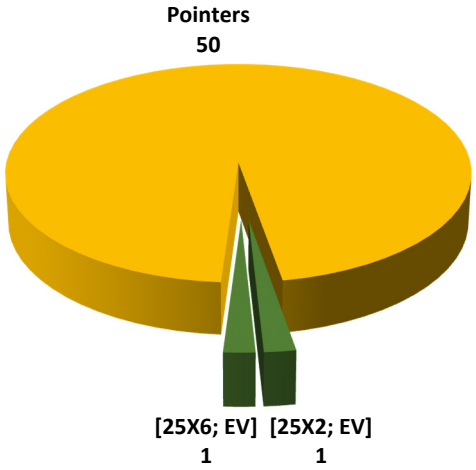
CG-UAV-2 was approved on May 8, 2017, superseding CG-UAV-1. Three NSI topics were converted to TFNI topics.

CG-PAV-1, *Classification and Unclassified Controlled Nuclear Information Guide for Plutonium Isotope Separation by Atomic Vapor Laser Isotope Separation Process,* was approved on May 8, 2017. This superseded and restructured classification guidance in CG-SIS-1 and combined it with UCNI guidelines from TG-PAV-1.

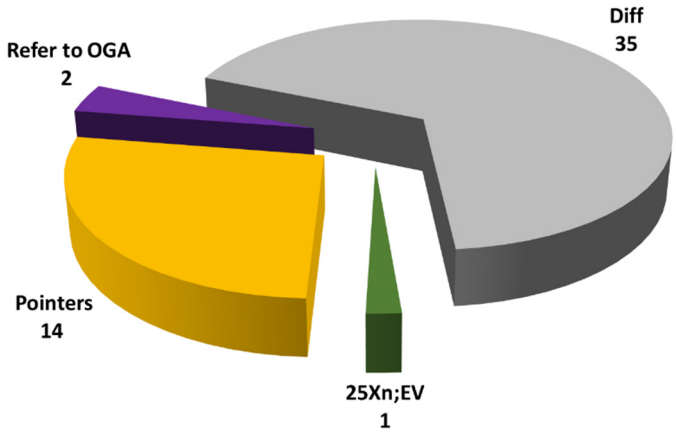
These guides were reviewed and validated for the 2017 FCGR. A total of 35 NSI topics were eliminated compared to the start of the 2012 FCGR.

Working Group 12 - Enrichment

2012 Guidance Attributes



2017 Guidance Attributes



Appendix B

Working Group 13 - Environmental Sampling

Scope

Classification guidance for the Environmental Sampling program addresses information regarding the verification process for compliance with the Limited Test Ban Treaty of 1963, the Threshold Test Ban Treaty of 1974, and the Peaceful Nuclear Explosion Treat of 1976 by detecting possible nuclear explosions. The Air Force Technical Applications Center (AFTAC) is the office responsible for accomplishing this mission.

Background

Classification Guide for Environmental Sampling (CG-ES-1), and the *Supplement to the Classification Guide for Environmental Sampling* (CG-ES-1A) were reviewed during the 2012 FCGR. These guides contain 90 NSI topics.

Summary of 2012 FCGR Analysis

The majority of topics in these two guides point to topics in AFTAC classification guides, and were correctly identified as AFTAC equities. AFTAC provided their guide citation and basis link information for these topics. After AFTAC completed their FCGR activities, DOE would update these topics accordingly.

Six of the topics were identified as joint equities between DOE and AFTAC, because the DOE research and development being done to support and enhance the AFTAC environmental sampling programs was conducted and funded by the DOE/National Nuclear Security Administration.

One DOE keystone concerning foreign relations of the U.S. Government was identified for the joint equity topics.

2012 FCGR Recommendations

- Change the declassification instructions for the DOE equity for six joint equity topics to 25X6; 50. Add a caution stating that the information protected by these topics is a joint equity and, as such, must be referred to the Air Force for declassification of their equities.
- Reword several topics in order to provide a better description of the information being protected.
- When AFTAC completes their FCGR activities, update the two guides accordingly.

Implementation

The 2012 FCGR recommendations were reviewed and coordinated with the appropriate subject matter experts.

For the 2017 FCGR, DOE confirmed the joint equities and validated the 2012 FCGR recommendation, but had deferred any further action until AFTAC completed its FCGR for environmental sampling. The AFTAC SCG was approved on April 12, 2017. Because DOE can provide the AFTAC SCG electronically to other offices within DOE, DOE plans to cancel the current DOE classification guide and supersede it with the AFTAC SCG.

Appendix B

Working Group 14 – Material Protection, Control and Accountability

Scope

The Material Protection, Control and Accountability (MPC&A) program addresses program information, location/asset description, threat description, risk assessment, and protection systems. The MPC&A program follows a systematic methodology in assisting foreign governments in nuclear safety upgrades.

Background

Classification Guide for MPC&A Information (CG-MPC&A-1) and the *Annex to the Classification Guide for MPC&A Information* (MPC&A-1A) were reviewed for the 2012 FCGR. These guides contained 115 National Security Information (NSI) topics.

CG-MPC&A-2 and CG-MPC&A-2A were approved on November 7, 2014, superseding CG-MPC&A-1 and CG-MPC&A-1A.

Summary of 2012 FCGR Analysis

Three keystones related to foreign relations were identified.

Topics in both CG-MPC&A-1 and CG-MPC&A-1A protected information provided to NA-25 during official correspondence with foreign governments. This information ranged from C/FGI-MOD to SNSI. The range was based on an assessment of the damage done by releasing this information. One topic series in both guides contained topics classified as C/FGI-MOD, CNSI, and SNSI. During analysis, it was determined that this information was always determined to be either C/FGI-MOD or SNSI. Therefore, the CNSI topic in the series will be eliminated from both guides.

Because the information classified in the MPC&A program is derived from treaties or agreements with foreign governments, these topics could be exempted using under 25X9.

2012 FCGR Recommendations

- Delete CNSI topic in one topic series from both CG-MPCA-1 and CG-MPCA-1A.
- Shift exemption from 25X6 to 25X9 when appropriately addressed by treaty or agreement.

Implementation

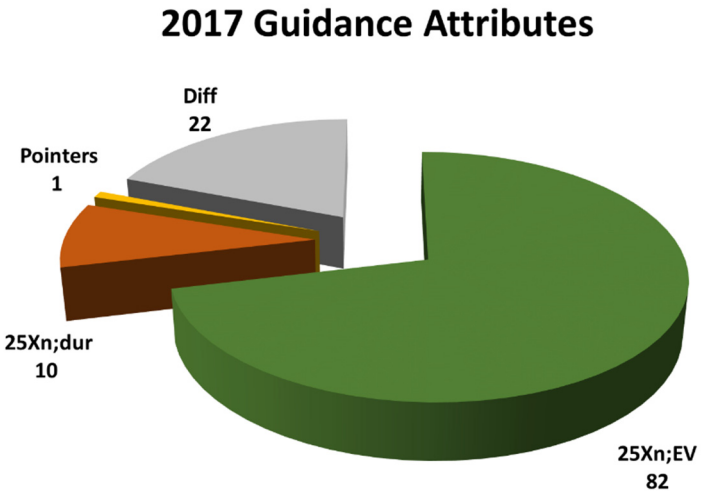
The 2012 FCGR recommendations were reviewed and coordinated with the appropriate subject matter experts.

Appendix B

CG-MPC&A-2 and CG-MPC&A-2A were approved on November 7, 2014, superseding CG-MPC&A-1 and CG-MPC&A-1A. All 2012 FCGR recommendations were implemented. In total, twenty-two NSI topics were eliminated, some because they were duplicative, and others because the program office determined during guidance development that they were unnecessary as they did not address actual MPC&A activities.

CG-MPC&A-2 and CG-MPC&A-2A were reviewed and validated for the 2017 FCGR.

Working Group 14 - Material protection, Control and Accountability



Appendix B

Working Group 15 - Nuclear Smuggling

Scope

Nuclear Smuggling applies to information regarding Department of Energy (DOE), National Nuclear Security Administration (NNSA), and Department of Homeland Security (DHS) Customs and Border Protection (CBP) activities and detection systems related to nuclear smuggling.

Background

The 2012 FCGR reviewed guidance is contained in *Joint CBP/DOE Classification Guide for Nuclear Smuggling Information* (CG-SMG-2). This classification guide was developed as a joint guide with CBP because, at the time of development, DHS did not have the infrastructure in place to develop, produce, and distribute the guide. DOE does not have a nuclear smuggling detection program, although several National Laboratories conduct activities in support of DHS.

DHS approved an SCG for this information on January 19, 2017.

This DHS security classification guide (SCG) was compared with CG-SMG-2 for the 2017 DOE FCGR.

Summary of 2012 FCGR Analysis

CG-SMG-2 contained 31 NSI topics. All 31 topics either pointed to other DOE or DHS guidance. All topics were forwarded to the DHS classification office and the NNSA Office of Emergency Response (NA-42) for review. This review confirmed that all DOE information was adequately protected in other DOE guidance such as CG-RDD-1*, Joint DOE/DHS/NRC Classification Guide for Radiological Dispersal Devices and Radiation Exposure Devices*, and CG-RER-1, *DOE Classification and UCNI Guide for Radiological Emergency Response*.

There were no original DOE keystones identified in CG-SMG-2.

DHS agreed to supersede this joint guide with a DHS SCG.

2012 FCGR Recommendations

- DOE assist DHS to develop a DHS-only SCG for activities and detection systems related to nuclear smuggling.
- Upon completion of DHS SCG, DOE would cancel CG-SMG-2.

Implementation

On May 17, 2016, the DOE Office of Classification sent a letter to DHS requesting they acknowledge the DOE plan to cancel CG-SMG-2 following approval of DHS SCG. On June 23, 2016, DHS responded in an email acknowledging this.

DHS SCG DNDO-001.2 was approved in January 19, 2017.

Appendix B

After comparing CG-SMG-2 with the DHS SCG and confirming appropriate coverage, DOE plans to cancel CG-SMG-2 by August 1, 2017.

The 2017 FCGR confirmed all 2012 FCGR recommendations will be or had been implemented and validated these actions.

Appendix B

Working Group 16 – Nuclear Materials

Scope

Classification guidance concerning nuclear materials applies to the various nuclear materials that have been produced for nuclear weapon purposes. The majority of classified information created that concerns materials production meets the requirements of Restricted Data (RD), per the Atomic Energy Act of 1958, as amended.

Background

The guidance contained in the *DOE Classification Guide for Nuclear Materials Production* (CG-NMP-2) was reviewed for the 2012 FCGR. There were 16 National Security Information (NSI) topics.

Summary of 2012 FCGR Analysis

No Department of Energy (DOE) NSI keystones for nuclear materials were identified during the analysis.

- The majority of the fourteen pointer topics referred the DC to safeguards and security guidance concerning the shipment or transfer of quantities of materials. Some of this information existed in program specific guidance.
- One topic was determined to be a Department of Defense (DoD) equity, which was confirmed by the Defense Threat Reduction Agency.
- Two topics contained the phrase "RD/may be NSI" as a part of the classification determination. These topics pointed to information in the *Joint DOE/DoD Topical Classification Guide for Weapon Production and Military Use (TCG-WPMU-2)*, which was reviewed by Working Group 25, WPMU, who determined that this information would not be NSI.

2012 FCGR Recommendations

- Revise the DoD equity topic to include the instruction "Refer to DoD," as the responsible agency.
- Revise the two topics pointing to TCG-WPMU-2 by removing "may be NSI" from the determination of these topics.

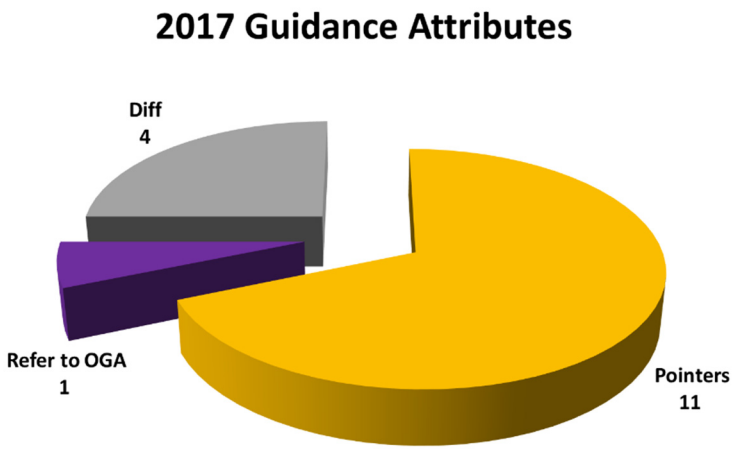
Implementation

The 2012 FCGR recommendations were reviewed and coordinated with the appropriate subject matter experts.

CG-NMP-2 Change 5 was approved by the DOE Office of Classification on January 23, 2017. This guidance update implemented all 2012 FCGR recommendations, resulting in the elimination of four NSI topics.

This was reviewed and validated for the 2017 FCGR.

Working Group 16 - Nuclear Materials



Appendix B

Working Group 17 - Materials Disposition

Scope

The Fissile Materials Disposition Program is responsible for the handling of weapon usable fissile materials that are surplus to the national security needs of the United States. It is the policy of the U.S. Government to protect sensitive nuclear weapon technology and production information that may be revealed by the materials being declared surplus.

Background

For the 2012 FCGR, *DOE Classification Guide for the Fissile Materials Disposition Program* (CG-MD-2), and *Classification Guidance for International Atomic Energy Inspections at DOE Facilities* (TNP-8) were reviewed. TNP-8 provided additional guidance for activities involving International Atomic Energy Agency (IAEA) inspections at DOE facilities.

CG-MD-2 contained 8 National Security Information (NSI) topics. The topics covered shipment, quantity/location, quantities identified for monitoring by the International Atomic Energy Agency, security, and deep borehole disposition of surplus special nuclear material (SNM).

TNP-8 contained two NSI topics. The topics covered data transmitted by safeguards sensors and information conveyed by analytical samples of SNM. Both of these topics pointed to other classification guidance.

Summary of 2012 FCGR Analysis

Only one keystone was identified that required protection:

- SNM safeguards of plutonium placed in deep boreholes.

The working group reviewed several pointer topics with a note pointing back to *Classification and UCNI Guide for Safeguards and Security Information* (CG-SS-4). The working group determined that these pointer topics are NSI for unreconciled inventories and RD when weapon information is revealed. Notes will be added to these topics to aid the user in determining the appropriate classification.

One topic covered the classification of enriched uranium not allocated to weapons programs at the Y-12 site. The topic had an Unclassified (U)/CNSI classification and referred to CG-SS-4 for further information. The working group determined that a note referring users to the Y-12 classification office for help determining when the information was classified would be beneficial. Additionally, a note directing the user to the Nuclear Material Control and Accountability (MC&A) classification guidance would improve the quality of guidance.

IAEA safeguards for HEU were covered by a series of topics in CG-MD-2. The guidance classified exact quantities of enriched uranium under IAEA safeguards. This information was classified based on the premise that the information indicated target attractiveness to an adversary. This concept was removed from other guidance in September 2000 with the release of CG-SS-4. This information should only be classified based on whether the inventory is

reconciled and audited, as well as any programmatic issues; therefore, a pointer to MC&A topics concerning reconciliation of inventories is appropriate. (See Working Group 9, MC&A for additional information on this subject area.) The working group also determined the need to address plutonium in the IAEA section in order to enable use for all envisioned scenarios across the complex.

The final topic reviewed concerns the burial of surplus plutonium that does not meet the spent fuel standard in deep boreholes. The spent fuel standard is a concept developed in the early 1990s to dispose of surplus weapons grade plutonium. The topic has an Unclassified (U)/Confidential National Security Information (CNSI) classification but did not indicate when either level applies. The original version of the guide contained a note that indicated the information is U when declassified and released by DOE. This note was removed in a subsequent revision to CG-MD-1 without any explanation in the guide development file. Since DOE can make the decision to declassify the information if desired, the note and U/CNSI [25] classification was unnecessary. The working group determined that the information warranted classification for 25 years. It recommended change the topic to CNSI [25].

All three of the 25X2; EV topics reviewed were found to be either a pointer, an EV topic not requiring a 25-year exemption, or no longer considered to be classified information. In one of these cases, the declassification event for the activity has occurred, so the information is now unclassified. In the other, the information was declassified when CG-SS-4 was approved in September 2000, making the topic inconsistent with the root guidance.

2012 FCGR Recommendations

The guidance should be rewritten to reflect the recommendations of the working group:

- Revise one topic to indicate that the related information is unclassified due to declassification event occurring.
- Delete one 25X2 topic.
- Change one topic from 25X2; EV to EV.
- Convert one topic to a pointer.
- Cancel TNP-8 by incorporating two pointer topics into CG-MD-2. Revise guidance related to IAEA safeguards activities to cover plutonium as well as highly enriched uranium.
- Improve four pointer topics and one keystone topic by clarifying notes to aid derivative classifiers in applying the topics correctly.
- Add a definition for the spent fuel standard.
- Additionally, to aid the user, a note describing when plutonium meets the spent fuel standard is added to a topic.

Implementation

The 2012 FCGR recommendations were reviewed and coordinated with the appropriate subject matter experts.

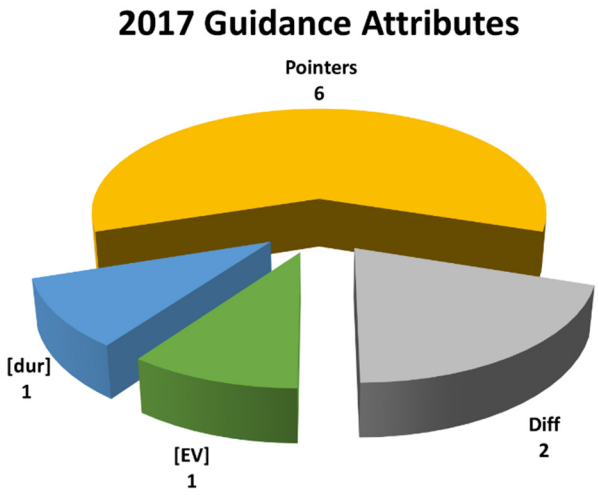
TNP-8 was cancelled on October 4, 2012, with the publication of CG-SS-3 Change 7.

Appendix B

CG-MD-2 Change 1 was approved on April 6, 2017. This change consolidated topics from TNP-28, TNP-61, and WNP-169, and implemented 2012 FCGR recommendations. It eliminated two NSI topics.

The 2017 FCGR reviewed and validated these actions.

Working Group 17 – Materials Disposition



Appendix B

Working Group 18 - Power Systems

Scope

As part of its responsibilities under the Atomic Energy Act of 1954, as amended, the Department of Energy (DOE) designs and/or builds radioisotope and nuclear reactor power systems for various space exploration and national security applications. At various times over the history of the department and its precursor organizations, interagency programs have operated to design and build nuclear reactors and radioisotope power systems for terrestrial and space military applications. These programs produced extensive information on materials and design engineering solutions to the challenging problems encountered in these applications. It is the policy of the U.S. Government to protect this information when it significantly assists the efforts of others to build similar systems.

Background

The following guides and bulletins were reviewed for the 2012 FCGR:

- The *Joint DOE/DoD/NASA Classification Guide for Radioisotope Power Systems* (CG-RP-1).
- The *DOE/DoD/NASA Classification Guide for Space Reactor Power Systems* (CG-SRPS-1).
- The *Joint DOE-NASA Classification Guide for Civilian Space Nuclear Reactors to Support NASA Project Prometheus Missions* (CG-SNR-1).
- The *Joint DOE/DoD Classification Guide for the Army Nuclear Power Program (*CG-RAR-6).
- *Guidance for Plutonium-238 Inventories*, (TNP-33).

TNP-48 superseded TNP-33 on May 13, 2013. It revised guidance for Pu-238 inventories and contains six NSI topics.

CG-SNS-1 is in review and approval for other agency equities in this joint guide. CG-SNS-1 was reviewed for the 2017 FCGR.

Summary of 2012 FCGR Analysis

CG-RP-1 contained 13 NSI topics for programmatic, mission, design, and safety information for radioisotope based power systems. CG-SRPS-1 contained 44 NSI topics for programmatic, research and development (R&D), procurement, specifications, fabrication, testing, design, military requirements, and security information for space reactor power systems. CG-SNR-1 contained 23 NSI topics for programmatic, R&D, design, transportation, safety and security information for space reactor power systems for the Prometheus Missions (no missions occurred; the program cancelled). CG-RAR-6 contained one NSI topic which covered the development of new army nuclear reactors and referred to other classification guidance. TNP-33 contained four NSI topics for the Office of Nuclear Energy's inventory and allocations of plutonium-238.

Eight keystones were identified that require protection:

- Space reactor design
- Space reactor material
- Space mission data
- Hardening
- Special nuclear material (SNM) - Vulnerable location
- SNM - Safeguards
- SNM - Allocation
- SNM – Recovery

2012 FCGR Recommendations

Merge CG-RP-1 and CG-SRPS-1 into one modernized guide to address current projects while retaining topics applicable to legacy programs.

- Deletion of 30 topics related to the Strategic Defense Initiative which relate to information that has been declassified by the Department of Defense.

Implementation

The 2012 FCGR recommendations were reviewed and coordinated with the appropriate subject matter experts.

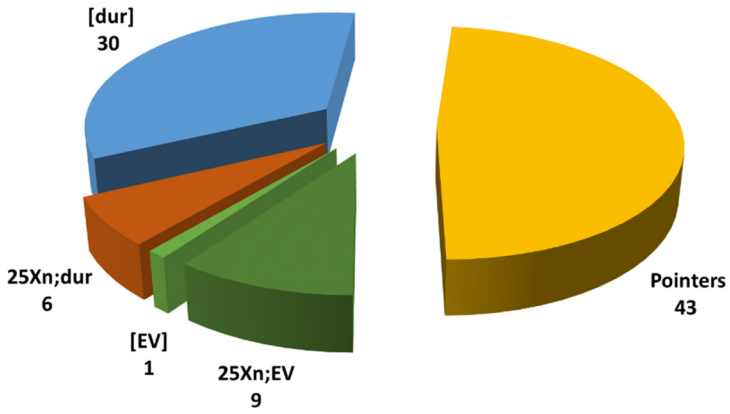
CG-RAR-6 will be cancelled upon approval of GG-DUSA-1, *General Guideline for Designated Unclassified Subject Areas.* This guideline will only carry forward the unclassified topics from CG-RAR-6. The one NSI topic will be eliminated.

CG-RP-1, CG-SNR-1, CG-SRPS-1, TNP-48, and TNP-30 topics were consolidated and migrated into *DOE/DoD/NASA Classification Guide for Space Nuclear Systems*, CG-SNS-1, which has been sent to DoD and NASA for approval of the joint guide. TNP-30 has three NSI topics specific to the shipment of Pu-238 from the Russian Federation and was deemed appropriate for inclusion in this CG.

CG-SNS-1 is in the process of approval and will result in a reduction of 52 NSI topics, 30 of which are declassified topics from CG-SRPS-1. 22 NSI redundant or unusable topics were eliminated as well. CG-SNS-1 NSI guidance was reviewed and validated for the 2017 FCGR.

Working Group 18- Power Systems

2017 Guidance Attributes



Appendix B

Working Group 19 - Russian Materials

Scope

The Highly Enriched Uranium (HEU) Transparency Program was responsible for the purchase of low enriched uranium derived from HEU removed from dismantled Russian Federation (R.F.) nuclear weapons. The program was governed by the U.S.-R.F. Purchase Agreement, signed in February 1993. R.F. information, as well as U.S. information related to this program is classified in accordance with classification guidance.

Additionally, the U.S. purchased plutonium-238 from the R.F. for use in radioisotope based power sources used in civilian space exploration missions. Various details regarding the classification of transportation information regarding these purchases are classified in accordance with the classification guidance.

Background

The 2012 FCGR reviewed *Classification Guide for Highly Enriched Uranium Transparency Program* (CG-TP-1), and *Guidance for the Shipment and Receipt of Plutonium-238 from the Russian Federation* (TNP-30).

CG-TP-2 was approved on May 3, 2013, superseding CG-TP-1.

TNP-30 will be superseded by CG-SNS-1 when it is approved.

Summary of 2012 FCGR Analysis

CG-TP-1 contained 49 NSI topics for programmatic, facility, equipment, process, transportation, and transparency assurance information generated by the HEU Transparency Program. TNP-30 contains three NSI topics for transportation information related to the purchase of plutonium-238 from the R.F.

Six keystones requiring protection were identified:

- Negotiation positions
- HEU agreement information
- Arms control
- Special nuclear material (SNM) – Transport
- Foreign facility – vulnerability
- Material verification

Twenty-five 25X6 topics should be changed to 25X9 because the information was related to information provided to the program by the R. F. under the agreement. The remaining 25X6 topics covered information that would affect relations with the R.F. but were not specifically addressed or covered by the agreement, so 25X6 was appropriate.

Four topics had a reference added to the declassification instructions to refer to the Department of State (DOS) to determine when the information would no longer harm foreign relations with

the R.F. Ten topics should be rewritten for clarity. Finally, one pointer topic required correction by inclusion of the 25X6 exemption listed with the parent topic in the *DOE Classification Guide for Nonproliferation of Weapons Information*.

No changes were recommended for the guidance in TNP-30.

2012 FCGR Recommendations

- Revise the exemption criteria for 25 topics in CG-TP-1 from 25X6 to 25X9.
- Revise the declassification instructions for four topics to refer the information to DOS.
- Reword 10 topics for clarity and to make application of topics easier.

Implementation

The 2012 FCGR recommendations were reviewed and coordinated with the appropriate subject matter experts.

CG-TP-2 was approved by the DOE Office of Classification on May 3, 2013, implementing the 2012 FCGR recommendations with the following changes:

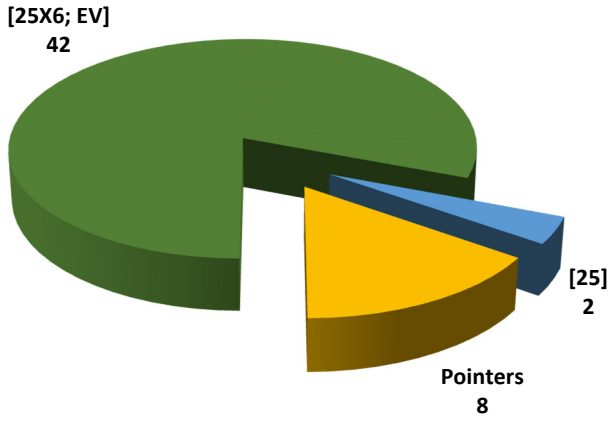
- Sixteen topics with a 25X6 exemption are now referred to the DOS after declassification of the DOE equity protected by the topic.
- Eight topics were reworded for clarity.
- One topic eliminated.

TNP-30 will be superseded by CG-SNS-1 when it is approved.

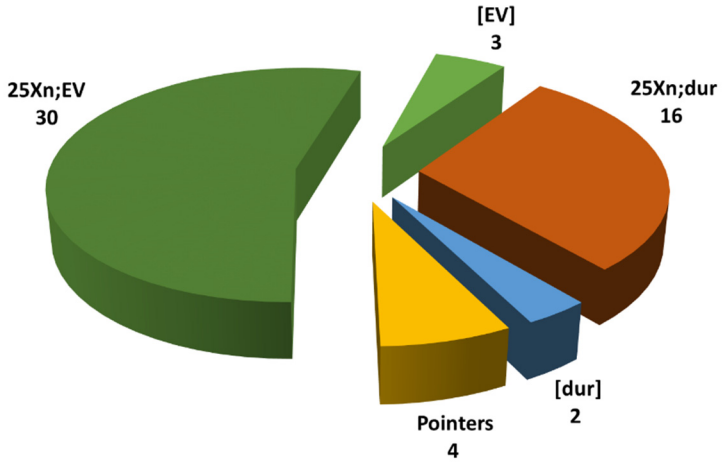
TNP-30 and CG-TP-2 NSI guidance was reviewed and validated for the 2017 FCGR.

Working Group 19 - Russian Materials

2012 Guidance Attributes



2017 Guidance Attributes



Appendix B

Working Group 20 - International Safeguards

Scope

These Department of Energy (DOE)/National Nuclear Security Administration (NNSA) programs are designed to acquire and/or secure special nuclear material (SNM) owned by foreign nations that is considered at risk for proliferation. It is in the interest of the U.S. Government to classify information about various aspects of the projects in order to protect foreign relations, operational security, and national security.

Background

DOE classification guidance contained in the *Classification Guide for a Material Protection Project* (CG-MPP-2); *Classification Guidance for Operation Sapphire* (TNP-3); *Classification Guidance for a Material Protection Program* (TNP-11); and *Classification Guide for Non-U.S. Reactor Conversion Studies* (CG-RC-2) was reviewed in the 2012 FCGR.

Classification Guide for Non-U.S. Reactor Conversion Studies (CG-RC-3) was approved on April 7, 2017, superseding CG-RC-3.

Classification Guide for Material Protection Projects (CG-MPP-3) was approved on April 18, 2017, superseding CG-MPP-2, TNP-3, and TNP-11.

CG-MPP-3 and CG-RC-3 were reviewed for the 2017 FCGR.

Summary of 2012 FCGR Analysis

NSI topics in CG-MPP-2, TNP-3, and TNP-11 covered programmatic, foreign relations, facility, packaging, and transportation information associated with Project Maximus, Project McCall, Sapphire, Olympus, Auburn Endeavor, and Partnership. CG-MPP-2 contained 23 NSI topics. TNP-3 contained 13 NSI topics. TNP-11 contained 21 NSI topics.

CG-RC-2 contained seven NSI topics for information related to projects to exchange foreign research reactor highly enriched uranium fuel rods for low enriched uranium fuel rods.

Four keystones were identified that require protection:

- Foreign relations
- SNM – Safeguards
- SNM – Packaging
- SNM – Transport

CG-RC-2 guidance was determined to be not in alignment with how the program office conducts reactor conversion projects. A complete restructuring and alignment of the guidance with current programmatic needs was recommended.

2012 FCGR Recommendations

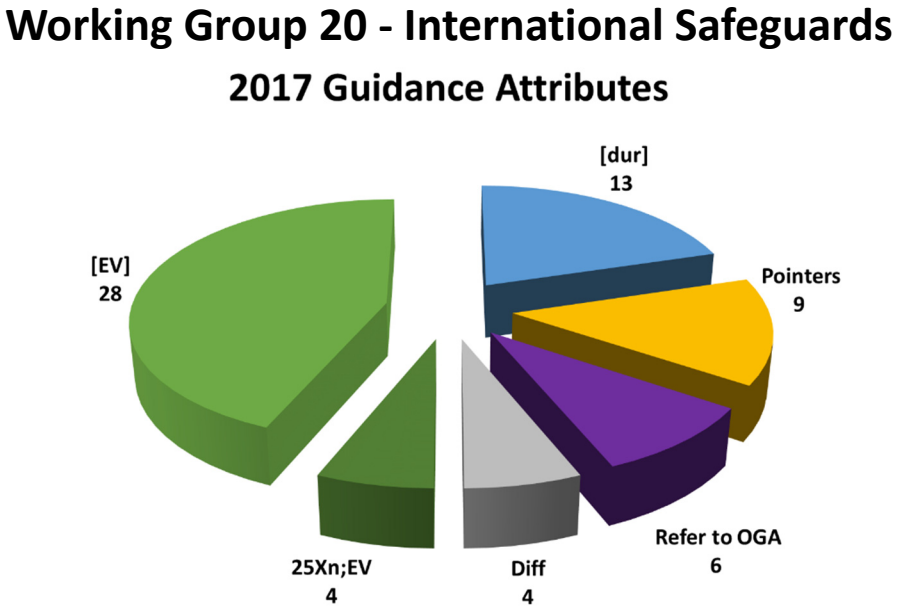
The guidance should be revised to:

- Merge CG-MPP-2, TNP-3, and TNP-11 into a single guide with common topics consolidated and updated to E.O. 13526 standards.
- Declassify one topic related to packaging issues in CG-MPP-2.
- Revise four topics to refer the user to DOS for a classification determination.
- Rewrite CG-RC-2 to reflect how the reactor conversion projects are managed and operated.

Implementation

The 2012 FCGR recommendations were reviewed and coordinated with the appropriate subject matter experts.

Classification Guide for Non-U.S. Reactor Conversion Studies (CG-RC-3), was approved on April 7, 2017, revising the guidance to better reflect how reactor conversion projects are managed and operated as recommended in the 2012 FCGR.
CG-MPP-3 was approved on April 18, 2017, implementing all applicable 2012 FCGR recommendations. In addition, many of the declassification events had occurred for some of the projects, allowing the guidance to be simplified significantly.
CG-MPP-3 and CG-RC-3 were reviewed and validated for the 2017 FCGR.


Working Group 20 - International Safeguards
2017 Guidance Attributes
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Pointers
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Refer to OGA
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Appendix B

Working Group 21 – Radiological Dispersal Devices

Scope

The Department of Energy (DOE) maintains classification guidance related to radiological dispersal devices (RDDs) and radiation exposures devices (REDs). RDDs and REDs are considered weapons of mass destruction (WMDs) which present a significant and continuing threat to the national security of the United States. The guidance addresses the properties and design of these devices, their dispersal patterns, effects, and recovery actions. This guidance is maintained by DOE and implemented jointly by DOE, the Department of Homeland Security (DHS), and the Nuclear Regulatory Commission (NRC).

Background

The *Joint DOE/DHS/NRC Classification Guide for Radiological Dispersal Devices and Radiation Exposure Devices* (CG-RDD-1) contains 45 topics addressing National Security Information (NSI); 6 topics point to other classification guidance topics; and 39 topics (35 Secret and 4 Confidential) are unique to the RDD/RED subject area and required analysis by the working group.

When CG-RDD-1 was approved in September 2009, the signatories intended that a thorough review and rewrite of the guide would be conducted after the guide had been used for a year and feedback was received from the field. The Fundamental Classification Guidance Review is being conducted concurrently with this rewrite of the guide.

Summary of 2012 FCGR Analysis

The 39 unique topics in CG-RDD-1 are exempt from automatic declassification at 25 years as the release of which would reveal information that would assist in the development or use of WMDs, and have event-driven declassifications. The declassification event throughout the guide is identified as "when the technology is no longer applicable to use in RDDs or REDs, or official disclosure of the technology has been made."

The 39 unique RDD/RED topics protect three keystones of information:

Identification, design, or optimization of unique technologies for radiological dispersal or radiation exposure.

- Non-explosive RDD techniques.
- Provocative information which might encourage an RDD/RED attack.

The rewrite of CG-RDD-1 is almost complete. Six topics have been rewritten to include subtopics with references to specific classification levels, thereby reducing the instances where a derivative classifier had to choose a classification from an Unclassified (U)-Secret (S) NSI range with minimal guidance. The working group agreed to focus on the attributes of the specific radioactive material in determining classification. Use in an RDD of radioactive material that was in a form found in common usage by industry, commerce, or medicine would be

unclassified. Examples include cesium chloride used in self-contained irradiators and americium oxide used as well logging sources.

The working group recognized that the consequences of an RDD event were significantly greater than those of an RED event. Consequently, the group concluded RDD information would be classified at the Secret level and similar information for REDs would be classified at the Confidential level.

The working group determined that all topics protecting the three keystones identified above should be exempt from automatic declassification at 50 years and cite the WMD reason for classification in the Executive Order 13526, section 3.3(h)(1)(B). Therefore, justification for these topics has been sent to the Interagency Security Classification Appeals Panel, via the Information Security Oversight Office, for approval.

Twenty of the topics were retained as written; however, all declassification instructions were revised to 50X2 as described above.

2012 FCGR Recommendations

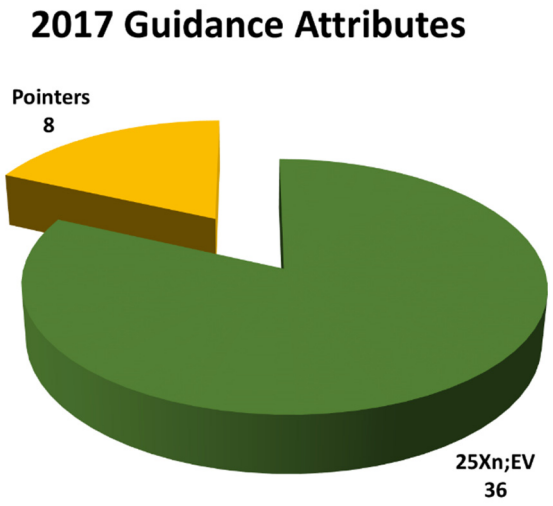
- Revise all 39 topics to require exemption from automatic declassification at 50 years.
- Classify the use of specified radioactive materials in an RDD or RED based on whether the material is in a form as commonly found in medical, industrial, or commercial uses (U) or if the material has been modified from the common form (SNSI).
- Limit the classification of REDs to CNSI.

Implementation

The recommendations were reviewed and coordinated with the appropriate subject matter experts. All recommendations were validated and implemented as appropriate.

The revised guide now has 36 NSI topics all exempted from automatic declassification as approved by the Interagency Security Classification Appeals Panel. CG-RDD-2 was approved by the DOE Office of Classification on December 8, 2016.

Working Group 21 – Radiological Dispersal Devices



Appendix B

Working Group 22 – Weapon Outputs

Scope

The majority of information related to nuclear weapon outputs is Restricted Data, with the exception of National Security Information (NSI) intelligence-related information.

Background

NSI guidance in *Joint DOE/DoD Classification Guide for Weapon Outputs* (TCG-WO-1) was reviewed for the 2012 FCGR.

Summary of 2012 FCGR Analysis

TCG-WO-1 contained two NSI topics:

- One topic refers to source documents from which the information on the outputs of non-U.S. weapons originated (in order to determine classification level, category and declassification instructions).
- One topic is for intelligence evaluations which are classified at either SNSI or TSNSI.

The first topic referred to source documents in order to determine classification level, category, and declassification instructions.

The second topic was determined to be an intelligence community (IC) equity. The topics should refer a DC to IC classification guidance for declassification instructions.

2012 FCGR Recommendations

- Retain the first NSI topic as is.
- Revise the second NSI topic to delete the declassification schedule and refer the derivative classifier to the IC for declassification instructions.

Implementation

As part of the implementation of the 2012 FCGR recommendations, it was determined that the two NSI topics fit the definition of Transclassified Foreign Nuclear Information (TFNI). The topics have been redesignated as TFNI. Notes were also added to remind the DC that collection sources or methodology may be NSI and that they need to refer to IC guidance. TCG-WO-1 Change 5, which incorporates these changes, has been finalized and is currently with the Director, Office of Classification for approval.

Appendix B

Working Group 23 - Malevolent Dispersal/Threat Messages

Scope

DOE maintains guidance to classify information involving (1) the malevolent dispersal of radioactive materials and (2) threat messages received from a perpetrator. Because of involvement by multiple government agencies in planning and executing coordinated responses to such events, including performance of training exercises, DOE works with agencies such as the Department of Homeland Security (DHS) and the Federal Bureau of Investigation to develop joint classification guidance.

Background

The guidance reviewed in the 2012 FCGR was located in two sections of the *Classification and UCNI Guide for Safeguards and Security Information* (CG-SS-4). Guidance concerning these two subject areas was also contained in other classification guides including *Joint DOE/DHS/NRC Classification Guide for Radiological Dispersal Devices and Radiological Exposure Devices*, *DOE Classification and UCNI Guide for Radiological Emergency Response*, and *DHS/DOE Classification and UCNI Guide for Nuclear/Radiological Incident Emergency Response and Consequence Management*.

CG-SS-5 was approved on July 22, 2016, superseding CG-SS-4 topics for malevolent dispersal and threat messages.

Summary of 2012 FCGR Analysis

Malevolent Dispersal – Some vulnerability topics inadequately address certain radiological dispersal and sabotage scenarios. The vulnerability-related topics were assessed to resolve this shortcoming. The topic which referred to CG-RER-1 dealt with radiological dispersal devices (RDD) and should refer to CG-RDD-1. A more effective means for this reference would be via a general note placed at the beginning of the topic section. There was one unique topic with a specified duration of 25 years that was appropriate. However, it was recognized that information classified by this topic could possibly contain Safeguards Information (SGI) under the purview of the Nuclear Regulatory Commission (NRC) when automatically declassified.

Keystone – for the unique topic, the keystone being protected is the results of dispersal tests or experiments, and subsequent analysis.

Three topics pointing to other guidance contain some classification/declassification instructions that are extraneous to the pointing function.

Threat Messages - Seven topics pointing to, or based on, other guidance are appropriate.

Appendix B

2012 FCGR Recommendations

Malevolent Dispersal

- Add a general note at the beginning of this topic section to restrict its applicability solely to dispersal of radioactive materials in storage or in process at or in transit to or from DOE facilities. This separates its applicability from the device dispersals addressed more broadly by CG-RDD-1.
- Delete topic concerning RDDs.
- Add a note to one topic informing the user of a possible residual NRC SGI equity upon declassification of the information.
- Remove unnecessary classification/declassification instructions from the three topics which point the user to other guidance.

Threat Messages:

- Retain the seven topics that refer to, or are based on, other relevant guidance.

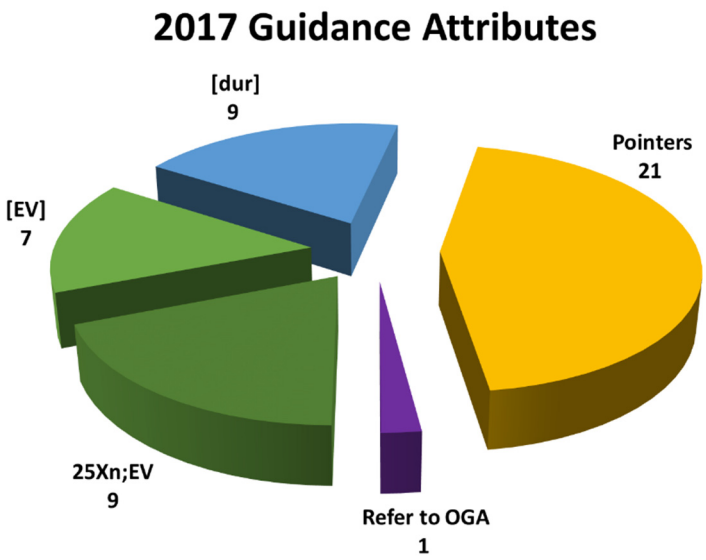
Implementation

The 2012 FCGR recommendations were reviewed and coordinated with the appropriate subject matter experts.

CG-SS-5 implemented all 2012 FCGR recommendation when approved on July 22, 2016. The malevolent dispersal topics from CG-SS-4 were rewritten as a new chapter in CG-SS-5. Twenty-four topics classify as CNSI information for a duration of 25 years. The remaining 22 topics identify unclassified information. The threat message topics from CG-SS-4 were rewritten as a new chapter in CG-SS-5. One topic classifies as CNSI for a duration of 25 years and two topics point to other guidance and seven identify unclassified information.

This CG-SS-5 guidance was reviewed and validated for the 2017 FCGR.

Working Group 23 - Malevolent Dispersal/Threat Messages



Appendix B

Working Group 24 - Radiological Emergency Response (RER)

Scope

DOE maintains guidance to appropriately classify information involving DOE actions in response to radiological emergencies. A significant portion of Radiological Emergency Response (RER) activity is an interagency effort, including the DOE/NNSA RER assets that function as the Nuclear Emergency Support Team, operating under the direction of a Lead Federal Agency (LFA) that has been designated for the specific response mission. The specific LFA depends on the nature of the emergency.

Background

Two classification guides for RER were reviewed in the 2012 FCGR, *DOE Classification and UCNI Guide for Radiological Emergency Response* (CG-RER-1), and *DHS/DOE Classification and UCNI Guide for Nuclear/Radiological Incident Emergency Response and Consequence Management* (CG-NRI-1).

Summary of 2012 FCGR Analysis

CG-RER-1 is a Secret Restricted Data classification guide that addresses the RER issues from a DOE standpoint – RER personnel and equipment; general mission/training operations; threat device information; and details of specific phases of RER operations, including Crisis Response and Consequence Management. It also contains a significant topic section dealing with the assessment/handling of nuclear threat messages received from a perpetrator. CG-NRI-1 is a joint classification guide with DHS that covers essentially the same material contained in CG-RER-1, subject to the limitation that the guide is unclassified (controlled as Official Use Only).

CG-RER-1 contained 153 NSI topics. Of these:

- Nineteen topics pointed to other DOE guidance – usually the *Joint DOE/DHS/NRC Classification Guide for Radiological Dispersal Devices and Radiation Exposure Devices* (CG-RDD-1).
- Twelve topics pointed to guidance from another Government agency – usually to the DHS. When CG-RER-1 was originally approved in 2002, DOE was responsible for the Nuclear Assessment Program (NAP) and the assessment of nuclear threat messages. This is now a DHS function, with the NAP managed by the Domestic Nuclear Detection Office.
- Six topics have their basis in other DOE guidance – almost all in *Classification and UCNI Guide for Safeguards and Security Information* or *Transportation Safeguards System Classification and Unclassified Controlled Nuclear Information Guide*. These topics deal with security for training and actual threat devices.

Of the remaining 116 NSI topics, a significant portion (53) entailed a range of classification/control possibilities, with the appropriate determination to be received from the LFA for a specific RER mission or training exercise, via communication from a DOE Senior Energy Official (SEO) or Emergency Response Officer (ERO). CG-RER-1 called for the

publication of supplemental guidance for each training exercise to formalize classification determinations in advance of the exercise.

CG-NRI-1 contained 88 NSI topics; however, all these topics are either based on other guidance (nearly all from CG-RER-1) or point to other guidance.

Nine DOE keystones were identified in CG-RER-1:

- Eight are categorized as being critical nuclear accident or counterterrorism incident response (NCTIR) capabilities and vulnerabilities, further applied to the specific mission areas of searching for, diagnosing, modeling, and defeating nuclear/radiological threats.
    - NCTIR search capability
    - NCTIR search vulnerability
    - NCTIR diagnostic capability
    - NCTIR diagnostic vulnerability
    - NCTIR modeling capability
    - NCTIR modeling vulnerability
    - NCTIR defeat capability
    - NCTIR defeat vulnerability
- The remaining keystone consists of tactics, techniques, or procedures used in NCTIR operations.
    - NCTIR tactic, technique, or procedure

In validating event descriptions, it was discovered that 13 topics dealing with certain threat device render-safe technology were based on guidance from the Defense Advanced Research Projects Agency, but the guidance had been cancelled. DOE determined there was a need to continue to classify this information since there is a DOE equity. This guidance is recommended to be incorporated into a revision of CG-RER-1 via an original classification decision by the DOE OC OCA.

In current guidance, 48 topics rely on the ERO/SEO for classification/declassification decisions. This is unnecessarily burdensome, and the conditions identified in many of these topics are not specific enough to apply consistently. In attempting to address information that has many unique facets that would or would not make it classified, these topics inadvertently place the ERO/SEO in the position of determining the level of damage caused to national security by the release of the information. In addition, the information frequently falls under the cognizance of additional agencies involved in the interagency response activity.

2012 FCGR Recommendations

- Rather than retaining broad topics, a DOE/NNSA Office of Emergency Operations original classification authority for RER should classify specific information about DOE participation in a specific RER activity that meets the requirements for classification.
- Original classifications will then be the basis for DOE derivative classification guidance for that specific RER activity.
- Revise the guidance to better reflect current agency roles/responsibilities jointly with the FBI and DHS.

Implementation

The 2012 FCGR recommendations were reviewed and coordinated with the appropriate subject matter experts.

After an extensive development, review, and concurrence process, CG-RER-1, Change 3 was approved on February 14, 2014. The following changes were implemented with this change:

- Forty-one topics changed from either25x2;EV or just EV to 25x2;50 years.
- Five topics had exemption codes 25X2 and 25X8. These topics are no longer exempt from automatic declassification at 25 years. They have either a 25-year or EV driven declassification.
- Five topics were changed to unclassified.
- 13 render safe topics formerly classified by DARPA guidance were changed to DOE NSI.
- Nine topics intended for referral to DHS were changed to DOE classified topics.
- An extensive section of topics (including 72 NSI topics) was added to address the Stabilization Program, which is run cooperatively by the DOE and FBI. This is a new programmatic activity that was instituted since the time of the 2012 FCGR thus the increase in NSI topics.

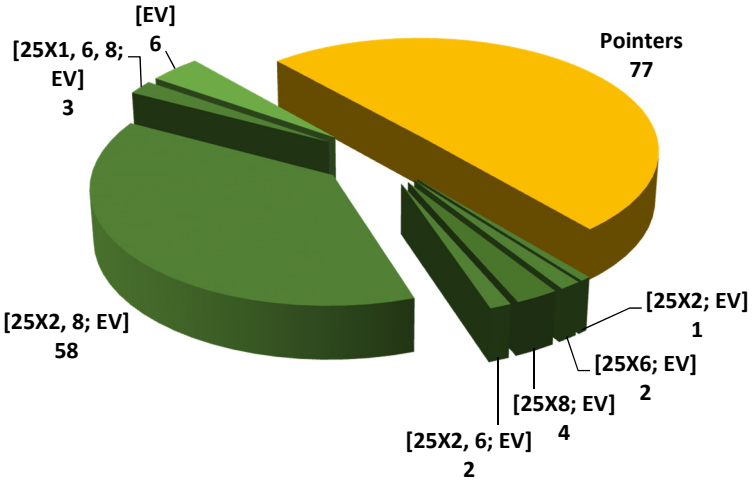
A change to CG-NRI-1 is in development to implement the same recommendations that applied to CG-RER-1:

- Three NSI topics have event-driven declassifications.
- Twenty-one topics are exempt from a 25 year declassification and are event-driven.
- Twenty-eight point to other DOE guidance.

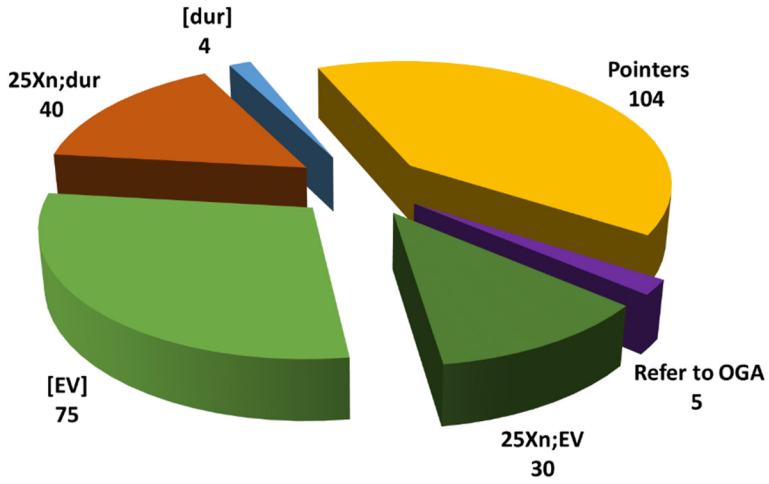
These changes to both CG-RER-1 and CG-NRI-1 were reviewed and validated for the 2017 FCGR.

Working Group 24 - Radiological Emergency Response (RER)

2012 Guidance Attributes



2017 Guidance Attributes



Appendix B

Working Group 25 - Weapon Production and Military Use

Scope

The Department of Energy (DOE) National Security Information (NSI) classification guidance has covered the areas of nuclear weapon production and use/employment of nuclear weapons, as well as accidents involving nuclear weapons over the past 60 years. The areas covered are transportation of nuclear weapons or components and/or safeguards and security of nuclear weapons throughout the nuclear weapons complex.

Background

The 2012 FCGR reviewed NSI topics in the following five classification guides:

- *Joint DOE/DoD Topical Classification Guide for Weapon Production and Military Use* (TCG-WPMU-2)
- *Joint DOE/DoD Topical Classification Guide for Detonation Systems* (TCG-DS-2)
- *DOE/DoD Topical Classification Guide for Weapon Initiators* (TCG-WI-2)
- *Joint DOE/DoD Topical Classification Guide for Safing, Arming, Fuzing and Firing* (TCG-SAFF-2)
- *Joint DOE/DoD Topical Classification Guide for Vulnerability and Hardening* (TCG-VH-2)

Summary of 2012 FCGR Analysis

The current guidance was inadequate as too much discretion is left to the DC and DD. These five classification guides contained 27 NSI topics. TCG-WPMU-2 contained 20 topics. Of those:

- Six topics were DOE equities and referred to other topics within the guide or other guides.
- Four topics were joint equities with Department of Defense (DoD), and were exempt from declassification at 25 years with event-driven declassification instructions. One referred to other appropriate agency-specific guidance, and three were situation dependent.
- Ten topics were equities belonging to DoD and the Department of State (DOS).

TCG-DS-2 contained 4 joint DOE/DoD topics; all four were situation dependent. TCG-WI-2 contained one topic that referred to a topic in another guide. TCG-SAFF-2 contained one topic exempt from declassification at 25 years with an event-driven declassification. TCG-VH-2 contained one IC equity.

The 2012 FCGR was conducted concurrently with the rewrite of TCG-WPMU-2. Ten DoD/DOS joint equity topics were determined to be unnecessary. Of the four joint equity topics, one was determined to be redundant to a topic in another guide, one was determined necessary but with an incorrect range of U-TSNSI, and other two topics were determined necessary but required a change from event-driven declassification instructions to a more appropriate classification duration of 25 years.

The four TCG-DS-2 topics were determined necessary to provide appropriate instruction to the DC for when to classify as NSI and when to classify as Restricted Data. The event-driven declassification instructions were determined to be correct.

The keystone identified for the joint equity topics in TCG-WPMU-2 was the protection of weapon components. The keystone identified for the four TCG-DS-2 topics was weapons of mass destruction development.

2012 FCGR Recommendations

- Delete the 10 DoD/DOS joint equity topics from TCG-WPMU-2.
- Delete the redundant DOE/DoD joint equity topic from TCG-WPMU-2.
- Revise the classification level range from U-TSNSI to U-SNSI for one topic in TCG-WPMU-2.
- Revise declassification for two situation dependent topics to a 25-year duration in TCG-WPMU-2.
- Retain topics in DS-2.
- Delete single NSI topic in TCG-WI-2 and include a note directing DC to the appropriate guide for non-nuclear component shipments.
- Delete the single NSI topic in TCG-SAFF-2, because it will be sufficiently addressed in TCG-WPMU-3.
- Retain the single topic in TCG-VH-2.

Implementation

The 2012 FCGR recommendations were reviewed and coordinated with the appropriate subject matter experts.

TCG-WPMU-3 was approved on December 13, 2013, implementing all its 2012 FCGR recommendations, including the deletion of ten joint DoD/DoS topics. The topic with a classification range had a NOTE added that points the DC to the applicable guidance.

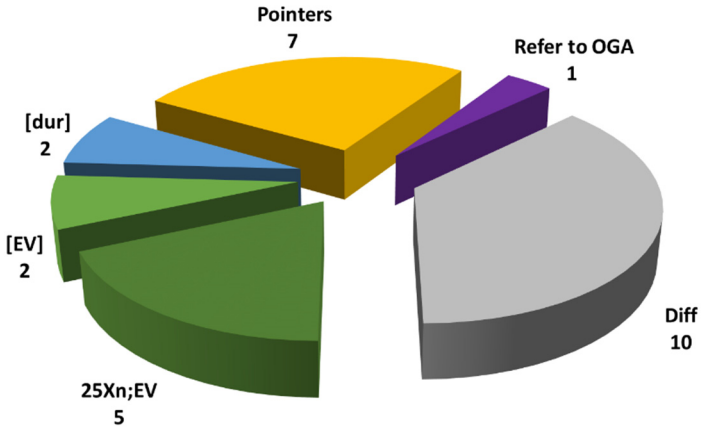
TCG-SAFF-3 was approved on March 31, 2015, implementing its one 2012 FCGR recommendation.

TCG-WI-3 was approved on May 8, 2017, implementing its one 2012 FCGR recommendation.

All NSI guidance in the five classification guides was review and validated for the 2017 FCGR. Ten NSI topics in total were eliminated in these five joint classification guides.

Working Group 25 - Weapon Production and Military Use

2017 Guidance Attributes



Appendix B

Working Group 26 – Improvised Nuclear Devices

Scope

The Department of Energy (DOE) issues guidance to classify information associated with the theory, development, design, manufacture, fabrication, and assembly of improvised nuclear devices (INDs). The vast majority of the IND guidance addresses information categorized as Restricted Data under the Atomic Energy Act of 1954, as amended; however, there exist a limited number of IND-related activities that are appropriately classified under Executive Order 13526 as NSI.

Background

An IND is defined as a simple, crude, and intuitive device that can produce a nuclear yield. Typically, this type of device would not be one created by a nuclear nation-state, but a terrorist group. An IND is considered to be a weapon of mass destruction which could present significant and continuing threat to the national security of the United States.

NSI guidance in *DOE Classification Guide for Improvised Nuclear Devices* (CG-IND-1) was reviewed for the 2012 FCGR. This was limited distribution guide and, therefore, not widely available to many DCs that required guidance concerning INDs. When CG-IND-1 was approved in October 2006, the signatories intended that a thorough review and rewrite of the guide would be conducted once the guide had been used to make classification determinations and after feedback was received from the users. The 2012 FCGR was conducted concurrently with the rewrite of the guide.

CG-IND-2 was approved.

CG-IND-2, Change 1, was approved on July 22, 2016.

CG-IND-2, Change 1, NSI guidance was reviewed for the 2017 FCGR.

Summary of 2012 FCGR Analysis

CG-IND-1 contained five NSI topics. No unique NSI keystones were identified by this working group. Three were based on topics in the *DOE Classification and UCNI Guide for Radiological Emergency Response* (CG-RER-1), and were reviewed by Working Group 24, Radiological Emergency Response. A fourth topic related to the physical security information concerning DOE sites and facilities that store special nuclear material (SNM), and was addressed by working groups for *Classification and UCNI Guide for Safeguards and Security Information*. The fifth topic was determined to no longer be necessary.

2012 FCGR Recommendations

- Rewrite one topic so that it will reflect the current guidance upon which it is based (the safeguards and security of SNM) and be declassified at 25 years. This could be implemented by inserting a simple pointer to the current guidance.

- Delete three topics that relate to the CG-RER-1 render safe procedures, as they are adequately addressed in that guide.
- Delete one topic concerning fabrication of an IND that has been determined to be obsolete.

Implementation

CG-IND-2 was approved September 16, 2014. 2012 FCGR recommendations were implemented with the following exception. The topic concerning facility or site as a concern for IND in-situ detonation was eliminated. In the revision one new topic was added. For IND training device or mockup which was derived from CG-RER-1.

CG-IND-2, Change 1 was approved on August 22, 2016. In this change one topic on a performance metric for safeguards and security was adopted.

NSI guidance in CG-IND-2, Change 1 was reviewed and validated for the 2017 FCGR.

The total number of NSI topics was reduced from five to two.

Appendix B

Working Group 28 – Weapons Two

Scope

The Department of Energy (DOE) issues guidance to classify information associated with weapon concepts that involve the use of a nuclear explosive as either the driver or in a directed energy device. Also, DOE issues guidance to classify information associated with testing of nuclear components in a manner that uses special nuclear material (SNM), but does not create a critical mass.

Background

Four classification guides were reviewed for the 2012 FCGR, two on energy weapons and two on testing of components not involving a critical mass:

- *Joint DOE/DoD Classification Guide for Nuclear Directed Energy Weapons* (CG-NDEW-2) contains guidance for the canceled Strategic Defense Initiative (SDI).
- *Joint DOE/DoD Classification Guide for Directed Nuclear Energy Systems* (CG-DNES-2) contains guidance for directed energy beams driven by a controlled (non-explosive) nuclear energy source.
- *Joint DOE/DoD Topical Classification Guide for Non-Nuclear Testing* (TCG-NNT-2) contains guidance on nuclear weapon testing not involving an actual nuclear explosion.
- *DOE Classification Guide for Subcritical Experiments* (CG-SCE-1) contains guidance on experiments typically performed at the Nevada National Security Site in an underground facility.

All of the above guides have undergone changes or revisions since the 2012 FCGR.

Summary of 2012 FCGR Analysis

NSI topics were either jointly owned equities of DOE and DoD, or topics uniquely owned by DOE or the DoD. CG-NDEW-2 contained five NSI topics, two of which were joint DOE/DoD equity. CG-DNES-2 contained 26 topics with DOE equities. TCG-NNT-2 contained 13 topics and CG-SCE-1 contained 6 NSI topics.

The DoD equity only topics provided challenges for guide users. These topics state, "See appropriate DoD guidance." These classification instructions were outdated, because most of these programs were canceled long ago and no points of contact were identified.

Identified four keystones, one for CG-NDEW-2 and three for CG-DNES-2. The keystones for the NSI topics in CG-SCG-1 and TCG-NNT-2 were physical security related (i.e., CG-SS-5).

2012 FCGR Recommendations

For CG-NDEW-2 it was recommended that the three topics addressing DoD equities and address them in the Broad Guidance and modify the declassification instructions for the two topics to a 50X2-WMD.

For CG-DNES-2 it was recommended that one topic be rewritten to conform to current guidance structure, three topics that address DoD equities be retained with their current declassification instructions (25X4; 50), twenty-three topics that address advances in DNES technologies and military requirements be modified to a 50X2-WMD exemption.

For TCG-NNT-2, it is recommended that two topic be retained as written, seven be rewritten to conform to current structure, five that address DoD or other agency equities be removed and addressed in Broad Guidance or via NOTE, and four revised to be consistent with TCG-VH-2.

Update CG-SCE-1 as necessary at the conclusion of other working group's efforts.

Implementation

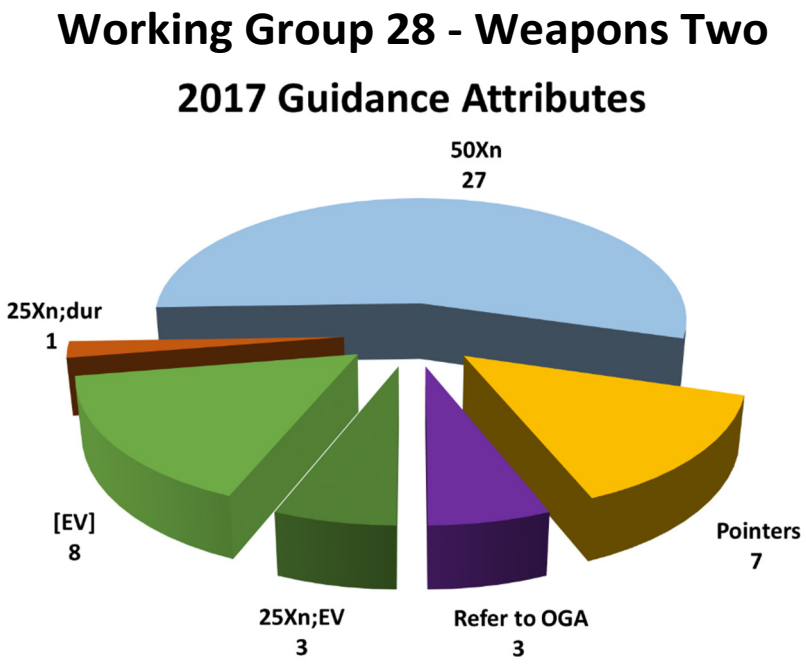
The 2012 FCGR recommendations were reviewed and coordinated with the appropriate subject matter experts. The DOE request for 50X2-WMD exemptions for certain NDEW and DNES information was approved by ISCAP on December 31, 2012 (per CG-HR-4 Change 1).

CG-NDEW-2 was approved on April 1, 2014. 2012 FCGR recommendations were implemented with the following the exception that three DoD-equity topics were retained with pointers to see DoD classification guidance. It was also reviewed as part of the 2017 FCGR.

CG-DNES-2 was approved on April 1, 2014. 2012 FCGR recommendations were implemented. It was also reviewed as part of the 2017 FCGR.

CG-NNT-3 was approved on February 3, 2017. 2012 FCGR recommendations were implemented with following some exceptions based upon operational needs and updated physical security guidance.

CG-SCE-1 Change 3 was approved on September 4, 2015. To complete its 2012 FCGR recommendations, two topics were combined and made consistent with CG-SS-5 topics and declassification instruction for one topic was updated to be consistent with the CG-HR-4 exemption.


Working Group 28 - Weapons Two
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[EV]
8
25Xn;EV
3
Refer to OGA
3
Pointers
7

Appendix B

Working Group 29 – Testing

Scope

The Department of Energy (DOE) maintains several classification guides related to nuclear weapon testing.

Background

DOE Classification Guide for Nuclear Explosion Monitoring (CG-NEM-1), *Joint DOE/Department of Defense (DoD) Classification Guide for Safeguard C* (CG-SGC-1), and *Joint DOE/DoD Topical Classification Guide for Weapon Testing* (TCG-WT-1) were reviewed for the 2012 FCGR.

CG-NEM-1 was used primarily by personnel who have nuclear explosion monitoring responsibilities, but are not directly involved in day-to-day operations. CG-SGC-1 was used as a basis for determining the level of classification of information concerning planning, support or execution of nuclear test operations and review of historical documents related to Safeguard C, which is the maintenance of the basic capability to resume nuclear testing in the atmosphere should it be deemed essential to national security. The guide also contains topics for the unlikely event of resumption of nuclear testing under the Safeguard C regime. CG-WT-1 was limited to the classification of information related to nuclear weapon testing.

Summary of 2012 FCGR Analysis

CG-NEM-1 contained 60 NSI topics representing equities belonging to the AFTAC. All topics were exempted from automatic declassification. The Office of Classification requested the assistance of the DOE Assistant Deputy Administrator for Nonproliferation Research and Development and AFTAC to review the topics in CG-NEM-1 against Executive Order (E.O.) 13526 requirements. The response from AFTAC provided links from CG-NEM-1 to their current guidance.

CG-SGC-1 contained 42 NSI topics representing equities belonging to the DoD, through the Defense Threat Reduction Agency (DTRA). Five of these topics refer to DoS or DTRA guidance for declassification instructions, seven topics have a 25-year declassification, and thirty topics have an event-driven declassification. The Office of Classification requested the assistance of DTRA to review the guidance in CG-SGC-1 against E.O. 13526 requirements. DTRA recommended that 37 topics be retained as is, 4 topics be retained with revised declassification instructions to have a 50X2-WMD, and the one remaining topic be retained with declassification instructions changed to 25X2; 50.

TCG-WT-1 contained 28 NSI topics representing equities shared between DOE and DoD. Of those, 15 were exempted from automatic declassification but had an event-driven declassification, one topic pointed to CG-ACVT-1, one topic referred to DTRA, and 11 have an event-driven declassification. Of the 15 topics exempted from automatic declassification, 4 are based on CG-NEM-1. The Office of Classification requested the assistance of DoD to review the guidance in TCG-WT-1 for their equities against E.O. 13526 requirements.

There are no unique DOE keystones.

2012 FCGR Recommendations

- Revise CG-NEM-1 when AFTAC has completed its FCGR.
- Incorporate DTRA recommendations into CG-SGC-1.
- One TCG-WT-1 topic needs to be revised to reflect WNP-114 (*Meteorological Restrictions at the Nevada Test Site*).
- To revise TCG-WT-1 topics that are based on or point to other guidance when that guidance has been revised.
- Change declassification instructions for the four TCG-WT-1 topics protecting United Kingdom equities from 25X6; EV to 25X9; EV.
- Change one TCG-WT-1 topic exemption to 50X2-WMD.
- Retain other TCG-WT-1 topics as is.

Implementation

The 2012 FCGR recommendations were reviewed and coordinated with the appropriate subject matter experts.

In CG-NEM-1, three NSI topics were retained as is. One new NSI topic was added. Forty-six topics now have instructions to refer the information to AFTAC. DOE OC is currently reviewing the April 2017 version of the AFTAC Security Classification Guide. The change in development will incorporate changes necessitated by the AFTAC guide.

CG-SCG-1 was approved by the on January 30, 2013. Five topic changes were made per DTRA recommendations, thus implementing the 2012 DOE FCGR recommendation for this guide.

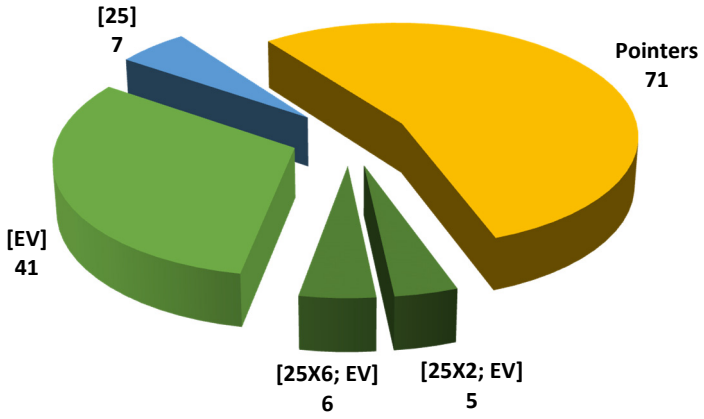
TCG-WT-1 was approved on August 3, 2015. This implemented the 2012 FCGR recommendations for this guide with the following clarifications:

- Classification of one topic affected by WNP-114 was changed to Unclassified.
- Exemptions for two topics were changed to 50X2-WMD.

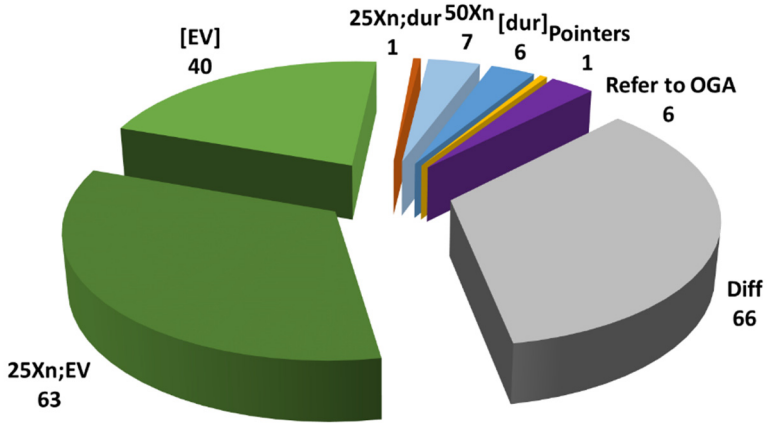
All recommendation were validated and implemented as appropriate.

Working Group 29 - Testing

2012 Guidance Attributes



2017 Guidance Attributes



Appendix B

Working Group 30 – Civilian Radioactive Waste

Scope

The *Joint DOE and NRC Sensitive Unclassified Information and Classification Guide for the Office of Civilian Radioactive Waste Management Program* (CG-OCRWM-1) provided guidance on classified and sensitive unclassified information associated with the DOE Office of Civilian Radioactive Waste Management's (RW) program for constructing and operating a geologic repository for the disposal of spent nuclear fuel and high-level radioactive waste at Yucca Mountain, Nye County, Nevada.

The *Joint DOE/NRC/DOT/DHS Classification and Sensitive Unclassified Information Guide for the Transportation of Radioactive Waste to Yucca Mountain* (CG-RWT-1) provided guidance on sensitive unclassified information and classified information associated with the RW program, and the RW Transportation System for the transport of non-Naval spent nuclear fuel and high-level waste to Yucca Mountain.

Both classification guides were cancelled during the 2012 FCGR following the shutdown of this program.

Background

The budget for the geologic repository for the disposal of spent nuclear fuel and high-level radioactive waste at Yucca Mountain, Nye County, Nevada, was eliminated.

Summary of 2012 FCGR Analysis

CG-OCRWM-1 contained 80 NSI topics and CG-RWT-1 contained 78 NSI topics.

In correspondence dated July 26, 2011, the Office of Classification requested that the Nuclear Regulatory Commission (NRC) review CG-OCRWM-1 per section 1.9 of EO 13526 and either concur with the DOE recommendation to cancel the guide or to proceed with a working group to update the guide to comply with the Executive order. NRC concurred with cancellation of the guide.

In correspondence dated July 26, 2011, the Office of Classification requested that the NRC, Department of Transportation (DOT), and Department of Homeland Security (DHS) review CG-RWT-1 per section 1.9 of EO 13526 and either concur with the DOE recommendation to cancel the guide or to proceed with a working group to update the guide to comply with the Executive order. NRC, DOT, and DHS concurred with cancellation of the guide.

2012 FCGR Recommendations

With the concurrence of the other agencies and the DOE program office, CG-OCRWM-1 and CG-RWT-1 were cancelled on October 10, 2011. If the program were to be restarted, the need for a specific program classification guide would be revisited.

Appendix B

Implementation

The 2012 FCGR recommendation to cancel the classification guides was reviewed and coordinated with the appropriate subject matter experts. Following the cancellation of these two guides, 158 topics were eliminated.

The status of these cancelled classification guides was reviewed and validated for the 2017 FCGR.

Appendix B

Working Group 31 - Weapons One

Scope

Four DOE classification guidance documents addressing nuclear weapons were identified for review.

Background

Joint DOE/DoD Nuclear Weapon Classification Policy Guide (CG-W-5), *Topics Retained from the Joint DOE-DoD Nuclear Weapons Classification Guide* (CG-W-4, Rescission), The *Joint DOE/DoD Topical Classification Guide for Nuclear Weapon Use Control* (TCG-UC-3), and *Joint DOE/DoD Topical Classification Guide for Nuclear Weapon Materials* (TCG-WM-2) were reviewed for the 2012 FCGR.

CG-SS-5 provided information concerning the classification to be assigned to information about the development, design, manufacture, or use of nuclear weapons. CG-W-4, Rescission, provided similar information as CG-W-5. TCG-UC-3 provided guidance concerning the classification of positive measures that, given access to a nuclear weapon, permit the authorized use and prevent or delay the unauthorized use of nuclear weapons. TCG-WM-2 provided classification of materials used in the DoD and DOE for research, development, testing and production of nuclear weapons.

These guides have been in the process of revision since early 2013 until present with some new changes already approved.

Summary of 2012 FCGR Analysis

- CG-W-4, Rescission, contained nine NSI DoD-equity topics.
- CG-W-5 contained 10 NSI topics with pointers to topics in other guides.
- TCG-UC-3 contained 11 NSI topics, 5 with DoD equities and 6 with NSA equities.
- TCG-WM-2 contained three NSI topics for equities belonging to the United Kingdom.

Because all NSI topics represented equities of other agencies or point to topics in other guides, additional analysis was not required. There were no unique DOE keystones.

2012 FCGR Recommendations

- Delete the nine NSI topics from CG-W-4, migrate all other topics into a revision of CG-W-5, and cancel CG-W-4.
- Update all NSI topics in CG-W-5 that refer to other guides to be consistent with their basis topics found in TCG-WPMU-2, TCG-WT-1, and WNP-122.
- In next change to TCG-UC-3, delete the note requested by NSA.
- In next change to TCG-WM-2, change the declassification instructions for the NSI topics to be consistent. Recommended declassification instruction is: "[25X9; EV] Declassification of this information will be based on the provisions of the 1958 U.S. –

UK Mutual Defence Agreement and will be implemented upon agreement of the U.S. and the UK to declassify."

Implementation

The 2012 FCGR recommendations were reviewed and coordinated with the appropriate subject matter experts. Before the completion of the 2012 FCGR, two of the recommendations were implemented as follows:

TCG-UC-3, Change 5, was approved on July 26, 2012, implementing its 2012 FCGR recommendations. TCG-UC-3, Change 6 was approved November 7, 2014, and was reviewed for the 2017 FCGR. TCG-UC-3 now has nine NSI topics with DOE and NSA equities, all of which have been validated for the 2017 FCGR.

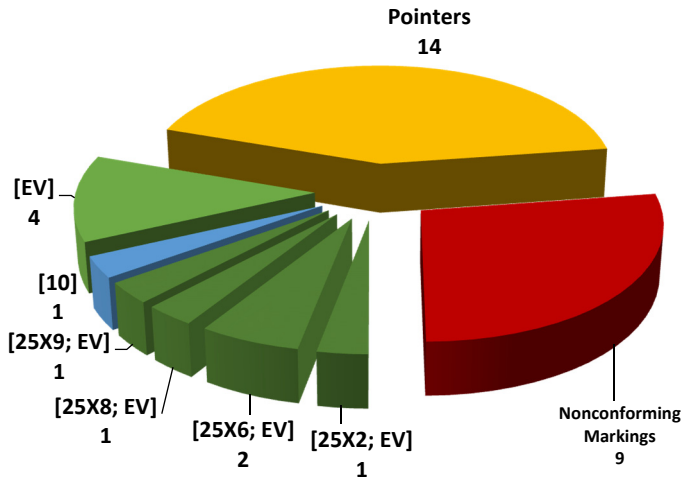
TCG-WM-2 Change 1 was approved on April 5, 2014, implementing its 2012 FCGR recommendations. This was reviewed and validated for the 2017 FCGR.

CG-W-5, Change 14 was approved on January 18, 2012. Changes included updates to reflect the current guidance in TCG-WPMU-2, TCG-WT-1, and WNP-122, and one topic was eliminated. With this change, CG-W-4 was canceled. CG-W-5, Change 15 was approved on August 25, 2016. CG-W-5 now has nine unique NSI topics, all of which have been validated for the 2017 FCGR.

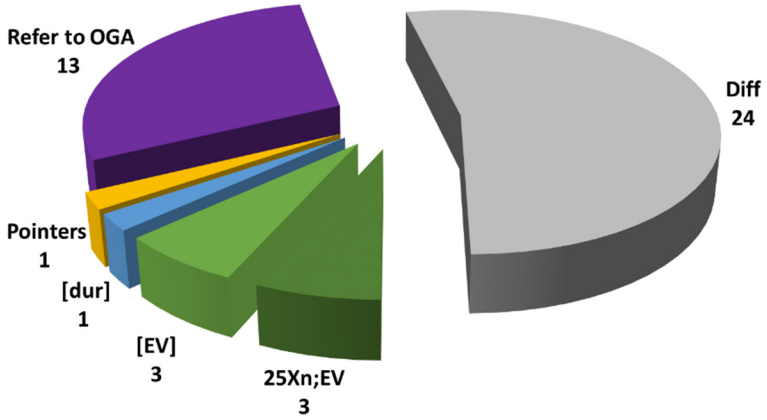
From the start of the 2012 FCGR, 22 NSI topics were eliminated.

Working Group 31 - Weapons One

2012 Guidance Attributes



2017 Guidance Attributes



Appendix B

Working Group 32 - Radiation Hardened Microelectronics

Scope

DOE in conjunction with the Department of Defense maintains a classification guide related to the radiation hardening of microelectronics.

Background

The *Joint DOD-DOE Radiation Hardened Microelectronics Guide* was reviewed for the 2012 FCGR. This guide provided a basis for determining levels of security classification to be assigned to information concerning the design, processing, fabrication, and testing of electronic devices that are hardened to withstand the effects of radiation environments. The continued availability of radiation hardened microelectronics and the technologies used harden microelectronic devices is a key element of national security for DoD space and missile systems to include nuclear weapons. The guide had not been updated since January 1989 and was not in compliance with the Executive order. As a result, a classification working group was convened in December 2009 to revise the *Joint DOD-DOE Radiation Hardened Microelectronics Guide*. The 2012 FCGR was conducted concurrently with the rewrite of this guide.

Summary of 2012 FCGR Analysis

A total of 38 NSI topics were reviewed. Of those topics:

- 21 had no declassification instructions.
- 17 had declassification instructions of "Originating Agency's Determination Required."

As a whole, the topics did not reflect technologies now published in the commercial sector. The use of radiation hardening techniques to achieve high levels of immunity had been widely published in the commercial sector as had the partial details of radiation hardening by process approaches. Thus, the guidance to control the distribution of piece-part radiation hardening technical data must be cognizant of the existing open literature.

The specific keystones are:

- System level hardness and vulnerabilities.
- Unique design details and material improvements that are not commercially available.

2012 FCGR Recommendations

- Revise declassification instructions of twenty-eight topics to be compliant with Executive Order 13526.
- Delete six topics by combining them with other topics.
- Add a chapter with one new NSI topic to cover the classification of information related to neutron-induced displacement damage.
- Declassify three topics.
- Declassify in part one topic.

- Upgrade classification of three topics, in order to resolve a shortcoming in the classification of energy disposition from classified sources and promising techniques for elimination devices that fail at low thermo-mechanical stress levels.
- Seven topics to be exempt from automatic declassification at 25 years ([25x8]), with instructions to declassify at 50 years.
- Twenty-five topics with instructions to declassify at 25 years.
- Identification of DoD as NSI original classification authority for this information.

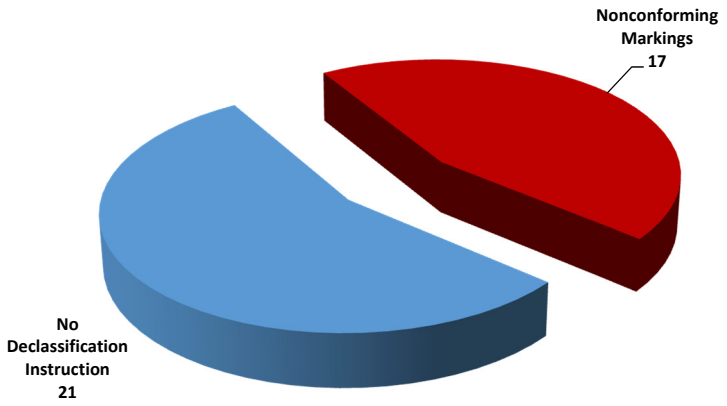
Implementation

The 2012 FCGR recommendations were reviewed and coordinated with the appropriate subject matter experts. All recommendations were implemented before the completion of the 2012 FCGR. Following DoD approval on October 19, 2011, CG-MIC-1 was approved on November 17, 2011.

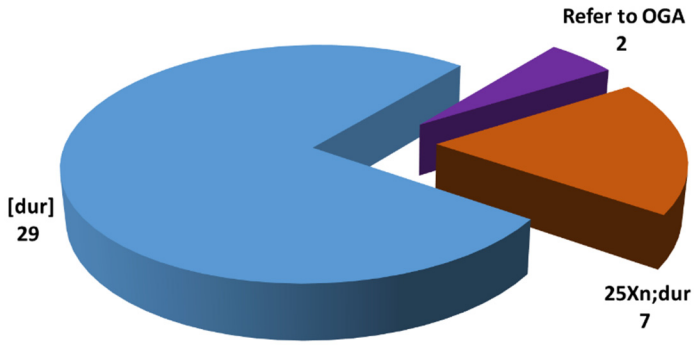
CG-MIC-1 Change 1 is in the review and concurrence process before approval. This change included a review and validation of the NSI topics for the 2017 FCGR. No changes to the NSI topics were identified.

Working Group 32 - Radiation Hardened Electronics

2012 Guidance Attributes



2017 Guidance Attributes



Appendix B

Working Group 33 – Treaties

Scope

Classification guidance is required for the Department of Energy (DOE) Office of Nuclear Verification to accomplish activities in the area of treaty negotiation as well as to support activities to evaluate treaty compliance and treaty verification technologies.

Background

Four classification guides were reviewed for the 2012 FCGR. These guides were grouped together due to their relationship to programs pertaining to treaty development, negotiation, and verification. Many of these topics addressed equities shared between the DOE, Department of Defense (DoD), and Department of State (DOS); however, some addressed equities solely belonging to the DOS.

The four classification guides identified for review were:

- *DOE Classification and UCNI Guide for Arms Control and Verification Technology* (CG-ACVT-1) addresses information related to arms control treaties and the technologies used to ensure treaty compliance by other countries.
- *Joint DOE/DoD Classification Guide for Arms Control Negotiations* (CG-ACN-1) addresses information related to treaty protocols, options and negotiating positions, as well as assessments of reactions by other countries to these options.
- *Classification Guide for Plowshare Program and Treaty Verification* (CG-PPTV-1) addresses information pertaining to peaceful uses of nuclear weapons (primarily the Plowshare Program) and identified information that has been declassified about the program.
- *DOE Classification Guide for Nonproliferation of Weapons Information* (CG-NP-3) addresses information pertaining to nuclear nonproliferation treaties that are negotiated between the U.S. and foreign governments.

Summary of 2012 FCGR Analysis

The reviewed guides contained a total of 177 NSI topics, many with joint or other agency equities.

The keystones identified are:

- Treaty negotiation stances that maintain and maximize outcome.
- Technical details which, if known to a treaty party, would allow circumvention of detection and verification protocols.

Considering the four guides overall, the program office confirmed that the protection of negotiating positions and subsequent analysis represented information critical to national security, because future treaty approaches and methodologies depend in large part on past treaties. Furthermore, even if many of the techniques and methodologies used to monitor treaty

compliance are well known and publicly available, the specific positioning by DOS, DoD, and DOE should be classified to protect leverage of positions as well as future negotiating stances, thereby justifying the exemption from automatic declassification at 25 years. These topics should remain event-driven, with declassification only when jointly approved by the cognizant agencies.

2012 FCGR Recommendations

- Maintain the 25X exemptions now stated in the existing guides.
- Delete topics in CG-ACN-1 that refer to CG-SS-4 topics related to physical security issues at DOE sites, and refer the derivative classifier to the relevant topics in CG-SS-4 or subsequent guides.

Implementation

The 2012 FCGR recommendations were reviewed and coordinated with the appropriate subject matter experts.

CG-ACVT-2 approved on September 6, 2013.

CG-PPTV-1 was approved by the DOE Office of Classification on September 6, 2013.

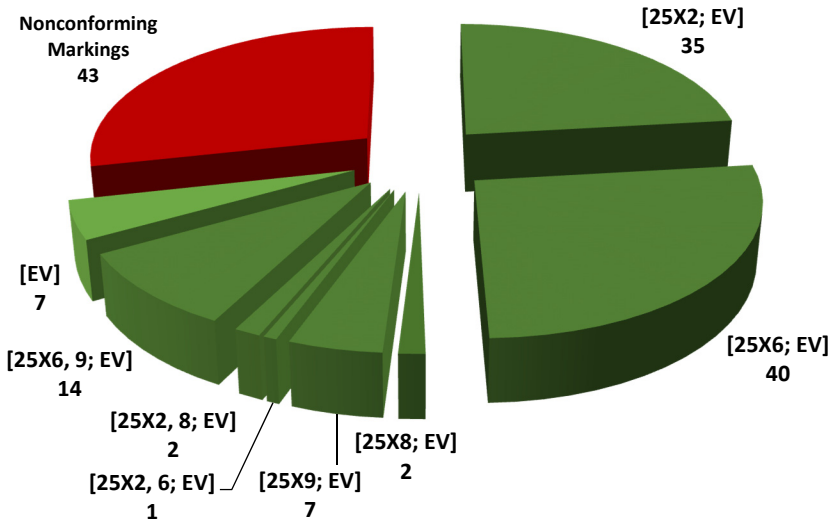
During development of CG-ACN-1, Change 4, which was approved May 5, 2017, it was determined that the 25X exemptions within the guide should no longer be maintained and that a declassification duration of 25 years with a referral to DOS for review of their equity would be sufficient to protect the information. The upcoming new versions of CG-ACVT-2 and CG-NP-4 will also implement this change to the 2012 FCGR recommendations.

CG-ACN-1, Change 4, all topics relating to safeguards and security have been removed, referring the user to appropriate DOE and/or DoD guidance. Additionally, because many RD/FRD topics were repetitious of topics in other guides, these RD/FRD topics relating to weapon design and military use were removed and users referred to topical classification guides. CG-ACN-1 is now properly focused on NSI information associated with negotiations.

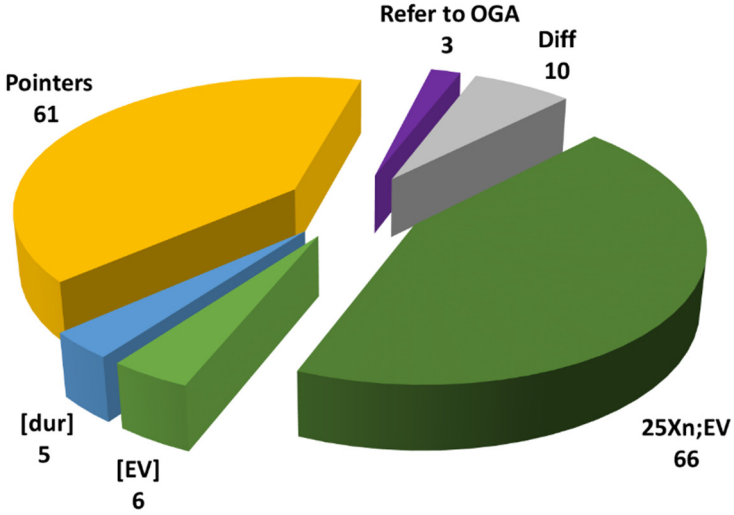
All guides were reviewed and validated for the 2017 FCGR.

Working Group 33 - Treaties

2012 Guidance Attributes



2017 Guidance Attributes



Appendix B

Working Group 34 – Chemical/Biological Programs

Scope

Department of Energy (DOE) work related to chemical and biological (C/B) agents is part of the Strategic Partnership Projects (SSP, formerly work for others (WFO) program) where other Federal agencies and non-Federal organizations can take advantage of DOE expertise. The work in this area consists of focused technology development for facility protection and a broad-based research and development program, purely defensive in nature, with the goal of reducing the threat of C/B weapons of mass destruction. This encompasses information, technologies, and systems that may be used to prevent, detect, mitigate, or otherwise defensively respond to the threatened or actual use of chemical or biological weapons.

Background

Classification Guide for Chemical/Biological Defense Information (CG-CB-2) was reviewed during the 2012 FCGR. CG-CB-2 addressed information about development, use, deployment, defeat, and destruction of chemical and biological agents. The guide was developed for the DOE laboratories to be used in accomplishing work for customers within the laboratory, and for external customers requesting laboratory expertise through the SPP program. These external customers may not have adequate classification guidance for their programs related to C/B activities.

Summary of 2012 FCGR Analysis

Keystone:

- Protect development, production, and use of C/B weapons of mass destruction.

In CG-CB-2, 50 National Security Information (NSI) topics were identified. Seven referred to other topics within the guide; twenty-six addressed information that is the equity of other agencies (only seven topics had declassification instructions), and seventeen topics addressed unique DOE equities. Of those 17 topics:

- Seven topics were exempt from automatic declassification at 50 years. These 7 topics had an incorrect declassification instruction of Secret (S) NSI [25X2; 100].
- Two topics were exempt from automatic declassification at 25 years and had event-driven declassification instructions.
- Eight topics required declassification at 25 years.

Information concerning the detection and destruction of C/B agents was considered less of a security risk because developments in these areas are driven more by commercial developments and technologies and benefit is realized through exchanges with these commercial entities. Therefore, a classification level of Secret and a duration of 25 years was determined sufficient.

Determined the duration for two topics citing 25X2 exemptions should be changed to 50 years. These two topics related to the inability to detect an agent, and modeling activities. Fifty years

was determined to be an adequate duration of classification due to independent advancement in these areas.

2012 FCGR Recommendations

- Revise the topics related to agent and dispersal information to be exempt from declassification at 50 years. This will affect eight topics.
- Revise the topics related to detection and destruction technologies to declassify the information at 25 years. This will affect eight topics.
- Change one topic with a [25X2; EV] to [25X2; 50].
- Revise three animal-use topic that are clearly another agency equity from [25X2; EV] to referral.
- Retain four remaining other agency equities as is.

Implementation

The 2012 FCGR recommendations were reviewed and coordinated with the appropriate subject matter experts.

During development of CG-CB-3 to implement the 2012 recommendations, DOE determined that DCs were rarely using topics in CG-CB-2 to derivatively classify information, and the few topics that were being used were far too broad and subjective for DC use. We decided to shift to specific original classifications if the need arises based on a clear identification of the damage to national security.

The Office of Classification is currently in the process of canceling CG-CB-2. Upon cancellation, no DOE guidance will protect C/B defense information at classified. We will retain a guideline for the identification of unclassified information in this subject area to assist DOE programs, laboratories, and facilities. Other agency guides will be referred to, as necessary, for classified information; and original classification determinations may be required by DOE for future developments. Cancellation of CG-CB-2 will eliminate 51 NSI topics.

This decision to cancel all current DOE classification guidance for C/B defense information was reviewed and validated for the 2017 FCGR.

Appendix B

Working Group 35 - NA-20

Scope

A diverse group of classification guides addresses the classification of verification methodologies developed and used by the Department of Energy (DOE) in support of non-proliferation activities, treaty monitoring and other activities as defined by the National Nuclear Security Administration, Office of Defense Nuclear Nonproliferation (NA-20). These technologies are used to directly and indirectly monitor signatures of nuclear activities in countries of a proliferation concern.

Background

Six classification guides were identified for the 2012 FCGR review:

- *Chemical Analysis by LASER Interrogation of Proliferation Effluents Program* (CALIOPE) guide classifies lasers and detection methods used to identify and characterize effluents emitted by nuclear proliferation activities.
- *Classification Guide for Remote Ultra Low Light Imaging* (CG-RULLI-1) classifies information for the RULLI program that used "single photon" imaging of light signals to assist in determining phenomena that could be associated with clandestine nuclear activities.
- *Joint DOE/DoD Classification Guide for the Nuclear Test Detection Satellite (Project VELA and VELA Follow-On)* (CG-WV-5) classifies information in Project VELA and the VELA Follow On programs, that were terminated in September 1984. The program used radiation monitoring technologies to detect nuclear weapon tests.
- *The Cibola Flight Experiment* program (CG-CFE-1) has the primary mission of testing a reconfigurable processor payload intended for Low Earth Orbit to further the technology for detecting nuclear electromagnetic pulse (EMP).
- *Classification Guide for the Beacon Program* (CG-BP-1) classifies information associated with the Beacon Program, which used imaging technologies to identify ground activity that could be associated with clandestine nuclear activities.
- *Classification Guide for the Multi Spectral Thermal Imaging (MTI) Program* (CG-MTI-1) classifies information in a program that uses thermal imaging of the ground to identify variations that would indicate potential nuclear proliferation activities.

Summary of 2012 FCGR Analysis

The keystones identified were:

- Treaty negotiation stances that maintain and maximize outcome.
- Technical details which, if known to a treaty party, would allow circumvention of detection and verification protocols.

Of the seven joint equity topics in CG-MTI-1, three involve DOE sites that directly support the NA-20 program, and the remaining four pertain to MTI performance information that could reveal techniques to counter the ability to measure treaty non-compliance. It was determined that

satellite technologies, including the performance of the MTI satellite, are continuing to evolve; thus a classification duration of 50 years is adequate.

2012 FCGR Recommendations

- Integrate these six individual program guides into one general guide, containing individual chapters to address specific information about each program. The consolidation would reduce the number of individual guides requiring management, and guidance required by the NA-20 program office would be available in one location.
- Revise the seven joint equity topics in CG-MTI-1 to require automatic declassification at 50 years.
- Because the topics relate primarily to equities of another agency, review the guides for necessary revisions after the other agency has completed their Fundamental Classification Guidance Review activities.

Implementation

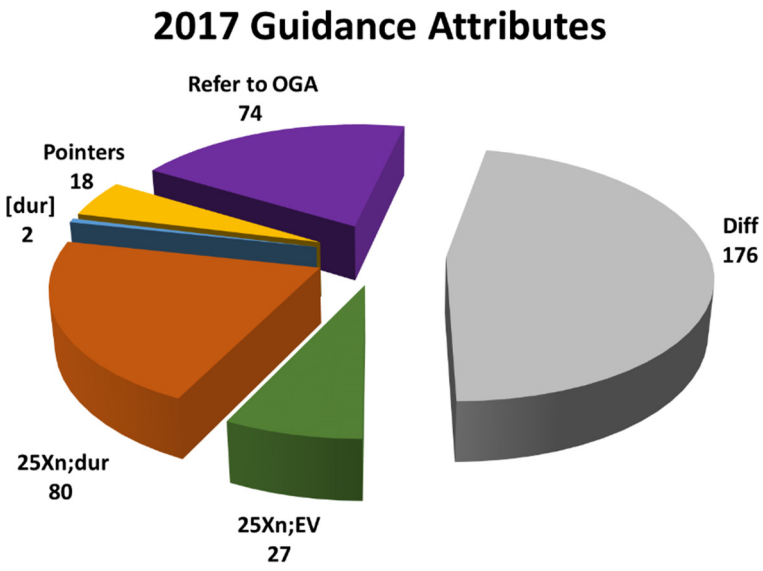
The recommendations were reviewed and coordinated with the appropriate subject matter experts. All recommendations were validated and implemented as appropriate.

Five guides were consolidated into the *Classification Guide for Proliferation* Detection, CG-PD-1, which was approved on May 5, 2017. The joint equity topics from CG-MTI-1 have been revised so their declassification instruction is 50 years. WV topics were rewritten to protect the DOE equity, then referring the user to the Air Force. This change was coordinated with the DoD and allowed WV NSI guidance to be changed from a joint equity to DOE only. CG-PD-1 topic declassification instructions were rewritten to protect the DOE equity and then refer to the other agency for declassification review. Many topics were changed from event-driven declassification to duration-driven declassification. All topics were rewritten to protect DOE equities and then refer the user to other government agencies for declassification review of non-DOE equities.

After discussions with the program office, it was determined that CG-RULLI-1 should not be integrated into the general guide due to current operations. CG-RULLI-1 Change 1 incorporates TNP-66 and is in the review and approval process.

This guide was reviewed and evaluated for the 2017 FCGR.

Working Group 35 - NA-20



Appendix B

Working Group 36 – High Power Radio Frequency

Scope

The High Power Radio Frequency Program (HPRF) related to an Air Force program whose purpose was to utilize a nuclear weapon to drive a source or fixture to produce high energy output for defense purposes. The Defense Threat Reduction Agency (DTRA) is the oversight office for such programs, and the Air Force Nuclear Weapons Center (AFNWC) was the owner of the program. The HPRF program never resulted in any design of a system to perform as an HPRF source - all activities ended in the mid-1990s.

Background

Classification guidance addressing this program is contained in one DOE guide, the *Classification Guide for High Power Radio Frequency (HPRF) Program* (CG-HPRF-2). The guide was generated in the 1990s to support the HPRF program, which was intended to investigate the design of a system that could provide high-level energies for use against an adversary. This was reviewed for the 2012 FCGR.

Summary of 2012 FCGR Analysis

The guide contained seven NSI topics. All NSI topics were determined to address equities belonging to the AFNWC. After review, it was confirmed that all DOE information being protected is adequately identified in other joint DOE/DoD Topical Classification Guides (TCG) or DTRA guides which base the classification requirements on the TCGs. The TCGs for Nuclear Assembly Systems, Use Control and Vulnerability/Hardening are the guides which contain the topics necessary to protect the DOE information contained in the CG-HPRF-2 Classification Guide.

2012 FCGR Recommendations

- Transfer responsibility for the NSI topics in this guide to the AFNWC.
- Cancel CG-HPRF-2 once the AFNWC has accepted responsibility for the NSI topics.

Implementation

The 2012 FCGR recommendations were implemented soon after the completion of the 2012 FCGR with the cancellation of CG-HPRF-2, July 17, 2012.

Appendix B

Working Group 37 – United Kingdom

Scope

The United States and the United Kingdom signed a treaty in 1958 to share certain information about nuclear materials production and nuclear weapons development. Known as *The Agreement between the Government of the United Kingdom of Great Britain and Northern Ireland and the Government of the United States of America for Co-operation on the Uses of Atomic Energy for Mutual Defense Purposes*, it has been revised on several occasions since issuance. There are seven current DOE classification guides containing NSI topics governed by this treaty with the United Kingdom.

Background

The classification guidance documents reviewed for the 2012 FCGR were:

- Classification bulletin GEN-17, *Association of U.K. and U.S. Nicknames* – addressed material nickname associations.
- The *DOE Classification Guide for Nuclear Materials Production* (CG-NMP-2), addresses the United States and United Kingdom material barter programs.
- *Joint DOE/DoD Topical Classification Guide for Nuclear Weapons Materials* (TCG-WM-2) – pertains to the same subject addressed by GEN-17.
- *Joint DOE/DoD Topical Classification Guide for Weapons Testing* (TCG-WT-1) – addresses United Kingdom participation in weapon testing.
- *DOE Classification Guide for Subcritical Experiments* (CG-SCE-1) – addresses United Kingdom participation in subcritical testing programs.
- *Joint Classification Guide for the Exchange and Safeguard of Materiel between the United States and the United Kingdom* (CG-UK-2) – addresses detailed information on the United States and United Kingdom barter programs.
- *DOE Classification and UCNI Guide for Radiological Emergency Response* (CG-RER-1) – addresses information involving Radiological Emergency Response.
- *Joint U.S./UK Classification Guide for Nuclear Weapons* (CG-US/UK-NUC-1) – addresses nuclear weapons information exchanged between the United States and the United Kingdom.

Summary of 2012 FCGR Analysis

Topics involving United Kingdom information equities were compiled from these eight classification guidance documents. The number of topics ranged from two complete guides to a few topics, for a total of 76 topics. These topics were addressed as follows:

- GEN-17 – one topic with a declassification instruction of OADR.
- CG-NMP-2 – two topics exempted from automatic declassification at 25 years (25X6) with event-driven declassification instructions.
- TCG-WM-2 – three topics exempt from automatic declassification at 25 years (25X6 and 25X9) with event-driven declassification instructions.

- TCG-WT-1 – four topics exempt from automatic declassification at 25 years (25X6) with event-driven declassification instructions.
- CG-SCE-1 – one topic exempt from automatic declassification at 25 years (25X6) with an event-driven declassification instruction.
- CG-UK-2 – Forty-two topics:
    - Twenty-nine topics exempt from automatic declassification at 25 years (25X9) with event-driven declassification instructions.
    - Thirteen topics with event-driven declassification instructions.
- CG-RER-1) – one topic exempt from automatic declassification at 25 years (25X6) with an event-driven declassification instruction.
- CG-US/UK-NUC-1 – Twenty-two topics:
    - Twenty topics exempt from automatic declassification at 25 years (25X6) with event-driven declassification instructions.
    - Two topics with event-driven declassification instructions.

One keystone was identified – protection of information belonging to the United Kingdom.

Detailed analysis was provided to the responsible official in the United Kingdom, including the United States recommendations concerning each topic. The response received from the United Kingdom confirmed that current classification levels and declassification instructions were adequate. However, the DOE Office of Classification analysis concluded that the majority of the "25Xn" topics should be 25X9, not 25X6, because the information protected is subject to the U.S./UK Mutual Defense Treaty. Only two appear to meet the criteria for exemption from automatic declassification based on Executive Order (E.O.) 13526, Sec. 3.3 (b)(6) as Foreign Government Information.

The fifteen topics with event-driven declassification instructions were determined to be E.O. 13526 for exemption from declassification at 25 years.

The one topic addressed by classification bulletin GEN-17 was redundant, as the information was adequately addressed in TCG-WM-2.

2012 FCGR Recommendations

- Engage the United Kingdom responsible officials to confirm that 25X9 is the appropriate criterion for 58 of the topics that meet the requirement in E.O. 13526, Sec. 3.3 (b)(9) and are treaty driven. Confirm with the United Kingdom that only two topics meet the criteria for exemption from automatic declassification based on E.O. 13526, Sec. 3.3 (b)(6) and should be 25X6.
- Cancel classification bulletin GEN-17, as this topic is adequately addressed in TCG-WM-2. (Cancellation of this bulletin requires United Kingdom concurrence.)

Implementation

The 2012 recommendations were reviewed and coordinated with the appropriate subject matter experts. All recommendations were validated and implemented as appropriate eliminating eight NSI topics.

GEN-17 superseded by TCG-WM-2 on March 5, 2014. Redundant NSI topic in GEN-17 eliminated.

CG-NMP-2 Change 5 was approved on January 23, 2017. Declassification instructions on the two NSI topics in CG-NMP-2 were changed to 25X9; EV.

TCG-WM-2 Change 1 supersedes GEN-17 and was approved on March 5, 2014. Declassification instructions on the three NSI topics in TCG-WM-2 were changed to 25X9; EV.

TCG-WT-1 Change 10 was approved on August 3, 2015. Declassification instructions on the four NSI topics in TCG-WT-1 were changed to 25X9.

CG-SCE-1 Change 3 was approved on September 4, 2015. Declassification instructions on the one NSI topic in CG-SCE-1 was changed to 25X9.

CG-UK-2 was reviewed with the UK on February 2, 2016 and no changes were recommended. Declassification instructions on the 29 NSI topics in CG-UK-2 were retained as 25X9; EV. Another 13 topics were retained with event-driven declassifications.

CG-RER-1 Change 3 was approved on February 14, 2015. Declassification instructions on the one NSI topic in CG-RER-1 was changed to 25X9.

CG-US/UK-NUC-1 Change 1 is in the review and approval process. Declassification instructions on the 20 NSI topics in CG-US/UK-NUC-1 were changed from 25X6; EV to 25X9; EV. One topic had its declassification instruction changed to 50X2-WMD at the request of the DTRA. This change is also implementing changes in FRD and RD guidance. The change will be published once the FRD and RD topics have been changed and coordination is completed with the United Kingdom.

Working Group 37 - United Kingdom

2017 Guidance Attributes