

ILLINOIS REGISTER

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ILLINOIS EMERGENCY MANAGEMENT AGENCY

NOTICE OF PROPOSED AMENDMENT

TITLE 32: ENERGY  
CHAPTER II: ILLINOIS EMERGENCY MANAGEMENT AGENCY  
SUBCHAPTER b: RADIATION PROTECTION

PART 337  
PHYSICAL PROTECTION OF CATEGORY 1 AND CATEGORY 2  
QUANTITIES OF RADIOACTIVE MATERIAL

SUBPART A: GENERAL INFORMATION

Section	
337.10	Purpose
337.20	Scope
337.30	Incorporations by Reference
337.40	Definitions
337.50	Specific Exemptions

SUBPART B: BACKGROUND INVESTIGATIONS AND  
ACCESS CONTROL PROGRAM

Section	
337.1010	Personnel Access Authorization Requirements for Category 1 or Category 2 Quantities of Radioactive Material
337.1020	Access Authorization Program Requirements
337.1030	Background Investigations
337.1040	Requirements for Criminal History Records Checks of Individuals Granted Unescorted Access to Category 1 or Category 2 Quantities of Radioactive Material
337.1050	Relief from Fingerprinting, Identification, and Criminal History Records Checks and Other Elements of Background Investigations for Designated Categories of Individuals Permitted Unescorted Access to Certain Radioactive Materials
337.1060	Protection of Information
337.1070	Access Authorization Program Review

SUBPART C: PHYSICAL PROTECTION REQUIREMENTS DURING USE

Section	
337.2010	Security Program
337.2020	General Security Program Requirements

ILLINOIS REGISTER

---

ILLINOIS EMERGENCY MANAGEMENT AGENCY

NOTICE OF PROPOSED AMENDMENT

- 337.2030 LLEA Coordination
- 337.2040 Security Zones
- 337.2050 Monitoring, Detection and Assessment
- 337.2060 Maintenance and Testing
- 337.2070 Requirements for Mobile Devices
- 337.2080 Security Program Review
- 337.2090 Reporting of Events

SUBPART D: PHYSICAL PROTECTION IN TRANSIT

- Section
- 337.3010 Additional Requirements for Transfer of Category 1 and Category 2 Quantities of Radioactive Material
- 337.3020 Applicability of Physical Protection of Category 1 and Category 2 Quantities of Radioactive Material During Transit
- 337.3030 Preplanning and Coordination of Shipment of Category 1 or Category 2 Quantities of Radioactive Material
- 337.3040 Advance Notification of Shipment of Category 1 Quantities of Radioactive Material
- 337.3050 Requirements for Physical Protection of Category 1 and Category 2 Quantities of Radioactive Material During Shipment
- 337.3060 Reporting of Events

SUBPART E: RECORDS

- Section
- 337.5010 Form of Records
- 337.5020 Record Retention

SUBPART F: ENFORCEMENT

- Section
- 337.6010 Resolution of Conflicting Requirements During Transition Period

337.APPENDIX A Category 1 and Category 2 Radioactive Material

AUTHORITY: Implementing and authorized by Section 10 of the Radiation Protection Act of 1990 [420 ILCS 40/10].

ILLINOIS REGISTER

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ILLINOIS EMERGENCY MANAGEMENT AGENCY

NOTICE OF PROPOSED AMENDMENT

SOURCE: Adopted at 40 Ill. Reg. 4850, effective February 26, 2016; amended at 42 Ill. Reg. 7485, effective April 4, 2018; amended at 47 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_.

SUBPART B: BACKGROUND INVESTIGATIONS AND  
ACCESS CONTROL PROGRAM

**Section 337.1040 Requirements for Criminal History Records Checks of Individuals  
Granted Unescorted Access to Category 1 or Category 2 Quantities of Radioactive Material**

- a) General Performance Objective and Requirements
  - 1) Except for those individuals listed in Section 337.1050 and those individuals grandfathered under Section 337.1030(d), each licensee subject to the provisions of this Subpart shall fingerprint each individual who is to be permitted unescorted access to category 1 or category 2 quantities of radioactive material. Licensees shall transmit all collected fingerprints to the NRC for transmission to the FBI. The licensee shall use the information received from the FBI as part of the required background investigation to determine whether to grant or deny further unescorted access to category 1 or category 2 quantities of radioactive material for that individual.
  - 2) The licensee shall notify each affected individual that his or her fingerprints will be used to secure a review of his or her criminal history record and shall inform him or her of the procedures for revising the record or adding explanations to the record.
  - 3) Fingerprinting is not required if:
    - A) A licensee is reinstating an individual's unescorted access authorization to category 1 or category 2 quantities of radioactive material;
    - B) The individual returns to the same facility that granted unescorted access authorization within 365 days after termination of his or her unescorted access authorization; and
    - C) The previous unescorted access authorization was terminated under favorable conditions.

ILLINOIS REGISTER

---

ILLINOIS EMERGENCY MANAGEMENT AGENCY

NOTICE OF PROPOSED AMENDMENT

- 4) Fingerprints are not required if an individual who is an employee of a licensee, contractor, manufacturer or supplier has been granted unescorted access to category 1 or category 2 quantities of radioactive material, access to safeguards information or safeguards information-modified handling by another licensee based upon a background investigation conducted under this Subpart, the Fingerprint Orders or 10 CFR 73. An existing criminal history records check file may be transferred, in accordance with Section 337.1060(c), to the licensee asked to grant unescorted access.
  - 5) Licensees shall use the information obtained as part of a criminal history records check solely for the purpose of determining an individual's suitability for unescorted access authorization to category 1 or category 2 quantities of radioactive material.
- b) Prohibitions
- 1) Licensees may not base a final determination to deny an individual unescorted access authorization to category 1 or category 2 quantities of radioactive material solely on the basis of information received from the FBI involving:
    - A) An arrest more than one year old in which there is no information of the disposition of the case; or
    - B) An arrest that resulted in dismissal of the charge or an acquittal.
  - 2) Licensees may not use information received from a criminal history records check obtained under this Subpart in a manner that would infringe upon the rights of any individual under the First Amendment to the Constitution of the United States nor shall licensees use the information in any way that would discriminate among individuals on the basis of race, religion, national origin, gender or age.
- c) Procedures for Processing of Fingerprint Checks
- 1) For the purpose of complying with this Subpart, licensees shall use an appropriate method listed in 10 CFR 37.7 to submit to the U.S. Nuclear

ILLINOIS REGISTER

---

ILLINOIS EMERGENCY MANAGEMENT AGENCY

NOTICE OF PROPOSED AMENDMENT

Regulatory Commission, Director, Division of Physical and Cyber Security Policy Facilities and Security, 11545 Rockville Pike, ATTN: Criminal History Program/Mail Stop ~~T-07D04MT-7D04M~~, Rockville MD 20852, one completed, legible standard fingerprint card (Form FD-258, ORIMDNRCOOOZ), electronic fingerprint scan or, where practicable, other fingerprint record for each individual requiring unescorted access to category 1 or category 2 quantities of radioactive material. Copies of these forms may be obtained by emailing [MAILSVS.Resource@nrc.gov](mailto:MAILSVS.Resource@nrc.gov). Guidance on submitting electronic fingerprints can be found at <https://www.nrc.gov/security/chp.html>.

~~AGENCY NOTE: Copies of these forms may be obtained by writing the Office of the Chief Information Officer, U.S. Nuclear Regulatory Commission, Washington DC 20555-0001, by calling (630)829-9565 or by email to [FORMS.Resource@nrc.gov](mailto:FORMS.Resource@nrc.gov).~~

- 2) Fees for the processing of fingerprint checks are due upon application. Licensees shall submit payment with the application for the processing of fingerprints through corporate check, certified check, cashier's check, money order or electronic payment made payable to "U.S. NRC". Combined payment for multiple applications is acceptable. The amount of the fingerprint check application fee is available on NRC's website. To find the current fee amount, go to the Electronic Submittals page at <http://www.nrc.gov/site-help/e-submittals.html> and see the link for the Criminal History Program under Electronic Submission Systems.

AGENCY NOTE: For guidance on making electronic payments, contact the Security Branch, Division of Facilities and Security at (301)415-1491 .

- 3) NRC will forward to the submitting licensee all data received from the FBI as a result of the licensee's applications for criminal history records checks.

(Source: Amended at 48 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

ILLINOIS REGISTER

ILLINOIS EMERGENCY MANAGEMENT AGENCY

NOTICE OF PROPOSED AMENDMENT

Section 337.APPENDIX A Category 1 and Category 2 Radioactive Material

Table 1 – Category 1 and Category 2 Threshold

The terabecquerel (TBq) values are the regulatory standard. The curie (Ci) values specified are obtained by converting from the TBq value. The curie values are provided for practical usefulness only.

Radioactive material	Category 1 (TBq)	Category 1 (Ci)	Category 2 (TBq)	Category 2 (Ci)
Americium-241	60	1,620	0.6	16.2
Americium-241/Be	60	1,620	0.6	16.2
Californium-252	20	540	0.2	5.40
Cobalt-60	30	810	0.3	8.10
Curium-244	50	1,350	0.5	13.5
Cesium-137	100	2,700	1	27.0
Gadolinium-153	1,000	27,000	10	270
Iridium-192	80	2,160	0.8	21.6
Plutonium-238	60	1,620	0.6	16.2
Plutonium-239/Be	60	1,620	0.6	16.2
Promethium-147	40,000	1,080,000	400	10,800
Radium-226	40	1,080	0.4	10.8
Selenium-75	200	5,400	2	54.0
Strontium-90	1,000	27,000	10	270
Thulium-170	20,000	540,000	200	5,400
Ytterbium-169	300	8,100	3	81.0

Note: Calculations Concerning Multiple Sources or Multiple Radionuclides

The "sum of fractions" methodology for evaluating combinations of multiple sources or multiple radionuclides is to be used in determining whether a location meets or exceeds the threshold and is thus subject to the requirements.

- I. If multiple sources of the same radionuclide and/or multiple radionuclides are aggregated at a location, the sum of the ratios of the total activity of each of the radionuclides shall be determined to verify whether the activity at the location is less than the category 1 or category 2 thresholds of Table 1, as appropriate. If the

ILLINOIS EMERGENCY MANAGEMENT AGENCY

NOTICE OF PROPOSED AMENDMENT

calculated sum of the ratios, using the equation below, is greater than or equal to 1.0, then the applicable requirements apply.

- II. First determine the total activity for each radionuclide from Table 1. This is done by adding the activity of each individual source, material in any device, and any loose or bulk material that contains the radionuclide. Then use the equation below to calculate the sum of the ratios by inserting the total activity of the applicable radionuclides from Table 1 in the numerator of the equation and the corresponding threshold activity from Table 1 in the denominator of the equation. Calculations shall be performed in metric values (i.e., TBq) and the numerator and denominator values shall be in the same units.

$$\sum \frac{R_1}{AR_1} + \frac{R_2}{AR_2} + \frac{R_N}{AR_N} \geq 1.0$$
$$\sum_1^N \left[ \frac{R_1}{AR_1} + \frac{R_2}{AR_2} + \frac{R_N}{AR_N} \right] \geq 1.0$$
$$\frac{R_1}{AR_1} + \frac{R_2}{AR_2} + \dots + \frac{R_n}{AR_n} \geq 1.0$$

where:

R1 = total activity for radionuclide 1

R2 = total activity for radionuclide 2

RN = total activity for radionuclide n

AR1 = activity threshold for radionuclide 1

AR2 = activity threshold for radionuclide 2

ARN = activity threshold for radionuclide n

(Source: Amended at 48 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)