

STATE OF ILLINOIS
DEPARTMENT OF NUCLEAR SAFETY

1035 OUTER PARK DRIVE • SPRINGFIELD, ILLINOIS 62704
217-785-9900 • 217-782-6133 (TDD)

George H. Ryan
Governor

Thomas W. Ortziger
Director

March 18, 2002

Josephine M. Piccone, Assistant Director
Office of State and Tribal Programs, USNRC
Mail Stop 03C10
Washington, D.C. 20555

Dear Ms. Piccone:

Enclosed with this letter is a copy of a final adopted regulation for certification of industrial radiographers—32 Ill. Adm. Code 405. The NRC has no equivalent provisions. The proposed rule was provided to your office earlier. It was determined that there are no areas of compatibility for this regulation, which is provided for information only.

If you have any questions regarding this regulation, please contact Steve Collins at 217-785-6982 or collins@idns.state.il.us.

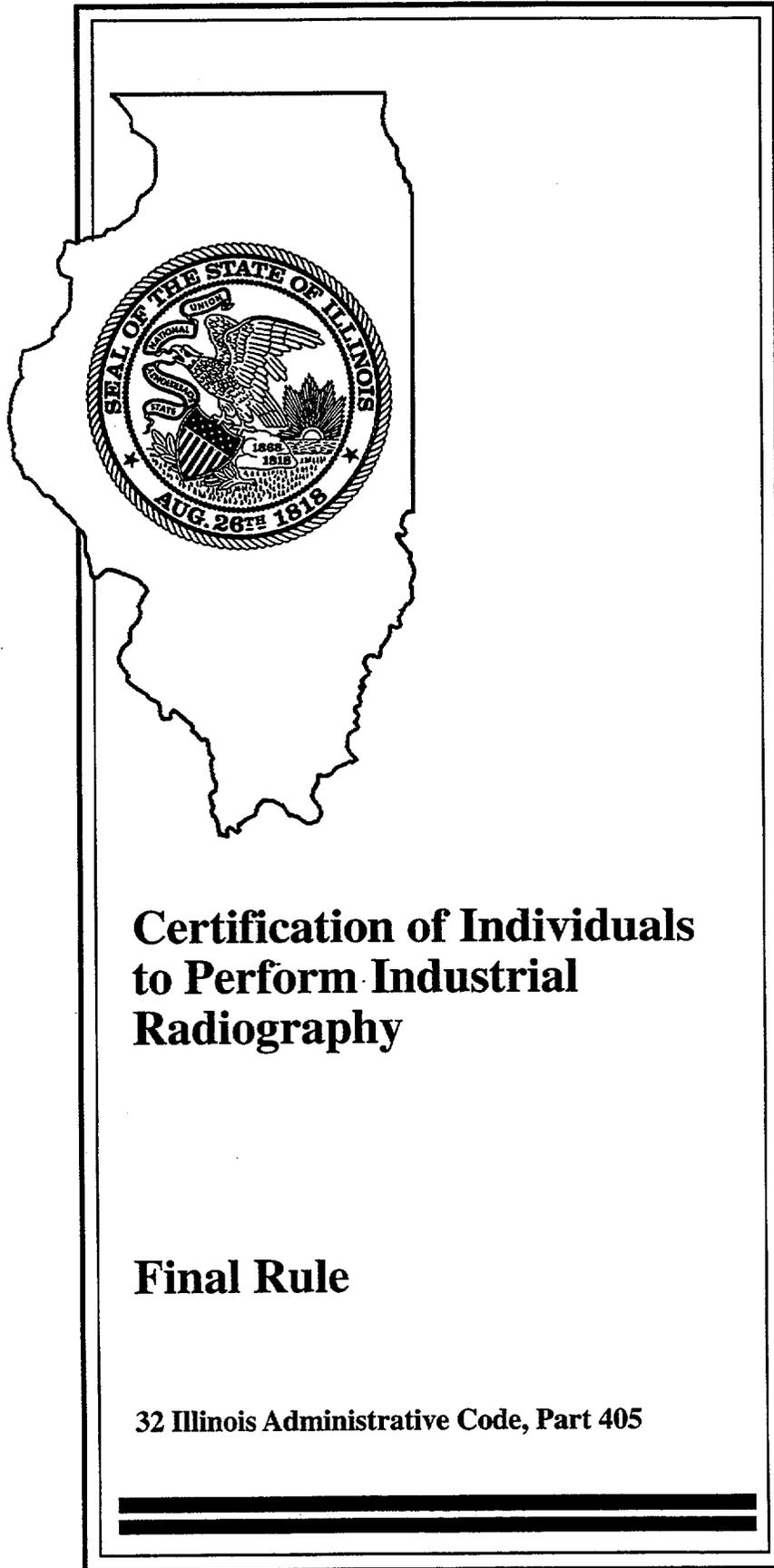
Sincerely,


Steven C. Collins, Assistant Manager
Office of Radiation Safety

cc: Jim Lynch, NRC Region III

SP07

**Illinois
Department
of Nuclear
Safety**



**Certification of Individuals
to Perform Industrial
Radiography**

Final Rule

George H. Ryan
Governor

Thomas W. Ortziger
Director

32 Illinois Administrative Code, Part 405

STATE OF ILLINOIS
DEPARTMENT OF NUCLEAR SAFETY

1035 OUTER PARK DRIVE • SPRINGFIELD, ILLINOIS 62704
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March 14, 2002

RECENTLY ADOPTED AMENDMENTS TO REGULATIONS

**Certification of Individuals to Perform Industrial Radiography
(32 Illinois Administrative Code, Part 405)**

Attached is a copy of the Department of Nuclear Safety regulations regarding "Certification of Individuals to Perform Industrial Radiography." These regulations were amended February 25, 2002. The attached text replaces Part 405 in its entirety.

Please advise your industrial radiographers of changes to these rules.

The rule changes recognize the American Society of Non-Destructive Testing's (ASNT) certification and tests for x-ray and combined x-ray and radioactive materials. Previously, the Department only recognized the radioactive material test and certification from ASNT as approved by the United States Nuclear Regulatory Commission (NRC). Recently, the Conference of Radiation Control Program Directors, Inc. (CRCPD) determined the ASNT's test and certification for x-ray and combined x-ray and radioactive materials to be acceptable.

Other editorial changes were also incorporated as well as statutory provisions regarding individuals who are in arrears for child support payments.

If you have any questions regarding the regulations, please contact Steve Collins at (217) 785-6982.

Attachment

TITLE 32: ENERGY
CHAPTER II: DEPARTMENT OF
NUCLEAR SAFETY
SUBCHAPTER b: RADIATION PROTECTION

§§405.10-20

PART 405
CERTIFICATION OF INDIVIDUALS TO PERFORM
INDUSTRIAL RADIOGRAPHY

Section

405.10	Purpose and Scope
405.20	Definitions
405.30	Application for Certification
405.40	Categories of Certification
405.50	Examination Requirements
405.60	Examinations
405.70	Approved Training Program
405.80	Experience Requirements for Certification
405.90	Requirements for Issuance of Certification
405.100	Duration of Certification
405.110	Fees
405.120	Reciprocity
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405.140	Suspension and Revocation of Certification
405.150	Civil Penalties
APPENDIX A	Minimum Training Requirements for Industrial Radiography Applicable to Radioactive Materials and Radiation Machines

AUTHORITY: Implementing and authorized by Section 7a of the Radiation Protection Act of 1990 [420 ILCS 40/7a].

SOURCE: Adopted at 18 Ill. Reg. 10721, effective June 23, 1994; amended at 20 Ill. Reg. 12602, effective September 6, 1996; emergency amendment at 25 Ill. Reg. 14975, effective October 30, 2001, for a maximum of 150 days; amended at 26 Ill. Reg. 3483, effective February 25, 2002.

Section 405.10 Purpose and Scope

- a) This Part establishes a program to certify persons to perform industrial radiography. Specifically, this Part provides:
- 1) Minimum standards for training and experience for persons who perform industrial radiography;
 - 2) Application and examination requirements for certification and recertification;
 - 3) Standards for the recognition of certification by other parties;
 - 4) Provisions for the suspension or revocation of certification; and
 - 5) Civil penalties.

- b) This Part applies to any person who performs industrial radiography in this State. For purposes of this Part, industrial radiography does not include radiography performed with Lixiscopes or cabinet x-ray systems, nor does it include computed tomography or computer-based digital radiography in which the useful beam of radiation is collimated to detectors.

Section 405.20 Definitions

As used in this Part, the following definitions shall apply:

"Act" means the Radiation Protection Act of 1990 [420 ILCS 40].

"Approved Training Program" means a program that the Department has determined is adequate to prepare individuals to meet the training requirements prescribed in Appendix A of this Part.

"Cabinet x-ray system" means an x-ray system with the x-ray tube installed in an enclosure which, independent of existing architectural structures except the floor on which it may be placed, is intended to contain at least that portion of a material being irradiated, provide radiation attenuation and exclude personnel from its interior during generation of x radiation. Included are all x-ray systems designed primarily for the inspection of carry-on baggage at airline, railroad, bus terminals and similar facilities. An x-ray tube used within a shielded part of a building or x-ray equipment that may temporarily or occasionally incorporate portable shielding is not considered a cabinet x-ray system.

"Certification" means the authorization by the Illinois Department of Nuclear Safety of an individual to perform industrial radiography in Illinois.

"Certified Industrial Radiographer" means an individual who has met prescribed training and experience requirements and has passed an approved examination and is authorized by the Department, pursuant to Section 405.90(a) of this Part, to perform industrial radiography.

"Certified Industrial Radiographer Trainee" means an individual who is authorized by the Department, pursuant to Section 405.90(b) of this Part, to be instructed in industrial radiography and who may perform industrial radiography while under the personal supervision of a Certified Industrial Radiographer.

AGENCY NOTE: Instruction in industrial radiography for trainees certified by the Department includes on-the-job and field experience.

"Department" means the Illinois Department of Nuclear Safety.

"Director" means the Director of the Illinois Department of Nuclear Safety.

"Industrial Radiography" means the process used to perform the examination of the macroscopic structure of materials by non-destructive methods using radioactive materials or radiation machines. For purposes of this Part, industrial radiography does not include radiography performed with Lixiscopes or cabinet x-ray systems, nor does it include computed tomography or computer-based digital radiography in which the useful beam of radiation is collimated to detectors.

"Industrial Radiography - Radiation Machines" means the process of performing industrial radiography using radiation producing machines.

"Industrial Radiography - Radioactive Materials" means the process of performing industrial radiography using radioactive materials.

"Lixiscope" means a portable light-intensified imaging device using a sealed source.

"Personal supervision" means supervision provided by a Certified Industrial Radiographer who is physically present at the immediate site where sources of radiation and associated equipment are being used, visually evaluating the performance of the Certified Industrial Radiographer Trainee and in such proximity that immediate assistance can be given if required.

"Radiographic exposure device" means any instrument containing a sealed source fastened or contained therein, in which the sealed source or shielding thereof may be moved, or otherwise changed, from a shielded to unshielded position for purposes of making a radiographic exposure.

(Source: Amended at 26 Ill. Reg. 3483, effective February 25, 2002)

Section 405.30 Application for Certification

- a) Any individual applying to the Department for certification to perform industrial radiography shall:
 - 1) Submit a complete and legible application on a form prescribed by the Department;
 - 2) Pay the appropriate non-refundable application fee in accordance with Section 405.110 of this Part;

- 3) Meet the examination requirements set forth in Section 405.50 of this Part or satisfy the requirements for certification based on reciprocity as set forth in Section 405.120 of this Part; and
 - 4) Provide evidence that the requirements for the given category and class for which certification is sought have been met.
- b) The appropriate fee shall accompany the application when filing with the Department. An application shall be deemed filed on the date that it is received by the Department or on the date that it is postmarked by the United States Postal Service or equivalent.
 - c) The Department shall refuse to issue or renew certification to any individual if the Department has evidence that the applicant is delinquent in the repayment of an educational loan guaranteed by the Illinois Student Assistance Commission, as set forth in 20 ILCS 2005/2005-85.
 - d) The Department shall refuse to issue or renew certification to any individual, after an opportunity for a hearing, if the Department has evidence that the applicant is delinquent in the payment of child support orders, pursuant to the provisions and procedures set forth in 5 ILCS 100/10-65. Further process, hearing, or redetermination of the delinquency or violation by the Department shall not be required if the refusal is based solely upon the certification of delinquency made by the Department of Public Aid or the certification of violation made by the court. The Department may issue or renew a license if the applicant has arranged for payment of past and current child support obligations in a manner satisfactory to the Department of Public Aid. The Department may also impose conditions, restrictions or disciplinary action upon the certification.

(Source: Amended at 26 Ill. Reg. 3483, effective February 25, 2002)

Section 405.40 Categories of Certification

- a) The Department shall certify individuals to perform industrial radiography in one or more of the following categories:
 - 1) Certified Industrial Radiographer; or
 - 2) Certified Industrial Radiographer Trainee.
- b) Each certification issued shall include a class endorsement for the type of industrial radiography authorized. Such class endorsements are limited to:

- 1) Radioactive Materials;
- 2) Radiation Machines; or
- 3) Radioactive Materials and Radiation Machines.

(Source: Amended at 26 Ill. Reg. 3483, effective February 25, 2002)

Section 405.50 Examination Requirements

- a) An individual who seeks certification as a Certified Industrial Radiographer shall have passed, within 12 months prior to application for certification, a written examination appropriate to the category and class of certification sought in accordance with Section 405.60 of this Part.
- b) An individual who holds certification as a Certified Industrial Radiographer Trainee shall take the examination for Certified Industrial Radiographer as prescribed by Section 405.60 of this Part within 12 months after certification.
- c) Application for examination or re-examination shall be on forms prescribed by the Department and shall include the appropriate fee specified by Section 405.110 of this Part. Examination fees are non-refundable.

AGENCY NOTE: In the event that an examination is not passed under subsection (a) or (b) of this Section, the applicant may apply for re-examination in accordance with subsection (c) of this Section.

- d) Examinees shall present photographic identification (e.g., drivers license) at the time of examination.

(Source: Amended at 26 Ill. Reg. 3483, effective February 25, 2002)

Section 405.60 Examinations

- a) The Department shall administer examinations in each class of industrial radiography as specified in Section 405.40(b) of this Part at such times and places as the Department determines necessary.
 - 1) The examination shall be available through the Conference of Radiation Control Program Directors, Inc.
 - 2) The passing score shall be 70 percent.
 - 3) A candidate who fails an examination may apply for re-examination in accordance with Section 405.50 of this Part.

- b) The Department shall accept alternative examinations provided that the examinations are found acceptable by the U.S. Nuclear Regulatory Commission or the Conference of Radiation Control Program Directors, Inc.

(Source: Amended at 26 Ill. Reg. 3483, effective February 25, 2002)

Section 405.70 Approved Training Program

Industrial radiographer training programs shall be approved by the Department. The Department shall recognize other programs approved by another state or jurisdiction provided that such programs consist of standards and procedures that are the same or comparable to the standards and procedures established by the Radiation Protection Act of 1990 and this Part. The Department shall base its approval on information provided by the training program that shall include:

- a) Curriculum information sufficient to assure inclusion of subjects referenced in Appendix A of this Part;
- b) Copies of test questions and answers and other evaluation tools and criteria used to demonstrate a participant's comprehension of subject matter in Appendix A of this Part; and
- c) Resumes of instructors.

(Source: Amended at 26 Ill. Reg. 3483, effective February 25, 2002)

Section 405.80 Experience Requirements for Certification

Applicants for certification to perform industrial radiography shall have a minimum of experience appropriate to each category and class of industrial radiography as follows:

- a) Certified Industrial Radiographer
 - 1) Radioactive Materials200 hrs
 - 2) Radiation Machines120 hrs
 - 3) Both Radioactive Materials and Radiation .. 320 hrs
Machines of which not less than 200 hours shall be with radioactive materials and not less than 120 hours shall be with radiation machines.
- b) Certified Industrial Radiographer Trainee. No prior experience required.

(Source: Amended at 26 Ill. Reg. 3483, effective February 25, 2002)

§§405.90-120

Section 405.90 Requirements for Issuance of Certification

The Department shall certify in a category and class of industrial radiography any individual who has satisfied the following requirements:

- a) Certified Industrial Radiographer
 - 1) Submitted an application for certification on a form prescribed by the Department;
 - 2) Submitted the application fee specified in Section 405.110(a) of this Part;
 - 3) Passed an examination as required by Section 405.50(a) of this Part or satisfies the requirements for certification based on reciprocity as set forth in Section 405.120 of this Part; and
 - 4) Completed the required hours of experience in industrial radiography as specified in Section 405.80 of this Part or satisfies the requirements for certification based on reciprocity as set forth in Section 405.120 of this Part.

- b) Certified Industrial Radiographer Trainee
 - 1) Submitted an application for certification on a form prescribed by the Department;
 - 2) Submitted the application fee specified in Section 405.110(a) of this Part; and
 - 3) Submitted documentation of successful completion of an approved training program as specified in Section 405.70 of this Part or satisfies the requirements for certification based on reciprocity as set forth in Section 405.120 of this Part.

AGENCY NOTE. Training includes didactic study incorporating those topics included in Appendix A of this Part. Training does not include on-the-job experience.

(Source: Amended at 26 Ill. Reg. 3483, effective February 25, 2002)

Section 405.100 Duration of Certification

- a) The duration of certification issued by the Department shall be:
 - 1) Certified Industrial Radiographer5 years
 - 2) Certified Industrial Radiographer Trainee2 years

- b) Certification for Certified Industrial Radiographer Trainee is non-renewable.

(Source: Amended at 26 Ill. Reg. 3483, effective February 25, 2002)

Section 405.110 Fees

- a) The application fees for examination or certification are non-refundable and are as follows:
 - 1) Each application for examination by the Department\$75.00
 - 2) Each application for certification:
 - A) Certified Industrial Radiographer\$50.00
 - B) Certified Industrial Radiographer Trainee\$50.00
- b) The appropriate fees shall accompany the application when filing with the Department.

(Source: Amended at 26 Ill. Reg. 3483, effective February 25, 2002)

Section 405.120 Reciprocity

- a) The Department shall issue certification to an applicant who has been certified in another state or jurisdiction, or by the American Society of Nondestructive Testing (ASNT), provided that:
 - 1) The applicant holds a valid certification in the appropriate category and class issued by another state or jurisdiction or by the ASNT;
 - 2) The standards and procedures for the certification issued by the state, jurisdiction, or ASNT are the same or comparable to the certification standards established by or pursuant to the Radiation Protection Act of 1990 and this Part;
 - 3) The applicant presents a copy of the certification document issued by the other state or jurisdiction, or by the ASNT, to the Department; and
 - 4) The applicant submits the application fee in accordance with Section 405.110(a) of this Part.

- b) Individuals who are certified by reciprocity shall either:
 - 1) Maintain the certification upon which the reciprocal certification was issued; or

- 2) Satisfy the requirements of Section 405.90 of this Part prior to the expiration of the certification upon which reciprocal certification was issued.

(Source: Amended at 26 Ill. Reg. 3483, effective February 25, 2002)

Section 405.130 Requirements for Renewal of Certification

a) Prerequisites

- 1) An individual shall submit an application for re-examination and renewal of certification at least six months prior to the expiration date of certification. The Department shall waive this requirement if the applicant satisfies the requirements of Section 405.30(a) of this Part. An individual may not legally perform industrial radiography without valid certification.
- 2) Each applicant shall submit a complete and legible application with the fee for re-examination and renewal of certification in accordance with Section 405.30(a) of this Part.

b) **Re-examination.** Applicants for renewal of certification shall meet the requirements of Section 405.90(a) of this Part including re-examination as described in subsection (a) of this Section.

c) **Certification as a Certified Industrial Radiography Trainee is non-renewable.**

(Source: Amended at 26 Ill. Reg. 3483, effective February 25, 2002)

Section 405.140 Suspension and Revocation of Certification

a) The Department may act to suspend or revoke an individual's certification for any one or a combination of the following causes:

- 1) Knowingly causing a material misstatement or misrepresentation to be made in the application for initial certification or renewal of certification if such misstatement or misrepresentation would impair the Department's ability to assess and evaluate the applicant's qualifications for certification pursuant to this Part;
- 2) Knowingly falsifying records of employees when such falsification would impair the Department's ability to assess and evaluate the applicant's qualifications for certification pursuant to this Part;

- 3) Willfully evading the statute or regulations pertaining to certification, or willfully aiding another person in evading such statute or regulations pertaining to certification;
- 4) Performing procedures under, or representing as valid to any person, a certification issued by the Department containing on its face unauthorized alterations or changes that are inconsistent with Department records regarding the issuance of that certification;
- 5) Performing procedures under, or representing as valid to any person, a credential not issued by the Department to prove certification in Illinois;
- 6) Having been convicted of a crime which is a felony under the laws of this State or conviction of a felony in a federal court, unless the individual demonstrates to the Department that he/she has been sufficiently rehabilitated, by restoration of all civil rights, to warrant the public trust;
- 7) Exhibiting significant or repeated incompetence in the performance of industrial radiography duties;
- 8) Having a physical or mental illness or disability that results in the individual's inability to perform industrial radiography duties with reasonable judgment, skill and safety;
- 9) Performing industrial radiography in such a manner that requirements of 32 Ill. Adm. Code 350 are violated resulting in a threat to health and safety of the individual, other workers or the public;
- 10) Repeatedly using alcohol, narcotics or stimulants to such an extent as to impair the performance of duties;
- 11) Having had a similar certification suspended or revoked if the grounds for that suspension or revocation are the same or equivalent to one or more grounds for suspension or revocation as set forth in this subsection (a);
- 12) Failure to maintain the out-of-state certification upon which certification by reciprocity was issued;
- 13) Failure to repay educational loans guaranteed by the Illinois Student Assistance Commission, as provided in 20 ILCS-2005/2005-85;
- 14) Failure to meet child support orders, as provided in 5 ILCS 100/10-65; and

- 15) Failure to pay a fee or civil penalty properly assessed by the Department.
- b) If, based upon any of the grounds in subsection (a) of this Section, the Department determines that action to suspend or revoke certification is warranted, the Department shall notify the individual and shall provide an opportunity for a hearing in accordance with 32 Ill. Adm. Code 200. An opportunity for a hearing shall be provided before the Department takes action to suspend or revoke an individual's certification unless *the Department finds that an immediate suspension of certification is required to protect against immediate danger to the public health or safety* [420 ILCS 40/38], in which case the Department shall suspend an individual's certification pending a hearing. The Department shall revoke or suspend certification under subsection (a)(14) of this Section *based solely upon the certification of delinquency made by the Department of Public Aid or the certification of violation made by the court. Further process, hearing, or redetermination of the delinquency or violation by the Department shall not be required. The licensing agency may issue or renew a license if the licensee has arranged for payment of past and current child support obligations in a manner satisfactory to the Department of Public Aid or the court. The licensing agency may impose conditions, restrictions, or disciplinary action upon that license.* [5 ILCS 100/10-65(c)]
- c) If the Department finds that removal of certification is warranted, the usual action shall be a suspension of certification for up to one year. The term of suspension may be reduced by the Director, based upon evidence presented, if the conditions leading to the Preliminary Order for Suspension can be cured in less than one year. However, if the Department finds that the causes are of a serious or continuous nature, such as past actions which posed an immediate threat to occupational or public health or safety, deficiencies that cannot be cured within one year or frequent child support arrearages, the Department shall revoke the individual's certification.
- d) When an individual's certification is suspended or revoked, the individual shall surrender his/her certification document to the Department until the termination of the suspension period or until reissuance of the certification.
- e) An individual whose certification has been revoked may seek reinstatement of certification by filing with the Department a petition for reinstatement. The petition may be filed one year or more after the beginning of the revocation period. The individual shall be afforded a hearing in accordance with 32 Ill. Adm. Code 200 and shall bear the burden of proof of establishing that the

certification should be reinstated due to rehabilitation or other just cause.

(Source: Amended at 26 Ill. Reg. 3483, effective February 25, 2002)

Section 405.150 Civil Penalties

- a) The Department shall assess civil penalties, in accordance with subsection (c) of this Section, against any individual who performs industrial radiography without valid certification.

AGENCY NOTE: Licensees and registrants that allow individuals who are not certified to perform industrial radiography are also subject to civil penalties. These penalties are assessed pursuant to 32 Ill. Adm. Code 310.

- b) Prior to assessing civil penalties, the Department shall confirm the violation of the certification requirements by:
 - 1) Observation of the violation;
 - 2) Obtaining records, documents or other physical evidence;
 - 3) Obtaining statements from either the employer, or the employee which confirm the existence of the violation; or
 - 4) Obtaining statements from third parties (e.g., co-workers) that corroborate the allegation that a violation has occurred.
- c) Civil penalties shall be assessed against individuals who perform industrial radiography without certification (i.e., uncertified radiographer) as follows:
 - 1) First violation by an uncertified individual - \$250.
 - 2) Second violation by an uncertified individual - \$500.
 - 3) Third and subsequent violation by an uncertified individual - \$1,000 for each violation.
- d) The Department shall impose civil penalties by issuing a Preliminary Order and Notice of Opportunity for Hearing as provided in 32 Ill. Adm. Code 200.60. Each day the violation continues shall constitute a separate offense.

(Source: Amended at 26 Ill. Reg. 3483, effective February 25, 2002)

Section 405.APPENDIX A Minimum Training Requirements for Industrial Radiography Applicable to Radioactive Materials and Radiation Machines

- a) Fundamentals of Radiation Safety
 - 1) Characteristics of radiation
 - 2) Units of radiation dose and quantity of radioactivity
 - 3) Significance of radiation dose
 - A) Radiation protection standards
 - B) Biological effects of radiation
 - 4) Levels of radiation from sources of radiation
 - 5) Methods of controlling radiation dose
 - A) Working time
 - B) Working distances
 - C) Shielding
- b) Radiation Detection Instrumentation to be Used
 - 1) Use of radiation survey instruments
 - A) Operation
 - B) Calibration
 - C) Limitations
 - 2) Survey techniques
 - 3) Use of personnel monitoring equipment
 - A) Film badges
 - B) Thermoluminescent dosimeters (TLDs) or optically stimulated luminescence dosimeters (OSLs)
 - C) Pocket dosimeters
 - D) Alarm ratemeter
- c) The Requirements of Pertinent Federal and State Regulations
- d) Written Operating and Emergency Procedures
- e) Case Histories of Radiation Accidents
- f) Radiography Equipment to be Used
 - 1) For Industrial Radiography Using Radioactive Material
 - A) Remote handling equipment
 - B) Radiographic exposure devices and sealed sources
 - C) Storage containers
 - D) Inspection, maintenance, operation and control of radiography equipment
 - E) Demonstration of competency to safely perform radiographic procedures using a simulated source of radioactive material.
 - 2) For Industrial Radiography Using Radiation Machines
 - A) Remote exposure equipment
 - B) Radiation machine exposure equipment
 - C) Inspection, maintenance, operation and control of radiography equipment
 - D) Demonstration of competency to safely perform radiographic procedures using a simulated source of radiation

(Source: Amended at 26 Ill. Reg. 3483, effective February 25, 2002)

**Illinois Department of Nuclear Safety
1035 Outer Park Drive
Springfield, Illinois 62704**

**ATTENTION RADIATION
SAFETY OFFICER**