AE07-1 035
PDR

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

JUN 30 1993

MEMORANDUM FOR: Eric S. Beckjord, Director
Office of Nuclear Regulatory Research

Robert M. Bernero, Director
Office of Nuclear Materials Safety and Safeguards

FROM: Gerald F. Cranford, Director
Office of Information Resources Management

SUBJECT: 10 CFR PART 34 - LICENSES FOR RADIOGRAPHY AND RADIATION SAFETY REQUIREMENTS FOR RADIOGRAPHIC OPERATIONS

This memorandum is in reference to the Office of Information Resources Management's (IRM) recent findings on two rulemakings involving 10 CFR Part 34. The Office of Administration, Division of Freedom of Information and Publications Services, requested our review of the subject 10 CFR Part 34 rulemaking, and we recently reviewed a rulemaking initiated by the Office of Nuclear Regulatory Research (RES) that covers the overall rewrite of 10 CFR Part 34. It appears that RES and the Office of Nuclear Materials Safety and Safeguards (NMSS) staffs have not coordinated the two rulemakings. The concurrent processing of multiple rulemakings covering the same 10 CFR Part is one of the problems that OMB has often cited as a cause for delays in processing NRC requests for OMB review of information collections.

We have reviewed the subject proposed rule, and concluded that it contains information collections that must be submitted to OMB for review. The recently reviewed rulemaking that would totally revise 10 CFR Part 34 also contains information collections that must be submitted to OMB for review. The total revision contains renumbered sections that are not reflected in the subject rulemaking. For example, section 34.11 has been changed to 34.13, and section 34.31 has been changed to 34.43. Since both are proposed rules, we recommend that the two be consolidated and that the OMB clearance package be revised to reflect the consolidated rule. Current procedures require that the OMB Clearance Package be included in the Commission Paper as an Appendix to the Regulatory Analysis.

Should you require further information or guidance on this matter, please contact Brenda Shelton on 492-8132.

Gerald F. Cranford

Gerald F. Cranford, Director
Office of Information Resources Management

cc: M. Lesar, ADM
R. O'Connell, NMSS
M. Au, RES
T. Rothchild, OGC

[7950-01]

NUCLEAR REGULATORY COMMISSION

10 CFR Part 34

RIN 3150-AE07

Licenses for Radiography

and

Radiation Safety Requirements for Radiographic Operations

AGENCY: Nuclear Regulatory Commission.

ACTION: Proposed rule.

SUMMARY: The Nuclear Regulatory Commission (NRC) is proposing to amend its regulations governing industrial radiography. The proposed rule would include additional safety requirements to enhance the level of protection of radiographers and the public and would clarify the regulations so that licensees may have a better understanding of what is expected in radiographic operations. The proposed rule includes a number of updated radiography regulations that have been adopted by many Agreement States. The format of the radiography regulations would be adjusted to place requirements into descriptive categories.

DATES: Submit comments by (75 days after publication). Comments received after this date will be considered if it is practical to do so, but the Commission is able to assure consideration only for comments received on or before this date.

ADDRESSES: Mail written comments to: Secretary, U.S. Nuclear Regulatory Commission, Washington DC 20555, Attention: Docketing and Service Branch. Hand deliver comments to 11555 Rockville Pike, Rockville, Maryland between 7:45 am and 4:15 pm Federal workdays.

Examine comments received, the environmental impact, and the regulatory analysis at: The NRC Public Document Room at 2120 L Street NW. (Lower Level), Washington, DC.

FOR FURTHER INFORMATION CONTACT: Dr. Donald O. Nellis or Mary L. Thomas, Office of Nuclear Regulatory Research, U.S. Nuclear Regulatory Commission, Washington DC 20555; Telephone: (301) 492-3628 or 492-3886.

SUPPLEMENTARY INFORMATION:

I. Background

10 CFR Part 34 was first published in 1965 (30 FR 8192) as part of the recodification of Parts 30 and 31 for the purpose of simplifying and clarifying the format of the then-current regulations so that persons subject to byproduct material licensing regulations could conveniently use and understand them. Numerous modifications to the original Part 34 have been made since 1965, many of which have been directed toward the safety aspects of

field radiography. These include performance requirements on radiography equipment and additional reporting requirements on equipment malfunctions, both published in 1990 (55 FR 852 and 55 FR 2281).

There are approximately 200 NRC radiography licensees with an additional 500 Agreement State licensees. Radiography licensees often conduct business under both NRC and Agreement State jurisdiction.

There has not been an overall revision of Part 34 in many years, while a number of Agreement States have updated their radiography regulations. The decision to develop an overall revision to 10 CFR Part 34 was made with the intent of establishing new safety requirements for radiography licensees and clarifying the regulation so that licensees may have a better understanding of what is expected in radiographic operations. The format of the radiography regulations would be adjusted to place requirements into descriptive categories which better describe the type of requirements that are found in the subpart.

The NRC solicited recommendations on radiography issues at the 1991 Agreement States meeting in Sacramento, CA, as well as from NRC regional offices, radiography equipment manufacturers, and radiography licensees. A workshop was held on November 18, 1992, in Dallas, Texas, to discuss the recommendations received from the Agreement States and licensees on an overall revision of the radiography regulations. The transcript of the meeting, which is available for inspection and copying in the NRC Public Document Room, was reviewed in further developing the proposed revision.

Part E of the "Suggested State Regulations for Control of Radiation" developed by the Conference of Radiation Control Program Directors, Inc.,

Part 31 of the Texas Regulations for Control of Radiation, Chapter 5 of the Louisiana regulations, and the Canadian "Atomic Energy Control Regulations," that apply to radiography were utilized in developing this proposed revision of Part 34.

A petition was received in October 1992 from the International Union of Operating Engineers (IUOE), Local No. 2, requesting an amendment to the radiography regulations to require a minimum of two radiographic personnel when performing industrial radiography at temporary jobsites. The petition was published in the Federal Register on December 4, 1992 (57 FR 57392). Thirty-eight comment letters were received, 35 were in favor of granting the petition. Resolution of this petition has been addressed in this proposed revision to Part 34.

II. Petition for Rulemaking

In October 1992, the International Union of Operating Engineers (IUOE), Local No. 2 petitioned the NRC to amend its regulations regarding radiography to require a minimum of two radiographic personnel when performing industrial radiography at temporary jobsites. The IUOE petition offered three options for the makeup of the two-person crew: (1) two radiographers; (2) one radiographer and one radiographer's assistant; and (3) one radiographer and one trainee, with the trainee having completed 40 hours of approved radiation safety training and passed an examination. The petitioners identified a number of problems associated with the use of licensed material by one radiographer at temporary jobsites. Some of these included: (1) difficulty keeping the area under constant surveillance while radiographic operations are

ongoing; (2) difficulty in maintaining surveillance when working in trenches; and (3) difficulty in obtaining assistance in the event of an emergency if there is only one individual. The petitioners believe that the suggested change is necessary to ensure a safe working environment. The NRC published a notice of receipt of the petition and a request for comment in the Federal Register on December 4, 1992 (57 FR 57392). Thirty-eight comments were received, 35 were in favor of granting the petition, 3 were against. Some concerns were expressed regarding the combination of a radiographer and a trainee as a two-person team. Many stated that the trainee is an unskilled individual that may or may not achieve radiographer status and spending the time and money for 40 hours training may not be financially feasible for some radiography companies.

This proposed rulemaking constitutes a partial granting of the petition in that it proposes to require a two-person crew whenever radiographic operations are being conducted outside of a permanent radiographic installation. The NRC has decided not to adopt the term "radiographer trainee," and is proposing that the second person be another qualified radiographer or an individual who has met, at least, the requirements for a radiographer's assistant. It is recognized that in some Agreement States the training of those individuals designated as trainees would meet the NRC's training requirements for a radiographer's assistant.

The estimated cost of requiring the two-person crew could be significant in those cases where licensees are in the habit of sending only one radiographer to a temporary jobsite. However, the current regulation requires direct surveillance of the operation to prevent unauthorized entry into a high radiation area, and to comply with this regulation most licensees must already

utilize more than one qualified individual in many situations. For certain circumstances where a licensee could demonstrate that adequate surveillance could be maintained by one radiographer, the Commission would consider granting an exemption through the process described in §34.111. Furthermore, the Commission is interested in receiving proposals for alternatives to the two-person requirement which would achieve comparable enhancements in safety with less of a burden on licensees.

In summary, the Commission believes that by requiring two qualified individuals to always be present when radiographic operations are being conducted, there will be a significant increase in assurance that operational safety measures and emergency procedures will be implemented effectively. The expectation is that violations that have involved failures to perform adequate radiation surveys of radiographic exposure devices and the surrounding area, failures to adequately post and monitor the restricted area, and failures to lock and secure the camera when not in use will become less frequent. Furthermore, if an incapacitating injury to a radiographer should occur at a remote location, the presence of a second individual could be an important factor in preventing unnecessary radiation exposures. The Commission is considering amending the Enforcement Policy as a result of this proposed rulemaking to provide, as an example of a Severity Level III violation, the conduct of radiography operations without the required second radiographer or individual with at least the qualifications of a radiographer's assistant as provided in §34.41.

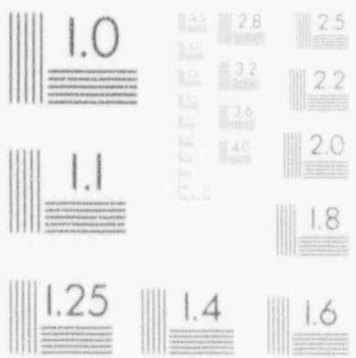
III. General Discussion of Proposed Rule Changes

The proposed amendments contain requirements which are intended to improve radiography safety. The first major change is a proposal to require two qualified individuals (two radiographers or a radiographer and an individual who has at least met the requirements to be a radiographer's assistant) to be present any time radiographic operations occur outside of a permanent radiographic installation. This issue has already been addressed under Section II. Petition for Rulemaking.

Another issue involves the definition of a permanent radiographic installation. In the past, there has been some confusion as to what the NRC intended in requiring a permanent radiographic installation to have special access control devices. The proposed rule changes the definition of a "permanent radiographic installation" to mean an enclosed shielded room, cell, or vault in which radiography is performed. The terms "designed or intended for radiography" and "regularly performed" have been removed from the definition to reduce any ambiguity as to what is intended. Under the existing rule, if a licensee has a room, cell, or vault that meets the definition of a "permanent radiographic installation", then it must meet the special safety requirements of § 34.33. The proposed rule adds two additional requirements: (1) to perform a daily check of the visible and audible signals, and (2) that all permanent facilities must be listed on the license. Under the proposed rule, radiography can only be performed in one of two ways; (1) in a permanent radiographic installation with a qualified radiographer, or (2) at any other location with two qualified individuals.

2

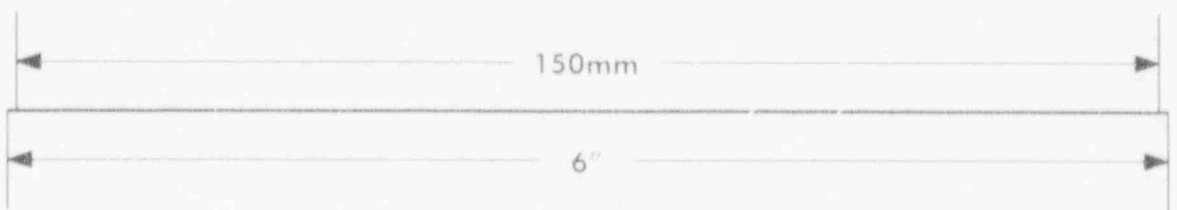
IMAGE EVALUATION TEST TARGET (MT-3)



PHOTOGRAPHIC SCIENCES CORPORATION
770 BASKET ROAD
P.O. BOX 338
WEBSTER, NEW YORK 14580
(716) 265-1600

2

IMAGE EVALUATION TEST TARGET (MT-3)



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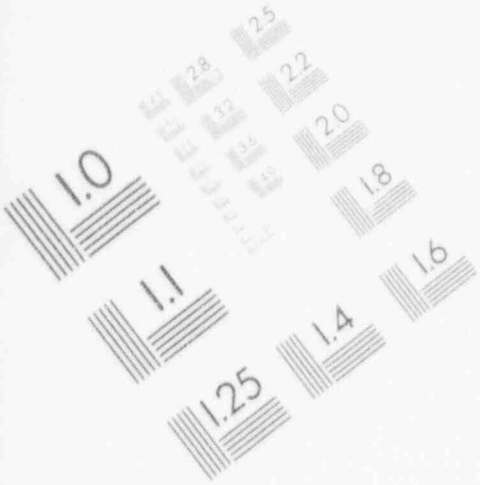
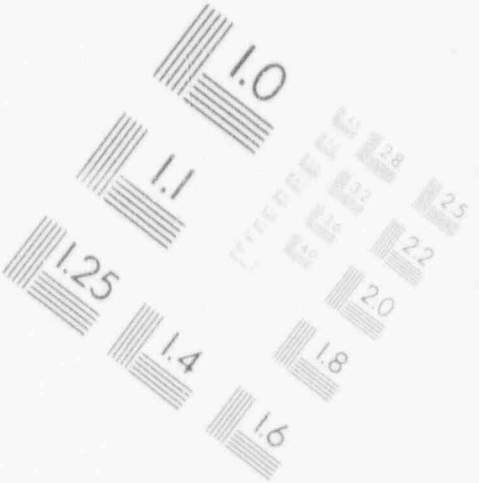
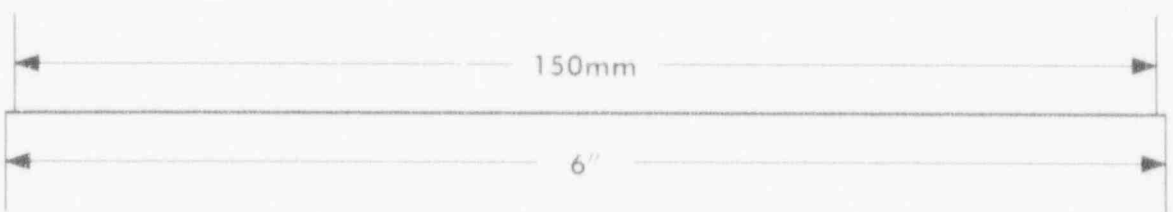
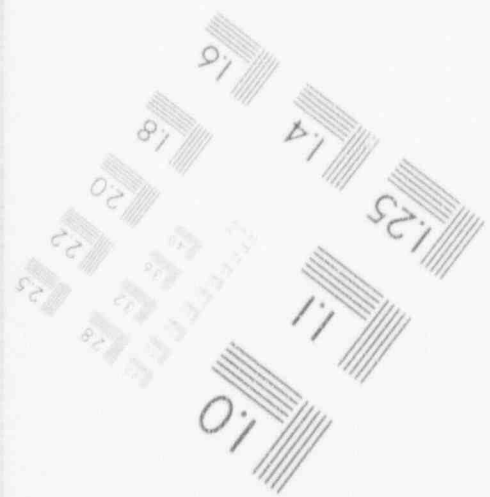
2

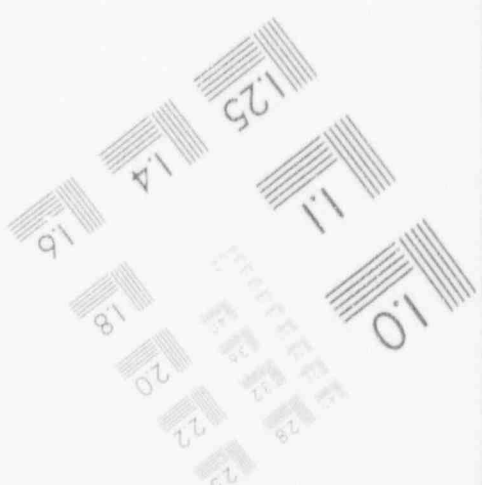
IMAGE EVALUATION TEST TARGET (MT-3)











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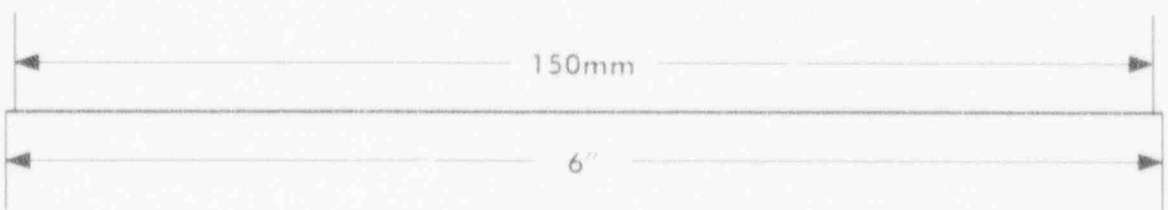
2

IMAGE EVALUATION TEST TARGET (MT-3)



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The proposed rule includes requirements specifying the qualifications and duties of the Radiation Safety Officer (RSO). The RSO is the key licensee individual charged with the responsibility to ensure that the requirements in the license are followed. These requirements have been based on similar commitments previously included in specific license conditions on a case-by-case basis. The proposed rule would require additional special training for RSOs. The Commission is considering permitting existing RSO's an additional two years to obtain the additional training, and is specifically requesting comment on this proposed requirement.

In an effort to make the regulation a more-easily understood document and to facilitate compliance, the format of the proposed rule has been revised to more appropriately group the requirements within subparts of 10 CFR 34.

IV. Discussion of the Proposed Rule

Table of Contents

The new Table of Contents contains eight subparts. The organization is as follows:

Subpart A-General Provisions

Subpart B-Specific Licensing Provisions

Subpart C-Equipment

Subpart D-Radiation Safety Requirements

Subpart E-Recordkeeping Requirements

Subpart F-Notification of Incidents

Subpart G-Exemptions

Subpart H-Enforcement

This organization follows the same general format used in 10 CFR Part 39, which addresses radiation safety requirements for well logging. Each subpart will be discussed separately.

Subpart A-General Provisions

This subpart covers items of a general nature, such as listing definitions and OMB approvals. It also describes the purpose and scope of the rule.

Section 34.1, Purpose and scope, is basically unchanged from the existing regulation. Other NRC regulations which apply to radiography licenses are referenced in this section.

Section 34.3, Definitions, contains the following new terms: ALARA, Annual Safety Review, Becquerel, Collimator, Field station, Gray, Radiation Safety Officer, Sievert, S-tube, and Temporary jobsite. These definitions were added to define terms used in requirements not previously addressed in Part 34. The term ALARA, which means as low as reasonably achievable, has been added to include procedures now explicitly required in Part 20. Previously these procedures were only addressed in regulatory guides. The term Annual Safety Review was added to describe what must be addressed in "periodic training" which while listed in the current rule has never been described. The terms Becquerel, Gray, and Sievert were added to reflect the Commission's policy on use of metric units in all new or revised regulations. The term Collimator was added to the proposed rule because it is a piece of equipment that is often used in conducting radiography operations and must be

included when conducting a radiation survey. The term S-tube was added to the proposed rule to describe the component of a radiographic exposure which would require leak testing. The terms Field station and Temporary jobsite were added to the proposed rule, because the use of radioactive material frequently occurs at sites that may not be listed on the license and there has been some confusion on whether special requirements must be met at these locations. The term Field station is being used to designate those locations where radiography equipment is stored and from which equipment is dispatched to temporary jobsites where radiography is to be conducted. The term Radiation Safety Officer (RSO) was added to clearly specify the duties and qualifications of this individual. While the role of the RSO has long been recognized by the NRC as a vital function in the safe use of radioactive material, the current Part 34 does not address the duties and qualifications of this individual.

The terms Associated equipment, Control device, Control Tube, Exposure head, Field examination, Projection sheath, Radiographic Operations, Shielded position, and Source assembly, while used in the existing regulation, were not previously defined. Both licensees and Agreement State representatives requested clarification of these terms. Changing the definition of radiographer's assistant was discussed at the November 1992 workshop in Dallas, Texas. Some Agreement States use the term, "trainee" to refer to a radiographer's assistant and require training similar to that required of a radiographer. The NRC has decided to retain the term radiographer's assistant and has proposed upgrading the training requirements to provide additional assurance that radiographers' assistants are sufficiently knowledgeable of NRC regulations. Although the NRC is not adopting the term "trainee," the

proposed rule has been written to provide the flexibility for the second person to have training beyond that of a radiographer's assistant. This position could then equally be filled by a "trainee."

The definition of a permanent radiographic installation was modified to remove ambiguities in the previous definition, because some licensee's were confused as to when a facility was required to meet the requirements of a permanent radiographic installation. The definitions of storage area and storage container were modified to remove references to transportation. Specific transportation requirements are addressed in § 34.35.

Section 34.5, Interpretations, is standard regulatory language to state that only the General Counsel of the NRC has the authority to provide interpretations of the regulations which will be binding on the Commission.

Section 34.8, Information collection requirements: OMB approval, is unchanged from the current regulation, except for changing the section numbers which apply to the new format of the proposed rule and any new requirements. The Commission has submitted the proposed rule for OMB clearance. Final OMB clearance will be obtained prior to publication of a final rule.

Subpart B-Specific Licensing Provisions

This proposed subpart provides the basic requirements for submittal of a license application. The sections in this proposed subpart are basically unchanged from those in the current Subpart A of Part 34.

Section 34.11, Application for a specific license, is worded the same as § 34.3 in the current Part 34.

Section 34.13, Specific license for radiography, is basically worded the same as § 34.11 in the current Part 34, except for the following: § 34.13(e) proposes a reduction in the frequency of field inspections of radiographers and radiographer's assistants from quarterly to semiannually. The NRC is proposing to reduce the frequency of the inspections of job performance to semiannual inspections for individuals regularly conducting radiographic operations. For individuals who have not performed radiographic operations for more than six months, an inspection of job performance would be required at the time they next participate in a radiographic operation. This reduction was done primarily in response to comments made at the Radiography Workshop conducted in November, 1992. The basic requirements for conducting the field inspections have been relocated to § 34.43(d) to more accurately reflect its role in the training program. In addition, a requirement for conducting annual safety reviews has also been added in § 34.43(c) to clarify the intent of the annual safety review requirement required by the current § 34.11(b) and the proposed § 34.13(b)(1). Section 34.13(g) is proposed which requires the licensee to designate an individual on the license to fulfill the duties of the RSO. The qualifications and duties of this individual are specified in § 34.41.

Section 34.13(i) is a new paragraph which, as proposed, would require a list and description of all permanent radiographic installations and all field stations to be included in the license application.

Subpart C-Equipment

This proposed subpart describes the requirements for radiographic equipment performance and use. Some of the requirements in this proposed subpart are changed from the current Part 34 as described below.

Section 34.20, Performance requirements for radiography equipment, is slightly changed from § 34.20 of the current rule. Section 34.20(b)(2) has been revised to specify that radiographic exposure devices used as Type B transport containers must meet the quality assurance program requirements outlined in §71.105. While this always has been true, many licensees have been unaware of this requirement. Section 34.20(b)(3) is revised to prohibit modification of any exposure device. Many licensees have expressed confusion over what the current rule intended in permitting modification. Modification of any safety component was never intended. The proposed rule removes this ambiguity. Modification of any non-safety equipment would still be permitted under the proposed rule. The term Source Assembly was added to § 34.20(c) and (e) so that it would be included as a piece of equipment that must meet the requirements of § 34.20. Section 34.20(f) is added to require labeling of all associated equipment acquired after January 10, 1996, to identify that the components have met the requirements of this section.

Section 34.21, Limits on levels of radiation for radiographic exposure devices, storage containers, and source changers, is basically unchanged from Section 34.21 of the current rule, with the following exceptions. Metric equivalents to the values previously cited have been included. While it is recognized that radiation exposure instruments currently use units of roentgens to measure radioactivity, the rule has been modified to use the terms millisieverts and millirems. Rather than making the transition from roentgens to coulombs per kilogram (in air), the terms millisieverts and

millirems were chosen because a quality factor of 1 is appropriate in dealing with gamma-ray emitting radiography sources. Under the proposed rule measurements taken in roentgens may continue to be recorded in terms of roentgens, provided the limits described in the rule, expressed in millisieverts or millirems, are not exceeded.

Section 34.23, Locking and relocation of radiographic exposure devices, storage containers, and source changers, is slightly changed from § 34.22 of the current rule, as described below. Section 34.23(a) describes locking of radiographic exposure devices. A requirement to remove the key of any keyed-lock is proposed. Should the key remain in the device, there is an increased likelihood of the accidental or intentional removal of the sealed source when the radiographic device unattended. The term manually is added to clarify what is meant by securing the source assembly for radiographic exposure devices manufactured prior to January 10, 1992. Section 34.23(b) is added which specifies requirements for ensuring that the sealed source is in the shielded position prior to movement of the device and associated equipment because a number of overexposures have occurred while radiographic devices were being moved from one location to another.

Section 34.25, Radiation survey instruments replaces § 34.24 in the current rule and has been updated to reflect current calibration standards for different types of survey meters. This is to provide appropriate guidance to address the variety of survey instruments currently available. An additional requirement to perform an operability check prior to use is proposed. While this is routinely part of all survey instrument specifications, a failure to determine whether an instrument was operable prior to use has been a contributing factor in overexposures during radiographic operations.

In § 34.27, Leak testing and replacement of sealed sources, the words "repair, tagging, opening, and modification" of sealed sources have been removed because these activities are only approved for individuals specifically licensed to do so. They are not considered routine activities that should be performed by anyone holding a radiography license. The language in the current rule could be confusing as written. It was never intended that radiographers would be permitted to perform these activities without special authorization from the Commission or an Agreement State. Section 34.31 was modified to include a specific prohibition on the opening, repair, or modification of sealed sources. Most of the language in the proposed rule is the same as § 34.25 of the existing rule. However, the organization has been modified for purposes of clarification. The requirement that performance of a source exchange or a leak test must be done by persons approved by the Commission has been modified to include Agreement States. Recordkeeping requirements have been moved to § 34.67.

Section 34.27(f) is proposed to require surveys for depleted uranium (DU) contamination in the "S" tube of radiographic devices at least once every 12 mont... The depleted uranium which is used as a shielding material in most radiographic device and replaces the lead shielding that was used in older models. The presence of DU contamination in the "S" tube, (i.e., a hard metal tube, such as titanium, through which the radioactive source travels) is an indication that the control cable has worn a groove through the "S" tube into the DU shielding. This condition could cause binding of the control cable in the groove with the resultant inability to retract the source, and could result in unwarranted exposures. Recordkeeping requirements have been moved to § 34.67.

Section 34.29, Quarterly inventory, is basically unchanged from the existing regulation, with the exception of moving all recordkeeping requirements to § 34.69.

Section 34.31, Inspection and maintenance of radiographic exposure devices, storage containers, associated equipment, and source changers, includes several proposed changes from § 34.28 in the current rule. The term associated equipment has been included in the proposed rule, and includes various items used for specific tasks which may not be supplied with the radiographic device. Experience has shown that defects in associated equipment can have an effect on safety warranting inclusion in an inspection and maintenance program. Section 34.31(a) has been revised to clarify the intent of the daily visual check and the required actions if defects are found. In § 34.31(b) the term "routine maintenance" is now used to clarify that licensees are not required to perform all maintenance. Many equipment repairs may require returning the device to the manufacturer. Language has been added to specify that defective equipment is to be removed from service until repaired and that a record of the defect, as well as corrective actions taken, is to be made. While this seems to be obvious, there have been numerous instances where the use of defective equipment continued and overexposures of personnel occurred as a direct result of the defects. Recordkeeping requirements have been moved to § 34.73. The records required to be kept are now specified in the rule, and include: date of check, individual performing check, equipment involved, any defects found, and repairs made.

Section 34.33, Permanent radiographic installations, is basically unchanged from the existing requirements in Part 34, with the exceptions noted

below. Section § 34.33(a) has been revised to clarify which entrance controls are required by incorporation of the appropriate language in Part 20.1601 into Part 34. Section 34.33(c) is revised to require an alarm system check at the beginning of each day of use. This is to be performed by checking the warning light and audible alarm with the source exposed, and is to be performed prior to use of the room each day. A defective alarm would require repair before radiographic operations could resume. This requirement is included because there have been instances where failures in alarm systems have resulted in personnel overexposures upon entry into a high radiation area.

Section 34.35, Labels, storage, and transportation precautions, is a proposed new section that would place requirements into Part 34 that specify labeling and security precautions for radioactive material storage and transportation. Section 34.23 of the current rule describes storage precautions for exposure devices and storage containers but does not address transportation or labeling requirements. In § 34.35 of the proposed rule, labeling requirements for source changers and storage containers are specified. The proposed rule contains specific requirements to lock and physically secure transport packages. The proposed rule would also require licensees to store licensed material in a manner to minimize the danger from explosions or fire. The requirement for a QA program, as described in § 71.105, has been added to the proposed rule. While radiography licensees have always had to comply with § 71.105, there have been numerous cases where radiography licensees were unaware of this requirement; and therefore, failed to comply. The addition of requirements addressing labeling and transportation is necessary because in the past personnel and public exposures

have occurred from the failure to properly safeguard radioactive material during storage and transportation.

Subpart D-Radiation Safety Requirements

This subpart describes basic radiation safety requirements for radiographic operations and includes training, safety procedures, personnel monitoring and surveys. New requirements describing the duties of the radiation safety officer are proposed.

Section 34.41, Conducting radiographic operations, would be added to address the practice of conducting radiography at sites where the special safety features of a shielded facility are not available. The proposed requirement specifies that either two radiographers or a radiographer and an individual who has met the requirements to be a radiographer's assistant must be present anytime radiographic operations occur outside a permanent installation. The basis for this proposed requirement is to ensure that, in the absence of the safety features outlined in § 34.33, there will be a significant increase in assurance that operational safety measures will be implemented effectively. The expectation is that violations that have involved failures to perform adequate radiation surveys of radiographic exposure devices and the surrounding area, failures to adequately post and monitor the restricted area, and failures to lock and secure the camera when not in use will become less frequent. Furthermore, if an incapacitating injury to a radiographer should occur at a remote location, the presence of a second individual could be an important factor in preventing unnecessary radiation exposures.

Section 34.42, Radiation Safety Officer(RSO), lists the qualifications and duties of the RSO. This section would be added to place in the regulations the requirements for this key individual. Previously, these requirements were only referenced in regulatory guides and included as license conditions on a case-by-case basis, but not specified in the regulations. The NRC believes that the RSO is the key individual for ensuring safe operations. The qualifications listed for the RSO in the proposed rule include: (1) completion of the training required for a radiographer as described in Part 34; and (2) 2000 hours of documented experience in industrial radiography with at least 40 hours of formal classroom training with respect to the establishment and maintenance of radiation protection programs. It is anticipated that most existing RSOs would already meet these requirements. It is proposed that licensees would have two additional years to meet this 40 hour training requirement for existing RSOs. The duties of the RSO in the proposed rule include overseeing procedure implementation and employee training, and monitoring radiation surveys, leak tests, and personnel monitoring results. A key duty of the RSO is to ensure the safe conduct of operations and to stop unsafe operations and institute corrective actions.

Section 34.43, Training, contains several new requirements which are discussed below. Section 34.43(a) has been revised to include training in §§ 30.7, 30.9, and 30.10, applicable sections of 10 CFR Part 71, and some instructions in applicable Department of Transportation (DOT) regulations as referenced in 10 CFR Part 71, in addition to other parts of NRC regulations. Section 34.43(b), which lists training requirements for radiographers' assistants, has been revised to require training in §§ 30.7, 30.9, 30.10, and Parts 19, 20, 34, 71, and some instructions in applicable DOT regulations as

referenced in 10 CFR Part 71, in addition to the licensee's operating and emergency procedures. These changes are to ensure that radiographers and radiographers' assistants are knowledgeable of the safety requirements applicable to handling radioactive material in the conduct of radiography. In § 34.43(b)(3) the option of providing an oral test has been omitted. The proposed rule would only allow a written test to be given. Section 34.43(c) describes a proposed requirement to conduct annual safety review of radiographers and radiographers' assistants. In the current rule, annual safety review is required although there are no requirements on topics to be addressed. A number of violations involving personnel overexposures have resulted from licensees' failures to provide adequate training. The proposed requirement includes training on revised operating and emergency procedures, new equipment, and safety issues. This review can be combined with the semiannual inspection of job performance required by § 34.43(d).

Section 34.43(d) has been relocated from § 34.11(d), and describes the requirements for routine inspections of job performance for radiographers and radiographers' assistants. The proposed rule reduces the frequency of these inspections from quarterly to semiannually. The NRC is proposing to reduce the frequency of inspections of job performance for individuals regularly conducting radiographic operations. For individuals who have not performed radiographic operations for more than six months, an inspection of their job performance would be required at the time of their next participation in a radiographic operation. With several of the other requirements proposed in this rulemaking, such as specifying requirements for annual safety review and having two individuals at a temporary jobsite, the Commission believes that

the frequency of inspection of job performance can be reduced from quarterly to semiannually.

Proposed § 34.43(e) specifies that recordkeeping requirements can be found in § 34.79. The requirements for records are unchanged from the current Part 34. Proposed § 34.43(f) contains the subjects currently listed in Appendix A of Part 34. Several proposed additional requirements are included. These include: pictures or models of source assemblies; training in storage, control, and disposal of licensed materials; and pertinent Federal regulations, i.e., Department of Transportation.

In § 34.45, Operating and emergency procedures, minor changes were made to include: procedures for source recovery if the licensee intends to perform emergency source recovery. This is added because many of the steps in a source recovery would be the same in any circumstance and, in the past, a number of personnel overexposures have occurred during emergency source recovery operations because basic radiation protection precautions were overlooked. Additional requirements are proposed for transportation procedures to include placarding of vehicles, and reference to the DOT regulations. A number of violations have resulted from licensees failing to follow DOT regulations in the transportation of radioactive material. Section 34.45(b) is proposed which specifies that the recordkeeping requirements can be found in § 34.81. Sections 34.89 and 34.91 specify that copies of current operating and emergency procedures are to be maintained at field stations, permanent installations, and temporary jobsites, to ensure that adequate documents are available where radiographic operations occur.

Section 34.46, Supervision of radiographer's assistants, is unchanged from § 34.44 of the current rule.

In § 34.47, Personnel monitoring, several changes are proposed. The existing requirement specifies that pocket dosimeters have a range from zero to at least 200 milliroentgens. The proposed rule has dropped the term "at least." This is to prevent the use of pocket dosimeters with very high ranges where the users would be unable to properly determine their exposure. Use of pocket dosimeters with a range higher than 200 milliroentgens will be considered on a case-by-case basis. Additional requirements are proposed on the replacement frequency for film and TLDs. In the existing regulation, no replacement frequency is specified. ~~A monthly frequency is proposed~~ because the high intensity sources used in radiography can lead to significant exposures, ~~so that~~ monthly monitoring is necessary to maintain an adequate knowledge of an individual's exposure to date and to prevent overexposures.

Section 34.47(b) addresses the use of pocket dosimeters. A requirement is proposed to read dosimeters at the beginning and end of each shift. This is added to ensure that the dose is correctly estimated. The existing regulation only specifies a daily reading which does not provide sufficient instruction on how licensees should handle any readings which remain on the pocket dosimeter after recharging. Because it is nearly impossible to recharge a pocket dosimeter to zero, licensees must take a reading before and after use and subtract the difference to accurately determine the dose. Section 34.47(d) addresses an off-scale pocket dosimeter. The proposed rule requires that, in the case of a pocket dosimeter being off-scale, the individual will not be permitted to work with licensed material until the RSO or a designee of the RSO makes a determination of the worker's radiation exposure. The current rule requires sending the film badge or TLD for processing but does not specify when the individual can return to work. The

proposed revision provides the criteria that must be met to permit the individual to return to work. A provision is included which will permit the individual to return to work when the circumstances are clearly known and justified by the RSO that there was no possibility of overexposure.

Section 34.47(e) is proposed which requires a worker to cease work whenever a film badge or TLD is lost or damaged until a replacement is available. This is added to ensure that there is a means to accurately determine the worker's radiation dose.

In § 34.49, Radiation surveys, there are several proposed changes. The existing regulation requires a survey of the camera circumference and the guide tube. A number of violations have occurred because of failure to follow this requirement. In reviewing the regulation, the NRC has decided to revise the survey requirements to remove the current requirements and specify a requirement to conduct a survey when approaching the guide tube. A requirement has been added to survey the camera to determine that the sealed source has returned to the shielded position. The proposed rule places the responsibility with the licensee for ensuring that an adequate survey is conducted. In the majority of cases, a survey of the camera ports should be adequate to make this determination.

Section 34.51, Security, is basically unchanged from § 34.41 of the current rule. References to Part 20 have been updated to reflect the proposed revisions in §34.33.

Section 34.53, Posting, is basically unchanged from § 34.42 of the current rule, except to incorporate current references to Part 20.

Subpart E-Recordkeeping Requirements

This subpart does not appear in the current Part 34. It is proposed to place all recordkeeping and notification requirements in one location. Most of the recordkeeping requirements are unchanged from the existing Part 34. Proposed changes are discussed below.

Section 34.61. Specific license for radiography, requires the licensee to maintain a copy of the license until it is terminated by the Commission.

Section 34.63, Records of receipt and transfer of sealed sources, is added to provide a record showing the disposition of sources.

Section 34.65, Records of radiation survey instruments, is proposed as currently written in Section 34.24. Licensees would be required to maintain calibration records for radiation survey instruments for 3 years after the record is made.

Section 34.67, Records of leak testing and replacement of sealed sources, is proposed as currently written in § 34.25(c), and requires licensees to maintain records of leak tests for 3 years after the record is made.

Section 34.69, Records of quarterly inventory, is proposed as currently written § 34.26, and requires licensees to maintain records of quarterly inventories for 3 years after the record is made.

Section 34.71, Utilization logs, is proposed much as currently written in § 34.27. This section would require licensees to maintain utilization logs for 3 years after the record is made. The proposed rule has added several additional pieces of information to the logs including the serial number of the device in which the sealed source is located, the radiographer's signature, and the dates the device is removed and returned to storage. This information is necessary in order to verify location of sources.

Section 34.73, Records of inspection and maintenance of radiographic exposure devices, storage containers, associated equipment, and source changers, is proposed much as currently written in § 34.28(b). This section requires licensees to maintain inspection and maintenance records for 3 years after the record is made. The proposed rule would specify the information that must be included in the inspection records: date of check, name of inspector, equipment inspected, any defects found, and repairs made.

Section 34.75, Records of alarm system checks at permanent radiographic installations, is proposed as currently written in § 34.29(c) and requires licensees to maintain records of alarm system checks for 3 years after the record is made.

Section 34.79, Records of training, is proposed as currently written in § 34.31(c), with the additional requirement for maintaining records of annual safety review, and requires licensees to maintain records of initial and annual safety review, and field examinations, including copies of tests, dates administered, names of instructors and attendees, and topics covered in periodic retraining.

Section 34.81, Copies of operating and emergency procedures, is proposed as currently written in § 34.32 and requires licensees to maintain copies of emergency and operating procedures until the Commission terminates the license.

Section 34.83, Records of personnel monitoring, is proposed as currently written in § 34.33(b), and requires licensees to maintain records of alarm ratemeter calibrations, pocket dosimeter readings, and operability checks for 3 years from the date the record was made, and to maintain records of film badge or TLD reports until the Commission terminates the license.

Section 34.85, Records of radiation surveys, is proposed as currently written in 43(d), and requires records of the exposure device surveys for 3 [illegible] the date the record was made.

Section 34.87, Form of records, is proposed as currently written in § 34.4, and specifies how records must be maintained, including permitting records to be stored in electronic media.

Section 34.89, Documents and records required at field stations and permanent installations, would be added to list documents and records required at field stations and permanent installations. This section is necessary to ensure that licensees have available sufficient records to demonstrate compliance with NRC regulations. Field stations and permanent installations may be far removed from the home office; therefore, records necessary to maintain safe operation should be readily available. The records listed are a subset of the records required at a licensee's normal place of business. These records include copies of pertinent regulations, copies of operating and emergency procedures, instrument calibration records, leak test results, inventory records, utilization logs, training and survey records. These records are those required for licensees to demonstrate that they safely handle radioactive material.

Section 34.91, Documents and records required at temporary jobsites and use or storage locations exceeding 180 days, would be added to list documents and records required at temporary jobsites and locations where radioactive material will be in use or storage for more than 180 days. This section is necessary to ensure that licensees have available sufficient records to demonstrate compliance with NRC regulations and those records necessary to maintain safe operations. The records listed are a smaller subset of the

records required for a field station or permanent installation. These records include copies of pertinent regulations, evidence of latest instrument calibrations, latest survey records, shipping papers, and Agreement State license if operating under reciprocity. These records are those required for licensees to demonstrate that they safely handle radioactive material.

Subpart F - Notifications of Incidents

This subpart is basically unchanged from § 34.30 with the exception of an additional requirement. Section 34.101(c) would require licensees to notify the appropriate NRC regional office in writing prior to using or storing radioactive material in one location for more than 180 days. This provision would be added to provide the NRC with information in a timely manner to permit inspection of radioactive material at these locations.

Subpart G - Exemptions

This subpart addresses exemptions and is basically the same as § 34.51 in the current Part 34 with the exception of minor wording changes.

Subpart H - Enforcement

This subpart addresses enforcement and is unchanged from § 34.61 in the current Part 34.

Agreement State Compatibility

The rule will be a matter of compatibility between the NRC and the Agreement States, thereby providing consistency between Federal and State safety requirements. With regard to basic radiation standards and

definitions, identified as a matters of Division I level of compatibility, the Agreement States will be expected to adopt, essentially verbatim, the proposed Part 34 standards and definitions into their equivalent regulations. The remainder of the rule will be a Division II level of compatibility allowing the Agreement State co-regulators the flexibility to adopt additional requirements based on their radiation protection experience, professional judgments, and community values.

IMPLEMENTATION

The effective date of the proposed requirements would be 90 days after publication of the final rule in the Federal Register. For the proposed requirements in §34.41 to utilize a two-person crew for radiographic operations not conducted in a permanent facility, licensees would have one-year from the effective date of the rule to comply. For the additional RSO training requirements specified in §34.42(a), all current RSOs would be granted a two-year extension to meet the proposed requirements.

The Commission requests that persons commenting on the proposed amendments particularly address how and why any hardships may result from the proposed rule particularly address how and why any hardships may result from the proposed implementation schedule. NRC is particularly interested in comments concerning the need for, and suggestions for, alternative implementation schedules.

Finding of No Significant Environmental Impact: Availability

The Commission has determined under the National Environmental Policy Act of 1969, as amended, and the Commission's regulations in Subpart A of 10 CFR Part 51, that the rule, if adopted, would not be a major Federal action; therefore, an impact statement is not required. The revision of 10 CFR Part 34 should have no environmentally significant impact since radiography only involves the use of sealed sources, and no environmental impact will be involved. The environmental assessment and finding of no significant impact on which this determination is based are available for inspections at the NRC Public Document Room at 2120 L Street, NW. (Lower Level), Washington DC.

Paperwork Reduction Act Statement

This proposed rule amends information collection requirements that are subject to the Paperwork Reduction Act of 1980 (44 U.S.C. 3501 et seq.). This rule has been submitted to the Office of Management and Budget for review and approval of these requirements.

Public reporting burden for this collection of information is estimated to average 2,400 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information including suggestions for reducing this burden, to the Information and Records Management Branch (MNBB-7714), U.S. Nuclear Regulatory Commission, Washington, DC 20555; and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-3019, (3150-0007), Office of Management and Budget, Washington, DC 20503.

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Regulatory Analysis

The Commission has prepared a draft regulatory analysis on this proposed regulation. The analysis examines the costs and benefits of the alternatives considered by the Commission. The draft analysis is available for inspection in the NRC Public Document Room at 2120 L Street NW. (Lower Level), Washington, DC.

Regulatory Flexibility Analysis

The NRC has prepared an initial regulatory analysis of the impact of this proposed rule on small entities. A summary of this analysis appears as Appendix A to this document. A copy of the analysis is available for inspection in the NRC Public Document Room, 2120 L Street, NW. (Lower Level), Washington, DC. Single copies of the analysis may be obtained from (name, address, and telephone number of staff contact). The NRC is seeking public comment on the initial regulatory flexibility analysis. The NRC is particularly seeking comment from small entities (i.e., small businesses, small organizations, and small jurisdictions under the Regulatory Flexibility Act) as to how the regulations will affect them and how the regulations may be tiered or otherwise modified to impose less stringent requirements on small entities while still adequately protecting the public health and safety. Those small entities which offer comments on how the regulations could be modified to take into account the differing needs of small entities should specifically discuss the following items:

(a) The size of their business and how the proposed regulations would result in a significant economic burden upon them as compared to larger organizations in the same business community.

(b) How the proposed regulations could be modified to take into account their differing needs or capabilities.

(c) The benefits that would accrue, or the detriments that would be avoided, if the proposed regulations were modified as suggested by the commenter.

(d) How the proposed regulations, as modified, would more closely equalize the impact of NRC regulations or create more equal access to the benefits of Federal programs as opposed to providing special advantages to any individuals or groups.

(e) How the proposed regulations, as modified, would still adequately protect the public health and safety.

The comments should be sent to the Secretary of the Commission, U.S. Nuclear Regulatory Commission, Washington, DC 20555, Attn: Docketing and Service Branch.

Backfit Analysis

The NRC has determined that the backfit rule, 10 CFR 50.109, does not apply to this proposed rule and, therefore, that a backfit analysis is not required for this proposed rule. The proposed rule does not involve any provisions that would impose backfits as defined in 10 CFR 50.109(a)(1).

List of Subjects in 10 CFR Part 34

10 CFR Part 34

Byproduct material, Criminal Penalties, Nuclear material, Packaging and containers, Radiation Protection, Radiography, Reporting and recordkeeping requirements, Scientific equipment, Security measures.

For reasons set out in the preamble and under the authority of the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974, as amended, and 5 U.S.C. 553, the NRC is proposing to adopt the following amendments to 10 CFR 34.

PART 34 - LICENSES FOR RADIOGRAPHY AND RADIATION SAFETY REQUIREMENTS FOR RADIOGRAPHIC OPERATIONS

1. The authority citation for Part 34 is revised to read as follows:

AUTHORITY: Secs. 81, 161, 182, 183, 68 Stat. 935, 948, 953, 954, as amended (42 U.S.C. 2111, 2201, 2232, 2233); sec. 201, 88 Stat. 1242, as amended (42 U.S.C. 5841).

Section 34.45 also issued under sec. 206, 88 Stat. 1246 (42 U.S.C. 5846).

2. The existing headings for Subparts A and B and each of the existing undesignated center headings are removed.

3. A new heading for subpart A (§§ 34.1 - 34.8) is added to read as follows: Subpart A - General Provisions.

4. Section 34.1 is revised to read as follows:

§ 34.1 Purpose and scope.

This part prescribes requirements for the issuance of licenses for the use of sealed sources containing byproduct material and radiation safety requirements for persons using such sealed sources in industrial radiography. The provisions and requirements of this part are in addition to, and not in substitution for, other requirements of this chapter. In particular, the requirements and provisions of Parts 19, 20, 21, 30, 71, 150, 170 and 171 of this chapter apply to applications and licenses subject to this part. This rule is not to be applied to medical uses of byproduct material.

5. Section 34.3 is removed.

§ 34.3 [Removed]

6. Section 34.2 is redesignated as § 34.3, and the new § 34.3 is revised to read as follows:

§ 34.3 Definitions.

ALARA (acronym for as low as reasonably achievable) means making every reasonable effort to maintain exposures to radiation as far below the dose limits specified in Part 20 as is practical consistent with the purpose for which the licensed activity is undertaken.

Annual safety review means a review conducted or provided by the licensee for its employees on radiation safety aspects of radiography. The review may include, as appropriate, the results of internal inspections, new procedures or equipment, accidents or errors that have been observed, and opportunities for employees to ask safety questions.

Associated Equipment means equipment that is used in conjunction with a radiographic exposure device to make radiographic exposures that drives, guides or comes in contact with the source, (e.g., guide tube, control tube, control (crank-out device), removable source stop, "J" tube).

Becquerel (Bq) means one disintegration per second.

Collimator means a device used to limit the size, shape, and direction of the primary radiation beam.

Control (crank-out device) means the control cable, the protective sheath (control tube) and control drive mechanism used to move the sealed source from its shielded position in the radiographic device or camera to an unshielded position outside the device for the purpose of making a radiographic exposure.

Control tube means protective sheath for guiding the control cable. The control tube connects the control drive mechanism to the radiographic exposure device.

Exposure head means a device that locates the gamma radiography sealed source in the selected working position. (An exposure head is also known as a source stop.)

Field examination means a demonstration through practical application of the safety rules and principles in radiography including use of all appropriate equipment and procedures.

Field station means a facility where licensed material may be stored or used and from which equipment is dispatched.

Gray means the SI unit of absorbed dose. One gray is equal to an absorbed dose of 1 Joule/kilogram. It is also equal to 100 rads.

Permanent radiographic installation means an enclosed shielded room, cell, or vault in which radiography is performed.

Projection sheath (guide tube) means a flexible or rigid tube (i.e., "J" tube) for guiding the source assembly and the attached control cable from the exposure device to the exposure head or working position.

Radiation Safety Officer means an individual named by the licensee who has knowledge of, responsibility for, and authority to ensure compliance with appropriate radiation protection rules, standards, and practices on behalf of the licensee and who meets the requirements of § 34.41.

Radiographer means any individual who performs or who, in attendance at the site where the sealed source or sources are being used, personally supervises radiographic operations and who is responsible to the licensee for

ensuring compliance with the requirements of the Commission's regulations and the conditions of the license.

Radiographer's assistant means any individual, who under the personal supervision of a radiographer, uses radiographic exposure devices, sealed sources or related handling tools, or radiation survey instruments in radiography.

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, (i.e., a camera or a projector).

Radiographic operations means all activities associated with the presence of radioactive sources in a radiographic exposure device during transport and use of the device, to include surveys to confirm the adequacy of boundaries, setting up equipment and any activity inside restricted area boundaries.

Radiography means the examination of the structure of materials by nondestructive methods, utilizing sealed sources of byproduct materials.

S tube means a hard metal tube, such as titanium, through which the radioactive source travels in a radiographic exposure device.

Sealed source means any byproduct material that is encased in a capsule designed to prevent leakage or escape of the byproduct material.

Shielded position means the location within the radiographic exposure device or source changer where the sealed source is secured and restricted from movement. (In this position the radiation exposure will be at a minimum. This position incorporates maximum shielding for the radioactive source.)

Sievert means the SI unit of any of the quantities expressed as dose equivalent. The absorbed dose in grays multiplied by the quality factor is equal to the dose equivalent in Sieverts. For comparison 1 Sv = 100 rems.

Source assembly means an assembly that consists of the sealed source and a connector that attaches the source to the control cable. The source assembly may also include a stop ball used to secure the source in the shielded position.

Source changer means a device designed and used for replacement of sealed sources in radiographic exposure devices, including those also used for transporting and storage of sealed sources.

Storage area means any location, facility, or vehicle which is used to store or to secure a radiographic exposure device, a storage container, or a sealed source when it is not in use and which is locked or has a physical barrier to prevent accidental exposure, tampering with, or unauthorized removal of the device, container, or source.

Storage container means a device in which sealed sources are stored.

Temporary jobsite means a place where licensed materials are present for the purpose of performing radiography other than the location(s) listed on the license.

7. Section 34.4 is removed.

§34.4 [Removed]

8. Section 34.5 is added to read as follows:

§ 34.5 Interpretations.

Except as specifically authorized by the Commission in writing, no

interpretation of the meaning of the regulations in this part by any officer or employee of the Commission, other than a written interpretation by the General Counsel, will be recognized to be binding upon the Commission.

9. Section 34.8 is revised to read as follows:

§ 34.8 Information collection requirements: OMB approval.

(a) The Nuclear Regulatory Commission has submitted the information collection requirements contained in this part to the Office of Management and Budget (OMB) for approval as required by the Paperwork Reduction Act of 1980 (44 U.S.C. 3501 et seq.). OMB has approved the information collection requirements contained in this part under control number 3150-0023.

(b) The approved information collection requirements contained in this part appear in §§ 34.13, 34.20, 34.25, 34.27, 34.29, 34.31, 34.33, 34.35, 34.43, 34.45, 34.47, 34.49, 34.53, 34.61, 34.63, 34.65, 34.67, 34.69, 34.71, 34.73, 34.75, 34.79, 34.81, 34.83, 34.85, 34.89, 34.91, 34.101, and 34.111.

(c) This part contains information collection requirements in addition to those approved under the control number specified in paragraph (a) of this section. The additional information collection requirements in § 34.11, Form NRC 313 are approved under control number 3150-0120.

10. A new heading for Subpart B [§§ 34.11-34.13] is added to read as follows:

Subpart B - Specific Licensing Provisions

11. Section 34.11 is revised to read as follows:

§ 34.11 Application for a specific license.

A person may file an application for specific license for use of sealed sources in radiography in duplicate on NRC Form 313, "Application for Material License," in accordance with the provisions of § 30.32 of this chapter.

12. Section 34.13 is added to read as follows:

§ 34.13 Specific license for radiography.

The Commission will approve an application for a specific license for the use of licensed material in radiography if the applicant meets the following requirements:

(a) The applicant shall satisfy the general requirements specified in § 30.33 of this chapter for byproduct material, as appropriate, and any special requirements contained in this part.

(b) The applicant shall develop an adequate program for training radiographers and radiographers' assistants and submit to the Commission a description of this program which specifies the --

(1) Initial training;

(2) On-the-job training;

(3) Annual safety reviews;

(4) Means the applicant will use to demonstrate the radiographer's knowledge and understanding of and ability to comply with the Commission's regulations and licensing requirements and the applicant's operating and emergency procedures; and

(5) Means the applicant will use to determine the radiographer's assistant's knowledge and understanding of and ability to comply with the applicant's operating and emergency procedures.

(c) In lieu of describing its initial training program for radiographers in the subjects outlined in § 34.43(f) and the description of and the means to determine the radiographer's knowledge and understanding of these subjects, the applicant affirms that all individuals acting as radiographers will be certified in radiation safety through the Certification Program for Industrial Radiography Radiation Safety Personnel of the American Society for Nondestructive Testing, Inc. (ASNT-IRRSP) prior to commencing duties as radiographers. From April 18, 1991, to the date of the renewal of an existing license, an approved license application is deemed to include the option, for individuals who are certified in radiation safety through the ASNT-IRRSP, to substitute ASNT-IRRSP certification in lieu of the described means to determine a radiographer's knowledge and understanding of the subjects in § 34.43(a)(1). (This paragraph does not affect the licensee's responsibility to assure that radiographers are properly trained in accordance with § 34.43(a)).

(d) The applicant shall submit to the Commission written operating and emergency procedures as described in § 34.45.

(e) The applicant shall establish and submit to the Commission its program for semiannual inspections of the job performance of each radiographer and radiographer's assistant as described in § 34.43(d).

(f) The applicant shall submit a description of its overall organizational structure as it applies to the radiation safety responsibilities in radiography, including specified delegations of authority and responsibility.

(g) The applicant shall designate and identify a Radiation Safety Officer responsible for implementing the licensee's radiation safety program. The

Radiation Safety Officer shall meet the qualifications and duties described in § 34.41.

(h) If an applicant intends to perform leak testing of sealed sources, the applicant shall identify the manufacturers and the model numbers of the leak test kits to be used. If the applicant wants to analyze its own wipe samples, the applicant shall establish procedures to be followed and submit a description of these procedures to the Commission. The description must include the --

(1) Instruments to be used;

(2) Methods of performing the analysis; and

(3) Pertinent experience of the person who will analyze the wipe samples.

(i) The applicant shall identify and describe the location(s) of all field stations and permanent radiographic installations.

13. A new heading for Subpart C [§§ 34.20-34.35] is added to read as follows:

Subpart C - Equipment

14. Section 34.20 is revised to read as follows:

§ 34.20 Performance requirements for radiography equipment.

Equipment used in industrial radiographic operations must meet the following minimum criteria:

(a) Each radiographic exposure device and all associated equipment must meet the requirements specified in American National Standard N432-1980 "Radiological Safety for the Design and Construction of Apparatus for Gamma

Radiography," (published as NBS Handbook 136, issued January 1981). This publication has been approved for incorporation by reference by the Director of the Federal Register in accordance with 5 U.S.C. 552(a). This publication may be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402 and from the American National Standards Institute, Inc., 1430 Broadway, New York, New York 10018, Telephone (212) 642-4900. Copies of the document are available for inspection at the Nuclear Regulatory Commission Library, 7920 Norfolk Avenue, Lower Level, Bethesda, Maryland, 20814. A copy of the document is also on file at the Office of the Federal Register, 800 North Capitol Street NW., Washington, DC 20408.

(b) In addition to the requirements specified in paragraph (a) of this section, the following requirements apply to radiographic exposure devices and associated equipment.

(1) Each radiographic exposure device must have attached to it by the user, a durable, legible, clearly visible label bearing the --

(i) Chemical symbol and mass number of the radionuclide in the device;

(ii) Activity and the date on which this activity was last measured;

(iii) Model number and serial number of the sealed source;

(iv) Manufacturer of the sealed source; and

(v) Licensee's name, address, and telephone number.

(2) Radiographic exposure devices intended for use as Type B transport containers must meet the applicable requirements of 10 CFR Part 71, including documentation of the QA program requirements outlined in § 71.105.

(3) Modification of any exposure devices and associated equipment is prohibited.

(c) In addition to the requirements specified in paragraphs (a) and (b) of this section, the following requirements apply to radiographic exposure devices, source assemblies, and associated equipment that allow the source to be moved out of the device for routine operation.

(1) The coupling between the source assembly and the control cable must be designed in such a manner that the source assembly will not become disconnected if cranked outside the guide tube. The coupling must be such that it cannot be unintentionally disconnected under normal and reasonably foreseeable abnormal conditions.

(2) The device must automatically secure the source assembly when it is cranked back into the fully shielded position within the device. This securing system may only be released by means of a deliberate operation on the exposure device.

(3) The outlet fittings, lock box, and drive cable fittings on each radiographic exposure device must be equipped with safety plugs or covers

which must be installed during storage and transportation to protect the source assembly from water, mud, sand or other foreign matter.

(4) Each sealed source or source assembly must have attached to it or engraved in it, a durable, legible, visible label with the words:

"DANGER -- RADIOACTIVE."

The label must not interfere with the safe operation of the exposure device or associated equipment.

(5) The guide tube must have passed the crushing tests for the control tube as specified in ANSI N432 and a kinking resistance test that closely approximates the kinking forces likely to be encountered during use.

(6) Guide tubes must be used when moving the source out of the device.

(7) An exposure head or similar device designed to prevent the source assembly from passing out of the end of the guide tube must be attached to the outermost end of the guide tube during radiographic operations.

(8) The guide tube exposure head connection must be able to withstand the tensile test for control units specified in ANSI N432.

(9) Source changers must provide a system for ensuring that the source will not be accidentally withdrawn from the changer when connecting or disconnecting the drive cable to or from a source assembly.

(d) All newly manufactured radiographic exposure devices and associated equipment acquired by licensees after January 10, 1992, must comply with the requirements of this section.

(e) All radiographic exposure devices, source assemblies, and associated equipment in use after January 10, 1996, must comply with the requirements of this section.

(f) All associated equipment acquired after January 10, 1996, must be labelled to identify that the components have met the requirements of this section.

15. Section 34.21 is revised to read as follows:

§ 34.21 Limits on levels of radiation for radiographic exposure devices, storage containers, and source changers.

(a) Radiographic exposure devices measuring less than 10 centimeters (4 inches) from the sealed source storage position to any exterior surface of the device must not have a radiation level in excess of 0.5 millisieverts (50 millirems) per hour at 15 centimeters (6 inches) from any exterior surface of the device. Radiographic exposure devices measuring a minimum of 10 centimeters (4 inches) from the sealed source storage position to any exterior surface of the device, and all storage containers for sealed sources or for radiographic exposure devices, must not have a radiation level in excess of 2 millisieverts (200 millirems) per hour at any exterior surface, and 0.1 millisieverts (10 millirems) per hour at one meter from any exterior surface. The radiation levels specified are with the sealed source in the shielded (i.e., "off") position.

(b) Paragraph (a) of this section applies to all equipment manufactured prior to January 10, 1992. After January 10, 1996, radiographic equipment other than storage containers and source changers must meet the requirements of § 34.20. Section 34.21 applies to only storage containers.

16. Section 34.22 is removed.

§ 34.22 [Removed]

17. Section 34.23 is revised to read as follows:

§ 34.23 Locking and relocation of radiographic exposure devices, storage containers and source changers.

(a) Locked radiographic exposure devices and storage containers must be physically secured to prevent tampering.

(1) Each radiographic exposure device must have a lock or outer locked container designed to prevent unauthorized or accidental removal of the sealed source from its shielded position. The exposure device and/or its container must be kept locked (and if a keyed-lock, with the key removed at all times) when not under the direct surveillance of a radiographer or a radiographer's assistant or as otherwise may be authorized in § 34.51. In addition, during radiographic operations the sealed source assembly must be manually secured in the shielded position each time the source is returned to that position, in those exposure devices manufactured prior to January 10, 1992.

(2) Each sealed source storage container and source changer must have a lock or outer locked container designed to prevent unauthorized or accidental removal of the sealed source from its shielded position. Storage containers and source changers must be kept locked (and if a keyed-lock, with the key

removed at all times) when containing sealed sources except when under the direct surveillance of a radiographer or a radiographer's assistant.

(b) Radiographic exposure devices, source changers, and storage containers, prior to being moved from one location to another, must have the guide tubes and control cables disconnected, safety plugs or covers applied, locked and physically secured to prevent accidental loss, tampering or removal of licensed material, and must be surveyed to assure that the sealed source is in the shielded position.

18. Section 34.24 is removed.

§ 34.24 [Removed]

19. Section 34.25 is revised to read as follows:

§ 34.25 Radiation survey instruments.

(a) The licensee shall keep sufficient calibrated and operable radiation survey instruments at each location where radioactive material is present to make the radiation surveys required by this part and by Part 20 of this chapter. Instrumentation required by this section must be capable of measuring a range from 0.02 millisieverts (2 millirems) per hour through 0.01 Sievert (1 rem) per hour. Survey instruments must be checked for operability prior to use. This may be accomplished by evaluating the instrument response to the previously measured fields at the projection sheath port or the control cable sheath port on a radiographic exposure device.

(b) The licensee shall have each radiation survey instrument required under paragraph (a) of this section calibrated --

(1) At intervals not to exceed 6 months and after instrument servicing, except for battery changes;

(2) For linear scale instruments, at two points located approximately 1/3 and 2/3 of full-scale on each scale; for logarithmic scale instruments, at midrange of each decade, and at two points of at least one decade; and for digital instruments, at appropriate points between 2 and 1000 millirems per hour; and

(3) So that an accuracy within plus or minus 20 percent of the calibration standard can be demonstrated on each scale.

(c) The licensee shall maintain records of the results of the instrument calibrations in accordance with § 34.65.

20. Section 34.26 is removed.

§ 34.26 [Removed]

21. Section § 34.27 is revised to read as follows:

§ 34.27 Leak testing and replacement of sealed sources.

(a) The replacement of any sealed source fastened to or contained in a radiographic exposure device and leak testing of any sealed source must be performed only by persons specifically authorized by the Commission or an Agreement State to do so.

(b) Testing and recordkeeping requirements.

(1) Each licensee who uses a sealed source shall have the source tested for leakage at intervals not to exceed 6 months.

(2) The licensee shall maintain records of the leak tests in accordance with § 34.67.

(3) In the absence of a certificate from the transferor that a leak test has been made within the 6 months before the transfer, the sealed source may not be used until tested.

(c) Method of testing. The wipe of a sealed source must be performed using a leak test kit or method approved by the Commission or an Agreement State. The wipe sample must be taken from the nearest accessible point to the sealed source where contamination might accumulate. The wipe sample must be analyzed for radioactive contamination. The analysis must be capable of detecting the presence of 185 Bq (0.005 microcuries) of radioactive material on the test sample and must be performed by a person approved by the Commission or an Agreement State to perform the analysis.

(d) Any test conducted pursuant to paragraphs (b) and (c) of this section which reveals the presence of 185 Bq (0.005 microcuries) or more of removable radioactive material must be considered evidence that the sealed source is leaking. The licensee shall immediately withdraw the equipment involved from use and shall have it decontaminated and repaired or disposed of, in accordance with Commission regulations. A report must be filed, within 5 days of any test, with results that exceed the threshold in this subsection, with the Director of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, describing the equipment involved, the test results, and the corrective action taken. A copy of such report must be sent to the Administrator of the appropriate Nuclear Regulatory Commission's Regional Office listed in Appendix D of Part 20 of this chapter "Standards for Protection Against Radiation."

(e) A sealed source which is not fastened to or contained in a radiographic exposure device must have permanently attached to it a durable tag at least one (1) inch square bearing the prescribed radiation caution symbol in conventional colors, magenta, purple or black on a yellow

background, and at least the instructions: "Danger -- Radioactive Material -- Do Not Handle -- Notify Civil Authorities if Found."

(f) Each exposure device using depleted uranium (DU) shielding and an "S" tube configuration must be periodically tested for DU contamination. This test could be performed by the licensee using available test kits or method approved by the Commission or an Agreement State, or the exposure device could be returned to the manufacturer for such testing. The analysis must be capable of detecting the presence of 185 Bq (0.005 microcuries) of radioactive material on the test sample and must be performed by a person approved by the Commission or an Agreement State to perform the analysis. This test must be undertaken at intervals not to exceed 12 months and should such testing reveal the presence of DU contamination, the exposure device must be removed from use and arrangements for proper disposal in a facility licensed under 10 CFR Part 61 must be made or the device may be returned to the vendor. A record of the DU leak-test must be made in accordance with § 34.67.

22. Section 34.28 is removed.

§ 34.28 [Removed]

23. Section 34.29 is revised to read as follows:

§ 34.29 Quarterly inventory.

(a) Each licensee shall conduct a quarterly physical inventory to account for all sealed sources received and possessed under this license.

(b) The licensee shall maintain records of the quarterly inventory in accordance with § 34.69.

24. Section 34.30 is removed.

§ 34.30 [Removed]

25. Section 34.31 is revised to read as follows:

§ 34.31 Inspection and maintenance of radiographic exposure devices, storage containers, associated equipment, and source changers.

(a) The licensee shall visually check for obvious defects in radiographic exposure devices, storage containers, associated equipment, and source changers prior to use each day the equipment is used to ensure that the equipment is in good working condition and that required labeling is present. If defects are found, the equipment must be removed from service until repaired, and a record must be made in accordance with § 34.73.

(b) Each licensee shall have a program for inspection and routine maintenance of radiographic exposure devices, source changers, associated equipment and storage containers at intervals not to exceed 3 months or prior to the first use thereafter to ensure the proper functioning of components important to safety. Records of these inspections and maintenance performed must be made in accordance with § 34.73. If defects are found, the equipment must be removed from service until repaired, and a record must be made in accordance with § 34.73.

(c) The opening, repair, or modification of any sealed source must be performed by persons specifically authorized to do so by the Commission or an Agreement State.

26. Section 34.32 is removed.

§ 34.32 [Removed]

27. Section 34.33 is revised to read as follows:

§ 34.33 Permanent radiographic installations.

(a) Permanent radiographic installations must have high radiation area entrance controls of the type described in § 20.1601(a)(1) of this chapter or meet the special requirements of paragraph (b).

(b) Each entrance that is used for personnel access to the high radiation area in a permanent radiographic installation to which this section applies must have both visible and audible warning signals to warn of the presence of radiation. The visible signal must be actuated by radiation whenever the source is exposed. The audible signal must be actuated when an attempt is made to enter the installation while the source is exposed; and meet one of the following:

(i) Any entryway is locked, except during periods when access to the area is required, with positive control over each individual entry.

(ii) Continuous direct surveillance that is capable of preventing unauthorized entry.

(c) The alarm system must be tested for proper operation at the beginning of each day the installation is used for radiographic operations. The test must include a check of the visible and audible signals by turning on the exposure device prior to use of the room. If a control device or alarm is operating improperly, it must be immediately labeled as defective and repaired before industrial radiographic operations are resumed. Test records must be maintained in accordance with § 34.75.

28. Section 34.35 is added to read as follows:

§ 34.35, Labels, storage, and transportation precautions.

(a) Labels.

(1) The licensee may not use a source changer or container to store licensed material unless the source changer or the container has securely attached to it a durable, legible, and clearly visible label. The label must contain the radiation symbol specified in § 20.1904 of this chapter and the wording

CAUTION (OR DANGER)

RADIOACTIVE MATERIAL--DO NOT HANDLE

NOTIFY CIVIL AUTHORITIES (OR NAME OF COMPANY)

(2) The licensee may not transport licensed material unless the material is packaged, labeled, marked, and accompanied with appropriate shipping papers in accordance with regulations set out in 10 CFR Part 71, including documentation of the QA program requirements outlined in § 71.105.

(b) Security precautions during storage and transportation.

(1) Locked radiographic exposure devices and storage containers must be physically secured to prevent tampering or removal by unauthorized personnel. The licensee shall store licensed material in a manner which will minimize danger from explosion or fire.

(2) The licensee shall lock and physically secure the transport package containing licensed material in the transporting vehicle to prevent accidental loss, tampering, or unauthorized removal of the licensed material from the vehicle.

29. A new heading for Subpart D [§§ 34.41-34.57] is added to read as follows:

Subpart D - Radiation Safety Requirements

30. Section 34.41 is added to read as follows:

§34.41 Conducting radiographic operations

(a) Whenever radiography will be performed outside a permanent radiographic installation, the radiographer must be accompanied by at least one other qualified radiographer or an individual who has at a minimum met the requirements of 34.43(b), and who is observing the operations and is capable of providing immediate assistance to prevent unauthorized entry. Radiography may not be performed if only one qualified individual is present.

(b) Unless specifically authorized by the Commission, all radiographic operations must be conducted at the locations listed on the license.

31. Section 34.42 is added to read as follows:

§ 34.42 Radiation Safety Officer.

The Radiation Safety Officer (RSO) shall ensure that radiation safety activities are being performed in accordance with approved procedures and regulatory requirements in the daily operation of the licensee's program.

(a) The RSO's qualifications must include:

(1) Completion of the training and testing requirements of § 34.43(a); and

(2) 2000 hours of documented experience in industrial radiographic operations, with at least 40 hours of formal classroom training with respect to the establishment and maintenance of a radiation protection program.

(b) The specific duties of the RSO include, but are not limited to, the following:

(1) To establish and oversee operating, emergency, and ALARA procedures as required by Part 20, and to review them regularly to ensure that the procedures are current and conform with these rules;

(2) To oversee and approve all phases of the training program for radiographic personnel so that appropriate and effective radiation protection practices are taught;

(3) To ensure that required radiation surveys and leak tests are performed and documented in accordance with these rules, including any corrective measures when levels of radiation exceed established limits;

(4) To ensure that personnel monitoring devices are calibrated and used properly by occupationally-exposed personnel, that records are kept of the monitoring results, and that timely notifications are made as required by § 20.2203; and

(5) To ensure that operations are conducted safely and to assume control and have the authority to institute corrective actions including stopping of operations when necessary in emergency situations or unsafe conditions.

~~32~~. Section 34.42 is removed.

§ 34.42 [Removed]

~~33~~. Section 34.~~43~~ is ~~revised~~ to read as follows:

§ 34.~~43~~ Training.

(a) The licensee ~~shall~~ not permit any individual to act as a radiographer until the individual --

(1) Has been instructed in the subjects outlined in paragraph (f) of this section;

(2) Has received copies of and instruction in NRC regulations contained in this part; in §§ 30.7, 30.9, and 30.10; and in the applicable sections of Parts 19, 20, and 71 of this chapter, and some instructions in applicable DOT regulations as referenced in 10 CFR Part 71, in the NRC license(s) under which the radiographer will perform radiography, and the licensee's operating and emergency procedures;

(3) Has demonstrated competence to use the licensee's radiographic exposure devices, sealed sources, related handling tools, and survey instruments; and

(4) Has demonstrated understanding of the instructions in this paragraph (a) of this section by successful completion of a written test and a field examination on the subjects covered in paragraph (f) of this section.

(b) The licensee ~~shall~~ proof not permit any individual to act as a radiographer's assistant until the individual --

(1) Has received copies of and instruction in NRC regulations contained in this part; in §§ 30.7, 30.9, and 30.10; and in the applicable sections of Parts 19, 20, and 71 of this chapter, and some instructions in applicable DOT regulations as referenced in 10 CFR Part 71, in the NRC license(s) under which the radiographer's assistant will perform radiography, and the licensee's operating and emergency procedures;

(2) Has demonstrated competence to use, under the personal supervision of the radiographer, the radiographic exposure devices, sealed sources, related handling tools, and radiation survey instruments that the assistant will use; and

(3) Has demonstrated understanding of the instructions in this paragraph (b) of this section by successfully completing a written test and a field examination on the subjects covered.

(c) The licensee shall provide annual safety reviews for radiographers and radiographer's assistants at least once during each calendar year.

(d) The licensee shall conduct a semiannual inspection program of the job performance of each radiographer and radiographer's assistant to ensure that the Commission's regulations, license requirements, and the applicant's operating and emergency procedures are followed. The inspection program must:

(1) Include observation of the performance of each radiographer and radiographer's assistant during an actual radiographic operation at intervals not to exceed 6 months; and

(2) Provide that, if a radiographer or a radiographer's assistant has not participated in a radiographic operation for more than 6 months since the last inspection, that individual's performance must be observed and recorded when the individual next participates in a radiographic operation.

(e) The licensee shall maintain records of the above training to include written and field examinations, annual safety reviews, and semiannual inspections of job performance in accordance with § 34.79.

(f) The licensee shall include the following subjects in the training required in paragraph (a)(1) of this section:

(1) Fundamentals of radiation safety including --

(i) Characteristics of gamma radiation;

(ii) Units of radiation dose and quantity of radioactivity;

(iii) Hazards of exposure to radiation;

(iv) Levels of radiation from licensed material; and

(v) Methods of controlling radiation dose (time, distance, and shielding);

(2) Radiation detection instruments including --

(i) Use, operation, calibration, and limitations of radiation survey instruments;

(ii) Survey techniques; and

(iii) Use of personnel monitoring equipment;

(3) Equipment to be used including --

(i) Operation and control of radiographic exposure equipment, remote handling equipment, and storage containers, including pictures or models of source assemblies (pigtails).

(ii) Storage, control, and disposal of licensed material; and

(iii) Maintenance of equipment.

(4) The requirements of pertinent Federal regulations; and

(5) Case histories of accidents in radiography.

34. Section 34.44 is removed.

§ 34.44 [Removed]

35. Section 34.45 is added to read as follows:

§ 34.45 Operating and emergency procedures.

(a) Operating and emergency procedures must include, as a minimum, instructions in at least the following:

(1) The handling and use of licensed sealed sources and radiographic exposure devices to be employed such that no person is likely to be exposed to radiation doses in excess of the limits established in Part 20 of this chapter "Standards for Protection Against Radiation";

(2) Methods and occasions for conducting radiation surveys;

(3) Methods for controlling access to radiographic areas;

(4) Methods and occasions for locking and securing radiographic exposure devices, storage containers and sealed sources;

(5) Personnel monitoring and the use of personnel monitoring equipment;

(6) Transporting sealed sources to field locations, including packing of radiographic exposure devices and storage containers in the vehicles, placarding of vehicles, when needed, and control of the sealed sources during transportation (refer to 49 CFR Parts 171-173);

(7) The inspection and maintenance of radiographic exposure devices and storage containers;

(8) Steps that must be taken immediately by radiography personnel in the event a pocket dosimeter is found to be off-scale or an alarm ratemeter alarms;

(9) The procedure(s) for identifying and reporting defects and noncompliance, as required by Part 21 of this chapter;

(10) The procedure for notifying proper persons in the event of an accident;

(11) Minimizing exposure of persons in the event of an accident;

(12) Source recovery procedure if licensee will perform source recovery; and

(13) Maintenance of records.

(b) The licensee shall maintain copies of current operating and emergency procedures in accordance with § 34.81.

36. Section 34.46 is added to read as follows:

§ 34.46 Supervision of radiographers' assistants.

Whenever a radiographer's assistant uses radiographic exposure devices, uses sealed sources or related source handling tools, or conducts radiation surveys required by § 34.49(b) to determine that the sealed source has returned to the shielded position after an exposure, the assistant shall be under the personal supervision of a radiographer. The personal supervision must include: (a) the radiographer's personal presence at the site where the sealed sources are being used, (b) the ability of the radiographer to give immediate assistance if required, and (c) the radiographer's watching the assistant's performance of the operations referred to in this section.

37. Section 34.47 is added to read as follows:

§ 34.47 Personnel monitoring.

(a) The licensee may not permit any individual to act as a radiographer or a radiographer's assistant unless, at all times during radiographic operations, each such individual wears a direct reading pocket dosimeter, an operating alarm ratemeter, and either a film badge or a thermoluminescent dosimeter (TLD) except that for permanent radiography installations where other appropriate alarming or warning devices are in routine use, the wearing of an alarming ratemeter is not required.

(1) Pocket dosimeters must have a range from zero to 2 millisieverts (200 millirems) and must be recharged at the start of each shift.

(2) Each film badge and TLD must be assigned to and worn by only one individual.

(3) Film badges and TLDs must be replaced at least monthly.

(4) After replacement, each film badge or TLD must be promptly processed.

(b) Pocket dosimeters must be read and the exposures recorded at the beginning and end of each shift, and records must be maintained in accordance with § 34.83.

(c) Pocket dosimeters must be checked at periods not to exceed 12 months for correct response to radiation, and records must be maintained in accordance with § 34.83. Acceptable dosimeters must read within plus or minus 30 percent of the true radiation exposure.

(d) If an individual's pocket dosimeter is found to be off-scale, and the possibility of radiation exposure cannot be ruled out as the cause, the individual's film badge or TLD must be sent immediately for processing. In addition, the individual shall not work with licensed material until a determination of the individual's radiation exposure has been made. This determination must be made by the RSO or designee. The results of this determination must be included in the records maintained in accordance with § 34.83.

(e) If a film badge or TLD is lost or damaged, the worker shall cease work immediately until a replacement film badge or TLD is provided and the exposure is calculated for the time period from issuance to loss or damage of the film badge or TLD. The results of the calculated exposure and the time period for which the film badge or TLD was lost or damaged must be included in the records maintained in accordance with § 34.83.

(f) Reports received from the film badge or TLD processor must be retained in accordance with § 34.83.

(g) Each alarm ratemeter must --

(1) Be checked to ensure that the alarm functions properly (sounds) prior to use at the start of each shift;

(2) Be set to give an alarm signal at a preset dose rate of 5 mSv/hr (500 mrem/hr); with an accuracy of plus or minus 20 percent of the true radiation dose rate.

(3) Require special means to change the preset alarm function; and

(4) Be calibrated at periods not to exceed 12 months for correct response to radiation. The licensee shall maintain records of alarm ratemeter calibrations in accordance with § 34.83.

38. Section 34.~~49~~ 53 is added to read as follows:

§ 34.~~49~~ 53 Radiation surveys.

The licensee shall:

(a) Conduct surveys with a calibrated and operable radiation survey instrument that meets the requirements of § 34.25.

(b) Conduct an adequate survey of the radiographic exposure device with a radiation survey instrument after each exposure to determine that the sealed source has been returned to its shielded position.

(c) Conduct a survey when approaching the guide tube prior to exchanging films, repositioning the collimator, or dismantling equipment.

(d) Conduct an adequate survey with a radiation survey instrument any time the source is exchanged and whenever a radiographic exposure device is placed in a storage area (as defined in § 34.3), to ensure that the sealed source is in its shielded position.

(e) Conduct a survey of the storage area whenever a radiographic exposure device is being placed in storage.

(f) For recordkeeping requirements see § 34.85.

39. Section 34.51 is ~~revised~~ to read as follows:

§ 34.51 Security.

During each radiographic operation the radiographer or radiographer's assistant shall maintain continuous direct visual surveillance of the operation to protect against unauthorized entry into a high radiation area, as defined in Part 20 of this chapter, except where the high radiation area is equipped with a control device or an alarm system as described in § 34.33.

40. Section 34.53 is added to read as follows:

§ 34.53 Posting.

Areas in which radiography is being performed must be conspicuously posted as required by § 20.1902(a) and (b) of this chapter. Exceptions listed in § 20.1903 of this chapter do not apply to radiographic operations.

41. A new heading for Subpart E (§§ 34.61-34.91) is added to read as follows:

Subpart E - Records

43. Section 34.61 is revised to read as follows:

§ 34.61 Records of specific license for radiography.

Each licensee shall maintain a copy of its license until the Commission terminates the license.

44. Section 34.63 is revised to read as follows:

§ 34.63 Records of receipt and transfer of sealed sources.

(a) Each licensee shall maintain records showing the receipts and transfers of sealed sources.

(b) These records must include the date, the individual making the record, the radionuclide, number of curies, and make, model, and serial number of each sealed source and device, as appropriate.

(c) The licensee shall retain the records required by paragraph (a) of this section for 3 years after the record is made.

45. Sections 34.65 - 34.91 are added to Subpart E to read as follows:

§ 34.65 Records of radiation survey instruments.

(a) Each licensee shall maintain records of the calibrations of its radiation survey instruments.

(b) The licensee shall retain the records required by paragraph (a) of this section for 3 years after the record is made.

§ 34.67 Records of leak testing of sealed sources.

(a) Each licensee shall maintain records of leak test results in units of Becquerels (curies).

(b) The licensee shall retain the records required by paragraph (a) of this section for 3 years after the record is made.

§ 34.69 Records of quarterly inventory.

(a) Each licensee shall maintain records of the quarterly inventory.

(b) The record must include the quantities and kinds of byproduct material (including the model number, the serial number and manufacturer), location of sealed sources, the name of the individual conducting the inventory, and the date of the inventory.

(c) The licensee shall retain the records required by paragraph (a) of this section for 3 years after the record is made.

§ 34.71 Utilization logs.

(a) Each licensee shall maintain current utilization logs at the address specified in the license, showing for each sealed source the following information:

(1) A description, including the make, model number, and serial number of the radiographic exposure device or storage container in which the sealed source is located;

(2) The identity and signature of the radiographer to whom assigned; and

(3) The plant or site where used and dates of use, including the dates removed and returned to storage.

(b) The licensee shall retain the logs required by paragraph (a) of this section for 3 years after the log is made.

§ 34.73 Records of inspection and maintenance of radiographic exposure devices, storage containers, associated equipment, and source changers.

(a) Each licensee shall maintain records of inspection and maintenance of radiographic exposure devices, storage containers, associated equipment, and source changers.

(b) The record must include the date of check, name of inspector, equipment involved, any defects found, and repairs made.

(c) The licensee shall retain the records required by paragraph (a) of this section for 3 years after the record is made.

§ 34.75 Records of alarm system checks at permanent radiographic installations.

(a) Each licensee shall maintain records of alarm system tests.

(b) The licensee shall retain the records required by paragraph (a) of this section for 3 years after the record is made.

§ 34.79 Records of training.

Each licensee shall maintain records of training:

(a) Records of training of each radiographer and each radiographer's assistant. The record shall to include copies of written tests, dates of field examinations, and names of individuals conducting the field examinations, and

(b) Records of annual safety reviews and semiannual inspections for each radiographer and each radiographer's assistant. The records must list the topics discussed, the dates of the reviews, and names of the instructors and attendees.

(c) Records must be retained for 3 years after the record is made.

§ 34.81 Copies of operating and emergency procedures.

(a) Each licensee shall maintain a copy of current operating and emergency procedures retain the records until the Commission terminates the license. Superseded material must be retained for 3 years after the change is made.

§ 34.83 Records of personnel monitoring.

Each licensee shall maintain the following exposure records:

(a) Daily pocket dosimeter readings and yearly operability checks for 3 years after the record is made.

(b) Records of alarm ratemeter calibrations for 3 years after the record is made.

(c) Reports received from the film badge or TLD processor until the Commission terminates the license.

(d) Records of estimates of exposures as a result of off-scale pocket dosimeters or lost or damaged film badges or TLDs until the Commission terminates the license.

§ 34.85 Records of radiation surveys.

(a) Each licensee shall maintain a record of each exposure device survey conducted prior to placing the device in storage if that survey is the last one performed in the work day.

(b) The licensee shall retain the records required by paragraph (a) of this section for 3 years after the record is made.

§ 34.87 Form of records.

Each record required by this part must be legible throughout the specified retention period. The record may be the original or a reproduced copy or a microform provided that the copy or microform is authenticated by authorized personnel and that the microform is capable of reproducing a clear copy throughout the required retention period. The record may also be stored in electronic media with the capability for producing legible, accurate, and complete records during the required retention period. Records, such as letters, drawings, and specifications, must include all pertinent information,

such as stamps, initials, and signatures. The licensee shall maintain adequate safeguards against tampering with and loss of records.

§ 34.89 Documents and records required at field stations and permanent installations.

Each licensee shall maintain copies of the following documents and records sufficient to demonstrate compliance at the field station and permanent installation:

(a) A copy of Parts 19, 20, and 34 of NRC regulations;

(b) The license authorizing the use of licensed material;

(c) Operating and emergency procedures required by § 34.45;

(d) Records of radiation survey instrument calibrations required by § 34.65;

(e) Records of leak test results required by § 34.67;

(f) Quarterly inventory records required by § 34.69;

(g) Utilization records required by § 34.71;

(h) Records of inspection and maintenance required by § 34.73;

(i) Training records required by § 34.79;

(j) Survey records required by § 34.85;

(k) Personnel monitoring records as required by § 34.83; and

(l) Records of receipt and transfer of sealed sources required by § 34.63.

§ 34.91 Documents and records required at temporary jobsites and use or storage locations exceeding 180 days.

Each licensee conducting operations at a temporary jobsite shall maintain copies of the following documents and records at the temporary jobsite until

the radiographic operation is completed and at any storage location where radioactive material is stored for more than 180 days:

(a) Operating and emergency procedures required by § 34.45;

(b) Evidence of latest calibration of the radiation survey instruments in use at the site required by § 34.65;

(c) Evidence of latest calibrations of alarm ratemeters and operability checks of pocket dosimeters as required by § 34.83;

(d) Latest survey records required by § 34.85;

(e) The shipping papers for the transportation of radioactive materials required by § 71.5 of this chapter; and

(f) When operating under reciprocity pursuant to § 150.20 of this chapter, a copy of the Agreement State license authorizing use of licensed materials.

46. A new Subpart G is added to read as follows:

Subpart F - NOTIFICATIONS

47. Section 34.101 is added to read as follows:

§ 34.101 Notifications.

(a) In addition to the reporting requirements specified in § 30.50 and under other sections of this chapter, each licensee shall provide a written report to the U.S. Nuclear Regulatory Commission; Division of Industrial and Medical Nuclear Safety; Medical, Academic, and Commercial Use Safety Branch; Washington, DC 20555, with a copy to the Director, Office for Analysis and Evaluation of Operational Data, U.S. Nuclear Regulatory Commission, Washington, DC 20555, within 30 days of the occurrence of any of the following incidents involving radiographic equipment:

(1) Unintentional disconnection of the source assembly from the control cable;

(2) Inability to retract the source assembly to its fully shielded position and secure it in this position; or

(3) Failure of any component (critical to safe operation of the device) to properly perform its intended function;

(b) The licensee shall include the following information in each report submitted under paragraph (a) of this section, and in each report of overexposure submitted under 10 CFR 20.2203 which involve failure of safety components of radiography equipment:

(1) A description of the equipment problem;

(2) Cause of each incident, if known;

(3) Manufacturer and model number of equipment involved in the incident;

(4) Place, time and date of the incident;

(5) Actions taken to establish normal operations;

(6) Corrective actions taken or planned to prevent recurrence; and

(7) Qualifications of personnel involved in the incident.

(c) Notify the appropriate NRC regional office in writing prior to conducting radiographic operations or storing radioactive material at any location not listed on the license in excess of 180 days.

48. A new subpart G is added to read as follows:

Subpart G - EXEMPTIONS

49. Section 34.111 is added to read as follows:

§ 34.111 Applications for exemptions.

The Commission may, upon application of any interested person or upon its own initiative, grant such exemptions from the requirements of the regulations in this part as it determines are authorized by law and will not endanger life or property or the common defense and security and are otherwise in the public interest.

49. A new Subpart H is added read as follows:

Subpart H - Enforcement

50. Section 34.121 is added to read as follows:

§ 34.121 Violations.

(a) The Commission may obtain an injunction or other court order to prevent a violation of the provision of-

(1) The Atomic Energy Act of 1954, as amended;

(2) Title II of the Energy Reorganization Act of 1974, as amended; or

(3) A regulation or order issued pursuant to these Acts.

(b) The Commission may obtain a court order for the payment of a civil penalty imposed under section 234 of the Atomic Energy Act;

(1) For violations of -

(i) Sections 53, 57, 62, 63, 81, 82, 101, 103, 104, 107, or 109 of the Atomic Energy Act of 1954, as amended;

(ii) Section 206 of the Energy Reorganization Act;

(iii) Any rule, regulation, or order issued pursuant to the sections specified in paragraph (b)(1)(i) of this section.

(iv) Any term, condition, or limitation of any license issued under the sections specified in paragraph (b)(1)(i) of this section.

(2) For any violation for which a license may be revoked under Section 188 of the Atomic Energy Act of 1954, as amended.

5) 31. Section 34.123 is added to read as follows:

Section 34.123, Criminal Penalties.

(a) Section 223 of the Atomic Energy Act of 1952, as amended, provides for criminal sanctions for willful violation of, attempted violation of, or conspiracy to violate, any regulation issued under one or more of sections 161b, 161i, or 161o of the Act. For purposes of section 223, all the regulations in Part 34 are issued under one or more sections 161b, 161i, or 161o, except for the sections listed in paragraph (b) of this section.

(b) The regulations in Part 34 that are not issued under sections 161b, 161i, or 161o for the purposes of section 223 are as follows: §34.1, §34.3, §34.11, §34.8, §34.13, §34.111, §34.121, §34.123.

Dated at Rockville, Maryland, this ____day of_____ 1993.

For the Nuclear Regulatory Commission.

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Samuel J. Chilk,
Secretary of the Commission.