1999 Rationale for Part E

Radiation Safety Requirements for Industrial Radiographic Operations

Introduction

On February 28, 1994, the Nuclear Regulatory Commission published a proposed rule (59 CFR 9429) in the Federal Register. The proposed rule included an overall revision of 10 CFR Part 34 based on comments and recommendations made at meetings with the Agreement States and members of industry in 1991 and 1992. After a comment period, the final rule which was published on May 28, 1997 in the Federal Register (62 FR 28948), included:

1. A requirement for a two-person crew whenever radiographic operations are being conducted outside a permanent installation, and the second person must meet the requirements of a radiographer's assistant as defined in 10 CFR part 34;
2. The addition and modification of many definitions;
3. A requirement to provide the location and description of all field stations and permanent radiographic installations;
4. A change in the field inspection of radiographer and radiographer's assistants from a quarterly interval to semiannually;
5. A change in the survey meter calibration interval from three months to six months with a requirement that the survey meters be checked for operation daily and at a three month interval;
6. A requirement that radiographic exposure devices using depleted uranium, (DU) for shielding be checked for DU contamination annually;
7. Added qualifications and duties of the Radiation Safety Officer;
8. A requirement that radiographers be certified by a certifying entity;
9. Allowance of the replacement of TLD badges on a three month basis; and
10. A requirement that pocket dosimeters be checked for accuracy within 20 percent. In addition, many other additions and changes in wording were made for clarification purposes such as Subpart E which is Recordkeeping Requirements.
Because of the major changes made to 10 CFR Part 34, the equivalent Part E of the Suggested State Regulations for Control of Radiation (SSRCR) was revised in its entirety. In this revision, the items addressed in the Final Rule of 10 CFR Part 34 are included, along with changes made to encompass the use of x-ray equipment in industrial radiography. In addition, specific changes were made to clarify the meaning of the requirements or to add additional requirements. Additional wording was included for States that choose to become certifying entities. These sections include E.39 and E.40 of the revised Part E.

Compatibility Issues

As stated in the NRC's Statements of Consideration, sections of 10 CFR Part 34 will be a matter of compatibility. Radiographic equipment standards, training standards, operational safety standards and technical definitions are identified as Division 2 matters of compatibility. The definitions of lay-barge radiography, radiographer's assistant and underwater radiographer are considered special cases of Division 2 matters of compatibility for States that do not authorize licensees to perform lay-barge or underwater radiography or do not authorize the use of radiographer's assistants. Such States would not be required to adopt these definitions. The NRC's sections entitled Purpose and Scope, Interpretations, Application for a Specific License, Applications for Exemptions, Violations, and Criminal Penalties are identified as Division 3 matters of compatibility. The definition and sections that relate to offshore platform radiography are designated as Division 4 matters of compatibility. A State will need to adopt a definition of platform radiography if it authorizes such activity on inland waters or tidal waters subject to that State's jurisdiction. Although Appendix A is designated as Division 2, the Agreement States are not required to implement a program unless they choose to become a certifying entity. They then would need to adopt only Sections II and III of Appendix A. However, if an Agreement State chooses to identify an independent certifying organization, it would need to adopt Section I of Appendix A.

Specific Provisions

Sec. E.3 - Definitions.

The definitions of Annual refresher safety training, ANSI, Associated equipment, Certifiable Cabinet X-ray System, Certifying Entity, Control (drive) cable, control drive mechanism, Control tube, Exposure head, Field station, Guide tube (projection sheath), Hands-on experience, Independent Certifying Organization, Lay-barge radiography, Offshore platform radiography, Practical examination, Radiation Safety Officer, Radiographer certification, Radiographer's assistant, Radiographic operations, S-tube, Sealed source and Underwater radiography were added to be consistent with the Final Rule of 10 CFR Part 34. The definition of Certifiable Cabinet x-ray system was added to describe a system that has been modified to meet the requirements of 21 CFR 1020.40.

The definitions of Lixiscope, personal supervision, radiographer instructor, radiographer trainee, radiographic personnel, shielded-room radiography and transport container were deleted because they were not used in the first draft of this revised Part E.
Many of the other definitions were changed to clarify the meaning and ensure compatibility with the Final Rule of 10 CFR Part 34.

Sec. E.12 - Inspection and Maintenance of Radiation Machines, Radiographic Exposure Devices, Transport and Storage Containers, Associated Equipment, Source Changers and Survey Instruments

10 CFR 34.31(b)(1) requires that replacement components shall meet design specifications. In section E.12 of the revised part E, this requirement was intentionally removed, as the committee felt it would be difficult to enforce and brings up the same issues relative to the requirements for the associated equipment.

Sec. E.14 - Labeling, Storage and Transportation.

In 10 CFR 34.35(c), the sentence starts with "Locked". This word was deleted from section 14.c because locking requirements are discussed in Section E.8.

Sec. E.17 - Training.

10 CFR 34.43 (a)(1) requires radiographers to be trained in the applicable subjects. For the revised part E, a stipulation that the training be a 40 hour course was added. This was done to provide equivalent training requirements between States. Specifying the hours will allow easier reciprocal recognition of radiographers between the States. Also, 10 CFR 34.43(b)(4) references paragraph (b)(1) of the section which was determined by the committee not applicable to the practical exam. Therefore, the format of section b. was changed to better describe the requirements of this part. Section c. (radiographer's assistant) was also changed to better layout the training requirements.

Sec. E.20 - Personnel Monitoring.

10 CFR 34.47(a)(3) requires film badges be replaced at periods not to exceed one month and TLDs replaced at periods not to exceed three months. The committee decided that replacement of film badges and TLDs at one month intervals was needed for RSOs to better evaluate exposures to radiographic personnel and keep an overexposure from occurring at the end of the year. Also, for Section E.20, the committee decided to exempt users of radiation machines from having an alarming ratemeter during operations. The possibility of x-ray machines having exposures of 500 mR/hr and thereby alarming the ratemeter are remote.

Sec. E.22 - Surveillance

10 CFR 34.51 requires the radiographic personnel to maintain continuous direct visual surveillance of the operation to protect against unauthorized entry into a high radiation area. The revised section E.22 was changed to require visual surveillance of radiographic operations including the radiation area. The wording was changed to make the requirement the responsibility of the radiographer, while allowing the radiographer to employ other individuals to perform this function.
Sec. E.24 - Records For Industrial Radiography.

10 CFR 34.61 requires a licensee to maintain a copy of its license, license conditions, documents incorporated by reference, and amendments to each of these items. In the revised Part E, the committee deleted "license conditions", as the license conditions are part of the license.

Sec. E.29 - Utilization Logs.

In this section of Part E., an extra item was added to require users of radiation machines in permanent radiographic installations to record on the utilization log the dates the machine is energized.

Sec. E.35 - Records of Radiation Surveys.

10 CFR 34.85 requires that the licensee maintain a record of each survey conducted before the device is placed in storage if that survey is the last one performed in the workday. For the revised Part E, this was changed to require that the results of each lock-out survey be recorded by the licensee. This includes such surveys as those done when the device is placed in the truck during lunch hour as well as surveys performed anytime the device is placed in permanent storage, not just the last time it is placed in storage.

Sec. E.37 - Location of Documents and Records.

10 CFR 34.89(10) requires the latest records of the storage surveys be maintained at each field station or temporary job site. For the revised part E, the section was changed to require the area surveys also be maintained. Instead of the latest records, the revised part E requires the records be maintained for the period of operation.

Sec. E.38 - Notifications.

In this section, 10 CFR 30.50 was referenced because the present SSRCR does not address this requirement at this time. Also in this section, a requirement to report events involving x-ray machines was added.

Sec. E.39 - Application and Examinations.

This section is optional wording for States that wish to perform their own certification of radiographers. This section includes the requirements for submitting the application and taking the examination. Within this section, wording in a..2 was used to allow a State to break down the fee structure if they so choose.

Sec. E.40 - Certification ID Card.

This section is also optional wording for States that wish to perform their own certification of radiographers. This section addresses the requirement for the ID card including renewal, revocation and suspension of the card. The requirement that the cards be valid for five years was used because this is the interval used by most of the present certifying entities. In reference to the revocation and
suspension of ID cards, wording was chosen to give a State the authority to revoke or suspend a card based on violations identified in another State or NRC jurisdiction.

Sec. E.41 - Reciprocity.

This section addresses reciprocal recognition of licenses, registrations and radiographer certifications. States should be aware that reciprocal recognition of licenses and registrations is addressed in Part C of the SSRCR and a State could include this in their equivalent Part C if they so choose.

Sec. E.42 - Specific Requirements for Radiographic Personnel Performing Industrial Radiography.

This section was not addressed in the Final Rule of 10 CFR Part 34. This section was added by the committee in an effort to better describe items required at a job site, including the radiographer's certification. In addition, this section gives an inspector the authority to shut down operations if any of the items are not available.

Appendix A

Part I of Appendix A provides the requirements for an independent certifying organization and only apply to organizations other than the Agreement States. Parts II and III of Appendix A provide the requirements for certification programs and written examinations for a certifying entity, and apply to the Agreement States that wish to become certifying entities.