

Attachment 5

Regulatory Framework for the Two-Person Rule

The following requirements in 10 CFR Part 34, "Licenses for Industrial Radiography and Radiation Safety Requirements for Industrial Radiographic Operations," provide the regulatory framework for the two person rule.

Section 34.3, "Definitions," states that "Industrial radiography (radiography) **[Compatibility Category B]** means an examination of the structure of materials by nondestructive methods, utilizing ionizing radiation to make radiographic images." "Radiographic operations **[Compatibility Category C]** means all activities associated with the presence of radioactive sources in a radiographic exposure device during use of the device or transport (except when being transported by a common or contract transport), to include surveys to confirm the adequacy of boundaries, setting up equipment, and any activity inside restricted area boundaries." Generally, radiographic operations includes radiography as one aspect of the operations. Radiography specifically refers to projection of the source from the device to the film and retraction of the source into the device after a pre-determined exposure time.

NRC's two person rule, 10 CFR 34.41, "Conducting industrial radiographic operations," paragraph (a) **[Compatibility Category B]** states, "Whenever radiography is performed at a location other than a permanent radiographic installation, the radiographer must be accompanied by at least one other qualified radiographer or individual who has at a minimum met the requirements of 10 CFR 34.43(c) **[Compatibility Category B]**. The additional qualified individual shall observe the operations and be capable of providing immediate assistance to prevent unauthorized entry." Section 34.43(c) provides minimum training requirements for a radiographer's assistant. At a temporary job site location where the licensee is conducting industrial radiographic operations, the two person rule requires the licensee to provide at least 2 radiographers or 1 radiographer and 1 radiographer's assistant. While one radiographer is operating the radiographic exposure device the other qualified individual(s) is (are) providing surveillance to prevent unauthorized entry into the area.

Section 34.46, "Supervision of radiographer's assistants," **[Compatibility Category B]** requires the radiographer to personally supervise the radiographer's assistant whenever the assistant uses radiographic exposure devices, associated equipment, or sealed sources or conducts surveys required under 34.49(b) **[Compatibility Category C]** after each radiographic exposure to determine that the sealed source has returned to the fully shielded position in the exposure device. Section 34.46 paragraphs (a), (b), and (c) state that the radiographer must be physically present at the location where sealed sources are being used so that the radiographer can directly observe the assistant's performance of the operations and give immediate assistance, if needed. With regards to the two person rule stated above, the radiographer and the assistant must work together at times when the assistant is actually conducting radiographic operations. Under 10 CFR 34.43(c), the licensee may not permit any individual to act as a radiographer's assistant until the individual has developed competence to use the equipment under the personal supervision of a radiographer.

Section 34.51, "Surveillance," **[Compatibility Category C]** requires one of the qualified individuals to maintain continuous direct visual surveillance of the operation to protect against unauthorized entry into a high radiation area. At a temporary job site, the high radiation area is present when the sealed source is projected from the device to the location of the film. Either the radiographer or assistant must remain in the vicinity of the exposure device control unit and retract the sealed source into the device in case an individual ignores warning signs and barriers and approaches the high radiation area. However, the radiographer is still required to personally supervise the assistant when operating the control unit and completing surveys to determine the location of the source.