

## § 37.40

the same time the chest roentgenogram required by this subpart is given.

### SPECIFICATIONS FOR PERFORMING CHEST ROENTGENOGRAPHIC EXAMINATIONS

#### § 37.40 General provisions.

(a) The chest roentgenographic examination shall be given at a convenient time and place.

(b) The chest roentgenographic examination consists of the chest roentgenogram, and a complete Roentgenographic Interpretation Form (Form CDC/NIOSH (M) 2.8), and miner identification document.

(c) A roentgenographic examination shall be made in a facility approved in accordance with § 37.42 by or under the supervision of a physician who regularly makes chest roentgenograms and who has demonstrated ability to make chest roentgenograms of a quality to best ascertain the presence of pneumoconiosis.

#### § 37.41 Chest roentgenogram specifications.

(a) Every chest roentgenogram shall be a single posteroanterior projection at full inspiration on a film being no less than 14 by 17 inches and no greater than 16 by 17 inches. The film and cassette shall be capable of being positioned both vertically and horizontally so that the chest roentgenogram will include both apices and costophrenic angles. If a miner is too large to permit the above requirements, then the projection shall include both apices with minimum loss of the costophrenic angle.

(b) Miners shall be disrobed from the waist up at the time the roentgenogram is given. The facility shall provide a dressing area and for those miners who wish to use one, the facility shall provide a clean gown. Facilities shall be heated to a comfortable temperature.

(c) Roentgenograms shall be made only with a diagnostic X-ray machine having a rotating anode tube with a maximum of a 2 mm. source (focal spot).

(d) Except as provided in paragraph (e) of this section, roentgenograms shall be made with units having generators which comply with the fol-

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lowing: (1) The generators of existing roentgenographic units acquired by the examining facility prior to July 27, 1973, shall have a minimum rating of 200 mA at 100 kVp.; (2) generators of units acquired subsequent to that date shall have a minimum rating of 300 mA at 125 kVp.

NOTE: A generator with a rating of 150 kVp. is recommended.

(e) Roentgenograms made with battery-powered mobile or portable equipment shall be made with units having a minimum rating of 100 mA at 110 kVp. at 500 Hz, or of 200 mA at 110 kVp. at 60 Hz.

(f) Capacitor discharge and field emission units may be used if the model of such units is approved by ALOSH for quality, performance, and safety. ALOSH will consider such units for approval when listed by a facility seeking approval under § 37.42 of this subpart.

(g) Roentgenograms shall be given only with equipment having a beam-limiting device which does not cause large unexposed boundaries. The beam limiting device shall provide rectangular collimation and shall be of the type described in part F of the suggested State regulations for the control of radiation or (for beam limiting devices manufactured after August 1, 1974) of the type specified in 21 CFR 1020.31. The use of such a device shall be discernible from an examination of the roentgenogram.

(h) To insure high quality chest roentgenograms:

(1) The maximum exposure time shall not exceed  $\frac{1}{20}$  of a second except that with single phase units with a rating less than 300 mA at 125 kVp. and subjects with chests over 28 cm. posteroanterior, the exposure may be increased to not more than  $\frac{1}{10}$  of a second;

(2) The source or focal spot to film distance shall be at least 6 feet;

(3) Medium speed film and medium speed intensifying screens are recommended. However, any film-screen combination, the rated "speed" of which is at least 100 and does not exceed 300, which produces roentgenograms with spatial resolution, contrast, latitude and quantum mottle