**KILOVOLTAGE-PEAK**

**Laboratory Experiment #3**

**Procedure:**

Make two exposures of a step-wedge penetrometer on the tabletop using a 10 x 12 inch 400-speed screen cassette masked off into two sections, and number each exposure with lead markers.

Fixed = 1.1 mAs

Exposure #1: 60 kVp

Exposure #2: 90 kVp

(50 percent increase)

Alternate Techniques:

Fixed mAs = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Exposure #1: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Exposure #2: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(50 percent increase)

1. Choose a specific step of the penetrometer and, using a densitometer, measure the radiographic density of this area for each image and record. Calculate the density change ratio by dividing the smaller number into the larger and record.
2. Note in #1 the effect of increasing the kVp by 50 percent, and compare this to the effect of increasing the mA by the same percentage. Which of the factors would have a greater influence on radiographic density?
3. Which factor, mAs or kVp, affects density in direct proportion and which affects it in an exponential fashion?
4. Not the densities for Exposures #1 and #2 from Question #1 as the *step #1* densities. For *step #2* measure a step two steps down (lighter) from the first one. Calculate the contrast on each exposure by dividing the smaller number into the larger, and record.
5. Compare the contrast obtained at 90 kVp to that obtained at 60 kVp in #4. What is the effect of increasing kVp on radiographic contrast: increase, decrease, or no change?