"NIXIE*" TUBES CONTAINING KRYPTON 85

STORAGE AND HANDLING

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1. GENERAL

1.01 This section covers the handling of NIXIE numerical indicator tubes and the precautions which must be taken at the location of installation.

1.02 This section is reissued to add storage and handling information. Revision arrows are used to denote significant changes. The Equipment Test List is not affected.

1.03 The NIXIE tubes contain a small amount (less than 0.5 μCi each) of krypton 85, which is a radioactive material. Although the radiation effect from these tubes in normal use is considered negligible, precautions should be exercised when a large number of tubes and lamps are installed in one location and when handling broken tubes.

1.04 The NIXIE tubes are manufactured under a United States Atomic Energy Commission (USAEC) license for distribution as exempt items. This release may or may not be binding in all the states (see Part 6).

*Registered trademark of the Burroughs Co.

2. APPARATUS

2.01 ***List of Tools and Materials:*** The following list of tools and materials is applicable to this section.

TOOLS	DESCRIPTION
KS-14428 or KS-5637, L1	Tube Extractor
MATERIALS	
—	Cotton gloves
(As required)	Rag such as dust cloth or used cleaning cloth

3. STORAGE

3.01 Do not store photographic film within 15 feet of these tubes. Prolonged radiation can penetrate the packaging and expose the film.

3.02 ◗Cartons of NIXIE tubes stacked on the floor for temporary storage shall be protected with an appropriately sized sheet of masonite or other structural material capable of preventing tube breakage due to falling objects. The stack of tubes shall not be located within 3 feet of a fixed work location, such as test boards or desks.◖

4. HANDLING

4.01 The tubes covered in this section represent no radiation hazard in normal use. However, precautions should be observed when handling broken tubes and in the disposal of them.

4.02 ***Accidental Breakage of a Large Number of NIXIE Tubes:*** An accidental breakage of a large number (all normally within a room—approximately 750) would result in an average concentration of krypton 85 of less than 10 percent of the

maximum permissible concentration in the air for occupational exposure for a 168-hour week.

4.03 ◗If a tube should fall and break, walk out of the area and wait a few minutes before picking up broken pieces to prevent inhalation of any released krypton 85.

4.04 If a broken tube is still in its socket, remove it with the KS-14428 or KS-5637, L1, tube extractor.

4.05 Cotton gloves should be worn when picking up broken tubes. Place parts in a wet rag and dispose of as covered in Part 5.

4.06 When a defective tube is not broken, remove it with the KS-14428 or KS-5637, L1, tube extractor and dispose of as covered in Part 5.◖

5. DISPOSAL

◗Danger: Tubes should be carefully crushed or broken to prevent broken glass from harming personnel. There is no danger of radiation contamination.◖

5.01 Tubes to be disposed of should be carefully broken or crushed in a well-ventilated place releasing any resulting vapors to the outside atmosphere. The residual broken or crushed tubes should be disposed of in normal public trash disposal system.

6. REGULATIONS

6.01 The United States Nuclear Regulatory Commission (USNRC) places no further regulatory requirements on the users of these tubes. It is suggested that facilities using these tubes in any quantity should contact the appropriate state regulatory body within that state for direction.