



MEMO

DATE: September 30, 2015
TO: KCP Work Group
FROM: Ron Buchanan, SC&A
SUBJECT: Outline of Radiological and Radiography Procedures and Standards at the KCP

During the July 17, 2015, Kansas City Plant (KCP) Work Group (WG) meeting, SC&A was instructed to develop a brief outline of the procedures and standards used in the control of radiography sources and equipment at the KCP.

The KCP has been under three major eras of regulations:

- Atomic Energy Commission (AEC) 1949–1974
- Energy Research and Development Administration (ERDA) 1975–1977
- Department of Energy (DOE) 1978–Present.

The radiological safety program at the KCP was under radiological controls mandated by these agencies; or in-house-developed radiation safety procedures that met, or exceeded, those of the controlling agency. The controlling standards for the three major periods were:

- AEC – Radiation Safety at AEC facilities (example, SRDB Ref. ID #58735)
- ERDA – ERDA AL Chapter 0524 (example, SRDB Ref. ID #111092)
- DOE – DOE Order 5480.1A Chapter XI (example, SRDB Ref. ID #111092), and 10 CFR 835 (example, SRDB Ref. ID #137091).

In addition to these overarching regulatory controls, the KCP instituted procedures, policies, and safety requirements specific to the operations and equipment at the KCP that involved radiation under the guidance of the National Bureau of Standards (NBS) and the American National Standards Institute (ANSI). Some examples of the standard operating procedures specifically related to sealed sources and industrial radiation generating devices (RGDs), such as x-ray machines, used for non-destructive testing (NDT) at the KCP, are as follows:

1. 1962 – S-600 Procedures for handling radioactive materials and radiation-generating equipment (example, SRDB Ref. ID #14686).
2. 1967 – Procedure for operation of neutron generator, No. A-800 (example, page 33 of SRDB Ref. ID #128440).
3. 1971 – Health Services-related policies and procedures, including OP-841 for RGDs (example, SRDB Ref. ID #128272).

4. 1973 – Guide for Febetron (electron accelerator) operations (example, SRDB Ref. ID #108263).
5. 1980 – Safety procedures for operation of x-ray equipment, No. 804 (example, SRDB Ref. ID #111778).
6. 1989 – Radiation safety for non-medical x-ray units and sealed sources, based on NBS-114, and analytical x-ray equipment, based on NBS-111 (example, page 55 of SRDB Ref. ID #128276).
7. 1990 – Radiation safety procedures for Dept. 921 (i.e., surveys and use of Allied Signal manual AP582 for sources and RGDs, pages 31–35, of SRDB Ref. ID #128204).
8. 1990 – Storage/Excess/Disposal of RGDs and radioactive sources (example, page 15 of SRDB Ref. ID #128240).

The above summary provides an outline of the overall radiological regulations that applied to the KCP and some in-house procedures specifically for RGDs and sealed sources used in NDT at the KCP. These in-house procedures were instituted and updated as required; the above list only provides a few examples of some of these many documents.