

**KDHE Radiation Control Program
Regulation Package FAQs**

Are these regulations basically federal regulations?

No. These regulations are Kansas regulations first and foremost. The goal of these NRC-mandated changes is to bring clarity and continuity to definitions and certain security and safety aspects between the states. Some states do not have a radiation program and operate under federal regulation instead, so these regulations are in accordance with federal ones.

Why does KDHE have these regulations when there are federal regulations?

The federal regulations do not apply within the state of Kansas, outside of federal land (like army bases) and nuclear power plants (which operate transmitting power and importing fuel across state lines). NRC regulations apply only to NRC states with no state-controlled program, like Missouri. 42 USC 2021 (aka Section 274b of the Atomic Energy Act of 1954) covers the delegation of control back to the states which desire it, given a few caveats like federal control over locations with enough nuclear material to start a chain reaction and the right to return control to the federal government if the program fails to meet minimum criteria in providing public safety.

How are federal regulations implemented in the State of Kansas?

The NRC (which controls 13 states and all territories) discusses regulations with the Organization of Agreement States (OAS, representing the other 37 states). All regulations are sent out to all states for comment before implementation. During implementation, the regulations are assigned a letter from A - D denoting how well state regulations must agree with them to be effective, where A is a word-for-word copy and D is entirely optional. The State of Kansas, in this regulations package, is consistent with A- and B-level requirements but does not implement C- or D-level requirements more than is deemed necessary for the well-being of the state. As an example of what was cut out, the full crosswalk of all regulations changes made by the NRC totals 221 pages, with multiple amendments per page. The number of changes here is 37.

Why does KDHE regulate NRC areas of control?

KDHE does not regulate NRC areas of control. The NRC has relinquished their control over most of the state.

KDHE receives fees from licensees in order to process and inspect their radioactivity safety programs. Our fees are lower than the NRC's, somewhat due to decreased overhead and significantly lower travel costs for inspections. We can pass that savings on to Kansans in the form of lesser license fees, in some cases more than a 50% reduction. In addition, their license fees go to Kansas instead of the federal government, making the Radioactive Control Program a self-sufficient one.

Jt Cmte on Adm Rules & Regs
Attachment 2
Date 10-24-2017

What does KDHE do in relation to these regulations on a routine basis?

Most of the regulations in this package are for subtly altering definitions of things for better clarity and continuity between us and neighboring states. It is meant to reflect the difference between when these original regulations were written and the current "state of the art." Some small items will be encountered during inspections, but they are not notable with one exception: 28-35-700 deals with enhanced security requirements for locations with large amounts of radioactive material. The security measures described in the new regulations were tested by Los Alamos National Labs. Though this adds extra time to inspections, only 21 licensees have this amount of material in the entire state. Most of them, notably healthcare consortiums and oil companies, have branches in other states and already abide by other states' versions of these regulations. The NRC rules provide clarity and continuity between the states on these issues, noting that the failure to secure these materials in one state will threaten the whole country.

What kind of waste do these regulations include / is this all low-level radioactive waste?

Technically, unless it has been explicitly specified as exempt, all waste that has been in contact with radioactive material is considered at least low-level radioactive waste. High-level waste is specifically generated inside a reactor, which is under federal control already and outside the scope of these regulations. It must be noted that there are no low-level radioactive waste dump sites in Kansas. It is classified under state versions of essentially federal regulations and shipped out across state lines.

These types of waste include medical waste from PET scans or heart and lung scans, chemicals used in research to radioactively "tag" certain molecules, and materials used in industry to quantize and categorize everything from minute defects in welds to how full a can of soda is. These materials, properly used, are of great benefit to industry and Kansans' health.

What happens on a routine basis with the radioactive materials and x-rays in a doctor or dentist's office?

X-rays are a special case. When they are turned on, they emit radiation. A sensor picks up where radiation was transmitted through the subject and where it was blocked by bone or another dense object and turns that information into a picture. Then, the machine shuts off and it is no longer emitting any radiation. These x-ray generators are not regulated as strongly as radioactive materials because they can be shut off.

Radioactive materials emit radiation at all times. They must be kept in shielded containers so that they do not irradiate people needlessly. In the case of floods, like with the recent hurricane Harvey, the x-ray generators posed no problem (they were shut off and the public did not have the keys to start them, and so were no more dangerous than any other piece of debris) but the radioactive material could be opened by anyone and expose the public. Thankfully, strict regulations are in place to govern the securing of these materials against theft or disaster.

There are several reasons why a doctor might use radioactive material instead of x-rays. Firstly, since it is always on, it cannot break down. If a blood center requires irradiation to clean their blood donations, but their x-ray machine breaks down, all the blood that day goes to waste until a company technician can be called in from across the country. Secondly, they might need to image or affect something inside the body. Radioactive iodine will always go to the thyroid. Technetium is also commonly used. These go to sites of interest to the doctor and irradiate only those sites instead of firing a beam through the patient and irradiating everything in that beam, causing skin damage. They will also emit radiation from there, making that location easily found by anyone with a detector. Lastly, materials do not require a high voltage power source and can be used in the field without heavy equipment. This also makes them useful in industry.