

Development of a Tomographic Imaging System for HEU Components

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This presentation describes the ongoing development of a tomographic imaging system suitable for measurements of highly enriched uranium (HEU) components. The interrogating radiation source is a deuterium-tritium (DT) neutron generator or a ^{252}Cf fission source. The tomographic image is constructed by identifying geometric shapes within the scanned item and mathematically modeling their interaction with the interrogating radiation. An iterative fitting process varies the shapes until the modeled measurement fits the actual measurement. This system has been tested in the laboratory using several test items, including a depleted uranium casting.