

FORT ST. VRAIN

The U.S. Department of Energy safely stores containers of radioactive spent nuclear fuel at an Independent Spent Fuel Storage Installation (ISFSI) near Platteville, Colorado. The Fort St. Vrain ISFSI stores 130 cubic meters of spent nuclear fuel, 13% of the DOE current inventory by volume. This spent nuclear fuel was once used in a demonstration program to produce electricity at the nearby Fort St. Vrain commercial power plant. In 1992, the Public Service Company of Colorado began to decommission its nuclear facilities, and has converted the

At the Fort St. Vrain Independent Spent Fuel Storage Installation, DOE safely stores spent nuclear fuel in the secure dry storage units shown here.

plant to produce electricity with natural gas. Under terms of a 1965 contract, the U.S. Department of Energy is responsible for the spent nuclear fuel and will remove it from Colorado when a permanent national repository is opened. In the meantime, the spent nuclear fuel is safely stored in the ISFSI consistent with sound environmental stewardship. The ISFSI is managed and operated for the U.S. Department of Energy by the Idaho National Engineering and Environmental Laboratory.

What is Spent Nuclear Fuel?

A nuclear reactor fissions or splits atoms of uranium to produce heat, which drives power-generating equipment. After the uranium has been fissioned, the spent nuclear fuel (which contains the split atoms called fission products) is intensely radioactive, emitting gamma rays that require shielding to protect workers, and it must be isolated from the environment for long time periods. The Fort St. Vrain Fuel is solid metal. It is made of



uranium encased in hexagonal blocks of high-purity graphite and is very stable.

What is the ISFSI?

This heavily reinforced concrete building is 143 feet long, 72 feet wide and 80 feet tall. It is designed to withstand tornado wind speeds of 360 MPH, flooding up to six feet deep and earthquakes to 0.1 g (acceleration of gravity). The structure was completed in 1991 and is designed to last at least 40 years. DOE intends to remove the spent nuclear fuel to the national repository by 2027. The spent nuclear fuel is stored

in a dry environment, cooled by natural circulation of air. Inside the facility are 244 locations containing steel fuel-storage containers with double metal o-ring seals and bolted lids. Specially designed shielding and containment protect workers and the public from exposure to harmful levels of radiation and prevent radioactive material from escaping to the environment.

The facility is 40 miles north of Denver, Colorado, and stands in farmland 1,500 feet northeast of the Fort St. Vrain electrical generating plant owned and

operated by Xcel Energy (the former Public Service Company of Colorado). The nearest community is Platteville, about four miles away.

History

On February 9, 1996, the U.S. Department of Energy and Public Service Company of Colorado signed an agreement that ensures continued safe storage of spent nuclear fuel from the former Fort St. Vrain power reactor until a permanent repository becomes available. For several years, spent nuclear fuel from Fort St. Vrain was routinely shipped to the

Department of Energy's Idaho National Engineering and Environmental Laboratory in eastern Idaho near Idaho Falls for temporary storage and testing. However, in October 1991, political and tribal opposition in Idaho forced the shipments to stop, followed by lawsuits in federal court. An agreement in principle between the Department of Energy and Public Service Company of Colorado was reached in late 1995, and an out-of-court settlement was adopted in 1996. The Department of Energy took title to the spent nuclear fuel and became responsible for managing its temporary storage at the Fort St. Vrain site. The ISFSI is a Nuclear Regulatory



The Fort St. Vrain Independent Spent Fuel Storage Installation looks much like a grain elevator as it rises above the Colorado prairie.

Commission licensed facility. In June 1999, the operating license for the Fort St. Vrain ISFSI was transferred from the Public Service Company of Colorado to DOE. The Idaho National Engineering and Environmental Laboratory manages and operates the facility for the DOE. Routine inspections of the ISFSI by the NRC confirm the facility is being managed in a safe manner, consistent with NRC license requirements.

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