



*The exterior of the Fort St. Vrain facility.*

MAY 2014

## FORT ST. VRAIN INDEPENDENT SPENT FUEL STORAGE FACILITY (ISFSI)

The U.S. Department of Energy (DOE) safely stores containers of radioactive spent nuclear fuel at an Independent Spent Fuel Storage Installation (ISFSI) 40 miles north of Denver near Platteville, Colo. The Fort St. Vrain ISFSI stores 130 cubic meters of spent nuclear fuel: 13 percent 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 from 1977 to 1992. In 1992, the Public Service Company of Colorado began to decommission its nuclear facilities, and has converted the plant to produce electricity with natural gas. Under terms of a 1965 contract, DOE 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 DOE by CH2M-WG IDAHO, LLC (CWI).

### WHAT IS SPENT FUEL?

A nuclear reactor fissions or splits atoms of uranium to produce intense heat, which drives power-generating equipment. After the uranium fissions, it is intensely radioactive, emitting gamma rays that require shielding

to protect workers. The spent fuel stored in the ISFSI is encased in hexagonal-shaped blocks of graphite. It is a stable solid, not a liquid, but must be isolated from the environment for a long time.

### FACILITY DIMENSIONS AND CAPABILITIES

The 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. The structure is intended to last at least 40 years – and probably longer with monitoring and maintenance. The spent fuel is stored in a dry environment, cooled by natural circulation of air. Inside are 244 locations containing fuel-storage containers that hold 1,464 spent fuel elements. Specially designed shielding prevents radioactivity from escaping to the environment.

### HISTORY

Between 1980 and 1986, spent fuel from Fort St. Vrain was routinely shipped to DOE's Idaho National Laboratory near Idaho Falls, Idaho, for temporary storage and



testing. However, in October of 1991, political and tribal opposition in Idaho halted the shipments, followed by lawsuits in federal court. An agreement in principle between DOE and Public Service Company was reached in 1995, and an out-of-court settlement was adopted in 1996. DOE took title to the spent fuel and became responsible for managing its temporary storage at the Fort St. Vrain site.

### EMERGENCY PREPAREDNESS

The Fort St. Vrain ISFSI conducts emergency preparedness drills as often as monthly and takes part in a full-scale

emergency exercise every two years, as required by its Nuclear Regulatory Commission license. Emergency response personnel from both Idaho and Colorado participate in the exercise, as well as regional law enforcement and hospitals.

Such drills and exercises are conducted to prepare personnel for a possible emergency at the ISFSI and to test the communication channels among the DOE, its contractor, and offsite emergency and medical support. The media often report when drills or exercises are being conducted as a public service.

### CONTACT INFORMATION

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*Spent nuclear fuel safely stored in secure dry storage units.*

