

GEM is a minority-owned, small disadvantaged business offering a full range of engineering and technical services. We have provided support to the U.S. Department of Energy (DOE) for retrieval of nuclear materials from various universities and shipment to a DOE storage facility. GEM performed nuclear material assessments, criticality analyses, and safety analyses; specified packaging and arranged shipping of nuclear materials; and provided coordination between the agencies involved. Look to GEM to meet your needs for retrieval of nuclear materials.

### NUCLEAR MATERIAL RETRIEVAL

Under contract to the Department of Energy (DOE), GEM has removed special nuclear materials from various universities and prepared them for shipment to the DOE Uranium Management Center in Portsmouth, Ohio. GEM specializes in nuclear material assessment and retrieval. All retrievals were executed in compliance with DOE, Department of Transportation (DOT) and Nuclear Regulatory Commission (NRC) requirements. Types of nuclear materials included uranium metal and uranium oxide fuels in various forms.



**Nuclear Materials at Purdue University**

### ASSESSMENT & RETRIEVAL METHODOLOGY

GEM has the knowledge and experience to:

- Provide onsite inspections to determine the physical conditions of the nuclear fuel materials.
- Evaluate the nuclear materials for acceptability relating to various regulatory requirements.



**Inspecting Nuclear Fuel Rods at University of Florida**

- Develop and implement appropriate plans for packaging the materials.
- Specify the appropriate approved DOT and NRC shipping containment for the nuclear fuel materials.
- Perform safety and criticality analyses that cover all significant safety scenarios.
- Provide coordination and interface between the university and DOE, DOT, NRC, and other state or federal agencies as required.
- Provide complete Project Management during the safe retrieval and shipment process to the DOE designated destination.



**Fuel Rods in WE-1 Container at Penn State**

### UNIVERSITY CLIENTS

Universities for which GEM has provided Fuel Retrievals and/or Material Assessments include:

#### Retrievals:

- Cornell University
- University of Florida - Gainesville
- California State University - Northridge
- Pennsylvania State University



**Final Check Before Transport**

#### Assessments:

- University of Idaho
- Massachusetts Institute of Technology
- Purdue University

GEM can provide a wealth of experience for universities interested in returning nuclear research materials, for security reasons or because of curriculum modifications.

**GEM is a Minority-Owned Small Disadvantaged Business**

408 North Cedar Bluff Road, Suite 451, Knoxville, TN 37923

Tel: (865) 560-9434 • Fax: (865) 560-9404 • Website: [www.gemserve.com](http://www.gemserve.com)