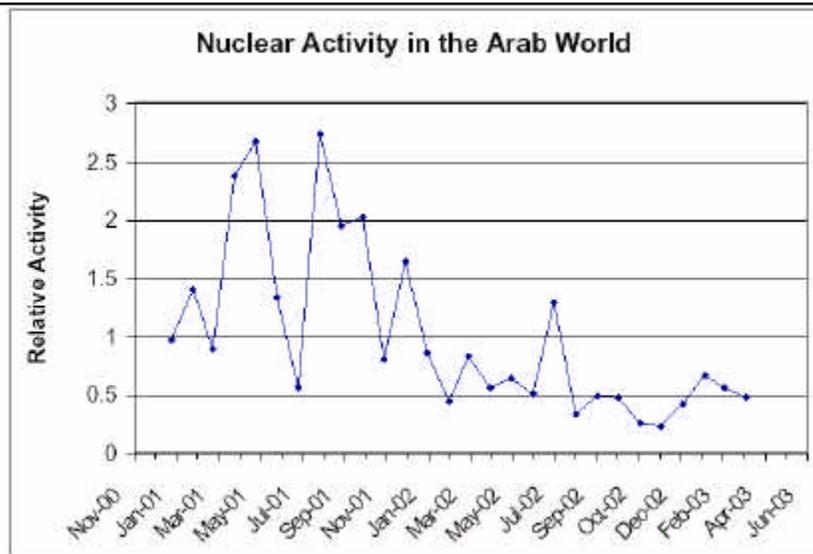


**Quad Chart
– Format**

BAA Number: DAAD05-03-T-0024
Mission Area: Infrastructure Protection
Requirement Number: IP-R1086-RegentsLBNL-Firestone-01
Proposal Title: Monitoring International Nuclear Activity

**Berkeley Laboratory
June 13, 2003**



Evidence of Increased Arab World Nuclear Activity in 2001

Proposed Technical Approach

The LBNL *Table of Isotopes* website provides primary nuclear information to >150,000 different users annually. We have developed the covert technology to identify users by IP address and country to determine the kinds of nuclear information they are retrieving.

We propose to develop pattern recognition software to provide an early warning system to identify

- Unusual nuclear activity by country or region
- Specific nuclear/radioactive material interests

We have monitored nuclear information for over two years and provide this information to the FBI and LLNL. Intelligence is gleaned from the website log files. This proposal would expand our reporting capabilities.

Operational Capability

Usage of the LBNL *Table of Isotopes* website produces log files recording the IP address and type of data that were provided for each transaction. This information is used to profile usage by country and informational content.

The figure at the left shows nuclear interest among Arab world users normalized to overall international usage. Peaks around May 2001 and October 2001 represent simultaneous increase in usage by several countries at those times.

This surveillance program provides covert, real-time information on international nuclear activities which is traceable to both the country and user of origin. Incorporation of the log files into a database will allow existing FBI and LLNL collaborators to interrogate the usage patterns by more sophisticated criteria for comparison with other information.

Rough Order of Magnitude Cost and Schedule

This project will require the services for one year of a full time computer programmer and one-quarter time scientific advisor. (\$200K) The project consists of two phases:

- Generation of a database from the log files (6 mo.)
- Development of database analysis and display tools (6 mo.)

Deliverables

A database of user IP addresses, country codes, and user activities will be provided with applications to display elemental, isotopic, and other topical download activities in tables and graphs. Internet access to server log files will be provided for continuous updating.

Contact: Dr. Richard B. Firestone, Lawrence Berkeley National Laboratory, MS 88R0192, Berkeley CA 94720.

Tel: (510)486-7646 **Fax:** (510)486-5757 **E-mail:** rbf@lbl.gov.