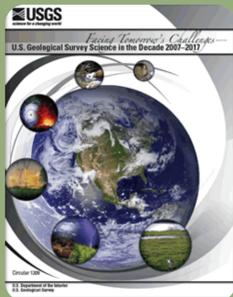


U.S. Uranium Resource Assessment

U. S. Geological Survey Central Energy Resources Team

Uranium Research Group

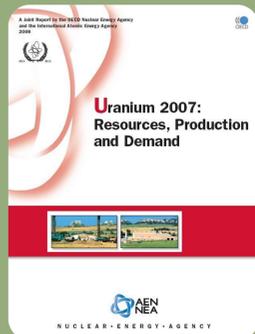
Facing Tomorrows Challenges: USGS Science Strategy, 2007-2017



“The USGS energy and minerals resource research will be broadened to contribute more comprehensively to discourse and decisions about future natural resource security, environmental effects of resource use, the economic vitality of the Nation, and management of natural resources on U.S. Department of the Interior, Federal and other lands.”

“Cumulative knowledge, long-term data, and new understanding of resource origin and assessment methodologies will improve the reliability and accuracy of national and global assessments and information products...”

Uranium Resources and the International Atomic Energy Association (IAEA) “Red Book”



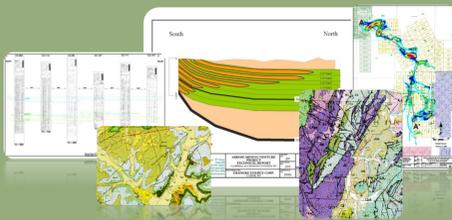
The USGS Central Energy Resources Team Uranium Research Group along with the Dept. of Energy collaborate to contribute U.S. uranium resource estimates to the IAEA *Uranium: Resources, Production and Demand*. This report, commonly known as the *Red Book*, has been published at two-year intervals and has become widely recognized in the international nuclear community as a primary reference document on world uranium supply.

Project Objective: To provide information on uranium resources, production and demand, and increase the capability of interested IAEA Member States for planning and policy making on uranium production. Uranium resources are an integral part of the nuclear fuel cycle. Uranium resource development is undergoing drastic changes in terms of both uranium production facilities and alternative sources of supply. An inventory of uranium resources, together with projections of supply and demand needs to be available to IAEA Member States in order to maximize the benefits of the resources to producers, while optimizing fuel cycle planning for consumers. The tasks focus on preparation of the world report "Uranium Resources, Production and Demand" (The Red Book), together with supporting activities.

Uranium Resources, Production and Demand (The Red Book): In the mid-1960's, the International Atomic Energy Agency (IAEA) in cooperation with the OECD Nuclear Energy Agency began the publication of a report entitled "Uranium-Resources, Production and Demand". The Red Book, which is based on a questionnaire sent to Member States, contains (1) estimates of uranium resources in several categories of assurance based on existence and economic attractiveness, (2) production capability, (3) nuclear capacity, and (4) related reactor requirements. Annual statistical data are included on exploration expenditures, uranium production, environmental issues, employment and levels of uranium stocks. In addition to a global analysis, including a discussion of recent developments and their impact on the outlook over the short term (uranium supply and demand through 2020), the report contains National Submissions reviewing related developments in member countries over the two-year reporting period.

Measuring U.S. Uranium Resources

Uranium resources are calculated by:
Researching historic reserves:



Tracking exploration activities and properties:



Compiling newly published "NI-43-101 compliant" (validated) reserves:



* Canadian Instrument NI-43-101 is the standard to which mining companies worldwide hold their reserve calculation reporting. Stringent securities laws define mineral reserve calculations to Canadian Institute of Mining standards. SEDAR is a registered trademark of the Canadian Securities Administrators.

Holistic Data Integration The Uranium Resource Data System Project

The USGS has collected data describing uranium resources since the 1950's. The Uranium Research Group is working to fully integrate this data into a spatially referenced relational database that is easily accessible by the public. This data includes:

- ❖ **Historic Data:** Geologic mapping, drilling and down hole logging data collected by USGS beginning in the 1950's. This data is unpublished or was released in limited edition reports (i.e. Trace Element Investigation Series).
- ❖ **NURE (National Uranium Resource Evaluation):** geochemical and geophysical data and reports collected from 1973 to 1984.
- ❖ **MRDS (Mineral Resource Data System):** geospatially referenced information describing uranium occurrences.

The USGS Uranium Research Group is working to fully integrate these data sources with resource assessment data to form a Uranium Resource Data System (URDS) <http://energy.cr.usgs.gov/other/uranium/uirs.html>, making the information:

- ❖ Geospatially referenced
- ❖ Fully integrated
- ❖ Portable (available for ArcMap and Google Earth)
- ❖ Searchable
- ❖ Linked to project maps, logs, geochemistry, USGS publications and drill data

