

Developing a New National Uranium Resource Assessment for the United States

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Proposed increased contributions from nuclear power to the U.S. energy mix and the rapidly expanding demand for nuclear capacity worldwide, have led to questions regarding the availability and security of the uranium supply to the U.S. In 2009, only 14% of uranium delivered to domestic nuclear power plants was produced in the US. Accurate estimates of uranium resources in the U.S. are critical for informed decision making regarding the future sustainability of U.S. nuclear power expansion. To address this concern, the U.S. Geological Survey (USGS) is planning a new national uranium resource assessment. The new assessment will update the 1982 undiscovered uranium resource estimates of the National Uranium Resources Evaluation (NURE) program, the last major U.S. uranium resource assessment. The USGS will consider the potential of significant uranium occurring in each of the 15' uranium deposit types recognized by the International Atomic Energy Association. Following a preliminary evaluation of the most favorable deposit types and host terrains, detailed geologic, grade, and tonnage information for known deposits of each type will be reviewed and compiled. Deficiencies in data or understanding of important deposit types will be addressed by additional research, to develop a more complete understanding of deposit formation and better predictions of the number and magnitude of potential deposits. Estimation of undiscovered resources will be based on refinements of existing algorithms used for the NURE assessment, and assessment techniques based on subjective, qualitative judgments may be dropped or modified before being incorporated into a more rigorously defined, statistically-based, quantitative estimation method. Methodology will be designed to be transparent with respect to information considered and the method of evaluation, so potential weaknesses can be rapidly identified. The new assessment approach will favor flexibility to allow for rapid adjustment as better data and deposit models become available. Methodology developed in this project will be rigorously peer reviewed by outside experts before the assessment is begun.

Increasingly, the decision to develop a uranium deposit is not limited to traditional resource measures of geological assurance or economic feasibility. Potential risks to ecosystems, water supplies and human health are common considerations in resource development. Recognizing this reality, a modified life cycle evaluation will be incorporated into assessments at a regional scale. Ongoing USGS research focused on the environmental impacts of uranium mining operations will be integrated into the assessments of geologic and economic considerations to identify limitations to resource

development. The USGS is actively soliciting input from potential users of the information produced in this assessment to determine what products would be most useful to audiences at both national and local levels.