

Additional Resources

- ATDSR
- EPA IRIS
- EPS SRS
- Chemical Abstract Service

ATSDR

- The Agency for Toxic Substances and Disease Registry (ATSDR) is an agency of the U.S. Department of Health and Human Services. ATSDR is charged under the Superfund law (CERCLA) to assess the presence and nature of health hazards at specific Superfund sites, to help prevent or reduce further exposure and the illnesses that result from such exposures, and to expand the knowledge base about health effects from exposure to hazardous substances. ATSDR maintains a series of fact sheets and profiles about contaminants of concern commonly found at Superfund sites.
- www.atsdr.cdc.gov

EPA IRIS

- The Integrated Risk Information System (IRIS), prepared and maintained by the U.S. Environmental Protection Agency (U.S. EPA), is an electronic database containing information on human health effects that may result from exposure to various chemicals in the environment. IRIS was initially developed for EPA staff in response to a growing demand for consistent information on chemical substances for use in risk assessments, decision-making and regulatory activities. The information in IRIS is intended for those without extensive training in toxicology, but with some knowledge of health sciences.
- <http://cfpub.epa.gov/ncea/iris/index.cfm>

EPA SRS

- The Substance Registry System (SRS) is the Environmental Protection Agency's (EPA) central system for information about regulated and monitored substances. The system provides a common basis for identification of chemicals, biological organisms, and other substances listed in EPA regulations and data systems, as well as substances of interest from other sources, such as publications.
- http://iaspub.epa.gov/sor_internet/registry/substreg/home/overview/home.do

Chemical Abstracts Service

- Chemical Abstracts Service (CAS) is a division of the American Chemical Society. CAS builds and maintains the largest and most current database of chemical substance information in the world. These chemical substances are labeled with CAS Registry Numbers[®] (CASRN or CAS Numbers) and are used internationally as unique numeric identifiers for a single substance. They have no chemical significance and, because they are widely used, are a link to a wealth of information about a specific chemical substance.
- www.cas.org

UK End State Contract Objectives

- Provide scoping/facilitation/document support for activities related to developing a Publicly Acceptable PGDP End State Vision for the PGDP based on "Politics of Cleanup" approaches
- Develop and integrate public, stakeholder, regulatory, & technical community visions thru meetings and stepwise development of a "PGDP End-State Vision Document".
- Integrate activities of public, stakeholder, regulatory, & technical personnel.
- Provide technical support to foster understanding of technical issues related to development and finalization of "PGDP End-State Vision Document"
- Public/regulators and stakeholders write report thru KRCEE support & facilitation
- Utilize KRCEE, CAER, and personnel from outside the DOE Complex to interact with public.

POC Critical Categories

- **Goals:** Developing Goals and Identifying the Future Use of the Site
- **Actions:** Accomplishing Cleanup by Focusing on and Refining Goals Throughout the Cleanup Process
- **Communications:** Engaging the Community Through Consultation, Coordination, and Ongoing Dialogue
- **Conflict Resolution:** Resolving Conflicts to Achieve Goals

Recommendations for Category 1

Recommendation #1: All Parties Must Collaborate — The federal government, local governments, community members, state and federal agencies, and Congress must collaborate when developing the cleanup and future use vision for the site.

Recommendation #2: Know the Rules — The law defines the cleanup process and the opportunity to participate in the process.

Recommendation #3: Understand Federal Agencies' Goals — The parties must consider the federal government's mission and goals.

Recommendation #4: A Cleanup Contract with Defined Goals Must Be Used — Closure contracts, which serve a number of roles, must identify clear milestones, be communicated to all parties, be understood by the parties and be funded annually by Congress.

Recommendation #5: Understand Community Values — To properly collaborate, the parties must work to understand the values of the community, and must work to incorporate such values into the planning process.

Observations on Category 1

- The parties must agree on the cleanup purpose and long-term vision for the site.
- The cleanup and future use visions must move beyond the conceptual level and specific cleanup goals must be identified, defined, and agreed to by the parties.
- The group must know and understand DOE's mission and constraints.
 - Mission: Clean up site
 - Mitigate risk and associated liabilities
 - Reduce if not eliminate long term costs
 - Constraints:
 - Internal policies
 - Congressional mandates
 - Regulatory requirements
 - Funding restrictions
- Success is also predicated on substantively incorporating the local community's values into the cleanup process-
 - In certain cases this has led to additional cleanup beyond a strictly risk-based cleanup

Recommendations for Category 2

Recommendation #6: Education Is Essential — The parties must take the time to educate each other on the technical and policy issues underlying the cleanup and to commit staff resources to engage each other. Discussions, which need to take place throughout the process, must also include the question of technical risk and perceptions of risk, recognizing perceptions of risks posed do not always align with the technical risk.

Recommendation #7: Congress Must Make Cleanup a Legislative Priority — Federal lawmakers should understand the needs of the parties involved and become intimately involved in cleanup decisions.

Recommendation #8: Local Presence Facilitates Cleanup — The federal entity charged with cleaning up the site and the federal and state regulatory agencies must have a local presence and must address problems resulting from staff turnover that negatively affect cleanup and public involvement efforts.

Recommendation #9: Federal Agency Leadership Sets the Tone — The federal entity charged with cleaning up a site must establish management policies that challenge the staff to complete the job, and broadly communicate agency policies to affected constituencies and to Congress.

Observations on Category 2

- Continued education is critical to the process:
 - Hold regular meetings
 - Provide pre-decisional drafts of cleanup documents to the community
 - Provide local governments and other members of the community with broad access to federal site personnel
 - Hold regular meetings between the federal facilities manager and the community members
 - Educate new parties as they become involved
- Education must be in both directions
- A risk communication process is critical to success
- Technical and risk perceptions may not correlate with scientific characterizations of technology or risk
- The stakeholders must be equipped to actively engaged their congressional representatives.

Recommendations for Category 3

Recommendation #10: All Parties Must Take Into Account Post-Cleanup Requirements – Cleanup completion typically means that contamination will be left in place; thus, identifying sources of long-term funding and clarifying the roles of the affected parties are essential.

Recommendation #11: The Parties Must Build a Working Relationship — All parties must take the necessary steps to develop and maintain trust, accountability and openness.

Recommendation #12: Be Organized — Local governments and the community must be organized and proactive, and strive to speak with one voice.

Recommendation #13: Resources Ensure Parties Can Participate — The federal government and Congress must provide regulators and communities with the financial resources necessary to organize and retain the staffing resources they need.

Recommendation #14: Following the Minimum in the Law Is Not Enough — Minimum regulatory requirements are insufficient to support substantive public involvement; the parties must develop public involvement processes that are tailored to site-specific needs, recognizing that process is different from negotiations.

Observations on Category 3

- Community engagement is critical at all steps in the process
- The process cannot be divorced from the objective
 - The objective must drive the process and not the other way around
 - The process must lead to:
 - Consultation
 - Coordination
 - Communication
- Federal sites are rarely remediated to natural background levels
 - Long term stewardship of the facility will be required
 - Adequate funding must be insured for long term stewardship
- Trust and accountability flow from a common mission and vision
- Characteristics of an open process
 - Abide by the principle of “no surprises”
 - Be honest
 - Provide regular information and brief your counterparts
 - Identify for all parties any real or potential impediments to success
 - Be available, which could mean talking with or meeting with your counterparts of the local community on a daily or weekly basis
 - Share bad news when you get it
 - Work off-line, and not all discussions should take place in public
 - Respect the parties enough to say when you do not agree
 - Keep searching for ways to increase dialogue and openness
- The entire community must be involved, not just a small number of representatives on the CAB

Recommendations for Category 4

Recommendation #15: Engage Each Other Regularly — The parties must substantively engage each other throughout the entire cleanup and reuse planning process.

Observations on Category 4

- Problems arise when:
 - Community not involved in the decision making process
 - Parties could not come to agreement on levels of risk

Phase I Tasks

1. Identify and contact stakeholders.
2. Conduct personal interviews with critical stakeholders to identify information needs, translation mechanisms, community concerns, constituent perspectives and preferences.
3. Plan and conduct separate stakeholder meetings (with multiple breakout sessions) with different stakeholder groups to introduce the project and to solicit input on issues and perspectives.
4. Plan and conduct separate meetings (with multiple breakout sessions) with different stakeholder groups using mapping exercises to identify key factors (i.e. issues, problems, concerns, needs, trends, uncertainties, and opportunities).
5. Integrate collected information into factor assessment matrix.
6. Plan and conduct meeting with all stakeholders to assess and assign weights to factors using anonymous key pads.
7. Plan and conduct meeting with representative stakeholders to identify potential end state scenarios and associated relevant parameters (i.e. regulatory issues, technical issues, economic issues, political issues, demographic issues, other issues).
8. Integrate collected information into scenario assessment matrix.

Phase II Tasks

8. Cross walk factor assessment matrix with scenario assessment matrix.
9. Build, calibrate, and validate preference model.
10. Use the model to build the initial scenario matrix.
11. Plan and conduct meeting with stakeholders to present initial scenario matrix and to solicit preferences using anonymous key pads.
12. Revise the initial scenario matrix as needed.
13. Plan and conduct meeting with stakeholders to finalize end state preferences.
14. Work with stakeholders to develop final report.



Intelligent Energy Choices for Kentucky's Future

Kentucky's 7-Point Strategy for Energy Independence

Strategy 7: Examine the Use of Nuclear Power for Electricity Generation in Kentucky

With major increases in efficiency and conservation, aggressively utilizing alternative and bio-based energy sources, and more effective use of cleaner coal technologies, we still will not be able to achieve the projected energy demands in 2025 along with meaningful GHG reductions. Thus, other sources of base-load electricity generation will be necessary. Many of our neighboring states are considering nuclear energy. Nuclear power production has no direct carbon dioxide emissions and is already a significant component of the global energy system. Current technologies for nuclear production are superior to the previous generation of plants, complementing an already safe industry in the United States. Improved reliability and efficiency have allowed the industry to maintain its 20 percent share of the growing U.S. electricity market. While the issue of disposal of spent fuel has not been completely resolved, progress will continue to be made to arrive at a solution that addresses the nation's needs.

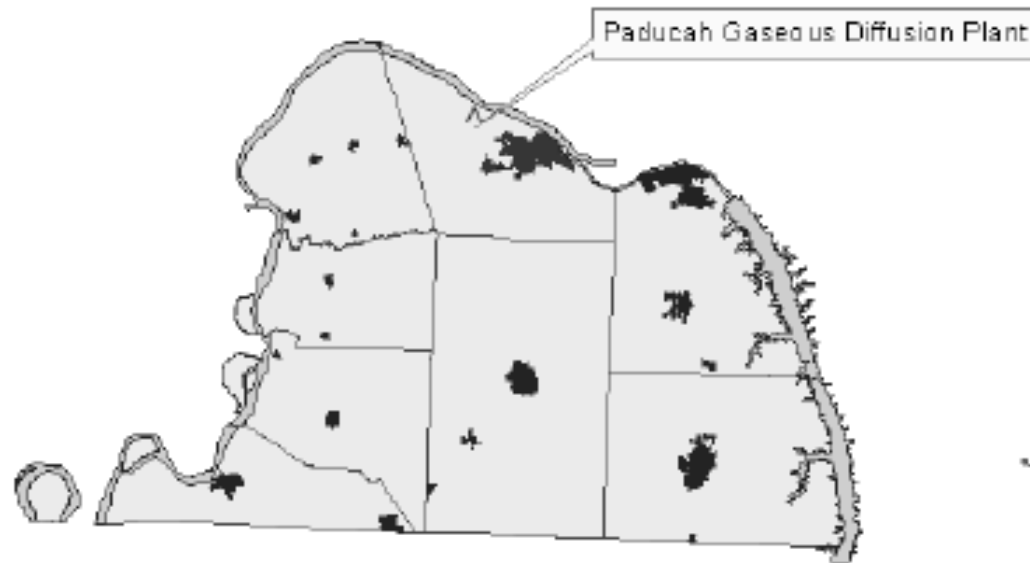
Goal: Nuclear power will be an important and growing component of the nation's energy mix, and Kentucky must decide whether nuclear power will become a significant part of meeting the state's energy needs by 2025.

In a carbon constrained world, the interdependencies among energy, the environment and the economy will lead to broad sweeping economic transformations in the 21st century. To find solutions that address climate challenges, use our abundant natural resources to gain energy security, and provide the power needed to drive our economy will require pursuit of a diversified mix of energy options. In weighing the benefits and limitations of potential solutions we must be willing to fully assess and understand the societal, technical, and financial trade-offs involved. Nuclear power is one such option that deserves our full attention, as its technology and safety have significantly improved in the last three decades. It also is likely to become a national priority.

Actions to Achieve the Goal

- Legal hurdles to successful inclusion of nuclear power in Kentucky's energy mix should be examined. Specifically, removal or revision of the legislative ban on new nuclear power plants must be addressed.
- A public engagement plan should be implemented to gather and address stakeholder feedback and concerns and to provide education about nuclear power today.
- Research should be conducted to assess the desirability of co-locating nuclear power plants with advanced coal conversion plants to assess the effects on reducing carbon dioxide emissions, providing ready access to electricity and/or steam, and possibly using waste heat for the coal conversion process.
- Incentives that reduce the risk of capitalizing and financing a new power plant should be considered in developing these programs.
- The EEC should work with the Community and Technical College System to ensure that trained personnel are available to staff the construction and operation of nuclear power plants.
- The state universities should explore now the possibility of adding nuclear engineering, health physics, and radiological science programs to their curricula.

Preparing for the future ...



PUPAU Task Force



Economic Impact ***... of the Paducah Gaseous Diffusion Plant***

The USEC Regional Annual Economic Impact by County *

■ McCracken County	\$ 84,300,000
■ Ballard County	\$ 14,200,000
■ Graves County	\$ 12,600,000
■ Massac County	\$ 8,500,000
■ Marshall County	\$ 8,500,000
■ All Others	\$ 12,600,000
■ Total	\$ 147,000,000



* Includes: payroll, charitable contributions, business memberships, procurement dollars, and tax payments.



GNEP

- The Global Nuclear Energy Partnership has four main goals. First, reduce America's dependence on foreign sources of fossil fuels and encourage economic growth. Second, recycle nuclear fuel using new proliferation-resistant technologies to recover more energy and reduce waste. Third, encourage prosperity growth and clean development around the world. And fourth, utilize the latest technologies to reduce the risk of nuclear proliferation worldwide.
- Through GNEP, the United States will work with other nations possessing advanced nuclear technologies to develop new proliferation-resistant recycling technologies in order to produce more energy, reduce waste and minimize proliferation concerns. Additionally, [the] partner nations will develop a fuel services program to provide nuclear fuel to developing nations allowing them to enjoy the benefits of abundant sources of clean, safe nuclear energy in a cost effective manner in exchange for their commitment to forgo enrichment and reprocessing activities, also alleviating proliferation concerns.

The Global Nuclear Energy Partnership



Global Nuclear Energy
Partnership

Greater Energy Security in a Safer, Cleaner World



Paducah Uranium Plant Asset Utilization (PUPAU) Task Force



What is the Global Nuclear Energy Partnership?

The Global Nuclear Energy Partnership (GNEP) initiative seeks to develop worldwide consensus on enabling expanded use of economical, carbon-free nuclear energy to meet growing electricity demand. This will use a nuclear fuel cycle that enhances energy security, while promoting non-proliferation.



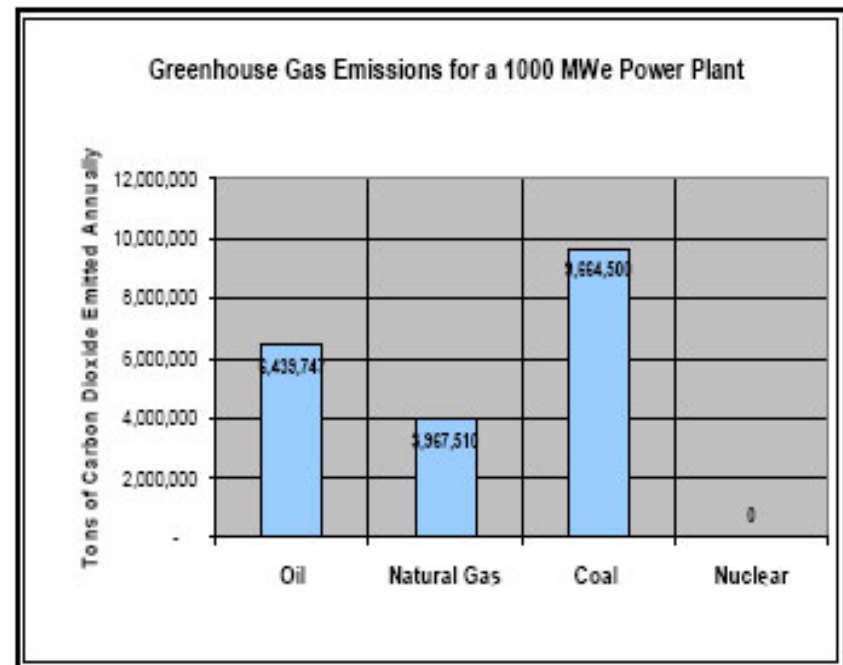
DOE Plans to Develop Two Types of GNEP Fuel Cycle Facilities

- The **Consolidated Fuel Treatment Center (CFTC)** will reprocess Spent Nuclear Fuel (SNF) to recover valuable products such as uranium for reuse as fuel
- Sodium cooled fast reactors (i.e. the **Advanced Burner Reactor - ABR**) will be used to consume transuranics such as Plutonium and generate electricity
- DOE is also planning to locate an Advanced Fuel Cycle Facility (AFCF) at one of the National Laboratories to support technology development



How does nuclear energy compare to fossil fuel use?

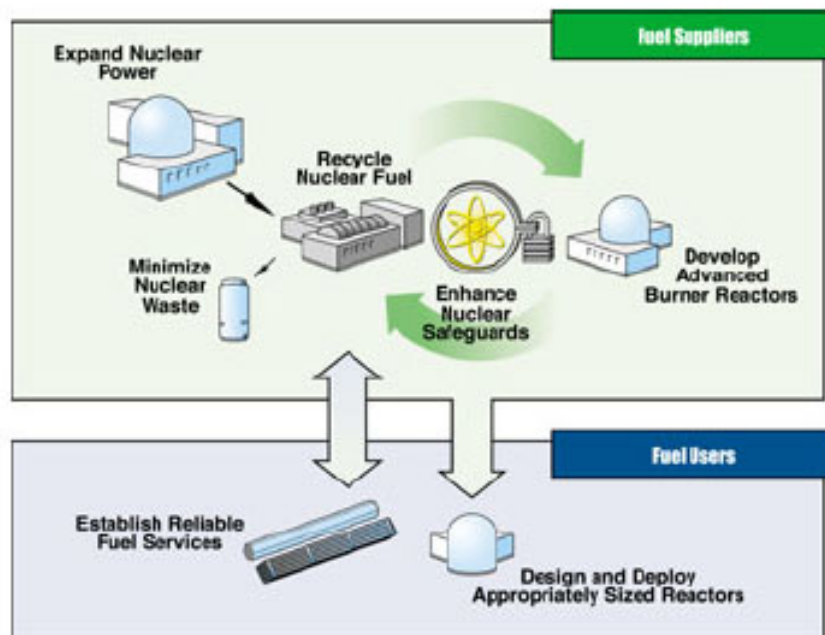
- The amount of electricity generated by a 1,000-MWe nuclear reactor at a 90% capacity factor in one year is 7.9 billion KWh.
- This is enough power to supply electricity for 740,000 households annually (while producing no greenhouse gases).
- The same amount of electricity generated by other fuel sources, would require:
 - Oil - 13.7 million barrels (producing over 6.4 million tons of greenhouse gases)*
 - Coal - 3.4 million tons (producing over 9.6 million tons of greenhouse gases)
 - Natural Gas - 65.8 billion cubic feet (producing almost 4 million tons of greenhouse gases)



* Based on average conversion rates from the Energy Information Administration



Why is GNEP a reliable fuel service model?



- Expands use of nuclear energy while preventing the spread of sensitive fuel cycle technology that could be used in the manufacture of weapons
- Fuel suppliers (e.g. the United States) – will operate both nuclear power plants and fuel recycle facilities
- Fuel users – will operate only power reactors using fuel leased from and returned to the suppliers



What is the potential economic impact on our region?

<i>Projected Construction Costs</i>	<i>\$12 to \$16 Billion</i>
Construction Jobs:	5,000
Permanent Jobs:	1,000
<i>Projected Regional Annual Economic Impact \$140.7M*</i>	
McCracken:	\$84,300,000
Ballard:	\$14,200,000
Graves:	\$12,600,000
Massac:	\$ 8,500,000
Marshall:	\$ 8,500,000
All Others:	\$12,600,000

* Includes: payroll, charitable contributions, business memberships, procurement dollars, and tax payments



Time line of the Global Nuclear Energy Partnership (GNEP) events

- **January 2006** – President announces GNEP initiative and Paducah Uranium Plant Asset Utilization (PUPAU) Task Force established
- **February 2006** – Administration requests \$250M for FY-2007
- **March 2006** – U.S. Department of Energy (DOE) seeks interest from candidate sites
- **May 2006** – DOE amends siting to include requirement for interim process storage of commercial spent nuclear fuel
- **June 2006** – Paducah Task Force selects CH2M Hill as corporate partner
- **September 2006** – Task Force submits proposal for grant to study site
- **September 2006** – DOE receives Expressions of Interest from Industry for the GNEP Consolidated Fuel Treatment Center (CFTC) and Advanced Burner Reactor (ABR)
- **January 2007** – Site study grants awarded
- **February 2007** - Administration requests \$405M for FY-2008
- **March-April 2007** – Community outreach begins - information workshops scheduled; web site provided for informational updates
- **May 1, 2007** – Paducah site study to DOE
- **June 2008** – Decision package including the GNEP Programmatic Environmental Impact Statement (PEIS), siting studies from 11 sites and technology proposals due to the Secretary of Energy