



Paducah Gaseous Diffusion Plant  
Citizens Advisory Board

## Recommendation 08-06

*Approved at the Citizens Advisory Board Meeting, July 17, 2008*

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**Title: PGDP CAB Response to Environmental Assessment of Disposition of Radioactively Contaminated Nickel at the East Tennessee Technology Park, Oak Ridge, Tennessee and the Paducah Gaseous Diffusion Plant, Paducah, Kentucky, for Controlled Radiological Applications**

**Background:**

The U.S. Department of Energy (DOE) owns approximately 15,600 tons of high-purity (>99.9%) nickel which is volumetrically contaminated with uranium and trace quantities of technetium, neptunium and plutonium. Approximately 9,700 tons of unclassified nickel ingots are stored at the Paducah Gaseous Diffusion Plant (PGDP) and 5,600 tons of classified shredded nickel are stored at the former DOE uranium enrichment facility in Oak Ridge, Tennessee. In addition, DOE owns approximately 53 tons of unclassified aluminum ingots that have both volumetric and surface contamination and are stored at the PGDP. The nickel and aluminum were the byproducts of the Cascade Improvement and Cascade Upgrading Projects conducted at Paducah, Portsmouth, Ohio, and Oak Ridge in the late 1970s and early 1980s.

On January 12, 2000, DOE placed a moratorium on the release of volumetrically contaminated metals pending a decision by the Nuclear Regulatory Commission (NRC) on establishment of national standards. The NRC continues to review this issue, and the moratorium remains in effect. On July 13, 2000, DOE further restricted the release of all scrap metals with radiation levels above the detectable background. Improved data collection and records management, public access to the data, public participation in the release decision process, and certification that all requirements are met were specified prior to release. This moratorium seeks to prevent public exposure to radiation above background resulting from recycling/reuse of contaminated DOE material in consumer products. However, the moratorium allows reuse for specific purposes by DOE-authorized nuclear facilities, the commercial nuclear industry and NRC licensees authorized to possess the material.

Restricted reuse of the nickel by DOE-authorized nuclear facilities, the commercial nuclear industry, or NRC licensees authorized to possess the material is the only viable near-term option for disposition of the ingots that could have economic benefit to DOE. Section V.4.c of DOE 5400.5, *Radiation Protection of the Public and Environment*, states that:

Scrap metal that does not meet the requirements of Paragraphs V.4.a and V.4.b may be –

- (3) released for restricted recycling with a designated use (e.g., waste containers) if the material meets DOE approved Authorized Limits for the designated use and there is reasonable assurance that the property will not be recycled into general commerce.

Representative Ed Whitfield (R-KY) recently wrote a letter urging Energy Secretary Bodman to end the moratorium and allow communities to reap proceeds from nickel recycling. On May 9, 2007, DOE sought input through an Expression of interest (EOI) from industry representatives on the safe disposition of the nickel with an option for the disposition of the aluminum ingots at the PGDP. Use of the recycled nickel and possibly aluminum would be restricted to controlled government and/or commercial radiological applications. The EOI does not commit DOE to a subsequent solicitation. DOE reserved the right to issue joint, separate or hybrid solicitation(s) for any or all of the metal.

On June 13, 2008, DOE released the *National Environmental Policy Act Draft Environmental Assessment for the Disposition of Nickel at Department of Energy Facilities in Oak Ridge, Tennessee, and Paducah Kentucky, for Controlled Radiological Applications (DOE/EA-1599)*. The proposed action analyzed in this Environmental Assessment (EA) would allow the stored nickel from both Oak Ridge and Paducah to be processed into final products for use, consistent with the referenced Secretarial moratoria, in controlled government and/or commercial radiological applications. Pursuant to the requirements of the National Environmental Policy Act (NEPA), the Council on Environmental Quality implementing regulations, and the DOE NEPA regulations, DOE has prepared this Draft EA to analyze the potential consequences resulting from the proposed action and its alternatives which include disposal of the nickel as a radioactive waste and a no-action alternative.

**Recommendation:**

**The PGDP Citizens Advisory Board recommends the following with regard to the Draft EA and the potential solicitation of nickel:**

- 1. If *de minimis* levels of nickel contamination can be achieved, it is recommended the moratorium on nickel release be rescinded.**
- 2. DOE should proceed with a Request for Proposal (RFP) for nickel processing. Based upon responses to the RFP, existing technology for nickel decontamination should be assessed and demonstrated.**
- 3. We suggest that DOE release the RFP in draft form and the RFP should incorporate weighting factors to encourage nickel processing in the communities of Paducah and/or Oak Ridge areas.**
- 4. Three alternatives were provided in the Draft EA. It is recommended a fourth alternative be evaluated: Decontamination to Internal Recycle/Storage. DOE should store processed nickel with *de minimis* levels of contamination, until the moratorium is lifted or until future internal use is identified. The following advantages to this alternative include:
  - a) Nickel is no longer a radiation hazard.**
  - b) Storage quantity requirements are reduced: more convenient form (powder, pellet, ball, etc.) for compact storage.**
  - c) Addition of valuable nickel stores to National Metals Reserve.****
- 5. If DOE proceeds with the RFP and a specific technology is offered by a successful bidder/vendor, it is recommended a more detailed Environmental Impact Assessment be prepared and submitted for public/community consideration.**