



Idaho National Laboratory

# 2005 Status Report – DOE University Reactor Fuel Assistance Program

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# 2005 Status – DOE's URFA Program

## ***URFA PROGRAM MANAGEMENT***

DOE HQ Office of Nuclear Energy (NE)

*John Gutteridge*

*Michelle Scott*

DOE - Idaho Operations Office

*Jim Wade*

INL

*Department Manager*

*Frances Marshall*

*Program Manager*

*Tony Vinnola*

*Nuclear Engineer For Fuel*

*Bill Steinke*

*Quality Engineer - at Idaho*

*Dana Cooper*

*Quality Engineer - at Virginia*

*Dave Capp*

*Mechanical Engineer*

*Doug Morrell*

*Nuclear Materials Management*

*Michelle Wilkinson*

*Subcontract Administration - Universities*

*Lynda Keller*

# 2005 Status – DOE's URFA Program

<i>Points of Contact</i>	<i>Organization</i>	<i>Area of Responsibility</i>	<i>Phone</i>
<b>Tony Vinnola (Primary)</b>	<b>INL</b>	<b>INL Program Management</b>	<b>208.526.366 7</b>
<b>Jim Wade</b>	<b>DOE-ID</b>	<b>DOE Program Manager</b>	<b>208.526.687 6</b>
<b>Frances Marshall</b>	<b>INL</b>	<b>Department Manager</b>	<b>208.533.444 6</b>
<b>Bill Steinke</b>	<b>INL</b>	<b>Nuclear Engineer</b>	<b>208.526.654 6</b>
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# 2005 Status – DOE's URFA Program

## ***PURPOSE OF PROGRAM***

***The purpose of the University Reactor Fuel Assistance Program is to provide fresh, new nuclear reactor fuel to U.S. universities at no cost to the university, to promote nuclear engineering education and related research and development. The title of the fuel remains with the U.S. government and when finished with the fuel, the university will return the fuel to the U.S. government.***

# 2005 Status – DOE's URFA Program

## The URFA Program:

- *Funded by the Department of Energy Office of Nuclear Energy Science and Technology*
- *Managed by DOE-ID*
- *Contracted to the INL's Management and Operations Contractor - Battelle Energy Alliance*
- *Program has been at Idaho since 1977*
  - *INL has no-cost subcontracts with 27 U.S. universities to supply nuclear reactor driver fuel for operations;*
  - *Some have recurring needs for new fuel*
    - *MURR, MIT, Rhode Island, Cal-Davis, Massachusetts, Penn State, Texas, NC State*

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## The URFA Program: (cont)

- *LEU Conversions - 11 Completed - 8 to go (Discussed Later)*
- *One Time Upgrades (Requested) - North Carolina State, Reed College, Maryland*
- *Lightly Irradiated Fuel Transfers – Some Possibilities*
- *Spent Fuel Transfers to DOE Facilities*
  - *Shutdown – SUNY, Buffalo*
  - *HEU to LEU conversions – Florida, Texas A&M, Purdue, Oregon State, Wisconsin, Washington State*

# 2005 Status – DOE's URFA Program

## ***PROGRAM STATUS***

### **Replacement Fuel Activities**

- *Recently provided fuel to maintain university reactors with sufficient fuel to operate at current power levels - MURR, MIT, UCal-Davis, Kansas State, Utah, Texas, Penn State*
- *Future needs to be communicated to program office – Provide documentation of excess reactivity for clean cold core and for core at full power with equilibrium poisons – Include comments to justify request*
- *Other university concerns or assistance to be communicated to program for consideration into future plans for DOE funding*

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## *HIGH TO LOW ENRICHED CONVERSION*

### Completed

<i>Michigan (No Fuel)</i>	<i>1984</i>	<i>Missouri Rolla</i>	<i>1992</i>
<i>Worcester</i>	<i>1988</i>	<i>Rhode Island</i>	<i>1993</i>
<i>Ohio State</i>	<i>1988</i>	<i>Virginia (D&amp;D)</i>	<i>1994</i>
<i>Rensselaer</i>	<i>1988</i>	<i>Georgia Tech (D&amp;D)</i>	<i>1996</i>
<i>Manhattan (No Fuel)</i>	<i>1990</i>	<i>Mass-Lowell</i>	<i>2000</i>
<i>Iowa State(D&amp;D)</i>	<i>1991</i>		

### Scheduled

<i>Florida</i>	<i>2006</i>	<i>Wisconsin</i>	<i>2008</i>
<i>Texas A&amp;M</i>	<i>2006</i>	<i>Washington St</i>	<i>2009</i>
<i>Purdue</i>	<i>2007</i>	<i>MIT</i>	<i>????</i>
<i>Oregon State</i>	<i>2007</i>	<i>MURR</i>	<i>????</i>



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## ***FUTURE CHALLENGES***

- *Sufficient Funding For:*
  - *New fresh fuel for recurring fuel needs - MURR, MIT, Rhode Island, Cal-Davis, Massachusetts, Penn State, Texas, NC State*
  - *Future needs for sent fuel shipments - Amount of fuel & schedule*
    - *Texas, Utah, UC Davis*
  - *Reed College request for removal of aluminum clad fuel*
  - *New fuel shipping containers*
    - *Replacement for DOT Specification 6M Drums (October 2008) – For MURR new fuel and fabrication excess*
    - *Proposed replacements identified*
- *DOE-Owned Casks*
  - *BMI-1 cask good through 2008 with renewal in 2006*
  - *GE-2000 Replacement for BMI-1*
  - *2 to 3 year lead time for new GE-2000 - \$2.5 M*