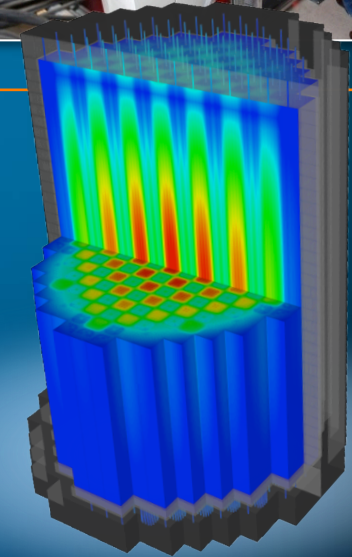


Idaho National Laboratory – *LINE Commission Update*



John Grossenbacher
Director, Idaho National Laboratory



July 28, 2014

www.inl.gov



Contract Extension

Five more years INL contractor to keep operating lab

For the MORNING NEWS

IDAHO FALLS — The U.S. Department of Energy has exercised an option in Battelle Energy Alliance's original 10-year contract to operate Idaho National Laboratory for an additional five years. This provides INL and its employees with the continuity required to continue building on the achievements of the past 10 years.

"This action is significant for all INL employees, and their hard work and dedication made it possible," said Laboratory Director John Grossenbacher. "They grew the capabilities of the lab, improved the infrastructure, strengthened intellectual leadership, published world-class research, developed new technology, and deployed it successfully."

The contract that was awarded to BEA in February 2011 began on Feb. 1, 2011, and will run through Sept. 30, 2014. BEA will continue to operate INL through Sept. 30, 2014.

The contract that was awarded to BEA in February 2011 began on Feb. 1, 2011, and will run through Sept. 30, 2014. BEA will continue to operate INL through Sept. 30, 2014.



- DOE has extended BEA's contract to operate the INL from 2014-2019 with a possible award term 2019-2024

Nov 2011
Contract Option Submitted

5 Year Contract Option

2012

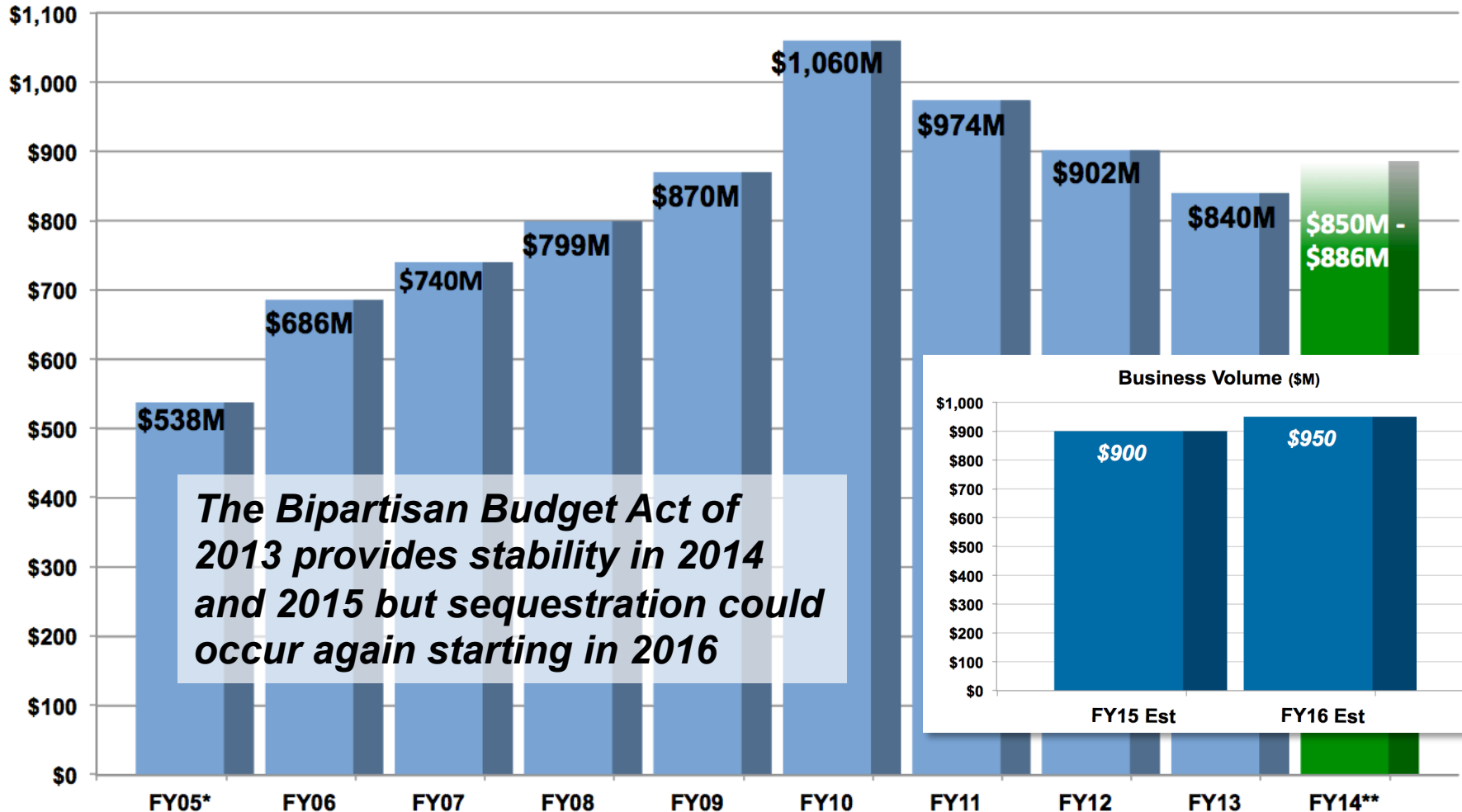
2013

2014

2015



INL – Financial Trends and Outlook



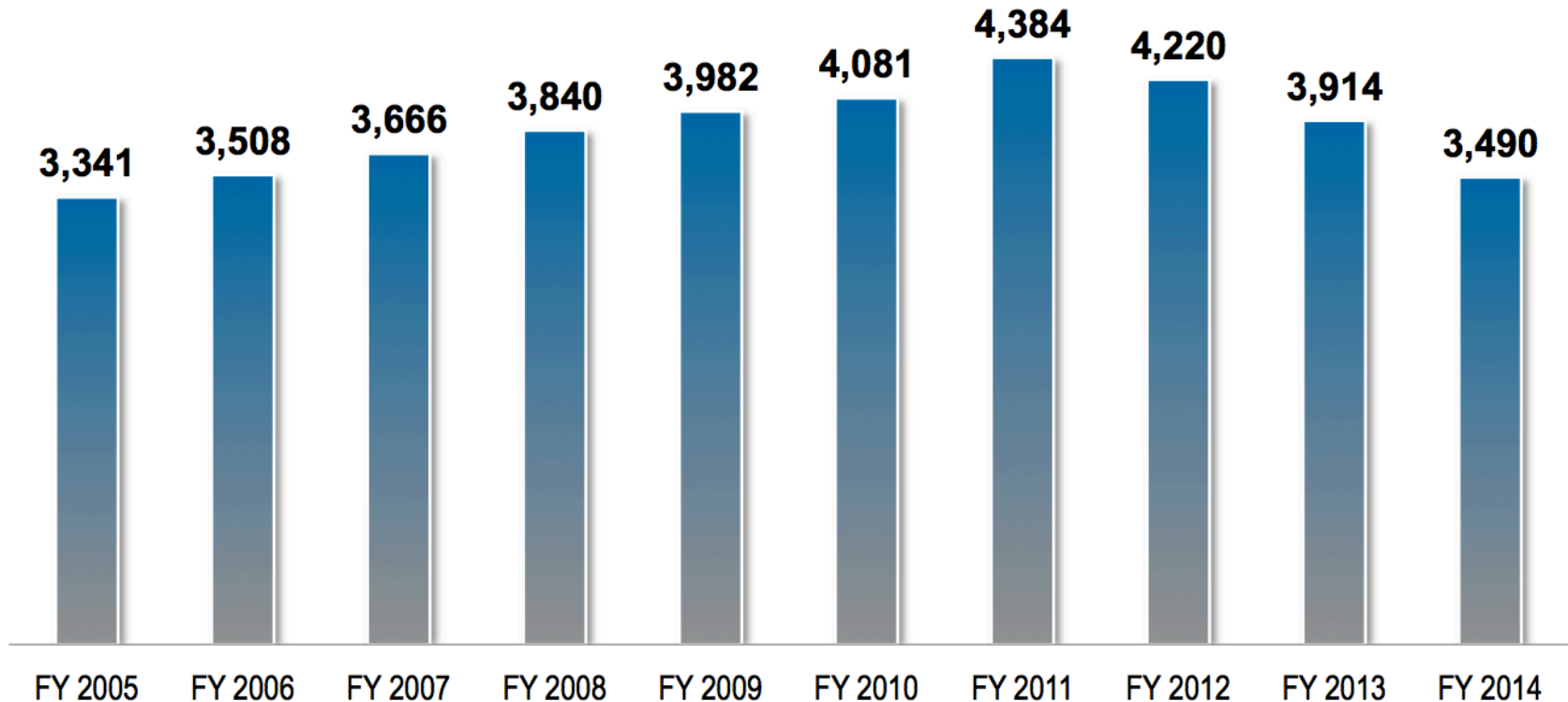
The Bipartisan Budget Act of 2013 provides stability in 2014 and 2015 but sequestration could occur again starting in 2016

* 8 Months
 ** Projected Amounts

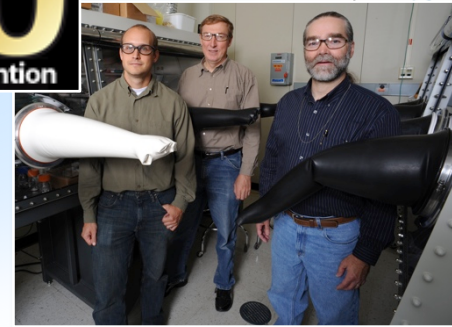
INL – Employment Trends and Outlook

- We are hiring – average open positions 188

Number of Employees



INL Recent R&D Accomplishments



MOOSE

- Multiphysics Object Oriented Simulation Environment (MOOSE), makes it easier for scientists to predict phenomena ranging from nuclear fuel and reactor performance to groundwater and chemical movement

Advanced Electrolyte Model

- An innovative modeling system for improving advanced batteries.
- Genome-level investigation of electrolytes and combinations for faster, more accurate battery and other product development.
- *Dow Chemical's Doug Brune, "The model saved a lot of time." (e.g. needed 300 experiments instead of 1,000)*

Industry Update

- New builds
- Market driven shutdowns

Electricity markets don't always value

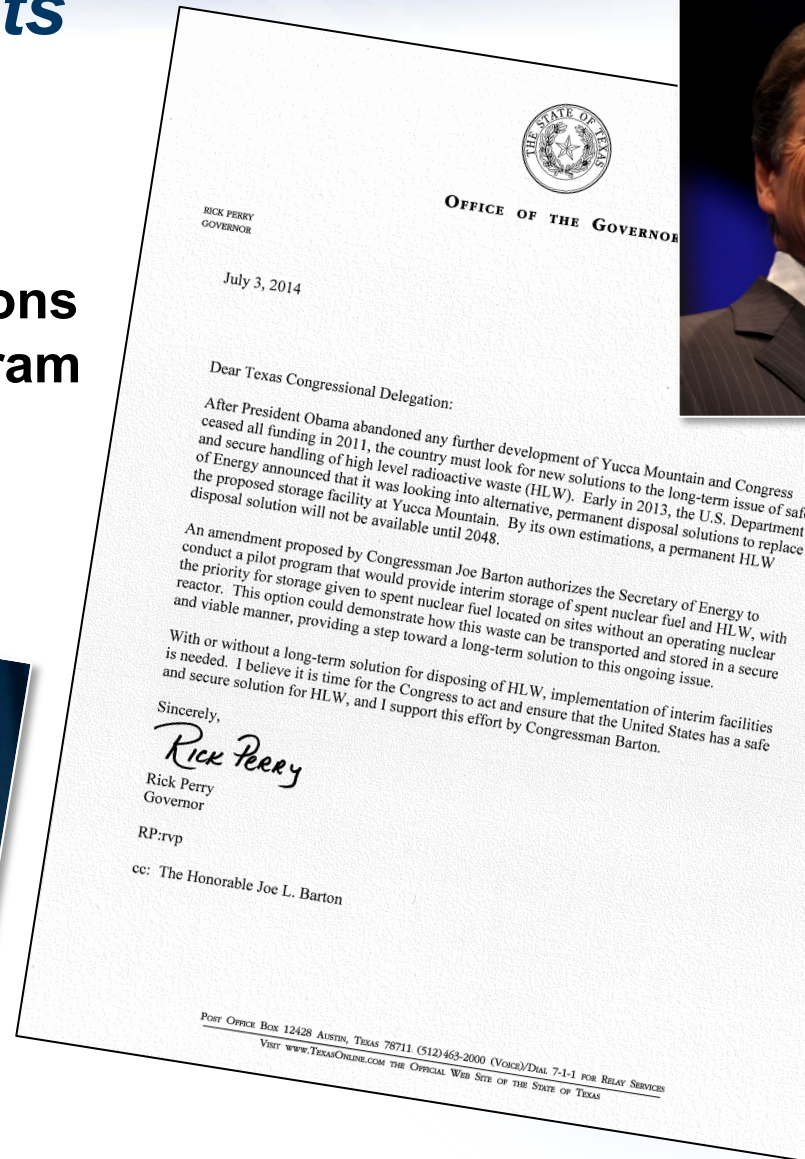
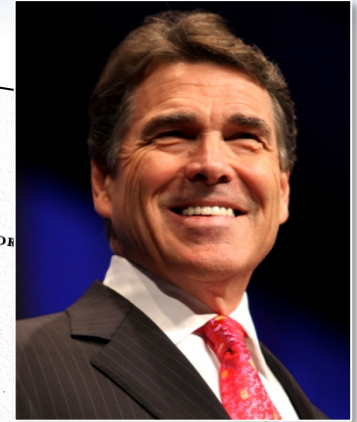
- Baseload power
- No carbon emissions
- Diversity of fuel supply
- Relative price stability

- SMRs
- Yucca Mountain impass
- U.S. Leadership
 - Industrial
 - Intellectual
- U.S. Interests
 - Domestic
 - International
 - Safety
 - Non-proliferation



Political Developments

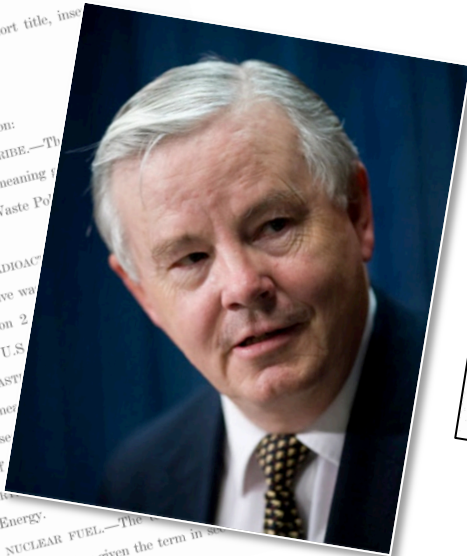
- **Congressman Joe Barton (R-Texas) offered an amendment on the House Energy & Water Appropriations bill to authorize a pilot program for an interim nuclear waste storage facility**



AMENDMENT TO H.R. 4923, AS REPORTED
OFFERED BY MR. BARTON OF TEXAS

At the end of the bill, before the short title, insert the following:

1 SEC. 508.
 2 (a) DEFINITIONS.—In this section:
 3 (1) AFFECTED INDIAN TRIBE.—The
 4 affected Indian tribe” has the meaning
 5 in section 2 of the Nuclear Waste Policy
 6 (42 U.S.C. 10101).
 7 (2) HIGH-LEVEL RADIOACTIVE
 8 term “high-level radioactive waste”
 9 given the term in section 2 of the
 10 Policy Act of 1982 (42 U.S.C. 10101).
 11 (3) NUCLEAR WASTE FUND.—The
 12 clear Waste Fund” means the fund
 13 established under section 202 of the
 14 Waste Policy Act of 1982 (42 U.S.C. 10102).
 15 (4) SECRETARY.—The Secretary of Energy.
 16 (5) SPENT NUCLEAR FUEL.—The term “spent
 17 nuclear fuel” has the meaning given the term in section 2 of the Nuclear Waste Policy Act of 1982 (42 U.S.C. 10101).



Impact of State Approval Allowing Research Quantities of Commercial Used Nuclear Fuel to be Brought to INL

- **January 2015**

- Expect to receive 25 used commercial fuel rods, about 100 lbs. heavy metal
- INL will examine the rods to assess fuel performance
- INL will reprocess some of the rods in a joint research program with Korea
- Expect \$75-80M of research over 5 years and work is expected to continue beyond 5 years at similar levels

- **January 2016**

- Expect to receive 25 “high burnup” used commercial fuel rods, about 100 lbs. heavy metal
- INL will examine the rods to research their behavior in long-term dry storage
- Some of these rods and samples of them will become part of our library/archive and be reexamined every 4-5 years to assess the impact of aging
- Expect \$10M/yr of research over many years

State Support is Enabling INL's Success

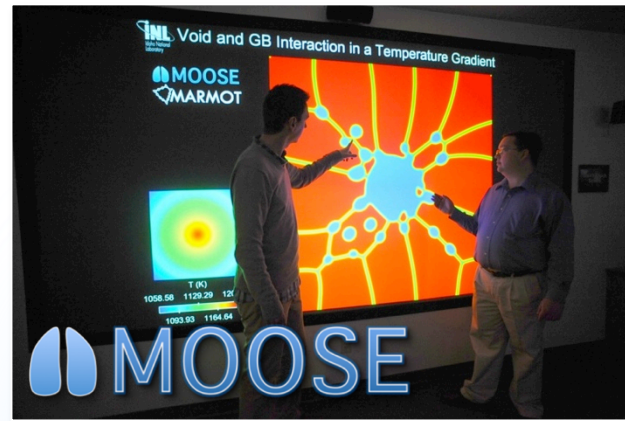
Future Opportunities

- **Dry Storage Demonstration**
- **Transshipment**
- **Pilot Interim Storage**

All Involve Tons of Heavy Metal
All Have Been Discussed with LINE Commission
None Require Immediate Action/Decisions

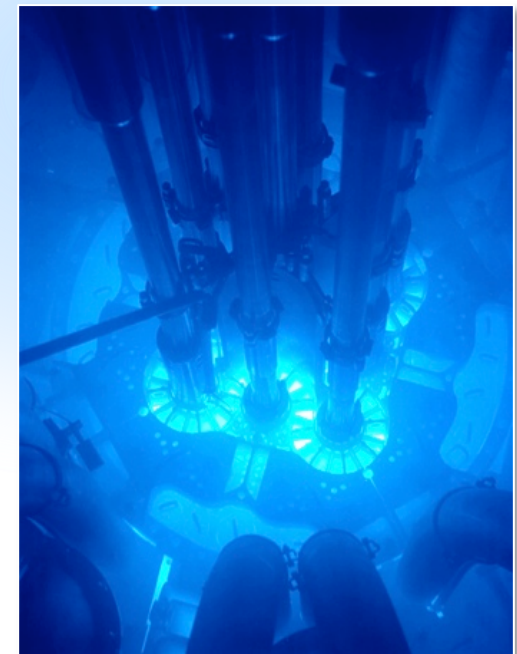
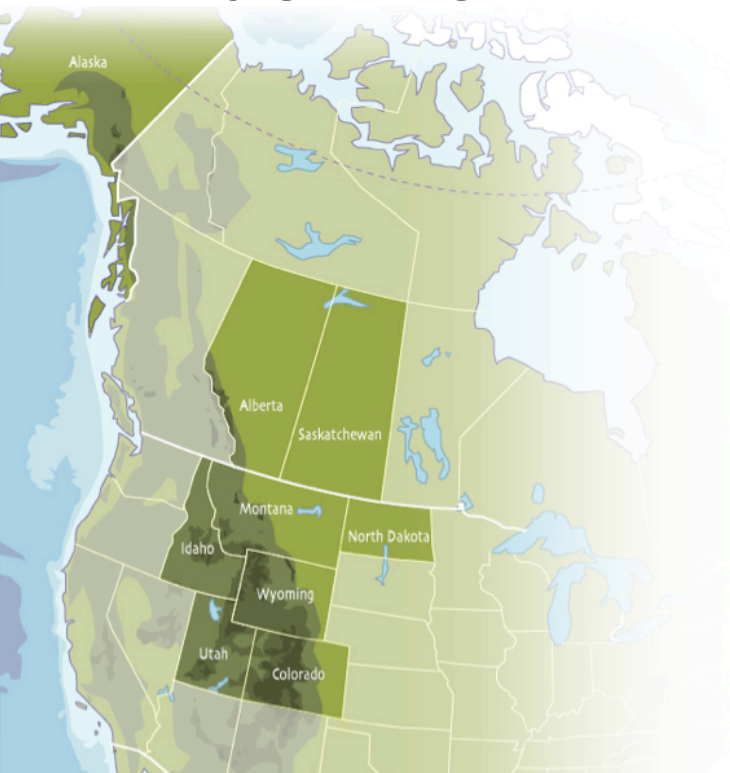
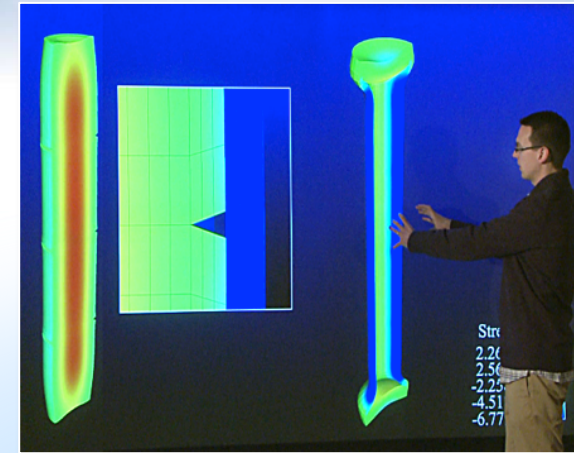
Opportunities

- TerraPower
- INL's MOOSE enabled modeling and simulation, coupled to the ATR NSUF
- High Performance Computing (HPC)
- Transient Reactor Testing (TREAT)
- Advance PIE
- Regional role and a greater Navy role



INL Lab Strategy for 2030

1. Grow the Lab
2. Get the EM role right and “finish” the cleanup
3. Enhance national relevance and impact by growing the Lab’s Regional Role



Unprecedented Number of High-Level Visitors

- March 21 **United States Senators Murkowski and Barrasso, Crapo and Risch**
- March 24-25 **NRC Commissioner William D. Magwood**
- April 17 **Anne Harrington, Admiral Richardson (N&HS), Congressman Simpson**
- April 22 **EIL Dedication, with Pete Lyons, Congressman Simpson, Gov. Otter, Dave Danielson**
- June 19 **Chinese Academy of Science Visit, Mianheng, JIANG, President CAS – Shanghai**
- June 30 **Lek Kadeli, Acting Assistant Administrator for EPA Office of Research**
- July 8-10 **Indo-US Civil Nuclear Energy Working Group Meeting**



**This Summer, so far – Secretary Moniz,
General Klotz and Pat Dehmer**



Idaho National Laboratory

The National Nuclear Laboratory