

HENRY A. WAXMAN, CALIFORNIA  
EDWARD J. MARKEY, MASSACHUSETTS  
RICK BOUCHER, VIRGINIA  
EDOLPHUS TOWNS, NEW YORK  
FRANK PALLONE, JR., NEW JERSEY  
BART GORDON, TENNESSEE  
BOBBY L. RUSH, ILLINOIS  
ANNA G. ESHOO, CALIFORNIA  
BART STUPAK, MICHIGAN  
ELIOT L. ENGEL, NEW YORK  
GENE GREEN, TEXAS  
DIANA DEGETTE, COLORADO  
*VICE CHAIRMAN*  
LOIS CAPPS, CALIFORNIA  
MIKE DOYLE, PENNSYLVANIA  
JANE HARMAN, CALIFORNIA  
TOM ALLEN, MAINE  
JAN SCHAKOWSKY, ILLINOIS  
HILDA L. SOLIS, CALIFORNIA  
CHARLES A. GONZALEZ, TEXAS  
JAY INSLEE, WASHINGTON  
TAMMY BALDWIN, WISCONSIN  
MIKE ROSS, ARKANSAS  
DARLENE HOOLEY, OREGON  
ANTHONY D. WEINER, NEW YORK  
JIM MATHESON, UTAH  
G.K. BUTTERFIELD, NORTH CAROLINA  
CHARLIE MELANCON, LOUISIANA  
JOHN BARROW, GEORGIA  
BARON P. HILL, INDIANA  
DORIS O. MATSUI, CALIFORNIA

ONE HUNDRED TENTH CONGRESS

*U.S. House of Representatives*  
**Committee on Energy and Commerce**  
**Washington, DC 20515-6115**

JOHN D. DINGELL, MICHIGAN  
CHAIRMAN

December 22, 2008

JOE BARTON, TEXAS  
*BANKING MEMBER*  
RALPH M. HALL, TEXAS  
FRED UPTON, MICHIGAN  
CLIFF STEARNS, FLORIDA  
NATHAN DEAL, GEORGIA  
ED WHITFIELD, KENTUCKY  
BARBARA CUBIN, WYOMING  
JOHN SHIMKUS, ILLINOIS  
HEATHER WILSON, NEW MEXICO  
JOHN B. SHADEGG, ARIZONA  
CHARLES W. "CHIP" PICKERING, MISSISSIPPI  
VITO FOSSSELLA, NEW YORK  
ROY BLUNT, MISSOURI  
STEVE BUYER, INDIANA  
GEORGE RADANOVICH, CALIFORNIA  
JOSEPH R. PITTS, PENNSYLVANIA  
MARY BONO MACK, CALIFORNIA  
GREG WALDEN, OREGON  
LEE TERRY, NEBRASKA  
MIKE FERGUSON, NEW JERSEY  
MIKE ROGERS, MICHIGAN  
SUE WILKINS MYRICK, NORTH CAROLINA  
JOHN SULLIVAN, OKLAHOMA  
TIM MURPHY, PENNSYLVANIA  
MICHAEL C. BURGESS, TEXAS  
MARSHA BLACKBURN, TENNESSEE

DENNIS B. FITZGIBBONS, CHIEF OF STAFF  
GREGG A. ROTHCHILD, DEPUTY CHIEF OF STAFF  
AND CHIEF COUNSEL

The Honorable Gene Dodaro  
Acting Comptroller General of the United States  
U.S. Government Accountability Office  
441 G Street, NW  
Washington, DC 20548

Dear Mr. Dodaro:

Much of the U.S. Department of Energy's (DOE) effort to address contamination at the sites of its nuclear weapons complex involves characterizing the nature and extent of the contamination present and then determining how effective various remediation strategies may be in protecting human health and the environment. Selection of the final remedy is often based largely on comparisons of the relative effectiveness and relative costs of different alternatives. However, determining how effective a particular cleanup approach may be, before that approach is implemented, is very difficult because it involves predicting future conditions.

To predict future conditions under different scenarios, DOE and other agencies often use computer simulation models. For example, DOE has simulated, under various cleanup approaches, how much contamination from the Hanford site will reach the Columbia River thousands of years in the future. The results of these simulation models often serve as the basis for decisions that cost hundreds of millions to billions of dollars to implement.

In recent years, however, the U.S. Government Accountability Office (GAO) has documented instances where DOE's simulation models used inadequate data or flawed assumptions and, as a result, produced unreliable results. For example, when reviewing the multitude of assumptions for the operational model used to predict the waste treatment schedule for Hanford's waste treatment plant, GAO found that several of the project's schedule milestones used in the model were outdated or inaccurate. In addition, GAO reported in April 2006 that DOE planned to rely on computer modeling to ascertain the reliability of special "pulse jet mixers" to mix wastes during waste treatment plant operations. Because computer modeling did not provide adequate assurance that the mixers would work, just nine months before the design configuration for the mixers was to be completed, the contractor decided to conduct pilot tests of the mixers. The contractor found that the mixers did not work effectively and had to be

redesigned. DOE has spent more than two years addressing problems with the mixers, which affected the project's critical path and contributed to more than \$300 million of additional costs.

While reliance on computer modeling may save time and money in some instances, inadequate or flawed data in simulations could result in years of delay in implementing cleanup activities and increase costs dramatically. Furthermore, such problems have damaged DOE's credibility in the eyes of regulators and stakeholders because DOE's work can be seen as unreliable or not in the best interests of the public.

In light of these issues, I write to ask GAO to examine DOE's use of computer simulation models. Specifically, GAO should focus on the following questions:

1. What DOE standards and requirements exist for computer simulation models, in particular those used in cleanup decisions, and are these standards consistent with industry best practices?
2. To what extent do DOE's simulation models meet DOE standards and requirements, and industry best practices?
3. What steps, if any, could DOE take to strengthen its management and oversight of the development and use of simulation models and help ensure computer simulation results are reliable?

If you have any questions related to this request, please have your staff contact Peter Spencer of the Minority Committee staff at 202-225-3641.

Sincerely,



---

Joe Barton  
Ranking Member  
Committee on Energy and Commerce

cc: The Honorable John Dingell, Chairman  
Committee on Energy and Commerce