

Budget--DOE FY96

PHOTOCOPY  
PRESERVATION

THE WHITE HOUSE  
WASHINGTON

November 16, 1994

MEMORANDUM FOR CAROL RASCO

FROM BRIAN BURKE

SUBJECT OMB DIRECTOR'S BUDGET REVIEW OF THE  
DEPARTMENT OF ENERGY

On November 1, 1994, I attended the OMB Director's budget review of the Department of Energy for FY 96. This memo outlines the budgetary highlights for DOE in FY 96. The complete OMB budget document is attached.

**I. Streamlining plan status**

DOE's streamlining plan seeks to make a significant reduction in management controls through a 67% reduction in the number of supervisors. However, the DOE plan does not achieve the NPR goal of a 50% reduction in target populations. The NPR staff judge the streamlining plan to be "not great, but a start." Specifically, DOE needs to provide an explanation for not making a larger reduction in its headquarters staff.

**II. Discretionary Programs**

The RMO recommends a Presidential Investment Initiative of \$113 million (\$100 million above DOE's request) for FY 96 to allow DOE facilities to be opened to civilian researchers. DOE spends billions of federal dollars each year to operate large state-of-the-art science facilities. The demand for these facilities among industrial, academic and government researchers is growing. Many of the facilities are now underutilized. RMO believes that relatively small additional investments will allow dramatically enhanced user access.

The most important budgetary issue facing DOE may be nuclear waste disposal. Currently, DOE is focusing on the Yucca Mountain Site in Nevada, as required by Congress in the Nuclear Waste Policy Act of 1987. Last year, the Administration proposed financing civilian nuclear waste activities through discretionary and mandatory spending authority. Congress chose to fund the entire program through discretionary funds.

The PAD recommends that the financing for civilian initiatives come from two sources: (1) discretionary spending of \$200 million in BA (\$1 billion over 5 years), and (2) mandatory spending of \$430 million in BA (\$2.7 billion over 5 years). DOE requests that the finding be \$382 million of discretionary spending in BA and \$248 million of mandatory spending in BA.

The level of funding for DOE's nuclear weapons program also must be considered. The goal of the stockpile stewardship program is to ensure public confidence in the stockpile's safety and reliability and to provide a credible nuclear deterrent at an affordable cost. Secretary O'Leary has been criticized for not adequately funding nuclear weapons research, production and maintenance as called for by the President in a Presidential Decision Directive. The DOE budget request would increase funding for nuclear weapons by \$350 million (11%). It would also increase funding by \$80 million (6%) for other defense activities, primarily in the nonproliferation area. The PAD recommendation suggests a \$244 million increase for activities in this area.

There is also consideration of providing DOE with additional BA to begin allowing full funding for asset acquisition. DOE currently has about \$15 billion in unfunded liabilities for construction projects and other acquisitions. A transition to full funding would require an appropriation of that amount over a several year period.

Current DOE acquisition practices may violate the Budget Enforcement Act and the Anti-Deficiency Act. The current practice has also contributed to seriously deficient planning for all DOE activities and produced a bias in favor of acquisition. Many of these projects are abandoned on further review. It has also led to regular cost overruns and construction stretchouts.

OMB's PAD recommends the transition to full up front funding for asset acquisition to correct these problems. The PAD's calls for providing approximately \$3 billion per year beginning in FY 98. A total of \$12 billion to \$16 billion would be provided through FY 2002. There would be no increase in outlays.

### **III. Department of Energy Performance Measures**

There are difficulties in measuring the performance of DOE's research and maintenance programs. The research programs are aimed at gaining knowledge rather than producing a specific result, and consequently regular performance measures do not adequately reflect the programs' success. Programs to maintain the security of the nuclear weapons stockpile and the Strategic Petroleum Reserve are aimed at the prevention of events rather than the promotion of them. Since a nonevent is the measure of the success of maintenance programs, it is best to adopt military-readiness type measures.

Overall, DOE efforts to develop performance measures are good. There has been major progress in developing measures for such programs as Environmental Management, certain Power Administrations and the Nuclear Waste Program. There have also been successful efforts at improving performance measurements in the conservation and renewable energy programs and the Power Marketing Programs.

DOE's contracting reform initiative is being implemented and progress is being made. However, DOE has been less successful in developing adequate performance measures for its contracting reform methods.

NAME: Carol Rasco

**ENERGY BUDGET REVIEW**

**NOVEMBER 1, 1994**

**1:30 - 3:30**

**ROOM 248 OEOB**

# **Department of Energy FY 1996 Director's Review**



**November 1, 1994**

**DEPARTMENT OF ENERGY  
FY 1996 DIRECTOR'S REVIEW  
TABLE OF CONTENTS**

|                                                                     | <b><u>Page</u></b> |
|---------------------------------------------------------------------|--------------------|
| 1. OVERVIEW .....                                                   | 1                  |
| A. Agency Summary .....                                             | 2                  |
| B. Streamlining Plan Status .....                                   | 3                  |
| 1. FTE Summary .....                                                | 3                  |
| 2. Summary Assessment .....                                         | 4                  |
| 3. NPR Target Populations .....                                     | 6                  |
| C. Discretionary Investment Proposals .....                         | 8                  |
| 2. DISCRETIONARY PROGRAMS .....                                     | 9                  |
| A. Summary of Discretionary Programs .....                          | 9                  |
| 1. Summary of Discretionary Programs by Theme .....                 | 10                 |
| 2. Summary of Discretionary Programs by Budget Account .....        | 15                 |
| B. Potential Increases to Discretionary Programs .....              | 20                 |
| C. Potential Reductions to Discretionary Programs .....             | 21                 |
| D. Major Outyear Changes from a Hard Freeze .....                   | 23                 |
| E. Issue Papers .....                                               | 26                 |
| 1. Increasing Availability of Science Facilities to Users .....     | 26                 |
| 2. Financing of Nuclear Waste Activities .....                      | 31                 |
| 3. Funding for Nuclear Weapons and Other Defense Activities .....   | 37                 |
| 4. Full Up Front Funding for Asset Acquisition .....                | 41                 |
| 3. PERFORMANCE MEASUREMENT .....                                    | 46                 |
| 4. FINANCIAL MANAGEMENT .....                                       | 58                 |
| 5. HIGH RISK AREAS .....                                            | 63                 |
| 6. SUMMARY OF PAD LEVEL DECISIONS NOT COVERED IN ISSUE PAPERS ..... | 67                 |
| 7. RELATED SMALL AGENCIES .....                                     | 70                 |
| 8. MANDATORY PROGRAMS ADDENDUM .....                                | 76                 |
| A. Baseline .....                                                   | 77                 |
| B. Summary .....                                                    | 79                 |
| C. Potential Reductions to Mandatory Programs .....                 | 80                 |

PHOTOCOPY  
PRESERVATION

# **1. OVERVIEW**

**AGENCY SUMMARY**  
**DEPARTMENT OF ENERGY**  
(in millions of dollars)

|                                                    | <u>FY 1993</u> |           | <u>FY 1994</u> |           | <u>FY 1995</u> |           | <u>FY 1996</u> |           |
|----------------------------------------------------|----------------|-----------|----------------|-----------|----------------|-----------|----------------|-----------|
|                                                    | <u>BA</u>      | <u>OL</u> | <u>BA</u>      | <u>OL</u> | <u>BA</u>      | <u>OL</u> | <u>BA</u>      | <u>OL</u> |
| <b>DISCRETIONARY</b>                               |                |           |                |           |                |           |                |           |
| FY 1993 Actual/FY 1994 Actual/FY 1995 Enacted..... | 18,825         | 17,888    | 18,647         | 19,032    | 17,459         | 17,802    | N/A            | N/A       |
| April 21st Planning Guidance.....                  |                |           |                |           |                |           | 18,100         | 18,200    |
| FY 1996 Agency Request.....                        |                |           |                |           |                |           | 18,687         | 18,480    |
| FY 1996 PAD Recommended Level.....                 |                |           |                |           |                |           | 18,358         | 18,200    |
| Percentage Change from:                            |                |           |                |           |                |           |                |           |
| FY 1993 Actual.....                                |                |           |                |           |                |           | -2.5%          | 1.7%      |
| FY 1994 Actual.....                                |                |           |                |           |                |           | -1.5%          | -4.4%     |
| FY 1995 Enacted.....                               |                |           |                |           |                |           | 5.1%           | 2.2%      |
| April 21st Planning Guidance.....                  |                |           |                |           |                |           | 1.4%           | ---       |
| Agency Request.....                                |                |           |                |           |                |           | -1.8%          | -1.5%     |
| <b>MANDATORY</b>                                   |                |           |                |           |                |           |                |           |
| FY 1993 Actual/FY 1994 Actual/FY 1995 Enacted..... | -1,228         | -767      | -1,749         | -1,659    | -1,491         | -1,589    | N/A            | N/A       |
| FY 1996 Agency Request.....                        |                |           |                |           |                |           | -200           | -2466     |
| FY 1996 PAD Recommended Level.....                 |                |           |                |           |                |           | -200           | -2307     |
| <b>AGENCY TOTAL</b>                                |                |           |                |           |                |           |                |           |
| FY 1993 Actual/FY 1994 Actual/FY 1995 Enacted..... | 17,597         | 17,121    | 16,898         | 17,373    | 15,968         | 16,213    | N/A            | N/A       |
| FY 1996 Agency Request.....                        |                |           |                |           |                |           | 18,487         | 16,014    |
| FY 1996 PAD Recommended Level.....                 |                |           |                |           |                |           | 18,158         | 15,893    |

**STREAMLINING PLAN STATUS  
FTE SUMMARY  
DEPARTMENT OF ENERGY**

|                                                         | <u>FY 1993</u> | <u>FY 1994</u> | <u>FY 1995</u> | <u>FY 1996</u> | <u>FY 1997</u> | <u>FY 1998</u> | <u>FY 1999</u> |
|---------------------------------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| FY 1993/ FY 1994 FTE/ FY 1996 Budget Request.....       | 20,328         | 20,418         | 20,649         | 20,439         | 20,176         | 19,700         | 19,143         |
| Planning Guidance.....                                  |                |                |                | 20,439         | 20,176         | 19,700         | 19,143         |
| PAD Recommendation.....                                 |                |                |                | 20,439         | 20,176         | 19,700         | 19,143         |
| Streamlining Plan.....                                  |                |                |                | 20,439         | 20,176         | 19,700         | 19,143         |
| Buyouts Planned (No. of separations, FY 1995 only)..... |                |                |                | 600            |                |                |                |

Difference between Budget Request and:

|                         |     |     |     |     |
|-------------------------|-----|-----|-----|-----|
| Planning Guidance.....  | --- | --- | --- | --- |
| PAD Recommendation..... | --- | --- | --- | --- |

Explanation:

Request does not include 400 FTE in FY96 for Environmental Management Pilot Project.

**STREAMLINING PLAN STATUS  
SUMMARY ASSESSMENT  
DEPARTMENT OF ENERGY**

**SUMMARY ASSESSMENT**

- The Summary assessment for the Department of Energy's (DOE) revised Streamlining Plan is "Acceptable with Explanation."
- The revised Streamlining Plan meets Planning Guidance FTE levels in all years. However, this assumes that the 400 FTEs separately requested by DOE are not counted. Including them puts the Plan over the FTE target.
- The Plan makes a significant reduction in management controls through a 67 percent reduction in the number of supervisors.
- The Plan does not achieve the National Performance Review (NPR) goal of fifty percent reduction in target populations. For example, the Plan reduces Budget Specialists by 12 percent; and Accountants and Auditors by 23 percent. The Plan indicates that anticipated Congressional actions that would have allowed larger reductions in these areas, including enactment of biennial budgets, have not occurred. Increased accounting resources will be needed to meet the recently enacted Congressional requirement that DOE maintain fiscal identity on all funds appropriated for FY 1996 and beyond, and to ensure adequate oversight of contractor financial management as recently recommended by GAO.
- Most DOE FTEs oversee contractors; they do not directly provide services. Further, the number of DOE FTEs is about one seventh the number of contractors overseen. The Plan reduces total Headquarters staffing by only 26.5 percent.

**RECOMMENDATIONS**

- The PAD recommendation is "Acceptable with Explanation". The PAD recommends approval of an additional 400 FTE in FY 1996 for DOE's Environmental Management Pilot Project. (Separate memo sent.)

- Over-all the Plan is acceptable but we need to continue to work with the Department to increase reductions in NPR target populations where appropriate.
- DOE is preparing streamlining performance measures.
- The Department needs to make a more compelling justification for not making a larger reduction in Headquarters staff (26.5 percent).
- National Performance Review Staff judge the revised Streamlining Plan to be "not great, but a start".

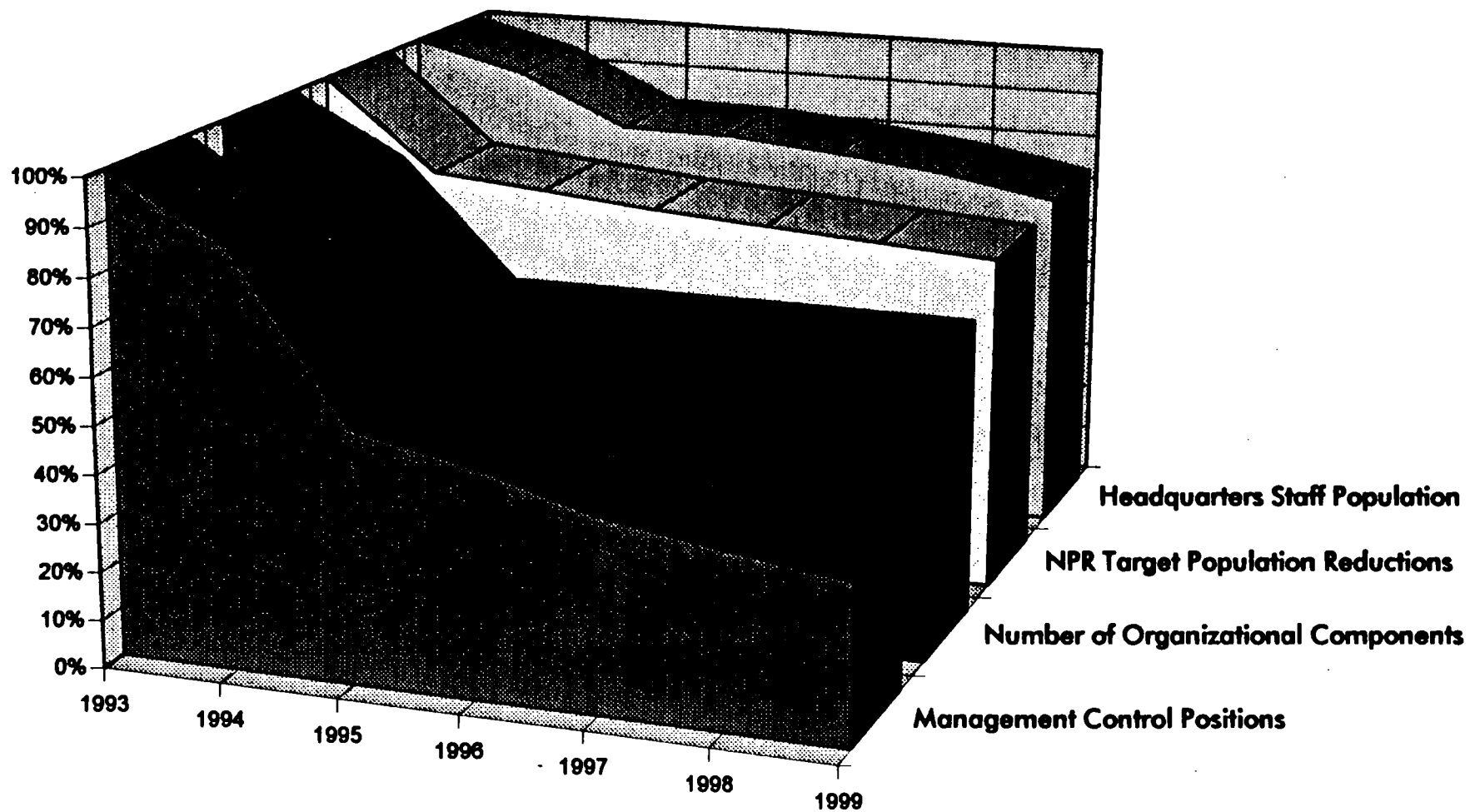
#### **KEY FEATURES OF PLANS AND DISCUSSION**

- The Plan uses buyouts to shift staffing resources to priority programs and has targeted buyouts to GS-14 and above to reduce supervisory levels.
- The Plan is consistent with the Strategic Plan which is predicated on Total Quality Management. The Strategic Plan calls for decentralization and elimination of unnecessary controls.
- The Plan places special emphasis on career transition and retraining.

**STREAMLINING PLANS: NPR TARGET POPULATIONS  
DEPARTMENT OF ENERGY**

|                              | <b>FY 1993<br/><u>Actual</u></b> | <b><u>FY 1994</u></b> | <b><u>FY 1995</u></b> | <b><u>FY 1996</u></b> | <b><u>FY 1997</u></b> | <b><u>FY 1998</u></b> | <b><u>FY1999</u></b> |
|------------------------------|----------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|----------------------|
| Total FTES.....              | 20,325                           | 20,418                | 20,649                | 20,439                | 20,176                | 19,700                | 19,143               |
| Number of positions:         |                                  |                       |                       |                       |                       |                       |                      |
| Supervisors.....             | 3,345                            | 2,894                 | 1,744                 | 1,582                 | 1,338                 | 1,217                 | 1,106                |
| Supervisory Ratio.....       | 1:4.6                            | 1:5.6                 | 1:10.0                | 1:11.0                | 1:13.0                | 1:14.0                | 1:15.0               |
| Headquarters Staff.....      | 6,984                            | 6,570                 | 5,797                 | 5,777                 | 5,635                 | 5,439                 | 5,135                |
| Personnel Specialists.....   | 551                              | 477                   | 481                   | 457                   | 445                   | 433                   | 423                  |
| Budget Specialists.....      | 335                              | 338                   | 317                   | 312                   | 304                   | 297                   | 295                  |
| Acquisition Specialists..... | 1,270                            | 931                   | 868                   | 833                   | 809                   | 781                   | 759                  |
| Accountants & Auditors.....  | 1,138                            | 909                   | 917                   | 907                   | 899                   | 893                   | 878                  |
| Organizational Layers.....   | 8                                | 7                     | 5                     | 5                     | 5                     | 5                     | 5                    |

**Department of Energy  
Streamlining Plan 1993-1999  
Selected Percentage Reductions**



**DISCRETIONARY INVESTMENT PROPOSALS**  
**DEPARTMENT OF ENERGY**  
(in millions of dollars)

|                                                                  |    | FY 1993 | FY 1994 | FY 1995                        |         | FY 1996                        |                |            |                     |
|------------------------------------------------------------------|----|---------|---------|--------------------------------|---------|--------------------------------|----------------|------------|---------------------|
|                                                                  |    |         |         | President's Request (FY95 Bud) | Enacted | President's Request (FY95 Bud) | Agency Request | PAD Recom. | Recom. less Request |
| <i>Existing Initiatives</i>                                      |    | Actual  | Actual  |                                |         |                                |                |            |                     |
| Alternative Fuel Vehicles                                        | BA | 28      | 44      | 69                             | 53      | 66                             | 56             | 56         | 0                   |
|                                                                  | OL | 20      | 31      | 49                             | 44      | 63                             | 53             | 53         | 0                   |
| Conservation R&D / EPAct                                         | BA | 346     | 436     | 654                            | 512     | 679                            | 629            | 629        | 0                   |
|                                                                  | OL | 302     | 365     | 488                            | 446     | 629                            | 536            | 536        | 0                   |
| Weatherization Assistance                                        | BA | 185     | 207     | 250                            | 226     | 240                            | 230            | 230        | 0                   |
|                                                                  | OL | 192     | 193     | 217                            | 210     | 240                            | 225            | 225        | 0                   |
| Fed. Facility Energy Efficiency                                  | BA | 5       | 16      | 37                             | 24      | 49                             | 26             | 26         | 0                   |
|                                                                  | OL | 2       | 8       | 21                             | 17      | 37                             | 23             | 23         | 0                   |
| Renewable Energy R&D                                             | BA | 251     | 341     | 393                            | 388     | 426                            | 434            | 434        | 0                   |
|                                                                  | OL | 238     | 295     | 351                            | 349     | 408                            | 402            | 402        | 0                   |
| CRADAs                                                           | BA | 151     | 262     | 275                            | 273     | 300                            | 297            | 297        | 0                   |
|                                                                  | OL | 100     | 258     | 259                            | 258     | 291                            | 285            | 285        | 0                   |
| Advanced Neutron Source                                          | BA | 12      | 17      | 40                             | 21      | 120                            | 0              | 0          | 0                   |
|                                                                  | OL | 5       | 12      | 27                             | 18      | 73                             | 11             | 11         | 0                   |
| B-Factory                                                        | BA | 0       | 36      | 44                             | 44      | 52                             | 52             | 52         | 0                   |
|                                                                  | OL | 0       | 27      | 42                             | 42      | 50                             | 50             | 50         | 0                   |
| Climate Change Action Plan *                                     | BA | 0       | 17      | 208                            | 100     | 233                            | 175            | 175        | 0                   |
|                                                                  | OL | 0       | 5       | 113                            | 49      | 183                            | 117            | 117        | 0                   |
| <i>Potential Additional Initiatives</i>                          |    |         |         |                                |         |                                |                |            |                     |
| Partnership for a New Generation of Vehicles (PNGV - DOE only) * | BA | 107     | 144     | 204                            | 168     | N/A                            | 262            | 262        | 0                   |
|                                                                  | OL | N/A     | N/A     | 156                            | 146     | N/A                            | 193            | 193        | 0                   |
| Science Facilities Utilization                                   | BA | 0       | 0       | 0                              | 0       | N/A                            | 0              | 100        | +100                |
|                                                                  | OL | 0       | 0       | 0                              | 0       | N/A                            | 0              | 57         | +57                 |

\* No tracking of PNGV-related funding are still being collected. PNGV did not exist as an initiative with FY 1996 before for FY 1993 or FY 1994; outlays were not calculated. FY 1995 figure is an estimate; details are in the FY 1995 budget.

DISCRETIONARY  
PROGRAMS

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## **2. DISCRETIONARY PROGRAMS**

# Department of Energy

## FY 1996 PAD Recommended Discretionary Funding Summary by Program Theme

Totals -- BA: \$18.4B OL: \$18.2B

CHART REFLECTS ALLOCATION OF BUDGET AUTHORITY

**ENERGY PROGRAMS 17%**

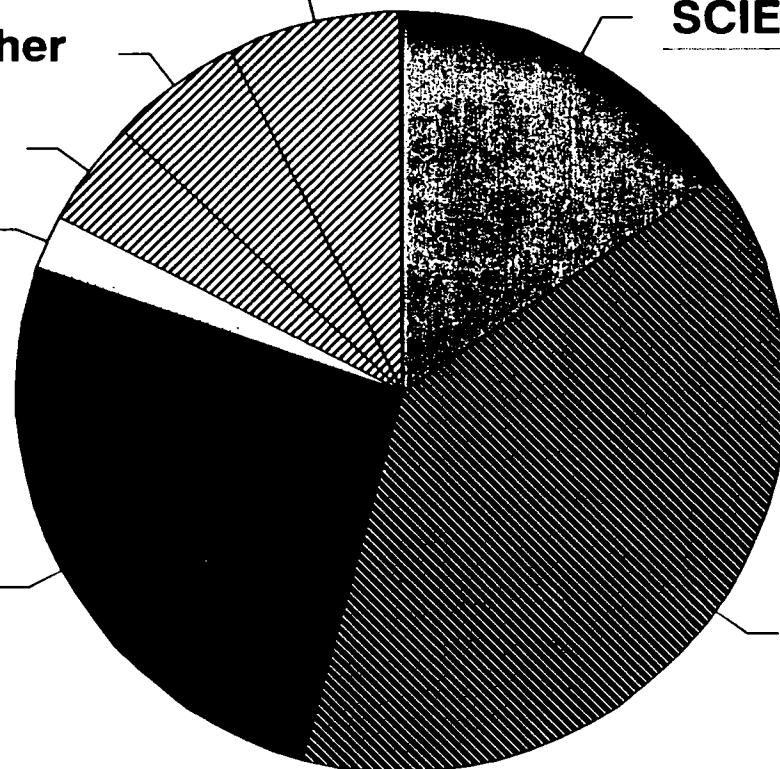
Conservation & Renewables  
Nuclear Energy & Other  
Fossil Energy

**OTHER**  
2%

**DEFENSE**  
26%

**SCIENCE & TECHNOLOGY**  
15%

**ENVIRONMENT**  
38%



**SUMMARY BY PROGRAM THEMES**  
**DEPARTMENT OF ENERGY**  
(in millions of dollars)

|                                 |    | FY 1994  | FY 1995                               |                  | FY 1996              |               | PAD Recommendation<br>Percent Change From |                               |                           |
|---------------------------------|----|----------|---------------------------------------|------------------|----------------------|---------------|-------------------------------------------|-------------------------------|---------------------------|
|                                 |    | Estimate | President's<br>Request<br>(FY 95 Bud) | Conf/<br>Enacted | Agency<br>Submission | PAD<br>Recom. | Agency<br>Request                         | FY 96<br>Agency<br>Submission | FY 95<br>Conf/<br>Enacted |
| <b>PROGRAM SUMMARIES</b>        |    |          |                                       |                  |                      |               |                                           |                               |                           |
| <b>Energy Programs</b>          |    |          |                                       |                  |                      |               |                                           |                               |                           |
| Energy Conservation             | BA | 673      | 961                                   | 776              | 903                  | 903           | ---                                       | ---                           | 16%                       |
|                                 | OL | 586      | 743                                   | 687              | 808                  | 808           | ---                                       | ---                           | 18%                       |
| Solar Renewables                | BA | 327      | 410                                   | 388              | 435                  | 435           | ---                                       | ---                           | 12%                       |
|                                 | OL | 286      | 354                                   | 344              | 400                  | 400           | ---                                       | ---                           | 16%                       |
| Fossil Energy R&D               | BA | 431      | 469                                   | 443              | 447                  | 431           | ---                                       | -4%                           | -3%                       |
|                                 | OL | 426      | 443                                   | 432              | 442                  | 435           | ---                                       | -2%                           | 1%                        |
| Clean Coal Technology           | BA | 222      | 37                                    | 37               | 100                  | 80            | ---                                       | -20%                          | 116%                      |
|                                 | OL | 320      | 288                                   | 288              | 450                  | 358           | ---                                       | -20%                          | 24%                       |
| Strategic Petroleum Reserves    | BA | 207      | 136                                   | 136              | 127                  | 127           | ---                                       | ---                           | -7%                       |
|                                 | OL | 211      | 233                                   | 233              | 284                  | 284           | ---                                       | ---                           | 22%                       |
| Naval Petroleum Reserves        | BA | 215      | 199                                   | 191              | 175                  | 175           | ---                                       | ---                           | -8%                       |
|                                 | OL | 227      | 213                                   | 211              | 189                  | 189           | ---                                       | ---                           | -10%                      |
| Nuclear Energy                  | BA | 305      | 311                                   | 294              | 388                  | 388           | ---                                       | ---                           | 32%                       |
|                                 | OL | 320      | 310                                   | 302              | 342                  | 342           | ---                                       | ---                           | 13%                       |
| Environment, Safety & Health    | BA | 121      | 179                                   | 127              | 146                  | 146           | ---                                       | ---                           | 15%                       |
|                                 | OL | 140      | 152                                   | 129              | 134                  | 134           | ---                                       | ---                           | 4%                        |
| All Other Energy Supply R & D   | BA | -33      | 26                                    | -10              | 24                   | 62            | ---                                       | 158%                          | -720%                     |
|                                 | OL | -43      | -18                                   | -19              | 6                    | 63            | ---                                       | 950%                          | -432%                     |
| Power Marketing Administrations | BA | 352      | 282                                   | 280              | 389                  | 354           | ---                                       | -9%                           | 26%                       |
|                                 | OL | 365      | 302                                   | 305              | 324                  | 302           | ---                                       | -7%                           | -1%                       |
| Uranium Enrichment              | BA | 135      | 63                                    | 63               | 68                   | 68            | ---                                       | ---                           | 8%                        |
|                                 | OL | 245      | 112                                   | 98               | 80                   | 80            | ---                                       | ---                           | -18%                      |
| SUBTOTAL, Energy Programs       | BA | 2955     | 3073                                  | 2725             | 3202                 | 3169          | ---                                       | -1%                           | 16%                       |
|                                 | OL | 3083     | 3132                                  | 3010             | 3459                 | 3395          | ---                                       | -2%                           | 13%                       |

**SUMMARY BY PROGRAM THEMES**  
**DEPARTMENT OF ENERGY**  
(in millions of dollars)

|                                                         |    | FY 1994  | FY 1995                               |                  | FY 1996              |               | PAD Recommendation<br>Percent Change From |                               |                           |
|---------------------------------------------------------|----|----------|---------------------------------------|------------------|----------------------|---------------|-------------------------------------------|-------------------------------|---------------------------|
|                                                         |    | Estimate | President's<br>Request<br>(FY 95 Bud) | Conf/<br>Enacted | Agency<br>Submission | PAD<br>Recom. | Agency<br>Request                         | FY 96<br>Agency<br>Submission | FY 95<br>Conf/<br>Enacted |
| <b>Science &amp; Technology</b>                         |    |          |                                       |                  |                      |               |                                           |                               |                           |
| General Science                                         | BA | 1615     | 1074                                  | 984              | 982                  | 1022          | ---                                       | 4%                            | 4%                        |
|                                                         | OL | 1634     | 1052                                  | 1043             | 982                  | 1013          | ---                                       | 3%                            | -3%                       |
| Fusion                                                  | BA | 329      | 373                                   | 373              | 368                  | 378           | ---                                       | 3%                            | 1%                        |
|                                                         | OL | 332      | 357                                   | 349              | 364                  | 368           | ---                                       | 1%                            | 5%                        |
| Supporting Research                                     | BA | 1375     | 1393                                  | 1399             | 1377                 | 1437          | ---                                       | 4%                            | 3%                        |
|                                                         | OL | 1340     | 1376                                  | 1371             | 1386                 | 1398          | ---                                       | 1%                            | 2%                        |
| SUBTOTAL, Science & Technology                          | BA | 3319     | 2840                                  | 2756             | 2727                 | 2837          | ---                                       | 4%                            | 3%                        |
|                                                         | OL | 3306     | 2785                                  | 2763             | 2732                 | 2779          | ---                                       | 2%                            | 1%                        |
| <b>Defense (Non-Environment)</b>                        |    |          |                                       |                  |                      |               |                                           |                               |                           |
| Weapons Activities                                      | BA | 3595     | 3312                                  | 3229             | 3584                 | 3445          | ---                                       | -4%                           | 7%                        |
|                                                         | OL | 4005     | 3397                                  | 3339             | 3478                 | 3380          | ---                                       | -3%                           | 1%                        |
| Materials Support & Other                               | BA | 1960     | 1905                                  | 1850             | 1394                 | 1354          | ---                                       | -3%                           | -27%                      |
|                                                         | OL | 2267     | 1923                                  | 1883             | 1531                 | 1503          | ---                                       | -2%                           | -20%                      |
| SUBTOTAL, Defense                                       | BA | 5555     | 5217                                  | 5079             | 4978                 | 4799          | ---                                       | -4%                           | -6%                       |
|                                                         | OL | 6272     | 5320                                  | 5222             | 5009                 | 4883          | ---                                       | -3%                           | -6%                       |
| <b>Environment</b>                                      |    |          |                                       |                  |                      |               |                                           |                               |                           |
| Nuclear Waste Disposal Fund<br>(Yucca Mountain)         | BA | 260      | 255                                   | 393              | 253                  | ---           | ---                                       | -100%                         | -100%                     |
|                                                         | OL | 268      | 257                                   | 326              | 323                  | 196           | ---                                       | -39%                          | -40%                      |
| Uranium Enrichment D&D Fund                             | BA | 286      | 301                                   | 301              | 333                  | 333           | ---                                       | ---                           | 11%                       |
|                                                         | OL | 177      | 275                                   | 275              | 325                  | 325           | ---                                       | ---                           | 18%                       |
| General Fund Payment, D&D Fund                          | BA | -130     | -134                                  | -134             | -350                 | -350          | ---                                       | ---                           | 161%                      |
|                                                         | OL | -130     | -134                                  | -134             | -350                 | -350          | ---                                       | ---                           | 161%                      |
| Defense Environmental Restoration<br>& Waste Management | BA | 5182     | 5212                                  | 5093             | 6250                 | 6250          | ---                                       | ---                           | 23%                       |
|                                                         | OL | 4833     | 5023                                  | 5084             | 5684                 | 5684          | ---                                       | ---                           | 12%                       |
| Defense Nuc. Waste Disposal Fund                        | BA | 120      | 129                                   | 129              | 129                  | 200           | ---                                       | 55%                           | 55%                       |
|                                                         | OL | 60       | 125                                   | 125              | 130                  | 165           | ---                                       | 27%                           | 32%                       |
| Non-Defense Environ. Restoration &<br>Waste Management  | BA | 693      | 744                                   | 744              | 728                  | 728           | ---                                       | ---                           | -2%                       |
|                                                         | OL | 680      | 716                                   | 716              | 726                  | 726           | ---                                       | ---                           | 1%                        |
| Foreign Fee, D&D Fund                                   | BA |          |                                       |                  |                      | -45           |                                           |                               |                           |
|                                                         | OL |          |                                       |                  |                      | -45           |                                           |                               |                           |
| SUBTOTAL, Environment                                   | BA | 6411     | 6507                                  | 6526             | 7343                 | 7116          | ---                                       | -3%                           | 9%                        |
|                                                         | OL | 5888     | 6262                                  | 6392             | 6838                 | 6701          | ---                                       | -2%                           | 5%                        |

**SUMMARY BY PROGRAM THEMES**  
**DEPARTMENT OF ENERGY**  
(in millions of dollars)

|                                    |    | FY 1994         | FY 1995                               |                  |                      | FY 1996       |                   | PAD Recommendation<br>Percent Change From |                           |
|------------------------------------|----|-----------------|---------------------------------------|------------------|----------------------|---------------|-------------------|-------------------------------------------|---------------------------|
|                                    |    | <u>Estimate</u> | President's<br>Request<br>(FY 95 Bud) | Conf/<br>Enacted | Agency<br>Submission | PAD<br>Recom. | Agency<br>Request | FY 96<br>Agency<br>Submission             | FY 95<br>Conf/<br>Enacted |
| <u>Other</u>                       |    |                 |                                       |                  |                      |               |                   |                                           |                           |
| Energy Information Administration  | BA | 87              | 85                                    | 85               | 85                   | 85            | ---               | ---                                       | ---                       |
|                                    | OL | 84              | 85                                    | 87               | 85                   | 85            | ---               | ---                                       | -2%                       |
| Federal Energy Regulatory Comm.    | BA | ---             | ---                                   | ---              | -15                  | -15           | ---               | ---                                       | ---                       |
|                                    | OL | -1              | ---                                   | ---              | 2                    | 2             | ---               | ---                                       | ---                       |
| Isotope Production & Distribution  | BA | 4               | ---                                   | ---              | ---                  | ---           | ---               | ---                                       | ---                       |
|                                    | OL | 4               | ---                                   | ---              | ---                  | ---           | ---               | ---                                       | ---                       |
| Emergency Preparedness             | BA | 9               | 8                                     | 8                | 8                    | 8             | ---               | ---                                       | ---                       |
|                                    | OL | 9               | 8                                     | 8                | 8                    | 8             | ---               | ---                                       | ---                       |
| Economic Regulation Administration | BA | 13              | 12                                    | 12               | 12                   | 12            | ---               | ---                                       | ---                       |
|                                    | OL | 13              | 13                                    | 13               | 12                   | 12            | ---               | ---                                       | -8%                       |
| Departmental Administration        | BA | 274             | 234                                   | 246              | 316                  | 316           | ---               | ---                                       | 28%                       |
|                                    | OL | 330             | 238                                   | 283              | 305                  | 305           | ---               | ---                                       | 8%                        |
| Office of Inspector General        | BA | 30              | 26                                    | 26               | 31                   | 31            | ---               | ---                                       | 19%                       |
|                                    | OL | 30              | 28                                    | 28               | 30                   | 30            | ---               | ---                                       | 7%                        |
| Geothermal Resources Dev. Fund     | BA | -5              | ---                                   | ---              | ---                  | ---           | ---               | ---                                       | ---                       |
|                                    | OL | ---             | ---                                   | ---              | ---                  | ---           | ---               | ---                                       | ---                       |
| Alternative Fuels Production       | BA | -5              | -4                                    | -4               | ---                  | ---           | ---               | ---                                       | -100%                     |
|                                    | OL | -5              | -4                                    | -4               | ---                  | ---           | ---               | ---                                       | -100%                     |
| <b>SUBTOTAL, Other</b>             | BA | 407             | 361                                   | 373              | 437                  | 437           | ---               | ---                                       | 17%                       |
|                                    | OL | 464             | 368                                   | 415              | 442                  | 442           | ---               | ---                                       | 7%                        |
| <b>TOTAL, Discretionary</b>        | BA | 18647           | 17998                                 | 17459            | 18687                | 18358         | ---               | -2%                                       | 5%                        |
|                                    | OL | 19013           | 17867                                 | 17802            | 18480                | 18200         | ---               | -2%                                       | 2%                        |

**DOE ENVIRONMENTAL MANAGEMENT PROGRAM**  
(in millions of dollars)

|                                                                           |    | FY 1993 | FY 1994 | FY 1995                        |         | FY 1996        |                            |            |
|---------------------------------------------------------------------------|----|---------|---------|--------------------------------|---------|----------------|----------------------------|------------|
|                                                                           |    | Actual  | Actual  | President's Request (FY 95Bud) | Enacted | Agency Request | Request Comparable Basis** | PAD Recom. |
| <b>Defense Environmental Restoration and Waste Management</b>             | BA | 4,828   | 5,178   | 5,235 *                        | 5,093   | 6,250          | 5,373                      | 6,250      |
|                                                                           | OL | 4,235   | 4,831   | 5,034                          | 5,083   | 5,684          | 5,245                      | 5,684      |
| <b>Energy Supply R&amp;D—Environmental Management</b>                     | BA | 692     | 673     | 744                            | 744     | 728            | 728                        | 728        |
|                                                                           | OL | 621     | 671     | 708                            | 708     | 726            | 726                        | 726        |
| <b>Uranium Enrichment Decontamination and Decommissioning Fund</b>        | BA |         | 287     | 301                            | 301     | 333            | 333                        | 333        |
|                                                                           | OL |         | 178     | 275                            | 275     | 325            | 325                        | 325        |
| <b>Subtotal</b>                                                           | BA | 5,520   | 6,138   | 6,280                          | 6,138   | 7,311          | 6,434                      | 7,311      |
|                                                                           | OL | 4,856   | 5,680   | 6,017                          | 6,066   | 6,735          | 6,296                      | 6,735      |
| <b>Interfund transfer from Defense to Uranium Enrichment D&amp;D Fund</b> |    |         | (130)   | (134)                          | (134)   | (350)          | (350)                      | (350)      |
| <b>TOTAL</b>                                                              | BA | 5,520   | 6,008   | 6,146                          | 6,004   | 6,961          | 6,084                      | 6,961      |
|                                                                           | OL | 4,856   | 5,550   | 5,883                          | 5,932   | 6,385          | 5,946                      | 6,385      |

\* FY95 amended request of \$5,187 million.

\*\* FY96 request adjusted by \$877 million for transfer of facilities from other DOE programs.

- o Request on a comparable basis to FY95 is \$5,373 million, adjusting for approximately \$877 million in responsibility transferred from other DOE programs to the Environmental Management facilities transition and management area. Facilities were transferred from Savannah River (\$786 million less \$37 million pension refund), Pinellas (\$50 million), Mound (\$61 million), and Rocky Flats (\$18 million).
- o PAD Recommendation provides \$80 million above FY1995 enacted level on a comparable basis.
- o Request includes \$350 million (\$216 million over FY95 enacted level) for EM's contribution to the Uranium Enrichment Decontamination and Decommissioning Fund. This amount is appropriated to the environmental restoration program within the Defense Environmental Restoration and Waste Management account. It is then transferred as a deposit to the D&D fund and is therefore offsetting.

SUMMARY OF DISCRETIONARY PROGRAMS  
DEPARTMENT OF ENERGY  
(in millions of dollars)

|                                                              |    | <u>FY 1993</u> | <u>FY 1994</u> | <u>FY 1995</u>                       |         | <u>FY 1996</u>                       |                   |               |                           |
|--------------------------------------------------------------|----|----------------|----------------|--------------------------------------|---------|--------------------------------------|-------------------|---------------|---------------------------|
|                                                              |    |                |                | President's<br>Request<br>(FY 95Bud) | Enacted | President's<br>Request<br>(FY 95Bud) | Agency<br>Request | PAD<br>Recom. | Recom.<br>less<br>Request |
|                                                              |    | <u>Actual</u>  | <u>Actual</u>  |                                      |         |                                      |                   |               |                           |
| <b>Discretionary Budget Accounts:</b>                        |    |                |                |                                      |         |                                      |                   |               |                           |
| Weapons Activities.....                                      | BA | 4496           | 3595           | 3312                                 | 3229    | 3358                                 | 3584              | 3445          | -139                      |
|                                                              | OL | 4294           | 4005           | 3397                                 | 3339    | 3332                                 | 3478              | 3380          | -98                       |
| Defense Environmental Restoration &<br>Waste Management..... | BA | 4828           | 5182           | 5212                                 | 5093    | 5432                                 | 6250              | 6250          | ---                       |
|                                                              | OL | 4235           | 4833           | 5023                                 | 5084    | 5361                                 | 5684              | 5684          | ---                       |
| Materials Support & Other Defense<br>Activities.....         | BA | 2621           | 1960           | 1905                                 | 1850    | 2034                                 | 1394              | 1354          | -40                       |
|                                                              | OL | 2379           | 2267           | 1923                                 | 1883    | 2006                                 | 1531              | 1503          | -28                       |
| Defense Nuclear Waste Disposal<br>Fund.....                  | BA | 100            | 120            | 129                                  | 129     | 129                                  | 129               | 200           | 71                        |
|                                                              | OL | 96             | 60             | 125                                  | 125     | 129                                  | 130               | 165           | 35                        |
| Weapons Activities.....                                      | BA | 65             | ---            | ---                                  | ---     | ---                                  | ---               | ---           | ---                       |
|                                                              | OL | 45             | 19             | ---                                  | ---     | ---                                  | ---               | ---           | ---                       |
| General Science.....                                         | BA | 1406           | 1615           | 1074                                 | 984     | 940                                  | 982               | 1022          | 40                        |
|                                                              | OL | 1359           | 1634           | 1052                                 | 1043    | 1059                                 | 982               | 1013          | 31                        |

SUMMARY OF DISCRETIONARY PROGRAMS  
DEPARTMENT OF ENERGY  
(in millions of dollars)

|                                     |    | FY 1993       | FY 1994       | FY 1995                              |         | FY 1996                              |                   |               |                           |
|-------------------------------------|----|---------------|---------------|--------------------------------------|---------|--------------------------------------|-------------------|---------------|---------------------------|
|                                     |    |               |               | President's<br>Request<br>(FY 95Bud) | Enacted | President's<br>Request<br>(FY 95Bud) | Agency<br>Request | PAD<br>Recom. | Recom.<br>less<br>Request |
|                                     |    | <u>Actual</u> | <u>Actual</u> |                                      |         |                                      |                   |               |                           |
| Energy Supply R&D.....              | BA | 3041          | 3117          | 3436                                 | 3315    | 3399                                 | 3466              | 3574          | 108                       |
|                                     | OL | 2949          | 3055          | 3247                                 | 3192    | 3331                                 | 3358              | 3431          | 73                        |
| o Nuclear Energy                    | BA | 319           | 305           | 311                                  | 294     | 317                                  | 388               | 388           | ---                       |
|                                     | OL | 341           | 320           | 310                                  | 302     | 322                                  | 342               | 342           | ---                       |
| o Solar Renewables                  | BA | 256           | 327           | 410                                  | 388     | 418                                  | 435               | 435           | ---                       |
|                                     | OL | 240           | 286           | 354                                  | 344     | 368                                  | 400               | 400           | ---                       |
| o Supporting Research               | BA | 1325          | 1375          | 1393                                 | 1399    | 1421                                 | 1377              | 1437          | 60                        |
|                                     | OL | 1276          | 1340          | 1376                                 | 1371    | 1431                                 | 1386              | 1398          | 12                        |
| o Environ. Rest. & Waste Mgmt       | BA | 692           | 693           | 744                                  | 744     | 759                                  | 728               | 728           | ---                       |
|                                     | OL | 619           | 680           | 716                                  | 716     | 745                                  | 726               | 726           | ---                       |
| o Fusion                            | BA | 335           | 329           | 373                                  | 373     | 380                                  | 368               | 378           | 10                        |
|                                     | OL | 327           | 332           | 357                                  | 349     | 371                                  | 364               | 368           | 4                         |
| o Environment, Safety & Health      | BA | 155           | 121           | 179                                  | 127     | 183                                  | 146               | 146           | ---                       |
|                                     | OL | 153           | 140           | 152                                  | 129     | 158                                  | 134               | 134           | ---                       |
| o Other                             | BA | -41           | -33           | 26                                   | -10     | -79                                  | 24                | 62            | 38                        |
|                                     | OL | -7            | -43           | -18                                  | -19     | -65                                  | 6                 | 63            | 57                        |
| Isotope Production & Distribution   | BA | 5             | 4             | ---                                  | ---     | 7                                    | ---               | ---           | ---                       |
| Program.....                        | OL | 5             | 4             | ---                                  | ---     | 7                                    | ---               | ---           | ---                       |
| Uranium Supply and Enrichment       | BA | ---           | 135           | 63                                   | 63      | 30                                   | 68                | 68            | ---                       |
| Activities.....                     | OL |               | 245           | 112                                  | 98      | 64                                   | 80                | 80            | ---                       |
| Uranium Enrichment Decontamination  | BA | ---           | 286           | 301                                  | 301     | 301                                  | 333               | 333           | ---                       |
| & Decommissioning.....              | OL | ---           | 177           | 275                                  | 275     | 309                                  | 325               | 325           | ---                       |
| General Fund Payment, D&D Fund..... | BA | ---           | -130          | -134                                 | -134    | -136                                 | -350              | -350          | ---                       |
|                                     | OL | ---           | -130          | -134                                 | -134    | -136                                 | -350              | -350          | ---                       |

**SUMMARY OF DISCRETIONARY PROGRAMS**  
**DEPARTMENT OF ENERGY**  
(in millions of dollars)

|                                     |               | <u>FY 1993</u> | <u>FY 1994</u> | <u>FY 1995</u>                                |                | <u>FY 1996</u>                                |                           |                       |                                    |
|-------------------------------------|---------------|----------------|----------------|-----------------------------------------------|----------------|-----------------------------------------------|---------------------------|-----------------------|------------------------------------|
|                                     |               |                |                | <u>President's<br/>Request<br/>(FY 95Bud)</u> | <u>Enacted</u> | <u>President's<br/>Request<br/>(FY 95Bud)</u> | <u>Agency<br/>Request</u> | <u>PAD<br/>Recom.</u> | <u>Recom.<br/>less<br/>Request</u> |
|                                     | <u>Actual</u> | <u>Actual</u>  |                |                                               |                |                                               |                           |                       |                                    |
| Foreign Fee, D&D Fund.....          | BA            | ---            |                |                                               |                |                                               | ---                       | -45                   | -45                                |
|                                     | OL            | ---            |                |                                               |                |                                               | ---                       | -45                   | -45                                |
| Nuclear Waste Disposal Fund.....    | BA            | 275            | 260            | 255                                           | 393            | 265                                           | 253                       | ---                   | -253                               |
|                                     | OL            | 275            | 268            | 257                                           | 326            | 260                                           | 323                       | 196                   | -127                               |
| Departmental Administration.....    | BA            | 81             | 274            | 234                                           | 246            | 275                                           | 316                       | 316                   | ---                                |
|                                     | OL            | 74             | 330            | 238                                           | 283            | 262                                           | 305                       | 305                   | ---                                |
| Office of Inspector General.....    | BA            | 30             | 30             | 26                                            | 26             | 32                                            | 31                        | 31                    | ---                                |
|                                     | OL            | 31             | 30             | 28                                            | 28             | 31                                            | 30                        | 30                    | ---                                |
| Power Marketing Administration..... | BA            | 391            | 352            | 282                                           | 280            | 379                                           | 389                       | 354                   | -35                                |
|                                     | OL            | 383            | 365            | 302                                           | 305            | 343                                           | 324                       | 302                   | -22                                |
| Federal Energy Reg. Comm.....       | BA            | ---            | ---            | ---                                           | ---            | ---                                           | -15                       | -15                   | ---                                |
|                                     | OL            | -3             | -1             | ---                                           | ---            | -1                                            | 2                         | 2                     | ---                                |
| Geothermal Resources Dev. Fund..... | BA            | ---            | -5             | ---                                           | ---            | ---                                           | ---                       | ---                   | ---                                |
|                                     | OL            | ---            | ---            | ---                                           | ---            | ---                                           | ---                       | ---                   | ---                                |
| Fossil Energy R&D.....              | BA            | 414            | 431            | 469                                           | 443            | 483                                           | 447                       | 431                   | -16                                |
|                                     | OL            | 433            | 426            | 443                                           | 432            | 467                                           | 442                       | 435                   | -7                                 |
| Energy Conservation.....            | BA            | 561            | 673            | 961                                           | 776            | 983                                           | 903                       | 903                   | ---                                |
|                                     | OL            | 515            | 586            | 743                                           | 687            | 925                                           | 808                       | 808                   | ---                                |

SUMMARY OF DISCRETIONARY PROGRAMS  
DEPARTMENT OF ENERGY  
(in millions of dollars)

|                                         |               | <u>FY 1993</u> | <u>FY 1994</u> | <u>FY 1995</u>                                |                | <u>FY 1996</u>                                |                           |                       |                                    |
|-----------------------------------------|---------------|----------------|----------------|-----------------------------------------------|----------------|-----------------------------------------------|---------------------------|-----------------------|------------------------------------|
|                                         |               |                |                | <u>President's<br/>Request<br/>(FY 95Bud)</u> | <u>Enacted</u> | <u>President's<br/>Request<br/>(FY 95Bud)</u> | <u>Agency<br/>Request</u> | <u>PAD<br/>Recom.</u> | <u>Recom.<br/>less<br/>Request</u> |
|                                         | <u>Actual</u> | <u>Actual</u>  |                |                                               |                |                                               |                           |                       |                                    |
| Energy Information Administration.....  | BA            | 82             | 87             | 85                                            | 85             | 85                                            | 85                        | 85                    | ---                                |
|                                         | OL            | 79             | 84             | 85                                            | 87             | 85                                            | 85                        | 85                    | ---                                |
| Economic Regulation.....                | BA            | 14             | 13             | 12                                            | 12             | 12                                            | 12                        | 12                    | ---                                |
|                                         | OL            | 15             | 13             | 13                                            | 13             | 12                                            | 12                        | 12                    | ---                                |
| Strategic Petroleum Reserve.....        | BA            | 177            | 207            | 244                                           | 244            | 244                                           | 314                       | 314                   | ---                                |
|                                         | OL            | 214            | 194            | 224                                           | 224            | 240                                           | 279                       | 279                   | ---                                |
| Naval Petr. & Oil Shale Reserves.....   | BA            | 236            | 215            | 199                                           | 191            | 229                                           | 175                       | 175                   | ---                                |
|                                         | OL            | 232            | 227            | 213                                           | 211            | 214                                           | 189                       | 189                   | ---                                |
| Naval Petroleum Reserves Budget         | BA            |                |                |                                               |                | -188                                          |                           |                       |                                    |
| Backout.....                            | OL            |                |                |                                               |                | -75                                           |                           |                       |                                    |
| Strategic Petroleum Reserves Account... | BA            | ---            | ---            | -108                                          | -108           | -94                                           | -187                      | -187                  | ---                                |
|                                         | OL            | ---            | 17             | 9                                             | 9              | 5                                             | 5                         | 5                     | ---                                |
| Emergency Preparedness.....             | BA            | 9              | 9              | 8                                             | 8              | 8                                             | 8                         | 8                     | ---                                |
|                                         | OL            | 9              | 9              | 8                                             | 8              | 8                                             | 8                         | 8                     | ---                                |
| Clean Coal Technology.....              | BA            | ---            | 222            | 37                                            | 37             | 74                                            | 100                       | 80                    | -20                                |
|                                         | OL            | 276            | 320            | 288                                           | 288            | 325                                           | 450                       | 358                   | -92                                |
| Alternative Fuels Production.....       | BA            | -7             | -5             | -4                                            | -4             | ---                                           | ---                       | ---                   | ---                                |
|                                         | OL            | -7             | -5             | -4                                            | -4             | ---                                           | ---                       | ---                   | ---                                |

**SUMMARY OF DISCRETIONARY PROGRAMS**  
**DEPARTMENT OF ENERGY**  
(in millions of dollars)

|                                      |    | <u>FY 1993</u> | <u>FY 1994</u> | <u>FY 1995</u>                                |                | <u>FY 1996</u>                                |                           |                       |                                    |
|--------------------------------------|----|----------------|----------------|-----------------------------------------------|----------------|-----------------------------------------------|---------------------------|-----------------------|------------------------------------|
|                                      |    | <u>Actual</u>  | <u>Actual</u>  | <u>President's<br/>Request<br/>(FY 95Bud)</u> | <u>Enacted</u> | <u>President's<br/>Request<br/>(FY 95Bud)</u> | <u>Agency<br/>Request</u> | <u>PAD<br/>Recom.</u> | <u>Recom.<br/>less<br/>Request</u> |
|                                      |    | -----          | -----          | -----                                         | -----          | -----                                         | -----                     | -----                 | -----                              |
| Total, Discretionary.....            | BA | 18825          | 18647          | 17998                                         | 17459          | 18281                                         | 18687                     | 18358                 | -329                               |
|                                      | OL | 17888          | 19032          | 17867                                         | 17802          | 18563                                         | 18480                     | 18200                 | -280                               |
|                                      |    |                |                |                                               |                |                                               |                           |                       |                                    |
| Discretionary Planning Guidance..... | BA | N/A            | N/A            | N/A                                           | N/A            | N/A                                           | 18100                     | 18100                 |                                    |
|                                      | OL | N/A            | N/A            | N/A                                           | N/A            | N/A                                           | 18200                     | 18200                 |                                    |
|                                      |    |                |                |                                               |                |                                               |                           |                       |                                    |
|                                      |    |                |                |                                               |                |                                               | PAD Recommendation        | BA                    | 258                                |
|                                      |    |                |                |                                               |                |                                               | less Guidance             | OL                    | ---                                |

**POTENTIAL INCREASES  
TO DISCRETIONARY PROGRAM RECOMMENDATIONS  
DEPARTMENT OF ENERGY  
(in millions of dollars)**

|                                     | <u>FY 1993</u> | <u>FY 1994</u> | <u>FY 1995</u>                                |                | <u>FY 1996</u>                                |                           |                       |                                  |                                                  |
|-------------------------------------|----------------|----------------|-----------------------------------------------|----------------|-----------------------------------------------|---------------------------|-----------------------|----------------------------------|--------------------------------------------------|
|                                     | <u>Actual</u>  | <u>Actual</u>  | <u>President's<br/>Request<br/>(FY 95Bud)</u> | <u>Enacted</u> | <u>President's<br/>Request<br/>(FY 95Bud)</u> | <u>Agency<br/>Request</u> | <u>PAD<br/>Recom.</u> | <u>Potential<br/>Incr. Level</u> | <u>Potential<br/>Incras. less<br/>Pad Recom.</u> |
| <b>Discretionary:</b>               |                |                |                                               |                |                                               |                           |                       |                                  |                                                  |
| <b>Proposal -- Priority #1.....</b> | BA             | N/A            | 1511                                          | 1450           | 1434                                          | 1450                      | 1611                  | 1519                             | 1550                                             |
|                                     | OL             |                | 1746                                          | 1468           | 1457                                          | 1450                      | 1558                  | 1494                             | 1515                                             |
|                                     |                |                |                                               |                |                                               |                           |                       |                                  | 31                                               |
|                                     |                |                |                                               |                |                                               |                           |                       |                                  | 21                                               |

**Additional increase for new procurements in support of Stockpile Management.**

The PAD recommendation would increase operating funds for Stockpile Management (i.e. maintenance of the enduring nuclear weapons stockpile) by 3 percent, versus the DOE request of 8.3 percent. This potential increase would add \$31 million requested by DOE for new procurements in the operating budget for Stockpile Management, bringing the overall increase to 5.3 percent. The additional funds would stem the loss of technical capabilities in the weapons production complex.

|                                     |    |     |     |     |     |     |     |          |          |
|-------------------------------------|----|-----|-----|-----|-----|-----|-----|----------|----------|
| <b>Proposal -- Priority #2.....</b> | BA | --- | --- | --- | --- | --- | --- | 25 - 250 | 25 - 250 |
|                                     | OL | --- | --- | --- | --- | --- | --- | 13 - 125 | 13 - 125 |

**DOE Support for USG-DPRK Framework Agreement.**

This funding is a potential "placeholder" to support DOE's role to manage spent fuel currently in wet storage in the Democratic Peoples Republic of Korea (DPRK). This activity is part of the implementation of the framework agreement between the U.S. Government and the DPRK. State and DOD also are supporting this agreement. OMB staff and DOE are discussing prospective missions and milestones. DOE's responsibility is likely to consist of recanning free rods for interim storage in the DPRK and preparations for their ultimate disposition.

|                                     |    |    |    |    |    |    |     |    |     |     |
|-------------------------------------|----|----|----|----|----|----|-----|----|-----|-----|
| <b>Proposal -- Priority #3.....</b> | BA | 12 | 16 | 40 | 21 | 89 | --- | 10 | 149 | 139 |
|                                     | OL | 5  | 12 | 27 | 16 | 51 | 11  | 16 | 78  | 62  |

**Advanced Neutron Source research reactor project (ANS).**

The PAD recommendation would eliminate construction funding for the Advanced Neutron Source research reactor at Oak Ridge National Laboratory. If a decision is made that the ANS project is to be included in the FY 1996 budget, \$149 million would be required in FY 1996 to initiate construction. The ANS total project cost is currently estimated to be approximately \$3 billion, with annual operating costs of \$150 million per year.

**POTENTIAL REDUCTIONS  
TO DISCRETIONARY PROGRAM RECOMMENDATIONS  
DEPARTMENT OF ENERGY  
(in millions of dollars)**

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |    | <u>FY 1993</u> | <u>FY 1994</u> | <u>FY 1995</u>                                |                | <u>FY 1996</u>                                |                           |                       |                                        |                                          |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|----------------|----------------|-----------------------------------------------|----------------|-----------------------------------------------|---------------------------|-----------------------|----------------------------------------|------------------------------------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |    | <u>Actual</u>  | <u>Actual</u>  | <u>President's<br/>Request<br/>(FY 95Bud)</u> | <u>Enacted</u> | <u>President's<br/>Request<br/>(FY 95Bud)</u> | <u>Agency<br/>Request</u> | <u>PAD<br/>Recom.</u> | <u>Potential Reduc.<br/>Red. Level</u> | <u>Potential<br/>less<br/>Pad Recom.</u> |
| <b>Discretionary:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |    |                |                |                                               |                |                                               |                           |                       |                                        |                                          |
| Proposal -- Priority #1.....                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | BA | 251            | 341            | 393                                           | 388            | 426                                           | 434                       | 434                   | 418                                    | -16                                      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | OL | 238            | 295            | 351                                           | 349            | 408                                           | 402                       | 402                   | 394                                    | -8                                       |
| <p><b>Do not continue funding for ETEC turbine R&amp;D and Univ. of Tennessee/TSI MHD-derived magnet research after the FY 1995 reprogramming.</b><br/> The FY 1995 reprogramming to provide funds for work on turbines at the Energy Technology Engineering Center (ETEC) and to the University of Tennessee / Tennessee Space Institute (TSI) for magnet research should be viewed as one-time transition funding to close down those activities. The work is deemed unnecessary at the staff level within DOE, OSTP, and OMB. The funds in the DOE request would use that reprogramming as the mechanism to embark on new, long-term research programs. The cut also includes a small reduction in International activities, which substantially overlap Department of Commerce roles.</p> |    |                |                |                                               |                |                                               |                           |                       |                                        |                                          |
| Proposal -- Priority #2.....                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | BA | 0              | 0              | 0                                             | 0              | 0                                             | 0                         | 0                     | -25                                    | -25                                      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | OL | 0              | 0              | 0                                             | 0              | 0                                             | 0                         | 0                     | -25                                    | -25                                      |
| <p><b>Sell excess enriched uranium from retired nuclear weapons and score the revenue to offset spending on plutonium disposition.</b><br/> DOE has excess HEU from retired warheads that could be sold for \$2-3 billion over a period of years. OMB staff projects revenues of \$500 from 1996-2000, with most of the revenue beyond 1996. The revenue from the sale could be used to offset spending required to dispose of excess plutonium, which is also coming from retired warheads. This proposal would require an exemption from the BEA asset sale provision.</p>                                                                                                                                                                                                                  |    |                |                |                                               |                |                                               |                           |                       |                                        |                                          |
| Proposal -- Priority #3.....                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | BA | 92             | 200            | 125                                           | 115            | 100                                           | 100                       | 70                    | 35                                     | -35                                      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | OL | 64             | 168            | 148                                           | 141            | 105                                           | 105                       | 84                    | 59                                     | -25                                      |
| <p><b>Reduce funding for economic development activities in the Worker and Community Transition Program.</b><br/> DOE plans to spend \$137 M from 1994-1996 to assist communities near eight DOE facilities that are undergoing defense conversion. Additional funds would go directly to displaced workers. The economic development funding equates to \$17 M per site. DOD has similar economic development programs at 92 base closing sites for which it plans to spend \$118 M (\$1.3 M per site) over the same three-year period. The PAD Recommendation would reduce DOE's 3-year spending to \$107 M (\$13 M per site). This proposal would further reduce it to \$72 M (\$9 M per site).</p>                                                                                        |    |                |                |                                               |                |                                               |                           |                       |                                        |                                          |
| Proposal -- Priority #4.....                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | BA | 0              | 2              | 0                                             | 0              | 0                                             | 40                        | 40                    | 0                                      | -40                                      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | OL | 0              | 1              | 1                                             | 1              | 0                                             | 28                        | 28                    | 0                                      | -28                                      |

**Fund lab-to-lab assistance to Russia for control and accounting of nuclear materials with "Nunn-Lugar" funds in the DOD budget.**  
DOE started the lab-to-lab program as a pilot in 1994 and has had good results. The PAD recommendation is to fund an expanded program in 1996 as requested by DOE. This proposal would also fund the program in 1996, but direct the use of funds that have been in DOD's budget for the past four years for nonproliferation assistance to the Former Soviet Union. The authorization for the use of Nunn-Lugar funds specifically allows for transfers to other agencies.

**POTENTIAL REDUCTIONS  
TO DISCRETIONARY PROGRAM RECOMMENDATIONS  
DEPARTMENT OF ENERGY  
(in millions of dollars)**

|                                   |    | FY 1993       | FY 1994       | FY 1995                              |         |                                      | FY 1996           |               |                                                |
|-----------------------------------|----|---------------|---------------|--------------------------------------|---------|--------------------------------------|-------------------|---------------|------------------------------------------------|
|                                   |    |               |               | President's<br>Request<br>(FY 95Bud) | Enacted | President's<br>Request<br>(FY 95Bud) | Agency<br>Request | PAD<br>Recom. | Potential Reduc. less<br>Red. Level Pad Recom. |
|                                   |    | <u>Actual</u> | <u>Actual</u> |                                      |         |                                      |                   |               |                                                |
| <b>Discretionary: (Continued)</b> |    |               |               |                                      |         |                                      |                   |               |                                                |
| Proposal -- Priority #5.....      | BA | N/A           | N/A           | N/A                                  | N/A     | N/A                                  | N/A               | N/A           | -160                                           |
|                                   | OL | N/A           | N/A           | N/A                                  | N/A     | N/A                                  | N/A               | N/A           | -80                                            |

**Savings from contract reform.**

Across-the-board cut of one percent of funding for Management and Operating contracts. This can be attributed to savings from DOE's contract reform efforts. DOE would argue that contract reform savings have already been included in its budget request. Despite claims of savings in DOE press releases; however, the Department has not identified any specific savings from contract reform.

|                                                                                                                   |    |       |       |       |       |       |       |       |       |     |
|-------------------------------------------------------------------------------------------------------------------|----|-------|-------|-------|-------|-------|-------|-------|-------|-----|
| Proposal -- Priority #6.....                                                                                      | BA | 5,520 | 6,008 | 6,099 | 6,004 | 6,142 | 6,961 | 6,961 | 6,881 | -80 |
|                                                                                                                   | OL | 4,856 | 5,550 | 5,980 | 5,932 | 6,065 | 6,385 | 6,385 | 6,345 | -40 |
| Figures on a comparable basis to FY95, adjusted for \$877 million transfer to Facility Transition and Management. |    |       |       |       |       |       | 6,084 | 6,084 | 6,004 | -80 |
|                                                                                                                   |    |       |       |       |       |       | 5,947 | 5,947 | 5,908 | -40 |

\* All figures shown are net of transfer from Defense Environmental Restoration and Waste Management to Uranium Enrichment Decontamination and Decommissioning Fund.

**Reduce Environmental Management program by \$80 million, maintaining level funding from FY95 enacted level.**

Specific reductions are proposed for each major program area including \$13.6 million from WIPP and \$31 million from various restoration projects.

|                              |    |     |     |     |     |     |     |     |     |      |
|------------------------------|----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| Proposal -- Priority #7..... | BA | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | -100 |
|                              | OL | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | -50  |

**Various additional cuts in selected projects.**

Additional possibilities for further reductions include: Reduce spending on the International Thermonuclear Experimental Reactor (ITER) by half (-\$40 M); reduce DOE spending on intelligence programs by half (-\$20 M); cut proposed Advanced Computing Initiative for Stockpile Stewardship by half (-\$20 M); and significantly reduce landload (maintenance) activities at nuclear energy sites (-\$20 M). The impact on programs of these reductions would have to be examined more closely, before cuts could be proposed.

**MAJOR OUTYEAR CHANGES FROM A HARD FREEZE**  
**DEPARTMENT OF ENERGY**  
(in millions of dollars)

| <u>Proposal</u>            |    | <u>FY 1996</u> | <u>FY 1997</u> | <u>FY 1998</u> | <u>FY 1999</u> | <u>FY 2000</u> |
|----------------------------|----|----------------|----------------|----------------|----------------|----------------|
| Planning Guidance.....     | BA | 18,100         | 18,100         | 18,000         | 18,000         | N/A            |
|                            | OL | 18,200         | 18,100         | 18,000         | 18,000         | N/A            |
| Agency Request.....        | BA | 18,687         | 21,297         | 22,325         | 22,897         | 23,050         |
|                            | OL | 18,480         | 19,974         | 21,610         | 22,605         | 22,866         |
| PAD Recommended Level..... | BA | 18,358         | 18,100         | 18,000         | 18,000         | N/A            |
|                            | OL | 18,200         | 18,100         | 18,000         | 18,000         | N/A            |

The major outyear increases included in DOE's request occur in a small number of program areas:

|                                 |          |       |       |       |       |       |
|---------------------------------|----------|-------|-------|-------|-------|-------|
| <b>Environmental Management</b> | BA (net) | 6,915 | 8,521 | 9,327 | 9,670 | 9,763 |
|                                 | OL       | 6,330 | 7,533 | 8,681 | 9,374 | 9,665 |

**Rationale:**

Most of DOE's outyear problems occur in this program, which is projected to grow from an adjusted BA level in FY 1996 of \$6.9 billion to \$9.8 billion in FY 2000. Increases are due to costs of compliance agreements and consent orders. DOE has some credible estimates that are even higher, see graph after this exhibit. Control of program cost is a high Administration priority, which is being addressed by the Federal Facilities Policy Group.

|                           |    |       |       |       |       |       |
|---------------------------|----|-------|-------|-------|-------|-------|
| <b>Defense Activities</b> | BA | 4,978 | 5,382 | 5,503 | 5,673 | 5,800 |
|                           | OL | 5,009 | 5,261 | 5,473 | 5,625 | 5,762 |

**Rationale:**

Program increase from about \$5 billion in FY 1996 to about \$5.8 billion in FY 2000. Most of this increase can be attributed to increases for tritium production and the National Ignition Facility. The PAD level recommendation would produce more modest increases and result in FY 2000 BA of about \$5.1 billion which is \$700 million below the request. By statute, 20 percent of DOE's Defense funds for FY 1995 (including EM) is being withheld pending submission of the National Security Five-Year Plan with the FY 1996 Budget. If funding levels in the Presidents FY 1996 budget are not consistent with this Plan, Congress will likely have questions.

**MAJOR OUTYEAR CHANGES FROM A HARD FREEZE**  
**DEPARTMENT OF ENERGY**  
(in millions of dollars)

| <u>Proposal</u>      |    | <u>FY 1996</u> | <u>FY 1997</u> | <u>FY 1998</u> | <u>FY 1999</u> | <u>FY 2000</u> |
|----------------------|----|----------------|----------------|----------------|----------------|----------------|
| <b>Nuclear Waste</b> | BA | 500.8          | 576            | 625            | 599            | 548            |
|                      | OL | 576            | 590            | 630            | 615            | 565            |

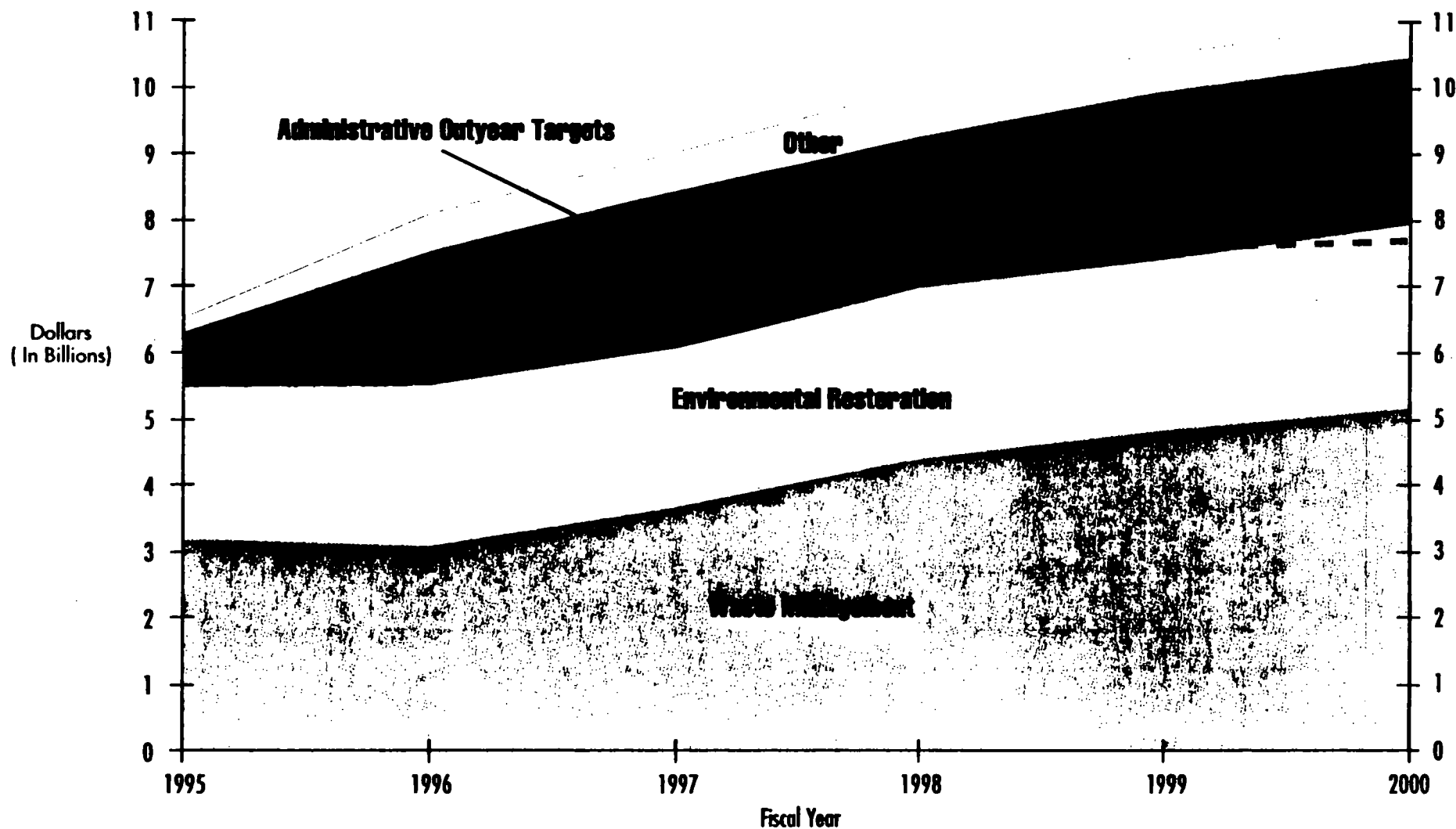
**Rationale:**

The DOE outyear request for this program is understated by about \$350 million and DOE provided no offsets for the 50 percent of its request which is mandatory. The outyear program costs grow from a BA of \$630 million in FY 1996 to a maximum BA of about \$900 million in FY 1999. The PAD recommendation would provide about \$2.6 billion in PAYGO offsets from privatization of the U.S. Enrichment Corporation and extension of NRC fees. This would offset Nuclear Waste Program outyear costs and reduce the DOE request numbers to zero in each of the outyears.

Overall, PAD decisions would reduce DOE outyear request by \$900 million to \$1.2 billion per year leaving the annual outyear delta in a range of about \$2.5 to \$3.8 billion depending on the year. In Fiscal Years 1998 - 2000 another \$3 billion per year would have to be added if the PAD recommendation to begin the transition to full up-front acquisition is implemented (see discretionary issue paper 4). There is, therefore, still a disconnect between decisions to date and actually meeting an outyear freeze.

# ***Preliminary Funding Estimates***

## ***DOE Office of Environmental Management***



**Note:** The tiered graph does not reflect any inherent ranking of programs

CEA

**DISCRETIONARY ISSUE PAPER # 1**

**Department of Energy**  
**(in millions of dollars)**

**ISSUE:** Should the Administration propose a \$113 million Presidential Initiative to significantly increase the availability of DOE science facilities to users?

**PREPARER/EXT:** Emily Pelton/5-3875

|            | <u>FY 1993</u> | <u>FY 1994</u> | <u>FY 1995</u>   |                | <u>FY 1996</u>   |                |               |                  |
|------------|----------------|----------------|------------------|----------------|------------------|----------------|---------------|------------------|
|            | <u>Actual</u>  | <u>Actual</u>  | <u>Request</u>   | <u>Enacted</u> | <u>Request</u>   | <u>Agency</u>  | <u>PAD</u>    | <u>Rec. less</u> |
|            |                |                | <u>FY 95 BUD</u> |                | <u>FY 95 BUD</u> | <u>Request</u> | <u>Recom.</u> | <u>Request</u>   |
| BA/OB..... | 0              | 0              | 0                | 0              | 0                | 0              | 100           | 100              |
| OL.....    | 0              | 0              | 0                | 0              | 0                | 0              | 57            | 57               |

**OPTION 1:** **RMO Recommendation.** Propose a Presidential Investment Initiative of \$113 million above the FY 1995 enacted level for DOE science facility operations (\$100 million above the Department's FY 1996 request to OMB).

**OPTION 2:** Propose limited increases to specific Office of Energy Research programs.

**OPTION 3:** Propose no increases to the DOE science budget.

**Description of Issue:**

**Quality of DOE Science Facilities.** The Department of Energy spends several hundred million dollars per year to operate large, state-of-the-art, science research facilities. Such facilities, which together represent a taxpayer investment of billions of dollars, include accelerators for high energy and nuclear physics research, tokamak fusion reactors, as well as neutron and synchrotron light sources that are used for basic and applied research in molecular, cellular, and structural biology, materials and chemical sciences, medical applications and health research, human genome studies, and many other research areas that have been identified as priorities by this Administration. Department of Energy civilian research facilities are among the best in the world in many science areas, and the Department has been internationally recognized for its success in operating such facilities effectively, and in a manner that is responsive to user needs. Funds to support DOE civilian science facilities are administered by the Department's Office of Energy Research.

**Demand for DOE Science Facilities.** DOE science facilities support a growing number of industrial, university, and government users. The number of user groups conducting research at DOE synchrotron and neutron research facilities alone has increased from 1,500 to 4,500 since 1987. DOE facilities are uniquely designed for specific types of research, and often provide the only means for scientists to conduct particular types of experiments. In many research areas, such as materials science, U.S. industry relies heavily upon DOE facilities to conduct experiments that otherwise would not be cost-effective. Moreover, research funds administered in conjunction with facility operations represent the predominant or even the sole source of Federal funding in many areas of scientific research in the United States. All DOE science facilities are consistently oversubscribed by users, (some by as much as a factor of three). All research conducted at DOE science facilities is regularly peer-reviewed by groups and individuals both within and outside the Department.

**Underutilization of Facilities.** Despite the growing demand for access to DOE facilities, the Department has been unable to operate all of its science facilities at optimal levels in recent years, due to tensions between tight discretionary budget constraints, increasing costs associated with DOE Environment, Safety, and Health Orders, and the high fixed costs of facility operations. The Department has struggled to maintain effective operations and support for facility research programs, and to complete construction of planned facilities. However, the Department also has been forced to close several research facilities, and to reduce operating time at most of its facilities. For example:

- The Department has proposed to operate all but two of its nuclear physics facilities at less than three-quarters of their optimal operating capacity in FY 1996, with an average of 55 percent, and some as low as 10 - 20 percent;
- DOE neutron and synchrotron facilities are proposed to be operated at an average of 63 percent of their optimal operating capacity in FY 1996, with some facilities as low as 44 percent; and
- Although the average proposed utilization rate for High Energy Physics facilities is relatively high, one of the three large DOE High Energy Physics facilities -- the Alternating Gradient Synchrotron at Brookhaven National Lab -- is proposed to be operated at only 56 percent of its optimal capacity in FY 1996.

**Enhancing Utilization of Facilities.** Through its recent analysis of DOE science facility utilization rates, RMO staff have found that, in many cases, relatively small marginal additional investments could dramatically enhance user access to many DOE facilities. (At least 27 facilities at seven multi-program labs and six single-program research facilities would be eligible for funds through the initiative -- see list of Laboratories, attached). Such investments would provide immediate and tangible benefits to thousands of scientists and could be expected to produce economic and social benefits resulting from environmental, biological, medical, and competitive industrial research, as well as significant scientific advances resulting from fundamental physics research. The following are several examples of potential additional investments and their associated benefits.

- A \$4 million increase above the DOE FY 1996 request of \$14 million would nearly double the operating capacity of the Stanford Synchrotron Radiation Lab (from 58 percent to 100 percent). Such an increase would provide 100 more experiments than the DOE FY 1996 proposal, (150 more than FY 1995); an increase in the facility user base from 950 to 1200 people; significantly enhanced user support and instrumentation; and improved data quality.
- A \$19 million increase over the FY 1996 request of \$56 million for three of the Department's neutron facilities would: (i) double the effective instrument time available to approximately 500 current users; (ii) significantly increase the number of industrial users at each facility; (iii) provide additional staff for user support; and (iv) upgrade 30-year-old instruments to a level that would be competitive with Europe and Japan.
- A \$6 million increase above the DOE FY 1996 request of \$23 million would nearly double the operating time available at the Advanced Light Source -- one of the Department's newest facilities -- from 56 percent to 100 percent of its capacity. Such an increase would also enable facility operators to educate industrial users about ALS capabilities, support instrumentation development, and install additional planned beamlines at the new facility.
- A \$9 million increment to the \$54 million requested for the CEBAF Nuclear Physics facility would increase the facility utilization rate from 74 to 100 percent in FY 1996, and would allow completion of a major detector that is necessary for backlogged experiments. CEBAF will serve about 1,000 university and laboratory users in FY 1996.

**RMO Recommendation.** The RMO recommends that an investment of \$113 million above the FY 1995 enacted budget for DOE science facility operations be proposed as a Presidential Initiative in FY 1996. The Initiative would support recent commitments -- made by the Administration in *Science in the National Interest* and the Gibbons-Panetta memo on R&D priorities -- to make investment in science a top priority. Research conducted at DOE science facilities is clearly consistent with the priority areas of research identified in both policy documents. Such an investment would significantly and immediately increase research time available to thousands of scientists in universities, Federal agencies, and U.S. companies, thereby leveraging both Federally and privately sponsored research, consistent with OSTP's strategy for enhancing the U.S. National science investment.

**Performance Measures.** The Office of Energy Research has developed performance measures through a strategic planning process, which included RMO staff. Such performance measures were identified in the FY 1996 DOE budget request. The Office of Energy Research has also recently developed a customer service plan. RMO staff are satisfied with the overall quality of the Office of Energy Research performance measures, although there is some variation across Energy Research programs; (handout on selected Office of Energy Research performance measures is available for Director's Review). RMO staff intend to continue working with DOE program managers to improve the quality of program performance measures and to ensure that appropriate performance data are included in the Department's FY 1997 budget request.

**OMB Facilities Utilization Study  
DOE Laboratories**

**MULTIPROGRAM LABS**

**ARGONNE (Argonne, IL)**

Argonne Tandem Linear Accelerator System (ATLAS)  
(nuclear physics)

Intense Pulsed Neutron Source (IPNS) (neutron-based  
research)

Electron Microscopy Center (electron microscopy,  
materials science)

GAMMASPHERE Facility (nuclear physics)

**BROOKHAVEN (Brookhaven, NY)**

National Synchrotron Light Source (synchrotron  
radiation)

Alternating Gradient Synchrotron (high energy physics)

High Flux Beam Reactor (neutron-based research)

**LAWRENCE BERKELEY (Berkeley, CA)**

Advanced Light Source (synchrotron radiation  
research)

88 Inch Cyclotron (nuclear physics)

National Center for Electron Microscopy (electron  
microscopy, materials science)

**LAWRENCE LIVERMORE (Livermore, CA)**

National Energy Research Supercomputer Center  
(computing research)

**SANDIA (Albuquerque, NM)**

Combustion Research Facility (industrial combustion  
research)

**LOS ALAMOS (Los Alamos, NM)**

LANSCE (Neutron-based research)

**Facilities Utilization Study  
DOE Laboratories**

**MULTIPROGRAM LABS (CONT'D)**

**OAK RIDGE (Oak Ridge, TN)**

High Flux Isotope Reactor (neutron-based research)

SHaRE; and Surface Modification and Characterization Facility (electron microscopy, materials science)

Oak Ridge Electron Linear Accelerator; EN Tandem Accelerator Facility; and Holifield Radioactive Beam Facility (nuclear physics)

**SINGLE PROGRAM LABS**

**High Energy Physics**

Fermilab Tevatron (Batavia, IL)

Stanford Linear Accelerator Center (Menlo Park, CA)

**Nuclear Physics**

Continuous Electron Beam Accelerator Facility (Newport News, VA)

Bates Linear Accelerator (at MIT, Boston, MA)

**Synchrotron Radiation Research**

Stanford Synchrotron Radiation Laboratory (Located at SLAC, Menlo Park, CA)

**Fusion**

Princeton Plasma Physics Lab (Princeton, NJ)

Alcator C-MOD (at MIT, Boston, MA)

D-III-D (Operated by General Atomics, San Diego, CA)

**DISCRETIONARY ISSUE PAPER #2**  
**DEPARTMENT OF ENERGY**  
(in millions of dollars)

**ISSUE:** Financing Civilian Nuclear Waste Activities.  
**PREPARER/EXT:** S. Goldberg/X54706

|                               | <u>FY 1993</u> | <u>FY1994</u> | <u>FY 1995</u>                |         | <u>FY 1996</u>                |                   |               |                           |
|-------------------------------|----------------|---------------|-------------------------------|---------|-------------------------------|-------------------|---------------|---------------------------|
|                               |                |               | Pres.<br>Request<br>(FY95BUD) | Enacted | Pres.<br>Request<br>(FY95BUD) | Agency<br>Request | PAD<br>Recom. | Recom.<br>less<br>Request |
|                               | <u>Actual</u>  | <u>Actual</u> |                               |         |                               |                   |               |                           |
| <b>Discretionary</b>          |                |               |                               |         |                               |                   |               |                           |
| <b>Nuclear Waste Fund</b>     |                |               |                               |         |                               |                   |               |                           |
| BA/OB.....                    | 283            | 285           | 255                           | 393     | 393                           | 252               | 0             | -252                      |
| OL.....                       | 262            | 284           | 269                           | 339     | 393                           | 322               | 196           | -126                      |
| <b>Defense Waste Disposal</b> |                |               |                               |         |                               |                   |               |                           |
| BA/OB.....                    | 110            | 120           | 130                           | 130     | 130                           | 130               | 200           | +70                       |
| OL.....                       | 105            | 115           | 125                           | 125     | 130                           | 130               | 165           | +35                       |
| <b>Total</b>                  |                |               |                               |         |                               |                   |               |                           |
| BA/OB.....                    | 393            | 405           | 385                           | 523     | 523                           | 382               | 200           | -182                      |
| OL.....                       | 367            | 399           | 394                           | 464     | 523                           | 452               | 361           | -91                       |
| <b>Mandatory</b>              |                |               |                               |         |                               |                   |               |                           |
| BA/OB.....                    | 0              | 0             | 150                           | 0       | 0                             | 248               | 430           | +182                      |
| OL.....                       | 0              | 0             | 75                            | 0       | 0                             | 124               | 215           | +91                       |
| REC.....                      | 450            | 412           | 541                           | 541     | 604                           | 604               | 604           | —                         |

**OPTION 1: PAD Recommendation.** Beginning in FY 1996, finance civilian nuclear waste fund activities by two funding sources: (1) discretionary spending of \$200 million in BA (\$1 billion over 5 years); and (2) mandatory spending of \$430 million in BA (\$2.7 billion over 5 years). The two sources of PAYGO offsets would be: (1) the sale of the U.S. Enrichment Corporation; and (2) extension of the U.S. Nuclear Regulatory Commission user fee.

**OPTION 2: DOE Request.** Beginning in FY 1996, finance civilian nuclear waste fund activities by two funding sources: (1) discretionary spending of \$382 million in BA; and (2) mandatory spending of \$248 million in BA. No PAYGO offsets were identified.

**OPTION 3:** Continue financing the nuclear waste activities by discretionary appropriations.

|                     | <u>FY 1993</u> | <u>FY1994</u> | <u>FY 1995</u>                |         | <u>FY 1996</u>                |                   |               |                           |
|---------------------|----------------|---------------|-------------------------------|---------|-------------------------------|-------------------|---------------|---------------------------|
|                     |                |               | Pres.<br>Request<br>(FY95BUD) | Enacted | Pres.<br>Request<br>(FY95BUD) | Agency<br>Request | PAD<br>Recom. | Recom.<br>less<br>Request |
|                     | <u>Actual</u>  | <u>Actual</u> |                               |         |                               |                   |               |                           |
| Discretionary Total |                |               |                               |         |                               |                   |               |                           |
| BA/OB.....          | 393            | 405           | 385                           | 523     | 523                           | 382               | 630           | +248                      |
| OL.....             | 367            | 399           | 394                           | 464     | 523                           | 452               | 576           | +124                      |

**DESCRIPTION OF ISSUE:** Perhaps the most complex and important issue in this year's DOE budget is nuclear waste disposal. DOE's program to investigate Yucca Mountain at the Nevada Test Site for permanent disposal of high-level waste is based on the Nuclear Waste Policy Act of 1982 and subsequent amendments in 1987. The 1982 Act required DOE to make a country-wide search for possible sites. This approach in the Act was based on the premise that it is possible to have a consensus on the location and need for a geologic repository. The Act also required nuclear customers to pay a millage fee into the Nuclear Waste Fund, which was intended to finance the construction of a waste repository and, if necessary, a monitored retrievable storage facility. The selection process produced regional disputes and, in 1987, Congress amended the Act and limited site investigations to the Yucca Mountain Site in Nevada. This action was bitterly opposed by Nevada and remained one of the root causes of the program's problems.

Last year, the Administration proposed financing civilian nuclear waste activities by both discretionary appropriations and mandatory spending authority. The Administration did not identify PAYGO offsets but informed the Congress it would provide them information on possible savings from the operations of the U.S. Enrichment Corporation (USEC). The Congress rejected the Administration's proposal and, instead, funded the entire program from its discretionary cap.

The Government is obligated to take title to the U.S. utility industry's spent fuel by January 31, 1998. The effort to find a suitable site to store and/or dispose of the waste has proven to be far more complicated and time-consuming than originally envisioned. The result has been that many State authorities believe that their citizens are paying twice (i.e., payment of the millage fee and also payment to their utilities for temporary, onsite storage of spent fuel). This situation has led to the filing of lawsuits by both utilities and various State authorities. They have requested judicial relief as a result of the Government's lack of progress to meet the 1998 obligation. Some of the State commissions have threatened to withhold payment into the fund (annual receipts about \$500 million) and possibly to claim the payments made to date should be refunded (current balance of the Nuclear Waste Fund is about \$4 billion out a total payment of about \$7.5 billion). Both the utilities and State officials have strongly argued that past collections in excess of amounts appropriated have been unfairly used for deficit reduction.

*If further progress is to be made on the nuclear waste program and, in turn, a process is established to minimize the Government's litigation exposure, a stable and adequate funding source needs to be provided. The Congress has announced that it plans to consider legislative changes this coming session. These plans are likely to include Senator Johnston's proposal to take the program "off-budget" as well to collocate interim storage capability with the geologic repository on the Nevada Test Site. The Administration needs to have established its own proposal in time for the next Congress.*

**PERFORMANCE INFORMATION:** During the Summer of 1994, DOE management organized a special team of experts to develop a "performance-based" five-year plan for the Yucca Mountain project in preparation for: (1) the Administration's FY 1996 budget process; (2) response to critics of the management of the project; (3) legislative proposals to change the mission of the project. DOE management invited a representative from OMB to obtain analytical help and insights regarding the budgetary process. A draft five-year plan has been prepared with several attributes: (1) establishment of product areas that link project activities with the project's statutory mission; (2) making bottoms-up budgeting support these product areas; (3) an identification of the areas of highest risk that impact the success of the project; (4) and identification of activities that could be scaled back and eliminated; and (5) a list of budgetary activities that do not directly support the statutory mission but are requirements that implement Agency regulations or are needed to comply with other Federal, State, or local Statutes. DOE management will be using the "performance-based" five year plan as a management tool during the budgetary execution phase to ascertain: (1) how well the project's activities are progressing to meet the metrics specified in the five-year plan; and (2) areas where budgetary efficiencies can be identified and implemented.

**FINANCIAL MANAGEMENT INFORMATION:** DOE Management is overhauling its financial management system to develop consistency between the performance measurements in the five-year plan and any new financial controls that need to be implemented by DOE and its contractors.

**ANALYSIS:**

**Option 1**

- Pro:
1. This will likely be strongly supported by USEC, DOE, commercial utility industry and State regulatory bodies. Industry and State regulatory bodies would particularly support the funding profile over five years.,
  2. *By privatizing USEC, starting in FY 1996, avoids that significant losses that the Government will likely incur as result of USEC continuing as a Government Corporation. These losses occur because USEC has not been successful in maintaining its market share, and because it cannot reduce significantly its operating costs (including closing one of its two enrichment plants) to satisfy the political interests of the Kentucky and Ohio delegations. In FY 1997, USEC gets unlimited borrowing authority under the Energy Policy Act. In contrast, operating as a private entity, the Corporation would be able to compete in the marketplace using sound business principles.*
  3. Greatly increases assurance of adequate funding to characterize Yucca Mountain and provides a potential funding source for interim storage of waste.
  4. Reduces the risk of Congress taking the program off-budget.
  5. Demonstrates to utilities and its customers that the Government is paying its fair share for the disposal of its defense-related waste.
  6. Makes it easier for DOE to meet spending target by reducing discretionary spending for this program.
- Con:
1. Requires an amendment to the BEA, because scoring the asset sale is not permissible under current law.
  2. Will likely be opposed by critics of program, particularly the State of Nevada.
  3. Require significant PAYGO offsets -- \$2.7 billion over five years. The PAYGO offset may be opposed by Senator Ford who wants to maintain USEC as a permanent Government Corporation.

**Option 2**

- Pro:
1. Helps DOE by \$248 million to reach its discretionary spending target.
  2. Reduces to some degree the risk of Congress taking the program "off-budget."
  3. Lower PAYGO requirement than Option 1.

- Con:
1. Does not assuage critics and litigants of the program because the proposal does not provide an adequate and stable long-term funding source both for site characterization and interim storage activity.
  2. Contains no PAYGO offsets; does not qualify as a "real" proposal.
  3. Will likely be opposed by critics of the program because of the appearance, at least for FY 1996, that funding increases by about \$100 million as compared with the FY 1995 enacted level.
  4. Does not address the looming financial problems the Government is likely to have with USEC.
  5. Does not demonstrate to utilities and its customers that the Government is paying its fair share for the disposal of its fair share for the disposal of its defense-related waste.

### Options 3

- Pro:
1. Will not create opposition in Kentucky and Ohio.
  2. No PAYGO offsets required.
- Con:
1. Does not assuage critic and litigants of the program because the proposal does not provide an adequate and stable long-term funding source both for site characterization and interim storage activities.
  2. Will likely be opposed by critics of the program because of the appearance, at least for FY 1996, funding increases by about \$100 million as compared with the FY 1995 enacted level.
  3. Does not address the looming financial problems the Government is likely to have with USEC.
  4. Does not demonstrate to utilities and its customers that the Government is paying its fair share for the disposal of its defense-related waste.
  5. Makes it more difficult for DOE to meet spending target, without additional BA above the planning guidance. Without additional BA above planning guidance, significant cuts in defense, cleanup, and/or science would need to be made.

**RECOMMENDATION:** Option 1. OMB will need to coordinate this policy recommendation with State/National Security Counsel (NSC) and Treasury. Privatization of USEC will need the full support of Treasury on financial considerations and State/NSC to address USEC's current statutory obligations to be the Executive Agent for the purchase of Russian highly enriched uranium. In addition, it will likely take 3-4 months of legislative drafting time to amend both the Nuclear Waste Policy Act and the Energy Policy Act to implement this recommendation. Scoring issues will have to be coordinated with CBO and the Congress. In addition, the Administration will need to work with the Congressional leaders to introduce legislation that reforms DOE's civilian nuclear waste program, its management, and its financing.

NUCLEAR WASTE FUND  
DEPT. OF ENERGY  
(IN MILLIONS OF DOLLARS)

ISSUE: FINANCING CIVILIAN NUCLEAR WASTE ACTIVITIES  
PREPARER/EXT: STEPHEN GOLDBERG/X54706

|                                                        |       | FY 1995                              |         | FY 1996           |               | FY 1997                                     | FY 1998 | FY 1999 | FY 2000 |       |
|--------------------------------------------------------|-------|--------------------------------------|---------|-------------------|---------------|---------------------------------------------|---------|---------|---------|-------|
|                                                        |       | President's<br>Request<br>(FY 95Bud) | Enacted | Agency<br>Request | PAD<br>Recom. | Consistent with FY 1996 PAD Recommendation: |         |         |         | TOTAL |
| TOTAL                                                  |       |                                      |         |                   |               | Recom.                                      | Recom.  | Recom.  | Recom.  |       |
|                                                        | BA    | 535                                  | 522     | 630               | 630           | 706                                         | 724     | 878     | 827     | 3765  |
|                                                        | OL    | 469                                  | 464     | 576               | 576           | 668                                         | 715     | 792     | 776     | 3527  |
|                                                        | PAYGO | 75                                   | —       | 124               | 215           | 468                                         | 615     | 592     | 576     | 2466  |
| DISCRETIONARY                                          |       |                                      |         |                   |               |                                             |         |         |         |       |
| NUCLEAR WASTE FUND                                     |       |                                      |         |                   |               |                                             |         |         |         |       |
|                                                        | BA    | 255                                  | 392     | 252               | —             | —                                           | —       | —       | —       | —     |
|                                                        | OL    | 269                                  | 339     | 322               | 196           | —                                           | —       | —       | —       | 196   |
| DEFENSE WASTE DISPOSAL                                 |       |                                      |         |                   |               |                                             |         |         |         |       |
|                                                        | BA    | 120                                  | 130     | 130               | 200           | 200                                         | 200     | 200     | 200     | 1000  |
|                                                        | OL    | 125                                  | 125     | 130               | 165           | 200                                         | 200     | 200     | 200     | 965   |
| TOTAL                                                  |       |                                      |         |                   |               |                                             |         |         |         |       |
|                                                        | BA    | 385                                  | 522     | 382               | 200           | 200                                         | 200     | 200     | 200     | 1000  |
|                                                        | OL    | 394                                  | 464     | 452               | 361           | 200                                         | 100     | 200     | 200     | 1061  |
|                                                        | REC   | -700                                 | -700    | -700              | -700          | -700                                        | -700    | -700    | -700    | -3500 |
| MANDATORY                                              |       |                                      |         |                   |               |                                             |         |         |         |       |
|                                                        | BA    | 150                                  | —       | 248               | 430           | 506                                         | 524     | 678     | 627     | 2765  |
|                                                        | OL    | 75                                   | —       | 124               | 215           | 468                                         | 615     | 592     | 576     | 2466  |
|                                                        | REC   | -700                                 | -700    | -700              | -700          | -700                                        | -700    | -700    | -700    | -3500 |
|                                                        | PAYGO | 75                                   | —       | 124               | 215           | 468                                         | 615     | 592     | 576     | 2466  |
| PAYGO SOURCE #1: SALE OF THE US ENRICHMENT CORPORATION |       |                                      |         |                   |               |                                             |         |         |         |       |
| SALES NET TREASURY                                     | REC   | —                                    | —       | —                 | -400          | -600                                        | -500    | -80     | —       | -1580 |
| AFFECT ON BASELINE                                     | OL    | —                                    | —       | —                 | 150           | 50                                          | -115    | -145    | -198    | -258  |
| TOTAL USEC                                             | OL    | —                                    | —       | —                 | -250          | -550                                        | -615    | -225    | -198    | -1838 |
| PAYGO SOURCE #2: EXTEND NRC USER FEE                   |       |                                      |         |                   |               |                                             |         |         |         |       |
| CURRENT FEE                                            | REC   | -524                                 | -504    | -504              | -504          | -519                                        | -535    | -184    | -189    |       |
| NEW FEE                                                | REC   | -524                                 | -504    | -504              | -504          | -519                                        | -535    | -551    | -567    |       |
| NET                                                    | REC   | —                                    | —       | —                 | —             | —                                           | —       | -367    | -378    | -745  |
| TOTAL PAYGO OFFSET                                     | OL    | —                                    | —       | —                 | -250          | -550                                        | -615    | -592    | -576    | -2583 |

**DISCRETIONARY ISSUE PAPER #3**  
**DEPARTMENT OF ENERGY**  
(in millions of dollars)

**ISSUE:** Funding for Nuclear Weapons and Other Defense Activities

**PREPARER/EXT:** Bob Civiak / 5-4707

|         | <u>FY 1993</u> | <u>FY 1994</u> | <u>FY 1995</u>   |                | <u>FY 1996</u>   |                   |               |                           |
|---------|----------------|----------------|------------------|----------------|------------------|-------------------|---------------|---------------------------|
|         |                |                | Pres.<br>Request |                | Pres.<br>Request | Agency<br>Request | PAD<br>Recom. | Recom.<br>less<br>Request |
|         | <u>Actual</u>  | <u>Actual</u>  | <u>(FY95BUD)</u> | <u>Enacted</u> | <u>(FY95BUD)</u> | <u>Request</u>    | <u>Recom.</u> | <u>Request</u>            |
| BA..... | 7,117          | 5,556          | 5,216            | 5,079          | 5,392            | 4,978             | 4,799         | -179                      |
| OL..... | 6,673          | 6,272          | 5,319            | 5,222          | 5,338            | 5,009             | 4,883         | -126                      |

**NOTE:** DOE has ceased weapons activities at several facilities and transferred responsibility for those facilities to the environmental management organization. FY 1994 and FY 1995 funding for the facilities retaining programmatic activities in FY 1996 is shown below, adjusted for comparability.

|                                                              |    |       |       |       |       |       |       |      |
|--------------------------------------------------------------|----|-------|-------|-------|-------|-------|-------|------|
| Funding for set of facilities comparable to FY 1996 request. | BA | 4,736 | 4,692 | 4,555 | 4,930 | 4,978 | 4,799 | -179 |
|                                                              | OL | 5,699 | 4,952 | 4,855 | 5,016 | 5,009 | 4,883 | -126 |

**OPTION 1: PAD Recommendation.** Net increase of \$244 M in BA over comparable 1995 activities. Major changes include:

- +\$ 70 M** Increase R&D in support of Stockpile Stewardship -- 10% increase;
- +\$ 50 M** Begin design of a \$1 billion "National Ignition Facility" (NIF) for research in weapons physics, basic science, and energy production;
- +\$ 80 M** Improve management of the enduring weapons stockpile -- 6% increase;

- + \$ 40 M      Begin technology development for tritium production using a linear accelerator;
- + \$ 40 M      Assist Russian efforts in control and accounting for nuclear materials; and
- \$ 30 M      Reduce economic assistance to communities near DOE plants that are undergoing cutbacks.

Funding for Stockpile Stewardship would increase from \$1,464 M in 1995 to \$1,606 M in 1996. This is \$37 M below the DOE request, but fully supports Presidential guidance on Stockpile Stewardship.

**OPTION 2: DOE Request.** Additional increase of \$179 M above the PAD recommendation including:

- + \$ 40 M      Additional funds for NIF and other Stockpile Stewardship activities;
- + \$ 90 M      Additional funds for management of the weapons stockpile; and
- + \$ 30 M      No offset from reduced community assistance.

**OPTION 3: Potential Reduction of \$100 M from PAD Recommendation.**

- \$ 25 M      Score the sale of excess uranium from retired nuclear weapons;
- \$ 40 M      Fund assistance to Russia with Nunn-Lugar funds in DOD budget;
- \$ 35 M      Further reduce economic assistance to communities.

**DESCRIPTION OF ISSUE:** Should funding increase for maintenance and stewardship of the enduring nuclear weapons stockpile and other DOE defense activities? Nuclear weapons account for about 75% of DOE's spending on defense activities. Nonproliferation, intelligence, and security account for 10% and development of reactors for naval vessels accounts for 15%.

**PERFORMANCE INFORMATION:** The nuclear weapons program has put considerable effort into developing goals and performance measures. DOE has used them to reorient the program to the post-Cold War mission. The strategic goal of the Stockpile Stewardship Program is to, "Ensure and achieve public confidence in a safe and reliable stockpile and a credible nuclear deterrent at an affordable cost." The performance measures are mostly qualitative or input oriented and difficult to use in budgeting. An example of a qualitative measure is, "Proven ability to evaluate all stockpile reliability and safety concerns and to provide necessary modifications and repairs within accepted schedule and budgeted cost." This measure is being met, since there has never been a reliability or safety concern with the stockpile that could not be evaluated and corrected. The scientific and technical infrastructure and the production capabilities of the weapons program has been reduced considerably, however, and nuclear testing can no longer be used to diagnose problems and evaluate fixes. It is difficult to determine what level of capabilities must be retained in the future to satisfy the performance measure.

**ANALYSIS:** Funding for nuclear weapons research, development, production, and maintenance has declined by over 50% during the past four years. DOD, NSC, and Members of Congress have criticized Secretary O'Leary for not adequately funding activities called for by President Clinton in a Presidential Decision Directive (PDD). The PDD instructed DOE to establish a Stockpile Stewardship Program, "to maintain a high level of confidence in the safety, reliability and performance of the U.S. nuclear weapons stockpile in the absence of nuclear testing." DOD and NSC have also criticized DOE's performance in maintaining the weapons remaining in the stockpile and for the lack of a plan to produce tritium when current stocks expire.

The DOE request would increase funding for nuclear weapons by about \$350 M (11%) to address these concerns. The request would also increase funding by \$80 M (6%) for other defense activities, primarily in the area of nonproliferation. The PAD recommendation identifies eight reductions, totaling \$179 M, to the DOE request for nuclear weapons and related activities. The reductions (shown in the attached table) would preserve all the essential elements of DOE's strategy to enhance Stockpile Stewardship, improve maintenance of the enduring stockpile, and move toward future tritium production. DOE and NSC are still likely to oppose the PAD recommendation. NSC staff has labeled the DOE request "minimally acceptable".

The PAD recommendation will require an additional increase of over \$300 M between 1996 and 1999 to fund the new projects (primarily NIF and the tritium source) that are initiated in FY 1996. These two projects cannot be accommodated with flat budgets, unless DOE phases out weapons activities at one of the laboratories or closes the Nevada Test Site permanently – both of which are draconian measures.

**RECOMMENDATION:** Option 1.

Secretary O'Leary has indicated she will appeal to the President to get the increase she believes she needs to properly maintain the nuclear weapons stockpile. The PAD recommendation protects all of her highest priorities, but still might not forestall an appeal.

**PAD RECOMMENDATIONS FOR DOE DEFENSE ACTIVITIES**  
(Budget Authority -- Dollars in millions)

|                              | <u>Enacted 1995</u> | <u>1996</u>  | <u>1997</u>  | <u>1998</u>  | <u>1999</u>  | <u>2000</u>  | <u>5-Year Total</u> |
|------------------------------|---------------------|--------------|--------------|--------------|--------------|--------------|---------------------|
| <b>OPTION 2: DOE REQUEST</b> | <b>4,555</b>        | <b>4,978</b> | <b>5,382</b> | <b>5,503</b> | <b>5,673</b> | <b>5,800</b> | <b>27,336</b>       |

**PAD RECOMMENDED REDUCTIONS TO DOE REQUEST**

|                                                                                                                      |             |             |             |             |             |  |              |
|----------------------------------------------------------------------------------------------------------------------|-------------|-------------|-------------|-------------|-------------|--|--------------|
| Increase operating funds for Core Stockpile Mgt. by 3.0% in 1996 vice request of 8.3%. Increases 1.5%/yr after 1996. | -72         | -132        | -154        | -162        | -141        |  | -661         |
| Use prior year balances to offset spending.                                                                          | 0           | -100        | 0           | 0           | 0           |  | -100         |
| Don't build the Contained Firing Facility at Livermore Lab.                                                          | -7          | -27         | -8          | -6          | 0           |  | -48          |
| Slow pace of the NIF project.                                                                                        | -15         | -60         | -50         | -30         | 0           |  | -155         |
| Reduce construction for Stockpile Management.                                                                        | -20         | -20         | -20         | -20         | -20         |  | -100         |
| Reduce funds for Community Economic Development.                                                                     | -30         | -50         | -25         | -25         | -25         |  | -155         |
| Efficiency savings at the Nevada Test Site.                                                                          | -15         | -7          | -7          | -7          | -7          |  | -43          |
| Extend technology development phase of the tritium production strategy from 3 to 4 years.                            | -10         | -50         | -130        | -210        | -400        |  | -800         |
| Other reductions, including outyear freeze on small programs.                                                        | -10         | -42         | -47         | -83         | -102        |  | -284         |
| <b>TOTAL RECOMMENDED REDUCTIONS</b>                                                                                  | <b>-179</b> | <b>-488</b> | <b>-441</b> | <b>-543</b> | <b>-695</b> |  | <b>-2346</b> |

|                                     |              |              |              |              |              |  |               |
|-------------------------------------|--------------|--------------|--------------|--------------|--------------|--|---------------|
| <b>OPTION 1: PAD RECOMMENDATION</b> | <b>4,799</b> | <b>4,894</b> | <b>5,062</b> | <b>5,130</b> | <b>5,105</b> |  | <b>24,990</b> |
|-------------------------------------|--------------|--------------|--------------|--------------|--------------|--|---------------|

**POTENTIAL REDUCTIONS TO PAD RECOMMENDATION**

|                                                                                              |     |     |      |      |      |  |      |
|----------------------------------------------------------------------------------------------|-----|-----|------|------|------|--|------|
| Sell excess enriched uranium from retired nuclear weapons and score revenue.                 | -25 | -75 | -100 | -140 | -150 |  | -490 |
| Fund lab-to-lab assistance to Russia for control of nuclear materials with Nunn-Lugar funds. | -40 | -40 | -40  | -40  | -40  |  | -200 |
| Further reduce Economic Development.                                                         | -35 | -10 | 0    | 0    | 0    |  | -45  |

|                                                   |              |              |              |              |              |  |               |
|---------------------------------------------------|--------------|--------------|--------------|--------------|--------------|--|---------------|
| <b>OPTION 3: REDUCTIONS TO PAD RECOMMENDATION</b> | <b>4,699</b> | <b>4,769</b> | <b>4,922</b> | <b>4,950</b> | <b>4,915</b> |  | <b>24,255</b> |
|---------------------------------------------------|--------------|--------------|--------------|--------------|--------------|--|---------------|

**DISCRETIONARY ISSUE PAPER #4**  
**DEPARTMENT OF ENERGY**  
(in millions of dollars)

**ISSUE:** Full Up Front Funding for Asset Acquisition

**PREPARER/EXT:** Bob Civiak / 5-4707

|                    |    | <u>FY 1996</u> | <u>FY 1997</u> | <u>FY 1998</u> | <u>FY 1999</u> | <u>FY 2000</u> |
|--------------------|----|----------------|----------------|----------------|----------------|----------------|
| DOE Request        | BA | --             | --             | --             | --             | --             |
|                    | OL | --             | --             | --             | --             | --             |
| PAD Recommendation | BA | --             | --             | 3,000          | 3,000          | 3,000          |
|                    | OL | 0              | 0              | 0              | 0              | 0              |

**OPTION 1: PAD Recommendation.** Begin transition to full funding for asset acquisition. Provide approximately \$3 billion/yr starting in 1998 to fully fund engineering and design activities for new projects and construction activities for an increasing portion of projects entering the construction phase and already under construction. A total of \$12-15 billion in BA would be provided through 2002. No increase in outlays.

**OPTION 2:** Current DOE planning guidance. No provision for up front funding of asset acquisition.

**DESCRIPTION OF ISSUE:** Should the Department of Energy be given additional BA to begin a phased transition to full funding for asset acquisition?

DOE has about \$15 billion in unfunded liabilities for construction projects and other major acquisitions that have already begun. A transition to full funding for asset acquisition would require providing DOE additional BA of approximately that amount over a several year period.

**DOE has presented a plan to begin the transition to up front funding in FY 1998, but neither the DOE budget request nor the OMB guidance provides any additional BA. Full funding cannot be achieved without additional BA.**

**ANALYSIS:** The Department of Energy spends about \$2-3 billion per year acquiring fixed assets. DOE incrementally funds the acquisition of all of its assets. This practice is not in conformance with the Budget Enforcement Act (BEA) and may violate the Anti-Deficiency Act. The practice is, however, supported by Congress and the Executive branch and, to our knowledge, has never been challenged. Incremental funding of asset acquisition has:

- o Contributed to seriously deficient planning for virtually all DOE activities;**
- o Produced a bias in favor of initiating asset acquisitions, which in several cases have been abandoned after further review; and**
- o Resulted in regular construction stretchouts and cost overruns.**

**DOE's internal budget planning focuses almost exclusively on the budget year, with no central control or review of outyear budget estimates. DOE's strategic planning process does a good job of adjusting annual budget requests for each of about twenty suborganizations. Except for a few megaprojects, however, the suborganizations largely determine on their own how to divide their budget request between asset acquisitions and current operations. Since incremental funding and limited outyear planning is the norm, DOE suborganizations have a strong incentive to begin projects with low initial-year funds, in the hope that future budget increases will allow continuation of the project without cutting into operating funds. Such "betting on the come" is a common practice in DOE, which produces a significant bias in favor of initiating asset acquisition.**

**As a result, DOE suborganizations and the entire Department routinely face a bow wave of increasing costs for asset acquisition in the outyears. This bow wave is largely ignored in DOE planning. When the outyears arrive and the budget increases needed to fund ongoing construction projects don't materialize, either operating programs must be reduced or construction projects must be stretched out or cancelled. Numerous examples of both results are available.**

**In the Office of Energy Research (which funds basic and applied research in high energy physics, nuclear physics and other areas), the combination of flat overall budgets and increasing construction funding requirements for projects initiated in the late 1980s has resulted in a reduction of operating time at existing particle accelerators and other user**

facilities to as little as 25 percent of their planned capacity. Thus, many facilities that cost billions of dollars to build are being significantly under used.

Some projects that were cancelled after increased funding requirements led to increased attention are shown below, with the amount spent on each before cancellation.

|                                 |               |
|---------------------------------|---------------|
| Superconducting Super Collider  | \$2.5 billion |
| Gas Centrifuge Enrichment Plant | \$3.0 billion |
| New Production Reactor          | \$1.3 billion |
| Clinch River Breeder Reactor    | \$1.7 billion |

The most efficient construction schedule for a large project requires increases in annual spending for several consecutive years. With incremental funding, projects must compete several times for increased funds under fixed caps. There is great temptation for DOE, OMB, and Congress to delay construction schedules to fund competing programs. Such stretchouts can increase the cost of even the best managed projects.

DOE has provided OMB with the outline of a three-year plan to improve the planning and budgeting for the acquisition of fixed assets. The plan includes:

- o Collection of the information required by OMB in Bulletin 94-08 after the FY 1996 budget has been submitted to OMB;
- o Improved cost/benefit analysis and a department-wide priority ranking system for acquisitions beginning with the FY 1997 budget; and
- o Phasing in of full funding for asset acquisition over a four year period beginning with the FY 1998 budget.

If the plan is achieved it could produce a significant improvement in DOE's planning and budgeting for fixed asset acquisition. ESD staff feel that the Department's commitment to the plan is suspect, however. The outline was prepared by the DOE Office of Field Management, rather than by the CFO's office or the Office of Policy and Planning. It has not been endorsed by the Secretary. DOE did not request any additional BA for up front funding. FM has not been a major player in DOE budget activities in the past, and it is not clear that it has the authority to implement the fundamental changes called for in the plan. A more visible commitment from senior policy officials in both OMB and DOE would be

required, if DOE is to move to full funding of asset acquisition.

**Should Additional BA be Provided to DOE for Full Funding of Asset Acquisition**

**Pros**

- o It would allow DOE to come into compliance with the Anti-Deficiency Act, the BEA, and OMB Bulletin 94-08.
- o It would prevent initiating projects with low initial funding and minimal review (Camel's nose under the tent), which can then only be completed or canceled after significant spending has occurred.
- o It would help improve long range planning in DOE, foster priority setting among competing projects, and provide more predictable funding for operating programs.
- o It would reduce cost overruns caused by stretching out construction schedules.

**Cons**

- o Appropriations Committees may resist the change because it reduces the number of States/districts to which construction dollars will go in a given year.
- o Full funding might reduce the oversight and review of large, complex, and costly projects as they proceed.
- o It could introduce spiking problems to the DOE budget, which might result in a new bias against large science and construction projects.
- o Congress might use the BA to fund operating programs rather than construction.

**RECOMMENDATION: Option 1.**

Requiring up front BA for asset acquisition will improve long range planning and priority setting in the Department of Energy and assure that the full cost of a decision to proceed to a succeeding stage of a project is considered when the

**commitment is made.**

**The new funding procedures must be implemented carefully to avoid the potential negative consequences listed above. Funding for major projects should still be requested in at least two steps so commitments are not made to projects before all the information needed for adequate review is available. Normally funding would be approved initially for project design and engineering, which for large projects may take two or more years and represents 10 - 15 percent of the total cost. Funding for actual construction, which would represent most of the remaining cost, would not be requested until additional design information and cost estimates are available. Some projects might be broken up into pieces or phases with additional funding decisions required. The pieces or phases funded initially should, however, make sense on their own for such phasing to occur.**

**Oversight and review of major projects should continue after construction funding is approved. If mission needs and or priorities change, or if projects are being managed poorly, projects could still be cancelled and funds not needed to meet cancellation costs could be rescinded.**

**Separate appropriation accounts should be established for construction and other asset acquisition and strict rules agreed upon with Congress to minimize the potential for diversion of funds from approved construction projects to operating programs. Retention of outlay caps will help in addressing this problem, as operating programs would generally have higher outlay rates.**

PERFORMANCE  
MEASUREMENT

PHOTOCOPY  
RESERVATION

### **3. PERFORMANCE MEASUREMENT**

## DEPARTMENT OF ENERGY PERFORMANCE MEASUREMENT

Department of Energy programs encompass a wide range of activities ranging from maintaining strategic oil reserves and nuclear stockpiles, to conducting basic and applied research, to marketing electricity (and oil and gas) and to cleaning-up radioactive and hazardous waste from weapons production facilities. Although DOE is moving aggressively to develop performance measures in these disparate program areas, the agency is experiencing some difficulties.

Research and programs present measurement problems. Much has been written about measuring the performance of research programs. Developing performance measures for basic research is particularly difficult. These programs, by definition, are aimed at gaining understanding and knowledge and are not targeted toward specific technologies or products. Also, in basic research, experimental failure can actually be a success because it may eliminate certain *a priori* explanations and better focus future research. (For example, failure to find the "top" quark at certain energy levels suggested that the "top" must be massive and must be found with higher and more costly accelerators--although many questioned why finding the sixth quark mattered in the after DOE's Fermi Lab made the apparent discovery last year.) We believe that use of performance measures for basic research is important, but we must be careful not to use them as major determinants for making annual budget decisions.

Maintenance programs. DOE's maintenance programs such as the Strategic Petroleum Reserve (SPR) and the Nuclear Weapons Stockpile programs present unique performance measurement problems. For these programs success may be measured by nothing happening. If there are no nuclear accidents or if SPR oil is not lost in underground salt caverns, these programs may be meeting their objectives. The measure of success is the non-event. For such programs, performance can be measured by adopting military-type readiness measures. Such measures are being developed by DOE for these programs. However, the ultimate measure of program performance is the infrequent event of a successful SPR drawdown or a successful test of a nuclear device.

DOE's efforts to date to develop performance measures are good. Overall, DOE is making a concerted effort to develop meaningful performance measures for all its programs, although some programs are clearly more advanced in this process than others. Programs such as Environmental Management, certain Power Marketing Administrations, and the Nuclear Waste Program have made major progress in developing effective measures of program performance. It remains to be seen, however, how effectively these programs will implement and use the measures to assess program performance and make program changes necessary for improvements.

Other programs in DOE have yet to develop meaningful performance measures or are struggling to develop effective measures. The following descriptions present some of the measures DOE is developing in various program areas. In addition to these brief descriptions additional information is contained in the issue papers of this Director's Review.

### **Examples of Performance Measurement Activities**

**Clean Coal Technology (CCT) Program.** DOE has developed a project management system to plan and track total program and individual project obligations and costs, and is also tracking project outcomes. Project progress has been much slower than expected, while some project sponsors have encountered financial difficulties or failed to find customers for plant products. Several CCT projects have been delayed due to opposition from community or national organizations. Other projects have had technical problems identified in the design stage causing long delays. The ultimate measures of program success are commercial sales volumes and dollars of the technologies demonstrated as a result of the program. The record to date (it may still be too early to tell after eight years into the program), is that only four sales with total value of \$322 million have occurred. We are working with DOE to refine its technology tracking system.

**Environmental Management.** The Environment Management (EM) program has developed a strategic plan with six key objectives:

- Manage and eliminate urgent environmental, safety and health risks and threats in the DOE site and facility system;
- Provide safe workplaces that are free from fatalities and serious accidents and continuously reduces injuries and adverse health effects;
- Change DOE's management system so that it is in control managerially and financially;
- Be more outcome oriented;
- Focus EM's technology development program on DOE's major environmental issues;
- Develop strong partnerships between the DOE and its stakeholders.

As a GPRA pilot, EM recently submitted a FY 1995 Performance Plan which links performance measures to these strategic objectives for each major program area. Examples of performance measures for environmental restoration include the number of

completed characterizations, interim actions, remedial actions and decontamination and decommissioning final actions. Technology development measures include the number of improved technologies demonstrated and transferred to the private sector. The greatest challenge in measuring performance for environmental management is to develop measures of overall program effectiveness. This is difficult in part because there is wide variation in types of waste, degrees of contamination, and compliance objectives among sites. EM will continue to improve the effectiveness of the performance measures, examples of which are shown in the attached exhibit.

**Science Programs.** DOE's Office of Energy Research (OER) has made a major effort to develop a set of performance measures for the High Energy and Nuclear Physics programs, Basic Energy Sciences, Fusion, and Biological and Environmental Research. These measures include such items as the number of cooperative research and development agreements executed, R&D 100 Awards won, number of instruments or components marketed by industry, expected versus actual machine operating time, and peer and advisory committee reviews. The attached charts present selected performance measures for OER. Also, see the issue paper on Increasing Availability of Science Facilities to Users.

**Conservation and Renewable Energy.** These programs cover many different types of activities, and the Department generally designates performance measures for each individual activity. The measures tend to fall into a number of generic categories, including: barrels of oil per day that are replaced by various alternative fuels, tons of carbon emissions reduction achieved per year by technologies the Department helped develop, reduction of toxic or hazardous wastes generated through improved manufacturing efficiency that the agency has funded, kilowatt-hours of electricity generated by DOE-supported renewable energy technologies, number of State and local governments participating in various alternative fuel and Climate Change Action Plan voluntary activities, and the degree of industry adoption of new materials and processes the Department has introduced. However, DOE's written presentation of these measures leaves much to be desired. In many cases, DOE's written materials confuse measures with goals. For example, the primary performance measure for biofuels R&D is, "Produce over 1 million barrels per day of alternative renewable fuels by the year 2010." The Department believes that performance measures should span several time-frames, including near-term activity measures, mid-term results (outputs), and long-term results (outcomes), but very few programs actually include measures that cover all three time-frames, and virtually none present their measurement plans in that three-part framework.

**Power Marketing Administrations (PMAs).** The PMA programs are in many ways similar to private businesses. Their activities are similar to other electric utilities, although, with a few exceptions PMAs only transport and market electricity--they do not produce it. PMA's vary greatly in size, ownership of assets, service areas and statutory responsibilities and consequently their performance measures vary as well. Some PMAs such as Bonneville have done a better job at defining appropriate measures.

Other PMAs have confused output and outcome measures. Some measures are used by all PMAs (except SEPA), such as measures of transmission reliability, net cash flow to Treasury and cumulative debt payments as percent of Federal investment. Although PMAs have had outside audited annual reports for over 20 years, they do not use appropriate financial and other operating performance measures that are used by private utilities. Such measures as interest coverage ratios, revenues as percent of assets, operating expenses as percent of revenues should be used by the PMAs to allow more meaningful comparison of PMA financial results. OMB staff are working with the PMA's to adopt some of these performance measures.

Contract Reform. The DOE began a major management initiative on contract reform in 1993. The objective was to address criticisms of contracting practices which the Department had received from GAO, the IG, Congress and others; and improve accountability, management, and cost-effectiveness of contractor operations. OMB staff participated in the problem identification and analysis phases of contract reform the effort, which culminated in the release of a report to the Secretary last year. The report recommended over 40 action items aimed at changing many of DOE's contracting practices. DOE is currently engaged in implementing many of these recommendations. Many of the action items lend themselves to performance measurement, allowing an unambiguous measure of savings from this commendable DOE effort. DOE is fully committed to implementing task force recommendations, however, the Department has been slow in developing adequate performance measures. The RMO has asked the DOE to develop performance measures as part of the contract reform process.

## ENVIRONMENTAL MANAGEMENT FY1996 PERFORMANCE PLAN

### Strategic Objectives:

- (1) Manage and eliminate urgent risks and threats in system.
- (2) Provide a safe workplace that is free from fatalities and serious accidents and continuously reduces injuries and adverse health effects.
- (3) Change the system so that it is under control managerially and financially.
- (4) Be more outcome oriented.
- (5) Focus the technology development program on DOE's major Environmental Management issues while involving the best talent in DOE and the national science and engineering communities.
- (6) Develop strong partnerships between DOE and its stakeholders.

| Performance Measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Performance Goals                                                                                                                    | Budget               |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|----------------------|
| <b><u>Environmental Restoration</u></b> <ul style="list-style-type: none"> <li>• Completed characterizations and assessments--ROD, Corrective Measure study, Closure plan, D&amp;D plan, Proposed Plan, NEPA document, No Action decision</li> <li>• Completed interim actions and expedited response actions--actions resulting in physical cleanup progress, reduction of exposure to contaminants, containment of a source term, action to restrict access to contaminants.</li> <li>• Completed remedial actions--RCRA closures, RCRA final corrective measures, CERCLA final remedial actions, FUSRAP site completions, UMTRA site completions, complete underground tank programs.</li> <li>• D&amp;D final actions--D&amp;D objectives met and report submitted for final approval.</li> </ul> | <p>Reduce characterization cost and time. Provide return on investment 5:1.</p> <p>100 Interim Actions.</p> <p>20 Final Actions.</p> | <p>\$2.6 billion</p> |

| Performance Measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Performance Goals                                                                                                | Budget                      |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|-----------------------------|
| <p><b><u>Waste Management</u></b></p> <p>Many of the waste management performance measures are site specific given the varying types of waste and degrees of contamination across the complex. Overall performance measures include:</p> <ul style="list-style-type: none"> <li>● Reduction of urgent risks to the public, workers and the environment at DOE sites, including: <ul style="list-style-type: none"> <li>○ potential releases of hazardous materials</li> <li>○ direct exposure to radiation</li> <li>○ risks of mechanical injuries or industrial accidents</li> </ul> </li> <li>● Safe and environmentally compliant storage, treatment and disposal of waste at field sites.</li> <li>● Treatment and disposal capability across the DOE complex, including minimization of waste generated.</li> </ul> | <p>Reduce risks.</p> <p>Achieve and maintain.</p> <p>Achieve significant progress.</p> <p>Increase capacity.</p> | <p><b>\$2.9 billion</b></p> |
| <p><b><u>Technology Development</u></b></p> <ul style="list-style-type: none"> <li>● Number of improved technologies/systems (bench, pilot, full-scale) demonstrated in the following areas: <ul style="list-style-type: none"> <li>○ Contaminant plume containment and remediation</li> <li>○ Mixed waste characterization, treatment and disposal</li> <li>○ High level waste tank remediation</li> <li>○ Landfill stabilization</li> <li>○ Facility transition, decommissioning, and final disposition</li> </ul> </li> </ul>                                                                                                                                                                                                                                                                                         |                                                                                                                  | <p><b>\$357 million</b></p> |

| Performance Measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Performance Goals                                                                                         | Budget        |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|---------------|
| <u><b>Technology Development (cont.)</b></u> <ul style="list-style-type: none"> <li>Number of improved technologies made available for transfer in the above areas.</li> <li>Percent of technology budget directed to the private sector.</li> <li>Cost savings through implementation of new or improved technologies.</li> </ul>                                                                                                                                                      | 5:1 return on investment.                                                                                 |               |
| <u><b>Facility Transition</b></u> <ul style="list-style-type: none"> <li>Number of facilities deactivated.</li> <li>Number of deactivation projects formally defined and baselined. Formally defined means project plan developed and approved and project management plan developed and approved. Baselined projects have established cost estimates, schedules and performance goals against which progress can be monitored.</li> <li>Surveillance and maintenance costs.</li> </ul> | Increase to xx.<br><br>Increase to xx.<br><br>Increase number of projects with S&M reduction goals by xx. | \$1.8 billion |
| <u><b>Compliance and Program Coordination</b></u> <ul style="list-style-type: none"> <li>Conduct appraisals and provide technical assistance and guidance for improved program performance, environmental compliance, and workplace safety and health.</li> <li>DOE transportation safety record.</li> </ul>                                                                                                                                                                            | Conduct 51 appraisals in FY95.<br><br>Improve or maintain.                                                | \$ 78 million |

| Performance Measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Performance Goals                                                                                                                                                                                                                                                                                                                                                                                                                                     | Budget               |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|
| <p><b><u>Analysis, Education and Risk Management</u></b></p> <p><b>Management and Finance:</b></p> <ul style="list-style-type: none"> <li>● Budget dollars managed per FTE.</li> <li>● EM contractor to Federal employee ratio.</li> <li>● EM operations office to Headquarters FTE ratio.</li> <li>● Number or highly qualified engineers, scientists, financial analysts, safety and health experts.</li> <li>● Diversity and staffing of minorities and women.</li> <li>● Productivity savings.</li> <li>● Headquarters supervisor to employee ratio.</li> </ul> <p><b>Integrated Risk Management:</b> Under development.<br/> <b>Analysis and Planning:</b> Under development.<br/> <b>Public Accountability:</b> Under development.</p> | <p>Reduce to below \$2 million per FTE by end of FY95. FY93 level was \$3.3 million.</p> <p>Reduce to 14.1:1 in FY95. FY93 ratio of 21.9:1.</p> <p>Increase to 2.77:1 by end of FY95. 3.5:1 is optimum.</p> <p>Increase FTEs in these areas.</p> <p>Achieve a more diverse workforce. Recent hiring percentages are 44% female and 24% minority.</p> <p>Achieve \$299.7 million in savings in FY95.</p> <p>Increase and reduce management layers.</p> | <p>\$157 million</p> |

| Performance Measures                                                                                                                                                                                                         | Performance Goals | Budget |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|--------|
| <p><b><u>Crosscutting Measures:</u></b></p> <ul style="list-style-type: none"> <li>● Productivity/Efficiency</li> <li>● Risk Reduction/Safety and Health</li> <li>● Customer Satisfaction/Stakeholder Involvement</li> </ul> |                   |        |

### SELECTED PERFORMANCE MEASURES: OFFICE OF ENERGY RESEARCH

| SELECTED SUBPROGRAMS                                      | PROGRAM GOALS                                                                                                                                                                                                       | STRATEGIES                                                                                                                                                                                                                                                                                                                                                                                                             | SELECTED PERFORMANCE MEASURES                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-----------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| High Energy Physics (\$674M)/<br>Nuclear Physics (\$298M) | Provide insight into the nature of energy and matter at the nuclear and sub-nuclear levels.                                                                                                                         | <p>Operate accelerator laboratories and support research to meet the needs of laboratory and university scientists.</p> <p>Efficiently and safely construct facility upgrades</p>                                                                                                                                                                                                                                      | <ul style="list-style-type: none"> <li>- Effective facility operations, as measured by ratio of expected to actual operating time and other specific performance parameters. Quality of science, as measured by: peer reviews, annual lab reviews, and advisory committees, and number of awards received by HEP-supported researchers. Facility user satisfaction, as measured (qualitatively) by input obtained by DOE management at regularly held user group meetings.</li> <li>- Achievement of cost and schedule milestones, design and performance specifications, and compliance with ES&amp;H standards, as measured by evaluations of major construction projects and ES&amp;H lab reviews, (each held semi-annually).</li> </ul>                                                                                                                                                                                                                                                                                                                            |
| Basic Energy Sciences (\$747M)                            | Conduct basic research through grant support of scientists and operation of research facilities for materials and chemical sciences, engineering and geosciences, energy biosciences, and advanced energy concepts. | <p>Develop new technologies that advance science research capabilities and reduce facility costs.</p> <p>Construct and operate facilities in a cost-effective, safe, and environmentally responsible manner.</p> <p>Provide technologies that benefit the U.S. economy.</p> <p>Improve linkage between DOE researchers and DOE and other Federal energy, national security, and environmental technology programs.</p> | <ul style="list-style-type: none"> <li>- Number of new BES-developed instruments and instrument components marketed by industry; total facility operations costs avoided through the application of new technologies at research facilities.</li> <li>- Fulfillment of schedule and cost milestones and ES&amp;H requirements in constructing facilities, as measured by periodic reviews; cost of DOE facility operations benchmarked against Federal and international facilities; number of facility users; number of repeat facility users.</li> <li>- Number of CRADAs and R&amp;D 100 awards; number of collaborations with industry and small businesses.</li> <li>- Number of research partnerships with other DOE Offices on DOE-wide initiatives and specific research areas, (e.g., high temperature corrosion, photovoltaics, and actinide chemistry); number of partnerships with other agencies and collaborations established through university-industrial joint research program (e.g., basic research needs for the automobile industry).</li> </ul> |

| SELECTED SUBPROGRAMS                           | PROGRAM GOALS                                                                                                    | STRATEGIES                                                                                                                                                                                                                                                                                                                                                                  | SELECTED PERFORMANCE MEASURES                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|------------------------------------------------|------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Biological and Environmental Research (\$433M) | Explore long-term health and environmental effects of energy use.                                                | <p>Ensure high quality and relevance of research products through competitive peer review.</p> <p>Fully utilize BES facilities; support diverse customer groups; enhance DOE researcher interactions with industry; and fully exploit DOE computational infrastructure for DOE and other Federal global climate change, environmental, and structural biology research.</p> | <p>- Results of: ad hoc panels, letter reviews, site visits to lab and academic programs, advisory committee reviews, and outside reviews by the DOE Office of Programs Analysis, NAS/NRC, and JASON review committees.</p> <p>- Utilization rates of DOE-operated BES facilities by BER researchers; number of CRADAs and interactions with industry groups and growth of start-up companies using BER technologies and data bases; number and diversity of research institutions using DOE resources through interagency programs such as Atmospheric Radiation Measurement Program, Human Genome Program, and the Carbon Dioxide Information Analysis Center; (specific measures include response rates to requests for products and services, information dissemination rates, and number and profile of users of DOE computational resources).</p> |
| Magnetic Fusion Energy (\$362M)                | Lead international efforts to develop fusion as a clean, inexhaustible fuel source available for commercial use. | <p>Achieve sustained burn of a deuterium-tritium plasma.</p> <p>Identify concepts and operating modes to improve fusion power plant designs.</p>                                                                                                                                                                                                                            | <p>- Demonstration of plasma self-heating in the Tokamak Fusion Test Reactor; (long-term goal: achieve ignition and sustained burn in ITER).</p> <p>- Number of concepts that warrant development of a medium-scale experiment (goal is at least one); successful demonstration of advanced concepts for a demonstration reactor in Tokamak Physics Experiment.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Applied Mathematical Sciences (\$109M)         | Administer DOE High Performance Computing program; support DOE computer technology needs.                        | <p>Enhance state-of-the-art of DOE computational science and increase supply of appropriately trained U.S. computational scientists.</p> <p>Ensure researcher satisfaction with HPCC infrastructure.</p> <p>Enhance effectiveness of DOE researcher-industry interactions.</p>                                                                                              | <p>- Number of researchers supported in specific computing areas; results of user reviews of software tools and computational techniques; number of graduate students and post-docs supported; number of users of DOE services, and number of high school students and teachers reached by program educational outreach.</p> <p>- Proportion of computing research resource requests fulfilled; fraction of computer storage requests fulfilled; supply of bandwidth to computing network sites; review of program's internet service that supports DOE.</p> <p>- Number of cooperative projects undertaken; reviews of project effectiveness by industrial partners; fraction of high quality proposals that can be funded.</p>                                                                                                                        |

FINANCIAL  
MANAGEMENT

PHOTOCOPY  
PRESERVATION

## **4. FINANCIAL MANAGEMENT**

# FINANCIAL MANAGEMENT DOE's PRIORITY EFFORT

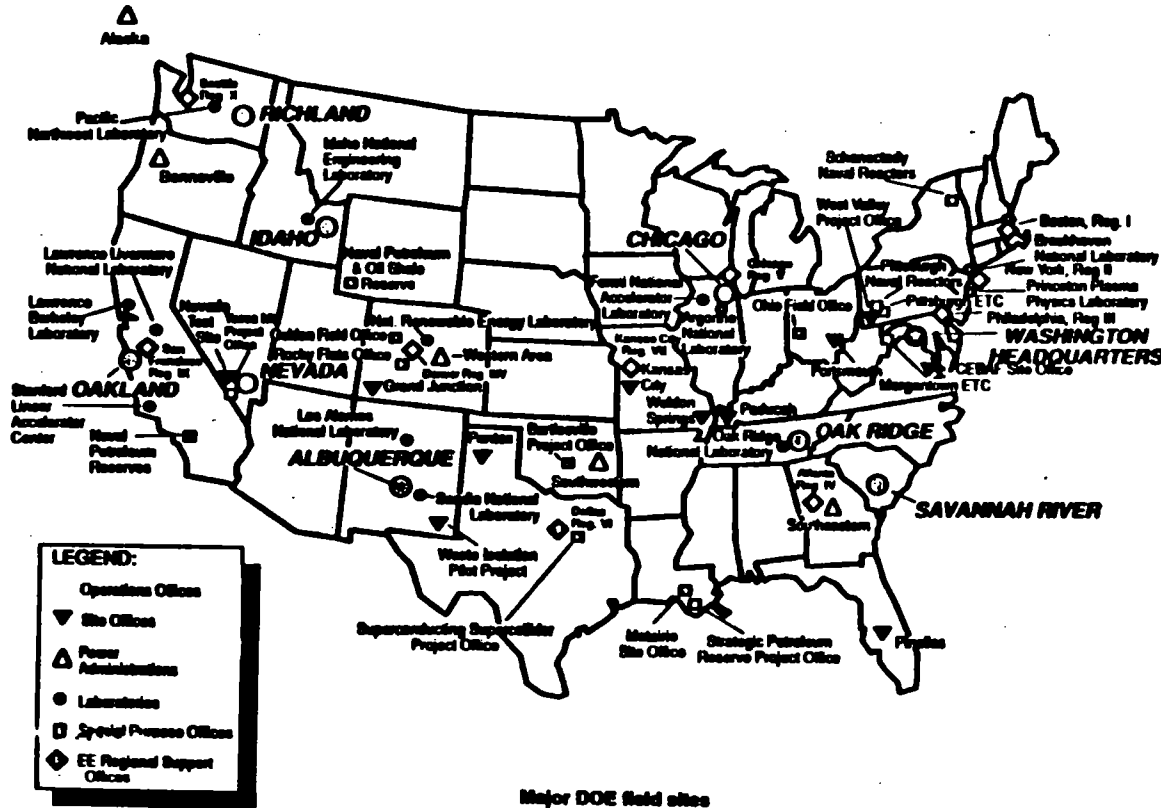
DOE is making good progress in improving financial management. The Department's most important effort involves improving the financial management systems of its management & operating contractors to increase accountability, and to control and reduce costs.

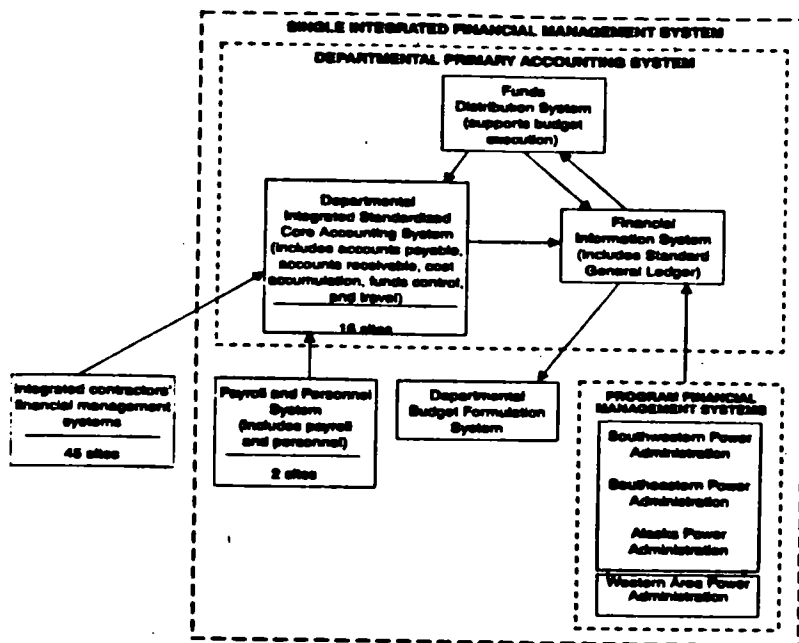
DOE has:

Established a Financial Management Improvement Council with contractor and DOE representatives.

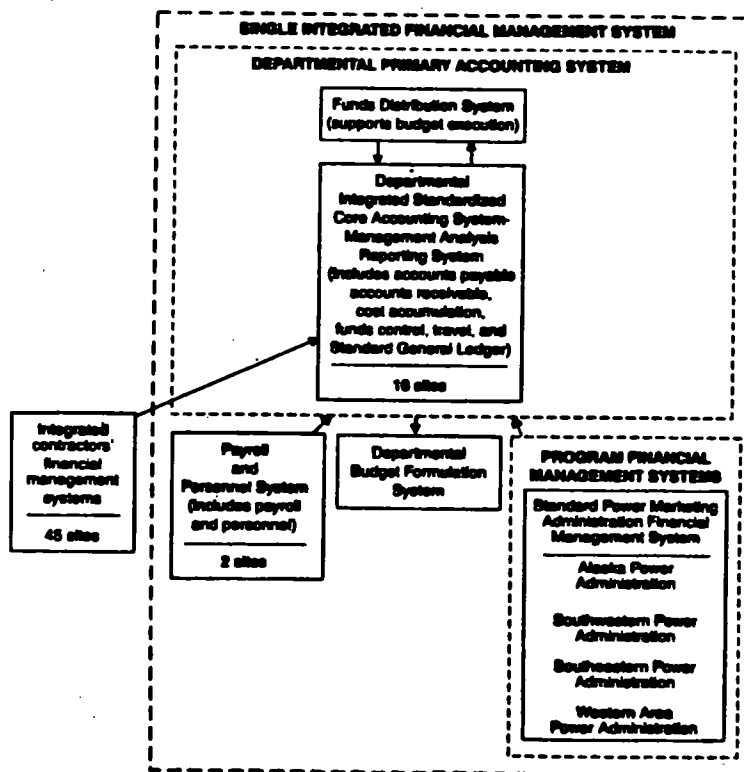
Set as a goal, achieving identical accounting recognition and treatment of costs, and attaining greater levels of standardization across contractor systems.

Is performing contractor-to-contractor productivity comparisons aimed at efficiency and reducing costs.





Schematic of DOE baseline systems



Single Integrated Financial Management System, FY

## FINANCIAL SYSTEMS DOE's PRIORITY EFFORTS

- Overall, DOE is making good progress in improving its financial systems. DOE's priority efforts include:
- Replacement of their Financial Information System (which includes the Standard General Ledger) of the Primary Accounting System with a new Management Analysis Reporting System. Provides: increased automated reporting, and flexibility to respond to OMB and Treasury data requests.
- Integrate the new Management Analysis Reporting System with Core Accounting System in order to share data.
- Standardize and consolidate the Financial Systems of the Power Marketing Administrations (excluding Bonneville).
- Improve the Financial Systems of the Integrated Management & Operating Contractors based on best practices to reduce costs.

**REPORT ON FINANCIAL MANAGEMENT SYSTEMS**  
**DEPARTMENT OF ENERGY (excluding the Bonneville Power Admin.)**

|                            | Budget Authority (\$ thousands) |                 |                 |                 | Total System FTE |                 |                 |                 |
|----------------------------|---------------------------------|-----------------|-----------------|-----------------|------------------|-----------------|-----------------|-----------------|
|                            | FY94<br>Actual                  | FY95<br>Request | FY95<br>CY Est. | FY96<br>Request | FY94<br>Actual   | FY95<br>Request | FY95<br>CY Est. | FY96<br>Request |
| Dept. Primary Acct. System | 9,065                           | 9,931           | 9,748           | 9,827           | 53               | 54              | 67              | 72              |
| Dept. Budget Form. System  | 155                             | 155             | 180             | 180             | 1                | 1               | 1               | 1               |
| Payroll & Personnel System | 172                             | 126             | 144             | 126             | 3                | 3               | 3               | 3               |
|                            | -----                           | -----           | -----           | -----           | -----            | -----           | -----           | -----           |
| Non-PMA Total              | 9,392                           | 10,212          | 10,072          | 10,133          | 57               | 58              | 71              | 76              |
| Change from FY95 Request   | -8.0%                           | ---             | -1.4%           | -0.6%           | -1.7%            | ---             | 22.4%           | 31.0%           |
| SWPA FMS                   | 600                             | 585             | 739             | 737             | 2                | 1               | 2               | 1               |
| WAPA FMS                   | 3,153                           | 2,029           | 3,731           | 3,742           | 15               | 15              | 19              | 17              |
|                            | -----                           | -----           | -----           | -----           | -----            | -----           | -----           | -----           |
| PMA Total                  | 3,753                           | 2,614           | 4,470           | 4,479           | 17               | 16              | 21              | 18              |
| Change from FY95 Request   | 43.6%                           | ---             | 71.0%           | 71.3%           | 6.3%             | ---             | 31.3%           | 12.5%           |
| DOE Total                  | 13,145                          | 12,826          | 14,542          | 14,612          | 74               | 74              | 92              | 94              |
| Change from FY95 Request   | 2.5%                            | ---             | 13.4%           | 13.9%           | 0.0%             | ---             | 24.3%           | 27.0%           |

## We are working with DOE on the following issues:

- Audited financial statements:

Inspector General FTE and funding of audit functions

- Establishment of reporting systems to track savings associated with major management initiatives:

DOE and Contractor Streamlining  
GPRA Pilots  
Contract & Procurement Reform  
Indirect Cost Reduction

- Requesting funds to reduce or eliminate the audit backlog for non-M&O contracts and subcontracts. (Discussing about \$1 million for FY96.)

- Ensuring contractor accountability:

Improve Asset Management  
Indirect Costs

Table 5. DOE FY 1993 financial statements and audits

| Entity                                                                  | Type of Opinion                             | Material Weaknesses/<br>Noncompliances |           |           |           |
|-------------------------------------------------------------------------|---------------------------------------------|----------------------------------------|-----------|-----------|-----------|
|                                                                         |                                             | Identified                             | Corrected | Open      |           |
|                                                                         |                                             | 1992                                   | 1993      | 1993      | Open      |
| Alaska Power Administration                                             | Unqualified                                 | 0                                      | 0         | 0         | 0         |
| Federal Columbia River Power System—<br>Bonneville Power Administration | Unqualified                                 | 0                                      | 0         | 0         | 0         |
| Southeastern Federal Power Program                                      | Unqualified                                 | 0                                      | 0         | 0         | 0         |
| Southwestern Federal Power System                                       | Unqualified                                 | 3                                      | 0         | 0         | 3         |
| Western Area Power Administration                                       | Unqualified                                 | 0                                      | 0         | 0         | 0         |
| Isotope Production and Distribution<br>Program                          | Unqualified                                 | 6                                      | 1         | 1         | 6         |
| Low Level Radioactive Waste Surcharge<br>Escrow Account                 | Unqualified                                 | 0                                      | 0         | 0         | 0         |
| Naval Petroleum and Oil Shale<br>Reserves                               | Unqualified                                 | 0                                      | 0         | 0         | 0         |
| Nuclear Waste Fund                                                      | Unqualified                                 | 0                                      | 0         | 0         | 0         |
| Uranium Enrichment Activity                                             | Unqualified                                 | 0                                      | 0         | 0         | 0         |
| Federal Energy Regulatory<br>Commission                                 | Unqualified;<br>Balance sheet<br>Disclaimer | 12                                     | 2         | 11        | 3         |
| <b>Total</b>                                                            |                                             | <b>21</b>                              | <b>3</b>  | <b>12</b> | <b>12</b> |

**PHOTOCOPY  
PRESERVATION**

**HIGH RISK AREAS**

## **5. HIGH RISK AREAS**

# DEPARTMENT OF ENERGY

| High Risk Area                                                                                                                                                                                                                                                                                                                                                                                                             | Progress to Date and Next Steps                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Assessment <sup>1</sup> |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|
| <p><b>Environmental management:</b> DOE faces large and complex environmental cleanup and waste management problems at many of its facilities.</p> <p>1995 budget includes \$6.1B for environmental restoration and waste management activities. <i>At risk:</i> potential long-term adverse impact to workers, the public or the environment; and failure to comply with environmental regulations and/or agreements.</p> | <p>The Environmental Management (EM) program has developed a strategic plan with six key objectives: (1) manage and eliminate urgent risks and threats in DOE system; (2) provide safe workplace that is free from fatalities and serious accidents and continuously reduces injuries and adverse health effects; (3) change system so that it is in control managerially and financially; (4) be more outcome oriented; (5) focus the technology development program on DOE's major environmental issues involving the best talent in DOE and the national science and engineering communities; (6) develop strong partnerships between DOE and its stakeholders. As a GPRA pilot, EM recently submitted a FY1995 Performance Plan which links performance measures to these strategic objectives. One key aspect of the pilot program is the addition of 1200 FTEs through contractor conversion. 850 of these FTEs were allocated to field offices in order to strengthen EM's capability in managing contractors. Hiring should be completed by spring of 1995. DOE has established a Site Specific Advisory board comprised of groups at each major facility. Stakeholders and regulators are taking a more active role than ever before in working with DOE to identify priorities at sites and evaluate budget issues.</p> <p><b>Next steps:</b> EM will continue to finetune performance measures focused on achieving outcomes. Performance measure information will be used to monitor improvement of program operations and achievement of strategic objectives. EM will continue to work with regulators at certain sites to negotiate realistic schedules that reflect risk-based priorities.</p> | 2                       |

<sup>1</sup>Assessment Codes: 1 – Significant progress. 2 – Active efforts underway to improve progress. 3 – Reservations about adequacy of progress and/or plan; A – Added to the High Risk List. D1 – Deleted: has been corrected. D2 – Deleted: no longer sufficiently serious to warrant the "high risk" designation and receiving appropriate attention at the agency. D3 – Deleted: does not belong on a list of agency operational problems.

|                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |    |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| <p><b><i>Nuclear safety:</i></b> Safety deficiencies exist at some DOE nuclear facilities.</p> <p>1995 budget includes \$2.1B to address health and safety risks (both nuclear and non-nuclear). <i>At risk:</i> protection of DOE workers, the public and the environment.</p>                   | <p>The Agency is committed to develop performance measures and monitoring system.</p> <p><b><i>Next steps:</i></b> OMB plans to meet with DOE in December to develop milestones to be achieved within six months. After these milestones have been identified and agreed to, OMB plans to transition this area to a material weakness and delete it from the High Risk List.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | D2 |
| <p><b><i>Nuclear waste storage and disposal:</i></b> Nuclear waste storage and disposal capability is inadequate.</p> <p>1995 budget includes \$522M for these program areas. <i>At risk:</i> long-term storage and disposal of nuclear waste generated by Federal and commercial facilities.</p> | <p>During the summer of 1994, DOE management organized a special team of experts to develop a "performance-based" 5-year plan. OMB participated in this effort to provide an analytical perspective on management issues facing the program as well as budgetary requirements. This effort has resulted in: (1) establishment of product areas that link project activities with the project's statutory mission; (2) establishment of "bottoms-up" budgeting to support these product areas; (3) an identification of critical areas that impact the success of the project; and (4) an identification of activities that could be scaled back or eliminated. DOE management is currently updating its financial management system to develop consistency with performance measurements in the 5-year plan.</p> <p><b><i>Next steps:</i></b> OMB plans to transition this area to a policy issue, deleting it from the High Risk List. Progress will continue to be tracked through the Major Initiatives Status Report.</p> | D2 |

|                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |          |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| <p><b>Contract/project management:</b><br/>Weaknesses exist in contract and project management for contractor operated DOE facilities.</p> <p>1995 budget includes \$16B for DOE contracting. <i>At risk:</i> assurance that contract funds are being spent efficiently and effectively.</p> | <p>The joint DOE/OMB Contract Reform Team issued its report in February 1994 with 48 recommendations to improve DOE's contracting practices. The report included specific plans for introducing well-defined performance measures, increasing accountability of contractors, improving financial management, increasing the use of fixed-price contracts, and expanding incentives for cost savings. DOE has established a high level executive committee and a Contract Reform Project Office to direct implementation of contract reform and remove the barriers to progress. Action items have been established for implementing all but one of the recommendations and action has been completed on about half of these items. In July 1994, a \$4.8 billion contract was awarded to Lockheed to operate the Idaho National Engineering Laboratory. This is the first major DOE contract to incorporate contract reform initiatives.</p> <p><b>Next steps:</b> Over the next year, DOE will continue progress on action items to implement contract reform, disseminate lessons learned to contracting officials, develop systems to identify and measure progress and benefits from contract reform, incorporate reform-related provisions into existing contracts, and compete six major contracts values at over \$18.6 billion.</p> | <p>2</p> |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|

PHOTOCOPY  
PRESERVATION

## **6. SUMMARY OF PAD LEVEL DECISIONS NOT COVERED IN ISSUE PAPERS**

SUMMARY OF PAD LEVEL DECISIONS NOT COVERED IN ISSUE PAPERS  
DEPARTMENT OF ENERGY  
(in millions of dollars)

|                            |    | <u>FY 1993</u> | <u>FY 1994</u> | <u>FY 1995</u>                       |         | <u>FY 1996</u>                       |                   |               |                           |
|----------------------------|----|----------------|----------------|--------------------------------------|---------|--------------------------------------|-------------------|---------------|---------------------------|
|                            |    |                |                | President's<br>Request<br>(FY 95Bud) | Enacted | President's<br>Request<br>(FY 95Bud) | Agency<br>Request | PAD<br>Recom. | Recom.<br>less<br>Request |
| <b>Discretionary:</b>      |    | <u>Actual</u>  | <u>Actual</u>  |                                      |         |                                      |                   |               |                           |
| Clean Coal Technology..... | BA | ---            | 225            | 37                                   | 37      | 74                                   | 100               | 80            | -20                       |
|                            | OL | 118            | 230            | 288                                  | 288     | 325                                  | 450               | 358           | -92                       |
| Explanation/Comments:      |    |                |                |                                      |         |                                      |                   |               |                           |

Combined with balances already available, the recommended BA provides adequate funds for DOE to keep its contractual commitments for 45 on-going demonstration projects. Based on project progress, DOE's estimate of outlays was found to be overly optimistic, and was revised downward to reflect more realistic expectations.

|                        |    |     |     |     |     |     |     |     |     |
|------------------------|----|-----|-----|-----|-----|-----|-----|-----|-----|
| Fossil Energy R&D..... | BA | 414 | 431 | 469 | 443 | 483 | 447 | 431 | -16 |
|                        | OL | 433 | 426 | 443 | 432 | 467 | 442 | 435 | -7  |

Explanation/Comments:

Reduces lower priority oil and gas-related research by about \$36 million, using \$20 million to increase coal R&D. On a comparable basis gas funding is up 12 percent, oil funding is up 2 percent, and coal funding is down 12 percent from the FY 95 enacted level.

|                                    |    |     |     |     |     |     |     |     |     |
|------------------------------------|----|-----|-----|-----|-----|-----|-----|-----|-----|
| Power Marketing Administration.... | BA | 391 | 352 | 324 | 280 | 379 | 389 | 353 | -36 |
|                                    | OL | 385 | 365 | 325 | 305 | 320 | 323 | 301 | -22 |

Explanation/Comments:

Assumes the use of prior year balances to finance FY 1996 programs. Also reflects decreased Western Area Power Administration construction activity and purchased power expenses.

|                         |    |     |     |     |     |     |     |     |     |
|-------------------------|----|-----|-----|-----|-----|-----|-----|-----|-----|
| Uranium Enrichment..... | BA | --- | --- | --- | --- | --- | --- | -45 | -45 |
|                         | OL | --- | --- | --- | --- | --- | --- | -45 | -45 |

Explanation/Comments:

PAD recommends a legislative proposal to establish a decontamination and decommissioning fee and fund for foreign entities who purchase uranium enrichment services from the U.S. Government. This fee will be analogous to the fee paid by domestic utilities who purchase such uranium enrichment services.

|                                         |           | <u>FY 1993</u> | <u>FY 1994</u> | <u>FY 1995</u>                                |                | <u>FY 1996</u>                                |                           |                       |                                    |
|-----------------------------------------|-----------|----------------|----------------|-----------------------------------------------|----------------|-----------------------------------------------|---------------------------|-----------------------|------------------------------------|
|                                         |           | <u>Actual</u>  | <u>Actual</u>  | <u>President's<br/>Request<br/>(FY 95Bud)</u> | <u>Enacted</u> | <u>President's<br/>Request<br/>(FY 95Bud)</u> | <u>Agency<br/>Request</u> | <u>PAD<br/>Recom.</u> | <u>Recom.<br/>less<br/>Request</u> |
| <b>Tokamak Physics Experiment.....</b>  | <b>BA</b> | 335            | 329            | 373                                           | 373            | 373                                           | 368                       | 368                   | ---                                |
| <b>(Magnetic Fusion Energy Program)</b> | <b>OL</b> | 329            | 331            | 349                                           | 349            | 350                                           | 364                       | 364                   | ---                                |

**Explanation/Comments:**

Delays construction of the Tokamak Physics Experiment by one year, pending results of planned programmatic reviews. Provides Department's full funding request for fusion in FY 1996, but redirects funds to other areas of the program. No construction line item for the project will be requested in FY 1996.

|                                     |           |    |    |    |    |    |     |    |    |
|-------------------------------------|-----------|----|----|----|----|----|-----|----|----|
| <b>Advanced Neutron Source.....</b> | <b>BA</b> | 12 | 16 | 40 | 21 | 89 | --- | 10 | 10 |
|                                     | <b>OL</b> | 5  | 12 | 27 | 16 | 51 | 11  | 16 | 5  |

**Explanation/Comments:**

Provides no construction funding for the Advanced Neutron Source in FY 1996, consistent with Department's FY 1996 request. Provides \$10 million to redirect the project. Department has been asked to reexamine other technological options for building a world-class neutron source. Department will consider options such as a spallation source, or a dual-use facility that could be used for tritium production at Oak Ridge National Lab.

|                            |           |     |     |     |     |     |     |     |     |
|----------------------------|-----------|-----|-----|-----|-----|-----|-----|-----|-----|
| <b>Energy Conservation</b> | <b>BA</b> | 561 | 673 | 961 | 776 | 983 | 903 | 903 | --- |
|                            | <b>OL</b> | 515 | 586 | 743 | 687 | 925 | 808 | 808 | --- |

**Explanation/Comments:**

Program is funded at the request level, although passback may include recommendations of some funding shifts within the total that would place more emphasis on Federal alternative-fuel vehicles and Federal facility energy efficiency.

|                                  |           |      |      |      |      |      |      |      |      |
|----------------------------------|-----------|------|------|------|------|------|------|------|------|
| <b>Total, Discretionary.....</b> | <b>BA</b> | 1713 | 2026 | 2204 | 1930 | 2008 | 2207 | 2100 | -107 |
|                                  | <b>OL</b> | 1785 | 1950 | 2175 | 2077 | 2438 | 2398 | 2237 | -161 |

RELATED SMALL  
AGENCIES

PHOTOCOPY  
PRESERVATION

## **7. RELATED SMALL AGENCIES**

**DISCRETIONARY AGENCY SUMMARY FOR RELATED SMALL AGENCIES**  
**DEFENSE NUCLEAR FACILITIES SAFETY BOARD**  
(In millions of dollars)

|                                                           | <u>FY 1993</u> |           | <u>FY 1994</u> |           | <u>FY 1995</u> |           | <u>FY 1996</u> |            |
|-----------------------------------------------------------|----------------|-----------|----------------|-----------|----------------|-----------|----------------|------------|
|                                                           | <u>BA</u>      | <u>OL</u> | <u>BA</u>      | <u>OL</u> | <u>BA</u>      | <u>OL</u> | <u>BA</u>      | <u>OL</u>  |
| <b>FY 1993 Actual/FY 1994 Actual/FY 1995 Enacted.....</b> | <b>13</b>      | <b>14</b> | <b>17</b>      | <b>15</b> | <b>18</b>      | <b>17</b> | <b>N/A</b>     | <b>N/A</b> |
| <b>April 21st Planning Guidance.....</b>                  |                |           | <b>17</b>      | <b>15</b> | <b>18</b>      | <b>17</b> | <b>18</b>      | <b>18</b>  |
| <b>FY 1996 Agency Request.....</b>                        |                |           |                |           |                |           | <b>18</b>      | <b>19</b>  |
| <b>FY 1996 RMO Recommended Level.....</b>                 |                |           |                |           |                |           | <b>18</b>      | <b>19</b>  |
| <b>Percentage Change from:</b>                            |                |           |                |           |                |           |                |            |
| <b>FY 1993 Actual.....</b>                                |                |           |                |           |                |           | <b>28</b>      | <b>28</b>  |
| <b>FY 1994 Actual.....</b>                                |                |           |                |           |                |           | <b>6</b>       | <b>21</b>  |
| <b>FY 1995 Enacted.....</b>                               |                |           |                |           |                |           | <b>—</b>       | <b>11</b>  |
| <b>April 21st Planning Guidance.....</b>                  |                |           |                |           |                |           | <b>—</b>       | <b>5</b>   |
| <b>Agency Request.....</b>                                |                |           |                |           |                |           | <b>—</b>       | <b>—</b>   |

**DISCRETIONARY AGENCY SUMMARY FOR RELATED SMALL AGENCIES**  
**NUCLEAR REGULATORY COMMISSION**  
(In millions of dollars)

|                                                           | <u>FY 1993</u> |           | <u>FY 1994</u> |           | <u>FY 1995</u> |           | <u>FY 1996</u> |             |
|-----------------------------------------------------------|----------------|-----------|----------------|-----------|----------------|-----------|----------------|-------------|
|                                                           | <u>BA</u>      | <u>OL</u> | <u>BA</u>      | <u>OL</u> | <u>BA</u>      | <u>OL</u> | <u>BA</u>      | <u>OL</u>   |
| <b>FY 1993 Actual/FY 1994 Actual/FY 1995 Enacted.....</b> | <b>22</b>      | <b>52</b> | <b>22</b>      | <b>7</b>  | <b>22</b>      | <b>24</b> | <b>N/A</b>     | <b>N/A</b>  |
| <b>April 21st Planning Guidance.....</b>                  |                |           | <b>9</b>       | <b>-1</b> | <b>22</b>      | <b>7</b>  | <b>21</b>      | <b>22</b>   |
| <b>FY 1996 Agency Request.....</b>                        |                |           |                |           |                |           | <b>72</b>      | <b>72</b>   |
| <b>FY 1996 RMO Recommended Level.....</b>                 |                |           |                |           |                |           | <b>22</b>      | <b>22</b>   |
| <b>Percentage Change from:</b>                            |                |           |                |           |                |           |                |             |
| <b>FY 1993 Actual.....</b>                                |                |           |                |           |                |           | <b>--</b>      | <b>-136</b> |
| <b>FY 1994 Actual.....</b>                                |                |           |                |           |                |           | <b>--</b>      | <b>68</b>   |
| <b>FY 1995 Enacted.....</b>                               |                |           |                |           |                |           | <b>--</b>      | <b>-9</b>   |
| <b>April 21st Planning Guidance.....</b>                  |                |           |                |           |                |           | <b>5</b>       | <b>--</b>   |
| <b>Agency Request.....</b>                                |                |           |                |           |                |           | <b>227</b>     | <b>227</b>  |

**DISCRETIONARY AGENCY SUMMARY FOR RELATED SMALL AGENCIES**  
**NUCLEAR WASTE TECHNICAL REVIEW BOARD**  
(In millions of dollars)

|                                                           | <u>FY 1993</u> |           | <u>FY 1994</u> |           | <u>FY 1995</u> |           | <u>FY 1996</u> |            |
|-----------------------------------------------------------|----------------|-----------|----------------|-----------|----------------|-----------|----------------|------------|
|                                                           | <u>BA</u>      | <u>OL</u> | <u>BA</u>      | <u>OL</u> | <u>BA</u>      | <u>OL</u> | <u>BA</u>      | <u>OL</u>  |
| <b>FY 1993 Actual/FY 1994 Actual/FY 1995 Enacted.....</b> | <b>2</b>       | <b>3</b>  | <b>2</b>       | <b>3</b>  | <b>3</b>       | <b>3</b>  | <b>N/A</b>     | <b>N/A</b> |
| <b>April 21st Planning Guidance.....</b>                  |                |           | <b>2</b>       | <b>2</b>  | <b>3</b>       | <b>3</b>  | <b>3</b>       | <b>3</b>   |
| <b>FY 1996 Agency Request.....</b>                        |                |           |                |           |                |           | <b>3</b>       | <b>3</b>   |
| <b>FY 1996 RMO Recommended Level.....</b>                 |                |           |                |           |                |           | <b>3</b>       | <b>3</b>   |
| <b>Percentage Change from:</b>                            |                |           |                |           |                |           |                |            |
| <b>FY 1993 Actual.....</b>                                |                |           |                |           |                |           | <b>33</b>      | <b>—</b>   |
| <b>FY 1994 Actual.....</b>                                |                |           |                |           |                |           | <b>33</b>      | <b>—</b>   |
| <b>FY 1995 Enacted.....</b>                               |                |           |                |           |                |           | <b>—</b>       | <b>—</b>   |
| <b>April 21st Planning Guidance.....</b>                  |                |           |                |           |                |           | <b>—</b>       | <b>—</b>   |
| <b>Agency Request.....</b>                                |                |           |                |           |                |           | <b>—</b>       | <b>—</b>   |

**DISCRETIONARY AGENCY SUMMARY FOR RELATED SMALL AGENCIES**  
**OFFICE OF THE NUCLEAR WASTE NEGOTIATOR**  
(In millions of dollars)

|                                                           | <u>FY 1993</u> |           | <u>FY 1994</u> |           | <u>FY 1995</u> |           | <u>FY 1996</u> |             |
|-----------------------------------------------------------|----------------|-----------|----------------|-----------|----------------|-----------|----------------|-------------|
|                                                           | <u>BA</u>      | <u>OL</u> | <u>BA</u>      | <u>OL</u> | <u>BA</u>      | <u>OL</u> | <u>BA</u>      | <u>OL</u>   |
| <b>FY 1993 Actual/FY 1994 Actual/FY 1995 Enacted.....</b> | <b>1</b>       | <b>2</b>  | <b>1</b>       | <b>2</b>  | <b>1</b>       | <b>1</b>  | <b>N/A</b>     | <b>N/A</b>  |
| <b>April 21st Planning Guidance.....</b>                  |                |           | <b>1</b>       | <b>2</b>  | <b>1</b>       | <b>1</b>  | <b>—</b>       | <b>—</b>    |
| <b>FY 1996 Agency Request.....</b>                        |                |           |                |           |                |           | <b>1</b>       | <b>1</b>    |
| <b>FY 1996 RMO Recommended Level.....</b>                 |                |           |                |           |                |           | <b>—</b>       | <b>—</b>    |
| <b>Percentage Change from:</b>                            |                |           |                |           |                |           |                |             |
| <b>FY 1993 Actual.....</b>                                |                |           |                |           |                |           | <b>-100</b>    | <b>-200</b> |
| <b>FY 1994 Actual.....</b>                                |                |           |                |           |                |           | <b>-100</b>    | <b>-200</b> |
| <b>FY 1995 Enacted.....</b>                               |                |           |                |           |                |           | <b>-100</b>    | <b>-100</b> |
| <b>April 21st Planning Guidance.....</b>                  |                |           |                |           |                |           | <b>—</b>       | <b>—</b>    |
| <b>Agency Request.....</b>                                |                |           |                |           |                |           | <b>-100</b>    | <b>-100</b> |

**DISCRETIONARY AGENCY SUMMARY FOR RELATED SMALL AGENCIES**  
**TENNESSEE VALLEY AUTHORITY**  
(in millions of dollars)

|                                                           | <u>FY 1993</u> |            | <u>FY 1994</u> |            | <u>FY 1995</u> |            | <u>FY 1996</u> |            |
|-----------------------------------------------------------|----------------|------------|----------------|------------|----------------|------------|----------------|------------|
|                                                           | <u>BA</u>      | <u>OL</u>  | <u>BA</u>      | <u>OL</u>  | <u>BA</u>      | <u>OL</u>  | <u>BA</u>      | <u>OL</u>  |
| <b>FY 1993 Actual/FY 1994 Actual/FY 1995 Enacted.....</b> | <b>135</b>     | <b>143</b> | <b>140</b>     | <b>139</b> | <b>143</b>     | <b>135</b> | <b>N/A</b>     | <b>N/A</b> |
| <b>April 21st Planning Guidance.....</b>                  |                |            | <b>140</b>     | <b>139</b> | <b>140</b>     | <b>133</b> | <b>140</b>     | <b>133</b> |
| <b>FY 1996 Agency Request.....</b>                        |                |            |                |            |                |            | <b>188</b>     | <b>180</b> |
| <b>FY 1996 RMO Recommended Level.....</b>                 |                |            |                |            |                |            | <b>140</b>     | <b>133</b> |
| <b>Percentage Change from:</b>                            |                |            |                |            |                |            |                |            |
| <b>FY 1993 Actual.....</b>                                |                |            |                |            |                |            | <b>4</b>       | <b>-8</b>  |
| <b>FY 1994 Actual.....</b>                                |                |            |                |            |                |            | <b>—</b>       | <b>-5</b>  |
| <b>FY 1995 Enacted.....</b>                               |                |            |                |            |                |            | <b>-2</b>      | <b>-2</b>  |
| <b>April 21st Planning Guidance.....</b>                  |                |            |                |            |                |            | <b>—</b>       | <b>—</b>   |
| <b>Agency Request.....</b>                                |                |            |                |            |                |            | <b>-34</b>     | <b>-35</b> |

## **8. MANDATORY PROGRAMS**

**MANDATORY BASELINE  
DEPARTMENT OF ENERGY**  
(in millions of dollars)

|                                                    |           | <u>FY 1995</u>        | <u>FY 1996</u>        | <u>FY 1997</u>        | <u>FY 1998</u>        | <u>FY 1999</u>        | <u>FY 2000</u>      |
|----------------------------------------------------|-----------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|---------------------|
| <b>Mandatory:</b>                                  |           |                       |                       |                       |                       |                       |                     |
| Bonneville Power Admin.                            | OL        | 130                   | 196                   | 255                   | 247                   | 184                   | ---                 |
| Naval Petroleum Res.                               | OL        | -411                  | -418                  | -427                  | -406                  | -375                  | ---                 |
| Nuclear Waste Fund                                 |           |                       |                       |                       |                       |                       |                     |
| Receipts                                           | OL        | -541                  | -604                  | -606                  | -606                  | -607                  | ---                 |
| Interest                                           | OL        | -321                  | -344                  | -381                  | -415                  | -447                  | ---                 |
| Tnsfr. Fm. US Enrich. Corp.                        | OL        | ---                   | ---                   | ---                   | ---                   | ---                   | ---                 |
| Power Marketing Admin.                             | OL        | -842                  | -908                  | -965                  | -1019                 | -989                  | ---                 |
| Uran . Enrch. D&D Fund                             |           |                       |                       |                       |                       |                       |                     |
| Interest                                           | OL        | -12                   | -15                   | -24                   | -33                   | -43                   | ---                 |
| Adv. For Coop. Work                                | OL        | -12                   | -1                    | ---                   | ---                   | ---                   | ---                 |
| Adv. For Coop. Work                                | OL        | 12                    | 1                     | ---                   | ---                   | ---                   | ---                 |
| Payments To States                                 | OL        | 2                     | 2                     | 2                     | 2                     | 2                     | ---                 |
| DOE Subtotal                                       | OL        | -1995                 | -2091                 | -2146                 | -2230                 | -2275                 | ---                 |
| US Enrichment Corp.<br>(Revised Baseline)          | OL        | -204                  | -150                  | -50                   | 115                   | 165                   | ---                 |
| Tennessee Valley Authority                         | OL        | 500                   | 533                   | 601                   | 649                   | 375                   | ---                 |
| US Nuc. Reg. Com. Fees<br>(Discretionary Baseline) | OL        | ---                   | ---                   | ---                   | ---                   | ---                   | ---                 |
| <b>Total, Mandatory.....</b>                       | <b>OL</b> | <b>-----</b><br>-1699 | <b>-----</b><br>-1708 | <b>-----</b><br>-1595 | <b>-----</b><br>-1466 | <b>-----</b><br>-1735 | <b>-----</b><br>--- |

**SUMMARY OF MANDATORY PROGRAMS**  
**DEPARTMENT OF ENERGY**  
(in millions of dollars)

|                                                                                                                                                                                                                                                                                                                                                        |    | FY 1995                              |         | FY 1996           |               | FY 1997                                     | FY 1998 | FY 1999 | FY 2000 |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|--------------------------------------|---------|-------------------|---------------|---------------------------------------------|---------|---------|---------|
|                                                                                                                                                                                                                                                                                                                                                        |    | President's<br>Request<br>(FY 95Bud) | Enacted | Agency<br>Request | PAD<br>Recom. | Consistent with FY 1996 PAD Recommendation: |         |         |         |
|                                                                                                                                                                                                                                                                                                                                                        |    |                                      |         |                   |               | Recom.                                      | Recom.  | Recom.  | Recom.  |
| <b>Mandatory:</b>                                                                                                                                                                                                                                                                                                                                      |    |                                      |         |                   |               |                                             |         |         |         |
| Bonneville Power Admin.                                                                                                                                                                                                                                                                                                                                | BA | 155                                  | 86      | -200              | -200          | -150                                        | 140     | 67      | 113     |
|                                                                                                                                                                                                                                                                                                                                                        | OL | 130                                  | 78      | -200              | -200          | -150                                        | 140     | 67      | 113     |
| An option under discussion is for BPA to provide \$14 million for the funding of Mitchell Act Hatcheries. Under this option the hatcheries would be managed by the NMFS in consultation with the BPA. Also includes \$10 million for a research and tagging program to develop essential information about salmon behavior and survival in the oceans. |    |                                      |         |                   |               |                                             |         |         |         |
| Naval Petroleum Res.                                                                                                                                                                                                                                                                                                                                   | OL | -411                                 | -411    | -461              | -461          | -498                                        | -488    | -463    | -439    |
| Based on continued Federal ownership of the Naval Oil Shale Reserves.                                                                                                                                                                                                                                                                                  |    |                                      |         |                   |               |                                             |         |         |         |
| Nuclear Waste Fund<br>(Receipts and Interest)                                                                                                                                                                                                                                                                                                          | OL | -862                                 | -843    | -948              | -948          | -987                                        | -1021   | -1054   | -1089   |
| Nuclear Waste Fund                                                                                                                                                                                                                                                                                                                                     | OL | 74                                   | ---     | 124               | 215           | 468                                         | 609     | 611     | 595     |
| Uran. Enrch. D&D Fund<br>(Interest)                                                                                                                                                                                                                                                                                                                    | OL | -12                                  | -12     | -15               | -15           | -24                                         | -33     | -43     | -53     |
| USEC Tnsfr. to Nuc. Wste.                                                                                                                                                                                                                                                                                                                              | OL | -74                                  | ---     | ---               | ---           | ---                                         | ---     | ---     | ---     |
| FY 1996 policy assumes there is no transfer from the USEC.                                                                                                                                                                                                                                                                                             |    |                                      |         |                   |               |                                             |         |         |         |
| Power Marketing Admin.                                                                                                                                                                                                                                                                                                                                 | OL | -843                                 | -842    | -908              | -900          | -940                                        | -972    | -934    | -942    |
| Adv. for Coop. Work                                                                                                                                                                                                                                                                                                                                    | OL | -12                                  | -12     | ---               | ---           | ---                                         | ---     | ---     | ---     |
| Adv. for Coop. Work                                                                                                                                                                                                                                                                                                                                    | OL | 12                                   | 12      | ---               | ---           | ---                                         | ---     | ---     | ---     |
| Payment to States                                                                                                                                                                                                                                                                                                                                      | OL | 2                                    | 2       | 2                 | 2             | 2                                           | 2       | 2       | 2       |
| Climate Change Act. Plan                                                                                                                                                                                                                                                                                                                               | OL | ---                                  | ---     | ---               | ---           | ---                                         | ---     | -160    | -160    |
| Under this proposal Treasury receives a share of the revenues generated by private investment at Federal hydro facilities.                                                                                                                                                                                                                             |    |                                      |         |                   |               |                                             |         |         |         |
| DOE Subtotal                                                                                                                                                                                                                                                                                                                                           | BA | 155                                  | 86      | -200              | -200          | -150                                        | 140     | 67      | 113     |
|                                                                                                                                                                                                                                                                                                                                                        | OL | -1995                                | -2028   | -2406             | -2307         | -2129                                       | -1763   | -1974   | -1973   |

|                                                            |    | FY 1995                              |         | FY 1996           |               | FY 1997                                     | FY 1998 | FY 1999 | FY 2000 |
|------------------------------------------------------------|----|--------------------------------------|---------|-------------------|---------------|---------------------------------------------|---------|---------|---------|
|                                                            |    | President's<br>Request<br>(FY 95Bud) | Enacted | Agency<br>Request | PAD<br>Recom. | Consistent with FY 1996 PAD Recommendation: |         |         |         |
|                                                            |    |                                      |         |                   |               | Recom.                                      | Recom.  | Recom.  | Recom.  |
| US Enrichment Corp.                                        | OL | -117                                 | -84     | ---               | -400          | -600                                        | -500    | -80     | ---     |
| Recommends privatization of the US Enrichment Corporation. |    |                                      |         |                   |               |                                             |         |         |         |
| Tennessee Valley Authority                                 | OL | 935                                  | 935     | 521               | 521           | 529                                         | 542     | 670     | 646     |
| US Nuc. Reg. Com. Fees                                     | OL | ---                                  | ---     | ---               | ---           | ---                                         | ---     | -367    | -378    |
|                                                            |    | -----                                | -----   | -----             | -----         | -----                                       | -----   | -----   | -----   |
| <b>Total, Mandatory.....</b>                               | BA | 155                                  | 86      | -200              | -200          | -150                                        | 140     | 67      | 113     |
|                                                            | OL | -1177                                | -1177   | -1885             | -2186         | -2200                                       | -1721   | -1751   | -1705   |

**POTENTIAL REDUCTIONS  
TO MANDATORY PROGRAM RECOMMENDATIONS  
DEPARTMENT OF ENERGY  
(in millions of dollars)**

| Proposal                               | FY 1996   |           | FY 1997   |           | FY 1998   |           | FY 1999   |           | FY 2000   |           |
|----------------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
|                                        | <u>BA</u> | <u>OL</u> | <u>BA</u> | <u>OL</u> | <u>BA</u> | <u>OL</u> | <u>BA</u> | <u>OL</u> | <u>BA</u> | <u>OL</u> |
| <b>Proposal -- Sell Elk Hills.....</b> | -1000     | -1000     | -35       | -35       | -20       | -20       | -80       | -80       |           |           |

The Administration could propose selling Elk Hills: the large oil field the Department operates -- with contractor support -- near Bakersfield, CA. The Elk Hills field is a commercial business. Selling this asset is consistent with the Administration's emphasis on limiting governmental activities to appropriate programs. Cash from the asset sale might be used to finance acquisition of other assets, such as Strategic Petroleum Reserve oil. The net present value gained would be about \$500 million. The major drawback of such a sale would be a loss of about \$300 million in annual net receipts. (This is also a potential scorekeeping problem.) The BEA would have to be amended to permit such a sale.

MANDATORY PROGRAMS

PHOTOCOPY  
PRESERVATION

**ADDITIONAL MATERIALS FOR THE  
DEPARTMENT OF ENERGY  
BUDGET REVIEW**

**DEPARTMENT OF ENERGY**  
**Selected Performance Achievements or Goals**

**Energy Programs**

- **Conservation R&D and Renewable Energy R&D.** Many recent improvements in building technologies -- CFC-free insulation, certain advanced windows, and the use of energy models by architectural engineers -- have been supported by DOE. Program support for advances in industrial process efficiency has induced a number of companies to change the way they make electronic components, reducing toxic wastes from cleaning processes. The electric vehicle (EV) battery program has succeeded in supporting development of batteries that meet most of the automakers' goals for the first generation of mass-produced EVs, except for cost, and progress has been significant enough that GM has signed an agreement to help finance a commercial production facility for one of the new battery technologies. One-quarter to one-third of all Industrial R&D 100 awards have gone to projects in energy efficiency and renewable energy programs (see further discussion of R&D 100 awards, below).
- **Strategic Petroleum Reserve (SPR).** SPR provides the U.S. with protection from interruption of oil supplies. Currently the Reserve holds about 580 million barrels of crude oil. Although the removal of oil price and allocation controls in 1981 greatly improved the ability of oil markets to respond to oil supply interruptions, the SPR continues to afford the U.S. (and world-wide oil users) protection from price spikes resulting from oil supply interruptions. The SPR is also a valuable foreign policy tool. The first emergency drawdown of the SPR occurred in January 1991, during the Persian Gulf War. The day after the SPR drawdown was announced oil prices dropped \$12 per barrel. While this price drop is largely attributable to U.S. military successes, the SPR equipment and drawdown procedures worked well and as designed.

- **Clean Coal Technology Program (CCT)**. CCT has been appropriated \$2,259 billion since the program's inception in FY 1987. A total of \$2,747 billion has been advanced appropriated. Only four sales (totaling \$322 million) of the technologies being demonstrated by the program have occurred to date. Of 45 on-going projects, only six have been completed. The largest (\$200 million for the Pure Air flue gas desulfurization process) of these was developed by Mitsubishi Heavy Industries. In 1992, DOE forecasted that 19 projects should have been completed at this time. One of the disappointing results of the program is that very few of the CCT-demonstrated technologies have been adopted under phase I implementation of the Clean Air Act. We hope for better results in phase II and for export markets.
- **Petroleum R&D**. DOE's oil R&D program seeks to stimulate domestic oil production through technical innovation. The program's benefit is measured by the additional domestic oil produced compared with what would have occurred without the program. Both OMB and the National Research Council believe as much as 40 percent of DOE's efforts, mostly in demonstration of existing technologies, would be achieved by industry without Government assistance. In previous reviews of the adoption of oil recovery technologies, oil prices and tax policy were found to be more important than technology advances in the short run. DOE has been more successful in stimulating long-term R&D for enabling technologies (whose impact on oil production is difficult to measure), such as mudpulse telemetry for measurement while drilling and strain measurement in core samples. However, some prior studies done by ESD on Fossil R&D successes suggest that program claims are overstated and that benefits are less than the \$650 million spent by DOE on oil R&D over the last 15 years.
- **Grants to Households to "Weatherize" Homes**. DOE estimates that roughly 28 million homes would be eligible for Weatherization Assistance Program (WAP) assistance; of these, about 4.4 million have been retrofitted so far (through 1994). The average size of participating households is about 3 people. In FY 1993, about 97,000 homes were weatherized; the FY 1996 request will weatherize about 116,000 homes. The most current data available on the programmatic benefit/cost ratio is based on a FY 1989 study. The program is significantly more cost-effective in the colder regions of the country than it is in the warmer regions. (The program-level benefit/cost ratio for FY 1989 was 0.6 in hot regions vs. 1.3 in cold regions, and 1.15 in moderate climate regions.) DOE is currently preparing revised allocation formulas that will direct a larger part of the funding toward the southern (warmer) part of the country in response to Congressional pressure and concerns for social equity. This will reduce the program's benefit/cost ratio; depending on how that formula works out, it may reduce the national average benefit/cost ratio to less than 1.

- **Federal Energy Regulatory Commission (FERC).** DOE's regulatory arm (Federal Energy Regulatory Commission) is making very significant changes in the way it regulates the \$200 billion-per-year electric power industry. Expected effects from this important regulatory reform: greater incentives for efficiency, cost-cutting and technological innovation in the private utility sector. Indicators of the size of the change: industry stockmarket prices fell one-third this past year for companies caught with so-called "stranded investment" (i.e. high-cost plants that made sense in a regulated but not in a deregulated environment). These electricity market reforms parallel similar pro-competition reforms in the natural gas markets (Order 636). There is bi-partisan support for promoting competition in these markets. DOE is also promoting these goals in its National Energy Policy Plan, now being developed, to be published next spring.
- **Nuclear Energy R&D.** About 20 percent of Nuclear Energy R&D is focused on support for the commercial nuclear industry (about \$100 million out of \$388 million). The commercial nuclear industry views this portion of DOE's R&D program very positively. The focus of this 50/50 cost-shared program is to make certified, standardized reactors available at the earliest possible date to ensure that nuclear power is an option for contributing to future electric capacity. The remaining 80 percent of DOE's R&D budget contributes to: DOE's international accomplishments (international nuclear safety assistance); DOE's nonproliferation and clean-up efforts ( at Argonne); and the safe shutdown of the EBR-II reactor in Idaho.

### **Science and Technology**

- **High Energy and Nuclear Physics: Discovering basic constituents of matter.** DOE High Energy and Nuclear Physics Programs are internationally recognized for conducting world-class research, and have produced numerous Nobel Prizes and breakthrough discoveries. For example, recent data on the "top" quark obtained at Fermilab has made a major contribution to the world physics community. (Quarks are believed to be the most fundamental constituents of matter.) Since the discovery of the "bottom" quark in 1977, physicists have sought evidence for the existence of its "partner" -- the "top" quark. The "top" is the only one of the six quarks believed to exist that has not been confirmed by experimental observation. However, experiments conducted at Fermilab have provided the first direct evidence that the top quark actually exists. Understanding the mass spectrum of elementary particles is one of the outstanding problems in physics today.

- **Fusion program achieves world record in fusion energy production.** The most recent experiment at the Princeton Plasma Physics Laboratory produced 9 million watts of fusion energy -- a new world record for fusion energy production, and a large success for the program. The power produced in U.S. fusion experiments has increased by a factor of over a million during the past fifteen years.
- **Discoveries and Advances at DOE User Facilities.** Discoveries and accomplishments at DOE user facilities include the development of non-invasive techniques that could lead to widespread screening of patients at risk of heart disease; research that led to a \$1 billion IBM investment in a new process for manufacturing electronic integrated circuits; and discovery of a new form of pure carbon ("buckyballs") that has already led to advances in superconductivity, optics, electronics, catalysis, and polymer chemistry.
- **Nobel Prizes.** There are currently ten Nobel Laureates working at Department of Energy Laboratories. Twenty-three scientists have won Nobel Prizes for research performed at Department of Energy Laboratories (some of these two populations overlap). In fact, just two weeks ago, Cliff Shull was awarded the Nobel Prize in physics for neutron scattering research he conducted at Oak Ridge National Laboratory in the late 1940s.
- **R&D 100 Awards.** *R&D 100* Magazine issues 100 awards annually honoring innovation in industrial research and highlights projects receiving awards in its October issue. In the 32 years since the awards have been granted, DOE leads all Federal agencies with a total of 352 winners, or nearly 60 percent of Federal awards. About one-third of the awards have been granted in the last three years. The Department of Energy received 28 R&D 100 Awards in 1994, six of which were given to researchers within the Office of Energy Research.

### **Defense Programs**

- **Nuclear weapons and nuclear reactors for the Navy.** Over 6,500 nuclear warheads have been disassembled without incident since 1991. Another 5,000+ warheads are scheduled for dismantlement through 1997. Nuclear reactors designed by DOE have allowed U.S. Naval vessels to travel more than 100 million miles during the past 40 years, without a single nuclear accident. Russia has lost three submarines to nuclear accidents and has had several other significant accidents. Total radioactivity releases from 121 nuclear ships in 1993 were less than the single best performing commercial nuclear power plants in the United States.

- **Weapons Complex restructuring.** DOE achieved major consolidation of the nuclear weapons complex without significant loss of capability to maintain the safety and reliability of the stockpile. It closed three production sites for non-nuclear components completely; ceased plutonium operations at Rocky Flats; reduced the size of uranium manufacturing facilities at Y-12 by two-thirds; suspended nuclear weapons testing; and consolidated, suspended, or terminated over 150 facilities and activities at the three weapons laboratories.
- **Defense spinoff technologies.** The NOVA facility (Livermore, CA) -- forerunner to the National Ignition Facility - won Popular Science's "Best of What's New in 1994" award for the development of a wideband radar. DOE has had inquiries regarding this technology from 500 companies in the areas of health care, transportation, security, and construction. DOE has also entered into 400 CRADA's with private industry in the defense programs.

## **Environment**

- **Environmental Restoration and Waste Management.** In the last two years the Environmental Management program has demonstrated progress in working to increase efficiency and effectiveness of the Program. Through FY 1994, the program has: (1) achieved over 88 percent of milestones in agreements with States and EPA, completed 30 remedial actions (20 percent of total); 70 assessment/characterization projects (35 percent of total); over 5,000 of 6,000 total interim/removal actions; and 10 D&D projects (10 percent of total); (2) demonstrated accomplishments in the waste management program through successfully using a mixing pump at Hanford, WA to reduce the risk of hydrogen release from an underground storage tank containing high-level waste and working with state governments to develop site treatment plans for mixed waste under the Federal Facilities Compliance Act; (3) completed remediation of the Arid Land Ecology Reserve and North Slope areas (46 percent of Hanford site), making this land available for transfer from DOE for other uses; (4) identified \$287 million in productivity savings for FY 1995 linked to an increase of FTEs. Since 1989, DOE has spent over \$24 billion on this program, and future liabilities will likely cost hundreds of billions of dollars. There is no information available to quantify the benefit to human health or reduction in risk resulting from the investment to date.
- **Nuclear Waste (Yucca Mountain).** This program is attempting to determine the suitability of a site to store and/or dispose of commercial nuclear waste. It has proven to be time consuming and complicated. Early this year, lawsuits by the utilities and State regulatory bodies were filed against DOE. In addition, outside groups have criticized the internal management of the program. In response, DOE management addressed these concerns by: (1) reorganizing the office increase "hands-on" positions at the Yucca Mountain site by 43 percent and less headquarters management control positions; (2) reducing the number of contractors and layers of contractors

performing the work at the site; (3) initiating an outside financial management review of the program; and (4) focusing the program to meet near-term milestones. During most of the Summer of 1994, OMB staff participated in the development of a "performance-based" five-year plan and companion budget at DOE's Yucca Mountain project office. This effort has proven to be very successful; the project has been completely "benchmarked" with firm milestones and supporting budgetary data. These milestones include: (1) a technical site suitability decision on the site by 1998; (2) a site recommendation report to the President by 2001; and (3) a license application to construct the repository by 2004.

### **Other Programs**

- **Power Marketing Administrations (PMAs)**. The PMAs market about 5 percent of the power generated in the United States (about 133 billion kilowatt hours of electricity) annually. They are run as businesses and they market this Federal power over nearly 33,000 miles of transmission lines in 34 states across the southeast, midwest and west. Wholesale prices average between less than 2 cents/kilowatthour for one PMA to about 3 cents/kilowatthour for two others, far lower than the national average for investor-owned utilities of about 6.8 cents/kilowatthour. PMAs serve about 1,200 wholesale customers in their service areas.
- **Contract Management**. DOE initiated a major review of its contracting procedures. An internal Task Force recommended over 48 recommendations. DOE is in the process of implementing these recommendations. In July, 1994, a \$4.8 billion contract was awarded to Lockheed to operate the Idaho National Engineering Laboratory. This is the first major DOE contract to incorporate contract reform initiatives. DOE has not yet developed performance measures assessing the effectiveness of the contract reform effort.
- **More Openness**. DOE has implemented a broad declassification initiative, which included the release of previously secret information on historical releases of radiation to the environment; human and animal radiation experimentation; nuclear weapons tests; and stockpiles of plutonium and highly enriched uranium. In addition, the role of stakeholders and other members of the public in DOE decision making has been greatly expanded.