NUREG-1100
VOLUME-15

BUDGET ESTIMATES AND PERFORMANCE PLAN FISCAL YEAR 2000

February 1999
U.S. Nuclear Regulatory Commission

B/1

NUREG-1100
VOLUME-15

BUDGET ESTIMATES AND PERFORMANCE PLAN FISCAL YEAR 2000

February 1999
U.S. Nuclear Regulatory Commission

SUMMARY OF CONTENTS

BUDGET SUMMARY

1

FY 2000 BUDGET SUMMARY

(Dollar amounts in tables represent thousands of dollars ($K). In text, whole dollar amounts are used. Staff numbers represent full-time equivalents (FTE).)

FUNDS: The NRC's FY 2000 budget request is $471,400,000. This is an increase of $1,600,000 above that for FY 1999.

FTEs: The NRC's FY 2000 budget request is 2,810 FTE which includes 6 reimbursable business-like FTE. This is a decrease of 86 FTE below the FY 1999 level.

TOTAL NRC BUDGET AUTHORITY BY APPROPRIATIONS

NRC Appropriation	FY 1998 Enacted	FY 1999 Estimate	FY 2000 Estimate	
			Request	Change from FY 1999
Salaries and Expenses (S&E) ($K)				
Salaries and Expenses	472,000	465,000	465,400	400
Offsetting Fees Receipts	450,000	444,800	442,400	-2,400
Net Appropriated--S&E	[2]22,000	20,200	23,000	2,800
Office of the Inspector General (OIG) ($K)				
Inspector General	4,800	4,800	6,000	1,200
Offsetting Fees Receipts	4,800	4,800	6,000	1,200
Net Appropriated--OIG	0	0	0	0
Total Net Appropriated--NRC	[2]22,000	20,200	23,000	2,800

[1]Net Appropriation - S&E ($K)	FY 1998 Enacted	FY 1999 Estimate	FY 2000 Estimate
Nuclear Waste Fund	15,000	17,000	19,150
Nuclear Waste Fund transfer	4,000	0	0
General Fund	3,000	3,200	3,850

[2]Funding for FY 1998 includes $4.0 million from the DOE Nuclear Waste Fund, originally intended to license a multi-purpose canister design, that was transferred from the Department of Energy (DOE) on August 26, 1998. These funds were originally deleted by a line item veto but transferred as a result of the ruling by the Supreme Court that the line item veto was unconstitutional.

FY 2000 BUDGET SUMMARY

SUMMARY OF BUDGET AUTHORITY BY FUNCTION				
NRC Appropriation	FY 1998 Enacted	FY 1999 Estimate	FY 2000 Estimate	
			Request	Change from FY 1999
Salaries and Expenses (S&E) ($K)				
Salaries and Benefits	269,701	266,802	278,396	11,594
Contract Support	188,074	184,776	173,740	-11,036
Travel	14,225	13,422	13,264	-158
Total (S&E)	472,000	465,000	465,400	400
Office of the Inspector General (OIG) ($K)				
Salaries and Benefits	4,200	4,400	4,800	400
Contract Support	360	160	960	800
Travel	240	240	240	0
Total (OIG)	4,800	4,800	6,000	1,200
Total NRC Appropriation ($K)				
Salaries and Benefits	273,901	271,202	283,196	11,994
Contract Support	188,434	184,936	174,700	-10,236
Travel	14,465	13,662	13,504	-158
Total (NRC)	476,800	469,800	471,400	1,600

FY 2000 BUDGET SUMMARY

SUMMARY OF BUDGET AUTHORITY AND STAFFING BY STRATEGIC ARENA				
Summary	FY 1998 Enacted	FY 1999 Estimate	FY 2000 Estimate	
			Request	Change from FY 1999
Budget Authority by Strategic Arena ($K)				
Nuclear Reactor Safety	224,009	210,350	210,043	-307
Nuclear Materials Safety	61,724	61,708	63,881	2,173
Nuclear Waste Safety	32,635	38,742	42,143	3,401
International Nuclear Safety Support	5,102	3,931	4,840	909
Management and Support	148,530	150,269	144,493	-5,776
Subtotal (S&E)	472,000	465,000	465,400	400
Inspector General ($K)	4,800	4,800	6,000	1,200
Total (NRC)	476,800	469,800	471,400	1,600
Staffing (FTE) by Strategic Arena				
Nuclear Reactor Safety	1,586	1,487	1,431	-56
Nuclear Materials Safety	482	479	464	-15
Nuclear Waste Safety	163	191	195	4
International Nuclear Safety Support	47	35	41	6
Management and Support	656	645	629	-16
Subtotal (S&E)	2,934	2,837	2,760	-77
Inspector General	43	44	44	0
Total (NRC)	2,977	2,881	2,804	-77
Reimbursable Business-Like FTE	8	15	6	-9
Total FTE Ceiling	2,985	2,896	2,810	-86

HIGHLIGHTS OF THE NRC FY 2000 BUDGET REQUEST

The NRC budget request for FY 2000 is $471,400,000 and 2,804 FTE, including $465,400,000 and 2,760 FTE for Salaries and Expenses, and $6,000,000 and 44 FTE for the Inspector General. The NRC continues to recognize the high priority on reducing Federal spending emphasized by the Administration. This budget request, when adjusted for inflation, represents the lowest budget request in the history of the NRC -- a 25 percent reduction in real terms since 1993-- and the FTE request is the lowest in more than 20 years -- down 600 FTE or 17 percent since 1993. In spite of the constrained fiscal environment, this budget request fully supports the agency's fundamental health and safety mission, while continuing the most comprehensive reform effort in the history of the agency.

The Planning, Budgeting and Performance Management (PBPM) Process

A critical element in the agency's continuing effort to improve overall performance has been the application of business-like principles to achieve sound management results, consistent with the requirement of the Government Performance and Results Act. The NRC is implementing an integrated and disciplined system to improve the agency's processes for planning, budgeting and performance management (PBPM). This system was designed to establish a sensible, reliable process for defining agency goals, develop cost effective strategies to achieve those goals, determine the resources needed to implement this strategic direction, and measure and assess the agency's progress.

The NRC has continued to make significant progress in implementing the PBPM process. Revisions to the NRC Strategic Plan, currently under review, and the development of the FY 2000 Performance Plan, were the initial PBPM efforts. The integrated FY 2000 budget request/FY 2000 Performance Plan reflects the continued evolution of this process. The FY 2000 budget request reflects the continued evolution of this system, and integrates the NRC Strategic Plan, Performance Plan and associated resources required to achieve the goals and planned accomplishments contained in these policy documents. A recent evaluation of the NRC's PBPM process conducted by a consultant found that the process is sound and that it has improved our integrated planning process.

We are continuing to refine the implementation of the PBPM process in order to strengthen the linkage between our performance goals, strategies and resource requirements in the FY 2001 budget. A review of the agency's initial Strategic Plan (FY 1997-FY 2002) was conducted during the fall of 1998. As a result of that review, the agency is further refining the revised strategic plan to fully reflect the regulatory reform efforts underway. This systematic review of the desired outcomes and specific measurements for success was initiated with the Office of Nuclear Reactor Regulation, aided by a consultant. The same disciplined review, also aided by a consultant, is underway in the Office of Nuclear Regulatory Research

and the Office of Nuclear Material Safety and Safeguards. The results of these efforts are expected to identify performance goals, strategies, and those key activities which contribute most to meeting our goals, and will be incorporated into revisions to the strategic plan released for stakeholder comment. We also expect this effort will move the NRC to a leadership role in becoming an "outcome based" organization within the Government, a path that we have taken since implementing our Strategic Assessment and Rebaselining efforts and that remains at the foundation of the Government Performance and Results Act.

Strategic Arenas

As part of revisions to the NRC Strategic Plan and FY 1999 Performance Plan, the number of strategic arenas for focusing the NRC's strategies for achieving its vision and mission was reduced from seven to the following four:

- Nuclear Reactor Safety
- Nuclear Materials Safety
- Nuclear Waste Safety
- International Nuclear Safety Support

The Common Defense and Security and International Involvement, Public Confidence, and Excellence strategic arenas have been eliminated. The performance goals identified in the FY 1999 Performance Plan associated with these arenas have been incorporated into the remaining arenas. The management goals and strategies cut across all NRC regulatory and support activities and are designed to build an environment conducive to accomplishing the agency's goals and mission.

Budget Request

Formulation of the budget request placed great emphasis on achieving program efficiencies across all programs and reducing funding for management and support activities. Funding for Salaries and Benefits (S&B) comprises 60 percent of the NRC request for Salaries and Expenses. The FY 2000 request for S&B of $278,396,000 represents an increase of $11,594,000 over FY 1999, in spite of a reduction of 77 FTE from the FY 1999 level. The impact of the proposed 4.4 percent pay raise in FY 2000 (vs. the baseline assumption of 3 percent in FY 2000) increased the S&B requirement $4,100,000. Funding for Contract Support activities is $173,740,000, a reduction of $11,036,000 from FY 1999. The request for travel funding is $13,264,000, down slightly from the FY 1999 level.

The FY 2000 budget reflects 100 percent recovery of new budget authority from fees. The streamlining activities within the agency, as well as regulatory reform efforts underway within the Nuclear Reactor Safety arena, result in a continuing decline in total fees assessed on the

nuclear power industry. Total fees estimated in FY 2000 are $448,400,000, a reduction of $1,200,000 from the FY 1999 total. The NRC budget request in FY 2000 of $471,400,000 includes $19,150,000 for High-Level Waste activities, $3,250,000 for review of Department of Energy external regulation and privatization activities, and $600,000 for AID-related work associated with Former Soviet Union (FSU) and Central Eastern European (CEE) countries. The NRC requests the budget be financed as follows: $448,400,000 from user fees, $19,150,000 from the Nuclear Waste fund, and $3,850,000 from the General fund.

The budget request details the funding required to support the people and activities required the NRC to accomplish its mission. Funding for program activities in the Nuclear Reactor Safety arena is reduced $4,977,000 in Contract Support and 56 FTE. These reductions are primarily in anticipation of savings to be achieved based on transitioning the NRC regulatory regime to the more risk-informed and other actions to reduce unnecessary burden. The overall goal of this adjustment is to enhance safety decisionmaking, improve efficiency, and reduce resources devoted to issues with low safety significance. Funding for program activities in the Nuclear Materials Safety arena includes resources for the review of the AVLIS license application, development and implementation of NRC's new general license registration program, and efforts related to dry cask storage of spent fuel. Funding in the Nuclear Waste Safety arena includes increases in the High-Level Waste Regulation and Regulation of Decommissioning programs, reflecting increased workload requirements in these areas. Funding for the International Nuclear Safety Support arena is increased, reflecting inclusion of the NRC FTE costs for providing nuclear safety assistance to the countries of the former Soviet Union and Central and Eastern Europe. Funding for Management and Support is reduced significantly, reflecting the agency-wide program reductions and efficiencies gained in the budget. Of note, funding for information technology and management is decreased significantly, as the benefit of investments in the agency-wide document access and management system (ADAMS) and the agency-wide integrated financial and resource management system (STARFIRE) are realized.

EXPLANATION OF RESOURCE CHANGES

Nuclear Reactor Safety

FY 2000 Change from FY 1999 ..... -$307,000

The funding included in the Nuclear Reactor Safety arena supports a reactor inspection program and reactor licensing activities for 103 operating reactors in FY 1999 and 102 in FY 2000 (based on historical trends). The reactor licensing and inspection program will continue to bear a strong relationship to facility performance. However, it is expected that these programs will change as a result of the agency's on-going reevaluation of its reactor

regulatory program. In anticipation of these changes, a general reduction in the reactor inspection and event assessment/incident response programs has been included in the budget estimates. The specific changes and their specific effect will be determined over the next several months.

The budget includes funding for the review of two new reactor license renewal applications in FY 2000 and preparation for additional new applications in FY 2001. Of the $56,318,000 in the research program, $48,806,000 is focused on reactor safety research. Resources for functions such as reactor incident response and operational experience evaluation are also included in this arena.

Funding is also included to accelerate the agency's move to a more risk-informed regulatory regime. Indeed, the Commission has increased funding in rulemaking in anticipation of a major effort in FY 2000 to eliminate unnecessary or duplicative reactor regulations. A small increase in FTE is also included in FY 1999 and FY 2000 to be able to perform new rulemakings that may be needed as the agency transitions to a more risk-informed regulatory framework. These resources will also be applied to the acceleration of cost-beneficial regulatory actions decommissioning plants. Further, the Commission has sustained resources in reactor licensing to reduce the size of the licensing action inventory to a historic low of 700 actions by the end of FY 2000. To fund higher priority research, the nuclear reactor research budget was reduced in the following areas: human factors and organizational performance, severe accidents, containment integrity and structural aging, and structural and civil engineering.

In terms of savings, the most significant change in the Nuclear Reactor Safety arena is the reduction of 56 FTE in FY 2000 which reflects savings in the reactor inspection and reactor performance assessment programs, the consolidation of event assessment functions, the implementation of a new performance assessment process in FY 2000, and reductions in the scope of the nuclear reactor research program.

Nuclear Materials Safety

FY 2000 Change from FY 1999 ..... $2,173,000

The resource increase in FY 2000 results primarily from costs associated with preparation and review of the Advanced Vapor Laser Isotope Separation (AVLIS) license application, development and implementation of NRC's new general license registration program, initiation of research in methods development and demonstration of dry cask storage risk assessment, and enhanced efforts to develop the technical basis for performance criteria of dry storage casks under seismic loading conditions. The increase is partially offset by decreases that result from the anticipated completion of a significant portion of the backlog of applications for

spent fuel storage and transport cask designs and spent fuel storage facilities, and completion of the rulemaking on the medical use of byproduct material in FY 1999.

Nuclear Waste Safety

FY 2000 Change from FY 1999 ..... $3,401,000

The resource increase in FY 2000 results primarily from NRC's high-level waste repository program activities, and ongoing decommissioning activities, including the increase in the number of reactors in the decommissioning process. The increase is partially offset by a reduction in the number of inspections to be conducted at uranium recovery facilities, and the completion of modeling to support regulatory guidance on decommissioning.

International Nuclear Safety Support

FY 2000 Change from FY 1999 ..... $909,000

The resource change in FY 2000 does not represent an increase in the amount of funds for this arena, but rather how the funds are obtained. For FY 1999, NRC renegotiated its reimbursable agreements with the Agency International Development to recover NRC's FTE costs for providing nuclear safety assistance to the countries of the former Soviet Union (FSU). In FY 2000, the NRC will include the AID-related FTE costs for support of FSU and Central and Eastern Europe countries within the general fund portion of the requested appropriation.

Management and Support

FY 2000 Change from FY 1999 ..... -$5,776,000

The resource decrease in FY 2000 is primarily based upon agency-wide program reductions and efficiencies gained in the budget. Funding also decreases in information technology and management as investments in the agency-wide document access and management system (ADAMS) and the agency-wide integrated financial and resource management system (STARFIRE) are completed.

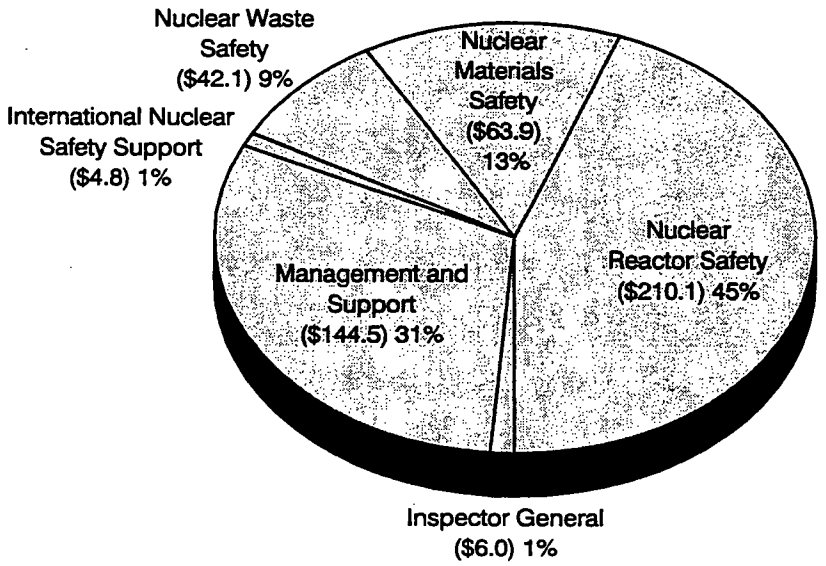
Office of the Inspector General

FY 2000 Change from FY 1999 ..... $1,200,000

The resource increase in FY 2000 stems from a recognition that after FY 1999, OIG carryover funds will be insufficient to restore OIG base-funding to a level at which OIG can carry out its essential programs. Contract support requirements were previously funded in prior years

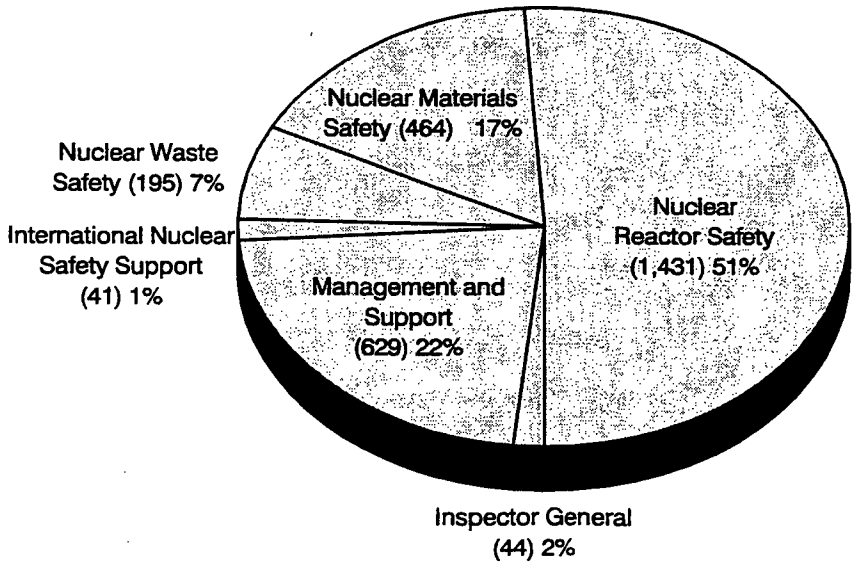
using OIG carryover funds. These requirements include the procurement of private sector contractors to perform the annual audit of the NRC's financial statements and provide technical investigative and audit support; as well as, procuring the services of other government audit agencies contract audits. In prior years, the NRC Salaries and Expenses appropriation funded OIG's information technology. The FY 2000 budget request includes new funding for OIG office-specific information technology requirements.

DISTRIBUTION OF NRC BUDGET AUTHORITY BY STRATEGIC ARENA



FY 2000 ($471.4 MILLION)

DISTRIBUTION OF NRC STAFF BY STRATEGIC ARENA



FY 2000 (TOTAL STAFF 2,810 FTEs)*

* Includes 6 reimbursable business-like FTEs

Note: Percentages are rounded to the nearest whole number.

APPROPRIATIONS LANGUAGE

Proposed FY 2000 Appropriations Legislation

The proposed appropriations legislation is as follows:

Salaries and Expenses

For necessary expenses of the Commission in carrying out the purposes of the Energy Reorganization Act of 1974, as amended, and the Atomic Energy Act of 1954, as amended, including official representation expenses (not to exceed $15,000), $465,400,000, to remain available until expended: Provided, That of the amount appropriated herein, $19,150,000 shall be derived from the Nuclear Waste Fund: Provided further, That revenues from licensing fees, inspection services, and other services and collections estimated at $442,400,000 in fiscal year 2000 shall be retained and used for necessary salaries and expenses in this account, notwithstanding 31 U.S.C. 3302, and shall remain available until expended: Provided further, That $3,850,000 of the funds herein appropriated for regulatory reviews and other assistance provided to the Department of Energy and other Federal agencies shall be excluded from license fee revenues, notwithstanding 42 U.S.C. 2214: Provided further, that the sum herein appropriated shall be reduced by the amount of revenues received during fiscal year 2000 so as to result in a final fiscal year 2000 appropriation estimated at not more than $23,000,000.

Office of the Inspector General

For necessary expenses of the Office of the Inspector General in carrying out the provisions of the Inspector General Act of 1978, as amended, $6,000,000 to remain available until expended: Provided, That the sum herein appropriated shall be reduced by the amount of revenues received during fiscal year 2000 so as to result in a final fiscal year 2000 appropriation estimated at not more than $0.

Analysis of Proposed FY 2000 Appropriations Legislation

The analysis of the proposed appropriations legislation is as follows:

Salaries and Expenses

1. FOR NECESSARY EXPENSES OF THE COMMISSION IN CARRYING OUT THE PURPOSES OF THE ENERGY REORGANIZATION ACT OF 1974, AS AMENDED, AND THE ATOMIC ENERGY ACT OF 1954, AS AMENDED:

   42 U.S.C. 5841 et seq.

   The NRC was established by the Energy Reorganization Act of 1974, as amended (42 U.S.C. 5801 et seq.). This act abolished the Atomic Energy Commission and transferred to the NRC all the licensing and related regulatory functions of the Atomic Energy Commission. These functions included those of the Atomic Safety and Licensing Board Panel and the Advisory Committee on Reactor Safeguards; responsibilities for licensing and regulating nuclear facilities and materials; and conducting research for the purpose of confirmatory assessment related to licensing, regulation, and other activities, including research related to nuclear material safety and regulation under the provisions of the Atomic Energy Act of 1954, as amended (42 U.S.C. 2011 et seq.).

2. INCLUDING OFFICIAL REPRESENTATION EXPENSES:

   47 Comp. Gen. 657

   43 Comp. Gen. 305

   This language is required because of the established rule restricting an agency from charging appropriations with the cost of official representation unless the appropriations involved are specifically available therefor. Congress has appropriated funds for official representation expenses to the NRC and NRC's predecessor, the Atomic Energy Commission, each year since FY 1950.

3. TO REMAIN AVAILABLE UNTIL EXPENDED:

31 U.S.C. 1301

31 U.S.C. 1301 provides that no regular, annual appropriation shall be construed to be permanent or available continuously unless the appropriation expressly provides that it is available after the fiscal year covered by the law in which it appears.

4. SHALL BE DERIVED FROM THE NUCLEAR WASTE FUND:

42 U.S.C. 10131(b)(4)

42 U.S.C. 10222(a)(4)

42 U.S.C. 10131(b)(4) provides for the establishment of a Nuclear Waste Fund to ensure that the costs of carrying out activities relating to the disposal of high-level radioactive waste and spent nuclear fuel will be borne by the persons responsible for generating such waste and spent fuel.

42 U.S.C. 10222(a)(4) provides that the amounts paid by generators or owners of these materials into the fund shall be reviewed annually to determine if any fee adjustment is needed to ensure full cost recovery.

42 U.S.C. 10134

42 U.S.C. 10133

42 U.S.C. 10134 specifically requires the NRC to license a repository for the disposal of high-level radioactive waste and spent nuclear fuel and sets forth certain licensing procedures. 42 U.S.C. 10133 also assigns review responsibilities to the NRC in the steps leading to submission of the license application. Thus, the Nuclear Waste Policy Act of 1982, as amended, establishes NRC's responsibility throughout the repository siting process, culminating in the requirement for NRC licensing as a prerequisite to construction and operation of the repository.

42 U.S.C. 10222(d)

42 U.S.C. 10222(d) specifies that expenditures from the Nuclear Waste Fund can be used for purposes of radioactive waste disposal activities, including identification,

development, licensing, construction, operation, decommissioning, and post-decommissioning maintenance and monitoring of any repository constructed under the Nuclear Waste Policy Act of 1982, and administrative costs of the high-level radioactive waste disposal program.

5. REVENUES FROM LICENSING FEES, INSPECTIONS SERVICES, AND OTHER SERVICES AND COLLECTIONS SHALL BE RETAINED AND USED FOR NECESSARY SALARIES AND EXPENSES IN THIS ACCOUNT, NOTWITHSTANDING 31 U.S.C. 3302, AND SHALL REMAIN AVAILABLE UNTIL EXPENDED:

31 U.S.C. 9701

The NRC is authorized under Title V of the Independent Offices Appropriation Act of 1952 to collect license fees. Pursuant to 31 U.S.C. 9701, any person who receives a service or thing of value from the Commission shall pay fees to cover the NRC's cost in providing such service or thing of value.

42 U.S.C. 2213

42 U.S.C. 2214

Pursuant to 42 U.S.C. 2213, the NRC is required to assess and collect annual charges from persons licensed by the Commission. Except for the holder of any license for a federally owned research reactor used primarily for educational training and academic research purposes, 42 U.S.C. 2214 requires the Commission to assess and collect annual charges from persons licensed by the Commission, and the aggregate amount of such charges must equal an amount that approximates 100 percent of the Commission's budget authority, less any amount appropriated to the Commission from the Nuclear Waste Fund and the amount of fees collected under the Independent Offices Appropriation Act of 1952 (31 U.S.C. 9701), for each year of FY 1991 through FY 1999.

The 100 percent fee recovery requirement was to revert to 33 percent at the end of FY 1998, however it was extended for one fiscal year in the agency's FY 1999 appropriation legislation. Consistent with the Administration's policy, the NRC will submit proposed authorization legislation for FY 2000 that would extend the 100 percent fee collection through FY 2004.

31 U.S.C. 3302

The NRC is required to deposit all revenues collected to miscellaneous receipts of the Treasury unless specifically authorized by an appropriation to retain and use such revenue.

6. FUNDS HEREIN APPROPRIATED FOR REGULATORY REVIEWS AND OTHER ASSISTANCE PROVIDED TO THE DEPARTMENT OF ENERGY AND OTHER FEDERAL AGENCIES SHALL BE EXCLUDED FROM LICENSE FEE REVENUES, NOTWITHSTANDING 42 U.S.C. 2214:

42 U.S.C. 2214

42 U.S.C. 2214 requires the Commission to assess and collect annual charges from persons licensed by the Commission that approximate 100 percent of the Commission's budget authority, less any amount appropriated to the Commission from the Nuclear Waste Fund and the amount of fees collected pursuant to 31 U.S.C. 9701 (the Independent Offices Appropriation Act of 1952), for each year of FY 1991 through FY 1999.

31 U.S.C. 9701

Under the Independent Offices Appropriation Act of 1952, 31 U.S.C. 9701, the NRC is not authorized to charge fees to DOE or other Federal agencies for these activities. Rather than having the NRC recover these costs by assessing fees to its licensees under its 100 percent cost recovery requirement, the costs of these consultation and review activities would be derived from appropriated funds.

31 U.S.C. 1535 et seq.

33 Comp. Gen. 27

The Economy Act, 31 U.S.C. 1535 et seq., permits a Federal agency to perform work or services for another Federal agency on a reimbursable basis. A Federal agency may not be reimbursed for rendering services to another Federal agency if the services are required by law in carrying out the normal functions of the performing agency and for which appropriations are specifically provided.

The NRC performs the following types of activities for DOE and other Federal agencies for which it cannot directly charge the benefiting Federal agency license fees under 42 U.S.C. 2214:

a. Review of applications for the issuance of new licenses or approvals. Under the Atomic Energy Act of 1954, as amended, and the Energy Reorganization Act of 1974, as amended, the NRC performs these functions to provide licenses, certificates of compliance, and other approvals to other Federal agencies.

b. Consultation and safety review activities for other Federal agencies that the NRC is not statutorily required to perform. Examples of such activities follow:

- NRC is providing support to assist DOE in establishing a regulatory program, consistent with NRC's regulatory approach, for the Hanford Tank Waste Remediation System (TWRS) privatization program which is a DOE effort to solidify the radioactive wastes presently stored in large underground tanks at the DOE Richland site. NRC is also providing support in the technical review of DOE's TWRS privatization program contractor's submittals.

- At DOE's request, the NRC is providing assistance in assessing and resolving technical and licensing issues with respect to DOE's possible acquisition of commercial light water reactors, or acquisition of irradiation services from commercial light water reactors, for the production of tritium.

- A pilot program was established in FY 1998 to determine the feasibility of NRC regulatory oversight of DOE nuclear facilities and to support a decision on whether to seek legislation to authorize NRC regulation of DOE nuclear facilities. DOE is principally responsible for conducting of the pilot evaluations, while NRC is performing a substantial supporting role. NRC and DOE continue to interact in the selection of additional pilot sites and discussion of implementation issues.

- NRC is currently providing nuclear safety related assistance to the countries of the former Soviet Union and Central and Eastern Europe. NRC's FY 1999 assistance activities are being supported by funds provided by the United States Agency for International Development (USAID). For FY 2000, USAID is expected to provide continuing

contract support and travel funding, with NRC staff costs funded from NRC's General Fund appropriation.

7. THE SUM HEREIN APPROPRIATED SHALL BE REDUCED BY THE AMOUNT OF REVENUES RECEIVED:

42 U.S.C. 2214

The total fees to be collected in FY 2000 are to approximate 100 percent of the Commission's budget authority. Pursuant to 42 U.S.C. 2214, the aggregate amount of the annual charges collected from all licensees shall equal an amount that approximates 100 percent of the budget authority of the Commission in the fiscal year in which such charges are collected, less any amount appropriated to the Commission from the Nuclear Waste Fund and the amount of fees collected under the Independent Offices Appropriation Act of 1952 (31 U.S.C. 9701), for each year of FY 1991 through FY 1999.

The 100 percent fee recovery requirement was to revert to 33 percent at the end of FY 1998, however, it was extended for one fiscal year in the agency's FY 1999 appropriation legislation. The NRC will submit proposed authorization legislation for FY 2000 that would extend the 100 percent fee collection through FY 2004.

Office of the Inspector General

8. FOR NECESSARY EXPENSES OF THE OFFICE OF THE INSPECTOR GENERAL IN CARRYING OUT THE PROVISIONS OF THE INSPECTOR GENERAL ACT OF 1978, AS AMENDED:

Public Law 95-452, 5 U.S.C. app., as amended by Public Law 100-504

Public Law 100-504 amended Public Law 95-452 to establish the Office of the Inspector General within the NRC effective April 17, 1989, and to require the establishment of a separate appropriation account to fund the Office of the Inspector General.

9. TO REMAIN AVAILABLE UNTIL EXPENDED:

31 U.S.C. 1301

31 U.S.C. 1301 provides that no regular, annual appropriation shall be construed to be permanent or available continuously unless the appropriation expressly provides that it is available after the fiscal year covered by the law in which it appears.

10. THE SUM HEREIN APPROPRIATED SHALL BE REDUCED BY THE AMOUNT OF REVENUES RECEIVED DURING FISCAL YEAR 2000 SO AS TO RESULT IN A FINAL FISCAL YEAR 2000 APPROPRIATION ESTIMATED AT NOT MORE THAN 0.

31 U.S.C. 9701

The NRC is authorized under Title V of the Independent Offices Appropriation Act of 1952 to collect license fees. Pursuant to 31 U.S.C. 9701, any person who receives a service or thing of value from the Commission shall pay fees to cover the NRC's cost in providing such service or thing of value.

42 U.S.C. 2213

42 U.S.C. 2214

Pursuant to 42 U.S.C. 2213, the NRC is required to assess and collect annual charges from persons licensed by the Commission. Except for the holder of any license for a Federally owned research reactor used primarily for educational training and academic research purposes, 42 U.S.C. 2214 requires the Commission to assess and collect annual charges from persons licensed by the Commission and the aggregate amount of such charges shall equal an amount that approximates 100 percent of the Commission's budget authority, less any amount appropriated to the Commission from the Nuclear Waste Fund and the amount of fees collected under the Independent Offices Appropriation Act of 1952 (31 U.S.C. 9701), for each year of FY 1991 through FY 1999.

The 100 percent fee recovery requirement was to revert to 33 percent at the end of FY 1998, however, it was extended for one fiscal year in the agency's FY 1999 appropriation legislation. Consistent with the Administration's policy, the NRC will submit proposed authorization legislation for FY 2000 that would extend the 100 percent fee collection through FY 2004.

31 U.S.C. 3302

The NRC is required to deposit all revenues collected to miscellaneous receipts of the Treasury unless specifically authorized by an appropriation to retain and use such revenue.

THIS PAGE INTENTIONALLY LEFT BLANK

PERFORMANCE PLAN

FY 2000 PERFORMANCE PLAN

OVERVIEW

Like many organizations, both public and private, the Nuclear Regulatory Commission (NRC) is facing a rapidly changing environment as it prepares to enter the 21st century.

- Restructuring and economic deregulation of the electric utility industry are introducing new challenges to the NRC regulatory environment.
- Public interest in the safe operation of nuclear power plants and facilities, use of nuclear materials, and management of nuclear waste remains high.
- Technology and other societal trends are changing the characteristics of the NRC workforce and the way that NRC does its work.

During FY 1998, the NRC was the subject of a number of external reviews, some of them sharply critical, from Congressional appropriations and authorization committees, the General Accounting Office (GAO), and other stakeholders. These critiques implied over-regulation from some, and the demand for stronger NRC oversight from others. The agency views this as a useful opportunity to review the effectiveness of improvements already put in place, to examine NRC initiatives already started, to accelerate or adjust those initiatives, and to address newly identified issues. In response to these reviews, the NRC supports an acceleration of its transition to a risk-informed and, where appropriate, performance-based approach to regulation. The NRC has also initiated a number of performance assessments to address areas where additional enhancements are required and is near completion of a full-scope, integrated review of all reactor-related assessment processes. The agency is actively seeking interaction with stakeholders for feedback and suggestions for improving performance, and is committed to accelerating change, where appropriate and necessary, and to working with various stakeholders to facilitate improvements to the NRC regulatory framework.

These conditions and the current intense scrutiny being applied to the NRC hold many challenges and opportunities. Some of these challenges are already known to the agency, but others cannot be anticipated today. For example, the full affects of State's implementation of electric utility deregulation is not fully known. To respond effectively to these challenges, the NRC has established a clear strategic direction that will enable the NRC to carry out its mission and achieve the results expected by its primary customers--the American public. The Commission believes that this mission must be the foundation for making decisions about what activities the agency should perform. Thus, the Commission's programmatic decisions will not be fee-driven but will be based on their contributions to public health and safety.

BACKGROUND

The NRC's strategic plan (NUREG-1614, Vol. 1, September 1997) establishes a strategic framework that will guide future decisionmaking and will help the NRC continue to meet its responsibility for protecting public health and safety, promoting the common defense and security, and protecting the environment. The development of the agency's strategic plan, and its associated strategic goals, was based on a 2-year strategic assessment and rebaselining initiative (1995-1997). This internal effort was initiated by the Commission to provide a solid, reliable foundation on which to base a strategic framework for future decisionmaking, in addition to supporting the NRC implementation of the Government Performance and Results Act (GPRA) and other Congressional and Administration initiatives. It has provided the foundation and the strategic direction for the development of the FY 1999 and FY 2000 performance plans, the internal program-level operating plans, and for initiatives in response to the external criticism described in the Overview. The development of performance goals, in support of the strategic goals, was based on the review and assessment of existing data collected by the agency and of available historical data of actual performance.

In the Fall of 1997, the agency implemented a disciplined, integrated Planning, Budgeting and Performance Management process establishing the framework to transition to a results-oriented environment, and for day-to-day management and decisionmaking. This process, implemented with the FY 2000 budget cycle, sets the operational framework for the agency to strategically manage its programs and operations. An initial step in implementing the Planning, Budgeting, and Performance Management process involved a review of the FY 1997-FY 2002 Strategic Plan. This review, together with the GAO assessment and Congressional scoring of the agency's FY 1999 Performance Plan, has prompted the agency to consider modifications to the strategic plan. The performance plan and budget request reflect two of the changes under consideration. The number of strategic arenas is reduced from seven to four and the number of output measures by half, to provide a more focused and meaningful basis for evaluating NRC performance. These changes reflect a revised strategic alignment that more accurately reflects the integrated nature of the agency's efforts, and its program structure and operations. The agency anticipates a more extended review process and expects a final strategic plan to be available in the future.

To date, the agency has made significant progress in implementing the Planning, Budgeting, and Performance Management (PBPM) Process. As the result of this progress and of two specific assessments conducted by the agency--an assessment of the PBPM process by an independent consultant, and the Office of Nuclear Reactor Regulation's (NRR) self-assessment of its programs and operations (supported by an independent consultant)--the agency is

working toward further refinement and more direct linkages between its goals, operations, and budget resources. The PBPM assessment concluded that the process is sound and that it provides definition and improvements to our processes. The effort associated with NRR is on-going and, as a result of current progress and meaningful application to other areas of the agency, is being implemented in the Office of Nuclear Regulatory Research and the Office of Nuclear Material Safety and Safeguards (for the High-Level Waste program). The results of this effort will be integrated into the FY 2001 PBPM process, including the review and revision of the agency's strategic plan, the development of appropriate performance goals, and the development of appropriate budget resources to support these goals. Other offices and arena integration will be further developed for the FY 2002 PBPM process.

The agency's FY 2000 budget request to Congress and the FY 2000 performance plan have been integrated into a single document based on the need to provide the necessary linkage between the goals and strategies presented in the strategic plan, the programs and performance measures included in the performance plan, and the resources requested in the budget. This submission includes a summary of key elements of the NRC's strategic plan including the impact of changes currently under consideration. The budget request is presented for each strategic goal and arena, and performance goals and strategies and targets are identified for both fiscal years 1999 and 2000. Output measures and targets are also identified for both fiscal years 1999 and 2000 for each program within a strategic arena as well as baseline data for FY 1998, where available. The FY 1998 data are provided as a generic "snapshot in time" and do not reflect performance as a result of specific program output targets. Agency efforts to develop specific output targets for its programs began in FY 1998 to further the agency's development and implementation of GPRA, and are reflected in FY 1999 and FY 2000. Therefore, FY 1998 output data reflect efforts completed during that year, independent of established targets. Some agency offices established specific organizational targets, but these targets reflected only organizational planning and not specific targets to which the agency was managed. The FY 1999 and FY 2000 targets, were developed within a performance-oriented framework using the disciplined rigor of the PBPM process; these indicate the agency's efforts to establish performance-based targets, relative to overall agency performance and resource allocation. A performance plan appendix contains additional information on the agency's plans for the verification and validation of performance measures, cross cutting functions with other government agencies, the planning and budgeting process this year and other organization elements, current initiatives to improve agency efficiency, and key external factors affecting performance.[1]

[1] No significant contribution was made to the preparation of the performance plan by any non-Federal entity.

Within six months after the close of FY 1999, the NRC will submit to the President and the Congress its first report on program performance. This performance report will review the success of the agency in achieving the performance goals established for FY 1999 and included in this performance plan. Where those goals have been achieved, the underlying assumptions and strategies will be examined to ensure that continued applicability is warranted in the future. If any of the FY 1999 performance goals are not met, the agency will conduct a thorough analysis of why it did not meet the goal and the actions necessary to meet the goal in the future. One result of this analysis will be the documentation of plans and schedules for achieving the established performance goal. If the analysis should indicate that the performance goal is impractical or infeasible, the performance report will document why that is the case and what action is recommended.

Key to the NRC's regulatory framework is the concept of a risk-informed and, as appropriate, performance-based approach to regulation, which focuses NRC and licensee resources on the most safety significant issues while providing flexibility in how licensees meet NRC requirements. Such a framework will allow the NRC to assess, with reasonable assurance, whether or not adverse impacts to public health and safety and the environment are likely to occur. As such, the implementation of this approach strengthens the agency's ability to achieve its performance goals and mission. Several programs have been initiated in the nuclear reactor safety and nuclear materials safety arenas utilizing risk-informed and, where appropriate, performance-based approaches to regulation. To facilitate this application to the NRC's regulatory framework the agency has initiated an aggressive program to provide related training to technical staff and managers throughout the agency. The NRC will continue to identify additional opportunities to utilize this approach, and as the agency moves in this direction and gains more experience, the result will be improved decisionmaking, enhanced efficiency and effectiveness, a better focus of the agency's regulatory resources on the most risk-significant aspects of the NRC's regulation, and reduced unnecessary regulatory burden on licensees.

Regulations

The NRC has not identified any economically significant rules as defined in Section 3(f)(1) of Executive Order 12866, "Regulatory Planning and Review" (September 30, 1993), that are intended to be proposed or promulgated during FY 2000.

Proposed Legislation

The NRC has not identified any legislation necessary for the agency to achieve its performance goals for FY 2000. The agency is, however, developing a proposed legislative package. With the anticipated application from USEC for the AVLIS uranium enrichment process expected mid FY 2000, the NRC is also considering including in the package, legislation that would modify the inflexible approach to hearings in Section 193 of the Atomic Energy Act. The NRC is considering legislative proposals that would modify sections 103.d and 104.d of the Atomic Energy Act to allow foreign ownership and control of utilization facilities, provided that such arrangements would not be inimical to the common defense and security of the United States or health and safety of the public. The agency also supports those aspects of the President's electric utility restructuring legislation applicable to the NRC, particularly the elimination of duplicative NRC antitrust reviews in licensing proceedings.

NRC'S STRATEGIC PLAN

This section summarizes the key elements of the NRC's strategic plan including modifications currently under consideration, as a prelude to discussion of the agency's FY 2000 performance goals. The significant agency program output measures which support those goals are discussed in the FY 2000 budget request. The full text of the NRC's September 1997 strategic plan is available from the U.S. Government Printing Office (NUREG-1614, Vol. 1, September 1997) or it can be viewed and downloaded from the NRC's home page on the Internet [http://www.nrc.gov]. A revised strategic plan to support the FY 2000 Performance Plan and the FY 2000 budget, is under development.

NRC's Mission

The Atomic Energy Act of 1954, as amended, and the Energy Reorganization Act of 1974, as amended, establish the basic regulatory mission of the Nuclear Regulatory Commission.

The NRC's mission is to regulate the Nation's civilian use of byproduct, source, and special nuclear materials to ensure adequate protection of public health and safety, to promote the common defense and security, and to protect the environment.

NRC's Vision

In implementing its mission, the NRC's actions enable the Nation to safely and efficiently use nuclear materials. The NRC's actions should be such that the public, those it regulates, and other stakeholders in the national and international nuclear community have the utmost respect for and confidence in the NRC.

NRC's Strategic Goals

The NRC has developed goals consistent with its mission. These strategic goals are supported by performance goals, which represent outcomes the NRC plans to achieve over the period covered by the NRC's strategic plan.

The NRC will conduct an efficient regulatory program that allows the Nation to use nuclear materials for civilian[2] purposes in a safe manner to protect the environment by working to achieve the following strategic goals:

- Prevent radiation-related[3] deaths and illnesses and protect the environment in the use of civilian nuclear reactors (Nuclear Reactor Safety).

- Prevent radiation-related deaths and illnesses, protect the environment, and safeguard special nuclear material and facilities in the civilian use of source, byproduct, and special nuclear materials (Nuclear Materials Safety).

- Prevent adverse impacts to the current and future public health and safety and the environment, as a result of uranium recovery, facility decommissioning, clean-up of contaminated sites, and disposal of radioactive wastes (Nuclear Waste Safety).

- Support U.S. national interests in the safe and secure use of nuclear materials and in nuclear non-proliferation (International Nuclear Safety Support).

The safe and secure use of nuclear materials for civilian purposes is the responsibility of NRC licensees and Agreement State licensees, and the regulatory oversight of licensees is the responsibility of the NRC and the Agreement States. Thus, achieving these goals requires the collective efforts of the NRC, the Agreement States, and their licensees. The NRC's regulatory program is designed to ensure that the activities proposed and conducted by its licensees comply with the NRC's regulatory framework and are conducted safely. The NRC through its Office of State Programs provides for cooperation, oversight, technical assistance, and liaison with States, local governments, Indian tribes, and interstate organizations. The NRC works with Agreement States in a cooperative manner to establish and maintain adequate and compatible regulatory programs. The NRC coordinates with other Federal agencies that have missions that overlap in scope with the NRC's mission, and also maintains a level of international involvement that supports broad U.S. national interests and the NRC's domestic mission. These collective efforts strengthen the NRC's ability to achieve its goals and mission to ensure the protection of public health and safety and the environment.

[2] As used in this plan, "civilian" uses or activities refer to those commercial and other uses of nuclear materials and facilities, including certain military activities (such as at hospitals and high-level waste disposal), required by the Atomic Energy Act to be licensed and otherwise regulated by the NRC.

[3] The term "radiation-related" as used in this document may be interpreted to include other hazards associated with the production and use of radioactive materials such as potential chemical hazards related to fuel processing.

NRC Management Goals and Strategies

The NRC has developed the following five overarching management goals in the strategic plan currently under development:

- Achieve excellence by effectively and efficiently carrying out the NRC regulatory and support functions.
- Inspire public confidence by providing the public, those the NRC regulates, and other stakeholders in the national and international community with clear and accurate information about, and a meaningful role in, the NRC regulatory program.
- Sustain a high-performing, diverse workforce.
- Apply information technology to streamline processes, improve information delivery, and support scientific computing and information needs.
- Employ innovative and sound business practices.

These management goals, and their supporting strategies, cut across all of NRC regulatory and corporate activities and are designed to build an environment conducive to accomplishing the agency's strategic goals, mission, and vision. The strategies define the means by which the NRC will conduct business to ensure success in the implementation of the strategic plan, the performance plan, and the accomplishment of the agency's mission.

RELATIONSHIP TO STRATEGIC PLAN AND STRATEGIC ARENAS

The NRC's performance plan is directly linked to the NRC's strategic plan currently under development. To facilitate the correlation between the performance plan and the strategic plan, the performance plan is organized into the same four strategic arenas, as follows:

- Nuclear Reactor Safety
- Nuclear Materials Safety
- Nuclear Waste Safety
- International Nuclear Safety Support

For each strategic arena in the performance plan, the following information is provided:

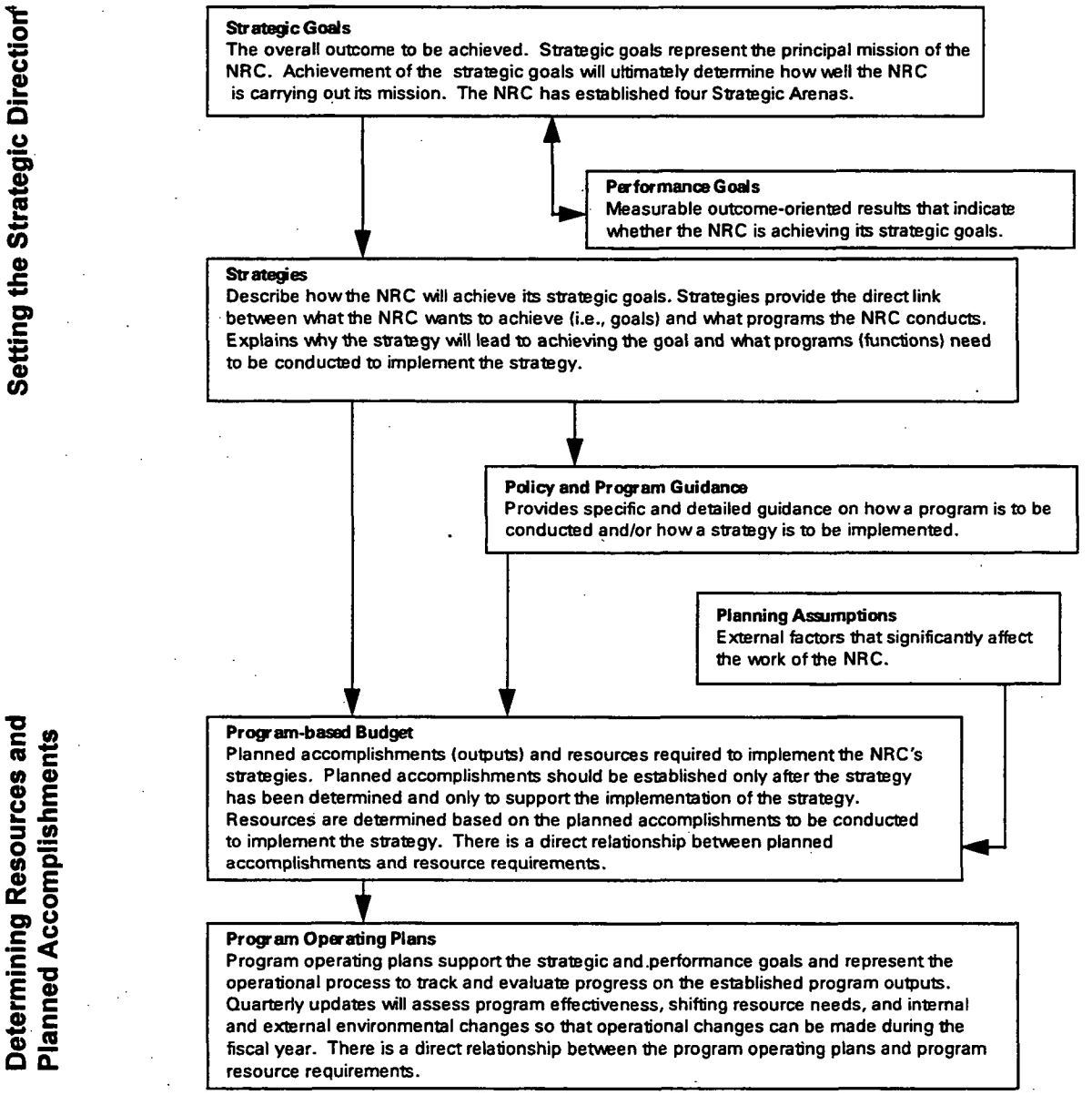
- the strategic goal from the strategic plan,
- a brief introduction to the arena,
- the performance goals for measuring results in FY 2000 toward meeting the strategic goals,
- the strategies the NRC will utilize to ensure that the agency achieves the strategic goal, and
- the relationship of the agency's programs, and their associated resources, to the strategic plan strategies.

The significant agency programs, their resources, and associated program output measures and targets, which support the strategies to achieve the agency's goals, are reflected in the FY 2000 budget request.

RELATIONSHIP TO THE BUDGET

The **strategic goals** (such as, "prevent radiation-related deaths") represent the agency's principal mission and the overall outcome the NRC wants to achieve. The **performance goals** (such as, "zero civilian nuclear reactor accidents") are direct or surrogate measures that provide independent, measurable, outcome-oriented results indicating whether the NRC is achieving its strategic goals. The **strategies** describe how the NRC will achieve its strategic goals and provide the direct link between what the NRC wants to achieve (i.e., strategic goals) and what programs the NRC conducts. The **programs** and **output measures and targets** to support the implementation of the strategies, and their associated resources, are reflected in the FY 2000 budget request. Resources are determined based on the programs to be conducted, including their associated planned outputs, to implement the strategies. The budget supports the direct relationship between the outputs and resource requirements, as well as the relationship between the outputs, programs, strategies, and goals. This linkage is visually represented in the schematic on the following page.

STRATEGIC PLANNING AND RELATIONSHIP TO THE BUDGET



[4] Strategic goals, performance goals, and strategies constitute the NRC's Strategic Plan. Discussion of the strategic arenas and their associated strategies, outputs, and resource requirements constitute the proposed budget.

NUCLEAR REACTOR SAFETY

NUCLEAR REACTOR SAFETY

STRATEGIC GOAL

Prevent radiation-related deaths and illnesses and protect the environment in the use of civilian nuclear reactors.

DESCRIPTION OF STRATEGIC ARENA

A major part of the NRC's mission is to ensure that its licensees[5] safely design, construct, and operate civilian nuclear reactor facilities. The NRC regulates 103 civilian nuclear power reactors that are licensed to operate and another 19 that are undergoing decommissioning. The Atomic Energy Act of 1954, as amended, and the Energy Reorganization Act of 1974, as amended, provide the foundation for regulating the Nation's civilian nuclear power industry.

The Nuclear Reactor Safety strategic arena encompasses all NRC efforts to ensure that civilian nuclear power reactor facilities, as well as non-power reactors, are operated in a manner that adequately protects public health and safety and the environment, and protects against radiological sabotage and theft or diversion of special nuclear materials. These efforts include reactor licensing; operator licensing; financial assurance; inspection; performance assessment; identification and resolution of safety issues; reactor regulatory research; regulation development; operating experience evaluation; incident investigation; threat assessment; emergency response; investigation of alleged wrongdoing by licensees, applicants, contractors, or vendors; imposition of enforcement sanctions for violations of NRC requirements; and reactor technical and regulatory training.

These efforts are conducted primarily by the Office of Nuclear Reactor Regulation and the Office of Nuclear Regulatory Research, with the assistance and coordination of the NRC Office of Enforcement, the Office of Investigations, the Office of the General Counsel, and the Atomic Safety and Licensing Board Panel.

The NRC has an ongoing effort, with the support of an independent consulting firm, to evaluate the current output measures in the Nuclear Reactor Safety strategic arena. As a result of this initiative, the NRC may revise one or more of the existing output measures, with the intent of strengthening the linkages to the agency's strategic plan.

---

[5] "Licensees," as used in this plan, include persons required to be licensed (as defined in Section 11s of the Atomic Energy Act) as well as, where appropriate, applicants for licenses; certificate holders and applicants for certificates; contractors (including suppliers and consultants), subcontractors, and vendors of licensees or certificate holders; and all other persons subject to the NRC's jurisdiction.

NUCLEAR REACTOR SAFETY

The NRC has been moving and will continue to move toward making the entire NRC regulatory framework more risk-informed (so that areas of highest risk receive the greatest focus) and, where appropriate, more performance-based (i.e., more results-oriented and more open to allowing licensee flexibility in how to meet NRC regulatory requirements). The overall goal of this adjustment in regulatory approach is to enhance safety decisionmaking, improve efficiency, and reduce resources devoted to issues with low safety significance.

The Nuclear Reactor Safety strategic arena comprises the following 13 programs: Reactor Licensing; Reactor License Renewal; Reactor Inspection; Reactor Performance Assessment; Reactor Incident Response; Reactor Operational Experience Evaluation; Reactor Technical Training; Reactor Enforcement Actions; Reactor Investigations; Reactor and Plant Performance Research; Reactor Materials and Component Behavior Research; Reactor Legal Advice; and Reactor Adjudication. The contract support funds are allocated for work done by the U.S. Department of Energy (DOE) contractors, commercial contractors, small business entities, nonprofit organizations (e.g., universities and foundations), and grantees.

As discussed in the Reactor Licensing program, a major information technology system, the Reactor Program System (RPS), is being developed to provide for the effective and efficient integration and analysis of information associated with nuclear reactor regulation programs. This is discussed in the Reactor Licensing Program section.

MEASURING RESULTS -- PERFORMANCE GOALS

The NRC has established the following performance goals for measuring results in achieving its Nuclear Reactor Safety strategic goal to prevent radiation-related deaths and illnesses and protect the environment in the use of civilian nuclear reactors. In developing these goals, a careful review and analysis of existing performance data was performed. Although targets for performance were not established until FY 1998, FY 1997 performance, where available, is provided. FY 1998 performance, where available, is also provided. These data provide a firm baseline for the development of future performance targets and the assessment of performance.

1. **Zero civilian nuclear reactor accidents.**

As used in this context, a "nuclear reactor accident" is defined in the NRC Severe Accident Policy Statement (50FR32138, August 8, 1995) as those accidents which result in substantial damage to the reactor core, whether or not serious offsite consequences occur. The **performance indicator** is the number of severe reactor accidents annually. The **data** to support this indicator are collected through reports from industry pursuant to 10 CFR Parts 50.72 and 50.73, and would be further described in the USNRC annual Abnormal Occurrence Report to Congress.[6]

The **FY 2000 target** is **zero**. The **FY 1999 target** is **zero**.
FY 1998 Performance: Zero civilian nuclear reactor accidents were identified in FY 1998.
FY 1997 Performance: Zero civilian nuclear reactor accidents were identified in FY 1997.

1.a. **Maintain a low frequency of events that could lead to a nuclear reactor accident.**

The **performance indicator** is the annual number of events from the population of plants that could result in a 1/1,000 (10^{-3}) or greater probability of leading to a nuclear reactor accident. The **data** to support this indicator are currently developed through the Accident Sequence Precursor program[7] and reflected in the annual report, "Precursors to Potential Severe Core Damage Accidents" (NUREG-4674).

The **FY 2000 target** is for no more than one such event to occur in the United States.
The **FY 1999 target** is for no more than one such event to occur in the United States.
FY 1998 Performance: Final analyses of all events in this period may not be completed until approximately one year after the end of the fiscal year. Performance for FY 1998, therefore, will be reported when the final analyses are completed.
FY 1997 Performance: Zero events were identified in FY 1997 that had a 1/1000 (10^{-3}) or greater probability of leading to a nuclear reactor accident.

[6] The NRC is required by Section 208 of the Energy Reorganization Act of 1974 to report abnormal occurrences to the Congress. The report, titled "Report to Congress on Abnormal Occurrences" (NUREG-0090) is submitted to Congress annually. In the context of the Act, an abnormal occurrence is an unscheduled incident or event that the Commission determines to be significant from the standpoint of public health or safety.

[7] The Accident Sequence Precursor (ASP) program involves the systematic review and evaluation of operational events or conditions that have occurred at licensed U.S. civilian nuclear power reactors. The ASP program identifies and categorizes precursors that could lead to accident sequences with a potential to cause severe damage to a reactor's core.

2. **Zero deaths resulting from radiation or radioactivity releases from civilian nuclear reactors.**

This measure addresses actual deaths resulting from acute radiation exposure. The **performance indicator** is the number of deaths annually. The **data** to support this indicator are currently collected through reports from industry pursuant to 10 CFR Parts 20, 50.72, and 50.73, and would be further described in the USNRC annual Abnormal Occurrence Report to Congress.

The **FY 2000 target** is **zero**. The **FY 1999 target** is **zero**.
FY 1998 Performance: Preliminary data indicate that there were **zero** deaths due to radiation or radioactivity releases from civilian nuclear reactors in FY 1998.
FY 1997 Performance: Zero deaths due to radiation or radioactivity releases from civilian nuclear reactors were identified in FY 1997.

2.a. **Zero significant radiation exposures resulting from civilian nuclear reactors.**

As used in this context, "significant radiation exposures" are those exposures that meet the NRC criteria for reporting abnormal occurrences to Congress. This goal encompasses both workers and the general population. (See Appendix I, FY 2000 Performance Plan, Item. I.A.) The **performance indicator** is the number of significant radiation exposures annually. The **data** to support this indicator are currently collected through reports from industry pursuant to 10 CFR Parts 20, 50.72, and 50.73, and would be further described in the USNRC annual Abnormal Occurrence Report to Congress.

The **FY 2000 target** is **zero**. The **FY 1999 target** is **zero**.
FY 1998 Performance: Preliminary data indicate that there were **zero** significant radiation exposures due to civilian nuclear reactors in FY 1998.
FY 1997 Performance: Zero significant radiation exposures due to civilian nuclear reactors identified in FY 1997.

3. **No substantiated breakdown of physical protection that significantly weakens protection against radiological sabotage, or theft or diversion of special nuclear materials.**

The **performance indicator** is the number of substantiated breakdowns of physical protection at nuclear power reactors annually. (See Appendix I, FY 2000 Performance Plan, Item I.C.4.) The **data** to support this indicator are currently collected in the Sequence Coding and Search System. (See Appendix I.)

The **FY 2000 target** is **zero**. The **FY 1999 target** is **zero**.
FY 1998 Performance: Preliminary data indicate that there were **zero** substantiated breakdowns of physical protection or material control in FY 1998.
FY 1997 Performance: Zero substantiated breakdowns of physical protection or material control were identified in FY 1997.

4. **Zero offsite releases of radioactive material from civilian nuclear reactors that have the potential to cause a serious adverse impact on the environment.**

The **performance indicator** is the number of offsite releases annually which meet the NRC criteria for reporting abnormal occurrences to Congress. (See Appendix I, FY 2000 Performance Plan, Item I.B.1.) The **data** to support this indicator are currently collected through reports from industry pursuant to 10 CFR Parts 20, 50.72, and 50.73, and entered in the Sequence Coding and Search System. (See Appendix I.)

The **FY 2000 target** is **zero**. The **FY 1999 target** is **zero**.
FY 1998 Performance: Preliminary data indicate that there were **zero** offsite releases in FY 1998.
FY 1997 Performance: **Zero** offsite releases were identified in FY 1997.

* 4.a. **No increase in the number of offsite releases of radioactive material from civilian nuclear reactors that exceed the limits specified in 10 CFR Part 20.2203.**

The **performance indicator** is the number of offsite releases per year in excess of 10 CFR Part 20 limits. The **data** to support this indicator are currently collected through reports from industry pursuant to 10 CFR Part 20, and entered in the Sequence Coding and Search System. (See Appendix I, FY 2000 Performance Plan.)

The **FY 2000 target** is that the five-year average (FY 1996-2000) will not exceed **three** per year. The **FY 1999 target** is that the five-year average (FY 1995-1999) will not exceed **three** per year.
FY 1998 Performance: Preliminary data indicate the NRC five-year average is **0.8** per year.
FY 1997 Performance: The NRC five-year average for FY 1997 is **0.6** per year.

5. **Environmental impacts are considered through the National Environmental Policy Act (NEPA) process before regulatory action is taken.**

The **performance indicator** is the number of environmental impacts identified and substantiated each year by external sources which were not identified as part of the NRC's NEPA process.

The **FY 2000 target** is zero. The **FY 1999 target** is zero.
FY 1998 Performance: Data for this measure will be reviewed in FY 1998 and will be reported for FY 1999.
FY 1997 Performance: Data are not available.

STRATEGIES

1. The NRC will maintain and further develop the capability to provide timely and independent technical bases for its regulatory decisions.

2. The NRC will maintain and improve its regulatory framework[8] and incrementally use risk-informed and, where appropriate, less prescriptive, performance-based[9] approaches. In doing this, the NRC will eliminate unnecessary or duplicative regulations in the primarily deterministic, prescriptive framework currently in place.

3. The NRC will authorize the siting, design, construction, and operation of civilian nuclear reactor facilities only after the NRC has determined that these proposed activities are consistent with the regulatory framework.[8]

4. The NRC will ensure that licensees understand and carry out their primary responsibility for conducting activities consistent with the regulatory framework.[8]

5. The NRC will be prepared to respond to incidents and emergencies involving potential radiological consequences.

6. The NRC will ensure that civilian nuclear reactor experience is evaluated, communicated to stakeholders, and used to improve the regulatory framework and its implementation.

7. The NRC will place a high priority on the review of applications for renewal of existing civilian nuclear reactor licenses and for the review of license transfer amendments. The NRC will also place a high priority on reducing the backlog of licensing actions to a historic low for the agency.

---

[8] The regulatory framework is rules and regulations that ensure adequate protection of public health and safety.

[9] A risk-informed approach to regulatory decisionmaking considers the insights from risk assessment together with other factors to focus licensee and regulatory attention on issues consistent with their importance to public health and safety. A performance-based approach establishes criteria for licensee performance and provides flexibility as to how these criteria are met. These definitions are currently under review by the Commission.

NUCLEAR REACTOR SAFETY

The following table depicts the relationship of the Nuclear Reactor Safety programs to the arena strategies identified above. The required resources are developed on the basis of the programs and functions necessary to implement the strategies. Detailed information on the resources, programs, and their associated output measures is provided in the Nuclear Reactor Safety arena of the FY 2000 budget request. FY 1998 baseline data for the FY 1999 and FY 2000 output measure targets are provided, where available.

FY 2000 NUCLEAR REACTOR SAFETY ARENA PROGRAM LINK TO ARENA STRATEGIES

LINKS TO ARENA STRATEGIES	STRATEGIES						
FY 2000 PROGRAMS ($210,043K, 1,431 FTE)	1	2	3	4	5	6	7
Reactor Licensing ($56,404K, 445 FTE)		X	X			X	
Reactor License Renewal ($7,763K, 54 FTE)							X
Reactor Inspection ($65,771K, 601 FTE)				X			
Reactor Performance Assessment ($5,694K, 51 FTE)				X			
Reactor Incident Response ($4,758K, 24 FTE)					X		
Reactor Operational Experience Evaluation ($6,387K, 28 FTE)						X	
Reactor Technical Training ($5,406K, 24 FTE)	X						
Reactor Enforcement Actions ($2,056K, 19 FTE)				X			
Reactor Investigations ($3,779K, 31 FTE)				X			
Reactor and Plant Performance Research ($30,237K, 93 FTE)	X		X				
Reactor Materials and Component Behavior Research ($18,569K, 34 FTE)	X						
Reactor Legal Advice ($2,330K, 21 FTE)		X	X	X			X
Reactor Adjudication ($889K, 6 FTE)			X				

BUDGET AUTHORITY BY FUNCTION AND BY PROGRAM
FULL-TIME EQUIVALENT EMPLOYMENT BY PROGRAM

(Dollar amounts in tables represent thousands of dollars ($K). In text, whole dollar amounts are used. Staff numbers represent full-time equivalents (FTEs).)

Total FY 2000 Estimate $210,043,000

Summary	FY 1998 Enacted	FY 1999 Estimate	FY 2000 Estimate	
			Request	Change from FY 1999
Budget Authority by Function ($K)				
Salaries and Benefits	150,254	143,581	148,356	4,775
Contract Support	64,882	58,162	53,185	-4,977
Travel	8,873	8,607	8,502	-105
Total	224,009	210,350	210,043	-307
Budget Authority by Program ($K)				
Reactor Licensing	58,639	53,172	56,404	3,232
Reactor License Renewal	3,700	6,394	7,763	1,369
Reactor Inspection	70,367	64,411	65,771	1,360
Reactor Performance Assessment	6,919	6,344	5,694	-650
Reactor Incident Response	6,175	4,876	4,758	-118
Reactor Operational Experience Evaluation	8,342	6,757	6,387	-370
Reactor Technical Training	6,499	6,242	5,406	-836
Reactor Enforcement Actions	996	1,914	2,056	142
Reactor Investigations	3,462	3,796	3,779	-17
Reactor and Plant Performance Research	33,975	34,019	30,237	-3,782
Reactor Materials and Component Behavior Research	21,523	19,440	18,569	-871
Reactor Legal Advice	2,235	2,026	2,330	304
Reactor Adjudication	1,177	959	889	-70
Total	224,009	210,350	210,043	-307

Summary	FY 1998 Enacted	FY 1999 Estimate	FY 2000 Estimate	
			Request	Change from FY 1999
Full-Time Equivalent Employment by Program				
Reactor Licensing	511	449	445	-4
Reactor License Renewal	28	50	54	4
Reactor Inspection	672	622	601	-21
Reactor Performance Assessment	69	62	51	-11
Reactor Incident Response	33	28	24	-4
Reactor Operational Experience Evaluation	35	34	28	-6
Reactor Technical Training	28	26	24	-2
Reactor Enforcement Actions	10	19	19	0
Reactor Investigations	30	33	31	-2
Reactor and Plant Performance Research	102	103	93	-10
Reactor Materials and Component Behavior Research	37	35	34	-1
Reactor Legal Advice	22	19	21	2
Reactor Adjudication	9	7	6	-1
Total	1,586	1,487	1,431	-56

EXPLANATION OF RESOURCE CHANGES BY PROGRAM

Reactor Licensing. The resource increase in FY 2000 is required to complete other licensing tasks and reduce the inventory of licensing actions to a historical low by the end of FY 2000, as well as to perform new rulemakings that may be needed to transition to a more risk-informed regulatory framework. This resource increase is partially offset by decreases resulting from issuance of formal updates to the improved Standard Technical Specification NUREGs, consolidation of events evaluation activities, and reduced overhead consistent with NRC's streamlining plans.

Reactor License Renewal. The resource increase in FY 2000 is required to conduct reviews of license renewal applications and to develop the associated regulatory framework.

Reactor Enforcement Actions. There are no significant resource changes in FY 2000. The resource increase in FY 1999 will be used to transition to the revised enforcement policy that the Commission is currently in the process of developing to reduce the unnecessary burdens associated with responding to non-risk-significant violations and incorporate clear risk-informed guidance in the treatment of escalated violations.

Reactor Investigations. The resource decrease in FY 2000 is primarily based upon the efficiencies achieved through streamlining the investigative process. This decrease is offset by increased personnel costs (pay raises, within-grade increases, and benefits cost increases). The resource increase in FY 1999 is primarily needed to expand the office's role in harassment and intimidation cases and to provide continuity in staff for anticipated losses based upon the extensive training requirement for new agents.

Reactor and Plant Performance Research. The resource decrease in FY 2000 reflects a number of resource shifts and programmatic reduction decisions. Decreases to the program reflect completion of work on electro-magnetic interference/radio-frequency interference (EMI/RFI) effects on digital instrumentation and control (I&C); cancellation of updates to the VICTORIA code; reduced SCDAP/RELAP maintenance; completion of the work on direct containment heating; completion of individual plant examination/individual plant external event examination (IPE/IPEEE) reviews; cancellation of a third demonstration of the improved reliability model, ATHEANA; delaying development and assessment of a human performance model for one year; termination of the Behavior-Oriented Fitness for Duty effort; termination of the Shutdown Risk effort; efficiencies derived from consolidating event assessment; eliminating all contractor support for new generic safety issue prioritization and resolution; general information technology; and reducing travel. Work on assessing management and organization influences on plant performance is canceled.

Reactor Materials and Component Behavior Research. The resource decrease in FY 2000 reflects reducing the effort on environmentally assisted cracking, eliminating an assessment of degraded structures and components, and eliminating anticipatory work on the assessment of natural hazards to nuclear power plants.

Reactor Legal Advice. The resource increase in FY 2000 is required for the workload associated with license renewal applications and with electric industry restructuring and deregulation.

Reactor Adjudication. The resource decrease in FY 2000 is primarily based upon expected efficiencies in the Atomic Safety and Licensing Board Panel's operations, including use of available technology.

JUSTIFICATION OF PROGRAM REQUESTS

Reactor Licensing

OUTPUT MEASURES		
✱ Output/Baseline	FY 1999 Target	FY 2000 Target
Licensing actions completed per year. (FY 1998: 1,425 licensing actions completed.)	1,670 actions, including conversions to improved Standard Technical Specifications.	1,800 actions, including conversions to improved Standard Technical Specifications.
Size of licensing action inventory. (FY 1998: 1,113 actions.)	1,000 actions or less.	700 actions or less.
Age of licensing action inventory. (FY 1998: 66 percent of inventory 1 year old or less; 86 percent 2 years old or less; 95 percent 3 years old or less.)	80 percent of inventory 1 year old or less; 95 percent 2 years old or less; all actions 3 years old or less.	95 percent of inventory should be 1 year old or less; all actions 2 years old or less.
Other licensing tasks completed per year. (FY 1998: 1,006 other licensing tasks completed.)	800.	925.
Number of operator licensing examinations administered. (FY 1998: 413 initial operator licensing examinations administered; 393 generic fundamentals examinations administered.)	Meet licensee demand estimated at 400 initial operator licensing examinations and 400 generic fundamentals examinations.	Meet licensee demand estimated at 400 initial operator licensing examinations and 400 generic fundamentals examinations.
Reactor Program System will develop demonstrable returns on investment to the agency.	No significant deviations (as defined by Clinger-Cohen Act of 1996).	No significant deviations (as defined by Clinger-Cohen Act of 1996).

The reactor licensing program ensures that operating facilities maintain adequate levels of protection of public health and safety in the daily operation and throughout the life of the plant, until decommissioning. This safety oversight includes assurances that facilities are adequately designed, properly constructed and correctly maintained, and that trained and qualified operating and technical support personnel can prevent or cope with accidents or other threats to public health and safety.

Each operating site is assigned a project manager having as a primary responsibility maintaining the nuclear power reactor license and serving as the headquarters point of contact with licensees, other NRC staff, and the public on safety matters concerning specific plants. This includes coordinating complex technical reviews, evaluating overall licensee performance, assisting the regions in developing and implementing inspection plans, consulting with State and local officials, and replying to public and Congressional inquiries.

Operating license requirements frequently need to be changed as a result of routine activities, technical advances, or unexpected events at power plants. A detailed technical review of applications from licensees for amendments to their operating licenses, such as technical specification changes, modification of license conditions, and exemption and relief requests, are necessary to ensure that the operational safety of the plant is not compromised. These licensing actions require NRC approval before the licensee can implement the requested action. Without such approval, the licensee cannot make the changes requested and, in some cases, may be required to shut down the plant if operation is not feasible under the current license conditions.

In FY 2000, the NRC expects to complete approximately 1,800 licensing actions, including initiatives involving risk informed regulation and conversions to improved Standard Technical Specifications. The licensing action inventory at the end of FY 2000 will be at a historic low of 700. The age of the licensing action inventory will be reduced so that 95 percent of the licensing actions in the inventory are one year old or less, and all actions are no more than two years old.

Another major licensing action effort will result from licensees' applications to increase their power ratings. At the end of FY 1998, approximately 48 power uprate licensing actions had been completed, resulting in an increase in the available electric generating capacity in the United States of about 2300 megawatts--which is equivalent to building two new 1150 MW electric plants--with minimal plant modification and minimal impact on plant safety. Three power-uprates are scheduled for completion in FY 1999 and we expect about three power-uprate applications each fiscal year.

The NRC will improve the effectiveness of its licensing process by reviewing and approving topical or generic reports submitted by licensees, vendor/owner groups, and other parties. These reports deal with safety issues and cost-beneficial changes common to a set of plants. The NRC will review the more safety-significant reports in FY 2000. In addition, topical reports that involve cost-beneficial actions and have a licensee sponsor will be given higher review priority.

NRC review is also required on issues that do not result in an amendment of the operating license. These reviews are considered "other licensing tasks." These other licensing tasks include (1) responding to petitions from the public requesting action pursuant to 10 CFR Part 2.206 or (2) evaluating information received from individual licensees in response to requests for information (e.g., generic letters and bulletins) or as required by regulation or license conditions as part of the NRC's responsibility for reviewing the safety of the operating licensed facilities (e.g., final safety evaluation report updates, 10 CFR Part 50.59 reports, and changes to quality assurance, safeguards, and emergency preparedness plans). The NRC expects to complete approximately 925 other licensing tasks in FY 2000 and reduce the inventory, with the goal that the number of other licensing tasks per operating reactor at the end of FY 2000 is less than the average at the end of the preceding fiscal year.

The NRC provides the overall management, quality assurance, and plant to plant consistency of improved Standard Technical Specifications (iSTS), generic effort and lessons learned as a result of iSTS conversions, all generic efforts to improve technical specifications to make them more operator oriented, and a focus on the more safety-significant requirements. In FY 1999, the NRC will issue Revision 2 to the iSTS, compiling approved changes in a formal update to the documentation. In FY 2000, the staff will continue to maintain the iSTS and review further changes as necessary.

The NRC must license all personnel authorized to operate power reactors. Initial examinations are administered by the NRC to ensure that operating plants are staffed by qualified personnel. NRC also examines candidates for new operator licenses on generic fundamentals to measure the candidates' knowledge of reactor theory, plant components, and thermodynamics. In FY 2000, the NRC will administer approximately 400 initial operator licensing examinations and 400 generic fundamentals examinations nationwide.

The NRC continues to endorse the Training Accreditation Program managed by the Institute of Nuclear Power Operations (INPO). The NRC intends to observe discussions of representatives from INPO accreditation teams and from the utilities before the National Nuclear Accrediting Board.

Policy and technical activities are conducted to assess the policy and safety significance of potentially generic regulatory issues as they emerge. Action plans are used, when appropriate, for issues that are complex, safety significant, or that have significant policy implications such as issues like implementation of probabilistic risk assessment (PRA), 10 CFR Part 50.59, FSAR and commitment management, utility deregulation, and Maine Yankee lessons-learned.

The NRC develops regulations and regulatory guidance applicable to reactor licensees. The NRC will develop and complete approximately six rulemakings per year in FY 1999 and FY 2000 that pertain to operating reactors. Milestones for completing rulemakings are established in the semiannual NRC Rulemaking Activity Plan. Among the priority rulemakings identified for completion during this period are the following: a change to 10 CFR 50.59 (Changes, tests, and experiments) to provide clarity and flexibility in the existing requirements; a revision to event-reporting requirements to reduce the reporting burden associated with events of little or no risk significance; a rule regarding the use of potassium iodide as a protective measure for the general public after a severe reactor accident; a change as a result of a rulemaking petition concerning burden reduction for Quality Assurance Program change control; a rule change to allow an operating power reactor licensee to voluntarily amend the facility design basis to use revised source terms in design-basis accident radiological analyses and a revision to the maintenance rule. A small increase in FTE is also included in FY 1999 and FY 2000 to be able to perform new rulemakings that may be needed as the agency transitions to a more risk-informed regulatory framework. These resources will also be applied to the acceleration of cost-beneficial regulatory actions in the Nuclear Waste Safety area for power reactor licensees in the decommissioning phase, such as rulemakings for emergency planning, safeguards, and financial protection for shutdown plants.

The NRC continually monitors and assesses the performance of nuclear power plant licensees to verify that plants are operated safely, and continually analyzes operational data to identify safety issues and potential degradations in performance. In FY 2000, prompt technical screening and assessments of approximately 5,000 nuclear reactor event reports and other incoming data will result in approximately 400 items that require followup. Followup can also result from technical assessments of potential generic safety questions, from licensee reports of defects and/or noncompliance, or from allegations. The NRC manages and tracks potential generic safety questions until they are resolved and documented in agency databases for future reference. If the NRC determines that a potential safety concern exists, corrective action is recommended and prompt operating experience feedback is provided to licensees or vendors. Approximately 80 of these generic communications are expected to be issued in FY 2000.

The standardization of nuclear power plant designs can increase the safety, reliability, and availability of nuclear power plants to ensure that certified standard designs, when properly

sited and constructed, will adequately protect public health and safety. The NRC completed its detailed technical review of the Westinghouse advanced passive pressurized-water reactor design (AP600) and issued the final design approval in late FY 1998. Followup activities concerning AP600 design certification rulemaking that will certify that the AP600 design as an appendix to 10 CFR Part 52 will start in early FY 1999 upon receipt of required information from the vendor and are scheduled to be completed in FY 2000.

The NRC is responsible for licensing, inspecting, and decommissioning smaller non-power reactors that are designed and used for research and testing in such areas as physics, chemistry, biology, medicine, and materials sciences, and for training individuals for nuclear-related careers in the power industry, national defense, research, and education. During FY 2000, the NRC will conduct inspections as well as reviews of licensing actions and other licensing tasks for approximately 52 licensed non-power reactors.

In addition to licensing and inspecting the non-power facilities, the NRC must license all personnel authorized to operate the non-power reactors. During FY 2000, the NRC will administer initial examinations for new reactor operators and requalification examinations to ensure that the approximately 300 non-power reactor operators are qualified to perform their duties.

The NRC will continue to proceed in two phases with the development of the Reactor Program System (RPS). The RPS is being developed to provide for the effective and efficient integration and analysis of information associated with nuclear reactor regulation programs. The RPS will provide reactor inspection and licensing information that can be used to improve NRC's ability to better monitor plant performance characteristics, effectively compare plant performance, and better identify early causes for concern. The licensing and other planning portions will be completed in FY 1999 and deployed by late FY 1999. Development of the remaining portion, including interfaces with other agency systems, will follow.

Reactor License Renewal

OUTPUT MEASURES		
Output/Baseline	**FY 1999 Target**	**FY 2000 Target**
Completion of license renewal application reviews. (FY 1998: Major milestones completed.)	Complete those major milestones scheduled in FY 1999 in accordance with the Commission-approved schedules in order to support completion of license renewal applications within 36 months from receipt of the application to a Commission decision.	Complete those major milestones scheduled in FY 2000 in accordance with the Commission-approved schedules in order to support completion of license renewal applications within 36 months from receipt of the application to a Commission decision.

The reactor license renewal program evaluates applications to renew current power reactor licenses beyond their expiration dates, evaluates the effects of aging on materials and safety-related systems, structures, and components, ensures that the safety-related plant systems and components perform their required intended functions in accordance with their current licensing basis for the period of extended operation, and establishes the technical requirements and regulatory framework for renewal of power plant licenses. The NRC will continue to conduct technical and environmental reviews of the Calvert Cliffs and Oconee license renewal applications. The staff review for Calvert Cliffs is scheduled to be completed in November 1999 and for Oconee in February 2000. Dates for final agency action on these applications will depend on the timing of adjudicatory hearings, if required. In each case, the Commission has issued a case-specific order to the Atomic Safety and Licensing Board Panel (ASLBP) to ensure that prompt, fair hearings are conducted. Resources are included to support two additional license renewal applications expected in FY 2000. The reviews of generic technical reports supporting the renewal applications, as well as prospective applications for Westinghouse and General Electric reactors, will continue, along with the resolution of technical issues that can improve the guidance in the regulatory guides, standard review plans, industry guides, and staff positions implementing 10 CFR Part 51 and Part 54. The NRC expects that these reviews, in conjunction with the experience gained from the Oconee and Calvert Cliffs reviews, will result in process enhancements that will improve the timeliness of license renewal application reviews.

Reactor Inspection

OUTPUT MEASURES		
Output/Baseline	**FY 1999 Target**	**FY 2000 Target**
Number of plants for which core inspection program is completed during the fiscal year. (FY 1998: Completed at all reactors.)	All operating reactors.	All operating reactors.
Average time to complete reviews of allegations. (FY 1998: Average time to complete reviews 122 days.)	180 days.	180 days.

The reactor inspection program is designed to ensure, through selective examinations, that the licensee identifies and resolves safety issues before they affect safe plant operations. This program is audit-oriented to verify that relevant activities are being properly conducted and equipment properly maintained to ensure safety operations. The inspection program comprises three major elements: core inspections, plant-specific inspections, and generic safety issue inspections.

The core inspections are performed at all operating reactors and focus on licensee performance in the areas of plant operations, maintenance, engineering, plant support (which includes security, radiation protection, and emergency preparedness), and licensee effectiveness in identifying, resolving, and preventing problems. Resident inspectors carry out the major part of the core inspection program and participate in regional initiative and generic safety issue inspections. Their primary job is to observe, evaluate, and report on the adequacy of licensee nuclear safety activities, concentrating on day-to-day licensee operational and event followup activities, and licensee activities and processes that are important to safety and reliability.

Plant-specific regional initiative inspections are performed as needed to followup on operational events and safety issues, and to further investigate the root causes and corrective actions related to inspection findings. In general, the level of regional initiative inspection performed at each site is a function of that site's performance. NRC inspectors also respond to allegations of safety and safeguards violations at nuclear facilities and provide technical support to investigative personnel.

Generic issue inspections are one-time inspections that address areas of emerging safety concern or areas requiring increased emphasis because of recurring problems. These inspections are required to be performed at all operating reactors, at a particular type of reactor facility, or at designated reactors. Previously conducted generic issue inspections include team inspections of maintenance, emergency operating procedures, and electrical distribution and service water systems.

The NRC plans to spend an annual average of approximately 2,300 hours in direct onsite inspection activities at each reactor in FY 2000. The NRC has reduced the total direct onsite inspection hours (from 2,550 hours in FY 1996 and FY 1997) based on operating experience in recent years that shows overall performance at reactors has been improving. This overall average is used to plan resource allocations for the inspection program. Actual hours expended for individual units are adjusted on the basis of licensee performance. For example, the core inspection and generic safety issue inspections constitute (at least) an adequate level of inspection at plants that have demonstrated superior performance. To ensure that resources are allocated effectively to enhance reactor safety, significant flexibility exists to conduct additional inspections of safety problems and of plants that require special attention.

During FY 1999, the staff is working to develop and implement a more risk-informed, efficient, and effective baseline core inspection program. By risk-informed, it is meant that the scope of the inspection program will be defined primarily by those areas that are significant from a risk perspective, and inspection methods used to assess these areas will take advantage of both generic and plant-specific risk insights. While resource reductions are anticipated from this effort, it is too early to quantify savings.

The NRC also conducts approximately 35 reactor operator licensing requalification program inspections each year to evaluate licensee examination and training programs and to improve operational safety through early identification and correction of programmatic weaknesses. Vendor/contractor inspections are also conducted. These inspections are reactive in nature and determine whether suppliers of materials, components, and services used in nuclear power plants are complying with NRC requirements. These inspections improve reactor safety by (1) ensuring that root causes of reported vendor-related problems are identified and that suitable corrective actions are developed and implemented, (2) informing the nuclear industry of substandard, suspected counterfeit, or fraudulently-marketed vendor products, and (3) ensuring that fraudulently-marketed products are traced to their source.

Reactor Performance Assessment

OUTPUT MEASURES		
Output/Baseline	**FY 1999 Target**	**FY 2000 Target**
Timeliness of assessments conducted and reports issued. (FY 1998: 45 reports issued and meetings conducted; four did not meet the target.)	All assessment reports issued and meetings with licensees held within 60 days of the end of the assessment cycle.	All assessment reports issued and meetings with licensees held within 60 days of the end of the assessment cycle.
Plant performance review. (FY 1998: 2 reviews per site conducted.)	Conduct 2 reviews per site.	Conduct 2 reviews per site.
Senior management meetings. (FY 1998: 2 meetings conducted.)	Conduct an annual meeting.	Conduct an annual meeting.

The NRC conducts an integrated assessment of licensee performance through collecting and assessing inspection and operational data on each power reactor site. This program provides for ongoing and annual reviews of agency observations and findings on the safety performance of operating reactor facilities. Assessing reactor performance also includes integrating lessons learned, overseeing the implementation of corrective actions, and systematically reexamining reactor oversight activities and continually evaluating and developing the program.

The assessment process will be used to develop the NRC's conclusions regarding a licensee's safety performance and to identify agency actions to ensure licensees address performance weaknesses. The assessment process will provide a vehicle to clearly communicate with licensee management and the public on plant performance from a safety and risk perspective. In addition, the NRC will use assessment results in allocating reactor inspection resources at specific plants.

During FY 1999 and FY 2000, the NRC will transition from the current processes, which include the Systematic Assessment of Licensee Performance (which has been suspended by the Commission), Plant Performance Reviews, and Senior Management Meetings into a single integrated process. As part of this transition, the NRC will change the conduct of the Senior Management Meeting from two meetings per year to an annual meting beginning in FY 1999.

In FY 2000, the NRC will continue to collect and assess inspection and operational data on each power reactor site, and use the assessment process to (1) conduct an integrated assessment of licensee's safety performance, (2) identify agency actions to ensure that licensees address performance weaknesses, (3) clearly communicate the results of the assessment and planned actions to licensees and the public, and (4) assist NRC management in allocating resources used to inspect and assess licensee performance.

Reactor Incident Response

OUTPUT MEASURES		
Output/Baseline	**FY 1999 Target**	**FY 2000 Target**
Emergency Response Performance Index (ERPI).	90 percent.	90 percent.
Definition: Index provides the single overall measure of the degree to which the agency believes it is ready to respond to an emergency situation. It serves as a method for measuring disparate activities that comprise the elements of the incident response program. It will be determined by averaging the degree of satisfaction of the following program functions: Response Organization Staffing, Response Facility Availability, Communications Reliability, Response Organization Training, 24-Hour Notification Point, Timeliness of Activation Decision, and Timeliness of Activation. If the overall index falls below or approaches its target value of 90 percent, management will determine what is contributing most to the decline and conduct appropriate corrective measures based on this review.		

Reactor incident response activities are conducted to maintain incident and accident investigation programs to ensure that safety-significant operational events involving nuclear power reactors are investigated in a timely, systematic, and technically sound manner and that information is obtained on the causes of the events so that NRC can take timely and effective corrective actions.

Emergency response activities are also conducted to ensure NRC is prepared to carry out its role in a radiological emergency at NRC-licensed nuclear reactor facilities, licensee responses are consistent with licensee responsibilities and NRC responses are coordinated with other Federal response activities and State and local governments. This also includes support of response tools, including an emergency telecommunications system, the Emergency Response Data System, and the Operations Center Information Management System.

During FY 2000, the Incident Investigation Program (IIP) will be maintained in a high state of readiness to establish and support an Incident Investigation Team (IIT) at any time. The Incident Investigation Manual (NUREG-1303), which provides formal guidance on the conduct of IITs, will be revised if necessary, to address investigation and programmatic deficiencies,

if any. IIT rosters will be revised as needed. IITs will be established and supported, and findings will be documented as staff followup actions. Also in FY 2000, independent reviews will be conducted for actions assigned from previous IITs and will be published in the NRC's Annual Report.

In FY 2000, the NRC will continue to provide oversight and interaction to maintain high Headquarters Operations Center (HOC) reliability and facility availability. The emergency response program will continue to be updated on the basis of lessons learned. The on-call response coordination team member position will be continuously staffed to initiate the call-out process when the HOC is activated. Response team readiness will be maintained. The staff will continue its interfaces with other Federal agencies involved in radiological incident response. The NRC will respond to new initiatives while maintaining its role in the principal Federal response plans (Federal Response Plan, Federal Radiological Emergency Response Plan, and National Contingency Plan). The NRC's incident response staff will participate in exercises, drills, major organizational meetings, and training sessions with State coordination as a focus. The training provided will be conducted in the most expeditious way possible.

During FY 2000, the HOC will be continuously staffed by Headquarters Operations Officers. They will take initial notifications of events and will document reported events for further review within the agency. During non-working hours (for other NRC staff), they will take allegation and materials event reports and will screen any initial reports for the decisionmaking process to activate the agency's emergency response.

The NRC's Regional Incident Response Program will also be maintained at a high level of readiness at all times during FY 2000. To accomplish this, the NRC's regional offices will train response personnel as required to maintain technical and administrative skills, participate periodically in drills and exercises, maintain response equipment in a state of operational readiness, maintain response procedures current, and implement program improvements resulting from lessons learned. The regions will designate sufficient staff to participate as response team members to implement program objectives, keeping in mind program efficiencies. In addition, the regions will continually evaluate ways to improve response through upgrades to equipment, resources, and facilities. The regions will interface with NRC headquarters, other Federal agencies, licensees, and State and local governments in order to maintain a high level of cooperation necessary for response to emergencies.

Reactor Operational Experience Evaluation

OUTPUT MEASURES		
Output/Baseline	**FY 1999 Target**	**FY 2000 Target**
Operational Experience Evaluation Performance Index.	90 percent.	90 percent.

Definition: Index provides the single overall measure of the timeliness and thoroughness of reactor operational experience evaluation and the risk associated with that experience. It serves as a method for measuring disparate activities that comprise the elements of the reactor operational experience evaluation program. The index is an average value calculated by combining the following program functions: Accident Sequence Precursor program, System Reliability studies, Risk-Based Performance Indicators, Reliability and Availability Data system, Sequence Coding and Search system, Common Cause Failure Data system, Senior Management Meeting Support, and case studies and evaluations of Safety Significant Issues. A decline in the index value would alert management to potential programmatic problems that would be examined to determine the root cause, and corrective actions would be taken on the basis of the results of this review.

During FY 1999, this output measure will be reevaluated and appropriate changes made as a result of recent operational and organizational changes related to this function.

The NRC collects, analyzes, and disseminates a wide range of power reactor operating experience data, including information on foreign reactor operating experience applicable to domestic nuclear power plants. This comprehensive review identifies two to three significant plant-specific or generic safety issues per year involving components, systems, system interactions, and human performance for in-depth evaluation. Results, findings, and recommendations of these evaluations are widely disseminated to the NRC staff, to industry, and to the public. Events that are significant from the standpoint of public health and safety are reported to the Commission with the recommendation that they be reported to Congress as abnormal occurrences (AOs). Such reactor AOs have declined from an average of approximately 9 per year in the mid-1980s to an average of approximately two per year over the past 5 years.

Operational data are collected, independently analyzed, and disseminated to communicate the important safety lessons drawn from operational experience. The emphasis has historically been focused on generic safety issues identified through the review of a broad range of data, including domestic and foreign reports of operating events. Long-term, in-depth studies of such safety concerns will continue in FY 2000. However, additional emphasis is being placed upon the assessment of plant-specific performance in support of the NRC's integrated reactor performance assessment process, and the collection and assessment of risk and reliability data to gather risk insights into both plant-specific and industry-wide safety performance. In

addition, the NRC has begun a new initiative to assess the effectiveness and efficiency of agency programs aimed at enhancing regulatory effectiveness, which will continue through FY 2000.

In FY 2000, the independent review of domestic and foreign nuclear power plant operating experience will continue. Safety-significant issues will be identified and studied to determine the root causes and corrective actions. This will include studies of components, systems, and human performance.

During FY 2000, the NRC's integrated reactor performance assessment process will continue to include the production of performance trend plots, financial variable trend plots, and performance indicator data. The analysis of these data will help identify plants with potential problems, and will be instrumental in the detailed review of the operational experience of selected plants.

The assessment of risk and reliability data will continue in FY 2000 to include the Accident Sequence Precursor program, which is being expanded to include Level 2/3 models and low-power/shutdown models; the evaluation of the reliability of important safety systems; the development of risk-based performance indicators; the development and/or maintenance of risk databases, including the Accident Sequence Precursor, Common-Cause Failure, Loss of Offsite Power, and Initiating Events databases; and the conduct of risk studies as directed.

During FY 2000, as part of the NRC program to enhance regulatory effectiveness, the NRC will continue to develop a process and identify candidate issues for improving the effectiveness and efficiency of rules, standards, regulatory guidance, and their application.

In FY 2000, the Committee To Review Generic Requirements (CRGR) will continue to maintain responsibility for the review of all proposed new generic requirements and NRC staff positions to be implemented by the licensees of operating power reactors. CRGR will continue to receive about 30–40 items per year for review and will hold 12–14 meetings for that purpose. NRC staff will provide support for planning, conducting, and documenting CRGR reviews on these items and for monitoring plant-specific backfitting activities. The CRGR Chairman and/or NRC support staff will continue to meet with the Nuclear Utility Backfitting and Reform Group (NUBARG) for feedback on generic backfit implementation by NRC via an estimated one to two meetings. The NRC will continue the conduct of training and audits in conjunction with program and regional office implementation of generic backfitting, at an estimated two to three training/audit sessions per year, and will also provide support for up to two operating facility site visits by CRGR to discuss generic backfitting activities and processes.

Reactor Technical Training

OUTPUT MEASURES		
Output/Baseline	**FY 1999 Target**	**FY 2000 Target**
Numbers and types of reactor technical training courses offered. (FY 1998: 100 percent of cumulative needs met.)	Numbers and types of courses offered will meet 90 percent of cumulative needs identified by offices and regions in semiannual needs surveys.	Numbers and types of courses offered will meet 90 percent of cumulative needs identified by offices and regions in semiannual needs surveys.

Reactor technical training is conducted to ensure that NRC staff possesses the requisite knowledge, skills, and abilities and competencies to accomplish the mission of the agency. Under this activity, technical training is provided for formal NRC staff qualification, development, and training programs in support of the reactor program. The NRC will continue to maintain the Technical Training Center (TTC) and manage the technical training program for NRC staff. Curriculum areas in support of the training program will be maintained in reactor technology, probabilistic risk assessment, engineering support, radiation protection, security and safeguards, and regulatory skills to provide the technical and regulatory foundation to support staff decisions in the regulatory oversight process. Technical training will continue to be provided using the principles of the systems approach to training, which is a standard, multiphase program that includes needs analysis, program design and development, implementation of training, and program evaluation.

Required core, specialized, and refresher reactor technical training is developed, implemented, and maintained in support of the qualification of NRC personnel with defined qualification, development, and training programs. In FY 2000, the reactor technical training program will continue to include approximately 60 reactor technology courses and 85 courses in specialized technical training areas. A spectrum of reactor technology training will be provided for the General Electric, Westinghouse, Combustion Engineering, and Babcock and Wilcox reactor designs to meet the agency's highest priority needs, including an integrated series of classroom and simulator courses for NRC staff. Technical training of regulatory personnel from other countries to assist in the development of knowledge of nuclear technology and regulatory skills will be provided on a "space available" basis. In FY 2000, the NRC will provide 90 percent of the numbers and types of courses as required by the offices and regions.

During FY 2000, initial reactor technology training and refresher training will continue to be provided to NRC inspectors, reactor operator license examiners, and other staff in formal

qualification or development programs. In addition, technical training will be available for NRC technical managers. Training of headquarters and regional reactor inspectors, operator license examiners, and headquarters operations officers on vendor-specific plant designs, operation, and emergency operating procedures, and technical issues will continue. Major curriculum adjustments to best satisfy the highest priority regional and program office training needs will be implemented as necessary.

Reactive training needs are addressed in reactor technical training curriculum areas as identified by job and task analyses and agency management through forums such as the training focus groups, division director counterpart meetings, and senior management meetings. The NRC will provide technical training to support special staff development programs. During this period, a limited amount of technical training will be provided in specialized areas to supplement the initial training provided to technical staff of a particular category. This training provides selected technical staff with specific expertise in areas for which all technical staff does not require the expertise.

New and expanded regulatory and technical training will be developed and implemented during FY 2000, as necessary, in areas identified by program offices and regions. This includes new training courses to support the regulatory oversight process improvements, agency-wide probabilistic risk assessment implementation plan, and new training determined to be necessary by technical training needs surveys. In addition, reactor concepts training will be provided for employee orientation.

Technical training for the NRC staff is highly dependent on the full-scope simulators, classroom information technology systems, and office technology systems at the TTC. In order to maintain an efficient, effective technical training program which meets identified agency needs, these information technology systems must be maintained and updated as necessary.

In FY 2000, full-scope training simulators will continue to be maintained at the TTC to support NRC initial qualification and refresher programs. This includes maintaining the operability, reliability, and performance of the simulator hardware and software and maintaining and updating the infrastructure for simulation equipment. Performance of NRC full-scope simulators will continue to be updated to the extent practicable to meet NRC reactor technology training needs. Five simulators are currently located at the Technical Training Center, modeling the following designs: the GE-BWR/4, the GE-BWR/6, the Westinghouse, the CE, and B&W. When the GE-BWR/4 simulator was acquired and made operational, the baseline BWR training program was shifted from the GE-BWR/6 to the GE-BWR/4 design.

The remaining four simulators will continue to support essential training in each of the four major U.S. reactor vendor designs.

Reactor Enforcement Actions

OUTPUT MEASURES		
Output/Baseline	**FY 1999 Target**	**FY 2000 Target**
Timeliness in completing enforcement actions. (FY 1998: Enforcement case average of 67.1 days for 90 percent of cases. Enforcement case average of 80.6 days for 100 percent of cases.)	90 percent of reactor enforcement cases will average 90 days or less. 100 percent of reactor enforcement cases will average 120 days, or less. The measuring period starts on the latest of the following dates: (1) inspection exit, for non-OI cases, (2) the date of the OI memorandum forwarding the OI investigation to the staff, for OI cases, (3) the date that the Department of Justice says NRC may proceed, for cases referred to the DOJ, or (4) the date of the Department of Labor decision that is the basis for the action.	90 percent of reactor enforcement cases will average 90 days or less. 100 percent of reactor enforcement cases will average 120 days, or less. The measuring period starts on the latest of the following dates: (1) inspection exit, for non-OI cases, (2) the date of the OI memorandum forwarding the OI investigation to the staff, for OI cases, (3) the date that the Department of Justice says NRC may proceed, for cases referred to the DOJ, or (4) the date of the Department of Labor decision that is the basis for the action.

The NRC's enforcement program is used as a deterrent to emphasize the importance of compliance with requirements and to encourage prompt identification and comprehensive correction of violations. The basic enforcement sanctions are notices of violations, civil monetary penalties, and various enforcement orders. The nature and extent of the enforcement action taken by the NRC reflect the seriousness of the violation involved.

The NRC expects to consider approximately 200-400 potentially escalated reactor enforcement actions in FY 2000. The Commission is in the process of revising its enforcement policy as to non-escalated actions and will be evaluating the use of risk information in escalated enforcement actions. As the number and types of enforcement actions taken in any period of time are a function of the number of licensees and the licensees' performance, it is difficult to predict future activity levels. However, previous enforcement activity has been as follows:

Reactor Enforcement				
Fiscal Year	Actions Considered	Resulting Civil Penalties	Notices of Violation Without Civil Penalty	Orders Issued
1996[1/]	280	50[2/]	38	4
1997	397	71	41	10
1998	464	44	34	14

1 Reflects a change in the threshold for considering escalated actions.

2 The information for FY 1996 was based on enforcement actions issued to licensees. Because an enforcement case or enforcement action can include more than one escalated enforcement item or issue, FY 1997 data are based on accounting for escalated enforcement items. Therefore, for consistency, data for FY 1996 have been adjusted to reflect this method of accounting.

The NRC also monitors discrimination actions filed with the U.S. Department of Labor under Section 211 of the Energy Reorganization Act and develops enforcement actions where there are properly supported findings of discrimination, either from the Office of Investigations or from the Department of Labor adjudications.

Reactor Investigations

OUTPUT MEASURES		
Output/Baseline	FY 1999 Target	FY 2000 Target
Timeliness in completing investigations. (FY 1998: Complete cases, on average, in 6.3 months; 7.9 percent of cases open for more than 12 months.)	Complete cases, on average, in 9 months, or less. Maintain the average number of cases within the active case inventory for more than 12 months, at 9 percent, or less.	Complete cases, on average, in 9 months, or less. Maintain the average number of cases within the active case inventory for more than 12 months, at 9 percent, or less.

The NRC investigates allegations of wrongdoing by NRC reactor licensees, and others within its regulatory jurisdiction. All findings and conclusions that result from investigations are sent to the appropriate program office, the Office of Enforcement, and the Office of the General Counsel for review of the issues involved and a determination as to whether enforcement action is warranted. Investigations that substantiate criminal violations concerning NRC licensees and others within the NRC's regulatory jurisdiction are referred to the U.S. Department of Justice. In FY 2000 the NRC anticipates investigating an inventory of approximately 265-285 cases and that 175-195 reactor cases will be closed. In addition to

managing its own caseload, the NRC works closely with other investigative agencies and organizations to ensure the timely exchange of information of mutual interest.

Reactor and Plant Performance Research

OUTPUT MEASURES		
Output/Baseline	**FY 1999 Target**	**FY 2000 Target**
Technical bases for safety and regulatory guidance and decisionmaking.	Issue 23 research products that respond to high- and medium-priority needs from the Commission and NRC's licensing organizations. Develop, maintain, or improve 6 engineering codes/models for use by RES and licensing organizations for regulatory analyses/decisionmaking. Key improvements include the consolidation of codes to reduce maintenance costs and the development of a Graphical User Interface to increase user productivity.	Issue 24 research products that respond to high- and medium-priority needs from the Commission and NRC's licensing organizations. Develop, maintain, or improve 6 engineering codes/models for use by RES and licensing organizations for regulatory analyses/decisionmaking. Key improvements include the consolidation of codes to reduce maintenance costs and the development of a Graphical User Interface to increase user productivity.
Definition: Research products are typically reports containing experimental or analytical results that form the technical basis for regulations, regulatory guides, new methods, the resolution of generic safety issues, and regulatory decisionmaking.		

The NRC conducts reactor and plant performance research to provide an in-depth examination and understanding of operating experience and plant transients experienced by the nuclear industry, including evaluations of overall plant risk; understand and provide a technical basis for acceptance of operator/control-system designs considering effects on human and total systems performance; gain an understanding of ways to prevent and mitigate the consequences of severe core damage or core-melt accidents in nuclear power reactors; and provide support for the development of revised reactor-related regulations, policy statements, and regulatory guides that incorporate research results and lessons learned from operating experience. Also, complex technical issues continue to arise that apply, in common, to large numbers of reactors and nuclear-related facilities. Solutions to such "generic issues" must be developed for the class of applicable reactors or facilities to assure continuing safety, and to determine if the costs of implementation can be justified in comparison to the corresponding benefit. The NRC

conducts numerous programs of cooperative research with both international and domestic organizations.

Thermal-Hydraulics and Reactor Physics--Understanding safety-significant abnormal operations and plant transients experienced by the nuclear industry is an important element in the NRC's continuing efforts to maintain an adequate margin of safety. Analysis of these operating events requires information on the processes of heat transfer and fluid flow (the thermal-hydraulic response) of the reactor coolant system over the range of plant transients and accidents that could occur. These events include design-basis accidents (required to be analyzed in license applications), non-design-basis events such as multiple-system or multiple-component failures, common mode failures, and operator errors that have been revealed through probabilistic risk assessments and operating experience.

Research is being conducted to provide validated methods to evaluate design-basis accidents, the safety implications of actual operating events and hypothetical transient scenarios determined to be major contributors to risk as shown by probabilistic risk assessments and earlier operating events. This work is focused on integrating experimental data and associated calculations into a firm technical basis to support regulatory actions such as modifications to plant technical specifications, reviews of accident management plans, or remedial actions in response to operating events. The principal products of this research are analytical tools (computer codes) used to understand and predict the plant response to deviations from normal operating conditions. The capability of the computer codes to predict plant response with an acceptable uncertainty is improved by validating the codes using (1) basic experiments to derive empirical formulas for determining coolant system behavior under postulated transients; (2) separate-effect experiments to evaluate the code predictions for a single, complex component; and (3) integral system experiments to evaluate the code predictions for a complete reactor system.

The use of complex computer codes is a major part of the NRC's independent capability for analyzing technical information pertaining to reactor safety. This ability is provided by a group of computer codes that model thermal-hydraulic and reactor physics phenomena that occur in reactor systems.

To maintain a high level of expertise in thermal-hydraulics and reactor safety, it is essential for the NRC to continuously improve its capability to analyze plant transients, and maintain key researchers in the areas of reactor safety codes, two-phase flow, and reactor physics. These improvements are necessary because the NRC's plant transient thermal-hydraulics codes were initially developed in the 1970s for main frame computers and were focused on large break loss-of-coolant accident (LOCA). Over the past 20 years, these codes have grown to

codes with more complex physics and an almost impenetrable, inconsistent, nonmodular, nonstandard, and nonportable database. Maintaining and running the existing codes is labor intensive and has consequently required many skilled people at four different contractors with little opportunity to consolidate the available talent base. Although these codes have provided useful analyses, they are becoming obsolete and are difficult to use and maintain; they are not robust, and they do not employ the latest technology in two-phase flow, numerical methods, and code architecture. Furthermore, maintaining several codes that embody many of the same characteristics and diverge only on a few models designed to address specific safety issues is not cost effective. The current advances in software engineering, data distribution, expert systems and graphical user interfaces, machine intelligence, and knowledge of thermal-hydraulic phenomena enable us to consolidate the NRC transient analysis capabilities into a single code without adversely impacting the existing capabilities.

Over the past 20 years, applications were made and incidents occurred with regularity in operating plants that required an independent analysis by the NRC. It was common that these events challenged the existing thermal hydraulic (T/H) codes beyond their design capabilities and the NRC was forced to use these codes outside their original design objectives and performed ad hoc improvements and developments to meet the "new" analysis requirements. The current suite of NRC T/H codes cannot handle some of the important issues that the agency is presently facing or will be facing in the near future, e.g., support for power rate increase, use of mixed-oxide (MOX) fuel. Without an improved capability, the NRC may, in some cases, either have to accept an applicant's submittal without performing its own independent evaluation, apply conservative factors to compensate for our lack of knowledge, request industry to do more research, or deny an applicant's request. The principal objective of the Thermal Hydraulics and Reactor Physics research program is to improve and maintain adequate technical expertise for NRC to independently assess applicant/licensee submittals and to analyze operating events and safety issues. These codes embody much of the NRC's knowledge about thermal hydraulics and reactor physics and are essential to maintaining a strong and effective regulatory program. For the NRC to effectively regulate applicants and licensees, it must remain cognizant of the complex issues associated with plant performance under normal and accident conditions.

Cooperative international research programs (e.g., CAMP) are utilized to best advantage to assist in this effort.

The thermal-hydraulic computer-code effort responds to (1) Commission direction to build and maintain a cadre of thermal-hydraulic experts to assist NRC in carrying on its regulatory function, (2) user need requests from NRR to maintain an assessed version of RELAP5, TRAC-P, and TRAC-B for AP600 and operating plants, and (3) historical trends in uncovering

and correcting code deficiencies. The effort needed to develop an improved state-of-the-art computer code is based upon historical data related to previous efforts related to code development/improvements.

To upgrade NRC's thermal-hydraulic analysis capability and to reduce the cost of maintaining that capability, the multiple codes and research are being consolidated and work is planned as described in the Five Year Thermal-Hydraulic Research Plan. Activities related to the consolidation of the NRC thermal-hydraulic codes are interrelated. Delays in any of these activities will result in expending additional resources to maintain existing codes for a longer period of time at a considerable expense to the NRC.

In FY 2000, the NRC will complete the consolidation efforts to incorporate TRAC-B models and 3-D neutronic capabilities, PARCS, developed by Purdue University into the modernized TRAC-P, which will be renamed TRAC-M.

In FY 2000, the NRC will continue administering the CAMP program.

During FY 2000, the NRC will continue to maintain the RELAP5, the TRAC-B, and the TRAC-P while assessing the consolidated TRAC-M code. The reduced level of effort to maintain these codes reflects the improvements made to them in FY 1998-FY 1999. In FY 2001, the TRAC-M code will replace TRAC-B and TRAC-P, and will include 3D neutronic capability. In FY 2000, the NRC will continue to develop two-phase flow models for computational fluid dynamics codes to model multiphase systems. In addition, efforts will continue to develop and maintain the Graphical User Interface (GUI).

In FY 2000, the NRC will start to assess the modernized/modularized TRAC-P code using AP600 small-break LOCA (SBLOCA) data to identify TRAC-M modeling needs to incorporate the RELAP5 SBLOCA capabilities into the consolidated TRAC code. In FY 2001, these models will be implemented in the consolidated TRAC-M code. In FY 2000-FY 2001, separate and integral test data will be used for the assessment of the consolidated TRAC-M code that incorporated the RELAP5 capabilities.

In FY 2000, experiments will be performed at the integral test facilities at Purdue University, Oregon State University, and the University of Maryland to develop the data needed to assess the consolidated code at the different stages of the consolidation. Approximately eight tests per year will be performed in each facility. Separate effect testing at Purdue University, Oregon State University, and the University of California at Los Angeles will continue data needed to improve the physical modeling in the consolidated code.

Fuel Behavior--The principal objective of the fuel behavior research program is to maintain adequate technical expertise for the NRC to carry out its responsibilities. This includes maintaining an independent analysis capability and supporting development or modification of licensing criteria. To accomplish this, analytical tools must be kept up to date for new fuel designs and operating conditions. Until recently, the NRC fuel performance codes for steady-state (FRAPCON) and transient (FRAPTRAN) analyses did not include models that account for high burnup. Likewise, the NRC criteria for evaluating cladding integrity at high burnup under accident conditions may not be correct. Efforts are underway to update the codes and obtain experimental data to modify the regulatory criteria (mainly through international cooperation). Cooperative international research programs are utilized to best advantage, and work is coordinated with industry groups and DOE when possible.

In FY 2000, the NRC will participate in and evaluate data from the French Cabri test reactor sodium loop and the Japanese Nuclear Safety Research Reactor (NSRR) test programs.

In FY 2000, the NRC will perform tests on high-burnup fuel and cladding at Argonne National Laboratory. Tests will simulate LOCA to allow assessment of current criteria at high burnup, and other tests will measure material properties needed for analysis.

In FY 2000, the NRC will continue to assess fuel performance and update mechanical properties data used in NRC fuel codes.

In FY 2000, the NRC will continue participation in the Halden fuels program to obtain data for code modifications for higher burnups and for MOX fuel.

Advanced Instrumentation and Controls--This work develops the technical basis for regulatory guidelines and criteria to evaluate the qualifications of instrumentation and control (I&C) hardware quality and completeness of software used in safety systems and for the interface between the plant and the human users along with guidelines on the environmental qualification of digital equipment. Utilities are adapting digital I&C technology into nuclear power plants (NPPs) and advanced designs. It is expected that as experience is accrued in NPPs, this trend is likely to continue and could increase. This effort addresses advanced I&C systems being applied to both current and advanced plants and covers hardware qualifications, human-system interfaces, software quality, digital system reliability and total systems considerations. Support for the advanced I&C and human factors aspects of the Organization for Economic Cooperation and Development (OECD) Halden Reactor Project is included. Review guidance will be completed for protection of I&C systems against moisture, high temperature, humidity, radiation, smoke, and lightning, as well as for software quality and the human issues associated with display navigation.

In FY 2000, the NRC will continue with international cooperative research at the OECD Halden Reactor Project.

In FY 2000, the NRC will continue the development of technical basis for digital system performance and reliability.

In FY 2000, the NRC will continue the development of a regulatory guide to address the threat to advanced I&C in safety critical systems due to lightning, smoke, and other environmental stresses.

In FY 2000, the NRC will continue work on Revision 2, NUREG-0700 for review of digital technology concerning human-system interfaces to address issues not included in Revision 1 (e.g., alarms).

Human Factors and Organizational Performance--Experience has shown that most safety-related events reported at nuclear facilities involve human performance. To reduce human errors, and thereby reduce the risk to the public from the accidental release of radioactive material, the NRC needs to (1) understand the root causes of human error during reactor operations and maintenance and (2) complete technical basis reports in the area of overtime usage. Research results will be used to identify, systematically prioritize, and suggest solutions to human performance issues in the maintenance and operation of nuclear facilities during normal, abnormal, and emergency situations.

In FY 2000, the NRC will publish guidance on credit for operator actions and resolve Generic Issue B-17, *Criteria for Safety-Related Operator Actions,* and publish Regulatory Guide 1.8 on power plant personnel qualification and training.

In FY 2000, the NRC will continue the update to Human Performance Investigation Process, and continue the development of the technical basis on the use of overtime in the nuclear industry.

Severe Accident Risk--Severe accidents represent the largest potential threat to public health and safety as a result of a significant accidental release of radioactive fission products to the environment. NRC efforts are directed toward reducing the risk associated with severe accidents at nuclear power plants by requiring design and operating strategies to prevent or ameliorate their consequences. The NRC accomplishes this by (1) improving fundamental understanding of dominant severe accident phenomena, (2) identifying and evaluating strategies to prevent and/or mitigate the consequences of severe accidents, (3) developing

analytical methods and tools to analyze the consequences and risks associated with severe accidents, and (4) determining whether severe accident research results warrant revisions to NRC regulations or policies. Results of these efforts will be applied in staff implementation of the Commission's severe accident, safety goals, and backfit policies. Development of risk-informed regulation is also a principal beneficiary of severe accident phenomenological and analytical methods expertise.

During FY 2000, the NRC will provide support for maintaining essential skills and facilities for severe accident codes. Code development, assessment and maintenance activities will continue during this period within the minimum level for code support. Other activities will be directed toward supporting efforts in risk-informed regulatory initiatives.

During FY 2000, the NRC will also continue to participate in selected international cooperative programs (PHEBUS, RASPLAV, and FARO/KROTOS) to maintain essential skills and expertise in key phenomenological areas. In addition, a cooperative program on lower head failure at Sandia National Laboratory (SNL) may be concluded. International cooperative research programs are directed toward obtaining improved prototype data for code assessments and to resolving remaining fundamental severe accident safety issues (i.e., in-vessel retention of molten core material and steam explosions).

During FY 2000, the NRC will continue to organize and conduct the Cooperative Severe Accident Research Program (CSARP) with our international partners (15 countries).

In FY 2000, the NRC will complete the OECD RASPLAV program directed toward gaining an understanding of in-vessel natural circulation behavior of a molten core. This understanding is essential to be able to determine under what conditions a molten core can be retained in-vessel.

In FY 2000, the NRC will complete its effort to benchmark the CONTAIN code (currently a detailed best-estimate severe accident containment code) for use as a licensing code to replace the current containment design-basis analysis codes (e.g. CONTEMPT, COMPARE) used by the NRC.

Reactor Probabilistic Risk Analysis--The NRC will continue to undertake a number of activities intended to increase the consideration of risk significance in its decision processes through the effective use of risk-informed technologies such as probabilistic risk assessment (PRA). Research is needed to support the development of guidance and methods to be used by the staff to ensure uniform, comprehensive application of PRA methods in resolving reactor licensing issues and related rulemakings. Guidance also needs to be developed and issued to

the industry regarding methods, data, and information that the NRC will consider acceptable to support actions that utilize PRA analysis. The NRC, in conjunction with industry-sponsored pilot programs, is developing this guidance in the form of regulatory guides and standard review plan sections in specific areas. The NRC, in conjunction with professional organizations, is also developing consensus industry standards on PRA quality.

PRA methods must be improved to support risk-informed regulation. Certain areas have been identified in which large uncertainties remain in the ability to model phenomena and quantify risk, thus leaving critical gaps in the quantification of overall plant risk and the ability to comprehensively apply risk-informed regulation. Research will result in new or improved methods for PRA analysis in the areas of low-power and shutdown accident risk, human reliability risk analysis, fire risk, plant aging risk, and digital instrumentation and control risk. The NRC will evaluate actual risks encountered during the shutdown condition, including consideration of implementation of the maintenance rule while shut down; capitalize on industry and international initiatives, including the Electric Power Research Institute (EPRI) effort in this area; encourage industry to take the lead in coordinating efforts to manage shutdown risk; and provide shutdown risk inputs for Accident Sequence Precursor (ASP) analyses. In addition, to facilitate risk analysis, NRC has developed computer codes (SAPHIRE) to model plant-specific systems and allow analysis of plant changes and sensitivities.

In FY 2000, the NRC will implement standards for PRA.

During FY 2000, the NRC will initiate development of new application-specific regulatory guides or update existing guides in response to industry and program office needs for risk-informed regulation.

The NRC will continue to organize and conduct an international cooperative PRA research program in FY 2000.

During FY 2000, the NRC will continue the development and improvement of human reliability and fire risk analysis methods. These methods will be completed in FY 2001.

During FY 2000, the NRC will continue work on the effect of quality assurance practices on risk estimates and aging risk.

During FY 2000, the NRC will continue to work with the Nuclear Energy Institute on its risk-informed pilot programs assessing risk vs. cost and regulatory requirements.

During FY 2000, the NRC will continue development and expansion of accident sequence precursor models, completing development in FY 2001.

During FY 2000, the NRC will continue the maintenance of SAPHIRE and MACCS and provide technical support to program offices.

During FY 2000, the NRC will initiate work on risk associated with digital I&C and software.

IPE/IPEEE Reviews--The Commission's severe accident policy calls for the examination of accidents initiated by individual plant susceptibilities to (1) severe accidents (i.e., the Individual Plant Examination (IPE) program) and (2) severe external events such as earthquakes (i.e., the IPE External Event Examination (IPEEE) program), as well as the identification and evaluation of potential improvements. The NRC will analyze the information from the review of licensee IPE submittals to determine if regulatory followup actions are appropriate. The NRC will continue reviewing licensee IPEEE reports and collecting and interpreting the supporting data for more general perspectives and use in the agency's risk-informed regulation activities.

The NRC will complete essentially all IPEEE reviews and staff evaluation reports by December 1999 and insights report (draft insights report by March 2000 and final insights report by July 2000), and will conduct a public workshop on IPEEE insights in FY 2000.

Reactor Radiation Dosimetry and Health Effects Research--This work involves developing the technical basis for reactor regulations and standards to minimize the adverse consequences of exposure to ionizing radiation from licensed reactor activities. New methods and models for estimating health risk take into account the age and gender-specific aspects of exposed individuals, are based upon revised radionuclide deposition and distribution biokinetics, and relate mortality and morbidity estimates to U.S. decennial life tables. The need to verify and validate assumptions in these models used to develop biokinetic and dose assessment models is paramount.

The NRC will continue to support international efforts in the area of health effects research, through ongoing studies being coordinated by the Joint Coordinating Committee for Radiation Effects Research and the National Council on Radiation Protection and Measurements (NCRP) as well as the collection and analysis of occupational exposure records as part to the Radiation Exposure Information Reporting System (REIRS) for FY 2000.

In FY 2000, the NRC will provide support for the development of the technical basis for reactor radiation protection related regulations and regulatory guidance, including updates to Part 20.

For FY 2000, the results of international health effects studies will be used to determine whether changes in NRC's radiation protection standards are warranted. The results of these international health effects studies will be used to improve the early recognition of acute radiation syndrome after exposure to radiation and to validate or modify risk assessment models (and parameters used in these models) as contained in NUREG/CR-4214 and NUREG/CR-5351. Revised models will be incorporated into revisions of these reports.

For FY 2000, the recommendations developed by the National Council on Radiation Protection and Measurements (NCRP) will be used by the NRC in the development of updated radiation safety regulations. For FY 2000, the information developed through the OECD Nuclear Energy Agency's Information System on Occupational Exposure (ISOE) will be used by program offices in evaluating ALARA programs.

During FY 2000, the NRC will collect occupational radiation exposure data from licensees through the REIRS program and will provide these data to NRC program offices to evaluate licensees' performance.

For FY 2000, the NRC will support the development of and revision of regulatory guides not accompanying a reactor-related rulemaking action; conduct systematic evaluations of reactor regulations and regulatory guidance to identify generic deficiencies, which, taking into consideration risk and other relevant information, merit correction; conduct program assessments and implement results; and seek input from its internal and external stakeholders, as appropriate in conducting these program assessments.

Generic Safety Issue Resolution--Generic safety issues involve safety concerns that may affect the design, construction, or operation of all, several, or a class of reactors or facilities and may have potential for safety improvements and issuance of new or revised requirements or guidance. As appropriate, resolutions of generic safety issues are transmitted to the industry through issuance of generic letters, information notices, or rule changes. Implementation procedures for resolving generic safety issues are occasionally developed in conjunction with organizations such as the Nuclear Energy Institute and nuclear plant owners groups.

This effort includes codes and standards activities related to OMB circular A-119, "Federal Participation in the Development and Use of Voluntary Consensus Standards and in Conformity Assessment Activities." It also includes prioritization, resolution, and

documentation of generic safety issues for reactor and materials issues for NRC; and, maintenance of the repository for generic safety issue documentation and the agency-wide tracking system, including Generic Issue Management Control System (GIMCS), for reactor and materials issues for NRC. Reactor-based generic safety issues continue to be identified at the rate of about two each year. Resources necessary for disposition of any single generic issue vary widely, depending on the availability of background data for evaluation of incident frequency and estimated consequences, inherent risk, possible remedial measures, and cost to NRC and industry for implementation. The newness of the materials issues will present additional uncertainty relative to their prioritization and tracking. A reasonable, historically based cost estimate for prioritization and resolution of a generic issue is in the $200,000 to $300,000 range per year, and can continue for two to three years, depending on the complexity of the issue and the factors noted above. Task order contracts are used for detailed event analysis, risk analysis, and cost-benefit studies; resolution and closeout packages are always developed by the staff.

In FY 2000, in order to reduce the backlog of unprioritized/unresolved generic safety issues (GSIs), the NRC will prioritize one new GSI per year; reprioritize, using updated information, one to two GSIs per year, which were previously prioritized as LOW or DROP; resolve one to two GSIs per year and continue tracking of GSIs through the GIMCS and NUREG-0933 (which presents a methodology to evaluate issues based upon risk).

In FY 2000, the NRC will continue participation in American Society of Mechanical Engineers (ASME) Code or standards writing activities, including membership on two committees of Section III of the ASME Boiler and Pressure Vessel Code, support to Section III and Main Boiler and Pressure Vessel meetings, membership on four committees under the ASME Operation and Maintenance committee and support to the NRC Operation and Maintenance Committee member at Operation and Maintenance Main committee meetings, membership on one committee under the Nuclear Quality Assurance Committee. As a part of its participation, to the extent possible within the context of its specific committee activity, the NRC will identify specific areas where revisions to Section III of the ASME Boiler and Pressure Vessel Code, Operation and Maintenance Code or NQA-1 could be used to provide new, or replace or supplement, regulatory requirements or guidelines and assure the related NRC position is reflected in any input provided to committees relative to the preparation or voting action on scope/need statements for identified code or standard revisions.

In FY 2000, the NRC will implement a plan that is responsive to OMB Circular A-119 and directed toward the effective, efficient, and consistent use of industry codes, standards, and guides important to safety, including stakeholder meetings to discuss improvement in the process for endorsing codes and standards, and potential areas for development of codes and

standards or industry guides. This plan will (1) streamline and simplify the NRC's internal process for endorsing codes and standards; (2) make appropriate use of all available codes, standards, and guides; and (3) identify areas in which new codes, standards, or guides are needed. In FY 1999 preparatory work, the NRC will review other relevant Federal agency practices, will continue high-level NRC liaison with standards-developing organizations, and will develop the plan.

Technical Information Exchange--This effort consists of two primary components: support provided to the Radiation Safety Information Computational Center (RSICC) at the Oak Ridge National Laboratory (ORNL) and conducting the annual NRC-sponsored Water Reactor Safety Information Meeting. RSICC, a specialized information analysis center authorized to collect, analyze, maintain, and distribute computer software and data sets in the areas of radiation transport and safety, serves as a repository for computer software sponsored by the NRC. The Center also publishes documents announcing the energy-related codes and maintains foreign information exchange arrangements that assist in making NRC's codes available to the public here and abroad. The Water Reactor Safety Information Meeting is a world-class research meeting that showcases domestic and international water reactor research results. Between 300 and 400 people attend annually from domestic and foreign organizations. Research papers are presented highlighting current topics of interest.

In FY 2000, the RSICC will manage and control the dissemination of software and data compilations developed under NRC sponsorship. RSICC will store and archive the software, disseminate the software in accordance with NRC guidelines, and serve as a software information center to support NRC offices, NRC contractors, and the public.

In FY 2000, the NRC will hold its annual Water Reactor Safety Information Meeting to share research results, and their safety/regulatory significance, among the worldwide research community and with representatives from industry and the general public.

In FY 2000, the NRC will continue its technical lecture series to broaden the technical staff's perspectives and to stimulate thought through exposure to new and innovative technical approaches or analyses.

Reactor Materials and Component Behavior Research

OUTPUT MEASURES		
Output/Baseline	**FY 1999 Target**	**FY 2000 Target**
Technical bases for safety and regulatory guidance and decisionmaking.	Issue 16 research products that respond to high- and medium-priority needs from the Commission and NRC's licensing organizations. Develop, maintain, or improve 2 engineering codes/models for use by RES and licensing organizations for regulatory analyses/decisionmaking.	Issue 16 research products that respond to high- and medium-priority needs from the Commission and NRC's licensing organizations. Develop, maintain, or improve 2 engineering codes/models for use by RES and licensing organizations for regulatory analyses/decisionmaking.
Definition: Research products are typically reports containing experimental or analytical results that form the technical basis for regulations, regulatory guides, new methods, the resolution of generic safety issues, and regulatory decisionmaking.		

The integrity of key passive and active components in a nuclear reactor system must be maintained to ensure that control rods can be inserted to shut down the chain reaction, that there is no blockage of the coolant flow needed to remove heat and ensure no fuel damage, and to maintain adequate levels of cooling water in the reactor. Aging affects virtually all active and passive components in a nuclear reactor system. It stems from exposure to reactor operating temperatures, irradiation environments, the water coolant (both primary and secondary systems), cyclic operation (fatigue), and general wear. However, the specific aging-related degradation mechanisms of components can be difficult to identify, and their effects may be difficult to quantify. Thus, research is needed to provide the data and analysis tools necessary to identify, quantify, and regulate the effects of aging in operating nuclear power plants as well as provide a sound technical basis for making license renewal decisions.

To ensure the public health and safety, the structures, systems, and components of nuclear power plants are designed and sited to withstand operational and accidental loads, including both internally initiated loads and loads imposed by severe external phenomena such as earthquakes, high winds, and floods. This program deals with the assessment of adequate safety margins for existing facilities by evaluating the effectiveness of inspection procedures and by evaluating the effects of degradation on margins. The program also addresses needs for development/improvement of regulatory acceptance criteria for site and design suitability. The assessment of the safety implications of siting and aging will be used as the basis for

ensuring continued safe operation and making decisions on extending reactor operation beyond the original license period of 40 years. The NRC Reactor Materials and Components Behavior research program is focused on seven areas: (1) reactor vessel integrity, (2) environmentally assisted cracking, (3) nondestructive examination procedures and techniques, (4) steam generator integrity, (5) mechanical/electrical components and piping, (6) containment integrity and structural aging, and (7) structural and civil engineering.

Reactor Vessel Integrity--The reactor pressure vessel is susceptible to several forms of degradation; reactor irradiation embrittlement is the most important. Since issues of reactor pressure vessel embrittlement can effectively limit the useful life of a nuclear power plant, the variability in chemistry and mechanical properties of reactor pressure vessel materials is being evaluated and methods for mitigating the embrittlement have been sought. The research involves experimental and analytical efforts addressing embrittlement, thermal annealing, and reactor pressure vessel integrity evaluation methods. The research includes strong emphasis on understanding the controlling factors so that empirical databases can be confidently employed to evaluate plant-specific conditions, and on experimental validation of the analysis methods and predictive models. Research will provide improved and more reliable methods for assessing irradiation effects on reactor pressure vessel steels and fracture behavior of embrittled reactor pressure vessel materials. This information is required to ensure reactor pressure vessel integrity, establish appropriate margins for integrity assessments, and assess proposed revisions to plant operating limits.

During FY 2000, the NRC will perform statistical and mechanistic analyses of plant embrittlement data, and complete the technical basis for a revision to Regulatory Guide 1.99. Issues to be addressed include variability in elemental constituents such as copper, nickel, and phosphorus, mechanistic synergisms in high-copper/high-nickel materials, and treatment of surveillance data.

In FY 2000, the NRC will develop and complete the technical basis for a revision to 10 CFR Part 50.61 (fracture toughness requirements for protection against pressurized thermal shock events) and will develop and complete the technical basis for determination of the need for a revision to Regulatory Guide 1.154, "Format and Content of Plant-Specific Pressurized Thermal Shock Safety Analysis Reports for Pressurized Water Reactors". These efforts will involve application of state-of-the-art advances in fracture mechanics and finite element modeling. During FY 2000, the NRC will put the new regulatory guide on neutron dosimetry and transport calculations in final form.

During FY 2000, university expertise to evaluate the mechanisms of reactor pressure vessel embrittlement due to neutron irradiation will be used; during the same period, the NRC will

participate in codes and standards (American Society of Mechanical Engineers (ASME) and American Society for Testing and Materials (ASTM)) activities related to fracture mechanics, flaw evaluation, and component integrity; and will continue international cooperative activities on reactor vessel integrity including participation in the network on evaluation of steel components (NESC) large-scale-test evaluations, International Atomic Energy Agency (IAEA) specialists meetings, and the Committee for Safety of Nuclear Installations international comparative assessment studies.

Environmentally Assisted Cracking--As reactors age and reactor components approach their end of life, environmentally assisted cracking (e.g., effects of water coolant, temperature, irradiation level, etc.) continues to be a problem in components critical to safety. This research will provide independent data and analysis tools to support regulatory evaluations of cracking and environmentally assisted degradation in operating reactors, and to support evaluations of license renewal applications. The work will specifically address cracking and other forms of environmentally assisted degradation in primary pressure boundary materials, reactor internals, and other piping and pressure retaining components. The work performed under this effort has previously been focused on boiling water reactors (BWRs) due to the presence of a more aggressive electrochemical environment. However, as plants continue to age and vessels and internals accumulate more radiation damage, environmentally assisted degradation is expected to become a more significant issue for pressurized water reactors (PWRs).

In FY 2000, the NRC will continue the assessment of crack growth models of degraded reactor components including the development of test data to validate the models, and in FY 2001, will complete and publish a comprehensive evaluation of the model(s) for predicting crack growth in typical reactor materials.

In FY 2000, the NRC will continue the evaluation of materials and components obtained from operating plants to validate models and will complete the evaluation in FY 2001.

During FY 2000, the NRC will participate in codes and standards activities related to environmental degradation, qualification and quantification of crack initiation and growth, and repair/mitigation, and will continue international cooperative activity on environmentally assisted cracking to include evaluation of inspection intervals, crack initiation and growth, and repair and mitigation strategies.

In FY 2000, the NRC will continue the testing of test reactor irradiated materials at typical PWR fluences.

Non-destructive Examination Procedures and Techniques--NRC regulations require licensees to perform inservice inspections (ISIs) of specific components during the plant lifetime. The NRC needs to ensure that significant flaws in important components are characterized so as to be able to independently evaluate the effectiveness of existing licensee ISI programs. Research will be conducted to evaluate the reliability and accuracy of existing ISI programs for detecting and sizing flaws in components; assess techniques for inspecting difficult inspection areas; assess the implementation of risk-ranking concepts in the development of ISI programs; evaluate improvements in ISI programs; assess methods for incorporating the results of ISI of working vessels into a general methodology to predict flaw size and density distribution for use in pressurized thermal shock analysis; and provide technical support and consultation on general ISI issues. As a part of the NRC's policy on risk-informed regulation, activities are underway to review risk-informed inservice inspection of piping and components at selected pilot plants. The results of this work will contribute to evaluations of the structural integrity of operating reactor components, and programs to manage aging degradation during renewal periods.

In FY 2000, the NRC will publish an interim update and, in FY 2001, publish a final update to flaw distributions for use in probabilistic fracture evaluations for reactor pressure vessel welds.

In FY 2000, the NRC will continue to evaluate pressure vessel weld samples for validation of non-destructive examination (NDE) reliability and effectiveness, and in FY 2001, will document the results with respect to NDE reliability and efficiency.

In FY 2000, the NRC will continue an international cooperative agreement on NDE effectiveness and reliability.

Steam Generator Integrity--The tubing inside pressurized-water reactor steam generators constitutes more than 50 percent of the primary pressure boundary surface and is an important barrier to the release of fission products to the environment. Steam generator tubing has been susceptible to several types of degradation that have changed over time. Denting and wastage were prevalent in the 1970s, but stress corrosion cracking and intergranular attack are the dominant forms today. The continuing evolution in types of degradation, and its severity, has created a situation in which the models used to predict tube integrity are not always appropriate for current applications. Further, the degradation is difficult to detect and characterize (e.g., to determine its depth and length) even using state-of-the-art inspection techniques. The NRC is developing performance-based regulatory guidance for use when assessing the integrity of steam generator tubes. This regulatory guidance is intended to permit licensees to develop and implement programs that can address plant-specific

degradation as it evolves. However, research is needed to support implementation of certain aspects of the regulatory guide. Research will provide independent data, methods, predictive models, and criteria to evaluate licensee programs designed to meet the performance criteria of the guide. The research will address any new forms of steam generator tube degradation that may develop, inspection capabilities, degradation processes, leak and rupture analysis methods, metallurgical assessments, and pressure tests of service-degraded tubes. The research is designed to support regulatory evaluations of steam generator tube degradation, both for operating plants and for license renewal considerations.

In FY 2000, the NRC will complete the validation of advanced eddy current and other NDE methods and imaging procedures for inservice inspection of steam generator tubes.

During FY 2000, the NRC will participate in codes and standards activities related to steam generator tube degradation, inspection and assessment of structural integrity (ASME and ASTM); and will continue international cooperation on steam generator tube integrity, including characterization of degradation modes, evaluation of NDE effectiveness, and structural integrity testing and analysis.

In FY 2000, the NRC will initiate development of an integrated, mechanistically based model for predicting failure, rupture, and total leak rate from inservice inspection results of a given generator under normal operating, accident, and severe accident loadings that build on results from the other tasks.

Mechanical/Electrical Components and Piping--As plants age, the integrity and reliability of electrical and mechanical components and piping can be challenged by age-related degradation. The NRC needs techniques and data to provide an independent basis for evaluating emerging issues and licensee programs for addressing those issues. This research will involve experimental and analytical assessments of the effects of aging degradation on mechanical components (pumps and valves), electrical cable systems, and piping. The research on mechanical components will be applicable in assessments of operating plant issues, such as changes to inservice test intervals and the use of condition monitoring equipment in determining component integrity, to the evaluation of license renewal applications and advanced designs, and to the long-term confirmation of regulatory decisions made regarding license renewal. The research on cable systems will be applicable to continued demonstration of environmental qualification during the current license term, assessments of the effectiveness of condition monitoring techniques in demonstrating loss-of-coolant accident (LOCA) survivability, and renewed license considerations. The research on piping will provide the technical basis for regulatory guidance on implementing leak-before-break concepts for operating plants and advanced designs, particularly for relatively small-diameter piping.

In FY 2000, the NRC will complete research to develop the technical basis for development of a revised leak-before-break methodology for piping.

In FY 2000, the NRC will complete the corrosion testing of Stellite valve facing material and publish a final report describing the potential impact on the operation of safety-related motor-operated valves.

During FY 2000, the NRC will participate in ASME codes and standards activities related to mechanical components and material properties, and Institute of Electrical and Electronics Engineers (IEEE) standards activities related to electrical components; and will complete the review of standards and publish regulatory guides endorsing ASME code cases and selected IEEE standards.

In FY 2000, the NRC will complete confirmatory research on the methods used by licensees to demonstrate compliance with EQ requirements in power uprate submittals.

In FY 2000, the NRC will complete the LOCA testing and condition monitoring measurements of low-voltage I&C cables.

In FY 2000, the NRC will continue to assess the effects of aging on the environmental qualification of electrical power cables and penetrations.

Containment Integrity and Structural Aging--For beyond-design-basis accidents, the failure modes and associated failure loads for containment structures have not been fully validated. Also, experience and research results suggest that corrosion effects may significantly degrade the margin that containments have to accommodate design-basis accidents and beyond. Research on failure modes for current containment types will provide the bases for evaluating both the performance of containments in accidents beyond the design basis and evaluating the impact of containment degradation on the capability to withstand design-basis loads. Further, the NRC initiative to develop a risk-informed perspective for regulation requires more realistic estimates of containment capacity than those that were used for the design of the first generation of containments. For purposes of design, it was sufficient to have a high degree of assurance that a containment could sustain the loads associated with what were felt to be limiting accident scenarios. A joint research program, in cooperation with the Ministry of International Trade and Industry (MITI) of Japan, involving the testing to failure of large models of steel and concrete containments, will be completed in FY 2000.

Experience has shown that corrosion effects that have the potential to reduce containment capacity occur in both steel and steel-lined concrete containments. Currently, research is concentrating on the use of analytical models of containment behavior to predict the effects of corrosion on containments and the amount of corrosion required at a given location to reduce the capacity. Experimental efforts to validate these predictive analytical models will begin in FY 2000.

In FY 2000, the NRC will perform the test to failure of the 1/4-scale prestressed concrete model and begin the post-test comparison of predictions and observations.

During FY 2000, the NRC will participate in codes and standards (ASME Section III and XI and ACI) activities.

In FY 2000, a report presenting the results of experimental validation of candidate methods for inspection of inaccessible portions of the containment pressure boundary will be finalized. A draft report summarizing information on candidate techniques for inspection of thick, heavily reinforced, concrete sections will be completed and circulated for peer and staff review. The sensitivity analysis on dominant risk contributors of steel containments and the steel liners of concrete containments will be completed. A final report on the risk analyses for containment failure and insights that can be drawn from them will be completed and reviewed by peers.

Structural and Civil Engineering--Research in this area covers broad disciplines of structural and civil engineering and earth science (seismology, geology, meteorology, etc.). The focus of the research is on the response of structures and components to internal and external loading and the determination of site suitability and loading resulting from natural hazards such as earthquakes, high winds, and floods. The NRC will continue to obtain data to evaluate the performance of structures, systems, and components when subjected to design basis, severe operational and accident loads, and natural hazards. Results of this research are needed for modification, repair, evaluation, design, and siting of power reactor facilities (results of this research are also applied to nonpower reactor facilities). As new information and research results become available, issues pertaining to the adequacy of the design basis and plant capacity will continue to be raised. The past and current examples include (1) the discovery of new faults near plant sites, (2) the much-larger-than-considered velocities and displacements associated with near-field seismic events, (3) inspection of damage caused by hurricanes, which emphasized the need to consider the interaction of safety-related and non-safety-related systems, and (4) new NOAA models that predict storm surge floods in excess of the flood levels used in design. One of the significant activities in this program deals with interface and coordination with the codes and standards such as Sections III and XI of ASME Boiler and

Pressure Vessel code, American Concrete Institute codes, and American Nuclear Society standards dealing with external hazards.

The data from this research will be used to help ensure the safety of nuclear power plants and nonpower facilities by enabling the NRC to (1) evaluate calculational methods used in analysis, (2) assess actual performance of structures, systems, and components in past external events, (3) validate design codes and probabilistic risk assessment (severe accident) techniques, (4) incorporate new events into the existing earthquake database to update hazard estimates, as necessary by the NRC staff, (5) confirm the assumptions made in the earlier licensing decisions, and (6) develop design basis for nonpower reactor sites. These data have enabled the NRC to (1) publish new earthquake engineering and seismic and geologic siting criteria, (2) develop positions and guidance for external event evaluations at operating nuclear power plants to identify severe accident vulnerabilities, and (3) publish lessons learned from recent hurricanes.

In FY 1999, the NRC will publish reports that will provide the technical basis for revision of Regulatory Guide 1.60, "Design Response Spectra for Seismic Design of Nuclear Power Plants." The items considered include the differences in spectral shape for rock vs. soil sites, the frequency content of central and eastern U.S. and western U.S. ground motion, and the effects that near-field and distant epicentral locations have on plant response. The development of the staff technical positions addressing the aforementioned items (rock vs. soil, etc.) will be initiated in FY 1999 and completed in FY 2000. In FY 2001, Draft Revision 2 to Regulatory Guide 1.60 will be published for public comment.

During FY 2000, the NRC will participate in codes and standards (ASME Sections IIIC and XI, ACI, ASCE, and ANS) activities and, during the same period, will coordinate with the national Earthquake Hazards Reduction Program in the areas such as strong seismic ground motion, earthquake recurrence, and seismicity.

In FY 2000, the NRC will complete the pre-test and post-test evaluations of 1/10-scale model tests of a reinforced-concrete containment. In this program, the Nuclear Power Engineering Corporation (NUPEC) of Japan will conduct seismic structural and functional integrity tests of the reinforced concrete containment model at Tadotsu Engineering Laboratory. The NRC is conducting analytical investigations to validate and understand limitations of current analysis methods and to draw more robust insights for risk assessment modeling.

In FY 2000, the NRC will publish for public comment a draft revision of the regulatory guide on modal combinations; the final guide, incorporating public comment, will be published in FY 2001.

In FY 1999, the NRC will complete a trial application of probabilistic risk assessment (PRA) methodology for BWR jet pumps to calculate the change in core damage frequency (CDF) caused by intergranual stress corrosion cracking (IGSCC) under accident-loading conditions. In FY 2000, the NRC will complete extending this methodology to all major BWR vessel internal components that can be degraded by IGSCC. In FY 2001, the program will be completed with a final report on recommendations on application of the methodology and overall assessment of the potential consequences and risks associated with failures of BWR reactor vessel internal components caused by IGSCC.

In FY 2000, the NRC will continue the evaluation of an International Standard Problem on Soil Structure Interaction Analysis to be sponsored by the Committee for Safety of Nuclear Installations /Nuclear Energy Association PWG-3 Subgroup on Seismic Behavior.

Reactor Legal Advice

The *Office of the General Counsel* (OGC) provides legal advice and assistance to the NRC Staff and the Commission with respect to all matters related to nuclear reactor safety and research and the environmental impacts of nuclear reactor operation. This includes review of proposed licensing actions (such as those associated with initial licensing and subsequent license amendments, the adoption of improved technical specifications, license renewal, license transfer, and advanced reactor activities), enforcement actions, conduct of investigations, promulgation of NRC regulations and regulatory guides, responses to petitions for rulemaking and regulatory interpretations. The OGC represents the NRC staff in administrative adjudications arising from proposed reactor licensing and enforcement actions; represents the Commission in lawsuits arising from adjudicatory and rulemaking decisions relating to reactors; provides legal advice and assistance with respect to all matters related to reactor research programs, including contractual advice; and provides legal analyses of regulations, statutes, and cases relevant to NRC activities.

Reactor Adjudication

The *Atomic Safety and Licensing Board Panel* (ASLBP), a statutorily authorized office of the NRC, conducts hearings as independent adjudicatory tribunals, usually at or near the site where the dispute arose. ASLBP judges hear and decide hearing petitions by intervenors and licensees concerning public health, safety, and environmental issues arising out of the grant, suspension, revocation, amendment, or renewal of licenses to operate and decommission nuclear power plants. In its 1998 statement on the Policy on Conduct of Adjudicatory Proceedings, the Commission reiterated its longstanding commitment to the expeditious completion of adjudicatory proceedings while still ensuring that hearings are fair and produce

an adequate record for decision. The Commission directed its hearing boards and presiding officers to continue to employ measures and techniques to reduce the time for completing licensing and other proceedings.

THIS PAGE INTENTIONALLY LEFT BLANK

NUCLEAR MATERIALS SAFETY

NUCLEAR MATERIALS SAFETY

STRATEGIC GOAL

Prevent radiation-related deaths and illnesses, protect the environment, and safeguard special nuclear material and facilities in the civilian use of source, byproduct, and special nuclear materials.

DESCRIPTION OF STRATEGIC ARENA

The Nuclear Materials Safety strategic arena encompasses NRC efforts to ensure that NRC-regulation aspects of nuclear fuel cycle facilities and nuclear materials activities are handled in a manner that provides adequate protection of public health and safety. The Nuclear Materials Safety arena encompasses more than 20,000 specific and 100,000 general licensees that are regulated by the NRC and 30 Agreement States.[10] This arena covers a wide range of nuclear material uses ranging from very low-risk smoke detectors to potentially high-risk irradiators, chemical processing of special nuclear material, and storage and transportation of spent nuclear reactor fuel. This arena also includes all regulatory activities carried out by the NRC and the Agreement States to ensure that nuclear materials and facilities are used in a manner that protects public health and safety and the environment, and protects against radiological sabotage and theft or diversion of special nuclear materials. The Atomic Energy Act of 1954, as amended, and the Energy Reorganization Act of 1974, as amended, provide the foundation for regulating the Nation's civilian uses of nuclear materials.

The scope of regulatory activities carried out under this arena includes regulation and guidance development; nuclear materials research; licensing/certification, inspection, and enforcement activities; identification and resolution of safety and safeguard issues; certification of spent fuel storage casks and transportation packages; operating experience evaluation; incident investigation; threat assessment; emergency response; technical training; and investigation of alleged wrongdoing by licensees, applicants, certificate holders, contractors and vendors. This arena also provides regulatory assistance to the Department of Energy (DOE).

These efforts are conducted primarily by the Office of Nuclear Material Safety and Safeguards, the Office of Nuclear Regulatory Research and the Office for Analysis and Evaluation of Operational Data with the assistance and coordination of the NRC Office of Nuclear Reactor

[10] Under Section 274 of the Atomic Energy Act of 1954, as amended, a State may assume and the NRC discontinue regulatory jurisdiction for certain uses of byproduct, source, and limited quantities of special nuclear materials within the State. The assumption in authority is accomplished through an agreement with the State upon an NRC finding that the State's program is adequate to protect public health and safety, and is compatible with the NRC regulatory program.

Regulation, Office of Enforcement, Office of Investigations, Office of State Programs, Office of Administration, Office of the Chief Information Officer, Office of the General Counsel, and Atomic Safety and Licensing Board Panel.

The Nuclear Materials Safety strategic arena comprises the following 13 programs: Fuel Facilities Licensing and Inspection; Spent Fuel Storage and Transportation Licensing and Inspection; Nuclear Materials Users Licensing and Inspection; State Programs; Materials Research; Materials Incident Response; Materials Operational Experience Evaluation; Materials Technical Training; Materials Enforcement Actions; Materials Investigations; Materials Legal Advice, Materials Adjudication; and Regulation of the Department of Energy. The contract support funds are allocated for work done by DOE contractors, commercial contractors, small business entities, nonprofit organizations (e.g., universities and foundations), and grantees.

MEASURING RESULTS -- PERFORMANCE GOALS

The NRC has established the following performance goals for measuring results in achieving its nuclear materials safety strategic goal to prevent radiation-related deaths and illnesses; protect the environment; and safeguard special nuclear material and facilities in the civilian use of source, byproduct, and special nuclear materials. In developing these goals, a careful review and analysis of existing performance data were performed. Although targets for performance were not established until FY 1998, FY 1997 performance, where available, is provided. FY 1998 performance, where available, is also provided. These data provide a firm baseline for the development of future performance targets and the assessment of performance.

1. **Zero radiation-related deaths resulting from civilian use of source, byproduct, and special nuclear materials.**

   This goal pertains to non-reactor uses of nuclear materials. This measure addresses actual deaths resulting from acute radiation exposure, not statistical deaths. The **performance indicator** is the number of radiation-related deaths per year. The **data** to support this indicator are currently collected in the Nuclear Material Events Database. (See Appendix I.)

The **FY 2000 target** is **zero**. The **FY 1999 target** is **zero**.

FY 1998 Performance: **Zero** radiation deaths due to civilian use of source, by product, and special nuclear materials were identified in FY 1998.

FY 1997 Performance: **Zero** radiation deaths due to civilian use of source, byproduct, and special nuclear materials were identified in FY 1997.

2. **No increase in the number of significant radiation exposures resulting from loss or use of source, byproduct, and special nuclear materials.**

The **performance indicator** is the number of radiation exposures (excluding those to patients caused by medical misadministrations) per year at or above the level for reporting abnormal occurrences to Congress. (See Appendix I, Item I.A.) The **data** to support this indicator are currently collected in the Nuclear Material Events Database. (See Appendix I.)

The **FY 2000 target** is that the combined five-year average for the NRC and Agreement States (FY 1996-FY 2000) will not exceed two per year. The **FY 1999 target** is that the combined five-year average for the NRC and Agreement States (FY 1995-FY 1999) will not exceed two per year.

FY 1998 Performance: Preliminary data indicate that the combined five-year average for the NRC and Agreements States for FY 1998 is **1.6** per year.

FY 1997 Performance: The combined five-year average for the NRC and Agreement States for FY 1997 is **1.8** per year.

Significant Radiation Exposures Resulting from Loss or Use of Source, Byproduct, and Special Nuclear Materials

	YEAR					Total	5-Year Average
	1994	1995	1996	1997	1998		
NRC	0	1	0	1	1	3	0.6
Agreement States	2	1	0	2	0	5	1.0

2.a. **No increase in the number of losses of licensed material as reported to Congress annually.**

The **performance indicator** is the number of losses of licensed material annually which meet the NRC criteria for reporting abnormal occurrences to Congress. (See Appendix I, Item I.C.1.) The **data** to support this indicator are currently collected in the Nuclear Material Events Database. (See Appendix I.)

The **FY 2000 target** is that the combined five-year average for the NRC and Agreement States (FY 1996-FY 2000) will not exceed **two** per year. The **FY 1999 target** is that the combined five- year average for the NRC and Agreement States (FY 1995-FY 1999) will not exceed **two** per year.

FY 1998 Performance: Preliminary data indicate that the combined five-year average for the NRC and Agreements States for FY 1998 is **0.6** per year.

FY 1997 Performance: The combined five-year average for the NRC and Agreement States for FY 1997 is **1.2** per year.

Loss of Licensed Material Reported to Congress Annually							
	YEAR					Total	5-Year Average
	1994	1995	1996	1997	1998		
NRC	0	0	0	0	0	0	0.0
Agreement States	1	0	2	0	0	3	0.6

2.b. **No accidental criticality involving licensed material.**

The **performance indicator** is the number of occurrences of accidental criticality (an inadvertent self-sustaining nuclear chain reaction) annually. (See Appendix I, Item I.D.1.) The **data** to support this indicator are currently collected in the Nuclear Material Events Database. (See Appendix I.)

The **FY 2000 target** is **zero**. The **FY 1999 target** is **zero**.
FY 1998 Performance: Preliminary data indicate that **zero** incidents of accidental criticality involving licensed material were identified in FY 1998.
FY 1997 Performance: Zero incidents of accidental criticality involving licensed material were identified in FY 1997.

2.c. **No increase in the number of misadministration events which cause significant radiation exposures.**

The **performance indicator** is the number of misadministration events per year that cause radiation exposures at or above the level for reporting abnormal occurrences to Congress. (See Appendix I, Item I.A.) The **data** to support this indicator are currently collected in the Nuclear Material Events Database. (See Appendix I.)

The **FY 2000 target** is that the combined five-year average for the NRC and Agreement States (FY 1996-FY 2000) will not exceed **six** per year. The **FY 1999 target** is that the combined five-year average for the NRC and Agreement States (FY 1995-FY 1999) will not exceed **six** per year.
FY 1998 Performance: Preliminary data indicate that the combined five-year average for the NRC and Agreements States for FY 1998 is **3.4** per year.
FY 1997 Performance: The combined five-year average for the NRC and Agreement States for FY 1997 is **3.8** per year.

Misadministration Events Which Cause Significant Radiation Exposures							
	YEAR					Total	5-Year Average
	1994	1995	1996	1997	1998		
NRC	4	3	1	1	3	12	2.4
Agreement States	2	0	0	2	1	5	1.0

3. **Zero offsite releases of radioactive material from operating facilities that have the potential to cause an adverse impact on the environment.**

The **performance indicator** is the number of offsite releases annually which meet the NRC criteria for reporting abnormal occurrences to Congress. (See Appendix I, Item I.B.1.) The **data** to support this indicator are currently collected in the Nuclear Material Events Database. (See Appendix I.)

The **FY 2000 target** is **zero**. The **FY 1999 target** is **zero**.
FY 1998 Performance: Preliminary data indicate that **zero** offsite releases were identified in FY 1998.
FY 1997 Performance: **Zero** offsite releases were identified in FY 1997.

3.a. **No increase in the number of offsite releases of radioactive material from operating facilities that exceeds the limits specified in 10 CFR Part 20.2203.**

The **performance indicator** is the number of offsite releases per year in excess of 10 CFR Part 20 limits. The **data** to support this indicator are currently collected in the Nuclear Material Events Database. (See Appendix I.)

The **FY 2000 target** is that the combined five-year average for the NRC and Agreement States (FY 1996-FY 2000) will not exceed **one** per year; the **FY 1999 target** is that the combined five-year average for the NRC and Agreement States (FY 1995-FY 1999) will not exceed **one** per year.
FY 1998 Performance: The combined five-year average for the NRC and Agreements States for FY 1998 is **0.6** per year.
FY 1997 Performance: The combined five-year average for the NRC and Agreement States for FY 1997 is **0.6** per year.

Offsite Releases of Radioactive Material from Operating Facilities that Exceeds the Limits Specified in 10 CFR Part 20.2203							
	YEAR					Total	5-Year Average
	1994	1995	1996	1997	1998		
NRC	0	0	0	0	0	0	0.0
Agreement States	1	2	0	0	0	3	0.6

4. **No significant accidental releases of radioactive material from the storage or transportation of nuclear material or nuclear waste.**

The **performance indicator** is the number of accidental releases of radioactive material per year that meet the NRC criteria for reporting abnormal occurrences to Congress. (See Appendix I, Items I.B.1 and 2.) The **data** to support this indicator are currently collected in the Nuclear Material Events Database. (See Appendix I.)

The **FY 2000** target is zero. The **FY 1999 target** is zero.

FY 1998 Performance: Preliminary data indicate that **zero** accidental releases of radioactive material from the storage or transportation of nuclear material or nuclear waste were identified in FY 1998.

FY 1997 Performance: Zero accidental releases of radioactive material from the storage or transportation of nuclear material or nuclear waste were identified in FY 1997.

5. **Zero loss, theft, or diversion of formula quantities of strategic special nuclear material, or unauthorized enrichment of special nuclear material regulated by the NRC.**

This goal is written within the context of the safeguards program which is to prevent theft or diversion of formula quantities of strategic special nuclear material. The **performance indicator** is the number of losses or thefts annually which meet the NRC criteria for reporting abnormal occurrences to Congress. (See Appendix I, Item I.C.1.) The **data** to support this indicator are currently collected in the Nuclear Material Events Database. (See Appendix I.)

The **FY 2000** target is **zero** thefts or losses. The **FY 1999 target** is **zero** thefts or losses.

FY 1998 Performance: Preliminary data indicate that **zero** incidents of loss or theft or diversion of formula quantities of strategic special nuclear material were identified in FY 1998.

FY 1997 Performance: Zero incidents of loss or theft or diversion of formula quantities of strategic special nuclear material were identified in FY 1997.

5.a. **No substantiated case of actual or attempted theft or diversion of formula quantities of strategic special nuclear material.**

The **performance indicator** is the number of substantiated cases of attempted thefts or diversions annually. (See Appendix I, Item I.C.2.) The **data** to support this indicator are currently collected in the Nuclear Material Events Database. (See Appendix I.)

The **FY 2000 target** is **zero**. The **FY 1999 target** is **zero**.
FY 1998 Performance: Preliminary data indicate that **zero** substantiated cases of attempted theft or diversion of formula quantities of strategic special nuclear material were identified in FY 1998.
FY 1997 Performance: Zero substantiated cases of attempted theft or diversion of formula quantities of strategic special nuclear material were identified in FY 1997.

5.b. **No substantiated breakdown of physical protection or material control and accounting systems (i.e., detection, assessment, access control, containment, or accounting systems) that significantly weakens protection against theft or diversion of formula quantities of strategic special nuclear material.**

The **performance indicator** is the number of substantiated breakdowns of physical protection or material control annually. (See Appendix I, Item I.C.4.) The **data** to support this indicator are currently collected in the Nuclear Material Events Database. (See Appendix I.)

The **FY 2000 target** is **zero**. The **FY 1999 target** is **zero**.
FY 1998 Performance: Preliminary data indicate that there were **zero** substantiated breakdowns of physical protection or material control involving formula quantities of strategic special nuclear material in FY 1998.
FY 1997 Performance: There were **zero** substantiated breakdowns of physical protection or material control involving formula quantities of strategic special nuclear material in FY 1997.

5.c. **No substantiated case of unauthorized enrichment of special nuclear material.**

The **performance indicator** is the number of substantiated cases of unauthorized enrichment of special nuclear material per year. The **data** to support this indicator are currently collected in the Nuclear Materials Event Database. (See Appendix I.)

The **FY 2000 target** is **zero**. The **FY 1999 target** is **zero**.
FY 1998 Performance: Data are not available.
FY 1997 Performance: Data are not available.

5.d. **No substantiated case of unauthorized disclosure or compromise of classified information concerning security measures for protection of special nuclear material or plant equipment vital to the safety of production or utilization facilities which causes damage to the national security.**

The performance indicator is the number of substantiated cases per year of unauthorized disclosure or compromise of classified information or documents concerning security measures for protection of special nuclear material or plant equipment vital to the safety of production or utilization facilities which causes identifiable damage to the national security. **The data** to support this indicator are currently reported in accordance with the provisions of 10 CFR Part 95.57, and investigated by the Regional Administrator of the appropriate NRC Regional Office, the NRC Division of Facilities and Security or the cognizant security authority under the National Industrial Security Program.

The **FY 2000 target** is **zero**. The **FY 1999 target** is **zero.**
FY 1998 Performance: There were **zero** substantiated cases of unauthorized disclosure or compromise of classified information in FY 1998.
FY 1997 Performance: There were **zero** substantiated cases of unauthorized disclosure or compromise of classified information in FY 1997.

6. **Environmental impacts are considered through the National Environmental Policy Act (NEPA) process before regulatory action is taken.**
The performance indicator is the number of environmental impacts identified and substantiated each year by external sources which were not identified as part of the NRC's NEPA process.

The **FY 2000 target** is zero. The **FY 1999 target** is zero.
FY 1998 Performance: Data for this measure will be reviewed in FY 1998 and will be reported for FY 1999.
FY 1997 Performance: Data are not available.

STRATEGIES

1. The NRC will maintain and further develop the capability to provide timely and independent technical bases for its regulatory decisions.

2. The NRC will maintain and improve the NRC regulatory framework[11] and incrementally use risk-informed and, where appropriate, less prescriptive performance-based approaches.

[11] The regulatory framework is rules and regulations that ensure adequate protection of public health and safety.

3. The NRC will authorize the use and storage of nuclear materials, the operation of fuel cycle facilities, and transportation packages only after the NRC has determined that these proposed activities are consistent with the regulatory framework and the level of risk.

4. The NRC will ensure that licensees understand and carry out their primary responsibility for conducting activities consistent with the regulatory framework.

5. The NRC will work with Agreement States and within NRC to ensure consistent protection of the public health and safety nationwide. We will ensure that Agreement States establish and implement adequate and compatible regulatory programs.

6. The NRC will be prepared to respond to incidents and emergencies involving potential radiological consequences.

7. The NRC will ensure that nuclear materials experience is evaluated, communicated to stakeholders, and used to improve the regulatory framework and its implementation.

8. The NRC will position the NRC to perform regulatory oversight of certain DOE activities.

The following table depicts the relationship of the Nuclear Materials Safety programs to the arena strategies identified above. The required resources are developed based on the programs and functions necessary to implement the strategies. Detailed information on the resources, programs, and their associated output measures is provided in the Nuclear Materials Safety arena of the FY 2000 budget request. FY 1998 baseline data for the FY 1999 and FY 2000 output measure targets is provided, where available.

FY 2000 NUCLEAR MATERIALS SAFETY ARENA PROGRAM LINK TO ARENA STRATEGIES

LINKS TO ARENA STRATEGIES	STRATEGIES							
FY 2000 PROGRAMS ($63,881K, 464 FTE)	1	2	3	4	5	6	7	8
Fuel Facilities Licensing and Inspection ($14,125K, 100 FTE)			X	X		X		
Spent Fuel Storage & Transportation Licensing and Inspection ($9,824K, 60 FTE)			X	X				
Nuclear Materials Users Licensing and Inspection ($22,361K, 179 FTE)		X	X	X		X	X	
State Programs ($3,989K 36 FTE)					X			
Materials Research ($3,402K, 12 FTE)	X							
Materials Incident Response ($209K, 2 FTE)						X		
Materials Operational Experience Evaluation ($514K, 1 FTE)							X	
Materials Technical Training ($863K, 2 FTE)	X							
Materials Enforcement Actions ($951K, 9 FTE)				X				
Materials Investigations ($1,290K, 11 FTE)				X				
Materials Legal Advice ($1,956K, 18 FTE)		X	X	X				X
Materials Adjudication ($1,147K, 8 FTE)			X					
Regulation of DOE ($3,250K, 26 FTE)								X

BUDGET AUTHORITY BY FUNCTION AND BY PROGRAM
FULL-TIME EQUIVALENT EMPLOYMENT BY PROGRAM

(Dollar amounts in tables represent thousands of dollars ($K). In text, whole dollar amounts are used. Staff numbers represent full-time equivalents (FTEs).)

Total FY 2000 Estimate $63,881,000

Summary	FY 1998 Enacted	FY 1999 Estimate	FY 2000 Estimate	
			Request	Change from FY 1999
Budget Authority by Function ($K)				
Salaries and Benefits	44,522	44,898	46,684	1,786
Contract Support	14,204	14,221	14,639	418
Travel	2,998	2,589	2,558	-31
Total	61,724	61,708	63,881	2,173
Budget Authority by Program ($K)				
Fuel Facilities Licensing and Inspection	12,550	13,591	14,125	534
Spent Fuel Storage and Transportation Licensing and Inspection	8,175	9,556	9,824	268
Nuclear Materials Users Licensing and Inspection	20,816	21,598	22,361	763
State Programs	3,578	3,802	3,989	187
Materials Research	3,003	2,930	3,402	472
Materials Incident Response	0	195	209	14
Materials Operational Experience Evaluation	212	596	514	-82
Materials Technical Training	744	909	863	-46
Materials Enforcement Actions	875	894	951	57
Materials Investigations	1,439	1,313	1,290	-23
Materials Legal Advice	1,933	1,825	1,956	131
Materials Adjudication	1,399	1,299	1,147	-152
Regulation of the Department of Energy	7,000	3,200	3,250	50
Total	61,724	61,708	63,881	2,173

Summary	FY 1998 Enacted	FY 1999 Estimate	FY 2000 Estimate	
			Request	Change from FY 1999
Full-Time Equivalent Employment by Program				
Fuel Facilities Licensing and Inspection	101	100	100	0
Spent Fuel Storage and Transportation Licensing and Inspection	57	64	60	-4
Nuclear Materials Users Licensing and Inspection	195	185	179	-6
State Programs	35	37	36	-1
Materials Research	16	12	12	0
Materials Incident Response	0	2	2	0
Materials Operational Experience Evaluation	2	1	1	0
Materials Technical Training	2	2	2	0
Materials Enforcement Actions	9	9	9	0
Materials Investigations	13	12	11	-1
Materials Legal Advice	19	18	18	0
Materials Adjudication	11	10	8	-2
Regulation of the Department of Energy	22	27	26	-1
Total	482	479	464	-15

EXPLANATION OF RESOURCE CHANGES BY PROGRAM

Fuel Facilities Licensing and Inspection. The resource increase in FY 2000 results from increased personnel costs (pay raises, within-grade increases, and benefits costs increases) and increased resources to support preparation for and the review of the new Atomic Vapor Laser Isotope Separation (AVLIS) license application. These increases are offset by decreases associated with the completion of the initial recertification of the gaseous diffusion plants in FY 1999.

Spent Fuel Storage and Transportation Licensing and Inspection. Resources increase in FY 2000 to support the update of the Modal Study--a study of spent fuel cask response to severe accident conditions. Staffing decreases in FY 2000 to reflect the anticipated completion of a significant portion of backlogged applications for spent fuel storage and transport cask designs and spent fuel storage facilities, and a reduction in overhead.

Nuclear Materials Users Licensing and Inspection. Resources increase in FY 2000 to support increased personnel costs (pay raises, within-grade increases, and benefits costs increases), and to develop and implement the general license registration program. These increases are offset by decreases that result from completion of the 10 CFR Part 35 rulemaking on the medical use of byproduct material, and a reduction to overhead.

State Programs. Resources increase overall in FY 2000 to reflect increased personnel costs, even though staffing decreases as a result of completion of materials license transfer activities in FY 1999 when Ohio becomes an Agreement State.

Materials Research. The net resource increase in FY 2000 reflects starting research in methods development and demonstration of dry cask storage risk assessment, and an increased effort on developing the technical basis for performance criteria for dry storage casks under seismic loading conditions. These increases are offset by eliminating an evaluation of the role of unusual moderators, and previously unanticipated fissile materials to determine their effect on the potential to develop a critical mass.

Materials Incident Response. There are no significant resource changes.

Materials Operational Experience Evaluation. The resource decrease in FY 2000 reflects a reduction in the level of support for the Nuclear Materials Events Database (NMED).

Materials Technical Training. The resource decrease in FY 2000 reflects the completion of the conversion of most of the fuel cycle curriculum courses to self-study format by the end of FY 1999.

Materials Enforcement Actions. There are no significant resource changes in FY 2000.

Materials Investigations. The resource decreases in FY 1999 and FY 2000 are primarily based upon projected decreases in the materials caseload. The decreases are offset by increased personnel costs (pay raises, within-grade increases, and benefits cost increases).

Materials Legal Advice. The resource increase in FY 2000 is based upon projected increases in personnel costs (pay raises, within-grade increases and benefits cost increases).

Materials Adjudication. The resource decrease in FY 2000 is primarily based upon expected efficiencies in the Atomic Safety and Licensing Board Panel's operations, including use of available technology.

Regulation of the Department of Energy. There are no significant resource changes in FY 2000.

JUSTIFICATION OF PROGRAM REQUESTS

Fuel Facilities Licensing and Inspection

OUTPUT MEASURES		
Output/Baseline	**FY 1999 Target**	**FY 2000 Target**
Timeliness of safety and safeguards inspections. (FY 1998: 100 percent completed on time.)	Complete 90 percent of the core safety and safeguards inspections scheduled in the Fuel Cycle Master Inspection Plan on time.	Complete 90 percent of the core safety and safeguards inspections scheduled in the Fuel Cycle Master Inspection Plan on time.

The NRC licenses and inspects all commercial nuclear fuel facilities involved in the processing and fabrication of uranium ore into reactor fuel as part of the agency's nuclear fuel cycle safety and safeguards mission. Detailed health, safety, safeguards, and environmental licensing reviews and inspections of licensee programs, procedures, operations, and facilities are conducted to ensure and secure safe operations. Each of the approximately 25 fuel facilities must have a license that specifies the materials the licensee may possess, sets restrictions on how the materials may be used, and establishes additional licensee responsibilities (such as worker protection, environmental controls, and financial assurance), as appropriate.

The NRC will complete the review and evaluation of approximately 100 license applications (amendments, renewals, and reviews) for nuclear fuel cycle facilities during FY 2000. To achieve its timeliness goal for safety- and safeguards-related licensing actions in FY 2000, the NRC plans to complete the review of 50 percent of the safety- and safeguards-related licensing actions within 180 days.

The NRC sets basic standards for the conduct of licensed activities at fuel cycle facilities through rulemaking, augmented by regulatory guidance documents that specify acceptable approaches for meeting the standards. In FY 2000, the NRC will continue to upgrade the fuel cycle facility program by evaluating changes to the regulatory base for 10 CFR Part 70 to maintain confidence in the safety at these facilities.

The NRC will work with the International Atomic Energy Agency (IAEA), the European Atomic Energy Community (EURATOM), and other countries on the tracking and reporting of special nuclear materials transfers. The NRC, in conjunction with DOE, will continue to support the operation and maintenance of the Nuclear Materials Management Safeguards System used to track the movement of domestic and foreign special nuclear materials under the safeguards control and special accounting procedures of the U.S. Government and U.S. treaties and obligations. Reports generated by this system are used to confirm material transactions, physical inventories and shipper-receiver difference evaluations in the domestic arena, and to satisfy the terms of U.S./IAEA safeguards agreements and certain bilateral and multi-lateral cooperative international agreements.

Routinely scheduled safety and safeguards inspections of approximately 10 major fuel cycle facilities are conducted each year to provide reasonable assurance that licensees conduct and maintain safe nuclear operations and provide adequate protection of the workers, the public, the environment and the common defense and security. In addition, safeguards inspections ensure that licensees comply with NRC requirements pertaining to the control and accounting of special nuclear materials, the physical protection of special nuclear material to prevent theft or diversion, contingency plans for responding to threat situations, and training of armed response personnel. The NRC's goal is to conduct timely core safety and safeguards inspections at these facilities. The target for FY 2000 is to complete 90 percent of the core safety- and safeguards-related inspections in accordance with the schedules in the Fuel Cycle Master Inspection Plan.

Uranium enrichment is the process used to increase the relative weight percentage of uranium-235 in reactor fuel to make it efficient for use in civilian nuclear power reactors. Enrichment can be accomplished using a number of different technologies including gaseous diffusion, centrifuge, and atomic vapor laser isotope separation. The NRC is responsible for regulating the operational safety and safeguards aspects of enrichment facilities in the United States.

In March 1997, the NRC assumed regulatory oversight of the United States Enrichment Corporation's two gaseous diffusion enrichment plants (located in Paducah, Kentucky and Portsmouth, Ohio). The NRC will conduct the first recertification in FY 1999, in accordance with the United States Enrichment Corporation Privatization Act which requires that the NRC recertify these plants at least once every 5 years, to ensure that they are in compliance with NRC regulations and that the United States Enrichment Corporation's operation of the gaseous diffusion enrichment plants provides adequate protection of public health and safety, the workers, the environment, and the common defense and security. The NRC will continue to issue reports to Congress at the time of recertification on the status and performance of the

plants and indicate whether these plants are operating in compliance with NRC's standards. The NRC also provides security policy and classification guidance support for the protection of National Security Information and Restricted Data for licensing, certifying, or regulating uranium enrichment facilities.

NRC's FY 2000 budget includes resources to review the license application for the United States Enrichment Corporation's Atomic Vapor Laser Isotope Separation (AVLIS). The licensing review of AVLIS present novel and highly complex technical challenges never before considered -- especially in areas of safeguards, nuclear criticality safety, chemical process safety, fire protection and accident analysis.

To verify operational safety and safeguards, and to assess licensee performance, the NRC conducts a program of scheduled safety and safeguards inspections that relies on resident inspectors to provide onsite presence and focus on daily operations, and on headquarters and regional inspectors to provide specialized technical expertise in areas such as radiological and chemical process safety, physical protection, physical security, nuclear criticality safety, material control and accounting, fire protection, training, emergency planning, and management control.

As part of its mission to ensure the protection of public health and safety, the NRC must maintain the ability to ensure that licensed nuclear activities are properly protected against radiological sabotage and theft of special nuclear material or malevolent use of nuclear material. In its continuing effort to evaluate the threat environment, the NRC will assess reported information on potential or actual threats worldwide; adversary characteristics and intentions and capabilities of terrorist groups; and any domestic or foreign events for relevancy to the U.S. domestic nuclear threat environment.

Spent Fuel Storage and Transportation Licensing and Inspection

OUTPUT MEASURES		
Output/Baseline	**FY 1999 Target**	**FY 2000 Target**
Non-spent fuel transport container design review completions. (FY 1998: Completed 96; exceeded target of 71 reviews.)	Complete 95 design reviews.	Complete 95 design reviews.
Spent fuel container and installation design review completions. (FY 1998: Completed 35; exceeded target of 28 reviews.)	Complete 50 design reviews.	Complete 40 design reviews.

Approximately 3 million shipments of radioactive materials are made each year in the United States. Regulating the safety and security of these shipments is a responsibility shared by a number of different Federal agencies including the NRC. To carry out its regulatory responsibilities for spent fuel and non-spent fuel storage and transportation, the NRC certifies transport container package designs, and licenses and inspects interim storage of spent fuel both at and away from reactor sites to ensure that licensees transport nuclear materials in packages that will provide a high degree of safety and that licensees provide safe interim storage of spent reactor fuel. NRC's transportation activities are closely coordinated with those of the Department of Transportation (DOT) and, as appropriate, with the Department of Energy (DOE) and the Federal Emergency Management Agency. NRC's transportation activities also include reviewing transportation plans, performing route approvals and surveys for shipments of nuclear material, and relaying Department of Transportation notifications from licensees and carriers of planned import, export, or domestic shipment of nuclear material.

In the course of its regulatory, licensing, and certification activities during FY 2000, the NRC will complete the review of approximately 95 applications submitted by the Departments of Energy and Transportation and by commercial vendors for non-spent fuel transport container designs and the review of approximately 40 storage and transport cask design and storage facility applications associated with spent fuel (new licenses, topical reports, and license amendments and renewals). Of the 40 spent fuel-related applications, approximately 15 are expected to be for commercial spent fuel transport designs (including 3 dual-purpose

designs); 5 for DOT/DOE spent fuel transport designs; 5 for commercial spent fuel storage designs (including 3 dual-purpose designs); and 15 for interim storage of spent fuel. The NRC is currently reviewing the Private Fuel Storage, Limited Liability Company (PFS) application for an away-from-reactor, independent spent fuel storage installation (ISFSI). PFS's application is for construction and operation of the ISFSI on the Reservation of the Skull Valley Goshute Indians in Toole County, Utah. PFS represents a consortium of eight utilities (21 nuclear power plants). On October 19, 1998, an application from the Pigeon Spur for an away-from-reactor ISFSI in Utah was submitted to the NRC for review and approval.

The industry's spent fuel storage activities require detailed health, safety, and environmental reviews of licensee and vendor procedures and facilities to ensure safe operations. Licensed utilities are responsible for the interim storage of their spent fuel until a Federal repository or centralized interim storage facility is available. All utilities have either installed or are planning to install high-density racks in their existing spent fuel pools. However, even with these modifications, pools are reaching capacity. To provide for "full-core" reserve, many utilities are constructing ISFSIs, which generally consist of a passive storage system using dry cask technology.

The NRC will continue to maintain awareness of any potential delays in DOE's waste disposal program and will closely monitor the DOE system for inventory and forecast of spent fuel and high-level radioactive waste generation to provide early warning of capacity problems and facilitate timely and adequate waste management regulatory action.

In FY 2000, the NRC will continue the review of the Department of Energy's Topical Safety Analysis Report (TSAR) on the Dry Transfer System (DTS). The DTS (essentially a large-shielded transfer cell) gives a nuclear utility or other spent fuel handling facility the ability to perform cask-to-cask transfers of individual spent fuel bundles without the current requirement of first returning the fuel to a conventional spent fuel pool. This ability is necessary, due to engineering restrictions many utilities have that prevent them from directly utilizing the large-capacity transport and/or storage systems either already licensed or under active review by the NRC.

To ensure that staff reviewers are thoroughly prepared to perform their technical reviews, the NRC will issue a final standard review plan on transportation packages for spent nuclear fuel in FY 1999. The NRC will also continue efforts in FY 2000 to revise transportation (10 CFR Part 71) and storage (10 CFR Part 72) regulations. The NRC will continue the update of the Modal Study, "Shipping Container Response to Severe Highway and Railroad Accident Conditions," a study of spent fuel cask response to severe accident conditions, particularly rail-truck accident parameters. This update is needed to reflect changes that have occurred since

the Modal Study was first issued in 1987, including the current family of shipping casks (dual purpose casks used for both storage and transportation), computer modeling advances, and the expected increased emphasis on rail shipments. During FY 2000, the NRC will continue the update of the survey of unclassified radioactive material shipments in the United States. The last survey was published in 1985 using shipment information from 1981 and 1982. The survey estimated that 2.79 million packages, containing approximately 8.97 million curies of radioactive material, were shipped annually (the results do not include spent fuel shipments).

The industry's spent fuel storage activities require inspections of licensee and vendor procedures and facilities to ensure safe operations. In the course of its regulatory and inspection activities during FY 2000, the NRC will complete approximately 35 quality assurance reviews of designers', fabricators' and users' quality assurance programs for the design, fabrication and use of transportation packages. In addition to these activities, the NRC will conduct approximately 20 safety inspections to ensure that safety measures are correctly implemented by licensees, certificate holders, applicants, designers and fabricators of NRC-certified spent fuel storage systems and transport packages. The NRC will also perform on-site inspections of concrete vaults and casks at reactors.

Nuclear Materials Users Licensing and Inspection

OUTPUT MEASURES		
Output/Baseline	**FY 1999 Target**	**FY 2000 Target**
Timeliness of reviews of applications for new materials licenses, license amendments, license renewals, and sealed source and device designs. (FY 1998: Completed 82 percent of reviews [new applications and amendments] within 90 days. Completed 94 percent of renewals and reviews [sealed source and device] within 180 days.)	Complete 80 percent of the reviews for new applications, and amendments, within 90 days. For license renewals and sealed source and device reviews received after October 1, 1997, complete 80 percent of the reviews for license renewals and sealed source and device reviews within 180 days.	Complete 80 percent of the reviews for new applications, and amendments, within 90 days. For license renewals and sealed source and device reviews received after October 1, 1997, complete 80 percent of the reviews for license renewals and sealed source and device reviews within 180 days.
Timeliness of safety inspections of materials licensees. (FY 1998: Less than 1 percent overdue.)	Complete core inspections with less than 10 percent overdue as defined in Inspection Manual Chapter 2800.	Complete core inspections with less than 10 percent overdue as defined in Inspection Manual Chapter 2800.

The NRC licenses and inspects activities related to approximately 5,900 specific licenses for use of nuclear byproduct and other radioactive material. These uses include medical diagnosis and therapy, medical and biological research, academic training and research, industrial gauging and nondestructive testing, production of radiopharmaceuticals, and fabrication of such commercial products as smoke detectors and other sealed sources and devices. Detailed health and safety reviews and inspections of licensee procedures and facilities provide reasonable assurance of safe operations and the development of safe products.

The NRC plans to complete the review of approximately 3,100 applications for new licenses, license amendments, license renewals, and sealed source and device designs for use of radioactive material in FY 2000. It is NRC's goal to complete 80 percent of the reviews for new applications, and amendments within 90 days. For renewals and sealed source and device reviews received after October 1, 1997, the goal is to complete 80 percent of the reviews for license renewals and sealed source and device reviews within 180 days. During FY 2000, the NRC will continue to consolidate into NUREG documents the information presently contained in regulatory guidance documents and technical assistance reports as they relate to the nuclear

material safety program. The NRC expects to realize efficiencies in FY 2000 as a result of guidance consolidation and implementation of the proposed new process for streamlining materials licensing.

The materials inspection program is designed to ensure that licensees are conducting operations in a safe manner and in accordance with procedures and regulations. The NRC will conduct approximately 1,500 routine health and safety inspections and closeout inspections of materials licensees in FY 2000. If conditions are noted that could cause unnecessary exposures or releases, prompt and appropriate enforcement actions are taken. As part of its materials inspection program, NRC conducts both core and non-core inspections. Core inspections encompass (a) all initial inspections (the first inspection after a license is issued to a licensee), and (b) all routine inspections of priority 1, 2, or 3 licensees. Non-core inspections include all other types of materials inspections. The inspection priority assigned to a licensee reflects the frequency of a routine inspection, and is based on the potential radiation hazard of the licensee's programs. The NRC's goal is to complete core inspections of materials licensees to ensure that less than 10 percent are overdue, as defined in NRC's Inspection Manual Chapter 2800. In FY 2000, the NRC will implement the NRC Registration Program to include the necessary features for registering licensees' devices and perform followup activities including onsite inspections with some of the licensees (infrastructure development will began in FY 1998).

The NRC develops regulations and regulatory guidance applicable to materials licensees. During FY 2000, the NRC expects to review 6 to 8 petitions for materials rulemaking, develop and complete 8 to 10 rulemaking actions, and develop OMB clearance packages for 5 to 8 new rulemakings and 12 to 15 OMB Clearance renewals. During this period, the NRC will continue to complete rulemakings in accordance with the timeliness goals and schedules in the semi-annual rulemaking plan. The goal for decisions on the course of action for resolution of rulemaking petitions received after October 1998, is that these will be accomplished within 12 months from the date the notice of receipt of the petition is published in the Federal Register. During FY 2000, the NRC's Regulatory Product Design Center (RPDC), which serves as a testing laboratory for the creation and validation of new systems and new operational methodologies, will continue to support and facilitate analysis, evaluation and redesign of programs and business systems, and will facilitate creating, revising, and consolidating regulatory requirements and guidance documents.

The NRC responds to incidents and allegations through reactive inspections, allegation followup, investigations, enforcement actions, operational data analysis, and identification of generic issues. During FY 2000, the NRC will continue to analyze and evaluate operational experience from NRC licensees and Agreement States to identify generic issues resulting from

incidents and events, to determine the root causes of certain incidents and events and to identify those safety concerns that may warrant regulatory action. This includes operational events, such as overexposure to radioactive materials, and medical misadministrations of nuclear material.

State Programs

The NRC provides for cooperation and program compatibility, oversight, technical assistance, and liaison with States, local governments, Indian tribes, and interstate organizations. This ensures adequate protection of public health and safety from the hazards associated with the use of radioactive materials in 30 Agreement States, and ensures that nuclear safety policy and program information is shared with States and State organizations.

Under the Agreement State Program, the NRC provides assistance to States seeking Agreement State status; conducts training courses, workshops, and meetings for Agreement State staff; evaluates technical licensing and inspection issues from Agreement States; evaluates State rule changes; and provides early and substantive involvement of the States in NRC rulemaking and other regulatory efforts (sometimes using NRC/Agreement State working groups). The NRC also coordinates with Agreement States on the reporting of event information and on responses to allegations reported to NRC involving Agreement States.

The NRC, with Agreement State participants, also conducts periodic Integrated Materials Performance Evaluation Program (IMPEP) reviews of Agreement States and regional office programs for adequacy to ensure public health and safety and compatibility of Agreement State programs with NRC programs. IMPEP uses a common process that is applicable to both Agreement State and NRC regional materials programs. In FY 2000, ten Agreement State and two NRC regional IMPEP reviews are scheduled.

Under the State Liaison Program, the NRC coordinates activities of interest to State, local, and Indian tribal governments with other NRC offices; keeps the Commission and staff informed of significant State actions; and participates in activities conducted by the Conference of Radiation Control Program Directors, Inc. The NRC regularly consults with the Governor-appointed State Liaison Officers, and maintains contact with representatives of State Public Utility Commissions, National Governors' Association, and the National Association of Regulatory Utility Commissioners to identify NRC regulatory initiatives affecting States and to keep the NRC apprised of those organizations' activities. The NRC negotiates memoranda of understanding with States on various NRC and State activities involving mutual cooperation.

Materials Research

OUTPUT MEASURES		
Output/Baseline	**FY 1999 Target**	**FY 2000 Target**
Technical bases for safety and regulatory guidance and decisionmaking.	Issue 6 research products that respond to high and medium priority needs from the Commission and NRC's licensing organizations. Develop, maintain, or improve one engineering code/model for use by RES and licensing organizations for regulatory analyses/decisionmaking.	Issue 7 research products that respond to high and medium priority needs from the Commission and NRC's licensing organizations. Develop, maintain, or improve one engineering code/model for use by RES and licensing organizations for regulatory analyses/decisionmaking.
Definition: Research products are typically reports containing experimental or analytical results that form the technical basis for regulations, regulatory guides, new methods, the resolution of generic safety issues and regulatory decisionmaking.		

NRC's research program addresses materials criticality and radiation protection issues. It also supports development of a technical basis for renewals of licenses and certificates of compliance for dry storage systems for spent nuclear fuel and waste at independent spent fuel storage installation sites.

As the nuclear industry pursues new initiatives directed at the use of higher uranium enrichment fuels and higher fuel burnup in reactors, issues related to materials criticality safety are likely to raise questions about or identify needed revisions to NRC regulations or regulatory guidance. Historically, criticality research has focused on the extreme ends of the enrichment spectrum: high enriched uranium weapon material and low enrichment reactor fuels of less than 5 percent enrichment in the uranium isotope U-235. This material criticality safety research will result in development of appropriate criticality standards for regulating the processing, storage, and transportation of fuels of enrichments of greater than 5 percent U-235. This work is significant because current criticality standards may not adequately address processing, transport, and storage of uranium of greater than 5 percent enrichment.

In FY 2000, research will continue to provide a methodology for establishing the range of applicability for use of codes for criticality safety and to provide an updated code for processing neutron cross-section data.

The state of technical knowledge concerned with measuring internal and external exposure, and estimating health risks associated with these exposures is rapidly evolving. This work includes evaluating the effectiveness of health physics practices and techniques to maintain occupational and public exposure as low as is reasonably achievable, modeling the uptake and distribution of radionuclides in humans, and participating in the review and revision of national and international exposure standards and guidance. Also, substantial medical and laboratory information has become available during the past several years on the effects of radiation exposure. This research is concerned with developing an improved understanding of the relationship between human exposure to ionizing radiation and the potential occurrence of radiogenic health effects.

For FY 2000, the NRC will continue to provide support for development of technical bases for materials radiation protection-related rulemakings and guidance.

In FY 2000, the NRC will finalize documentation providing the technical basis to support a site clearance rulemaking. The dose estimate information developed will be used by program offices in rulemaking.

In conjunction with the Savannah River Technology Center, the NRC will complete the development of water chemistry limits to minimize the potential for corrosion in FY 2000.

The NRC requires a technical basis for renewals of licenses and certificates of compliance for dry storage systems for spent nuclear fuel and high-level radioactive waste at independent spent fuel storage installation (ISFSI) sites. Renewing licenses that cover periods ranging from 20 to 100 years, requires the development of a technical basis for ensuring continued safe performance under extended service conditions. Verification of past performance of selected components (spent fuel, and all structures, systems and other components with functions important to safety) is needed to establish part of that technical basis. This research assesses the ability of the component to maintain safety functions that include maintaining subcriticality, maintaining confinement, ensuring that radiation rates and doses to workers and the public do not exceed acceptable levels and remain as low as is reasonably achievable, maintaining retrievability, and ensuring heat removal as needed to meet the safety requirement, which will comprise the technical basis. One activity in this research effort focuses on monitoring ISFSI test of prototype cask service behavior to verify performance of the fuel and storage system under extended service conditions. Another activity focuses on understanding the effects of zinc vapor on Zircaloy clad spent fuel surfaces for fuel that has already been loaded into a cask with zinc coating. A third activity focuses on the evaluation of licensing issues for ISFSI storage of high burnup fuel, specifically the potential for fuel cladding

degradation due to hydrogen embrittlement. A fourth element will assess the public health risk from the use of dry cask storage systems.

A typical ISFSI licensed under 10 CFR Part 72 consists of arrays of free-standing storage casks resting on a concrete pad. In evaluating the seismic safety of a dry cask storage system (DCSS), the cask stability is assessed. Current Standard Review Plan (SRP) provisions use a safety margin of 1.1 as the review criterion against cask sliding and overturning for a postulated design earthquake; i.e., the cask is not allowed to move or tip. However, when strong earthquake ground motion strikes, the casks may move and wobble in various directions. Simultaneous sliding and tipping is a complex technical issue. In the safety review process, it is important to know how the casks would behave seismically, how much sliding and tipping is likely to take place, how the casks would impact on each other, and how the internals of the cask would be affected. There are no guidelines in the current criteria to address these questions. Thus, there exists a need for a confirmatory research project for establishing criteria or review guidelines for evaluating the seismic behavior of the storage casks.

During FY 2000, the NRC will continue methods development and demonstration for risk to the public from sealed sources, restart research in methods development and demonstration of dry cask storage risk assessment, and identify and initiate methods development for other facilities and/or devices as regulated.

In FY 2000, the NRC will continue to develop appropriate data and analyses on materials aspects of spent fuel storage in ISFSI test of prototype cask environments, publish a progress report in FY 2000, with a NUREG/CR published in FY 2001 to document the findings.

In FY 2000, the NRC will conduct detailed studies on mechanisms for long-term effects of zinc vapor on mechanical properties of fuel cladding, and will publish a progress report in FY 2000.

In FY 2000, the NRC will initiate the development of fracture mechanics based criteria for evaluating the structural integrity of high-burnup fuel cladding, and will publish a progress report in FY 2000.

In FY 2000, the NRC will continue analytical studies and testing, as needed, to evaluate the performance of casks and concrete pads, and will initiate development of guidance on review of casks on the pad for different seismic loading scenarios.

Materials Incident Response

OUTPUT MEASURES		
Output/Baseline	**FY 1999 Target**	**FY 2000 Target**
Emergency Response Performance Index	90 percent.	90 percent.
Definition: Index provides the single overall measure of the degree to which the agency believes it is ready to respond to an emergency situation. It serves as a method for measuring disparate activities that comprise the elements of the Incident Response Program. It will be determined by averaging the degree of satisfaction of the following program functions: Response Organization Staffing, Response Facility Availability, Communications Reliability, Response Organization Training, 24-Hour Notification Point, Timeliness of Activation Decision, and Timeliness of Activation. If the overall index falls below or approaches its target value of 90 percent, management will determine what is contributing most to the decline and conduct appropriate corrective measures on the basis of this review.		

Materials incident response activities are conducted to maintain incident and accident investigation programs to ensure that safety-significant operational events involving nuclear materials and fuel cycle facilities are investigated in a timely, systematic, and technically sound manner and that information is obtained on the causes of the events so that NRC can take timely and effective corrective actions. Emergency response activities are also conducted to ensure NRC is prepared to carry out its role in a radiological emergency involving radiological materials and fuel cycle facilities, licensee responses are consistent with licensee responsibilities and NRC responses are coordinated with other Federal response activities and State and local government activities.

The Incident Investigation Program (IIP) will be maintained in a high state of readiness to establish and support an Incident Investigation Team (IIT) at any time. The Incident Investigation Manual (NUREG-1303), which provides formal guidance on the conduct of IITs, will be revised if necessary, to address investigation and programmatic deficiencies if any. IIT rosters will be revised, as needed. IITs will be established and supported, and findings will be documented as staff followup actions. In FY 2000, independent reviews will be conducted for actions assigned from previous IITs.

During FY 2000, the emergency response program will continue to be updated based on lessons learned. The on-call position of response coordination team member will be continuously staffed to initiate the call-out process when the NRC Headquarters Operations Center (HOC) is activated. Response team readiness will be maintained. The staff will continue its interfaces with other Federal agencies involved in radiological incident response.

The NRC will respond to new initiatives while maintaining its role in the principal Federal response plans (Federal Response Plan, Federal Radiological Emergency Response Plan and National Contingency Plan). The incident response staff will participate in exercises, drills, major organizational meetings and training sessions with State coordination as a focus. The training will be conducted in the most expeditious way possible.

In FY 2000, the NRC staff will improve the conceptual design of emergency response courses, prepare and revise training documents, and schedule, track and conduct training for headquarters and regional responders. In this way, the efficiency and effectiveness of headquarters and regional responder training will be significantly improved. Training outside the exercise environment will continue to be provided in order to improve responder technical skills. The NRC will conduct one materials exercise in FY 2000.

During FY 2000, the Regional Incident Response Program will be maintained at a high level of readiness at all times. To accomplish this, the NRC Regional Offices (Regions) will train response personnel as required to maintain technical and administrative skills, participate periodically in drills and exercises, maintain response equipment in a state of operational readiness, maintain response procedures current, and implement program improvements resulting from lessons learned. The Regions will designate sufficient staff to participate as response team members to implement program objectives, keeping in mind program efficiencies. In addition, the Regions will continually evaluate ways to improve response through upgrades to equipment, resources, and facilities. The Regions will work with NRC Headquarters, other Federal agencies, licensees, and State and local governments to maintain a high level of cooperation necessary for response to emergencies.

Materials Operational Experience Evaluation

OUTPUT MEASURE		
Output/Baseline	**FY 1999 Target**	**FY 2000 Target**
The Nuclear Materials Events Database (NMED) which contains information about nuclear materials events reported to the NRC by NRC licensees and Agreement States, will be maintained by entering materials event information in a timely manner. (FY 1998: Materials event information entered within the specified time 90 percent of the time.)	Materials event information from morning reports, event notifications, and preliminary notifications of occurrences will be entered into NMED within 2 working days from the date of the document, and NMED records will be updated within 2 working weeks of the data of receipt 90 percent of the time.	Materials event information from morning reports, event notifications, and preliminary notifications of occurrences will be entered into NMED within 2 working days from the date of the document, and NMED records will be updated within 2 working weeks of the data of receipt 90 percent of the time.

The NRC collects nuclear materials event data from NRC licensees and Agreement States, codes the data, and enters them into the Nuclear Materials Events Database (NMED). This database is available to NRC and Agreement States staff. In FY 1999, in response to a request from the Conference of Radiation Control program directors representing the States, NMED will be expanded to capture orphan sources, discrete radioactive material that is not under the control of a licensee and that presents a radiological threat to public health and safety, containing Atomic Energy Act (AEA) and non-AEA materials. Enhancements will also be made to collect additional event information, accommodate more users, and provide online registration of orphan sources. Nuclear materials event data will be systematically screened and reviewed for significant health and safety lessons. The annual Abnormal Occurrence Report to Congress will be prepared.

Materials Technical Training

OUTPUT MEASURES		
Output/Baseline	**FY 1999 Target**	**FY 2000 Target**
Numbers and types of materials technical training courses offered. (FY 1998: 100 percent of cumulative needs met.)	Numbers and types of courses offered will meet 90 percent of cumulative needs identified by offices and regions in semiannual needs surveys.	Numbers and types of courses offered will meet 90 percent of cumulative needs identified by offices and regions in semiannual needs surveys.

Materials technical training is conducted to ensure that NRC staff possesses the requisite knowledge, skills, abilities and competencies to accomplish the mission of the agency. Under this activity, technical training is provided for formal NRC materials inspector and license reviewer qualification, development, and training programs in support of the materials program. The NRC will continue to maintain the Technical Training Center (TTC) and manage the technical training program for NRC staff. Curriculum areas will be maintained in radiation protection, fuel cycle technology, safeguards, regulatory skills, and probabilistic risk assessment to provide the technical and regulatory foundation to support staff decisions in the regulatory oversight process. Technical training will continue to be provided using the principles of the systems approach to training which is a standard, multiphase program that includes needs analysis, program design and development, implementation of training, and program evaluation.

Required core, specialized, and refresher technical training is developed, implemented, and maintained in support of the qualification of NRC personnel with defined qualification, development, and training programs. Materials technical training is provided for formal NRC staff qualification in support of the nuclear materials and fuel cycle programs. Similar training is also provided in support of the Agreement State program. The materials technical training program will continue to offer approximately 17 courses ranging in duration from 3 days to 5 weeks. In FY 2000, the NRC will provide 90 percent of the numbers and types of sources required by the offices and regions.

In FY 2000, initial materials technical training and refresher training will be provided to NRC materials inspectors and license reviewers in formal qualification or development programs for Agreement State personnel. In addition, materials technical training will be available for NRC technical managers. Major curriculum adjustments to best satisfy the highest priority regional and program office training needs will continue.

Reactive training needs are addressed in materials technical training curriculum areas as identified by job and task analyses and agency management through forums such as training focus groups, division director counterpart meetings, and senior management meetings. The NRC will provide technical training to support special staff development programs. During this period, a limited amount of technical training will be provided in specialized areas to supplement the initial training provided to technical staff. This training provides selected technical staff with specific expertise in areas for which all technical staff do not require the expertise. New and expanded materials technical training will be developed and implemented during FY 2000, as necessary, in areas identified by program offices and regions. This includes new training courses to support the agency-wide probabilistic risk assessment implementation plan, training in regulatory skills, and new training determined to be necessary by technical training needs surveys.

Materials Enforcement Actions

OUTPUT MEASURES		
Output/Baseline	**FY 1999 Target**	**FY 2000 Target**
Timeliness in completing enforcement actions. (FY 1998: Enforcement case average of 67.1 days for 90 percent of cases. Enforcement case average of 80.6 days for 100 percent of cases.)	90 percent of materials enforcement cases will average 90 days or less. 100 percent of materials enforcement cases will average 120 days or less. The measuring period starts on the latest of the following dates: (1) inspection exit, for non-OI cases, (2) the date of the OI memorandum forwarding the OI investigation to the staff, for OI cases, (3) the date that the Department of Justice says NRC may proceed, for cases referred to the DOJ, or (4) the date of the Department of Labor decision that is the basis for the action.	90 percent of materials enforcement cases will average 90 days or less. 100 percent of materials enforcement cases will average 120 days or less. The measuring period starts on the latest of the following dates: (1) inspection exit, for non-OI cases, (2) the date of the OI memorandum forwarding the OI investigation to the staff, for OI cases, (3) the date that the Department of Justice says NRC may proceed, for cases referred to the DOJ, or (4) the date of the Department of Labor decision that is the basis for the action.

The NRC's enforcement program is used as a deterrent to emphasize the importance of compliance with requirements and to encourage prompt identification and comprehensive correction of violations. The basic enforcement sanctions are notices of violations, civil monetary penalties, and various enforcement orders. The nature and extent of the enforcement action taken by the NRC reflect the seriousness of the violation involved.

The NRC expects to consider approximately 100-200 potentially escalated nuclear materials enforcement actions. As the number and types of enforcement actions taken in any period of time are a function of the number of licensees and the licensees' performance, it is difficult to predict future activity levels. However, previous enforcement activity has been as follows:

Materials Enforcement				
Fiscal Year	Actions Considered	Resulting Civil Penalties	Notices of Violation Without Civil Penalty	Orders Issued
1996[1/]	160	28	33[2/]	13
1997	211	41	83	18
1998	164	29	55	10

1/ Reflects a change in the threshold for considering escalated actions.

2/ The information for FY 1996 was based on enforcement actions issued to licensees. Because an enforcement case or enforcement action can include more than one escalated enforcement item or issue, FY 1997 data are based on accounting for escalated enforcement items. Therefore, for consistency, data for FY 1996 have been adjusted to reflect this method of accounting.

The NRC also monitors discrimination actions filed with the U.S. Department of Labor under Section 211 of the Energy Reorganization Act and develops enforcement actions for properly supported findings of discrimination, either from the Office of Investigations or from the Department of Labor adjudications.

Materials Investigations

OUTPUT MEASURES		
Output/Baseline	FY 1999 Target	FY 2000 Target
Timeliness in completing investigations. (FY 1998: Completed cases, on average, in 6.3 months. 7.8 percent of cases open for more than 12 months.)	Complete cases, on average, in 9 months or less. Maintain the average number of cases within the active care inventory for more than 12 months, at 9 percent or less.	Complete cases, on average, in 9 months or less. Maintain the average number of cases within the active care inventory for more than 12 months, at 9 percent or less.

The NRC investigates allegations of wrongdoing by NRC licensees, certificate holders, and others within its regulatory jurisdiction. All findings and conclusions that result from investigations are sent to the appropriate program office, the Office of Enforcement and the

Office of the General Counsel to review the issues involved and to determine whether enforcement action is warranted. Investigations that substantiate criminal violations concerning NRC licensees and others within the NRC's regulatory jurisdiction are referred to the U.S. Department of Justice. In FY 2000, the Office of Investigation anticipates investigating an inventory of approximately 80-100 materials cases and that 50-75 cases will be closed. In addition to managing its own investigations' caseload, the NRC works closely with other investigative agencies and organizations to ensure the timely exchange of information of mutual interest.

Materials Legal Advice

The *Office of the General Counsel* (OGC) provides legal advice and assistance to the Office of Nuclear Materials Safety and Safeguards (NMSS) and the Commission with respect to all matters related to the regulation of nuclear materials and the storage of spent fuel. OGC's legal support will include legal advice and assistance on NRC's FY 2000 licensing, inspection, and enforcement activities concerning the application of regulatory requirements to particular factual situations as presented by NMSS or the regional offices including legal review of licenses, amendments, certificates, environmental documents and inspection reports, enforcement, and any contractual matters that may arise in performing these activities. OGC will also provide legal analyses and interpretations of regulations, statutes, and cases relevant to materials and spent fuel storage activities; continue to represent the NRC staff in adjudications arising from proposed licensing and enforcement actions and represent the Commission in lawsuits arising from adjudicatory and rulemaking decisions relating to materials and spent fuel storage; and provide legal advice and assistance for any rulemaking activities in the materials area.

Materials Adjudication

The *Atomic Safety and Licensing Board Panel (ASLBP)*, a statutorily authorized office of the NRC, conducts hearings as independent adjudicatory tribunals, usually at or near the site at which the dispute arose. ASLBP's administrative judges sit alone and in three-member boards; they hear and decide requests to grant, suspend, revoke, or amend nuclear materials licenses that address issues involving health, safety, and the environment. ASLBP judges also preside over materials enforcement and decommissioning cases.

In its 1998 statement on the Policy on Conduct of Adjudicatory Proceedings, the Commission reiterated its longstanding commitment to the expeditious completion of adjudicatory proceedings while still ensuring that hearings are fair and produce an adequate record for decision. The Commission directed its hearing boards and presiding officers to continue to

employ measures and techniques to reduce the time for completing licensing and other proceedings.

Regulation of the Department of Energy

The Department of Energy (DOE) and the NRC, in recognition of a mutual commitment to the effective and efficient protection of public health and safety and the environment, will continue to resolve issues of concern that relate to the potential NRC regulation of DOE nuclear facilities, projects and activities. DOE will obtain assistance from the NRC on projects and activities pertaining to DOE's responsibilities and the NRC will obtain information from DOE that may be relevant to the regulation of licensed activities.

Under a Memorandum of Understanding with DOE, dated November 21, 1997, NRC and DOE agreed to conduct a pilot program to simulate external regulation of DOE by testing regulatory concepts at selected DOE sites and facilities. DOE is principally responsible for conduct of the pilot evaluations, while NRC performs a substantial supporting role. The overall objective of the pilot program is to determine the desirability of NRC regulatory oversight of DOE nuclear facilities by evaluating the standards, requirements, procedures and practices at the pilot facilities in accordance with the NRC's regulatory safety standards and provide support for a decision on whether legislation should be pursued to authorize NRC regulation of certain DOE nuclear facilities. In FY 1998, NRC tested its regulatory concepts at three DOE pilot facilities--the Lawrence Berkeley National Laboratory (LBNL), the Radiochemical Engineering Development Center, and the Savannah River Site-Receiving Basin for Offsite Fuel.

In the FY 1999 appropriations language, Congress directed DOE to include the Occupational Safety and Health Administration (OSHA), and appropriate State and local regulatory entities in the external regulation pilot projects. DOE is to send a report to Congress by March 31, 1999, on the results of the comprehensive pilot project at LBNL (reflecting the involvement of DOE, NRC, OSHA and California's State and local government entities responsible for worker health and safety).

In FY 1999, DOE may add up to three additional pilot facilities of greater complexity to the program. The experience gained from these pilots will allow both DOE and NRC to address significant technical, policy, and legal issues related to NRC regulation of DOE facilities. Legislation may be submitted in FY 1999 to have NRC regulate either various classes of, or all non-defense program facilities. Assuming that legislation moves forward, program development and rulemaking initiatives would begin in FY 2000 in order to facilitate a smooth transition into external regulation starting in FY 2001. In addition, discussions would take

place with pilot facilities on implementation issues and prelicensing consultations with DOE facilities.

In FY 2000, the NRC will continue to support DOE on the Hanford Tank Waste Remediation System at Richland, Washington. DOE initiated this effort in 1996 to demonstrate technologies for solidifying highly radioactive tank waste at the Hanford site through the design of a pilot-scale facility. The NRC is participating in this effort to acquire sufficient knowledge and understanding of the Hanford tank waste and the processes, technology, and hazards to: (1) assist DOE in performing technical reviews in a manner consistent with NRC's regulatory approach; and (2) be prepared to develop an effective and efficient regulatory program for the possible future licensing of DOE contractor-owned and contractor-operated facilities that will process waste at Hanford, pending resolution of certain statutory and regulatory issues. In FY 2000, the NRC will continue to develop an overall review strategy for Phase I activities including review of design, construction, and operation in preparation for the proposed NRC licensing. To assist in this effort, the NRC on-site representative will continue to interface with DOE and to provide NRC coordination and support.

The *Office of the General Counsel* provides legal support, review and advice to the staff on the external regulation of DOE facilities and sites, primarily involving DOE Hanford tank waste remediation, and the pilot programs on the general oversight of DOE facilities.

THIS PAGE INTENTIONALLY LEFT BLANK

NUCLEAR WASTE SAFETY

NUCLEAR WASTE SAFETY

STRATEGIC GOAL

Prevent adverse impacts to the current and future public health and safety and the environment, as a result of uranium recovery[12], facilities decommissioning, cleanup of contaminated sites, and disposal of radioactive wastes.

DESCRIPTION OF STRATEGIC ARENA

Nuclear waste is a byproduct of the use of radioactive materials. Such waste is produced by nuclear reactors that generate electric power, as well as fuel processing plants, uranium recovery operations, and institutions such as hospitals and research facilities. It also results from decommissioning nuclear facilities that are permanently shut down. The strategy for disposing of these wastes largely depends on the potential hazard and the time period over which this hazard will exist. The objective of such disposal is to isolate the wastes from humans and the environment during the period of greatest hazard, and to ensure that potential releases will not result in adverse impacts to public health and safety and the environment. High-level radioactive waste results primarily from the fuel used by reactors to produce energy. Low-level radioactive waste results from reactor operations, and from medical, academic, industrial, and other commercial uses, and generally contains relatively limited concentrations of radioactivity.

The Nuclear Waste Safety strategic arena encompasses the NRC's high-level waste regulatory activities associated with high-level waste storage and high-level waste disposal at Yucca Mountain as mandated by the Nuclear Waste Policy Act of 1982, the Nuclear Waste Policy Amendments Act of 1987, and the Energy Policy Act of 1992; and the NRC's low-level radioactive waste activities associated with the disposal of waste in accordance with the Low-Level Radioactive Waste Policy Act of 1980, amended in 1985.

NRC regulatory and oversight activities also include decommissioning, which involves safely removing a facility from service and reducing residual radioactivity to a level that permits the property to be released. This action is to be taken by a licensee before termination of the license. Some power reactor licensees have recently decided to shut down their facilities prematurely, before the expiration of the current operating licenses (e.g., Haddam Neck, Maine Yankee, Zion, etc.). These unexpected shutdowns have resulted in additional staff efforts in the areas of decommissioning inspections and in the licensing area to process license

[12] "Uranium recovery" means the removal of uranium from ore and the stabilization of tailings from this process.

amendments and exemptions reducing regulatory requirements to correspond to the reduced risk posed by the permanently shutdown plants. In some cases, non-licensed facilities may also be required to reduce or stabilize contamination before sites are released. This activity comprises NRC's integrated regulation of the decontamination and decommissioning of facilities and sites associated with NRC-licensed activities, including associated research, rulemaking efforts, and the technical interface with the Environmental Protection Agency (EPA) to resolve issues of mutual interest in accordance with the March 1992 General Memorandum of Understanding.

This strategic arena also includes NRC's regulation of uranium recovery. The Uranium Mill Tailings Radiation Control Act of 1978, as amended, (UMTRCA) directs the NRC to amend its regulations to conform to the Environmental Protection Agency standards for uranium mill tailings reclamation and groundwater cleanup, and to regulate the reclamation of tailings and groundwater cleanup from licensed uranium mills. In addition, UMTRCA also directs NRC to review and concur in the reclamation of uranium mill tailings and groundwater cleanup being conducted by the Department of Energy at abandoned mill sites. These activities require detailed health, safety, and environmental reviews; inspections of licensee procedures and facilities to provide reasonable assurance of safe operations; the development of NRC regulations and guidance to implement the applicable standards; and the site-by-site evaluation of licensee and Department of Energy plans for reclamation of mill tailings and cleanup of groundwater.

These efforts are conducted primarily by the Office of Nuclear Material Safety and Safeguards, the Office of Nuclear Reactor Regulation, and the Office of Nuclear Regulatory Research, with the assistance and coordination of the NRC offices of the General Counsel, the Atomic Safety Licensing Board Panel, the Advisory Committee on Nuclear Waste, the Secretariat, and the Chief Information Officer.

The Nuclear Waste Safety strategic arena is comprised of the following six programs: High-Level Waste Regulation; Regulation of Low-Level Waste; Regulation of Decommissioning; Radionuclide Transport and Decommissioning; Uranium Recovery Licensing and Inspection; and Non-High-Level Waste Safety Legal Advice. The contract support funds are allocated for work done by Department of Energy (DOE) contractors, commercial contractors, small business entities, nonprofit organizations (e.g., universities and foundations), and grantees.

MEASURING RESULTS -- PERFORMANCE GOALS

The NRC has established the following performance goals for measuring results in achieving its nuclear waste safety strategic goal to prevent adverse impacts to the current and future public health and safety and the environment, as a result of uranium recovery, facility decommissioning, cleanup of contaminated sites, and disposal of radioactive waste. In developing these goals, a careful review and analysis of existing performance data were performed. Although targets for performance were not established until FY 1998, FY 1997 performance, where available, is provided. FY 1998 performance, where available, is also provided. These data provide a firm baseline for the development of future performance targets and the assessment of performance.

1. **No radiation exposures or releases of radioactive material are likely to occur now or in the future that will have significant adverse impacts on the health and safety of the public, and the environment, as a result of uranium recovery, facility decommissioning, cleanup of contaminated sites, and disposal of radioactive wastes.**

   The **performance indicators** and **targets** for FY 2000 are established under the following performance goals.

1.a. **Minimize the number of radiation exposures or offsite releases that exceed the regulatory requirements for operational activities.**

This goal includes sites regulated by Agreement States, but excludes sites under EPA Superfund authority. The **performance indicator** is the number of accidental releases per year that exceed the dose standards in 10 CFR Part 20.1201, 10.1208, or 20.1301. The **data** to support this indicator are currently collected in the Nuclear Material Events Database. (See Appendix I.)

The **FY 2000 target** is that the five-year average (FY 1996-FY 2000) will not exceed **two** per year. The **FY 1999 target** is that the five-year average (FY 1995-FY 1999) will not exceed **two** per year.

1.b. **Estimated post-operational offsite releases will not exceed regulatory requirements.**

This goal includes sites regulated by the Agreement States but excludes sites under EPA Superfund authority. The **performance indicator** is the number of offsite releases per year in excess of the standards in 10 CFR Part 40 Appendix A Criterion 6, 10 CFR Part 20 Subpart E, or 10 CFR 61.41. The **data** to support this indicator are currently collected in the Nuclear Material Events Database. (See Appendix I.)

The **FY 2000 target** is **zero**. The **FY 1999 target** is **zero**.

1.c.	**Potential environmental impacts will be considered in accordance with the National Environmental Policy Act (NEPA) before regulatory action is taken.** The **performance indicator** is the number of environmental impacts identified and substantiated each year by external sources which were not identified as part of the NRC's NEPA process.

The **FY 2000** target is **zero**. The **FY 1999 target** is **zero**.
FY 1998 Performance: Data for this measure will be reviewed in FY 1998 and will be reported for FY 1999.

2.	**The regulatory framework for high-level waste disposal will be established consistent with current national policy.** The **performance indicator** is the development of 10 CFR Part 63 in accordance with the Commission's strategy, which includes incorporating the legislatively required environmental standard.

The **FY 2000** target is to publish a final site-specific, performance-based regulation applicable to the proposed repository at Yucca Mountain.
The **FY 1999 target** is to publish a proposed site-specific, performance-based regulation applicable to the proposed repository at Yucca Mountain.

2.a.	**Develop guidance to address key technical issues most important to the performance of a high-level waste repository during the pre-licensing period.** The **performance indicator** is the resolution of subissues that make up the key technical issues. The **data source** are the issuance of specific issue resolution status reports.

The **FY 2000 target** is to resolve at least five of the seven subissues related to: (1) extent of dilution due to transport and well bore mixing; (2) waste package chemical environment; (3) chemical environment for radionuclide release; (4) retardation in fractures; (5) retardation in matrix; (6) criticality in far-field; and (7) tectonic model of Yucca Mountain.

The **FY 1999 target** is to resolve five subissues related to: (1) rate of shallow infiltration; (2) rate of deep percolation; (3) physical and chemical system affecting radionuclide transport; (4) consequences of igneous activity; and (5) design for seismic events and fault disruption.

2.b.	**Participate in developing a high-level waste radiation safety standard and implement the standard through a site-specific, performance-based regulation and Yucca Mountain review plan.** The **performance indicator** is the development of a Yucca Mountain Review Plan that will implement the site-specific, risk-informed and performance-based regulations for a proposed repository at Yucca Mountain, Nevada. The **date source** are the issuance of specific documents for the Yucca Mountain regulation and review plan.

The FY 2000 target is to refine the Yucca Mountain Review Plan format and content that will implement the site-specific, risk-informed, and performance-based regulations for a proposed repository at Yucca Mountain, and build sections using Issue Resolution Status Reports, acceptance criteria and review methods.

The **FY 1999 target** is to develop an initial Yucca Mountain Review Plan format and content.

STRATEGIES

1. The NRC will maintain and further develop the capability to provide timely and independent technical bases for its regulatory decisions.

2. The NRC will maintain and improve its regulatory framework[13] and incrementally use risk-informed and, where appropriate, less prescriptive performance-based approaches.

3. The NRC will authorize uranium recovery activities, decommissioning of nuclear reactors and materials facilities, and the disposal of radioactive waste only after the NRC has determined that these proposed activities will be conducted in accordance with the regulatory framework.[11]

4. The NRC will ensure that licensees understand and carry out their primary responsibility for conducting activities consistent with the regulatory framework.

5. The NRC will prepare to license a high-level waste repository by focusing on the issues most significant to repository safety and provide feedback to the DOE at a pace consistent with the national program.

[13] The regulatory framework is rules and regulations that ensure adequate protection of public health and safety.

6. The NRC will streamline and improve its decommissioning regulatory process to be more performance-based and efficient.

The following table depicts the relationship of the nuclear waste safety programs to the arena strategies identified above. The required resources are developed based on the programs and functions necessary to implement the strategies. Detailed information on the resources, programs, and their associated output measures is provided in the Nuclear Waste Safety arena section of the FY 2000 budget request. FY 1998 baseline data for the FY 1999 and FY 2000 output measure targets are provided, where available.

FY 2000 NUCLEAR WASTE SAFETY ARENA PROGRAM LINK TO ARENA STRATEGIES

LINKS TO ARENA STRATEGIES	STRATEGIES					
FY 2000 PROGRAMS ($42,143K, 195 FTE)	1	2	3	4	5	6
High-Level Waste Regulation ($19,150K, 53 FTE)			X		X	
Regulation of Low-Level Waste ($1,353K, 12 FTE)		X				
Regulation of Decommissioning ($13,729K, 85 FTE)		X	X	X		X
Radionuclide Transport and Decommissioning ($4,001K, 15 FTE)	X					
Uranium Recovery Licensing & Inspection ($3,470K, 26 FTE)			X	X		
Non-High-Level Waste Safety Legal Advice ($440K, 4 FTE)		X	X	X		

BUDGET AUTHORITY BY FUNCTION AND BY PROGRAM
FULL-TIME EQUIVALENT EMPLOYMENT BY PROGRAM

(Dollar amounts in tables represent thousands of dollars ($K). In text, whole dollar amounts are used. Staff numbers represent full-time equivalents (FTEs).)

Total FY 2000 Estimate $42,143,000

Summary	FY 1998 Enacted	FY 1999 Estimate	FY 2000 Estimate	
			Request	Change from FY 1999
Budget Authority by Function ($K)				
Salaries and Benefits	14,875	18,354	19,892	1,538
Contract Support	16,972	19,668	21,485	1,817
Travel	788	720	766	46
Total	32,635	38,742	42,143	3,401
Budget Authority by Program ($K)				
High-Level Waste Regulation	15,000	17,000	19,150	2,150
Regulation of Low-Level Waste	897	1,387	1,353	-34
Regulation of Decommissioning	8,866	12,322	13,729	1,407
Radionuclide Transport and Decommissioning	4,372	4,431	4,001	-430
Uranium Recovery Licensing and Inspection	3,088	3,191	3,470	279
Non-High-Level Waste Safety Legal Advice	412	411	440	29
Total	32,635	38,742	42,143	3,401
Full-Time Equivalent Employment by Program				
High-Level Waste Regulation	44	50	53	3
Regulation of Low-Level Waste	8	12	12	0
Regulation of Decommissioning	63	85	85	0
Radionuclide Transport and Decommissioning	17	17	15	-2
Uranium Recovery Licensing and Inspection	27	23	26	3
Non-High-Level Waste Safety Legal Advice	4	4	4	0
Total	163	191	195	4

EXPLANATION OF RESOURCE CHANGES BY PROGRAM

High-Level Waste Regulation. Resources increase in FY 2000 for activities associated with (1) preparation of preliminary sufficiency comments for DOE, (2) review and comment on DOE's draft license application for Yucca Mountain, and (3) development of the Yucca Mountain Review Plan.

Regulation of Low-Level Waste. There are no significant resource changes in FY 2000.

Regulation of Decommissioning. Resources increase in FY 2000 to work off the licensing backlog, to complete the Standard Review Plan for decommissioning, and to support an increased level of activity associated with rulemaking for clearance of materials and equipment that have residual radioactivity (recycle rulemaking).

Radionuclide Transport and Decommissioning. Resources decrease in FY 2000 as a result of completing the modeling effort to support regulatory guidance on decommissioning.

Uranium Recovery Licensing and Inspection. Resources increase slightly in FY 2000 to continue development of the 10 CFR Part 41 rulemaking for uranium milling and milling facilities, to review efforts for uranium recovery Title I groundwater reviews, and to reflect increased personnel costs (pay raises, within-grade increases, and benefits costs increases). These increases are offset by decreases that result from completing the majority of reclamation plan reviews in FY 1999.

Non-High-Level Waste Safety Legal Advice. There are no significant resource changes in FY 2000.

JUSTIFICATION OF PROGRAM REQUESTS

High-Level Waste (HLW) Regulation

OUTPUT MEASURES		
Output/Baseline	**FY 1999 Target**	**FY 2000 Target**
Resolve subissues related to (1) extent of dilution due to transport and well bore mixing, (2) waste package chemical environment, (3) chemical environment for radionuclide release, (4) retardation in fractures, (5) retardation in matrix, (6) criticality in far-field, and (7) tectonic model of Yucca Mountain. (FY 1998: No output data available.)	None.	Resolve at least 5 of the 7 subissues targeted.
Resolve subissues related to (1) rate of shallow infiltration, (2) rate of deep percolation, (3) physical and chemical systems affecting radionuclide transport, (4) consequences of igneous activity, and (5) design for seismic events and fault disruption. (FY 1998: No output data available.)	Resolve 5 of the subissues targeted.	
Development of the Yucca Mountain Review Plan (YMRP).	Develop an initial Yucca Mountain Review Plan format and content.	Refine YMRP format and content; build YMRP sections using Issues Resolution Status Reports, acceptance criteria, and review methods.
Establish a site-specific, performance-based regulation applicable to the proposed repository at Yucca Mountain.	Publish a proposed site-specific, performance-based regulation applicable to the proposed repository at Yucca Mountain.	Publish a final site-specific, performance-based regulation applicable to the proposed repository at Yucca Mountain.

The NRC's efforts in the area of high-level radioactive waste (HLW) licensing are governed by the Nuclear Waste Policy Act of 1982 (NWPA), the Nuclear Waste Policy Amendments Act of 1988 (NWPAA), and the Energy Policy Act of 1992 (EnPA). This legislation specifies a detailed approach for the long-range undertaking of HLW disposal as well as the respective roles of NRC, the U.S. Department of Energy (DOE), and the U.S. Environmental Protection Agency (EPA) in the HLW program. DOE has the responsibility for the actual disposal of HLW, developing the geologic repository and operating it. EPA has been charged with developing the necessary environmental standards, consistent with the recommendations of the National Academy of Sciences, that will be used to evaluate the safety of the geologic repository developed by DOE. The NRC has extensive pre-licensing responsibilities and is the regulatory agency that will determine whether DOE's safety case for a geologic repository at Yucca Mountain, Nevada, complies with the applicable regulatory standards developed by both NRC and EPA.

The NRC high-level waste program was strategically realigned during FY 1996-FY 1997 to improve its effectiveness and in response to budget reductions. This realignment focused all HLW work on a set of 10 key technical issues (KTIs) and their component subissues, that address the technical concerns of greatest potential impact on post-closure repository performance. However, despite these reductions in previous years, the program realignment has (1) significantly improved the focus of the HLW program, (2) presented opportunities for substantial cost savings to the overall program, and (3) provided opportunities to reduce the schedule risk associated with the licensing process.

Pre-closure activities, for which previous regulatory experience exists (i.e., emergency plans, safeguards and security, compliance with 10 CFR Part 20), were curtailed as part of the program realignment. For certain pre-closure design issues and operations where experience is lacking and standards have not been developed--waste package retrievability--some work will be conducted in FY 1999-FY 2000 although the Yucca Mountain License Application Review Plan (YMRP) sections themselves will not be completed until the License Application is submitted in FY 2002.

Progress toward resolution of the KTIs has been the focus of NRC's program during FY 1996-FY 1998 and will continue to be the case until DOE submits a License Application (LA). Overall, KTI resolution comprises four interrelated phases. The first phase--resolution at the staff level--is achieved when the staff has no further questions regarding how the DOE is addressing a particular subissue; such resolution does not preclude the issue being raised and considered during the licensing proceeding. This phase will be completed between FY 1999-FY 2002. Issue Resolution Status Reports (IRSRs), which are being progressively developed over time, will document the current technical bases and acceptance criteria for issue

resolution and subsequent use in staff reviews. The YMRP will be developed in the second phase for use by the NRC staff in conducting its review of the LA. The YMRP will be a highly focused, site-specific document that integrates the regulatory basis of the regulation with the acceptance criteria and review methods contained in the IRSRs. Following issue resolution at the staff level, the third phase of work will continue through FY 2002 to (1) develop the review methods, total-system performance assessment (TSPA) and process-level models, and confirmatory databases needed to review the LA, (2) conduct limited, focused studies aimed at developing confidence in the application of review methods to licensing the proposed Yucca Mountain repository, and (3) monitor and provide feedback to DOE regarding implementation of acceptable approaches. The final phase of resolution involves monitoring DOE performance confirmation activities.

FY 2000 resources will allow the NRC to fulfill it own statutory responsibilities by conducting activities in HLW rulemaking, and in pre-licensing issue resolution with DOE in the areas most important to geologic repository licensing.

The EnPA requires that NRC develop implementing regulations within one year after promulgation of the final EPA standard for Yucca Mountain. The NRC plans to complete work on the development of the proposed site-specific disposal regulations for the proposed geologic repository at Yucca Mountain in FY 1999 and complete the final site-specific disposal regulations in FY 2000. It should be recognized that this schedule could be impacted by EPA's schedule for promulgating the standard or passage of legislation currently before Congress. Once the rulemaking is completed, the NRC will focus on evaluating the existing 1990 Waste Confidence findings for geologic disposal of HLW in FY 2000.

The NRC will continue to pursue the first phase of pre-licensing issue resolution with DOE in FY 1999. The KTIs will be re-evaluated and possibly re-prioritized based on the following: (1) changes or new developments in DOE's program, as a result of the findings of the Viability Assessment (VA); (2) evaluation of sensitivity results produced by DOE and NRC total system performance assessments (TSPAs) that identify issues most important to repository performance; and (3) results of the staff review of the VA. Based on these activities, the staff will prepare updates to its IRSRs in FY 2000.

The NRC will complete its review of DOE's VA in FY 1999, and will enter the second phase of issue resolution with DOE by undertaking the initial development of the YMRP, which will be used as guidance for NRC's review of DOE's draft LAs (FY 2000 and FY 2001) and the final LA (in FY 2002).

Additional NRC goals in the HLW program for this period include (1) the conduct of observation audits of DOE's quality assurance (QA) program to ensure that it is being implemented effectively, (2) maintenance of the NRC Licensing Support System Network, which will be necessary to support a potential Yucca Mountain licensing hearing, and (3) continued contract management and administrative support of the Center for Nuclear Waste Regulatory Analyses (CNWRA), in order to ensure that it is managed effectively and efficiently.

In FY 2000, the NRC plans to initiate new activities with the goal of achieving pre-licensing issue resolution with DOE. Specifically, NRC intends to provide timely comments to DOE on the following major program milestones: (1) its draft LA, (2) its draft environmental impact statement (EIS) (which the Commission will later adopt, to the extent practicable, as part of a DOE LA), and (3) the extent to which DOE's site characterization analysis and waste form proposal are sufficient for inclusion in a DOE LA (the so-called "Commission's preliminary sufficiency comments").

Other HLW program activities include the licensing, inspection and environmental reviews for the safe management, storage, and transportation of nuclear materials, including spent nuclear fuel. During FY 2000, the NRC will continue its reviews of the DOE Topical Reports on Burn-up Credit and the adequacy of long-term dry storage in the existing Waste Confidence Decision.

The *Office of the General Counsel* (OGC) provides legal advice and assistance to the technical staff on proposed amendments to regulations on the transportation, storage and disposal of HLW and spent fuel; on the rulemaking to develop implementing regulations after promulgation of final EPA standards; on NRC issue resolution status reports; on NRC review of DOE's siting guidelines, its viability assessment and its draft EIS for the Yucca Mountain site; on development of a repository licensing standard review plan; and on the Commission's required 10-year review of its Waste Confidence proceeding. The OGC will also represent the NRC in all proceedings on the HLW repository license application, including the review of material generated by the NRC and by contacts with persons and entities outside the NRC.

The *Advisory Committee on Nuclear Waste* provides advice on issues concerning the management of high-level radioactive waste (HLW) including: interim storage of spent nuclear fuel; transportation; the disposal of HLW in geologic repositories, pre-licensing activities such as viability assessment, the environmental impact statement, and site suitability; standards, regulations, and guidance; and other issues as appropriate, including decommissioning and uranium mill tailing. This advice will be responsive to Commission needs, expectations, and requests, and will be issued in a timely manner to support Commission decisionmaking.

The *Atomic Safety and Licensing Board Panel* (ASLBP), a statutorily authorized office of the NRC, conducts hearings as independent adjudicatory tribunals, usually at or near the site at which the dispute arose. ASLBP judges will hear and decide petitions for hearing by intervenors and applicants concerning public health, safety, and environmental issues arising out of the application for a construction authorization and a license to receive and possess nuclear materials in a high-level waste repository.

The *Office of the Chief Information Officer* provides support for the Licensing Support System (LSS) which provides shared document discovery and facilitates electronic motions practice for the hearings on a license application, ensuring that all documents relevant to the licensing are made equally accessible in a timely manner to all parties and potential parties. FY 2000 resources will be used to develop the LSS home page and search interfaces; establish and test the linkage from it to the NRC home pages maintained under the Agency-wide Documents Access and Management System (ADAMS); and implement the hardware, software, staff operations, and other resources to develop an operating program for automated auditing of participant-operated home pages. One test audit will be conducted toward the end of FY 2000 in order to validate that a fully operational and tested audit capability is in place by September 30, 2000. This provides a 6-month time frame prior to the anticipated March 2001 Site Recommendation going to the President (the event that will trigger actual availability of the LSS).

The *Secretary* serves as Chairman of the Licensing Support Network Advisory Review Panel which provides advice and recommendations on the operation of the Licensing Support System for the HLW licensing proceeding.

The NRC will continue the contract management and administrative activities of the Center for Nuclear Waste Regulatory Analyses (CNWRA) in accordance with all applicable laws and regulations and the provisions of the NRC contract. This includes, but is not limited to, the quality assurance function that ensures CNWRA compliance with NRC's quality assurance requirements in 10 CFR Part 50, Appendix B; selection, recruitment, and/or retention of high-quality technical skills; implementation of management procedures and administrative practices; planning activities; maintaining staff capabilities; providing appropriate computer support and associated security systems; and production of periodic CNWRA management and fiscal reports.

Regulation of Low-Level Waste (LLW)

OUTPUT MEASURES		
Output/Baseline	**FY 1999 Target**	**FY 2000 Target**
Maintenance of the regulatory framework for low-level waste disposal.	There is no FY 1999 target for this measure.	Consolidate low-level waste regulatory guidance. Complete Branch Technical Position on Low-Level Waste Disposal Facility Performance Assessment.

The classification of nuclear waste depends on origin, level of radioactivity, and potential hazard. Low-level waste (LLW), which results from many commercial, medical, and industrial processes, typically contains a small amount of radioactivity dispersed in a large amount of material and poses little potential hazard. However, because of its radioactivity, disposal of LLW requires special handling to avoid the health and environmental hazards associated with radiation. To adequately protect against these hazards, the NRC regulates the management, storage, and disposal of low-level radioactive waste.

The Low-Level Radioactive Waste Policy Act of 1980, amended in 1985, made States responsible for providing for the disposal of commercially-generated low-level waste within their borders. The Act encourages States to enter into compacts that would allow several States to dispose of waste at a regional disposal facility. Most States have entered into compacts and several States are proceeding with plans to construct and operate new disposal facilities. However, to date, no new disposal facilities have been opened since passage of the Act, with the exception of the Envirocare facility in Utah. The three operating disposal facilities are located in Agreement States, and all of the States with near-term plans to license a new disposal facility are also Agreement States. Therefore, the NRC does not expect to receive an application for a disposal facility license in the near future. The NRC plans to maintain its capability to perform low-level waste performance assessment modeling through technical reviews associated with the Site Decommissioning Management Program. This will ensure that NRC is prepared to respond to any application for a low-level waste disposal facility from a non-Agreement State.

During FY 1999 and FY 2000, the NRC will provide technical support to the States, as requested, to resolve specific technical issues concerning low-level waste storage and disposal. The NRC will also provide information to the States through the Department of Energy's National Low-Level Waste Management Program and other appropriate forums. In support

of State efforts and potential future NRC licensing activities, the NRC will continue to review and update its guidance on low-level waste storage and disposal. During FY 1999, LLW storage guidance will be revised and guidance will be developed on criticality safety for emplacement of low-level waste containing special nuclear material. In FY 2000, the NRC will complete a guidance document on Low-Level Waste Disposal Facility Performance Assessment. Also in FY 2000, LLW guidance will be consolidated into a single document. The NRC will continue its support of international low-level waste programs through its review of International Atomic Energy Agency safety standards and guides and by hosting visits and technical exchanges with counterparts from foreign countries.

Because of the costs associated with offsite disposal, some licensees have chosen to store waste onsite pending the development of new disposal facilities. Others allow their waste to decay in storage or store waste while awaiting processing and shipment for disposal. The NRC will address technical issues related to such storage practices as they arise. In addition, the NRC receives several requests each year for onsite disposal. The NRC will conduct safety and environmental reviews of these requests as received.

Regulation of Decommissioning

OUTPUT MEASURES		
Output/Baseline	**FY 1999 Target**	**FY 2000 Target**
Cleanup problem materials and fuel facility sites listed in the Site Decommissioning Management Plan (SDMP). (FY 1998: 3 sites were removed from SDMP list.)	Remove 3 sites from the SDMP list after satisfactory cleanup.	Remove 3 sites from the SDMP list after satisfactory cleanup.

In FY 1999 and FY 2000, the NRC will continue to enhance the reactor decommissioning program to add stability, predictability, and efficiency to the power reactor decommissioning process. These activities include the completion of guidance documents that implement the 1997 decommissioning rule, implement the experience gained from plants undergoing the decommissioning process, and implementing the Commission's direction on regulatory approaches to power reactor decommissioning proposed by the staff in response to the Commission's decisions on DSI-24, "Decommissioning - Power Reactors." This will enable the decommissioning staff to conduct rulemaking related to the decommissioning process, including development of the associated implementation guidance, as well as development of a range of guidance documents for both the NRC and the industry to effectively and efficiently

implement the revised decommissioning rule. The staff will take regulatory action to address plant-specific licensing actions and exemption requests to facilitate timely decommissioning while formal rulemakings to resolve generic issues proceed.

Decommissioning project managers provide the overall management of activities pertaining to the regulation of assigned nuclear power plants and serve as headquarters point of contact with licensees, other NRC staff, and the public on safety and safeguards matters concerning specific nuclear power plants. Licensing actions require NRC review and approval before they can be implemented by licensees. These issues include: issuance of licenses, amendments of licenses, NRC originated orders, exemptions, reliefs, and notices of enforcement discretion. Other project management activities include conducting public meetings in support of the decommissioning process, reviewing licensee Post Shutdown Decommissioning Activity Reports (PSDARs), coordinating with State and local contacts, and responding to correspondence.

In FY 2000, the NRC will conduct decommissioning activities for 19 commercial power reactors to include Millstone 1, Maine Yankee, Haddam Neck, Big Rock Point, Indian Point 1, Saxton, TMI-2, Yankee Rowe, Dresden 1, LaCrosse, Humboldt Bay, Rancho Seco, San Onofre 1, Trojan, GE VBWR, Fermi, Peach Bottom 1, and Zion 1 and 2.

Portland General Electric, the licensee for the Trojan reactor, plans to ship its reactor vessel in one piece, with the internal components intact (Trojan Reactor Vessel Package [TRVP]) to the licensed low-level waste disposal site in Hanford, Washington. This shipment requires exemptions from certain NRC and Department of Transportation regulations. In October 1998, NRC reviewed and authorized the TRVP for transport, with a specific exemption from regulatory requirements and an authorization to transport which is unique to the TRVP. In November 1998, DOT approved the exemption to its regulations, and the State of Washington, which is responsible for determining the suitability of the TRVP for disposal at the Hanford waste disposal site, approved the disposal plan. The shipment is scheduled to take place in August 1999.

By conducting inspections, the NRC evaluates the licensee's ability to store or dismantle and decontaminate the power reactor plant in a safe manner maintaining the licensed configuration of the facility and managing the use of decommissioning funds as described in the regulations. The NRC's core inspection program for reactors undergoing decommissioning examines four areas: (1) facility management and cost controls, (2) decommissioning support activities, (3) spent fuel safety, and (4) radiological safety. Special inspections of major decommissioning activities using subject matter experts are also conducted.

Materials and fuel facility decommissioning involves safely removing a facility from service and reducing residual radioactivity to a level that permits the property to be released for use. This action is taken by a licensee before termination of the license. In some cases, non-licensed facilities may also be required to reduce or stabilize contamination before sites are released. This activity comprises NRC's integrated requirements for the decontamination and decommissioning of facilities and sites associated with NRC-licensed activities, including the technical interface with the Environmental Protection Agency to resolve issues of mutual interest in accordance with the March 1992 General Memorandum of Understanding and research and rulemaking efforts.

In FY 2000, the NRC will continue to manage the national program for materials and fuel cycle decommissioning including program oversight, guidance development, licensing, and casework reviews of submittals including: decommissioning plans, environmental reports, final radiological survey reports, financial assurance certifications and funding plans, and related license amendments and license termination requests.

The NRC provides increased attention to timely cleanup of approximately 40 known materials and fuel facility sites through the implementation of its Site Decommissioning Management Plan (SDMP). At these sites, buildings, former disposal areas, piles of tailings, groundwater, and soil are contaminated with low levels of uranium, thorium, or other radionuclides. Consequently, they represent varying degrees of radiological hazard, cleanup complexity, and associated costs. Additional sites are expected to be added to this list as a result of the NRC's review of all files of licenses that have been terminated to ensure that facilities were properly decontaminated and to identify any additional contamination that may require remediation. In addition, it is anticipated that additional sites will be added to the list of difficult sites as a result of licensee decisions to cease licensed operations. In addition, NRC terminates several hundred licenses per year for non-complex sites.

The NRC has implemented a graded approach (i.e., one in which the regulatory effort and requirements match the safety risks) for reviewing decommissioning activities at licensed facilities. This approach relies on a series of assessments to determine whether additional characterization, remediation, and confirmatory surveys are necessary. Included in this review are SDMP sites and other routine and non-routine materials and fuel cycle facilities. In conjunction with this graded approach, NRC will continue a decommissioning pilot program aimed at streamlining the decommissioning process by identifying new and different approaches and conducting workshops with licensees who are technically and financially capable of pursuing expedited decommissioning of their facilities in accordance with Commission direction on decommissioning at non-reactor facilities.

In FY 1999, the NRC will initiate an enhanced participatory rulemaking to establish radiological criteria for the clearance of materials and equipment that have residual radioactivity. In FY 1999, the NRC will complete the technical basis for the rulemaking, consult with EPA and other Federal agencies and the States, and complete its initial public involvement activities, including the development of an issues paper and a series of public meetings. Based on the results of these activities, the NRC will finalize its rulemaking, complete consultations with Federal agencies and the Agreement States, and develop the proposed rule and associated environmental impact statement (EIS) in FY 2000. The proposed rule and draft EIS will be published for public comment in FY 2001.

The NRC will also continue decommissioning oversight activities related to the Department of Energy's West Valley facility in accordance with the West Valley Demonstration Project Act. The Commission recently conducted a public briefing with stakeholders to discuss potential decommissioning and decontamination criteria for the site. This is a highly complex site that requires careful consideration.

The NRC will continue to work with the EPA in FY 2000 to resolve issues of mutual concern related to the regulation of radionuclides in the environment to avoid unnecessary duplication of regulatory requirements. The NRC will focus its activities in this area in supporting the Interagency Steering Committee on Radiation Standards (ISCORS). In addition to NRC and EPA, ISCORS member agencies include the Departments of Energy, Defense, Transportation, Health and Human Services, and Labor (Occupational Health and Safety Administration) and the Office of Science and Technology. Topics being addressed by ISCORS include harmonization of risk goals and assessment methods, management of mixed low-level and hazardous wastes, radioactive contamination of sewer sludge, risks associated with naturally-occurring radioactive material, implementation of NRC's decommissioning criteria, and standards for recycling.

In FY 2000, the NRC will maintain an inspection program to ensure the safety of decommissioning and to assess compliance with NRC regulations and license conditions at material and fuel cycle facilities listed in the SDMP and other non-routine decommissioning projects. Inspections will include routine radiation protection inspections, in-process inspections during decommissioning, and accompaniments during licensee-conducted final radiological surveys to assess the adequacy of the licensee's remediation process. The NRC will operate its regional laboratories to analyze samples collected during these inspections.

The NRC will continue to operate the Computerized Risk Assessment and Data Analysis Lab (formerly the Advanced Computer System) to assist NRC staff in the review of applicant site

characterization activities and engineered facilities and in performance assessments for licensing decisions in support of the Nuclear Waste Safety program.

Radionuclide Transport and Decommissioning

OUTPUT MEASURES		
Output/Baseline	**FY 1999 Target**	**FY 2000 Target**
Technical bases for safety and regulatory guidance and decisionmaking.	Issue 3 research products that respond to high- and medium-priority needs from the Commission and NRC's licensing organizations. Develop, maintain, or improve 2 engineering codes/models for use by RES and licensing organizations for regulatory analyses/decisionmaking.	Issue 4 research products that respond to high- and medium-priority needs from the Commission and NRC's licensing organizations. Develop, maintain, or improve 2 engineering codes/models for use by RES and licensing organizations for regulatory analyses/decisionmaking.
Definition: Research products are typically reports containing experimental or analytical results that form the technical basis for regulations, regulatory guides, new methods, the resolution of generic safety issues and regulatory decisionmaking.		

The radionuclide transport and decommissioning program supports the development of a performance assessment capability to assess the movement of radionuclides in the environment and consequent dose to the public from NRC-licensed facilities. Topics of concern within the context of performance assessment include source term, engineered barriers, flow and transport processes, pathway analysis, and calculation of doses. It also supports the development of rules and regulatory guidance to address decommissioning issues.

Radionuclide contamination from NRC-licensed activities will continue to be a concern and, in many instances, contamination will involve varied amounts of diverse species of radioactive materials and complex natural environments. This research is concerned with assuring that the NRC has the capability to make realistic assessments of the movement of radionuclides in the environment, and with the exposure of the public to radionuclides after release from NRC-licensed facilities and from sites for which the license has been terminated. The research includes the evaluation of models, databases, and analytical frameworks to determine their appropriateness in a wide range of licensing activities such as: source-term characterization to support transport analyses, performance of engineered barriers over design life, flow and

transport processes, definition of critical groups and pathway analyses, and integrated performance assessment modeling.

During FY 2000, the regulatory guidance supporting the final rule addressing radiological criteria for license termination will be revised by the NRC on the basis of public comments and issued as final.

In FY 2000, the NRC will provide independent technical support for revisions and updates to improving the MARSSIM methodology. The Multi-Agency Radiation Survey and Site Investigation Manual provides information on planning, conducting evaluations, and documenting environmental radiological surveys of surface soil and building surfaces for demonstrating compliance with regulations.

The NRC will provide independent technical support in performing a survey of sewer sludge and ash, and will provide the technical basis for any rulemaking addressing radiological criteria for environmental effluents. The NRC will also update DandD (a code for Decontamination and Decommissioning) to address subsurface contamination and other issues identified in the review and use of the code.

During FY 2000, the NRC will also (1) provide a draft methodology for groundwater model selection and develop two field data bases to test the methodology; (2) extend studies of radionuclide solubilities to include additional sources of contamination; (3) provide data on column experiments to support mechanistic performance assessment modeling of contaminated field site; (4) continue to evaluate the mineral composition of slags from various smelting processes with concentrated radionuclides; (5) provide a comparison of models, analytical methods and instrumentation used for infiltration assessments and analysis of soil properties in site characterization studies; (6) provide final documentation on monitoring for long-term groundwater quality stability; (7) provide a progress report on mechanistic modeling of clay sorption and the feasibility assessment for incorporating mechanistic sorption in the Sandia Environmental Decision Support System (SEDSS), which is both a decision-support methodology and an automated decision-support tool to assist environmental decision makers in selecting appropriate tool characterization and remediation schemes; (8) provide an assessment of the importance and difficulty of considering spatial and statistical distribution of data in SEDSS and the complexity associated with including mechanistic sorption modeling; and (9) provide an evaluation of conceptual model assumptions used to assess monitoring systems for deep unsaturated systems and data sets for use in evaluating and testing conceptual models.

Uranium Recovery Licensing and Inspection

OUTPUT MEASURES		
Output/Baseline	**FY 1999 Target**	**FY 2000 Target**
Licensing Actions. (FY 1998: The number of reviews met the budget estimate.)	Conduct reviews such that the number of application reviews completed meets or exceeds the budget estimates.	Conduct reviews such that the number of application reviews completed meets or exceeds the budget estimates.
Safety inspections of uranium recovery facilities. (FY 1998: Completed 43, exceeded target of 40 inspections.)	Complete an average of 25 inspections per year.	Complete an average of 25 inspections per year.

NRC efforts for uranium recovery are governed by the Atomic Energy Act (AEA) of 1954, (AEA) as amended and the Uranium Mill Tailings Radiation Control Act (UMTRCA) of 1978, as amended. Under the AEA, the NRC is responsible for licensing the activities involved with the concentration of uranium from ore into source material. UMTRCA establishes two programs to protect health and the environment: Title I and Title II. The Title I program established a joint Federal/State-funded program for remedial action at abandoned mill tailings sites, with ultimate Federal ownership under license from NRC. Under Title I, the NRC must evaluate the Department of Energy's (DOE's) designs and concur that DOE's actions meet standards set by the Environmental Protection Agency. The Title II program deals with sites under license to the NRC or Agreement States, as provided by the AEA. Under Title II, the NRC has the authority to control radiological and non-radiological hazards associated with byproduct material, and ensure that sites licensed by NRC and Agreement States meet all applicable standards and requirements before termination of the license.

For licensed uranium mills, the NRC's goal is to complete the review of two uranium recovery site reclamation plans in FY 1999. The NRC will also complete the review of three applications for alternate concentration limits or Corrective Action Plan reviews for groundwater cleanup at license sites. This effort will include the preparation of safety evaluations and environmental assessments. In FY 1999, the NRC also plans to continue development of a new set of regulatory requirements solely applicable to uranium recovery facilities. The new rulemaking will: (1) update the additional technical requirements for solution mines; (2) clarify existing requirements and remove inconsistencies; and (3) codify criteria that will allow uranium mill tailings sites to be used for the disposal of contaminated

soil from other NRC-licensed sites undergoing decommissioning. The NRC's goal is to have a revised rule promulgated by early FY 2001.

The NRC will complete the review of approximately 80 license amendments in FY 2000, plus two new license applications in FY 2000. The NRC will also conduct the review of approximately two construction completion reports, which must be approved before termination of site-specific licenses. Besides ensuring that the reviewed actions comply with the applicable requirements, the NRC's goal is to meet or exceed the budget projections for completed actions.

Through its inspection program for uranium recovery sites, the NRC will verify acceptable implementation of licensee commitments, and confirm that facilities are being operated or decommissioned in compliance with applicable requirements. The lead for inspections will be the NRC regional office. However, support will be provided by NRC Headquarters staff for technical disciplines that are not available in the region. In addition, NRC Headquarters will be the lead for inspections verifying acceptable completion of construction work related to tailings reclamation. The NRC's goal for FY 1999 through FY 2001 is to conduct approximately 42 inspections over the three-year period through its regional office, as supported by Headquarters staff. Besides supporting field related inspections, the NRC will also provide event followup activities. This includes the identification, evaluation, and closure of violations identified through normal licensing actions, preparation of generic correspondence to all licensees to ensure an industry-wide knowledge of problems and operational issues; and revisions to inspection procedures and guidance documents to reflect lessons learned from inspections.

Consistent with DOE's completion of surface reclamation, for FY 1999, the NRC will complete the licensing of the final two Title I sites being reclaimed by DOE. The NRC's efforts in this area will include completing the design review at one site, and the construction completion review and licensing of both sites. In FY 1999 and FY 2000, the NRC will also conduct licensing of Title II reclaimed uranium mill tailings impoundments for long-term care in each fiscal year. This effort covers mills under site-specific license to NRC and Agreement States. Other work that will be completed in this area during FY 1999 and FY 2000 is the NRC evaluation of DOE's post-licensing actions for Title I and II sites at uranium mill tailings impoundments under long-term care by DOE. In FY 2000, the NRC will continue to evaluate the groundwater cleanup aspects for the Title I sites. This effort covers the concurrence on DOE strategies and cleanup programs for all Title I sites, and the overall concurrence that groundwater reclamation has been completed in compliance with applicable Environmental Protection Agency standards.

Non-High-Level Waste Safety Legal Advice

The *Office of the General Counsel* (OGC) will provide legal advice and assistance to the Commission and NRC staff on low-level waste and transportation of radioactive materials and waste, and in the decommissioning of materials facilities.

THIS PAGE INTENTIONALLY LEFT BLANK

INTERNATIONAL NUCLEAR SAFETY SUPPORT

INTERNATIONAL NUCLEAR SAFETY SUPPORT

STRATEGIC GOAL

Support U.S. national interests in the safe and secure use of nuclear materials and in nuclear non-proliferation.

DESCRIPTION OF STRATEGIC ARENA

The NRC maintains a program of international cooperation to help ensure the safe, secure, and environmentally acceptable uses of nuclear energy. As the regulator of the world's largest civilian nuclear program, the NRC has extensive regulatory experience to contribute to international programs in areas such as nuclear reactor safety, radiation protection, nuclear materials safety and safeguards[14], waste management, and decommissioning of nuclear facilities.

The International Nuclear Safety Support strategic arena encompasses international nuclear policy formulation, export-import licensing for nuclear materials and equipment, treaty implementation, international information exchange, international safety and safeguards assistance, and deterring nuclear proliferation. NRC international activities support broad U.S. national interests, as well as the NRC's domestic mission. The primary foundation for these activities is the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974, as amended, the Nuclear Non-Proliferation Act of 1978, executive orders, and treaties and conventions.

Domestic safeguards activities are conducted primarily by the Office of Nuclear Material Safety and Safeguards (NMSS). The Office of International Programs takes the lead in the international arena with the support of other NRC offices: NMSS, Nuclear Reactor Regulation, Nuclear Regulatory Research, Administration, and the General Counsel.

The International Nuclear Safety Support strategic arena encompasses the program, Participation in International Activities. The contract support funds are allocated for work done by Department of Energy (DOE) contractors, commercial contractors, small business entities, nonprofit organizations (e.g., universities and foundations), and grantees.

[14] Safeguards include physical protection as well as material control and accounting.

MEASURING RESULTS -- PERFORMANCE GOAL

The NRC has established the following performance goal to measure progress in achieving the strategic goal of international nuclear safety support to support U.S. national interests in the safe and secure use of nuclear materials and in nuclear non-proliferation.

1. **Strengthen international nuclear safety and safeguards through leadership and participation in international nuclear policy formulation and exchange activities by providing assistance through international agreements. Support U.S. nuclear non-proliferation interests through export/import licensing and other activities.**

   The **performance indicator** is the completion of the significant program outputs that are discussed in the International Nuclear Safety Support arena of the FY 2000 budget request.

The **FY 2000 target** is to complete those outputs that are scheduled for FY 2000.
The **FY 1999 target** is to complete those outputs that are scheduled for FY 1999.
FY 1998 Performance: Information on FY 1998 outputs presented in the International Nuclear Safety Support arena of the FY 2000 budget request.

STRATEGIES

1. The NRC will take a more active role in formulating international nuclear regulatory policy.

2. The NRC will provide leadership to strengthen nuclear safety and safeguards worldwide.

3. The NRC will assist in curbing the proliferation of the capability to produce nuclear explosives.

INTERNATIONAL NUCLEAR SAFETY SUPPORT

The following table depicts the relationship of the international nuclear safety support program to the arena strategies identified above. The required resources are developed on the basis of the program and functions necessary to implement the strategies. Detailed information on the resources, programs, and their associated output measures, are presented in the International Nuclear Safety Support arena of the FY 2000 budget request. FY 1998 baseline data for the FY 1999 and FY 2000 output measure targets are provided, where available.

FY 2000 INTERNATIONAL NUCLEAR SAFETY ARENA PROGRAM LINK TO ARENA STRATEGIES

INTERNATIONAL NUCLEAR SAFETY ARENA PROGRAM LINK TO ARENA STRATEGIES	STRATEGIES		
FY 2000 PROGRAMS ($4,840K, 41 FTE)	1	2	3
Participation in International Activities	X	X	X

BUDGET AUTHORITY BY FUNCTION AND BY PROGRAM
FULL-TIME EQUIVALENT EMPLOYMENT BY PROGRAM

(Dollar amounts in tables represent thousands of dollars ($K). In text, whole dollar amounts are used. Staff numbers represent full-time equivalents (FTEs).)

Total FY 2000 Estimate $4,840,000

	FY 1998 Enacted	FY 1999 Estimate	FY 2000 Estimate	
			Request	Change from FY 1999
Budget Authority by Function ($K)				
Salaries and Benefits, Fee Base	4,437	3,315	3,536	221
Salaries and Benefits, General Fund (AID)	0	0	600	600
Total	4,437	3,315	4,136	821
Contract Support	177	145	205	60
Travel	488	471	499	28
Total	5,102	3,931	4,840	909
Budget Authority by Program ($K)				
Participation in International Activities	5,102	3,931	4,840	909
Full-Time Equivalent Employment by Program				
Participation in International Activities, Fee Base	47	35	35	0
Participation in International Activities, General Fund (AID)	0	0	6	6
Total	47	35	41	6

EXPLANATION OF RESOURCE CHANGES BY PROGRAM

Participation in International Activities. The resource increase in FY 2000 is primarily based upon NRC's having renegotiated its reimbursable agreements with AID to obtain full recovery of NRC's FY 1999 FTE costs for providing nuclear safety assistance to the countries of the former Soviet Union (FSU). In FY 2000, NRC will include the AID-related work for the FSU and Central and Eastern Europe countries within the General Fund portion of the requested appropriation, but off of the fee base.

JUSTIFICATION OF PROGRAM REQUESTS

Participation in International Activities

The NRC participates in a wide range of mutually beneficial programs involving information exchange with counterparts in the international community. It also provides for support for strengthening of the International Atomic Energy Agency (IAEA) safeguards and technical reviews associated with export licensing.

OUTPUT MEASURES		
Output/Baseline	**FY 1999 Target**	**FY 2000 Target**
Negotiate/renew bilateral exchange arrangements between NRC and appropriate foreign counterparts to ensure that an effective framework for NRC's international exchanges is in place. (FY 1998: Completed 7 arrangements.)	Negotiate/renew 5 arrangements. 4	Negotiate/renew 5 arrangements.
Issuance of NRC licenses. (FY 1998: Completed 90 staff reviews. 100 percent were completed within 60 days.)	Complete reviews for and issue as appropriate, approximately 75-100 NRC import/export authorization (NRC licenses or amendments). Staff reviews, including the drafting of required Commission decision papers, will be completed for 90 percent of the cases within 60 days of the receipt of all necessary documentation, including Executive Branch views and recipient country assurances, and when applicable, State and LLW and Compact acceptance letters, and public intervention petitions and associated filings.	Complete reviews for and issue as appropriate, approximately 75-100 NRC import/export authorization (NRC licenses or amendments). Staff reviews, including the drafting of required Commission decision papers, will be completed for 90 percent of the cases within 60 days of the receipt of all necessary documentation, including Executive Branch views and recipient country assurances, and when applicable, State and LLW and Compact acceptance letters, and public intervention petitions and associated filings.

103 cases

Reviews of Executive Branch proposed Part 810 licenses. Subsequent Arrangements, and Section 123 Agreements for Cooperation. (FY 1998: Completed 34 staff reviews. 100 percent were completed within 60 days.)	Complete staff reviews within 60 days. Completed 23 reviews 100 percent completed w/in 60 days	Complete staff reviews within 60 days.

The NRC maintains a leadership role in the standing committees and senior advisory groups of the IAEA and the Nuclear Energy Agency and participates in exchange of views in other high-level meetings focused on international nuclear regulatory policy formulation. The NRC participates with the international community in developing approaches for the safe and secure use of nuclear material for peaceful purposes, and initiated the formation of the International Nuclear Regulators Association (INRA). The INRA was established to enable its members to influence and enhance nuclear safety worldwide from a regulatory perspective and to facilitate international cooperation in nuclear regulation.

The NRC participates in a wide range of mutually beneficial programs involving information exchange with counterparts in the international community and also provides a carefully selected range of safety and safeguards assistance to develop and strengthen foreign nuclear regulatory authorities, especially those in the New Independent States of the former Soviet Union (FSU) and countries of Central and Eastern Europe (CEE). The NRC currently maintains 34 information exchange arrangements. These arrangements provide communications channels that ensure the prompt reciprocal notification of power reactor safety problems that could affect both U.S. and foreign plants. They are the foundation for bilateral cooperation with other nations in nuclear safety, physical security, materials control and accounting, waste management, environmental protection, and other areas to which the parties agree. The NRC participation in bilateral information exchanges with the regulatory authorities of foreign countries that have established nuclear power programs helps to gain safety insights and information useful to the regulatory mission of the NRC. Priority is given to those countries where most relevant information may be gained, such as Japan, France, United Kingdom, Spain, Sweden, and Switzerland. In addition to its extensive program of bilateral cooperation with other countries, the NRC also works closely in the area of nuclear safety with international organizations such as the International Atomic Energy Agency (IAEA) in Vienna, and the Nuclear Energy Agency (NEA) of the Organization for Economic Cooperation and Development (OECD) in Paris. In FY 2000, the NRC will sponsor an IAEA operational safety assessment review team visit to a volunteer U.S. nuclear power plant to evaluate elements of operational safety over and above compliance and performance measures normally required

by NRC; this will enhance the plant's self-assessment and independent assessment processes. NRC assistance efforts include helping countries strengthen their regulatory organizations, training foreign inspectors, and working together in the areas of operational safety and risk reduction. In providing this assistance, the NRC works closely with the Department of State (DOS), the Department of Energy (DOE), and the Department of Defense (DoD), and the Agency for International Development (AID). Presently, funding for the assistance to the New Independent States of the FSU and countries of CEE is provided by AID, DOE, and DoD.

In addition, the NRC financial management policy is that the NRC will pursue reimbursement from Federal agencies and other outside organizations for the full costs of activities that are not a part of its statutory mission and for which the NRC has not received appropriations. Consequently, the NRC has renegotiated its reimbursable agreements with the AID to obtain full recovery of NRC's FTE costs for providing nuclear safety assistance to countries of the FSU for FY 1999. In FY 2000, the NRC will include the AID work for the FSU and CEE countries within the General Fund portion of the requested appropriation.

The NRC participation in U.S. initiatives at presidential summits and vice-presidential commissions (e.g., U.S.-Russian Joint Commission on Economic and Technological Cooperation, U.S.-South African Binational Commission, and other vice-presidential/prime minister-level commissions as they arise) could result in additional requests for safety assistance to the New Independent States of the FSU, CEE, South Africa, China and other countries. International nuclear safety assistance and cooperation are expected to expand in the Pacific Rim countries with rapid growth in their economies and electric energy sectors. These activities will require a continued and focused commitment of staff resources.

The international Convention on Nuclear Safety (CNS) became effective on October 24, 1996. Assuming U.S. Senate ratification of the CNS, the Commission will be required to implement several of its major elements, including preparation of the U.S. report, review of national reports of other contracting parties, and participation in preparatory, organization, and review meetings--all of which will require sustained commitment of staff resources. Two additional international conventions on waste management and liability have been negotiated. The Executive Branch is reviewing them and will likely forward them to the Senate for its advice and consent for ratification in Calendar Year 1999. Assuming that the U.S. Senate ratifies these conventions, the Commission will be required to implement several of their major elements, including preparation of national reports and participation in review meetings--all of which will require sustained commitment of staff resources.

The NRC will also continue to participate as a member of interagency U.S. physical protection review teams to exchange technical information with representatives of foreign governments

on physical protection procedures and practices and to host reciprocal visits to the United States. The NRC will continue to support IAEA-sponsored international safeguards activities deterring nuclear proliferation. It will facilitate IAEA information gathering and inspection activities at selected U.S. nuclear facilities, as required. It will continue to participate in the management and direction of interagency groups supporting the strengthening and implementation of IAEA safeguards. The NRC will also continue to assist the regulators in Russia, Ukraine, and Kazakhstan in developing and implementing national systems for accounting and control of nuclear materials and for physical protection. The objective of this program is to develop systems of material control and accounting and physical protection that will include a body of regulations, guides, technical review criteria, implementation standards and procedures, and a licensing and inspection program.

The NRC participation in international activities also involves awarding and administering contracts to countries in the Commonwealth of Independent States and other countries in Eastern Europe and the translation of documents under the Lisbon Agreement protocols between the NRC and its counterpart regulatory agencies in Russia, the Ukraine, Belarus, Kazakhstan, Armenia, Lithuania, Bulgaria, Hungary, the Czech Republic, and Slovakia. Included are documents related to reactor safety systems, waste management, emergency planning, and strengthening organizational oversight, among others.

Under the Atomic Energy Act of 1954, as amended, the NRC is responsible for licensing the export and import of nuclear materials and equipment to ensure these items are used for peaceful purposes. This authority extends to nuclear reactors and other fuel cycle facilities and equipment, to source and special nuclear material, to byproduct materials, and to certain other commodities, including heavy water, nuclear-grade graphite and radioactive waste. The NRC obtains the views and recommendations of other governmental agencies and departments in its prelicensing reviews, and, in turn, provides its views and recommendations to DOS, DOE, and the Department of Commerce (DOC) on nuclear-related export authorizations under Executive Branch jurisdiction.

Approximately 75-100 NRC licensing cases for the export of nuclear materials will be completed in FY 2000, following required reviews and determinations, including safeguards, legal, policy, and physical protection evaluations by the NRC staff.

THIS PAGE INTENTIONALLY LEFT BLANK

MANAGEMENT AND SUPPORT

MANAGEMENT GOALS AND STRATEGIES

The management goals and strategies cut across all NRC regulatory and support activities and are designed to build an environment conducive to accomplishing the agency's strategic goals and mission. These goals, and their associated strategies, define the means by which the NRC will conduct business to ensure success in the implementation of the strategic plan and the accomplishment of the agency's mission.

In establishing these goals, the NRC has placed significant emphasis on achieving excellence and public confidence. Striving for excellence in all NRC functions is both desirable and necessary to maintain an effective and efficient regulatory framework in today's changing environment. As stated in the NRC's "Principles of Good Regulation," the American taxpayer, the rate-paying consumer, and licensees are all entitled to the best possible management and administration of the NRC's activities. Building and maintaining public confidence is critical to carrying out the agency's mission and achieving its vision. To be an effective steward of nuclear safety, NRC's actions must be such that the public, those the agency regulates, and other stakeholders have respect for and confidence in the NRC. The following overarching management goals provide the means to accomplish these goals, mission, and vision.

Management Goals	Management Strategies
Achieve excellence by effectively and efficiently carrying out NRC regulations and support functions.	The NRC will continue to assess and improve the effectiveness and efficiency of the regulatory process, incorporating innovative approaches in response to a changing environment. The NRC will provide excellent and timely support services.

MANAGEMENT AND SUPPORT

Management Goals	Management Strategies
Apply information technology to streamline processes, improve information delivery, and support scientific computing and information needs.	The NRC will increase our knowledge of and ability to apply information technology to improve NRC performance. The NRC will improve delivery of the information needed to achieve our mission. The NRC will maintain a robust and reliable information technology infrastructure that is driven by current and planned technical and business application needs. The NRC will make sound information management technology investments that are focused on results and responsive to customer needs. The NRC will ensure that its computer systems are Year 2000 compliant, and oversee licensee activities to ensure that Year 2000 issues do not adversely affect public health and safety.
Employ innovative and sound business practices.	The NRC will create and maintain a planning, budgeting, and performance management process that is focused on outcomes and provides an effective tool for setting goals, allocating resources, tracking progress, measuring results, and identifying areas for improvement. The NRC will acquire goods and services in an efficient manner that helps to accomplish the agency's mission, ensures fair and equitable treatment for all parties wishing to do business with the NRC, and results in the best value to the NRC.

FY 2000 MANAGEMENT AND SUPPORT LINK TO STRATEGIC ARENAS

The following table depicts the relationship of the Management and Support program to the strategic arenas. The required resources are developed based on the program and functions necessary to implement the strategies designed to build an environment conducive to accomplishing the agency's strategic goals, mission, and vision. Detailed information on the resources, programs, and their associated output measures are provided in the Management and Support section of the FY 2000 budget request. FY 1998 baseline data for the FY 1999 and FY 2000 output measure targets is provided, where available.

	Strategic Arenas			
	Nuclear Reactor Safety	Nuclear Materials Safety	Nuclear Waste Safety	International Nuclear Safety Support
FY 2000 Programs ($144,493K, 629 FTE)				
Management Services ($55,458K, 176 FTE)	X	X	X	X
Information Technology and Information Management ($47,911K, 172 FTE)	X	X	X	X
Financial Management ($19,750K, 106 FTE)	X	X	X	X
Policy Support ($21,374K, 175 FTE)	X	X	X	X

DESCRIPTION

Management and Support encompasses NRC's central policy direction, legal advice for the Commission, analysis of long-term policy issues, administrative proceedings review and advice, liaison with outside constituents and other Government agencies, financial management, all administrative and logistical support, information resources management, executive management services for the Commission, personnel and training, and matters involving small and disadvantaged businesses and civil rights.

Two major information technology systems are currently being developed to provide for agency-wide efficiencies. A discussion of the efficiencies to be provided by STARFIRE, an agency-wide integrated financial and resource management system, and ADAMS, an agency-wide document management system, are discussed in Appendix I, "FY 2000 Performance Plan," under Agency Efficiency.

Management and Support comprises the following four programs: Management Services, Information Technology and Information Management, Financial Management, and Policy Support. The contract support funds are allocated for services and products obtained from commercial contractors and other Federal agencies, such as the General Services Administration and the Office of Personnel Management.

BUDGET AUTHORITY BY FUNCTION AND BY PROGRAM
FULL-TIME EQUIVALENT EMPLOYMENT BY PROGRAM

(Dollar amounts in tables represent thousands of dollars ($K). In text, whole dollar amounts are used. Staff numbers represent full-time equivalents (FTEs).)

Total FY 2000 Estimate $144,493,000

	FY 1998 Enacted	FY 1999 Estimate	FY 2000 Estimate	
			Request	Change from FY 1999
Budget Authority by Function ($K)				
Salaries and Benefits	55,614	56,654	59,329	2,675
Contract Support	91,839	92,580	84,225	-8,355
Travel	1,077	1,035	939	-96
Total	148,530	150,269	144,493	-5,776
Budget Authority by Program ($K)				
Management Services	54,737	53,406	55,458	2,052
Information Technology and Information Management	54,385	54,464	47,911	-6,553
Financial Management	18,839	21,702	19,750	-1,952
Policy Support	20,569	20,697	21,374	677
Total	148,530	150,269	144,493	-5,776
Full-Time Equivalent Employment by Program				
Management Services	196	181	176	-5
Information Technology and Information Management	176	175	172	-3
Financial Management	103	108	106	-2
Policy Support	181	181	175	-6
Total	656	645	629	-16

EXPLANATION OF RESOURCE CHANGES BY PROGRAM

Management Services. The resource increase in FY 2000 reflects support for the Human Resources Information System (HRIS), a component of the agency-wide integrated financial and resource management system (STARFIRE) and is offset by a reduction in the level of training, and adjustments to accommodate for inflation in rent.

Information Technology and Information Management. The resource decrease in FY 2000 is associated with a reduced level of support for activities in the areas of information technology infrastructure, applications development, information management, and efficiency gains in the way business is conducted. Resources are also decreased due to the closing of the local public document rooms beginning in the latter part of FY 1999 and concluding in FY 2000. These program decreases are offset by increased personnel costs associated with salary and other benefits cost increases.

Financial Management. The resource decrease in FY 2000 is primarily based upon decreased requirements for the agency-wide integrated financial and resource management system (STARFIRE), as the new system's core accounting capability becomes operational in FY 1999, and efficiencies achieved through ongoing operations of the new system.

Policy Support. The resource increase in FY 2000 primarily results from increased personnel costs (pay raises, within-grade increases, and benefits cost increases).

Management Services

	FY 1998 Enacted	FY 1999 Estimate	FY 2000 Estimate	
			Request	Change from FY 1999
Budget Authority by Function ($K)				
Salaries and Benefits	14,883	14,206	14,812	606
Contract Support	39,719	39,061	40,569	1,508
Travel	135	139	77	-62
Total	54,737	53,406	55,458	2,052
Budget Authority by Activity ($K)				
Administration	44,030	42,265	43,292	1,027
Human Resources	9,653	10,069	11,084	1,015
Small Business and Civil Rights	1,054	1,072	1,082	10
Total	54,737	53,406	55,458	2,052
Full-Time Equivalent Employment by Activity				
Administration	127	115	112	-3
Human Resources	62	59	57	-2
Small Business and Civil Rights	7	7	7	0
Total	196	181	176	-5

Administration

The Administration activity includes responsibility for rent and facility management, security, administrative services, and acquisition of goods and services. These functions are in direct support of the staff in carrying out the mission of the agency.

Rent and Facility Management--In FY 2000, the agency's rent payments to the General Services Administration (GSA) and facilities management costs will total approximately $25 million, which represents 60 percent of the costs for this activity. Rent payments to GSA are for the two building White Flint North complex, regional offices, the warehouse, the Public Document Room (PDR) in Washington, DC, and other ancillary space. The day-to-day oversight of office and support space at the headquarters is conducted within the rent and facility management planned accomplishment. This includes establishing policies, standards

and procedures for NRC-wide space and building acquisition and utilization, administering the terms of the GSA delegation program applicable to the White Flint Complex, operating and maintaining buildings and grounds at White Flint, and managing the agency's conservation program.

OUTPUT MEASURES		
Output/Baseline	**FY 1999 Target**	**FY 2000 Target**
Conduct program assessments with representatives from program offices and the Office of Human Resources to evaluate the effectiveness in various areas based upon criteria used by GSA. Satisfactory rating will be evidence that the White Flint complex is operated and maintained in conformance with GSA delegation and NRC standards; and that office space alterations maximize space utilization consistent with agency FTE reductions and streamlining initiatives, and provide a safe and healthy work environment for NRC employees.	A score of 90 or higher on the GSA-supplied criteria. Promulgate results by September 30, 1999.	A score of 90 or higher on the GSA-supplied criteria.
One White Flint North (OWFN) Restack Project milestones. After ten years of occupancy, the purpose of the OWFN Restack Project is to upgrade communications cabling, replace/repaint floor and wall coverings, and restack and reconfigure offices due to agency downsizing.	Complete floors 15, 14, 13, and 8 in the OWFN Restack project commensurate with the following schedule: Floor 8: January 1999 Floor 14: April 1999 Floor 15: July 1999 Floor 13: Sept. 1999	Complete the Restack project in April 2000.

Security--Safeguarding the NRC's personnel, property, and information requires a comprehensive security program. The safeguarding of restricted data and national security information at contractor, licensee, and certificate holder facilities are conducted within this planned accomplishment. Also included are the requesting and adjudicating of security investigations/reinvestigations, operation of the NRC secure communications center,

administering the NRC drug testing program for employees and applicants, and administering the NRC intelligence support program.

Administrative Support Services--An efficient and effective administrative support infrastructure is essential in supporting the programmatic efforts of the agency. Management oversight is provided for: 1) transportation services, including management of motor vehicles, and traffic mitigation including employee subsidies for public transit; 2) office provisions, including warehouse operations, supplies, office equipment, and furniture; 3) administrative services, including conference facilities scheduling and management, audio-visual services, recycling, and various facility-related support services; 4) rule review, internal directives system management, rulemaking support services and translations services; and 5) mail, messenger and postage services.

OUTPUT MEASURES		
Output/Baseline	**FY 1999 Target**	**FY 2000 Target**
Complete review of draft rules without need for substantive changes and within schedules established by the Office of the Federal Register and NRC.	Completed reviews within schedule 98 percent of the time.	Completed reviews within schedule 98 percent of the time.

Acquisition of Goods and Services--This planned accomplishment encompasses all aspects of contract management necessary to ensure that the agency obtains goods and services in an efficient manner consistent with mission needs. It includes the development and implementation of agency-wide contracting policies and procedures, and implementation of the Agency's Small Business Program, whose primary goal is to ensure that small, 8(a), small disadvantaged, and small women-owned businesses receive full and fair opportunity to participate in NRC's procurement activities. It also includes the development and application of streamlined procurement processes and adherence to sound business practices in the negotiation, award, administration and closeout of agency contracts. NRC/DOE work orders are monitored to ensure that these sound business practices are applied and that assistance is provided to agency program offices in the negotiation and administration of these agreements. This planned accomplishment also ensures that agency personal property is accounted for, including property held by contractors and DOE laboratories.

Human Resources

In managing the agency's human resources, a variety of activities are conducted in the area of recruitment, organization, program and policy analysis, placement, utilization, and training and development of agency employees. Administration of NRC-wide occupational health and safety, employee assistance, health and fitness, and child development programs are also part of the Human Resources program. In FY 2000, additional focus will be directed toward managing anticipated workforce reductions, which will challenge human resources management agency-wide.

Training and Development--The training and development planned accomplishment is composed of three major task areas: external training, in-house training and development, and management development. In concert, these task areas support the mission-related need to facilitate workplace learning by ensuring that continuous learning opportunities are supported, promoted, and fully integrated into the organizational culture as changes take place in organizational goals, technologies, programs, and environment. In support of this program accomplishment human resources professionals facilitate the development of new knowledge, skills, and competencies to meet the NRC's organizational, occupational, and individual performance expectations as well as meet recruitment goals. This planned accomplishment contributes toward NRC's need to recruit, develop, and maintain a highly skilled, competent, and responsive workforce capable of meeting today's needs and ensuring that development dollars are directed toward the highest priority needs in the organization--those that relate closest to accomplishing the agency's mission and performance goals. Training and development supports in-house and external training in the areas of information technology, management and supervision, equal employment opportunity, regulatory skills, communication skills, acquisition, financial management, and a variety of other special disciplines including management development programs sponsored by external organizations.

Recruitment and Staffing--NRC's recruitment and staffing planned accomplishment supports the creation of a competent, motivated, and culturally diverse workforce. This includes activities necessary to recruit and hire new employees and to assign both new and current employees to positions established to carry out the mission of the agency. Principal activities include position management and evaluation, recruitment contacts, advertising and recruitment visits, competitive and non-competitive staff placement activities including merit promotion, pay-setting, personnel transaction processing, and personnel records maintenance. These planned accomplishments support cultural diversity in recruitment, staffing and placement activities throughout NRC. Additional efforts will be devoted to managing workforce reductions in light of anticipated reductions in agency resources. This effort will be conducted in concert with changes in organizational culture and agency mission.

OUTPUT MEASURES		
Output/Baseline	**FY 1999 Target**	**FY 2000 Target**
Develop and maintain a high quality, culturally diverse workforce and applicant pool.	Manage staffing strategies to achieve targeted workforce reductions (i.e.,reductions in staff size, management and supervisory positions, and non-supervisory positions at high grade levels). Maintain a high quality, culturally diverse workforce that is no more than 25 percent under represented as compared to the available labor force, as reflected by data provided by the Oak Ridge Institutes of Science and Education.	Manage staffing strategies to achieve targeted workforce reductions (i.e.,reductions in staff size, management and supervisory positions, and non-supervisory positions at high grade levels). Maintain a high quality, culturally diverse workforce that is no more than 25 percent under represented as compared to the available labor force, as reflected by data provided by the Oak Ridge Institutes of Science and Education.

Workforce Effectiveness and Utilization--The workforce effectiveness and utilization planned accomplishment provides the infrastructure, policy, support, information, and analysis necessary for NRC managers and employees to carry out their responsibilities. The task areas in this planned accomplishment includes human resource program and policy development, workforce analysis, administration of employee appraisal and recognition programs, employee relations/labor-management partnership activities, management of human resources information and data, and human resources computer application development work. It also includes the administration of benefits and retirement, employee assistance and employee health services and safety programs. Additional resources must be devoted in FY 2000 on workforce analysis and planning, and resource monitoring and projections due to anticipated reductions in agency resources. Concurrently, an effective and efficient means to access, analyze, and project human resources information and data must be developed and maintained. This effort will be conducted in concert with changes in organizational culture and agency mission.

Small Business and Civil Rights

The Office of Small Business and Civil Rights (SBCR), develops, implements, and manages four major programs: (1) Affirmative Action, including the Federal Women's Program and implementing a managing diversity process, (2) Civil Rights, (3) Historically Black Colleges and Universities (HBCU), and (4) Small Business. The programs' mission is to (1) facilitate

equal employment opportunity for all NRC employees and applicants for employment through an ongoing affirmative employment process, (2) provide for prompt, fair, and impartial processing of discrimination complaints filed under applicable civil rights statutes (3) administer grants to HBCU faculty and graduate and undergraduate students, which affords these individuals opportunities to participate in NRC's scientific, engineering, and research activities, and (4) ensure that small, 8(a), small disadvantaged, and small women-owned businesses have full and fair opportunity to participate in NRC procurement activities.

These activities include developing the agency's Equal Employment Opportunity Program, and conducting the semi-annual briefing to the Commission on the status and progress of the Agency's Affirmative Employment Plan. SBCR implements a managing diversity process to maintain a work environment that supports valuing and utilizing all employees regardless of differences.

Information Technology and Information Management

	FY 1998 Enacted	FY 1999 Estimate	FY 2000 Estimate	
			Request	Change from FY 1999
Budget Authority by Function ($K)				
Salaries and Benefits	13,997	14,811	15,656	845
Contract Support	40,282	39,560	32,168	-7,392
Travel	106	93	87	-6
Total	54,385	54,464	47,911	-6,553
Budget Authority by Activity ($K)				
Planning and Resource Management	2,554	2,709	2,861	152
Information Technology Infrastructure	23,332	26,245	23,276	-2,969
Application Development	7,040	7,002	5,554	-1,448
Information Management	21,459	18,508	16,220	-2,288
Total	54,385	54,464	47,911	-6,553
Full-Time Equivalent Employment by Activity				
Planning and Resource Management	25	25	24	-1
Information Technology Infrastructure	35	35	34	-1
Application Development	30	30	30	0
Information Management	86	85	84	-1
Total	176	175	172	-3

The Office of the Chief Information Officer (OCIO) plans, directs, and oversees the NRC's information resources, including information technology infrastructure, applications systems, and delivery of information management services, to meet the mission and goals of the agency. The OCIO ensures that information technology resources are acquired and information resources are managed consistent with Federal Information Resources Management laws and regulations, including implementation of the Clinger-Cohen Act of 1996.

Planning and Resource Management

OUTPUT MEASURES		
Output	**FY 1999 Target**	**FY 2000 Target**
Percent of agency executives and managers who have received IT training.	All NRC senior executives and managers.	All executives and managers within 12 months of hire.
Percent of OCIO employees who completed training.	70 percent of training course slots identified in OCIO employee training plans have been completed.	70 percent of training course slots identified in OCIO employee training plans have been completed.
Percent of high-level data entities in the agency's primary applications systems that are shared. FY 1998: Baseline established as 28 percent.[15]	Thirty-five percent of data entities.	Forty-five percent of data entities.

This activity encompasses the direction and coordination of agency-wide information resources planning, including development of information technology (IT) and information management (IM) goals and measures, development of agency IT architectures and standards, assessment of technology trends and their applicability to NRC business needs, direction of planning for new information technology, and management of the agency's IT Capital Planning and Investment Control process. Also included are coordination of IT and IM program evaluation, development of agency IT and IM policy, and coordination of agency IT training. This activity also covers OCIO general administrative and resource management functions, including budget, financial management, personnel, and acquisition support.

This activity also includes the NRC's computer security program, which implements administrative, technical, and physical security measures for the protection of NRC's information, automated information systems, and information technology. The computer security program encompasses special safeguards to protect classified information, unclassified safeguards information, and sensitive unclassified information that is processed, stored, or produced in all automated information systems.

[15] Entities reflect those identified by formal data modeling. As additional modeling work is done, the list of entities may change. Entities are scored "low, medium or high" in terms of the portion of systems in the business area which share the data. The percentage shared is the portion of all entities modeled which score medium or high.

Information Technology Infrastructure

OUTPUT MEASURES		
Output/Baseline	**FY 1999 Target**	**FY 2000 Target**
Availability of key infrastructure services which are provided as part of the agency information technology infrastructure. (FY 1998: Baseline established as 1 percent unavailability.)	The unavailability of Infrastructure services will decrease by 10 percent per year until infrastructure services are available 99.5 percent.	The unavailability of Infrastructure services will decrease by 10 percent per year until infrastructure services are available 99.5 percent.
Availability of agency network servers within the agency information technology infrastructure (determined by the percentage of work hours agency network servers are available for staff use exceeding scheduled downtime and scheduled outages). (FY 1998: baseline established as 1 percent unavailability.)	The unavailability of network servers will decrease by 10 percent per year until infrastructure services are available 99.5 percent.	The unavailability of network servers will decrease by 10 percent per year until infrastructure services are available 99.5 percent.
Agency employees have workstation configurations that will support ADAMS and other planned agency-wide applications.	Complete replacement of all 486-based desktop PC workstations.	Replace workstations as required to support new agency applications.

This activity provides for the development, integration, implementation, management, and support of the agency's information technology (IT) infrastructure to support the mission and program activities of the NRC. The activity manages and operates the Customer Support Center which functions as a single point of contact for service questions, service requests, problem reporting, and request status. It provides desktop support which includes the replacement/upgrade of desktop microcomputers to meet agency program and business requirements and maintaining basic desktop workstations and peripheral equipment in operational condition. The telecommunications services and support area of this program provides agency long distance and headquarters local telecommunications services to meet current business needs and the related services necessary to implement and maintain these services. It provides operations and administrative support for agency communications

systems including operation of the NRC message center, videoconferencing services, voice mail system, local and long distance voice and data telecommunications services, personnel communications equipment (pagers, faxes, modems, cellular), and support for the NRC Operations Center. This activity provides for development, integration, implementation, maintenance, and support of all agency network, telecommunications, and desktop resources. This activity provides for the operation and systems programming support of agency-wide application systems and timesharing services. It provides technical support for design of the agency's information technology architecture pertaining to IT infrastructure development, standards, and practices. This activity provides technical guidance and direct assistance as needed to headquarters and regional offices concerning implementation of agency-wide application systems and IT infrastructure issues and practices. It provides personnel to serve as a liaison with application development teams to coordinate program office infrastructure development, operations, and support requirements.

Applications Development

OUTPUT MEASURES		
Output/Baseline	**FY 1999 Target**	**FY 2000 Target**
Level of staff satisfaction with information in NRC's primary applications systems. (FY 1998: Baseline established as 3.52.[16])	Improve staff satisfaction level to 3.60.	Improve staff satisfaction level to 3.75.
Renovation and installation of corrected mission-critical and business essential systems to handle dates from January 1, 2000, and beyond.	By March 31, 1999, the Year 2000 renovation, validation and implementation of all maintained mission-critical and business-essential application systems will be completed.	Zero adverse affects on the public, NRC licensees, and other stakeholders.

This activity encompasses the development and maintenance of a comprehensive information technology (IT) applications management program to support the mission and program activities of the NRC, and involves the coordination of all agency IT applications development and support activities to ensure applications are efficiently developed and operationally sound on an agency-wide basis. It includes the formulation of approaches to provide appropriate

[16] The basis question asks for overall satisfaction with reliability, accuracy, and accessibility of information in selected systems.

information technology solutions to information management problems confronting the agency. Also included are the development and maintenance of methodologies to guide all agency activities throughout the entire applications life cycle, and the development of components of the agency's information technology architecture pertaining to software engineering and development tools, data base management systems, and document management systems.

Information Management

OUTPUT MEASURES		
Output/Baseline	**FY 1999 Target**	**FY 2000 Target**
ADAMS will develop demonstrable returns on investment to the agency.	No significant deviations (as defined by Clinger-Cohen Act of 1996).	No significant deviations (as defined by Clinger-Cohen Act of 1996).

This activity provides for the organizational and electronic integration of agency information management (IM) functions and for providing agency-wide IM services. It includes planning, developing policy for, managing, and delivering services related to the Public Document Room; the NRC Technical Library; the File Center; the Freedom of Information Act and Privacy Act programs; the agency's Information Collection Budget; and NRC's records, forms, and correspondence management programs. Additionally, it includes duplicating, copying, printing, editing, writing, and graphic services; centralized receipt, processing, distribution and electronic and paper inventory maintenance of agency documents; and electronic publishing, including NRC's World Wide Web internal and external sites. This activity also provides for the development, implementation and maintenance of ADAMS, the agency's electronic system that supports document creation and capture, workflow maintenance, records management, and search and retrieval by both NRC staff and the public. Efficiencies to be gained from the implementation of ADAMS will be reflected in future budget submissions.

Financial Management

	FY 1998 Enacted	FY 1999 Estimate	FY 2000 Estimate	
			Request	Change from FY 1999
Budget Authority by Function ($K)				
Salaries and Benefits	7,679	8,665	9,143	478
Contract Support	11,141	13,018	10,589	-2,429
Travel	19	19	18	-1
Total	18,839	21,702	19,750	-1,952
Budget Authority by Activity ($K)				
Budget and Analysis	2,897	3,372	3,467	95
Accounting and Finance	11,478	12,430	10,488	-1,942
Permanent Change of Station	4,464	5,900	5,795	-105
Total	18,839	21,702	19,750	-1,952
Full-Time Equivalent Employment	103	108	106	-2

The Office of the Chief Financial Officer has the lead for the implementation of the Government Performance and Results Act of 1993, including the development of NRC's Strategic Plan, which was published in September 1997, and development of the NRC Planning, Budgeting, and Performance Management (PBPM) process. This process is a disciplined, integrated method for planning, budgeting, and assessing performance that will enable the agency to meet the demands of the new results-driven Federal environment. In addition to the leadership role in financial management and planning, the OCFO continues to direct the agency's traditional budgeting and accounting functions, as described below.

Budget and Analysis

This activity provides for the required functions of budget planning, development, and oversight of budget execution. This includes managing the agency planning process, including updating the agency Strategic Plan and developing the annual Performance Plan and annual Performance Report, as required by the Government Performance and Results Act of 1993. The NRC plans to provide the FY 2000 Performance Plan to Congress and the public by early February 1999 and the FY 2001 Plan to OMB in mid-September 1999. Annual performance

reports are due to the President and the Congress within 6 months of the close of the fiscal year. This activity also includes administering the NRC's authorization and appropriation legislation, managing the administrative control of appropriated and non-appropriated funds, and approving and issuing allowances and financial plans to users of agency funds.

Accounting and Finance

013E6

OUTPUT MEASURES		
Output/Baseline	**FY 1999 Target**	**FY 2000 Target**
Timeliness and quality of NRC's Annual Financial Statement. (FY 1998: Published in March 1998; received an unqualified opinion.)	Publish the FY 1998 Statement by March 1999 and receive an unqualified opinion.	Publish the FY 1999 Statement by March 2000 and receive an unqualified opinion.
Collect amounts due NRC. (FY 1998: Actual collections were within 0.9 percent of projected collections; receivables at $2.3 million.)	Achieve 98 percent actual collections when compared with projected collections and maintain past due accounts receivable at $5 million or less by the end of the fiscal year.	Achieve 98 percent actual collections when compared with projected collections and maintain past due accounts receivable at $5 million or less by the end of the fiscal year.
Pay Bills (FY 1998: 85 percent of bills by EFT; 95 percent of payments on time.)	Pay 100 percent of bills by electronic funds transfer and achieve 94 percent of payments on time.	Pay 100 percent of bills by electronic funds transfer and achieve 94 percent of payments on time.
Fee Rule (FY 1998: Issues proposed rule in March 1998; final rule in June 1998, to be effective in August 1998.)	Issue proposed rule by March. Issue final rule by June.	Issue proposed rule by March. Issue final rule by June.
Major systems subject to the CPIC process (STARFIRE) will develop demonstrable returns on investment to the agency. (FY 1998: No significant deviations.)	No significant deviations (as defined by Clinger-Cohen Act of 1996).	No significant deviations (as defined by Clinger-Cohen Act of 1996).

Accounting activities include the maintenance of a general ledger accounting system, the financial reporting required by other federal agencies, payments to vendors for goods and services received, and an annual, audited financial statement. The FY 1999 financial statement will be published by March 2000. During FY 2000, the NRC will move its core accounting system to a new agency-wide integrated financial and resource management system (STARFIRE). Efficiencies gained from the implementation of STARFIRE have been reflected in this budget submission. Additional savings will be factored into future budget requests.

The NRC is required to recover approximately 100 percent of the agency's budget authority through license and annual fees. Activities necessary to meet this requirement include developing and issuing rules that reflect fees to offset the budget authority each year; providing policy, processing applications, and analyzing fee-related data; issuing approximately 7,000 annual fee bills and 2,200 full cost licensing and inspection invoices per year; pursuing collection action; and responding to congressional constituent and licensee correspondence regarding fee billings. The office also provides services directly to employees, such as temporary duty travel services and change of station travel, as well as the traditional functions of payroll services that ensure that disbursements are accurate and timely.

Permanent Change of Station

This activity is carried out to ensure that NRC personnel who are required to change duty stations are afforded the required relocation services and expenses related to permanent change of station services and moves, such as expenses incurred in connection with the sale and purchase of a residence, transportation and storage of household goods, and subsistence while occupying temporary quarters and other miscellaneous moving expenses.

Policy Support

	FY 1998 Enacted	FY 1999 Estimate	FY 2000 Estimate	
			Request	Change from FY 1999
Budget Authority by Function ($K)				
Salaries and Benefits	19,055	18,972	19,718	746
Contract Support	697	941	899	-42
Travel	817	784	757	-27
Total	20,569	20,697	21,374	677
Budget Authority by Activity ($K)				
Commission	5,261	5,182	5,539	357
Commission Appellate Adjudication	445	446	478	32
Congressional Affairs	1,004	988	1,060	72
General Counsel	4,499	4,272	4,134	-138
Public Affairs	1,462	1,546	1,655	109
Secretariat	1,788	1,956	2,086	130
Executive Director for Operations	2,751	2,900	2,974	74
Advisory Committees for Reactor Safeguards/Nuclear Waste	3,359	3,407	3,448	41
Total	20,569	20,697	21,374	677
Full-Time Equivalent Employment by Activity				
Commission	45	45	45	0
Commission Appellate Adjudication	4	4	4	0
Congressional Affairs	9	9	9	0
General Counsel	41	38	34	-4
Public Affairs	13	14	14	0
Secretariat	16	17	17	0
Executive Director for Operations	24	25	24	-1
Advisory Committees for Reactor Safeguards/Nuclear Waste	29	29	28	-1
Total	181	181	175	-6

The *Commission* is the governing body of the Nuclear Regulatory Commission. It is responsible for determining the fundamental policy and for guiding staff offices to ensure that the civilian use of nuclear energy is regulated in a manner consistent with public health and safety, environmental quality, national security, and antitrust laws. The following Commission-level offices provide support to the Commission.

Commission Appellate Adjudication assists the Commission in its disposition of appeals of licensing board decisions and other adjudicatory matters coming before the Commission and monitors pending board cases.

Congressional Affairs serves as the principal point of contact between the Commission and Congress. The primary objectives of this activity are to ensure that Congress is kept fully and currently informed about agency activities, to coordinate appearances by and testimony of the Commission and other NRC officials before Congress, to track Congressional actions and keep the Commission apprised of legislative activities likely to affect the agency, and to help ensure that Congressional requests are responded to in a timely manner.

The *General Counsel* is the Commission's chief legal advisor and advises the Commission on the legal aspects of agency policy initiatives, programs rules and adjudicatory matters.

The Office of the General Counsel (OGC) provides advice and assistance to the Commission and NRC offices on matters involving interagency agreements, legislation, procurement, intellectual property, budget, fees, security, alternate dispute resolution matters and administrative functions, and represents the NRC in public rulemaking and administrative hearings involving procurement, personnel, personnel security, labor relations, and equal employment opportunity matters. The General Counsel is the designated agency official and provides advice to the Commission and OGC staff on all matters related to ethics and conflict of interest, and is responsible for administering the ethics program prescribed by the Office of Government Ethics.

Public Affairs (OPA) assists the Chairman in carrying out responsibilities as principal spokesman for the NRC. It assists the Commission and senior NRC staff by managing and directing the agency's public affairs program. This includes keeping top management informed of public interest in and media coverage of NRC's regulatory activities, advising the Commission on a public affairs strategy that can be implemented effectively, and advising management on conducting public meetings. Public Affairs keeps the public and media informed of NRC policies, programs, and activities; and works with civic groups. The office distributes press releases, speeches and other key documents. It responds to inquiries from reporters and the public by electronic mail, telephone, facsimile, and letter, obtaining

information requested. Public Affairs arranges technical interviews as needed, and maintains regular dialog with reporters who follow NRC to provide them with accurate, contextual information, to gain advance knowledge of what is being reported, and to notify reporters about major agency actions and release of key documents when they are about to occur.

The *Secretariat* (SECY) provides executive management services to support the Commission and to implement Commission decisions including the planning and scheduling of Commission business and preparing the Commission's meeting agenda, managing the Commission's decision-making process, codifying Commission decisions in memoranda directing staff actions, and monitoring staff compliance of pending issues and commitments. SECY maintains the Commission's adjudicatory and rulemaking dockets, including the management of the Commission's Electronic Hearing Docket which enhances the processes for handling the Commission's adjudicatory activities, processes and controls Commission correspondence, maintains the Commission's official records, and administers the NRC historical program.

The *Executive Director for Operations* (EDO) leads the operational and administrative activities of the Agency. The EDO plans and directs the programs necessary to regulate civilian use of nuclear reactors and nuclear materials, and support activities, such as research, performance evaluation and analysis, enforcement, investigations, and policy development and implementation which combined ensure the regulatory mission of the NRC is met. Additionally, the EDO manages the operating plan as part of the Planning, Budgeting, and Performance Management process.

The *Advisory Committee on Reactor Safeguards* (ACRS) is independent of the NRC staff and is statutorily mandated by the Atomic Energy Act of 1954, as amended. The ACRS reviews safety studies and facility license and license renewal applications referred to it and makes reports thereon to the NRC, advises the NRC on the hazards of proposed or existing reactor facilities and the adequacy of proposed reactor safety standards, and performs such other duties as the NRC may require. At present, the ACRS is reviewing several matters, including risk-informed and performance-based regulatory approaches, plant-specific applications of Safety Goals, possible modifications to the Safety Goal Policy Statement, proposed Phase 1 and 2 Standards for PRA quality, improvements to the NRC inspection and assessment programs, proposed revisions to 10 CFR Part 50 and 10 CFR 50.59 (Changes, Tests, and Experiments), extended power uprates, application of alternate source term at operating reactors, AP600 design certification rule, thermal-hydraulic code upgrade program, steam generator integrity issues, and applications for license renewal. The ACRS, on its own initiative, may conduct reviews of specific generic matters or nuclear facility safety-related items. As requested by the Commission, the ACRS also performs a comprehensive review of the NRC Safety Research Program and provides a report to the Commission annually. Upon request from the

Department of Energy (DOE), the ACRS reviews and provides reports on U.S. Naval reactor designs, and also advises DOE with regard to the hazards of DOE nuclear activities and facilities. In addition, upon request, the ACRS provides technical advice to the DOE Defense Nuclear Facilities Safety Board.

The *Advisory Committee on Nuclear Waste* (ACNW) was established by the Commission in June 1988 to provide independent technical advice on agency activities and programs, and to review key technical issues associated with the regulation, management, and safe disposal of radioactive waste. In performing its work, the Committee examines and reports on areas of concern as requested by the Commission and may undertake studies and activities on its own initiative, as appropriate. The bases of this advice include regulations governing the low-level waste (LLW), and other applicable regulations and legislative mandates. The scope of this advice encompasses reviewing and commenting on all issues that affect nuclear waste management disposal facilities, includes disposal of LLW in near-surface facilities; transportation; storage; nuclear materials safety; research; application of risk-informed, performance-based regulation; the risks of low-level ionizing radiation; and the evaluation of licensing documents, rules, and regulatory guidance. The Committee interacts with representatives of NRC, ACRS, other Federal, State, and local agencies, Indian Tribes, and private, international, and other organizations, as appropriate, to fulfill its responsibilities.

OFFICE OF THE INSPECTOR GENERAL

OFFICE OF THE INSPECTOR GENERAL

FY 2000 PERFORMANCE PLAN

OVERVIEW

The American people expect excellence and accountability from their Government. Toward that end, the U.S. Congress passed the Inspector General (IG) Act in 1978 to ensure integrity and efficiency within the Federal Government and its programs. In accordance with the 1988 amendment to the Act, NRC's Office of the Inspector General (OIG) was established as a statutory entity on April 15, 1989.

In 1993, Congress passed the Government Performance and Results Act (GPRA) due to continued concerns of waste and inefficiency in Government management. GPRA forces a shift in the focus of Federal agencies away from the traditional concerns such as staffing and activities, and more toward a single overriding issue: results. Congress was not seeking simple measures, it was seeking broad measures that would reflect the affects of agency activities on society. GPRA sought to create a management tool useful in improving the operation of Government agencies. It sought to link performance goals to planning for budget purposes, and integrate them with reasonable indicators of progress. GPRA enlists agency managers and inspectors general in fighting waste and improving accountability for financial and general management.

Accordingly, NRC's OIG is committed to ensuring the integrity and efficiency of NRC programs and operations, including within its own office, as it carries out the mandates of the Inspector General Act of 1978, as amended. To this end, and with the support of Arthur Anderson and Co. in 1995, OIG adopted its own performance goals and measures in conformance with the intent of GPRA. Since 1995, these performance goals have been modified slightly to address the contemporary issues of OIG and agency program managers.

STRATEGIC PLAN

This section summarizes the key elements of the OIG's strategic plan as a prelude to discussion of the OIG's FY 2000 performance goals. The performance outputs that support these goals are discussed in the OIG's FY 2000 budget request.

OIG Mission

The Inspector General Act of 1978 established the legislative framework for the mission of Inspectors General.

The NRC-OIG mission is to (1) independently and objectively conduct and supervise audits and investigations relating to the NRC's programs and operations; (2) prevent and detect fraud, waste, and abuse, and (3) promote economy, efficiency, and effectiveness in NRC's programs and operations.

OIG Vision

We are the agents of positive change striving for continuous improvement in NRC's management and program operations and in the OIG's office.

OIG Strategic Goals

The OIG strategic plan contains four general goals and a number of supporting objectives. In addition, the goals in OIG's Annual Plan identify specific audits and evaluations that will be conducted during the year to achieve the strategic plan's goals and objectives.

OIG will carry out its mission by working to achieve the following strategic goals:

- To add value to NRC's technical and administrative programs, OIG will identify opportunities for improvement in the agency and will conduct activities for the purpose of preventing and detecting fraud, waste, and abuse in NRC's programs and operations.

- In order to keep our stakeholders well informed, OIG will enhance its communication and liaison activities with OIG's customers, including NRC management, the U.S. Congress, Government agencies, the nuclear industry, and public entities.

- The OIG will make value-added policy, legislative, and regulatory recommendations relating to NRC's programs and operations.

- The OIG will improve the effectiveness of its efforts in conducting activities for the purpose of preventing and detecting fraud, waste, and abuse in NRC's programs and operations by ensuring the economical, efficient, and effective operation of its office.

The OIG's performance goals and associated measures are directly related to these strategic general goals and objectives, and are linked to OIG's FY 2000 budget request.

VERIFICATION AND VALIDATION OF MEASURED VALUES AND PERFORMANCE

The OIG uses numerous small database systems to measure OIG performance. Primarily, OIG uses Microsoft Access and Clipper applications. In some instances, customer and stakeholder surveys, as well as peer reviews, are used to determine whether OIG has achieved its stated goal.

CROSS-CUTTING FUNCTIONS WITH OTHER GOVERNMENT AGENCIES

The NRC's OIG has a cross-cutting function relating to its investigatory case referrals to the Department of Justice (DOJ). Some performance outputs are dependent upon the expediency of DOJ's case processing.

OPERATIONAL PROCESSES/ORGANIZATIONAL ELEMENTS

The principal operational processes are criminal and civil investigations of fraud and abuse, financial and management audits, program evaluations and event inquiries, legislative reviews, and management support. The OIG employs auditors, management analysts, criminal investigators, investigative analysts, an attorney, and various support personnel. The OIG also uses private-sector contractors for the conduct of its Chief Financial Officers (CFO) Act audit work, contract audit work, special projects, and quality assurance reviews of its investigative program. Audit quality assurance is accomplished through applying internal policy and procedures to its audit work and through peer reviews by IGs from other Government offices.

Historically, OIG's audit and investigative staff applied approximately 45 percent of its resources to NRC's reactor program, 50 percent to management and support programs, and 5 percent to nuclear materials and nuclear waste programs. Absent any significant changes in NRC's program mix, OIG expects to continue with this approximate resource allocation if the necessary funding is provided. The OIG was authorized 44 Full Time Equivalent (FTE) employees for FY 1999.

Funding and Staffing

To carry out mandated OIG activities in FY 2000, additional funding is required. In FY 1996, OIG experienced significant staff attrition, which resulted in available carryover funds. In response, OIG reduced its budget request for FY 1998, intending to use prior year money to fund necessary activities, such as the CFO audit. The OIG attempted to restore its budget in FY 1999 but was unsuccessful. Beginning in FY 2000, available carryover funds will be exhausted.

Without an increase in the OIG's FY 2000 budget, OIG will not be able to provide adequate oversight coverage of NRC's high-risk programs. If OIG's funding is held to the FY 1998 budget of $4.8 million, OIG will have no available funds to support its program activities. This level of funding will only allow OIG to only meet its salaries and benefits costs. The resources to meet the FY 2000 performance goals and their associated FY 2000 target levels as shown in this plan are contained in the OIG's FY 2000 budget request.

Human Resources Management

All the direct mission staff of the OIG are specialists. These specialists are hired with the qualifications needed to carry out these complex operational processes. In addition, continuing education is an integral part of OIG staff career development, and essential to fulfilling their professional requirements.

Information Technology

The NRC made many changes in the way it manages its Information Technology (IT) as a result of the Clinger-Cohen Act. To ensure that agency information resource investments are cost effective and well managed, the agency has implemented an IT capital planning and investment control process. In addition, the NRC is moving toward cost center budgeting and intends to shift additional IT financial and technical responsibilities to the OIG beginning in FY 1999 and continuing in subsequent years.

Prior to FY 1992, the OIG appropriation supported its own IT requirements. To facilitate the agency's budgeting and accounting processes, OIG agreed to transfer its funds to the agency's Salaries and Expenses appropriation in exchange for the agency's support of OIG's IT requirements. The FY 2000 OIG budget reestablishes an IT funding activity to support this shift of financial responsibility for OIG office-specific IT activities from the agency's appropriation to the OIG appropriation.

Request for Waivers of Administrative Requirements to Provide Managerial Flexibility

The OIG has not identified any waivers of administrative procedures that are required to achieve its stated FY 2000 performance goals. Certain performance indicators require the use of surveys that may require OMB clearance in accordance with existing procedures.

BUDGET AUTHORITY BY FUNCTION AND BY PROGRAM
FULL-TIME EQUIVALENT EMPLOYMENT BY PROGRAM

(Dollar amounts in tables represent thousands of dollars ($K). In text, whole dollar amounts are used. Staff numbers represent full-time equivalents (FTEs).)

Total FY 2000 Estimate $6,000,000

	FY 1998 Enacted	FY 1999 Estimate	FY 2000 Estimate	
			Request	Change from FY 1999
Budget Authority by Function ($K)				
Salaries and Benefits	4,199	4,400	4,800	400
Contract Support	360	160	[1]960	800
Travel	241	240	240	0
Total	4,800	4,800	6,000	1,200
Budget Authority by Program ($K)				
Audits	1,819	1,887	2,470	583
Investigations	1,932	2,002	2,156	154
Management, and Operational Support	1,049	911	1,374	463
Total	4,800	4,800	6,000	1,200
Full-Time Equivalent Employment by Program				
Audits	18	18	18	0
Investigations	18	18	18	0
Management, and Operational Support	7	8	8	0
Total	43	44	44	0

[1] CFO audit $410,000; information technology $375,000; and $175,000 for other mission-related activities.

EXPLANATION OF RESOURCE CHANGES

Inspector General

FY 2000 Change from FY 1999 ..... $1,200,000

The resource increase in FY 2000 stems from a recognition that after FY 1999, OIG carryover funds will be insufficient to restore OIG base-funding to a level at which the OIG can carry out its essential programs. Contract support requirements were previously funded in prior years using OIG carryover funds. These requirements include the procurement of private-sector contractors to perform the annual audit of the NRC's financial statements and provide technical investigative and audit support. In prior years, the NRC Salaries and Expenses appropriations funded OIG's information technology. The FY 2000 budget request includes new funding for OIG office-specific information technology requirements.

Audits

FY 2000 Change from FY 1999 ..... $583,000

The resource increase in FY 2000 for the audit program includes the procuring of a private-sector contractor for audit services to perform, with OIG oversight, the annual audit of NRC's financial statements as mandated by the CFO Act. The provision of these funds will ensure the ready availability of sufficient audit staff who have a well-developed understanding of NRC's programs and operations to provide audit coverage of most major high-risk agency programs on a regular, timely, and comprehensive basis. Funding is also included to acquire specialized skills of private experts to address ad hoc audit technical requirements. These costs were previously funded in prior years using OIG carryover funds.

Investigations

FY 2000 Change from FY 1999 ..... $154,000

The resource increase in FY 2000 for the investigative program includes the procuring of specialized law-enforcement equipment and the payment of fees associated with access to indoor and outdoor firearms ranges to implement the deputation provisions of the Memorandum of Understanding (MOU) with DOJ. Funding is also included to acquire specialized skills of private experts to address ad hoc investigative technical requirements. These costs were previously funded in prior years using OIG carryover funds.

Management, and Operational Support

FY 2000 Change from FY 1999 ..... $463,000

The resource increase in FY 2000 for operational support includes acquiring the services of private sector contractors to perform quality assurance reviews to measure compliance with the President's Council on Integrity and Efficiency (PCIE) Quality Standards for Investigators, DOJ guidelines, the NRC/OIG Special Agent Handbook, and other applicable laws, policies, and regulations, as well as GPRA/customer surveys. These necessary services were previously funded by using OIG carryover funds.

For FY 2000, the NRC has advised the OIG of its intention to shift the cost responsibility for OIG-specific information technology (IT) requirements, heretofore funded from the NRC's Salaries and Expenses appropriation, pursuant to the March 1991 MOU between NRC and OIG. In response, this budget includes funding for OIG office-specific IT requirements to include system development and enhancements, adaptive and corrective maintenance and operation of existing database systems, acquisition of office-specific hardware and software, and fees associated with on-line database searches conducted in association with ongoing OIG investigations.

JUSTIFICATION OF PROGRAM REQUESTS

Inspector General

The NRC's Office of the Inspector General (OIG) was established in April 1989 to independently evaluate the agency's programs and operations to ensure their efficiency and effectiveness, and to investigate allegations of fraud, waste, and abuse. The OIG accomplishes its mission by performing audits, investigations, event inquiries, assessments, and other reviews. In addition, OIG reviews the agency's policies and procedures to ensure they meet specific legislative mandates.

The NRC and the OIG each has complementary unique responsibilities in support of the agency's mission. The NRC's mission is to regulate the Nation's civilian use of byproduct, source, and special nuclear materials to ensure adequate protection for public health and safety, to promote the common defense and security, and to protect the environment. The OIG, therefore, plays a critical role by assessing and reporting on the efforts of the NRC to ensure that its safety-related programs are operating effectively.

Similarly, the NRC is responsible for ensuring that individuals who identify nuclear safety concerns regarding the use of nuclear materials do not suffer adverse job actions resulting from such activities. The OIG continually assesses the NRC's efforts to combat this type of unlawful discrimination.

Audits

Performance Measure

Improved Program Management

The audit program is designed to provide assurance to the Chairman and to Congress that NRC programs and operations are working efficiently and effectively. To do this, the OIG audit staff conducts performance and financial audits. Performance audits focus on NRC's administrative and program operations. Financial audits focus on NRC's internal control systems, transaction processing, and financial systems.

FY 2000 resources will allow the OIG to conduct 16 to 18 audits. The audits planned for this period are based on a comprehensive annual audit plan that includes input from various elements of the NRC, Congress, the General Accounting Office (GAO), the Office of Management and Budget (OMB), the Department of Energy (DOE), and the nuclear industry, as well as from the OIG staff. The plan identifies key, high-risk, high-cost programs for audit, including NRC's inspection, research, waste management, international activities, and information technology programs.

In the financial management area, the audit plan includes several audits to meet legislative and OMB requirements. FY 2000 contract support resources of $460,000 will allow the OIG to procure private-sector contractors for the annual audit of the NRC's financial statements as mandated by the Chief Financial Officers Act and for technical audit assistance. The staff plans to complete the FY 1999 Financial Statements Audit Report by March 2000.

Additionally, in FY 2000, the OIG will assess and report on NRC's response to recommendations made by OIG and other audit entities, such as GAO, concerning NRC programs.

Investigations

Performance Measures

- Department of Justice convictions
- Agency actions taken in response to reports generated by OIG

Consistent with the Inspector General Act of 1978, OIG receives and investigates allegations concerning violations of Federal laws and regulations, as well as allegations of mismanagement, waste, and danger to public health and safety. The mission of the investigative program is to perform investigative activities related to the integrity of NRC's programs and operations.

The majority of investigative activities focus on violations of law and misconduct by NRC employees and contractors as well as allegations of irregularities or abuse in NRC programs and operations. However, proactive investigations may also be conducted where indications of potentially systematic violations such as theft of Government property or contract fraud have been raised. In addition, OIG periodically performs root cause analysis and implements other preventive initiatives such as integrity awareness training.

FY 2000 resources will allow the OIG to conduct 80-100 investigations and event inquiries covering a broad range of criminal misconduct and wrongdoing affecting various NRC programs. Investigations and event inquiries may be initiated as a result of allegations or referrals from private citizens, licensee employees, NRC employees, Congress, other Federal, State and local law enforcement agencies, OIG Audits, OIG Hotline, and proactive efforts directed at areas bearing high potential for fraud, waste, and abuse.

Cases involving allegations of criminal and other wrongdoing will continue to be a high priority. We have concentrated our main efforts and resources on investigations of health and safety-related issues. These investigations include alleged misconduct by high-ranking NRC officials and other NRC officials, such as managers and inspectors, whose positions directly affect public health and safety. The investigative unit will also undertake a number of proactive project initiatives where resources allow.

The investigative caseload is primarily determined by the number of allegations received and the complexity of issues raised. On the basis of historical trends, the investigative workload has continually increased in complexity since the inception of the OIG in April 1989. The OIG opened 111 investigations and event inquiries, and closed 74 in FY 1997, and opened 92 investigations and event inquiries, and closed 103 in FY 1998. It is anticipated that a like or increased number of cases will be opened and closed during FY 1999 and FY 2000. In addition, investigators may participate in agency task forces that examine ways to strengthen agency operations.

Management, and Operational Support

The Inspector General's management and operational support staff consists of senior managers, administrative support and legal counsel.

Management

FY 2000 resources will allow the OIG senior managers to lead a diverse program and provide policy direction and guidance in the conduct and supervision of audits and investigations, as well as provide leadership and coordination in recommending policies to prevent and detect fraud and abuse in agency programs and operations. To effectively supervise audits and investigations, OIG managers will provide leadership, policy direction, and coordination of OIG programs. Further, OIG managers will promote economy and efficiency and combat fraud and abuse in NRC programs and operations.

Operational Support

Performance Measures

- Provide relevant and timely support services to the NRC/OIG staff.
- Properly safeguard the use of OIG appropriated funds.

FY 2000 resources will allow the OIG administrative staff to formulate and execute the OIG budget; prepare OIG's semiannual report to Congress; operate an independent personnel program; manage the OIG contract audit program; administer the control of OIG funds;

authorize OIG travel; administer the information technology program; provide space planning, security management, quality assurance, training, and procurement support to the OIG; and serve as the liaison and point of contact for activities of the President's Council for Integrity and Efficiency. In addition, FY 2000 resources will allow the OIG to analyze and report on 40 to 50 contract audit reports for questioned costs and funds put to better use issued by DCAA and HHS. Moreover, FY 2000 contract support resources of $375,000 will allow the OIG to satisfy OIG office-specific IT requirements.

Legal Counsel

Performance Measure
Provide objective, relevant, timely recommendation(s) on legislation, regulations, and policy affecting economy, efficiency, and fraud and abuse prevention.

FY 2000 resources will allow the OIG Counsel to provide independent advice on issues concerning criminal law and procedures, evidence, and constitutional law as these relate to the OIG's investigative program. In addition, OIG Counsel develops legal interpretations of appropriation law, financial management statutes and regulations, and procurement and funding rules in support of OIG's audit program. The OIG Counsel furnishes litigation support to DOJ and others as necessary, and advises on matters concerning personnel, procurement, labor law, and Privacy Act and Freedom of Information Act issues. The OIG Counsel also reviews in depth and comments on existing and proposed legislation, regulations, directives, and policy issues that affect NRC programs and operations.

STRATEGIC PLAN/PERFORMANCE PLAN LINKAGE

Role of the OIG

The existence of the OIG relieves agency program managers and executives from being solely responsible for gathering objective data and evidence in circumstances in which wrongdoing is suspected and intense scrutiny and controversy exist. In this capacity, an OIG is the focal point for the responsibility for conducting audits and investigations relating to the programs and operations of the agency.

In order to accomplish this broad mandate, Inspectors General (IGs) have substantial independence and authority. Within this broad purview, the IGs are authorized to conduct audits and investigations of agency programs; have direct access to agency records and materials; issue subpoenas for all necessary information, data, reports, and other documentary evidence; hire their own staffs; and, request assistance from other Federal, State, and local Government agencies. The IG structure allows them to act as independent fact gatherers, often undertaking initiatives at the request of the agency head, and provide assessments in such areas as financial management systems and internal controls. In such instances, the IGs and agency management pursue the same ultimate goal–efficient and effective program operation and delivery of services.

Audits

The OIG audit staff conducts performance and financial audits as well as special evaluations. Audits are conducted in accordance with Government Auditing Standards. Performance audits are conducted on NRC administrative and program operations to evaluate the effectiveness and efficiency with which managerial responsibilities are carried out. They focus on whether management controls, practices, processes, and procedures are adequate and effective, and whether programs achieve intended results.

Financial audits include the financial statements audit required by the Chief Financial Officers Act and other financial-related audits. These audits include such items as internal control systems, transaction processing, financial systems, and contracts. As a complement to the audit function, OIG auditors perform a limited number of special evaluations. These evaluations provide a mechanism for the OIG to perform an initial, quick review of a question or an issue to determine whether in-depth, independent audit work should be planned. In preparing reports summarizing audit findings, the OIG strives to maintain an open channel of

communication between the agency and management officials to ensure that audit findings are accurate and fairly presented in the audit report.

Investigations

Investigations are conducted in accordance with the Quality Standards for Investigations of the President's Council on Integrity and Efficiency (PCIE), Department of Justice (DOJ) guidelines, the NRC/OIG Special Agent Handbook, and other applicable laws, policies, and regulations. OIG investigators conduct investigations of individuals and entities suspected of offenses against the criminal and civil laws of the United States or NRC regulations, in accordance with the IG Act. The OIG coordinates investigations with DOJ, U.S. Attorney's offices, and other law-enforcement agencies. Investigations generally fall into the following categories: fraud, waste, abuse, and mismanagement involving NRC programs, activities and functions; contract and procurement fraud and improprieties; conflict of interest and ethics violations; and NRC employee misconduct and improprieties.

Many sources refer allegations of criminal misconduct and wrongdoing to the investigative staff. These sources include NRC management and staff, the Congress, public interest groups, the nuclear industry, other Government agencies, and the general public. The OIG maintains a toll-free telephone hotline to facilitate the receipt of allegations.

In addition to criminal and administrative investigations, OIG investigators conduct event inquiries that have traits common to both audits and investigations. Institutional weaknesses that led to or allowed a problem to occur are addressed during these inquiries, which may serve as precursors for more extensive activity by OIG's audit and/or investigative staff.

Legal Counsel

The OIG Counsel reviews proposed legislation, regulations, directives, and policy initiatives that affect NRC's programs and offices. Significant concerns are documented in regulatory commentaries and given to the agency for consideration. These commentaries provide OIG's objective analysis of vulnerabilities created by proposed or existing statutes, regulations, or policies. Commentaries cite the IG Act as authority for the review; state the specific law, regulation, or policy examined; the pertinent background information considered; and identify OIG concerns, observations, and suggestions. Significant observations regarding NRC action or inaction in response to OIG commentaries are reported in the Semiannual Report to Congress.

Management Support

The Resource Management and Operational Support staff performs myriad support functions. These include formulating and executing the OIG budget, administering independent personnel services, preparing the OIG Semiannual Report to Congress, supporting information technology within OIG, and coordinating strategic planning activities.

LINKAGE BETWEEN THE GENERAL GOALS OF THE OIG FY 1998--FY 2003 STRATEGIC PLAN AND THE FY 2000 PERFORMANCE PLAN

The OIG's strategic plan includes four general goals and a number of supporting objectives that describe planned accomplishments.

The following is a linkage between the general goals of the OIG FY 1998 - FY 2003 Strategic Plan and the FY 2000 Performance Plan. This includes a tie-in between the level of activity by the OIG in its audit, investigation and support functions with the objectives related to the general goals. It also includes the performance goals (outcomes) for measuring results, performance indicators, FY 1999/FY 2000 targets and FY 1997 and FY 1998 performance levels.

General Goal 1 (Strategic Goal)

To add value to the NRC's technical and administrative programs, the OIG will identify opportunities for improvement in the agency and conduct activities for the purpose of preventing and detecting fraud, waste, and abuse in the NRC's programs and operations.

Objectives (Strategies)

1. Conduct timely, effective, and independent audits and investigations.
2. Proactively identify and act on current and emerging issues.
3. Advise the NRC in areas of OIG expertise.
4. Enhance programs for prevention and awareness of fraud, waste and abuse.

	Objectives			
FY 2000 Activities	1	2	3	4
OIG will conduct between 16 and 18 audits and special evaluations. Audit resources will be applied between 40-50 percent to NRC's reactor program, between 40-50 percent to NRC's management and support programs and between 5-10 percent to nuclear materials and nuclear waste programs. The allocation of audit resources applied in the different NRC program areas may be subject to change based on current NRC reorganizations and budget initiatives.	x	x	x	x
OIG will conduct between 80-100 investigations and event inquiries. Investigative resources will be applied between 40-50 percent to NRC's reactor program, between 40-50 percent to NRC's management and support programs and between 5-10 percent to nuclear materials and nuclear waste programs.	x	x	x	x

Measuring Results - Performance Goals (Outcomes)

OIG has established the following performance goals for measuring its results in achieving General Goal 1.

1.1. Conduct timely, effective, and independent audits and investigations.

Performance Indicators for Audits	FY 1999/FY 2000 Targets
Keep average cost per audit to 1 FTE or less.	.95 FTE applied per audit.
Complete audits in 6 months or less, on average.	Complete audits in 5.2 months on average.
Obtain satisfactory peer review.	Achieve 100% compliance with audit standards per peer review.
Obtain customer feedback on timeliness and quality of audits.	Obtain customer feedback on all audit reports issued.
Obtain agency agreement on at least 80% of audit recommendations.	Obtain agreement by the agency on 80-90% of audit recommendations.

FY 1998 Performance: .53 FTE applied per audit.
4.65 months per audit on average.
100% compliance with audit standards per peer review.
100% feedback obtained on issued audit reports.
100% agreement by the agency on audit recommendations.

FY 1997 Performance: .95 FTE applied per audit.
5.2 months per audit on average.
100% compliance with audit standards per peer review.
100% feedback obtained on issued audit reports.
100% agreement by the agency on audit recommendations.

Performance Indicators for Investigations	FY 1999/FY 2000 Targets
Complete investigations in an average time frame of 8 months.	Complete investigations in 8 months on average.
Apply an average of 185 hours or less on completed investigations.	Apply 185 hours or less on completed investigations.

Performance Indicators for Investigations	FY 1999/FY 2000 Targets
Achieve a minimum success rate of 70% for convictions/pleas on cases accepted by DOJ.	Achieve 80% success rate for convictions/pleas.
Achieve a minimum success rate of 70% for actions taken by NRC management on referrals with program modification or wrongdoing aspects.	Achieve 80% success rate for management referrals.
Achieve a minimum success rate of 70% for Program Fraud and Civil Remedies Act (PFCRA) cases accepted by NRC's Office of General Counsel (OGC).	Achieve 80% success rate for PFCRA referrals.
Address 80% of issues raised in customer surveys.	90% of survey issues addressed.
Address all issues identified in quality control reviews.	100% of quality control issues addressed.

FY 1998 Performance:

6.8 months per investigation on average
160 hours per completed investigation on average
convictions/pleas - N/A
100% success rate for management referrals
PFCRA referrals - one pending
90% of survey will be addressed
100% of quality control issues will be addressed

FY 1997 Performance:

5.3 months per investigation on average
205 hours per completed investigation on average
100% success rate for convictions/pleas
100% success rate for management referrals
100% success rate for PFCRA referrals
100% of survey issues addressed
100% of quality control issues addressed

1.2. Proactively identify and act on current and emerging issues.

Performance Indicators for Audits	FY 1999/FY 2000 Targets
Develop a detailed annual audit plan, listing audits to be performed and estimated required resources, with input from agency management, Congress, industry, other Government agencies, GAO, and the public.	Complete Audit Plan by October 1, 1998, for FY 1999 and, by October 1, 1999, for FY 2000.

FY 1999 Performance: Plan completed on time.

FY 1998 Performance: Plan completed on time.

FY 1997 Performance: Plan completed on time.

Performance Indicators for Investigations	FY 1999/FY 2000 Targets
Develop a detailed annual investigative plan, based in part on sources of information developed by investigative staff. Sources include members of public interest groups, NRC employees, representatives of other agencies and licensees.	Complete Investigative Plan by October 1, 1998, for FY 1999 and, by October 1, 1999, for FY 2000.

FY 1999 Performance: Plan will be completed in March 1999.

FY 1998 Performance: Plan completed in November 1997.

FY 1997 Performance: Plan completed in November 1996.

1.3. Advise the NRC in areas of OIG expertise.

Performance Indicators for Audits and Investigations	FY 1999/FY 2000 Targets
Participation, by auditors and/or investigators, in one or more NRC management projects or task forces as observers	Participation in at least one project or task force by OIG auditors and/or investigators.

FY 1998 Performance: Participation on three intergovernmental task forces by OIG investigators

FY 1997 Performance: Participation on one intergovernmental task force by an OIG investigator

1.4. Enhance programs for prevention and awareness of fraud, waste and abuse.

Performance Indicators for Audits and Investigations	FY 1999/FY 2000 Targets
Completion of annual training for NRC employees and others, in areas most at risk for fraud, waste, and abuse	Conduct training at NRC regional offices (FY 1999) and major Headquarters components (FY 2000). Training will be provided by senior members of the OIG staff.
	Conduct training of NRC contract specialist (FY 1999) and other identified employees (FY 2000) who may detect indicators of contract fraud during the course of their duties. Training will be provided by OIG investigative staff.

FY 1998 Performance: Training was completed at Headquarters components and an updated version of "The IG at NRC" was distributed to NRC employees.

FY 1997 Performance: Training was completed at regional offices.

General Goal 2 (Strategic Goal)	
In order to keep our stakeholders wellinformed, OIG will enhance its communication and liaison activities with OIG's customers, including NRC management, the U.S. Congress, Government agencies, the nuclear industry, and public entities.	
Objectives (Strategies) 1. Develop and maintain liaison activities with OIG customers.	
	Objective
FY 2000 Activities	1
Periodically meet with the NRC Chairman, the Commission, other key NRC executives and members of Congress. Hold planning conferences and invite customers for input, provide reports to Congress summarizing results of OIG activities and accomplishments.	x

Measuring Results - Performance Goals (Outcomes)

We have established the following performance goals for measuring our results in achieving General Goal 2.

2.1. Develop and maintain liaison activities with OIG customers.

Performance Indicators for the Office	FY 1999/FY 2000 Targets
The IG/Deputy IG will meet periodically with the NRC's EDO, CFO, CIO, and the General Counsel.	The IG/Deputy IG will meet four times each year with the EDO, CFO, CIO, and the General Counsel.
The IG/Deputy IG will brief the NRC Chairman and the NRC Commissioners periodically on important OIG matters.	The IG/Deputy IG will brief the Chairman monthly and the Commissioners quarterly on OIG matters.
The IG/Deputy IG/senior members of the OIG staff will meet periodically with appropriate Congressional Committees and issue summaries of audits and investigations to the U.S. Senate Committee on Governmental Affairs.	The IG/Deputy IG/senior members of the OIG staff will meet twice each year with appropriate oversight committees and provide quarterly summaries of reports to the Committee on Governmental Affairs.
OIG will timely produce, and appropriately distribute, a Semiannual Report to Congress and other interested parties.	Semiannual reports will be distributed no later than one month following the end of the reporting period.
OIG will make publicly releasable documents available on the Internet.	All audit reports and investigative event inquiries will be on the Internet within four weeks of issuance.

Performance Indicators for the Office	FY 1999/FY 2000 Targets
OIG investigators will be assigned liaison responsibilities for designated Government agencies and meet with representatives of these agencies on a periodic basis.	Investigators will meet quarterly with designated Government agency representatives and report results to the Assistant Inspector General for Investigations.

FY 1998 Performance:

Met 4 times with the EDO, CFO, and CIO, and 3 times with the General Counsel.

Chairman received monthly briefings and each Commissioner received a quarterly briefing.

Quarterly summaries were timely provided to oversight committees.

Semiannual reports were issued within one month after close of reporting period.

Audit reports were available on the Internet within four weeks of issuance.

Two investigative event inquiries were available on the Internet within four weeks of issuance.

Investigators met with approximately 12 designated agencies on a quarterly basis.

FY 1997 Performance:

Met once with the EDO and twice with the CFO.

Chairman received monthly briefings; Commissioners were briefed either semiannually or annually.

Quarterly reports were not requested or provided to oversight committees.

Semiannual reports were issued within one month after close of reporting period.

Audit/Investigative reports were not available on the Internet.

General Goal 3 (Strategic Goal)	
OIG will make value-added policy, legislative, and regulatory recommendations relating to the NRC's programs and operations.	
Objectives (Strategies) 1. Review existing and proposed legislation and regulations.	
	Objective
FY 2000 Activities	1
OIG Counsel will review existing and proposed policy legislation, and regulations relating to NRC's programs and operations. OIG will provide timely reports that make recommendations concerning the impact of such legislation or regulations as they pertain to economy and efficiency of programs and operations and vulnerability to fraud, waste, and abuse.	x

Measuring Results - Performance Goals (Outcomes)

We have established the following performance goals for measuring our results in achieving General Goal 3.

3.1. Review existing and proposed legislation and regulations.

Performance Indicators for OIG Counsel	FY 1999/FY 2000 Targets
Responses to requests from the agency for comment/input will be made within the due date(s).	90 percent of requests will be reviewed within the due date.
The agency will consider input from OIG Counsel in its decisionmaking process in the majority of matters reviewed.	OIG Counsel input will be considered in 60 percent of the matters reviewed.

FY 1998 Performance: Targets were met.

FY 1997 Performance: N/A

General Goal 4 (Strategic Goal)			
OIG will improve the effectiveness of its efforts in conducting activities for the purpose of preventing and detecting fraud, waste, and abuse in the NRC's programs and operations by ensuring the economical, efficient, and effective operation of our office.			
Objectives (Strategies) 1. Maximize organizational efficiency and effectiveness. 2. Evaluate the sufficiency of the current Issue Area Monitoring (IAM) Program. 3. Develop a specialized training program and increase the organizational knowledge of the OIG staff.			
	Objectives		
FY 2000 Activities	1	2	3
OIG will evaluate the OIG report production process and determine where and how they can be streamlined. OIG will also assess the efficiency of current methods for information distribution within OIG and establish a means to allow OIG staff to provide direct input to the IG/Deputy IG regarding audit and investigative issues.	x		
OIG will evaluate how current agency issue areas are monitored and consider whether it is appropriate to expand the current OIG program, which is currently an audit staff function, to include investigations.		x	
OIG will establish a specialized training program for the OIG staff to enhance awareness of investigative, audit, legal and pertinent legislative processes.			x

Measuring Results - Performance Goals (Outcomes)

OIG has established the following performance goals for measuring its results in achieving General Goal 4.

4.1. Maximize organizational efficiency and effectiveness.

Performance Indicators for the Office	FY 1999/FY 2000 Targets
OIG, as part of its planning efforts, will periodically evaluate the OIG process for producing reports.	OIG will review the OIG report production process on an annual basis.
OIG will conduct an assessment to address ease of retrieving information relevant to operation, barriers to access and communication, and benefits associated with the introduction of a paperless environment.	OIG will conduct an initial assessment in FY 1999 addressing the information retrieval issue with a followup review in FY 2000.

Performance Indicators for the Office	FY 1999/FY 2000 Targets
The IG and Deputy IG will schedule periodic meetings with OIG staff in order to obtain direct input regarding audit and investigative issues.	The IG and Deputy IG will meet directly with OIG audit and investigative staff on a quarterly basis each year to obtain input on audit and investigative issues.

FY 1998 Performance: Report production process reviewed in investigations resulting in streamlining of reports.

FY 1997 Performance: N/A

4.2. Evaluate the sufficiency of the current IAM program.

Performance Indicator for the Office	FY 1999/FY 2000 Targets
OIG will use a team approach to review the IAM process.	A review will be complete, with a summary report, no later than the first quarter of FY 2000.

FY 1998 Performance: N/A

FY 1997 Performance: N/A

4.3. Develop a specialized training program and increase the organizational knowledge of the OIG staff.

Performance Indicators for Audits	FY 1999/FY 2000 Targets
Auditors will attend Continuing Professional Education (CPE) in accordance with Government Auditing Standards.	Each OIG auditor will complete a minimum of 20 hours of CPE in each year and a total of 80 hours for both years combined. Of the 80 hours, 24 hours must be directly related to Government environment and to Government auditing. For entry-level employees with less than 2 years with the audit organization, a pro rata number of hours will be acceptable.
Newly hired OIG auditors will attend an NRC-developed technical training course for non-engineers at the Technical Training Center (TTC).	At least 50% of newly hired auditors will complete the TTC course.

Performance Indicators for Audits	FY 1999/FY 2000 Targets
Auditors will develop an Individual Development Plan (IDP) for long-term career development.	At least 75% of the Audit staff will develop IDPs.

FY 1998 Performance: Auditors met training requirements.

FY 1997 Performance: Auditors met training requirements.

Performance Indicators for Investigations	FY 1999/FY 2000 Targets
Investigators will attend periodic technical training relevant to NRC operations and refresher training relating to their law-enforcement function.	Each investigator will receive at least 40 hours of training.
Newly hired investigators will attend an NRC-developed training course for non-engineers at the TTC.	At least 50% of newly hired investigators will complete the TTC course.
Investigators will develop an IDP for long-term career development.	At least 75% of the investigative staff will develop IDPs.

FY 1998 Performance: Investigators met training requirements.

FY 1997 Performance: Investigators met training requirements.

THIS PAGE INTENTIONALLY LEFT BLANK

APPENDICES

TABLE OF CONTENTS
APPENDICES

APPENDIX I
FY 2000 PERFORMANCE PLAN

TABLE OF CONTENTS

VERIFICATION AND VALIDATION OF MEASURED VALUES OF PERFORMANCE

Most of the data used to measure performance goals come from the NRC's abnormal occurrence (AO) data, and from reports submitted by licensees. The AO criteria were developed by NRC in order to comply with the legislative intent of Section 208 of the Energy Reorganization Act of 1974, as amended. The Act requires the NRC to inform Congress of unscheduled incidents or events that the Commission determines to be significant from the standpoint of public health and safety. Events that meet the AO criteria are included in an annual "Report to Congress on Abnormal Occurrences" (NUREG-0090). In addition, in 1997, the Commission determined that events occurring at Agreement State licensed facilities that meet the AO criteria should be reported in the annual AO report to Congress. Therefore, the AO criteria developed by the NRC are applied uniformly to events that occur at facilities licensed bor otherwise regulated by the NRC and the Agreement States.

Data for the abnormal occurrences originate from external sources, such as Agreement States and NRC licensees. The NRC has a high degree of confidence about the reliability of these data because (1) the information needed from external sources is required to be reported to the NRC by regulations, (2) the NRC maintains an aggressive inspection program that, among other activities, audits licensees and evaluates Agreement State programs to determine that information is being reported as required by the regulations, and (3) there are Agency procedures for reviewing and evaluating licensees.

The NRC systems that support these data include the Sequence Coding and Search System (SCSS), the Accident Sequence Precursor (ASP) Database, the Nuclear Materials Events Database (NMED), and the Radiation Exposure Information Report System (REIRS). The SCSS and ASP systems support the performance goals in the Reactor Safety arena, the NMED system supports performance goals in the Nuclear Materials Safety and the Nuclear Waste Safety arenas, and the REIRS system supports exposure performance goals in the Nuclear Reactor Safety and the Nuclear Materials Safety arenas. In FY 1998, the NRC identified the primary data systems that provide the information necessary to apply the Agency's performance measures. The NRC will implement a systems assessment of these primary data systems in FY 1999 to ensure that the Agency can report accurate and reliable data in FY 1999, the first year of implementing the performance plan under the Government Performance and Results Act.

The NRC has established procedures for the systematic review and evaluation of events reported by NRC licensees and Agreement State licensees. The objective of the review is to identify events that are significant from the standpoint of public health and safety based on criteria that

include specific thresholds. The NRC uses a number of sources to determine the reliability and the technical accuracy of events information reported to NRC. Such sources include (1) NRC licensee reports, (2) NRC inspection reports, (3) Agreement State reports, (4) NRC consultant/contractor reports, and (5) U.S. Department of Energy Operating Experience Weekly Summaries. In addition, there is daily interaction and exchange of events information between headquarters and regional offices, and periodic conference calls between headquarters, the region, and Agreement States to discuss event information. Events identified that meet the AO criteria are verified and concurred by all applicable NRC headquarters program offices, regional offices, and Agency management prior to submission to Congress.

The NRC also continues to rely on established procedures, such as OIG audits and management reviews, to verify and validate performance data. Prior to Agency implementation of GPRA and the development of the performance measures reflected in the FY 1999 Performance Plan, the OIG reviewed a selected number of performance measure data systems annually for the performance measures reported in the Agency's annual Accountability Report. Two such systems were reviewed in FY 1996. The OIG systems reviews in FY 1997, however, were not initiated based on the Agency reevaluation of its existing performance measures at that time to assess their viability for compliance with GPRA reporting requirements. The NRC plans to coordinate with the OIG in FY 1999 to develop a specific plan that establishes the scope of performance measures data systems evaluations and the OIG role in data verification and validation of the Agency's current performance measures.

Data security is ensured by the Agency's computer security program. This program provides administrative, technical, and physical security measures for the protection of the Agency's information, automated information systems, and information technology infrastructure. This includes special safeguards to protect classified information, unclassified safeguards information, and sensitive unclassified information that is processed, stored, or produced on all types of automated information systems.

The Year 2000 compliance is addressed later within this Appendix I, FY 2000 Performance Plan, under Agency Processes/Organizational Elements, "Information Technology." Descriptions of the primary data sources and the abnormal occurrence criteria follow.

Reactor Operational Data

The primary source of information about an operational event is the licensee event report (LER) submitted to NRC in accordance with 10 CFR 50.73. Other data NRC uses include immediate notifications to the NRC Operations Center in compliance with 10 CFR 50.72; monthly operating reports submitted to NRC in accordance with plant technical specifications; the

database of component failures in systems managed by the Institute of Nuclear Power Operations (INPO); reports of defects and noncompliance in accordance with 10 CFR Part 21; NRC inspection reports, and allegations. Reactor licensee event reports (LER) are stored in the Sequence Coding and Search System(SCSS) database.

The Accident Sequence Precursor (ASP) program provides a structured and systematic means of qualitatively evaluating operational events or conditions that have occurred at licensed U.S. civilian nuclear power reactors. The program uses probabilistic risk assessment techniques to evaluate the conditional core damage probabilities of nuclear power plant events and equipment unavailabilities, and categorizes precursors that could lead to accident sequences with a potential to cause severe damage to a reactor's core. Results of the ASP analyses are considered indications of the level of risk associated with operating nuclear power plants based on the direct assessment of actual operational experience. The ASP program uses the information gained to provide an ongoing assessment of nuclear power plant operation and helps to identify how well plant designs and capabilities can cope with actual operational events or conditions. The ASP program results are published annually in the NUREG/CR-4674 series.

Nuclear Materials Operational Data

Event Data

Nuclear materials licensees are required by Title 10 of the *Code of Federal Regulations*, comparable Agreement State regulations, or license conditions to submit reports of events that meet established criteria. Reportable nuclear materials events include medical misadministrations of radiation or radiopharmaceuticals to patients, radiation overexposures, loss of control of licensed material, problems with equipment that uses licensed material or is otherwise associated with the use of licensed material, releases of material or contamination, leaking radioactive sources, problems during the transportation of licensed material, problems in fuel cycle facilities, and problems in power reactors. The NRC collects, reviews, and codes nuclear materials event information reported to the NRC and the Agreement States. The NRC maintains this information in the Nuclear Material Events Database (NMED).

Radiation Exposure Data

All NRC licensees are required to monitor employee exposure to radiation and radioactive materials at levels sufficient to demonstrate compliance with the occupational dose limits specified in 10 CFR Part 20. Licensees of power reactors, and those involved in industrial radiography, the manufacture and distribution of radioactive materials, fuel fabrications and processing, low-level radioactive waste disposal, and independent spent fuel storage, are required

by 10 CFR 20.2206 to provide to the NRC annual reports of exposure data for individuals for whom personnel monitoring is required. NRC maintains this information in the Radiation Exposure Information Report System (REIRS).

Abnormal Occurrence Criteria[1]

The Energy Reorganization Act of 1974 requires the Nuclear Regulatory Commission to submit abnormal occurrence reports to Congress. The Act defines an abnormal occurrence as an unscheduled incident or event that the Commission has determined to be significant from the standpoint of public health and safety. For each occurrence, the report must contain the date and place, the nature and probable consequence, the cause or causes, and any action taken to prevent recurrence.

Criteria by types of events used to determine which incidents or events will be considered for reporting as AOs are as follows:

I. For All Licensees

A. Human Exposure to Radiation From Licensed Material

1. Any unintended radiation exposure to an adult (any individual 18 years of age or older) resulting in an annual total effective dose equivalent (TEDE) of 250 millisievert (mSv) (25 rem) or more; or an annual sum of the deep dose equivalent (external dose) and committed dose equivalent (intake of radioactive material) to any individual organ or tissue other than the lens of the eye, bone marrow and the gonads, of 2500 mSv (250 rem) or more; or an annual dose equivalent to the lens of the eye, of 1 mSv (100 rem) or more; or an annual sum of the deep dose equivalent and committed dose equivalent to the bone marrow, and the gonads, of 1 Sv (100 rem) or more; or an annual shallow-dose equivalent to the skin or extremities of 2500 mSv (250 rem) or more.

2. Any unintended radiation exposure to any minor (an individual less than 18 years of age) resulting in an annual TEDE of 50 mSv (5 rem) or more, or to an embryo/fetus resulting in a dose equivalent of 50 mSv (5 rem) or more.

[1] Appendix A to NRC's Abnormal Occurrence General Statement of Policy (From the Federal Register dated 04/17/97, Pages 18820-18824)

3. Any radiation exposure that has resulted in unintended permanent functional damage to an organ or a physiological system as determined by a physician.

B. Discharge or Dispersal of Radioactive Material From Its Intended Place of Confinement

1. The release of radioactive material to an unrestricted area in concentrations which, if averaged over a period of 24 hours, exceed 5000 times the values specified in Table 2 of Appendix B to 10 CFR 20, unless the licensee has demonstrated compliance with Sec. 20.1301 using Sec. 20.1302(b)(1) or 20.1302(b)(2)(ii).

2. Radiation levels in excess of the design values for a package or the loss of confinement of radioactive material resulting in one or more of the following: (a) A radiation dose rate of 10 mSv (1 rem) per hour or more at 1 meter (3.28 feet) from the accessible external surface of a package containing radioactive material; (b) a radiation dose rate of 50 mSv (5 rem) per hour or more on the accessible external surface of a package containing radioactive material and that meet the requirements for "exclusive use" as defined in 10 CFR 71.47; or (c) release of radioactive material from a package in amounts greater than the regulatory limits in 10 CFR 71.51(a)(2).

C. Theft, Diversion, or Loss of Licensed Material, or Sabotage or Security Breach[2]

1. Any lost, stolen, or abandoned sources that exceed 0.01 times the A_1 values, as listed in 10 CFR Part 71, Appendix A, Table A-1, for special form (sealed/nondispersible) sources, or the smaller of the A_2 or 0.01 times the A_1 values, as listed in Table A-1, for normal form (unsealed/dispersible) sources or for sources for which the form is not known. Excluded from reporting under this criterion are those events involving sources that are lost, stolen, or abandoned under the following conditions: sources abandoned in accordance with the requirements of 10 CFR 39.77(c); sealed sources contained in labeled, rugged source housings; recovered sources with sufficient indication that doses in excess of the reporting thresholds specified in AO criteria I.A.1 and I.A.2 did not occur during the time the source was missing; and unrecoverable sources lost under

[2] Information pertaining to certain incidents may be either classified or under consideration for classification because of national security implications. Classified information will be withheld when formally reporting these incidents in accordance with Section 208 of the Energy Reorganization Act of 1974, as amended. Any classified details regarding these incidents would be available to the Congress, upon request, under appropriate security arrangements.

such conditions that doses in excess of the reporting thresholds specified in AO criteria I.A.1 and I.A.2 were not known to have occurred.

2. A substantiated case of actual or attempted theft or diversion of licensed material or sabotage of a facility.

3. Any substantiated loss of special nuclear material or any substantiated inventory discrepancy that is judged to be significant relative to normally expected performance, and that is judged to be caused by theft or diversion or by substantial breakdown of the accountability system.

4. Any substantial breakdown of physical security or material control (i.e., access control containment or accountability systems) that significantly weakened the protection against theft, diversion, or sabotage.

D. Other Events (i.e., Those concerning Design, Analysis, Construction, Testing, Operation, Use, or Disposal of Licensed Facilities or Regulated Materials)

1. An accidental criticality [10 CFR 70.52(a)].

2. A major deficiency in design, construction, control, or operation having significant safety implications requiring immediate remedial action.

3. A serious deficiency in management or procedural controls in major areas.

4. Series of events (where individual events are not of major importance), recurring incidents, and incidents with implications for similar facilities (generic incidents) that create a major safety concern.

II. For Commercial Nuclear Power Plant Licensees

A. Malfunction of Facility, Structures, or Equipment

1. Exceeding a safety limit of license technical specification (TS) [§50.36(c)].

2. Serious degradation of fuel integrity, primary coolant pressure boundary, or primary containment boundary.

3. Loss of plant capability to perform essential safety functions so that a release

of radioactive materials, which could result in exceeding the dose limits of 10 CFR 100 or 5 times the dose limits of 10 CFR 50, appendix A, General Design Criterion (GDC) 19, could occur from a postulated transient or accident (e.g., loss of emergency core cooling system, loss of control rod system).

B. Design or Safety Analysis Deficiency, Personnel Error, or Procedural or Administrative Inadequacy

1. Discovery of a major condition not specifically considered in the safety analysis report (SAR) or TS that requires immediate remedial action.

2. Personnel error or procedural deficiencies that result in loss of plant capability to perform essential safety functions so that a release of radioactive materials, which could result in exceeding the dose limits of 10 CFR 100 or 5 times the dose limits of 10 CFR 50, Appendix A, GDC 19, could occur from a postulated transient or accident (e.g., loss of emergency core cooling system, loss of control rod system).

III. For Fuel Cycle Licensees

A. A shutdown of the plant or portion of the plant resulting from a significant event and/or violation of a law, regulation, or a license/certificate condition.

B. A major condition or significant event not considered in the license/certificate that requires immediate remedial action.

C. A major condition or significant event that seriously compromises the ability of a safety system to perform its designated function that requires immediate remedial action to prevent a criticality, radiological or chemical process hazard.

IV. For Medical Licensees

A medical misadministration that:

(a) Results in a dose that is (1) equal to or greater than 1 gray (Gy) (100 rads) to a major portion of the bone marrow, to the lens of the eye, or to the gonads; or (2) equal to or greater than 10 Gy (1000 rads) to any other organ; and

(b) Represents either (1) a dose or dosage that is at least 50 percent greater than that prescribed in a written directive; or (2) a prescribed dose or dosage that, (I) is the wrong radiopharmaceutical[3], or (ii) is delivered by the wrong route of administration, or (iii) is delivered to the wrong treatment site, or (iv) is delivered by the wrong treatment mode, or (v) is from a leaking source(s).

V. Guidelines for "Other Events of Interest"

The Commission may determine that events other than AOs may be of interest to Congress and the public and be included in an appendix to the AO report as "Other Events of Interest." Guidelines for events to be included in the AO report for this purpose are items that may possibly be perceived by the public to be of health or safety significance. Such items would not involve a major reduction in the level of protection provided for public health or safety; therefore, they would not be reported as abnormal occurrences. An example is an event where upon final evaluation by an NRC Incident Investigation Team, or an Agreement State equivalent response, a determination is made that the event does not meet the criteria for an abnormal occurrence.

[3] The wrong radiopharmaceutical as used in the AO criterion for medical misadministrations refers to any radiopharmaceutical other than the one listed in the written directive or in the clinical procedures manual.

CROSS-CUTTING FUNCTIONS WITH OTHER GOVERNMENT AGENCIES

Detailed information concerning the NRC's cross-cutting functions and overlap in mission with other agencies is provided in the strategic plan currently under development. Because of the potential impact to our programs and the Agency's ability to accomplish its mission, that information is provided in total in this performance plan.

Several Government agencies have missions that overlap in scope with the NRC. The NRC identified no inconsistent or duplicative areas in its respective strategic plans, but the Agency continues to be alert to potential inconsistencies or duplication in its cooperative activities. A table of the major cross-cutting functions with other agencies and their relationship to NRC programs, and associated strategies and performance goals is provided below. In many instances, the interaction and coordination efforts are critical to meeting the NRC goals and accomplishing the Agency's mission. In most instances, the NRC has, or is developing, memoranda of understanding (MOU) or other agreements with these agencies to ensure that areas of mutual interest and cooperation are treated in a consistent, coordinated, and complementary way that avoids unnecessary duplication or conflict. To develop programs in those areas that are critical to the NRC's mission, senior agency management meet with agency counterparts and establish plans and strategies in the areas of common programs and goals. Interagency committees are established, as necessary, to facilitate program development and implementation. One such example is the interagency committees to establish EPA radiological criteria. Commission briefings on the status of programs are held as well, such as the periodic briefings by DOE on the high-level waste program. In other areas of mutual interest, agency staff coordinates with other agencies as appropriate. The review of cross-cutting programs, the coordination of those programs, and the identification of any issues are also an integral part of the NRC's internal technical program review process. In the area of intra-agency cross-cutting activities and functions within the NRC, there is no substantive cross-cutting or overlap between the programs within the agency. Descriptions of the specific NRC areas of mutual interest with other agencies follows the table. Additional discussion of these areas of mutual interest and coordination efforts with other Government agencies is provided in the FY 2000 budget request, as appropriate.

Agency	Areas of Mutual Interest	NRC Program/(Strategic Arena)
Department of Energy (DOE)	High-level Waste Disposal	High-Level Waste/(Nuclear Waste Safety)
	Transportation and Storage of Spent Fuel and Waste	Spent Fuel Storage and Transportation Licensing and Inspection (Nuclear Materials Safety)
	Uranium Mill Tailings Radiation Control Act	Uranium Recovery Licensing and Inspection (Nuclear Waste Safety)
	Low-Level Waste	Regulation of Low-Level Waste (Nuclear Waste Safety)
	Excess Plutonium Disposition	Fuel Facilities Licensing and Inspection (Nuclear Materials Safety)
	Mitigation of Threat from Certain Discrete Radioactive Material	Regulation of Low-Level Waste (Nuclear Waste Safety)
	Pilot Program to Simulate NRC Regulation at DOE Sites	Regulation of the DOE (Nuclear Materials Safety)
	Security of Classified National Security Information and Restricted Data	Fuel Facilities Licensing and Inspection (Nuclear Materials Safety)
Environmental Protection Agency (EPA)	Protection of Public Health and Safety and the Environment	(Nuclear Materials Safety) (Nuclear Waste Safety)
	High-level Waste Site-specific Standards	High-Level Waste Regulation (Nuclear Waste Safety)
Federal Emergency Management Agency (FEMA)	Offsite Nuclear Power Plant Emergency Planning	Reactor Incident Response (Nuclear Reactor Safety)
	National Dam Safety Program	Uranium Recovery Licensing & Inspection (Nuclear Waste Safety)
Federal Energy Regulatory Commission (FERC)	Utility Economic Deregulation, Antitrust and Market Power Issues	(Nuclear Reactor Safety)
Department of Transportation (DOT)	Transportation of Radioactive and Fissile Materials	Spent Fuel Storage and Transportation Licensing and Inspection (Nuclear Materials Safety)
Food & Drug Administration (FDA)	Approval of Medical Devices Incorporating Byproduct Materials, Radiopharmaceuticals, and Radioactively Labeled Biologic Materials	Nuclear Materials Users Licensing and Inspection (Nuclear Materials Safety)
Occupational Safety & Health Administration (OSHA)	Worker Health and Safety	Fuel Facilities Licensing & Inspection (Nuclear Materials Safety)

Agency	Areas of Mutual Interest	NRC Program/(Strategic Arena)
Department of Health and Human Services, Public Health Service, Agency for Toxic Substances and Disease Registry (HHS/PHS/ATSDR)	Public Health and Safety in the Release and Transportation of Ionizing Radiation	Reactor Inspection Reactor Incident Response (Nuclear Reactor Safety) Fuel Facilities Licensing and Inspection Materials Incident Response State Programs (Nuclear Materials Safety) High-Level Waste Regulation (Nuclear Waste Safety)
Department of Interior (DOI)	Protection of the Environment	Uranium Recovery Licensing and Inspection (Nuclear Waste Safety)
Department of Labor (DOL)	Enforcement	Reactor Enforcement Actions (Nuclear Reactor Safety) Materials Enforcement Actions (Nuclear Materials Safety)
Department of Justice (DOJ)	Enforcement	Reactor Enforcement Actions (Nuclear Reactor Safety) Materials Enforcement Actions (Nuclear Materials Safety)
	Investigations	Reactor Investigations (Nuclear Reactor Safety) Materials Investigations (Nuclear Materials Safety)
Department of State (STATE)) Department of Defense (DoD) Agency for International Development Department of Energy (AID)	Nuclear Safety and Safeguards Assistance to Other Countries	Participation in International Activities (International Nuclear Safety Support)
Department of State (STATE) Department of Defense (DoD) Department of Energy (DOE) Department of Commerce (DOC) Arms Control Disarmament Agency (ACDA)	Export of Nuclear and Nuclear Related Materials, Equipment, and Technology	Participation in International Activities (International Nuclear Safety Support)

Department of Energy (DOE)--The NRC and DOE share responsibility for **high-level waste (HLW) disposal**. As specified in the Nuclear Waste Policy Act of 1982, as amended (NWPA), DOE is responsible for characterizing the site and for the design and construction of the repository, and NRC is responsible for regulatory oversight, including licensing the construction and operation of the facility. Our strategy is to advise DOE and prepare to license a high-level waste repository at a pace consistent with the national program. An agreement is in place with DOE that outlines the procedures for staff consultation and exchange of information. This procedural agreement is currently being updated to incorporate changes to the HLW program since 1993.

The NRC also interacts with DOE on a number of activities associated with the **transportation and storage of spent nuclear fuel and high-level radioactive waste**. The NRC and DOE have a procedural agreement regarding spent fuel and HLW transportation packaging. Further, DOE is required by law to use NRC-certified packaging for certain waste and spent fuel shipments. NRC and DOE have signed a cost-reimbursable interagency agreement whereby NRC provides DOE oversight of physical security arrangements for certain foreign research reactor spent fuel shipments.

The NRC and DOE have a joint responsibility in carrying out the **Uranium Mill Tailings Radiation Control Act (UMTRCA) Title I Program and in the long-term care of reclaimed uranium mill tailings sites**. Although DOE has the responsibility for carrying out remedial action, the NRC must concur in DOE's selection and completion of the remedial action and must license the sites for long-term care. The NRC and DOE have a memorandum of understanding (MOU) to minimize or eliminate unnecessary duplication of effort between the two agencies.

NRC and DOE are assigned responsibilities for the **management of low-level radioactive waste** (LLW) under the Low-Level Radioactive Waste Policy Act of 1980 and its 1985 amendments. These responsibilities are different but complementary; thus, an MOU or other type of agreement has not been necessary. NRC and DOE frequently interact on LLW policy, regulatory, and technical issues.

DOE and NRC have established a reimbursable agreement for NRC to provide technical assistance and coordinate with DOE on **regulatory issues associated with DOE's disposition of excess plutonium**. Under the agreement, NRC advises DOE on regulatory issues associated with this effort, including prelicensing consultation support and development of standard review procedures for a mixed-oxide (MOX) fuel fabrication facility.

The NRC and DOE currently have an agreement that outlines the procedures for NRC requests for DOE assistance to **mitigate threats to the public from certain discrete radioactive material**, including material that exceeds Class C waste classification. This agreement is being formalized in an MOU.

To provide a comprehensive framework to support legislation for the **external regulation of certain DOE nuclear facilities or classes of facilities**, DOE signed an agreement with NRC on November 21, 1997, to establish a pilot program to simulate NRC regulation at 6 to 10 DOE sites over a 2-year period (FY 1998-1999). NRC and DOE have established task forces to test regulatory concepts at certain DOE nuclear facilities against the standards that the NRC believes would be appropriate to ensure safety at the facilities. The pilot program will test regulatory concepts by evaluating a facility and its standards, requirements, procedures, practices, and

activities. This pilot program is to determine the feasibility of NRC regulatory oversight of DOE non-defense program nuclear facilities and to support a decision on whether to seek legislation to authorize NRC regulation of either various classes of, or all, DOE non-defense program nuclear facilities. A major goal of the pilot program is to develop a clear understanding of the regulatory and legal issues and the NRC resource implications to facilitate a smooth transition into external regulation in FY 2001 if the Congress enacts authorizing legislation. NRC and DOE task groups and steering committees have been established to coordinate and facilitate this effort. External regulation would ensure more effective enforcement by placing such authority in independent hands engaged only in the achievement of safety.

The NRC and DOE share responsibility for the **security of classified National Security information and Restricted Data at certain licensees** (principally Naval Nuclear Fuel Facilities) and at the U.S. Enrichment Corporation (USEC). Although DOE has principal responsibility at Naval Nuclear Fuel Facilities under the auspices of its classified contracts with those firms, NRC has responsibility for the personnel security program for access to or control over strategic nuclear material and for information related to the physical security plans for the protection of the strategic nuclear material. At USEC, NRC has primary responsibility for the protection of classified information and DOE for the Personnel Security Program. The NRC and DOE have several MOUs in place to minimize or eliminate duplication of effort between the two agencies.

Environmental Protection Agency (EPA)--The NRC and EPA share responsibility for **protection of public health and safety and the environment**. There are numerous MOUs and interrelated activities between the NRC and EPA. NRC and EPA have been successful in many of these interrelated activities, including the development of the Multi-Agency Radiation Site Survey and Investigation Manual and the Multi-Agency Radiation Laboratory Protocols Manual, support for the National Research Council Committee on the Biological Effects of Ionizing Radiation, development of the Joint NRC/EPA Guidance for Testing Requirements for Mixed Radioactive and Hazardous Waste, development of a Technical Position for Disposition of Cesium-137 Contaminated Emission Control Dust, development of a nationwide survey to analyze for radioactive contamination of sewer sludge and ash at publicly-owned treatment works, and development of modeling scenarios in support of potential rulemakings for recycle/reuse of radioactively contaminated materials. The NRC is currently working with EPA to define roles, responsibilities, and jurisdictions regarding orphan source issues.

NRC and EPA currently share responsibility for **establishing and implementing site-specific HLW standards for a geologic repository** under existing legislation. As specified in the Energy Policy Act of 1992 (EnPA), EPA is tasked to develop site-specific HLW standards consistent with the recommendations of the National Academy of Sciences report on the

Technical Bases for Yucca Mountain Standards. NRC has one year to develop an implementing rule after issuance of final EPA standards. Both Houses of Congress are expected to pass legislation that would, among other things, prescribe an overall performance standard for Yucca mountain, and, depending on which bill is enacted, could impact NRC and EPA responsibilities. The NRC maintains a formal liaison with the EPA staff and has implemented a strategy for the conforming requirements to ensure that the NRC completes the implementing rule within a year of issuance of the final EPA standards. Differences continue between the EPA and the NRC on groundwater protection requirements and other matters; and may impact the requirements, complexity, and costs of licensing the repository.

Areas where the NRC and EPA have been unsuccessful is in Environmental standards establishing radiological criteria for decommissioning/cleanup of contaminated sites, and high-level waste disposal. EPA is responsible for developing general radiation standards, which are then reflected in NRC regulations and other requirements. EPA regulations frequently limit radiological activities of NRC licensees and these requirements may be added to NRC regulations and implemented by the NRC. The NRC is seeking legislation that would eliminate the overlap in standard setting authority with regard to contaminated sites by recognizing NRC's and Agreement States' standards in this area. EPA has expressed concerns with certain provisions of NRC's license termination rule and included in their guidance, Establishment of Clean-up Levels for Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Sites with Radioactive Contamination, a statement that the dose limits established in the NRC license termination rule would not provide a protective basis for establishing preliminary remediation goals for cleanup at CERCLA sites and that the NRC sites could require further remediation. Top-level NRC and EPA management have addressed these issues to resolve the question of finality for sites that have complied with the NRC or equivalent Agreement State cleanup standards and have had their licenses terminated. It is NRC's position that changes to legislation are needed to resolve these issues. The NRC has also supported provisions in high-level waste legislation in both Houses of Congress that would effectively remove EPA from the standard-setting role for the Yucca Mountain repository and establish a Congressional standard for which NRC would issue implementing regulations. While the bills differ on specifics, either would be preferable to the current statutory provisions on standard setting.

Federal Emergency Management Agency (FEMA)--FEMA has lead responsibility for **offsite nuclear power plant emergency planning and for nuclear materials emergency planning.** FEMA also has the lead in assessing offsite emergency plans and preparedness for adequacy. NRC is responsible for onsite radiological emergency preparedness and for review of FEMA findings and determinations as to whether offsite plans are adequate and can be implemented. NRC also has the responsibility to make radiological health and safety decisions with regard to

the overall state of emergency preparedness, such as assurance for continued operation and shutdown of operating reactors. Should an actual peacetime radiological emergency require more than one agency to respond, the Federal Radiological Emergency Response Plan (FRERP) provides for coordination of all Federal response activities. The FRERP is maintained by the Federal Radiological Preparedness Coordinating Committee (FRPCC); NRC is a member actively involved in several FRPCC subcommittees that develop Federal procedures and guidance. In the event of an emergency involving an NRC-regulated entity, NRC is the lead Federal agency and works closely with six agencies: FEMA, DOE, EPA, USDA, HHS, and NOAA. Representatives of these agencies train with, and are integrated into, the NRC response team. Response coordination on a broader scale is provided by the Federal Response Plan (FRP) for emergencies of all kinds, including responses under the National Contingency Plan (NCP) for emergencies involving chemical and radiological hazards together. NRC is a member of the teams that coordinate actions under the NCP. The NRC also supports the FBI in the event of an emergency involving terrorist threats or other illegal acts.

FEMA and the NRC share involvement in the **National Dam Safety Program**. The primary purpose of this program is to bring together the expertise and resources of the Federal and non-Federal communities to achieve national dam safety hazard reduction. The NRC has regulatory authority over only uranium mill tailings dams and those dams integral to the operation of licensed facilities, or the possession and use of licensed material, that pose a radiologically safety-related hazard if they fail.

Federal Energy Regulatory Commission (FERC)--The NRC and the Federal Energy Regulatory Commission (FERC) have ongoing interaction regarding **issues of mutual concern**, such as: (1) FERC actions with respect to economic deregulation of the electric utility industry and the potential impact of FERC's deregulation activities on the NRC's mandate to protect public health and safety; and (2) the respective roles of the NRC and FERC in evaluating antitrust and market power issues arising from NRC power reactor license applicants or licensees. NRC supports those aspects of the President's electric sector restructuring legislation that pertain to it, in particular, the elimination of NRC's duplicative role in antitrust reviews.

Department of Transportation (DOT)--Under an MOU, the NRC and the Department of Transportation (DOT) share responsibility for developing, establishing, implementing, and enforcing consistent and comprehensive regulations and requirements for the **safe transportation of radioactive and fissile materials**, often through interagency committees. Generally, the NRC works with DOT to develop regulations for transporting materials, and the NRC adopts DOT requirements into its regulations.

Food and Drug Administration (FDA)--The NRC and the Food and Drug Administration (FDA) have an MOU that outlines procedures for sharing information of mutual interest relating to the **approval of medical devices incorporating byproduct materials, radiopharmaceuticals, and radioactively-labeled biologic materials**. The NRC routinely relies on prior FDA approval of medical devices as an essential component of the NRC's sealed source and device safety evaluations. The MOU also establishes procedures for notification, sharing of information, and coordination of joint inspections of events related to design and manufacturing defects and failures of these devices or of radiopharmaceuticals.

Occupational Safety and Health Administration (OSHA)--By an October 1988 OSHA/NRC MOU, NRC and OSHA share responsibility for worker health and safety at NRC-regulated facilities. NRC regulates worker safety concerning radiation and chemical risks resulting from processing radioactive material and OSHA regulates worker safety concerning non-radiological and other industrial hazards.

Agency for Toxic Substances and Disease Registry (ATSDR)--The NRC coordinates with ATSDR on issues relevant to the agency's mission to prevent exposure and human health effects and diminished quality of life associated with exposure to hazardous substances from waste sites, unplanned releases, and other sources of pollution present in the environment. This coordination includes ATSDR's hazardous substances role in public health, including the impact of radioactive releases from power plants on adjacent communities' and Indian reservations' air, water, and food chain and impacts resulting from transportation of nuclear waste.

Department of the Interior (DOI), Fish and Wildlife Service--Under the Endangered Species Act, the NRC has responsibility to assure that its actions are protective of endangered species. NRC consults with the Fish and Wildlife Service (FWS) in evaluating effects on endangered species of proposed NRC actions. If a proposed NRC action has the potential of affecting endangered species, NRC prepares a biological assessment of the effects, and the FWS then renders a biological opinion. This consultation process can be extensive, as in the Atlas uranium mill tailings remediation case.

Department of Labor (DOL)/Department of Justice (DOJ)--The NRC monitors discrimination actions filed with the Department of Labor (DOL) under Section 211 of the Energy Reorganization Act and develops enforcement actions where there are properly supported findings of discrimination, either from NRC's Office of Investigations or from DOL adjudications. Suspected criminal activities concerning NRC licensees, and others within NRC's regulatory jurisdiction, are referred to the Department of Justice (DOJ). Coordination with DOJ occurs prior to initiating any enforcement action for matters under DOJ consideration for criminal prosecution.

Department of State (State), Department of Defense (DoD), Agency for International Development (AID), Department of Energy (DOE), Department of Commerce (DOC), Arms Control Disarmament Agency (ACDA)--The NRC shares responsibility with the Department of State (State), DOE, DoD and the Agency for International Development (AID) in providing nuclear safety and safeguards assistance to other countries. State provides foreign policy guidance for U.S. government agencies in carrying out such assistance, while NRC contributes actively to the formulation of this guidance and clears its assistance programs with State to ensure they are within U.S. Government policy and budgetary guidelines. The NRC also shares responsibility with DOE for providing nuclear safety and safeguards assistance internationally. The NRC and DOE coordinate their efforts with each other and with other countries providing assistance to ensure they are complementary and to avoid duplication and conflict. The NRC and DOE are developing an MOU to specify their roles and responsibilities in the international assistance area. NRC participates in DoD and AID programs to provide nuclear safety and safeguards assistance to the former Soviet Union and Central and Eastern Europe countries. In addition, State, DoD, and AID coordinate on the programs developed by the NRC. The National Security Council and the Office of the Vice President provide high-level policy guidance on key issues in the international assistance area and resolve questions that arise in providing such assistance.

The NRC, DOE, State, DoD, Arms Control Disarmament Agency (ACDA), and the Department of Commerce (DOC) have interrelated roles in controlling exports of nuclear and nuclear-related materials, equipment, and technology. The NRC's primary role involves issuing export licenses for nuclear materials and equipment, including reactors. The following issue licenses or authorizations in related areas: DOE for nuclear technology exports and for retransfers or changes in form or content of previously exported nuclear materials and equipment; State for munitions made with depleted uranium; and Commerce for nuclear reactor balance-of-plant equipment and "dual use" commodities. Each agency is obliged to consult with the others (including, if warranted, ACDA and DoD) for significant cases.

AGENCY PROCESSES/ORGANIZATIONAL ELEMENTS

Planning, Budgeting, and Performance Management Process

In applying business-like principles to its regulatory processes, the Commission's goal is to ensure that the NRC is both effective and efficient in implementing its mission. Beginning with the FY 2000 budget cycle, the agency implemented a disciplined, integrated process to improve the agency's processes for planning, budgeting, and performance management that will enable the agency to meet the demands of the new results-driven Federal environment. The four major components of the new process are:

1. setting the strategic direction,
2. determining resources and planned accomplishments,
3. measuring and monitoring performance, and
4. assessing performance.

The first step of the process is to establish the goals and objectives for the agency and to decide how it will meet those goals and objectives. The products of this step are the agency's strategic plan and performance plan. The strategic plan sets the strategic direction of the agency and the performance plan establishes how those goals and objectives are met. Using the direction established by the strategic plan and the performance plan, the second step in the process is to determine the resources and planned accomplishments required to achieve those objectives. The result of this step is the agency budget which reflects the priority of activities and the level of resources based on the goals and objectives established in step one. This step also includes the development of internal agency program-level operating plans, which include performance measures and targets. This enables the agency to track the degree to which it is achieving its objectives (the third step), as reflected in the planned accomplishments (found in the budget), the NRC performance goals (found in the performance plan), and the program- level operating plans used by each office. The final step in the process is the assessment phase, which determines the effectiveness of our performance and compares performance against the established objectives. These assessments include annual program reviews, program evaluations, self-assessments, and internal and external audits. The results of the assessment phase form the basis for the reevaluation of the agency's strategic direction, and the next cycle of the planning, budgeting and performance management process.

Funding and Staffing

The resources required to meet the FY 2000 performance goals and their associated FY 2000 target levels as shown in this plan are included in the budget.

A summary of the NRC's FY 2000 funding request is shown below by strategic arena, and management and support. These resources support the programs and strategies required to accomplish the agency's goals and mission. A more detailed discussion of the NRC funding requirements and the FY 2000 program outputs and targets are addressed in the FY 2000 budget request.

Funding and FTE (Full-Time Equivalents)						
	FY 1998 Enacted		FY 1999 Estimate		FY 2000 Request	
Strategic Arena	$K	FTE	$K	FTE	$K	FTE
Nuclear Reactor Safety	224,009	1,586	210,350	1,487	210,043	1,431
Nuclear Materials Safety	57,724	482	61,708	479	63,881	464
Nuclear Waste Safety	32,635	163	38,742	191	42,143	195
International Nuclear Safety Support	5,102	47	3,931	35	4,840	41
Management and Support	148,530	656	150,269	645	144,493	629
Total	468,000	2,934	465,000	2,837	465,400	2,760

For FY 2000, the distribution of funding and FTE is as follows:

	% of Funding Requested	% of FTE Requested
Nuclear Reactor Safety	45	52
Nuclear Materials Safety	14	17
Nuclear Waste Safety	09	07
International Nuclear Safety Support	01	01
Management and Support	31	23
Total	100%	100.000%

Human Resources Management

A high-performing workforce is essential for achieving the NRC's mission, providing significant results, and delivering quality products and services. Effective human resource management is an integral part of the agency's Planning, Budgeting, and Performance Management Process. The agency is also developing a program for performance management and performance recognition that links employee performance to program outcomes, organizational effectiveness, and accomplishment of the agency's mission. Through these initiatives, the agency can effectively and efficiently manage its current and future human resource requirements and accomplish the agency's mission and goals.

Information Technology

Information technology (IT) is essential for streamlining NRC processes in an era of downsizing and constrained resources. The rapid evolution of technology and growth of networks is providing necessary and unprecedented opportunities, not only to reengineer the Agency's business processes, but also to improve information access and analysis, and to facilitate internal and external communication. Wider use of technology for advanced scientific computing enables the NRC to better understand complex physical processes and evaluate the potential risks from the use of the radioactive materials the agency regulates. The NRC is working to implement integrated, secure, and reliable information systems that deliver the information needed to achieve the NRC's mission. As required in the Clinger-Cohen Act of 1996, programs are being implemented to assess and enhance IT skills throughout the agency to improve productivity and to provide better ways of doing business. Clinger-Cohen requirements for an Information Technology Architecture are also being aggressively implemented to provide an integrated framework for evolving and maintaining the agency's IT infrastructure and applications. To ensure that major agency information resource investments are cost-effective and well managed, the agency has implemented an IT capital planning and investment control process (CPIC), an integral part of the agency overall Planning, Budgeting, and Performance Management Process. This process is designed to maximize the returns and minimize the risks of IT investments, and ensure that IT investments are focused on results.

The NRC is working to ensure that its computer systems are Year 2000 compliant and on schedule to ensure that all affected systems are repaired or replaced. The NRC, through cooperative efforts with industry associations, is also overseeing licensee activities to ensure that Year 2000 issues do not adversely affect public health and safety, and to ensure that licensees are in compliance with their licenses and NRC regulations. The agency utilizes information notices,

as needed, to alert licensees, certificate holders, and registrants of potential Year 2000 problems in their computer systems, and will continue to monitor the status of licensee efforts to deal with any potential or existing Year 2000 problems.

The Clinger-Cohen Act requires additional information on the agency's goals and performance in improving the efficiency and effectiveness of agency operations through the effective use of information technology. This information has been provided to OMB, together with other IT related material in NRC's Exhibit 42, "Report on Information Technology," and Exhibit 300B, "Capital Asset Plan and Justification."

Request for Waivers of Administrative Requirements to Provide Managerial Flexibility

The NRC has not identified any waivers of administrative procedures that are required to achieve its stated FY 2000 performance goals. Certain of the performance indicators require the use of surveys, which may require OMB clearance in accordance with existing procedures.

AGENCY EFFICIENCY

To improve agency efficiency and effectiveness, a number of program evaluations are scheduled for FY 1998-FY 2000. These evaluations have been identified as areas where there exists a strong potential for performance and/or cost improvement. Currently scheduled program evaluations include the assessment of the Office of Nuclear Reactor Regulation, the Planning, Budgeting, and Performance Management Process, the reactor inspection program, the reactor licensing support and regulatory oversight program, safety decisionmaking through the use of probabilistic risk assessment (PRA) insights and agency support functions. Additional areas for program evaluations are being evaluated at this time by the agency's Executive Council. Detailed information on these evaluations aimed at improving the agency's efficiency and effectiveness in accomplishing its goals and mission can be found in the agency's strategic plan currently under development.

Pending initiation of the evaluation of agency support functions, the NRC has taken action to effect some efficiencies in the management and support area. For example, since FY 1994, NRC has reduced full-time-equivalent staff year utilization by more than 12 percent, from 3,374 to 2,949; reduced the number of managers and supervisors by 42 percent, from more than 700 to 400 by the end of the FY 1998. Planned reorganizations are expected to further reduce that number to approximately 335 by the end of FY 1999. In the context of the staffing levels in the President's FY 1999 budget, this will equate to an 8:1 ratio of staff to supervisors and managers. Since FY 1994, NRC has significantly reduced the number of SES positions from 220 to approximately 180 positions, a reduction of almost 40 positions. Targeted reductions will continue into FY 2000. In the area of management services, the implementation of the Procurement Reinvention Laboratory (PRL) reduced procurement lead time by an average of over two months. Key innovations available through the PRL to reduce procurement lead times include waiving the requirement to synopsize procurements in the CBD; utilizing oral presentations in lieu of written proposals; utilizing simplified evaluation criteria; and limiting the number of Source Evaluation Panel members when appropriate. The expanded use of technology and the implementation of the BankCard program have also improved the agency's procurement capability and efficiency.

An additional specific area where the agency has focused on agency and program efficiency is in its efforts to achieve total program costs/unit cost and to conform with Federal cost accounting standards. The agency has initiated the development of an agency-wide integrated financial and resource management system (STARFIRE). This system will be far-reaching and when fully operational, will be used by all employees of the agency. STARFIRE will serve as the single authoritative source for financial and resource information to support the mission of the agency,

support program and fiduciary decisionmaking, support performance reporting, and support the preparation of auditable financial statements. STARFIRE integrated modules include core accounting, funds control, payroll, cost accounting, debt management/fee billing, property, travel management, automated procurement, performance measurement, basic human resources, and a labor cost distribution system. This system will support the alignment of agency resources with program outputs, strategies, and strategic goals to support a results-oriented environment and provide the tool for managers to make informed program and resource decisions. Phased-in implementation will begin in FY 1999.

Another area where the agency is improving efficiency and effectiveness in the way it does business is in the development of an agency-wide document management system. This system, the Agency-wide Documents Access and Management System (ADAMS), is being developed to meet current and future document storage and retrieval needs and to provide the capability to perform document management processes more efficiently and effectively by managing documents electronically rather than in a paper-based mode. ADAMS will support the electronic submission of documents by NRC licensees, store all new documents electronically in one location, permit full-text document retrieval capability from each employee workstation, and allow for the electronic routing, concurrence, and distribution of documents. ADAMS will also improve the public availability of NRC documents by providing access to the ADAMS public document collection via the Internet. This system will also be integrated with the financial and resource management system, STARFIRE, discussed above. The ADAMS system will be deployed agency-wide by the end of FY 1999.

KEY EXTERNAL FACTORS

Key external factors specific to each strategic arena are provided in the FY 1997-FY 2002 Strategic Plan. These factors are continually monitored through agency programs and factored into agency planning and program development. Maintaining a high degree of involvement and information positions the agency to effectively mitigate any negative impact to agency operations and to achieve the agency's goals and mission. A discussion of the major external factors that the NRC has identified follows:

Electric Utility Deregulation

The economic deregulation of electric utilities has continued its rapid transition from the wholesale to the retail environment. While the Federal Energy Regulatory Commission and the State Public Utility Commissions have the responsibility for rate regulation, several areas of NRC focus have emerged as the transition to a competitive market has begun to take shape. As utilities restructure internally, as ownership arrangements changes, as mergers occur, and as licensees work to control and reduce costs, the NRC must understand and respond appropriately to the effect of the changing business environment on nuclear safety. NRC areas of focus include the impact of cost-competitiveness on safe nuclear operations, electric grid reliability, and the availability of funds for decommissioning. We believe our regulatory framework is generally sufficient at this time to address the restructuring and reorganization that likely will arise as a result of electric utility deregulation. Several actions have been taken by NRC to address these issues.

In the area of license transfers, NRC has initiated a comprehensive review of the license transfer process. To date, the NRC has issued a final rule to streamline the hearing process associated with license transfers (which was published in the *Federal Register* on December 3, 1998), completed final Standard Review Plans (SRPs) on antitrust reviews and financial qualifications and decommissioning funding assurance, and is finalizing a draft SRP on foreign ownership, control, and domination issues. As part of this review, the NRC is also developing guidance on specific aspects of license transfer reviews for use by NRC staff and licensees and the public and will disseminate this guidance through standard publication and circulation procedures (e.g., publication in the *Federal Register* and mailings to NRC licensees).

Concerning cost-competitiveness and safe nuclear operations, the NRC continues to focus on any possible impact of cost-competitiveness pressures on safe nuclear operations. NRC safety assessments at some reactor facilities have identified deficiencies that may stem from the economic pressure on a licensee to be a low-cost energy producer, which in turn, may limit the

resources available for corrective actions and plant maintenance. The NRC is developing measures that could help to identify plants where economic stress may be adversely impacting safety. In addition, the NRC is conducting an integrated review of reactor-related assessment processes to enhance our existing program for plant performance assessment.

Concerning electrical grid reliability, while station blackouts are extremely rare to date, the possibility of a "station blackout" continues to be a focus for NRC. A station blackout refers to an event in which a loss of offsite power is coupled with the inability of the onsite emergency diesel generators to provide vital power to plant safety equipment. This event is a major contributor to core damage frequency. The analysis of power reactor experience in this area shows that nuclear generating stations are robust in design and operational standards, allowing them to help stabilize the electrical grid. However, analysis also shows that nuclear generating stations are vulnerable to grid disturbances, and especially to loss-of-offsite-power events. The NRC has established a grid reliability action plan to address concerns regarding the impact of utility deregulation on the reliability of the grid in supplying offsite power to nuclear power plants.

Concerning decommissioning funding assurance, current NRC decommissioning regulations require power reactor licensees to set aside funds periodically in external trust fund accounts (or to provide third-party guarantees) for estimated decommissioning costs. By the time a licensee permanently ceases operations at the end of its licensed term, the total amount of funds estimated as needed to complete decommissioning is expected to be available. In the emerging environment of electric utility restructuring, the NRC has reevaluated certain aspects of these provisions for decommissioning funding assurance, including the NRC definition of "electric utility," the potential impact of new ownership arrangements, and the problem of above-market costs. The NRC has taken several actions in this area. A final policy statement on electric utility restructuring and deregulation was issued in August 1997 indicating that the NRC will continue to conduct its financial qualifications, decommissioning funding, and antitrust reviews; will identify all direct and indirect owners of nuclear power plants; will establish and maintain working relationships with rate regulators; and will reevaluate the adequacy of its regulations in this area. A proposed rule on decommissioning funding was issued for public comment in September 1997. The comments have been evaluated and a final rule was issued on September 22, 1998. Numerous meetings have been held with industry representatives, State and Federal rate regulators, the financial community, and other stakeholders. Staff-level liaisons have been established where appropriate. As mentioned above the NRC supports those aspects of the President's electric utility restructuring legislation that pertain to it, in particular the elimination of duplicative antitrust reviews.

Decline in the Number of Operating Reactors

Eleven reactors have shut down prematurely over the past ten years, including six in the past three years. Increased economic pressure on owners and operators of power reactors as the utility industry continues deregulation and restructuring and the predictability and stability of the license renewal review process are factors that affect the number of operating reactors. There are currently 103 operating reactors (FY 1999). In FY 2000 and in FY 2001, one reactor each year is anticipated to shut down before the expiration of its license. There will be 102 operating nuclear power reactors in FY 2000, and 101 in FY 2001. The agency has undertaken an assessment of the effect this will have on agency operations and resources, recognizing that there are uncertainties in the current projections and resource estimates.

Changes in the National High-Level Waste Program/Changes in DOE HLW Program

Changes in the national HLW program and changes in DOE activities and funding have significant impact on the ability of the NRC to plan, implement, and fund the program to provide regulatory oversight and achieve its program goals. The NRC and DOE continue to work cooperatively to maintain parallel programs to ensure that the HLW program goals are achieved. The NRC is working to resolve a set of key technical issues considered most important to repository safety performance. We are reviewing the DOE Viability Assessment, which was submitted in December 1998, providing feedback to DOE on its strategy for preparing a license application scheduled to be submitted in 2002, and developing an NRC Standard Review Plan for reviewing such an application for the proposed repository at Yucca Mountain. The NRC will be able to determine, with reasonable assurance, whether spent fuel and other high-level waste can be disposed of safely in a geologic repository, provided (1) that DOE submits a high-quality application; (2) that NRC requirements are met; (3) budget resources permit the NRC to maintain its technical capability for licensing a geologic repository; and (4) that timely, reasonable, and implementable radiological standards are developed for the repository. Currently there is legislation being considered by Congress that would alter the national program. As mentioned above, the NRC testified in favor of legislation similar to the current proposal (H.R. 45), in particular the standard-setting aspects of the legislation. The NRC will continue to monitor the status of this legislation for any impact to the agency's high-level waste program.

Fee Collection

Currently, NRC funding is limited by the amount of funds appropriated by Congress. The Omnibus Budget Reconciliation Act of 1990, as amended, requires the NRC to recover 100 percent of new budget authority, less the amount appropriated from the Nuclear Waste Fund for high-level waste activities, by assessing fees. The fees collected by NRC are used to offset

the Congressional appropriation. The 100 percent fee recovery requirement was to revert to 33 percent at the end of FY 1998, however, it was extended for one year in the agency's FY 1999 appropriation legislation. Consistent with the Administration's policy, the NRC will submit proposed authorization legislation that would extend the 100 percent fee collection through FY 2004 to provide a sound future funding base for NRC programs.

Core Competencies and Staffing

This area addresses projecting and maintaining skill requirements, availability, and staff required to accomplish the NRC's mission. Maintaining the correct balance of knowledge, skills, and abilities (KSAs) is critical to the accomplishment of the NRC's mission and is affected by a number of external factors that may impact the agency's ability to maintain the correct balance of KSAs. External factors include the labor market for experienced professionals, the workload as projected by the activity of the nuclear industry, and the declining university enrollment in nuclear engineering studies and other fields related to nuclear safety.

THIS PAGE INTENTIONALLY LEFT BLANK

APPENDIX II
SUMMARY OF OUTPUT MEASURES

APPENDIX II: Performance Output Measures

NUCLEAR REACTOR SAFETY STRATEGIC ARENA **SUMMARY OF OUTPUT MEASURES*** INCLUDED IN FY 2000 BUDGET REQUEST TO CONGRESS			
Program	**Output**	**FY 1999 Target**	**FY 2000 Target**
Reactor Licensing	Licensing actions completed per year.	1,670 actions.	1,800 actions.
	Size of licensing action inventory.	1,000 actions or less.	700 actions or less.
	Age of licensing action inventory.	80% of inventory 1 year old or less; 95% 2 years old or less; all actions 3 years old or less.	95% of inventory should be 1 year old or less; all actions 2 years old or less.
	Other licensing tasks completed per year.	800.	925.
	Number of operator examinations administered.	Meet licensee demand - approximately 400 initial and 400 generic fundamentals examinations.	Meet licensee demand - approximately 400 initial and 400 generic fundamentals examinations.
	Major systems subject to the CPIC process will develop demonstrable returns on investment to the agency.	No significant deviations (as defined by Clinger-Cohen Act of 1996).	No significant deviations (as defined by Clinger-Cohen Act of 1996).
Reactor License Renewal	Completion of license renewal application reviews.	Complete major milestones scheduled to support completion within 36 months.	Complete major milestones scheduled to support completion within 36 months.
Reactor Inspection	Core inspection program completed.	All operating reactors.	All operating reactors.
	Average time to complete reviews of allegations.	180 days.	180 days.
Reactor Performance Assessment	Timeliness of assessments conducted and reports issued.	Within 60 days of the end of the assessment cycle.	Within 60 days of the end of the assessment cycle.
	Plant performance review.	Conduct two reviews per site.	Conduct two reviews per site.
	Senior management meetings.	Conduct an annual meeting.	Conduct an annual meeting.
Reactor Incident Response	Emergency Response Performance Index (IRPI).	90 percent.	90 percent.
	Index provides the single overall measure of the degree in which the agency believes it is ready to respond to an emergency situation.		

*This document provides a summarization of the NRC's output measures. Further output and target detail and FY 1998 baseline data is provided in the FY 2000 Budget Request to Congress (February 1999).

NUCLEAR REACTOR SAFETY STRATEGIC ARENA
SUMMARY OF OUTPUT MEASURES*
INCLUDED IN FY 2000 BUDGET REQUEST TO CONGRESS

Program	Output	FY 1999 Target	FY 2000 Target
Reactor Operational Experience Evaluation	Operational Experience Evaluation Performance Index.	90 percent.	90 percent.
	Index provides the single overall measure of the timeliness and thoroughness of reactor operational experience evaluation and the risk associated with that experience.		
Reactor Technical Training	Numbers and types of reactor technical training courses offered.	Meet 90 percent of cumulative needs identified by semiannual needs surveys.	Meet 90 percent of cumulative needs identified by semiannual needs surveys.
Reactor Enforcement Actions	Timeliness in completing enforcement actions.	90 percent of cases will average 90 days or less. 100 percent of cases will average 120 days or less.	90 percent of cases will average 90 days or less. 100 percent of cases will average 120 days or less.
Reactor Investigations	Timeliness in completing investigations.	Complete cases, on average, in 9 months or less. Maintain the average number of cases within the active case inventory for more than 12 months, at 9 percent or less.	Complete cases, on average, in 9 months or less. Maintain the average number of cases within the active case inventory for more than 12 months, at 9 percent or less.
Reactor and Plant Performance Research	Technical bases for safety and regulatory guidance and decision making.	Issue 23 research products that respond to priority needs. Develop, maintain, or improve 6 engineering codes/models for regulatory analyses/decision making.	Issue 24 research products that respond to priority needs. Develop, maintain, or improve 6 engineering codes/models for regulatory analyses/decision making.
Reactor Materials and Component Behavior Research	Technical bases for safety and regulatory guidance and decision making.	Issue 16 research products that respond to priority needs. Develop, maintain, or improve 2 engineering codes/models for regulatory analyses/decision making.	Issue 16 research products that respond to priority needs. Develop, maintain, or improve 2 engineering codes/models for regulatory analyses/decision making.

*This document provides a summarization of the NRC's output measures. Further output and target detail and FY 1998 baseline data is provided in the FY 2000 Budget Request to Congress (February 1999).

NUCLEAR MATERIALS SAFETY STRATEGIC ARENA
SUMMARY OF OUTPUT MEASURES*
INCLUDED IN FY 2000 BUDGET REQUEST TO CONGRESS

Program	Output	FY 1999 Target	FY 2000 Target
Fuel Facilities Licensing and Inspection	Timeliness of safety and safeguards inspections.	Complete 90 percent of core inspections scheduled in the Fuel Cycle Master Inspection Plan on time.	Complete 90 percent of core inspections scheduled in the Fuel Cycle Master Inspection Plan on time.
Spent Fuel Storage and Transportation Licensing and Inspection	Non-spent fuel transport container design review completions.	Complete 95 design reviews.	Complete 95 design reviews.
	Spent fuel container and installation design review completions.	Complete 50 design reviews.	Complete 40 design reviews.
Nuclear Materials Users Licensing and Inspection	Timeliness of reviews of applications for new materials licenses, license amendments, license renewals, and sealed source and device designs.	For new applications and amendments, complete 80 percent within 90 days. For license renewals and sealed source and device reviews received after October 1, 1997, complete 80 percent within 180 days.	For new applications and amendments, complete 80 percent within 90 days. For license renewals and sealed source and device reviews received after October 1, 1997, complete 80 percent within 180 days.
	Timeliness of safety inspections of materials licensees.	Less than 10 percent of core inspections overdue as defined in Inspection Manual Chapter 2800.	Less than 10 percent of core inspections overdue as defined in Inspection Manual Chapter 2800.
Materials Research	Technical bases for safety and regulatory guidance and decision making.	Issue 6 research products that respond to priority needs. Develop, maintain, or improve 1 engineering code/model for regulatory analyses/decision making.	Issue 7 research products that respond to priority needs. Develop, maintain, or improve 1 engineering code/model for regulatory analyses/decision making.
Materials Incident Response	Emergency Response Performance Index	90 Percent.	90 Percent.
	Index provides the single overall measure of the degree in which the agency believes it is ready to respond to an emergency situation.		

*This document provides a summarization of the NRC's output measures. Further output and target detail and FY 1998 baseline data is provided in the FY 2000 Budget Request to Congress (February 1999).

NUCLEAR MATERIALS SAFETY STRATEGIC ARENA **SUMMARY OF OUTPUT MEASURES*** INCLUDED IN FY 2000 BUDGET REQUEST TO CONGRESS			
Program	**Output**	**FY 1999 Target**	**FY 2000 Target**
Materials Operational Experience Evaluation	Timeliness of materials event information entered into the Nuclear Materials Events Database (NMED).	Within 2 working days from the date of the document, morning reports, event notifications, and preliminary notifications of occurrences will be entered. Within 2 working weeks of date of receipt, NMED records will be updated 90 percent of the time.	Within 2 working days from the date of the document, morning reports, event notifications, and preliminary notifications of occurrences will be entered. Within 2 working weeks of date of receipt, NMED records will be updated 90 percent of the time.
Materials Technical Training	Numbers and types of materials technical training courses offered.	Meet 90 percent of cumulative needs identified by semiannual needs surveys.	Meet 90 percent of cumulative needs identified by semiannual needs surveys.
Materials Enforcement Actions	Timeliness in completing enforcement actions.	90 percent of cases will average 90 days or less. 100 percent of cases will average 120 days or less.	90 percent of cases will average 90 days or less. 100 percent of cases will average 120 days or less.
Materials Investigations	Timeliness in completing investigations.	Complete cases, on average, in 9 months or less. Maintain the average number of cases within the active care inventory for more than 12 months, at 9 percent or less.	Complete cases, on average, in 9 months or less. Maintain the average number of cases within the active care inventory for more than 12 months, at 9 percent or less.

*This document provides a summarization of the NRC's output measures. Further output and target detail and FY 1998 baseline data is provided in the FY 2000 Budget Request to Congress (February 1999).

NUCLEAR WASTE SAFETY STRATEGIC ARENA **SUMMARY OF OUTPUT MEASURES*** INCLUDED IN FY 2000 BUDGET REQUEST TO CONGRESS			
Program	**Output**	**FY 1999 Target**	**FY 2000 Target**
High-Level Waste (HLW) Regulation	Resolve subissues related to the key technical issues most important to the performance of a HLW repository.	Resolve five of the subissues targeted.	Resolve at least five of the seven subissues targeted.
	Development of the Yucca Mountain Review Plan (YMRP).	Develop an initial Yucca Mountain Review Plan format and content.	Refine YMRP format and content; build YMRP sections using Issues Resolution Status Reports, acceptance criteria, and review methods.
	Establish a site-specific, performance-based regulation applicable to the proposed repository at Yucca Mountain.	Publish a proposed site-specific, performance-based regulation applicable to the proposed repository at Yucca Mountain.	Publish a final site-specific, performance-based regulation applicable to the proposed repository at Yucca Mountain.
Regulation of Low-Level Waste (LLW)	Maintenance of the regulatory framework for low-level waste disposal.	There is no FY 1999 target for this measure.	Consolidate low-level waste regulatory guidance. Complete Branch Technical Position on Low-Level Waste Disposal Facility Performance Assessment.
Regulation of Decommissioning	Clean up problem materials and fuel facility sites listed in the Site Decommissioning Management Plan (SDMP).	Remove three sites from the SDMP list after satisfactory cleanup.	Remove three sites from the SDMP list after satisfactory cleanup.
Radionuclide Transport and Decommissioning	Technical bases for safety and regulatory guidance and decision making.	Issue 3 research products that respond to priority needs. Develop, maintain, or improve 2 engineering codes/models for regulatory analyses/decision making.	Issue 4 research products that respond to priority needs. Develop, maintain, or improve 2 engineering codes/models for regulatory analyses/decision making.
Uranium Recovery Licensing and Inspection	Licensing Actions.	Number of application reviews completed meets or exceeds the number estimated.	Number of application reviews completed meets or exceeds the number estimated.
	Safety inspections of uranium recovery facilities.	Complete an average of 25 inspections per year.	Complete an average of 25 inspections per year.

*This document provides a summarization of the NRC's output measures. Further output and target detail and FY 1998 baseline data is provided in the FY 2000 Budget Request to Congress (February 1999).

INTERNATIONAL NUCLEAR SAFETY SUPPORT STRATEGIC ARENA **SUMMARY OF OUTPUT MEASURES*** INCLUDED IN FY 2000 BUDGET REQUEST TO CONGRESS			
Program	**Output**	**FY 1999 Target**	**FY 2000 Target**
Participation in International Activities	Negotiate/renew bilateral exchange arrangements with appropriate foreign counterparts.	Negotiate/renew 5 arrangements.	Negotiate/renew 5 arrangements.
	Issuance of NRC licenses.	Complete reviews for and issue as appropriate, approximately 75-100 NRC import/export authorization (NRC licenses or amendments). Staff reviews will be completed for 90 percent of the cases within 60 days of the receipt of all necessary documentation.	Complete reviews for and issue as appropriate, approximately 75-100 NRC import/export authorization (NRC licenses or amendments). Staff reviews will be completed for 90 percent of the cases within 60 days of the receipt of all necessary documentation.
	Reviews of Executive Branch proposed Part 810 licenses. Subsequent Arrangements, and Section 123 Agreements for Cooperation.	Complete staff reviews within 60 days.	Complete staff reviews within 60 days.

*This document provides a summarization of the NRC's output measures. Further output and target detail and FY 1998 baseline data is provided in the FY 2000 Budget Request to Congress (February 1999).

APPENDIX II: Performance Output Measures

MANAGEMENT AND SUPPORT **SUMMARY OF OUTPUT MEASURES*** INCLUDED IN FY 2000 BUDGET REQUEST TO CONGRESS			
Program	**Output**	**FY 1999 Target**	**FY 2000 Target**
Administration	Conduct program assessments to evaluate the effectiveness in various areas based upon criteria used by GSA.	A score of 90 or higher on the GSA-supplied criteria.	A score of 90 or higher on the GSA-supplied criteria.
	One White Flint North (OWFN) Restack Project milestones.	Complete floors 15, 14, 13, and 8 in the OWFN Restack project.	Complete the Restack project in April 2000.
	Complete review of draft rules without need for substantive changes and within schedule.	Completed reviews within schedule 98 percent of the time.	Completed reviews within schedule 98 percent of the time.
Human Resources	Develop and maintain a high quality, culturally diverse workforce and applicant pool.	Manage staffing strategies to achieve targeted workforce reductions. Workforce of no more than 25% under represented as compared to workforce availability data.	Manage staffing strategies to achieve targeted workforce reductions. Workforce of no more than 25% under represented as compared to workforce availability data.
Information Technology - Planning and Resource Management	Percent of agency executives and managers who have received IT training.	All NRC senior executives and managers.	All executives and managers within 12 months of hire.
	Percent of OCIO employees who completed training.	70 percent completion of training course slots identified.	70 percent of training course slots identified.
	Percent of high-level data entities in shared primary applications systems.	Thirty-five percent of data entities.	Forty-five percent of data entities.
Information Technology Infrastructure	Availability of key infrastructure services.	Unavailability of infrastructure services will decrease by 10 percent.	Unavailability of infrastructure services will decrease by 10 percent.
	Availability of agency network servers.	Unavailability will decrease by 10 percent.	Unavailability will decrease by 10 percent.
	Agency employee workstation configurations support planned agency-wide applications.	Complete replacement of all 486-based desktop PC workstations.	Replace workstations as required to support new agency applications.

*This document provides a summarization of the NRC's output measures. Further output and target detail and FY 1998 baseline data is provided in the FY 2000 Budget Request to Congress (February 1999).

MANAGEMENT AND SUPPORT **SUMMARY OF OUTPUT MEASURES*** INCLUDED IN FY 2000 BUDGET REQUEST TO CONGRESS			
Program	**Output**	**FY 1999 Target**	**FY 2000 Target**
Information Technology - Applications Development	Level of staff satisfaction with information in NRC's primary applications systems.	Improve staff satisfaction level to 3.60	Improve staff satisfaction level to 3.75.
	Renovation and installation of applicable systems to handle dates from January 1, 2000, and beyond.	Complete by March 31, 1999.	Zero adverse affects on the public, NRC licensees, and other stakeholders.
IT - Information Management	ADAMS will develop demonstrable returns on investment to the agency.	No significant deviations (as defined by Clinger-Cohen Act of 1996).	No significant deviations (as defined by Clinger-Cohen Act of 1996).
Financial Management - Accounting and Finance	Timeliness and quality of NRC's Annual Financial Statement.	Publish the FY 1998 Statement by March 1999 and receive an unqualified opinion.	Publish the FY 1999 Statement by March 2000 and receive an unqualified opinion.
	Collect amounts due NRC.	Achieve 98 percent actual collections when compared with projected collections and maintain past due accounts receivable at $5 million or less by the end of the fiscal year.	Achieve 98 percent actual collections when compared with projected collections and maintain past due accounts receivable at $5 million or less by the end of the fiscal year.
	Pay Bills.	Pay 100 percent of bills by electronic funds transfer. Achieve 94 percent of payments on time.	Pay 100 percent of bills by electronic funds transfer. Achieve 94 percent of payments on time.
	Fee Rule.	Issue proposed rule by March. Issue final rule by June.	Issue proposed rule by March. Issue final rule by June.
	STARFIRE will develop demonstrable returns on investment to the agency.	No significant deviations (as defined by Clinger-Cohen Act of 1996).	No significant deviations (as defined by Clinger-Cohen Act of 1996).

*This document provides a summarization of the NRC's output measures. Further output and target detail and FY 1998 baseline data is provided in the FY 2000 Budget Request to Congress (February 1999).

THIS PAGE INTENTIONALLY LEFT BLANK

*This document provides a summarization of the NRC's output measures. Further output and target detail and FY 1998 baseline data is provided in the FY 2000 Budget Request to Congress (February 1999).

APPENDIX III
LEGISLATIVE PROGRAM PROJECTIONS

APPENDIX III: LEGISLATIVE PROGRAM PROJECTIONS

U. S. NUCLEAR REGULATORY COMMISSION LEGISLATIVE PROGRAM PROJECTIONS (Dollars are in millions.)				
	SALARIES AND EXPENSES APPROPRIATION		INSPECTOR GENERAL APPROPRIATION	
	Budget Authority	Budget Outlays	Budget Authority	Budget Outlays
FY 1999 Enacted	465.0	465.8	4.8	4.8
FY 2000 Estimate	465.4	465.4	6.0	5.8
FY 2001 Estimate	465.4	465.4	6.0	6.0
FY 2002 Estimate	465.4	465.4	6.0	6.0
FY 2003 Estimate	465.4	465.4	6.0	6.0
FY 2004 Estimate	465.4	465.4	6.0	6.0

APPENDIX IV
REPORT TO CONGRESS ON DRUG TESTING

U.S. NUCLEAR REGULATORY COMMISSION
REPORT TO CONGRESS ON DRUG TESTING

The Nuclear Regulatory Commission's (NRC's) Drug Testing Plan was initially approved in August 1988 and updated in November 1997. NRC drug testing requirements on the nuclear industry through regulations are separate from this program and are not covered by this report. The NRC's Drug Testing Program under Executive Order (E.O.) 12564 includes random, applicant, voluntary, followup, reasonable suspicion, and accident-related drug testing. Testing was initiated for non-bargaining unit employees in November 1988 and for bargaining unit employees in December 1990 after an agreement was negotiated with the National Treasury Employees Union.

The NRC positions meeting the following criteria are considered testing-designated positions, and the employees filling these positions are subject to random testing: (1) regional and headquarters employees who have unescorted access to vital or protected areas of nuclear plants, Category I fuel facilities, and uranium enrichment facilities; (2) employees who have assigned responsibilities or are on call for regional or headquarters incident response centers; (3) employees who require access to sensitive compartmented information, foreign intelligence information, or who require access to classified information (e.g., national security information or restricted data); and (4) employees who are motor vehicle operators carrying passengers.

Approximately 1,675 NRC employees occupy testing-designated positions and are subject to random testing. Potential selectees interviewed for positions in these categories are subject to applicant testing.

Approximately 1,002 tests of all types were conducted between October 1, 1997, and September 30, 1998. Since each employee subject to random testing has an equal chance of being selected each time, some NRC employees were randomly tested more than once. All testing results during this time period have been negative.

Internal quality control reviews were completed during the past year to ensure NRC's program continues to be administered in a fair, confidential, and effective manner.

The NRC's Drug Testing Program is based on the principles and guidance provided through E.O. 12564, Public Law 100-71, Department of Health and Human Services guidelines, and Commission decisions.

APPENDIX V
SUMMARY OF REIMBURSABLE WORK AGREEMENTS

APPENDIX V: Reimbursable Work Agreements

U.S. NUCLEAR REGULATORY COMMISSION SUMMARY OF REIMBURSABLE WORK AGREEMENTS (New Budget Authority)			
	FY 1998	**FY 1999 (Estimate)**	**FY 2000 (Estimate)**
INTERNATIONAL ASSISTANCE TO FOREIGN GOVERNMENTS AND ORGANIZATIONS			
Core Conversion Project	$50,000	$200,000	$0
International Invitational Travel	$60,935	$60,000	$60,000
Nuclear Safety Initiatives for the New Independent States	$4,300,000	$4,000,000	$0
Regional Energy Efficiency Project	$650,000	$350,000	$250,000
ADMINISTRATIVE AGREEMENTS			
Agreement States Training	$106,309	$100,000	$100,000
Criminal History Program	$690,336	$1,200,000	$1,200,000
Federal Railroad Administration	$150,000	$150,000	$0
Information Access Authorization Program	$134	$10,000	$10,000
Material Access Authorization Program	$389,770	$290,000	$290,000
National Park Service Employee Detail	$6,000	$0	$0
University of Illinois Employee Detail	$100,833	$105,087	$0
Westinghouse Electric Company Participation in the Second USNRC International Steam Generator Program	$0	$50,000	$50,000
OTHER AGREEMENTS			
Aluminum-Based Research Reactor Spent Nuclear Fuel[1]	$0	$0	$0
Closure of High-Level Waste Tanks at Savannah River[2]	$0	$0	$0
Fissile Materials Disposition	$240,000	$0	$0
Foreign Cooperative Research Agreements	$2,279,356	$2,500,000	$2,500,000
Foreign Research Reactor Spent Nuclear Fuel	$120,000	$700,000	$600,000
Navy Porting Reviews	$12,000	$12,000	$10,000
Privatization of U.S. Enrichment Corporation	$550,000	$0	$0
Safety Evaluation at Brookhaven National Laboratory[2]	$0	$0	$0
TOTAL	$9,705,673	$9,727,087	$5,070,000

[1] This workload is continuing into FY 2000, based upon prior year funding.
[2] This workload is continuing into FY 1999, based upon prior year funding.

SUMMARY OF REIMBURSABLE WORK AGREEMENTS

1. Core Conversion Project

Source: Department of Defense (DoD)

Description of Work: The NRC will provide technical assistance to the Russian reactor regulator, Gosatomnadzor (GAN), in support of its review and approval of core conversion activities at Russia's three weapons-grade plutonium production reactors. The reimbursable FTE requirement for this agreement is approximately 1 FTE in FY 1999 and in FY 2000.

Justification for NRC Involvement: DoD has the lead in a US-Russian project to alter the core design of the three Russian reactors referred to above. NRC was assigned by the U.S.-Russian Joint Commission on Economic and Technological Cooperation to provide to GAN assistance in the safety review and licensing of the conversion designs. The NRC and GAN have signed a Statement of Intent to cooperate in this assistance program and DoD has issued an Interagency Cost Reimbursement Order (IACRO) to NRC defining NRC's role and providing for all approved assistance to GAN.

Reimbursement Procedures: DoD provides budget authority in advance for the full cost of the assistance which it approves for NRC to provide to GAN. The NRC bills DoD quarterly for all direct staff hours and contractual support expended for work specified in the reimbursable agreement. The hourly rate charged to DoD for NRC direct staff time is established in 10 CFR Part 170. This agreement was entered into pursuant to the authority of the Economy Act, 31 U.S.C. 1535 and 1536.

2. International Invitational Travel

Source: International Atomic Energy Agency (IAEA), various foreign governments, and other international organizations.

Description of Work: IAEA and various foreign governments reimburse NRC travel costs pertaining to the organization's or government's work.

Justification for NRC Involvement: The NRC is assisting IAEA, other international organizations, and foreign governments by providing support in the area of nuclear safety because of the NRC's specialized expertise in the regulation of the uses of nuclear energy and materials. The NRC is authorized by its appropriation legislation to retain and use funds for services rendered to foreign governments and international organizations.

Reimbursement Procedures: The NRC initially funds the travel cost and is then reimbursed, generally by check, by the organization or country that sponsored the travel.

3. Nuclear Safety Initiatives for the New Independent States (NISs): Energy Efficiency and Market Reform Project

Source: U.S. Agency for International Development (AID)

Description of Work: The purpose of this AID initiative is to continue to implement nuclear safety initiatives in Russia, Ukraine, Armenia, and Kazakhstan. Activities under this agreement include (1) analytical support activities, (2) development of a training center for regulatory personnel, (3) creation of an incident response center, (4) work in the technical area of probabilistic risk assessment, and (5) assistance in legal enforcement and development of draft regulatory legislation. The FTE requirement for this agreement is approximately 6 FTE in FY 1999 and FY 2000.

Justification for NRC Involvement: The NRC is assisting AID in providing support to the NISs in the area of nuclear safety because of the NRC's specialized expertise in the regulation of civilian uses of nuclear energy and materials.

Reimbursement Procedures: AID transfers budget authority to the NRC for travel, contractor support, and administrative expenses (e.g., interpreters). Additionally for r FY 1999, salary costs for NRC employees working under this agreement will be charged to these funds. In FY 2000, NRC will include the staff cost for the AID-related work within the General Fund portion of the Salaries and Expenses appropriation. As costs are incurred by the NRC, the costs are charged to NRC's AID transfer allocation account.

4. Regional Energy Efficiency Project

Source: U.S. Agency for International Development (AID)

Description of Work: The purpose of this AID initiative, started in 1991, is to assist the countries of Central and Eastern Europe (Czech Republic, Slovak Republic, Lithuania, Bulgaria, and Hungary) develop effective regulatory organizations, advance safety culture awareness and practices, strengthen the legal framework and regulatory capability, improve analytic capabilities for performing safety analyses (by providing computer code membership), strengthen inspectorates through intensive training in NRC regulatory inspection philosophy, procedures and techniques and respond quickly to changing assistance priorities. The NRC has continually emphasized a regional approach by including representatives from all the Central and Eastern European countries so that when AID assistance comes to an end, technical experts in each

country will be familiar with and can help their counterparts in adjacent countries.

Justification for NRC Involvement: The NRC is assisting AID in providing support to the countries of Eastern and Central Europe in the area of nuclear safety because of the NRC's specialized expertise in the regulation of civilian uses of nuclear energy and materials.

Reimbursement Procedures: AID provides budget authority in advance to the NRC for travel, contractor support, and administrative expenses (e.g., interpreters). For FY 1999, the Commission waived recovery of salary costs for NRC employees working under this agreement, based on the small resources involved. In FY 2000, NRC will include the staff costs for this AID-related work within the General Fund portion of the Salaries and Expenses appropriation. As costs are incurred by the NRC, AID is billed via the Department of Treasury's on-line payment and collection system.

5. Agreement States Training

Source: Agreement State Governments

Description of Work: The purpose of this program is to offer nuclear materials technical training to the Agreement States. Contracted courses are provided on a cost reimbursable basis.

Justification for NRC Involvement: NRC conducts technical training to ensure that the NRC staff possesses the requisite knowledge, skills, abilities, and competencies to accomplish the agency's nuclear safety oversight mission. NRC also makes this training available to the Agreement States to assist the states in carrying out their oversight mission. Contracted courses are provided on a cost reimbursable basis.

Reimbursement Procedures: The various Agreement States are billed for their proportionate share for participation in the NRC's Technical Training contracted courses. Payments will be made either by check or by electronic funds transfer.

6. Criminal History Program (CHP)

Source: NRC licensees

Description of Work: The NRC has entered into a written agreement with the Federal Bureau of Investigation's (FBI's) Identification/Information Management Division to conduct user fee non-criminal justice fingerprint card checks for which the FBI provides criminal history records for applicants if such exist in FBI files and/or databases. The reimbursable FTE

requirement for this workload is approximately 1 FTE in FY 1999 and FY 2000.

Justification for NRC Involvement: Title 10 of the *Code of Federal Regulations*, Part 73, issued under the authority of the AEA to protect public health and safety and provide for common defense and security.

Reimbursement Procedures: Funds are received from the licensees for fingerprint checks. Payments are made to the FBI via the Department of Treasury's on-line payment and collection system.

7. Federal Railroad Administration

Source: U.S. Department of Transportation, Federal Railroad Administration (FRA)

Description of Work: The purpose of this research program is to develop a risk management tool set to assess a safety critical process in railroad companies, railroad industry suppliers, and the FRA. The development of the tool set is expected to assist in nationwide efforts in diverse applications and industries to apply microprocessors to safety-critical control functions.

Justification for NRC Involvement: The NRC will ensure that the University of Virginia Center for Semicustom Integrated Systems develops and provides a research proposal which meets FRA's needs, along with a mutually agreeable approach, identification of deliverables, costs, and schedules. This railroad-specific work will serve as a case study for the generic techniques being developed by UVA.

Reimbursement Procedures: FRA provided budget authority in advance for NRC's contractual support. FRA is being billed through the Department of Treasury's on-line payment and collection system. Funding is from a no-year appropriation; any FRA funds remaining unexpended at the end of the year may be carried over into future fiscal years unless otherwise notified by FRA. This agreement was entered into pursuant to the authority of the Economy Act, 31 U.S.C. 1535 and 1536.

8. Information Access Authorization Program (IAAP)

Source: NRC licensees

Description of Work: Licensee personnel with access to classified national security information and restricted data are subject to personnel security background investigations conducted by the Office of Personnel Management (OPM) at the NRC's request to ensure their

eligibility for such access. This background investigation is necessary under the Atomic Energy Act (AEA) and Executive Order 12968 to determine their eligibility for access to classified information.

Justification for NRC Involvement: Title 10 of the *Code of Federal Regulations*, Part 25, issued under the authority of the AEA to protect public health and safety and provide for common defense and security.

Reimbursement Procedures: Funds are received from the licensees for background investigations. Payments are made to OPM via the Department of Treasury's on-line payment and collection system. Salary costs for NRC employees administering this program are not reimbursed by the requestor.

9. Material Access Authorization Program (MAAP)

Source: NRC licensees

Description of Work: Licensee personnel with access to, or control of, formula quantities of special nuclear material are subject to personnel security background investigations conducted by the Office of Personnel Management (OPM) at the NRC's request to ensure their eligibility for such access. Such screening is necessary to protect against the theft or diversion of special nuclear material or acts of sabotage.

Justification for NRC Involvement: Title 10 of the *Code of Federal Regulations*, Part 11, issued under the authority of the Atomic Energy Act to protect public health and safety and provide for common defense and security.

Reimbursement Procedures: Funds are received from the licensees for background investigations. Payments are made to OPM via the Department of Treasury's on-line payment and collection system. Salary costs for NRC employees administering this program are not reimbursed by the requestor.

10. National Park Service Employee Detail

Source: National Park Service (NPS), Department of the Interior

Description of Work: The NRC detailed an employee to provide translator services for the NPS.

Justification for NRC Involvement: The NRC employee's services supported members of

the NPS delegation visiting the People's Republic of China for meetings with the Ministry of Construction of China on U.S.-China cooperation in the field of national parks.

Reimbursement Procedures: NPS provided budget authority in advance to the NRC for the direct salary and benefits of the employee. On the basis of actual salary and benefits costs, the NPS was billed via the Department of Treasury's on-line payment and collection system. The employee's travel expenses were reimbursed directly from NPS. This agreement was entered into pursuant to the authority of the Economy Act, 31 U.S.C. 1535 and 1536.

11. University of Illinois Employee Detail

Source: University of Illinois

Description of Work: The NRC provides assistance in the planning, design, coordination and deployment of a new National Center for Technology Transfer. This includes establishing an operational center as a national resource, and assisting the National Center for Super Computing Applications (NCSA) Deputy Directors with planning, outreach and management activities associated with these objectives. This work also includes working directly with the NCSA Director and Deputy Directors to provide assistance in the concept, development, management and operations of the Center. The reimbursable requirement for this workload is approximately 1 FTE in FY 1999.

Justification of NRC Involvement: The NCSA is a recipient of the University of Illinois, National Science Foundation's new Partnerships for Advanced Computational Infrastructure (PACI) Program. The center has begun its new role as the leading edge site for research and academic individuals and institutions nation wide for the National Computational Science Alliance. A critical objective of the PACI program is outreach and technology transfer. To further this objective a new Technology Transfer Center is being established to operate as a national resource. NRC's experience in managing the NRC Technology Center provides valuable assistance to NCSA in the coordination of technology transfer to federal agencies, states and local governments, as well as the National Science Foundation.

Reimbursable Procedures: Funds are received from the University of Illinois on an annual basis. Payments are either made by check or electronic funds transfer. The University of Illinois reimburses NRC for the assignee's actual salary and benefits costs. This agreement was entered into pursuant to the Intergovernmental Personnel Act (IPA).

12. Westinghouse Electric Company Participation in the Second USNRC International Steam Generator Tube Integrity Research Program

Source: Westinghouse Electric Company

Description of Work: The purpose of this research program is to develop experimental data and predictive correlations and models needed for the independent evaluation of the integrity of steam generator tubes as plants age and degradation proceeds, as new forms of degradation appear, and as new defect-specific management schemes are implemented.

Justification for NRC Involvement: NRC is conducting this research under Title 10 of the Code of Federal Regulations, Part 73, issued under authority of the Atomic Energy Act to protect public health and safety and provide for the common defense and security. Westinghouse participation under the cooperative nuclear research program contributes to offsetting the associated costs.

Reimbursement Procedures: Funds will be received from Westinghouse in advance. Payments will be made either by check or by electronic funds transfer. The NRC is authorized by Section 506 of the FY 1999 Energy and Water Development Appropriations Act, P.L. 105-245, to receive, retain, and use funds under the cooperative nuclear research program for the salaries and expenses associated with the program.

13. Aluminum-Based Research Reactor Spent Nuclear Fuel

Source: Department of Energy (DOE)

Description of Work: The NRC provides technical assistance to DOE in connection with DOE's identification of potential issues relating to the ultimate disposition, in a geologic repository, of aluminum-based research reactor spent nuclear fuel (SNF) from both foreign and domestic research reactors. The reimbursable FTE requirement for this agreement is less than 1 FTE each year in FY 1999 and FY 2000.

Justification for NRC Involvement: DOE has developed a technical strategy regarding the interim management and eventual ultimate disposition of aluminum-based research reactor SNF. This strategy calls for technology development efforts to be conducted which will allow DOE to make a decision by the year 2000 on one or more disposition approaches for aluminum-based research reactor SNF. DOE seeks NRC's technical support to assist DOE's Savannah River Operations Office (DOE-SR) in identifying issues relating to NRC disposal requirements that may be applicable to the ultimate disposition of the aluminum-based SNF.

Reimbursement Procedures: DOE provides budget authority in advance to the NRC for the full cost of NRC assistance. The NRC bills DOE for all direct staff hours expended for work specified in the reimbursable agreement, as well as contract support costs, via the Department of the Treasury's on-line payment and collection system. The hourly rate charged to DOE for NRC direct staff time is established in 10 CFR Part 170. This agreement was entered into pursuant to the authority of the Economy Act, 31 U.S.C. 1535 and 1536.

14. Closure of High-Level Waste Tanks at Savannah River

Source: Department of Energy (DOE)

Description of Work: The NRC is reviewing the methodology established by DOE-Savannah River for closure of high-level waste (HLW) tanks and will consider DOE-Savannah River's proposed approach for classification of residual waste in the tanks as "incidental" waste. NRC will advise DOE-Savannah River of the results of the review. This work is currently expected to be completed by April 1999.

Justification for NRC Involvement: DOE's Savannah River Operations Office has established a HLW tank closure program for the 51 HLW tanks at the Savannah River Site. Consistent with Section 202 of the Energy Reorganization Act of 1974, which gives NRC licensing and related regulatory authority over DOE HLW disposal facilities, closure of HLW tanks without the need for licensing by the NRC is predicated on the classification of the residual waste in the tanks as "incidental" waste. DOE-Savannah River seeks NRC technical assistance in reviewing DOE-Savannah River's methodology for classification of the residual waste in the tanks, after waste removal operations, as "incidental" waste.

Reimbursement Procedures: DOE provides budget authority in advance to the NRC for the full cost of NRC assistance. The NRC bills DOE for all direct staff hours expended for work specified in the reimbursable agreement, as well as contract support costs, via the Department of the Treasury's on-line payment and collection system. The hourly rate charged to DOE for NRC direct staff time is established in 10 CFR Part 170. This agreement was entered into pursuant to the authority of the Economy Act, 31 U.S.C. 1535 and 1536.

15. Fissile Materials Disposition

Source: Department of Energy (DOE)

Description of Work: The NRC provides review and advice to DOE on licensing and permitting strategies and plans being developed by DOE addressing the implementation of technologies selected for disposition of surplus fissile materials. This includes NRC comments

on DOE strategies and plans with the principal technical effort being NRC's review of information provided by DOE and interactions between NRC and DOE/DOE contractors to discuss regulatory strategies and associated plans and schedules. The reimbursable FTE requirement for this agreement is approximately 1 FTE each year in FY 1999.

Justification for NRC Involvement: NRC's review and advice to DOE on licensing and permitting strategies and plans being developed to address the implementation of technologies selected for disposition of surplus fissile materials is needed to assure that the information being developed to support DOE's plans for implementation is correct and that the licensing strategies being considered by DOE have the potential to succeed.

Reimbursement Procedures: DOE provides budget authority in advance to the NRC for the full cost of NRC assistance. The NRC bills DOE for all direct staff hours expended for work specified in the reimbursable agreement via the Department of the Treasury's on-line payment and collection system. The hourly rate charged to DOE for NRC direct staff time is established in 10 CFR Part 170. This agreement was entered into pursuant to the authority of the Economy Act, 31 U.S.C. 1535 and 1536.

16. Foreign Cooperative Research Agreements (FCRAs)

Source: Various foreign entities

Description of Work: The NRC enters into nuclear safety cooperative research agreements with foreign entities under the NRC's Foreign Cooperative Nuclear Safety Research Program for the purpose of exchanging nuclear safety-related information, conducting joint projects of mutual interest, and interacting with other organizations concerned with nuclear safety. The research programs subject to these cooperative research agreements are carried out as a part of the agency's nuclear regulatory responsibilities. The foreign entities participating in the Cooperative Nuclear Safety Research Program enter into cooperative research agreements that provide in-kind technical or financial contributions to the NRC.

Justification for NRC Involvement: These foreign contributions are provided to the NRC in return for access to information that has been developed and continues to arise from the NRC research programs before final publication and release to the public domain. These contributions support broad safety research programs and also allow the foreign entity direct participation in the execution of the research program. Both parties benefit from the cooperative efforts.

Reimbursement Procedures: The foreign entity provides an advance of funds to the NRC using the Fedwire Deposit System (i.e., electronic funds transfer) or by check or money order. The NRC is authorized by Section 506 of the FY 1999 Energy and Water Development

Appropriation Act, P.L. 105-245, to receive, retain, and use funds under the cooperative nuclear research program for the salaries and expenses associated with the program.

17. Foreign Research Reactor Spent Nuclear Fuel

Source: Department of Energy

Description of Work: The Department of Energy (DOE) has established a program to accept and manage foreign research reactor spent nuclear fuel containing uranium enriched in the United States. The purpose of the DOE program is to support the broad United States' nuclear weapons nonproliferation policy calling for the reduction and eventual elimination of the use of highly enriched (weapons grade) uranium in civil commerce worldwide. The scope of the Interagency Agreement with DOE that was signed on March 30, 1998, was limited to the review of plans for the domestic transportation of a particular shipment of foreign research reactor spent nuclear fuel, and the conduct of route surveys and inspections associated with Foreign Research Reactor Fuel. Late in FY 1998, the scope of the Interagency Agreement was significantly broadened to include: (1) package reviews to support U.S. Department of Transportation (DOT) revalidation of foreign certified packages; (2) resolution of technical issues; (3) route approvals; (4) shipment inspections; (5) NRC participation in public meetings; and (6) other related activities. The reimbursable FTE requirement for this program is approximately 3 FTE each year in FY 1999 and FY 2000.

Justification for NRC Involvement: The NRC is assisting DOE by providing expedited transport package reviews to support Department of Transportation revalidations of foreign certified transport packages. These expedited reviews, along with route approvals and shipment oversight, are needed to support scheduled shipments under the U.S. nuclear weapons nonproliferation policy. The NRC is assisting DOE because of the NRC's specialized expertise in the regulation of civilian uses of nuclear energy and materials.

Reimbursement Procedures: DOE will provide budget authority in advance for the full cost of NRC's assistance. NRC will bill DOE quarterly for all direct staff hours and contractual support expended for work specified in the reimbursable agreement. The hourly rate charged to DOE for NRC direct staff time is established in 10 CFR Part 170. This agreement will be entered into pursuant to the authority of the Economy Act, 31 U.S.C. 1535 and 1536.

18. Navy Porting Reviews

Source: United States Navy (USN)

Description of Work: The NRC conducts porting reviews for the United States Navy. The reimbursable FTE requirement for this agreement is approximately less than 1 FTE in both FY 1999 and FY 2000.

Justification for NRC Involvement: The NRC provides technical advice to the United States Navy on health and safety matters concerning the Navy's nuclear propulsion reactors. These reactors and the special nuclear material used therein are held by the Department of Defense pursuant to directives of the President under Section 91b. of the Atomic Energy Act of 1954. As such, neither these reactors nor the special nuclear material is licensed under that act. From the beginning of the nuclear Navy program in 1946 until the present, such technical advice has been furnished by the NRC or its predecessors when requested.

Reimbursement Procedures: The United States Navy provides budget authority in advance for the full costs of NRC services at the beginning of each fiscal year. The NRC charges a flat rate for each service performed. The flat rate is based on the hourly rate for NRC direct staff time, which is established in 10 CFR Part 170. The NRC will evaluate this rate annually and inform the United States Navy of any changes required to the service charges. The adjusted service charges will be an appendix to the memorandum of understanding. The NRC will bill the United States Navy at the end of each quarter for services performed. This agreement is entered into pursuant to the authority of the Economy Act, 31 U.S.C. 1535 and 1536.

19. Privatization of the U.S. Enrichment Corporation

Source: The United States Enrichment Corporation (USEC)

Description of Work: The NRC determined that the privatized entity that operates the gaseous diffusion plants is not foreign owned, controlled, or dominated, and that certification will not be inimical to common defense and security nor to the maintenance of an economical and reliable source of domestic enrichment. This effort was completed in FY 1998.

Justification for NRC Involvement: The U.S. Enrichment Corporation Privatization Act (Public Law 104-134, signed into law April 26, 1996) and other applicable law, including Atomic Energy Act of 1954, as amended requires that the NRC perform the activities stated above. Section 3104 of Public Law 104-134 states, "Expenses of privatization shall be paid from corporation revenue accounts in the U.S. Treasury."

Reimbursement Procedures: On a quarterly basis, the NRC prepared invoices which detailed actual costs incurred related to the scope of activities described in the Interagency Agreement between NRC and USEC. Payment by check was made to NRC by USEC. The NRC billed USEC for all direct staff hours expended for work specified in the reimbursable agreement. The hourly rate charged to USEC for NRC direct staff time is established in 10 CFR Part 170.

20. Safety Evaluation at Brookhaven National Laboratory

Source: Department of Energy (DOE)

Description of Work: The NRC is performing a safety assessment of the Brookhaven National Laboratory's (BNL) High Flux Beam Reactor (HFBR) operation over the range of power levels for which HFBR has previously operated, conduct a review to assess the extent of compliance with existing DOE safety requirements at the HFBR, and develop an inventory of potential issues associated with regulatory oversight of BNL by entities other than DOE. The reimbursable FTE requirement for this agreement is approximately less than 1 FTE in FY 1999.

Justification for NRC Involvement: NRC involvement was requested in order to provide independent review and assessment of the various safety and regulatory issues at BNL's HFBR by an entity other than DOE as requested by U.S. Representative McDade in a letter dated June 19, 1997, to the Secretary of Energy.

Reimbursement Procedure: DOE advanced $225,000 to NRC on September 25, 1997, via the U.S. Treasury's on-line payment and collection system. These funds were carried over into FY 1998 and FY 1999 to support NRC's full costs of conducting the safety assessment. The NRC charges these funds for all direct staff hours expended for work specified in the agreed upon scope of work via the Department of the Treasury's on-line payment and collection system. The hourly rate charged to DOE for NRC direct staff time is established in 10 CFR Part 170. This agreement was entered into pursuant to the authority of the Economy Act, 31 U.S.C. 1535 and 1536.