

STRATEGIC ASSESSMENT ISSUE PAPER



DSI 2: OVERSIGHT OF THE DEPARTMENT OF ENERGY

INTRODUCTION

In August 1995, the Nuclear Regulatory Commission (NRC) staff initiated a strategic assessment and rebaselining project. This project was intended to take a new look at the NRC by conducting a reassessment of NRC activities in order to redefine the basic nature of the work of the agency and the means by which the work is accomplished, and to apply to these redefined activities a rigorous screening process to produce (or re-baseline) a new set of assumptions, goals, and strategies for the NRC. The results of this project are intended to provide an agency-wide Strategic Plan which can be developed and implemented to allow the NRC to meet the current and future challenges.

A key aspect of this project was the identification and classification of issues that affect the basic nature of NRC activities and the means by which this work is accomplished. These issues fall into three categories. The first category includes broad issues defined as Direction-Setting Issues (DSIs). DSIs are issues that affect NRC management philosophy and principles. The second category includes subsumed issues. Subsumed issues are those that should be considered along with the DSIs. The third category includes related issues. These are issues that should be considered after the Commission makes a decision on the option(s) for a DSI. Also, as part of the project, other issues of an operational nature were identified. These are not strategic issues and are appropriately resolved by the staff, and are not discussed in the issue papers.

Following the reassessment of NRC activities, issue papers were prepared to provide a discussion of DSIs and subsumed issues, and to obtain a review of these broad, high-level issues. These papers are intended to provide a brief discussion of the options as well as summaries of the consequences of the options related to the DSIs. Final decisions related to the DSIs will influence the related issues which are listed, but not discussed, in each issue paper. As part of the Strategic Assessment and Rebaselining Project, the issue papers are being provided to interested parties and to the public. Following distribution of the issue papers, a series of meetings are planned to provide a forum to discuss and receive comment on the issue papers. After receiving public comment on the issue papers, the Commission will make final decisions concerning the DSIs and options. These decisions will then be used to develop a Strategic Plan for the NRC. In summary, the Strategic Assessment and Rebaselining Project will analyze where the NRC is today, including internal and external factors, and outline a path to provide direction to move forward in a changing environment.

I. SUMMARY**A. Direction-Setting Issue**

As part of its defense and non-defense missions, the Department of Energy (DOE) owns and operates approximately 3500 nuclear facilities, involving approximately 34 individual sites across 13 States. These facilities comprise nuclear research and production reactors, nuclear weapons assembly and disassembly facilities, chemical processing facilities, nuclear material storage vaults, reactor fuel fabrication facilities, tritium recovery facilities, particle accelerators, and research laboratories. Many different types of facilities may be found on any one particular DOE "site." Although many of these facilities will continue to operate, some must now be decommissioned and be cleaned up environmentally to varying levels. Large inventories of spent reactor fuel and radioactive wastes may be present in the DOE complex.

Over the last several years, consideration has been given to providing the Commission with additional authority over DOE. The Commission could be required to assume jurisdiction over additional facilities in two ways:

- DOE could undertake initiatives in regard to specific facilities that would trigger the Commission's existing jurisdiction under the Energy Reorganization Act or under the Atomic Energy Act of 1954, as amended (AEA).
- Congress could approve the recommendations of DOE's Advisory Committee on External Regulation of Department of Energy (DOE) Nuclear Safety (Advisory Committee). In December 1995, the Advisory Committee recommended that essentially all aspects of safety at DOE nuclear facilities and sites should be externally regulated and that existing agencies, rather than a new one, should become responsible for such regulation. Furthermore, the Advisory Committee recommended that either the NRC or a restructured Defense Nuclear Facilities Safety Board (DNFSB) should regulate facility safety at DOE nuclear facilities. Legislation establishing NRC as the external regulator could place numerous DOE facilities under the Commission's jurisdiction.

Recognizing the potential impact of these activities, the Strategic Assessment Steering Committee identified the following direction-setting issue:

Should the NRC seek to expand its regulatory authority and responsibilities to include DOE facilities?

NRC's position regarding regulation of nuclear safety, safeguards, security, and radiation protection at DOE facilities requires careful consideration. Among the issues to be considered are the magnitude of the potential workload, the types of DOE facilities and operations, NRC's current statutory authority and the regulatory approaches available, NRC's possible role considering overlapping regulatory authority with other Federal agencies, and NRC's funding requirements and the mechanism that could be employed to recover NRC's costs of its oversight of DOE facilities and operations.

B. Options

Option 1: Support Broad Responsibility for NRC Regulation of DOE

NRC would support broad responsibility for regulating DOE facilities. Under the basic option (Suboption 1A), NRC would support a regulatory framework based on the recommendations of the Advisory Committee. Under Suboptions 1B and 1C, NRC would also support a broad responsibility for regulating DOE but under a different interagency jurisdictional framework than the one recommended by the Advisory Committee. Suboption 1B would use the same division of responsibility among the various Federal and State agencies that now applies to commercial nuclear facilities. Suboption C would involve more significant changes in NRC's relationship with other federal and state agencies than either those contemplated by the Advisory Committee or those suggested by the analogy to the regulation of the commercial nuclear sector.

Option 2: Support Broad Responsibility for Regulating Certain Types of DOE Facilities

NRC would support broad responsibility for regulating DOE facilities, but would limit the categories of facilities that would come within this responsibility. This option presents three alternative sets of facilities over which the Commission might assert control. Each of these sets would be a subset of the DOE facilities recommended for NRC coverage under the Advisory Committee recommendations.

Option 3: Oppose Broad NRC Responsibility for Regulating DOE Facilities

NRC would oppose attempts to establish broad NRC responsibility for DOE nuclear facilities. Under Suboption 3A, NRC would not only oppose any new legislation giving NRC broad responsibility for regulating DOE nuclear facilities but would also attempt to confine its jurisdiction over DOE to the specific DOE facilities it now regulates, such as the high-level waste repository. NRC would object to any additional responsibility for DOE facilities even though this could occur under NRC's existing statutory

authority. Under Suboption 3B, NRC would accept responsibility for regulating additional DOE facilities on an incremental basis consistent with existing statutory authority.

Option 4: Take No Position on Broad NRC Responsibility for DOE Facilities

NRC would neither seek nor object to receipt of additional responsibility through legislative change. NRC would continue its jurisdiction over those DOE facilities it now regulates, and would accept responsibility for regulating additional DOE facilities on an incremental basis consistent with existing statutory authority.

II. DESCRIPTION OF ISSUES

Described in this section are DOE nuclear facilities and DOE's internal regulation of them, NRC's present oversight over some DOE facilities and how that oversight is funded, and the regulatory authority of other agencies over DOE.

A. DOE Facilities

As part of its defense and non-defense missions, DOE owns and operates approximately 3500 nuclear facilities, involving approximately 34 individual sites across 13 States. These facilities include nuclear research and production reactors, nuclear weapons assembly and disassembly facilities, chemical processing facilities, nuclear material storage vaults, reactor fuel fabrication facilities, tritium recovery facilities, particle accelerators, and research laboratories. Many different types of facilities may be found on any one particular DOE "site". While many of these facilities will continue to operate, many other facilities must now be decommissioned and undergo varying levels of environmental cleanup. In addition, large inventories of spent reactor fuel and radioactive wastes are present in the DOE complex.

The defense mission of DOE is shifting from a production effort to the dismantlement of nuclear weapons, management of the radioactive materials resulting from weapons dismantlement, custody of the remaining nuclear arsenal, maintenance of the nuclear weapons technology infrastructure, and nonproliferation activities. With few exceptions, all weapons production facilities have been shut down. The exceptions include the Pantex Plant in Texas and three weapons laboratories (Los Alamos, Lawrence Livermore, and Sandia). In the future, the construction of defense facilities will be limited to those related to the conduct of nuclear weapons research such as the proposed Nuclear Ignition Facility at Lawrence Livermore; the expansion of storage capacity for special nuclear material resulting from the dismantlement of nuclear weapons; and to those activities critical for the maintenance of the nuclear arsenal, such as a facility for the production of tritium gas.

The nondefense test and research reactor mission has also been significantly reduced in scope, involving a shift from research and development of commercial reactor technology to efforts associated with the Naval Propulsion Program and the operation of six research reactors and other facilities associated with medical research and isotope production. These efforts are concentrated at Brookhaven, Oak Ridge, Idaho National Engineering Laboratory, and Sandia. The current level of activity is expected to continue with efforts concentrated in high-energy and nuclear physics, basic energy sciences, biological and environmental sciences, and fusion energy. These undertakings involve DOE's research reactors, large accelerators, and the multipurpose DOE laboratories.

DOE's waste management responsibilities comprise the treatment, storage, and disposal of approximately 2700 metric tons of spent reactor fuel, 400,000 cubic meters of high-level waste, 35,000 cubic meters of transuranic and transuranic mixed wastes, and 270,000 cubic meters of low-level waste and low-level mixed waste. These wastes are located at several sites throughout the country, including the Hanford (Washington) Reservation. The DOE environmental restoration effort, managed by DOE's Office of Environmental Restoration, encompasses approximately 850 projects at more than 130 sites in 33 States. A number of these sites, such as Rocky Flats, are on the Superfund National Priorities List. In addition to its responsibilities for its own waste, DOE currently receives "greater than Class C" wastes, as well as transuranics, that are not acceptable at LLW sites.

Each type of DOE facility or program is described briefly below.

Test and Research Reactors

These reactors and critical assemblies are currently operating in support of research in energy, physics, and materials. Each facility is unique, having a considerable range of fuel types and designs. There are currently 21 DOE test and research reactors including those at Idaho National Engineering Laboratory, Savannah River, Oak Ridge Reservation.

Production Reactors

These reactors are capable of producing plutonium and tritium for nuclear defense purposes. Production reactors are currently located at the Savannah River site in South Carolina and at the Hanford site in Washington State.

Fuel Fabrication/Processing

These industrial-scale facilities are used to fabricate nuclear fuel and targets or to digest and concentrate unused fuel, fission products, plutonium, lithium, or tritium through chemical separation processes. There are currently 30 DOE fuel fabrication and processing facilities.

Waste Treatment/Processing

These operable facilities are used to treat or process solid, liquid, or gaseous radioactive waste and effluents. There are currently 163 DOE waste treatment/processing facilities including Hanford, Idaho National Engineering Laboratory, Savannah River, and elsewhere.

Low-Level Waste Disposal

These facilities are used for placing low-level radioactive waste or contact-handled (less than 200 millirem/hour surface radiation) transuranic waste in the near-surface environment without intent to recover. There are currently 29 DOE low-level waste disposal facilities.

Low-Level Waste Storage

These facilities are used for temporary storage of low-level radioactive waste and contact-handled transuranic waste awaiting final disposal. There are currently 48 DOE low-level waste facilities.

High-Level Waste/Spent Fuel Storage

These facilities are used for the temporary storage of high-level radioactive waste and spent fuel; they have controls for physical protection, criticality safety, radiation protection, thermal cooling, chemical reactivity, and severe accidents protection. There are currently 25 DOE high-level waste/spent fuel facilities.

High-Level Waste Disposal

These facilities are designed and constructed for deep geological emplacement of spent fuel, vitrified high-level waste, or remotely handled (greater than 200 millirem/hour surface radiation) transuranic waste. The two DOE high-level waste facilities under development are the Waste Isolation Pilot Plant (WIPP) and Yucca Mountain.

Research and Development Laboratories

At these facilities, diverse operations take place involving the use of sealed and unsealed sources of radioactive material for a wide variety of research and development activities, typically source vaults, irradiators, hot cells, glove boxes, and byproduct and special nuclear material. There are currently 58 DOE research and development facilities.

Components Manufacturing

These facilities are used for shaping, milling, extruding, or refabricating metallic objects for research and defense applications, such as controls for criticality safety, radiation protection, physical protection, and protection against severe accidents. There are currently 25 DOE components manufacturing facilities.

Uranium Mill Tailings

This program involves the reclamation, long-term surveillance, and maintenance of uranium mill tailings disposal sites, such as groundwater protection, tailings reclamation, vicinity property remediation, and erosion and radon protection. There are currently 24 DOE uranium mill tailings facilities primarily located in Colorado, New Mexico, and Utah.

Environmental Restoration

This program involves activities to remove, reduce, or stabilize environmental contamination involving radioactive material in soils, buildings, structures, surface water, or groundwater. It includes remediation of formerly used sites such as the Formerly Utilized Sites Remedial Action Program (FUSRAP). There are currently 72 DOE environmental restoration sites.

Enrichment Facilities

These facilities consist of those gaseous diffusion plants and related facilities used to enrich gaseous uranium hexafluoride in the U-235 isotope. There are currently 4 DOE enrichment facilities including plants at Portsmouth and Paducah.

Accelerators

Accelerator facilities are used for high-energy research. These accelerators emit machine-produced radiation energies up to and exceeding, in some cases, 25 MeV. These facilities have associated accelerator shielding, hot cells, activated components, and targets. There are currently 34 DOE accelerators.

Decommissioning - Reactor

This program involves systematic activities associated with characterizing, removing, reducing, or stabilizing radioactive contamination at shutdown DOE reactor facilities. There are currently 33 DOE reactors associated with this program.

Decommissioning - Waste Processing

This program involves characterizing, removing, reducing, or stabilizing radioactive contamination at shutdown DOE waste processing and treatment facilities. There are currently three shutdown DOE waste processing facilities associated with this program.

Decommissioning - Research and Development Facilities

This program involves characterizing, removing, reducing, or stabilizing radioactive contamination at shutdown research and development laboratories, including hot cells, glove boxes, irradiators, and a variety of other sealed and unsealed uses of radioactive materials. There are currently 11 DOE research and development facilities associated with this program.

Decommissioning - Fuel Processing

This program involves characterizing, removing, reducing, or stabilizing radioactive contamination at shutdown fuel and chemical processing facilities. There are currently 23 DOE fuel processing facilities associated with this program.

Fissile Material Storage

These facilities are used for temporary storage of fissile material in bulk form or in fabricated shapes, and have controls for physical protection, material control and accounting (MC&A), criticality safety, radiation protection, chemical reactivity, and severe accidents protection. There are currently 26 DOE fissile material facilities.

Sealed Sources

This program consists of the use of sealed radioactive sources containing byproduct material for various applications such as instrument calibration and density measurement. It is estimated that approximately 13,500 sources are used currently throughout the DOE system.

B. DOE Self-Regulation

DOE regulates the safety of the design, construction, and operation of its own nuclear facilities (except for areas over which the Commission exercises jurisdiction) and has the statutory authority under the AEA to develop and impose requirements to protect environment, health, and safety issues at its facilities. Unlike NRC's authority under AEA, DOE regulates all radiological, chemical, and physical hazards at its nuclear facilities. DOE implements such self-regulation through a system of Orders it imposes on DOE contractors through contract provisions and which, in many cases, are also directly applicable to DOE personnel. Typically, these are consensus documents prepared by DOE with limited or no public involvement, other than comments received from DOE contractors. The Orders system originated with the administrative directives imposed on contractors in the Manhattan Project and gradually developed into a collection of approximately 270 Orders, covering a wide variety of areas, and differing in level of detail, format, and approach. Recently, through the directives system, DOE has taken steps to reduce or consolidate the Orders. Stimulated by the Price-Anderson Amendments Act of 1988, DOE has initiated a process to move away from the Orders system to rules that are promulgated under the public notice and comment requirements of the Administrative Procedures Act. These rules, which will address facility safety, worker health and safety, and environmental protection, will be codified in 10 CFR Part 800.

C. Current NRC Statutory Authority

The Commission's present responsibilities do not extend to any general authority to regulate DOE nuclear facilities and sites. However, the Commission has been given the statutory authority to regulate selected DOE facilities and programs. These are the Uranium Mill Tailings Remedial Action Program, the West Valley Demonstration Project, the high-level waste repository, and the United States Enrichment Corporation.

NRC regulates DOE remedial actions at inactive uranium mill sites pursuant to the Uranium Mill Tailings Radiation Control Act (UMTRCA). NRC evaluates and concurs in DOE remedial action projects for inactive uranium mill tailings sites and associated vicinity properties as required by Title I of UMTRCA. DOE will hold these sites under an NRC general license for long-term care (10 CFR 40.27) once all remedial work is completed.

NRC exercises safety oversight at the DOE West Valley Demonstration Project. NRC staff monitors public health and safety aspects of this facility through site inspections and review of the Safety Analysis Reports submitted by DOE for each aspect of the process. NRC reviews each DOE submittal and issues a corresponding Safety Evaluation Report containing NRC conclusions about public health and safety implications of the process segment.

NRC has regulatory authority over the construction and operation of the high-level waste repository pursuant to its authority under the Nuclear Waste Policy Act. In this case, the Environmental Protection Agency (EPA) will issue generally applicable environmental standards for high-level waste disposal, NRC will issue regulations that implement those standards, and DOE will submit a license application for NRC review.

Under the Energy Policy Act of 1992, NRC will regulate facility safety and safeguards at the two gaseous diffusion plants located in Portsmouth, Ohio, and Paducah, Kentucky. The Energy Policy Act directed DOE to lease these two plants to the United States Enrichment Corporation (USEC). Instead of being licensed by NRC, these facilities are required, as a condition of operation, to apply annually for NRC certification that they are in compliance with applicable NRC regulations (10 CFR Part 76).

In addition to its responsibilities for these facilities, there are other avenues by which the Commission might have to assume new responsibilities for DOE facilities under existing authority. For example, a new facility could fall under the Commission's existing jurisdiction if it was one of the facility types covered in Section 202 of the Energy Reorganization Act, or as a result of a DOE "privatization" initiative.

Section 202 of the Energy Reorganization Act gives NRC licensing and related regulatory authority for specific DOE facilities. Section 202 notes four types of facilities that would fall under the scope of this provision:

- demonstration liquid metal fast breeder reactors when operated as part of the power generation facilities of an electric utility system, or when operated in any other manner for the purpose of demonstrating the suitability for commercial application of such a reactor
- other demonstration nuclear reactors—except those in existence on the effective date of this Act [1974]—when operated as part of the power generation facilities of an electric utility system, or when operated in any other manner for the purpose of demonstrating the suitability for commercial application of such a reactor
- facilities used primarily for the receipt and storage of high-level radioactive wastes resulting from licensed activities
- retrievable surface storage facilities and other facilities authorized for the express purpose of subsequent long-term storage of high-level radioactive waste generated by the Administration, which are not used for, or are part of, research and development activities

Any new DOE facilities that fall within the ambit of these provisions would be subject to NRC licensing.

In addition, any DOE facilities that are outside the scope of these provisions, but that are "privatized" by DOE, may also fall within the Commission's licensing authority under the Atomic Energy Act. The privatization concept involves a private entity funding, operating, and owning a facility to provide a particular product or service to DOE under contract.

DOE is evaluating whether to privatize several facilities. Most prominent is the proposed DOE program to solidify the high-level waste (HLW) held in tanks on the DOE Hanford Reservation. The DOE privatization project at Hanford would have a private entity fund the development of a process to solidify the high-level waste held in tanks at the Hanford Reservation. The private entity would also construct and operate the facility to solidify the waste. It would own the facility and would recapture its costs through a contract with DOE, which would purchase the solidified product. In addition to the Hanford solidification project, DOE is also evaluating privatization projects to create reactor-produced isotopes, to process transuranic waste at the Idaho National Engineering Laboratory, to construct and operate several independent spent fuel storage installations at various locations, and to develop a system for transferring dry spent fuel. The Commission is also considering developing a memorandum of understanding (MOU) with DOE to establish the basis for NRC review and consultation of DOE's possible use of commercial light-water reactors for the production of tritium needed to maintain the U.S. nuclear weapons stockpile. This may eventually involve DOE's acquisition of commercial light-water reactors, or acquisition of irradiation services from these reactors. Both of these possibilities would have implications for NRC's future regulation of DOE facilities.

The issue of whether NRC jurisdiction would apply to these activities involves an interpretation of whether the activities fall outside of the Commission's rules in 10 CFR Parts 30, 40, 50, and 70, which exclude prime contractors of DOE from NRC licensing under certain conditions.

D. NRC Funding Mechanisms

Currently, NRC receives funds for regulating DOE activities in two ways: either an appropriation from Congress or reimbursement for specific services. Irrespective of whether NRC's regulatory authority over DOE facilities and programs is expanded through legislation or incrementally, NRC's funding for these activities will likely come from Congressional appropriations. Although NRC funds are appropriated by Congress, the Omnibus Budget Reconciliation Act of 1990 (OBRA-90) requires NRC to recover approximately 100 percent of its budget by assessing fees to NRC applicants and licensees in a fair and equitable manner. Since additional regulatory authority over DOE

facilities may have a substantial impact on the NRC budget, funding mechanisms should be considered when making decisions regarding NRC's strategy for regulating DOE facilities. The following three funding mechanisms can be used to recover NRC's costs for DOE work.

First, NRC applicants and licensees could continue to pay for approximately 100 percent of the appropriated budget authority. The Independent Offices Appropriations Act of 1952 (IOAA) prohibits NRC from assessing licensing and inspection fees to Federal agencies. As a result, NRC does not recover the actual costs from the applicant for NRC staff review of such activities as the DOE West Valley Demonstration Project, or certification of transportation casks for spent fuel. NRC treats these costs as it treats overhead, and distributes the costs among the broadest base of NRC licensees. DOE is charged an annual fee for NRC licenses held and pays a portion of these specific review activities as part of the annual fee.

Second, Congress could amend OBRA-90 to reduce the amount to be recovered from fees by the budgeted amount for DOE activities. This could be done annually by modification of the appropriation bill, as is being done in FY 97 for NRC's involvement in the Hanford Tanks. Alternatively, the Atomic Energy Act of 1954 (AEA) could be changed to give NRC authority to assess fees for services (licensing and inspection) to Federal agencies similarly to what is done for commercial licensees. This was done when the NRC was given oversight of United States Enrichment Corporation activities.

This approach is also compatible with the funding concept established for NRC's activities related to the licensing of DOE's high-level waste repository. NRC's appropriation for high-level waste activities is derived from the Nuclear Waste Fund and is not subject to user fees. This fund was established to ensure that the costs of carrying out activities relating to the disposal of high-level radioactive waste and spent nuclear fuel are borne by the persons responsible for generating such waste and spent fuel.

Third, Congress could rescind the Independent Offices Appropriations Act of 1952 (IOAA) and OBRA-90 so that NRC would be fully funded through taxes, as was the case until 1968.

Alternatively, NRC and DOE might agree that NRC would regulate a very small portion of DOE's activities, perhaps on a trial basis. For such a limited effort, an appropriate funding mechanism might be reimbursement of NRC's regulatory expenses by DOE. Typically, reimbursements are made for certain activities that NRC performs for another organization that are not directly related to the agency's core mission and that are not required to be funded through an NRC appropriation. Examples of work in this area are NRC assistance to the Interagency Nuclear Space Review Panel in support of the

National Aeronautics and Space Administration (NASA) Cassini launch, and assistance to DOE in the review of licensing and compliance plans for technologies associated with the disposition of fissile materials.

E. Authority of Other Agencies

The Defense Nuclear Facilities Safety Board (DNFSB) is an independent agency which exercises an advisory role on facility safety with respect to DOE nuclear defense facilities. The five-member Board was established in 1988 by the Department of Defense Authorization Act for fiscal year (FY) 1989. To date, the DNFSB has issued more than 100 formal recommendations to the Secretary of Energy. Although all of these recommendations have been accepted by the Secretary of Energy, the Board has no enforcement mechanism and it has not established any new nuclear safety standards.

The AEA exempts facilities built under AEA authority from regulation by the Occupational Safety and Health Administration (OSHA), and most DOE facilities were built under that authority. OSHA regulates worker protection at the remaining facilities, e.g., the Waste Isolation Pilot Plant). Although DOE regulates worker safety at most of its nuclear facilities under its Orders system, OSHA also advises DOE on occupational health and safety under a 1992 DOE-OSHA MOU.

EPA has authority under the AEA to establish generally applicable standards for protecting the environment from radioactive material. Pursuant to several environmental protection statutes, EPA and its authorized States have gained increasing regulatory authority over both nonradioactive and radioactive substances. These statutes have provisions that require Federal agencies, including DOE, to comply with the statute to the same extent as private facilities. Under these statutes, authorized States may impose environmental standards more stringent than EPA standards. In addition, under Executive Order 12088, the head of each agency under the Executive Branch is responsible for complying with all applicable pollution control standards. Source, special nuclear, and byproduct materials are excluded from the coverage of some environmental protection statutes, such as the Resource Conservation and Recovery Act and the Clean Water Act. Therefore, DOE self-regulates implementation of these statutes for these materials.

In the case of the Atomic Energy Act, the Commission can, under the Agreement States program authorized by Section 274, relinquish its authority and allow a qualified State to assume regulatory authority over the radioactive materials in question. In order to be approved, the State must have a program that is adequate to protect public health and safety and that is compatible with the NRC program. Production or utilization facilities and uranium enrichment facilities are excluded from this program under Section 274.

III. DISCUSSION

Advisory Committee Recommendations

In 1995, DOE created the Advisory Committee on External Regulation of Department of Energy Nuclear Safety (Advisory Committee). The Advisory Committee's charter called for it to recommend whether and how DOE nuclear facilities and operations should be externally regulated to best protect human health and safety and the environment. The Advisory Committee report issued in December 1995 concluded that:

- DOE should be externally regulated for the same reason private industry and all other Federal facilities and sites are, i.e., an external regulator, free of the responsibilities for DOE's mission, can ensure that safety receives consistent and adequate attention.
- Credibility is critical to the success of both safety regulation and DOE's mission, i.e., external regulation would end the inherent conflict of interest between mission and self-regulation of safety at DOE and consequently would improve public confidence in the safety of DOE operations. It would also enable the public, States, and tribes to become effectively involved in the regulation of safety at DOE facilities.
- Regulation of safety must be effective and must promote efficiency, i.e., to be fully successful, regulation must be carried out in ways that ensure safety and that impose the least possible costs and burdens.

On the basis of these conclusions, the Advisory Committee recommended that

- An existing agency, either NRC or a restructured DNFSB, should regulate "facility safety" at all DOE nuclear facilities, including weapons facilities and particle accelerators. Facility safety comprises oversight of the design, construction, operation, modification, and decommissioning of a facility for the purpose of preventing or mitigating unnecessary or unplanned releases of radioactivity.
- OSHA should regulate all worker protection under the Occupational Health and Safety Act unless the regulation of worker risks at a given facility could significantly interfere with maintaining facility safety, in which case, the regulator of facility safety should regulate all worker protection at that facility under the Atomic Energy Act.
- EPA should continue to regulate environmental protection matters for all DOE nuclear facilities and sites under current environmental statutes.

- States with programs authorized by Federal agencies (for example, EPA, OSHA, NRC) should acquire or continue to have roles in the regulation of environmental protection, facility safety, and worker protection comparable to those they now have in the private sector.

It is important to note several particulars of the Advisory Committee's recommendations. The Advisory Committee recommended that some subjects be excluded from the facility safety regulator's purview, that the division of responsibility among external regulators be different from what now exists at NRC licensees, that external regulators have the flexibility to tailor their regulatory frameworks, and that provision be made for citizen suits. These recommendations are discussed below.

First, the Advisory Committee recommended that three subjects be excluded from the facility safety regulator's purview: safeguards and security, decontamination, and nuclear explosive safety.

Safeguards and security at DOE facilities are presently regulated by DOE through an integrated system of security programs to protect special nuclear material, classified information, and property. The system consists of three elements: (1) material control and accounting, (2) physical security, and (3) personnel security. The Advisory Committee recommended that safeguards and security remain a DOE function, at least initially, to avoid diluting the external regulator's focus on safety at DOE nuclear facilities. The Advisory Committee did note that the facility safety regulator would need information and an opportunity to observe DOE regulation of safeguards and facility security in order to understand and evaluate any impacts on safety. For comparison purposes, NRC generally regulates safeguards and security at the facility it licenses. NRC does not regulate safeguards and security at the gaseous diffusion plants operated by the U.S. Enrichment Corporation, the DOE high-level waste repository development project at Yucca Mountain, or the DOE remediation activities at West Valley, New York.

Decontamination would also be excluded from the facility safety regulator's purview. Although decontamination is not explicitly defined in the Advisory Committee's report, it is intended to include at least the cleanup of soil at contaminated DOE sites. This would seem to cover the primary activity at the 72 DOE "environmental restoration" sites. Little might remain for the external facility safety regulator to oversee at these sites. Therefore, they may be effectively excluded from coverage from the facility safety perspective. This implication is not explicitly addressed in the report of the Advisory Committee. However, it should be noted that it will be necessary to identify any environmental restoration sites where there are facility safety issues such as criticality concerns.

Nuclear explosive safety, which would also be excluded, was described by the Advisory Committee as the formalized program designed to prevent accidental or unauthorized detonation of high explosives while the explosives are in the proximity of fissionable nuclear materials during nuclear explosive operations. Nuclear explosive operations comprise a wide range of DOE activities, such as assembly, transportation, maintenance, storage, testing, and disassembly of a nuclear explosive or weapon. These operations often involve circumstances in which high explosives are often deliberately placed near special nuclear material. The Advisory Committee recommended that this remain a DOE responsibility to avoid drawing the facility safety regulator into the "unique national security interests and specialized knowledge involved in nuclear explosive safety." NRC has no experience in regulating the use of explosives in the vicinity of special nuclear material.

The Advisory Committee recommended that the regulator of facility safety be responsible for all AEA material (i.e., source, special nuclear, and by-product), as well as NARM (naturally occurring and accelerator-produced radioactive material) and other hazardous substances for purposes of facility safety. The implication is that the external regulator of facility safety should be responsible for regulating the use of chemicals and other hazardous substances at DOE nuclear facilities to ensure that these operations do not compromise facility safety. However, these substances would be excluded from the purview of the facility safety regulator for the purpose of environmental protection. Similarly, the regulator of facility safety would be responsible for regulating hazardous waste management under the Resource Conservation and Recovery Act to the extent that the waste could affect facility safety. NRC's acceptance of responsibility for regulating NARM and hazardous waste management at DOE facilities would be a significant change from its present responsibility to only regulate those materials under limited circumstances.

The Advisory Committee recommended that OSHA assume a major regulatory presence at DOE facilities. According to the Advisory Committee, the lines for responsibility for worker safety need to be drawn differently at DOE facilities than at commercial nuclear facilities because of the predominance of chemical and physical hazards to workers at DOE facilities, and because of the Advisory Committee's desire to ensure adequate treatment of all occupational hazards by using a single regulator of worker safety at any facility. Thus, the Advisory Committee recommended that OSHA be responsible for worker safety at DOE facilities, including radiological safety. The only exception to this assignment of responsibility would be those occasions during which worker safety requirements could significantly interfere with facility safety; in that case, the facility safety regulator would also be responsible for worker safety. This recommendation is a significant change from the existing NRC regulatory framework because it would transfer the NRC's existing regulatory responsibility for occupational exposures to OSHA.

The current Federal-State model for facility safety and environmental protection would be followed. NRC Agreement States would be able to assume NRC responsibility for the regulation of facility safety at DOE facilities, except for DOE reactors. This would permit Agreement States to set more stringent standards than the Federal regulator as long as those standards do not unduly hinder DOE in the performance of its missions.

The Advisory Committee recommended that the external regulator be able to tailor the regulatory framework to different situations at different DOE sites and facilities, including the use of techniques such as issuing licenses, certificates, and permits; and performing audited self-regulation and concurrence. The Advisory Committee also emphasized that the external regulator should have the capability to establish performance regulations, and to use informal proceedings, as opposed to formal proceedings, for the issuance of NRC decisions such as licenses or certificates.

Finally, the Advisory Committee recommended that provision be made for citizen suits against the regulated entity or the external regulator. The AEA, unlike certain environmental protection statutes, does not now provide for a suit against the NRC or the licensee for an alleged failure to comply with regulations. The Advisory Committee recommendations would extend citizen suit provisions to the regulation of facility safety under the Atomic Energy Act. At the present time, 10 CFR 2.206 provides a mechanism for the public to petition the Commission to take enforcement action against an NRC licensee.

If the Advisory Committee's recommendations are enacted into law, NRC is likely to be challenged in several ways. First, NRC would need to apply a considerable fraction of its present staff and Commissioner Office resources to regulating DOE. NRC would have to develop innovative ways to prevent both the staff and the Commissioners from being spread too thinly to effectively discharge new and ongoing responsibilities. Second, NRC has historically set high standards for its licensees. Although DOE may be fully dedicated to complying with NRC requirements, the history and size of DOE nuclear facilities and programs may make it very difficult for that agency to provide sufficient resources and technical expertise to be able to meet the same standards NRC sets for comparable commercial licensees. This situation could challenge NRC and DOE to agree to standards that provide reasonable assurance of safety at DOE facilities but that may differ from NRC's present standards. Third, NRC would need to resolve the issues often associated with regulating another Federal agency. Among these issues are the extent of NRC's effective authority over another agency, because Federal agencies historically are accustomed to negotiating with each other and resolving issues through the Administration, rather than taking direction from other agencies. Further, DOE may have limited knowledge of NRC's regulatory regime for facilities similar to those that DOE operates. On the basis of its previous experience, NRC staff would expect to expend considerable resources to properly exchange

information with DOE regarding DOE's roles and responsibilities as the regulated entity. The time and effort both agencies would need to accomplish this is the largest contributor to uncertainty in NRC's resource projections. Fourth, the Commission would need to be sensitive to national security interests in its regulation of safety at defense facilities. Finally, because most DOE facilities and activities have never had external regulator, DOE has generally not operated in the same type of open forum with public interaction as NRC and its licensees are accustomed to. NRC and DOE will need to work together to ensure that DOE understands the NRC regulatory framework in this regard and is prepared to work within this framework.

IV. OPTIONS

The Steering Committee has developed four options for the Commission's consideration. Although each of the options described below is distinct, gradations between and among them are certainly possible. The Commission may find that the best choice lies in a combination of options.

Option 1: Support Broad Responsibility for NRC Regulation of DOE

NRC would support broad responsibility for regulating DOE facilities. Under the basic option (Suboption 1A), NRC would support a regulatory framework based on the recommendations of the Advisory Committee. Under Suboptions 1B and 1C, NRC would also support a broad responsibility for regulating DOE but under a different interagency jurisdictional framework than the one recommended by the Advisory Committee. Suboption 1B would use the same division of responsibility among the various Federal and State agencies that now applies to commercial nuclear facilities. Suboption 1C would involve more significant changes in NRC's relationship with other Federal and State agencies than either those contemplated by the Advisory Committee or those suggested by the analogy to the regulation of the commercial nuclear sector.

A. Support for the Adoption of the Advisory Committee Recommendations

Under this suboption, NRC would support being given the broad responsibility for the external regulation of facility safety at DOE nuclear facilities consistent with the Advisory Committee's recommendations. The Advisory Committee did not specify whether NRC or DNFSB should be selected as the external regulator of facility safety of DOE. Under this suboption, NRC would actively support itself as external regulator. In addition, NRC would continue jurisdiction over the DOE facilities that it now regulates, and would accept responsibility for regulating additional DOE facilities on an incremental basis under existing statutory authority.

The Advisory Committee's recommendations and the challenges associated with them are examined at length in the "Discussion" section above. However, to further amplify the preceding discussion, the Steering Committee would also note that if the Advisory Committee's recommendations became law, the impact on NRC is difficult to overestimate. The staff has estimated that the resources needed for this suboption are about 1100 to 1600 full-time equivalent (FTE) staff and \$150 to \$200 million annually, which would increase the NRC's size by one-third to one-half. So many new personnel would mandate a significant reorganization of both Headquarters and regional offices and could possibly require NRC to establish field offices for oversight of the DOE complex. The additional workload would also affect the ability of the present Commission Office structure and size to function effectively. Beyond the issues of FTE and organizational structure, this suboption would require the agency to regulate a wider range of activities and technologies than it has regulated to date. Accordingly, NRC would need to add skills and expertise in such areas as criticality, metallurgy, linear accelerators, and environmental sciences. Initial and ongoing training programs would likely have to be developed. In addition, the agency would need to consider fundamental changes in its regulatory approach, recognizing that licensing, inspection, and enforcement as currently practiced might not be appropriate in large-scale regulation of another agency.

Legislation would be necessary to implement this suboption. Further, NRC would need to write several new rules to establish the substantive and procedural standards for regulating DOE facilities. This would be an extensive effort because of the wide range of facilities addressed, including two facility types with which the NRC has limited experience, components manufacturing and accelerators. In addition, NRC would probably need to develop MOUs with several other agencies with adjacent responsibilities for regulating DOE, such as OSHA and EPA. Because the MOUs would be developed solely to implement the new law, it may be appropriate to recommend how the law might be written to minimize jurisdictional issues that might arise.

The Commission's support for assuming broad authority over DOE facilities would be based on a recognition of the need for external regulation and on the recognition that NRC's expertise places it in the strongest position of any existing agency to assume these responsibilities. In addition, the legislation needed for implementing this suboption could be the source of sufficient resources to enable the Commission to serve effectively as the external regulator of DOE nuclear facilities. By phasing in NRC responsibility for DOE facilities over a sufficient time period, the potential disruption to the Commission's existing regulatory responsibilities could be mitigated. The initial phase could be tied to DOE facilities that are similar to those currently regulated by NRC. This could give the Commission and DOE valuable experience in implementing an external regulatory program that could be later extended to other DOE nuclear facilities. In terms of the problems

related to regulating another Federal agency, the Commission already does exercise authority over various federal agencies, including DOE. Although the magnitude of the effort would increase under this option, the basic conceptual issues would be the same.

The Steering Committee has also identified two alternatives to this basic suboption. Under these alternatives, NRC would support receiving broad responsibility for regulating DOE facilities, but with different divisions of responsibility among NRC and other external regulators. The two alternatives are: Suboption 1B, regulate DOE with the same division of responsibility among agencies that now applies to commercial facilities; or Suboption 1C, attempt to minimize jurisdictional conflicts between NRC and other Government agencies.

These alternatives are intended to achieve a clear and predictable division of responsibility between NRC and other Federal agencies, and to achieve a sound division of authority between NRC and the States. The divisions of responsibility provided in these options could apply whether NRC regulates all of the classes of DOE facilities discussed in Suboption 1A or the more limited classes discussed in Option 2.

Suboption 1B: Use the Division of Responsibility That Applies to Commercial Facilities

This suboption simply extends existing divisions of responsibility between NRC and other regulators of commercial nuclear facilities. It takes advantage of agencies' existing expertise and interfaces and avoids forcing them to venture into areas where they presently have little expertise and which would require additional staff and a lengthy planning process to implement.

This suboption contains the following four features which differ from the Advisory Committee's recommendations:

- NRC would retain its jurisdiction over the radiological aspects of worker safety and would otherwise maintain its existing relationship with OSHA for the regulation of worker safety at commercial nuclear facilities. Consistent with this relationship, NRC inspectors would continue to receive limited training in nonradiological worker safety requirements, and would refer potential violations to OSHA for action. OSHA would then be responsible for followup and enforcement.

This feature would achieve several efficiencies. It would use NRC's existing expertise for radiological worker safety; it would build on the solid relationship between NRC and OSHA which is documented in their 1988 MOU on worker protection at NRC-licensed facilities; it would eliminate the potential conflicts of having two sets of inspectors on

site reviewing many of the same activities and practices. The total cost to the Federal Government of implementing a regulatory scheme similar to that which exists for commercial nuclear facilities is expected to be much less than giving OSHA the responsibilities recommended by the Advisory Committee.

- NRC would regulate the decontamination and decommissioning of all DOE sites, consistent with its present responsibilities for commercial facilities and for all sites previously licensed by NRC.

This feature would apply NRC's experience in regulating remediation of a variety of facilities and sites including power reactors, materials sites, uranium mill tailings sites, and challenging remediation problems addressed in the Site Decommissioning Management Plan.

- NARM would not fall within NRC jurisdiction, but would be the responsibility of EPA and the States, consistent with present commercial practice.

NRC generally does not now exercise jurisdiction over NARM. Even though NARM may present radiation hazards similar to those posed by AEA materials, the AEA covers only certain types of NARM, and no accelerator-produced radioactive materials. EPA has Federal responsibility for regulating NARM, and State governments have traditionally regulated NARM under their inherent powers to protect public health and safety of their citizens. This feature simply extends this division of responsibility to the regulation of DOE facilities. Although this feature is consistent with current practice, the staff notes that EPA does not actively regulate NARM, that State regulation is uneven, and that historically, States and others have asked NRC to assume Federal jurisdiction for NARM. This feature would extend these issues to the regulation of DOE facilities.

- No provisions would be made for citizen suits in respect to the activities under NRC's regulatory framework. The existing remedy in 10 CFR 2.206 would be used.

This suboption does not contain a citizen suit provision on the theory that it would add unnecessary costs to the regulatory program without improving on the remedy already provided to the public under 10 CFR 2.206 of the NRC's regulations. In the use of citizen suit provisions under existing statutes, the types of violations that are usually addressed are those involving objective criteria or numerical standards, for example, the effluent limitations under the statutes administered by EPA. In this regard, 10 CFR 2.206 is more generous, allowing the petition to be brought with respect to any type of safety issue, including those subjective standards for which more judgment must be

exercised regarding licensee compliance. However, judicial review of the NRC's 2.206 decisions is limited because they are treated as a matter of enforcement discretion, but the citizen suit provisions do result in a judicial hearing on the merits of the issue.

This suboption also offers the following two features which are consistent with the Advisory Committee's recommendations:

- EPA would continue to establish generally applicable environmental standards that apply to DOE facilities. NRC would continue to implement the EPA standards that fall within its responsibility.
- NRC and EPA would continue their overlapping responsibility for regulating the treatment and disposal of mixed waste (radioactive waste that is also chemically hazardous).

The NRC-EPA relationship is challenging because differing agency objectives, priorities, and statutory mandates, together with overlapping enforcement jurisdictions, have resulted in both real and perceived differences between NRC and EPA over the regulation of radiation. Over the last 20 years, the two agencies developed conflicting positions on radiation protection for a range of applications, such as standards for radionuclide air emissions under the Clean Air Act, environmental standards for disposal of low-level radioactive waste, groundwater protection at uranium mill tailings disposal sites, exemption levels for radioactive wastes, and standards for disposal of high-level waste. These differences have consumed limited resources and risked eroding public confidence in the regulation of radioactive materials. Although NRC and EPA work cooperatively to resolve their differing regulatory approaches, substantial resources are still expended in these efforts.

In summary, this suboption offers the important advantage of consistent regulatory practice across both commercial and DOE facilities. It thus eliminates a source of potentially significant interagency jurisdictional conflict over the development and implementation of worker safety and radiation protection regulations. This would eliminate delay and reduce the unnecessary resource expenditures devoted to resolving different regulatory approaches and philosophies. Finally, if NRC receives additional regulatory responsibility over DOE nuclear facilities on an incremental basis, the division of responsibility between NRC and other agencies will almost certainly be consistent with this alternative. However, the interagency issues and concerns identified above that presently exist in the Nation's commercial regulatory program would be extended to the DOE program.

Suboption 1C: Minimize Jurisdictional Conflicts Between NRC and Other Agencies

This suboption discusses the division of responsibility between NRC and other Government agencies from the perspective of minimizing jurisdictional conflicts in regulating DOE facilities. It reconsiders the six features of the previous suboption and asks whether and how they might change.

- NRC would retain its jurisdiction over the radiological aspects of worker safety and would otherwise maintain its existing relationship with OSHA for the regulation of worker safety at commercial nuclear facilities. This feature is the same in Suboptions 1B and 1C, because the present system is effective and efficient.
- EPA would regulate decontamination and decommissioning of DOE sites, because the final goal of these activities is to ensure that the environment is properly protected. This appears to be consistent with the Advisory Committee's recommendation, and should minimize regulatory overlap between NRC and EPA.
- NARM could remain the responsibility of EPA and the States, consistent with present commercial practice and the first alternative under this option, or it could become the responsibility of NRC, for DOE facilities only. In either case, the agency or agencies responsible for NARM would need to take an active role in its regulation to ensure that a class of orphan wastes is not created and that NARM and AEA wastes are treated consistently.
- No provisions would be made for citizen suits in respect to the activities under NRC's regulatory framework. The existing remedy in 10 CFR 2.206 would be used. This regulatory approach works efficiently for the reasons discussed under the previous alternative, and would remain the same under this alternative.
- EPA would establish and implement environmental standards at DOE facilities. This feature would remove NRC from implementation of EPA standards at DOE facilities. It avoids the conflicts EPA and NRC now face in commercial regulation that arise from differing agency objectives, statutory mandates, and overlapping jurisdictions. It is consistent with the Advisory Committee's recommendations.
- NRC and EPA would resolve their overlapping responsibility for regulating DOE's mixed waste by simply determining whether the largest contributor to the waste's hazard is radiological or chemical, and giving the lead to the agency that regulates that hazard. As needed, the agency that does not regulate the hazard could consult on, but not concur in, the treatment and disposal of that waste. This feature

benefits from the particular expertise of each agency and recognizes that either agency's disposal regulations can be expected to provide adequate protection from both types of hazards.

In sum, this suboption has several features in common with Suboption 1B, and differs principally in that this suboption minimizes the regulatory overlap between NRC and EPA at DOE facilities. As stated above, the divisions of responsibility provided in either suboption could apply whether NRC regulates all of the classes of DOE facilities discussed in Option 1A or to the more limited classes discussed in Option 2.

Suboption 1B or 1C would entail meeting the challenges described above connected with broad responsibility for DOE facilities. However, either option, and particularly Suboption 1C, would facilitate the NRC exercising effective regulatory control over DOE sites.

Option 2: Support Broad Responsibility for Regulating Certain Types of DOE Facilities

NRC would support broad responsibility for regulating DOE facilities, but would limit the categories of facilities that would come within this responsibility. This option presents three alternative sets of facilities over which the Commission might assert control. Each of these sets would be a subset of the DOE facilities recommended for NRC coverage under the Advisory Committee recommendations.

Suboption 2A: Regulate Only the Non-Defense DOE Nuclear Facility Complex

This suboption would exclude all DOE weapons facilities from Commission jurisdiction. All DOE facilities whose purpose is primarily directed toward the research and development, testing and certification, production, maintenance, and dismantlement of nuclear weapons would be excluded. These weapons facilities would largely correspond to the facilities that now fall under the responsibility of DOE's Office of Defense Programs, such as the Y-12 plant at Oak Ridge, the Savannah River facilities, the plutonium storage facility at Rocky Flats, the Pantex Plant in Texas, the Hanford Plutonium Finishing Plant, and the national laboratory facilities at Sandia, Los Alamos, and Lawrence Livermore associated with maintenance of the nuclear weapons technology infrastructure.

This suboption would do the most to maintain the traditional separation between the regulation of national security facilities and commercial facilities. Maintaining this distinction would eliminate potential difficulties the Commission might be faced with by the need to balance nuclear safety concerns with national security concerns. However, one of the primary findings of the Advisory Committee was that regaining public trust requires

that DOE's defense activities be subjected to the same general regulatory scheme and standards of performance as its non-weapons facilities and nuclear facilities in the private sector. The Advisory Committee also concluded that it is entirely possible to ensure nuclear safety and at the same time to protect national security through properly managed and circumscribed external regulation. Therefore, this suboption is not consistent with those Advisory Committee findings. However, it would alleviate the need for the Commission to consider national security interests in devising its regulatory scheme for DOE facilities.

Suboption 2B: Regulate Only DOE Facilities That Are Similar to Those Presently Regulated by NRC

NRC would regulate only those DOE facilities that are similar to the DOE and commercial facilities presently under the Commission's existing regulatory framework. For example, NRC would regulate production and research reactors and facilities for the storage of high-level waste and spent fuel wherever they are located within the DOE facilities complex. Therefore, this alternative would include some defense facilities and some non-defense facilities. However, it might exclude regulation of components manufacturing and accelerators.

By limiting the Commission's jurisdiction to facilities with which it has experience, this suboption would eliminate a major part of the uncertainties in the Commission's assumption of jurisdiction over DOE facilities. This factor should not be underestimated in assuring that the Commission could smoothly and successfully assume effective regulation of DOE facilities. Like Suboption 2A, this suboption would provide more limited coverage than that recommended by the Advisory Committee. However, unlike Suboption 2A, this suboption does not directly conflict with the Advisory Committee's view that DOE's defense activities can and should be subject to external regulation.

One consequence of Suboption 2B is that it could extend NRC jurisdiction across departmental lines within DOE, with any attendant management problems this might create for NRC. Suboptions 2A and 2C appear less likely to raise this issue.

Under this suboption, the Commission would need to be sensitive to national security interests in its regulation of facility safety at defense facilities.

Suboption 2C: Regulate All DOE Sites and Facilities Except for Environmental Restoration Facilities

This suboption would exclude those contaminated DOE sites and facilities that have been designated for cleanup under the responsibility of the DOE Office of Environmental Management. As noted earlier, the Advisory Committee excluded

"decontamination" from the purview of the regulator of facility safety. This would seem to exclude the primary activity at the 72 DOE environmental restoration sites. At least at some of these sites, little, if anything, would remain for the regulator of facility safety to oversee. Therefore, the sites would already be effectively excluded from coverage if one adopted the facility safety approach. Furthermore, these sites will be subject to external regulation through the radiation cleanup standards that are being promulgated by EPA, and through the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) program. This implication is not explicitly addressed in the Committee report and the Commission could clarify this ambiguity by advocating the explicit exclusion of these facilities. However, some of these facilities might also have facility safety concerns (e.g., criticality) associated with them; those would need to be included within the Commission's purview as the regulator of facility safety.

As with Suboption 2B, the Commission would need to be sensitive to national security interests in its regulation of facility safety at defense facilities.

Legislation would be necessary to implement this option, regardless of which suboption is preferred. Although the scope of facility coverage will be more limited than under Option 1, all the other major issues that will need to be addressed in the legislation, such as the regulatory authority of the states and the fee issue, will be the same. NRC would still need to conduct several rulemakings to establish the substantive and procedural standards regulating the class of DOE facilities covered. However, the rulemaking effort could be much less extensive than that required for Option 1, if Suboption 2B was selected (facilities with which the Commission has experience). Under Suboption 2B, the Commission could place greater reliance on the existing regulatory framework and would spend fewer resources in the rulemaking process.

The estimated resource needs associated with any of these alternatives could be less than for Option 1 because only subsets of the facilities covered by Option 1 would be included. However, the significance of the potential resource reductions cannot be evaluated because the necessary information is not yet available. There could be some resource savings resulting from Options 2A and 2B when compared to Option 1. However, due to the ambiguity of the terms used by the Advisory Committee to describe decontamination and environmental restoration, the scope of NRC activities and, therefore, the resources required for Option 2C cannot be readily compared to Option 1.

Although the resource needs would be less under this option, NRC will still face several of the challenges identified under Option 1, such as the need to apply significant fractions of its present staff and Commission Office resources to regulating DOE facilities; the difficulty DOE might have in

providing sufficient resources and technical expertise to be able to meet the same standards NRC sets for its commercial licensees; and the issues associated with regulating another Federal agency.

Option 3: Oppose Broad NRC Responsibility for Regulating DOE Facilities

NRC would oppose attempts to establish broad NRC responsibility for DOE nuclear facilities. Under Suboption 3A, NRC would not only oppose any new legislation giving it broad responsibility for regulating DOE nuclear facilities but would also attempt to confine its jurisdiction over DOE to the specific DOE facilities it now regulates, such as the high-level waste repository. NRC would object to any additional responsibility for DOE facilities even though this could occur under NRC's existing statutory authority. Under Suboption 3B, NRC would accept responsibility for regulating additional DOE facilities on an incremental basis consistent with existing statutory authority.

Suboption 3A: Confine NRC Jurisdiction to Existing DOE Facilities

Under this suboption, NRC would seek to confine its jurisdiction to the DOE facilities and activities it currently regulates, i.e., the Uranium Mill Tailings Remedial Action Project, the West Valley Demonstration Project, the high-level waste repository, and the United States Enrichment Corporation. NRC would object to assuming any additional responsibility for DOE facilities, either on an incremental basis under existing statutory authority or through new legislation giving NRC broad responsibility for regulating DOE nuclear facilities.

NRC would oppose new legislation giving it broad authority over DOE nuclear facilities on the basis of such considerations as the potential for significantly broadened authority to divert NRC attention from regulation of the commercial sector; the ability of a focused DOE safety effort and a restructured Defense Nuclear Facilities Safety Board to adequately ensure public health and safety at all DOE facilities without the need for NRC regulation; the problems inherent in one Government agency attempting to enforce a detailed regulatory scheme on another Government agency; and the possibility that DOE would be unable to meet NRC standards, therefore creating the potential for a less credible regulatory framework for DOE facilities.

As discussed above, under existing law, a DOE facility could fall under the Commission's existing jurisdiction as a result of a DOE privatization initiative, or a new facility could be one of the facility types noted in Section 202 of the Energy Reorganization Act. Under this suboption, NRC would not attempt to change the law, but would actively discourage DOE from taking actions that could make facilities or activities subject to NRC regulation. If DOE facilities were subject to NRC regulation, the Commission would, of

course, comply with the law. However, in any negotiation process, the Commission would emphasize the difficulties of NRC's regulation of DOE nuclear facilities, as discussed above.

The Commission would oppose receipt of regulatory authority for the high-level waste tanks at the Hanford Reservation and other projects that DOE is considering, such as production of tritium and other reactor-produced isotopes.

This suboption would run counter to the underlying bases of the Advisory Committee recommendations, that external regulation of DOE facilities would ensure adequate attention to protection of public health and safety, to increase the credibility of DOE's overall safety, and to provide the public with a greater chance to be involved.

If successfully implemented, this suboption would require no additional resources.

Suboption 3B: Accept Jurisdiction for DOE Facilities on an Incremental Basis Only

Under this suboption, NRC would continue jurisdiction over those DOE facilities it now regulates, and would accept responsibility for regulating additional DOE facilities on an incremental basis under existing statutory authority. However, NRC would oppose new legislation to give it broad responsibility for regulating DOE nuclear facilities.

NRC would endorse existing law, under which a DOE facility could come under the Commission's jurisdiction as a result of a DOE privatization initiative, or a new facility could be one of the facility types noted in Section 202 of the Energy Reorganization Act. This suboption is consistent with NRC's past policy of accepting jurisdiction over DOE facilities on an incremental basis. If this suboption were selected, for example, the Commission would endorse receipt of regulatory authority for the high-level waste tanks at the Hanford Reservation.

NRC could either endorse receipt of authority for all other projects that DOE is considering, or could work with DOE to develop a basis for prioritizing acceptance of authority over some DOE nuclear activities. For example, priority could be given to facilities at which NRC regulation would have the greatest potential to benefit public health and safety and add credibility to DOE operations. Higher priority might also be given to facilities that NRC already has experience with, such as reactors or high-level waste and spent fuel storage facilities, so that NRC's regulation would be most cost effective.

This suboption would not permit NRC to avoid all of the difficulties associated with the assumption of regulatory authority over those DOE activities that are mentioned in the "Discussion" section, but an incremental assumption of authority could probably make the challenges more tractable. That is, fewer Commission resources would be needed than for a broad assumption of authority over some DOE nuclear facilities, and there would be less potential for a disruption of NRC's current regulatory program. On the other hand, legislated receipt of broad authority over DOE nuclear facilities would almost certainly be accompanied by additional resources, whereas the increased resource needs associated with an incremental assumption of authority are unlikely to be recognized by Congress.

Concerning other aspects, although the possibility that DOE might have difficulty meeting NRC's current standards, and although the issues often associated with extending regulatory authority over another Federal agency would remain, their resolution would be expected to be easier on an incremental basis.

NRC would oppose new legislation giving it broad authority over DOE nuclear facilities on the bases discussed in Option 1 (above).

Resource needs associated with this suboption would depend on which DOE facilities would come under NRC's regulatory authority.

Option 4: Take No Position on Accepting Broad Responsibility for DOE Facilities

NRC would neither seek nor object to receipt of additional responsibility through legislative change. NRC would continue its jurisdiction over those DOE facilities it now regulates, and would accept responsibility for regulating additional DOE facilities on an incremental basis consistent with existing statutory authority.

This option is identical to Option 3 with respect to receipt of regulatory responsibility for DOE facilities on an incremental basis. NRC would endorse incremental receipt of additional authority over DOE facilities as a result of a DOE privatization initiative, or through DOE's development of a new facility that fell under Section 202 of the Energy Reorganization Act. The problems associated with incremental assumption of authority over DOE would remain as described in Option 3.

Under this option, the Commission would offer no opinion on whether it should receive authority for a broad range of DOE facilities. This differs from Option 1 where the Commission would actively support receipt of additional responsibilities and Option 3 where the Commission would oppose legislation to give it broad responsibility for regulating DOE nuclear facilities.

Although NRC would offer no opinion on receipt of broad authority over DOE nuclear facilities, it would continue to provide its estimates of the resource needs associated with whatever alternatives DOE or the Congress might be considering.

V. COMMISSION'S PRELIMINARY VIEWS

Staff actions regarding the various options should be held in abeyance pending the Commission's final decision on this issue paper. The Commission's preliminary views are:

The Commission preliminarily favors Option 4. This view would be consistent with the position the Commission has taken on this issue in the past; that is, the NRC has not actively pursued the added responsibilities that would result from regulating DOE activities but, given adequate resources and a reasonable time schedule to develop and initiate a regulatory program, the NRC could provide adequate regulatory oversight of DOE, if asked.

If NRC were to be given added regulatory oversight of DOE facilities, the Commission would prefer that the regulatory responsibilities be placed on the NRC on an incremental basis and that some type of prioritization methodology be used to determine the types of DOE facilities that, if subject to NRC oversight, would provide the greatest potential benefit to public health and safety.

Since the Commission is tentatively accepting the option that the NRC will not take a position on accepting broad responsibility for DOE facilities (Option 4), it would neither encourage nor oppose new legislation giving it broader authority over DOE nuclear facilities.

ACRONYMS

AEA	Atomic Energy Act
CERCLA	Comprehensive Environmental Response Compensation and Liability Act
DNFSB	Defense Nuclear Facilities Safety Board
DOE	Department of Energy
DSI	Direction-Setting Issue
EPA	Environmental Protection Agency
FUSRAP	Formerly Utilized Sites Remedial Action Program
FY	fiscal year
HLW	high-level waste
IOAA	Independent Offices Appropriations Act of 1952
ISFSI	independent spent fuel storage installations
LWR	light-water reactor
MC&A	material control and accounting
MOU	memorandum of understanding
NARM	naturally occurring and accelerator-produced radioactive material
NASA	National Aeronautics and Space Administration
NRC	Nuclear Regulatory Commission
OBRA-90	Omnibus Budget Reconciliation Act of 1990
OSHA	Occupational Safety and Health Administration
SNM	special nuclear material
UMTRCA	Uranium Mill Tailings Radiation Control Act

DSI 2

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32

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