STATEMENT OF

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SENATE COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS

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Mr. Chairman, members of the Committee,

Introduction

I appreciate this opportunity to appear before your Subcommittee to discuss the FY 1980 program activities and resource requirements for the Office of Nuclear Material Safety and Safeguards (NMSS). Accompanying me today are Robert Burnett, Director of the Safeguards Division, Richard Cunningham, Director of the Fuel Cycle and Material Safety Division, and John Martin, Director of the newly created Waste Management Division. In my testimony today, I will discuss some of the more significant accomplishments of the past year, share with you my views on the substantive issues confronting us now, and present our resource requirements to meet the program needs we have forecast for FY 1980.

Under the Energy Reorganization Act of 1974, NMSS is charged with the specific responsibility for licensing and regulating all nuclear facilities and materials, except reactors, subject to regulation under the Atomic Energy Act of 1954, as amended, associated with the possession, use, transport and disposal of nuclear materials. Our regulatory responsibilities encompass uranium mills, uranium conversion facilities, fuel fabrication plants, spent fuel storage facilities, and waste disposal sites. We also certify transport containers, and we license radioisotopes used in medicine, industry and science.

Our licensing and regulatory programs are designed with one primary objective in mind. This objective is to protect the public health and safety, as well as the environment, from any adverse effects associated with the use of nuclear materials and the operation of nuclear fuel facilities which fall within our regulatory jurisdiction. Included within this objective is our responsibility to safeguard the public from the theft and illicit use of nuclear materials, and from incidents arising from threats or sabotage to nuclear fuel cycle facilities. To accomplish this objective, NMSS manages three major programs: Safeguards, Fuel Cycle and Material Safety, and Waste Management. I will discuss each of these programs in turn. But first, I wish to note that in carrying out these programs, NMSS depends upon the assistance of other NRC offices who are engaged in technical activities which directly support our programs. The Office of Nuclear Regulatory Research, the Office of Standards Development, and the Office of Inspection and Enforcement all provide such assistance. Representatives from each of these offices will discuss their budget requests in detail and will indicate how those requests relate to NMSS programs.

Safeguards Program

To accomplish our safeguards objectives, we specify requirements for the application of appropriate safeguards measures in NRC regulations, 10 CFR Parts 70 and 73, and in licenses issued by the Office of Nuclear Material Safety and Safeguards. The basic techniques used to safeguard nuclear material are physical protection, material accountability and contingency planning.

We are currently in the process of strengthening our regulations to provide an increased physical protection capability. A draft amendment to the Physical Protection Rule, 10 CFR Part 73, was published in the Federal Register for public comment during FY 1977. The large number of comments from the public were carefully considered and consolidated into another draft rule which was published for comment last August. The final rule is scheduled for publication in mid-1979. The new rule will require protection against a higher level of postulated threat than is currently required through present regulations. This new rule will culminate four years of intense NRC activity designed to elevate physical security of the private nuclear fuel cycle to a level that will provide greater confidence that these activities are properly secure.

In another area, we have moved to strengthen the overall safeguards program by requiring physical security of additional special nuclear materials commensurate with international standards. When this proposed

rule becomes effective in mid-1979, we will have graded requirements for three different categories of special nuclear material. This means that NRC physical security requirements will soon cover a broader spectrum of special nuclear material and over a wider variety of areas than is presently the case.

The next safeguards subject deals with material control and accounting. We are considering recommending revisions to the material control and accounting requirements in 10 CFR 70 based on a staff report which was completed in April 1978. This report clarified the role of material control and accounting in the NRC domestic safeguards program, and recommended short-term and long-term improvements that can be implemented to supplement existing material control and accounting programs. We are preparing a proposed Material Control and Accounting Upgrade Rule and plan to publish it for public comment during FY 1980. After modifying the proposed rule to incorporate public comments, the final rule will be published in FY 1981.

In addition to our requirements of the systems of physical protection and material control in place at a licensed facility or during transportation, we have also required licensees to develop safeguards contingency plans. These plans provide for a structured, orderly, and timely response to any attempted theft, sabotage, or threat involving nuclear material. These plans will result in organizing licensee resources in such a way that, in the event of a safeguards contingency, the appropriate agencies and people will be identified, their responsibility specified, and their responses coordinated in a timely and effective manner.

During FY 1977, the NRC formulated and published for public comment a proposed rule, which requires nuclear fuel cycle licensees to develop and implement safeguards contingency plans. The final rule and associated regulatory guides were published during FY 1978, and contingency plans initiated in response to this rule are presently being reviewed by NMSS.

Should the need arise, state and Federal resources could be called into action through the NRC Incident Response Program. This program provides for implementing the headquarters level contingency plan and response procedures which will coordinate the efforts of key Federal, state, and local agencies in order to provide appropriate responses in the event of a safeguards contingency. The draft of a headquarters level contingency plan is now being augmented with a transportation appendix and will be used along with the results of training experience to guide development of NMSS procedures. In support of the headquarters contingency plan, interagency memoranda of understanding are being developed with other Federal agencies that can assist NRC in the event of a safeguards contingency.

A threat assessment system is also being developed. This system will determine capabilities, characteristics, and trends of any present or potential threat, integrate and correlate information from diverse sources relating to such threats, and quickly identify, in time-sensitive situations, indicators that require the implementation of extra safeguards measures.

The NRC staff is currently evaluating the effectiveness of material control and accounting and physical protection safeguards as these requirements are being implemented at nuclear fuel cycle facilities. These evaluations are being conducted in accordance with a comprehensive evaluation plan approved by the Commission in May 1977. The evaluations involve a four-phase review of all safeguards programs incorporating the following.

- Physical Security Assessment
- Material Control and Accounting Assessment
- Exterior Assault Appraisal
- Diversion Path Survey

We are providing copies of our classified evaluation reports to the House Subcommittee on Energy and the Environment; the House Subcommittee on Energy and Power; the Senate Subcommittee on Nuclear Regulation; and the Senate Subcommittee on Energy, Nuclear Proliferation and Federal Services.

Thus far, while the reviews have not disclosed any safeguards problems which warrant emergency remedial action, they have revealed in certain cases a need for licensee management to direct serious attention to this important area of their operation.

Finally, I would like to discuss briefly with the committee our safeguards efforts in the international community. Under the Nuclear Non-Proliferation Act of 1978, the NRC conducts physical protection reviews before the United States exports nuclear material and sensitive equipment abroad.

As part of the export review process, we in NMSS evaluate the receiving country's physical protection program. Also, as a result of a recent Commission decision, we plan to review the adequacy of the country's program for material control and accounting and the effectiveness of implementations of IAEA safeguards in that country. NRC works with the State Department, the IAEA, and other agencies to obtain information needed to ensure that any special nuclear materials that we export will be protected from theft or diversion to military uses.

We have expended considerable effort to prepare for the implementation of the US/IAEA Safeguards Agreement, and more effort will be required when the Agreement is implemented. The draft Agreement is awaiting Senate consent to ratification. Under the US/IAEA Safeguards Agreement, IAEA safeguards will be put into effect in approximately 200 licensed facilities beginning 90 days after the Agreement is approved.

We also are engaged in a number of other activities to improve international safeguards. These include development of an Interagency Action Plan to upgrade IAEA safeguards, technical consultation to the International Fuel Cycle Evaluation (INFCE) and the Non-Proliferation Alternative Systems Assessment Program (NASAP) efforts and evaluation of IAEA Safeguards Implementation Reports.

I estimate that the Safeguards Program which I have highlighted will require 89 people and $2,530,000 in contractual support funds for FY 1980.

Fuel Cycle and Material Safety Program

As indicated at the beginning of my remarks, the Office of Nuclear Material Safety and Safeguards is also responsible for the health, safety, and environmental regulation of nuclear materials, fuel cycle facilities, and shipping containers.

During FY 1980, we expect to complete 49 major licensing actions, an increase of approximately 20 percent over this year's caseload. Twenty-six of the completions will be uranium recovery operations and the remainder for other fuel cycle facility and transportation activities.

The front end of the fuel cycle includes uranium mills, UF_6 production plants and fuel fabrication plants which produce the fuel for nuclear reactors. Over the past two years, we have seen a significant increase of interest in uranium recovery operations, and a very recent survey of the industry indicates that increased activity in this field can be expected to continue for the next few years. This industry activity is reflected in the number of applications we have received and expect to receive in the future not only for conventional uranium mills but also for new methods of uranium recovery such as solution mining. In FY 1979 we plan to take licensing action on nine conventional uranium milling projects and on fourteen additional projects using other methods for uranium recovery.

In addition, in FY 1979, we will:

(1) provide technical assistance to Agreement States on four uranium milling projects under their jurisdiction;

(2) begin to implement new EPA environmental radioactivity standards which were issued in 1977 and which will become effective for uranium mills in December 1980; and

(3) publish, in final form, the Generic Environmental Impact Statement (GEIS) on uranium milling.

In Fiscal Year 1980, we project that we will take a total of 40 major licensing actions related to NRC licensed plants in the front end of the fuel cycle. In addition, we will begin to implement new requirements which will result from the GEIS on uranium milling.

Our other activities related to the front end of the fuel cycle, for example licensing actions for fuel fabrication plants, will grow gradually over the next few years and we do not expect any significant increase in budgetary needs for these activities.

The 1980 Fuel Cycle budget will also allow us to continue to provide some limited technical assistance to Agreement States in their uranium recovery licensing actions and for NRC review of DOE remedial action to be applied to inactive mill tailings sites. The "Uranium Mill Tailing Radiation Control Act of 1978" was enacted after our budget was prepared and will require more effort than originally planned for technical

assistance to Agreement States and for the review of and licensing responsibilities for DOE remedial actions. We are now in the process of determining our additional resource requirements resulting from this Act.

In the back end of the fuel cycle, the storage of spent fuel is an area which is receiving a great deal of emphasis and which will be widely influenced on the final outcome of the recommendations of the Interagency Review Group on Waste Management. During FY 1978 we issued a draft Generic Environmental Impact Statement (GEIS) on the Handling and Storage of Spent Light Water Power Reactor Fuel which projects domestic storage capacity needs to the year 2000. This GEIS assesses environmental impacts of such storage. Presently the storage of spent fuel at independent spent fuel storage installations is licensed pursuant to 10 CFR 70, "Domestic Licensing of Special Nuclear Material." While this regulation is adequate and NRC's licensing authority under it has been affirmed in Federal Court, Part 70 does not contain specific details about spent fuel storage. Such a proposed regulation identifying the specific licensing requirements for independent spent fuel storage installations has been issued for comment. Guidance is being developed to assist applicants in meeting the requirements of the regulations. In FY 1979, we will issue the final GEIS on spent fuel storage and the related rule for licensing of such installations.

We are continuing our review of the proposed expansion of the spent fuel storage capacity at the General Electric facility at Morris, Illinois. These expansion plans could be modified by possible

DOE decisions to provide for additional increased capacity at this site or developing capacity at another site. According to our latest information, DOE is considering use of the General Electric facility or the spent fuel storage pool at the Allied-General Nuclear Facility at Barnwell, South Carolina, as independent spent fuel storage installations. Modifications required to provide the storage capacity being considered by DOE will need our review and evaluation in FY 1980. Some utilities and other nuclear industry firms are developing plans for independent spent fuel storage installations in the event that the proposed DOE legislation is not enacted. One firm is prepared to submit a standardized spent fuel pool design this year for our review and approval for subsequent use by utilities. TVA also is developing plans for possible submittal of a spent fuel storage application in FY 1980. Depending on DOE actions, NRC expects that it may receive applications for review and evaluation for two DOE proposals or several commercial storage installations to provide adequate spent fuel storage capacity through the late 1980's.

The problem of the eventual disposition of the Nuclear Fuel Services (NFS) facilities and wastes at West Valley, New York remains. DOE is currently developing alternatives as a result of the Congressionally mandated studies. On our part, we are actively pursuing with NFS the development of data and information for decontamination of the reprocessing plant and related facilities that will be required regardless of decisions concerning decommissioning or modification of the plant for other applications. Our work on the safety status of the facility will

continue in FY 1980 with a focus on investigations of the waste tanks to provide further assessments about their capability for continued storage of the high-level liquid waste until final disposition is accomplished.

During FY 1979 we will complete the special natural phenomena resistance reviews for five existing advanced fuel R&D facilities to support license renewal decisions for these plants. Review efforts forecast for FY 1980 for these facilities include evaluation of three expected license amendments for plant modifications, in addition to the review of the decommissioning procedures of two other plants which have terminated operations.

We have begun the planned update of the Environmental Survey of the Uranium Fuel Cycle to reassess the environmental impact of all portions of the uranium fuel cycle. This upgraded survey will provide the basis for revised generic rulemaking to be used in preparing assessments of the environmental effects of the fuel cycle in reactor licensing. We plan to issue the draft of this survey in early FY 1980. The final survey and rulemaking are scheduled for FY 1980.

The demands on the radioisotopes licensing program for nuclear materials used in the medical, academic, and industrial fields will continue to be heavy in FY 1980. We anticipate taking more than 7200 licensing actions in FY 1980.

As a result of management emphasis and intensive staff effort this year, we have accomplished what I consider to be one of our outstanding achievements of FY 1978. The large backlog of applications we expected to carry into FY 1979 was reduced from 2,000 to 1,000, and the average turnaround time was reduced to 70 days compared to the 120 days that we projected at this time last year. We will continue progress this year toward achieving our goal in FY 1980 of an average 30-45 day turnaround and a manageable backlog. We also initiated a pilot program in FY 1978 for performing radioisotopes licensing at the NRC regional level and have recently expanded this program to include two additional states in FY 1979.

In addition to the direct licensing actions, we have initiated a generic environmental impact study of consumer products which contain radioactive material. Our current policy for regulating distribution of consumer products was established in 1965. We will use this GEIS to recommend a new policy, if appropriate, to the Commission. We hope that FY 1981 will see any recommendations for new policy implemented.

We are continuing the study which was initiated in FY 1978 to determine the need for Price-Anderson indemnification for radioisotopes materials licensees. We expect that the study will be completed and staff recommendations made in FY 1979.

In FY 1978, as part of our program to regulate containers used to ship radioactive materials, we completed testing and certification of a package design for shipping plutonium by air. We are beginning to implement standard methods of analysis for evaluating package designs in FY 1979 and will continue to modify and improve analytical methods through FY 1980. We also expect in FY 1980 to review three major package designs and three amendments, and to review 75 DOE and licensee minor package applications and renewals. Presently six spent fuel cask designs are certified for shipment of spent fuel from Pressurized Water Reactors (PWR's) or Boiling Water Reactors (BWR's). These six designs include four truck casks and two rail casks. Our present information is that six rail casks and 14 truck casks have been built and six truck casks are under construction. Two additional rail cask designs are under review.

Several studies are underway on the risks to public health and safety from transportation of radioactive materials. Recently, in reviewing its regulations in this area, the NRC staff has completed one environmental statement on transportation by air and other modes, concluding that the risk is very small and that present regulations are adequate. Additional studies are proceeding on the unique aspects of transportation through urban areas, on the need to safeguard spent fuel shipments, and on the relationship of the package standards in the regulations to accident conditions in each mode of transportation. The results of these studies will be factored into our regulations and licensing reviews as appropriate.

We estimate that to carry out the Fuel Cycle and Material Safety program, which I have outlined, will require an authorization of

118 personnel and $4,114,000 in contractual support funds for FY 1980. This includes an increase of one new position and $74,000 in program support funds. The additional resources are primarily for an increase in the uranium fuel cycle plant licensing caseload and for review of DOE proposed remedial actions for inactive mill tailing sites.

Waste Management Program

The management of nuclear waste continues to receive major emphasis within the Office of Nuclear Material Safety and Safeguards (NMSS). In keeping with the national significance of this program, the Commission has elevated the stature of the program by establishing a Waste Management Division within the Office. We intend to continue to focus management attention on this important area of our responsibilities.

Our planned accomplishments for FY 1979 in the area of high-level waste include the achievement of several critical milestones. We plan to issue for public comment the administrative regulation, 10 CFR Part 60. This regulation establishes the general licensing procedures for geologic disposal. We also plan to issue to the states, for their comment, Draft Technical Criteria for High-Level Waste Management. (Public comment on the Draft Technical Criteria will be obtained during FY 1980.) Also during FY 1979, we plan to complete the development of a major portion of our analytical models for predicting long-term migration of radioactive materials from a deep geologic repository in bedded salt.

For FY 1980, we plan to issue the final regulation for geologic disposal of high-level wastes, 10 CFR 60. We also plan to complete the development of staff technical positions necessary to begin the first step of a license application -- the Preliminary Site Review -- for the disposal of spent fuel in bedded salt. A very significant milestone for FY 1980 is the extension of our technical program to consider alternative media. We will look next at basalt and domed salt. We believe these additional studies could be completed in approximately two to three years if they receive adequate support.

In the area of Low-Level Waste, in FY 1979 we intend to complete development of a proposed system for classifying radioactive waste and to complete studies of alternatives to shallow land burial. We will also finish work on a study of the chemical toxicity of low-level wastes, and a model for projecting waste disposal needs. We will also be ready to publish proposed rules and a supporting draft GEIS report on Uranium Mill Tailings.

For FY 1980 we will be able to publish proposed rules and supporting draft Environmental Impact Statements on classification of radioactive wastes and disposal of low-level wastes by shallow land burial.

These are ambitious goals that we have set out to achieve. They will require an extensive technical support and analytical base. We have recently presented to the Commission a preliminary waste management program plan that lays out for the first time the range of technical activities across the agency that will be required in order to meet the goals we have set for ourselves as well as the schedules that we believe

will be recommended by the IRG. That plan also lays out the costs of such a program. These costs are in excess of funds currently available to us in the Fiscal Years 1979 and 1980. The Commission is currently reviewing ways that we can increase the resources for the waste management program using those currently available within the agency as well as considering the need to seek additional resources from the Congress.

There are a number of program uncertainties identified in our plan which I would like to mention briefly. First, there is the uncertainty over NRC's role regarding the Waste Isolation Pilot Plant. Our budget reflects a small level of effort in Fiscal Year 1980 to get started on a review of an application. We are also aware of the Congressional restriction on use of FY 1979 funds for licensing WIPP. However, it seems prudent for us to budget for resources to handle this potential workload. If it is the sense of the Congress that NRC should not license the repository, we would then expect to review and comment on DOE's Safety Report and Environmental Reports, as would any other government agency, and this will require resources.

The Draft Report of the Interagency Review Group (IRG) poses additional uncertainties. The IRG was established by the President to formulate recommendations for the establishment of an Administration policy with respect to the long-term management of nuclear wastes and supporting programs to implement this policy. The IRG issued a draft report for public comment in October 1978. Among the numerous recommendations contained in that draft report, five will have significant impact on the NMSS Waste Management Program if adopted. These recommendations relate to:

1) an extension of NRC licensing authority;

2) the state role in the licensing process;

3) the NRC role in licensing any interim high-level waste (HLW) disposal facilities such as the "intermediate scale facilities" or "pilot commercial waste respository";

4) the range of geologic environments considered for the first commercial HLW repository; and

5) the implementation of the President's Spent Fuel Policy.

The first two of these issues are the subject of current studies by the NRC in response to the FY 1979 NRC Authorization Act, with reports due to Congress by March 1, 1979. Without pre-empting the conclusions of these reports, I will note that any increase in NRC licensing responsibilities or increased State involvement in the licensing process will require increased resources within the NMSS Waste Management Program. The magnitude of those additional resources will be addressed along with the recommendations in the study reports where appropriate.

The IRG recommended that work proceed promptly to permit siting of one or more intermediate scale facilities (ISF) in different emplacement media and geologic environments. The IRG also recommended that all ISF be licensed. The schedule chosen to implement any such facilities, as well as the number and variety of emplacement media and geologic environments, will have an impact upon licensing time and the resources required by NMSS to license the facilities.

In addressing the first commercial HLW repository, the IRG delineated two options involving: (1) a "limited range of geologic environments" and (2) a "broader range of geologic environments." As with the interim facilities discussed above, the variety of emplacement media and geologic environments chosen for consideration will impact the licensing time and the NMSS resources required to conduct a licensing review.

The foregoing discussion of the potential impacts of the IRG recommendations is not meant to be exhaustive. Rather, it is meant to indicate the considerable degree of uncertainty that NMSS must factor into its Waste Management Program planning. In the face of that uncertainty, perhaps we should be pursuing a program to respond to all options. But, because of the large amount of resources involved, we have made a conscious decision not to do this. Instead, we have, in the past, elected to pursue a program to license the first repository in bedded salt, consistent with our understanding of DOE's program. However, DOE now appears to be conducting development programs in various alternative media simultaneously. Based on the available FY 1979 resources, we intend to begin studies to extend our knowledge of other media, sequentially, beginning in FY 1980.

For FY 1980, the President's budget contains a request for 55 people and $8.975M in program support funds to continue our recommended Waste Management program. As I mentioned, we have identified areas where our program objectives may be in excess of the funds budgeted. In addition, as the uncertainties I referred to earlier are resolved,

Presidential decision regarding the IRG effort, outcome of our program plan, and Congressional action relating to licensing WIPP, it may become necessary for us to seek a budget amendment or supplement.

The combined request for the Office of Nuclear Material Safety and Safeguards is for 297 positions and $15,779,000 in contractual support funds. This includes the Safeguards Program, the Fuel Cycle and Material Safety Program, the Waste Management Program, and our Program Evaluation and Policy Management functions.