

The Secretary of Energy
Washington, DC 20585

1998-006427

August 14, 1998

The Honorable John T. Conway
Chairman
Defense Nuclear Facilities Safety Board
625 Indiana Avenue, N.W.
Suite 700
Washington, D.C. 20004

John
Dear Mr./Chairman:

I am responding to your May 14, 1998, letter to former Secretary Peña requesting information to assist the Defense Nuclear Facilities Safety Board in preparing a report to Congress with evaluations and assessment of proposals to externally regulate the Department of Energy's (DOE) defense nuclear facilities.

We believe there will be clear benefits from external regulation of worker and nuclear safety at DOE facilities. However, for these benefits to be realized, the transition to external regulation must be carefully designed and implemented. To that end, former Secretary Peña and Chairman Jackson, representing the Nuclear Regulatory Commission, created the Pilot Program on External Regulation of DOE Nuclear Facilities, which is described in a November 21, 1997, Memorandum of Understanding between the two agencies (Enclosure 1). The Pilot program will gather information to allow us to answer many of the questions contained in your May 14, 1998, letter. Until issuance of the Pilot Program final report, our preliminary responses are given as Enclosure 2 for your use.

We look forward to our continued dialogue and discussions. Questions regarding our response may be directed to Mr. Joseph Fitzgerald of my staff. He may be reached at (301) 903-5532.

With best wishes,

Sincerely,

A handwritten signature in cursive script that reads "Betty".

Elizabeth A. Moler
Acting Secretary

Enclosures



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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

November 21, 1997

The Honorable Federico F. Peña
Secretary of Energy
Washington, D.C. 20585

Dear Mr. Secretary:

The U.S. Nuclear Regulatory Commission (NRC) is pleased to transmit the enclosed signed Memorandum of Understanding (MOU) between the Department of Energy (DOE) and the NRC that establishes a Pilot Program on External Regulation of DOE Nuclear Facilities by the NRC. This MOU represents the joint efforts of members of the DOE and NRC staff, and provides an early indication of success in the upcoming cooperative effort between our two agencies.

As you know, a team of individuals drawn from NRC Headquarters and Region IV, DOE Headquarters and the Berkeley Site Office, as well as representatives from the State of California will visit Lawrence Berkeley National Laboratory (LBNL) next week to begin the pilot project.

The Commission has requested that, the NRC staff, in consultation with DOE prepare a revised MOU, that will be available for your signature and mine at the time of conclusion of the LBNL pilot. The revised MOU would incorporate lessons learned during the process, and allow DOE and NRC to promptly seek legislation, if agreed, for NRC regulatory authority for a specific pilot facility or class of facilities, on the basis of information gained during this first pilot and each of the successive pilots in the pilot program.

I am looking forward to continuing our work on this very important effort.


Sincerely,

Shirley Ann Jackson

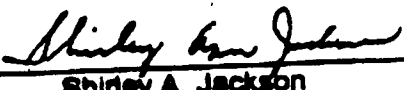
Enclosure: As stated

**MEMORANDUM OF UNDERSTANDING
BETWEEN THE
U.S. DEPARTMENT OF ENERGY
AND THE
U.S. NUCLEAR REGULATORY COMMISSION**

**PILOT PROGRAM
ON EXTERNAL REGULATION
OF DOE FACILITIES BY THE NRC**



Date 10/20/97
Federico F. Peña
Secretary of Energy
U.S. Department of Energy



Date 11/21/97
Shirley A. Jackson
Chairman
U.S. Nuclear Regulatory Commission

**MEMORANDUM OF UNDERSTANDING
BETWEEN THE
U.S. DEPARTMENT OF ENERGY
AND THE
U.S. NUCLEAR REGULATORY COMMISSION**

**PILOT PROGRAM ON
EXTERNAL REGULATION OF DOE FACILITIES BY THE NRC**

I. PURPOSE

The purpose of this Memorandum of Understanding (MOU) between the U.S. Department of Energy (DOE) and the U.S. Nuclear Regulatory Commission (NRC) is to establish the framework for a pilot program to support a joint recommendation by DOE and NRC to Congress on whether NRC be given statutory authority to regulate nuclear safety at DOE nuclear facilities. The intent of this pilot program is for NRC to "simulate regulation" (as defined herein) on a series of pilot facilities to help both agencies gain experience related to NRC regulation of DOE facilities. It will also provide an opportunity to develop actual information on the costs and benefits of external regulation.

II. BACKGROUND

In 1994, legislation was introduced in the House of Representatives that would have subjected new DOE facilities to immediate external regulation and would have created a stakeholder group to study external regulation of existing facilities. As an alternative to that approach, Hazel O'Leary, the Secretary of Energy at that time, in January 1995 created the Advisory Committee on External Regulation of DOE Nuclear Safety (Advisory Committee).

The Advisory Committee was charged with providing advice and recommendations on whether and how new and existing DOE facilities and operations might be regulated to ensure nuclear safety.

In its December 1995 report, *Improving Regulation of Safety at DOE Nuclear Facilities*, the Advisory Committee recommended that essentially all aspects of safety at DOE's nuclear facilities be externally regulated. Secretary O'Leary accepted and endorsed the Advisory Committee's report and created the DOE Working Group on External Regulation (Working Group) to provide recommendations on implementation of the Advisory Committee's report. The recommendations made by the Working Group in its December 1996 report were: (1) NRC should be the external nuclear safety regulator and (2) the transition to external regulation should be phased in.

Benefits of external regulation are expected to include improved safety while also facilitating DOE's ongoing transition to performance-based contracting and a more efficient corporate style of safety and health management. In the view of the Advisory Committee, an external regulator, free of the responsibility for DOE's missions, and not answering to DOE, can ensure that safety receives consistent and adequate attention. External regulation would also ensure more effective enforcement by placing such authority in independent hands engaged only in achievement of safety. Taken together, the move to external regulation is seen as the best way to ensure the safety of DOE nuclear facilities, protect the safety and health of workers across the DOE complex, and build public trust.

Both the Advisory Committee and the Working Group concluded that the transition to NRC regulation would involve significant legal, financial, technical and procedural adjustments for

both agencies.

In September 1996, the NRC published for comment a series of Direction Setting Issue (DSI) Papers under its Strategic Assessment and Rebaselining initiative. One of the issue papers, DSI 2, addressed options for NRC's position on the regulation of DOE facilities. In March 1997, after considering public comments, along with the December 1996 DOE decision to seek transfer of oversight to NRC, the Commission endorsed seeking the transfer to NRC of responsibility for the regulatory oversight of certain DOE nuclear facilities contingent on adequate funding, staffing resources, and a clear delineation of the authority NRC will exercise over the facilities. In addition, the Commission directed the NRC staff to convene a high-level NRC Task Force to identify, in conjunction with DOE, the policy and regulatory issues needing analysis and resolution.

Therefore, both Secretary Peña of the Department of Energy and Chairman Jackson representing the Nuclear Regulatory Commission have agreed to pursue NRC regulation of DOE nuclear facilities on a pilot program basis.

III. DEFINITION OF SIMULATED REGULATION

Regulation, in contrast to simulated regulation used in this pilot program, generally means that the regulator has the statutory authority to: (1) establish standards and requirements; (2) apply the standards and requirements to particular operations, sometimes through licensing or permitting actions; (3) conduct inspections against applicable standards and requirements and licensing conditions; and (4) bring enforcement actions against the regulated entity for violations of the standards and requirements. Simulated regulation, as

defined for the purposes of this pilot program, means that NRC will test regulatory concepts and evaluate a facility and its standards, requirements, procedures, practices, and activities against standards that NRC believes would be appropriate to ensure safety in view of the nature of the work and hazards at that pilot facility. Simulated regulation will involve interactions with DOE, DOE's contractors, and NRC. Simulated regulation will include NRC inspections of each pilot facility to identify issues related to implementation. NRC's inspections will not result in enforcement actions to compel compliance with particular standards or requirements. However, significant inspection findings that impact health and safety will be transmitted promptly to the appropriate DOE organization for the pilot facility for review and corrective actions, as appropriate.

IV. SCOPE

This MOU establishes the overall framework for DOE and NRC cooperation in a pilot program for simulated regulation by NRC at selected DOE facilities. Implementation details for each pilot facility will be negotiated by DOE, NRC and DOE contractors in individual work plans.

The pilot program is expected to last two years. During these two years, between six and ten facilities will be evaluated. At the end of the two years, DOE and NRC will determine whether to seek legislation to give NRC authority to regulate individual or classes of DOE nuclear facilities.

This MOU provides for cooperation in seeking to obtain the necessary budgetary and staffing resources for NRC participation in the pilot program.

In addition, this MOU provides for cooperation in involving the public and other stakeholders in the pilot program and in the DOE and NRC decision on whether to seek external regulation at the end of the pilot program.

This MOU covers a pilot program for simulated regulation of nuclear safety and radiation protection of workers at the pilot facilities. It does not cover the industrial (non-nuclear) safety of workers at the pilot facilities. A parallel effort related to industrial safety of workers at some, if not all, of the pilot facilities is expected between DOE and the Occupational Safety and Health Administration (OSHA).

V. OBJECTIVES

The overall objective of the activities undertaken pursuant to this MOU is to provide DOE and NRC with sufficient information to determine the desirability of NRC regulatory oversight of DOE nuclear facilities and to support a decision whether to seek legislation to authorize NRC regulation of DOE nuclear facilities. Specifically, DOE and NRC seek to obtain sufficient information about a set of DOE nuclear facilities to:

- A. Determine the value added by NRC regulatory oversight of activities at a pilot set of DOE nuclear facilities.**
- B. Test regulatory approaches that could be used by NRC in overseeing activities at a pilot set of DOE nuclear facilities.**
- C. Determine the status of a set of DOE pilot facilities with respect to meeting existing**

NRC requirements , or acceptable alternatives, and to identify any significant safety issues.

- D. Determine the costs (to DOE and NRC) related to NRC regulation of the pilot facilities and other DOE facilities that might be in a similar class and condition.**
- E. Evaluate alternative regulatory relationships between NRC, DOE, and DOE contractors at the pilot facilities. Identify DOE contract changes that would be needed to provide for NRC oversight of contractor operations.**
- F. Identify issues and potential solutions associated with a transition to NRC oversight of DOE nuclear facilities.**
- G. Identify legislative and regulatory changes necessary or appropriate to provide for NRC regulatory oversight of DOE nuclear facilities.**
- H. Evaluate how stakeholders should be involved if the NRC assumes broad external regulatory authority over DOE nuclear facilities.**

VI. AUTHORITY

A. Department of Energy

DOE is entering into this MOU pursuant to the Atomic Energy Act of 1954, as amended, including but not limited to Sections 31, 33, 91 and 161(i); the Energy

Reorganization Act of 1974, including Section 104; Sections 301(a) and 641 of the Department of Energy Organization Act of 1977; and, the Economy Act as amended.

B. Nuclear Regulatory Commission

NRC is entering into this MOU pursuant to the Atomic Energy Act of 1954, as amended; the Energy Reorganization Act of 1974; and, the Economy Act of 1932, as amended.

VII. AGREEMENTS BETWEEN PARTIES

A. Responsibilities

Department of Energy

The Assistant Secretary for Environment, Safety and Health will be responsible for the overall implementation of the terms of this agreement. A technical point of contact will be appointed for each individual pilot facility.

Nuclear Regulatory Commission

The Deputy Executive Director for Regulatory Programs will be responsible for the overall implementation of the terms of this agreement. An NRC technical point of contact will be appointed for each individual pilot facility.

B. Coordination Activities

1. DOE and NRC agree to enter into an Interagency Agreement to reimburse NRC, where legally permitted and not otherwise covered by appropriations, for its agency cost associated with NRC activities to achieve the objectives of this MOU.
2. DOE and NRC agree to each establish a Task Force to act for them in this cooperative project. These Task Forces may also evolve into or establish a joint review group to evaluate individual pilots and/or the pilot program.
3. DOE agrees to support an NRC request to the Office of Management and Budget (OMB) to authorize an increase in NRC's personnel ceiling by the amount necessary to carry out the activities provided for by this MOU.
4. If an issue arises in the implementation of this MOU which cannot be resolved at the staff level, within 30 days of reaching such a conclusion, the NRC and DOE agree to refer the matter to the Assistant Secretary of Environment, Safety and Health (DOE) and the Deputy Executive Director for Regulatory Programs (NRC).

C. Pilot Program Description

The pilot program will begin with three DOE pilot facilities selected by DOE and NRC. The objective is to complete between six and ten pilot facilities by the end of the two-year term. Pilots will be staggered throughout the two-year period as mutually agreed to by DOE and NRC. However, all pilots must be completed no later than two years from the effective date

of this MOU.

DOE and NRC agree to develop a detailed work plan for each pilot facility. These work plans will be prepared with extensive participation by the pilot site. The work plans will be developed to allow DOE and NRC to implement the intent and objectives of this MOU.

As soon as sufficient information has been obtained and analyzed for each of the pilot facilities, DOE and NRC personnel will prepare and provide to the Secretary and the Commission a report, and as appropriate briefings, on each facility that addresses the objectives in Section V of this MOU. Each report will examine the advantages and disadvantages of NRC regulating the pilot facility, as well as other DOE facilities in a similar class of facility.

Within three months after the two year pilot program ends, DOE and NRC personnel will prepare and provide to the Secretary and the Commission a report on the advantages and disadvantages of NRC regulating DOE nuclear facilities based on the pilot program experiences. The report will include a recommendation on which DOE nuclear facilities or which classes of DOE nuclear facilities should be externally regulated by NRC. If the Secretary and the Commission determine that some or all DOE nuclear facilities should be regulated by NRC, DOE and NRC will prepare draft legislation giving NRC such authority.

D. Stakeholder and Public Participation

1. Identification and assessment of the issues associated with external regulation are expected to require extensive coordination between DOE and NRC, other affected Federal agencies (e.g., Environmental Protection Agency, OSHA), the Defense Nuclear Facilities Safety Board, State governments, and other interested parties. DOE and NRC will develop a strategy to involve stakeholders, including the general public, throughout the pilot program.
2. Requests received by NRC under the Freedom of Information Act for information provided to NRC by DOE under this MOU will be referred to DOE for appropriate response.

VIII. OTHER PROVISIONS

- A. NRC's participation in the activities described in this MOU is contingent upon receiving adequate appropriations or reimbursements from DOE of NRC's full agency cost and an appropriate personnel ceiling for those activities. Special activities beyond the scope of this MOU may be negotiated for cost reimbursement as needed.
- B. For this pilot program, DOE will facilitate NRC interactions with DOE contractors to achieve the purposes of this MOU.
- C. Nothing in this MOU will limit the authority of either agency to exercise independently,

its authority with regard to matters that are the subject of this MOU.

- D. Nothing in this MOU alters DOE's authority to ensure the safety of any DOE nuclear facility that is part of the pilot program. Nothing in this MOU grants NRC any regulatory authority over DOE nuclear safety and radiation protection activities.**

- E. Nothing in this MOU establishes any right nor provides a basis for any action, either legal or equitable, by any person or class of persons challenging a government action or a failure to act.**

- F. This MOU is effective upon the date of signature by the last party. This MOU may be terminated by mutual agreement or by written notice of either party. Amendments or modifications to this MOU may be made upon written agreement of the parties.**

*** * ***



OFFICE OF THE
SECRETARY

MEMORANDUM TO:

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

November 13, 1997

ACTION: Paperiello, NMSS

Cys: Callan
Thadani
Thompson
Norry
Blaha
Collins, NRR
Martin, AEOD
Knapp, RES
Bangart, SP
Rathbun, NMSS

FROM:

L. Joseph Callan
Executive Director for Operations

John C. Hoyle
John C. Hoyle

SUBJECT:

STAFF REQUIREMENTS - SECY-97-237 - MEMORANDUM
OF UNDERSTANDING WITH THE DEPARTMENT OF
ENERGY

The Commission has approved the proposed Memorandum of Understanding (MOU) with the Department of Energy (DOE).

The staff should, in consultation with DOE, prepare a revised MOU that will be available for review and signature by the Secretary of Energy and the Chairman at the time of completion of the Lawrence Berkeley National Laboratory Pilot. The revised MOU should incorporate lessons learned and language that allows DOE and NRC to seek legislation for NRC regulatory authority for a specific pilot facility or class of facilities based on information from the pilot program. Some of the changes below reflect this approach. The cover letter to DOE transmitting the signed MOU should mention this need for a revision.

The following editorial changes should be incorporated in the next revision to the MOU:

1. On the signature page, insert 'NUCLEAR' between 'DOE' and 'FACILITIES.' Also, the signature block should be changed to 'Shirley Ann Jackson.'
2. On page 1, line 4, insert 'should' after 'NRC.' In line 7, insert 'nuclear' after 'DOE.'
3. On page 3, paragraph 3, line 1, add a comma after 'Jackson' and on line 2, add a comma after 'Commission.'
4. On page 4, last paragraph, line 2, replace 'At the end of the two years' with 'Over the course of this pilot program.'
5. On page 5, line 1, add a new sentence after

SECY NOTE:

THIS SRM, SECY-97-237, AND THE COMMISSION VOTING RECORD CONTAINING THE VOTE SHEETS OF ALL COMMISSIONERS WILL BE MADE PUBLICLY AVAILABLE 5 WORKING DAYS FROM THE DATE OF THIS SRM.

'facilities' which states: If deemed appropriate, a decision to seek legislation to give NRC authority to regulate a specific facility could be made in advance of the full two-year time frame. In the second full paragraph, line 3, delete 'at the end of the pilot program.'

6. On page 7, paragraph 1, line 4, insert 'of 1932' after 'Economy Act.'
7. On page 9, paragraph 4, line 3, insert commas before and after 'as appropriate.' The comma after the word "briefings" should be removed. Add a new sentence at the end of paragraph 4: Each report will be made available to stakeholders, including the Congress. Also on page 9, in the last line, insert a hyphen between 'two' and 'year.'
8. On page 9, insert a new paragraph prior to the last paragraph on this page:

Within three months after the first year of the pilot program ends, DOE and NRC personnel will prepare and provide to the Secretary and the Commission a report on the advantages and disadvantages of NRC regulating specific DOE nuclear facilities based on the first year pilot program experiences. The report will include a recommendation on which specific DOE nuclear facilities or which classes of DOE nuclear facilities should be externally regulated by NRC as well as draft legislation to implement the recommendation. If the Secretary and the Commission determine that particular DOE nuclear facilities or classes of DOE nuclear facilities should be regulated by the NRC, DOE and NRC will promptly submit draft legislation giving NRC such authority as part of the FY 2000 legislative program of the two agencies.

9. On page 10, paragraph 1, line 1, insert 'final' before 'report.' In line 4, insert 'as well as draft legislation to implement the recommendations' after 'NRC.' In line 6, replace 'prepare' with 'submit.' Also in line 6, insert 'as part of the FY 2001 legislative program of the two agencies' at the end of the sentence after 'authority.'
10. On page 11, item C., line 2, remove the comma after 'independently.'

(EDO) (NMSS)

(SECY Suspense:

4/30/98)
4/23/98

9700085

cc: Chairman Jackson
Commissioner Dicus
Commissioner Diaz
Commissioner McGaffigan
OGC
CIO
CFO
OCA
OIG
Office Directors, Regions, ACRS, ACNW, ASLBP (via E-Mail)
PDR
DCS

Enclosure 2

RESPONSES TO DNFSB QUESTIONS ON EXTERNAL REGULATION

Question #1: Congress referred to DOE's "proposal to place Department of Energy defense nuclear facilities under the jurisdiction of external regulatory agencies." To what extent, if any, is DOE's current position on the desirability of externally regulating DOE nuclear facilities different from that indicated in the DOE/NRC Memorandum of Understanding of 11/21/97? Please identify which defense nuclear facilities, if any, DOE believes should be subject to licensing or regulation and which defense nuclear facilities should continue to be subject to external non-regulatory oversight.

Response: DOE's position on external regulation has not changed from that given in the November 21, 1997, Memorandum of Understanding with the NRC. DOE believes there are benefits to external regulation; however, transition must be carefully designed and managed. In my testimony before the Committee on Science, Subcommittee on Basic Research and the Subcommittee on Energy and Environment on May 21, 1998, I stated that, "Our position today is consistent with the DOE working group on external regulation which recommended in 1996 that external regulation be phased in over 10 years, and after a two-year transition period." I further stated that, in consultation with NRC and OSHA, the Department intends to propose classes of DOE facilities for which external regulation can be responsibly implemented in the near future, and to submit the necessary legislation to the Congress on a phased-in basis. I also proposed certain civilian laboratories as the first candidates for external regulation. I noted that other facilities, such as some DOE weapons laboratories and production sites, will be more challenging to deal with, and that closure sites that will be shut down in the near future may never be appropriate for external regulation.

In order to gain real-time experience and information that will inform this effort, we established a two-year pilot program with the NRC in late 1997. Assessment methodology, policy issues, and other significant factors, such as those addressed in my testimony (attachment 1) are being evaluated first using facilities that are well managed and similar to those regulated by the NRC. We are now in the process of identifying the next few pilots that would fully expose all issues important to transition to NRC regulation. Candidate pilots include: the High Flux Isotope Reactor, the Annular Core Research Reactor, the Advanced Test Reactor, the High Flux Beam Reactor, the Hanford site, the Savannah River site, and the Idaho National Engineering and Environmental Laboratory. It should be noted that the Environmental Management pilot project that is chosen could include some defense nuclear facilities that would fall under the Board's current oversight.

However, after consulting with the congressional committees that oversee DOE defense facilities, we decided to exclude Defense Programs' research, development and production facilities as a class of facilities from the pilot program at this time. We are assuming oversight of these facilities will continue to be the responsibility of the Board, pending congressional actions responding to the report required by Section 3202 of the National Defense Authorization Act for Fiscal Year 1998 (P.L. 105-85).

Question #2: Please identify the regulatory framework DOE envisions as possibly appropriate for existing defense nuclear facilities, for new construction, and for decommissioning.

Response: DOE has not yet identified a particular regulatory framework. One of the objectives of the Pilot Program is to evaluate alternate regulatory frameworks appropriate for the diverse DOE nuclear operations. Licensing may be appropriate for new construction; however, certification or other more performance-based regulatory frameworks may be more appropriate for existing defense nuclear facilities and facilities scheduled for decommissioning. A preliminary list and discussion of options that could be considered is included in Chapter 5 (attachment 2) of the draft Lawrence Berkeley National Laboratory (LBNL) report. The possible options identified in that report are: DOE-only broad-scope license, UC-only broad-scope license, joint DOE/UC broad-scope license and dual broad-scope licenses. A copy of the draft LBNL report was sent to the Board on July 23, 1998.

Question #3: For each facility identified as a candidate for regulation, we would like to have your estimate of the direct and indirect costs that will be incurred by the regulator and regulatee (DOE/contractor) to develop and implement the regulations and license conditions and to bring the facility into compliance with NRC regulatory standards.

Response: The only facilities that have been identified as candidates for regulation are the single purpose non-defense laboratories, and low hazard non-defense laboratories, such as LBNL. We have not completed our analysis on an estimate of direct and indirect costs that will be incurred by the regulator and regulatee to develop and implement the regulations and licensing conditions to bring the facility into compliance with NRC regulatory standards. We will continue to share this information with the Board as it becomes available.

The Department has developed cost estimates for the regulatory transition of the gaseous diffusion plants from DOE to NRC certification. The total cost to bring the plants into compliance with NRC standards was approximately \$254 million. Certain costs, such as equipment modifications and upgrades are well known. Of the \$254 million spent to bring the plants into compliance with NRC standards, the

Department spent \$37 million on the initial NRC certification application, certification fees, and confirmatory security sweeps. Additionally, another \$34 million (inclusive in the \$254 million) in NRC-related upgrades were performed by the United States Enrichment Corporation. Thus, \$71 million of the total \$254 million was spent on NRC-related activities; additionally, it is estimated that other activities, e.g., multiple procedure revisions and training necessary to meet NRC rules, are estimated at an additional \$55 million for an estimated total of \$126 million for NRC related activities.

If we extrapolate the cost of bringing the plants into compliance with DOE standards, then it is estimated that approximately \$128 million of the total cost of \$254 million would have been associated with compliance with DOE standards. NRC has stated that an educated guess of the costs to bring the two plants into compliance with existing DOE orders, standards, regulations, and guidelines were excluded from the NRC estimate for transition costs and were estimated to be about \$200,000 million (as provided in the July 14, 1998, letter from Shirley Ann Jackson, NRC, to John Conway, DNFSB).

Question #4: Please indicate your views on whether the DOE, the contractor, or both should be considered the "licensee" or party regulated under the contemplated external regulatory system; and whether the contractor should be subject to NRC coverage under subsections a, b, and c of Section 170 of the Atomic Energy Act of 1954 (the Price-Anderson Act)?

Response: DOE firmly believes that it has certain responsibilities as owner of nuclear facilities and operations. These include responsibilities, such as safeguarding the taxpayer's money, carrying out its mission and ensuring safety at its nuclear facilities. In DOE's view, it must be the sole licensee in order to carry out these responsibilities. Policy issues relating to the Price-Anderson Act are under active discussion within the Department as a part of the Pilot Program.

Question #5: What additional benefits to the safety and health of workers and the public would DOE expect to derive from external regulation of the facilities identified above? In particular, would DOE expect further reduction in accidents and "work days lost" as a result of the regulatory program? Please provide statistical information, comparisons with commercial accident rates, reports, and other data that DOE possesses which bear upon this determination.

Response: The External Regulation Working Group stated in its December 1996 report that having a single external regulator for DOE nuclear facility safety will significantly improve safety and health at our facilities and at the same time improve public confidence and trust in DOE. Since that time, the Department has taken a number of steps to improve safety management and performance. The effort has produced results. Many of the Department's sites and operations have improved their

facility and worker safety records. The attached chart (attachment 3) compares information on DOE accidents/lost work days with commercial accident rates.

However, we have to continue to be diligent and drive for excellence, and recognize that neither external regulation, nor oversight in general, can be substituted for line management's commitment to safety. The recommendations to transition to external regulation were made by this and previous studies and reflected, in part, policy considerations and the use of external regulation as a means to remove any perception of bias, thus giving DOE the opportunity to perform and earn credibility, which is critical for efficient operations. This is consistent with DOE's current drive to develop and implement the Integrated Safety Management System.



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Statement by Elizabeth A. Moler
Deputy Secretary
U.S. Department of Energy
before the
Subcommittee on Basic Research
and
Subcommittee on Energy and Environment
Committee on Science
U. S. House of Representatives

May 21, 1998

Thank you, Mr. Chairman. I appreciate the opportunity to join my colleagues to discuss our efforts to pursue external regulation of worker and nuclear safety at the Department of Energy.

As we indicated in our comments to the GAO, we disagree with the fundamental finding as presented to us in their draft report that the Department's position is unclear. We believe there will be clear benefits from external regulation of worker and nuclear safety at DOE facilities. However, for these benefits to be realized, the transition to external regulation must be carefully designed and measured against current DOE practices.

In the context of external regulation, DOE facilities must be considered as a continuum. Some will be relatively "easy" sites to design an appropriate regulatory scheme for, such as single purpose Energy Research laboratories. Other facilities, such as some DOE weapons laboratories and production sites will be more challenging to deal with. Finally, closure sites which will be shut down in the near future may never be appropriate for external regulation.

In 1996, DOE's Working Group on External Regulation recommended that implementation of NRC regulation begin immediately and be phased in over a ten year period by means of comprehensive legislation. Since that time, we have learned through our experience with existing NRC regulation -- for example, at the gaseous diffusion plants, the high-level waste repository, and through our pilot projects -- that many serious and potentially costly issues remain to be resolved. We do not believe that these problems are insurmountable. However, at this point we simply do not have enough knowledge about, or experience with, external regulation to fully address all of the possible legal, institutional, and technical issues that

must be addressed to develop an omnibus external regulation legislative package.

Consequently, we intend, in consultation with NRC and the Occupational Safety and Health Administration (OSHA), to propose classes of DOE facilities for which external regulation can be responsibly implemented, and to submit the necessary legislation to the Congress on a phased-in basis. This approach, which will allow us to incorporate numerous lessons learned, was outlined in a letter from Chairman Jackson to Secretary Peña in 1997. Our analysis and experience indicates that certain civilian laboratories are most compatible with existing NRC licensees, and we would propose that they constitute the first class of candidates for external regulation. We will work with our colleagues from OSHA and NRC to further define a process for establishing the scope, timing, and resource needs for the necessary transition itself. We expect such an interagency process to be in place by July 1998 and reflected in Fiscal Year 2000 budget planning.

Before I turn to a discussion of our current efforts, let me briefly summarize recent studies and conclusions that have informed this effort.

DOE-Sponsored Studies of External Regulation

In making its recommendations to the Department in December 1995, the Advisory Committee on External Regulation of Department of Energy Nuclear Safety generally endorsed the concept of external regulation but concluded that "DOE's facilities and hazards differ widely, and a rigid, one-size-fits-all regulatory approach will not work. The use of a variety of models for regulation of safety is essential to successful and economically-feasible regulation of the DOE complex."

As I noted previously, in 1996, former Secretary O'Leary formed a DOE Working Group on External Regulation to provide recommendations on implementing the Advisory Committee findings. This Working Group reviewed a number of options for implementing the transition from DOE self regulation to external regulation of nuclear facilities, and submitted its recommendations in December 1996. Prior to implementation of external regulation, the Working Group called for a transition period. "During that period," the Working Group reported, "many planning and preparatory activities should take place, including developing budgets, establishing interagency working groups to develop detailed regulatory frameworks, stakeholder coordination, training... and planning and initiating pilots."

The Working Group concluded that during this planning phase, "it is critical that the complex variety of facilities, including many that have unique characteristics and others that are comparable to facilities currently in the private sector, be carefully considered. DOE has facilities in planning; under construction; in operation; in standby; in deactivation; in decontamination and decommissioning; and in cleanup or waste management. It will be important in establishing a cost-effective regulatory framework to ensure the system is sufficiently flexible to allow the regulator to weigh differences in facility age, expected life, and planned use while accounting for adequate safety and compliance with standards."

We believe that the cautions raised by Secretary O'Leary's Working Group remain valid today. A majority of DOE's large facilities are one-of-a-kind and old and many do not have documentation adequate to satisfy current licensing procedures. Many of these facilities were constructed in the past under a different set of safety requirements. These may require backfitting to comply with today's requirements. Many require expertise in dealing with hazards unique to

the weapons production complex for which there is no parallel in the regulated nuclear industry.

Given the complexity of DOE facilities, the Working Group recommended a phased approach to external regulation, with DOE Energy Research facilities transferred during the first five years. DOE facilities range from accelerators, to research reactors, to spent nuclear fuel storage facilities, to fuel processing canyons, to deactivating facilities, to environmental restoration sites. Clearly, no single form of type of regulation will be suitable to all.

Activities Since 1997

When Secretary Peña took office in 1997, we carefully reviewed the analyses and recommendations of the Advisory Committee on External Regulation of DOE Nuclear Safety, the Departmental Working Group on External Regulation, and the report of the National Academy of Public Administration which focused on OSHA. Based on the findings of each of these studies – that the transition to NRC and OSHA regulation would involve significant legal, financial, technical and procedural adjustments for each agency involved – the Secretary determined that additional information and real experience was needed to fully inform the transition process.

What we learned from these reviews, Mr. Chairman, was that if external regulation is to work, we need to tackle major, complex issues. We also learned that it is one thing to address these issues in a policy or analysis setting and quite another to put them into practice. We felt we needed the benefit of more real-time information on costs, resources, regulatory approaches, and benefits drawn from actual experience at the highly varied DOE complex with unique and compelling hazards. In order to gain that real-time information and experience, we decided to develop a two-year pilot program. The pilot program is allowing us to simulate actual regulation

-- including evaluation of a specific facility, its standards, requirements, procedures, practices, and activities against standards that the NRC believe would be appropriate given the nature of the work and hazards at that facility.

Complexity of the issues also has been raised by our laboratory directors. Dr. Eastman of Argonne recently wrote to Chairman Joseph McDade that while he was supportive of external regulation, issues such as Price-Anderson Act liability protection need to be resolved. He further noted that "given the wide range of nuclear activities.....further pilot programs should be conducted in facilities that have greater hazards to evaluate better the appropriateness of NRC regulation in that context." Dr. Goldston of the Princeton Plasma Physics Laboratory calls for a careful transition saying that, "if we proceed too quickly I am concerned that what may, at first glance, seem like a simple transition can have adverse consequences on Laboratory research and operations."

In pursuing the two year pilot program, it has been our intent to evaluate what we learn from these projects, along with what we have learned from a number of DOE facilities already under NRC regulation such as the gaseous diffusion plants, and what we have learned from the transition to regulation to the Environmental Protection Agency.

I want to reinforce to the Committee that, as was the case in the environmental area, this transition will not be an easy one. From our direct experience, we have encountered serious issues and potential obstacles that we must address as legislation is prepared. I'd like to summarize just a few.

Cost. If not carefully managed, the potential cost of a transition to external regulation of DOE facilities could be significant. The Working Group report estimates that, although NRC

regulation of the DOE complex could reduce total safety and health operating costs, it could also more than double those costs -- from \$1.5 billion today to more than \$3.1 billion. This does not include the cost of additional resources for OSHA and NRC. We learned that the potential for increased costs is real from our direct experience at the two gaseous diffusion plants -- DOE facilities now being operated by the United States Enrichment Corporation. DOE's cost for coming into compliance with Department standards during the NRC certification process exceeded \$200 million in Fiscal Year 1996. It should be noted that DOE would have expended about two-thirds of these costs over an extended period of operations.

DOE Stewardship. As the owner of federal facilities, DOE has responsibilities to the taxpayer to accomplish its missions and manage its contractors with the prudent expenditure of appropriated funds. Certain licensing options may hinder or otherwise restrict this ability, such as the ability of the Secretary and other Department managers to hire and fire our contractors. As we learned with our experience at Brookhaven National Laboratory, changing contractors is sometimes the only option for effecting needed improvements in safety culture.

Determination of Licensee. As noted above, it is important to analyze various licensing options to determine if a particular option allows the Department to effectively carry out its mission. For example, concerns have been raised whether the Department, as the party with ultimate line management responsibility for safety, can fulfill its obligations without being a license holder.

If we were to make our contractors the licensees at DOE facilities, it would be very difficult for us to decide to compete a contract at the expiration of a management and operating (M&O) contract. Assume, for example, that contractor "X" is the licensee of an NRC regulated

facility. Under current practice, DOE would likely have a five year initial contract with that M&O contractor, with a five year renewal option. What would happen at the expiration of either contract term. Could we readily compete the M&O contract? Who would want to compete if the competition required an NRC license transfer proceeding? Making the M&O contractor the NRC licensee could easily chill our realistic competitive options.

Compliance Agreements. The Department has established more than 100 enforceable agreements with the Environmental Protection Agency and States to address the requirements and corrective actions needed to comply with a broad range of environmental laws. A number of these agreements contain specific milestones -- required work and timetables for completing that work -- that apply to radioactive and mixed waste. A transition to NRC regulation will require that we carefully review these agreements to ensure that existing enforceable requirements are consistent with the nuclear safety requirements established for NRC licensing.

NRC Deactivation and Decommissioning (D&D) Requirements. NRC and DOE take different approaches to requirements for D&D. NRC requires licensees to estimate D&D costs and commit that such funds will be obtained when necessary. NRC further requires that licensees complete decommissioning activities within a specified timeframe after operations stop. DOE makes D&D decisions solely on the basis of safety concerns, mission priorities, and funding availability; the imposition of an NRC structure that does not dovetail with DOE's D&D process could result in lengthy delays and substantial additional costs. These issues have been satisfactorily resolved for the gaseous diffusion facilities although the resolution of these issues required legislation and additional regulatory changes.

Cost of 'Backfitting' Requirements. 'Backfitting' refers to the process of determining

what is required for older facilities and activities to meet safety requirements for which they were not designed. The NRC imposes a cost/benefit test on a proposed backfit, unless the backfit is considered necessary for adequate protection. These upgrades must then be completed fairly expeditiously or operations must cease. As the Committee is aware, many DOE facilities, including those at the laboratories, were not built to meet current requirements. While DOE has upgraded facilities and systems critical to maintain safe operations, building and system drawings and other safety documentation for older buildings have not been maintained to accurately reflect changes over years of operations.

DOE's approach has been to perform its national security, science and environmental missions safely and with effective expenditure of appropriated funds. Reconstruction of these configurations essential to backfit determinations could be very costly. DOE also has specific concerns not encountered in the commercial sector. First, many of our operations cannot be shut down either because they accomplish national security or other essential governmental missions or because the hazards themselves do not permit cessation of activities (e.g., hazardous radioactive wastes in tanks). Second, the federal budget process does not always permit appropriated funds to be applied to projects that are not considered during the annual budget process. Thus, costly backfits must be planned and budgeted several years in advance.

Multiple, Overlapping Regulators. Under the "Agreement State" provisions of the Atomic Energy Act, NRC can delegate a portion of its authority for regulating radioactive material to States that have programs adequate to protect public health and safety. The NRC cannot currently confer on Agreement States its authorities to regulate federal facilities. An important policy issue, which should be addressed in the legislative process, is whether conferring

additional authority on Agreement States is in the best interest of public health and safety. The benefits of Agreement State authority would have to be weighed against the potential for the Department to be faced with differing regulatory requirements in different states.

States may also contract with a local government to perform certain elements of the regulatory program, including inspection and licensing. These circumstances could lead to multiple regulators under the same statute and possibly inconsistent requirements from State to State. In addition, NRC would still be regulating the processing, use and disposal of special nuclear materials being used in most DOE facilities and laboratories. This would require NRC and Agreement States to regulate different aspects of a site's radiation protection program, with the potential for conflict, inefficiency and increased cost.

Legislative Changes. The decision to subject DOE non-defense laboratories to regulation by the NRC will affect dozens of statutory provisions from DOE's primary enabling statutes and will require careful attention. These are summarized at the end of my testimony. Changes to the numerous provisions may also affect other statutes, such as the Occupational Safety and Health Act.

In addition to the statutory provisions, the Nuclear Regulatory Commission's authority would have to be expanded to include such things as accelerators and a statutory alternative to licensing may be necessary for existing DOE facilities which cannot be economically back fitted to meet current NRC licensing standards. Also, substantial changes to both NRC's and DOE's regulations and DOE's Orders will be required.

Transition considerations. The transition to external regulation must be done carefully so that it is supportive of the Department's efforts already underway to strengthen and streamline

its internal safety management system. Over the past few years, DOE has made significant progress in improving safety management and implementing performance-based management of its contractors. The Department must maintain its focus on Integrated Safety Management throughout the transition, and take steps to ensure that both the Department and the external regulators have the expertise required to deal with the diverse hazards and difficult situations at the DOE complex. In addition, all reviews have agreed that the Department must retain -- separate from organizations with responsibilities for carrying out DOE's missions -- a competent and focused "corporate" safety management function of the sort typical of corporations that operate large facilities.

Mr. Chairman, the list could go on. As we described to the GAO, we, in conjunction with the NRC, have designed and are implementing our pilot program to provide information that will help us resolve these and other issues.

NRC/DOE Pilot Program

The NRC/DOE pilot program has as its objectives:

- ▶ to determine the value added by NRC regulatory oversight;
- ▶ to test various approaches to regulation that might be more appropriate to DOE nuclear facilities;
- ▶ to determine the costs to both DOE and the NRC associated with NRC regulation of the pilot facilities and other similar DOE facilities;
- ▶ to evaluate alternative regulatory relationships between NRC, DOE, and DOE contractors at the pilot facilities.
- ▶ to identify DOE contract changes that would be needed to provide for NRC oversight of contractor operations;

- ▶ to identify issues and potential solutions associated with a transition to NRC oversight of DOE nuclear facilities; and
- ▶ to identify legislative and regulatory changes necessary or appropriate to provide for NRC regulatory oversight of DOE nuclear facilities.

For each pilot, DOE and NRC develop a detailed work plan with extensive participation management and workers. After sufficient information is obtained and analyzed for each of the pilot facilities, DOE and NRC staff prepare a report that addresses the above objectives. Each report will discuss the facility's compliance with NRC requirements and issues related to NRC regulating the pilot facility.

In conducting the pilot program we are taking a deliberate approach. Assessment methodology and policy issues are being developed first using facilities that are well managed and similar to those currently regulated by NRC. We are in the process of identifying the next few pilots that would fully explore all issues important to transition to external regulation by NRC. All pilots are selected jointly with the NRC.

After consulting with the congressional committees that oversee DOE Defense facilities, we decided to exclude these defense-related facilities and laboratories from the pilot program at this time. Oversight of these facilities is currently being performed by the Defense Nuclear Facilities Safety Board. We are assuming that the Board will continue this oversight function, pending Congressional actions responding to the report required by Section 3202 of the National Defense Authorization Act for Fiscal Year 1998 (P.L. 105-85).

Three pilots will be conducted during fiscal year 1998. These are the Lawrence Berkeley

National Laboratory, the Radiochemical Engineering and Development Center at the Oak Ridge National Laboratory and the Receiving Basin for Offsite Fuel at the Savannah River site. Initial planning for the fourth pilot, the Pacific Northwest National Laboratory, is underway. A summary of the pilot projects to date follows.

Lawrence Berkeley National Laboratory Pilot. DOE and NRC held a stakeholder meeting in December 1997, all on-site reviews have been completed and the final report is expected shortly. NRC reviewed Berkeley's procedures, practices and activities against NRC requirements. Preliminary feedback from NRC is that the radiological safety program at Berkeley is adequate to protect public health and safety and worker safety at the site. Cost-savings are possible depending upon which licensee model is selected.

Oak Ridge National Laboratory Radiochemical Engineering and Development Center. The NRC held a stakeholder meeting in February 1998 and reviews are underway. As with the Berkeley pilot, NRC reviewed the procedures, practices and activities against NRC requirements. Another onsite review is planned for the week of June first which will include a brief overview of other facilities at the Oak Ridge National Laboratory to see if the results of this pilot could be extrapolated to the entire Oak Ridge National Laboratory. Another major objective is for the NRC staff to interact with representatives from OSHA at the same facility and evaluate regulatory interface issues.

Savannah River Receiving Basin for Offsite Fuel. This pilot is just getting underway. A visit to familiarize the NRC with the site is being conducted this week.

Additional Pilot Projects

We and the NRC plan to conduct three additional pilots in Fiscal Year 1999. We agree with the GAO and other observers that these must be geared to assessing the applicability of NRC regulatory approaches at more challenging facilities. We plan to recommend that the three additional pilots be conducted at:

- ▶ Pacific Northwest National Laboratories;
- ▶ One of the Department's reactors at a multi-program laboratory; and
- ▶ An operating waste management or environmental restoration activity managed by the Office of Environmental Management, and that is representative of the scope and challenges of typical environmental projects.

These additional pilots will provide additional information required for a joint decision as to whether it is feasible to expand NRC regulation to the entire range of DOE facilities.

OSHA Regulation of Worker Health and Safety

In May 1993, former Secretary of Energy Hazel O'Leary announced that the Department would move to regulation by the Occupational Safety and Health Administration. Despite DOE's above average occupational safety record as compared with private industry, it was clear that strengthened safety management and more uniform compliance would be benefits of OSHA regulation. At the same time, the Secretary recognized that there would be significant logistical problems involved in this transition and also recognized concerns expressed by OSHA that oversight of DOE would stress its limited budgetary and manpower resources. Since that time, DOE has worked with the Department of Labor, OSHA, and the Office of Management and Budget to address these transition issues.

I met with my counterpart at the Department of Labor and OMB in November 1997 to discuss the resources needed by OSHA to regulate DOE sites. We agreed on a path forward to further explore external regulation of DOE which included at least one additional pilot at a site involved in operations not already probed during a previous regulatory pilot at the Argonne National Laboratory. This would provide OSHA the opportunity to gather information on hazardous waste clean-up activities, radiation protection jurisdiction, and additional information on affordability and feasibility, all of which constitute significant implementation issues.

DOE and OSHA are currently planning a regulatory pilot at the Oak Ridge reservation. The pilot will help refine and evaluate transition issues, focus on the site's compliance status and costs for DOE, and will provide opportunities to educate managers and workers regarding OSHA regulation. The pilot will also provide an onsite opportunity for OSHA to evaluate regulatory interface issues with the Nuclear Regulatory Commission.

In addition to issues related to external regulation of government-owned, contractor-operated sites, DOE has been engaged in privatization of a number of sites no longer in use by the government, or parts of larger sites that may still have operations under DOE's control. Since January 1996, DOE has sought to ensure that privatized facilities no longer covered by the Atomic Energy Act are formally transferred to OSHA's regulatory jurisdiction. The two agencies have established a process whereby DOE provides information to OSHA about a particular site, and OSHA reviews issues related to that site to determine whether it can accept jurisdiction. The agencies then publish a joint Federal Register notice to announce the transfer of responsibility. To date, OSHA has formally accepted jurisdiction for two of the approximately 60 facilities that have been or will be privatized over the next two years. OSHA has prepared a draft privatization plan

to establish criteria for their acceptance of such sites. DOE recently provided comments on that plan, and discussions are expected to continue. Resources are one issue, but there are others dealing with the presence of radiation hazards and other technical and policy areas of concern to OSHA that need to be resolved before additional transfers can occur. The types of problems encountered in the area of privatization provide some indication of those which may be encountered as we proceed with the larger issue of external regulation.

In order for external regulation to work, OSHA must have the proper authorization and must develop an appropriate regulatory regime. New safety standards for specific safety issues must be developed. That will take time and resources. We, and OSHA, must have both or external regulation will not work in a manner that assures adequate health and safety protection.

Response to GAO Report

As we indicated in our formal comments to the GAO, we disagree with their finding that the Department is not committed to external regulation of worker and nuclear safety. As I have indicated, we are proceeding in a careful and methodical manner to identify regulatory and institutional issues associated with implementing external regulation. The DOE Working Group identified the use of pilots as a possible method for collecting information about the detailed regulatory information necessary for implementing external regulation under both final options. The Department, together with its partners at NRC and OSHA, is now pursuing this approach of using pilots to examine regulatory issues on the ground at real facilities.

As indicated in my testimony, we are proceeding with a phased approach under which we will sequentially identify classes of candidate facilities for external regulation. We intend to

embark on complex pilots at facilities such as nuclear reactors, environmental restoration or waste management. These will provide the information we need to make a decision to expand NRC regulation to additional DOE facilities.

Conclusion

Mr. Chairman, the Department is ready to move forward now to work with you and others to develop a path forward to externally regulate single purpose Energy Research laboratories. As I have noted in my testimony today, other DOE facilities will be considered only after weighing the financial and programmatic costs of external regulation against its obvious benefits.

Let me conclude by reaffirming the Department's commitment to work with the Congress and other agencies in the Administration to explore and resolve all of the complex technical, management, and legal issues surrounding the transition to external regulation.

This completes my statement, Mr. Chairman. I look forward to hearing from my colleagues and would be pleased to answer any questions.

The following is a list of statutory provisions from DOE's primary enabling statutes which may be affected if DOE's non-defense activities become subject to regulation by the NRC. It does not necessarily denote what provisions would have to be amended because that would depend on the approach and extent of the legislation. In addition, changes to the following provisions may affect other statutes, such as the Occupational Safety and Health Act.

From the Atomic Energy Act of 1954:

Section 11.s.(Definition of person);

Section 31.d.(Requires research assistance contracts to provide for the protection of health and minimize danger to life or property);

Section 41.b.(2)(C).(Requires contract provisions for the operation of DOE's production facilities obligating the contractor to comply with DOE's safety and security regulations);

Section 108(Permits DOE when Congress has declared a state of war to order the entry into any plant or facility to recapture special nuclear material or to operate a commercial utilization or production facility when it finds it necessary to the common defense and security);

Section 110.a.(Excludes processing, fabrication, or refining special nuclear material, the separation of special nuclear material, or the separation of special nuclear material from other substance under contract with and for the account of DOE and the construction or operation of facilities under contract with and for the account of DOE from the requirement to be licensed);

Section 111.a.(Exempts from NRC regulation byproduct material distributed by DOE pursuant to Section 82);

Section 161.b.(Authorizes DOE to establish rules and regulations, including to promote the common defense and security or to protect health or to minimize danger to life or property);

Section 161.i.(3)(Authorizes DOE to prescribe regulations or orders to govern any activity authorized under the AEA, including standards and restrictions governing the design, location, and operation of facilities used in such activity, in order to protect health and to minimize danger to life or property);

Section 161.k.(Authorizes members, officers, employees, contractor and subcontractor employees to carry firearms and make arrests in the discharge of their official duties in the interest of the common defense and security for the protection of property under the jurisdiction of the United States and located at facilities owned by or contracted to the United States or being transported to or from such facilities);

Section 170. ("INDEMNIFICATION AND LIMITATION OF LIABILITY" --Price-Anderson Act);

Section 229. (Authorizes DOE to issue regulations relating to entry upon or carrying, transporting, or introducing dangerous weapons, explosives, or other dangerous instrument into or upon any DOE installation);

Section 234A. (Permits the imposition of fines and penalties for violation of DOE's nuclear safety regulations);

Sections 311-318 (Relates to the Defense Nuclear Facilities Safety Board);

Section 1313. (Imparts certain authorities relating to security to the United States Enrichment Corp.(USEC));

Section 1403(f). (Extends Price-Anderson coverage to USEC from DOE)

From the Energy Reorganization Act of 1974:

Section 203(c)(Excludes from NRC regulatory authority under section 203 the functions of DOE relating to the safe operation of its facilities);

Section 204(c)(Excludes from NRC regulatory authority under section 204 the functions of DOE relating to safeguarding special nuclear materials, high-level radioactive wastes and nuclear facilities under DOE's jurisdiction);

Section 205(d)(Excludes from NRC regulatory authority under section 205(a) and (b) and section 201 the safety of activities within DOE's jurisdiction);

Section 211(a)(2)(D)(Includes contractors or subcontractors to DOE indemnified under section 170 (Price-Anderson) within the definition of "employer" for the purposes of providing "whistle-blower" protection);

Section 211(j)(1). (Prohibits either NRC or DOE from delaying taking appropriate action with respect to an allegation of a substantial safety hazard on the basis of a complaint under this section arising from such allegation or an investigation by the Secretary in response to such complaint).

ATTACHMENT 3

5. REGULATORY APPROACHES: MECHANISMS AND MODELS

5.1 REGULATORY MECHANISMS

The team considered a variety of possible regulatory mechanisms, including a specific license, a general license, a broad-scope license, a Master Materials License, concurrence, orders, and certification along the lines of the United States Enrichment Corporation (USEC) model. On the basis of NRC's experience and practice in applying these mechanisms to existing regulated facilities, the regulator would implement these options in different ways, depending on the characteristics and risks associated with a DOE facility or activity under review. Since DOE's facilities and hazards differ widely, it may be that a "one size fits all" regulatory approach would not work. For example, broad-scope licenses may be suitable for research facilities, and a specific license could be issued for spent fuel storage facilities.

For this pilot project, a broad-scope license is being considered as the preferred regulatory mechanism because

- licensing, where possible, is the preferred NRC regulatory mechanism and
- the current LBNL program is most similar to those of existing NRC and Agreement State broad-scope licensees regulated under 10 CFR Part 33 or compatible State requirements.

The LBNL has a Radiation Safety Committee (RSC), as well as a Radiological Control Manager (analogous to a Radiation Safety Officer), to review and approve uses of radioactive material and radiation-producing machines. A typical NRC broad-scope license involves NRC programmatic review of the radiation protection program before license issuance. After license issuance, the licensee, rather than the NRC, issues permits for the use of the licensee's facilities to individual users.

A Master Materials License was also considered. This type of license has been issued to other Federal agencies, such as the non-weapons (civilian) programs at the Department of the Navy and the Department of the Air Force, and has enabled these departments to operate, under NRC oversight, a nationwide permit and inspection program for all departmental users of byproduct, source, and special nuclear material. The DOE has chosen not to pursue a Master Materials License, which would have required DOE to maintain a centralized permit and inspection program for all of its facilities, reducing the benefits that are expected to result from transferring these responsibilities to an external regulator. Consequently, a broad-scope license was chosen as the basis for regulatory oversight of LBNL. The results of the onsite review by NRC indicated that the Radiation Protection Program (RPP) at LBNL could be licensed under NRC standards.

The broad-scope license would identify safety requirements as specific license conditions and the licensee(s) would be required to fulfill commitments made in the application and in the supporting

information submitted as a result of the NRC review of the application. These conditions complement NRC's regulations and represent additional requirements deemed necessary for this particular facility. NRC would exercise continuing regulatory oversight through inspections to ensure compliance with license conditions and other requirements. Periodic modification or renewal of the license would be based on appropriate NRC review and would be supported by safety and environmental evaluations. Before terminating a license, the licensee(s) would be required to fulfill certain requirements for releasing sites or transferring their oversight to another regulatory entity.

5.2 FOUR LICENSING MODELS

Four possible models were identified for issuing a license to LBNL:

1. DOE-only broad-scope license
2. UC-only broad-scope license
3. joint DOE/UC broad-scope license
4. dual broad-scope licenses

LBNL activities most closely resemble licensed activities at the National Institutes of Health and large universities, both of which hold broad-scope materials licenses. An NRC broad-scope materials license can be issued under the provisions of 10 CFR Part 33. An applicant for a broad-scope materials license must demonstrate that it is qualified and that the facility has been or will be adequately designed, built, and operated to meet NRC regulatory requirements. The applicant must establish administrative controls and provisions relating to organization and management, procedures, recordkeeping, material control, and accounting, and management reviews that are necessary to assure safe operations. These controls and provisions include (1) the establishment of a radiation safety committee comprising such persons as a radiological safety officer, a representative of management, and persons trained and experienced in the safe use of radioactive materials and accelerators; (2) the appointment of a radiological safety officer who is qualified by training and experience in radiation protection, and who is available to give advice and assistance on radiological safety matters. Other specific controls and provisions include controls for the procurement and use of radioactive materials; control of the design, construction, and operation of facilities that use radioactive materials; controls for the completion of safety evaluations of proposed uses of radioactive materials, which take into consideration such matters as the adequacy of facilities and equipment, training and experience of the user; and the operating or handling procedures; and controls on the review, approval, and recording by the radiation safety committee of safety evaluations as called for above.

Typically, NRC licenses the entity that owns the facilities and materials, which is usually the entity carrying out licensed activities. DOE owns the facilities and materials at LBNL and leases

the land from UC, which owns the land. DOE contracts with UC to operate and manage the facilities. It may be argued that the M&O contract between UC and DOE alleviates some of the level of control concerns. For instance, UC has exercised final decisionmaking authority for many of the criteria established in SECY-97-304.

Under the NRC regulatory framework, this is known as a "non-owner operator" of licensed activities. The extent to which DOE, the owner, can delegate safety functions to the manager and operator, UC, without circumventing NRC's regulations is an issue. Typically, NRC holds its licensees responsible for all licensed activities, even if some activities are carried out by contractors. Depending on the type of contracting arrangement and the level of control given to the contractor by the licensee, the issue becomes whether the contractors have assumed such significant responsibility for licensed activities that the contractors should be added to the license.

For many years, DOE has contracted with the University of California for its expertise and UC serves as the management and operating (M&O) contractor for LBNL. As defined in the Federal Acquisition Regulation, a management and operating contract contemplates a special, close, long term relationship between the contractor and DOE whereby the contractor operates, maintains or supports, on DOE's behalf, a government-owned facility wholly or principally devoted to one or more major programs of DOE, the contracting federal agency. The contractor is expected to have a high level of expertise and continuity of operations and personnel. M&O's have long been regarded in many circumstances as DOE's alter ego performing at least some of DOE's statutory duties and responsibilities. This is a form of contracting unique to DOE.

The NRC Office of Nuclear Reactor Regulation (NRR) is in the process of developing criteria regarding licensing of non-owner operators for 10 CFR Part 50 licenses for power reactors. (See SECY-97-144, "Potential Policy Issues Raised by Non-Owner Operators," dated July 11, 1997; SECY-97-304, "Response to Staff Requirements Memorandum: SECY-97-144, 'Potential Policy Issues Raised by Non-Owner Operators.'" dated December 31, 1997; and the Commission's Staff Requirements Memorandum, SECY-97-304, dated February 5, 1998.) Therein, the NRR staff developed proposed criteria regarding changes to nuclear power plant operating entities by which the need for a review under 10 CFR 50.80 (transfer of licenses) can be measured. In the materials licensing area, there has not been a previous need for development of similar criteria. The Commission approved interim use of the criteria for nuclear reactors in the Staff Requirements Memorandum of February 5, 1998. Although LBNL has no nuclear reactors and has no intention of acquiring any, by analogy, the criteria developed to judge whether contracting arrangements amount to a transfer of a license are useful considerations in deciding who should be the licensee at LBNL.

The NRR staff focused the criteria around the concept of final decisionmaking authority: If an operating service company gives advice but does not make the final decision in a particular area, then there has been no transfer of operating authority for that area. For power reactors, the NRR considers who has the authority to

- shut down for repairs:
- start up the plant:
- approve licensee event reports:
- decide whether to make a 10 CFR 50.72 report:
- make operability determinations;
- change staffing levels;
- make organizational changes:
- defer repairs;
- make quality assurance decisions (selecting audits, approving audit reports, accepting audit responses);
- determine budget and spending levels:
- continue operation with equipment problems:
- control the design of the facility; and
- continue operations or permanently cease operation.

If an operating entity is granted final decisionmaking authority (which is essentially a command and control managerial and technical function) in any of these areas, then the staff would judge that a review under 10 CFR 50.80 should be pursued by the licensee and the transferee may have to become a licensee.

Applying the principle of who makes the final decisions in particular licensing matters would, in the LBNL situation, limit the extent to which DOE could delegate responsibility to UC without UC becoming a licensee. With these applicant requirements (10 CFR Part 33) and licensing insights in mind, the advantages and disadvantages of the four licensing models can be developed.

Under each of the options, NRC would issue a license to the applicant(s) after a full review of the license application. The choice of licensee determines the responsibilities for establishing administrative procedures to assure command and control of procurement, creation, and use of radioactive materials. The adequacy and efficacy of facilities and equipment, training and experience of the user, and operating or handling procedures would be taken into consideration.

5.2.1 "DOE ONLY" LICENSE

Under this option, a broad-scope license would be issued to DOE in order to control the principal safety functions at LBNL. The Secretary of Energy or a designee would sign the application for the license.

There would be some inherent limitations on how much responsibility for complying with NRC requirements could be delegated to UC to avoid what amounts to a transfer of the license to UC. The establishment of a Radiation Safety Committee whose principal responsibility is to ensure safety at a licensed facility is an important aspect of a broad-scope license. Because of the significance of the RSC, DOE, not the contractor, must have control over the RSC. In its contract with UC, DOE would have to ensure that all contractor activities are performed in accordance with the license and other NRC requirements. Finally, the ultimate decisionmaking authority with regard to licensed activities would reside with DOE. Consequently, DOE would need additional technical and safety expertise to direct contractor activities, essentially duplicating the level of expertise that UC, as the manager and operator, would need.

As the sole licensee, DOE would be responsible for demonstrating LBNL compliance with NRC requirements and, therefore, would be subject to fines and penalties for noncompliance. Presumably, DOE would take action against UC if UC were deemed responsible. As stated earlier, DOE would establish a significant infrastructure for managerial and technical oversight (e.g., inspections and audits of LBNL radiation safety involvement and other aspects of operation). UC would be required to work with DOE oversight groups on matters affecting its regulatory posture with the NRC. Finally, DOE would be directly accountable for meeting license conditions, and UC would not be directly accountable. Of the licensing options, only this model would result in NRC having little or no impact on the decision to terminate an existing contract or qualify a potential new contractor. As long as DOE controls are in conformance with the license, approving the qualifications of a contractor is strictly a DOE decision.

Advantages

- DOE would be free to change its contractor without NRC licensing actions, as long as the contractor was not delegated fundamental safety functions.
- DOE would be directly involved with NRC regulatory actions that might impact DOE missions and funding of programs.
- This is a customary regulatory approach since the funding organization and the party responsible for safety in the event of a violation are the same.

Disadvantages

- DOE would be required to possess or develop additional technical and safety expertise to direct contractor activities.
- DOE would need to establish a significant new infrastructure of inspections and auditing of LBNL radiation safety programs and an increased onsite presence. This could result in additional oversight imposed on the contractor.
- DOE would still have a potential conflict of interest between mission and safety.

5.2.2 "UC ONLY" LICENSE

UC, by definition and practice, has always exercised a great deal of control of and directed the operations at LBNL. In light of LBNL's excellent safety record, unusual owner/operator circumstances, longevity and the unique mode of contracting, a persuasive case can be made for the UC only licensee model.

If NRC were to issue the license to UC only, UC would be responsible for radiation safety through its license. An alternative method of funding radiation safety would be required to ensure that DOE requests adequate funding from Congress for compliance with NRC requirements. Without DOE on the license, NRC would carry out the DOE regulatory oversight responsibilities with regard to radiation safety. The existing UC-chaired RSC would continue, perhaps with some realignment of functions (e.g., the RSC would need to expand its functions into waste management activities, which are not currently under the purview of the RSC). Under this scenario, DOE could reduce its presence at LBNL for radiation safety, since NRC would be enforcing radiation safety requirements. However, DOE would likely perform corporate style audits of LBNL. UC would be subject to enforcement action, including fines and penalties unless exempted by Congress. (UC prefers such an exemption.) Although UC would be the licensee, DOE would retain ownership responsibilities for the facilities but DOE would not be directly involved with NRC on licensing and enforcement matters.

UC would be responsible for demonstrating compliance with NRC's D&D regulations. NRC would accept documentation, from a person of authority within DOE, assuring the availability of the D&D funds when needed. This would be consistent with NRC regulatory practice for contractors doing work at military installations. This issue could also be handled in the legislation authorizing external regulation.

If DOE were to change contractors, selection of the new contractor would remain a DOE decision. UC would be obligated to carry out its safety functions under the terms of its license until NRC allows its license to be transferred. Once the new contractor is selected, an application for transfer of the license must be submitted. This transfer process could take several months. (Since UC owns the land, it is rather unlikely that there would be a change in contractor for LBNL.) NRC would need to make a determination that the new contractor is qualified to carry out the safety functions at LBNL before NRC could transfer the license to the new contractor. This could affect DOE's ability to easily change its contractor.

UC believes that Congress would have to waive the principle of sovereign immunity in order for NRC to relinquish jurisdiction over a DOE contractor, operating a DOE facility, to an Agreement State.

Further details regarding the UC views on sovereign and intergovernmental immunity are found in Appendix G.

Advantages

- UC, the entity in charge of day-to-day management and operations, would be accountable for radiation safety.
- NRC regulatory actions would go directly to the organization performing the work.
- DOE would not have to possess or develop the technical and safety expertise to control licensed activities and would need no continuous presence at LBNL for radiation safety.
- The existing UC-chaired RSC could continue as constituted, with only minor realignment of functions.
- DOE functions relating to oversight of radiation safety would decrease significantly, lessening DOE's potential conflict of interest between mission and safety.

Disadvantages

- The licensee would not have full fiscal authority, independent of DOE fiscal controls, to initiate any NRC-required or licensee-identified actions. An alternate method may be required to ensure Congressional funding for compliance with NRC requirements.
- DOE would still retain ownership responsibilities, e.g., funding and accomplishment of DOE missions, with less ability to influence contractor radiation safety activities or other aspects of management and operations.
- If DOE wished to change contractors, NRC would have to approve the transfer of the license (i.e., NRC would have to determine that the new contractor is qualified to engage in the licensed activity).
- DOE would not be a direct party to any regulatory actions that might impact mission or ownership interest.

5.2.3 JOINT DOE/UC LICENSE

The joint DOE/UC broad-scope license model is most similar to that seen in licenses for power reactors owned by multiple corporations. Using this model, NRC would issue a single license to DOE and UC. The respective roles and responsibilities of DOE and UC would be identified in the license. DOE would be responsible for maintaining a qualified contractor in control of the site and UC would be responsible for carrying out all safety functions. NRC would rely on the designation of the roles and responsibilities defined by the license to identify the responsible party for initiating enforcement actions. If the violation was solely caused by the actions of UC, the enforcement action could be brought against UC. If responsibility for the violation cannot be assigned to one party, the enforcement action could be brought against both DOE and UC. In that case, DOE and UC would be jointly and severally liable for any penalties. Identification of the culpable party would be the responsibility of DOE and UC to determine. DOE could choose to restructure oversight to a corporate-style assurance process and leave day-to-day oversight

responsibilities to UC, or DOE could reduce its involvement even further. If the operator of LBNL were to change, NRC would need to make a determination that the new contractor is qualified to carry out the safety functions at LBNL before NRC could transfer the license to the new contractor.

Advantages

- The joint DOE/UC license model is most consistent with current NRC licensing practices in which multiple corporations are involved, provided that one designated "operator" is defined as the lead for the multiple parties.
- DOE has flexibility in choosing the depth and breadth of oversight functions.
- Roles and responsibilities can be defined in the license and joint licensing would assure that both UC and DOE would be able to participate in licensing and regulatory matters.
- Depending upon the assignment of safety and oversight responsibilities, DOE may not have to possess or develop the technical and safety expertise to direct contractor activities and would need no continuous presence at LBNL to ensure radiation safety, since UC would be responsible for performing most safety functions.
- The existing UC-chaired RSC could continue as constituted, with only minor realignment of functions.

Disadvantages

- A DOE choice to establish an infrastructure of inspections and auditing of LBNL radiation safety programs, would add to DOE costs and would create dual DOE/NRC oversight while providing no additional safety benefit.
- If DOE wished to change contractors, NRC would have to approve the transfer of the license (i.e., NRC would have to determine that the new contractor is qualified to engage in the licensed activity).
- NRC regulatory actions would require coordination with DOE and UC, and between DOE and UC. If the roles and responsibilities are not clearly defined under the license, this model could blur accountability for safety performance and could complicate regulatory and enforcement actions.
- DOE might have to have greater involvement in the day-to-day operations of LBNL, depending on the responsibilities assigned by the license to DOE.
- DOE and UC must allocate resources and devote time to identify the culpable party in any given enforcement action.

5.2.4 DUAL LICENSES

Two separate licenses would be issued, one to DOE and one to UC, specifying the roles and responsibilities of each party. DOE, as the owner, would be responsible for maintaining a qualified contractor. UC, as the operational entity, would be responsible for carrying out all safety functions. The process for changing the contractor would take place as described above in the UC-only or the joint-license model.

Enforcement would be directed against the culpable party and would be governed by the terms of the specific license. This would require NRC either to clearly determine the culpable party (or parties) before taking enforcement action or to cite both licensees. Practically speaking, NRC will not be in a position to clearly determine the culpable party or parties and will likely cite both licensees. Therefore, this model is essentially the same as the joint model.

UC believes that Congress would have to waive the principle of sovereign immunity in order for NRC to relinquish jurisdiction over a DOE contractor, operating a DOE facility, to an Agreement State.

Advantages

- DOE would not have to possess or develop the technical and safety expertise to control licensed activities and would need no continuous presence at LBNL for radiation safety.
- The existing UC-chaired RSC could continue as constituted, with only minor realignment of functions.

Disadvantages

- Documentation of DOE allocations to the contractor and specification of how the funds must be used will need to be much more detailed to account for potential inquiries concerning whether the DOE approved or disapproved requests for compliance-related funds.
- NRC has never issued two licenses for the same facility because no benefit has been identified for such an approach.
- If DOE wished to change contractors, NRC would have to approve the transfer of the license (i.e., NRC would have to determine that the new contractor is qualified to engage in the licensed activity).

5.3 PREFERRED LICENSING OPTIONS

5.3.1 THE NRC TEAM PREFERRED MODEL

The NRC team prefers to license the operator by issuing a license to UC only. This model combines the major advantages of the other models, and eliminates most of the disadvantages. DOE would neither be required to maintain its infrastructure and auditing process, as it now exists, for LBNL radiation safety programs nor to create dual DOE/NRC oversight, thus significantly reducing the costs of regulation. DOE would not have to possess or develop the technical and safety expertise to direct contractor activities on safety matters. The UC-only licensing model may be especially workable at LBNL because, as discussed, it is unlikely (although possible) that DOE would change contractors. Further, UC is the only DOE contractor operating this laboratory complex, thus, establishing a clear and unequivocal line of responsibility for complying with the license. Without DOE being named on the license, there would be less of a potential for DOE to be involved in licensed activities, reducing the potential for dual regulation of safety matters at LBNL. Requesting adequate funding for radiation safety programs, liability, and decommissioning would remain a DOE Federal Government responsibility, and may need to be addressed in legislation. The LBNL RSC could continue as constituted, with some minor realignment of functions.

The license would be issued with UC named as the operator of LBNL if, among other things (see 10 CFR Part 33), UC is qualified and has adequate equipment and UC has established administrative controls and provisions relating to organization and management, procedures, recordkeeping, material control and accounting, and management reviews that are necessary to ensure safe operations, including the following::

- the establishment of an RSC composed of such persons as a Radiological Safety Officer, a representative of management, and persons trained and experienced in the safe use of radioactive materials and accelerators;
- the appointment of a Radiological Safety Officer who is qualified by training and experience in radiation protection and who would be available to advise and assist on radiological safety matters; and
- the establishment of administrative procedures. These procedures must ensure (1) the control of procurement, creation, and use of radioactive materials and the control of the design, construction, and operation of accelerators; (2) the completion of safety evaluations of proposed uses of radioactive materials and uses of accelerators that weigh such matters as the adequacy of facilities and equipment, training, and the experience of the user and the operating or handling procedures; and (3) the review, approval, and recording by the RSC of safety evaluations as enumerated in items (1) and (2).

5.3.2 DOE-PREFERRED MODEL

In its discussion of who should be the licensee at LBNL, DOE analyzed the four licensing options and its advantages and disadvantages. We also focused on the problems to be addressed by external regulation and whether these options accommodate the Department's interests/responsibilities.

The UC only option was proposed to the DOE Steering Committee⁴ as the preferred position for licensing at LBNL. In its final analysis, the Steering Committee decided that a license issued solely to the University of California may be feasible at LBNL, but there are many unresolved issues that must be tested during the conduct of future pilots before a final DOE position can be developed. The merits of the UC only option, and issues/concerns are discussed below.

DOE, as owner, has responsibilities to accomplish its missions, manage its contractors, and fund programs including ensuring prudent expenditure of appropriated funds. Pursuant to the terms and conditions of its contract UC, as manager and operator, has responsibilities to operate DOE facilities safely and efficiently.

A license issued solely to UC may be the best approach for licensing at LBNL. LBNL is a relatively small, low hazard, well managed facility. Under the UC only model liability rests with the party that operates the facility and is directly responsible for safety. However, some would argue that this option may not be appropriate in light of the Department's continuing ownership responsibilities, such as funding and D&D. Moreover, the Department retains ultimate line management responsibility for safety. Supporters of the contractor only option point out, that these responsibilities could be adequately addressed in legislation. NRC, however, is concerned that addressing DOE's funding responsibilities in legislation would prevent it from bringing enforcement actions directly against DOE. The Department of Justice would have to enforce these provisions.

Both ownership and operational roles and responsibilities can be affected by regulatory actions. As such, both DOE and UC should be held accountable and responsible for their respective roles by clearly defined licensing terms and conditions. Therefore, the joint licensing model may be a truer depiction of the realities of ownership and operations at LBNL. On the other hand, one can argue that the joint model may not satisfy the Department's need for clarity on who is accountable

⁴ The DOE Steering Committee is a group consisting of upper management whose purpose is to advise DOE staff on high level policy issue associated with the Pilot Program on External Regulation.

for safe operations. The Department has experienced under RCRA⁵ enforcement actions that although roles and responsibilities are clearly defined in joint permits, enforcement actions sometimes are not as clearly directed at the accountable party. This could also be the case with a joint license issued by NRC.

Under all of the licensing models NRC has sole regulatory and enforcement responsibility. The UC only model provides an advantage because it eliminates the perception of dual oversight. Although DOE would no longer have regulatory oversight responsibility, it is likely that even under the UC only model, the Department would establish a corporate audit function.

Contractor change-out can be an important consideration in NRC licensing since NRC has to be able to license the new contractor. NRC accomplishes this through a license transfer. LBNL is a unique situation in that UC owns the land while DOE owns the buildings and equipment which lessen the likelihood of contractor change out. Nevertheless, NRC and DOE staff have discussed an approach that would allow NRC to participate in deciding the qualifications of new contractors, while giving DOE the flexibility to select the best contractor to fulfill its assigned missions. However, some have concerns about whether the NRC can quickly process a license transfer.

5.3.2.1 EFFECT OF OPTIONS ON ER PROGRAM DIRECTION AND OVERSIGHT

The effect of the respective licensing options on ER program direction and oversight is expected to be negligible. The DOE Berkeley Site Office and LBNL contractor currently have stop work authority and the ability to reallocate overhead funding. They may also reallocate direct operating funds as long as it does not conflict with program guidance. Program guidance is modified monthly and can be modified sooner for special cases. An example of program guidance modification would be to permit a reduction in weeks of facility operation in order to fund a critical repair. This relationship should not change considerably under any of the licensing options. Finally, ER does not perform environment, safety and health (ES&H) oversight, but maintains operational awareness through various avenues.

5.3.2.2 EFFECT OF OPTIONS ON DOE INDEPENDENT OVERSIGHT

[DOE to add section.]

⁵ Pursuant to Secretary of Energy (SEN) 22-90, DOE Policy on Signatures of RCRA Permit Applications, May 8, 1990, the Department and its contractor sign the permit--the Department as owner and co-operator and the contractor as co-operator. The permit is then issued jointly to the Department and the contractor.

5.3.3 UC PREFERRED MODEL

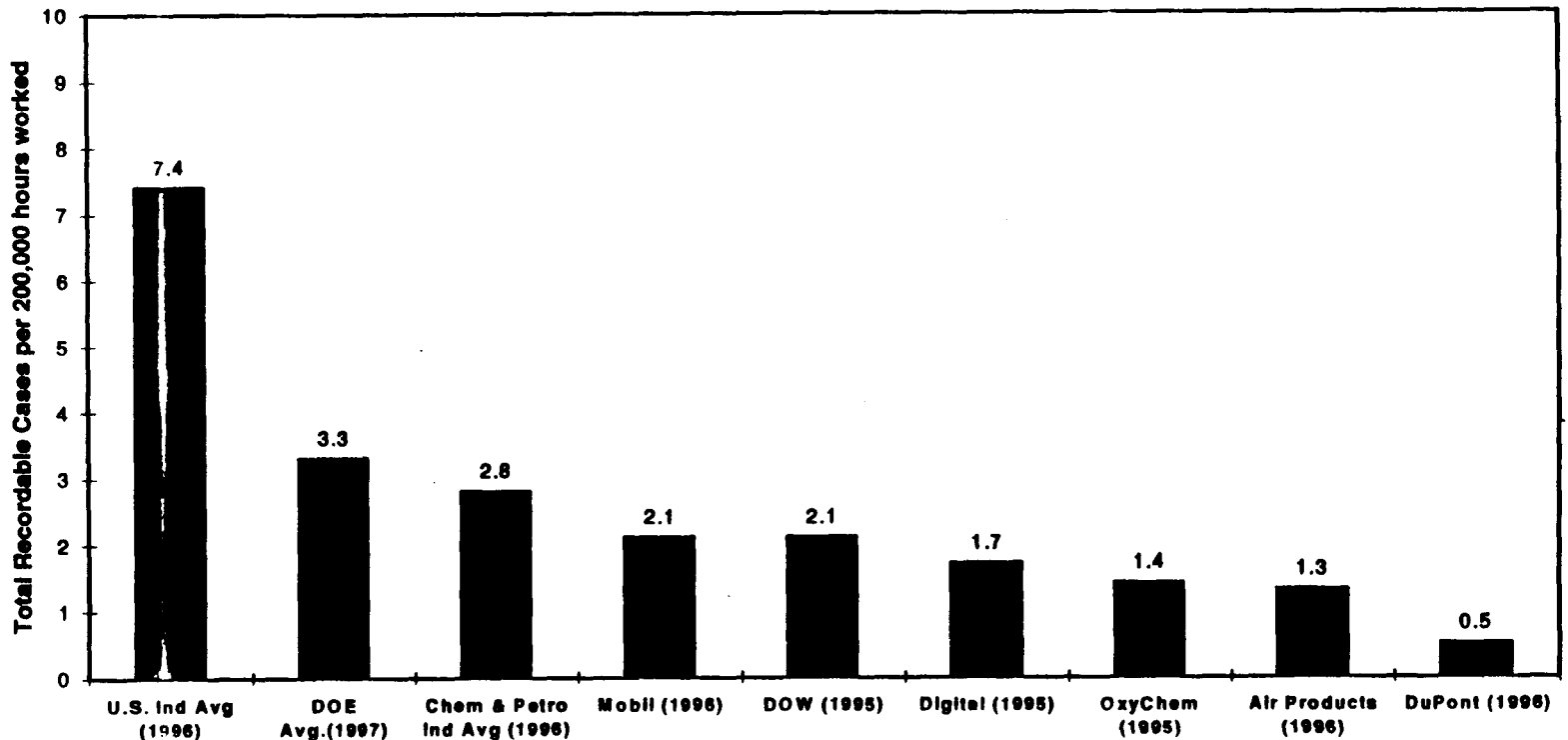
The UC views on the roles and responsibilities of DOE and UC on the joint model are found in Appendix G. It is UC's view that the only option representing a "clean break" with DOE regulatory oversight of safety is for UC to be issued a license directly from the NRC. The alternative models of a joint license issued to UC and DOE or a dual license issued to both UC and DOE would likely result in dual oversight, the worst possible outcome. All matters related to DOE responsibilities (safety funding, contractor turnover) should be dealt with in the legislation, not in the licensing process.

5.4 RECOMMENDATION

DOE Injury and Illness Rate versus Private Industry

Shown below is a comparison of DOE's Total Recordable Case Rate (TRC) versus a selected group of private sector companies whose work closely resembles DOE's work. The TRC is a count of all work-related injuries and illnesses per 200,000 persons worked. While DOE's rate is lower than the U.S. industry average for 1996, it has a way to go to achieve the best-in-class status as DuPont. However, given the unique nature of DOE's work, these comparisons may be misleading. For example, the U.S. average includes the entire spectrum of industrial work – both hazardous and non-hazardous – in companies of all sizes.

Total Recordable Case Rate - DOE vs. Industry



DOE Numbers do not include FEDs