Report to Congress
on the
Role of the Defense Nuclear Facilities Safety Board
Regarding
Regulation of DOE's Defense Nuclear Facilities

DEFENSE NUCLEAR FACILITIES
SAFETY BOARD

NOVEMBER 1998

EXECUTIVE SUMMARY

This report responds to a requirement in the National Defense Authorization Act (Act) for Fiscal Year 1998, to prepare a report and make recommendations to Congress as to what the role of the Defense Nuclear Facilities Safety Board (Board) should be in the event that Congress considers legislation for external regulation of nuclear safety at Department of Energy (DOE) defense nuclear facilities.

The Act required the Board to address 16 specific items, as listed in Appendix 1 of this report. The Board's responses and supporting analyses are contained in Section III of this report. In some instances, information requested was not readily available to the Board and thus the Board solicited information from both the Nuclear Regulatory Commission (NRC) and the Department of Energy (DOE). Those letters and responses are included as Appendices 4 and 5.

Based on available information, the individual experiences of Board Members, and current analyses, the Board concludes that:

- Congress made the correct decision in 1988 when it adopted the recommendation of the Senate Committee on Armed Services for national security reasons to maintain responsibility for nuclear safety of Department of Energy defense activities with the Secretary of Energy and to establish the Defense Nuclear Facilities Safety Board as an independent advisory agency and not as a regulator.

- The most serious problem with any external nuclear regulation of DOE's defense program would be a potential for adverse effects on national security. Delay is a commonly encountered consequence of a regulatory process. The Secretaries of Defense and Energy and the Directors of DOE's national laboratories are on record in stating that significant delay in the conduct of DOE's weapons program "could have serious national security implications" including causing other entities to doubt or question the credibility of our nation's nuclear deterrent.

- While we are respectful of the views of those seeking change in the regulatory regime for DOE contractors, the Board believes such action is hardly justified by the costs likely to be incurred for any benefits that might accrue. This is particularly true for defense nuclear facilities because the costs include the real potential for undue intervention and delays that could effectively block interminably the construction and operation of new facilities or the upgrades of existing ones that are needed either for safety reasons or to support the national security mission. The potential for increased vulnerability of defense nuclear facilities to litigious proceedings and extended delays needs to be recognized as a potentially serious cost.

- There is no basis to assert that cost savings or even cost-neutral results are achievable. On the contrary, it is generally recognized that transition to external regulation of DOE nuclear safety will require a cost increase.

- Considerable complications—legal, technical, and fiscal—would accompany any attempt to change the Atomic Energy Act to require DOE defense nuclear facilities to be subject to external nuclear safety regulation.

- DOE's credibility with the public improves when it performs its responsibilities in a safe, efficient, and creditable manner, not when additional government regulatory agencies are layered on it. DOE has made notable progress with regard to cooperation and openness with the public, particularly in the formation and utilization of local citizen advisory boards.

The record of Board accomplishments in assisting DOE in its safety activities has been documented in the Board's annual reports to Congress. This record attests to the efficiency of the Board's structure as legislated in 1989. The Board has been able to help reorient DOE's safety management program and to set it on a course that:

- Places much less reliance upon expert-based safety management and much more on standards that define good practices;

- Makes work planning and safety planning an integrated process;

- Treats public, worker, and environmental protection as an integrated process;

- Treats radioactive and nonradioactive hazards in an integrated fashion in establishing controls; and

- Tailors safety measures to the hazards involved.

In accordance with its statutory mandate the Board has focused on enhanced safety management of defense nuclear activities. DOE has recognized the benefits of such enhancements for all of its hazardous activities and is extending the enhancement principles and functions complex-wide. This is being done without the potentially litigious and confrontational processes that frequently characterize regulatory regimes.

The Board's accomplishments during the 9 years since its establishment clearly demonstrate that there are ways of achieving enhanced safety objectives without adding unnecessary regulatory layers and processes.

Based on its review of the factors that would attend to the external regulation of defense nuclear facilities, the Board does not believe that additional external regulation of defense nuclear facilities is in the best interest of our nation.

TABLE OF CONTENTS

ROLE OF THE DEFENSE NUCLEAR FACILITIES SAFETY BOARD

I. INTRODUCTION AND BACKGROUND

This report by the Defense Nuclear Facilities Safety Board (Board) responds to a requirement in the National Defense Authorization Act for Fiscal Year 1998. Citing the expressed intent of former Secretary of Energy Hazel O'Leary to seek external nuclear regulation of the Department of Energy's (DOE) defense nuclear facilities, the Authorization Act directed the Board to prepare a report and make recommendations to Congress as to what the Board's role should be in the event such legislation be considered by Congress. In responding, the Board was requested by Congress to address 16 specific matters (see Appendix 1) involving, among other things, detailed listings of defense nuclear facilities and assessments of the interrelationships among DOE, the Nuclear Regulatory Commission (NRC), and the Board.

A. Legislative History (1987-1994)

In the late 1980s, it became increasingly clear to Congress that conditions at sites used for production of nuclear materials and weapons were such that additional measures were needed to ensure adequate safety management by DOE. Residuals of production in formerly used facilities represented a potential threat to the safety of the public, workers, and the environment, and facilities required for the national security mission needed to be brought into operational modes consistent with current safety and environmental protection objectives. From 1987 to 1989, both houses of Congress examined a variety of legislative proposals intended to upgrade the safety management of DOE defense nuclear facilities. The Senate Committee on Governmental Affairs under the chairmanship of Senator John Glenn initially proposed to establish an independent, nuclear safety board with recommendation powers.[1] The Senate Committee on Armed Services under the chairmanship of Senator Sam Nunn proposed in the Nuclear Protections and Safety Act of 1987 an independent defense nuclear safety board with advisory powers, but reserving to the Secretary of Energy the ultimate responsibility to accept or decline advice. In its report accompanying the proposed legislation, the Committee noted that DOE had managed its safety responsibilities well and that it was DOE's contractors who actually were responsible for operating the facilities under DOE supervision. The report quoted the National Academy of Sciences, as follows:

> The contractors responsible for the operation [of DOE production reactors] have excellent records of safe operation. There have been no major reactor accidents at these facilities. [They] have records of avoidance of lost workdays as a result of on-the-job injuries at least 10 times better than that of U.S. industry as a whole.[2]

During 1988, the House and Senate worked out a compromise solution resulting in formation of the Defense Nuclear Facilities Safety Board in 1989. The Board was granted

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[1] S. 1085, *Nuclear Protections and Safety Act of 1987*, April 1987.

[2] S. Rep. No. 232, 100th Cong., 1st Sess. 7-8 (1987) (quoting *Safety Issues at the Defense Production Reactors,* National Academy of Sciences, National Academy Press, Washington, D.C., p. 61 (1987)).

extensive safety oversight including investigative functions over defense nuclear facilities under the control or jurisdiction of DOE. The Atomic Energy Act of 1954, as amended, currently establishes two categories of defense nuclear facilities subject to Board jurisdiction: (1) those facilities under Secretary of Energy control or jurisdiction, operated for national security purposes, that produce or utilize special nuclear materials, and (2) nuclear waste storage facilities under the control or jurisdiction of the Secretary of Energy. The term does not include facilities or activities associated with the Naval Nuclear Propulsion Program, transportation of nuclear explosives or nuclear materials, the U.S. Enrichment Corporation, and any facilities developed pursuant to the Nuclear Waste Policy Act of 1982 and licensed by the NRC, or any facility that does not conduct atomic energy defense activities.[3]

In line with the intent of the Committee on Armed Services, the Board was not made a regulatory agency. The choice of oversight rather than regulation reflected a careful balancing by Congress of national security interests with the various methods for promoting improvements in safety at DOE facilities. The new provisions inserted in the Atomic Energy Act represented the most extensive modification of that statute since the Energy Reorganization Act of 1974.[4]

Under its enabling statute, 42 U.S.C. § 2286 *et seq*., the Board is responsible for independent oversight of all programs and activities impacting public health and safety within DOE's defense nuclear facility (i.e., nuclear weapons) complex, which has served to design, manufacture, test, and maintain nuclear weapons.

The Board is authorized to review and analyze facility and system designs, operations, practices, and events, and make recommendations to the Secretary of Energy that the Board believes are necessary to ensure adequate protection of public health and safety, including worker safety. The Secretary may accept or reject the recommendations in whole or in part. The Board must consider the technical and economic feasibility of implementing the recommended measures, and the Secretary must report to the President and Congress if implementation of a recommendation is impracticable because of budgetary considerations. If the Board determines that an imminent or severe threat to public health or safety exists, the Board is required to transmit its recommendations to the President, as well as to the Secretaries of Energy and Defense. (To date, the Board has issued 38 sets of safety recommendations containing 174 specific recommendations; no Board recommendation has been rejected by the Secretary of Energy.)

The Board's enabling statute, 42 U.S.C. § 2286 *et seq.*, also requires the Board to review and evaluate the content and implementation of health and safety standards, including DOE's Orders, rules, and other safety requirements, relating to the full life cycle of defense nuclear facilities, including design, construction, operation, and decommissioning. The Board must then recommend to the Secretary of Energy any specific measures, such as changes in the content and implementation of those standards, that the Board believes should be adopted to ensure that public health and safety are adequately protected. The Board also is required to review the design

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[3] 42 U.S.C. § 2286g.

[4] 42 U.S.C. §§ 2286 - 2286i, enacted in Pub. L. No. 100-456, September 29, 1988.

of new defense nuclear facilities before construction begins, as well as modifications to older facilities, and to recommend changes necessary to protect health and safety.

The Board may conduct investigations, issue subpoenas, hold public hearings, gather information, conduct studies, establish reporting requirements for DOE, and take other actions in furtherance of its review of health and safety issues at defense nuclear facilities. These ancillary powers of the Board relate to the accomplishment of the Board's primary function, which is to assist DOE in identifying and correcting health and safety problems at defense nuclear facilities. DOE is required to cooperate fully with the Board, as are its defense nuclear contractors to the extent required by contract.

B. Legislative History (1994-1998)

In February 1994, the Chairman of the House Committee on Resources and three other House members sponsored a bill entitled, *Federal Nuclear Facilities Licensing and Regulation Act*.[5] Among other things this bill would have required that all new DOE nuclear weapons and research facilities be licensed by the NRC. A Presidential Commission would have been created to review options for regulation of existing facilities.

In March of that year, the Subcommittee on Energy and Mineral Resources of the House Committee on Resources held hearings on that bill. The hearings were chaired by Representative Richard Lehman, one of the bill's sponsors. Dr. John Ahearne, a former NRC Chairman, testified he believed that NRC should regulate DOE defense nuclear facilities. Chairman John Conway, in representing the Board, opposed external regulation of nuclear safety at defense nuclear facilities. DOE Deputy Secretary Charles Curtis, on behalf of DOE, asked for time to study the proposal.

No companion bill was introduced in the Senate and no other Committee of the Congress including those that had substantive responsibility for DOE defense activities, e.g., Committees on Armed Services and Energy and Natural Resources, considered the bill sufficiently important for consideration. Similar to thousands of other bills introduced in the Congress that are not acted upon, this bill was never voted on or even reported out of Committee or Subcommittee.

C. DOE Initiatives

In January 1995, former Secretary of Energy Hazel O'Leary announced the formation of a 25-member Advisory Committee on External Regulation to explore the placement of DOE nuclear activities under additional regulation by other Federal agencies. She appointed Dr. John Ahearne and Mr. Gerard Scannell, former Director of the Occupational Safety and Health Administration (OSHA), to co-chair this committee. A member of the Defense Nuclear Facilities Safety Board, Mr. Joseph DiNunno, was invited to participate. The committee held a series of public hearings during 1995 and delivered its report, *Improving the Regulation of Safety at DOE Nuclear*

[5] H.R. 3920, 103d Cong., 2d Sess. (1994).

Facilities,[6] to Secretary O'Leary in December of that year. This report contained dissenting views of committee members; for example, Mr. DiNunno expressed reservations concerning this report. His views are presented in Appendix 2 of the instant report. The report, referred to as the *Ahearne Report* after one of its co-chairmen, recommended that:

> An existing agency—either the Nuclear Regulatory Commission (NRC) or a restructured Defense Nuclear Facilities Safety Board (DNFSB)—regulate facility safety at all DOE nuclear facilities under the Atomic Energy Act (AEA).
>
> The Occupational Safety and Health Administration (OSHA) regulate all protection of workers at DOE nuclear facilities under the Occupational Safety and Health Act (OSH Act), unless regulation of worker risks at a given facility could significantly interfere with maintaining facility safety (for example, if nuclear criticality is possible), in which case the regulator of facility safety should regulate all worker protection at that facility under the Atomic Energy Act.
>
> The Environmental Protection Agency (EPA) continue to regulate environmental protection matters for all DOE nuclear facilities and sites under the environmental statutes.
>
> States with programs authorized by EPA, OSHA, or the regulator of facility safety acquire or continue to have roles in regulation of environmental protection, facility safety, and worker protection comparable to those they now exercise in the private sector.[7]

Another committee, the Department of Energy Working Group on External Regulation, was formed by Secretary O'Leary in January of 1996. This 22-member Working Group was composed entirely of federal employees (mostly DOE) and chaired by Mr. Thomas Grumbly, then Under Secretary of Energy. Its assigned tasks included developing specific recommendations on a regulatory framework for external regulation of DOE nuclear facilities, selecting a preferred facility safety regulator, and examining the costs of alternative approaches. This Working Group completed its report in December 1996.[8] The Working Group initially identified four options, which were then narrowed to two for detailed analysis and cost estimates. One option provided a permanent sharing of nuclear safety oversight jurisdiction between the NRC and the Board; the other provided a 10-year transition period ending in termination of the Board and full jurisdiction for NRC. The cost of the first option was estimated to be in the range of $50-60 million/year (total of Board and NRC costs); the cost of the all-NRC option was estimated to be in the $150-$200 million/year range.

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[6] *Improving Regulation of Safety at DOE Nuclear Facilities*, Advisory Committee on External Regulation of Department of Energy Nuclear Safety, December 1995.

[7] *Id.* at 4.

[8] *Report of Department of Energy Working Group on External Regulation*, DOE/US-0001, December 1996.

In parallel with, but independently of these DOE efforts, the NRC examined whether it could and should undertake regulation of DOE nuclear facilities not already under its jurisdiction. As part of its Strategic Rebaselining Initiative, the NRC developed a series of "Direction Setting Issues," or DSIs. DSI-2 was designated "Oversight of the Department of Energy."[9] Three public hearings on this paper were conducted by the NRC staff during the latter part of 1996. At the end of March 1997, the Commission voted to support external regulation of DOE nuclear facilities with itself as the regulator of nuclear facility safety.

In 1996, the Board, in response to its enabling statute, provided Congress in its Fifth Annual Report an appraisal of its progress in improving DOE's safety management program, and its perceptions of need for additional authorities to achieve the objectives sought by Congress. The Board advised that no additional action-forcing or regulatory powers were needed.

On March 6, 1996, in response to a request from the Senate Committee on Armed Services, the Board commented on the Ahearne Report. In testimony before the Committee, the Board cited the reasons why it did not believe external regulation would improve safety, enhance DOE credibility with the public, or save the taxpayers money.

NRC and DOE began cooperative efforts in early 1997. On March 31, 1997, Under Secretary Grumbly appeared before the NRC to present the findings of the DOE Working Group and to state that former Secretary O'Leary endorsed the higher-cost option of terminating the Board after a 10-year transition period, with full NRC jurisdiction thereafter. In the ensuing 6 months, NRC and DOE staffs negotiated a memorandum of understanding (MOU) to establish a pilot program of "simulated regulation." On September 19, 1997, NRC's senior staff and senior DOE officials met again to review the proposed pilot program. The MOU was executed on November 21, 1997, and the pilot program started immediately.[10] The overall objective of the MOU was "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."[11] Three DOE facilities were reviewed by NRC during FY 1998.[12] The Board has been informed that the first pilot to be conducted in FY 1999 will be at the Pacific Northwest National Laboratory on the Hanford Site in Richland, Washington. Additional DOE facilities to be reviewed in FY 1999 have not yet been announced. The pilot program of simulated regulation is planned for a 2-year period ending in FY 1999.

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[9] A draft of this paper was released by NRC to the public on September 16, 1996.

[10] 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, November 21, 1997.

[11] *Id.* at 5.

[12] The first three pilot facilities are the Lawrence Berkeley National Laboratory in Berkeley, California, the Radiochemical Engineering and Development Center in Oak Ridge, Tennessee, and the Receiving Basin for Offsite Fuel at Savannah River Site in South Carolina.

II. PIVOTAL CONSIDERATIONS

One cannot reasonably address the proposition that nuclear safety of DOE's production and utilization of nuclear materials, particularly for the nation's defense mission, should be externally regulated, rather than externally monitored and constructively critiqued, without being clear what purposes are to be served.

The Board believes three basic considerations by Congress are pivotal: (1) national security, (2) cost/benefits, and (3) government administrative policies and precedents. With respect to each of these, the Board observes the following.

A. National Security Considerations

The Board believes that the most serious problem with any external nuclear regulation of DOE's defense program would be the potential for an adverse effect on national security.

1. Atomic Energy Act

At the very outset of the Atomic Energy Act of 1954, and resonating throughout, is the declaration of the "paramount objective" of the Atomic Energy Act: "that the development, use, and control of atomic energy shall be directed so as to make the maximum contribution to the . . . common defense and security . . . ."[13]

DOE's most important contribution to national security under the Atomic Energy Act is its effective conduct of this country's nuclear weapons program, a program that has changed significantly and is still evolving, since the end of the Cold War. Part of DOE's responsibility in furtherance of this essential mission is the function of prescribing and assuring compliance with adequate nuclear health and safety requirements for public and worker protection.

2. Impact of Regulation on National Security

To regulate, with or without licensing or permitting authority, is to control, direct, or govern, coupled with the authority to enforce or penalize for violation. Regulatory control by an external agency of the nuclear health and safety aspects of DOE's performance of its defense mission could diminish the declared primacy of national security by relieving DOE of a significant portion of its responsibility for the nuclear weapons program. DOE would shift its focus to treat the regulated portion of health and safety as a stand-alone objective without regard for national security or any damage to national security the regulatory process could cause. Conflicts would have to be umpired.

National security is a precious amalgam of prevailing law and policy. It has extensive purview and both tangible and intangible facets. This was ably and successfully explained last year by government lawyers in the case of the Natural Resources Defense Council versus the

[13] 42 U.S.C. § 2011.

Secretary of Energy, in the Federal District Court for the District of Columbia.[14] Together with emphasizing the critical importance of the nuclear weapons program to national security, the court cited "credibility" as an important ingredient of national security, arguing that the existence of the nuclear deterrent had to be believable and that credibility "depends in large part on the effective and successful" conduct of the weapons program. The court stressed that even a brief disruption of the program would create a vulnerability and that "any such vulnerability—and any future reduction in the credibility of our nuclear deterrent for even a brief period of time—would be unacceptable. . . . Any doubt over the credibility of our nuclear deterrent would create unacceptable risks in the event of a future crisis . . . ."[15] The court also contended that any delay in the conduct of DOE's weapons program "could have serious national security implications."

As Judge Stanley Sporkin made clear in his opinion, these comments were amply supported by statements by the Secretaries of Defense and Energy and the Directors of DOE's national laboratories engaged in nuclear weapons work. In his opinion, the Judge pointed out: "What is more, Defendants claim that 'even a modest delay in implementing the SSM (Stockpile Stewardship and Management) Program could have a serious impact in the short term.'"[16]

Delay is a commonly encountered consequence of the regulatory process. The Atomic Energy Act and the Administrative Procedure Act require a nuclear regulatory agency to adhere to a formalized process that can result in adversarial hearings, administrative reviews, and an opportunity for judicial appeals such that private and special interest intervenors are accommodated. Licensing arenas are often battlegrounds over legal processes rather than substantive nuclear health and safety issues, and often result in extensive delays. Witness the recent failed licensing proceeding for the proposed Louisiana Energy Services centrifuge enrichment facility, which was subject to full adjudicatory hearings during a several-year period.

Note that the Board is not a regulatory body. It cannot control, direct, or govern any function, or interfere with the paramountcy of national security.

The Board assumes that the regulatory process that NRC would seek to have authorized would parallel or generally resemble the procedural course now applicable to commercial NRC licensees, because the DOE-NRC MOU indicates that one of its objectives is to "build public trust."

The Board would not agree to the following suggestion in the Final Report of the Advisory Committee of External Regulation, commonly known as the Ahearne Report, which is referred to in the DOE-NRC MOU: "NRC is only empowered but not required to 'minimize danger to life and property.' The health and safety provision of the Atomic Energy Act to 'minimize danger to life and property' could be strengthened by making it a nondiscretionary requirement for the regulation of DOE nuclear facilities." Not only would such a standard be extremely costly to

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[14] *NRDC v. Peña*, 972 F. Supp. 9 (D.D.C. 1997).

[15] *Id*. at 20.

[16] *Id*.

achieve, it would further expand the opportunities for legal and judicial contributions to the regulatory system. This would unquestionably suit the agendas of opponents of nuclear weapons (or of all things nuclear), who are among some of the strongest advocates of nuclear defense regulation. The legal intervention process for major nuclear facilities that is normally a part of formal external regulation could readily be exploited by the more hard-line opponents of U.S. national security policy by crippling the nuclear weapons program.

The usual enforcement powers of regulators, e.g., denial of license and fines, are not appropriate for DOE defense activities. Denial of licenses would stop critical national security activities, and fining DOE would merely transfer appropriations away from the safety activities the public is concerned about, thereby making operations potentially more risky and cleanup activities further delayed.

Formal regulation of our nation's defense nuclear facilities, similar to what is imposed on the civilian nuclear utilities would unquestionably aid those who are attempting to close down the Los Alamos National Laboratory and other national laboratories by demonstrations and lawsuits. As reported in the October 2, 1998, *Albuquerque Journal*:

> Peace Action, billing itself as the nation's largest grassroots disarmament group, is inviting hundreds of activists from 28 states next summer for a mass march on the lab.

The article, which points out that certain groups are seeking new ways to court public opinion, including marches and lawsuits, quotes the Peace Action organizer from the group's headquarters in Washington, D.C., as saying: "I think from groups like Peace Action, you're going to see a lot of stepped up activity in the Santa Fe-Los Alamos area."

Regulating agencies in general, and NRC in particular, were intentionally chartered to have no stake in the success of the regulated enterprise. In fact, they can and do use the threat of shutting down the enterprise to enforce their goals. But the nuclear weapons program is an enterprise of the Government. The notion that in contentious adversarial proceedings the NRC could decide whether DOE may have a license or certificate to build or operate a nuclear weapons facility gives the NRC and intervenors a ready tool to overrule the President and Congress on an issue of national security.

3. Impact of Regulation on Stockpile Stewardship

DOE's nuclear weapons program is critical to national security. To appreciate the present posture of DOE's most important national security mission, it helps to read DOE's Final Programmatic Environmental Impact Statement for Stockpile Stewardship and Management. Therein are described the treaties influencing our nation's security interests, and the substance of the Stockpile Stewardship and Management Program developed by DOE to continue to meet its obligation to ensure the safety and reliability of the nuclear weapons stockpile under the following programmatic restraints:

- No new-design nuclear weapons will be produced.

- The emphasis will be on reducing the size of the stockpile by dismantling existing nuclear weapons.

- The moratorium on nuclear testing, begun in 1992, will continue.

- Existing weapons are expected to remain in the stockpile well into the next century.

These limitations are to be compensated for in the Stockpile Stewardship and Management Program by what DOE calls "a single, highly integrated technical program for maintaining the continued safety and reliability of the nuclear weapons stockpile." Details of that complex program are presented in the DOE Environmental Impact Statement: They show an intricate interplay of stockpile stewardship functions, including research and development; testing of components and products; assessments and certification of safety and reliability; and the stockpile management activities of production, surveillance, refurbishment, and dismantlement of the nuclear weapons stockpile, along with fabricating replacements for pits, high explosives, and nonnuclear components. The necessities of stockpile stewardship include retention of the technical competencies of the three weapons laboratories, as well as maintenance of the capability to conduct nuclear tests under a "supreme national interest" condition "because there can be no absolute guarantee of complete success in the development of experimental and computational capabilities." New facilities will be needed, e.g., the National Ignition Facility, the Contained Firing Facility, and the Atlas Facility, and additional experimental facilities may turn out to be needed in the course of the program's evolvement.

As the DOE Environmental Impact Statement makes clear, the enduring stockpile mission it describes is a difficult one. The Statement, however, makes no mention of the possibility of an external regulatory presence. If NRC were assigned a role in the Stockpile Stewardship and Management Program, the Board believes that the regulatory process would seriously hamper DOE's programmatic day-by-day tasks and diminish assurance of adequacy of the nuclear weapons stockpile.

B. Cost/Benefit Considerations

Cost/Benefit considerations can be grouped thematically along the following lines:

- Credibility
- Cost Effectiveness
- Safety.

1. Credibility

The credibility DOE now needs most is that which comes from doing its work safely and cost effectively within budgets Congress has thus far supported. DOE's credibility will improve by performing its responsibilities in a safe, efficient, and creditable manner, rather than by having more external regulation imposed upon it. DOE has made notable progress with cooperation and

openness, particularly in the formation and utilization of local citizen advisory boards. Trust and credibility are developed at the local level, not by layering government agencies.

The last 4 Secretaries of Energy have been at the fore in establishing this kind of attitude and fostering a safety culture to sustain it. The Board has also played a key role in DOE's safety upgrade effort. Significant milestones in the Board's and DOE's efforts to improve the assurance of safety at defense nuclear facilities include Recommendations 90-2, 93-3, 95-2, 98-1, and the associated DOE implementation plans for these recommendations.[17]

The first of these recommendations caused DOE to critically evaluate its set of safety-related standards and embark upon an aggressive program to improve those standards, bringing them into close alignment with the applicable NRC requirements. The second of these recommendations addressed the technical competence of DOE personnel in critical safety positions. DOE's implementation plan in this case created the first ever DOE-wide technical qualification program. The third recommendation encouraged DOE to build on the successes gained in the other two efforts and develop safety management programs for its defense nuclear facilities that integrated public protection, worker safety, and environmental protection into the work process. The full implementation of this recommendation, now well along at a number of facilities, is showing substantial gains not only in safety, but also in efficiency. The last of these recommendations (98-1) is directed at closing the loop on these safety programs by strengthening DOE's ability to find and resolve safety problems through its independent oversight function.

The principal thrust of this upgrade is identification of applicable safety requirements with clearly defined safety measures, to be mutually agreed upon by DOE and its contractors in authorization agreements as contractual conditions for performing hazardous work. In effect, such defined conditions are to be those conditions mutually agreed as necessary to ensure the protection of the public, the workers, and the environment. As of November 1998, 40 authorization agreements had been completed for 77 defense nuclear facilities and activities. DOE is proceeding to have all of the most hazardous defense nuclear facilities operating in accordance with such agreements within the next 2 years. In the meantime, operations are continuing under permits issued by the EPA and states for environmental compliance and DOE-approved, Board-scrutinized bases for interim operations in the area of nuclear safety.

As a direct result of DOE's improved self regulation, coupled with the Board's independent external oversight, DOE's safety and environmental protection programs at defense nuclear facilities during the past decade have been marked by considerable improvement, increased effectiveness, and minimal disruption to national security missions. The priority that may have been accorded to mission objectives in the past has given way to a DOE management philosophy that stresses doing work safely while competently.

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[17] Recommendation 98-1 was issued in September 1998, and is still under review by the Secretary of Energy.

2. Cost Effectiveness

In an era of shrinking dollars to perform DOE's major missions—weapons maintenance/ stewardship and cleanup—it would not be prudent to transfer safety-related responsibilities into a more costly regulatory structure for questionable fringe benefits.

The Board has been asked by Congress to provide estimates of costs for transfer of defense nuclear facilities to NRC and presumably OSHA. The Board is not able to quantify costs to be incurred by other agencies with any greater reliability than has already been done by them.

Neither DOE's External Regulation Advisory Committee nor DOE's Internal Study Group has provided any convincing estimates of what a move to use NRC for nuclear safety regulation, and OSHA for regulation of occupational safety, would cost. An NRC estimate reported in the External Advisory Committee Report, at page 54, stated that 1100-1600 additional staff and $150-200 million per year would be required to regulate DOE's nuclear facilities. DOE's estimates as reported by DOE's Working Group on External Regulation, at pages 3-8 to 3-10, were in the same range, but stated that costs would build up to that annual level during a 10-year transition period.

It should be noted also that the above are estimates only of the cost to the external regulator, and do not include the costs of DOE response to new regulatory requirements. For these costs to DOE, we turn to estimates that have been made by that body.

In December 1996, former Secretary of Energy Hazel O'Leary announced her intention to seek legislation that would authorize the transfer of nuclear safety oversight to the NRC. Based on the Report of the Department of Energy Working Group on External Regulation, Secretary O'Leary chose the following option as the preferred method for external regulation of all DOE nuclear facilities.

> **Option #2:** All DOE nuclear facilities would transition into full regulation by the Nuclear Regulatory Commission in a little over 10 years. In years 1-5, all Nuclear Energy and Energy Research nuclear facilities and selected Defense Program and Environmental Management nuclear facilities would become regulated by the Nuclear Regulatory Commission. This transition would begin immediately after enabling legislation is passed. Except for the selected facilities regulated by the Commission, Defense Program and Environmental Management nuclear facilities would continue to be regulated by the Department with oversight by the Defense Nuclear Facilities Safety Board in this first phase. In years 6-10, all Environmental Management nuclear facilities would become regulated by the Commission and the Board would maintain oversight only of Defense Program facilities. After 10 years, all DOE facilities would be regulated by the Commission. Remaining Board staff would merge into the NRC.[18]

[18] Action Memorandum to Hazel O'Leary from Thomas P. Grumbly, *Recommendation on Implementing External Regulation*, approved by Secretary O'Leary, p. 2, December 19, 1996.

The DOE staff attempted to study the cost impacts associated with the above external regulation proposal.[19] The costs to regulate DOE under NRC were estimated using two cost scenarios:

(1) the current NRC regulatory structure, and

(2) using "enlightened compliance" assumptions.

The upper-case cost estimate is based on the current NRC regulatory scheme; that is, each major nuclear facility or operation would receive an individual license. The upper-case cost estimate does not include any savings resulting from productivity or streamlining improvements.

The lower or best-case cost estimate is based on enlightened compliance assumptions. For DOE this means that multiple facilities and operations at a site could be enveloped within a single broad-scope or materials license. The best-case cost estimate includes the assumption of DOE/contractor productivity improvements of 40 percent during a 10-year period that have been achieved by the commercial nuclear industry. Further, the best-case cost estimate does not include any penalties for options with dual regulation.

DOE's estimated costs to implement this external regulation plan are shown in the following table.

Table 1 - DOE's Costs to Implement External Regulation

Cost to Implement Option 2	**Best Case** (in billions of dollars)	**Upper Case**
Cost during the first 5 years	1.4	1.8
Cost for year 6 thru 10	1.3	2.5
Cost beyond 10 years	1.2	3.1
Total	3.9	7.4

The DOE staff places a further caveat on its cost estimates with the following caution:

> Other data indicate a potential for significantly higher costs due to external regulation. Data gathered from experience both at the Gaseous Diffusion Plants (GDP) and Waste Isolation Pilot Plant (WIPP) indicate the potential for

[19] *Report of Department of Energy Working Group on External Regulation*, Appendix K, Subteam Report on *Costing External Regulatory Options*, Appendix K, December 1996.

> higher than anticipated costs. Data from the GDP experience indicate that as much as 16% of the annual operating cost can be attributed to the cost of regulation and our study of WIPP indicates that regulatory creep can increase costs significantly. Experience at WIPP has shown that regulatory creep can account for as much as 27% of the life-cycle cost.[20]

Both of the DOE cost scenarios offered above reflect the magnitude of the effort and associated resources needed to implement NRC external regulation over all DOE nuclear facilities. The economic reality of a multi-billion dollar venture for this type of external regulation must be considered in any valid cost/benefit study.

What can be said with confidence is that it is simply not realistic to assume that transfers in regulatory functions can be accomplished as a zero fund process, i.e., DOE savings are equal to additional regulatory cost. Any external regulatory system imposed fully on DOE that is comparable in legal processes and proceedings to that current for the commercial industry will cost the government much in the way of added dollars. If the experience gained with the gaseous diffusion plants is any indication, these costs for the most hazardous of defense nuclear facilities are likely to be in the tens of millions of dollars per plant per year.

In contrast to the estimates by NRC and DOE (OSHA costs not included), during the past 9 years (FY 1990-1998) the Board has expended a total of about $127 million or on the average less than $15 million per year. For this amount the Board has provided oversight of facilities that make up the defense nuclear component of DOE's nuclear facilities. For these costs the Board through its action-forcing—not regulatory—powers has helped bring DOE well along in the upgrading of its safety management program.

The Senate Committee on Armed Services stated in its report on the National Defense Authorization Act of 1999, "The committee notes that DNFSB continues to provide exceptional and effective external oversight with a budget that equals about one-tenth of one percent of total Atomic Energy Defense funding."

3. Improved Safety

The historical record of DOE management of its contractors with respect to the nuclear safety aspects of its facilities and occupational environment of workers has not been above criticism. However, judged objectively by statistical evidence of safety performance, DOE's record compares favorably with that of comparable industries.

Without doubt, DOE has effected improvements in safety management of its contractors as a result of external pressures brought to bear by the Board. Any external regulator could reasonably have been expected to have an equivalent effect. However, to make a case that such improvements will result only if nuclear safety at DOE is externally regulated is not supportable and diminishes the stature and accomplishments of DOE.

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[20] *Id*. at K-15.

As reported in a study done in 1996 by the National Academy of Public Administration on occupational health at DOE,[21] DOE's statistical safety and health record has always compared favorably with that of private industry. Are continued efforts aimed at improvement justified? The answer is Yes, of course. Continuous efforts to improve operations in all facets are a well-established "best practice." The development and maintenance of a safe work environment are never-ending tasks that must keep current with the changing missions of DOE. Does such a requirement justify change in the lead agency responsible for ensuring a safe work place? Evidence does not support such a change.

As of January 1997, 18 DOE operating contractors, representing 60 percent of contractor employees, were reported to be active participants in the Voluntary Protection Plan (VPP), with 2 defense nuclear sites recognized by OSHA as having achieved Star Status for safety management excellence, marking them as being on a par with the best in industry. Enhanced work planning processes and integrated management concepts to which DOE is now committed are bringing further upgrades into place.

While being in the forefront of those that have been constructive critics of DOE's safety management of its contractors, the Board has been favorably impressed by the responsiveness of DOE to the Board's recommendations for improvements. While continuing to find areas for improvement, this progress and responsiveness are clear indications that an effective safety management program can be effected without resort to the complications that the proposed external regulatory concept would entail. The Board has found no fatal flaws in DOE's safety management program. All 4 Secretaries, since the creation of the Board, have been willing to respond affirmatively to the Board's recommendations for improvement.

C. Government and Administrative Policies

1. Layering of Government Agencies

The idea that credible performance by one government agency can be assured only by layering another on top of it is, on the surface, poor administrative policy. It becomes even more so if one government agency regulates another through the authority to levy penalties. It is bureaucracy at its worst and as a matter of public policy raises the question of where such layering ends. If DOE, as a cabinet-level office, is not performing credibly the job it is required by law to perform, should the public be asked to fund a second entity of government to improve its credibility? Credibility should come from a job well done, not from a system of layering of government agencies. Congress and the Administration can do much more to increase public confidence in the job being performed by appointing administrators who understand DOE's missions, by selecting and training highly-skilled and technically-competent staff, and by holding accountable those entrusted with safety as well as mission.

There are those who rightfully say that the Federal Government is already doing layering in the environmental protection field where EPA has such authority. Further, in the same field, states are levying fines on the federal agencies for failures to meet negotiated environmental compliance

[21] NAPA Report, *Ensuring Worker Safety and Health Across the DOE Complex,* pp. 108-109, January 1997.

agreements. Such penalties in effect divert funds from the very actions required in the public interest.

One federal agency forcing a second federal agency to perform its statutorily required duty through enforcement action with penalties is not good administrative policy. Administrative fines between federal agencies serve no purpose (i.e., no net gain to the treasury) other than to call attention to deficient performance. Interagency fines do, however, pull money from where it is most needed—the budget of the deficient activity.

In the commercial nuclear world, NRC regulates private entities that perform work. In most of the civilian weapons complex, DOE regulates contractors that operate DOE-owned facilities. Unlike the commercial world, external regulation of DOE nuclear activities would result in a regulator regulating the regulator regulating the contractors performing the work. This relationship might improve safety performance, but at great cost to the taxpayer. The Board has shown that safety performance can be improved at much lower cost than adding a layer of full regulation. In response to the Board's prodding, and in some cases as a result of the Board working with DOE, qualified administrators have been put in place, safety programs have been markedly improved, and DOE is now in the process of upgrading its internal assessment programs to ensure effective regulation of its own activities.

2. Additional Potential Obstacles

Regulation of toxic and hazardous materials at DOE is extensive and highly divided. DOE's contractors must deal with numerous laws and regulatory agencies associated with protection of the public, workers, and the environment.

DOE's contractors must conform to requirements of the EPA and the states in connection with discharge of toxic and hazardous wastes to the environment, including radioactive materials when mixed with hazardous waste. Although DOE sets standards for its use of radioactive material, the Department of Transportation (DOT) regulates their transport, and DOT and the NRC are involved in approval of containers in which the radioactive material is shipped. The NRC will regulate disposal of high-level nuclear waste in an ultimate repository, subject to EPA-established standards and subject to ongoing impediment by states. EPA and the State of New Mexico will regulate disposal of low-level and transuranic waste in the Waste Isolation Pilot Plant. Meanwhile, all states through which traffic to disposal sites will flow are preparing to oversee and possibly limit that movement. Protection against radioactivity and for all hazardous activities in the workplace is administered by DOE using OSHA and other requirements. Individually, the objectives of each of these regulatory restraints cannot be faulted. Altogether, it generally appears that the world is full of people who can say "No," but nearly empty of those who can say "Yes."

There are those who advocate inserting into this already complex maze external regulation of DOE's program for ensuring the protection of health and safety from radiation hazards in its defense nuclear activities. Though this has been suggested as a means of replacing DOE's control of safety by NRC's, and thus benefitting from an assumed greater public acceptance of the control of safety, that hand-off would not and could not occur. DOE's responsibility for protection of

nuclear safety would be undiminished, as has been so in relation to regulatory control by EPA and OSHA where that has been exercised. It would only be more complicated and more costly.

There would be a profound effect on the status quo as the transition was made to a new regulatory regime. DOE's entire safety management structure would be altered. Furthermore, the interfaces between DOE and the other regulators would require redefinition. The interface problem is not trivial. Witness the controversies on these interfaces in other arenas where conflicts have existed. Do the claims of expected benefits justify the upset of the existing effective, functioning system? The Board believes not.

3. Reinventing Government Initiative

One of the most innovative and constructive attempts in recent years to improve the administrative function of government is captured in what is called the "National Partnership for Reinventing Government Initiative." The stated goal is a government that "works better, costs less, and gets results that Americans care about."

The initiative calls on government agencies to "give the public the protection and services it expects at a reasonable cost, while eliminating ineffective and unnecessarily burdensome regulation." Further, it advocates that agencies "employ regulations more selectively and sometimes use other approaches to accomplish their goals . . . ."[22] That concept was formalized by the President in Executive Order 12,866, *Regulatory Planning and Review*, September 30, 1993. That Executive Order requires that agencies evaluating changes to regulatory systems identify the problem that the change is meant to address, examine whether modifying existing regulatory arrangements is a more effective path than developing new regulatory schemes, assess available alternatives to direct regulation, and perform cost/benefit assessments of the various options. DOE's advocacy of increased regulation falls far short of this level of rigor.

In fact, the concept of regulation of DOE by NRC with its resulting complexity, added cost, reduction of national security, and questionable benefit would be completely counter to the intention of the Reinventing Government Initiative.

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[22] *Improving Regulatory Systems*, Accompanying Report of the National Performance Review, Washington, D.C., USGPO, September 1993.

III. RESPONSES TO THE CONGRESSIONAL REQUEST FOR INFORMATION

Congress, in 1997, passed the National Defense Authorization Act for FY 1998. The Act, which was signed into law by the President on November 18, 1997, contains Section 3202 which requested that the Board prepare a report and make recommendations on what its role should be in the event that Congress considers legislation for external regulation of defense nuclear facilities. The report was to include responses, and supporting analyses, for 16 items of interest to Congress as germane to the discussion of the need for external regulation.

The following are responses to the issues and questions raised by Congress.

1. An Assessment of the Value of and the Need for the Board to Continue to Perform the Functions Specified under Chapter 21 of the Atomic Energy Act of 1954 (42 U.S.C. § 2286 et seq.)

Experience after almost 9 years of oversight operations has confirmed the concerns and wisdom of the Senate Committee on Armed Services in establishing an independent oversight board with advisory authority. The flexibility and the authority provided in the enabling legislation allowed the Board to aggressively focus its expertise on Congressional concerns for safety and viability of the nuclear weapons complex while preserving to the Secretary of Energy the power to address his responsibilities to meet national security requirements. As authorized by Congress, the Board's charter was carefully defined, allowing the Board to blunt early efforts by third-party litigants to force the Board to an agenda other than addressing the high risk conditions already identified by Congress.

Through the architecture of the Board's uniquely prescriptive enabling legislation, which closely follows the Committee on Armed Services concerns and the unique contours of the challenges presented by our country's nuclear weapons complex, Congress wisely avoided adversarial and cumbersome processes that sometimes attend traditional external regulatory structures and would certainly dilute the Board's ability to provide its assistance and advice to the Secretary of Energy. Consequently, the Board has been able to assemble and fully utilize the expertise of its staff not only to identify the risks to the health and safety of the public and workers, but also to assist DOE in mobilizing the resources and expertise required to remove the risks.

The independent oversight advisory structure provided Congress, the Secretary, contractors, representatives of labor, citizen advisory groups, and the Board with the flexibility DOE needed to successfully meet the new challenges to DOE's operations of the last 9 years. Among these are sharply changing mission, dwindling resources, aging facilities, and the rapid dissipation of expertise needed to competently and safely dismantle facilities that are no longer needed.

The Board has also helped to ensure safety in the course of DOE's stewardship of the enduring stockpile, nourish the leadership needed to modernize the nuclear weapons complex (including the National Laboratories), and maintain the nuclear weapons needed to meet national defense requirements. Because of its unique charter, the Board has provided leadership and assistance to facilitate effective communication among labor interests, citizen advisory groups,

federal and state agencies, concerned individuals, and those private-sector interests seeking constructive participation in resolving health and safety concerns.

The Secretary of Energy has been and continues to be confronted with challenges far beyond those difficulties recognized by Congress when it created the Board. Nevertheless, the inherent strengths of external oversight that provide assistance rather than adjudgment, of advice rather than command and control, and of facilitation rather than adversarial dispute resolution allow the Board to craft technically-sound recommendations.[23] From our vantage point, the continuance of the Board with independent oversight and advisory powers is the superior governance mechanism to promote and protect the several public interests that converge on DOE's defense nuclear facilities.

To the extent the Board can be criticized for any shortcomings, we think it appropriate to recall the Senate Committee on Armed Services admonition:

> The Committee does not believe that a safety board is a panacea for all DOE safety problems, or that it can in any way absolve the Secretary or the Department's contractors of their fundamental safety responsibilities. In fact, many witnesses testified that DOE's shortcomings largely reside within the Department's line management, and that there can be no substitute for capable and committed line management.
>
> What the Board can do is provide critical expertise, technical vigor, and a sense of vigilance within the Department at all levels.[24]

This the Board has done, and these actions and responsive improvements have been documented in its annual reports.

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[23] The Senate Committee on Armed Services noted that oversight provided the necessary assistance and flexibility for DOE to upgrade safety in the diverse weapons complex.

> The Board should be instrumental in helping DOE to develop appropriate and operationally meaningfully [sic] safety standards, and ensuring their translation into clear and consistent requirements for DOE management and contractors.
>
> Many recommendations may pose complex requirements for planning, analyzing, designing, contracting, and implementing on the part of the Department. It may not be obvious to the Board at the time it issues a recommendation how much money or time might be needed for implementation. There is a real need for latitude on the part of the Secretary, on the one hand, and the Board, Congress, and the contractors who would perform the work on the other, at all stages of the implementation process.

S. Rep. No. 232, 100th Cong., 1st Sess. 16 (1987).

[24] *Id.* at 21.

2. An Assessment of the Relationship between the Functions of the Board and a Proposal by the Department of Energy to Place Department of Energy Defense Nuclear Facilities under the Jurisdiction of External Regulatory Agencies

We interpret this reporting requirement as asking for a comparison of the safety oversight functions as performed by the Board and the functions of a proposed external regulator. To assess the relationship between the Board's functions and the functions of an external regulatory agency, it is important to first define the components of "independent oversight" and the elements of "regulation" proposed by former Secretary of Energy Hazel O'Leary.

The Board, by law, currently exercises independent oversight of safety standards, activities, and practices at defense nuclear facilities, from design, construction, and operation through decommissioning, to ensure that worker and public health and safety are adequately protected. Such oversight includes site visits; technical reviews; evaluations of the adequacy of safety standards including DOE Orders, rules, and other safety requirements; formal investigations; hearings; briefings; and data gathering. These activities are designed to determine whether the Board should issue recommendations, and in what form, to the Secretary of Energy to ensure that public health and safety are adequately protected.

For example, when DOE initiated its effort to streamline its directives system and move from safety Orders to rules under the Administrative Procedure Act, the Board committed substantial resources to provide timely review of the technical content of the revised DOE Orders, regulations, and other safety directives. The Board's contribution in maintaining the technical content of these new directives and rules was highly praised by the DOE Under Secretary, who characterized the Board's efforts as "seamless oversight." The courts likewise have recognized the Board's unique oversight as having action-forcing authority.

As stated in the Board's Policy Statement No. 2, the Board also flexibly exercises its oversight function by working cooperatively, and informally, with DOE to correct safety problems identified by the Board and its staff that are not serious enough to warrant issuing a formal Board recommendation. The Board's Annual Reports to Congress detail safety improvements made by DOE both in response to the Board's formal recommendations and achieved cooperatively by informal means.

Regulation of the DOE complex would depend upon the exact legislation passed by Congress. As noted previously, however, DOE and NRC have now taken the position that the exact scope and format for the regulatory program must await the results of the pilot program. Certain elements of regulatory programs are nevertheless considered standard. For example, a regulator normally would promulgate regulations after notice and comment. DOE could, however, have authority to petition the regulator for promulgation of needed safety rules, and could comment on any rules proposed. Those rules would have the force and effect of law, allowing the regulator to mandate compliance with the regulations and use civil or criminal enforcement tools to rectify any noncompliance.

Table 2 presents a side-by-side comparison of the Board's statutory oversight functions with typical regulatory functions.

Table 2 - Comparison of the Board's Oversight Functions with Regulatory Functions

Function	Board's Independent Oversight	Regulation
Inspection of Facilities and Access to Property	Yes. [42 U.S.C. §§ 2286b(h), 2286c(a)]	Yes
Investigative Authority	Yes. [42 U.S.C. § 2286a(2)]	Yes
Access to Documents and Subpoena Authority	Yes. [42 U.S.C. §§ 2286a(3), 2286b(d), 2286c, 2286a(a)(3)-(4); 42 U.S.C. § 2286b(a)(2)]	Yes
Hearings	Yes. [42 U.S.C. § 2286b(a)]	Yes
Set Safety Standards	No. The Board reviews and evaluates the content and implementation of DOE standards, and may recommend adoption of standards, including DOE Orders, regulations, or other requirements, "to ensure that public health and safety are adequately protected." [42 U.S.C. § 2286a(a)(1)]	Yes, by formal rulemaking processes or otherwise.
Establish License or Permit Conditions	No. The Board may make recommendations regarding the safety content of contracts and existing licenses and permits. Pursuant to Rec. 95-2, DOE now requires authorization agreements akin to licenses for its hazardous activities.	Yes
Enforce Mandatory Safety Requirements	No. However, the Board's functions are considered "action forcing" on DOE by the courts. To date, no Recommendation has been rejected by DOE.	Yes, by a number of civil and/or criminal enforcement mechanisms in furtherance of its regulatory authority.
Public Involvement	Yes, through legislative style hearings for information purposes, briefings, Freedom of Information Act (FOIA), a public reading room, Internet access, and Sunshine Act processes.	Yes. Hearings are of the adjudicatory form.

During DOE's assessment of the need for additional regulation during the past 3 years, there has been extensive discussion of the extent to which DOE is self-regulating. "Self-regulating" means the extent to which the DOE's programs and actions are unconstrained by outside agencies. The premise that DOE today is self-regulating is inaccurate. In fact, DOE is subject today to very substantial external regulation and oversight. This results not only from oversight of nuclear safety by the Board, but also regulation by DOT, EPA, and the states.

The Board has issued 38 sets of safety recommendations containing 174 specific recommendations. Given that DOE has not rejected any of the 174 specific recommendations to date and that DOE has completed many of these recommendations and is making progress in implementing others, it is clear that DOE can achieve its nuclear safety goals under the current regime for defense nuclear facilities.

3. An Assessment of the Functions of the Board and Whether There Is a Need to Modify or Amend Such Functions

In the Board's original enabling legislation, Congress required the Board to perform a comprehensive assessment of its functions and provide "recommendations for continuation, termination, or modification of the Board's functions and programs" as a part of the Board's Fifth Annual Report to Congress. That statutory reporting requirement is nearly identical to the present one. In its Fifth Annual Report, the Board presented its comprehensive assessment of all Board functions and determined there was a need for only minor modifications in order for the Board to be more effective. Those modifications have now been completed and include the assignment of site representatives to key defense nuclear facilities to serve as the Board's technical eyes and ears, and the expansion of efforts to increase public involvement in the Board's work.

4. An Assessment of the Relative Advantages and Disadvantages to the Department and the Public of Continuing the Functions of the Board with Respect to Department of Energy Defense Nuclear Facilities and Replacing the Activities of the Board with External Regulation of Such Facilities

The major advantages of continuing Board oversight, as opposed to regulation of defense nuclear facilities, were discussed in detail in the Board's Fifth Annual Report to Congress, and are summarized in the following points:

- Independent oversight may be conducted without unduly interfering with critical national defense and security functions at defense nuclear facilities.

- The Board's oversight is far less costly than regulation and yet can achieve comparable safety benefits.

- The oversight model as structured by the Board's enabling statute has proven to provide the kind of flexibility needed to address substantive issues presented by the disparate facilities and circumstances.

- Board recommendations may be accepted or rejected. The plans for implementing accepted recommendations are developed by DOE, which is ultimately responsible for safety at defense nuclear facilities.

- Recommendations are developed by a neutral party, interested in safety and in the success of the overseen activity.

- The Board's recommendations, including the Secretary of Energy's implementation plans that respond to the recommendations, are made available to the public, except where national security considerations prevail. The recommendation process provides affirmative steps to solicit comments from the interested public. It is also designed to involve the public in constructive participation in dealing with conditions or practices that may endanger the public and worker health and safety.

- The Board structure is well-established and already possesses the specialized expertise necessary to ensure that DOE provides adequate protection of public health and safety within the unique nuclear defense complex.

- Shifting to a regulatory structure at this point would disrupt progress being made under Board recommendations.

The major advantages attributed to regulation, defined to include licensing or permitting of facilities, are the following:

- Regulations and licenses contain detailed safety requirements that have the force and effect of law, which the regulated defense nuclear facilities must follow. A regulator can mandate that actions be taken within the complex and enforce its will through administrative, and ultimately, judicial actions.

- Regulations are circulated for comment by experts and the general public prior to finalization.

- Requirements are developed by a neutral party, interested only in safety and have no statutory responsibility in the success or failure of the regulated activity.

- The regulatory process results in promulgation of requirements that are relatively difficult to amend, but as a consequence, provide stability. The regulated entity knows what is expected for compliance, and can engage in short-term and long-term planning based on a settled set of expectations regarding requirements.

Regulation poses some serious potential disadvantages when applied to facilities vital to national security, such as the core defense nuclear facilities engaged in weapons activities (listed in response to item 8 below). The use of injunctions and other legal processes when regulations are violated could result in DOE not being able to fulfill nuclear stockpile and other national security

commitments. (See statements of Secretaries Peña and Cohen filed in *NRDC v. Peña et al.*,[25] regarding the impact of an injunction under the National Environmental Policy Act (NEPA) on national security programs.) Regulatory programs, such as the Resource Conservation and Recovery Act (RCRA), with the potential for impacting the national security prerogatives of the President contain provisions for Presidential override of regulatory actions that impede national security programs. Such override is not reviewable in court. These national security issues would be compounded if citizen suits were authorized by statute for enforcement of regulations or license conditions at defense nuclear facilities. It should be noted that NRC regulations and licenses for commercial nuclear facilities do not now authorize such enforcement actions initiated by citizens, although the Ahearne Committee's report recommended that the law be changed to permit such actions for DOE facilities.

Other disadvantages include the potential enormous cost of regulatory processes. NRC expends nearly $3 million per reactor per year to conduct its regulatory and licensing activities. By contrast, the Board's oversight appropriation for FY 1999 is $16.5 million, and it covers all defense nuclear facility oversight. Other disadvantages are the time-consuming and cumbersome legal framework required for such processes, the enormous cost of bringing facilities into compliance with the rules, and the inherent inflexibility of regulatory requirements. As stated in response to item 2, many functions and activities at DOE's defense nuclear facilities are already regulated. Adding another layer of regulation to existing ones would be duplicative, costly, and could actually result in less safety rather than more. For the small subset of operations within production, utilization, and weapons-related facilities that are currently subject to oversight alone, no adequate justification for conversion to regulation has been given.

5. A List of All Existing or Planned Department of Energy Defense Nuclear Facilities That Are Similar to Facilities under the Regulatory Jurisdiction of the Nuclear Regulatory Commission

A list of existing and planned DOE nuclear facilities is contained in Appendix 3 of this report. Also appended is a set of correspondence between the Board and NRC that addresses the question of which defense nuclear facilities are similar to facilities under the regulatory jurisdiction of NRC (see Appendix 4). These letters reflect the difficulty shared by the Board and NRC in obtaining accurate information on any direct and indirect costs for selected categories of NRC facilities deemed similar to the defense nuclear facilities. To develop an estimate of regulatory cost, NRC believes that it would be necessary to review information on each defense nuclear facility on a case-by-case basis. As stated in its letter to NRC on September 9, 1998, the Board is concerned that the time-consuming and expensive effort to collect such data for use in extrapolating possible regulatory costs would be of questionable value for this reporting requirement.

[25] 972 F. Supp. 9 (D.D.C. 1997).

6. A List of All Department of Energy Defense Nuclear Facilities That Are in Compliance With All Applicable Department of Energy Orders, Regulations, and Requirements Relating to the Design, Construction, Operation, and Decommissioning of Defense Nuclear Facilities

Neither the Board nor NRC can verify, at any given point in time, that a specified defense nuclear facility or commercial nuclear facility is in full compliance with "all" applicable requirements. Such requirements, in the case of defense nuclear facilities, include thousands of contracting, financial management, personnel, and other administrative requirements that have nothing, or little, to do with the safe operation of the facilities. Moreover, individual safety-related requirements may number in the hundreds or even thousands for a particular facility. Even if limited to the 2 sets of DOE regulations on quality assurance and radiation protection, and the "DOE Orders of Interest to the Board" containing environment, safety, and health requirements, few, if any, facility managers could assert they are in full compliance, at all times, with safety requirements.

However, temporary noncompliance with some portions of applicable rules or Orders does not necessarily support the assertion that such facilities are unsafe. The Board is able to identify facilities that are in such substantial compliance with fundamental safety requirements that they pose no undue risk to public health and safety at this time. This has most often been seen when the Board reviewed DOE restarts of facilities after DOE conducted an operational readiness review (ORR), or when the Board made a determination, pursuant to Section 3133 of Public Law No. 102-190, that a plutonium operations building at the Rocky Flats Environmental Technology Site (RFETS) could resume operations because public health and safety were adequately protected. Both kinds of actions require DOE and its contractor to determine the status of compliance with applicable safety requirements, issue findings, and take corrective actions where necessary before resuming operation. The following is a list of a few of the many facilities that have resumed operation after it had been independently determined by DOE and the Board that public health and safety were adequately protected:

- Idaho National Engineering and Environmental Laboratory (INEEL) Idaho Chemical Processing Plant, de-nitrator process (DNFSB 1995 Annual Report, p. 17)

- INEEL Idaho Chemical Processing Plant, New Waste Calciner Facility (DNFSB 1997 Annual Report, pp. 2-19)

- Lawrence Livermore National Laboratory (LLNL) Building 332, plutonium facility (DNFSB 1996 Annual Report, p. 47)

- Mound Laboratory reservoir unloading (DNFSB 1996 Annual Report, p. 47)

- Oak Ridge Y-12 Plant, shipping and receiving, weapons secondary surveillance, and weapons secondary dismantlement areas (DNFSB 1996 Annual Report, p. 46)

- Pantex Plant, weapons surveillance and disassembly activities (DNFSB 1997 Annual Report, pp. 2-19)

- Savannah River Site (SRS) K-Reactor (DNFSB 1992 Annual Report, p. 16)
- SRS HB-Line (DNFSB 1994 Annual Report, p. 23)
- SRS Replacement Tritium Facility (DNFSB 1995 Annual Report, p. 15)
- SRS F-Canyon, dissolving Mark-31 plutonium targets (1997 Annual Report, pp. 2-19).

In addition, the following plutonium operations have been successfully restarted in accordance with the Board's responsibility under Section 3133 of Public Law 102-190:

- RFETS Building 559 (DNFSB 1993 Annual Report, pp. 11-12)
- RFETS Building 707 (DNFSB 1993 and 1995 Annual Reports, pp. 33-34 and 16)
- RFETS Building 371 (DNFSB 1997 Annual Report, pp. 2-33)
- RFETS Building 771 (DNFSB 1997 Annual Report, pp. 2-3).

The Board's Annual Reports to Congress chronicle 8 years of Board oversight activity that has improved the content and implementation of DOE standards, including Orders, rules, and other requirements at defense nuclear facilities. That line of activity began with the issuance of the Board's Recommendation 90-2, and continues today in DOE's implementation of Recommendations 94-5 and 95-2, which call for compliance with applicable requirements by use of integrated safety management in the DOE defense nuclear complex. For integrated safety management of all radiological work, DOE and its contractors must: (1) define the scope of work, (2) identify and assess the hazards, (3) develop controls for safely executing the work, (4) perform the work safely, and (5) evaluate the work and develop feedback to improve the process.

Under the implementation plan for Board Recommendation 95-2, DOE is committed to having contractually specified requirements for both site-wide and facility-specific activities performed by contractors. These requirements are the drivers for developing facility and activity-specific safety control measures that are tailored to the hazards of the work and mutually agreed upon by DOE and contractors as conditions for performing that hazardous work. For high-hazard category facilities or activities, formal authorization agreements setting forth these agreed conditions are to be established. These agreements are the contractual equivalent of licenses or permits issued by external regulatory bodies. The Board's attention in this respect since 1996 has been focused on 10 priority defense nuclear facilities, which constitute the pilot subset for this integrated safety management program. The Board and DOE have adopted a goal to have all defense nuclear facilities operating to an upgraded safety management program within the next 2 years. (See Table 3.)

Table 3 - Status of Authorization Agreements for Priority Facilities and Follow-on Facilities

DEFENSE PROGRAMS		
PRIORITY FACILITIES	**AA in Place**	**Approval Date/Status**
Lawrence Livermore - Superblock:		
Building 334, Weapon Design & Testing Facility	No	LLNL intends to approve AA's as it implements ISMS in the Superblock, although currently not required by LLNL for Cat 3 facilities.
Plutonium Facility, B332	Yes	Doesn't meet Board expectations. Will be revised after restart.
Tritium Facility, B-331	No	LLNL intends to approve AA's as it implements ISMS in the Superblock, although currently not required by LLNL for Cat 3 facilities.
Los Alamos		
TA-55, Bldg.4, Plutonium Facility	No	Draft complete - Approve ~ 10/98
TA-3, Bldg. 29, Chemical Metallurgical Research (CMR) Facility	No	Draft in 10/98, Approve about 11/98
Oak Ridge		
Y-12:		
Bldg. 9212, Wet Chemistry, Casting, Storage	Yes	5/15/98
Bldg. 9206, Enriched Uranium Chemical Processing	No	App 11/98
Bldg. 9720-5, Warehouse Operations	Yes	4/6/98
Bldg. 9204-2E, Disassembly Operations	Yes	4/6/98
Bldg. 9204-4, Quality Evaluation	Yes	4/6/98
Bldg. 9215, SNM Processing &Fabrication	Yes	5/15/98
Pantex		
Zone 12, Nuclear Explosive Bays 64,84,99,104	No	AA's will be approved for specific weapon activity, not for the facility.
Zone 12, Nuclear Explosive Cells 44, 85, 96, 98	No	Same as above
ENVIRONMENTAL MANAGEMENT		
Hanford		
K Basins Facility	Yes	9/24/98
Tank Farms	Yes	7/24/98

Table 3 - Status of Authorization Agreements for Priority Facilities and Follow-on Facilities (continued)

PRIORITY FACILITIES	AA in Place	Approval Date/Status
Rocky Flats		
Bldg. 371, Plutonium Chemical Processing Facility	Yes	9/11/97
Bldg. 771, Plutonium Recovery Facility	Yes	12/31/97
Savannah River		
F Canyon	Yes	9/9/97
FB Line	Yes	9/26/97
H Canyon	Yes	7/98
HB Line	Yes	3/98

DEFENSE PROGRAMS		
FOLLOW-ON FACILITIES	**AA in Place**	**Approval Date/Status**
Lawrence Livermore		
Building 231 Complex (Vaults)	No	Currently not required by LLNL for Cat 3 facilities.
Building 251, Heavy Element Facility	No	Currently not required by LLNL for Cat 3 facilities.
Los Alamos		
TA-18, Pajarito Laboratory	No	2/99
TA-16, Weapons Engineering Tritium Facility	No	2/99
Defense Nuclear Activities at TA-15, Dual Axis Radiographic Hydrotest (DARHT) Facility	Not Applicable - Under Construction	
Defense Nuclear Activities at TA-53, Los Alamos Nuclear Scattering Center	No	2/99
Nevada Test Site		
Abel Site, Area 27 (to be replaced by the Device Assembly Facility, Area 6)	No	The DAF AA has been written and is currently being revised by the affected parties.
U1a Complex	No	The U1a AA has been written and is currently being revised by the affected parties.

Table 3 - Status of Authorization Agreements for Priority Facilities and Follow-on Facilities (continued)

FOLLOW-ON FACILITIES	AA in Place	Approval Date/Status
Oak Ridge		
ORNL: Material Storage (Building 3019)	No	12/99
Pantex		
Building 12-116, SNM Staging Facility, Phase I	Yes	8/98
Building 12-104A, Special Purpose Bays (New - not operational)	No	FY99 Planned
Dynamic Balancer (Bldg. 12-60)	Yes	12/98
W56	No	FY99 Planned
W69, Revision 3	Yes	2/98
W76	No	FY99
W78	Yes	FY99
W79	Yes	6/98
W87 LEP	No	FY99 Planned
B61-11	Yes	6/98
B61-7 Alt 920, Rebuild	Yes	9/98
Paint Bays, (Bldg. 12-41)	No	No plans for AA. 12-104A will replace.
Sandia National Laboratory		
Sandia Pulse Reactor Facility	No	AAs to be proposed to AL by SNL by 10/26/98
Savannah River		
Tritium Facilities	Yes	8/26/97
Tritium Inventory Storage Area (217H)	Yes	8/26/97
Tritium Isotope Separation/Purification Facility, Lines I/II (232H)	Yes	8/26/97
Tritium Reservoir Finishing/Packing Facility (234H)	Yes	8/26/97
Tritium Reservoir Loading/Unloading Facility (233H)	Yes	8/26/97
Tritium Burst Test Facility (236H)	Yes	8/26/97

Table 3 - Status of Authorization Agreements for Priority Facilities and Follow-on Facilities (continued)

FOLLOW-ON FACILITIES	AA in Place	Approval Date/Status
Tritium Byproduct Purification Facility (236H)	Yes	8/26/97
Tritium Extraction Facility, Line III (232H)	Yes	8/26/97
Tritium Reservoir Reclaiming Facility (238H)	Yes	8/26/97
Tritium Storage/Spare Parts/Shipping (237H)	Yes	8/26/97
ENVIRONMENTAL MANAGEMENT		
Hanford		
(WESF) Waste Encapsulation and Storage Facility	No	FY99
Plutonium Finishing Plant	No	FY99
Idaho		
Underwater Fuel Storage (CPP-603-A)	No	3/99
Irradiated Fuel Storage Facility (Dry SNM Storage) (CPP-603-B)	No	3/99
New Waste Calcining Facility (CPP-659)	No	3/99
Underwater Fuel Storage (CPP-666)	No	3/99
Radioactive Waste Management Complex (RWMC)	No	3/99
Unirradiated Fuel Storage Facility (CPP-651)	No	3/99
Nevada Test Site		
Radioactive Waste Management sites in Area 5, Area 3 and the TRU Pad	Yes	10/1/97
Oak Ridge		
Depleted Uranium Tailings	No	11/98
Material Storage (MSRE)	No	12/99
Rocky Flats		
Building 707, Plutonium Manufacturing Bldg.	Yes	8/15/97
Building 776, Manufacturing Bldg.	No	1/99
Building 559, Analysis Laboratory	Yes	3/1/98
Building 774, Waste Processing	No	Estimated completion 12/15/98

Table 3 - Status of Authorization Agreements for Priority Facilities and Follow-on Facilities (concluded)

FOLLOW-ON FACILITIES	AA in Place	Approval Date/Status
Savannah River		
FA-Line	No	No plans to operate.
HA-Line	Yes	Covered in H Canyon AA
235-F	No	After SAR approval
Defense Waste Precessing Facility	Yes	10/6/97
ITP/ESP Waste Storage Tanks	Yes	ITP/ESP - 7/16/98 Tank Farms - 3/9/98
Receiving Basin for Offsite Fuel (RBOF)	Yes	9/17/97
K-Reactor Basin	Yes	9/17/97
L-Reactor Basin	Yes	9/17/97
WIPP		
Waste Isolation Pilot Plant	No	Draft Authorization Agreement prepared in July 1998. AA will be completed after legal challenges have been resolved.
NUCLEAR ENERGY		
Advanced Test Reactor	No	3/99

7. A List of All Department of Energy Defense Nuclear Facilities That Have Implemented, Pursuant to an Implementation Plan, Recommendations Made by the Board and Accepted by the Secretary of Energy

The Board has issued 38 sets of recommendations, containing 174 individual recommendations; to date no Board recommendation has been rejected by DOE. Twenty-one sets have been closed because they were fully implemented by DOE, or superseded by another recommendation. Table 4 presents the Board's recommendations and applicable defense nuclear facility sites.

Table 4 - Board Recommendations and Applicable Defense Nuclear Facility Sites

LOCATION	RECOMMENDATION
All Sites / Multiple Sites	90-2 Standards 91-1 Safety Standards 91-6 Radiation Protection 92-2 DOE Facility Representative Program 92-5 Discipline of Operation 92-6 Operational Readiness Review 92-7 Training & Qualification 93-1 Standards Utilization 93-2 Critical Experiment Capability 93-3 Upgrading DOE Technical Capability 93-4 DOE Technical Management 93-6 Nuclear Weapons Expertise 94-1 Improved Schedule for Remediation 94-2 Low-Level Waste Disposal 94-5 Integration of Safety Rules, Orders 95-1 Safety of Cylinders Containing Depleted Uranium 95-2 Safety Management 97-1 Uranium-233 Storage Safety at DOE Facilities 97-2 Criticality Safety 98-1 Integrated Safety Management
Hanford	90-3 Future Tank Monitoring 90-7 Modification to Implementation Plan for 90-3 92-4 Multi-Function Waste Tank Facility 93-5 Waste Tanks Characterization Studies
Oak Ridge	94-4 Deficiencies in Criticality Safety
Rocky Flats	90-4 Operational Readiness Review 90-5 Systematic Evaluation Program 90-6 Plutonium in the Ducts 91-4 Operational Readiness Review 94-3 Seismic and Safety Systems
Savannah River	90-1 Reactor Operator Training 91-2 Narrative for Closure Package 91-5 Power Limits/K-Reactor 92-1 HB-Line Operational Readiness 92-3 HB-Line Operational Readiness Review 96-1 In-Tank Precipitation System at the Savannah River Site
Pantex	98-2 Safety Management at the Pantex Plant
WIPP	91-3 Readiness Review

8. A List of Department of Energy Defense Nuclear Facilities That Have a Function Related to Department Weapons Activities

The following list includes facilities which meet the definition of a "defense nuclear facility" in the Atomic Energy Act and are currently used, or are likely to be used in the future, to conduct or support DOE weapons activities. It does not include facilities once related to DOE weapons but not now used, and which are subject to the Board's oversight while they are being cleaned and remediated.

Stockpile Management

Defense nuclear facilities involved in stockpile management are those that are used to maintain, repair, and evaluate the enduring stockpile and strategic components/materials or those that are used to permanently dismantle retired weapons. The following list identifies the major facilities by function and by site. Some of the facilities in the complex are used for more than one function and are therefore listed in more than one category for completeness.

- Assembly and Disassembly:

Pantex:	Entire Site
Nevada Test Site (NTS):	Device Assembly Facility, Area 27

- Dismantlement:

Pantex:	Entire Site
Y-12 Plant:	9204-2/2E
NTS:	Device Assembly Facility, Area 27

- Weapon and Component Maintenance:

Pantex:	Entire Site
Y-12 Plant:	9204-2/2E, 9212 Complex, 9215 Complex, 9201-5N. 9998
LANL:	Plutonium Facility at TA-55
SRS:	H Area Tritium Facilities

- Surveillance:

Pantex:	Entire Site
Y-12 Plant:	9204-2/2E, 9204-4
SRS:	H Area Tritium Facilities
LANL:	Plutonium Facility at TA-55 and Chemistry and Metallurgy Research Building (CMR) at TA-3
LLNL:	Superblock

- Component Production:

LANL:	Plutonium Facility at TA-55
Y-12 Plant:	9212 Complex, 9215 Complex, 9201-N.9998
SRS:	Tritium Facilities
SNL:	Neutron Generator Facility (part of the MDE program)
Kansas City:	Nuclear Components

- Nuclear Weapons and/or Material Storage:

Pantex:	Entire Site
Y-12 Plant:	9212 Complex, 9720-5, 9204-2/2E, 9204-4
SRS:	Tritium Facilities, Accelerator Production of Tritium (APT), Actinide Packaging and Storage Facility (APSF)
LANL:	Plutonium Facility and Nuclear Material Storage Facility at TA-55, KIVAS and Hillside Vault at TA-18, and CMR at TA-3
LLNL:	B332
RFETS:	B371

Stockpile Stewardship

A number of defense nuclear facilities are required for the DOE-wide program to support assessments of weapon safety (and reliability) of an ever-aging enduring stockpile in the absence of nuclear testing. These include:

- Laser Facilities:

LLNL:	Nova Laser

- Dynamic Experiment Facilities:

LLNL:	Flash X-Ray (FXR) facility
LANL:	Pulsed High-Energy Radiation Machine Emitting X-Rays (PHERMEX) Facility and Dual Axis Radiographic Hydrotest (DARHT) Facility at TA-15
NTS:	Sub-Critical Experiment Facility (SCSS or U1a)

- Accelerator and Pulsed-Power Facilities:

LANL:	Los Alamos Neutron Science Center (LANSCE)

- Nuclear Research Reactors:

  SNL: Annular Core Research Reactor (ACRR)[26]

  SNL: Sandia Pulse Reactor

- Other Research and Development Facilities:

  LANL: Weapons Engineering Tritium Facility (WETF) at TA-16
  Tritium Science and Fabrication Facility (TSFF) at TA-21
  Radioactive Materials Research, and Demonstration (RAMROD) at TA-50
  Los Alamos Critical Experiments Facility (LCEF) at TA-18

  Pantex: Pit Characterization Laboratory

Support Facilities

This list includes support facilities (actually functions) without which the weapons complex would be unable to sustain operations:

- Low-Level Waste (LLW) Storage and Processing
- Transuranic (TRU) Waste Storage, Processing, and Disposition (WIPP)
- Liquid Radioactive Residue and Waste Processing (e.g., F & H Canyons at SRS)
- On-Site Transportation
- Radiography at LANL's TA-8
- Assembly of Devices for Testing at LANL's TA-16
- 300 Area at LLNL
- Actinide Packaging and Storage Facility (APSF)

9. (A) A List of Each Existing Defense Nuclear Facility That the Board Determines--

(I) Should Continue to Stay within the Jurisdiction of the Board for a Period of Time or Indefinitely; and

(II) Should Come under the Jurisdiction of an Outside Regulatory Authority.

(B) An Explanation of the Determinations Made under Subparagraph (A)

The Board recommends no change in its statutory jurisdiction.

[26] Although the Annular Core Research Reactor is a Defense Programs (DP) facility, it is currently being used to support an Office of Nuclear Energy, Science and Technology (NE) mission. The current mission of the ACRR is to produce molybdenum-99 (Mo-99) for domestic medical use. It is also reserved and is used on occasion by DP.

The Board has determined that current and future defense production and utilization facilities should remain within the jurisdiction of the Board indefinitely. That group of facilities includes, but is not limited to, all the current "weapons-related" facilities listed in response to item 8 above, as well as proposed defense nuclear facilities listed in response to item 11 below. The reasons which explain this determination have been generally outlined in response to item 4, regarding the relative advantages and disadvantages of oversight versus regulation of defense nuclear facilities. Board oversight has proven to be a flexible and cost-effective means for bringing about safety improvements within the DOE complex without additional expense and intrusiveness into national security issues.

Defense nuclear facilities currently undergoing decommissioning and environmental restoration are subject to EPA Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and RCRA regulation, as well as appropriate state regulation. Although overlaps in jurisdiction between the Board and these agencies exist in some areas, the Board has established efficient working relationships.[27]

10. For Any Existing Facilities That Should, in the Opinion of the Board, Come under the Jurisdiction of an Outside Regulatory Authority, the Date When This Move Would Occur and the Period of Time Necessary for the Transition

The Board recommends that nuclear health and safety at defense nuclear facilities not be subject to outside regulatory authority, and no transition should be necessary since there would be no change in jurisdiction.

11. A List of Any Proposed Department of Energy Defense Nuclear Facilities That Should Come under the Board's Jurisdiction

For purposes of this list, "proposed DOE defense nuclear facilities" include facilities that are currently being planned, or facilities whose plans have been preserved for contingencies, and have been publicly identified by DOE through a process such as the federal budget or programmatic or other environmental impact statement. This list is a snapshot in time, as DOE plans for new facilities or conversions of existing facilities are always possible and only includes those that require Board jurisdiction under existing law.

- Production and Storage Facilities
  - -- Target Fabrication Facility for Tritium Producing Burnable Absorber Rods (TPBARs)
  - -- Accelerator Production of Tritium (APT)

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[27] *See, e.g.*, DNFSB/TECH-12, *Regulation and Oversight of Decommissioning Activities at Department of Energy Defense Nuclear Facilities*, August 19, 1996, and the February 15, 1996, *Memorandum of Understanding Governing Regulation and Oversight of Department of Energy Activities in the Rocky Flats Environmental Technology Site Industrial Area*.

-- Actinide Packaging and Storage Facility

-- Tritium Extraction Facility (TEF)

-- K-Reactor Vault

-- LANL Storage Facilities

- Disassembly and/or Testing

-- Pit Storage Facilities

-- National Ignition Facility (NIF)

-- Contained Firing Facility (CFF)

The following facilities, while further from construction and operation than any of the facilities listed above, were identified in DOE's *Final Programmatic Environmental Impact Statement for Stockpile Stewardship and Management*:

- Advanced Hydrotest Facility (AHF)
- Atlas Facility
- High-Explosive Pulsed-Power Facility (HEPPF)
- Advanced Radiation Source (ARS)
- Advanced Recovery and Integrated Extraction System (ARIES)

12. An Assessment of Regulatory and Other Issues Associated with the Design, Construction, Operation, and Decommissioning of Facilities That Are Not Owned by the Department of Energy but Which Would Provide Services to the Department of Energy

13. An Assessment of the Role of the Board, If Any, in Privatization Projects Undertaken by the Department

Questions (12) and (13) have been combined for convenience. Over the past several years, DOE has been considering the privatization concept for some of its defense-related activities.

The word “privatization” has been used to describe a broad range of governmental initiatives designed to transfer portions of government property, activities, or services to private-sector control. The term includes such action as directly transferring ownership of property to a commercial entity, which then performs services previously executed by the government on that property. The term also includes a variety of other government/private cooperative efforts.

Resolving the legal and policy issues raised by transferring ownership of, or otherwise privatizing, defense nuclear facilities depends upon the exact form that the privatization takes. Until the Board receives a more concrete description of the legal structure for the privatized facilities, the Board cannot speculate on such complex issues, or meaningfully assess how they should be resolved.

The Board notes, however, that "privatizing" defense nuclear facilities does not necessarily obviate Board statutory oversight responsibilities for existing defense nuclear facilities. The Atomic Energy Act provisions delineating the Board's jurisdiction were analyzed in detail in response to reporting item 2. Those statutory provisions direct the Board to review the content and implementation of DOE safety standards, and to oversee safety activities and programs at defense nuclear facilities throughout their entire life cycle.[28] The statute specifies that the life cycle includes design, construction, operation, and decommissioning of "defense nuclear facilities." As analyzed previously, defense nuclear facilities include "production" and "utilization" facilities operated for national security purposes under the "control or jurisdiction" of the Secretary of Energy and "waste storage" facilities "under the control or jurisdiction of the Secretary of Energy."[29]

The Board, therefore, would retain jurisdiction of existing defense nuclear facilities, such as the Tank Waste Remediation System (TWRS) at Hanford, even if aspects of the TWRS were "privatized" and owned by the private sector, so long as the TWRS or its nuclear materials remained under the "control or jurisdiction" of the Secretary of Energy.

In the glossary section of the request for proposal (RFP) for TWRS, "privatized facility" is defined as one which is "privately developed, financed, constructed, owned, operated, decontaminated, decommissioned, and closed under the requirements of [RCRA]."[30] DOE's Office of Environmental Management (EM) has defined the term "privatization" in this manner:

> Contractors, under contract with DOE to provide a service, use private funding to design, permit, construct, operate, decontaminate and decommission their own equipment and facilities to treat tank waste, and receive payments when producing products meeting DOE's performance specifications.[31]

While the contractor owns the "privatized facilities," DOE retains ownership of the land where the facility is located, and ownership and control of the nuclear waste located in the facility. DOE also retains responsibility for the safety of the facility. Congress may wish to clarify this issue.

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[28] 42 U.S.C. § 2286a.

[29] 42 U.S.C. § 2286g.

[30] Draft Request for Proposal No. DE-RP06-96RL13308 at C-54, November 16, 1995.

[31] *Concept of the DOE Regulatory Process for Radiological and Nuclear Safety for TWRS Privatization Contractors*, Richland Operations Office, Rev. A.1 Draft, November 1995, at 1.

14. An Assessment of the Role of the Board, If Any, in Any Tritium Production Facilities

Defense nuclear facilities which produce tritium for use in nuclear weapons should be subject to the oversight jurisdiction of the Board.

Accelerator produced tritium is not a source, special nuclear, or byproduct material as defined by the Atomic Energy Act. Therefore, an accelerator for production of tritium is not a production or utilization facility. The Board believes that the sense of Congress is that tritium and tritium production safety oversight is the responsibility of the Board. The radiation hazards posed by the APT are considerable and similar to those posed by a commercial utilization facility. The Board has asserted jurisdiction over DOE tritium production and reprocessing facilities located on defense nuclear facility sites. The Board believes that its safety oversight of such facilities, both existing and planned, should be continued.

The Board continues to follow and monitor the two current options for production of tritium—the accelerator and the light water reactor. The Board plans to continue this oversight activity.

15. An Assessment of the Comparative Advantages and Disadvantages to the Department of Energy in the Event Some or All Department of Energy Defense Nuclear Facilities Were No Longer Included in the Functions of the Board and Were Regulated by the Nuclear Regulatory Commission

The Board has already addressed the major advantages and disadvantages of oversight versus regulation in response to item 4. Briefly, these are: weakening of national defense, additional cost, and no added value. Therefore, this response will focus on additional considerations, advantages, and disadvantages which are triggered if NRC is to be designated the regulator.

- The first disadvantage is the termination of the traditional separation of regulation of commercial nuclear facilities from oversight of defense nuclear facilities, dating from the creation of NRC and the Energy Research and Development Administration (ERDA). Beginning with the Atomic Energy Act of 1954, Congress has mandated that military and civilian applications of atomic energy be regulated and managed separately. Though the Atomic Energy Commission had responsibility for both from 1954 to 1974, the Atomic Energy Act provided for a "Division of Military Application" separate from other divisions which were assigned "primary responsibilities [for] the development and application of civilian uses of atomic energy."[32] The Energy Reorganization Act carried this separation one step further, by creating the NRC, with jurisdiction limited to regulation of civilian applications. Regulation and management of military applications were

[32] 42 U.S.C. § 2035.

assigned to ERDA.[33] The Energy Reorganization Act continued the compartmentalization of military applications by creating a statutory position, "Director of Military Application."[34] These functions were finally transferred to DOE by the Department of Energy Reorganization Act of 1977, Section 203(a)(5).[35] Once again, Congress required a separation of civilian and military applications by designation of an Assistant Secretary to manage defense programs and national security functions.[36]

- A second disadvantage is that combining commercial nuclear regulation with regulation of the defense complex under a single set of commissioners would create several administrative, management, and efficiency problems. First, the admittedly complex task of overseeing and regulating the defense function could get lost in the even broader scope of activities NRC currently conducts relative to commercial facilities. While the Board's expertise is currently directed at defense nuclear issues, NRC commissioner expertise is directed at commercial issues, particularly nuclear reactor safety. Defense complex issues would compete for commissioners' attention with commercial issues with which NRC commissioners are most familiar.

- When regulation by NRC was first proposed, Chairman Shirley Jackson acknowledged that NRC regulation of the national laboratories would present a conflict of interest, since NRC relies upon the laboratories for research and technical support of NRC's regulation of commercial facilities.

- Even the various DOE proposals for external regulation have equivocated on the issue of transferring all defense nuclear facilities to NRC regulation and licensing because of inherent technical difficulties, national security issues, and cost.

- Introduction of regulatory authority could provide an opportunity for civil processes to delay and draw out national defense issues indefinitely.

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[33] Energy Reorganization Act of 1974, Section 104(d) (42 U.S.C. § 5814(d)).

[34] *Id.* § 102(g) (42 U.S.C. § 5812(g)).

[35] 42 U.S.C. § 7133(a)(5).

[36] 42 U.S.C. § 7158(b).

16. A Comparison of the Cost, as Identified by the Nuclear Regulatory Commission, That Would Be Incurred at a Gaseous Diffusion Plant to Comply with Regulations Issued by the Nuclear Regulatory Commission, with the Cost That Would Be Incurred by a Gaseous Diffusion Plant If Such a Plant Was Considered to Be a Department of Energy Defense Nuclear Facility as Defined by Chapter 21 of the Atomic Energy Act of 1954 (42 U.S.C. § 2286 et seq.)

The Board does not believe that it is necessary for existing gaseous diffusion plants to be designated as defense nuclear facilities or for the Board to be given jurisdiction over them. Sufficient highly enriched uranium is available to meet national security needs, and additional supplies are not needed.

The NRC completed the first certification review for these plants in November 1996 and issued its first annual report to Congress on January 5, 1998, reporting on the status of the plants and indicating whether these plants are operating in compliance with NRC's standards. The NRC will recertify these plants at least once every 5 years, in accordance with the United States Enrichment Corporations Privatization Act (USEC), to ensure that the plants are in compliance with NRC regulations and that the USEC in operating the gaseous diffusion enrichment plants ensures adequate protection of the health and safety of the public and workers, the environment, and the common defense and security.

To verify operational safety and assess licensee performance, the NRC conducts a program of scheduled safety and safeguards inspections that relies on resident inspectors to provide on-site presence and focus on daily operation, and on headquarters and regional inspectors to provide specialized technical expertise in areas such as radiological/chemical safety, chemical processing, material control and accounting, training, quality assurance, surveillance/maintenance, emergency planning, configuration control, and management control. During FY 1998, the NRC also continued to review upgraded safety analysis reports for both enrichment plants. The NRC provides security policy and classification guidance support for the protection of national security information and restricted data for licensing, certifying, or regulating uranium enrichment facilities.

The actual cost that would be incurred at a gaseous diffusion plant to comply with regulations issued by the NRC is not known to the Board. In an attempt to obtain these cost data, the Board requested both the NRC and DOE to provide any information responsive to this question. The NRC provided the following cost information in response to the Board's request:

> The estimates of the cost of transitioning the two GDPs at Paducah, Kentucky, and Portsmouth, Ohio . . . are:
>
> | Activity | |
> |---|---|
> | Application preparation | $20,000,000 |
> | Compliance plan | 8,000,000 |
> | NRC certification fee | 7,200,000 |
> | Procedures and training | 4,000,000 |
> | NRC reporting system | 250,000 |
> | 10 CFR review and comment | 85,000 |
> | NRC Office modifications | 170,000 |
> | [Total | $39,805,000] |
>
> Costs to bring the two plants into compliance with existing DOE orders, standards, regulations and guidelines were excluded and were estimated to be about $200,000,000. The costs provided above, attributable to coming under NRC jurisdiction, are for Portsmouth and Paducah. The activity, "NRC certification fee," includes 12 full-time equivalents (FTEs) per year for four years including two resident inspectors at each site, and is for the initial certification of the Paducah and Portsmouth Plants.[37]

DOE provided the following cost estimates for the transition of the gaseous diffusion plant from DOE oversight to NRC regulation. The DOE cost estimates are approximately three times greater than the NRC estimate for direct, NRC-related transition costs.

> 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 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 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.[38]

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[37] Letter from S.A. Jackson, Chairman, NRC, to J. T. Conway, Chairman, DNFSB, July 14, 1998, p. 1, 2.

[38] Letter from E.A. Moler, Acting Secretary, DOE, to J. T. Conway, Chairman, DNFSB, August 14, 1998, Enclosure 2, p. 2, 3.

The direct additional cost to support the NRC's uranium enrichment oversight and inspections program was approximately $2.3 million in FY 1996, and is estimated to be in the $1.9 to $2.1 million range in FY 1997 and FY 1998. The cost for general support of this program is not included in these estimates.[39] NRC estimates that for the continuing oversight inspection and recertification of the two plants, NRC is spending about twelve FTEs per year, including two resident inspectors at each site. This level of effort could be somewhat higher if NRC were to license the Gaseous Diffusion Plants (GDPs). Licensing of the GDPs could require three or more FTEs in addition to those expended on the certification, to address environmental issues and the learning process.[40]

On May 29, 1997, the NRC issued a final rule establishing an annual fee of $2.606 million for each certificate of compliance issued to USEC to operate the gaseous diffusion plants.[41] Subsequent to the implementation of this final rule, the USEC filed a request for exemption from the Annual Fee Regulation with the NRC on October 21, 1997, arguing that the combined annual fee of $5,212,000 for the Paducah and Portsmouth Gaseous Diffusion Plants is not based on a fair and equitable allocation of the NRC costs.[42] On March 23, 1998, the NRC denied USEC's annual fee exemption request. The NRC's FY 1998 annual fee for a highly enriched uranium facility is $2.603 million.

In addition, the Board conducted a search of the reports addressing the costs associated with the external regulation of DOE facilities to find any references to costs incurred by DOE and the USEC in transferring the gaseous diffusion plants to NRC regulatory oversight. In discussing the potential impact of external regulation on various proposals to privatize DOE facilities and operations involving nuclear materials, the DOE staff provided the following comments.

> When considering particular privatization involving nuclear material, DOE must conduct a careful analysis of the impact of the transition to NRC jurisdiction. DOE is not currently organized to regulate privatized operations. Consequently as was the case with the Tank Waste Remediation System, privatization may require DOE to establish entirely new regulatory units, requiring additional personnel, increased funding, and substantial startup time. In addition, differences between DOE and NRC requirements could affect fundamental decisions regarding site selection and facility features and could significantly affect the cost and schedule of the privatization. For example, the transition to NRC regulation of the gaseous diffusion plants in connection with privatization of the DOE's former enrichment enterprise could cost

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[39] U.S. Nuclear Regulatory Commission, NUREG-1100, Volume 13, *Budget Estimates Fiscal Year 1998*, February 1997, p. 71, 73.

[40] Letter from S.A. Jackson, Chairman, NRC, to J. T. Conway, Chairman, DNFSB, July 14, 1998, p. 2.

[41] *Revision of Fee Schedules; 100% Fee Recovery, FY 1997*, Final Rule, U.S. Nuclear Regulatory Commission, May 29, 1997.

[42] Request for Exemption from Annual Fee Regulations Pursuant to 10 CFR § 171.11(d), United States Enrichment Corporation to the U.S. Nuclear Regulatory Commission, October 21, 1997.

> DOE more that $100 million to bring the plants into compliance with NRC requirements.[43]

The DOE staff provided further commentary regarding the estimated cost of moving to external regulation in the above referenced report.

> As there appears to be no realistic way to shift to external regulation in a way that is budget neutral over the short term, the cost of moving to external regulation should be viewed from a long-term perspective. It is clear from the DOE's experience with the gaseous diffusion plants that there will be startup costs associated with the transition and in some cases this cost may be significant.[44]

In a briefing to DOE staff presented by representatives of the USEC in December 1997,[45] the following summary of specific actions taken to help Paducah receive its initial NRC certificate was provided:

• Procedures Rewritten	1500
• Hours Required to do Procedure Rewrite	192,000 man-hours
• Specific Requirements Flowed Down Into Procedure Form	4700
• Commercial Nuclear Coaching Program	8 "Blue-Chip" Coaches for 2 years
• Senior Managers Replaced by Commercial Nuclear People	50 percent
• NRC Application Submitted	2300 pages.

While specific cost data were not provided in the above-referenced presentation, a conservative approximation of the dollar cost for the 192,000 man-hours required to do procedure rewrite can be made. Using staff cost data compiled by the National Academy of Public Administration, $83,000 per work year or $40 per hour represents a very conservative cost

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[43] *Report of Department of Energy Working Group on External Regulation*, December 1996, Appendix I-119.

[44] *Id*., Appendix I-103.

[45] *Key Steps to NRC Regulation*, Lockheed Martin -- USEC, December 1997, page 3.

factor for compensation and benefits, resulting in a cost of $7,680,000 for this procedures rewrite exercise.[46] A more realistic estimate for compensation and benefits would be $121 per hour, the professional hourly rate used by the NRC to fully recover costs incurred for their nuclear materials and nuclear waste program in FY 1998, resulting in a cost of $23,232,000. The costs attributable to the "Commercial Coaching" program and the replacement of 50 percent of the senior managers (e.g., severance pay, hiring expenses) cannot reasonably be estimated without further data from the USEC.

As to the question of the cost that would be incurred by a gaseous diffusion plant if such a plant were considered to be a DOE defense nuclear facility as defined by Chapter 21 of the Atomic Energy Act of 1954, this matter would have to be considered in light of the current oversight authority and statutory mission of the Board. Even so, without the benefit of an actual field assessment of the gaseous diffusion plants in question, the cost that the USEC and the Board would potentially incur to implement specific Board recommendations to ensure that public and worker health and safety would be adequately protected is speculative at best.

In general, the Board's oversight methods are less intrusive and less resource intensive than NRC's regulation methods. The Board believes the current set of generally applicable DOE safety-related requirements are adequate to ensure the safety of the public, workers, and the environment when tailored to the specific hazards of the work being performed. The Board would not have felt compelled to promulgate new requirements following rulemaking proceedings or to subject USEC to the formal certification processes that the NRC deployed.

One can note from the information provided by DOE that $126 million was spent for NRC-related activities and $128 million for compliance with DOE standards. The $126 million is equivalent roughly to the cumulative annual budget of the Board over the period of its existence (FY 1989-1998) and its oversight of DOE's entire defense nuclear facilities complex during that time.

Rather than imposing a regulatory structure on a defense nuclear facility, the Board works with DOE to upgrade its existing requirements and guidance (e.g., DOE safety Orders, Guides, and Manuals) to ensure adequate protection of worker and public health and safety. However, the NRC's regulatory structure has already been imposed on USEC. Therefore, two factors work against the utility of the Board estimating the cost of oversight of USEC facilities and activities. First, USEC operates under a rigid regulatory structure which would not lend itself to the Board's oversight methods without considerable "retooling" of the USEC safety management program, or extensive changes to the Board's oversight methods. Second, USEC is statutorily excluded from Board oversight under the Atomic Energy Act. Even if it were not, it is doubtful that the U.S. nuclear weapons program will require isotope enrichment services for the foreseeable future, given the surfeit of enriched uranium currently available. Therefore, the Board does not expect that USEC facilities will be declared defense nuclear facilities subject to Board oversight, and as a result, a cost comparison would not be helpful.

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[46] *Ensuring Worker Safety and Health Across the DOE Complex, A Report by a Panel of the National Academy of Public Administration for the Occupational Safety and Health Administration and the Department of Energy*, January 1997, Appendix A, page 106.

IV. CONCLUSION

While respectful of the views of those seeking change in the regulatory regime for DOE contractors, such action, in the Board's view, is hardly justified by the costs likely to be incurred for any benefits that might accrue. This is particularly true for defense nuclear facilities because the costs include the real potential for undue interventions and delays that could effectively block interminably the construction and operation of new facilities or the upgrades of existing facilities that are needed to support the national security mission.

Accountability in government is often difficult to establish, but it becomes even more so when fractionation and overlaps in responsibilities among agencies occur. At this time DOE has clear responsibility for both mission and nuclear safety. DOE should be required to fulfill those responsibilities as integrated functions. DOE is committed to doing so, not only for defense nuclear facilities under the independent oversight of the Board, but also as a DOE-wide objective. DOE should seek to bring to bear the expertise of other federal agencies, if needed, to assist in the fulfillment of its safety responsibilities without opting out on defining and enforcing good safety practices for its contractors. DOE, if it advocates external regulation of nuclear health and safety, would be diminishing its stature as a center of technical excellence in the nuclear field, much more than enhancing the credibility it seeks.

APPENDIX 1: ITEMS REQUESTED BY CONGRESS

1. An assessment of the value of and the need for the Board to continue to perform the functions specified under chapter 21 of the Atomic Energy Act of 1954 (42 U.S.C. § 2286 *et seq.*).

2. An assessment of the relationship between the functions of the Board and a proposal by the Department of Energy to place Department of Energy defense nuclear facilities under the jurisdiction of external regulatory agencies.

3. An assessment of the functions of the Board and whether there is a need to modify or amend such functions.

4. An assessment of the relative advantages and disadvantages to the DOE and the public of continuing the functions of the Board with respect to Department of Energy defense nuclear facilities and replacing the activities of the Board with external regulation of such facilities.

5. A list of all existing or planned Department of Energy defense nuclear facilities that are similar to facilities under the regulatory jurisdiction of the Nuclear Regulatory Commission.

6. A list of all Department of Energy defense nuclear facilities that are in compliance with all applicable Department of Energy orders, regulations, and requirements relating to the design, construction, operation, and decommissioning of defense nuclear facilities.

7. A list of all Department of Energy defense nuclear facilities that have implemented, pursuant to an implementation plan, recommendations made by the Board and accepted by the Secretary of Energy.

8. A list of Department of Energy defense nuclear facilities that have a function related to Department weapons activities.

9. (A) A list of each existing defense nuclear facility that the Board determines--

   (i) should continue to stay within the jurisdiction of the Board for a period of time or indefinitely; and

   (ii) should come under the jurisdiction of an outside regulatory authority.

   (B) An explanation of the determinations made under subparagraph (A).

10. For any existing facilities that should, in the opinion of the Board, come under the jurisdiction of an outside regulatory authority, the date when this move would occur and the period of time necessary for the transition.

11. A list of any proposed Department of Energy defense nuclear facilities that should come under the Board's jurisdiction.

12. An assessment of regulatory and other issues associated with the design, construction, operation, and decommissioning of facilities that are not owned by the Department of Energy but which would provide services to the Department of Energy.

13. An assessment of the role of the Board, if any, in privatization projects undertaken by the DOE.

14. An assessment of the role of the Board, if any, in any tritium production facilities.

15. An assessment of the comparative advantages and disadvantages to the Department of Energy in the event some or all Department of Energy defense nuclear facilities were no longer included in the functions of the Board and were regulated by the Nuclear Regulatory Commission.

16. A comparison of the cost, as identified by the Nuclear Regulatory Commission, that would be incurred at a gaseous diffusion plant to comply with regulations issued by the Nuclear Regulatory Commission, with the cost that would be incurred by a gaseous diffusion plant if such a plant was considered to be a Department of Energy defense nuclear facility as defined by Chapter 21 of the Atomic Energy Act (42 U.S.C. § 2286 *et seq.*)

APPENDIX 2: STATEMENT BY JOSEPH J. DiNUNNO[1] RELATIVE TO THE REPORT OF THE ADVISORY COMMITTEE ON EXTERNAL REGULATION[2]

I recognize the difficulty of achieving consensus on all aspects of a report of such detail, given the diversity of backgrounds and interest of Committee membership. However, I find so much of that detail at variance with my own views that I cannot endorse the report as a whole. I do endorse a number of the principal conclusions and observations.

A. With respect to the report in general:

1. The report in too many places, in my view, shows lack of factual rigor, impartiality, and objectivity that should obtain for a report of this importance.

   a. The report too often makes claims and assertions that are judgment calls, representing viewpoints of either individuals or segments of the Committee, but not necessarily the Committee as a whole.

   b. Where the report summarizes factual information and published critiques of Department of Energy (DOE) and predecessor agencies by impartial entities, it is quite useful and informative. The report also identifies well major issues that must be examined by the Administration and Congress, if they elect to pursue the matter of increased external regulation as the Committee recommends. However, the multiplicity of detailed solutions offered as recommendations is another matter. They reflect too often the aspirations of special interest groups. The detailed meeting records (transcripts) of the spirited exchanges that took place at the Committee's public, plenary sessions attest to considerable differences in views on so-called detailed recommendations which are offered in the report as *Committee* consensus.

2. The report targets the statutory authority given to DOE and its predecessor agencies to establish requirements for assuring radiation protection and then implementing them (self-regulation) as the major source of difficulty. The assertion is that such authority allowed mission objectives to be given greater priority than protection of the environment, and that such authority led to environmental degradation, now the subject of costly cleanup and environmental restoration efforts. That, historically, there was substantial environmental contamination of sites and production facilities, is indisputable. However, the report labors hard to make this case as the rationale

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[1] Member of the Defense Nuclear Facilities Safety Board.

[2] *Report of the Advisory Committee on External Regulation*, U.S. Department of Energy, pp. 107-110, September 1996.

for advocating external regulation, implying that *only* such a measure will assure that DOE in the future would be more constrained from perpetrating environmental damage than in the past. In evaluating this premise, I believe it important to bear in mind the following:

a. DOE is subject today to many more statutory environmental requirements than in the pre-1980 period in which most of the conditions requiring remedial actions were created. The DOE mission today and the way it is constrained in its operations are far different from the pre-1980's DOE. The report should be read with the understanding that what the Committee really addressed was not so much whether there is to be external regulation, but rather whether there is to be MORE external regulation.

b. Much of the fix sought by elimination of all vestiges of self-regulation by DOE has already been accomplished by environmental protection statutes. For a large fraction of the current DOE mission (cleanup and environmental restoration), problems identified do not stem from lack of regulation but perhaps from too many regulators in overlapping roles. A large fraction of DOE's program today falls into this regulatory arena. More external regulation will further complex not simplify this problem.

c. The Committee's deliberations on external regulation centered much upon nuclear materials and their regulation under existing provisions of the Atomic Energy Act (AEA) and the Resource Conservation and Recovery Act (RCRA). Since such special materials are crucial to the sustenance of the weapons program, external regulation of their uses raises substantive issues involving and potentially affecting national security.

B. With respect to principal conclusions and observations:

Notwithstanding the above observations, there are concepts and conclusions presented in the report that I do endorse, some fully and others with qualifications. Those I wish to highlight with commentary are the following:

1. ***Agree***: There is no longer any reason, in principle, to allow DOE to continue to self-regulate its nuclear activities, with the exception of certain aspects of defense nuclear facilities still required to support the weapons surveillance and stewardship program.

However: The added costs may provide a compelling reason for not so proceeding. The cost penalty to achieve change will be a function of the specifics of any external regulatory regime put in place. The value-added from additional regulation relative to the costs still remains to be established. I recognize that the Committee did not have the time or resources to analyze the costs relative to benefits of the regulatory schemes suggested in the report. However, the report has taken the position that costs for the legal changes recommended will be justified by increased safety and operating efficiencies. Such assertions without substantive supportable facts are

particularly vulnerable to scepticism and discredit. It is critical in this era of Federal budget austerity to be able to demonstrate that additional regulatory schemes will generate the projected benefits in terms of increased safety of the worker and the public and do so at costs justifiable by those benefits.

Regulatory processes, including public participation opportunities such as those provided for cleanup under environmental statutes, may have to be limited for security reasons in regulation of the residual defense nuclear complex and for cleanup programs requiring expedited action. In my view some of the changes offered as recommendations in the report are likely to lead to more, not less, administrative proceedings and litigation of issues in the courts. Such implications deserve much more scrutiny than was possible within the time and resource constraints of this study.

In establishing the Defense Nuclear Facilities Safety Board (DNFSB), Congress determined that DOE defense nuclear facilities should be subject to independent, external oversight. Some form of external oversight should be retained for aspects of defense nuclear facilities not subjected to such external regulatory processes as might be decided for non-defense nuclear activities.

2. ***Agree***: External regulation offers the potential for enhanced public credibility and greater stability in the framework and execution of DOE's safety management program.

   However: Although increased public confidence and assurance may result, claims for significant increase in safety over a well-executed internal Environmental Safety and Health (ES&H) program with DNFSB oversight are not supported.

3. ***Agree***: Both the DNFSB and the NRC are existing agencies whose current activities make them lead candidates for assuming such additional external regulatory functions the Congress may decide to authorize. Neither agency, as currently authorized and organized, is viewed to be totally suitable to administer to the perceived future needs for external regulation of the DOE.

   However: The record of the Committee's deliberations has shown a strong bias by the drafters towards regulation by the Nuclear Regulatory Commission (NRC). The final report still shows some evidence to that effect although better balance has been achieved.

   The single new agency concept discussed in the report represents an ideal against which possibilities for restructuring existing agencies might well be measured. The weighing of pros and cons of restructuring using either the Board or the NRC, should in my view, focus on the relative complexities of bringing one or the other closer to that ideal. On this choice, Committee members could not come to closure. My own views are that it is preferable to add to the functions and resources of the Board, a small agency, more readily adaptable and already dedicated to independent external oversight of the most hazardous of DOE nuclear programs than to divert the focus of

the NRC now dedicated to regulation of the commercial industry. On this, reasonable persons might well disagree.

4. ***Agree***: In moving to external regulation as a better way for assuring that basic ES&H objectives are achieved, the fulfillment of the nation's national security mission is not to be thwarted or unduly impeded. This is presented as the general sense of the Committee.

   However: The fulfillment of this objective could be significantly affected by report recommendations for specific language changes to existing provisions of both the Atomic Energy Act and the RCRA. I do not endorse such recommendations. The implications of such changes deserve much more scrutiny than the Committee was able to provide, not only for their effects upon DOE's nuclear activities but also upon the commercial industry as well. These statutory changes include:

   - Altering the basic safety mandate of the Atomic Energy Act (page 28*);
   - Permitting state regulation of nuclear facility safety, using standards inconsistent with Federal standards (page 30*); and
   - Provision for citizen suits directly against DOE and its contractors in addition to new layers of Federal regulation of DOE (Page 37*).

5. ***Agree***: DOE's efforts to strengthen its internal system must continue, and any transition to increase external regulation must be carefully thought out and managed. The report underscores the need for an effective internal health and safety system and urges the DOE to continue efforts already underway to clarify and strengthen that system.

6. ***Agree***: Flexibility is a key attribute needed in any regulatory regime devised by an external regulator to deal with the diversity of activities and facilities that make up the DOE complex.

   However: Although this attribute is recognized in the report as essential, so much of the detail presented as recommendations would deny such flexibility. (See commentary under 4. above)

APPENDIX 3: LISTING OF EXISTING AND PLANNED DOE NUCLEAR FACILITIES. (Attachment to a letter from John T. Conway, Chairman, DNFSB, to Shirley Ann Jackson, Chairman, NRC (July 22, 1998)

Table 1. Priority Facilities and Activities

PANTEX FACILITIES		
Facility	**Status**	**Hazards**
Plant-wide Activities	**Operational**	**High-Moderate**
FY 1997: • Oversee the safety of the continuing dismantlement of weapons and weapons components • Monitor the safety of DOE's program for surveillance of nuclear weapons • Assess the adequacy of safety measures applied to the manufacture of explosive charges for nuclear weapons • Observe DOE's conduct of specific nuclear explosive safety studies • Assess the adequacy of DOE's implementation of Recommendation 92-6, involving improvements in the readiness review process for weapon operations • Oversee the implementation of integrated safety management systems under Recommendation 95-2 • Review the Essential Standards Program		
FY 1998: • Oversee the safety of the continuing dismantlement and storage of weapons and weapons components • Monitor the safety of DOE's program for surveillance of nuclear weapons • Evaluate the interfaces between high-explosives safety and nuclear explosive operations • Observe DOE's conduct of specific nuclear explosive safety studies • Oversee the implementation of integrated safety management systems under Recommendation 95-2 • Review the Essential Standards Program		
Building 12-116, SNM Staging Facility (New Nuclear Facility)	**New Facility - Startup in FY 1998**	**Moderate (at present): Plutonium, Uranium, Tritium**
FY 1997: • Review the safety aspects of design and construction • Follow the development of the authorization basis and integrated safety management system • Monitor preparations for startup		
FY 1998: • Assess the adequacy of the final authorization basis and integrated safety management system • Review the safety aspects of design and construction • Observe preparations for startup and the Operational Readiness Review process		

Data as of: 01/22/97

Table 1. Priority Facilities and Activities (Continued)

OAK RIDGE FACILITIES		
Facility	**Status**	**Hazards**
Plant-wide, Y-12 Plant	**Operational**	**Moderate**
FY 1997: • Closely monitor the implementation of contractor and DOE corrective actions identified by assessments in the areas of criticality safety, conduct of operations, and training and qualification as specified in the implementation plan for Recommendation 94- 4 • Monitor the implementation of integrated safety management systems under Recommendation 95-2 for enriched uranium operations; component assembly, disassembly, and evaluation; and nuclear material storage • Review the Essential Standards Program • Monitor safety performance under stockpile maintenance		
FY 1998: • Ensure effective completion of corrective actions associated with Recommendation 94-4 • Review the implementation of integrated safety management systems • Review the Essential Standards Program • Monitor safety performance under stockpile maintenance		
Y-12: Highly Enriched Uranium Processing	**Operational**	**Moderate: Highly Enriched Uranium; Hazardous, Toxic, and Radioactive Materials**
FY 1997: • Assess the Integrated Safety Management Plan • Monitor the safety of restart activities for the enriched uranium operations in Building 9212 to support national security tasking (W87 Life Extension Program) • Review DOE's plan to process the excess in-process material in Buildings 9212 and 9206		
FY 1998: • Monitor the Operational Readiness Review for enriched uranium operations in Building 9212 and initial operations • Monitor progress in processing the in-process material in Buildings 9212 and 9206		

Table 1. Priority Facilities and Activities (Continued)

Facility	Status	Hazards
Y-12: Component Assembly, Disassembly, and Evaluation	**Operational**	**Moderate: Highly Enriched Uranium; Hazardous, Toxic, and Radioactive Materials**
FY 1997: • Monitor the potential safety impacts of increased operational tempo in nuclear weapon secondary dismantlement operations, and review readiness for dismantlement operations on newly retired weapons systems • Review the safety aspects of preparations for the weapon life extension program • Monitor the implementation of DOE's Enhanced Surveillance Program for potential safety implications		
FY 1998: • Review the authorization bases for Buildings 9402-2/2E and integrated safety management systems • Continue to review the safety aspects of readiness for dismantlement operations on newly retired systems • Review the safety aspects of readiness for additional weapon life extension program activities • Monitor the Operational Readiness Review for quality evaluation activities in Building 9204-2E and initial operations		
Y-12 and ORNL: Material Storage	**Operational**	**Moderate: Highly Enriched Uranium; Uranium-233; Hazardous, Toxic, and Radioactive Materials**
FY 1997: • Review the safety of Building 3019 as the uranium-233 national repository • Oversee the development of a uranium storage standard for in-process material, canned subassemblies, and uranium-233		
FY 1998: • Continue Board oversight of the above activities, as appropriate		
K-25 Remediation of Highly Enriched Uranium and Storage of Depleted Uranium Tailings	**Transition**	**Moderate: Highly Enriched Uranium, Depleted Uranium, Hydrogen Fluoride**
FY 1997: • Review progress on the removal of highly enriched uranium held up in piping and systems in gaseous diffusion plant equipment • Review the establishment of the depleted uranium cylinder coating renewal program under Recommendation 95-1		
FY 1998: • Review the construction and loading of the depleted uranium cylinder storage yard		

Table 1. Priority Facilities and Activities (Continued)

LOS ALAMOS NATIONAL LABORATORY NUCLEAR FACILITIES		
Facility	**Status**	**Hazards**
Site-wide	**Operational**	**High-Moderate**
FY 1997: • Review integrated safety management systems and their initial implementation at the site level • Review the adequacy of seismic design criteria • Review the Essential Standards Program		
FY 1998: • Review the implementation of integrated safety management systems • Review the Essential Standards Program		
TA-55, Plutonium Facility, LANL's main facility for R&D and processing of plutonium	**Operational**	**High: Plutonium, Chemical Hazards, Nuclear Criticality**
FY 1997: • Review integrated safety management systems, including the adequacy of hazard assessments for research, development, and demonstration projects • Review the Advanced Recovery and Integrated Extraction System project for recovering plutonium from pits • Review the safety aspects of the Conceptual Design Report for the Capability Maintenance and Improvement Project to prepare TA-55 for future pit production • Continue to review the Nuclear Materials Storage Facility; review the updated preliminary hazards assessment; begin to review the preliminary design		
FY 1998: • Continue to review integrated safety management systems • Continue to review the Capability Maintenance Improvement Project and related activities for future pit production • Continue to review the Nuclear Materials Storage Facility (review the Preliminary Safety Analysis Report and the Preliminary Design)		

Table 1. Priority Facilities and Activities (Continued)

Facility	Status	Hazards
TA-3, Chemistry and Metallurgy Research Building, an R&D Facility	**Operational**	**Moderate: Plutonium, Uranium, Chemical Hazards**
FY 1997: • Review integrated safety management systems, including the adequacy of hazard assessments for research, development, and demonstration projects • Review the safety aspects of the Detailed Design Report for Chemistry and Metallurgy Research Building upgrades		
FY 1998: • Review integrated safety management systems, including the adequacy of hazard assessments for research, development, and demonstration projects • Review the safety aspects of the Final Design Report for Chemistry and Metallurgy Research Building upgrades • Review preparations for activities related to pit production to ensure safety		
TA-18, Los Alamos Critical Experiments Facility	**Operational**	**Moderate: Nuclear Criticality**
FY 1997: • Continue to review the adequacy of implementation of safety measures for criticality controls under Recommendation 93-2		
FY 1998: • Continue to review the adequacy of implementation of safety measures for criticality controls under Recommendation 93-2		
TA-16, Weapons Engineering Tritium Facility	**Operational**	**Moderate: Tritium**
FY 1997: • Review proposed facility modifications		
FY 1998: • Review integrated safety management systems, including the adequacy of hazard assessments for research, development, and demonstration projects		

Table 1. Priority Facilities and Activities (Continued)

Facility	Status	Hazards
TA-15, Dual Axis Radiographic Hydrotest Facility	**Partially Constructed**	**High: Radiation Generating Device, Explosions, Depleted Uranium, Chemical Hazards**
FY 1997: • Review the facility design and provisions for the safety management program		
FY 1998: • Review readiness for operation		
TA-53, Los Alamos Nuclear Scattering Center	**Operational**	**Moderate: Tritium, High-Energy Accelerator Beam**
FY 1997: • Review the safety of activities related to the new defense nuclear mission		
FY 1998: • Review integrated safety management systems, including the adequacy of hazard assessments for research, development, and demonstration projects		
Accelerator Production of Tritium, To Be Designed by Los Alamos National Laboratory and Constructed at the Savannah River Site	**Predesign**	**Moderate: Tritium, High-Energy Accelerator Beam**
FY 1997: • Review the safety aspects of the Los Alamos National Laboratory design		
FY 1998: • Continue the design review		

Table 1. Priority Facilities and Activities (Continued)

SAVANNAH RIVER SITE FACILITIES

Facility	Status	Hazards
Site-wide Activities	**Operational**	**High-Moderate**

FY 1997 and FY 1998:

- Monitor ongoing site-wide implementation of provisions for stabilization and disposition of special nuclear materials under Recommendation 94-1
- Monitor ongoing site-wide implementation of provisions for handling low-level waste under Recommendation 94-2
- Monitor ongoing site-wide implementation of provisions for standards-based safety management under Recommendation 95-2
- Negotiate a memorandum of understanding involving the Board, the state, and the Environmental Protection Agency
- Continue to review both DOE and contractor implementation of integrated safety management systems, starting with review of hazard analyses, followed by reviews of Safety Analysis Reports and Technical Safety Requirements (particularly for the americium-cerium vitrification activity and H-Canyon operations)
- Monitor safety aspects of the processing of plutonium metal in storage and of irradiated fuel and target assemblies in storage basins
- Review the content and implementation of site-wide Standards/Requirements Identification Documents

Defense Waste Processing Facility/In-Tank Precipitation Facility, High-Level Waste Tanks	**Operational**	**High: Fission Products**

FY 1997:

- Review DOE's development of the implementation plan for a program to gain understanding of the mechanisms involved in benzene production under Recommendation 96-1
- Closely monitor corrective actions defined by the Recommendation 96-1 implementation plan
- Continue to focus on efforts to understand benzene generation and release mechanisms in the In-Tank Precipitation process
- Assess the safety of ongoing startup activities and initial operation involving precipitate processing in the Defense Waste Processing Facility, assuming satisfactory resolution of benzene issues
- Monitor and assess ongoing high-level waste tank farm operations
- Evaluate safety issues associated with startup of the Consolidated Incinerator Facility
- Assess and observe activities for closure of high-level waste tanks

FY 1998:

- Continue to monitor Defense Waste Processing Facility operations, particularly during efforts to increase facility capacity (from 200 to 300 canisters/year)

Table 1. Priority Facilities and Activities (Continued)

Facility	Status	Hazards
F-Canyon/FB-Line/FA-Line H-Canyon/HB-Line/HA-Line	Operational	High: Plutonium, Uranium, Transuranics, High-level Waste

FY 1997:

- Review the transfer of plutonium-239 solutions from H-Canyon to F-Canyon, and the processing of these solutions to oxide in the FB-Line
- Monitor processing of plutonium-242 solution to oxide in the HB-Line
- Review the design, safety analysis, and construction of the americium-curium vitrification project
- Monitor the processing of irradiated Mark-31 targets to metal in F-Canyon and FB-Line
- Evaluate the operational readiness of H-Canyon for startup to process highly enriched uranium spent fuel
- Review the design, safety analysis, and construction of modifications required to process highly enriched uranium spent fuel in F-Area
- Monitor FB-Line modifications and startup for new characterization, digital radiography, repackaging, and bagless capabilities for plutonium materials
- Monitor FB-Line operations for processing of plutonium scrap metal

FY 1998:

- Review the Integrated Safety Management Plan
- Evaluate the operational readiness and monitor operations of americium-curium vitrification

Tritium Facilities	Operational	High: Tritium

FY 1997:

- Review the safety of activities associated with strategic stockpile loadouts
- Assess the adequacy of safety measures involved in tritium storage activities
- Monitor DOE's decision-making process regarding potential methods for new tritium production to ensure that suitable safety considerations are taken into account
- Review safety aspects of the conceptual and preliminary designs for the selected new tritium production technology
- Review the conceptual design and Preliminary Safety Analysis Report for the new tritium extraction facility

FY 1998:

- Continue to monitor the safety of strategic stockpile loadouts and tritium storage
- Review the safety of the design and construction of an expanded capacity for unloaded reservoirs
- Oversee the safety of DOE's expansion of tritium stockpile surveillance activities as these new activities are developed, approved, and implemented

Table 1. Priority Facilities and Activities (Continued)

Facility	Status	Hazards
Receiving Basin for Off-site Fuel, L-Basin, K-Basin, and P-Basin	**Operational**	**Moderate: Plutonium, Uranium, Fission Products**
FY 1997: • Monitor the safety of the removal of defense-related spent fuel from the basins for processing • Evaluate the safety/hazards of Mark 16/22 spent fuel transfers to H-Canyon • Monitor the safety of the removal of consolidated sludge from L-Basin • Monitor the vacuum consolidation of sludge in K-Basin • Review the DOE-approved Safety Analysis Report for the Receiving Basin for Off-site Fuel		
FY 1998: • Monitor the safety of the removal of defense-related spent fuel from the basins for processing • Review the safety of the continued transfer of Mark 16/22 spent fuel to H-Canyon • Review the Integrated Safety Management Plan for transition to deactivation (except the Receiving Basin for Off-site Fuel) • Monitor the safety of the removal of consolidated sludge from K-Basin		
K-Reactor	**Cold Standby**	**Moderate: Mixed Fission Products, Activation Products**
FY 1997: • Review DOE's determination of hazards and their potential impact on long-term surveillance and maintenance • Evaluate plans for transition from cold standby to cold shutdown for potential impact on deactivation • Evaluate the Integrated Safety Management Plan for facility transition to deactivation		
FY 1998: • Evaluate the Integrated Safety Management Plan for facility transition to surveillance and maintenance status • Monitor the implementation of the surveillance and maintenance program		

Table 1. Priority Facilities and Activities (Continued)

Facility	Status	Hazards
Actinide Packaging and Storage Facility	**Operational**	**Moderate: Special Nuclear Materials**
FY 1997: • Review the design and safety analysis for the new Actinide Packaging and Storage Facility		
FY 1998: • Review the safety aspects of construction of the new Actinide Packaging and Storage Facility		

Table 1. Priority Facilities and Activities (Continued)

HANFORD FACILITIES		
Facility	**Status**	**Hazards**
High-Level Waste Tank Farms	**Operational**	**High: Fission Products, Actinides**

FY 1997:

- Review intermediate and final elements of the upgraded authorization basis
- Assess the implementation of the integrated safety management system
- Oversee the ongoing waste characterization program
- Monitor the ongoing implementation of systems engineering

FY 1998:

- Continue to pursue DOE's implementation of the integrated safety management system
- Continue to monitor systems engineering practices
- Continue to assess the waste characterization program and resulting disclosures regarding potential safety issues

Plutonium Finishing Plant	**Operational**	**High: Plutonium**

FY 1997:

- Review ongoing aspects of the implementation of provisions for stabilization and disposition of special nuclear materials under Recommendation 94-1
- Closely monitor plans for treatment of plutonium residues
- Oversee preparations for stabilization of plutonium solutions

FY 1998:

- Closely scrutinize processing of plutonium residues and solutions

Table 1. Priority Facilities and Activities (Continued)

Facility	Status	Hazards
K-Reactor Area Fuel Storage Basins	**Operational**	**High: Spent Nuclear Fuel, Sludge**
FY 1997: • Oversee preparations for the transfer of deteriorating spent fuel, stabilization of fuel rods, and cleanup of the basins • Review the adequacy of safety analyses and designs for the new Fuel Retrieval System in the K-Basins, the Canister Storage Building, and the Cold Vacuum Drying Facility • Monitor the construction of the Fuel Retrieval System, the Canister Storage Building, and the Cold Vacuum Drying Facility • Review the results of spent fuel and sludge characterization testing for support of fuel conditioning		
FY 1998: • Continue oversight of fuel transfer, stabilization, and cleanup activities • Review authorization bases and authorization agreements for the Canister Storage Building and the Cold Vacuum Drying Facility • Monitor the completion of construction and startup of the Fuel Retrieval System, the Canister Storage Building, and the Cold Vacuum Drying Facility • Monitor the Operational Readiness Reviews for the Fuel Retrieval System, the Canister Storage Building, and the Cold Vacuum Drying Facility		
PUREX/Redox/233S/B-Plant	**Shutdown**	**High: Plutonium, Mixed Fission Products, Uranium**
FY 1997: • Review authorization bases and safety management planning • Assess the adequacy of ventilation systems • Review the design and integrity of gloveboxes and building roof • Review the adequacy of the design and operation of bridge cranes • Review preparations for facility deactivation • Evaluate readiness for transition to surveillance and maintenance status		
FY 1998: • Monitor the implementation of facility deactivation • Monitor surveillance and maintenance activities		

Table 1. Priority Facilities and Activities (Continued)

Facility	Status	Hazards
Waste Encapsulation and Storage Facility	**Operational**	**Moderate: Cesium and Strontium**
FY 1997: • Continue to review indicators of the long-term integrity of cesium and strontium capsules • Assess the integrity of the storage pool • Review the capability to detect and handle a leaking container • Initiate a review of the facility authorization basis		
FY 1998: • Complete the review of the facility authorization basis • Continue monitoring of ongoing day-to-day operations		

Table 1. Priority Facilities and Activities (Continued)

ROCKY FLATS FACILITIES		
Facility	**Status**	**Hazards**
Solution Processing and Special Nuclear Material Storage, Building 771	**Operating**	**High: Plutonium Solution, Special Nuclear Material, and Waste**
FY 1997: • Assess safety management plans for deinventory activities • Assess the implementation of the upgraded authorization bases • Assess the adequacy of the upgraded authorization bases and the Integrated Safety Management Plan • Review and assess the safety aspects of the plan for oxalate precipitation processing • Evaluate the readiness of equipment, personnel, and procedures for stabilization and packaging		
FY 1998: • Review and assess the safety aspects of the plan for oxalate precipitation processing, as appropriate • Evaluate the readiness of equipment, personnel, and procedures for processing, as appropriate • Observe DOE and contractor readiness assessments for processing, as appropriate • Evaluate the Integrated Safety Management Plan for deactivation		
Solution Processing and Special Nuclear Material Consolidated Storage, Building 371	**Operating**	**High: Plutonium Solution, Special Nuclear Material, and Waste**
FY 1997: • Assess the adequacy of the upgraded authorization bases and the Integrated Safety Management Plan • Assess the implementation of the upgraded authorization bases • Review plans for and assess the adequacy and implementation of safety upgrades per the Recommendation 94-3 Integrated Program Plan • Assess the adequacy of the process selected for processing combustible residues • Review and evaluate the adequacy of the design of the interim storage vault		
FY 1998: • Evaluate the readiness of equipment, personnel, and procedures for processing of combustible residues • Review and evaluate the adequacy of the interim storage vault, as appropriate • Assess the implementation of the upgraded authorization basis		

Table 1. Priority Facilities and Activities (Continued)

Facility	Status	Hazards
Residue Processing and Special Nuclear Material Storage, Building 776, Building 779, Building 707	**Shutdown**	**High: Plutonium Solution, Special Nuclear Material, and Waste**
FY 1997: • Assess safety management plans for deinventory of Building 776, and deactivation and decommissioning of Building 779 • Independently assess the adequacy of the process selected for processing of residues • Evaluate the readiness of equipment, personnel, and procedures for processing of residues in Building 707 • Observe DOE and contractor readiness assessments for processing of residues		
FY 1998: • Review and assess the deactivation and decommissioning of Buildings 779 and 776 • Independently assess the adequacy of the process selected for processing of residues • Evaluate the readiness of equipment, personnel, and procedures for processing of residues in Building 707 • Observe DOE and contractor readiness assessments for processing of residues		
Highly Enriched Uranyl Nitrate, Building 886	**Shutdown**	**Moderate: Highly Enriched Uranium Solution, Special Nuclear Material, and Waste**
FY 1997: • Review the safety management plans for deactivation and decommissioning of Building 886		
FY 1998: • Continue to review the safety aspects of the deactivation and decommissioning of Building 886		

Table 1. Priority Facilities and Activities (Continued)

IDAHO NATIONAL ENGINEERING LABORATORY FACILITIES		
Facility	**Status**	**Hazards**
Advanced Test Reactor	**Operational**	**High:** **Fission Products, Uranium-235**
FY 1997: • Review the safety aspects of facility upgrades • Monitor the experiment testing schedule		
FY 1998: • Review facility upgrades • Monitor the experiment testing schedule		
CPP-603 Underwater Fuel Storage	**Operational**	**Moderate:** **Fission Products, Uranium, Plutonium**
FY 1997: • Oversee fuel movements • Monitor preparations for final disposition of the facility		
FY 1998: • Monitor final disposition of the facility		
CPP-603 Irradiated Fuel Dry Storage Facility	**Operational**	**Moderate:** **Fission Products, Uranium, Plutonium**
FY 1997: • Review planned seismic upgrades • Oversee the safety aspects of operation of the canning (drying) facility		
FY 1998: • Continue to monitor facility operation		

Table 1. Priority Facilities and Activities (Continued)

Facility	Status	Hazards
CPP-666 Irradiated Fuel Dry Storage Facility	**Operational**	**Moderate: Fission Products, Uranium, Plutonium**
FY 1997: • Assess the adequacy of the structural analysis of the basins • Review the safety aspects of the new fuel rack design • Oversee the safety of the reracking of fuel		
FY 1998: • Continue oversight of the safety of fuel movements		
New Waste Calciner Facility	**Operational**	**Moderate: Fission Products, Uranium, Plutonium**
FY 1997: • Oversee preparations for startup • Review the authorization basis • Monitor the Operational Readiness Review and the safety of initial operations		
FY 1998: • Continue to monitor the safety of operations		

Table 1. Priority Facilities and Activities (Continued)

LIVERMORE FACILITY		
Facility	**Status**	**Hazards**
Building 332, Plutonium/Uranium Metallurgy and Chemistry Facility	**Operational**	**Moderate: Plutonium, Uranium**
FY 1997: • Review the authorization basis and the Integrated Safety Management Plan • Review the seismic design of the building • Continue to monitor criticality safety • Review the safety aspects of the heating, ventilation, and air conditioning system • Monitor the implementation of Recommendation 94-1		
FY 1998: • Continue to monitor the safety of building operations		
Building 251, Actinide Chemistry Facility	**Operational**	**Moderate: Plutonium, Uranium**
FY 1997: • Review the authorization basis and the Integrated Safety Management Plan • Monitor the safety of building operations		
FY 1998: • Continue to monitor the safety of building operations		

Table 1. Priority Facilities and Activities (Continued)

NEVADA TEST SITE FACILITIES		
Facility	**Status**	**Hazards**
LYNER Experimental Activities	**Operational**	**High: Plutonium, High Explosives**
FY 1997: • Review the authorization basis and the Integrated Safety Management Plan • Monitor the safety of the initial subcritical experiments		
FY 1998: • Monitor the safety of continuing subcritical experiments		
Device Assembly Facility	**Approaching Startup**	**High: Plutonium/Uranium, High Explosives**
FY 1997: • Assess the adequacy of closure of construction issues • Review the authorization basis and the Integrated Safety Management Plan • Review preparations for the Operational Readiness Review process • Monitor the safety of the transition of operations from Area 27 to the Device Assembly Facility		

SANDIA NATIONAL LABORATORIES FACILITY		
Facility	**Status**	**Hazards**
Technical Area V Reactor Facilities	**Operational**	**Moderate: Reactors Fueled by Highly Enriched Uranium**
FY 1997: • Review integrated safety management systems for defense research and development activities developed under Recommendation 95-2 • Review corrective actions to the radiological protection program in response to recent incidents		
FY 1998: • Review the safety of reactor operations in Technical Area V		

Appendix J

FACILITIES LIST

Note: The tables in this Appendix J were derived from the tables contained in the appendices of the *Report of Department of Energy Working Group on External Regulation.*[1] The Board amended DOE's tables by adding a column that divided DOE nuclear facilities into various categories, including a category for non-defense nuclear facilities. This categorization is made for purposes of convenience only and is not intended to define the Board's jurisdiction.

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[1] *Report of Department of Energy Working Group on External Regulation*, U.S. Department of Energy, Appendix J: Facilities List, pp. J-1 to J-50, December 1996.

DOE Defense Nuclear Complex

FACILITIES	LABORATORIES WEAPONS ASSEMBLY & DISASSEMBLY TESTING SURVEILLANCE & READINESS SPECIAL NUCLEAR MATERIALS	SPENT FUEL & PRODUCTION RESIDUALS EXCESS SPECIAL NUCLEAR MATERIAL	TREATMENT & STABILIZATION FACILITIES WASTE PROCESSING & STORAGE RADIOACTIVE WASTE	EXCESS FACILITIES . CUSTODIAL . DECONTAMINATION (D) . DECONTAMINATION & DECOMMISSION (D&D) . (D&D PLUS ENV. RES.)	OPERABLE UNITS RCRA & CERCLA . (D&D PLUS ENV. RES.)	REPOSITORIES . HL-W . LL-W . MIXED . TRU
FUNCTIONS	STEWARDSHIP/NATIONAL SECURITY & DEFENSE		TREATMENT & STABILIZATION SAFE STORAGE	CUSTODIAL & D&D	ENVIRON-MENTAL RESTORATION	WASTE DISPOSAL
	PART I		A PART II B		PART III	PART IV

DOE Non-Defense Nuclear Complex

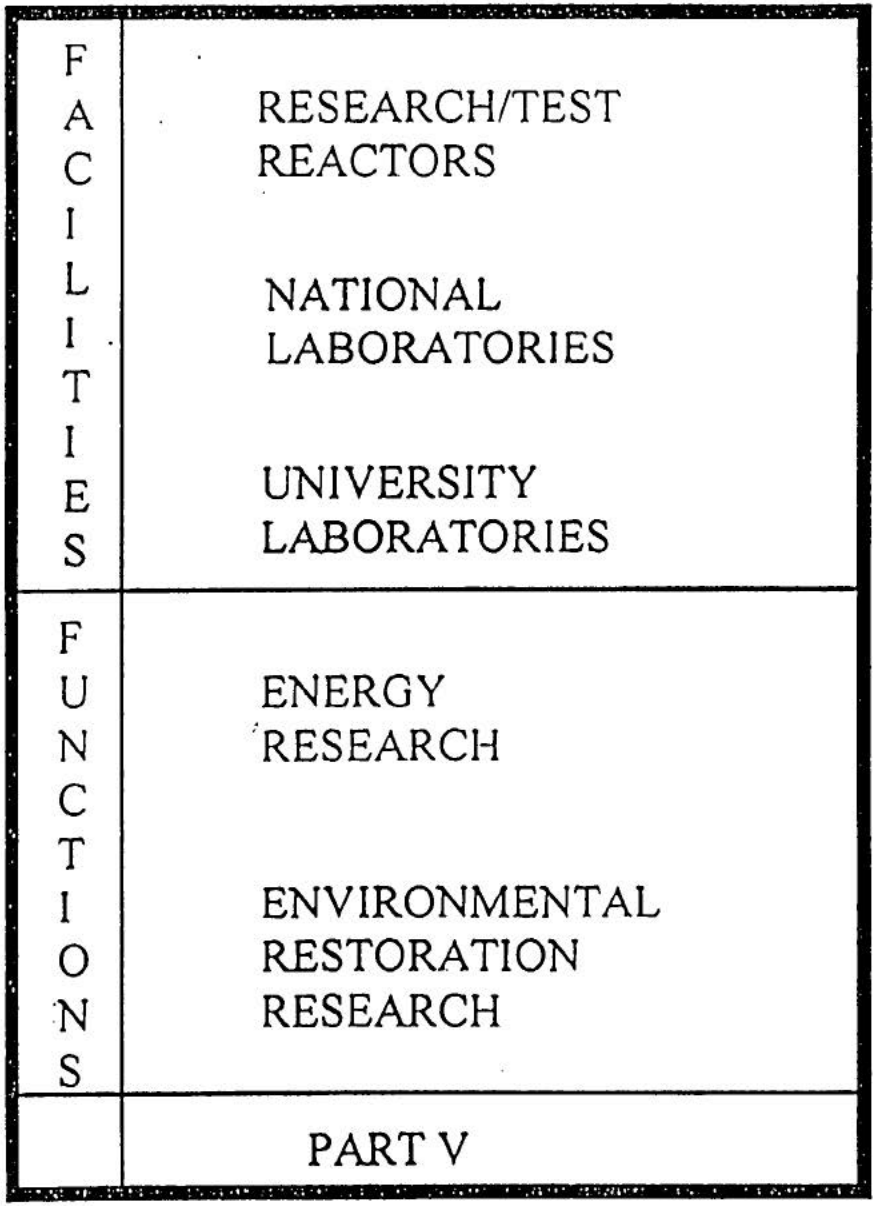


FIGURE 2

DOE FACILITY/SITE SUMMARY

AGGREGATE FACILITY TYPE	DESCRIPTION
ACCELERATORS	Generators of high-energy radiation or particles, including exclusive support buildings.
ANALYTICAL LABORATORIES	Laboratories in which analytical chemistry and radiochemistry are performed in support of site/facility operations. Includes calibration and standards laboratories.
CHEMICAL PROCESSING FACILITIES	Facilities whose purpose is the chemical production and processing/reprocessing of special nuclear material (SNM). Includes target production, fabrication, and processing.
ENRICHMENT FACILITIES	Facilities utilized for the enrichment of uranium for use in nuclear weapon components or for use in commercial reactor research, design, or development. Includes all isotope separation facilities.
ENVIRONMENTAL RESTORATION SITES	Sites, facilities, and locations undergoing remedial investigation, design, or cleanup in which a radionuclide is among the primary contaminants. Includes sites and facilities and locations covered under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the Resource Conservation and Recovery Act (RCRA). Includes facilities undergoing decontamination and decommissioning (D&D). Formerly Utilized Sites Remedial Action Program (FUSRAP) and Uranium Mill Tailings Remedial Action (UMTRA) sites are included.
FISSILE MATERIAL STORAGE FACILITIES AND VAULTS	Facilities utilized for the storage of fissile material. Includes storage facilities for sealed sources and for unirradiated reactor fuel.
FUSION FACILITIES	Facilities utilized for plasma physics research and development of fusion technology.
HOT-CELL COMPLEXES	Facilities used for the processing, machining, testing, assembly, and disassembly of highly radioactive material for use in research or production reactors, or other nuclear research.
PRODUCTION REACTORS	Facilities utilized for the production of plutonium and tritium for use in nuclear weapon research, design, engineering, and production.

RADIOACTIVE MATERIALS/FUEL FABRICATION/PROCESSING FACILITIES	Facilities used for the fabrication and processing and/or reprocessing of reactor fuel.
RADIOACTIVE WASTE MANAGEMENT FACILITIES	Facilities used for the handling, treatment, storage, or disposal of low-level, transuranic, high-level, or mixed wastes. Includes facilities used for the processing of radioactive toxic wastes and radioactive classified wastes.
RADIOGRAPHIC FACILITIES	Facilities used exclusively for the generation of X-rays for diagnostic applications in support of facility operations.
RESEARCH LABORATORIES	Research and development (R&D) facilities used for radioactive and non-radioactive biomedical, basic science, health effects, life science, environmental science, criticality, and alternative energy source research. Includes technology transfer demonstration and testing sites.
RESEARCH REACTORS	Fission reactors used for nuclear physics research, for isotope research, for reactor material testing, and for reactor design evaluation.
SPENT-FUEL STORAGE FACILITIES	Facilities utilized for the short- or long-term storage of spent fuel from either production or research reactors.
SUPPORT FACILITIES	Facilities utilized in direct support for nuclear reactor, chemical processing facility, or other nuclear facility functions. Examples are cooling water processing and monitoring and exhaust air processing/filtering/monitoring.
TRITIUM PRODUCTION AND RECOVERY FACILITIES	Facilities utilized for the recovery, storage, and processing of tritium.
WEAPON MANUFACTURING, ASSEMBLY, AND DISASSEMBLY FACILITIES	Facilities utilized for the engineering, production, manufacturing, assembly, testing, certification, storage, and disassembly of nuclear weapon components or complete nuclear weapons. Includes facilities utilized in support of nuclear weapons in the stockpile. Also includes high-explosives manufacturing, testing, and storage facilities.
WEAPON DESIGN AND TESTING FACILITIES	R&D facilities utilized for the design, engineering, assembly, and testing of nuclear weapon nuclear systems and weapon support components. Includes high-explosives research, production, and storage facilities.
OTHER RADIOACTIVE FACILITIES	Facilities involved in the management and/or processing of radioactive materials that do not fit one of the above categories.

CURRENT/FUTURE STATUS

OPERATIONAL STATUS	DESCRIPTION
PLANNING, CONSTRUCTION, STARTUP	Facilities are in the conceptual design, preliminary design (Title I), definitive design (Title II), under construction (Title III), or in facility operational startup stage or stages.
OPERATING	Activities at a DOE facility are associated with an ongoing, defined, and funded mission such as research. Includes site support functions that are necessary for the continued function of the site, area, or facility in the performance of an ongoing mission.
STANDBY	The facility has no ongoing operations associated with a defined mission, but is being maintained for possible reactivation to support a future mission. Surveillance and maintenance are the primary functional operation underway.
DEACTIVATED	The facility is undergoing a planned, controlled, and permanent cessation of operations. The facility has a reduced level of surveillance and maintenance activities and is being prepared for D&D. Such operations could include removal/consolidation of remaining radioactive/hazardous/SNM material, removal/isolation/mitigation of personnel or environmental hazards, and removal of equipment related to an operating mission.
SHUT DOWN	All operations/activities at the facility have ceased. No plans exist to resume operations (i.e., the mission of the facility has been terminated and no new mission exists). The facility is awaiting transition to D&D.
DECONTAMINATION AND DECOMMISSIONING	The facility is in the process of removal of contaminated systems and equipment and removal of contamination from building structures. The facility may be scheduled for demolition.
SITE CLEANUP AND RESTORATION	Facilities/sites which are undergoing some phase of remedial investigation.
OTHER	Facilities with an operational status which does not fit any of the above categories. Such facilities could include leased facilities, abandoned, or orphan facilities.

OFFICE OF DEFENSE PROGRAMS
NUCLEAR FACILITIES, ACCELERATORS, & RADIOGRAPHIC FACILITIES

Operations Office	Site	Facility	Hazard Category	Aggregate Facility Type	Current Status	Future Status	Remarks	Category
AL	LANL	TA-18, Bldg. 127, Pulsed Accelerator B	2	Accelerators	Operating	Operating		V
AL	LANL	Los Alamos Meson Physics Facility	N/A	Accelerators	Operating	Operating		I
AL	LANL	TA-18, Bldg. 129, Calibration Laboratory	2	Analytical Laboratories	Operating	Operating		I*
AL	LANL	TA-35, Bldg. 2, Laboratory - sealed sources	2	Analytical Laboratories	Operating	Operating		I
AL	LANL	TA-3, Bldg. 130, Instrument Calibration Facility	3	Analytical Laboratories	Operating	Operating		V
AL	LANL	TA-48, Bldg. 1, Radiochemistry Laboratories & Hot Cell	3	Analytical Laboratories	Operating	Operating		I
AL	LANL	TA-41, Bldg. 1, Main Vault (Underground Vault)	2	Fissile Material Storage Facilities & Vaults	Deactivated	Shutdown		IIB
AL	LANL	TA-55, Bldg. 41, Nuclear Material Storage Facility	2	Fissile Material Storage Facilities & Vaults	Deactivated	Shutdown		I
AL	LANL	TA-18, Bldg. 23, Cat I SNM Vault (Kiva 1)	2	Fissile Material Storage Facilities & Vaults	Operating	Operating		I*
AL	LANL	TA-18, Bldg. 26, Hillside Vault (Pajarito Site)	2	Fissile Material Storage Facilities & Vaults	Operating	Operating		I
AL	LANL	TA-18, Bldg. 32, SNM Vault (Kiva 2)	2	Fissile Material Storage Facilities & Vaults	Operating	Operating		I*
AL	LANL	TA-3, Bldg. 65, Sealed Source Storage	2	Fissile Material Storage Facilities & Vaults	Operating	Operating		IIA
AL	LANL	TA-18, Bldg. 247, Sealed Source Storage	3	Fissile Material Storage Facilities & Vaults	Operating	Operating		I*
AL	LANL	TA-3, Bldg. 159, Thorium Storage Facility	3	Fissile Material Storage Facilities & Vaults	Operating	Operating		IIA
AL	LANL	TA-3, Bldg. 66, Sigma Complex - Storage of 65 MT DU	3	Other Radioactive Facilities	Operating	Operating		I

OFFICE OF DEFENSE PROGRAMS
NUCLEAR FACILITIES, ACCELERATORS, & RADIOGRAPHIC FACILITIES

Operations Office	Site	Facility	Hazard Category	Aggregate Facility Type	Current Status	Future Status	Remarks	Category
One facility								
AL	LANL	TA-55, Bldg. 4, Plutonium Facility (PF-4)	2	Radioactive Materials/Fuel Fabrication/Processing Facilities	Operating	Operating		I
AL	LANL	TA-8, Radiography Facility, Bldgs. 22, 23, 24 & 70	2	Radiographic Facilities	Operating	Operating		I
AL	LANL	TA-18, Bldg. 248, National Safeguards Training Facility (IAEA inspector training)	2	Research Laboratories	Operating	Shutdown		V
AL	LANL	TA-3, Bldg. 29, Chemical Metallurgical Research (CMR) Facility	2	Research Laboratories	Operating	Operating		I
AL	LANL	TA-3, Bldg. 40, Physics Bldg.	2	Research Laboratories	Operating	Operating		V
AL	LANL	TA-35, Bldg. 27, Nuclear Safeguards Research	2	Research Laboratories	Operating	Operating		V
AL	LANL	TA-53, Nuclear Activities at LANSCE - A-6 Isotope Production, P3E Pion Scattering Experiment, ER1 Actinide Scattering Experiment	3	Research Laboratories	Operating	Operating		I
AL	LANL	TA-2, Bldg. 1, Omega West Reactor (OWR)	3	Research Reactors	Shutdown	D & D		IIB
AL	LANL	TA-33, Bldg. 86, High-Pressure Tritium Facility (Tritium Handling Facility)	2	Weapon Design & Testing Facilities	Deactivated	Shutdown		IIB
AL	LANL	TA-16, Bldg. 205, Weapons Engineering Tritium Facility (WETF)	2	Weapon Design & Testing Facilities	Operating	Operating		I

OFFICE OF DEFENSE PROGRAMS
NUCLEAR FACILITIES, ACCELERATORS, & RADIOGRAPHIC FACILITIES

Operations Office	Site	Facility	Hazard Category	Aggregate Facility Type	Current Status	Future Status	Remarks	Category
AL	LANL	TA-16, Bldg. 411, Rest House	2	Weapon Design & Testing Facilities	Operating	Operating		I
AL	LANL	TA-21, Bldg. 209, Tritium Science & Fabrication Facility (TSFF)	2	Weapon Design & Testing Facilities	Operating	Operating		I
AL	LANL	TA-15 Phermex		Weapon Design & Testing Facilities	Operating	Operating		I
AL	LANL	TA-15 Dual Axis Radiographic		Weapon Design & Testing Facilities	Under Construction	Operating		I
AL	Pantex	Zone 12, Nuclear Staging Bldgs. 26 PV, Bldg. 44 - Cell-8, Bldg. 58-Bays 4, 5, Bldg. 42S-South Vault, North Vault, Bldg. 60 - Bays 3,4,5, & 6	2	Fissile Material Storage Facilities & Vaults	Operating	Operating		I
AL	Pantex	Zone 4 Nuclear Staging (Igloos), Bldgs. 19, 21, 25, 30 -44, 101-142	2	Fissile Material Storage Facilities & Vaults	Operating	Operating		I
AL	Pantex	Zone 12, Nuclear Staging, Bldg. 116	2	Fissile Material Storage Facilities & Vaults	Planning, Construction, Startup	Operating		I
AL	Pantex	Nuclear Explosives Transfer Facilities - Loading Docks: Zone 12, 12-98, 99, 117; Zone 4, 4 -26	2	Weapon Manufacturing, Assembly, Disassembly Facilities	Operating	Operating		I
AL	Pantex	Zone 12, Nuclear Explosive Bays 64,84,99,104	2	Weapon Manufacturing, Assembly, Disassembly Facilities	Operating	Operating		I
AL	Pantex	Zone 12, Nuclear Explosive Cells 44,85,96,98	2	Weapon Manufacturing, Assembly, Disassembly Facilities	Operating	Operating		I
AL	Pantex	Zone 12, Nuclear Explosive Special Purpose Facilities Bldg. 26, Bays 27&28, Bldg. 41, Bldgs. 50, 60, 94	2	Weapon Manufacturing, Assembly, Disassembly Facilities	Operating	Shutdown		I

OFFICE OF DEFENSE PROGRAMS
NUCLEAR FACILITIES, ACCELERATORS, & RADIOGRAPHIC FACILITIES

Operations Office	Site	Facility	Hazard Category	Aggregate Facility Type	Current Status	Future Status	Remarks	Category
AL	Pantex	Zone 12, Bldg. 104A	2	Weapon Manufacturing, Assembly, Disassembly Facilities	Planning, Construction, Startup	Operating		I
AL	Pantex	Zone 12, Nuclear Explosives Transfer Facility, Bldg. 117	2	Weapon Manufacturing, Assembly, Disassembly Facilities	Planning, Construction, Startup	Operating		I
AL	SNL-NM	Manzano Nuclear Materials Storage Bunkers, Current Bldgs.: (37011, 37045, 37055, 37057, 37063, 37118) Future Bldgs.: (37003, 37007, 37008, 37010)	3	Fissile Material Storage Facilities & Vaults	Operating	Operating		I
AL	SNL-NM	TA-5, Bldg. 6580, Hot Cell Facility (HCF)	2	Hot Cell Complexes	Operating	Operating		I
AL	SNL-NM	TA-5, Bldg. 6588, Gamma Irradiation Facility (GIF)	2	Other Radioactive Facility	Operating	Deactivated		IIB
AL	SNL-NM	TA-5, Bldg. 6590, Sandia Pulsed Reactor III (SPR III)	2	Research Reactors	Operating	Operating		I
AL	SNL-NM	TA-5, Spent Fuel Storage Holes	3	Spent Fuel Storage Facilities	Operating	Operating		I
OAK	LLNL	Explosives Firing Bunker, Flash Xray Unit, Bldg. 801	N/A	Accelerators	Operating	Operating		I
OAK	LLNL	Explosives Firing Bunker, LINAC, Bldg. 851	N/A	Accelerators	Operating	Operating		I
OAK	LLNL	Physics, 100 MeV LINIAC, Bldg. 194	N/A	Accelerators	Operating	Operating		I
OAK	LLNL	Physics Research Lab, Van de Graff, Bldg. 190	N/A	Accelerators	Operating	Operating		I
OAK	LLNL	Radiography and HE Machining, 1MeV Xray Machine, Bldg. 809	N/A	Accelerators	Operating	Operating		I
OAK	LLNL	Radiography Facility, Liniac, Bldg. 823	N/A	Accelerators	Operating	Operating		I

OFFICE OF DEFENSE PROGRAMS
NUCLEAR FACILITIES, ACCELERATORS, & RADIOGRAPHIC FACILITIES

Operations Office	Site	Facility	Hazard Category	Aggregate Facility Type	Current Status	Future Status	Remarks	Category
OAK	LLNL	Buildings 231/233	3	Fissile Material Storage Facilities & Vaults	Operating	Operating		I
OAK	LLNL	Building 334	3	Weapon Design & Testing Facilities	Operating	Operating		I
OAK	LLNL	Plutonium Facility, B332	3	Weapon Design & Testing Facilities	Operating	Operating		I
OAK	LLNL	Building 251	3	Weapon Design & Testing Facilities	Standby	Shutdown		IIB
OAK	LLNL	Tritium Facility, B-331	3	Weapon Design & Testing Facilities	Standby	Standby		IIB
OAK	LLNL	Radiography Facility, Bldg. 239	N/A	Weapons Design and Testing Facilities	Operating	Operating		I
OR	ORNL	Bldg. 3019, Radiochemical Development Facility	2	Chemical Processing Facilities	Operating	Operating		I
OR	Y-12	Bldg. 9212, Wet Chemistry, Casting, Storage	2	Chemical Processing Facilities	Operating	Operating		I
OR	Y-12	Bldg. 9206, Enriched Uranium Chemical Processing	2	Chemical Processing Facilities	Shut down	D & D		IIB
OR	Y-12	Bldg. 9720-5, Warehouse Operations	2	Fissile Material Storage Facilities & Vaults	Operating	Operating		I
OR	Y-12	Bldg. 9720-12, Warehouse for Recoverable Salvage	3	Other Radioactive Facilities	Operating	Operating		I
OR	Y-12	Bldg. 9720-8, Depleted Uranium Warehouse	3	Other Radioactive Facilities	Operating	Operating		I
OR	Y-12	Bldg. 9204-2E Disassembly Operations	2	Weapon Manufacturing, Assembly, Disassembly Facilities	Operating	Operating		I

OFFICE OF DEFENSE PROGRAMS
NUCLEAR FACILITIES, ACCELERATORS, & RADIOGRAPHIC FACILITIES

Operations Office	Site	Facility	Hazard Category	Aggregate Facility Type	Current Status	Future Status	Remarks	Category
OR	Y-12	Bldg. 9204-4, Quality Evaluation	2	Weapon Manufacturing, Assembly, Disassembly Facilities	Operating	D & D		I
OR	Y-12	Bldg. 9215, SNM Processing & Fabrication (Bldg. 9998, H-1 Foundry - attached to Bldg. 9215 & shares safety documentation; Cat 3 facility)	2	Weapon Manufacturing, Assembly, Disassembly Facilities	Operating	Operating		I
OR	Y-12	Bldg. 9201-5, Depleted Uranium Machining, Arc Melt, Casting	3	Weapon Manufacturing, Assembly, Disassembly Facilities	Operating	Operating		I
RL	Hanford	PFP (Plutonium Finishing Plant)	2	Radioactive Materials/Fuel Fabrication/Processing Facilities	Shutdown	D & D		IIA
RL	Hanford	PFP (Plutonium Finishing Plant)	2	Radioactive Materials/Fuel Fabrication/Processing Facilities	Shutdown	D & D		IIA
SR	SRS	Tritium Inventory Storage Area, Bldg. 217000H	2	Tritium Production & Recovery Facilities	Operating	Operating		I
SR	SRS	Tritium Isotope Separation/ Purification Facility, Lines I/II, Bldg. 232000H	2	Tritium Production & Recovery Facilities	Operating	Shutdown	Includes Tritium Support Facilities:-232-H Exhaust Stack, Lines I/II-232-H Exhaust Stack, Line III-232-H Standby Diesel Generator Enclosure	I

OFFICE OF DEFENSE PROGRAMS
NUCLEAR FACILITIES, ACCELERATORS, & RADIOGRAPHIC FACILITIES

Operations Office	Site	Facility	Hazard Category	Aggregate Facility Type	Current Status	Future Status	Remarks	Category
SR	SRS	Tritium Reservoir Finishing/Packing Facility, Bldg. 234000H	2	Tritium Production & Recovery Facilities	Operating	Operating	Includes Tritium Support Facilities:-234-H Exhaust Stack-234-H Standby Diesel Generator Enclosures-233-H Exhaust Stack-233-H Standby Diesel Generator Enclosure-238-H Standby Diesel Generator Enclosure	I
SR	SRS	Tritium Reservoir Loading/Unloading Facility, Bldg. 233000H	2	Tritium Production & Recovery Facilities	Operating	Operating		I
SR	SRS	Tritium Burst Test Facility, Bldg. 236001H	3	Tritium Production & Recovery Facilities	Operating	Operating		I
SR	SRS	Tritium Byproduct Purification Facility, Bldg. 236000H	3	Tritium Production & Recovery Facilities	Operating	Operating		I
SR	SRS	Tritium Extraction Facility, Line III, Bldg. 232000H	3	Tritium Production & Recovery Facilities	Operating	Shutdown		I
SR	SRS	Tritium Reservoir Reclamation Facility, Bldg. 238000H	3	Tritium Production & Recovery Facilities	Operating	Operating		I
SR	SRS	Tritium Storage/Spare Parts/Shipping, Bldg. 237000H	3	Tritium Production & Recovery Facilities	Operating	Operating		I

OFFICE OF ENVIRONMENTAL MANAGEMENT
NUCLEAR FACILITIES, ACCELERATORS, & RADIOGRAPHIC FACILITIES

Operations Office	Site	Facility	Hazard Category	Aggregate Facility Type	Current Status	Future Status	Remarks	Category
AL	LANL	TA-50, Bldg. 1, Radioactive Liquid Waste Treatment Facility (RLWTF)	2	Radioactive Waste Management Facilities	Operating	Operating		IIA**
AL	LANL	TA-50, Bldg. 2, Radioactive Liquid Waste Treatment - low level liquid influence tanks, treatment effluent tanks, low level sludge tanks	2	Radioactive Waste Management Facilities	Operating	Operating		**
AL	LANL	TA-50, Bldg. 90 Radioactive Waste Treatment - Holding tank	2	Radioactive Waste Management Facilities	Operating	Operating		**
AL	LANL	TA-54, Area G, Low-Level Radioactive Waste Disposal & TRU Waste Storage Site (SWMF)	2	Radioactive Waste Management Facilities	Operating	Operating		IV
AL	LANL	TA-54 Transuranic Waste Inspectable Storage Project (TWISP) - TRU Waste Remediation Project	2	Radioactive Waste Management Facilities	Operating	Shutdown		IIA
AL	LANL	TA-63, Replacement Radioactive Liquid Waste Treatment Plant	2	Radioactive Waste Management Facilities	Planning, Construction, Startup	Operating	Replacement Facility for TA-50-1	IIA
AL	LANL	TA-50, Bldg. 190, Liquid Waste Tank	3	Radioactive Waste Management Facilities	Operating	Operating		**
AL	LANL	TA-50, Bldg. 66 Radioactive Waste Treatment - Acid & caustic waste holding tanks	3	Radioactive Waste Management Facilities	Operating	Operating		**
AL	LANL	TA-50, Bldg. 69, Waste Characterization, Reduction & Packaging Facility	3	Radioactive Waste Management Facilities	Operating	Operating	Formerly Called TRU Waste Size Reduction Facility (SRF)	IIA
AL	LANL	TA-54, Bldg. 38, Radioactive Assay Nondestructive Testing (RANT) Facility - TRU Waste NDE/NDA	3	Radioactive Waste Management Facilities	Operating	Operating		IIA

** One facility

OFFICE OF DEFENSE PROGRAMS
NUCLEAR FACILITIES, ACCELERATORS, & RADIOGRAPHIC FACILITIES

Operations Office	Site	Facility	Hazard Category	Aggregate Facility Type	Current Status	Future Status	Remarks	Category
SR	SRS	Tritium Reservoir Finishing/Packing Facility, Bldg. 234000H	2	Tritium Production & Recovery Facilities	Operating	Operating	Includes Tritium Support Facilities:-234-H Exhaust Stack-234-H Standby Diesel Generator Enclosures-233-H Exhaust Stack-233-H Standby Diesel Generator Enclosure-238-H Standby Diesel Generator Enclosure	I
SR	SRS	Tritium Reservoir Loading/Unloading Facility, Bldg. 233000H	2	Tritium Production & Recovery Facilities	Operating	Operating		I
SR	SRS	Tritium Burst Test Facility, Bldg. 236001H	3	Tritium Production & Recovery Facilities	Operating	Operating		I
SR	SRS	Tritium Byproduct Purification Facility, Bldg. 236000H	3	Tritium Production & Recovery Facilities	Operating	Operating		I
SR	SRS	Tritium Extraction Facility, Line III, Bldg. 232000H	3	Tritium Production & Recovery Facilities	Operating	Shutdown		I
SR	SRS	Tritium Reservoir Reclamation Facility, Bldg. 238000H	3	Tritium Production & Recovery Facilities	Operating	Operating		I
SR	SRS	Tritium Storage/Spare Parts/Shipping, Bldg. 237000H	3	Tritium Production & Recovery Facilities	Operating	Operating		I

OFFICE OF ENVIRONMENTAL MANAGEMENT
NUCLEAR FACILITIES, ACCELERATORS, & RADIOGRAPHIC FACILITIES

Operations Office	Site	Facility	Hazard Category	Aggregate Facility Type	Current Status	Future Status	Remarks	Category
AL	LANL	TA-50, Bldg. 1, Radioactive Liquid Waste Treatment Facility (RLWTF)	2	Radioactive Waste Management Facilities	Operating	Operating		IIA**
AL	LANL	TA-50, Bldg. 2, Radioactive Liquid Waste Treatment - low level liquid influence tanks, treatment effluent tanks, low level sludge tanks	2	Radioactive Waste Management Facilities	Operating	Operating		**
AL	LANL	TA-50, Bldg. 90 Radioactive Waste Treatment - Holding tank	2	Radioactive Waste Management Facilities	Operating	Operating		**
AL	LANL	TA-54, Area G, Low-Level Radioactive Waste Disposal & TRU Waste Storage Site (SWMF)	2	Radioactive Waste Management Facilities	Operating	Operating		IV
AL	LANL	TA-54 Transuranic Waste Inspectable Storage Project (TWISP) - TRU Waste Remediation Project	2	Radioactive Waste Management Facilities	Operating	Shutdown		IIA
AL	LANL	TA-63, Replacement Radioactive Liquid Waste Treatment Plant	2	Radioactive Waste Management Facilities	Planning, Construction, Startup	Operating	Replacement Facility for TA-50-1	IIA
AL	LANL	TA-50, Bldg. 190, Liquid Waste Tank	3	Radioactive Waste Management Facilities	Operating	Operating		**
AL	LANL	TA-50, Bldg. 66 Radioactive Waste Treatment - Acid & caustic waste holding tanks	3	Radioactive Waste Management Facilities	Operating	Operating		**
AL	LANL	TA-50, Bldg. 69, Waste Characterization, Reduction & Packaging Facility	3	Radioactive Waste Management Facilities	Operating	Operating	Formerly Called TRU Waste Size Reduction Facility (SRF)	IIA
AL	LANL	TA-54, Bldg. 38, Radioactive Assay Nondestructive Testing (RANT) Facility - TRU Waste NDE/NDA	3	Radioactive Waste Management Facilities	Operating	Operating		IIA

** One facility

OFFICE OF ENVIRONMENTAL MANAGEMENT
NUCLEAR FACILITIES, ACCELERATORS, & RADIOGRAPHIC FACILITIES

Operations Office	Site	Facility	Hazard Category	Aggregate Facility Type	Current Status	Future Status	Remarks	Category
AL	LANL	TA-54, Bldgs. 2,48, 49 & 153, Radioactive Waste Storage & Disposal Facility	3	Radioactive Waste Management Facilities	Operating	Operating		IIA
AL	LANL	TA-63, Mixed Waste Storage Bldg.	3	Radioactive Waste Management Facilities	Planning, Construction, Startup	Operating		IIA
AL	Pinellas	Zone 1, Area 132, Tritium Recovery System	3	Radioactive Waste Management Facilities	Operating	Deactivated	None	IIB
AL	Pinellas	Zone 1, Areas 108, Tube Exhaust, Room	3	Radioactive Waste Management Facilities	Operating	Deactivated	None	IIB
AL	Pinellas	Zone 5, Bldg. 1010, 90 Day Radioactive Waste Storage - Waste Treatment Facility	3	Radioactive Waste Management Facilities	Operating	Deactivated	None	IIB
AL	Pinellas	Zone 5, Bldgs. 1000, Radioactive Waste Storage - Radioactive Waste Treatment Facility	3	Radioactive Waste Management Facilities	Operating	Deactivated	None	IIB
AL	SNL-NM	Manzano Area, Bldg. 37055, 37057, 37063, 37078, Waste Storage	3	Radioactive Waste Management Facilities	Operating	Operating	Converting 37057 and 37063 from nuclear material storage (DP) to only waste storage.	IA
AL	WIPP	Waste Isolation Pilot Plant (WIPP)	2	Radioactive Waste Management Facilities	Planning, Construction, Startup	Operating		IV
CH	ANL-E	Bldg. 200, M-Wing Hot Cells, D&D	N/A	Hot Cell Complexes	Shutdown	D & D		
CH	ANL-E	Radioactive Waste Storage Area Bldg. 331	2	Radioactive Waste Management Facilities	Planning, Construction, Startup	Operating		
CH	ANL-E	Area 317-B, Waste Storage Area - Below Grade	3	Radioactive Waste Management Facilities	Operating	Operating		

OFFICE OF ENVIRONMENTAL MANAGEMENT
NUCLEAR FACILITIES, ACCELERATORS, & RADIOGRAPHIC FACILITIES

Operations Office	Site	Facility	Hazard Category	Aggregate Facility Type	Current Status	Future Status	Remarks	Category
CH	ANL-E	Bldg. 306, Waste Management Operations Facility	3	Radioactive Waste Management Facilities	Operating	Operating		
CH	ANL-E	Mixed Radioactive Waste Storage Area, Bldg. 303	3	Radioactive Waste Management Facilities	Planning, Construction, Startup	Operating		
CH	ANL-E	Area 317-A, Waste Storage Area - Above Grade	N/A	Radioactive Waste Management Facilities	Operating	Operating		
CH	ANL-E	Bldg. 212, D-Wing Glove Boxes D&D	N/A	Research Laboratories	Shutdown	D & D		
CH	ANL-E	Bldg. 330, CP-5 Reactor, D&D	3	Research Reactors	D & D	D & D		
CH	ANL-E	Bldg. 331, Experimental Boiling Water Reactor D&D	N/A	Research Reactors	D & D	D & D		
CH	BNL	Storage Vaults	N/A	Fissile Material Storage Facilities & Vaults	Operating	Operating		
CH	BNL	[Existing] Hazardous Waste Management Facility (HWMF)	2	Radioactive Waste Management Facilities	Operating	D & D		
CH	BNL	New Waste Management Facilities	3	Radioactive Waste Management Facilities	Planning, Construction, Startup	Operating		
CH	BNL	Bldg. 650A, Vertical Pits, Holes & Trenches	N/A	Radioactive Waste Management Facilities	Shutdown	D & D		
CH	PPPL	Princeton Plasma Physics Laboratory (PPPL) (Site D)	3	Fusion Facilities	Operating	Operating		
ID	INEL	CPP-602, -620, -627, -637 ICPP Laboratory Facilities	2	Analytical Laboratories	Operating	Operating		IIA
ID	INEL	CPP-684, Remote Analytical Laboratory	3	Analytical Laboratories	Operating	Operating		IIA
ID	INEL	CPP-651, Unirradiated Fuel Storage Facility	2	Radioactive Materials/Fuel Fabrication/Processing Facilities	Operating	Operating		I*

OFFICE OF ENVIRONMENTAL MANAGEMENT
NUCLEAR FACILITIES, ACCELERATORS, & RADIOGRAPHIC FACILITIES

Operations Office	Site	Facility	Hazard Category	Aggregate Facility Type	Current Status	Future Status	Remarks	Category
ID	INEL	CPP-601 (ERP), Fuel Processing Complex	2	Radioactive Materials/Fuel Fabrication/Processing Facilities	Shutdown	Deactivated		IIB
	* Is a bunker used to store HEU							
ID	INEL	CPP-640 (ERP), Headend Processing Plant	2	Radioactive Waste Management Facilities	Deactivated	D & D		IIB
ID	INEL	CPP-659, New Waste Calcining Facility	2	Radioactive Waste Management Facilities	Operating	Operating		IIA
ID	INEL	CPP-742, -746, -760, -765, Calcined Solids Storage Facilities	2	Radioactive Waste Management Facilities	Operating	Operating	Single Facility License (Group A)	IIA
ID	INEL	ICPP, Airborne Waste Systems	2	Radioactive Waste Management Facilities	Operating	Operating		IIA
ID	INEL	RWMC Transuranic Storage Area Retrieval Enclosure	2	Radioactive Waste Management Facilities	Planning, Construction, Startup	Operating		IIA
ID	INEL	CPP-633 Waste Calcining	2	Radioactive Waste Management Facilities	Deactivated	D & D		IIB
ID	INEL	CPP-(ERP), High Level Waste Tank Farm	2	Radioactive Waste Management Facilities	Operating	Operating	Single Facility License (Group A)	IIA
ID	INEL	CPP-741, Calcined Solids Storage Bin Set One	2	Radioactive Waste Management Facilities	Operating	Operating	Single Facility License (Group A)	IIA
ID	INEL	CPP-791, Calcined Solids Storage Bin Set Six	2	Radioactive Waste Management Facilities	Operating	Operating	Single Facility License (Group A)	IIA
ID	INEL	CPP-795, Calcined Solids Storage Bin Set Seven	2	Radioactive Waste Management Facilities	Operating	Operating	Single Facility License (Group A)	IIA
ID	INEL	ICPP General	2	Radioactive Waste Management Facilities	Operating	Operating		IIA
ID	INEL	ICPP Intermediate Level Liquid Waste Systems	2	Radioactive Waste Management Facilities	Operating	Operating	Single Facility License (Group A)	IIA

OFFICE OF ENVIRONMENTAL MANAGEMENT
NUCLEAR FACILITIES, ACCELERATORS, & RADIOGRAPHIC FACILITIES

Operations Office	Site	Facility	Hazard Category	Aggregate Facility Type	Current Status	Future Status	Remarks	Category
ID	INEL	Radioactive Waste Management Complex (RWMC)	2	Radioactive Waste Management Facilities	Operating	Operating		IIA, III, IV*
ID	INEL	RWMC Pit 9 Project	2	Radioactive Waste Management Facilities	Planning, Construction, Startup	Operating		III
* RWMC activities include safe storage of waste for shipment to WIPP (IIA), environmental restoration of Pit 9 Area (III), and permanent repository for some waste (IV)								
ID	INEL	ICPP Low Level Liquid Waste Systems	3	Radioactive Waste Management Facilities	Operating	Operating	Single Facility License (Group A)	IIA
ID	INEL	RWMC Waste Storage Facility (WMF - 628, -635)	3	Radioactive Waste Management Facilities	Operating	Operating		IIA
ID	INEL	Bldg. TRA-660 Advanced Reactivity Measurement Facility/Coupled Fast Reactivity Measurement facility, (ARMF/CFRMF)	2	Research Reactors	Shutdown	D & D		IIB
ID	INEL	Power Burst Facility (PBF)	2	Research Reactors	Shutdown	D & D		IIB
ID	INEL	CPP-603-A, Underwater Fuel Receiving and Storage	2	Spent Fuel Storage Facilities	Operating	D & D	Single Facility License (Group B)	IIA*
ID	INEL	CPP-603-B, Irradiated Fuels Storage Facility	2	Spent Fuel Storage Facilities	Operating	Operating	Single Facility License (Group B)	IIA*
ID	INEL	CPP-666, Flourinel and Fuel Storage Facility	2	Spent Fuel Storage Facilities	Operating	Operating	Single Facility License (Group B)	IIA*
ID	INEL	CPP-749, Dry Well Fuel Storage	2	Spent Fuel Storage Facilities	Operating	Operating	Single Facility License (Group B)	IIA*
ID	INEL	ICPP, Fissile/ Radioactive Material Transport (Peach Bottom Casks)	2	Spent Fuel Storage Facilities	Operating	Operating		IIA*
ID	INEL	ICPP Fissile/ Radioactive Material Transport (STR&HLC Cask)	2	Spent Fuel Storage Facilities	Operating	Operating		IIA*
ID	INEL	Test Area North Operations	2	Spent Fuel Storage Facilities	Operating	D & D		IIA*

OFFICE OF ENVIRONMENTAL MANAGEMENT
NUCLEAR FACILITIES, ACCELERATORS, & RADIOGRAPHIC FACILITIES

Operations Office	Site	Facility	Hazard Category	Aggregate Facility Type	Current Status	Future Status	Remarks	Category
ID	INEL	TRA Materials Test Reactor (MTR). Canal & Plug Storage Holes 1+2 (TRA - 603/657)	2	Spent Fuel Storage Facilities	Shutdown	D & D		IIB

*Although these facilities are for storage of spent fuel, the fuel is not from production reactors. Accordingly, functions are classified as IIA (safe storage) and not stewardship/national security and defense (I)

OFFICE OF ENVIRONMENTAL MANAGEMENT
NUCLEAR FACILITIES, ACCELERATORS, & RADIOGRAPHIC FACILITIES

Operations Office	Site	Facility	Hazard Category	Aggregate Facility Type	Current Status	Future Status	Remarks	Category
OR	ORNL	Bldg. 7855, Concrete Cask Storage Facility	3	Radioactive Waste Management	Operating	Operating		
OR	ORNL	Bldg. 7886, Interim Waste Management, Storage Pad 1	3	Radioactive Waste Management	Operating	Operating		
OR	ORNL	Bldg. 7567, Central Pumping Station	2	Radioactive Waste Management Facilities	Operating	Operating		
OR	ORNL	Bldg. 7569, LLLW Collection Tank WC-20	2	Radioactive Waste Management Facilities	Operating	Operating		
OR	ORNL	Building 2531, LLW Evaporator Building	2	Radioactive Waste Management Facilities	Operating	Operating		
OR	ORNL	Building 2537, Evap Serv Tanks	2	Radioactive Waste Management Facilities	Operating	Operating		
OR	ORNL	LLLW Intervalley Transfer Line & W-6 Pilot Pipeline	2	Radioactive Waste Management Facilities	Operating	Operating		
OR	ORNL	Melton Valley Storage Facility, 7830	2	Radioactive Waste Management Facilities	Operating	Operating		
OR	ORNL	Tank 2026A, LLW Collection Tank	3	Radioactive Waste Management Facilities	Deactivated	Shutdown		
OR	ORNL	7822A High Range Disposal Wells	3	Radioactive Waste Management Facilities	Operating	Operating		
OR	ORNL	7822J Radioactive SW Staging & Storage Pads	3	Radioactive Waste Management Facilities	Operating	Operating		
OR	ORNL	7831 Field Office and Compactor Facility	3	Radioactive Waste Management Facilities	Operating	Operating		
OR	ORNL	7831C Temporary Storage Shed	3	Radioactive Waste Management Facilities	Operating	Operating		
OR	ORNL	7842C SWSA 6 Temporary Waste Storage Facility	3	Radioactive Waste Management Facilities	Operating	Operating		

OFFICE OF ENVIRONMENTAL MANAGEMENT
NUCLEAR FACILITIES, ACCELERATORS, & RADIOGRAPHIC FACILITIES

Operations Office	Site	Facility	Hazard Category	Aggregate Facility Type	Current Status	Future Status	Remarks	Category
OR	ORNL	7878A Temporary Waste Storage Facility	3	Radioactive Waste Management Facilities	Operating	Operating		
OR	ORNL	Bldg. 7823B, Temporary Waste Storage Facility	3	Radioactive Waste Management Facilities	Operating	Operating		
OR	ORNL	Bldg. 7823C, Temporary Waste Storage Facility	3	Radioactive Waste Management Facilities	Operating	Operating		
OR	ORNL	Bldg. 7823D, Temporary Waste Storage Facility	3	Radioactive Waste Management Facilities	Operating	Operating		
OR	ORNL	Bldg. 7823E, Temporary Waste Storage Facility	3	Radioactive Waste Management Facilities	Operating	Operating		
OR	ORNL	Bldg. 7824, Waste Examination and Assay Facility	3	Radioactive Waste Management Facilities	Operating	Operating		
OR	ORNL	Bldg. 7827, Shielded Dry Well Facility	3	Radioactive Waste Management Facilities	Operating	Operating		
OR	ORNL	Bldg. 7829, Shielded Dry Well Facility	3	Radioactive Waste Management Facilities	Operating	Operating		
OR	ORNL	Bldg. 7834 TRU Drum Storage Facility	3	Radioactive Waste Management Facilities	Operating	Operating		
OR	ORNL	Bldg. 7842 Temporary Low-Level Waste Storage Facility	3	Radioactive Waste Management Facilities	Operating	Operating		
OR	ORNL	Bldg. 7842A LWSP II Solidified Waste Storage Pad	3	Radioactive Waste Management Facilities	Operating	Operating		
OR	ORNL	Bldg. 7842B SWSA 6 Temporary Waste Storage Facility	3	Radioactive Waste Management Facilities	Operating	Operating		
OR	ORNL	Bldg. 7877, LLW Solidification Facility	3	Radioactive Waste Management Facilities	Operating	Operating		
OR	ORNL	Bldg. 7878, SWSA 6 Facility	3	Radioactive Waste Management Facilities	Operating	Operating		

OFFICE OF ENVIRONMENTAL MANAGEMENT
NUCLEAR FACILITIES, ACCELERATORS, & RADIOGRAPHIC FACILITIES

Operations Office	Site	Facility	Hazard Category	Aggregate Facility Type	Current Status	Future Status	Remarks	Category
OR	ORNL	Bldg. 7879 TRU/LLW Staging Storage Facility	3	Radioactive Waste Management Facilities	Operating	Operating		
OR	ORNL	Bldg. 7934, Photographic Waste Storage Facility	3	Radioactive Waste Management Facilities	Operating	Operating		
OR	ORNL	BV Collection Header & Valve Boxes (V1A, 2, 2A, 3)	3	Radioactive Waste Management Facilities	Operating	Operating		
OR	ORNL	Liquid LLW System (includes: 2099, MCS for bldg. 2026 (tank F-1401)	3	Radioactive Waste Management Facilities	Operating	Operating		
OR	ORNL	Private sector RH-TRU sludge treatment facilities	3	Radioactive Waste Management Facilities	Planned	Operating		
OR	ORNL	7572 CH TRU Waste Storage Facility	3	Radioactive Waste Management Facilities	"Planning, Construction, Startup"	Operating		
OR	ORNL	7574 Radioactive Waste Storage Facility	3	Radioactive Waste Management Facilities	"Planning, Construction, Startup"	Operating		
OR	ORNL	7883 RH TRU Storage Bunker	3	Radioactive Waste Management Facilities	"Planning, Construction, Startup"	Operating		
OR	ORNL	Bldg. 2649, Transported Waste Receiving Facility	3	Radioactive Waste Management Facilities	"Planning, Construction, Startup"	Operating		
OR	ORNL	Bldg. 7503, Molten Salt Reactor Experiment (MSRE) Building	2	Research Reactors	D & D	D & D		
OR	ORNL	Bldg. 3010 Bulk Shielding Reactor	2	Research Reactors	Deactivated	D & D		
OR	ORNL	Bldg. 7700-7708 Tower Shielding Reactor	2	Research Reactors	Deactivated	D & D		
OR	ORNL	Bldg. 7511, MSRE Filter Pit	2	Support Facilities	D & D	D & D		
OR	ORNL	Bldg. 7512, MSRE Exhaust Stack	2	Support Facilities	D & D	D & D		

OFFICE OF ENVIRONMENTAL MANAGEMENT
NUCLEAR FACILITIES, ACCELERATORS, & RADIOGRAPHIC FACILITIES

Operations Office	Site	Facility	Hazard Category	Aggregate Facility Type	Current Status	Future Status	Remarks	Category
OR	ORNL	Bldg. 7514, MSRE Supply Air Filter House	2	Support Facilities	D & D	D & D		
OR	Portsmouth	Bldg. X-345;SNM Storage	2	Fissile Material Storage Facilities & Vaults	Operating	Operating		I
OR	Portsmouth	Bldg. X-744-G, Bulk Storage Building	2	Fissile Material Storage Facilities & Vaults	Operating	Operating		I
OR	Portsmouth	Bldg. X-326, "L" Cage in X-326	2	Radioactive Waste Management	Operating	Operating		IIA
OR	Portsmouth	Bldg. X-744-G(U), Bulk Storage Building (Unrestricted)	2	Radioactive Waste Management Facilities	Operating	Operating		IIA
OR	Portsmouth	Bldg. X-7725, Recycle/Assembly Building (R/A)	2	Support Facilities	Operating	Operating		I
OR	Y-12	Bldg. 9825-1 & -2, Depleted Uranium Oxide Storage Vault	2	Other Radioactive Facilities	Operating	Operating		IIA
OR	Y-12	Bldg. 9995, Plant Laboratory	2	Other Radioactive Facilities	Operating	Operating		IIA
RF	RFETS	Bldg. 559 Plutonium Analytical Lab	2	Analytical Laboratories	Operating	Operating		IIA
RF	RFETS	Bldg. 881, Environmental Testing Laboratory	3	Analytical Laboratories	Operating	Operating		IIAB*
RF	RFETS	Bldg. 371 Plutonium	2	Chemical Processing Facilities	Operating	Operating		IIA
RF	RFETS	Bldg. 771, Plutonium Recovery Facility	2	Chemical Processing Facilities	Shutdown	Deactivated		IIA
RF	RFETS	Bldg. 903 Operable Unit 2	3	Environmental Restoration Sites	Site Cleanup & Restoration	Site Cleanup & Restoration		III
RF	RFETS	Bldg. 903 Operable Unit 2	3	Environmental Restoration Sites	Site Cleanup & Restoration	Site Cleanup & Restoration		III
RF	RFETS	Bldg. 991 Product Storage Facility	2	Fissile Material Storage Facilities & Vaults	Operating	Operating		IIA

OFFICE OF ENVIRONMENTAL MANAGEMENT
NUCLEAR FACILITIES, ACCELERATORS, & RADIOGRAPHIC FACILITIES

Operations Office	Site	Facility	Hazard Category	Aggregate Facility Type	Current Status	Future Status	Remarks	Category
SR	SRS	F Canyon, Bldg. 221000F	2	Chemical Processing Facilities	Operating	Operating	F Canyon Support Facilities:-Cooling Water Return Basin-Cooling Water Return Pump Basin-Cooling Water Monitoring House-Cooling Water Monitoring-F Canyon Stack-F Canyon Exhaust Fan House-Vessel Vent Fan House-Diesel Generator	IIA
SR	SRS	F Canyon Outside Facilities, Bldg. 211000F	2	Chemical Processing Facilities	Operating	Operating		IIA
SR	SRS	FB-Line, Bldg. 221000F	2	Chemical Processing Facilities	Operating	Operating		IIA
SR	SRS	H Canyon, Bldg. 221000H	2	Chemical Processing Facilities	Operating	Operating	Includes H Canyon Support Facilities:-Monitoring House-Cooling Water Monitoring Houses (6 houses)-H Canyon Stack-Canyon Exhaust Fan House-Vessel Vent Fan House-Fan House Building-Stack Monitoring Equipment Building	IIA
SR	SRS	HB-Line, Bldg. 221000H	2	Chemical Processing Facilities	Operating	Operating		IIA
SR	SRS	Heavy Water Rework Finish Building, Bldg. 421000D	2	Chemical Processing Facilities	Operating	Shutdown		IIB
SR	SRS	A-Line, Bldg. 221001F	3	Chemical Processing Facilities	Operating	Operating		IIA

OFFICE OF ENVIRONMENTAL MANAGEMENT
NUCLEAR FACILITIES, ACCELERATORS, & RADIOGRAPHIC FACILITIES

Operations Office	Site	Facility	Hazard Category	Aggregate Facility Type	Current Status	Future Status	Remarks	Category
SR	SRS	Heavy Water Rework Handling Facility, including 420-2D, Bldg. 420000D	3	Chemical Processing Facilities	Operating	Shutdown		IIB
SR	SRS	Technical Purification Facility, Bldg. 421002D	3	Chemical Processing Facilities	Operating	Shutdown		IIB
SR	SRS	Nuclear Material Storage Facility, 247-F (Vault & FMF)	2	Fissile Material Storage Facilities & Vaults	Deactivated	Shutdown		IIB
SR	SRS	235-F Manufacturing Building	2	Fissile Material Storage Facilities & Vaults	Operating	Operating		IIA
SR	SRS	Drum Storage (MWSS), Bldg. 316000M	N/A	Fissile Material Storage Facilities & Vaults	Shutdown	Shutdown		IIB
SR	SRS	F Tank Farm Sealed Sources (Monitors):-SWM, Bldg. 907002F-SWM, Bldg. 907003F-SWM, Bldg. 907004F-SWM (Spares), Bldg. 241059F	N/A	Other Radioactive Facilities	Operating	Operating		IIA
SR	SRS	H Tank Farm Sealed Sources:-SWM, Bldg. 907002H-SWM, Bldg. 907003H-SWM, Bldg. 907004H-SWM, Bldg. 907005H-SWM, Bldg. 907006H-SWM, Bldg. 907007H-Other Monitors & Sources, Bldg. 241084H-Check Cs-137 Sources, Bldg. 242026H-1H Evaporator Monitors	N/A	Other Radioactive Facilities	Operating	Operating		IIA
SR	SRS	Lab (Sources), Bldg. 241084H	N/A	Other Radioactive Facilities	Operating	Operating		IIA
SR	SRS	Lab (Sources), Bldg. 241096H	N/A	Other Radioactive Facilities	Operating	Operating		IIA
SR	SRS	Medical Facility, Bldg. 719000A	N/A	Other Radioactive Facilities	Operating	Operating		IIA
SR	SRS	Medical Facility, Bldg. 719005N	N/A	Other Radioactive Facilities	Operating	Operating		IIA

OFFICE OF ENVIRONMENTAL MANAGEMENT
NUCLEAR FACILITIES, ACCELERATORS, & RADIOGRAPHIC FACILITIES

Operations Office	Site	Facility	Hazard Category	Aggregate Facility Type	Current Status	Future Status	Remarks	Category
RF	RFETS	Bldg. 884, LLW, RCRA Unit 13	3	Other Radioactive Facilities	Operating	Operating	Depleted Uranium Storage	IIA
RF	RFETS	Bldg. 444, Depleted Uranium (DU) Manufacturing (includes support Buildings 450, 455)	3	Other Radioactive Facilities	Shutdown	Deactivated	Mfgr; Depleted Uranium Storage	IIAB*
RF	RFETS	Bldg. 447, Depleted Uranium (DU) Shipping/Storage (includes support building 451)	3	Other Radioactive Facilities	Shutdown	Deactivated	Mfgr; Depleted Uranium Storage	IIB
RF	RFETS	Bldg. 448, Uranium Shipping/Storage	3	Other Radioactive Facilities	Shutdown	Deactivated	Depleted Uranium Storage	IIB
RF	RFETS	Bldg. 883, Uranium Rol/Forming Operations (includes support building 879)	3	Other Radioactive Facilities	Shutdown	Deactivated	Depleted Uranium Storage	IIB
RF	RFETS	Bldg. 374, Waste Treatment Facility	2	Radioactive Waste Management Facilities	Operating	Operating		IIA
RF	RFETS	Bldg. 569, Crate Counting and Storage Facility	2	Radioactive Waste Management Facilities	Operating	Operating		IIA
RF	RFETS	Bldg. 664, Waste Storage & Shipping Facility	2	Radioactive Waste Management Facilities	Operating	Operating		IIA
RF	RFETS	Bldg. 774, Waste Treatment Plant	2	Radioactive Waste Management Facilities	Operating	Operating		IIA
RF	RFETS	B440, TRU Waste Storage	2	Radioactive Waste Management Facilities	Shutdown	Operating		IIA
* IIAB - Excess building but being used for storage (counted as IIA)								
RF	RFETS	Bldg. 906, Centralized Waste Storage Facility	3	Radioactive Waste Management Facilities	Operating	Operating		IIA
RF	RFETS	Bldg. 964, Drum Storage	3	Radioactive Waste Management Facilities	Operating	Operating		IIA
RF	RFETS	Pads 750 & 904, Storage Pads	3	Radioactive Waste Management Facilities	Operating	Operating		IIA

OFFICE OF ENVIRONMENTAL MANAGEMENT
NUCLEAR FACILITIES, ACCELERATORS, & RADIOGRAPHIC FACILITIES

Operations Office	Site	Facility	Hazard Category	Aggregate Facility Type	Current Status	Future Status	Remarks	Category
RF	RFETS	RCRA Unit 15A (904)	3	Radioactive Waste Management Facilities	Operating	Operating		IIA
RF	RFETS	Bldg. 886 Nuclear Safety Facility (previously Critical Mass Research laboratory)	2	Research Laboratories	Shutdown	Deactivated		IIB
RF	RFETS	Bldg. 707 Plutonium Manufacturing Bldg.	2	Weapon Manufacturing, Assembly, Disassembly Facilities	Operating	Operating		IIA
RF	RFETS	Bldg. 776/777, Manufacturing Bldg.	2	Weapon Manufacturing, Assembly, Disassembly Facilities	Operating	Deactivated	Mnf Shutdown, Operating (Waste Ops)	IIA
RF	RFETS	Bldg. 779 Plutonium Processing Development Bldg.	2	Weapon Manufacturing, Assembly, Disassembly Facilities	Shutdown	Deactivated		IIA
RL	Hanford	EMSL (Environmental Molecular Sciences Laboratory)	2	Accelerators	Planning, Construction, Startup	Operation	Hazard category is estimated.	V
RL	Hanford	222-S Laboratory	3	Analytical Laboratories	Operating	Operating		IIA
RL	Hanford	N Reactor Complex	3	Production Reactor	D & D	Site Cleanup & Restoration	Retired Facility (BHI intends to cat. as RF in future)	IIB
RL	Hanford	REDOX	2	Chemical Processing Facilities	D & D	Site Cleanup & Restoration	Retired Facility (BHI intends to cat. as RF in future	IIB
RL	Hanford	PUREX (Plutonium/Uranium Extraction Facility)	2	Chemical Processing Facilities	Transition	D & D		IIB
RL	Hanford	2718 - E Critical Mass Storage	?	Fissile Material Storage Facilities & Vaults	Operating	Operating		IIA

OFFICE OF ENVIRONMENTAL MANAGEMENT
NUCLEAR FACILITIES, ACCELERATORS, & RADIOGRAPHIC FACILITIES

Operations Office	Site	Facility	Hazard Category	Aggregate Facility Type	Current Status	Future Status	Remarks	Category
RL	Hanford	N Reactor Fuel Facilities Fabrication	3	Fissile Material Storage Facilities & Vaults	Operating	Shutdown		IIA
RL	Hanford	Cold Vacuum Drying Annex (Future)	2	Radioactive Materials/Fuel Fabrication/Processing Facilities	Planning, Construction, Startup	Operating		IIA
RL	Hanford	CSB + Hot Vacuum Drying Annex (Future)	2	Radioactive Materials/Fuel Fabrication/Processing Facilities	Planning, Construction, Startup	Operating		IIA
RL	Hanford	B Plant	2	Radioactive Materials/Fuel Fabrication/Processing Facilities	Shutdown	D & D		IIB
RL	Hanford	UO3 (only includes T Hoppers and cribs - rest of UO3 transitioned to ER)	3	Radioactive Materials/Fuel Fabrication/Processing Facilities	Shutdown	D & D		IIB
RL	Hanford	242-A Evaporator	2	Radioactive Waste Management Facilities	Operating	Shutdown		IIA
RL	Hanford	K Basins Facility (100K Area)	2	Radioactive Waste Management Facilities	Operating	Shutdown		IIA
RL	Hanford	SWBG (Solid Waste Burial Grounds)	2	Radioactive Waste Management Facilities	Operating	Operating		IV
RL	Hanford	Tank Farms (SST, DST, DCRT, 204-AR Waste Unloading Facilities)	2	Radioactive Waste Management Facilities	Operating	D & D		IIA
RL	Hanford	TRUSAF (Transuranic Storage and Assay Facility)	2	Radioactive Waste Management Facilities	Operating	D & D		IIA
RL	Hanford	340 Facility	3	Radioactive Waste Management Facilities	Operating	Shutdown		IIA
RL	Hanford	CWC (Central Waste Complex)	3	Radioactive Waste Management Facilities	Operating	Operating		IV

OFFICE OF ENVIRONMENTAL MANAGEMENT
NUCLEAR FACILITIES, ACCELERATORS, & RADIOGRAPHIC FACILITIES

Operations Office	Site	Facility	Hazard Category	Aggregate Facility Type	Current Status	Future Status	Remarks	Category
RL	Hanford	T Plant (Decontamination Facility)	3	Radioactive Waste Management Facilities	Operating	Shutdown		IIA
RL	Hanford	242-S Evaporator, 242-T Evaporator	3	Radioactive Waste Management Facilities	Shutdown	D & D		IIB
RL	Hanford	Grout	3	Radioactive Waste Management Facilities	Shutdown	Shutdown		IIB
RL	Hanford	W-112 Project - Enhanced Radioactive & Mixed Waste Storage Facility, Phase V (Future)	2	Radioactive Waste Management Facility	Planning, Construction, Startup	Operation	Hazard category is estimated; (safety documentation to be incorporated into CWC)	IIA
RL	Hanford	WESF (Waste Encapsulation and Storage Facility)	2	Radioactive Waste Management Facilities	Operating	Operating		IIA
RL	Hanford	High Level Waste Vitrification	2	Radioactive Waste Management Facilities	Other	Operating		IIA
RL	Hanford	LERF (Liquid Effluent Retention Facility)	3	Radioactive Waste Management Facilities	Operating	Operating		IIA
RL	Hanford	100 Area Reactors	3	Production Reactors	D & D Shutdown	D & D		IIB
RL	Hanford	U Plant (221-U)	2/3	Radioactive Materials/Processing Facility	Shutdown	D & D		IIB
RL	Hanford	Low Activity Waste Thermal Treatment Facility	3	Radioactive Waste Management Facilities	Planning, Construction, Startup	Operating	Est. FY 2000; to be private	IIA
RL	Hanford	W-026 Project - Waste Receiving & Processing Module (WRAP)	3	Radioactive Waste Management Facilities	Planning, Construction, Startup	Operation	Hazard category is estimated.	IIA

OFFICE OF ENVIRONMENTAL MANAGEMENT
NUCLEAR FACILITIES, ACCELERATORS, & RADIOGRAPHIC FACILITIES

Operations Office	Site	Facility	Hazard Category	Aggregate Facility Type	Current Status	Future Status	Remarks	Category
RL	Hanford	W-113 Project - Solid Waste Retrieval Facility, Phase V	3	Radioactive Waste Management Facilities	Planning, Construction, Startup	Operating	Hazard category is estimated; Negotiation (est. FY 2000)	IIA
RL	Hanford	200 ERF (Effluent Treatment Facility)	3	Radioactive Waste Management Facilities	Operating	Operating		IV
RL	Hanford	306W - Materials Development Laboratory	N/A	Research Laboratories	Operating	Operating		V
RL	Hanford	324 Building	2	Research Laboratory	Operating	Shutdown		IIA
RL	Hanford	325 Building	3	Research Laboratory	Operating	Shutdown		IIA
RL	Hanford	327 Building	2	Research Laboratory	Operating	Shutdown		IIA
RL	Hanford	FFTF (Fast Flux Test Facility) and MASF (Maintenance and Storage Facility)	1	Research Reactors	Shutdown	Hut Standby	Backup for Tritium Production	I
RL	Hanford	308 Building	3	Research Reactors & Pu Processing	Shutdown	D & D	Remains nuclear facility due to Pu in ducts	IIB
RL	Hanford	CSB (Canister Storage Building) (Future)	2	Spent Fuel Storage Facilities	Planning, Construction, Startup	Operating	Dry Spent Fuel Storage	IIA
RL	Hanford	306E Building	N/A	Weapon Design & Testing Facilities	Other	Other		I
SR	SRS	Process Control 772-F Laboratory	2	Analytical Laboratories	Operating	Operating		IIA
SR	SRS	Process Control 772-1F Laboratory	3	Analytical Laboratories	Operating	Operating		IIA
SR	SRS	Water Quality Laboratory, Bldg. 772000D	3	Analytical Laboratories	Operating	D & D		IIB
SR	SRS	Reactor Material Lab, Bldg. 320000M	N/A	Analytical Laboratories	Shutdown	Shutdown		IIB
SR	SRS	Metallurgical Lab, Bldg. 322000M	N/A	Analytical Laboratories	Shutdown	Shutdown		IIB
SR	SRS	211-H Outside Facility	2	Chemical Processing Facilities	Operating	Operating		IIA

OFFICE OF ENVIRONMENTAL MANAGEMENT
NUCLEAR FACILITIES, ACCELERATORS, & RADIOGRAPHIC FACILITIES

Operations Office	Site	Facility	Hazard Category	Aggregate Facility Type	Current Status	Future Status	Remarks	Category
SR	SRS	Sealed Sources:-FCWB Discharge, Bldg. 241097F-HCWB Discharge, Bldg. 241103H-FRB Discharge, Bldg. 281008F-HRB Discharge, Bldg. 281008H	N/A	Other Radioactive Facilities	Operating	Operating		IIA
SR	SRS	C-Reactor, Bldg. 105000C	2	Production Reactors	Shutdown	Shutdown		IIB
SR	SRS	K-Reactor, Bldg. 105000K	2	Production Reactors	Shutdown	Shutdown		IIB
SR	SRS	L-Reactor, Bldg. 105000L	2	Production Reactors	Shutdown	Shutdown		
SR	SRS	P-Reactor, Bldg. 105000P	2	Production Reactors	Shutdown	Shutdown		IIB
SR	SRS	R-Reactor, Bldg. 105000R	N/A	Production Reactors	Shutdown	Shutdown		IIB
SR	SRS	Fuel Fabrication Building, Bldg. 321000M	2	Radioactive Materials/Fuel Fabrication/Processing Facilities	Shutdown	Shutdown		IIB
SR	SRS	Old Target Fabrication Facility, Bldg. 313000M	N/A	Radioactive Materials/Fuel Fabrication/Processing Facilities	Shutdown	Shutdown		IIB
SR	SRS	F Tank Farm Waste Storage Tank 20	2	Radioactive Waste Management Facilities	Deactivated	Shutdown		IIB
SR	SRS	SWMF Engineered Low Level Trenches	2	Radioactive Waste Management Facilities	Deactivated	Site Cleanup & Restoration		III
SR	SRS	Defense Waste Processing Facility, Bldg. 221000S	2	Radioactive Waste Management Facilities	Operating	Operating		IIA
SR	SRS	F Tank Farm Pump Pits:FPP1, FPP2, FPP3	2	Radioactive Waste Management Facilities	Operating	Operating		IIA
SR	SRS	F Tank Farm Waste Storage Tanks 17-19	2	Radioactive Waste Management Facilities	Operating	Shutdown		IIB

OFFICE OF ENVIRONMENTAL MANAGEMENT
NUCLEAR FACILITIES, ACCELERATORS, & RADIOGRAPHIC FACILITIES

Operations Office	Site	Facility	Hazard Category	Aggregate Facility Type	Current Status	Future Status	Remarks	Category
SR	SRS	F Tank Farm Waste Storage Tanks:-Tanks 1-8-Tanks 25-28-Tanks 33, 34-Tanks 44-47	2	Radioactive Waste Management Facilities	Operating	Operating	Includes F Tank Farm Waste Transfer System Support Facilities:-F Tank Farm Control Room-2F Evaporator Control House-Waste Removal Control House-Emergency Ventilation Storage & Supply Building	IIA
SR	SRS	F Tank Farm Waste Transfer System Diversion Boxes:-FBD-1 through FBD-6	2	Radioactive Waste Management Facilities	Operating	Operating		IIA
SR	SRS	Glass Waste Storage Facility, Bldg. 250000S	2	Radioactive Waste Management Facilities	Operating	Operating		IIA
SR	SRS	H Tank Farm Pump Pits:-HPP 1-6	2	Radioactive Waste Management Facilities	Operating	Operating		IIA
SR	SRS	H Tank Farm Waste Storage Tanks:-Tanks 9-15-Tanks 21-24-Tanks 29-32-Tanks 35-39-Tank 43	2	Radioactive Waste Management Facilities	Operating	Operating	Includes H Tank Farm Waste Transfer System Support Facilities:-Change House (East Hill Control Room)-Waste Evaporator #1 Control Room-Waste Removal Control House-Emergency Ventilation Storage & Supply Building	IIA
SR	SRS	H Tank Farm Waste Transfer System Diversion Boxes:-HDB-1 through HDB-8	2	Radioactive Waste Management Facilities	Operating	Operating		IIA
SR	SRS	H Tank Farm Waste Transfer System:-Process Pump Pit-Concentrate Transfer System	2	Radioactive Waste Management Facilities	Operating	Operating		IIA

OFFICE OF ENVIRONMENTAL MANAGEMENT
NUCLEAR FACILITIES, ACCELERATORS, & RADIOGRAPHIC FACILITIES

Operations Office	Site	Facility	Hazard Category	Aggregate Facility Type	Current Status	Future Status	Remarks	Category
SR	SRS	ITP/ESP Waste Storage Tanks:-Tanks 40-42-Tanks 48-51	2	Radioactive Waste Management Facilities	Operating	Operating	Includes ITP/ESP Support Facilities:-Emergency Ventilation Storage & Supply Building-Control House, Bldg. 241082H	IIA
SR	SRS	Late Wash Facility, Bldg. 512000S	2	Radioactive Waste Management Facilities	Operating	Operating		IIA
SR	SRS	Lower Point Pump Pit, Bldg. 511000S	2	Radioactive Waste Management Facilities	Operating	Operating		IIA
SR	SRS	SRTC Radioactive Liquid Waste Handling (1A-6A), Bldg. 778000A	2	Radioactive Waste Management Facilities	Operating	Operating		IIA
SR	SRS	SWMF TRU Waste Storage Pads	2	Radioactive Waste Management Facilities	Operating	Operating		IIA
SR	SRS	Waste Evaporator 2F	2	Radioactive Waste Management Facilities	Operating	Operating		IIA
SR	SRS	Waste Evaporator 2H	2	Radioactive Waste Management Facilities	Operating	Operating		IIA
SR	SRS	Replacement HLW Evaporator	2	Radioactive Waste Management Facilities	Planning, Construction, Startup	Operating		IIA
SR	SRS	SWMF Old Burial Ground (Includes Solvent Storage Tanks 1-22)	2	Radioactive Waste Management Facilities	Shutdown	Site Cleanup & Restoration		III
SR	SRS	Waste Evaporator 1F	2	Radioactive Waste Management Facilities	Shutdown	Shutdown		IIB
SR	SRS	Waste Evaporator 1H	2	Radioactive Waste Management Facilities	Shutdown	D & D		IIB
SR	SRS	SWMF Mixed Waste Management, Bldg. 643028E	2	Radioactive Waste Management Facilities	Site Cleanup & Restoration	Site Cleanup & Restoration		III

OFFICE OF ENVIRONMENTAL MANAGEMENT
NUCLEAR FACILITIES, ACCELERATORS, & RADIOGRAPHIC FACILITIES

Operations Office	Site	Facility	Hazard Category	Aggregate Facility Type	Current Status	Future Status	Remarks	Category
SR	SRS	H Tank Farm Waste Storage Tank 16	3	Radioactive Waste Management Facilities	Deactivated	Shutdown		IIB
SR	SRS	SWMF Solvent Storage Tanks 29, 30	3	Radioactive Waste Management Facilities	Deactivated	Site Cleanup & Restoration		III
SR	SRS	CIF Compactor Building, Bldg. 253000H	3	Radioactive Waste Management Facilities	Operating	Deactivated		IIB
SR	SRS	E-Area Intermediate Level Non-Tritium Vault	3	Radioactive Waste Management Facilities	Operating	Operating		IIA
SR	SRS	E-Area Intermediate Level Tritium Vault	3	Radioactive Waste Management Facilities	Operating	Operating		IIA
SR	SRS	E-Area Long-Lived Waste Storage Vault	3	Radioactive Waste Management Facilities	Operating	Operating		IIA
SR	SRS	E-Area Low Activity Waste Vault	3	Radioactive Waste Management Facilities	Operating	Operating		IIA
SR	SRS	Effluent Treatment Facility (ETF) Treatment Water Storage Tanks:-Treated Water Storage Tank, Bldg. 241018H-Treated Water Storage Tank, Bldg. 241019H-Treated Water Storage Tank, Bldg. 241020H	3	Radioactive Waste Management Facilities	Operating	Operating		IIA
SR	SRS	ETF Treatment Building, Bldg. 241081H	3	Radioactive Waste Management Facilities	Operating	Operating		IIA
SR	SRS	Interim Treatment Storage Tanks -Tanks M-425-100-1 to -10	3	Radioactive Waste Management Facilities	Operating	Shutdown		IIB

OFFICE OF ENVIRONMENTAL MANAGEMENT
NUCLEAR FACILITIES, ACCELERATORS, & RADIOGRAPHIC FACILITIES

Operations Office	Site	Facility	Hazard Category	Aggregate Facility Type	Current Status	Future Status	Remarks	Category
SR	SRS	Other ETF Tanks:-DX/RO/EVAP OH Tank Containment-EVAP Condenser Tank Containment-Evaporator Feed Tank-Wastewater Collection Tank Containment-Mercury Removal and Carbon Tank Area	3	Radioactive Waste Management Facilities	Operating	Operating		IIA
SR	SRS	Saltstone Process Building, Bldg. 210000Z	3	Radioactive Waste Management Facilities	Operating	Operating		IIA
SR	SRS	Saltstone Vaults:-Vault No. 1 (Cells A-F)-Vault No. 4 (Cells A-L) (Previously Vaults 6&7)	3	Radioactive Waste Management Facilities	Operating	Operating		IIA
SR	SRS	SRTC Solid Waste Handling (1A, 2A, 6A), Bldg. 778000A	3	Radioactive Waste Management Facilities	Operating	Operating		IIA
SR	SRS	SSHT/FWRT, Bldg. 201000Z	3	Radioactive Waste Management Facilities	Operating	Operating		IIA
SR	SRS	SWMF E-Area Trenches	3	Radioactive Waste Management Facilities	Operating	Operating		IIA
SR	SRS	SWMF Mixed Waste Storage, Bldg. 643029E	3	Radioactive Waste Management Facilities	Operating	Operating		IIA
SR	SRS	SWMF Mixed Waste Storage, Bldg. 643043E	3	Radioactive Waste Management Facilities	Operating	Operating		IIA
SR	SRS	SWMF, N-Area, Mixed Waste Storage Bldg., Bldg. 645002N	3	Radioactive Waste Management Facilities	Operating	Operating		IIA
SR	SRS	SWMF Naval Reactor Component Storage Area	3	Radioactive Waste Management Facilities	Operating	Operating		IIA
SR	SRS	SWMF Used Equipment Storage Area, Bldg. 643007E	3	Radioactive Waste Management Facilities	Operating	Operating		IIA
SR	SRS	SWMF Waste Certification Building, Bldg. 724008E	3	Radioactive Waste Management Facilities	Operating	Operating		IIA

OFFICE OF ENVIRONMENTAL MANAGEMENT
NUCLEAR FACILITIES, ACCELERATORS, & RADIOGRAPHIC FACILITIES

Operations Office	Site	Facility	Hazard Category	Aggregate Facility Type	Current Status	Future Status	Remarks	Category
SR	SRS	CIF Liquid Waste Storage, Bldg. 262000H	3	Radioactive Waste Management Facilities	Planning, Construction, Startup	Operating		IIA
SR	SRS	CIF Main Process Building, Bldg. 261000H	3	Radioactive Waste Management Facilities	Planning, Construction, Startup	Operating		IIA
SR	SRS	SWMF New Solvent Storage Tanks	3	Radioactive Waste Management Facilities	Planning, Construction, Startup	Operating		IIA
SR	SRS	SWMF Greater Confinement Disposal	3	Radioactive Waste Management Facilities	Shutdown	Site Cleanup & Restoration		III
SR	SRS	CIF Beta Gamma Incinerator, Bldg. 230000H	N/A	Radioactive Waste Management Facilities	D & D	D & D		IIB
SR	SRS	SWMF Solvent Storage Tanks 23-28	N/A	Radioactive Waste Management Facilities	Shutdown	Site Cleanup & Restoration		III
SR	SRS	SRTC Main Technical Lab, Bldg. 773000A	2	Research Laboratories	Operating	Operating		IIA
SR	SRS	SRTC Standards Lab, Bldg. 736000A	3	Research Laboratories	Operating	Operating		IIA
SR	SRS	SRTC Testing/Irradiation, Bldg. 774000A	3	Research Laboratories	Operating	Operating		IIA
SR	SRS	Separations Equipment Development Facility, Bldg. 678000T	N/A	Research Laboratories	Operating	Operating		IIA
SR	SRS	SRTC Radiological & Environmental Science Lab, Bldg. 735000A	N/A	Research Laboratories	Operating	Operating		IIA
SR	SRS	TNX Building 677	N/A	Research Laboratories	Operating	Operating		IIA
SR	SRS	Old Experimental Reactor Facility, Bldg. 777010A	N/A	Research Reactors	Deactivated	Deactivated		IIB
SR	SRS	Heavy Water Components Test Reactor (HWCTR), Bldg. 770000U	N/A	Research Reactors	Shutdown	Shutdown		IIB

OFFICE OF ENVIRONMENTAL MANAGEMENT
NUCLEAR FACILITIES, ACCELERATORS, & RADIOGRAPHIC FACILITIES

Operations Office	Site	Facility	Hazard Category	Aggregate Facility Type	Current Status	Future Status	Remarks	Category
SR	SRS	Receiving Basin for Offsite Fuel, Bldg. 244000H	2	Spent Fuel Storage Facilities	Operating	Operating		IIA
SR	SRS	235-F Sand Filter	2	Support Facilities	Operating	Operating	Includes 235-F Support Facilities-Sand Filter Fan House-Building Stack	IIA
SR	SRS	Bare Core Warehouse, Bldg. 331000M	2	Support Facilities	Operating	Operating		IIA
SR	SRS	Drum Storage, Bldg. 421004D	2	Support Facilities	Operating	Shutdown		IIA
SR	SRS	F Canyon Added Canyon Exhaust Sand Filter	2	Support Facilities	Operating	Operating		IIA
SR	SRS	F Canyon Exhaust Sand Filter	2	Support Facilities	Operating	Operating		IIA
SR	SRS	F Canyon Waste Truck Unloading, Bldg. 211003F	2	Support Facilities	Operating	Operating		IIA
SR	SRS	Filter Pit Building, Bldg. 241096H	2	Support Facilities	Operating	Operating		IIA
SR	SRS	Finished Product Warehouse, Bldg. 330000M	2	Support Facilities	Operating	Operating		IIA
SR	SRS	H Canyon Added Canyon Sand Filters	2	Support Facilities	Operating	Operating		IIA
SR	SRS	H Canyon Exhaust Filters	2	Support Facilities	Operating	Operating		IIA
SR	SRS	Resin Regeneration, Bldg. 245000H	2	Support Facilities	Operating	Operating		IIA
SR	SRS	R-Area Drum Storage, Bldg. 122000R	2	Support Facilities	Shutdown	Shutdown		IIA
SR	SRS	ETF HVAC HEPA Filter Containment, Bldg. 241053H	3	Support Facilities	Operating	Operating		IIA
SR	SRS	F Cooling Water Basin	3	Support Facilities	Operating	Operating		IIA
SR	SRS	F Process Lift Station, Bldg. 607020F	3	Support Facilities	Operating	Operating		IIA
SR	SRS	F Retention Basin	3	Support Facilities	Operating	Operating		IIA
SR	SRS	H Canyon Cooling Water Return Delaying Basins (3 basins)	3	Support Facilities	Operating	Operating		IIA
SR	SRS	H Cooling Water Basin	3	Support Facilities	Operating	Operating		IIA
SR	SRS	H Retention Basin	3	Support Facilities	Operating	Operating		IIA

OFFICE OF ENVIRONMENTAL MANAGEMENT
NUCLEAR FACILITIES, ACCELERATORS, & RADIOGRAPHIC FACILITIES

Operations Office	Site	Facility	Hazard Category	Aggregate Facility Type	Current Status	Future Status	Remarks	Category
SR	SRS	Process Lift Station, Bldg. 607024H	3	Support Facilities	Operating	Operating		IIA
SR	SRS	Return Water Retention Basin	3	Support Facilities	Operating	Operating		IIA
SR	SRS	U Oxide Storage, Bldg. 221012	3	Support Facilities	Operating	Operating		IIA
SR	SRS	U Oxide Storage, Bldg. 221021	3	Support Facilities	Operating	Operating		IIA
SR	SRS	U Oxide Storage, Bldg. 221022	3	Support Facilities	Operating	Operating		IIA
SR	SRS	U Oxide Storage, Bldg. 714007G	3	Support Facilities	Operating	Operating		IIA
SR	SRS	U Oxide Storage, Bldg. 728000F	3	Support Facilities	Operating	Operating		IIA
SR	SRS	U Oxide Storage, Bldg. 730000F	3	Support Facilities	Operating	Operating		IIA
SR	SRS	Weir Box No. 4	3	Support Facilities	Operating	Operating		IIA
SR	SRS	WM Maintenance Facility, Bldg. 299000H	3	Support Facilities	Operating	Operating		IIA
SR	SRS	ETF Control Room, Bldg. 241084H	N/A	Support Facilities	Operating	Operating		IIA
SR	SRS	Covered Equipment Laydown Area, Bldg. 722008A	N/A	Support Facilities	Operating	Operating		IIA
SR	SRS	Motor Repair & Equipment Calibration Shop, Bldg. 722004A	N/A	Support Facilities	Operating	Operating		IIA
SR	SRS	Saltstone Operations Building, Bldg. 704000Z	N/A	Support Facilities	Operating	Operating		IIA
SR	SRS	Airborne Radiation Removal, Bldg. 772004F	N/A	Support Facilities	Operating	Operating		IIA
SR	SRS	F Canyon Portal Monitor Maintenance Shop and S&S	N/A	Support Facilities	Operating	Operating		IIA
SR	SRS	M-Area Pad, Bldg. 315004M	N/A	Support Facilities	Operating	Operating		IIA
SR	SRS	Site Laundry Facility, Bldg. 723000F	N/A	Support Facilities	Operating	Operating		IIA
SR	SRS	Vendor Treatment Facility, Bldg. 341001M	N/A	Support Facilities	Planning, Construction, Startup	Shutdown		IIB

OFFICE OF ENVIRONMENTAL MANAGEMENT
NUCLEAR FACILITIES, ACCELERATORS, & RADIOGRAPHIC FACILITIES

Operations Office	Site	Facility	Hazard Category	Aggregate Facility Type	Current Status	Future Status	Remarks	Category
SR	SRS	Vendor Treatment Facility, Bldg. 341008M	N/A	Support Facilities	Planning, Construction, Startup	Shutdown		IIB

OFFICE OF ENERGY RESEARCH
NUCLEAR FACILITIES, ACCELERATORS, & RADIOGRAPHIC FACILITIES

Operations Office	Site	Facility	Hazard Category	Aggregate Facility Type	Current Status	Future Status	Remarks	Category
AL	LANL	3 MeV Pelletron (Material Sciences Laboratory)	N/A	Accelerators	Operating	Operating		V
AL	LANL	TA-21, Bldg. 155, Tritium Systems Test Assembly (TSTA)	2	Research Laboratories	Operating	Operating		V
CH	AMES	AMES Laboratory	N/A	Research Laboratories	Operating	Operating		
CH	ANL-E	Advance Photon Source	N/A	Accelerators	Operating	Operating		
CH	ANL-E	Advanced Photon Source	N/A	Accelerators	Operating	Operating		
CH	ANL-E	Argonne Tandem Linac Accelerator System (ATLAS), Bldg. 203	N/A	Accelerators	Operating	Operating		
CH	ANL-E	HVEM - Tandem Facility (Chem Sciences, Bldg. 212)	N/A	Accelerators	Operating	Operating		
CH	ANL-E	Intense Pulse Neutron Source (IPNS), Bldgs. 381, 391, 375	N/A	Accelerators	Operating	Operating		
CH	ANL-E	LINAC - 20 MeV (Chem Sciences, Bldg. 211)	N/A	Accelerators	Operating	Operating		
CH	ANL-E	Van De Graaff - 2 MeV (Chem Sciences, Bldg. 203)	N/A	Accelerators	Operating	Operating		
CH	ANL-E	Van De Graaff - 3 MeV (Chem Sciences, Bldg. 211)	N/A	Accelerators	Operating	Operating		
CH	ANL-E	Bldg. 315, Storage Vault 40	N/A	Fissile Material Storage Facilities & Vaults	Operating	Operating		
CH	ANL-E	Bldg. 212, Alpha Gamma Hot Cell Facility (AGHCF)	2	Hot Cell Complexes	Operating	Operating		
CH	ANL-E	Bldg. 205, G-Wing & Kwing Complexes	3	Research Laboratories	Operating	Operating		
CH	BNL	2 MeV Van de Graaff [Bldg. 555]	2	Accelerators	Operating	Operating		
CH	BNL	10 MeV Electron Linac [Bldg. 555]	N/A	Accelerators	Operating	Operating		
CH	BNL	2 MeV Van de Graaff [Bldg. 555]	N/A	Accelerators	Operating	Operating		

OFFICE OF ENERGY RESEARCH
NUCLEAR FACILITIES, ACCELERATORS, & RADIOGRAPHIC FACILITIES

Operations Office	Site	Facility	Hazard Category	Aggregate Facility Type	Current Status	Future Status	Remarks	Category
CH	BNL	3 MeV Dynamitron Accelerator [Bldg. 901 W]	N/A	Accelerators	Operating	Operating		
CH	BNL	Accelerator Test Facility (ATF), [Bldg. 820]	N/A	Accelerators	Operating	Operating		
CH	BNL	Alternating Gradient Synchrotron (AGS), [Bldgs. 912, 913]	N/A	Accelerators	Operating	Operating		
CH	BNL	Brookhaven Linac Isotope Producer (BLIP), [Bldg. 931]	N/A	Accelerators	Operating	Operating		
CH	BNL	Cyclotron Facility (BNL 50" and 41" Cyclotrons), Bldg. 901	N/A	Accelerators	Operating	Operating		
CH	BNL	National Synchrotron Light Source (NSLS), [Bldg. 725]	N/A	Accelerators	Operating	Operating		
CH	BNL	Relativistic Heavy Ion Collider (RHIC)	N/A	Accelerators	Planning, Construction, Startup	Operating		
CH	BNL	Depleted Uranium Blocks Vault	N/A	Fissile Material Storage Facilities & Vaults	Operating	Operating		
CH	BNL	Bldg. 403 Controlled Environment Radiation Facility	N/A	Research Laboratories	Operating	Operating		
CH	BNL	Bldg. 490 Whole Body Neutron Irradiation Facility	N/A	Research Laboratories	Operating	Operating		
CH	BNL	Bldg. 830, Gamma Irradiation Facility	N/A	Research Laboratories	Operating	Operating		
CH	EML	Environmental Measurement Laboratory (EML)	N/A	Research Laboratories	Operating	Operating		
CH	EML	Environmental Measurements Laboratory	N/A	Research Laboratories	Operating	Operating		
CH	FNAL	Fermi National Accelerator Laboratory (FNAL)	N/A	Accelerators	Operating	Operating		

OFFICE OF ENERGY RESEARCH
NUCLEAR FACILITIES, ACCELERATORS, & RADIOGRAPHIC FACILITIES

Operations Office	Site	Facility	Hazard Category	Aggregate Facility Type	Current Status	Future Status	Remarks	Category
CH	NDRL	Linac No. 1	N/A	Accelerators	Operating	Operating		
CH	NDRL	Linac No. 2	N/A	Accelerators	Operating	Operating		
CH	NDRL	Van de Graaff No. 1	N/A	Accelerators	Operating	Operating		
CH	NDRL	Van de Graaff No. 2	N/A	Accelerators	Operating	Operating		
CH	PPPL	TFTR	3	Fusion Facilities	Operating	Operating		
OAK	LBNL	88" Cyclotron, Bldg. 88	N/A	Accelerators	Operating	Operating		
OAK	LBNL	Advanced Light Source, Bldg. 6	N/A	Accelerators	Operating	Operating		
OAK	LBNL	Biomedical Isotope Facility, Bldg. 56	N/A	Accelerators	Operating	Operating		
OAK	LBNL	Radiation Assessment Calibration Facility (RACF) Bldg. 75C	N/A	Analytical Laboratories	Operating	Operating		
OAK	LBNL	Shipping & Receiving, Bldg. 69	N/A	Other Radioactive Facilities	Operating	Operating		
OAK	LBNL	Laboratory Building, Bldg. 83	N/A	Research Laboratories	Operating	Operating		
OAK	LBNL	Bldg. 70	N/A	Research Laboratories	Operating	Operating		
OAK	LBNL	Bldg. 70A	N/A	Research Laboratories	Operating	Operating		
OAK	LBNL	Bldg. 75 National Tritium Labeling Facility (NTLF)	N/A	Research Laboratories	Operating	Operating		
OAK	LBNL	Calvin Lab, Bldg. 3	N/A	Research Laboratories	Operating	Operating		
OAK	LBNL	Doner Lab, Bldg. 1	N/A	Research Laboratories	Operating	Operating		
OAK	LBNL	Dynamo Bldg. Bldg. 934	N/A	Research Laboratories	Operating	Operating		
OAK	LBNL	Human Genome Center, Bldg. 74	N/A	Research Laboratories	Operating	Operating		
OAK	LSBMM	Laboratory of Structural Biology & Molecular Medicine	N/A	Research Laboratories	Operating	Operating		
OAK	SLAC	Linear Accelerator Facility	N/A	Accelerators	Operating	Operating		
OAK	SLAC	Stanford Synchrotron Radiation Laboratory (SSRL)	N/A	Accelerators	Operating	Operating		

OFFICE OF ENERGY RESEARCH
NUCLEAR FACILITIES, ACCELERATORS, & RADIOGRAPHIC FACILITIES

Operations Office	Site	Facility	Hazard Category	Aggregate Facility Type	Current Status	Future Status	Remarks	Category
OAK	SLAC	Calibration Facility, Bldg. 24	N/A	Analytical Laboratories	Operating	Operating		
OAK	SLAC	Radioactive Material Storage Yard	N/A	Other	Operating	Operating		
OAK	SLAC	Radioactive Waste Storage Area	N/A	Radioactive Waste Management Facilities	Planning, Construction, Startup	Operating		
OR	ORNL	Hollifield Heavy Ion Research Facility/Radioactive Ion Beam (HHIRF/RIB), 6000	N/A	Accelerators	Operating	Operating		
OR	ORNL	Oak Ridge Linear Accelerator (ORELA), 6010	N/A	Accelerators	Operating	Operating		
OR	ORNL	Surface Modification and Characterization Research	N/A	Accelerators	Operating	Operating		
OR	ORNL	Tandem Particle Accelerator, 5500	N/A	Accelerators	Operating	Operating		
OR	ORNL	Triple Ion Beam Facility (TIBF)	N/A	Accelerators	Operating	Operating		
OR	ORNL	Bldg. 2026, Radioactive Materials Analytical Lab	3	Analytical Laboratories	Operating	Operating		
OR	ORNL	Bldg. 3027, Special Nuclear Materials Vault	2	Fissile Material Storage Facilities & Vaults	Operating	Operating		
OR	ORNL	Bldg. 3525, Irradiated Fuels Examination Laboratory (IFEL)	2	Hot Cell Complexes	Operating	Shutdown		
OR	ORNL	Bldg. 3025E, Irradiated Materials Examination & Testing Facility	3	Hot Cell Complexes	Operating	Operating		
OR	Portsmouth	Bldg. X-7725 Recycle Assembly Storage Yard- South	3	Support Facilities	Operating	Operating		

OFFICE OF NUCLEAR ENERGY
NUCLEAR FACILITIES, ACCELERATORS, & RADIOGRAPHIC FACILITIES

Operations Office	Site	Facility	Hazard Category	Aggregate Facility Type	Current Status	Future Status	Remarks	Category
AL	SNL-NM	TA-5, Bldg.. 6588, Annular Core Research Reactor	2	Research Reactors	Operating	Operating		I
CH	ANL-E	Bldg. 205, G&K Wing Complex	3	Hot Cell Complexes	Operating	Operating		
CH	ANL-W	Lab & Office Bldg.	3	Analytical Laboratories	Operating	Operating		
CH	ANL-W	Fuel Conditioning Facility (FCF)	2	Chemical Processing Facilities	Operating	Operating		
CH	ANL-W	ZPPR Workroom/Vault	2	Fissile Material Storage Facilities & Vaults	Shutdown	D & D		
CH	ANL-W	Hot Fuel Examination Facility (HFEF)	2	Hot Cell Complexes	Operating	Operating		
CH	ANL-W	Radioactive Scrap & Waste facility	2	Other Radioactive Facilities	Operating	Operating		
CH	ANL-W	Contaminated Equipment Storage Facility	3	Other Radioactive Facilities	Operating	Operating		
CH	ANL-W	Outside Radioactive Storage Area	3	Other Radioactive Facilities	Operating	Operating		
CH	ANL-W	ZPPR Materials Control	3	Other Radioactive Facilities	Shutdown	D & D		
CH	ANL-W	ZPPR Mockup	3	Other Radioactive Facilities	Shutdown	D & D		
CH	ANL-W	Fuel Manufacturing Facility	2	Radioactive Materials/Fuel Fabrication/Processing Facilities	Operating	Operating		
CH	ANL-W	Experimental Breeder Reactor II (EBR-II)	1	Research Reactors	Shutdown	D & D		
CH	ANL-W	Neutron Radiography Reactor (NRAD)	2	Research Reactors	Operating	Operating		
CH	ANL-W	Transient Reactor Test Facility (TREAT)	2	Research Reactors	Shutdown	D & D		

OFFICE OF NUCLEAR ENERGY
NUCLEAR FACILITIES, ACCELERATORS, & RADIOGRAPHIC FACILITIES

Operations Office	Site	Facility	Hazard Category	Aggregate Facility Type	Current Status	Future Status	Remarks	Category
CH	BNL	High Flux Beam Reactor (HFBR)	1	Research Reactors	Operating	Operating		
CH	BNL	Brookhaven Medical Research Reactor (BMRR)	2	Research Reactors	Operating	Operating		
ID	INEL	Nuclear Materials Inspection and Storage (NMIS) Facility	2	Fissile Material Storage Facilities & Vaults	Operating	Operating	Fuels	
ID	INEL	(TRAHC), Test Reactor Area Hot Cells	2	Hot Cell Complexes	Operating	Operating		
ID	INEL	TRA Effluent Treatment and Processing Facilities	3	Radioactive Materials/Fuel Fabrication/Processing Facilities	Operating	Operating		
ID	INEL	Advanced Test Reactor (ATR)	1	Research Reactors	Operating	Operating		IA
ID	INEL	Advanced Test Reactor Critical Facility (ATRCF)	2	Research Reactors	Operating	Operating		IA
OR	K-25	Bldg. - K-1066-B, UF6 Cylinder Yard	2	Other Radioactive Facilities	Operating	Operating		IIA
OR	K-25	Bldg. - K-1066-E, UF6 Cylinder Yard, North of K-832	2	Other Radioactive Facilities	Operating	Operating		IIA
OR	K-25	Bldg. - K-1066-F, UF6 Cylinder Yard, North of K-1025	2	Other Radioactive Facilities	Operating	Operating		IIA
OR	K-25	Bldg. - K-1066-J, UF6 Cylinder Yard, North of K-1025	2	Other Radioactive Facilities	Operating	Operating		IIA
OR	K-25	Bldg. - K-1066-K, UF6 Cylinder Yard, Portal 8	2	Other Radioactive Facilities	Operating	Operating		IIA
OR	K-25	Bldg. K-1066-L, UF6 Cylinder Yard	2	Other Radioactive Facilities	Operating	Operating		IIA
OR	ORNL	Bldg. 7920, Radiochemical Engineering Development Center	2	Chemical Processing Facilities	Operating	Operating		
OR	ORNL	Bldg. 7930, Radiochemical Engineering Development Center	3	Chemical Processing Facilities	Operating	Operating		

OFFICE OF NUCLEAR ENERGY
NUCLEAR FACILITIES, ACCELERATORS, & RADIOGRAPHIC FACILITIES

Operations Office	Site	Facility	Hazard Category	Aggregate Facility Type	Current Status	Future Status	Remarks	Category
OR	ORNL	Bldg. 5505, Transuranic Research Laboratory (TRL)	3	Research Laboratories	Operating	Operating		
OR	ORNL	Bldg. 7900, High Flux Isotope Reactor (HFIR)	1	Research Reactors	Operating	Operating		
OR	Paducah	Paducah Gaseous Diffusion Plant (non-USEC facilities)	2	Enrichment Facilities	Operating	Operating		IIA
OR	Portsmouth	Portsmouth Gaseous Diffusion Plant (non-USEC facilities)	2	Enrichment Facilities	Operating	Operating		IIA
OR	Portsmouth	X-745-A, C, & E, UF6 Cylinder Yard	2	Other Radioactive Facilities	Operating	Operating		IIA
CH	NBL	New Brunswick Laboratory	2	Analytical Laboratories	Operating	Operating		

APPENDIX 4: DEFENSE NUCLEAR FACILITIES SAFETY BOARD CORRESPONDENCE WITH THE NUCLEAR REGULATORY COMMISSION

1. John T. Conway, DNFSB Chairman, to Shirley Ann Jackson, NRC Chairman, April 9, 1998.

2. Shirley Ann Jackson, NRC Chairman, to John T. Conway, DNFSB Chairman, July 14, 1998.

3. John T. Conway, DNFSB Chairman, to Shirley Ann Jackson, NRC Chairman, July 22, 1998 (see Appendix 3 for enclosures).

4. John H. Austin, NRC, to Kenneth M. Pusateri, DNFSB, August 25, 1998 (w/o enclosures).

5. John T. Conway, DNFSB Chairman, to Shirley Ann Jackson, NRC Chairman, September 9, 1998 (w/o enclosure).

6. John T. Conway, DNFSB Chairman, to Shirley Ann Jackson, NRC Chairman, September 30, 1998 (w/o enclosure).

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

625 Indiana Avenue, NW, Suite 700, Washington, D.C. 20004
(202) 208-6400

April 9, 1998

The Honorable Shirley Ann Jackson
Chairman
Nuclear Regulatory Commission
Washington, DC 20555

Dear Dr. Jackson:

Congress has asked the Defense Nuclear Facilities Safety Board (Board) to prepare a report with evaluations and assessments of proposals to externally regulate the Department of Energy's (DOE) defense nuclear facilities. The Board and its staff have been working on responses to the sixteen items that Congress specified for the report in section 3202 of the National Defense Authorization Act for FY-1998 (see Enclosure). Congress referred to the Nuclear Regulatory Commission (NRC) in items 5, 15, and 16 and asked the Board to provide:

(5) A list of all existing or planned Department of Energy defense nuclear facilities that are similar to facilities under the regulatory jurisdiction of the Nuclear Regulatory Commission;

(15) An assessment of the comparative advantages and disadvantages to the Department of Energy in the event some or all Department of Energy defense nuclear facilities were no longer included in the functions of the Board and were regulated by the Nuclear Regulatory Commission; and

(16) A comparison of the cost, as identified by the Nuclear Regulatory Commission, that would be incurred at a gaseous diffusion plant to comply with regulations issued by the Nuclear Regulatory Commission, with the cost that would be incurred by a gaseous diffusion plant if such a plant was considered to be a Department of Energy defense nuclear facility as defined by chapter 21 of the Atomic Energy Act of 1954 (42 U.S.C. § 2286 *et seq.*).

In addition, Congress asked for evaluations of issues and problems associated with proposed "privatization" of certain DOE defense nuclear facilities, such as the Tank Waste Remediation System (TWRS) at the Hanford Site, Richland, Washington. NRC is listed as licensing body for Phase II of TWRS in DOE's draft request for proposals.

The Board and its staff have, to date, relied upon published information in beginning to evaluate these and other issues regarding proposals to regulate defense nuclear facilities. To help the Board assemble all the facts necessary for its report, the Board would appreciate receiving from NRC copies of such data, reports, information, and expressions of views as the Commission believes are relevant to the Board's consideration of the items listed and external regulation in general. Among other things, the Board requests NRC to provide the following specific information:

(1) A list of all existing or planned DOE defense nuclear facilities which NRC believes are similar to facilities currently under the regulatory jurisdiction of the NRC. For each DOE facility deemed similar, please identify the analogous category of NRC facilities, the current NRC regulatory requirements governing those facilities, the basis for determining that the facilities are similar, and the direct and indirect costs incurred by NRC to license and annually regulate each facility type deemed similar to a defense nuclear facility.

(2) Since regulatory costs will be affected by the assumed regulatory (e.g., certification vs regulations without licensing vs licensing) framework, what framework does the NRC envision as appropriate for existing defense nuclear facilities? For new construction? For decommissioning?

(3) NRC performed a certification for the Paducah Gaseous Diffusion Plant pursuant to 42 U.S.C. § 2297 et seq., and 10 CFR Part 76. Please provide the direct and indirect costs that were incurred by (a) the NRC, and (b) the United States Enrichment Corporation to develop the regulations and certification process, to implement the certification process, and to achieve compliance with the certification standards at the Paducah Gaseous Diffusion Plant. Using the gaseous diffusion plant as a reference nuclear facility, what is NRC's estimate of the direct and indirect costs that would be incurred if such a plant were subjected to:

Case 1, full commercial licensing by NRC, including comprehensive construction/operational licensing, together with compliance activity and enforcement;

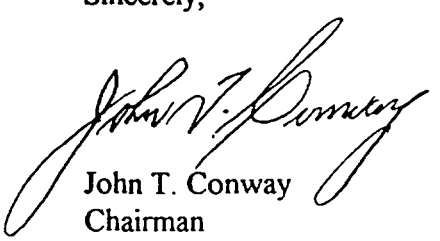
Case 2, NRC certification of plant as compliant with NRC requirements or equivalent as a condition of operations, together with compliance activity and enforcement; and

Case 3, independent NRC assessments with advisories and/or recommendations to the Department of Energy.

The Board is in the process of drafting responses to Congress that encompass the specific questions asked and would appreciate receipt of the information identified above as soon as possible. To be useful, as much of the information as possible should be in our hands within the next 60 days. As our work progresses, we may have need for additional information from NRC.

If you or the other NRC Commissioners have any questions about this request, the other Board Members and I are available to answer your questions and would be available to meet with you and the other Commissioners at a time convenient to you. NRC staff may contact the Board's General Counsel, Robert M. Andersen, at (202) 208-6387 at any time regarding this information request.

Sincerely,



John T. Conway
Chairman

Enclosure

c: The Honorable Nils J. Diaz, Commissioner
The Honorable Greta Joy Dicus, Commissioner
The Honorable Edward McGaffigan, Jr., Commissioner

SEC. 3202. REPORT ON EXTERNAL REGULATION OF DEFENSE NUCLEAR FACILITIES.

(a) REPORTING REQUIREMENT- The Defense Nuclear Facilities Safety Board (in this section referred to as the 'Board') shall prepare a report and make recommendations on its role in the Department of Energy's decision to establish external regulation of defense nuclear facilities. The report shall include the following:

(1) An assessment of the value of and the need for the Board to continue to perform the functions specified under chapter 21 of the Atomic Energy Act of 1954 (42 U.S.C. 2286 et seq.).

(2) An assessment of the relationship between the functions of the Board and a proposal by the Department of Energy to place Department of Energy defense nuclear facilities under the jurisdiction of external regulatory agencies.

(3) An assessment of the functions of the Board and whether there is a need to modify or amend such functions.

(4) An assessment of the relative advantages and disadvantages to the Department and the public of continuing the functions of the Board with respect to Department of Energy defense nuclear facilities and replacing the activities of the Board with external regulation of such facilities.

(5) A list of all existing or planned Department of Energy defense nuclear facilities that are similar to facilities under the regulatory jurisdiction of the Nuclear Regulatory Commission.

(6) A list of all Department of Energy defense nuclear facilities that are in compliance with all applicable Department of Energy orders, regulations, and requirements relating to the design, construction, operation, and decommissioning of defense nuclear facilities.

(7) A list of all Department of Energy defense nuclear facilities that have implemented, pursuant to an implementation plan, recommendations made by the Board and accepted by the Secretary of Energy.

(8) A list of Department of Energy defense nuclear facilities that have a function related to Department weapons activities.

(9)(A) A list of each existing defense nuclear facility that the Board determines--

(i) should continue to stay within the jurisdiction of the Board for a period of time or indefinitely; and

(ii) should come under the jurisdiction of an outside regulatory authority.

(B) An explanation of the determinations made under subparagraph (A).

(10) For any existing facilities that should, in the opinion of the Board, come under the jurisdiction of an outside regulatory authority, the date when this move would occur and the period of time necessary for the transition.

(11) A list of any proposed Department of Energy defense nuclear facilities that should come under the Board's jurisdiction.

(12) An assessment of regulatory and other issues associated with the design, construction, operation, and decommissioning of facilities that are not owned by the Department of Energy but which would provide services to the Department of Energy.

(13) An assessment of the role of the Board, if any, in privatization projects undertaken by the Department.

(14) An assessment of the role of the Board, if any, in any tritium production facilities.

(15) An assessment of the comparative advantages and disadvantages to the Department of Energy in the event some or all Department of Energy defense nuclear facilities were no longer included in the functions of the Board and were regulated by the Nuclear Regulatory Commission.

(16) A comparison of the cost, as identified by the Nuclear Regulatory Commission, that would be incurred at a gaseous diffusion plant to comply with regulations issued by the Nuclear Regulatory Commission, with the cost that would be incurred by a gaseous diffusion plant if such a plant was considered to be a Department of Energy defense nuclear facility as defined by chapter 21 of the Atomic Energy Act of 1954 (42 U.S.C. 2286 et seq.).

(b) COMMENTS ON REPORT- Before submission of the report to Congress under subsection (c), the Board shall transmit the report to the Secretary of Energy and the Nuclear Regulatory Commission. The Secretary and the Commission shall provide their comments on the report to both the Board and to Congress.

(c) SUBMISSION TO CONGRESS- Not later than six months after the date of the enactment of this Act, the Board shall provide to Congress an interim report on the status of the implementation of this section. Not later than one year after the date of the enactment of this Act, and not earlier than 30 days after receipt of comments from the Secretary of Energy and the Nuclear Regulatory Commission under subsection (b), the Board shall submit to Congress the report required under subsection (a).

(d) DEFINITION- In this section, the term 'Department of Energy defense nuclear facility' has the meaning provided by section 318 of the Atomic Energy Act of 1954 (42 U.S.C. 2286g).

98-0002475

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

CHAIRMAN

July 14, 1998

RECEIVED
98 JUL 16 PM 3:39
DNF SAFETY BOARD

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

Dear Mr. Conway:

I am responding to your April 9, 1998, request for data, reports, and information on external regulation of the U.S. Department of Energy's (DOE) defense nuclear facilities. The Nuclear Regulatory Commission (NRC) has focused on the potential for external regulation of non-defense program facilities. There are no present plans for the NRC to provide external regulation to Defense Program (DP) facilities.

In order to accurately respond to Questions 1 and 2, DNFSB should provide an updated list of which DOE facilities the DNFSB considers defense facilities, along with a description of each facility's activities. Such a list would allow comparisons with existing facilities under the NRC's jurisdiction, and allow the estimation of direct and indirect costs to regulate each such facility type (Item 1, page 2). After receiving the lists as described, we will be pleased to respond to Questions 1 and 2.

Question 3 asked for the NRC's estimate of direct and indirect costs that would be incurred using the gaseous diffusion plants (GDPs) as a reference nuclear facility, if such a plant were subjected to: (a) full commercial licensing; (b) certification as compliant with NRC requirements; and (c) independent assessments with advisories and/or recommendations to DOE. This is a hypothetical question for which we have no direct experience. The review and certification of the GDPs were unique and any extrapolation of the costs incurred has great uncertainty. Therefore, the following should be taken, at best, as an educated guess.

The estimates of the cost of transitioning the two GDPs at Paducah, Kentucky, and Portsmouth, Ohio, (as provided in the August 9, 1996, letter from J. Dale Jackson, DOE, to Walter S. Schwink, NRC, enclosed) are:

Activity	$, thousands
Application preparation	20,000
Compliance plan	8,000
NRC certification fee	7,200
Procedures and training	4,000
NRC Reporting System	250
10 CFR review and comment	185
NRC Office modifications	170

Costs to bring the two plants into compliance with existing DOE orders, standards, regulations and guidelines were excluded and were estimated to be about $200,000,000. The costs provided above, attributable to coming under NRC jurisdiction, are for Portsmouth and

Paducah. The activity, "NRC certification fee," includes 12 full-time equivalents (FTEs) per year for four years including two resident inspectors at each site, and is for the initial certification of the Paducah and Portsmouth Plants. NRC believes this cost would be an upper limit for regulating non-DP facilities.

For the continuing oversight inspection and re-certification of the two plants, NRC is spending about 12 FTEs per year, including 2 resident inspectors at each site. This level of effort could be somewhat higher if NRC were to license the GDPs. Licensing of the GDPs could require about 3 or more FTEs in addition to those expended on the certification, to address environmental issues and the learning process. Conversely, there may be some savings of resources in a licensing review since the technical issue resolution is better defined. The continuing oversight and inspection costs would remain the same. However, we have no estimate of the costs to backfit licensing requirements on the GDPs. Because of the uncertainty of costs in this area, and since the GDPs were already constructed and had operated for several decades, the certification option was chosen. If NRC were to just be an advisor making recommendations concerning the GDPs, the resources would be less and would be very dependent on the extent and complexity of any requested assistance.

In general, the costs for external regulation of a DOE facility will vary according to the regulatory mechanism applied and the means chosen to implement it. There are a variety of possible regulatory mechanisms that could be used to regulate DOE facilities including a specific license, a general license, a broadscope 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, NRC 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, a "one size fits all" regulatory approach would not work. For example, broadscope licenses may be suitable for research facilities, and a specific license could be issued for spent fuel storage facilities. NRC and DOE are about to complete the first pilot project which has taken place at the Lawrence Berkeley National Laboratory (LBNL). Among the preliminary findings are: there would be value added by NRC regulation of LBNL, the best regulatory mechanism would be through issuance of a broadscope materials license under 10 CFR Part 33, there would be cost savings to the tax payer, and NRC's costs would be about 0.6 FTE to transition to NRC regulation of LBNL and about 0.2 FTE per year thereafter. NRC believes this represents the lower bound of NRC costs to regulate DOE non-DP nuclear facilities. Further, NRC anticipates backfitting requirements only where it is necessary to improve safety.

I trust this reply responds to your concerns.

Sincerely,

Shirley Ann Jackson

Enclosure: As stated

Department of Energy

Oak Ridge Operations
P.O. Box 2001
Oak Ridge, Tennessee 37831— 8651

98/2475

August 9, 1996

Mr. Walter S. Schwink
United States Nuclear
Regulatory Commission
MS T8A33
11545 Rockville Pike
Rockville, Maryland 20852

Dear Mr. Schwink:

DEPARTMENT OF ENERGY ESTIMATE OF COST IMPACT FOR TRANSITION OF REGULATORY AUTHORITY OF THE GASEOUS DIFFUSION PLANTS FROM THE DEPARTMENT OF ENERGY TO THE NUCLEAR REGULATORY COMMISSION

Refer to the memo from me concerning the subject transition costs dated June 19, 1995.

This information is being provided to update the cost information provided to you on June 19, 1995. The Department of Energy (DOE) Regulatory Oversight Group has reviewed the previous estimate for the cost impact of regulatory transition of the Gaseous Diffusion Plants (GDP) at Portsmouth, Ohio, and Paducah , Kentucky, from DOE to the Nuclear Regulatory Commission (NRC), and updated it based on current information and forecasts. The revised estimates for these costs are shown below.

Subject	Estimated cost
Application preparation	$20,000,000
Compliance Plan	$ 8,000,000
NRC Certification Fee	$ 7,200,000
Procedures and training upgrade	$ 4,000,000
NRC Reporting System	$ 250,000
10CFR76 Review and comment	$ 185,000
NRC Office Modifications	$ 170,000
Total	$39,805,000

Excluded are those costs estimated to bring the plant into compliance with existing DOE orders, standards, regulations and guidelines. The estimates address only those activities necessary for initial certification and for compliance with requirements in 10CFR76 which are either more rigorous than or are not addressed by the DOE requirements. Neither does the estimate include costs for ongoing annual reports to Congress, etc.

This is currently the best cost estimate available. More accurate data will be collected as the GDPs certification finalizes.

If you have any questions or need additional information, please do not hesitate to give me a call at (423) 241-3208.

Sincerely,

J. Dale Jackson
Regulatory Oversight Manager
Office of Assistant Manager
for Enrichment Facilities

cc:
R. M. DeVault, EF-20/TRPK, DOE/ORO
J. W. Parks, EF-20, DOE/ORO

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

625 Indiana Avenue, NW, Suite 700, Washington, D.C. 20004-2901
(202) 208-6400

July 22, 1998

The Honorable Shirley Ann Jackson
Chairman
Nuclear Regulatory Commission
Washington, DC 20555

HAND DELIVERED

Dear Dr. Jackson:

We have received your July 14, 1998, letter responding in part to the Defense Nuclear Facilities Safety Board's (Board) April 9, 1998, request to the Nuclear Regulatory Commission (NRC) for data, reports, and information on possible external regulation of the United States Department of Energy's (DOE) defense nuclear facilities. Your letter states that "[i]n order to accurately respond to Questions 1 and 2, DNFSB should provide an updated list of which DOE facilities the DNFSB considers defense facilities, along with a description of each facility's activities." Your letter goes on to explain that once in receipt of this information, NRC will be able to provide the information requested in Questions 1 and 2 of the Board's April 9, 1998, letter.

As indicated below, most, if not all, of this information is available to the public or has previously been discussed with NRC staff.

Defense nuclear facilities are statutorily defined in the Atomic Energy Act, as amended, at 42 U.S.C. § 2286g

> . . . [T]he term 'Department of Energy defense nuclear facility' means any of the following:
>
> > (1) A production facility or utilization facility (as defined in section 11 of this Act) that is under the control or jurisdiction of the Secretary of Energy and that is operated for national security purposes, but the term does not include--
> >
> > (A) any facility or activity covered by Executive Order No. 12344, dated February 1, 1982, pertaining to the Naval nuclear propulsion program;
> >
> > (B) any facility or activity involved with the transportation of nuclear explosives or nuclear material;
> >
> > (C) any facility that does not conduct atomic energy defense activities; or

> (D) any facility owned by the United States Enrichment Corporation.
>
> (2) A nuclear waste storage facility under the control or jurisdiction of the Secretary of Energy, but the term does not include a facility developed pursuant to the Nuclear Waste Policy Act of 1982 (42 U.S.C. 10101 et seq.) and licensed by the Nuclear Regulatory Commission.

In 1991, Congress enacted the National Defense Authorization Act for Fiscal Years 1992 and 1993 (Public Law 102-190, Dec. 5, 1991) which amended the Board's enabling statute to include oversight of facilities that conduct assembly, disassembly, and testing of nuclear weapons. Thus, there are currently three basic categories of defense nuclear facilities: (1) DOE facilities which produce or produced special nuclear materials for national security purposes, which now also include facilities that assemble and disassemble nuclear weapons; (2) DOE facilities which utilize or utilized special nuclear materials for national security purposes, such as defense-related reactors, and now include weapons testing facilities; and (3) DOE nuclear waste storage facilities not licensed by the Nuclear Regulatory Commission. By statute, the Board has oversight jurisdiction for these facilities throughout their entire life cycle, from design, construction, and operation through decommissioning regardless of whether these facilities are under the control of the Assistant Secretary for Defense Programs. The Board, in its Seventh Annual Report to Congress listed priority defense nuclear facilities and activities. A copy of the relevant portion of that report is enclosed.

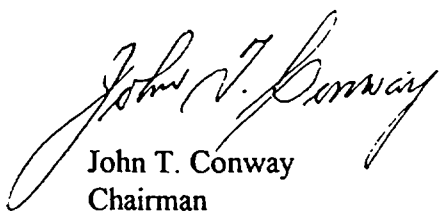
Because defense nuclear facilities have been defined by statute to include items as small as "any equipment or device" or "component part designed for such equipment or device," the Department of Energy and the Board have, for the most part, aggregated such equipment or devices at the building level, and have referred to the building or room as the "defense nuclear facility." DOE's December 1996 *Report of the Department of Energy Work Group on External Regulation* cited in your Memorandum of Understanding with Secretary Peña contains a list in Appendix J of DOE nuclear facilities managed by the Office of Defense Programs. In addition it includes those facilities managed by the Office of Environmental Management, and the Office of Energy Research.

In a presentation to NRC staff on January 21, 1997, Board Member Joseph DiNunno used, and left with your staff, view graphs that designated facilities as category I, IIA, IIB, III, IV, and V. A copy of Appendix J, annotated to show this categorization, is enclosed. Facilities marked I include operational defense nuclear facilities in the weapons program required to support the weapons mission. Those marked IIA are high hazard defense nuclear facilities required for safe materials stabilization of radioactive residuals of weapons production, waste processing, and safe storage. Defense nuclear facilities marked IIB, III, and IV are former operational facilities that are the major targets for deactivation, decommissioning, cleanup, and environmental restoration. Facilities marked V are non-defense nuclear facilities which do not fall

under the Board's oversight jurisdiction. For purposes of responding to the Board's Questions 1 and 2 of April 9, 1998, those defense nuclear facilities designated as I or IIA are of principal interest.

With this additional information from publicly-available documents, the Board hopes NRC will be able to promptly respond to initial Questions 1 and 2 contained in the Board's letter of April 9, 1998. If you or your staff have additional questions in responding to our initial request for information, please do not hesitate to contact me by phone at 202-208-6400.

Sincerely,



John T. Conway
Chairman

Enclosures

c: The Honorable Nils J. Diaz, Commissioner
The Honorable Edward McGaffigan, Jr., Commissioner

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

98-0003492

August 25, 1998

Mr. Kenneth M. Pusateri
General Manager
Defense Nuclear Facilities Safety Board
625 Indiana Avenue, NW, Suite 700
Washington, DC 20004

Dear Mr. Pusateri:

This is to confirm our telephone conversation of August 24, 1998, establishing a meeting time of 10:30 a.m., on August 31, 1998, in your office, to discuss our information needs that would permit us to estimate the costs of regulating the U.S. Department of Energy (DOE) Defense Program (DP) facilities. This information is in addition to the information provided by John T. Conway, Chairman, U.S. Defense Nuclear Facilities Safety Board (DNFSB) in his letter to Shirley Ann Jackson, Chairman, U.S. Nuclear Regulatory Commission (NRC), dated July 22, 1998.

NRC regulates on the basis of individual radionuclides, quantities of those radionuclides, and the nature of the activities conducted at facilities, as well as other considerations. An example of the type of information we need for each facility, so we can develop accurate, regulatory costs, is shown in Enclosure 1. NRC developed this information so as to best identify which program codes, regulatory regime, and fee categories would apply to each Oak Ridge National Laboratory facility assessed during the Pilot Project of simulated regulation conducted there in the past few months. Similar information is needed about the DP facilities, so we can complete a similar analysis.

NRC has reorganized (Enclosure 2) the facilities that DNFSB provided according to the types of facilities listed in the attachment to the letter dated July 22, 1998, namely, "DOE Facility/Site Summary." From this reorganization, NRC has identified current licensees or program codes that most closely fit those types of facilities (Enclosure 3). As can be seen in Enclosure 3, a wide variety of current licensees or program codes could serve as a basis for estimating resource needs for regulating DP facilities. Resource needs for regulating this variety of licensees differ by a factor of five or more, depending on the particulars of each licensee. This would be true for DP facilities, as well. It may be that existing program codes are not appropriate for DP facilities. If not, then the level of effort is dependent on the extent to which the "areas of review" identified in Enclosure 3 are applicable to individual DP facilities. The areas of review, in turn, are dependent on the identities of radionuclides within each facility, possession limits for radionuclides, and the nature of the activities (e.g., hot cell activities, glove box activities, hood operations, and potential for criticality), and the role of structures, systems, and components in ensuring safety.

I look forward to meeting with you on August 31, 1998. If you need to contact me before then, I can be reached at (301) 415-7275.

Sincerely,

John H. Austin, Deputy Chairman
External Regulation of the Department
of Energy Task Force

Enclosures:
1. ORNL Radiological Facilities
   (other than REDC)
2. DOE Facility/Site Summary
3. Costs to Regulate DOE DP Facilities

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

625 Indiana Avenue, NW, Suite 700, Washington, D.C. 20004-2901
(202) 208-6400

September 9, 1998

The Honorable Shirley Ann Jackson
Chairman
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Dear Dr. Jackson:

As set forth in previous correspondence, the Defense Nuclear Facilities Safety Board is in the process of completing a report on external regulation of defense nuclear facilities as required by Section 3202 of the National Defense Authorization Act for FY 1998. In this regard, the Board has sought the Nuclear Regulatory Commission's (NRC) views on the questions posed by Congress concerning the comparative advantages and disadvantages to the Department of Energy (DOE) in the event some or all DOE defense nuclear facilities currently subject to Board oversight are subjected to full regulation by the NRC. Specifically, the Board requested from the NRC any direct and indirect cost data that the NRC had readily available for selected categories of NRC facilities deemed similar to the defense nuclear facilities referenced in my letter to you dated July 22, 1998.

The Board has reviewed the enclosed letter from Dr. Austin of your staff explaining NRC's regulatory approach and additional data needs in order for the NRC to develop meaningful cost data that are responsive to the Board's original request. In addition, the Board's staff met with Dr. Austin on August 31, 1998 to discuss the scope and magnitude of the effort required to research and develop the data base envisioned for projecting NRC's costs for regulating DOE defense nuclear facilities.

With the benefit of Dr. Austin's letter and his meeting with the Board's staff, the Board now has a better understanding of the difficulties the NRC has in being able to provide the Board with reliable cost estimates. Dr. Austin explained that there are few NRC facilities that are analogous to proposed or existing defense nuclear facilities, and that attempts to extrapolate regulatory costs from NRC's traditional regulatory base to those for defense nuclear facilities may result in a significant underestimation of the cost of regulating defense nuclear facilities. Dr. Austin stated in his recent letter that the NRC regulates on the basis of individual radionuclides, quantities of radionuclides, and the nature of the activities conducted at facilities as well as other considerations. It would be difficult at best for the Board's staff to apply the NRC program codes and regulatory regime to the DOE nuclear weapons stockpile stewardship and management operations, which include nuclear explosive activities and unique experiments involving co-

located high explosives and nuclear material. Unlike the facilities under NRC regulation, the risks at these defense nuclear facilities are not solely a function of the quantities of nuclear material present and associated criticality safety concerns, but more importantly, the material processes involved and the potential for explosive dispersal of radioactive materials or inadvertent nuclear detonation.

The Board understands that NRC believes it would be necessary to review information on each defense nuclear facility on a case-by-case basis in order to develop an estimate of the regulatory costs. The Board is concerned that a time-consuming and expensive effort by NRC, DOE, and Board staff to collect data on DOE defense nuclear facilities for use in extrapolating possible regulatory costs will be of questionable value for this Congressional reporting requirement. Before engaging in a review of this depth, the Board intends to solicit the views of the House and Senate Defense Oversight Committees.

The Board appreciates the NRC's attempt to be responsive to our request for projected cost data. In view of the submission date for this Congressional reporting requirement, the Board plans to reference the information provided by the NRC to date in its report to Congress.

Sincerely,

John T. Conway
Chairman

Enclosure: J.H. Austin to K.M. Pusateri
letter dated August 25, 1998

c: The Honorable Nils J. Diaz, Commissioner
The Honorable Edward McGaffigan, Jr., Commissioner

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

625 Indiana Avenue, NW, Suite 700, Washington, D.C. 20004-2901
(202) 208-6400

September 30, 1998

The Honorable Shirley Ann Jackson
Chairman
Nuclear Regulatory Commission
Washington, DC 20555

HAND DELIVERED

Dear Chairman Jackson:

In accordance with Section 3202 of the National Authorization Act for Fiscal Year 1998, I am sending you a draft report by the Defense Nuclear Facilities Safety Board (Board), which includes a response to 16 specific inquiries from the Congress evaluating External Regulation of Defense Nuclear Facilities.

As you will note, the Board does not believe additional external regulation of Defense Nuclear Facilities is in the best interest of our Nation. The Board is continuing to obtain additional material and will welcome any comments you may wish to make. Your comments will be included in the final report together with your earlier letters of July 14, 1998, and August 25, 1998. While our final report may differ somewhat in details from the draft enclosed, this basic conclusion is firm.

Sincerely,

John T. Conway
Chairman

Enclosure

APPENDIX 5: DEFENSE NUCLEAR FACILITIES SAFETY BOARD CORRESPONDENCE WITH THE DEPARTMENT OF ENERGY

1. John T. Conway, DNFSB Chairman, to Federico F. Peña, Secretary of Energy, December 23, 1997.

2. John T. Conway, DNFSB Chairman, to Federico F. Peña, Secretary of Energy, May 14, 1998.

3. Elizabeth A. Moler, Acting Secretary of Energy, to John T. Conway, DNFSB Chairman, August 14, 1998.

4. John T. Conway, DNFSB Chairman, to Bill Richardson, Secretary of Energy, September 30, 1998 (w/o enclosure).

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

625 Indiana Avenue, NW, Suite 700, Washington, D.C. 20004
(202) 208-6400

December 23, 1997

The Honorable Federico Peña
Secretary of Energy
1000 Independence Avenue, SW
Washington, D.C. 20585-1000

Dear Secretary Peña:

As a part of the Department of Energy's (DOE) implementation plan for the Defense Nuclear Facilities Safety Board's (Board) Recommendation 95-2, DOE and its contractors are moving forward on a demonstration program. This program will systematically establish, for ten priority facilities, the controls mutually agreed upon by contractors and DOE to be needed for safe facility operation. These controls are being tailored to the hazards of the activities conducted in those facilities to ensure protection of the public, workers and the environment. This integration of work planning and safety planning for the ten designated facilities is proceeding reasonably well. The results are providing an experience base that illustrates not only the merits of such an integrated approach, but good examples that can be used to enlarge the range of applications for safety management programs.

The Board is aware that the Secretary and the Deputy Secretary are looking to the Secretarial Program Officers to aggressively implement integrated safety management (ISM) concepts in the conduct of their programs. The Board commends top management leadership's emphasis on safety and believes the time has come to move beyond the ten priority/demonstration facilities toward a wider scale application of the ISM concept at other defense nuclear facilities. The Board believes that DOE and its contractors have much of this concept already in place for a substantial number of facilities and activities, although not in a form that is readily identifiable and demonstrable. The Board wishes to collect information on all defense nuclear facilities and activities that represent substantial potential safety risks, to determine their current operational safety bases. The objective is to identify needed upgrades, if any. The Board intends to work with DOE to bring all such facilities and activities into compliance with the ISM concept. Enclosure A identifies those facilities the Board considers to be an appropriate set. DOE may wish to add to the list.

Enclosure B identifies requisites for demonstrating that an integrated safety management program is indeed in place for a facility or activity. The Board wishes to know the status of each of these key elements for each of the facilities/activities listed in Enclosure A.

Therefore, pursuant to 42 U.S.C § 2286b(d), the Board requests for each of the facilities and activities listed in Enclosure A the following information:

- The status of each of the requisites for an integrated safety management program as shown in Enclosure B. Where requisites are considered to be already satisfied, the

data provided should include the reference documents in which evidence of such status can be confirmed and the date upon which DOE approved or otherwise indicated acceptance (e.g., SARs, BIOs, TSRs, LCOs, etc.).

- If DOE and contractors determine, for any of the facilities or activities listed in Enclosure B, that the elements identified as requisites are not presently sufficiently well-developed to pass verification reviews, provide the following:

  - What is the completion status?
  - What is the schedule for upgrades?
  - What compensatory measures are or will be in place pending the upgrades to ensure safe continuing operations?
  - Which facilities or activities listed in Enclosure A are considered priority targets for Authorization Agreements? On what schedule?

Most of the facilities listed in Enclosure A are currently operational and presumably are operating under controls that DOE and its contractors deem acceptable for ensuring adequate radiological protection of the public, workers, and the environment. Hence, much of the information sought should be readily available. However, the Board realizes that in light of the number of facilities involved and the number of questions relevant to each, it may be difficult to assimilate the information and coordinate a response in a short time. The Board requests that a complete report be provided within 60 days. In the interest of obtaining as full as possible a response in that interval, the Board's staff is prepared to assist in any way that will be helpful. Furthermore, the Board encourages DOE to submit partial responses earlier, where that is possible, rather that waiting until all information is available for a full response.

This report will assist the Board in preparing a report requested by Congress, as a part of the Fiscal Year 1998 Defense Authorization Bill on the state of compliance of defense nuclear facilities with applicable DOE safety requirements. The Board believes this status report also will be essential to DOE in planning its path forward for complex-wide integrated safety management.

If you need additional information, please do not hesitate to contact me.

Sincerely,

John T. Conway
Chairman

cc: Mr. Mark B. Whitaker, Jr.

Enclosures

FACILITY	LIFE CYCLE STAGE[1]	HAZARDS[2]
SAVANNAH RIVER SITE		
F-Canyon/FB-Line/ FA-Line H-Canyon/HB-Line/ HA-Line 235-F Vault	Operational (EM)	HIGH Plutonium, Uranium, Transuranics, HLW
DWPF/ITP/ESP HLW Tanks	Operational (EM)	HIGH Fission Products
RBOF, L-Basin, K-Basin	Operational (EM)	MODERATE Plutonium, Uranium, Fission Products
Tritium Facilities	Operational (DP)	HIGH Tritium
HANFORD		
High Level Waste Tank Farms	Operational (EM)	HIGH Fission Products
K-Reactor Area Fuel Storage Basins	Operational (EM)	MODERATE Spent Nuclear Fuel and Sludge
Plutonium Finishing Plant	Operational (EM)	MODERATE Plutonium
Waste Encapsulation and Storage Facility	Operational (EM)	MODERATE Cesium & Strontium
ROCKY FLATS		
Solution processing and SNM Storage Building 771	Deactivation (EM)	MODERATE Plutonium solution, SNM, and waste
Solution processing and SNM consolidated storage Building 371/374	Operational (EM)	HIGH Plutonium solution, SNM, and waste
Residue Processing and SNM Storage, Building 707	Operational (EM)	MODERATE Plutonium residue SNM, and waste

FACILITY	LIFE CYCLE STAGE[1]	HAZARDS[2]
Residue Processing and SNM Storage Building 776	Deactivation and Decommissioning (EM)	MODERATE Plutonium residue SNM, and waste
Building 559, Analysis Laboratory	Operational (EM)	MODERATE Plutonium solution, SNM, and waste
Building 774, Waste Processing	Operational (EM)	LOW Waste plutonium solutions
INEL		
Advanced Test Reactor	Operational (NE)	HIGH Fission Products, Uranium-235
CPP-603 Underwater Fuel Storage	Operational (EM)	MODERATE Fission Products, Uranium, Plutonium
Irradiated Fuel Storage Facility (Dry SNM Storage)	Operational (EM)	HIGH Fission Products
New Waste Calcining Facility	Operational (EM)	HIGH Fission Products
CPP-666, Underwater Fuel Storage	Operational (EM)	HIGH Fission Products
Radioactive Waste Management Complex	Operational (EM)	MODERATE Some Fission Products, Uranium, Plutonium
Unirradiated Fuel Storage Facility	Operational (EM)	LOW Uranium
PANTEX		
Nuclear Weapon Assembly/Disassembly cells	Operational (DP)	HIGH High Explosives, Plutonium, Uranium, Tritium
Nuclear Weapon Assembly/Disassembly Bays	Operational (DP)	HIGH High Explosives, Plutonium, Uranium, Tritium
Building 12-116, SNM Staging Facility (New nuclear facility)	Construction (DP)	MODERATE (at present) Plutonium, Uranium, Tritium

FACILITY	LIFE CYCLE STAGE[1]	HAZARDS[2]
Building 12-104A, Special Purpose Bays (New nuclear facility)	Construction (DP)	MODERATE Weapons hazards Radiation Generating Device (LINAC)
Building 12-66, Pit Storage Facility	Operational (DP)	MODERATE Plutonium
Dynamic Balancer	Operational (DP)	HIGH High Explosives, Plutonium, Uranium, Tritium
Weapons Dismantlement Programs (W56, W69, W76, W78, W79)	Operational (DP)	HIGH High Explosives, Plutonium, Uranium, Tritium
Paint Bays, (Bldg 1241)	Operational (DP)	HIGH High explosives, Plutonium
NTS		
Abel Site, Area 27 (to be replaced by the Device Assembly Facility, Area 6)	Operational (DP)	HIGH High Explosives Plutonium, Uranium, Tritium
Radioactive Waste Management sites in Area 5, Area 3 and the TRU Pad	Operational (DP)	MODERATE Plutonium, Uranium
U1a Complex	Operational (DP)	HIGH High Explosives Plutonium, Uranium, Tritium
LANL		
TA-55, Plutonium Facility, LANL's main facility for R&D and processing of plutonium.	Operational (DP)	HIGH. Plutonium. Chemical hazards. Nuclear criticality.
TA-3, Chemistry and Metallurgy Research Building, an R&D facility	Operational (DP)	HIGH. Plutonium, Uranium. Chemical hazards.

FACILITY	LIFE CYCLE STAGE[1]	HAZARDS[2]
TA-18, Los Alamos Critical Experiments Facility	Operational (DP)	HIGH. Nuclear criticality.
TA-16, Weapons Engineering Tritium Facility	Operational (DP)	MODERATE. Tritium
Defense Nuclear Activities at TA-15, Dual Axis Radiographic Hydrotest (DARHT)	Construction (DP)	HIGH. Radiation generating device. Explosions. Depleted Uranium. Chemical Hazards.
Defense Nuclear Activities at TA-53, Los Alamos Nuclear Scattering Center	Operational (DP)	MODERATE Radiation
LLNL		
Building 332, Plutonium Facility	Operational (DP)	MODERATE Plutonium, Uranium
Building 231 Complex (Vaults)	Operational (DP)	MODERATE Plutonium, Uranium
Building 251, Heavy Element Facility	Operational (DP)	LOW Transuranics
Building 331, Tritium Facility	Operational (DP)	LOW Tritium
OAK RIDGE		
Y-12: Highly Enriched Uranium Processing. (Building 9212/9215 Complex)	Operational (DP)	MODERATE HEU Hazardous, toxic, and radiological materials
Y-12: Disassembly and Assembly. (Buildings 9204-2/2E	Operational (DP)	MODERATE HEU, lithium Hazardous, toxic, and radiological materials
Y-12: Quality Evaluation. (Buildings 9204-2E/4)	Operational (DP)	MODERATE HEU, lithium Hazardous, toxic, and radiological materials

FACILITY	LIFE CYCLE STAGE[1]	HAZARDS[2]
Y-12: Material Storage. (Building 9720-5, 9204-2, 9204-2E, 9204-4, 9212, 9215)	Operational (DP)	MODERATE HEU Hazardous, toxic, and radiological materials
K-25 Highly Enriched Uranium Remediation and Depleted Uranium Tailings Storage	Deactivation (EM)	MODERATE. HEU, DU, HF
ORNL: Material Storage (Building 3019)	Operational (DP)	MODERATE U-233 Hazardous, toxic, and radiological materials
ORNL: Material Storage (MSRE)	Deactivation and Decommissioning (EM)	MODERATE U-233, CxF, HF, hazardous, toxic and radiological materials
K-25: HEU Remediation	Deactivation (pre-Decommissioning) (EM)	MODERATE HEU, hazardous, toxic and radiological materials
K-25: Depleted Uranium Tailings Storage	Deactivation (pre-Decommissioning) (EM)	MODERATE dU, HF, hazardous, toxic and radiological materials
SNL		
Reactor (ACRR) Sandia Pulse Reactor Facility	Operational (DP)	MODERATE Highly enriched uranium fueled reactor.

For each of the following questions, indicate Yes or No wherever possible. If Yes, name the vehicle/document used to provide the function, and date executed. If No, provide the anticipated completion date, status of completion (i.e., percent complete), and the status of interim compensatory measures.

1. ISMS DEVELOPMENT

1.1 Does the contract currently contain a set of applicable safety requirements (e.g., DOE orders, regulations, statutes)?
1.2 Have the requirements of the DEAR Clause been incorporated into the contract?
1.3 Has the DOE Contracting Officer provided guidance to the contractor on the preparation and content of the ISMS description?
1.4 Does the contractor have an outline/plan for its ultimate institutional ISMS structure?
1.5 Has the DOE Contracting Officer established a date for the contractor to submit the ISMS description?

1.5.1 What is the established date?
1.5.2 Has the contractor submitted the ISMS description?

1.6 Does the contractor have an approved requirements/standards set (e.g., List A/List B, S/RID, WSS)?
1.7 Does the approved requirements/standards set address all stages of the life-cycle:

1.7.1 Design/construction,
1.7.2 Startup,
1.7.3 Operations,
1.7.4 D&D?

1.8 Has the approved requirements/standards set been promulgated via a system of institutional implementing procedures (e.g., manuals of practice, essential standards -- in other words, the ISMS or equivalent safety management program), or via facility/scope of work-specific procedures?
1.9 If the requirements/standards set is not institutionally implemented, describe the approach being taken. In particular:

1.9.1 Have functions and responsibilities been assigned, as required, for the various components of the ISMS (e.g., work planning and authorization, radiation control, waste management, independent review, etc.)? Describe the organizational structure and key personnel for executing the ISMS.

1.9.2 Does the ISMS contain a commitment to ensure adequate qualification and training of individuals with responsibilities for safety management that are called out in the ISMS?

1.9.3 Does the ISMS include a feedback and improvement function that measures the effectiveness of all components of the system, and that will result in continual improvement of the implementing procedures, as needed?

1.9.4 Are the implementing procedures (institutional, facility/scope of work, or other) subject to a configuration management system, to ensure continual compliance with the requirements/ standards set as either the set changes or the implementing procedures evolve?

1.9.5 Is there a resource loaded schedule for full implementation of the described ISMS and are those resources committed?

2. ISMS DESCRIPTION, DOE VERIFICATION

2.1 Has the DOE Contracting Officer established a date and the scope/expectations for the ISMS Phase I[1] Verification Review?

2.1.1 Describe the approach to be taken.

2.2 Has the DOE Contracting Officer selected a team leader for the ISMS Phase I Verification Review?

2.2.1 If Yes, provide the planned/actual review team membership.

2.3 Has the ISMS Phase I Verification Review been conducted?

2.3.1 If Yes, provide a copy of the report.

2.3.2 Have all needed contractor corrective actions been completed and verified by DOE?

2.4 Has the DOE Contracting Officer approved the contractor's ISMS documentation, based on the ISMS Phase I Verification Review recommendation, and pending any needed contractor corrective actions?

3. ISMS IMPLEMENTATION/EXECUTION

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[1]Phase I is a term used by DOE to describe verification of ISMS development. Phase II is a term used by DOE to describe verification of ISMS implementation.

3.1 Give the status for each facility, in terms of the following functions:

3.1.1 Is the scope of hazardous work authorized for each facility formally and explicitly defined?

3.1.2 Are the hazards of all work identified and analyzed?

3.1.2.1 Via an authorization basis analysis (SAR, BIO, HAR, etc.)?

3.1.2.2 Via day-to-day work planning analysis (job hazard analysis, work permits, radiation work control permits, etc.)

3.1.3 Are controls developed to address the hazards identified that ensure protection of the public, workers, and the environment?

3.1.3.1 Design controls?

3.1.3.2 Administrative controls?

3.1.3.3 Personnel training?

3.1.3.4 TSRs, other facility controls, operation-specific controls?

3.1.3.5 Standard Operating Procedures?

3.1.3.6 Other? (Describe.)

3.1.4 Are controls implemented at the work level?

3.1.5 Describe how controls are implemented for each facility/scope of work.

3.1.5.1 Via TSR implementation and surveillances?

3.1.5.2 Via execution of implementing procedures (institutional, facility/scope of work, or other; describe)?

3.1.5.3 Via verbatim compliance with work procedures that contain the controls?

3.1.5.4 Other? (Describe.)

3.1.6 Is readiness for safe operation, within specified controls, including personnel readiness, verified prior to work initiation?

3.1.6.1 By the operators?

3.1.6.2 By a supervisor or other line manager?

3.1.6.3 By facility personnel?

3.1.6.4 By ES&H support personnel?

3.1.6.5 By DOE, via formal operational readiness confirmation and/or work authorization protocol?

3.1.7 Has an Authorization Agreement or other DOE authorizing protocol been executed?

3.1.8 Is continuing operation periodically monitored to explicitly confirm that specified controls remain in place?

3.1.8.1 By the operators (check lists, etc.)?
3.1.8.2 By a supervisor or other line manager?
3.1.8.3 By facility personnel?
3.1.8.4 By ES&H support personnel?
3.1.8.5 By DOE, via operational awareness activities?

3.1.9 Are the work definition, hazard analysis (including use of the Unreviewed Safety Question process), controls development, and controls implementation functions (including the configuration management system for controls) periodically reviewed, and deficiencies/opportunities for improvement identified?

3.1.9.1 By line management?
3.1.9.2 By facility personnel?
3.1.9.3 By ES&H support personnel?
3.1.9.4 By an independent institutional organization?
3.1.9.5 By DOE, via functional area reviews and appraisals?

3.1.10 Are deficiencies/opportunities for improvement systematically tracked and acted upon?

4. ISMS IMPLEMENTATION DOE VERIFICATION

4.1 Has the DOE Contracting Officer established a date and the scope/expectations for the ISMS Phase 2 Verification Review at the facilities or activities listed in Enclosure A?

4.1.1 Describe the approach to be taken, for example, site-wide or for each facility or activity.

4.2 Has the DOE Contracting Officer selected a team leader for the ISMS Phase 2 Verification Review?

4.2.1 If the team leader has been selected, provide the planned/actual review team membership.

4.3 Has the ISMS Phase 2 Verification Review been conducted?

4.3.1 If Yes, provide a copy of the report.
4.3.2 Have all needed contractor corrective actions been completed?

4.4 Has the DOE Contracting Officer determined that the contractor's ISMS is implemented at the facility listed in Enclosure A, based on the ISMS Phase 2 Verification Review, and pending any needed contractor corrective actions?

98-0001709

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

625 Indiana Avenue, NW, Suite 700, Washington, D.C. 20004
(202) 208-6400

May 14, 1998

The Honorable Federico F. Peña
Secretary of Energy
1000 Independence Avenue, SW
Washington, DC 20585-1000

Dear Secretary Peña:

Congress has asked the Defense Nuclear Facilities Safety Board (Board) to prepare a report with evaluations and assessments of proposals to externally regulate the Department of Energy's (DOE) defense nuclear facilities. The Board and its staff have been working on responses to the sixteen items that Congress specified for the report in section 3202 of the National Defense Authorization Act for FY-1998 (see Enclosure).

To date, we have relied upon published information in beginning to evaluate issues regarding proposals to regulate defense nuclear facilities. To help the Board assemble all the facts necessary for its report, the Board has requested information from DOE and the Nuclear Regulatory Commission by letters dated December 23, 1997, and April 9, 1998, respectively. The Board would appreciate receiving from DOE copies of such data, reports, information, and expressions of views as DOE believes are relevant to the Board's consideration of external regulation. Among other things, the Board requests DOE to provide the following specific information:

(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.

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

(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 the regulatee (DOE/contractor) to develop and implement the regulations and

license conditions and to bring the facility into compliance with NRC regulatory standards.

(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)?

(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.

The Board is in the process of drafting responses to Congress that encompass the specific questions asked and would appreciate receipt of the information identified above as soon as possible. To be useful, as much of the information as possible should be in our hands within the next 60 days. As our work progresses, we may have need for additional information from DOE.

If you have any questions about this request, the other Board Members and I are available to answer your questions and would be available to meet with you at a time convenient to you. DOE staff may contact the Board's General Counsel, Robert M. Andersen, at (202) 208-6387 at any time regarding this information request.

Sincerely,

John T. Conway
Chairman

Enclosure

c: Mark B. Whitaker, Jr.

SEC. 3202. REPORT ON EXTERNAL REGULATION OF DEFENSE NUCLEAR FACILITIES.

(a) REPORTING REQUIREMENT- The Defense Nuclear Facilities Safety Board (in this section referred to as the 'Board') shall prepare a report and make recommendations on its role in the Department of Energy's decision to establish external regulation of defense nuclear facilities. The report shall include the following:

(1) An assessment of the value of and the need for the Board to continue to perform the functions specified under chapter 21 of the Atomic Energy Act of 1954 (42 U.S.C. 2286 et seq.).

(2) An assessment of the relationship between the functions of the Board and a proposal by the Department of Energy to place Department of Energy defense nuclear facilities under the jurisdiction of external regulatory agencies.

(3) An assessment of the functions of the Board and whether there is a need to modify or amend such functions.

(4) An assessment of the relative advantages and disadvantages to the Department and the public of continuing the functions of the Board with respect to Department of Energy defense nuclear facilities and replacing the activities of the Board with external regulation of such facilities.

(5) A list of all existing or planned Department of Energy defense nuclear facilities that are similar to facilities under the regulatory jurisdiction of the Nuclear Regulatory Commission.

(6) A list of all Department of Energy defense nuclear facilities that are in compliance with all applicable Department of Energy orders, regulations, and requirements relating to the design, construction, operation, and decommissioning of defense nuclear facilities.

(7) A list of all Department of Energy defense nuclear facilities that have implemented, pursuant to an implementation plan, recommendations made by the Board and accepted by the Secretary of Energy.

(8) A list of Department of Energy defense nuclear facilities that have a function related to Department weapons activities.

(9)(A) A list of each existing defense nuclear facility that the Board determines--

(i) should continue to stay within the jurisdiction of the Board for a period of time or indefinitely; and

(ii) should come under the jurisdiction of an outside regulatory authority.

(B) An explanation of the determinations made under subparagraph (A).

(10) For any existing facilities that should, in the opinion of the Board, come under the jurisdiction of an outside regulatory authority, the date when this move would occur and the period of time necessary for the transition.

(11) A list of any proposed Department of Energy defense nuclear facilities that should come under the Board's jurisdiction.

(12) An assessment of regulatory and other issues associated with the design, construction, operation, and decommissioning of facilities that are not owned by the Department of Energy but which would provide services to the Department of Energy.

(13) An assessment of the role of the Board, if any, in privatization projects undertaken by the Department.

(14) An assessment of the role of the Board, if any, in any tritium production facilities.

(15) An assessment of the comparative advantages and disadvantages to the Department of Energy in the event some or all Department of Energy defense nuclear facilities were no longer included in the functions of the Board and were regulated by the Nuclear Regulatory Commission.

(16) A comparison of the cost, as identified by the Nuclear Regulatory Commission, that would be incurred at a gaseous diffusion plant to comply with regulations issued by the Nuclear Regulatory Commission, with the cost that would be incurred by a gaseous diffusion plant if such a plant was considered to be a Department of Energy defense nuclear facility as defined by chapter 21 of the Atomic Energy Act of 1954 (42 U.S.C. 2286 et seq.).

(b) COMMENTS ON REPORT- Before submission of the report to Congress under subsection (c), the Board shall transmit the report to the Secretary of Energy and the Nuclear Regulatory Commission. The Secretary and the Commission shall provide their comments on the report to both the Board and to Congress.

(c) SUBMISSION TO CONGRESS- Not later than six months after the date of the enactment of this Act, the Board shall provide to Congress an interim report on the status of the implementation of this section. Not later than one year after the date of the enactment of this Act, and not earlier than 30 days after receipt of comments from the Secretary of Energy and the Nuclear Regulatory Commission under subsection (b), the Board shall submit to Congress the report required under subsection (a).

(d) DEFINITION- In this section, the term 'Department of Energy defense nuclear facility' has the meaning provided by section 318 of the Atomic Energy Act of 1954 (42 U.S.C. 2286g).

98-0002721

The Secretary of Energy
Washington, DC 20585

August 14, 1998

RECEIVED
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DNF SAFETY BOARD

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

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,

Elizabeth A. Moler
Acting Secretary

Enclosures

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

CHAIRMAN

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

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

10/20/97

Federico F. Peña Date
Secretary of Energy
U.S. Department of Energy

11/21/97

Shirley A. Jackson Date
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.

# # #

JT/HT

Action: Paperiello, NMSS

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

November 13, 1997

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

OFFICE OF THE SECRETARY

MEMORANDUM TO: L. Joseph Callan
Executive Director for Operations

FROM: 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.

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 AN 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).

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 Committee[4] 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 advice DOE staff on high level policy issue associated with the Pilot Program on External Regulation.

for safe operations. The Department has experienced under RCRA[5] 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.

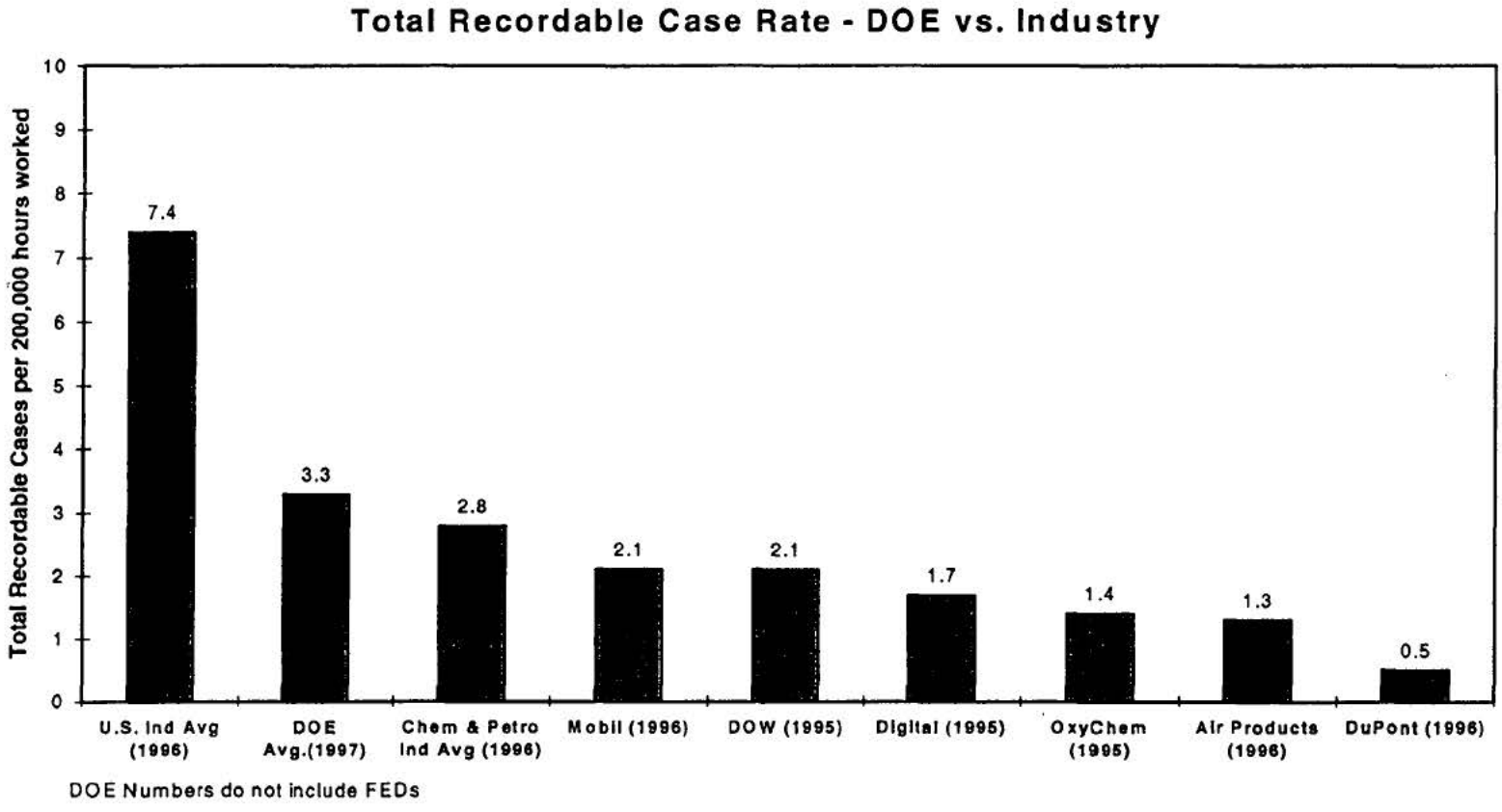
5.3.3 UC PREFERRED MODEL

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 person-hours 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 such as DuPont. However, given the unique nature of DOE's work, these comparisons may be misleading. For example, the U.S. Industry average includes the entire spectrum of industrial work – both hazardous and non-hazardous – in companies of all sizes.



DEFENSE NUCLEAR FACILITIES SAFETY BOARD

625 Indiana Avenue, NW, Suite 700, Washington, D.C. 20004-2901
(202) 208-6400

September 30, 1998

The Honorable Bill Richardson
Secretary of Energy
Department of Energy
1000 Independence Avenue, SW
Washington, D.C. 20585-1000

Dear Secretary Richardson:

In accordance with Section 3202 of the National Authorization Act for Fiscal Year 1998, I am sending you a draft report by the Defense Nuclear Facilities Safety Board (Board), which includes a response to 16 specific inquiries from the Congress evaluating External Regulation of Defense Nuclear Facilities.

As you will note, the Board does not believe additional external regulation of Defense Nuclear Facilities is in the best interest of our Nation. The Board is continuing to obtain additional material and will welcome any comments you may wish to make. Your comments will be included in the final report together with Acting Secretary Elizabeth Moler's letter of August 14, 1998. While our final report may differ somewhat in details from the draft enclosed, this basic conclusion is firm.

Sincerely,

John T. Conway
Chairman

Enclosure

APPENDIX 6: COMMENDATIONS REGARDING DEFENSE NUCLEAR FACILITIES SAFETY BOARD PERFORMANCE

The Board has received many compliments over the years for the superior quality of its oversight activities, the exceptionally high caliber of its technical staff, and the atmosphere of openness and responsiveness which marks its operations. These commendations have been received from a multitude of sources, including Congress, the Department of Energy, other federal agencies, professional organizations and public interest groups, and members of the public in general.

Congressional

- The Senate Committee on Armed Services stated in its report on the National Defense Authorization Act for Fiscal Year 1999, "The committee notes that DNFSB continues to provide exceptional and effective external oversight with a budget that equals about one-tenth of one percent of total Atomic Energy Defense funding."[1]

- On April 24, 1998, Representatives John Spratt, Norm Dicks, David E. Skaggs, Mac Thornberry, Doc Hastings, and Lindsey Graham, wrote to Representative Joseph M. McDade, Chairman, House Subcommittee on Energy and Water Development,

> We are writing to express our full support for the vital public and worker health and safety oversight work of the Defense Nuclear Facilities Safety Board. . . . Since 1992, the Board has sent almost 100 written communications to DOE regarding issues and observations that affect the safety of weapons activities and facilities. These upgrades stimulated by Board action are being accomplished throughout the nuclear weapons complex. We believe the Board's actions reduce the possibility of accidents that would adversely affect DOE's ability to continue its weapons missions. . . . The Board's statutory mission to ensure that worker and public health and safety is adequately protected at DOE's defense nuclear facilities has and will continue to be important in maintaining DOE's attention to safety. We have found the Board to be a constructive partner in its oversight role, whether the mission is accelerated closure of a DOE site or the continued safe operation of the Nation's nuclear weapons stockpile and components program. . . . The technical expertise of the Board continues to be needed to provide added assurance to the Congress and the public that DOE is implementing a sound program for the safe management of the production and use of defense nuclear materials, a program that provides reasonable assurance of no undue risk to the workers and the public, and protects the environment.

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[1] S. Rep. No. 189, 105th Cong., 2nd Sess. (1998).

- The Senate Committee on Armed Services stated in its report on the National Defense Authorization Act for Fiscal Year 1998,

> The committee remains supportive of the DNFSB role in assessing and overseeing the Department of Energy's (DOE) defense related activities and believes this role should continue. . . . The committee notes that the DNFSB has successfully pushed the Department to improve nuclear safety and that the DNFSB's non-punitive review process has successfully created an improved safety culture at the Department of Energy facilities. The committee believes that the DNFSB serves an essential role in improving and making accountable DOE operations and should continue in its current capacity.[2]

- The Senate Committee on Armed Services stated in its report on the National Defense Authorization Act for Fiscal Year 1997, "Since the creation of the Defense Nuclear Facilities Safety Board (DNFSB) in 1988, the board has gained the bipartisan support and confidence of the committee. The committee is satisfied with the current relationship between the board and the Secretary of Energy."

  It further states,

> The committee commends the Defense Nuclear Facilities Safety Board for its participation in and completion of a Memorandum of Understanding with the Environmental Protection Agency (EPA), the Colorado Department of Public Health and Environment, and the Department of Energy. That memorandum should sensibly facilitate the application of the respective functions and resources of the board, EPA, and the State of Colorado in the fulfillment of the oversight and regulatory functions related to the Rocky Flats Environmental Technology Site Industrial Area. The memorandum is expected to maximize the effectiveness of oversight responsibilities and minimize duplication of regulatory efforts, resulting in overall progress toward the completion of cleanup and decommissioning work under the Department of Energy's control.[3]

- The Senate Committee on Armed Services stated in its report on the National Defense Authorization Act for Fiscal Year 1994, "The committee continues to fully support the Defense Nuclear Facilities Safety Board and notes the many problems that the Board has brought to the attention of the Secretary of Energy."

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[2] S. Rep. No. 29, 105th Cong., 1st Sess. (1997).

[3] S. Rep. No. 267, 104th Cong., § 3301.

The Committee report continues,

> The Defense Nuclear Facilities Safety Board oversight and independent technical judgments are of significant importance to the local community as well. The committee notes the progress that the Board has made in involving the local communities in its work. The committee urges the Board to continue this effort and to expand its activities where possible.[4]

- Senator Strom Thurmond, commemorating Board Member Edson G. Case upon his death in 1991, said on the Senate floor, "Mr. President, the work of the Defense Nuclear Facilities Safety Board has been crucial in putting our nuclear deterrent on secure footing."[5]

Local Government

- Dianne Bosch, a commissioner with the City of Amarillo, wrote in 1994,

> Accordingly, we support the continuing oversight of the Complex [Pantex] by the DNFSB, and recommend that its functions and programs be continued, with only those modifications which the DNFSB and the Congress deem necessary to carry out its functions more effectively. We do not believe that transition of the functions of DNFSB to other independent oversight arrangements would be advisable or cost effective.[6]

Department of Energy

- On October 19, 1998, the Honorable Bill Richardson, Secretary of Energy, wrote to Chairman Conway, "In terms of the Board's characterization of its role in overseeing the Department's defense nuclear facilities and the overall status at these facilities, we agree that much progress has been made during the Board's tenure and that the complex is a safer place."

- On October 23, 1995, Thomas P. Grumbly, the DOE's Assistant Secretary for Environmental Management, wrote to the Chairman Conway,

> Thank you and your staff for focusing our attention on the structural degradation hazards in Buildings 776/777 and 771 at the Rocky Flats Environmental Technology Site (RFETS). Your letter dated August 3, 1995, addressed failure of both Department and contractor personnel to

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[4] S. Rep. No. 112, 103rd Cong. (1993).

[5] 137 Cong. Rec. S13,177 (1991).

[6] Letter to Kenneth M. Pusateri, DNFSB, p. 1, October 7, 1994.

recognize the safety implications of known and apparent structural problems. The failure of the system for identifying, evaluating and correcting deficiencies and the potential for generic applicability to our aging facilities have become more apparent as we have investigated this concern. . . . We hope that your staff will continue to oversee our ongoing evaluation and will contribute to our correction of the problems in a timely fashion.

- Former Secretary of Energy, the Honorable Hazel O'Leary, said in a public meeting with the Board on December 6, 1994,

> I want to focus, first of all, on your key question, which might be whether the Board has assisted the Department of Energy in identifying significant nuclear safety problems and helped us in correcting those problems. My response would be a resounding 'yes'. . . . You sent and were sending, Mr. Chairman and members of this Board, when I arrived on this job, not only very strong signals about training, qualifications, and the requirement to keep technical competence within the Department of Energy, but you even went a step further and provided the technical insight which would help us to accomplish those goals.[7]

- In response to the discovery by Board staff of substantial deterioration in DOE programs to prevent the introduction of suspect/counterfeit parts into safety-related applications, the Under Secretary of Energy formed a Quality Assurance Working Group (QAWG) to restore DOE's quality assurance program. In August 1996, Department of Defense investigators notified DOE that a vendor of semiconductor devices for high-reliability applications supplied DOE with potentially non-conforming parts. DOE applications for the parts included significant national security applications and applications in the Cassini space probe. DOE did not notify the necessary field elements until the Board brought the problem to the attention of the Under Secretary of Energy. DOE subsequently evaluated the adequacy of the parts in national security applications and determined that they would not compromise safety. Additionally, the Cassini probe was inspected for presence of the parts, thus averting last minute legal efforts to halt the launch of the probe.

  The Board's oversight and timely intervention in dealing with suspect/counterfeit parts has been pivotal in energizing the reestablishment of the DOE quality assurance program vital to ensuring public health and safety.

Professional and Public Interest Groups

- The Rocky Flats Citizens Advisory Board wrote in the Fall 1998 issue of its publication, *The Advisor*, "During that same year [1994], the Defense Nuclear Facilities Safety Board

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[7] Fifth Annual Report to the United States Congress, *Public Hearings Before the Defense Nuclear Facilities Safety Board*, at 369, 1994 (transcript of public meeting with The Honorable Hazel O'Leary, Secretary of Energy, December 6, 1994).

(DNFSB), a congressionally-appointed panel overseeing DOE's nuclear work, issued Recommendation 94-1 regarding important changes which were needed to remedy potential 'imminent hazards' regarding the storage of plutonium."

- *The Nuclear Examiner*, a publication of the Save Texas Agriculture and Resources (STAR) Coalition, stated in its March 1998 issue, "[F]ew people question the technical prowess the safety board derives from a staff with strong engineering and nuclear backgrounds, or its ability to provide useful and substantial information and insights to the public, including distilling reams of documents into a concise, readable format with few wasted words."

- David R. Smith, Chairman of the American Nuclear Society Consensus Committee, wrote in May 1997, " As one who has devoted more than thirty-five years to nuclear criticality safety I thank and congratulate you and your staff for Recommendation 97-2, the most perceptive and accurate official recommendation regarding criticality safety that has been promulgated during the time I have been active in this field."[8]

- Todd Macon of the Los Alamos Study Group wrote in March 1997, "We want you to know that your cooperation, professionalism, and diligence are greatly appreciated by those of us here at the Study Group."[9]

- Mr. Glenn Bell, an officer of the Beryllium Victims Alliance and a worker at Oak Ridge, wrote in 1996 to express his appreciation for DNFSB staff efforts in identifying his needs as a victim of chronic beryllium disease to DOE officials who could provide needed workplace accommodations for his condition. With the assistance of the Board staff, Mr. Bell was able to obtain workplace accommodations which permitted him to continue to work at Oak Ridge.[10]

- Paula Elofson-Gardine, Executive Director of Environmental Information Network, Inc., wrote in 1994, "The accessibility of the DNFSB members and staff has been invaluable. We thank you for continuing to have an 'open door' policy that encourages the public and the workers to contact you at any time with information and/or concerns that can be investigated."[11]

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[8] Letter to John T. Conway, Chairman, DNFSB, May 28, 1997.

[9] Letter to Gloria Jones, Management Analyst, DNFSB, March 4, 1997.

[10] Letter to Rick Schapira, DNFSB, October 10, 1996.

[11] Letter to Board Members (Attn: Dr. A.J. Eggenberger, Vice Chairman), p. 3, October 18, 1994.

- Samuel H. Cole, Executive Director of Physicians for Social Responsibility, wrote in 1994,

> The DNFSB plays a critical role in overseeing operations at Rocky Flats and other sites in the weapons complex. Their role in protecting the public, workers and the environment should not be underestimated. Because of the public distrust in the way the Department of Energy and its contractors at Rocky Flats have operated the facility, it is imperative that an outside, independent entity like the DNFSB be able to have access to the facilities and make recommendations to the DOE on public health and safety issues. This creates a more credible arena for the DOE to operate Rocky Flats.[12]

Public

- Mr. Faris M. Badwan wrote Dr. A.J. Eggenberger, Vice Chairman of the DNFSB, in 1994, "With its limited charter the Board has performed admirably in overseeing the nuclear safety at the DOE facilities. The value added by the Board is unmeasurable in assuring safety."[13]

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[12] Letter to Kenneth Pusateri, DNFSB, November 9, 1994.

[13] Letter to Dr. A.J. Eggenberger, Vice Chairman, October 25, 1994.