

PAPER PREPARED FOR PANEL DISCUSSION
ON
REGULATION OF NUCLEAR SAFETY OF DOE NUCLEAR FACILITIES

AMERICAN NUCLEAR SOCIETY MEETING

WASHINGTON, DC.

NOVEMBER 19, 2002

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- * The views expressed herein are those of the author and are not necessarily those of the Board, except as cited.

REGULATION OF DOE NUCLEAR FACILITIES: A PANEL DISCUSSION

1. THE ISSUE:

As I understand, the issue under debate in this panel session is the proposition that:

The Department of Energy (DOE) should divest itself of its statutory authority to regulate for safety its possession and uses of by-product and special nuclear materials and seek to transfer such authority to the Nuclear Regulatory Commission (NRC) for public safety and the Occupational Health and Safety Administration (OSHA) for worker safety.

2. SUMMARY POSITION:

The case made to date for divesting by DOE of its existing statutory authority for establishing, implementing and enforcing radiation safety requirements is not compelling. There are stronger arguments that can be advanced for not doing so, particularly for those operations vital to the national security interests of our nation. In summary:

- (1) The case made to date for external regulation of nuclear safety on the basis of improved credibility, safety and cost effectiveness is much more subjective than objective and certainly not convincing.

* **Safety:** Judged by conventional performance indicators DOE's Environment Safety & Health (ES&H) record during the past decade has been quite good and has shown continuous improvement. Objective evidence relative to radiation safety does not provide cause for drastic change in regulatory regimes.

* **Image:** Public confidence in DOE safety management is important for mission success but instilling such is not dependent upon external regulation. DOE and the Defense Nuclear Facilities Safety Board (Board) have accomplished much in recent years to improve public confidence in DOE's safety management program.

* **Cost Savings:** Other than anecdotal statements, the basis for alleging that cost savings will result from the imposition of two additional external regulators on DOE's nuclear programs has yet to be established.

- (2) External regulation of DOE defense programs under an NRC type model raises the risk of litigious proceedings and delays in conduct of vital national security missions. Hampering the weapons program through regulatory processes was a goal revealed by

earlier tactics of opponents of the weapons program. The national security mission is difficult enough. It should not be burdened in a way that could thwart its vital objectives. An external oversight program, in lieu of regulation, was established by Congress. External oversight is working effectively. This arrangement should be left to perform.

- (3) The large clean up program Environment Management (EM) of DOE is already highly regulated. The preponderance of facilities and sites involved are contaminated or contain hazardous and mixed wastes. These come under the regulatory jurisdiction of the Environmental Protection Agency (EPA) and the states. This clean up program, already beset with formidable challenges, hardly needs another set of regulators to further complicate its mission.
- (4) The transfer of the ten non-weapon Science Labs to NRC regulation, as some in Congress have been pressuring DOE to do, can hardly be considered an action with substantial safety-related benefit nor is it likely to result in measurable cost savings through reduction of regulatory functions performed by DOE. Such action would, in effect reduce by just a small percentage the inventory of DOE nuclear facilities subject to DOE 's safety rules. It would be an adjustment in regulatory jurisdiction, more symbolic than substantive.
- (5) Cost effectiveness of programs for ensuring the protection of public, workers and the environment is more likely to result from maintaining stability in DOE's current regulatory framework rather than from a changeover to additional external regulatory regimes. Maintaining the forward momentum with DOE's enhanced integrated Safety Management program will be difficult if significant change in regulatory regimes is anticipated.
- (6) Additional external regulation is a proposed solution to a problem of yesteryear and not of the DOE of today. DOE's historical ES&H program was flawed. Its structural framework has been much strengthened. It is stable and, stability is essential to continued improvement. That improvement is more likely to result from allocating the time and effort required to effect a major change in regulatory regimes to upgrades in DOE's aged, but still essential nuclear facilities.

3. BACKGROUND

In establishing the Atomic Energy Commission (AEC) as a successor to the Manhattan project, the agency was charged under the Atomic Energy Act of 1954 with the continuing weapons mission and also the promotion of peaceful uses of nuclear materials. In the pursuit of these missions, Congress authorized the agency to:

“Establish such requirements as necessary to protect life and property.”

While the Atomic Energy Act originally enacted authorized the Agency to establish safety requirements, it did not at that time make such issuance mandatory, although the intent was clear enough. Safety practices brought to the weapons programs during its early days were those common to the chemical and petroleum industries that built and operated the weapons complex. Codification of safety requirements for reactors and other peaceful uses began with the fledgling regulatory staff of the AEC in the late 1950's. These early efforts drew heavily from the weapons program and the developing naval reactors program. Like their weapons program counterparts, the "peaceful uses" staff of the AEC had to rely heavily upon the users of radioactive materials to bring safe practices to their applications. The reasonableness of these practices were assessed and conditions for applications agreeable to both were established. These included both aspects of design and aspects of operation. In the early years of regulation of the commercial industry, DOE's new facilities and those for peaceful applications followed parallel requirements and practices. With the establishment of the NRC as a separate independent regulatory agency, practices began to diverge. However, they remained rooted to the same radiation protection standards.

The added scrutiny given to the operation of DOE production reactors in the post-TMI period and the revelation of environmental contamination of sites from weapons materials and processing during the 1980s caused the public and Congress to lose confidence and trust in DOE's self-policing of its hazardous activities. Four very key government actions resulted:

- (1) The states took firm actions through the courts to invoke jurisdiction under environmental protection laws for the regulation of hazardous and toxic wastes being generated, stored and discharged on DOE sites.
- (2) Congress in 1988 enacted amendments to the Price-Anderson Act¹ making compliance with safety requirements established by DOE a condition for indemnification.
- (3) Congress in 1988 established the Defense Nuclear Facilities Safety Board² to provide independent external oversight of nuclear safety programs for defense nuclear facilities. DOE's nuclear science and energy development programs were neither cause nor focus of the Congressional inquiry and action that followed.)
- (4) Congress in 1992 enacted the Federal Environmental Compliance Act³ requiring Federal agencies operating hazardous facilities to come into compliance with environmental protection statutes.

¹ Price Anderson Amendments Act of 1988, P.L. 100-408

² 42 U.S.C. 2286-2286i, P.L. #100-456, September 21, 1988

³ Federal Facilities Compliance Act of 1992, P.L.102-386

The 1988 Price Anderson Act Amendments made compliance with DOE nuclear safety requirements established by rule a condition for Government indemnification of its contractors. Moreover during the decades of 1980 and 1990's, corollary radiation protection responsibilities were given other agencies of government, such as the EPA for developing environmental protection standards and the Department of Transportation for establishing requirements for transport of nuclear materials. Congress also chose to make certain special nuclear facilities such as the Uranium Enrichment Facilities, the High Level Waste (HLW) Repository and the Mixed Oxide (MOX) plutonium fuel conversion facility subject to regulation by the NRC. In setting up the Board, Congress considered external regulation. Congress opted for a Board with Fact-finding and recommendations as core functions and strong action-forcing powers to effect response. The Board was compromise solution, not fully accepted by those who believed that regulation by NRC to be a preferred solution.

This latent feeling of some on Capitol Hill that external regulation was a preferable course stimulated anew in 1995 by an initiative by Secretary Hazel O'Leary to divest DOE of its regulatory role. Enhanced public acceptance, not enhanced safety, seemed to be the driver for this initiative; some of us perceived it to have been advocated and encouraged by opponents of the weapons programs. Persons of such persuasion had been brought into DOE with the administration change. As a part of this initiative to move toward external regulation, Secretary O'Leary in 1995 established (1) an Advisory Committee on External Regulation and (2) in collaboration with Occupational Safety and Health Administration (OSHA) commissioned the National Academy of Public Administration (NAPA) to assess the DOE's worker protection program relative to OSHA practices. These studies were more focused upon how best to proceed towards external regulation.

The Advisory Committee endorsed the concept of external regulation of DOE nuclear facilities. After all the reality was that DOE operations were already being regulated externally by the states and EPA. The Advisory Committee, however, could not decisively agree on whether the NRC or the Board should be the preferred regulator for nuclear safety, nor what form of regulatory program might be appropriate. Programs of both the NRC and the Board were felt to require modification to accommodate DOE's varied and diverse nuclear facilities, most of which are quite old. OSHA was recommended as the preferred regulator of safety in the work place. In simplistic terms, the new model that emerged from the Advisory Committee report⁴ would have had either a modified Board or NRC in collaboration with OSHA regulating radiation safety "inside the fence," with EPA and the states regulating operations with potential impacts outside the fence. In effect, DOE's ongoing nuclear operations would be required to transition to two new regulatory regimes for radiation safety. The Advisory Committee recognized it would take years and resources to effect such a transition once Congress shaped, authorized and funded the transition plan.

⁴ Advisory Committee on External Regulation of the Department of Energy, report dated December 1966

Relative to external regulation of safety in the work place, the NAPA⁵ also recommended this authority be transferred to OSHA.

DOE deliberations on the Advisory Committee and NAPA studies led to announcement in 1996 by Secretary O'Leary of the intent to seek Congressional action to move to external regulation of DOE's nuclear facilities. A ten year period for complete transition was visualized. In the interim, the Secretary committed DOE to a safety upgrade program based upon a recommendation (95-2, Integrated Safety Management) from the Defense Nuclear Facilities Safety Board. The Administration of which she was a part changed before her specific legislative proposal to transition to external regulation was developed. Key members of Congress had advised her against any hurried action.⁶ No one of her four successors chose to follow through with her vision. Her successors, instead, moved steadily forward with the ISM concept.⁷⁸

Notwithstanding these actions, there are those who continued to advocate an end to the residual self-regulatory role of DOE and a transition of its existing nuclear complex to regulation by the NRC. Having met opposition for transition of the entire nuclear complex as a whole, some proponents have advocated transition by parts. This is evident in language in the conference report⁹ accompanying the Energy and Water Development Appropriations Act for FY 2002. DOE was directed to prepare an implementation plan for transferring their non-defense science laboratories to external regulation.

4.0 DOE REGULATORY PROGRAM

4.1 INTEGRATED SAFETY MANAGEMENT (ISM)

Under ISM, safety planning has been made an integral part of work planning. Contractors have been made to put in place requirements-based, safety management programs. Line managers of DOE have been made to understand they have primary responsibility and accountability for safety of their programs. Safety under ISM encompasses protection of public, workers and the environment. Safety

⁵ National Academy of Public Administration (NAPA) Panel Report, Ensuring Worker Safety and Health across the DOE Complex, January 1997

⁶ See citations 26 and 27

⁷ Defense Nuclear Facilities Safety Board Technical Document DNFSB/Tech 16, June 1997, *Integrated Safety Management*

⁸ DOE Implementation Plan for DNFSB Recommendation 95-2, April 1996

⁹ Conference Report 107-258, Energy and Water Appropriations Act for 2002, dated October 21, 2001

measures must address not only radiation hazards but also the hazards of working with other toxic and hazardous materials that are regulated by EPA and the states. Today, for defense nuclear facilities, all high hazard facilities are operating to authorization agreements that define the specifics of safety terms and conditions mutually agreed upon to ensure public and worker safety. These are the equivalent of licenses in the commercial nuclear world. At the activity level, workers have key roles in work planning of hazardous activities and the establishment of control measures for their safety. Such involvement is much in keeping with the Voluntary Protection Program (VPP) encouraged and endorsed by OSHA. All DOE sites are actively engaged in cleanup programs under Environmental Compliance Agreements with the States. All contractors are required to perform systematic self-assessments. Senior management of DOE requires their line management to assess regularly their contractors performances. The Secretary of Energy and his Program Secretarial Officers periodically deploy independent inspectors to double check for added assurance. Causes of injuries and vulnerabilities to harmful situations are the focus of these inquiries with corrective action plans required to continue to improve performances. Enforcement of terms of nuclear safety agreements is accomplished through two mechanisms. One stems from provisions of the Price Anderson Act (PAA). These provisions, in essence, provide liability protection for DOE contractors but require contractors to comply with safety requirements generally applicable to DOE's work. Such requirements have been established through rule-making procedures. Other requirements that are enforceable are established as contractual obligations defined by a mutually agreed-upon set of standards and requirements. These are tailored to the specifics of the work being performed. This duality of requirement sets represents a major difference in a NRC versus DOE regulatory systems. The diversity of DOE facilities and operations, which translates into diversity in hazards, does not lend itself to a "one size fits all" set of requirements.

While DOE has moved in recent years to a mode of operation wherein the definition and enforcement of requirements have become more visible and systematic, admittedly, its history provides cause for skeptics to question how long this changed behavior will be sustained. The Board's continued presence and pressures and DOE's positive responses have created a guarded sense of optimism that an effective and stable safety program is now in place.

4.2 RADIATION SAFETY REGULATION

The characterization of the Weapons and Nuclear Science programs of DOE and its predecessor agencies as self-regulating with respect to nuclear safety is certainly correct. To assert that DOE self-regulation equates to lack of safety is not. If one objectively examines the regulatory programs of DOE and NRC—and I am familiar with both of them—you will find that they are based upon essentially the same basic radiation safety requirements. Their radiation protection standards stem from the same source. They flow down from Federal Guidance Documents. These documents are developed by EPA, signed by the President and issued by EPA as a framework for federal regulatory

authorities in developing radiation protection standards.¹⁰ Among EPA considerations are the recommendations of organizations such as the National Council on Radiation Protection and Measurement (NCRP) and the International Commission on Radiological Protection (ICRP). Regulatory agencies, such as DOE and NRC, are expected to establish facility and operations-specific requirements that are in keeping with this guidance incumbent upon all federal agencies using or possessing nuclear materials. Both the DOE and NRC regulatory programs require implementation of their radiation protection requirements by those they regulate. Both have programs for enforcing compliance. Implementation and enforcement aspects of these regulatory program do differ, but again, difference does not equate to inadequacy. In fact, the safety record of DOE over the past decade, judged by the protection provided the public, workers and the environment, has been remarkably good, relative to statutory requirements.

4.3 STATUS QUO CHALLENGE

If the situation is as I have briefly characterized it, then why the continued agitation for change. One would think that such safety performances should equate to an acceptable regulatory program. However, for DOE there are those who, performance in recent years notwithstanding, do not accept the status quo as good enough. One can reasonably ask why not.

- ! Enhance Credibility
- ! Improve Safety
- ! Perform More Cost-Effectively

Let me first dispute these reasons for change most frequently advanced and then share with you my thoughts on some additional factors that persuade me to the contrary.

4.3.1 Enhance Credibility

As a long-time government worker, I believe strongly in the importance of government agencies acting in such fashion as to engender confidence in the public they serve. For government agencies such as DOE whose mission is to construct and operate facilities with the potential for harm to workers and the public because of the hazardous materials involved, there is particular need to communicate the nature of such hazards and the steps being taken to prevent harm. The Community Right to Know statute recognizes this need.

While regulatory agencies undoubtedly do contribute to public confidence about matters being regulated, external regulation is not a unique way for achieving such end. Congressional action to establish the Board illustrates this point. Congress established the Board as an independent oversight

¹⁰ USEPA, Federal Guidance, www.epa.gov/radiation/federal/about

body, not as a regulator. In deliberating on this matter, Congress also made it clear¹¹ that it expected the Board to:

“... raise the technical expertise of the department substantially, to assist and monitor the continued development of DOE’s internal ES&H organization, and to provide independent advise to the Secretary. Above all, the Board should be instrumental in restoring public confidence in DOE’s management capabilities—a clear pre-requisite for the continued production of the nuclear materials vital to the nation’s security.”

The past decade is marked by considerable effort by both DOE and the Board on this matter. DOE today is a far different agency than it was during the decades before 1990. DOE under Hazel O’Leary established and funded Citizen Advisory Boards (CABs) at all major DOE sites to foster communication among the local populace, site operators and the federal work force. Protection policies for “whistle blowers” were established to encourage workers to report perceived safety problems without fear of retribution. Web sites have been established to make information relevant to site operations more readily accessible to those interested.

The Board has held open status review sessions at all defense nuclear sites and also met less formally with representatives of unions and the CABs. The Board’s site representatives serve as interfaces with local citizens and with local and state government officials. The Board also maintains a Web site to facilitate access to Board files.

Granted that independent oversight of DOE’s nuclear safety program does help to address the perception of conflict, but the trauma of transition of DOE to external regulation is hardly justifiable on such grounds. The overriding consideration should be safety assurance.

I have become convinced over the years that regardless of the safety performance of those conducting nuclear operations there will exist, at best, an uneasy and cautions acceptance of their facilities by the local citizenry. Evidence of offsite releases of potentially harmful contaminants, however small, adds to such unease. Advantage of this state can be taken by those with hidden agendas. This became quite evident in the debates on the sub-recommendations of the Advisory Committee on External Regulation (e.g., substantive changes to the Atomic Energy Act were proposed by the representative from the National Resources Defense Council [NRDC]). These changes were directed toward enhancing legal rights to intervene in DOE decision-making processes relative to construction or operation of DOE nuclear facilities and related regulatory activities. Legislative changes were proposed that would have provided even greater intervention rights that which exists in the civilian field. The weapons program was the prime target for these proposed legislative changes. On another front,

¹¹ U. S. Senate Committee on Armed Services Report 100-232, dated November 20, 1987

members from states offered their agencies for regulating worker safety as more credible to their local constituents. Enhanced credibility translated into a bigger piece of the action. When the credibility issue is raised, it behooves one to look carefully at the critic.

In my view, the local communities directly affected, and the Congress who represent them, are the most important constituencies to satisfy. Credibility with these entities will not derive so much from whether it is the Board or the NRC or any other external body that is given oversight responsibilities, but from the department and performance of DOE itself. A DOE that takes on a responsibility Congress has entrusted it to perform in the public interest—to ensure the protection of people, property and the environment—and does it well, surely must be more credible than one who seeks to divest itself of that responsibility because it was not done well in the past or is found to be taxing in the present.

The Board as a whole commented on this issue in its 1998 Report to Congress. The Board observed as follows:¹²

“The idea that credible performance by one government agency can be assured 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 policy raises the question of where such layering stops. 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 government agencies.”

4.3.2 Improve Safety

The assertion that safety performance of DOE and its contractors will be improved by a change in regulatory regimes is largely a subjective call. It is based upon little or not factual evidence of failure to achieve safety norms comparable to other hazardous industries. While there is always room for improvement, DOE’s comparative performance record in recent years has been quite good. Now what do such records show?

4.3.2.1 Worker Protection

4.3.2.1.1 Industrial Safety

¹² DNFSB Report to Congress, November 1998: Role of the DNFSB Regarding Regulation of DOE’s Defense Nuclear Facilities

The overall worker protection program of DOE was extensively critiqued in 1996 by a NAPA Panel. The Panel's Report¹³ includes a summary of statistical data on worker safety for the DOE complex for the period 1990-1995. The report also includes observations of OSHA's experiences with the Paducah and Portsmouth diffusion plants and a pilot study by OSHA of the worker protection program at Argonne National Laboratory/Chicago.

Common indicators of work place safety are the Lost Work Day (LWC) rate in incidence per 200,000 hours and the Total Recordable Case (TRC) rate per 200,000 hours involving work-related injuries and illnesses. Statistical data on DOE's LWC and TRC rates during the 1990-1995 period were summarized and critiqued in the NAPA study (Chapter 2, pages 10-12). The LWC was reported as ranging from 1.9 to 1.6 during the period and the TRC ranged from xxx to 2.3. More recent data gathered by DOE during the 1995-2000 period show a continuing downward trend in both the LWC rate (1.0) and the TRC rate (2.4).

These rates, compared with Department of Labor (DOL) statistics for the industrial sector as a whole, for the year 2000, for example, showed the following by major sector and a few chosen sub-sectors believed to be more informative (see Table 1).

Table 1: Comparative Illness and Injury Rates DOE Versus Industry Year 2000

	TRC	LWC
DOE Nuclear Establishment	2.4	1.0
Private Industry (Total)	6.1	1.8
Agricultural, Forestry and Fishing	7.1	2.5
Mining	4.7	2.4
Construction	8.3	3.2
Manufacturing	9.0	2.0
Chemical and Allied Products	4.2	1.0
Transportation and Public Utilities	6.9	3.1
Services	4.9	1.4
Engineering and Management	1.7	0.5
Research and Testing	2.0	0.5

Although DOE numbers are well below rates for "industry" as a whole, and rates reported for the major industrial sectors, NAPA rightly advised against making too much of such comparisons. The

¹³ See citation 3

statistics that make up these industry averages encompass such a broad and diverse spectrum of industrial activities that they do not match well either the Research, Design, and Development (R&D) or the varied materials processing and product manufacturing activities of DOE.

Nonetheless, these precautions notwithstanding, one conclusion one can reasonably draw from these statistics is that working in DOE facilities appears to be no more of an industrial risk to workers than employment in other industrial sectors of our economy.

The OSHA experiences at Argonne and the Diffusion Plants as reported by NAPA, illuminated some of the strengths, weaknesses and traps for those advocating transition to OSHA regulation.

Relative to the Portsmouth and Paducah experience, observations included the following:

“... it is difficult to draw clear distinctions between activities that compromise worker safety and those that might compromise the safety of the nuclear facility. Thus, there are not “Bright lines” and based upon hazard characteristics to separate the legitimate interests of OSHA from those of DOE and NRC.”

“... the regulatory framework of the 1990's does not fit comfortably around the facilities at Paducah ... overlapping jurisdictions occasionally creates challenges for the contractor which must decide which agency rules and standards apply to any given situation....”

“... the transition to OSHA jurisdiction has forced safety improvements at Paducah. The transition teams ‘wall-to-wall’ inspection found more than 22,000 violations of OSHA standards at the two sites. Most of them posed no serious safety or health concerns, but DOE did pay the contractor to correct those that did.... In partnership with the unions, USEC and workers designated many of the technical violations ‘as not worth fixing’”

Given the age of these production facilities, these results are not surprising. They probably are indicative of what would be observed at DOE nuclear facilities of similar vintage and phase of operational life. Does such state give cause to transition to a new regulatory regime? I submit it does not. Funds spent in changeover in regulatory regimes would better be spent in facility upgrades or replacements, using a risk informed approach to decide on backfits as was done for the diffusion plants.

The Argonne pilot represents a facility of a much different type. It is one of the ten non-defense laboratories under current consideration for transition to external regulation. The NAPA report indicated among its observations about this study that:

“For the most part, OSHA’s PEP (Program Evaluation Profile), rated Argonne’s safety and health programs very positively. And as all parties anticipated, OSHA found no serious safety and health problems at the laboratory. OSHA’s citations, 10 in total, pointed to relatively minor problems...”

One could hardly conclude from the NAPA Argonne findings that a case was made for radical change in the worker safety program at the laboratory. Argonne is one of four non-defense DOE laboratories under the oversight of DOE’s Chicago Operations Office.

With respect to the ten non-weapons science laboratories as a whole, LWC and TRC statistics for the period 1995-2001 as recently reported¹⁴ show that LWC rates ranged from 0.9 at Ames Laboratory, Ames, Iowa (AMES) to Princeton Plasma Physics Laboratory; Princeton, New Jersey (PPPL) with the average for all ten being 1.6. Argonne’s rate for the period was shown as 1.25. TRC rates for this same period ranged from a high of 4.25 at Oak Ridge National Laboratory (ORNL) to a low of 2.0 at Pacific Northwest National Laboratory (PNNL). These rates compare with DOL statistics listed earlier for Research and Testing Laboratories in private industry of 2.0 (TRC) and 0.5 (LWC).

4.3.2.1.2 Radiation Safety

DOE’s radiation protection program for workers is based upon exposure limits in keeping with the Federal Guidelines for radiation protection developed by EPA and signed by the President. DOE practices for implementing measures to satisfy them are essentially the same as those used by the commercial industry. DOE rules require that radiation workers be exposed annually to no more than 5 rem (TEDE) and exposures be “as low as reasonably achievable” (ALARA). DOE has established as a general goal for its contractors that exposure of workers be kept below 2 rem (2000 milli-rem). How well has DOE performed? According to its latest summary¹⁵—2000 DOE Occupational Radiation Exposure Report—the average dose to radiation workers showing measurable exposures was 0.079 rem for the year 2000. Measurable levels were found in approximately 16,000 out of 102,000 workers monitored. These statistics show that DOE nuclear facilities as a whole are operating well below statutory allowable limits for radiation workers. The report also indicated that during the 1996-2000 period, there were 16 cases of annual exposures >2 rem. Six of these cases were >5 rem.

Radiation exposure experience of the commercial nuclear industry as reported by NRC¹⁶

¹⁴ DOE/EH-0647, June 2002, the Value Added of the DOE Voluntary Protection Program (DOE-VPP), Rama Sastry, et al

¹⁵ DOE Occupational Radiation Exposure Report, Year 2000

¹⁶ NRC NUREG-0713, Vol. 23, 34 Annual Report: Occupational Exposure at Commercial Nuclear Power Reactors and Other Facilities 2001

(Table 3-1, page 3-3) shows that industry-wide for the comparable period, the TEDE dose per worker ranged between 0.31 to 0.24 rem. During the period 1996-2001 there were 10 incidents of exposures above the regulatory limit of 5 rem. These were due largely to radiography mishaps (Table 6.1/Nureg-0713). Added insight to the exposure picture is provided in Table 6.3/Nureg-0713 wherein it is reported that for 2001, there were commercial industry-wide, 1920 doses >1.25 rem, 448 cases >2.5 rem, 73 cases >3.75 rem, 4 cases >4.75 rem and 1 case >5 rem.

What conclusions might one reasonably draw from these statistics? One can note that facilities and operations of DOE and the commercial industry have some commonalities but in aggregate are really quite different. Power generation is the major product of the commercial sector. Weapons and weapon materials have been and remain the major products of the DOE program. Material processing facilities in the commercial world operate largely with stable, unirradiated materials or radioactive fuel elements stored in pools and casks. DOE operations are marked by energetic materials and legacy highly radioactive wastes stored in tanks. This is a simplification, but is made to emphasize the following points. The commercial nuclear industry and the DOE nuclear operations have some similarity but are sufficiently different as not to support definitive conclusions about relative performances based upon a comparison of these performance indicators. On the other hand, one can reasonably conclude that both the DOE and NRC are succeeding in making those they regulate maintain radiation working environments well within federal guidelines and the associated rules they have established.

4.3.2.1.3 Safety Vulnerabilities

Recording and analyzing performance history is necessary but certainly not sufficient to maintain the kind of safe working environment sought. Conventional performance indicators are used but more for guidance as to vulnerabilities than norms of acceptable behavior. Prevention is preferred over reaction to injuries to keep a work place safe.

OSHA, the nuclear industry and the chemical industry have stressed preventive programs achieved through robust self-assessment and corrective action programs. The commendable record of workplace safety achieved by Dupont, as recognized in the NAPA Report, was achieved through the corporate work ethic established by management. To argue that external regulation by OSHA and NRC is required to develop such work ethic is to do an injustice to those who voluntarily institute exceptionally effective programs.

The Voluntary Protection Program, a self-assessment program, is a hallmark of OSHA. It has been endorsed and adapted by DOE to fit its diverse activities and contractors. To date, VPP/STAR status has been achieved by 19 of DOE's contractors (Not all nuclear). This represents approximately 38% of the contractor workforce. Moreover, all of DOE's major maintenance and operating contractors (M&O) are operating under DOE Integrated Management System. ISM embodies the VPP concept of worker involvement in work planning and robust feedback and improvement

programs. The DOE Office of Independent Oversight and Performance Assurance periodically reviews contractor performance against ISM principles and functions.

In response to a Board recommendation (98-1), the DOE in 1999 upgraded its program¹⁷ for capturing and acting upon findings of vulnerability that resulted from both the contractor's self-assessments and DOE's own independent oversight appraisals. DOE's 4th Quarter, FY 2002 report on its Corrective Action Program (CAP)¹⁸ indicates that from 103 different appraisals performed during the years 1998-2002, a total of 3865 corrective actions were identified to be performed by DOE contractors and tracked by DOE Headquarters. Of these, 3668 were completed, 154 were on schedule and 43 were late. These numbers unto themselves provide no comparative safety data upon which to base a case for or against regulatory change. However, it is worth noting that such an institutionalized, effective system for self-identifying and addressing safety vulnerabilities is a good indicator of a well-managed safety program.

4.3.2.1.4 Commentary: Worker Protection

As detailed above, performance indicators show DOE contractors are keeping workplace radiation exposure rates well below statutory limits and industrial types of workplace mishaps within reasonable bounds. While performance has room for improvement as observed by NAPA, programs to achieve improvement are in place. Granted, all such statistics must be used guardedly. However, they do represent useful benchmarks for assessing performance and highlighting where improvements can be made in workplace safety. Such as they are, they do not, in my view, make a case for radical change in the existing regulation of the workplace. They do make a case for constant vigilance and continuing feedback of lessons learned to lessen chances for repeat experiences and to make workplaces even safer.

4.3.2.2 Nuclear Facility Safety (Worker and Public Protection)

DOE's nuclear operations have not been accident free, its safety program notwithstanding. There have been a number of serious accidents in the DOE facilities during the past five years that caused either worker fatalities, serious worker injuries or significant damage to property. During the 5 years (1997-2002), DOE conducted 9 Type A and 29 Class B investigations. One of the Type A and 4 of the Type B investigations involved radionuclides. These included 1 intake incident at Lawrence Livermore (Type B) and 1 waste transportation incident at Kingman, Arizona (Type B). The other 33 incidents were diverse industrial type accidents involving chemical reactions, electrical, transportation, rigging, fires, construction or rotating equipments. Whether NRC and OSHA regulatory regimes might have detected the vulnerabilities to such events and acted to prevent them, falls into the realm of

¹⁷ See citation 12

¹⁸ DOE Corrective Action Management Plan, Fourth Quarter Report FY 2002, October

speculation. External regulation does not equate to an accident-free work environment.

Relative to public safety, there have been no accidents in many years at DOE facilities that have been any offsite threat. Fires in the West near and on DOE sites in recent times raised the specter of a public at risk, but even that threat subsided without dangerous public exposures to radiation. The high hazard facilities with their potential for accidents that could cause significant offsite consequences are largely a part of the defense nuclear complex. For these, Congress elected to make them subject to independent oversight of the Defense Nuclear Facilities Safety Board. The Board's challenge has been two fold: (1) to get new defense nuclear facilities designed and operated to requirements fully compliant with the best of safety practices of the times, and (2) to get DOE to systematically appraise operational state of vital safety systems in existing facilities and undertake upgrades where need is found, using a hazards-based prioritization for the backfit effort.

There does exist as a legacy of the past, contamination of DOE sites with the potential for migration of nuclear materials offsite. Clean-up and restoration activities are in process under the regulatory oversight of EPA and the states.

4.3.2.2.1 Commentary

The nuclear safety business has been marked by its constant efforts to reduce vulnerabilities to serious accidental events. How best to achieve that objective through regulatory oversight is a matter about which reasonable people can disagree. My view is that public protection under an NRC regulatory regime would not be substantially different than that accomplished in recent years by DOE and its contractors, with Board oversight.

In any case, safety performance is much more the result of actions of those performing hazardous work than actions of a regulator. This has certainly been demonstrated by the exceptional worker safety program of Dupont and the establishment of the Institute for Nuclear Power Operations (INPO) by the commercial nuclear power industry. This observation was captured succinctly in the Advisory Committee on External Regulation report wherein it was stated that:

“No outside authority or authorities could or should be considered a substitute for an effective internal safety management structure and program.”

4.3.2.3 Environmental Protection

External regulation of DOE nuclear facilities for environmental protection is not at issue. In keeping with the Environmental Compliance Act of 1992, all DOE sites must comply with environmental protection laws. Operational facilities are subject to provisions of the Clean Air, Clean Water and Solid Waste Disposal statutes. These statutes are administered by EPA and the affected

States. Cleanup of formerly used facilities and contaminated sites is proceeding under Compliance Agreements worked out with the EPA and state authorities. Imposition of additional regulatory entities would more likely complicate not facilitate the cleanup program.

A relative newcomer on the federal environmental scene is Executive Order 13148.¹⁹ This presidential directive calls for the implementation of Environmental Management Systems (EMSs) in all appropriate federal facilities by 2005. DOE issued DOE Notice 450.4 in 2001 to implement the requirements of the executive order. DOE has adopted the Integrated Management System as its umbrella program, it is planning to embed its EMS into that program. EPA is coordinating this federal program.²⁰

4.3.3 Cost Reduction

This is another of the assertions that is without convincing evidence. One of the problems with data gathered to date is that estimates gathered on small scale and relatively uncomplicated operations cannot with credibility be applied to the DOE complex as a whole.²¹

The count of nuclear facilities made by DOE in 1996, as a part of the staff assessment of External Advisory Committee report, identified approximately 551 different nuclear “facilities.” 76 of the total were part of the weapons complex, 375 were part of the environmental management program and the remaining 100 were facilities dedicated to nuclear energy R&D and nuclear science. 400 of them were still “operational.”

For laboratory and research types of facilities with small inventories of radioactive materials, such as the Lawrence Berkeley Laboratory (LBL), the cost differences in the exercise of nuclear safety regulation, whether external or internal, should not be substantially different, because the costs for an oversight program, once established, should not be large. However, estimating cost for the transition is another matter. This difficulty was communicated to Congress by DOE in its July response to Congress on this matter.

Large complex facilities with substantial radioactive inventories represent an even greater

¹⁹ Executive Order 13148, Greening the Government Through Leadership in Environmental Management, April 21, 2000

²⁰ DOE/EH 2nd Annual Report, E. O. 13148, Submitted to EPA March 2002

²¹ GAO Congressional Testimony, GAO/T-RCED-98-205, May 21, 1998

costing challenge. The Board sent a letter²² to NRC in 1998 seeking cost estimates for NRC regulation of defense nuclear facilities. The NRC rightly responded that cost estimates would be a function of facility and operation specifics. For those of us experienced in both the DOE and the NRC regulatory regimes, trying to make a case for cost effectiveness of one regime versus the other is fraught with uncertainty. The uncertainties relative to required backfits and the amount of administrative work required to put in place new NRC and OSHA regulatory regimes are the main variables. The effect of participation of interested parties in the proceedings is another major uncertainty.

The issue of funding of the additional regulators has been repeatedly raised. The only transition experience comparable to the more complex situations has been the gaseous diffusion plants. That transition experience showed the kind of transition time and the costs one might reasonably expect for facilities of similar age, complexity, and nuclear materials inventory. The transition process was neither fast nor cheap.²³

Proponents of external regulation of DOE have argued that relief from regulatory responsibilities will allow reduction of DOE Environmental Safety and Health (ES&H) staff. That may be true for some DOE organizational units but doubtful for the safety organization of DOE and contractors taken as a whole. The staff of DOE who perform regulatory functions is really a small fraction of the total ES&H staff required to support DOE missions. Most ES&H personnel are part of those organizations (contractors and federal) responsible for doing the work safely. The US General Accounting Office (GAO) earlier this year reported to Congress²⁴ anecdotal statements attributed to the contractors of the non-weapons science laboratories that external regulation by NRC and OSHA would enable cost savings through reduction of their ES&H staffing. Undoubtedly, this is accurate reporting, but to those of us with long experience in this business, it would take more understanding as to exactly how that reduction is to be accomplished and the implications on safety before proceeding.

The Board in its testimony to Congress, Senate Committee on Armed Services, March 1996²⁵ observed that:

²² DNFSB Report to Congress, November 1998: Role of the DNFSB Regarding Regulation of DOE's Defense Nuclear Facilities, Appendix 4 (Correspondence with NRC)

²³ Nuclear News, October 1998: Making a Successful Transition from DOE to NRC Regulation, Steve Polston

²⁴ GAO Testimony GAO-02-974T, July 25, 2002: Observations on Externally Regulating Nuclear and Worker Safety in DOE's Science Laboratories

²⁵ DNFSB Congressional Testimony, March 6, 1996: FY 1997 Defense Authorization Hearing, Senate Armed Services Committee, Sub-Committee on Strategic Forces

“We know of no organization, in government or in private industry, that reduces personnel or response costs when additional regulatory authorities are imposed upon it. The opposite occurs.”

This uncertainty about the cost has been a major factor in what appears to some to be indecisiveness about the issue of external regulation. The cost/benefits of moving to external regulation have been difficult for DOE to quantify. This was reflected in DOE’s July 2002 response to Congress for a plan to transition the non-weapons science laboratories to NRC and OSHA regulation.²⁶ The Energy and Water Appropriations Committee in its September 2002 report on appropriations²⁷ observed that:

“We know of no organization, in government or in private industry, that reduces personnel or response costs when additional regulatory authorities are imposed upon it. The opposite occurs.”

The Committee report includes language that would have compliance audits performed by NRC and OSHA to determine what will be required to satisfy NRC and OSHA requirements. This audit is to be followed by a report from DOE as to the costs to comply with findings. Such report is to be supplied to both the House and Senate Water Development Appropriations Sub-Committee, no later than September 23, 2003 (the status of this mandate is not certain). With respect to the science laboratories, the House report also states the intent to have the GAO “develop objective estimates of current resources expended by DOE and the potential savings from external regulation.”

Given that these 10 non-weapons science laboratories represent a very small fraction of the total of nuclear facilities for which the DOE has regulatory responsibilities, the incremental effect on staffing of the Federal workforce should be quite modest. An objective report quantifying DOE regulatory cost savings, while interesting, perhaps, will not tell Congress how much money will be saved, if any, unless it also provides costs of DOE and contractor line compliance activities under the two different regulatory regimes. The contractors operating the science laboratories reportedly are expecting to be able to reduce their ES&H staffs as DOE reduces its nuclear and worker oversight.²⁸ Just how they plan to improve safety performance with less people has yet to be revealed. Whether these latest of Congressional-mandated studies will result in a more convincing data on this issue remains to be seen.

²⁶ DOE External Regulation Task Force Report, July 1, 2002: Implementation Plan for External Regulation of Non-Defense Science Laboratories

²⁷ House Report 107-681, September 24, 2002: Energy and Water Development Appropriations Bill, 2003

²⁸ See GAO Report, Reference 15

4.4 OTHER CONSIDERATIONS

While the above remarks are intended in rebuttal to arguments advanced by those who are proponents of external regulation of DOE's nuclear facilities, let me offer some additional arguments against proceeding. First, let me say that my observations are not to be taken as deprecating of either the Administrators or staff of the NRC, an agency I once worked for a hold in respect—nor of the OHA. Having so stated, let me say that I believe this interest on the part of some to change the Atomic energy Act to impose the NRC and OSHA's regulatory regimes on DOE's nuclear complex is unwise for additional reasons as follows.

4.4.1 National Security

The weapons and the naval reactors programs of the Department of Energy are strategic components of the National Defense structure of our nation. In recognition by Congress of their importance to national security, defense agencies have traditionally been allowed to perform their defense missions with less transparency and citizen challenge than the non-defense sectors of government. Our national leadership is currently struggling to formulate a new strategy and approach to ensuring our national security. Part of that struggle is the issue of transparency—with citizen rights to intercede versus secrecy in the interest of national defense—with closed Congressional oversight. Self-regulation versus external regulation of nuclear safety of the weapons complex presents a bit of this same struggle. The balance struck on this issue changes with the perceived perils of the time.

Because of national security, the weapons program was born in secrecy and much about it must still be so maintained. In contrast, the peaceful uses of atomic energy was initiated on a totally open basis. The Atoms for Peace program was dedicated to sharing of nuclear technology widely with the promise of benefits to all mankind. It was recognized from these early times that widespread uses of nuclear materials would be dependent highly upon public acceptance of benefits (high) versus the risks (low). The need for transparency in decision-making by the government as to safe applications was recognized. The right for affected parties to be a part of the proceedings whereby the government made safety determinations was also recognized as a public acceptance factor. Clear separation of the peaceful uses from nuclear weapons was also a major driving force. As a result, commercial uses of nuclear materials are subject to administrative processes in which affected parties can participate and challenge decisions. History has shown that these proceedings can be litigious and lengthy. At issue then is whether these more open processes should be applied to DOE's defense programs.

In 1988, Congress considered the placement of DOE defense nuclear facilities under external regulation. Congress decided against that option. Congress elected, instead, to establish the Defense Nuclear Facilities Safety Board²⁹ to provide safety oversight of defense nuclear facilities and to

²⁹ National Defense Authorization Act, FY1989 (P.L.-100-456-September 29, 1989)

recommend improvements in safety management. The Board was given authorities that enable it to exert strong pressures upon DOE for developing and maintaining an effective safety management program. The Board reports to Congress annually on the state of safety of defense nuclear facilities.

In letters^{30 31} to Secretary Hazel O’Leary in 1996 regarding the report of the Advisory Committee on External Regulation and her plans for going forward, Congressional leaders, out of concern for the defense program, cautioned the Secretary against moving in haste. Senator Johnson advised the Secretary with these prophetic words:

“...the admission that the Department can no longer manage its complex without the aid of another agency does not bode well for the Department’s future. The chances that Congress will fund two agencies to manage and regulate the weapons complex are, in my judgement, less than the chances that the Department will be abolished and its defense responsibilities assigned to another agency.”

“Perhaps if DOE and its predecessors had an external regulator during the height of the Cold War, we would not face many of the environmental problems we now find throughout the complex. But those days are over. The Department’s production facilities are shuttered; major new reactor projects have been abandoned; a new oversight board already exists; EPA and the states now exert enormous authority over site cleanups. The need for another regulator may have already passed. It may yet come again. But this is not the hour.”

In enacting the National Defense Authorization Act for Fiscal year 1998, Congress required the Board to prepare a report and make recommendations to Congress as to what the role of the Board should be in the event that Congress considered legislation for external regulation of DOE’s defense nuclear facilities. The Board’s report,³² in which I actively participated and signed, was submitted to Congress in November 1998. The report includes a discussion of pivotal considerations relative to this issue, and I commend it to those with continued interest in this matter. The executive summary summarized the Board’s conclusions as follows:

! Congress made the correct decision in 1988 when it adopted the recommendation of the

³⁰ Letter, Senator J. Bennett Johnson to Secretary of Energy, Hazel O’Leary, February 29, 1996

³¹ Letter, Senator Frank Murkowski to Secretary of Energy, Hazel O’Leary, March 28, 1996

³² See Citation 14

Senate Committee on Armed Services for national security reasons to maintain responsibility for nuclear safety of Department of Energy defense nuclear facilities with the Secretary of Energy and 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 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 respect to cooperation and openness with the public, particularly in the formation and utilization of local citizen advisory boards.

As judged by continued budgetary support³³ for the Board, one can reasonably conclude that

³³ Congressional Letters: Congressmen John Spratt, Norm Dicks, David Skaggs, Mac Thornberry, Doc Hastings, and Lindsay Graham to Congressman John McDade, April 24, 1998, and to Vic Fazio, April 24, 1998

Congress as a whole continues to favor the Board concept of external oversight not regulation for defense nuclear facilities.

4.4.2 Environmental Management

DOE's program for disposal of residual wastes from weapons production and the cleanup of associated facilities and sites is the second largest nuclear program of DOE. Most of the waste storage and former materials production facilities are still considered "defense nuclear facilities" and come under the nuclear safety oversight of the Board. However, all Environmental Management (EM) sites have been declared "super fund" sites by the EPA and are subject to remedial actions under provisions of either Resource Conservation and Recovery Act (RCRA) or Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). These are statutes administered by EPA (CERCLA) and the States (RCRA). Cleanup is being accomplished under Compliance Agreements with the affected states. EPA and the States exercise regulatory authority over these cleanup operations. The Board works cooperatively with the regulatory authorities relative to nuclear safety issues.

Satisfying the external demands of multiple cleanup regulators has been a difficult and major challenge for DOE. Adding two more regulators—the NRC and OSHA—to this already complicated scene promises to add little benefit but more grief for those trying to expedite the cleanup program. Bob Card, now Under Secretary of Energy, and former President of Kaiser Hill, the cleanup contractor for Rocky Flats, advised the Congressional Sub-Committee on Energy and Water Development in 1998³⁴ that "a transition from a DOE to an NRC regulatory environment at Rocky Flats could cause a delay of up to three years on our accelerated closure schedule." The same concern for delay, without compensating benefits, caused DOE several years ago to abandon the idea of NRC licensing of its new waste processing and vitrification facility at Hanford. While Congress might well decide on a per case basis, such as they have done for Mixed Oxide (MOX), to subject new EM facilities to NRC regulation, it does not make much sense to take facilities and operations that are to be phased out and demolished within the next 5-10 years and change their current manner of regulatory oversight, not to complicate the existing regulatory regimes for the environmental cleanup effort.

4.4.3 Non-Weapons Nuclear Science and Research and Development Facilities

These facilities, particularly those at the non-weapons science laboratories with small inventories of nuclear materials, are, in general, not the most hazardous of DOE's operational nuclear facilities. Some do have inventories of legacy materials. With few exceptions, such as the Brookhaven Reactor several years ago, they have not been at the forefront of attention by the public out of safety concerns, nor were they the focus of special attention by the Advisory Committee on External Regulation. Interest in NRC regulation of these facilities comes from several sources; mainly (1) those

³⁴ Letter, Bob Card, President/CEO Kaiser-Hill to Congressman Joseph M. McDade, House Sub-Committee on Energy and Water Development, April 20, 1998

who believe that doing so will free up resources they must now devote to ensure safe operating status, (2) those who are convinced from pilot studies that transition is feasible and cost effective, and (3) those who look at such transition as a step towards the promise land—transition of all self-regulatory functions of DOE to an external regulator.

The General Accounting Office³⁵ recently castigated the DOE for its reluctance to proceed with a plan to transfer authority for regulation of its non-weapons, science laboratories to the NRC. When one looks at the multiplicity of actions that are required to bring even these facilities of modest hazard potential into a changed regulatory regime, as indicated by DOE's report to Congress,³⁶ one cannot help to question whether this move is worth all the effort. It seems to me that an inordinate amount of time and effort is being expended to shift around a small parcel of turf with little benefit to the public being served.

4.4.4 Commentary: Jurisdictional Overlaps

The treatment of nuclear materials as being so uniquely dangerous as to justify a regulatory program solely focused upon them is an outmoded concept. Since those days when nuclear safety was at the forefront of public and worker protection programs, the need to address other hazardous and toxic materials has been determined. Regulation of these non-nuclear hazardous and toxic materials has also been established by statutes. These statutes are being administered by agencies other than those regulating the uses of nuclear materials. As I have observed on other occasions³⁷ such as this, protective requirements established by parts are being administered by parts. The multiplicity of regulatory authorities that a developer/operator of DOE nuclear facilities must satisfy makes getting a job done quite difficult. The ideal would be a one-stop kind of service that was talked about so much years ago in the heyday of nuclear power expansion. Under such a service one entity would provide the principal interface with the owner/operator of a nuclear facility and would provide the coordination of inputs from all other affected parties. Precedent for this kind of approach is reflected in the National Environmental Policy Act (NEPA). NEPA requires the agency taking the action to perform the environmental impact assessment, but in the process, obtain the input from others in the government having expertise in the matter. In contrast to such an ideal, the proposition that DOE nuclear facilities should be made subject to additional single-focus regulators is out of keeping with the needs of those who are tasked by Congress with missions involving uses of nuclear materials. If regulatory reform is to be sought, it would be better directed at eliminating overlapping jurisdictions, not adding additional ones. The daunting problems of getting Congress to re-invent what had been created in the way of protection programs over the years led the Advisory Committee on External Regulation to shy away

³⁵ See citation 15

³⁶ See citation 17

³⁷ Weapons Complex Monitor, February 21, 1996

from recommending this course of action. Yet, absent this ideal, regulatory agencies with overlapping jurisdictions are forced to resort to Memoranda of Understanding to avoid undue interference patterns. This need is illustrated by the recent understanding³⁸ developed between the NRC and EPA on the decommissioning and decontamination of NRC-licensed sites.

While it may not be realistic to dream of integrated environmental, health and safety administration through statute, one can and should resist the further complication of an already complicated regulatory framework. Any such re-alignment as might be done in the future should be justified by demonstrable benefits that would accrue to the missions and to the health and safety of those being protected.

5.0 SUMMARY CONCLUSION

This issue of external regulation of DOE nuclear facilities is not whether NRC, the Board, and/or OSHA could provide external regulation of nuclear safety and worker protection but whether they should, at this stage of life and missions of DOE. Debate over the years on this issue certainly shows this is a matter about which reasonable people can well disagree. My judgement, based upon years of experience in the field, is that the existing safety management program of DOE, although not perfectly executed by its contractors, is basically sound. Conventional performance indicators support that view. DOE's program is dedicated to robust management self-assessments, independent appraisals of performance, and a feedback and improvement program to address appraisal findings. The commercial nuclear industry has demonstrated that over the years, since Three Mile Island, that safety improvements have come more from the industry's own self-assessments and self-generated improvements than changes in regulatory regimes. Stability in the regulatory framework, whether commercial or government, is important for steadily improving safety performances.

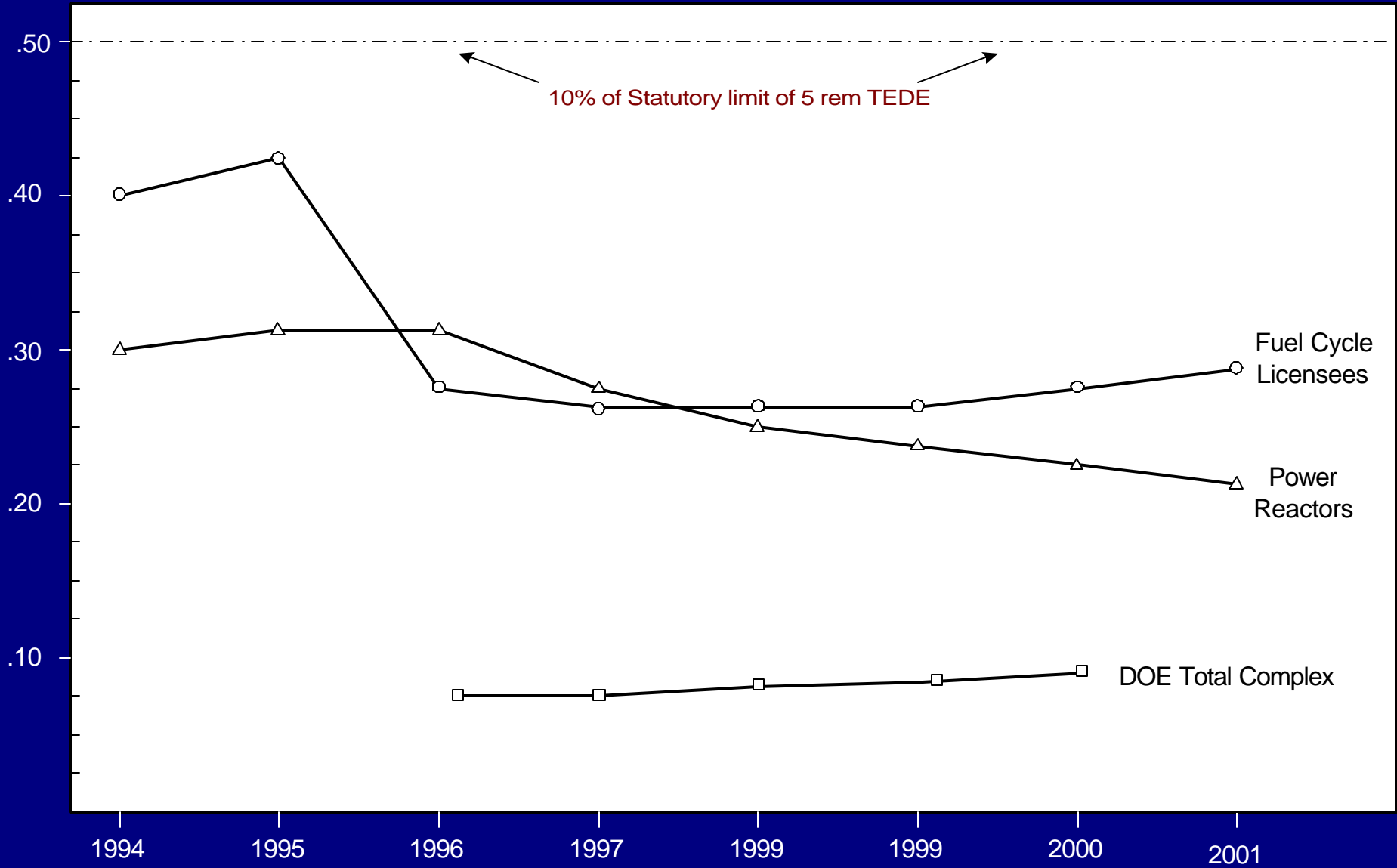
In my view, the proponents for additional external regulation of DOE's existing nuclear facilities have not made a compelling case for change.

As Senator Bennett Johnson wrote:

“The need for another regulator may have already passed.
It may come again.
But not for now.”

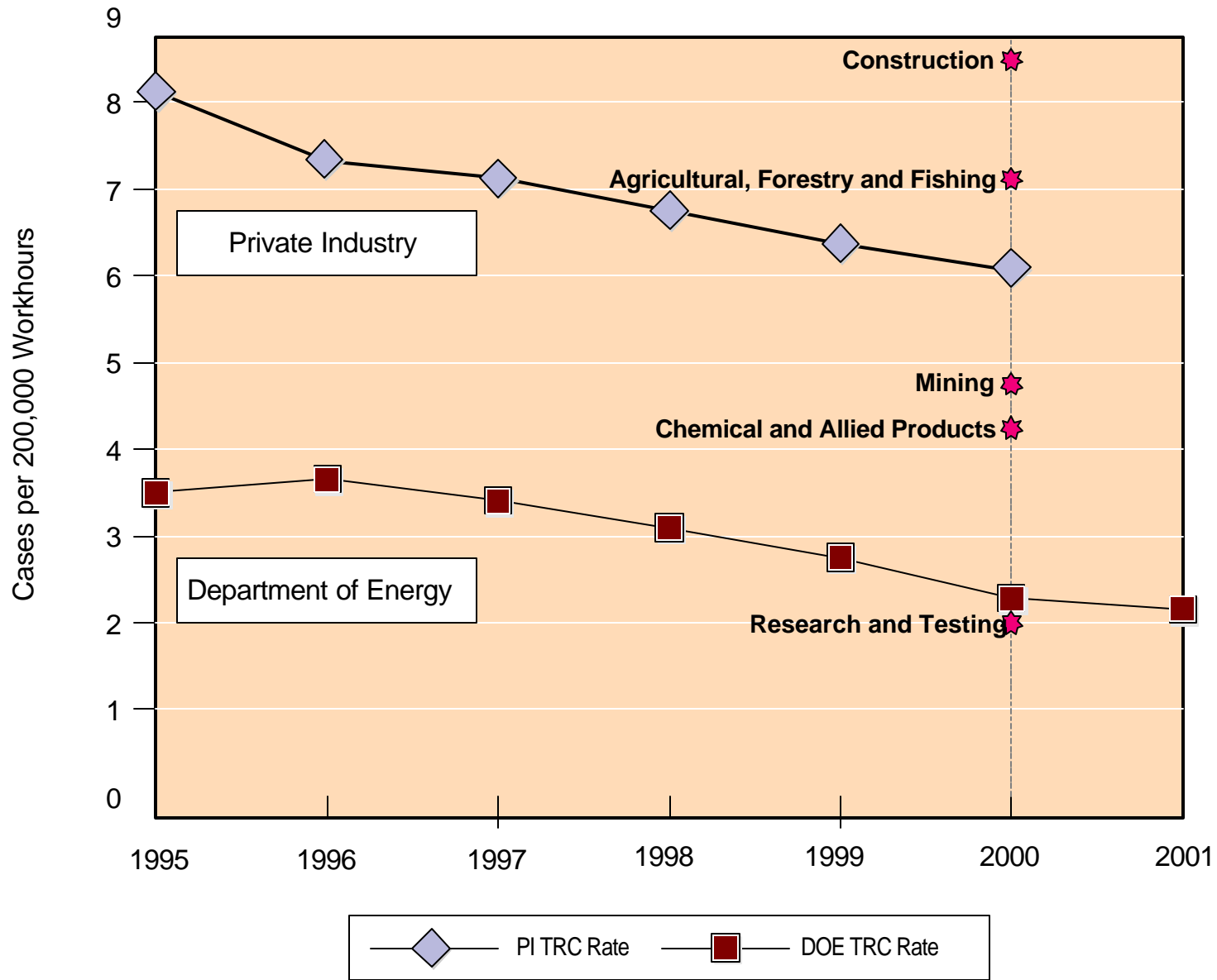
³⁸ EPA/NRC Memorandum of Understanding, October 9, 2002: Decommissioning and Decontamination of NRC-licensed Sites

Occupational Exposures Average of Measurable TEDE (Rem)



References: NRC NUREG-0713, 2002 Report
DOE YR2000 Report, Occupational Radiation Exposures

Private Industry vs. Department of Energy Total Recordable Case Rate Comparison



Private Industry vs. Department of Energy Lost Workday Case Rate Comparison

