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DOE ENVIRONMENTAL ISSUES BULLETIN

APRIL 1996

Editor's Note

In January, the Federal Advisory Committee on External Regulation of DOE Nuclear Safety submitted its final report to DOE Secretary Hazel O'Leary. While the committee agreed, in general, that DOE nuclear facilities and operations should be externally regulated, the committee did not come to a consensus on how the facilities should be regulated.

This issue of the Bulletin highlights key elements of the advisory Committee recommendations including an article from. one of the Committees former members. Michael Mobley, Chair of the Conference of Radiation Control Program Directors' Federal Facilities Task Force.

In a future issue of the Bulletin, Ohio Assistant Attorney General Jim Payne,' who was also a member of the Advisory Committee, will contribute an article on this issue.

- Michele Gagnon

ADVISORY COMMITTEE ON EXTERNAL REGULATION OF DOE NUCLEAR SAFETY SUBMITS FINAL REPORT*

The Federal Advisory Committee on External Regulation of Department of Energy (DOE) Nuclear Safety was an independent panel formed by Secretary of Energy Hazel O'Leary in January of 1995. The Committee was formed to provide recommendations on whether and how existing and new DOE nuclear facilities and operations might be externally regulated to best protect health, safety, and environment; eliminate unnecessary oversight, and reduce costs. During its tenure, the Committee assessed the technical, regulatory, institutional, and resource impacts of regulatory options for oversight of safety at DOE nuclear facilities, including worker, public, environmental, and facility safety. The Committee held eight public meetings in nine months and obtained input from the public workers, and DOE offices and contractors for use in the development of the Committee's recommendations. Many of these meetings were held at or near DOE sites across the country.

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On January 19, 1996, the Committee submitted its recommendations in a Final Report, *Improving the Regulation of Safety at DOE Nuclear Facilities,* to the Secretary of Energy, and simultaneously to the White House Council on Environmental Quality and the Office of Management and Budget. The Committee's Final Report presents a number of recommendations to strengthen both the regulation and the assurance of safety at DOE 'nuclear facilities. Three of these recommendations are fundamental:

> *Essentially all aspects of safety at DOE's nuclear facilities and sites should be externally regulated.*
>
> *Existing agencies rather than a new one should be responsible for external regulation.*
>
> *Under any regulatory scheme, DOE must maintain a strong internal safety management system.*

Along with recommendations for external regulation, the Report contains a summary of the current state of the DOE complex and its missions, and recommendations on issues that must be addressed for any successful regulatory scheme. The Report also contains recommended actions that will make internal regulation more effective during the transition to external regulation, and contribute to a well-managed transition.

In deciding on a regulatory framework, the Committee followed two principles: First, DOE nuclear facilities should be regulated the way private sector nuclear facilities are regulated, but, second, there should be only one regulator for each of the three major areas of safety at any DOE nuclear facility, which are facility safety, worker protection, and environmental protection. After careful evaluation of a wide variety of options, the Committee recommended that:

> *An existing agency regulate facility safety at all DOE nuclear facilities under the Atomic Energy Act (AEA) -- either the Nuclear Regulatory Commission (NRC), with Defense Nuclear Safety Facilitate Board (DNFSB) staff moved into the NRC, or a restructured DNFSB.*
>
> *The Occupational Safety and Health Administration (OSHA) regulate all protection of workers at DOE nuclearfacilities 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 thatfacility under the AEA.*
>
> *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.*

The external regulatory framework recommended by the Committee will allow greater productivity and efficiency within the DOE by removing the regulatory redundancies and overlaps that now burden its work. The Committee believes that external regulation will improve public confidence in DOE and provide increased assurance that its future record of nuclear safety will be free of the mistakes of the past.

* From the Final Report Summary dated December 1995 and the "About the Committee" insert prepared by the Advisory Committee.

DOE WORKING GROUP ON EXTERNAL REGULATION

On January 19, 1996, the Secretary announced the formation of a working group led by the Acting Under Secretary Thomas Grumbly to provide her with recommendations on implementation of the Advisory Committee's report. The current membership of the working group includes representatives from a broad cross section of the DOE as well as representatives from other Federal entities such as the Office of Management and Budget (OMB) and Department of Justice.

EXTERNAL REGULATION OF DOE NUCLEAR ACTIVITIES

by
Michael H. Mobley*
Chair, CRCPD Federal Facilities Task Force

The Department of Energy (DOE) has an exemption that no other user of radioactive material in the United States can obtain, an exemption to the Atomic Energy Act (AEA). That exemption provides that DOE shall "self-regulate" its activities involving radioactive material regulated under the AEA. The exemption allows the DOE to develop its own standards and its own implementation program for its activities involving source, by-product(s), and special nuclear material.

As a result of that exemption, DOE developed a "self-regulating" scheme that evolved into something that some now recognize as inadequate. This contrasts with the regulatory scheme developed by the Nuclear Regulatory Commission (NRC) and the Agreement States for the regulation of these radioactive materials in the commercial world. (See sidebar for information on sources of radiation not regulated under the AEA.)

Some environmental statutes have exemptions for radioactive material, which are provided in recognition of the preexistence of the AEA regulation of radioactive material. AEA regulation of radiation activities and materials has been extraordinarily effective in the commercial arena and obviously (because of the exemption) less effective in the DOE arena. To correct this, all DOE activities could be regulated under the jurisdiction of the NRC and Agreement States. This relatively simple action would put DOE activities in the same regulatory realm as the commercial arena. A waiver of sovereign immunity for all federal facilities would allow non-AEA sources of radiation to be regulated by states. (See sidebar.) This action would provide for the regulation of all sources of radiation at federal facilities in the same manner as all sources of radiation at commercial facilities.

In order to appreciate why I believe it essential to provide oversight for all aspects of the DOE operation, it is necessary to have an understanding of how radioactive materials and machine radiation sources are regulated in the non-DOE world, or commercial world. Because of the uniqueness of the hazard (one can be injured by a source of radiation without being in contact with it) and because of the very small quantities of many radioactive material that can create great problems, a pervasive regulatory program has evolved that controls almost every aspect of any transfer, delivery, receipt, acquisition, possession, and use of radiation sources. This regulatory scheme (developed for AEA regulated radioactive material and extended to non-AEA radioactive material through the state programs) is virtually unique in the degree to which broad responsibility is reposed in the radiation control agency. Thus, every radiation control agency is established with broad powers because of the need to assure adequate control of sources of radiation it regulates.

For example, no one is allowed to possess radioactive material until they have obtained a license. To get a license, they must develop a

program, document it, and provide assurance to the regulatory agency that they can meet the requirements of the regulations. The license they receive will limit the amount of radioactive material that can be possessed, how it can be used, and how it can be disposed of, identify individuals responsible for ensuring radiation safety, designate specific authorized users, and add any special conditions the agency may deem appropriate. A licensee can only transfer radioactive material as permitted by license or regulation to someone who is permitted by license or regulation to receive it.

In addition the regulations address operational issues. They provide for a comprehensive program to address the hazards presented to the public, workers, patients, and the environment. They address the hazard regardless of whether the radioactive material is a useful source, an emission, a waste, a contaminant, or a product. The total impact of all radioactive material from all pathways is collectively regulated via dose limits (related to risk), e.g., if two radionuclides are emitted, the allowable dose received from each is reduced proportionally. The packaging and transportation of radioactive material is highly integrated with the NRC and Agreement States regulations dovetailing into Department of Transportation standards in order to ensure safe transport.

The impact of all this regulation is to ensure complete coverage for any possession, use, transfer, release or disposal of radioactive material in a comprehensive fashion. This precludes the media versus media, or product versus waste shell game sometimes played with other pollutants. It also ensures that environmental protection is not played off against worker protection.

It is important to consider the difficulty and implications to establish another system for the regulation of DOE's radiation activities, when a working system exists in the commercial arena. The first question is simply the reasonableness of the concept. Should a separate system be established with separate regulations, regulatory guides, jurisdictional guidance, and all the other necessities for a federal program of this magnitude? Will this new system maintain parity with the NRC and state radiation control programs? Will it evolve into another "self-regulating" process? Given the effort to privatize many DOE operations, will a special DOE regulatory regime allow the continuation of this effort?

The AEA exemption has allowed DOE to ignore the advances made in the regulation of commercial world nuclear activities that have provided an excellent level of protection from the hazards of radiation. This protection provided under the AEA by the NRC and Agreement States ranges from requirements for the safe operation of nuclear power plants (sole NRC jurisdiction) to the regulation of tracer sources used in nuclear medicine.

While acknowledging that the current system regulating sources of radiation in the commercial arena is not perfect, I do believe it provides the best protection available for any hazard that is currently addressed by any regulatory scheme. It allows for the beneficial use of sources of radiation in industry, medicine, education, and research, while providing in a coordinated, comprehensive fashion, protection for the public, workers, patients, and the environment from the hazards of the radiation. As far as I know, there are no streams precluded from use as a drinking water source because of radioactive material contamination from a licensed source, there are no land areas that are precluded from public use because of emissions from licensed facilities. The same cannot be said for DOE facilities or even for regulated chemical or hazardous waste facilities., The same cannot be said for DOE facilities or even for regulated chemical or hazardous waste facilities.

Finally, I must argue against attempted changes in the regulation of radioactive material. In recent years, there have been numerous proposals to require the regulation of radioactive material (or radionuclides) via the environmental standards,

allegedly because these standards are more protective than the AEA.

In every case of which I am aware, the AEA standard in the commercial world was found to be protective, and generally more protective than the proposed environmental standard. For example, in the application of the Clean Air Act (CAA), several studies by the EPA demonstrated that virtually all facilities (possibly 1 of 6,000 did not) already met the standard and that most, because of AEA regulation, were one-tenth of the CAA standard. Similarly, the Low-Level Waste Disposal Standard proposed by EPA with its purportedly very restrictive 4 mrem/yr limit for groundwater is actually much less protective than the current AEA standard. This is because the EPA's 4 mrem/yr standard only applies to certain radioactive material and under the current EPA Drinking Water/Ground Water Standard, uranium is not restricted at all. Thus, for many DOE low-level waste sites (which are not regulated by the NRC or states) where one may expect to see large quantities of uranium, there is no limit on the contamination of groundwater by uranium.

I encourage everyone to work to fully understand the issues, the real implications of change, and the actual impacts of implementation. Increasingly, I see proposals to change the current system in the commercial world to provide some protection, which in fact, is already being provided. In my opinion, the only major gaps in radiation protection today are the lack of regulation of AEA sources at DOE and the lack of regulation of state regulated sources at all federal facilities.

Unregulated Radiation Sources

The Atomic Energy Act (AEA) does not address all sources of radiation. It actually addresses only a portion of all radioactive materials and does not address any sources of machine-produced radiation. The non-AEA regulated radioactive material and machine-produced radiation actually represent the greatest number of sources that impact on the public and environment In fact, these non-AEA regulated sources are the sources that actually produce the greatest radiation impact on the public and the environment. These sources are only regulated by the states, through their state radiation control programs.

Numerous estimates have been made regarding the relative magnitude of sources regulated by states versus those regulated by the Nuclear Regulatory Commission (NRC). In early 1995, of the 21,600 licenses issued for AEA regulated radioactive material in the United States, 6,600 were issued by the NRC and 15,000 were issued by Agreement States. When these numbers are combined with those from sources of radiation regulated only by the states; it appears that 90% to 95% of all sources of radiation are regulated by state radiation control programs. In a recent (1995) National Academy of Sciences review of the regulation of sources of radiation in the medical arena, it was recommended that the regulation of all sources of radiation in medicine be transferred to the states.* * The National Academy states that 90% of all sources of radiation in medicine are already regulated by state radiation control programs.

It is important to note that the states do not regulate any source at any federal facility because of sovereign immunity. This needs correcting just as the Resource Conservation and Recovery Act (RCRA) was corrected to provide for state regulation of hazardous waste at federal facilities.

The Agreement State Program is somewhat different than most Federal/State programs in that federal authority is relinquished and state authoritv is imposed. The NRC has no authority in the state, and the state has complete authority for the facilities and activities it regulates. The NRC can only withdraw the agreement if health and safety is compromised within the state,

* The views of this author are his own and do not necessarily represent the position of the Conference of Radiation Control Program Directors, Inc., Federal Facilities Task Force.

**(Sidebar) Radiation In Medicine, A Need for Regulatory Reform; Committee for Review and Evaluation of the Medical Use Program of the Nuclear Regulatory Commission; Kate-Louise D. Gottfried and Gary Penn, Editors.

DOE SUBMITS FY 1997 BUDGET

The Department of Energy recently proposed its FY 1997 budget request for $16.3 billion. This budget includes $5.2 billion for national security, $1.8 billion for energy resources, $6.3 billion for environmental quality and $176 million for environmental safety and health, $2.6 billion for science and technology, and $200 million for other programs, including the Energy Information Administration and departmental administration accounts. Below is a breakdown of the Environmental Management Program.

Waste Management	$1,735.7*
Environmental Restoration	2,120.4
Nuclear Mat. & Facilities Stabilization	995.2
Science & Technology	303.8
Uranium Enrichment D&D	240.2
Site Operations	332.3
Environmental Science	52.1
Privatization	185.0
Policy & Management	48.2
Program Direction	446.5
Subtotal	6,459.4
Use of Prior Year Balances	(150.4)
SR Pension Funds	(8.0)
D&D Fund Deposit Offsets	(376.7)
D&D Fund Foreign Fee	
TOTAL	$5,878.4

Some of the key results supported by the FY 1997 budget include: producing 100 canisters of vitrified High Level radioactive waste at the Savannah River Site; stabilizing plutonium & uranium solutions at the Rocky Flats, Hanford and Savannah River Sites; completing 50 large-scale cleanups, 39 interim cleanups and 38 decommissioning projects; solidifying 140,000 gallons of liquid high level radioactive waste at the Idaho site; and undertaking three major privatized waste treatment operations.

*Dollars in Thousands

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DOE ENVIRONMENTAL ISSUES BULLETIN is published by the Environment Project of the National Association of Attorneys General (NAAG), 444 North Capitol Street, Suite 339, Washington, D.C. 20001. This bulletin is edited by NAAG's Environment Project. For general inquiries, call (202) 434-8000. Subscription rate: $75.00 per year. For subscription services, call (202) 434-8030.

The publication of this bulletin is funded, in part, by the U.S. Department of Energy under cooperative agreement number DE-FC01-95EH89594. The contents of this bulletin do not necessarily reflect the views and policies of the U.S. Department of Energy or the National Association of Attorneys General, nor does mention of trade names or commercial products constitute endorsement or recommendation for use.