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ID 794792

THE WHITE HOUSE
WASHINGTON

10/31
DF
Bill

DATE: 30 OCT 79

FOR ACTION:

INFO ONLY: JACK WATSON

ARNIE MILLER

SUBJECT: WOLFE MEMO RE NATIONAL ENDOWMENT FOR THE HUMANITIES -
BUDGET

++++
+ RESPONSE DUE TO RICK HUTCHESON STAFF SECRETARY (456-7052) +
+ BY: +
++++

ACTION REQUESTED: YOUR COMMENTS

STAFF RESPONSE: () I CONCUR. () NO COMMENT. () HOLD.

PLEASE NOTE OTHER COMMENTS BELOW:

<input type="checkbox"/>	FOR STAFFING
<input checked="" type="checkbox"/>	FOR INFORMATION
<input type="checkbox"/>	FROM PRESIDENT'S OUTBOX
<input type="checkbox"/>	LOG IN/TO PRESIDENT TODAY
<input type="checkbox"/>	IMMEDIATE TURNAROUND
<input type="checkbox"/>	NO DEADLINE
<input type="checkbox"/>	FOR APPROPRIATE HANDLING
<input type="checkbox"/>	LAST DAY FOR ACTION

<input type="checkbox"/>	ADMIN CONFID
<input type="checkbox"/>	CONFIDENTIAL
<input type="checkbox"/>	SECRET
<input type="checkbox"/>	EYES ONLY

ACTION
FYI

<input type="checkbox"/>	VICE PRESIDENT
<input type="checkbox"/>	JORDAN
<input type="checkbox"/>	CUTLER
<input type="checkbox"/>	DONOVAN
<input type="checkbox"/>	EIZENSTAT
<input type="checkbox"/>	MCDONALD
<input type="checkbox"/>	MOORE
<input type="checkbox"/>	POWELL
<input checked="" type="checkbox"/>	WATSON
<input type="checkbox"/>	WEDDINGTON
<input type="checkbox"/>	WEXLER
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<input type="checkbox"/>	GOLDSCHMIDT
<input type="checkbox"/>	HARRIS
<input type="checkbox"/>	KREPS
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<input type="checkbox"/>	BUTLER
<input type="checkbox"/>	CAMPBELL
<input type="checkbox"/>	H. CARTER
<input type="checkbox"/>	CLOUGH
<input type="checkbox"/>	CRUIKSHANK
<input type="checkbox"/>	FIRST LADY
<input type="checkbox"/>	FRANCIS
<input type="checkbox"/>	HARDEN
<input type="checkbox"/>	HERTZBERG
<input type="checkbox"/>	HUTCHESON
<input type="checkbox"/>	KAHN
<input type="checkbox"/>	LINDER
<input type="checkbox"/>	MARTIN
<input checked="" type="checkbox"/>	MILLER
<input type="checkbox"/>	MOE
<input type="checkbox"/>	PETERSON
<input type="checkbox"/>	PRESS
<input type="checkbox"/>	SANDERS
<input type="checkbox"/>	SPETH
<input type="checkbox"/>	STRAUSS
<input type="checkbox"/>	TORRES
<input type="checkbox"/>	VOORDE
<input type="checkbox"/>	WISE

6
RL
JOHN WALTON WOLFE

155 EAST BROAD STREET
COLUMBUS, OHIO 43215

October 23, 1979

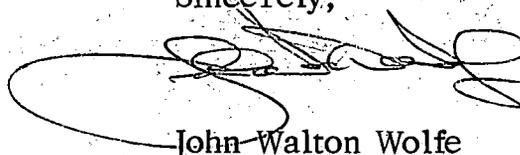
057791

President Jimmy Carter
The White House
1600 Pennsylvania Avenue
Washington, D. C. 20500

Dear Mr. President:

My position on the National Endowment for Humanities,
being a presidential appointment, I feel that I am
obligated to forward to you this copy of my letter to
Mr. Joseph D. Duffey.

Sincerely,



John Walton Wolfe

JWW:js
Enclosure

JOHN WALTON WOLFE
155 EAST BROAD STREET
COLUMBUS, OHIO 43215

October 23, 1979

Mr. Joseph D. Duffey, Chairman
National Endowment for Humanities
Washington, D. C. 20506

Dear Joe:

I have received the budget request of the Humanities to the office of Management and Budget. I see, with great disappointment, that the 14% increase was requested as indicated at the August meeting. I feel that I, once again, must protest such an extravagant request. I fully understand the theory pointed out to me at the August meeting that it is bureaucratic policy to ask for more than you want, want more than you need, and everything will come out favorably in the end. If the National Endowment cannot take the lead and set the example of endeavoring to moderate the economic chaos that exists in this country today, creating hardships on everybody and everything from the old and infirmed to the institutions of higher education that we are supposed to support, then I think that the rest of our noble endeavors are being tarnished by our actions.

After sitting on the Council for more than a year, I asked one of the more senior members who happens to be a respective member of academia, with a prominent position at a well regarded institution of higher education, what percent of the Endowment budget was being well spent and I was very disheartened to hear his reply of 20%. Surely the benefits of an increase in spending for the Endowment during these troubled times can be achieved by a more prudent distribution of existing funds.

I also understand that by comparison with the total budget the Endowment's requests are considered small. But when one realizes that only 25% of the budget consists of discretionary expenditures, consequently the affect of anything that we do is multiplied by four. So if showing restraint in favor of the people the benefits of this restraint will also be multiplied by four.

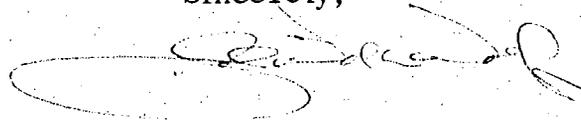
Mr. Joseph D. Duffey

-2-

October 23, 1979

In all due respect, I submit my objection to your budget request.

Sincerely,

A handwritten signature in black ink, appearing to read "John Walton Wolfe". The signature is fluid and cursive, with a large loop at the beginning and a long, sweeping tail that ends in a small flourish.

John Walton Wolfe

JWW:js

Xerox Copies: President Jimmy Carter
Mr. James McIntyre
Congressman Samuel L. Devine

MEMORANDUM

THE WHITE HOUSE
WASHINGTON
October 30, 1979

Hold

TO: DOUG COSTLE
FROM: RICK HUTCHESON
SUBJECT: Your Memorandum to the President
of October 16, 1979 (attached)

OMB advises me that not all Federal agencies involved in radiation activities concur with the guidelines recommended in your memorandum. OMB recommends that you review your proposal with other involved agencies at policy levels.

I will hold your memorandum pending your response.

cc: Bo Cutter

MEMORANDUM

THE WHITE HOUSE
WASHINGTON

29 October 1979

TO: DOUG COSTLE
FROM: RICK HUTCHESON
SUBJECT: Your memorandum to the President
of October 16, 1979 (attached)

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I will hold your memo - pending your response.

cc: Bo Cutter

*Pls
retype*

*Put Costle
memo in
1 hold
folder*



EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF MANAGEMENT AND BUDGET
WASHINGTON, D.C. 20503

October 29, 1979

MEMORANDUM FOR: RICK HUTCHESON
THROUGH: BO CUTTER *BC*
FROM: JOE HEZIR/CURT HESSLER *Curt Hessler*
SUBJECT: Costle Memo Re Radiation Protection Guidance to
Federal Agencies on Dose Limits for Persons Exposed
to Transuranium Elements in the General Environment

The proposed guidance establishes limits on contamination resulting from the disposal of nuclear wastes containing plutonium. The guidance would apply to waste management activities of DOE and DOD. The procedure for Presidential issuance of these types of guidelines involves the concurrence of all Federal agencies involved in radiation activities, including HEW, NRC, DOE, and DOD.

A cursory check with these agencies revealed that the established procedure has not been followed in this instance. We recommend that the proposed guidance be returned to EPA with the request that they review the proposal with the other agencies at policy levels. This will ensure that the President receives the best possible advice from radiation experts government-wide prior to establishing radiation exposure limits.

Parenthetically, we call your attention to the fact that early this week the President approved the establishment of a Radiation Policy Council, chaired by EPA, to coordinate Federal radiation activities. We understand that an early initiative of the Council will be a complete review of the Radiation Guidance functions of EPA. We believe our recommendation for a Federal agency review of the Transuranium Guidance is consistent with the intent of the President's decision.

ID 794684

THE WHITE HOUSE

WASHINGTON

DATE: 24 OCT 79

FOR ACTION: STU EIZENSTAT *nc*

ZBIG BRZEZINSKI *CONCURS*

JIM MCINTYRE *attached*

FRANK PRESS *CONCURS*

INFO ONLY: THE VICE PRESIDENT

SUBJECT: COSTLE MEMO RE RADIATION PROTECTION GUIDANCE TO FEDERAL AGENCIES ON DOSE LIMITS FOR PERSONS EXPOSED TO TRANSURANIUM ELEMENTS IN THE GENERAL ENVIRONMENT

+++++

+ RESPONSE DUE TO RICK HUTCHESON STAFF SECRETARY (456-7052) +

+ BY: 1200 PM FRIDAY 26 OCT 79 +

+++++

ACTION REQUESTED:

STAFF RESPONSE: () I CONCUR. () NO COMMENT. () HOLD.

PLEASE NOTE OTHER COMMENTS BELOW:

[Handwritten signature]



EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF MANAGEMENT AND BUDGET
WASHINGTON, D.C. 20503

October 29, 1979

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EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF MANAGEMENT AND BUDGET
WASHINGTON, D.C. 20503

October 29, 1979

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

THE ADMINISTRATOR

MEMORANDUM FOR THE PRESIDENT

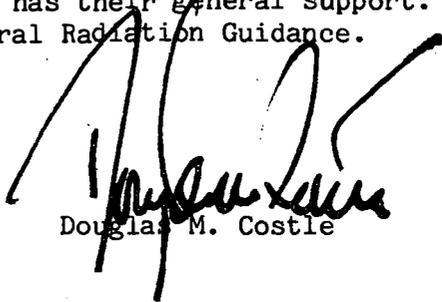
SUBJECT: Radiation Protection Guidance to Federal Agencies on Dose Limits for Persons Exposed to Transuranium Elements in the General Environment

Executive Order 10831 and Public Law 86-373 require that the Administrator of the Environmental Protection Agency "...advise the President with respect to radiation matters, directly or indirectly affecting health, including guidance for all Federal agencies in the formulation of radiation standards." In accordance with this directive, we have prepared for your signature Federal Radiation Protection Guidance intended to limit the radiation dose that persons may receive from land contaminated by transuranium elements (e.g., Plutonium).

This Guidance would limit radiation doses resulting from transuranium element contamination to one millirad per year to the pulmonary lung or three millirad per year to the bone. Most of the existing transuranium element contamination in the United States is at levels below that specified by these recommendations, and no large-scale remedial actions are expected. However, any environmental contamination that could generate a radiation dose greater than specified in the Guidance would have to be cleaned up by the responsible agency. The Department of Energy would, for example, be responsible for cleaning up any contamination associated with the Rocky Flats Facility in Colorado that exceeds the Guidance. A more detailed explanation and justification for these recommendations is included in the Guidance.

This Guidance was developed with the cooperation of all affected agencies, including DOE and DOD, and has their general support. I recommend that you approve this Federal Radiation Guidance.

OCT 16 1979


Douglas M. Costle

Attachment

THE WHITE HOUSE
Washington, D.C.

RADIATION PROTECTION GUIDANCE TO FEDERAL AGENCIES ON DOSE LIMITS FOR
PERSONS EXPOSED TO TRANSURANIUM ELEMENTS IN THE GENERAL ENVIRONMENT

Recommendations 1 through 3 in the Radiation Protection Guidance on Dose Limits for Persons Exposed to Transuranium Elements in the General Environment are approved for the guidance of Federal agencies; the Administrator of the EPA is directed to interpret and clarify each of the recommendations, as necessary, in cooperation with other agencies; and the Administrator is authorized to publish such interpretations and clarifications in the Federal Register.

Jimmy Carter

RADIATION PROTECTION GUIDANCE TO FEDERAL AGENCIES ON DOSE LIMITS FOR PERSONS EXPOSED TO TRANSURANIUM ELEMENTS IN THE ENVIRONMENT

INTRODUCTION

Executive Order 10831 and Public Law 86-373 (42 U.S.C. 2021(h)) require that the Administrator of the Environmental Protection Agency (EPA) "...advise the President with respect to radiation matters, directly or indirectly affecting health, including guidance for all Federal agencies in the formulation of radiation standards, and in the establishment and execution of programs of cooperation with States." In accordance with this directive, the Environmental Protection Agency has developed recommendations that are intended to limit the radiation doses that persons may receive from transuranium elements present in the environment from existing or future unplanned contamination. These recommendations are intended for the guidance of those Federal agencies which have statutory responsibilities for producing or using transuranium elements, or for licensing or regulating such activities.

The Guidance considers both the inhalation and ingestion pathways of transuranium elements to humans and establishes a maximum dose rate to lung and bone for members of the general population. The recommendations provide for a dose rate limit to the specified internal organs of the most exposed segment of the population. This dose rate limit can be associated with an estimated maximum risk of one additional death per million persons continuously exposed at this rate per year. Implementation of the Guidance requires that Federal agencies estimate dose rates to persons from measured air and/or soil concentration levels. Most of the existing areas of transuranium element contamination in the United States will meet these criteria, and no large scale remedial actions will be required. The same numerical recommendations also apply for all future accidents, with the additional requirements that remedial actions be started as soon as possible and carried out to achieve as little residual environmental contamination as possible. Federal agencies will be expected to plan their activities to avoid future releases of transuranium nuclides to the environment, and minimize the consequences of accidental releases. Remedial action for all future incidents of contamination should have as its objective the restoration of the environment as nearly as possible to its former state, and the reduction of risk to any individual in the general population to levels of a few percent of the maximum dose rates specified in these recommendations. It is intended that both the limiting exposure to individuals and the cumulative exposure to the population be minimized to the extent practicable.

GUIDANCE RECOMMENDATIONS

In order to assure the protection of persons in the general population by limiting the radiation doses that an individual in a critical segment of the population may receive from concentrations of transuranium elements present above average background levels in the general environment, the following recommendations shall apply for the guidance of Federal agencies:

1. The annual alpha radiation dose rate to members of the critical segment of the exposed population as the result of exposure to transuranium elements in the general environment should not exceed either:

- a. 1 millirad per year to the pulmonary lung, or
- b. 3 millirad per year to the bone.

2. For newly contaminated areas, the Federal agency responsible for implementation of these recommendations should take immediate action to minimize both the residual levels of transuranium elements in the general environment and the radiation exposure of the general public. Determination and implementation of further appropriate measures, to ensure that projected dose rates to persons in the general population are as low as reasonably achievable and in full compliance with the above recommendations, should begin as promptly as possible and should be completed within a reasonable period of time. Additionally, in the design and operation of any facility handling materials containing transuranium elements, steps should be taken to ensure that risks due to future accidental releases will be minimal. Accordingly, Federal agencies should assure that appropriate systems, methods, and procedures are installed and utilized in all such facilities, with the intent that doses to persons in the general population from future unplanned releases will not exceed a small fraction of the recommendations for existing contaminated areas.

3. The recommendations are to be used only as radiation protection guidance for presently existing cases of environmental contamination by transuranium elements and for possible future cases of environmental contamination from unplanned releases of transuranium elements. Federal agencies are not to use them as limits for planned releases of transuranium elements into the general environment.

DEFINITIONS

"as low as reasonably achievable" means that all unnecessary radiation exposures be avoided and that radiation exposure of individuals and population groups be minimized, taking into account economic and social considerations (adapted from ICRP Publication 22).

"bone" means osseous tissue. The average total weight of this tissue is assumed to be 5,000 grams.

"critical segment of the exposed population" means that group of persons within the exposed population who, because of residency or other factors, can on the average be expected to receive the highest lifetime radiation dose to the pulmonary region of the lung or to the bone from a specified source of transuranium element contamination.

"general environment" means the total terrestrial, atmospheric and aquatic environments outside the boundaries of Federally-licensed facilities or outside the boundaries of sites which are under the direct control of a Federal agency.

"millirad per year to the bone" means the dose rate attained after 70 years of chronic exposure. This dose rate is calculated by dividing the alpha energy absorbed in the bone during the 70th year by the bone mass.

"millirad per year to the pulmonary lung" means the equilibrium dose rate for chronic inhalation. This dose rate is calculated by dividing the alpha energy absorbed per year in the pulmonary lung by the lung mass.

"pulmonary lung" means the region of the lung consisting of respiratory bronchioles, alveolar ducts, atria, alveoli, and alveolar sacs. The average total weight of this tissue, including the capillary blood, is assumed to be 570 grams.

"rad" is the unit of absorbed dose, defined as the energy imparted to tissue by ionizing radiation, divided by the mass of the tissue. One rad is equal to the absorption of 100 ergs of radiation energy per gram of matter.

$$1 \text{ millirad (mrad)} = 10^{-3} \text{ rad.}$$

"transuranium elements" means all chemical elements with atomic numbers greater than that of uranium as classified in the Periodic Table of Elements.

SUPPLEMENTARY INFORMATION

Background: The Environmental Protection Agency published a Notice of Intent to Review the Need for Establishing New Rules for Plutonium and Other Transuranium Elements in the Federal Register, Vol. 39, p. 34098, on September 23, 1974. The Agency held public hearings to gather information in Washington, D.C., on December 10-11, 1974, and in Denver, Colorado, on January 10, 1975. The proceedings of these hearings were published as EPA Document ORP/CSD-75-1.

The Agency published the basis and text of the proposed Federal Radiation Protection Guidance in the Federal Register, Vol. 42, pp. 60956-9, on November 30, 1977. Comments were invited from interested members of the public, industry, Federal agencies, and others. The Office of Radiation Programs also published a technical summary document explaining the proposed recommendations (EPA 520/4-77-016), and the Agency has provided responses to all comments received (Technical Report, EPA 520/4-78-010).

The Agency has also published additional related documents entitled "The Ecological Impact of Land Restoration and Cleanup" (Technical Report, EPA 520/3-78-006), "Selected Topics: Transuranium Elements in the General Environment" (EPA/ORP Technical Note CSD-78-1), and "Plutonium Air Inhalation Dose (PAID)" (EPA/ORP Technical Note CSD-77-4).

The recommendations were developed under authorities of the former Federal Radiation Council, which was established by Executive Order 10831 and Public Law 86-373, and transferred to the Environmental Protection Agency (EPA) by Reorganization Plan No. 3 of 1970. Technical support was provided by liaison representatives from the Department of Energy, the Nuclear Regulatory Commission, the Department of Defense, the National Aeronautics and Space Administration, the Department of State, the Department of Commerce, the Department of the Interior, the Department of Health, Education, and Welfare, the Department of Transportation, and the Department of Housing and Urban Development.

Rationale for Guidance: The recommendations are intended to protect the public health by limiting exposure to transuranium elements. The Guidance establishes maximum dose rates applicable to individuals in the general population, based on the criteria that any added risk to an individual from exposure to the transuranium elements must be very small, and that the total cost of implementing the Guidance should not be excessive. Because the recommendations are directed toward protecting those few people at greatest risk, the vast majority of the population is assured even lower risks.

In deriving this Guidance, the calculation of risks resulting from radiation exposure was based on the assumption that there is some risk no matter how small the amount of absorbed radiation. The risk at very low dose levels is assumed to be directly proportional to the damage actually observed at much higher dose levels. Health risks resulting from radiation exposure were estimated mostly by using models and recommendations that were published by the Advisory Committee on the Biological Effects of Ionizing Radiation of the National Academy of Sciences (NAS-BEIR Committee) in its reports entitled "The Effects on Populations of Exposure to Low Levels of Ionizing Radiation" (1972), and "Health Effects of Alpha-Emitting

Particles in the Respiratory Tract" (1976). The implications of the specific dose rates and associated risks chosen for this Guidance are discussed in the following section.

Costs which will be involved in implementing the Guidance were also considered. These costs can be expected to vary by location, contamination level, and other factors. It is estimated that costs of remedial actions may range from several hundred to a half-million dollars per acre, depending on the method(s) used and the type of storage required. Because the size of the contaminated areas at all known existing locations which may need remedial action is very small and the levels of contamination are low, the total costs of implementation for these existing areas can be expected to be small. While the costs of remedial actions for future accidents are only speculative, and may be very large for any particular situation, the low probability of catastrophic events makes it likely that the average annual costs of implementing this Guidance will also be relatively small. It can therefore be concluded that the costs of implementing the Guidance would be reasonable and achievable.

Risk Perspectives: Radiation may increase somatic risks, primarily cancer, to those exposed, as well as increase the genetic risks to future generations. Inhalation of transuranium elements primarily causes lung cancers, and ingestion primarily causes bone and liver cancers. Translocation to other body organs introduces additional risks. For a person continuously exposed over an entire lifetime at the maximum level permitted by the Guidance, the added lifetime risk of developing a cancer is about 5 per 100,000, or 1 per million per year. This can be compared with a normal expectation of about 16,000 cancer deaths in a cohort of 100,000 persons, or a risk to the individual of one cancer death per six deaths. Genetic damage may result from retention of transuranium elements in gonadal tissue. For the extreme case of exposure of both parents at the Guidance limit for 30 years, each 100,000 live births may produce from 1 to 20 genetic defects in the first generation. This can be compared to the approximately 6,000 genetic defects normally observed in 100,000 live births. While reputable scientific opinions may differ on the accuracy of the risk estimates, they represent the best technical judgment based on currently available information.

The above projections of maximum lifetime health impacts are believed greater than can normally be expected because of generally observed decreasing environmental contamination levels with time, the mobility of the "critical segment of the general population," and other conservative assumptions used in the calculations.

In general, it can be expected that the inhalation pathway will represent the principal hazard to persons in the nearby population. The intake of transuranium elements through the food chain is limited

because most plants have a very small uptake from the soil and the human intestinal tract has a large discrimination factor for transuranium elements. However, the food pathway may affect a relatively large population. Uptake in drinking water is generally not significant because most transuranium elements are relatively insoluble, although some recent evidence indicates that chlorination may increase the solubility of plutonium.

The level of risk implied by this Guidance represents a judgment that the numerical limits in the Guidance will provide adequate public health protection and that any residual risks from accidental environmental contamination by transuranium nuclides will be minimal.

In regulating a nonthreshold substance, the establishment of a limit other than zero implies a judgment that no further reduction in risks should be attempted at the time for a number of reasons, including the fact that very large additional costs would have to be imposed on the public in order to achieve any appreciable additional reduction in risks. Because the judgments made in arriving at the exposure levels specified in the recommendations were based on the particular facts stated here, these should be viewed as applicable only to this situation. This Guidance should not be interpreted as an indication of a generally acceptable level of risk for environmental hazards.

Scope of Guidance: The Guidance covers all transuranium element contamination in the general environment above general background levels. The recommendations apply to all individuals in the general population who are outside the boundaries of any Federally-owned or -operated facility, Federally-licensed facility, or other site under the direct control of a Federal agency. The States are not precluded from adopting a more restrictive standard or recommendation. The limits apply specifically to the critical segment of the exposed population, which is that group of persons in the general population who, because of residency or other factors, can on the average be expected to receive the highest lifetime radiation dose from an existing source of transuranium elements.

The recommendations are given in terms of a maximum accumulated annual dose to the pulmonary region of the lung for the inhalation pathway or to bone for the ingestion pathway. Although the Guidance specifies dose rate limits to only these organs, it also considers and limits the potential accumulation in other body organs including gonadal tissues. The annual dose rate to the designated organs can be estimated from representative measurements of air concentrations or soil contamination levels, using either site-specific data or calculations based on reasonable procedures and assumptions.

The same numerical recommendations apply to both those places presently contaminated and places that may be accidentally contaminated in the future. The possible differences between these two cases were recognized and issuing of separate numerical guides was considered. However, there is no specific rationale based on health risk considerations that would justify different guidance levels, and possible differences in cost of implementation or other factors are not well known enough to be useful in such a determination. The Agency emphasizes, however, that there is a difference in the cleanup procedures for the two situations because newly deposited contamination is generally much more mobile than at some later time. Therefore, the Guidance requires that all new contamination be stabilized or cleaned up as soon as possible after it occurs, in order to minimize radiation exposures of the general public and prevent widespread dispersion of the radioactivity. The Agency also recommends that, in order to provide adequate assurance of compliance, the objective of future remedial actions should be to achieve residual environmental levels which will result in dose rates well below the given numerical limits for any "critical segment" of the population. While the primary concern must be protection of the individual, the total population impacts for such incidents must also be considered and minimized to the extent practicable. The potential impacts of each incident must be evaluated on a site-specific basis.

The Guidance recommendations apply only to the transuranium elements and only to existing or possible future soil contamination. It is not appropriate to use the numerical dose rate limits for pulmonary lung and for bone given in this Guidance, or any other limits derived from these, and apply them to any other radionuclides without detailed evaluations as to their applicability, including analyses of pathways, dosimetry, and risk relationships.

Implementation: Implementation of the provisions of the Guidance is the responsibility of the Federal agency under whose jurisdiction the facility which caused the environmental contamination operates, or of the Federal agency whose operations otherwise cause the environmental contamination. Implementation includes determining both the actual or potential hazard to people and instituting remedial actions where required. A more detailed discussion of requirements is given in the "Response to Comments" document.

Federal agencies can generally show compliance with the Guidance recommendations by publishing the results of measurements of the concentration of transuranium elements in air and/or soil, and calculating the dose rates to internal organs of persons living in the vicinity of a specified site. All environmental pathways must be considered in such calculations, and the evaluations must be based on the best available data.

To facilitate implementation of the Guidance, numerical values for levels of soil or air concentrations can be derived which can reasonably be expected to result in dose rates less than the Guidance recommendations. On the basis of limited data available for several existing sites, a soil contamination level of $0.2 \mu\text{Ci}/\text{m}^2$, for samples collected at the surface to a depth of 1 cm and for particle sizes under 2 mm, would establish a reasonable "screening level" for this purpose. Similarly, an air concentration "screening level" of $1 \text{ fCi}/\text{m}^3$ for alpha-emitting transuranium nuclides (based on an activity median aerodynamic diameter (AMAD) of $0.1 \mu\text{m}$) may be used under most circumstances. Using such derived numerical values can reduce the size of land areas requiring evaluation and minimize the number of measurements needed. Areas which do not exceed the "screening level" generally would be considered in compliance with the Guidance recommendations; those that exceed it would require more intensive evaluation to determine the actual dose rates to exposed persons.