

**FINDING OF NO SIGNIFICANT IMPACT
PROPOSED AMENDMENT TO 10 CFR PART 835**

AGENCY: U.S. Department of Energy

ACTION: Finding of No Significant Impact

SUMMARY: The Department of Energy (DOE) has prepared an Environmental Assessment (EA), DOE/EA-1086 (revised), for issuance of amendments to 10 CFR Part 835, "Occupational Radiation Protection." Based on the analyses in the revised EA, DOE has determined that the proposed action is not a major Federal action significantly affecting the quality of the human environment, within the meaning of the National Environmental Policy Act (NEPA) of 1969. Therefore, the preparation of an environmental impact statement (EIS) is not required and DOE is issuing this Finding of No Significant Impact (FONSI).

SINGLE COPIES OF THE ENVIRONMENTAL ASSESSMENT ARE AVAILABLE FROM:

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SUPPLEMENTARY INFORMATION: On December 14, 1993, the Department of Energy (DOE) published a final rule, 10 CFR Part 835, "Occupational Radiation Protection," which applies to normal operations at all DOE and DOE contractor facilities where individuals could be occupationally exposed to ionizing radiation. The rule codified certain requirements previously

promulgated in DOE Order 5480.11, "Radiation Protection for Occupational Workers," which implemented the President's Radiation Protection Guidance to Federal Agencies for Occupational Exposure and guidance issued by authoritative organizations, including the National Council on Radiation Protection and Measurements and the International Commission on Radiological Protection. In addition, 10 CFR Part 835 codified the "as low as is reasonably achievable" (ALARA) process as the primary means of maintaining occupational radiation exposures below the regulatory exposure limits. On August 13, 1996 DOE issued a FONSI based upon DOE/EA-1086 for the issuance of proposed amendments to 10 CFR 835. Subsequently, on December 23, 1996, DOE published a Notice of Proposed Rulemaking to amend 10 CFR 835, providing a 60 day period (extended to 90 days on February 21, 1997) for public review and comment. The final version of the amendments to 10 CFR 835 were modified in response to public comments. Accordingly, the original EA and FONSI have been revised to incorporate consideration of these modifications.

The final rule amends 10 CFR Part 835 with three categories of changes: additional requirements; clarifications to existing requirements; and exceptions to requirements. The changes are described in the EA. All but two of the changes have no potential for environmental impact and were not analyzed further. However, DOE determined that the additional requirements for sealed radioactive source control and tritium surface radioactivity values required analysis for potential environmental impacts.

The amendments to 10 CFR Part 835 are the culmination of a systematic analysis to consolidate the elements of DOE's comprehensive radiation protection program and to identify those portions of this program that should be codified in 10 CFR Part 835. As a result of this analysis, DOE has amended all of the subparts of 10 CFR Part 835. These amendments range from minor technical or language clarifications to the restructuring of entire subparts. The analysis included a review of the requirements in DOE Notice 441.1, "Radiological Protection for DOE Activities," and resulted in the codification of certain provisions of that Notice, including those for posting of areas where radioactive material is present and for control of sealed radioactive sources. In

addition, the amendments clarify the scope of 10 CFR Part 835 to explicitly exclude both transportation of radioactive materials conducted in compliance with applicable DOE Orders and DOE activities performed on foreign soil when those activities are performed in accordance with occupational radiation protection requirements agreed to by both the United States and the cognizant foreign government. DOE has also added a removable tritium surface contamination value to appendix D of 10 CFR part 835. The value will be used to determine the need for posting of areas to warn individuals of the presence of radioactive contamination and for implementing other radiological controls.

In addition, the final rule includes several changes aimed at ensuring continuity in DOE's system of occupational radiation protection standards, now that the DOE Radiological Control Manual is no longer a mandatory standard. These changes are based on articles in the Manual and primarily address area access control, radioactive material labeling, and radiation safety training. These changes codify requirements previously imposed through DOE's system of contractually-implemented standards. Finally, the final rule revises or deletes certain requirements that DOE has determined to be unduly burdensome or unenforceable, including standards related to workplace monitoring, recordkeeping, and facility design.

ENVIRONMENTAL IMPACTS: The issuance of the amendments will not significantly change DOE's occupational radiation protection standards. The amendments primarily establish requirements that were originally established in the DOE Radiological Control Manual and that are currently contained in DOE Notice 441.1. Additional requirements are established that are consistent with current U.S. Nuclear Regulatory Commission radiation protection regulations. Any beneficial impacts resulting from such improved implementation, however, are too speculative to analyze meaningfully.

A significant feature of the DOE dose limitation system is that meeting the specific dose limit does not, by itself, constitute satisfactory compliance with the regulation. DOE facility operators limit the risk of health effects to workers and to members of the public by restricting doses to levels

that are ALARA. Through these efforts, the average annual dose received by DOE radiological workers was less than 0.1 rem for each of the years 1990 through 1996 (less than 1/50 of the annual dose limit).

The environment most affected by the requirements of the final rule are designated controlled areas at sites where DOE radiological activities are conducted. These amendments will have a direct impact on the occupational radiological environment of general employees at DOE and DOE contractor sites and facilities.

The final rule establishes levels of radioactivity for sealed radioactive sources below which specific controls will not be required. In the event of a lost sealed radioactive source, the environment beyond controlled areas at DOE or DOE contractor facilities could be affected. The levels established for the control of sealed radioactive sources included consideration of this potential situation. The EA shows that the maximum risk to a member of the public from exposure to a nonaccountable sealed radioactive source would be 1 chance in 20,000 for contracting fatal cancer. In view of the extremely unusual circumstances under which such an exposure could occur, the credible risk is much lower, rendering the overall impact insignificant.

The tritium surface contamination values define the radioactive contamination levels below which materials and equipment may be released from radiological areas for use in controlled areas at a DOE or DOE contractor facility. 10 CFR Part 835 does not address release of equipment and materials beyond the controlled area. The EA shows that the consequences of exposure to surfaces contaminated with tritium at levels equal to or below the tritium surface contamination value are small and that the likelihood of anyone being harmed by such exposure is remote.

Promulgation of these amendments will not cause either an increase or decrease in normal operational or accidental effluent discharges of radioactivity or hazardous materials to the air or water; therefore, no impacts on environmentally sensitive resources are anticipated.

ALTERNATIVES CONSIDERED: In the EA, DOE considered three alternatives to the sealed radioactive source control requirements and tritium surface radioactivity values in the amendment to 10 CFR Part 835: (1) not proposing the amendment (no action); (2) establishing more restrictive requirements; and (3) establishing less restrictive requirements.

Sealed Radioactive Source Control Requirements

Under the no action alternative, DOE would not fulfill the commitment it made in the preamble to final rule 10 CFR Part 835 (Federal Register, Vol. 58, No. 238, pg. 65466; 12/14/93) to codify requirements for control of sealed radioactive sources. This commitment is based on the DOE practice of codifying nuclear safety requirements. Also, DOE would not receive the benefit of public comments on these issues that is afforded through the rulemaking process. The codification of sealed radioactive source requirements permits DOE to impose nuclear safety requirements for accountable sealed radioactive sources which, if violated, would provide a basis for assessment by DOE of civil and criminal penalties under the Price-Anderson Amendments Act (PAAA).

Moreover, the sealed radioactive source requirements established in the final rule are consistent with DOE Notice 5400.9, which was originally issued in December 1991. Each facility that possessed or used sealed radioactive sources was directed to establish sealed radioactive source control procedures consistent with the provisions of the Notice. The Notice has been extended each year since 1991 up through the latest extension via DOE Notice 441.3. In addition, the DOE Radiological Control Manual, at sites where it is contractually incorporated, requires continued compliance with the provisions of DOE Notice 5400.9.

With regard to establishment of either more or less restrictive requirements (alternatives 2 and 3 above), DOE stated in the NOPR that it would consider comments on the proposed sealed radioactive source provisions. While indicating support for codifying these requirements, public commentors indicated that the accountability threshold values proposed for inclusion in appendix

E of 10 CFR 835 were overly restrictive relative to the hazards associated with the possession and use of the sealed radioactive sources. In light of these comments, DOE has revised the sealed radioactive source requirements as follows: (1) revised appendix E values based on more realistic parameters for the model used to calculate the accountability threshold values in terms of source radioactivity, and a higher dose criterion for the imposition of specific regulatory controls for accountability; and (2) codified a general requirement for all sealed radioactive sources (both accountable and non-accountable) to be used, handled and stored in a manner commensurate with the radiological hazard created by the operation involving the source. In addition to the public comments, the basis for these changes included consideration of DOE environmental and reporting requirements that apply to radioactive sources.

The resulting regulatory system of radiological controls for sealed radioactive sources imposes the most stringent accountability controls for sources that could produce a radiation dose equal to or greater than the criterion for personnel monitoring for general employees of 0.1 rem in a year. In addition, this regulatory system establishes effective general requirements for control of sealed sources having activities below these threshold values.

Although this approach to sealed radioactive source control differs somewhat from that proposed in the NOPR, the changes made in response to public comments compensate each other. The increase in the threshold values for imposing the most restrictive radiological controls is offset by the inclusion of a general requirement that all sealed radioactive sources be used, handled, and stored in a manner commensurate with the hazards created by the operations involving the source. These requirements are comprehensive, reasonably achievable, provide a level of protection consistent with those used throughout the DOE complex since 1991, and do not impose an undue regulatory burden on DOE contractors. DOE has prepared implementing guidance for achieving compliance with these provisions.

Tritium Surface Contamination Values

Under the no action alternative, DOE would not fulfill the commitment it made in the preamble to final rule 10 CFR Part 835 (58 FR 65466; December 14, 1993) to codify requirements for surface contamination values for surfaces contaminated by tritium organic compounds, tritiated hydrogen gas (HT), tritiated water (HTO), and metal tritide aerosols. DOE promulgated surface contamination values for tritium in the DOE Radiological Control Manual in 1992, but this requirement is only applicable when specifically implemented through contractual means and is not applicable by operation of law. Surface contamination values were "Reserved" when DOE originally promulgated 10 CFR Part 835. Also, under the no action alternative, DOE would not receive the benefit of public comments on these issues that is afforded by the rulemaking process. The amendment provides a means for DOE to impose nuclear safety requirements for tritium surface contamination values that, if violated, would provide a basis for assessment by DOE of civil and criminal penalties under the PAAA.

If the surface contamination values for tritium are not promulgated, tritium surface contamination values would be regulated under the generic beta-gamma emitting radionuclide surface contamination values contained in 10 CFR Part 835, appendix D. DOE believes that the generic beta-gamma surface contamination values are overly restrictive for tritium in view of the very small risk to persons exposed to tritium contamination at the proposed values. Using the overly restrictive generic surface contamination values for tritium results in significant costs without a commensurate benefit, which is inconsistent with the ALARA philosophy embraced by DOE. Unnecessary expenditures include the replacement or decontamination costs for equipment and materials that have low tritium surface contamination levels. Additionally, slightly contaminated equipment and materials may have to be disposed of as radioactive waste when, under the amended regulations, they could be released for use in controlled areas.

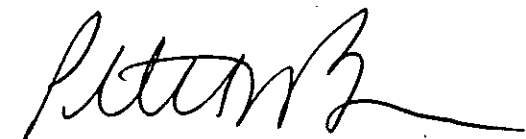
Establishing either more restrictive or less restrictive requirements (alternatives 2 and 3 above) would not be preferable to amending the rule to include tritium surface contamination values

because the values are consistent with those currently in use throughout the DOE complex as provided in the DOE Radiological Control Manual. As previously discussed with regard to the no action alternative, surface contamination values lower than those established in the amendment are overly restrictive.

Although it may be possible to establish higher levels in view of the low risk estimate for serious health effects, higher levels do not currently appear to be required by operational needs. The amended rule appears to be prudent, compatible with operational needs, and provides commensurate economic benefit.

DETERMINATION: Based on analyses in the revised EA, the issuance of the amendments to 10 CFR Part 835 does not constitute a major Federal action significantly affecting the quality of the human environment within the meaning of NEPA. Therefore, an EIS for the proposed action is not required.

Issued at Washington, D.C., this 31st day of August, 1996.



Peter N. Brush
Acting Assistant Secretary
Environment, Safety and Health