



Department of Energy
Washington, DC 20585

February 9, 2000

Dr. Robert W. Kuckuck
Deputy Director of Operations
Lawrence Livermore National Laboratory
P.O. Box 0808, L-001
Livermore, California 94551

Dear Dr. Kuckuck:

On December 29, 1995, the Department of Energy (DOE) Assistant Secretary, Environment, Safety and Health issued three exemption decisions, which granted Lawrence Livermore National Laboratory (LLNL) exemptions, with specified conditions, from certain provisions to Title 10 Code of Federal Regulations, Part 835 (10 CFR 835), *Occupational Radiation Protection*. Title 10 CFR 835 was originally published as a final rule in the Federal Register on December 14, 1993. On November 4, 1998, an amendment to 10 CFR 835 was published in the Federal Register, which revised several of the requirements in 10 CFR 835 from which LLNL was granted exemption. The Office of Worker Health and Safety (EH-5) reviewed the December 29, 1995, exemption decisions and determined that, based on changes made to the requirements in the November 4, 1998, amendment, LLNL no longer needs the following exemptions:

- 10 CFR 835.601(c); authorized revised coloring of radiological area postings.
- 10 CFR 835.603(b); authorized revised wording for posting of High Radiation Areas.
- 10 CFR 835.603(f); authorized revised wording for posting of High Contamination Areas

Title 10 CFR 835 Subpart B specifies that DOE activities be conducted in accordance with a documented Radiation Protection Program (RPP) as approved by DOE. Accordingly, the above exemption decisions will be considered to be terminated when LLNL achieves compliance with their RPP, which has been updated as a result of the November 4, 1998, amendment to 10 CFR 835.

Sincerely,

A handwritten signature in black ink, appearing to read "David Michaels", is written over a horizontal line.

David Michaels, PhD, MPH
Assistant Secretary
Environment, Safety and Health

cc:
Distribution





Department of Energy

Washington, DC 20585

December 29, 1995

Dr. Dennis K. Fisher
Associate Director
for Plant Operations
Lawrence Livermore
National Laboratory
Mail Stop L-668
P.O. Box 808
Livermore, California 94551-9900

Dear Dr. Fisher:

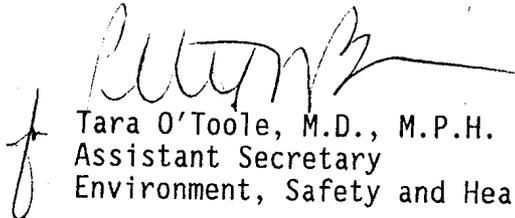
This responds to your May 1, 1995, letter requesting the Department of Energy (DOE) to approve a request from Lawrence Livermore National Laboratory (LLNL) for permanent exemption from portions of Title 10, Code of Federal Regulations, Part 835, "Occupational Radiation Protection" (10 CFR 835). Your request specifically addresses the requirement in 10 CFR 835.601(c) regarding the color of certain radiological area postings. LLNL currently bases its high radiation area posting design (in particular, the way the "DANGER" warning is presented) on a generic safety standard accepted by the American National Standards Institute (ANSI) and referred to as ANSI Z535.2-1991. The Office of Worker Protection Programs and Hazards Management (EH-52) has reviewed the request, and their assessment is summarized below.

LLNL stated in its request that changing the color and design of its high radiation area postings to conform with part 835 and its associated implementation guides would, at the very least, require current postings to be reprinted and could increase the risk of harm to employees since a new warning format would have to be learned and recognized. The request further stated that LLNL recognized that its current coloring and design scheme is inconsistent with that used by all other DOE sites. Discussions with LLNL personnel regarding this issue resulted in a modified high radiation area posting that incorporates a display of the radiation symbol that is compliant with 10 CFR 835.601(c).

Based on EH-52's review of the request, the modified example, and discussions with Oakland Operations Office (OAK) and LLNL personnel, DOE grants a permanent exemption to LLNL from the posting requirement described by 10 CFR 835.601(c).

The DOE Office of Defense Programs staff concur with this determination.

Sincerely,


Tara O'Toole, M.D., M.P.H.
Assistant Secretary
Environment, Safety and Health

2 Enclosures

cc w/enclosures:

Victor H. Reis, DP-1

Keith Christopher, EH-3

Docketing Clerk, EH-3

Michael J. Cornell, OAK

Radiological Control

Coordinating Committee

Price Anderson Amendments

Act Coordinator

Technical Position

Lawrence Livermore National Laboratory Title 10, Code of Federal Regulations, Part 835

Lawrence Livermore National Laboratory (LLNL) requests exemption from the requirements of Title 10, Code of Federal Regulations, "Occupational Radiation Protection," Part 835 (10 CFR 835). Specifically, LLNL addresses 10 CFR 835.601(c) as it applies to the coloring of certain radiological area postings.

Discussion

Request

LLNL requested that it be allowed to use color schemes described in the Z535.2-1991 standard approved by the American National Standards Institute (ANSI) for radiation and high radiation area postings, respectively. ANSI Z535.2-1991, "Environmental and Facility Safety Signs," specifies in section 5.1.3 that the word "DANGER" be in white letters on a red oval background surrounded by a white border, all on a black rectangular field; all other symbols and information are to be in black on a white background.

LLNL stated that its employees are trained to associate the color of a sign with the hazard level of the situation described by the sign. LLNL further stated that it has never distinguished between the causes of a hazard and to start doing so would "likely introduce errors based on human factors." The laboratory also pointed out that if the exemption is denied it will then be forced to reprint all of its high radiation area postings and modify all radiation safety training documents and programs.

Applicable Requirements

10 CFR 835.601(c): "Required signs and labels shall have a yellow background. The radiation symbol shall be black or magenta."

Analysis

The Office of Worker Health and Safety reviewed LLNL's request for permanent exemption and found the request met the requirements of Title 10, Code of Federal Regulations, Part 820, "Procedural Rules for DOE Nuclear Activities" (10 CFR 820), subpart E. Specifically, LLNL agreed to modify its current high radiation area posting format to include presenting a black radiation symbol on a yellow, circular field.

Conclusion

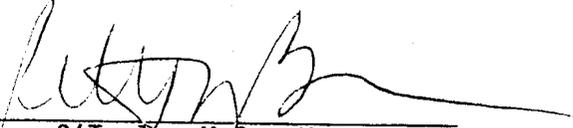
A permanent exemption to 10 CFR 835.601(c) should be granted to LLNL with respect to the modified high radiation area posting submitted by LLNL in support of the exemption request.

EXEMPTION DECISION

Pursuant to title 10, Code of Federal Regulations, part 820.61, the Assistant Secretary for Environment, Safety and Health is authorized to exercise authority on behalf of the Department of Energy with respect to requests for exemption from nuclear safety rules relating to the radiological protection of workers, the public, and the environment.

On May 1, 1995, Lawrence Livermore National Laboratory (LLNL) filed a request with the Department for permanent exemption from Title 10, Code of Federal Regulations, Part 835, "Occupational Radiation Protection" (10 CFR 835). In particular, LLNL requested exemption from the radiological area posting coloring requirement in 10 CFR 835.601(c) for high radiation area postings, especially presentation of the word "DANGER" and the radiation symbol.

Based on a review of the supporting documentation and after reviewing the criteria for exemption relief, I hereby approve the request from LLNL for a permanent exemption from the applicable posting requirement in 10 CFR 835.601(c). Specifically, I find that the exemption criteria at 10 CFR 820.62 have been met. I have read the exemption request and the technical position prepared by the Office of Worker Protection Programs and Hazards Management (EH-52) and have determined that the exemption is authorized by law; will not present undue risk to public health and safety, the environment, or facility workers; and is consistent with the safe operation of a DOE nuclear facility. I also find that the special circumstances, described in the Technical Position prepared by EH-52, constitute a sufficient basis upon which to grant this exemption.


Tara O'Toole, M.D., M.P.H.
Assistant Secretary
Environment, Safety and Health

12/29/95
Date



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Washington, DC 20585

December 29, 1995

Dr. Dennis K. Fisher
Associate Director
for Plant Operations
Lawrence Livermore
National Laboratory
Mail Stop L-668
P.O. Office Box 808
Livermore, California 94551-9900

Dear Dr. Fisher:

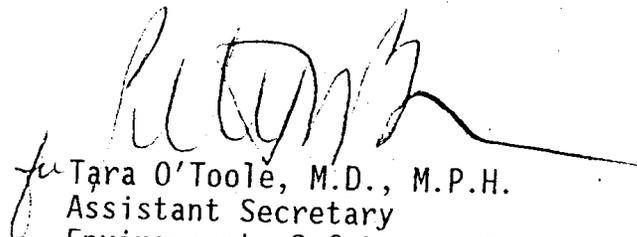
This responds to your May 1, 1995, letter requesting the Department of Energy (DOE) to approve a request from Lawrence Livermore National Laboratory (LLNL) for permanent exemption from portions of Title 10, Code of Federal Regulations, Part 835, "Occupational Radiation Protection" (10 CFR 835). Your request specifically addresses the requirement in 10 CFR 835.603(b) regarding the warning statement for certain radiological area postings. LLNL requested that the "DANGER" warning statement for high radiation area postings be changed to "CAUTION" in certain circumstances. The Office of Worker Protection Programs and Hazards Management (EH-52) has reviewed the request, and their assessment is summarized below.

LLNL stated in the request that it be allowed to modify the standard warning statement for high radiation area postings from "DANGER" to "CAUTION" for radiation fields that are capable of delivering a deep dose equivalent of 100 millirems to 5,000 millirems in 1 hour at 30 centimeters from the radiation source or surface from which radiation emanates. LLNL stated that the modification would more accurately reflect the radiological hazard. The laboratory proposes to reserve use of the "DANGER" warning for radiation exposure rates exceeding 5,000 millirems per hour to 500 rads per hour.

Based on EH-52's review of the request and discussions with Oakland Operations Office (OAK) and LLNL personnel, DOE grants a permanent exemption to LLNL from the posting requirement in 10 CFR 835.603(b) as described above.

The DOE Office of Defense Programs staff concur with this determination.

Sincerely,


Tara O'Toole, M.D., M.P.H.
Assistant Secretary
Environment, Safety and Health

2 Enclosures

cc w/enclosures:
See attached list

Technical Position

Lawrence Livermore National Laboratory Title 10, Code of Federal Regulations, Part 835

Lawrence Livermore National Laboratory (LLNL) requests exemption from the requirements of Title 10, Code of Federal Regulations, Part 835, "Occupational Radiation Protection" (10 CFR 835). Specifically, LLNL addresses 10 CFR 835.603(b) as it applies to the warning statement used for high radiation area postings.

Discussion

Request

LLNL requested that it be allowed to modify the standard warning statement for high radiation area postings from "DANGER" to "CAUTION" for radiation fields that are capable of delivering a deep dose equivalent of 100 millirems to 5,000 millirems in 1 hour at 30 centimeters from the radiation source or surface from which radiation emanates. LLNL stated that the modification would more accurately reflect the radiological hazard. The laboratory proposes to reserve use of the "DANGER" warning for radiation exposure rates exceeding 5,000 millirems per hour to 500 rads per hour at a distance of 30 centimeters from either a source or barrier. LLNL pointed out that the proposed change would be consistent with current U.S. Nuclear Regulatory Commission (NRC) posting criteria.

Applicable Requirements

10 CFR 835.603(b): "High Radiation Area. The words "Danger, High Radiation Area" shall be posted at any area accessible to individuals in which radiation levels could result in an individual receiving a deep dose equivalent in excess of 0.1 rem (0.001 sievert) in 1 hour at 30 centimeters from the source or from any surface that the radiation penetrates."

Analysis

The Office of Worker Health and Safety (EH-5) reviewed the request from LLNL for permanent exemption and found the request met the requirements of Title 10, Code of Federal Regulations, Part 820, "Procedural Rules for DOE Nuclear Activities" (10 CFR 820), subpart E. Specifically, LLNL provided a reasonable justification for modifying the warning statement "DANGER" that is part of high radiation area postings to "CAUTION" for relatively low exposure rates within the high radiation area exposure rate range. The NRC also allows this warning option for high radiation area postings.

Conclusion

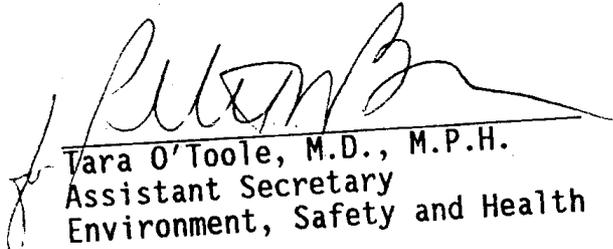
A permanent exemption to 10 CFR 835.603(b) should be granted to LLNL with respect to replacing the warning "DANGER" with "CAUTION" for certain high radiation area postings described above. Under no circumstances, however, is either the "CAUTION" or "DANGER" warning to be the only wording on a high radiation area posting; either warning must be used in conjunction with the radiation symbol and "HIGH RADIATION AREA" statement which specifically indicates the type of radiation area involved.

PART 835 EXEMPTION DECISION

Pursuant to title 10, Code of Federal Regulations, part 820.61, the Assistant Secretary for Environment, Safety and Health is authorized to exercise authority on behalf of the Department of Energy (DOE) with respect to requests for exemption from nuclear safety rules relating to the radiological protection of workers, the public, and the environment.

On May 1, 1995, Lawrence Livermore National Laboratory (LLNL) filed a request with the Department for permanent exemption from certain requirements of Title 10, Code of Federal Regulations, Part 835, "Occupational Radiation Protection" (10 CFR 835). In particular, LLNL requested exemption from the high radiation area posting requirements in 10 CFR 835.603(b). The laboratory seeks authorization to use "CAUTION" as the warning statement for relatively low exposure rates within the high radiation area exposure rate range.

Based on a review of the supporting documentation and after reviewing the criteria for exemption relief, I hereby approve the request from LLNL for a permanent exemption from the high radiation area posting requirements in 10 CFR 835.603(b) in certain circumstances. Specifically, I find that the exemption criteria at 10 CFR 820.62 have been met. I have read the exemption request and the technical position prepared by the Office of Worker Protection Programs and Hazards Management (EH-52) and have determined that the exemption is authorized by law; will not present undue risk to public health and safety, the environment, or facility workers; and is consistent with the safe operation of a DOE nuclear facility. I also find that the special circumstances, described in the Technical Position prepared by EH-52, constitute a sufficient basis upon which to grant this exemption.


Tara O'Toole, M.D., M.P.H.
Assistant Secretary
Environment, Safety and Health

12-29-95
Date



Department of Energy

Washington, DC 20585

December 29, 1995

Dr. Dennis K. Fisher
Associate Director
for Plant Operations
Lawrence Livermore
National Laboratory
Mail Stop L-668
P.O. Box 808
Livermore, California 94551-9900

Dear Dr. Fisher:

This responds to your May 1, 1995, letter requesting the Department of Energy (DOE) to approve a request from Lawrence Livermore National Laboratory (LLNL) for permanent exemption from portions of Title 10, Code of Federal Regulations, Part 835, "Occupational Radiation Protection" (10 CFR 835). Your request specifically addresses the requirement in 10 CFR 835.603(f) regarding the warning statement for certain contamination area postings. LLNL requested that the "DANGER" warning statement for high contamination area postings be changed to "CAUTION" in certain circumstances. The Office of Worker Protection Programs and Hazards Management (EH-52) has reviewed the request, and their assessment is summarized below.

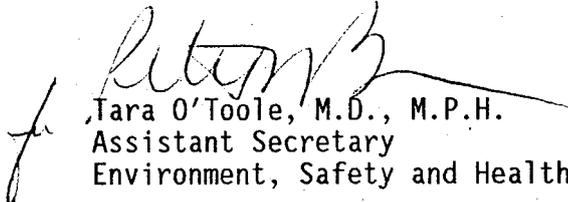
LLNL stated in the request that it be allowed to modify the standard warning statement for high contamination area postings from "DANGER" to "CAUTION" for total contamination levels greater than 100 times the appendix D values in 10 CFR 835 but less than 1,000,000 disintegrations per minute per 100 square centimeters (dpm/100 cm²) for the radioisotopes listed in appendix D. LLNL stated that the modification would more accurately reflect the radiological hazard present at its facility. The laboratory proposes to reserve use of the "DANGER" warning for total contamination levels exceeding 1,000,000 dpm/100 cm².

Based on EH-52's review of the request and discussions with Oakland Operations Office (OAK) and LLNL personnel, DOE grants a permanent exemption to LLNL from the posting requirement in 10 CFR 835.603(f) as described above and subject to the following: LLNL shall prepare for OAK review and approval a technical justification addressing, at a minimum, general and job-specific radiological worker training, personal protective equipment, area entry and

exit procedures, nonroutine situations, and contamination surveys in a manner commensurate with the range of contaminated areas to be identified by the modified posting.

The DOE Office of Defense Programs staff concur with this determination.

Sincerely,


Tara O'Toole, M.D., M.P.H.
Assistant Secretary
Environment, Safety and Health

2 Enclosures

cc w/enclosures:

Victor H. Reis, DP-1
Keith Christopher, EH-3
Docketing Clerk, EH-3
Michael J. Cornell, OAK
Radiological Control
Coordinating Committee
Price Anderson Amendments
Act Coordinator

Technical Position

Lawrence Livermore National Laboratory Title 10, Code of Federal Regulations, Part 835

Lawrence Livermore National Laboratory (LLNL) requests exemption from the requirements of Title 10, Code of Federal Regulations, Part 835 (10 CFR 835), "Occupational Radiation Protection." Specifically, LLNL addresses 10 CFR 835.603(f) as it applies to the warning statement used for high contamination area postings.

Discussion

Request

LLNL requested that it be allowed to modify the standard warning statement for high contamination area postings from "DANGER" to "CAUTION" for total contamination levels greater than 100 times the part 835, appendix D, values but less than 1,000,000 dpm/100 cm² for the radioisotopes specified in appendix D. The "DANGER" warning would be reserved for posting total contamination levels equal to or exceeding 1,000,000 dpm/100 cm². LLNL stated that the modification would more accurately reflect the radiological hazard present at its site.

Applicable Requirements

10 CFR 835.603(f): "High Contamination Area. The words "Danger, High Contamination Area" shall be posted where contamination levels are greater than 100 times the values listed in appendix D of this part."

Analysis

The Office of Worker Protection Programs and Hazards Management (EH-52) reviewed the request from LLNL for permanent exemption and found the request met the requirements of 10 CFR 820, "Procedural Rules for DOE Nuclear Activities," subpart E. Specifically, LLNL provided a reasonable justification for modifying the warning statement "DANGER" that is part of high contamination area postings to "CAUTION." This justification was further supported by clarifying the "< 10⁶ times the Appendix D values" statement to mean 1,000,000 dpm/100 cm² for total contamination.

Conclusion

A permanent exemption to 10 CFR 835.603(f) should be granted to LLNL with respect to replacing the warning "DANGER" with "CAUTION" for certain high contamination area postings as described above. This exemption does not relax or modify the requirements of 10 CFR 835.404, "Radioactive Contamination Control and Monitoring."

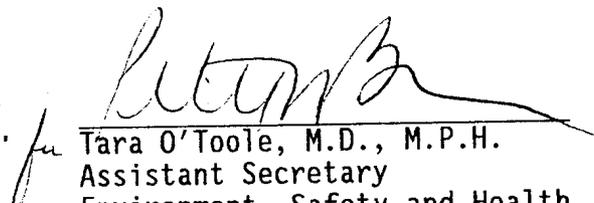
LLNL should also be required to provide an acceptable technical justification regarding this modification to 10 CFR 835.603(f) to OAK for all affected contamination areas. The justification should address, at a minimum: general and job-specific radiological worker training; personal protective equipment; area entry and exit procedures; nonroutine situations; and contamination surveys in a manner commensurate with the range of contaminated areas to be identified by the modified posting. Only after approval of the technical justification by the operations office shall the exemption request go into effect.

PART 835 EXEMPTION DECISION

Pursuant to title 10, Code of Federal Regulations, part 820.61, the Assistant Secretary for Environment, Safety and Health is authorized to exercise authority on behalf of the Department of Energy (DOE) with respect to requests for exemption from nuclear safety rules relating to the radiological protection of workers, the public, and the environment.

On May 1, 1995, Lawrence Livermore National Laboratory (LLNL) filed a request with the Department for permanent exemption from certain requirements of Title 10, Code of Federal Regulations, Part 835, "Occupational Radiation Protection" (10 CFR 835). In particular, LLNL requested exemption from the high contamination area posting requirements in 10 CFR 835.603(f). The laboratory seeks authorization to use "CAUTION" as the warning statement for total contamination levels less than 1,000,000 dpm/100 cm² for the radioisotopes specified in appendix D.

Based on a review of the supporting documentation and after reviewing the criteria for exemption relief, I hereby approve the request from LLNL for a permanent exemption from the applicable posting requirements in 10 CFR 835.603(f) in certain circumstances and subject to the following condition: LLNL shall prepare, and OAK shall review and approve, a technical justification addressing, at a minimum, general and job-specific radiological worker training; personal protective equipment; area entry and exit procedures; nonroutine situations; and contamination surveys in a manner commensurate with the range of contaminated areas to be identified by the modified posting. This condition shall be met prior to putting the modified high contamination area posting in effect. Specifically, I find that the exemption criteria at 10 CFR 820.62 have been met. I have read the exemption request and the technical position prepared by the Office of Worker Protection Programs and Hazards Management (EH-52) and have determined that the exemption is authorized by law; will not present undue risk to public health and safety, the environment, or facility workers; and is consistent with the safe operation of a DOE nuclear facility. I also find that the special circumstances, described in the Technical Position prepared by EH-52, constitute a sufficient basis upon which to grant this exemption.


Tara O'Toole, M.D., M.P.H.
Assistant Secretary
Environment, Safety and Health

12-29-95
Date