

Department of Energy

Washington, DC 20585

May 12, 2000

Mr. John Bradburne
President
Fluor Fernald
P.O. Box 538704
Cincinnati, Ohio 45253-8704

Dear Mr. Bradburne:

This is an update to the exemption from certain provisions of Title 10 Code of Federal Regulations, Part 835 (10 CFR 835), "Occupational Radiation Protection," which was granted to Fernald Environmental Restoration Management Corporation (FERMCO) on January 3, 1996. On April 11, 2000, you provided this office with a clarification that although the company name of FERMCO has been changed to Fluor Fernald, Inc., the change has no effect on your company's status as a legal entity.

FERMCO requested exemptions from certain posting and labeling requirements as they applied to areas with fixed contamination. In response to the request, a set of exemptions was granted, with conditions, which intended to permit a practical application of the system of radiation protection provided in 10 CFR 835 to adequately provide warning of radiological hazards in the workplace.

On November 4, 1998, the Department published an amendment to 10 CFR 835 in the Federal Register. The amendment included renumbering of certain provisions and the modification of other provisions. Some of the provisions for which exemptions were granted have been revised: (1) an exemption is no longer needed; or (2) the Exemption Decision needs to be revised to be consistent with the amended rule.

I am enclosing a table of revisions for the Exemption Decision and updated conditions that were modified to reflect the amended 10 CFR 835. This enclosure should be kept with the original Exemption Decision. The original technical position accompanying the Exemption Decision remains in effect.

Sincerely,

A handwritten signature in black ink, appearing to read "David Michaels", is written over the typed name.

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

Enclosure

cc w/enclosure:
C. Huntoon, EM-1
Keith Christopher, EH-10
Docketing Clerk, EH-10
Manager, Ohio Field Office
Radiological Control
Coordinating Committee
Price Anderson Amendments
Act Coordinator

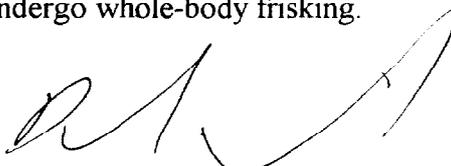
Update of January 3, 1996, Exemption Decision as it now applies to Fluor Fernald, Inc.

<u>Original Exemption Decision</u>	<u>Amended Exemption Decision</u>
§835.603(f)	No Exemption Needed
§835.404(d)(4)	§835.1102(c)(2)

The original technical position accompanying the Exemption Decision remains in effect.

The exemption from 10 CFR 835.1102(c)(2) pertaining to the marking of areas where the total surface contamination levels exceed, but the removable surface contamination levels are less than corresponding surface contamination values specified in appendix D of 10 CFR 835 (hereafter referred to as fixed contamination areas) is granted with the following conditions on the Fernald site:

- a. Access to these areas is controlled and the entry points are posted indicating that the areas are fixed contamination areas;
- b. Radiological areas within the fixed contamination areas that would require posting under section 835.603 are posted;
- c. All individuals permitted unescorted access to these areas have received radiation safety training in accordance with section 835.901(b); and
- d. All individuals leaving these areas undergo whole-body frisking.



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

5-12-2000

Date



Department of Energy

Washington, DC 20585

January 3, 1996

Mr. Don Ofte
President
Fernald Environmental Restoration
Management Corporation
P.O. Box 398704
Cincinnati, Ohio 45239-8704

Dear Mr. Ofte:

This responds to your request for exemption from certain provisions contained in Title 10, Code of Federal Regulations, Part 835 (10 CFR 835), "Occupational Radiation Protection." Specifically, this response concerns your request for exemptions from the requirements of sections 404(c)(1), 603(e), and 603(f) of 10 CFR 835, which address posting of contamination and high contamination areas and, thereby, relieving the Fernald site of significant cost increases for training, protective clothing, and internal dosimetry processing.

The Office of Worker Health and Safety (EH-5) has conducted a technical review of the exemption request from sections 404(c)(1), 603(e), and 603(f) of 10 CFR 835 and has determined that resolution of the concerns causing this exception request can be achieved as follows:

- o Modification of the posting requirements for high contamination areas. Accordingly, the Office of Environment, Safety and Health (EH) authorizes an exemption from section 835.603(f) (the requirements for posting of high contamination areas). The enclosure contains the conditions under which the exemption is granted and a detailed explanation of the basis for this determination. This approach permits Fernald Environmental Restoration Management Corporation (FERMCO) to post high contamination areas based solely on the levels of removable contamination in accordance with the exemption request.
- o Modification of the requirement for fixed contamination areas to permit posting areas of fixed contamination instead of marking areas of fixed contamination, as required by 835.404(d)(4). Accordingly, EH authorizes an exemption from section 835.404(d)(4). Based on our analysis from site visits and discussions with FERMCO and Fernald Field Office personnel, the FERMCO approach to establishing fixed contamination areas appears to be consistent with all of the other provisions of 10 CFR 835.404(d). The enclosure contains the conditions under which this exemption is granted.



- o Based on the information provided to EH-1, it has been determined that FERMCO has not submitted an exemption request from sections 835.404(c)(1) and 603(e) but has instead requested clarification to determine if their approach to implementation of these provisions is consistent with the intent of these provisions. The technical position (enclosed) contains the clarifications showing that the FERMCO approach to implementation is consistent with the intent of these provisions.

The Department of Energy's Office of Environmental Management (EM) staff concur with this response.

Sincerely,


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

2 Enclosures

cc w/enclosures:
Thomas P. Grumbly, EM-1
Robert K. Christopher, EH-3
Docketing Clerk, EH-3
Susan Klein, GC-52
Radiological Control
Coordinating Committee
Price Anderson Amendments
Act Coordinator

Technical Position

Fernald Environmental Restoration Management Corporation (FERMCO) Title 10, Code of Federal Regulations, Part 835 (10 CFR835)

FERMCO has requested exemption from certain requirements of 10 CFR 835, "Occupational Radiation Protection." FERMCO requests exemption from the requirements of sections 404(c)(1), 603(e), and 603(f) of 10 CFR 835 that address posting of contamination and high contamination areas. FERMCO states that the purpose of this exemption request is to set up a system of posting contaminated areas and fixed contaminated areas that is cost effective and more accurately addresses the hazard at the Fernald site than do the posting requirements of 10 CFR 835.

Discussion

Request

The Fernald site has large areas (over 1,000,000 square feet) of radioactive contamination in which the contaminant is fixed to hard surface (such as asphalt, concrete) to such an extent that it is not easily removed. Accordingly, over much of the Fernald site the removable contamination is less than 10 CFR 835, appendix D, values but the total contamination (fixed plus removable) is greater than appendix D values. By section 835.404(c)(1), section 835.603(e), and section 835.603(f) these areas must be posted as either contamination areas or high contamination areas (depending on the levels of fixed contamination) and appropriate access controls instituted in accordance with section 835.404 (c)(2) and section 835.501. Note that according to section 835.404(e), the posting and entry controls required by sections 835.603 and 501 are not required for areas of fixed contamination if the conditions in section 835.404(d)(1) through (6) are met.

FERMCO believes that exemptions from the requirements of sections 835.404(c), 603(e), and 603(f) are needed to prevent posting large areas of fixed contamination on the Fernald site as either contamination or high contamination areas, thereby relieving the Fernald site of significant cost increases for training, protective clothing, and internal dosimetry processing.

As part of the exemption request, FERMCO proposes to establish a system of posting that clearly distinguishes between hazards resulting from removable contamination and hazards primarily based on fixed contamination. Table 1 summarizes this approach in terms of criteria based on appendix D contamination values. As shown, FERMCO would post contamination and high contamination areas based only on removable contamination levels. Table 2, which summarizes the current criteria used to establish the various types of contamination areas, is provided for comparison.

Table 1: FERMCO's Proposed Contamination Posting Criteria

TYPE OF AREA	CRITERIA
Contamination	Removable Contamination > appendix D values but \leq 100 times appendix D values
High Contamination	Removable Contamination > 100 times appendix D values
Fixed Contamination	Removable Contamination < appendix D values and Total Contamination > appendix D Values

Table 2: 10 CFR 835 Contamination Posting Criteria

TYPE OF AREA	CRITERIA
Contamination	Removable Contamination > appendix D values but \leq 100 times appendix D values or Total Contamination > appendix D Values but \leq 100 times appendix D values
High Contamination	Removable Contamination > 100 times appendix D values or Total Contamination > 100 times appendix D values
Fixed Contamination	May be used if: Removable Contamination < appendix D values and Total Contamination > appendix D Values plus Criteria in 835.404(d)(1) through (6)

Requirements from which Exemption is Sought

- o 10 CFR 835.404(c): "Any area in which contamination levels exceed the values specified in appendix D of this part shall be:
 - Posted in accordance with § 835.603."
- o 10 CFR 835.404(d): "Areas with fixed contamination exceeding the total radioactivity values specified in appendix D of this part may be located outside of radiological areas provided the following conditions are met:
 - Removable contamination levels are below the levels specified in appendix D of this part;

- Unrestricted access to the area is not likely to cause any individual to receive a total effective dose equivalent in excess of 0.1 rem (0.001 sievert) in a year;
 - The area is routinely monitored;
 - The area is clearly marked to alert personnel of the contaminated status;
 - Appropriate administrative procedures are established and exercised to maintain control of these areas; and
 - Dose rates do not exceed levels which would require posting in accordance with § 835.603."
- o 10 CFR 835.404(e): "Entry control pursuant to § 835.501 and posting pursuant to § 835.603 are not required for areas with fixed contamination meeting the conditions of § 835.404(d)."
 - o 10 CFR 835.603(e): "*Contamination Area*. The words "Caution, Contamination Area" shall be posted where contamination levels exceed values listed in appendix D of this part, but are less than or equal to 100 times those values."
 - o 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."

10 CFR 835 Appendix D (Footnotes not included)

Surface Radioactivity Values ¹

Nuclide	Removable ^{2,4}	Total (Fixed + Removable) ^{2,3}
	(dpm/100 cm ²)	(dpm/100 cm ²)
U-nat, U-235, U-238, and associated decay products	1,000	5,000
Transuranics, Ra-226, Ra-228, Th-230, Th-228, Pa-231, Ac-227, I-125, I-129	20	500
Th-nat, Th-232, Sr-90, Ra-223, Ra-224, U-232, I-126, I-131, I-133	200	1,000
Beta-gamma emitters (nuclides with decay modes other than alpha emission or spontaneous fission) except Sr-90 and others noted above. ⁵	1,000	5,000
Tritium Organic Compounds; surfaces contaminated by HT, HTO, and metal tritide aerosols.	[Reserved]	[Reserved]

Analysis

The Office of Worker Protection Programs and Hazards Management (EH-52) has analyzed the FERMCO exemption request and provides the following analysis:

Section 835.603(f):

EH-52 finds that the portion of the exception request pertaining to the posting of high contamination areas (section 835.603(f)) meets the special circumstance of 10 CFR 820.62(2) (which states that application of the requirements in the particular circumstances would not serve or is not necessary to achieve its underlying purpose or would result in resource impacts that are not justified by the safety improvements). This position is based on the recognition that the primary hazard in these areas is the removable contamination and the FERMCO proposal to post high contamination areas when removable contamination levels exceed 100 times the appendix D values (see table 1). Accordingly, posting of high contamination areas in accordance with table 1 is a condition for approval of an exemption from section 835.603(f).

Using the approach described by FERMCO will inform workers of contaminated areas where removable contamination (contamination in a form that has a potential to be taken into the body) exists at levels greater than 100 times appendix D values and, therefore, more vigilance and protective measures are appropriate than are required for contaminated areas in which the removable contamination levels are less than or equal to 100 times appendix D values. The other radiological postings and associated radiological controls required by 10 CFR 835 provide an acceptable level of protection to workers for all other situations when contamination levels exceed the appendix D levels.

Section 835.603(e):

EH-52 finds that FERMCO does not need an exemption from the posting requirements for contamination areas (section 835.603(e)) to comply with 10 CFR 835. We find that the provisions in section 835.404(d), with exemption from section 835.404(d)(4), will permit the Fernald site to post areas of fixed contamination as described in the exemption request. Accordingly, FERMCO has not submitted a request for exemption for 835.603(e) but instead has requested clarification on how to post areas of fixed contamination.

In the exemption request, FERMCO proposes to establish fixed contamination areas where the removable contamination is less than appendix D values but the total contamination levels exceed appendix D values. Based on a site visit and discussions with Fernald Area Office and FERMCO personnel, the following conditions apply to fixed contamination areas:

1. Access to this area is controlled and the entry points are posted indicating that the area is a fixed contamination area;
2. Radiological areas within the fixed contamination area that would require posting under section 835.603 are posted;
3. All individuals permitted unescorted access to this area have received radiological worker training in accordance with 835.902; and
4. All individuals leaving this area undergo whole-body frisking.

The approach taken by FERMCO appears to be consistent with all of the requirements for a fixed contamination area except for 835.404(d)(4).

Section 835.404(d)(4) requires that the area be marked to indicate the presence of fixed contamination. As explained in the "U.S. Department of Energy Radiological Control Manual," the marking is to be applied to the area of fixed contamination. The Fernald site indicates the presence of a fixed contamination area by posting a sign at the access point to the fixed contamination area. However, the requirements adopted by FERMCO for individuals entering and leaving fixed contamination areas go beyond those required by section 835.404(d). Accordingly, EH-52 finds that an exemption from section 835.404(d)(4) is appropriate if FERMCO meets the four conditions listed above.

Section 835.404(c)(1):

FERMCO has also requested an exemption from section 835.404(c)(1). This provision states that any area in which contamination levels exceed the values specified in appendix D must be posted in accordance with section 835.603. The exemption request appears to be based on the view that an exemption from this provision is needed to permit the exemptions from section 835.603 to take effect. It is the position of EH-52 that an exemption from this provision is not needed to permit an exemption from the posting requirements in section 835.603. Accordingly, FERMCO has not submitted a request for exemption from section 835.404(c)(1) but instead has requested clarification on the intent of this provision.

Conclusion

Consistent with the technical analysis and conditions provided above, EH-52 concurs with the FERMCO request for an exemption from section 835.603(f) relating to posting of high contamination areas.

In addition, based on the technical analysis and conditions provided above, EH-52 recommends an exemption from section 835.404(d)(4).

PART 835 EXEMPTION DECISION

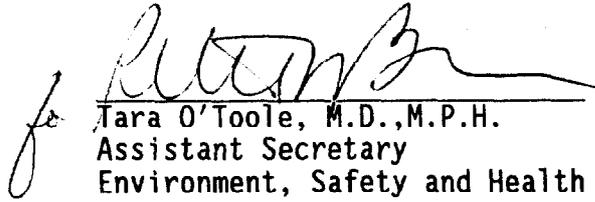
Pursuant to title 10 Code of Federal Regulations, part 820.61 (10 CFR 820.61), the Assistant Secretary for Environment, Safety and Health (EH-1) is authorized to exercise authority on behalf of the Department of Energy (DOE) with respect to requests for exemptions from nuclear safety rules relating to radiological protection of workers, the public, and the environment.

Fernald Environmental Restoration Management Corporation (FERMCO) filed a request for exemption from certain provisions contained in Title 10 Code of Federal Regulations, Part 835 (10 CFR 835), "Occupational Radiation Protection." In particular, FERMCO requested relief from the requirements of sections 404(c)(1), 603(e), and 603(f) of 10 CFR 835, which address posting of contamination and high contamination areas. FERMCO believes that exemptions from the requirements of sections 835.404(c), 603(e), and 603(f) are needed to prevent posting large areas of fixed contamination on the Fernald site as either contamination or high contamination areas, thereby relieving the Fernald site of significant cost increases for training, protective clothing, and internal dosimetry processing.

Based on a review of the supporting documentation and after reviewing the criteria for exemption relief, I hereby approve the request from FERMCO for a permanent exemption from the following requirements in 10 CFR 835. 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.

1. The request for exemption from 10 CFR 835.603(f) is granted with the condition that FERMCO will meet the 10 CFR 835 requirements for high contamination areas where contamination levels are greater the 100 times the removable contamination values in 10 CFR 835 appendix D.
2. An exemption from 10 CFR 835.404(d)(4) pertaining to the marking of fixed contamination areas is granted with the following conditions associated with fixed contamination areas established on the Fernald site:
 - a. Access to this area is controlled and the entry points are posted indicating that the area is a fixed contamination area;
 - b. Radiological areas within the fixed contamination area that would require posting under section 835.603 are posted;
 - c. All individuals permitted unescorted access to this area have received radiological worker training in accordance with section 835.902; and
 - d. All individuals leaving this area undergo whole-body frisking.

3. FERMCO has not submitted an exemption request from sections 835.404(c)(1) and 603(e) but has instead requested clarification to determine if their approach to implementation of these provisions is consistent with the intent of these provisions.


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

1/3/94
Date