JUL 20 1990

Mason & Hanger-Silas Mason Company, Inc.
ATTN: R. M. Loghry
Vice President & Plant Manager
Iowa Army Ammunition Plant
Middletown, IA 52638

Gentlemen:

Enclosed is Amendment No. 03 to your NRC License No. 14-24479-01 in accordance with your request.

In accordance with a telephone conversation on June 12, 1990, between Mr. Joe Shannan of your organization and me, we have added License Condition Number 18. to limit the use of cobalt-60 in Building 3-10 to less than or equal 600 curies. This will ensure that radiation levels on the roof of Building 3-10 will be less than 100 mr/hr (High Radiation Area). Also, as requested by Mr. Shannan we have amended Item No. 8 of your license document to reduce the maximum possession limit of cobalt-60 from 5 sources to 3 sources not exceeding 1,000 curies per source.

After review of your license we have determined that the type, form, and quantity of material authorized does not warrant the development and submittal of a decommissioning funding plan, or certification of financial assurance as described in 10 CFR 30.35 (enclosed). However, this does not relieve you of record keeping requirements relative to information which the Commission considers important to decommissioning. Therefore, we have added License Condition 19. requiring that you maintain such records as set forth in Section 30.35(g).

Please review the enclosed document carefully and be sure that you understand all conditions. You must conduct your program involving radioactive materials in accordance with the conditions of your NRC license, representations made in your license application, and NRC regulations. In particular, note that you must:

1. Operate in accordance with NRC regulations 10 CFR Part 19, "Notices, Instructions and Reports to Workers; Inspections," 10 CFR Part 20, "Standards for Protection Against Radiation," and other applicable regulations.

2. Possess radioactive material only in the quantity and form indicated in your license.

3. Use radioactive material only for the purpose(s) indicated in your license.

4. Notify NRC in writing of any change in mailing address.

B-8

5. Request and obtain appropriate amendment if you plan to change ownership of your organization, change locations of radioactive material, or make any other changes in your facility or program which are contrary to your license conditions or representations made in your license application and any supplemental correspondence with NRC. Any amendment request should be accompanied by the appropriate fee specified in 10 CFR Part 170.

6. Submit a complete renewal application with proper fee or termination request at least 30 days before the expiration date on your license. You will receive a reminder notice approximately 90 days before the expiration date. Possession of radioactive material after your license expires is a violation of NRC regulations.

7. Request termination of your license if you plan to permanently discontinue activities involving radioactive material prior to your expiration date.

You will be periodically inspected by NRC. Failure to conduct your program in accordance with NRC regulations, license conditions, and representations in your license application will result in enforcement action against you in accordance with the General Policy and Procedures for NRC Enforcement Actions, 10 CFR Part 2, Appendix C.

If you have any questions or require clarification of any of the above stated information, contact us at (708) 790-5625.

Sincerely,

Original Signed By
Kevin G. Null
Materials Licensing Section

Enclosures:
1. Amendment No. 03
2. 10 CFR Part 30

RIII

Null/ib
07//0/90

CONVERSATION RECORD

TIME:

6/12/80

ROUTING

NAME/SYMBOL	INT

TYPE: ☐ VISIT ☐ CONFERENCE ☒ TELEPHONE ☒ INCOMING ☐ OUTGOING

Location of Visit/Conference:

NAME OF PERSON(S) CONTACTED OR IN CONTACT WITH YOU: Joe Shannon

ORGANIZATION (Office, dept., bureau, etc.):

TELEPHONE NO:

SUBJECT: C/N 89393

SUMMARY: Mr. Shannon called back & stated that they will reduce source strength of Co-60 used in bldg. 3-10 to 600 curies. in roof level will be ≯ 613 ci / 96 mr/hr = 600 ci / x

x = 94 mr/hr

→ restricted area - signs are posted on all four sides of building at roof level & access is restricted. Signs require that an individual notify the safety office prior to entering roof area.

Also, Mr. Shannon asked that we change Item 8.A of their license to a total of 3 sources.

ACTION REQUIRED: Write L/C that restricts use of cobalt-60 in bldg 3-10 to ≯ 600 Ci

NAME OF PERSON DOCUMENTING CONVERSATION:

SIGNATURE: [signature] DATE: 6/12/80

ACTION TAKEN:

SIGNATURE: TITLE: DATE:

CONVERSATION RECORD

TIME:

6/11/90

TYPE: ☐ VISIT ☐ CONFERENCE ☒ TELEPHONE ☐ INCOMING ☒ OUTGOING

Location of Visit/Conference:

ROUTING	
NAME/SYMBOL	INT

NAME OF PERSON(S) CONTACTED OR IN CONTACT WITH YOU: Joe Shannon

ORGANIZATION (Office, dept., bureau, etc.):

TELEPHONE NO:

SUBJECT: c/N 89393

SUMMARY

Your rad levels above roof bldg 3-100 are as high as 96 mR/hr. What strength Co-60 is reflective of this level? Reply: 613 Ci. Your license authorizes 1000 Ci Co-60 sources. This means that upon source exchange using a 1000 Ci Co-60 source, you will be over 100 mR/hr. This is a high rad area which means that you must treat same as a hot cell (i.e. 34/20). Alternative options are to add shielding to roof, use of collimators &/or decrease source strength.

Please consider the above & call me on 6/14 to discuss.

ACTION REQUIRED

NAME OF PERSON DOCUMENTING CONVERSATION:

SIGNATURE: Kim G. Null

DATE: 6/12/90

ACTION TAKEN

SIGNATURE:

TITLE:

DATE:

Mason & Hanger-Silas Mason Co., Inc.

ENGINEERS AND CONTRACTORS
FOUNDED 1827

IOWA ARMY AMMUNITION PLANT
MIDDLETOWN, IOWA 52638-9701

10 May 1990

SF90-0070/L

Nuclear Regulatory Commission
Attn: Mr. John Madera
Region III
799 Roosevelt Road
Glen Ellyn, Illinois 60137

Dear Sir:

Subject: License No. 14-24479-01 Renewal

Reference: Control No. 88138

Enclosed is the description of the method incorporated to reduce the radiation levels on the roof of building 3-10. This method was selected in lieu of the two(2) options described in Item #5 of the letter dated February 27, 1990.

Should there be any questions on the information submitted, please call Joe E. Shannan, RPO or Nicholas M. Kieler at (319) 753-7308.

Very truly yours,

MASON & HANGER-SILAS MASON CO., INC.

R. M. Loghry

R. M. Loghry
Vice President & Plant Manager

RML/JES/NMK/kl

Att: a/s

may 25 88138
add'l - 8
fee Not Required
VCB 6/4/90

RECEIVED
MAY 17 1990
REGION III

CONTROL NO. 89393

MASON & HANGER-SILAS MASON CO., INC.
IOWA ARMY AMMUNITION PLANT
Environmental Safety & Health Department

Mr. John Madera

Subject: License No. 14-24479-01 Renewal

Reference: Control No. 88138

Amendment No.01 renewing our NRC License No. 14-244-01 has been received. Condition number 16 of the amendment required direct surveillance of high radiation areas on the roof of our facility which we are now in compliance with.

Item #5, stated we were investigating two (2) options to reduce the radiation levels on the roof top of building 3-10. These are as follows:

1. Install motion detectors in the area that will cause an alarm to sound in the area near the radiographer.

2. Install a fence around the roof top location and restrict the access to this area.

In lieu of these options we have repositioned the lead attenuation gates located in front of the collimator to reduce radiation levels below 100 mr/hr on the roof top of building 3-10. The following is a description of the actions taken:

Upon further investigation to reduce radiation levels at the roof top of 3-10, it was determined that the problem could be solved by repositioning the lead attenuation gates (see att #1, enlarged view "A" of attached drawing No. 2-10-M-1055, sheet 1 of 7). The lead gates were lowered to limit the area of exposure to the area within the maximum height of the ring (see att #2, drawing No. 3-10 S613 sheet 1 of 1, for clarification of ring orientation). This arrangement confines the radiation to the inner wall (see photo No. 3-04, included with letter dated 27 February 1990) of the vault, therefore, limiting the amount of exposure to the rooftop. To inhibit the lead gates from being raised, a maximum height gate has been installed between the top of each gate and the collimator tank flange (att #1, drawing No. 2-10-M-1055). To ensure the gates cannot be removed, a locknut has been placed on the stem of each gate. The lockout was also tapped and a roll pin was placed through the nut and stem.

The following items are attached to clarify the description of the method utilized to reduce radiation levels.

Attachment	Description
No. 1	Gamma Industries 1000 C1 C0 60 Exposure Device Serial #1, Drawing No. 2-10-M-1055

CONTROL NO. 89393

Attachment	Description
No. 2	Shielding Alterations X-Ray Bay bldg 3-10 Drawing No. 3-10 S613
No. 3	Radiation Survey of 3-10 roof after repositioning lead gates.
No. 4	1000 Curie Cobalt 60 Shielding bldg. 3-10
No. 5	Polaroid Pictures, numbers 3-06, 3-07 and 3-08

Therefore, with the above actions and the radiation level below 100 MR/HR, we request concurrence that the requirement for direct surveillance is not now required.

Additional information will be furnished upon request.

FORM 2220

MASON & HANGER - SILAS MASON CO., INC. ATTACHMENT NO. 3

ENGINEERS CONTRACTORS

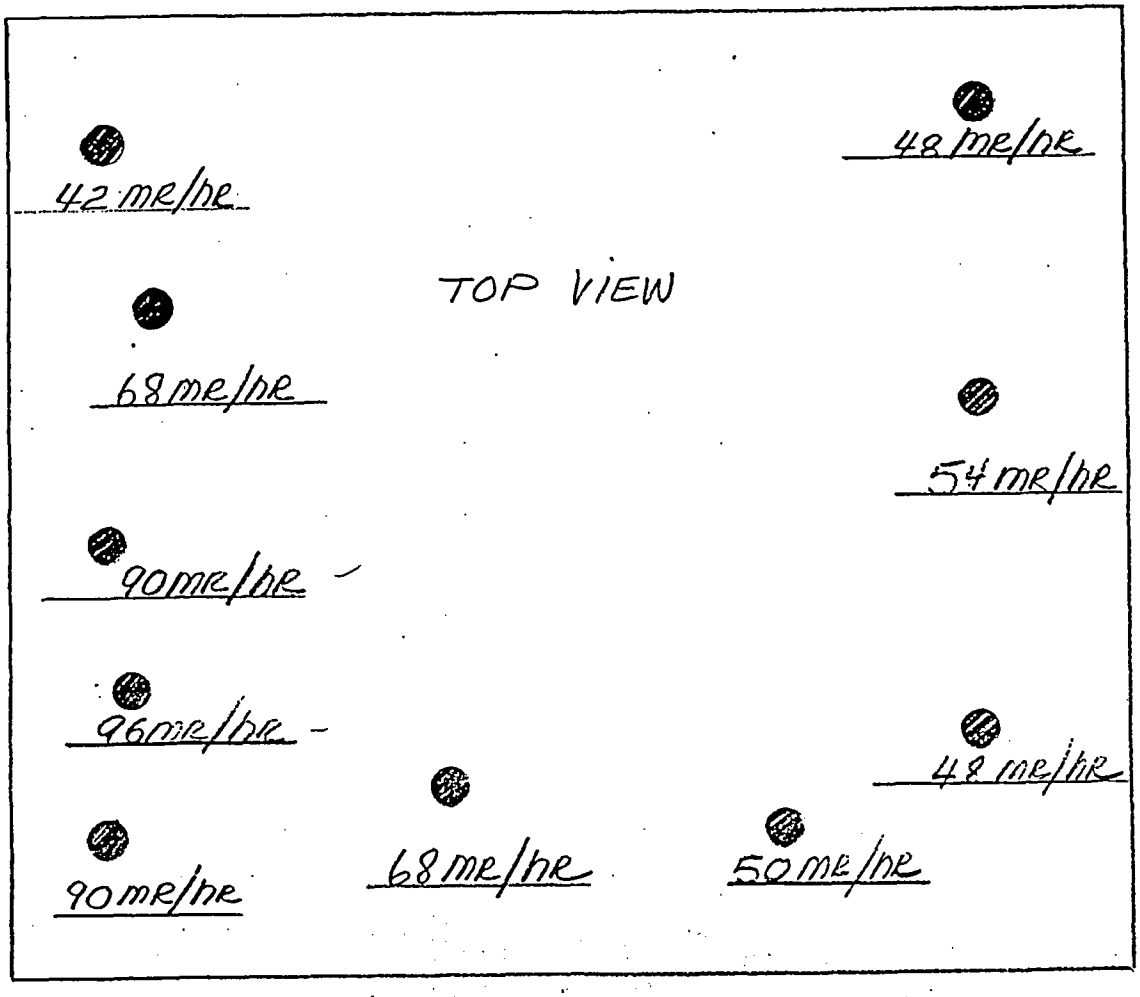
PROJECT 90-02 LOCATION 3-10 SOURCE ROOF DATE 2 April 1990

SUBJECT RADIATION COMPUTED BY Nicholas Kieler

CHECKED BY

N

3-10 SOURCE VAULT ROOF TOP



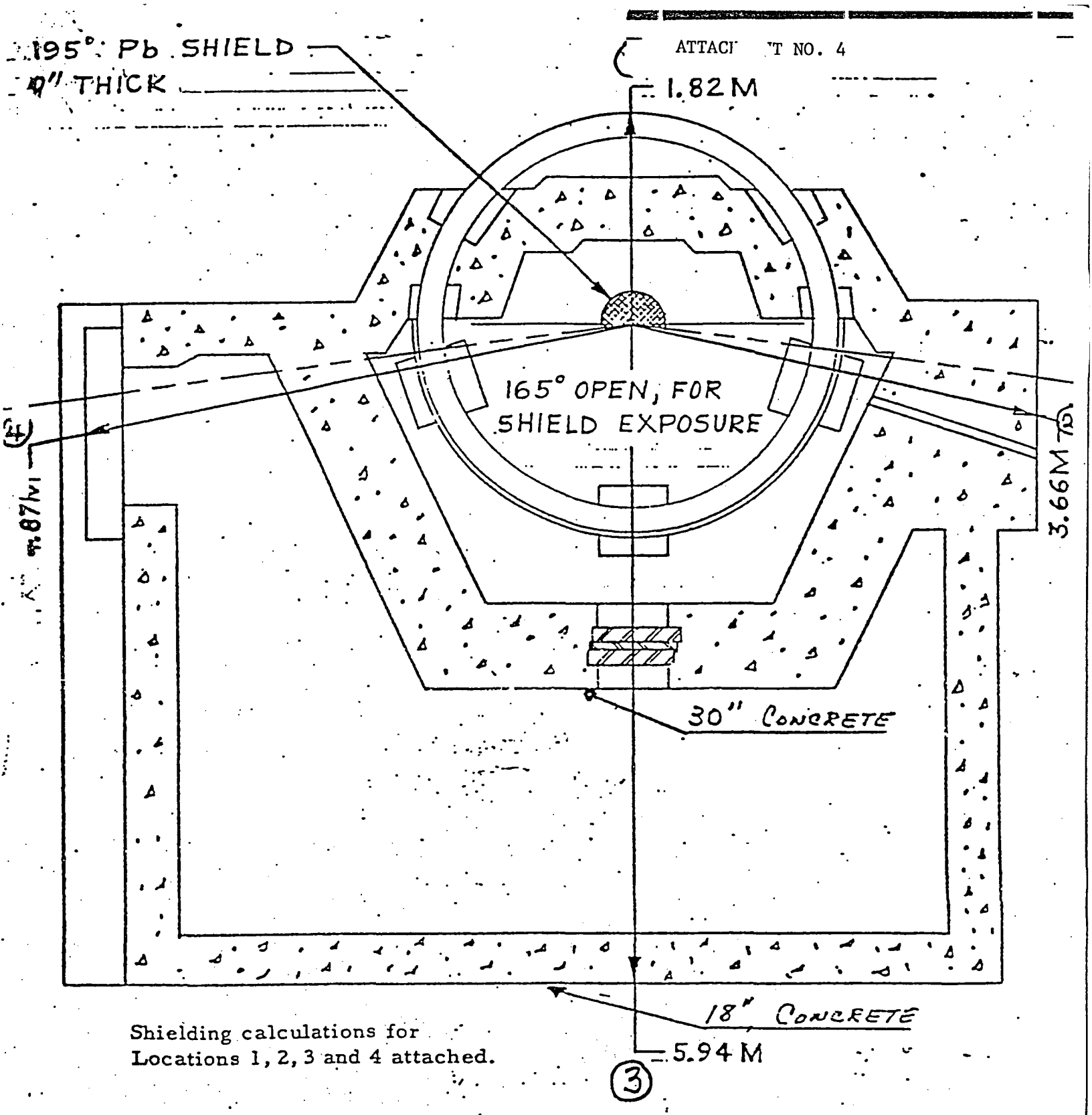
NOTE: ALL READINGS TAKEN INSIDE CONCRETE WALL.

INSTRUMENT: Victoreen Survey Meter Model 440 Serial No. 872

NOTE: ALL READINGS TAKEN AT THE PENETRATION'S leadgates.

CONTROL NO. 89393

ATTACHMENT NO. 4



Shielding calculations for
Locations 1, 2, 3 and 4 attached.

REV.	BY	DATE	DESCRIPTION	APPROVAL	DATE

ARMY AMMUNITION PLANT
BURLINGTON, IOWA
OPERATED BY
MASON & HANGER
SILAS MASON CO., INC.

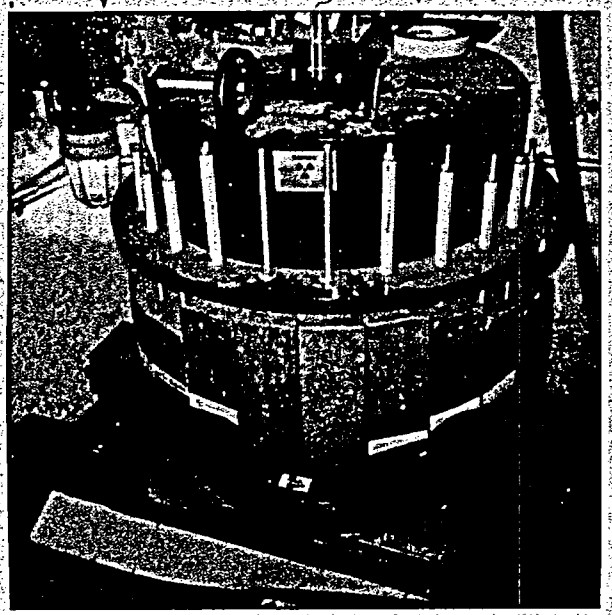
DESIGN	DRAWN	APPROVAL
	MCKAY	

1000 CURIE COBALT 60 SHIELDING BLDG. 3-10

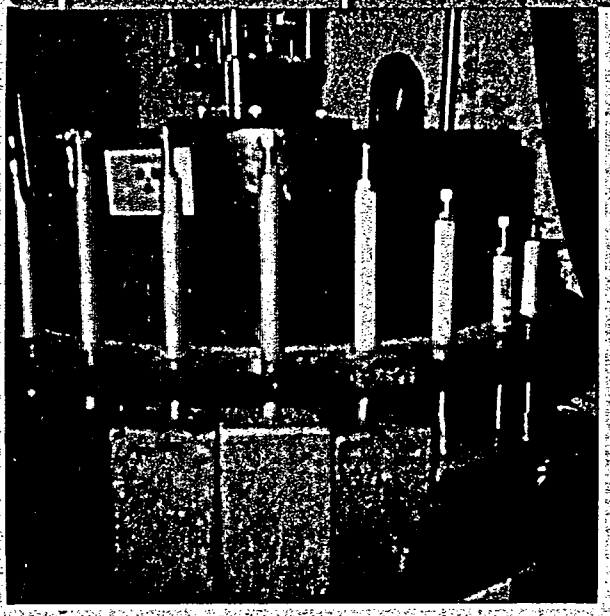
CONTROL NO. 89393

E.O. NO.
W.O. NO.
DATE

SKETCH NUMBER
SK



LEAD ATTENUATION GATES BEFORE INSTALLATION OF NUTS AND PINS NO.3-06



LEAD ATTENUATION GATES W/ NUTS AND THREADED ROD DRILLED AND PINNED 3-07

LEAD ATTENUATION GATES W/NUTS AND THREADED ROD DRILLED AND PINNED 3-08