

# UNDERWOOD ENGINEERING COMPANY

[www.underwood-engineering.com](http://www.underwood-engineering.com)

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Testing and Inspections Fax: 856 931 7124

January 9, 2008

Division of Nuclear Materials Safety  
United States Nuclear Regulatory Commission  
Region I

29-23425-01  
03021053 / 2007001

Attn: Sattar Lodhi, PH.D

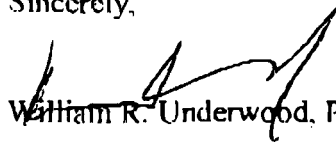
Underwood Engineering Company (UEC) was established in 1978 and incorporated in the State of New Jersey on September 3rd, 1987. Under the direction of Mr. William Underwood, PE, UEC has performed Geotechnical Engineering services on over 15,000 projects in the Delaware Valley Tri-State area. Underwood Engineering Company currently employs 50+ individuals and subcontracts a variety of professionals throughout each year.

Underwood Engineering Company (UEC) is a commercial Engineering company that provides a wide variety of engineering services and inspections to architects, engineers, contractors, developers, and government agencies. The Underwood Group is certified by the NJ Treasury Division of Property Management & Construction and has been inspected by the Army Corp of Engineers, the Cement & Concrete Reference Laboratory and the AASHTO Materials Reference Laboratory.

Underwood Engineering Company has in the past and presently diligently strives to adhere and operate within the NRC guidelines, regulations and its license. To ensure that Underwood achieves a comprehensive corrective action program to address root causes, Underwood is contracting with NJN Associates and J.R. Clark Associates to assist Underwood in the development and implementation of a regulatory compliance enhancement program. This program will address (1) identification of all relevant NRC regulatory and licensing requirements; (2) confirmation or development of procedures and policies regarding compliance with such requirements; (3) training of employees; and (4) implementation of a safety conscious work environment for Underwood.

The Underwood Engineering Company would like to thank NRC for the recent inspections in identifying the root cause of the apparent violations.

Sincerely,



William R. Underwood, P.E.

Owner / President

NMSS/RGNI MATERIALS-004

Geotechnical Engineering, Inc. and Inspections  
1431 Parkway Avenue, Suite 100, P.O. Box 31  
Parsippany, NJ 07054

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# **UNDERWOOD ENGINEERING COMPANY**

**SOIL & FOUNDATION ENGINEERING**

**143 Harding Ave, Bellmawr, NJ 08031**

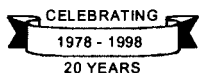
**William R. Underwood, PE - President**

**Phone (856) 933-1818 Fax (856) 933-0170**

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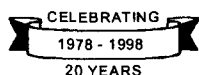
## Apparent violation #1

Four examples of failure to use a minimum of two tangible barriers to prevent unauthorized removal of a gauge as required by 10CFR 30.34(i).

### Root cause of the violation:

10CFR 30.34(i) states that there must be two independent physical controls that form tangible barriers to secure portable gauges from unauthorized removal.

The radiation safety officer believed that by having the gauge locked to the open ended vehicle and having the lid locked separately was complying with the above regulation. After being advised by The Nuclear Regulatory Commission that our procedure was incorrect, several necessary corrective actions were taken to prevent recurrence of the violations (see pages 4-22 for corrective action).



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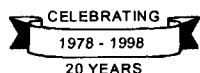
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### Corrective Action for Violation #1

- 1) An immediate mandatory meeting was held with the RSO and all authorized users at which time a notice was given as to transporting regulations (see safety packet information and transporting the gauge memo attached, see page 5).
- 2.) A second person was immediately assigned to assist in properly inspecting all gauges for proper security at the beginning and end of each day (see troxler sign in and out sheet attached, see page 6).  
Key control: only the authorized personnel have access to all necessary nuclear gauge and storage room keys.
- 3.) Bi - monthly site visits are conducted by the RSO to ensure authorized users are correctly adhering to the use, transfer and control as regulated.
- 4) After the first meeting in which transporting regulations were reviewed with all authorized users another incident took place where the procedure was not followed. This prompted the RSO to take immediate necessary actions to defer authorized users for not complying with the transporting regulations. An incident sheet was created and explained to each authorized user. This form states that authorized users in violation of any transporting or use regulations will receive one warning and the second incident will result in serious disciplinary actions, however all employees are encouraged to raise concerns of any violations (see certified nuclear density technician incident sheet attached, see page 7).
- 5) Chains and locks were purchased for each gauge so that each container could be chained to the fixed structure in the storage room.
- 6) A separate secure enclosure was built around the door to the storage room, which provides barrier to secure the gauges from unauthorized removal.



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## SAFETY PACKET INFORMATION

### EMERGENCY RESPONSE

Current leak test (6 months)

License

Source of certificate

Bill of lading

Type A package

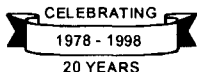
### TRANSPORTING THE GAUGE

- 1.) Source rod locked.
- 2.) Lid locked with 2 independent sources. If using chain, make sure chain is tight so the lid cannot be opened.
- 3.) Open bed vehicle – chain to vehicle twice – 2 independent locking systems, make sure they are tight so gauge **cannot** move.
- 4.) Closed bed vehicle (car, SUV, etc.)
  - a.) Chain to inside of vehicle so gauge **cannot** move.
  - b.) Lock your vehicle!

**ALWAYS KEEP GAUGE, WHETHER LOCKED IN YOUR VEHICLE OR WHILE USING, IN YOUR EYESIGHT.**

**IF YOU CANNOT, CALL THE RSO PATRICA BEMESDERFER.**

7/2/07



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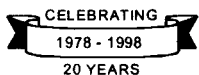
## TROXLER SIGN IN & OUT SHEET

DATE: \_\_\_\_\_

Troxler #	Out Time	Initial	In Time	Initial	5 x's Locked
H-1					
T-1					
T-2					
T-3					
T-4					
T-6					
T-8					
T-9					
T-10					
T-11					
T-12					
T-13					
T-14					
T-15					
T-16					
Roof Gauge					

End of day all gauges in and secure: \_\_\_\_\_

7/2/07



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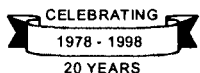
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## Certified Nuclear Density Technicians Incident Sheet

Technician	1 <sup>st</sup> Warning	2 <sup>nd</sup> Warning	Termination

\*Actual names are not included

\*\*Two warnings will result in termination.



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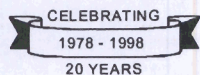
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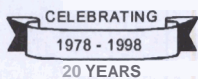
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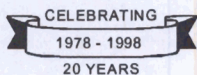
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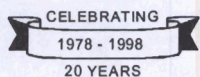
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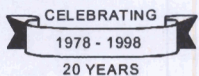
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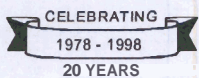
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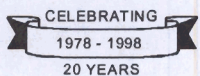
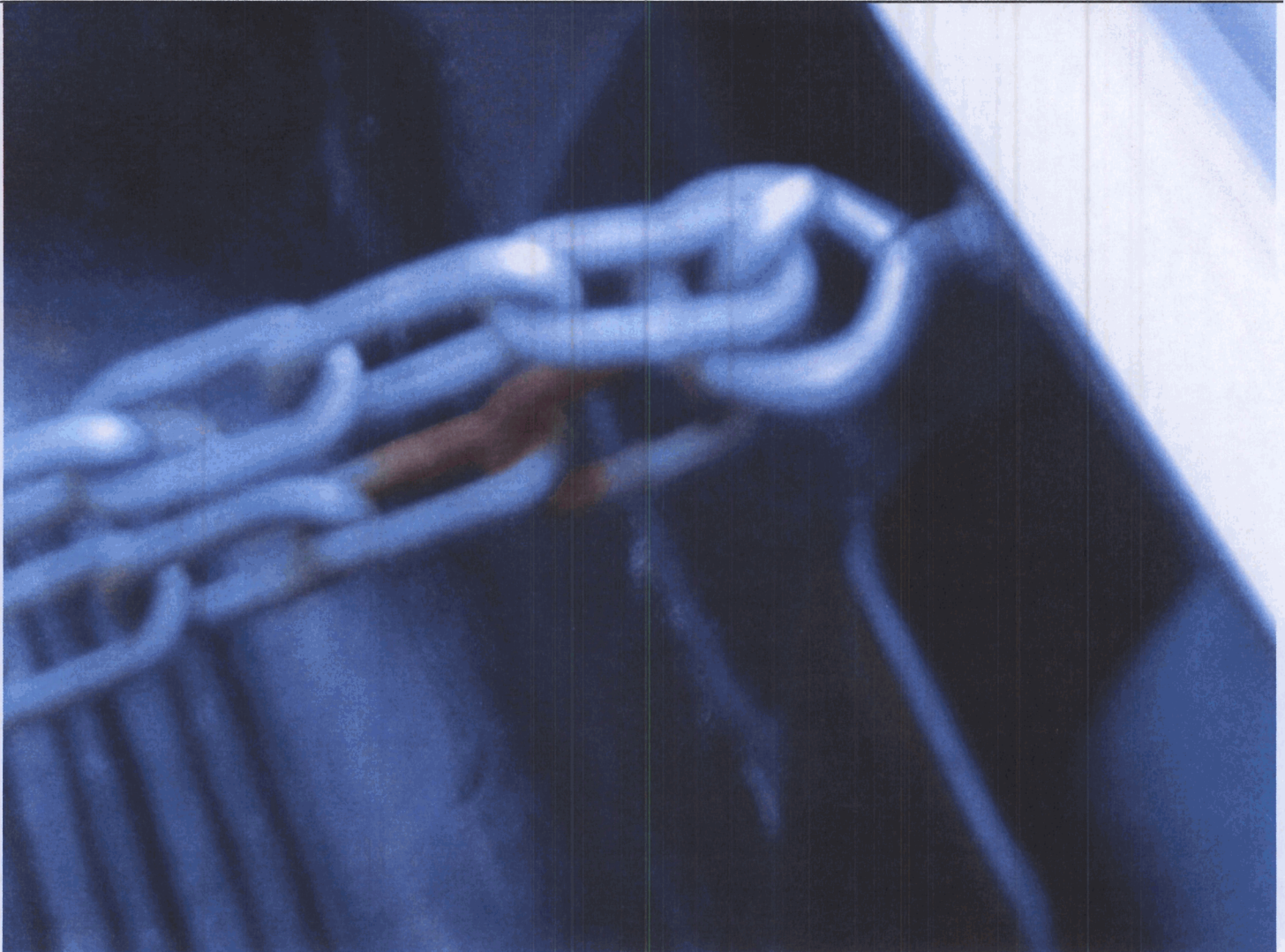
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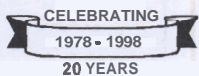
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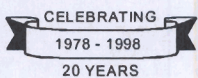
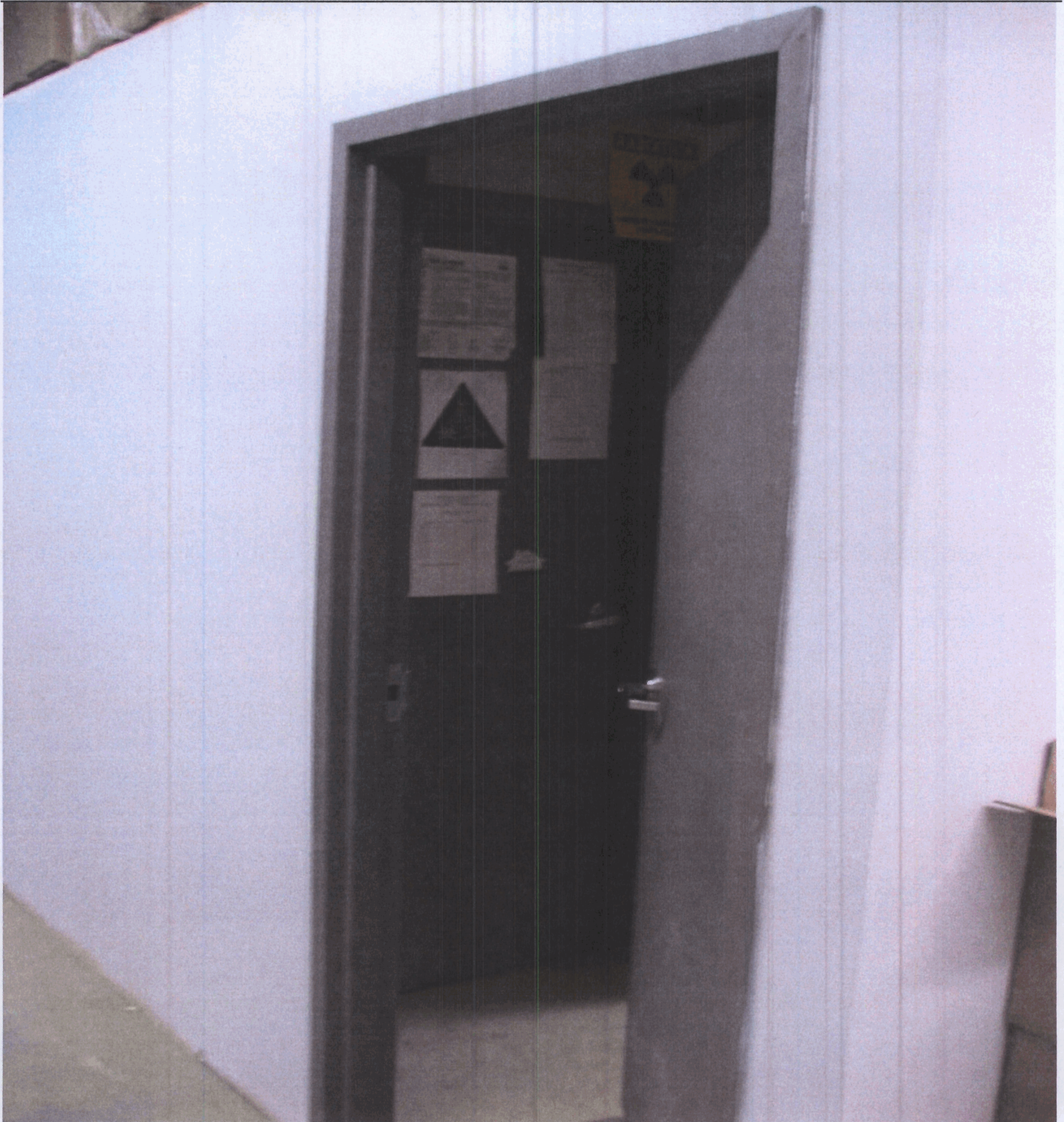
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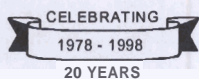
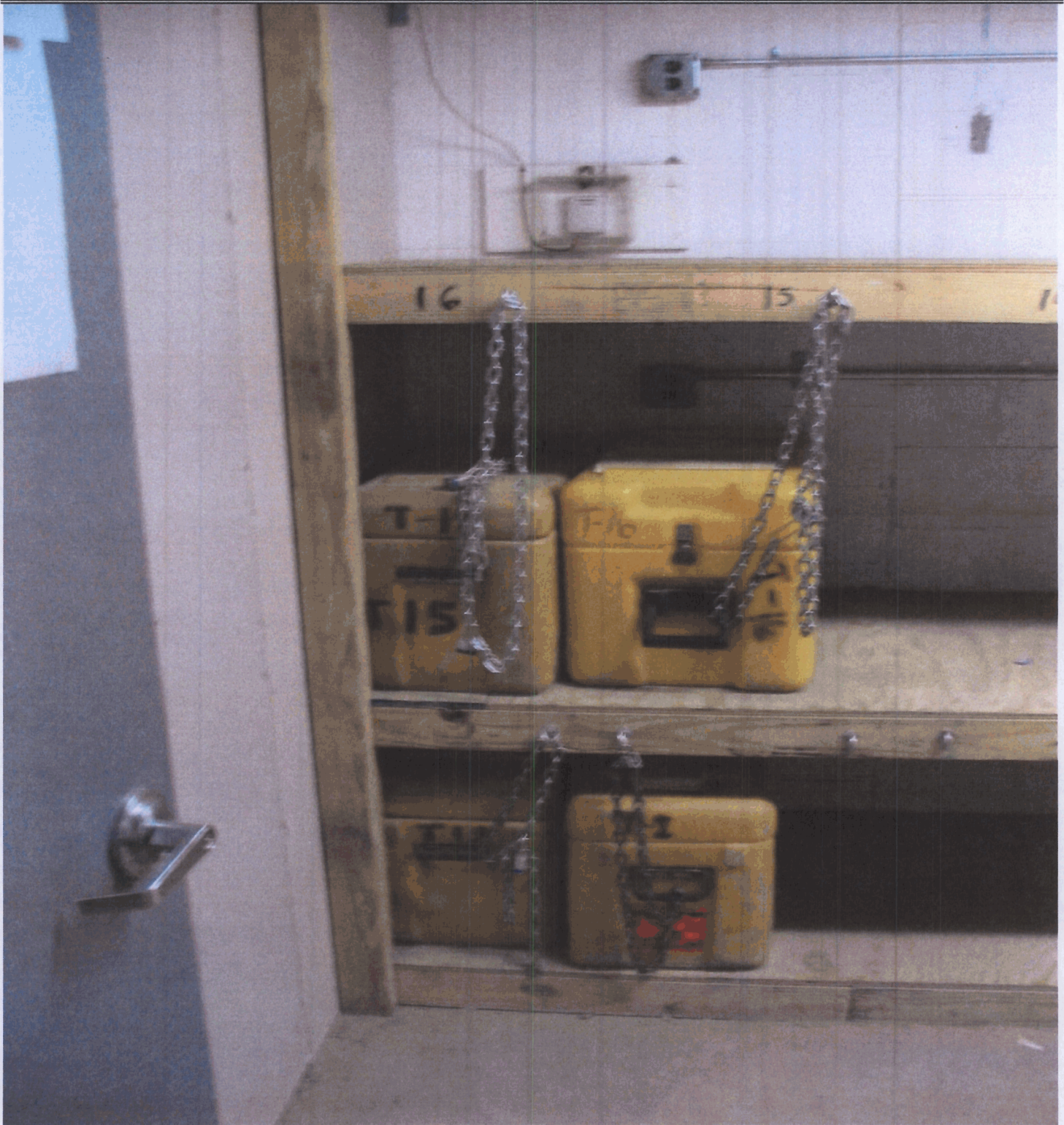
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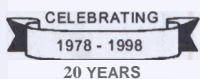
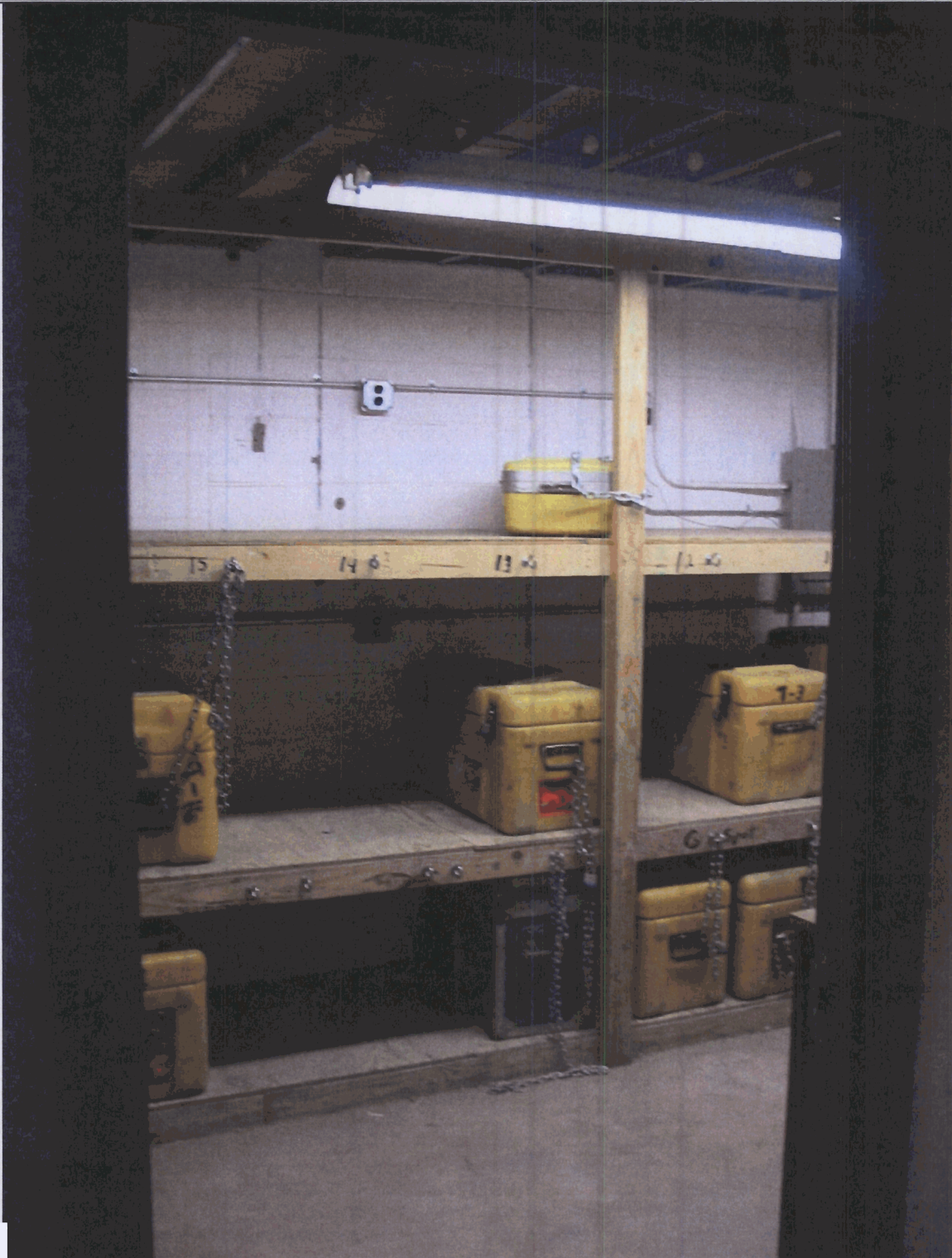
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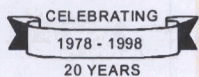
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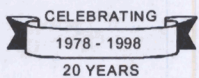
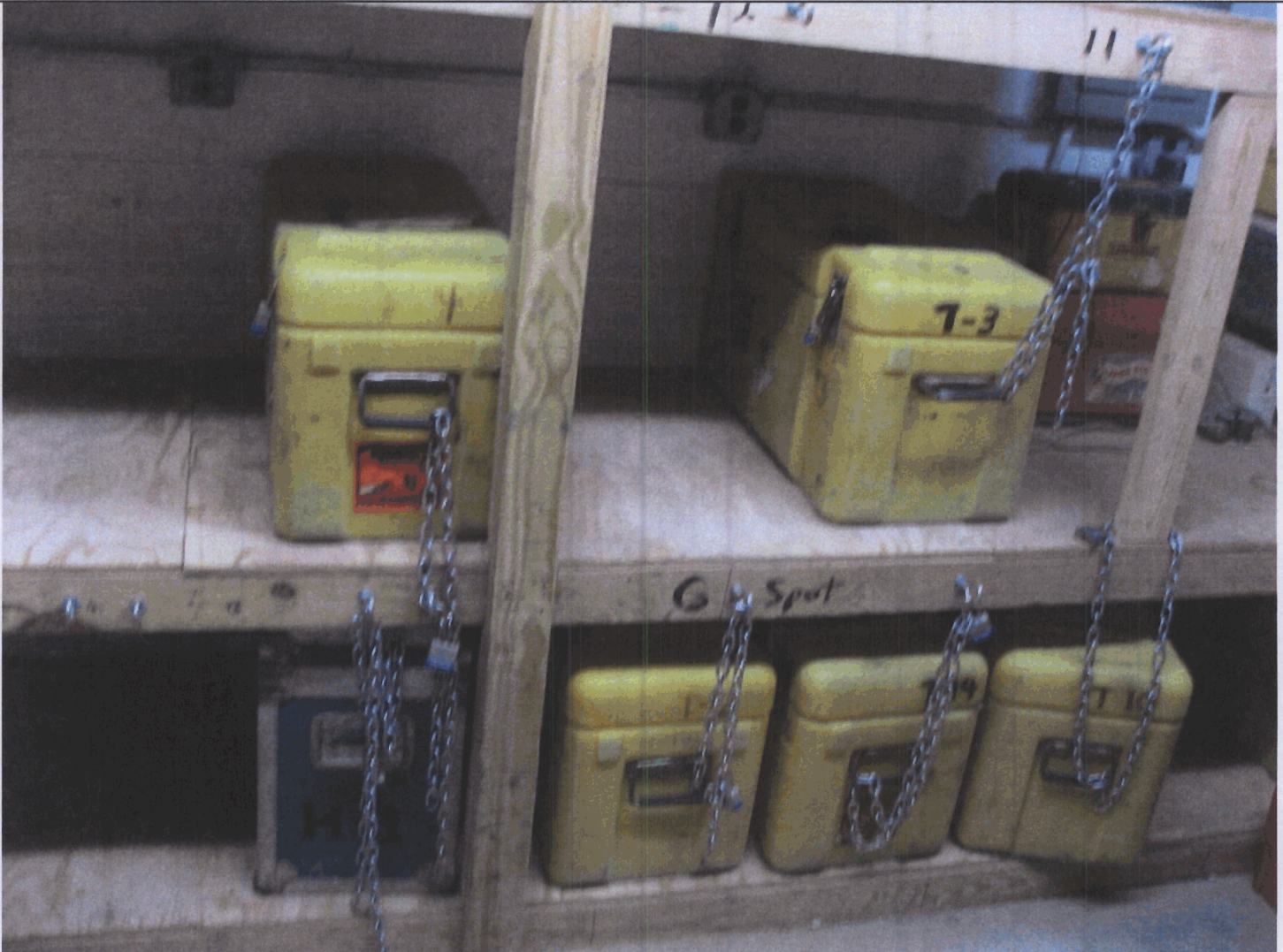
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## Apparent Violation #2

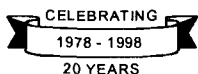
## Apparent violation #3

Failure to confine possession and use of radioactive material to locations authorized by the companies NRC license. 10CFR30.34(c)

Failure to provide written notification to the NRC within 60 days of a decision by our firm to permanently cease NRC licensed activities at one facility and move source handling activity to another facility.

### *Root of the problem*

Our move from Mt. Ephraim, NJ to Bellmawr, NJ took several months to occur, with our engineering department in Bellmawr and our testing department in Mt. Ephraim. Once we were notified by Walgreen's executives that we had to all vacate the building, it became very hectic in trying to move and continue business operations. The General Manager and the RSO assumed each other had taken care of the notification. However, the letter was written and not sent. Necessary corrective actions were taken (see page 22 for correction).



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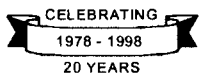
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## *Corrective action for violation #2 & #3*

1. Underwood Engineering requested in writing an Amendment to our licenses to authorize the new facility, 143 Harding Ave., Bellmawr as storage location (see copy of letter).
2. The General Manager and RSO have met and determined that all notifications that are required to the NRC of any move or change to our licenses is the RSO's first priority.



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May 1, 2007

Kathy Dolce Modes  
Security and Industrial Branch  
Division of Nuclear Materials Safety  
Region 1  
King of Prussia, PA 19406

RE: Amendment to our licenses  
Items 2 and 10

Dear Kathy,

Underwood Engineering Testing Company, Inc. has moved from 3 South Black Horse Pike, Mt. Ephraim, NJ 08059. Our new address and permanent storage area for the nuclear gauges is 143 Harding Ave. Bellmawr, NJ 08031. All other items in our Material License will remain the same. I have enclosed a copy of all leak tests for our troxlers, which cover the dates of our move to show that no contamination has taken place during our move.

Based on our leak test records and surveys performed with our survey meters monitor 4/4cc and Troxalert 3105, it has been determined that the source materials have remained sealed and our equipment and previous location have not been contaminated throughout our residency at that location.

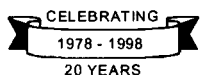
Any further information that is needed, please feel free to contact me at 856-933-1818.

Respectfully submitted,  
**Underwood Engineering  
Testing Co., Inc.**

Respectfully submitted,  
**Underwood Engineering  
Testing Co., Inc.**

Patricia Bemesderfer, RSO  
Director Testing & Inspection

Cris W. Oslund  
General Manager



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