

# Politics 101: The Reporting of Non- Reportable Events

TRTR

September 14, 2006

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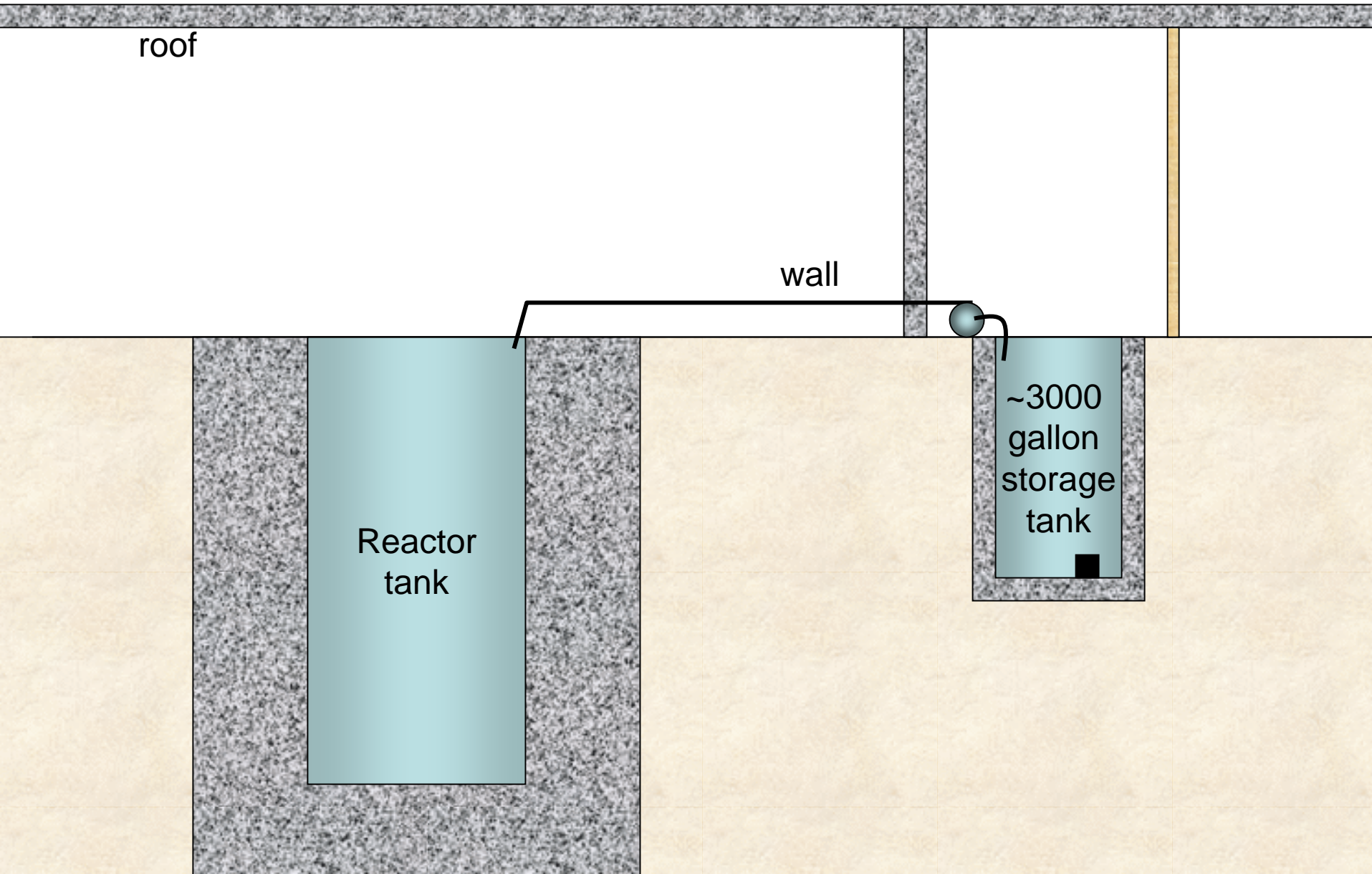
US Geological Survey

It's always been good policy to be as open and honest as possible with the NRC.

Self-identification and reporting of violations (by licensees – to the NRC) is encouraged and rewarded.

When in doubt, it's always a good idea to call your project manager and get advice and input.

# Physical Arrangement of Tank



roof

wall

Reactor  
tank

~3000  
gallon  
storage  
tank

# Storage Tank Details

Tank had been in use for storage of large, irradiated items and high purity water since 1987.

Tank water was used as a water source for replenishment of evaporation losses from reactor tank.

Highest activity component has ~ 2 Ci of Co-60 (not on Rx license).

Storage tank has separate water filter and ion exchange purification system.

Sampling of water was routinely done for first few years of use, but activity was consistently below 10CFR20 effluent limits so routine sampling was discontinued.

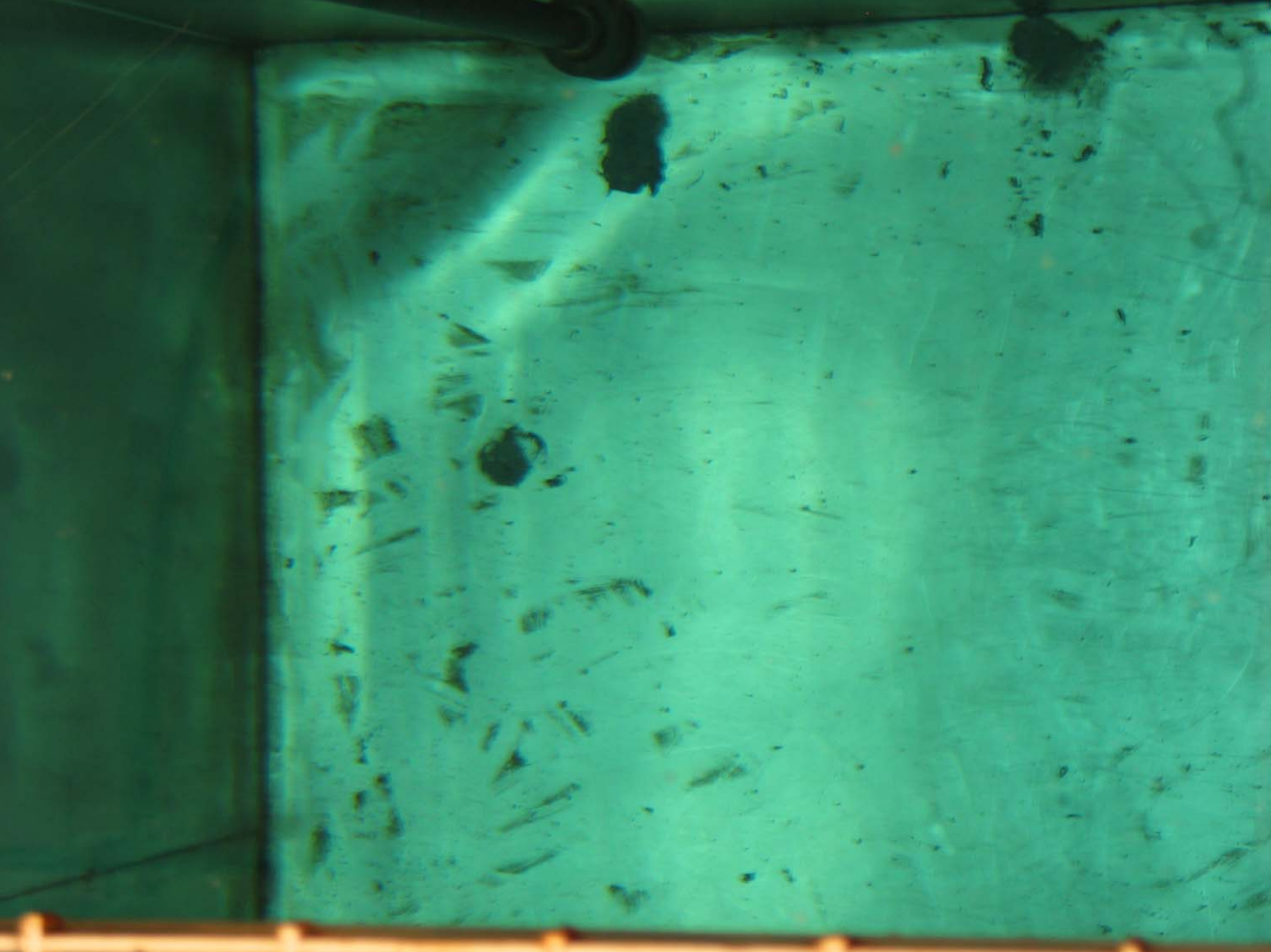
Leakage was verified to be occurring on June 5, 2006 and was conservatively estimated to be <14 gallons per day.

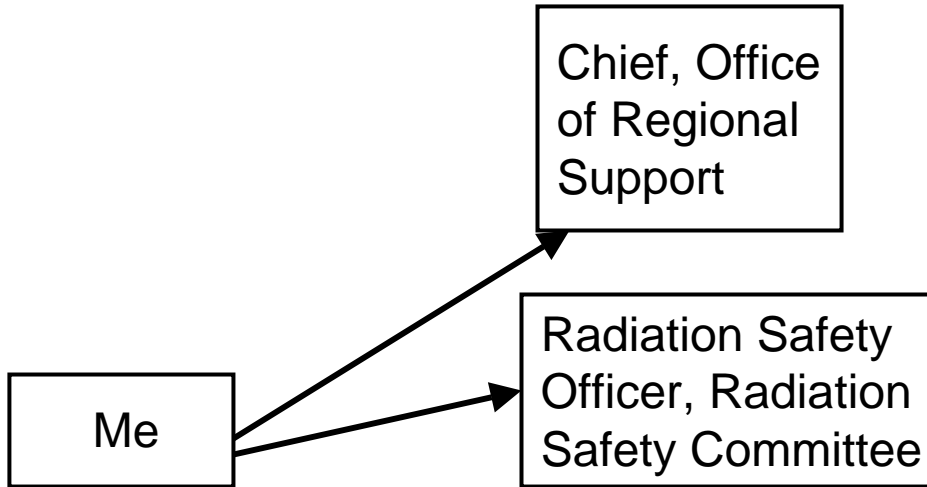
The RSO was notified; water sampled; analyzed to verify the activity was < 10CFR20 effluent limits. The only licensed radioisotope present was Co-60. This is NOT a reportable event.



Over the next 2 weeks, the tank was cleaned with a separate water pump and brush, suspicious spots were located on the bottom of the tank, and underwater patching was performed. The leak rate was reduced to ~1.5 gallons per day.

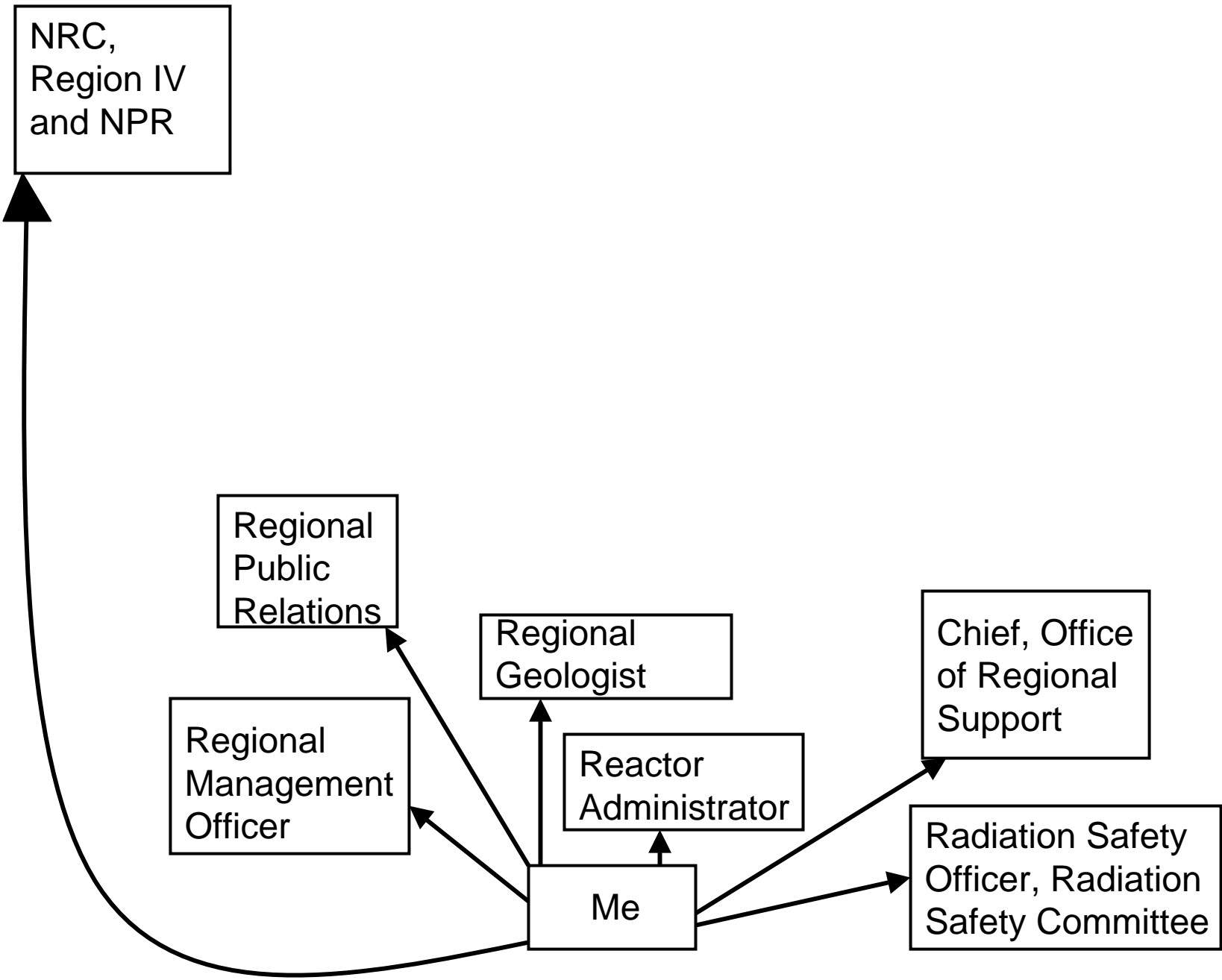
The next Thursday, the USGS Radiation Safety Committee was informed of the leak and the Committee viewed the tank. The response was subdued and no additional actions were directed.

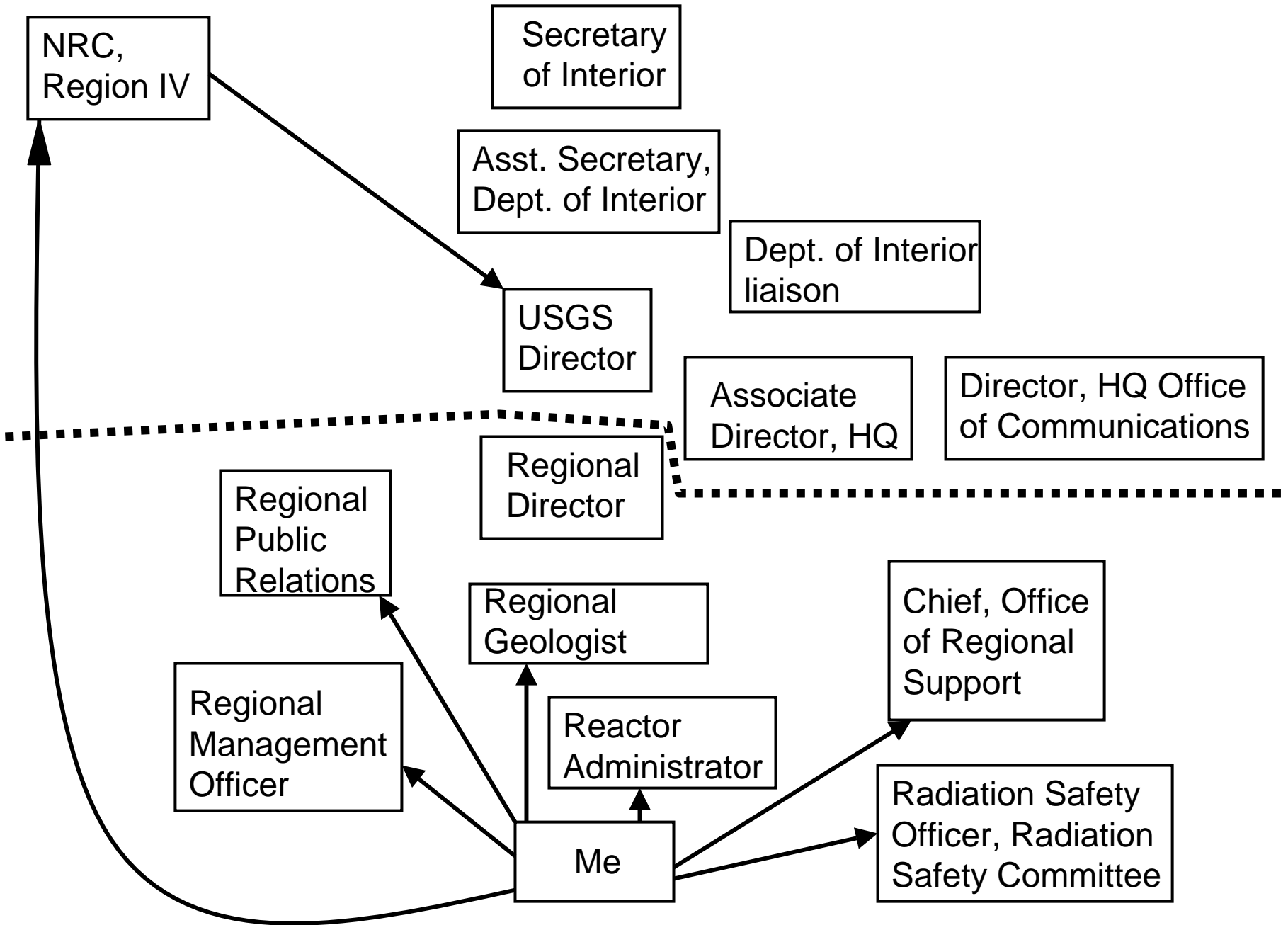




On the next day (Friday), local management (2 levels) and the USGS regional safety office was informed of the leak. The NRC was also notified, both the non-power reactor branch and the Region IV office. Responses were all subdued and we were requested to keep the NRC informed and to consider notifying appropriate local government agencies and news media.

The following Monday brought chaos.





## Media Releases:

USGS issued press release

NRC issued "Preliminary Notification"

USGS sent email to all Denver area employees

## Media Responses: Articles appeared in the following

Associated Press

USA Today

Rocky Mountain News

Denver Post

Summit Daily News

Denver TV Channels 2, 4, and 9

Cherry Creek News

North Denver News

KOA radio

GLIDE organization (assigned disaster number)

(a product of the United Nations?)

## Public Responses:

Several phone calls to local USGS contact

Several phone calls to local municipality offices

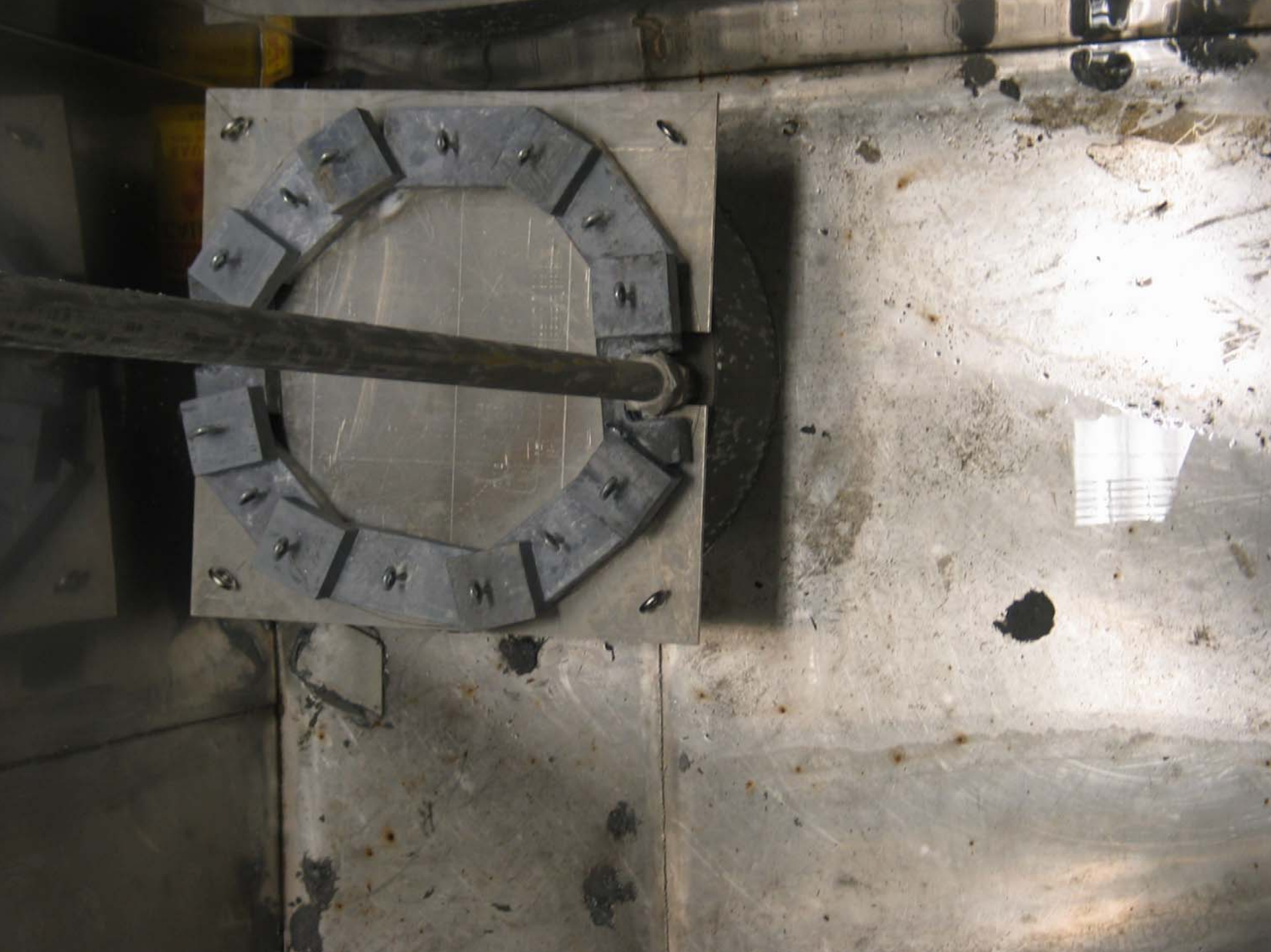
Several questions from Federal employees

# Continuing Events of Tank Leak

- NRC sent a two man inspection team to the site on June 29.
- No violations or concerns were identified.
- The leak was NOT a reportable event.
- No requirements were issued.
- USGS agreed to perform several actions.
  - Continue monitoring tank and ground water
  - Keep NRC informed of actions and status
  - Attempt to have permanent solution by Oct 06
  - Sample below tank to check for contamination

# Current Status:

- Lead shielding was installed over the large, irradiated component in the tank.
- All tank water was removed on 8/15/06.  
(leak is positively stopped)
- No contamination found in ground water; sampling is continuing.
- Bid has been received for possible disposal of the large, irradiated component.
- Tank may remain as is, as a dry storage facility, with component in place.
- Sampling below tank is pending.



# Summary of leak

- Total water leaked: < 675 gallons
- Licensed isotope found: Co-60 (5.2 year half-life)
- Concentration of Co-60:  $5.6e-8$  to  $1.3e-7$   $\mu\text{Ci/ml}$
- 10CFR effluent concentration limit:  $3e-6$   $\mu\text{Ci/ml}$
- Total qty of Co-60 leaked: <  $0.35$   $\mu\text{Ci}$
- 10CFR exempt qty for Co-60:  $1.0$   $\mu\text{Ci}$
- 10CFR reporting limit for Co-60:  $10.0$   $\mu\text{Ci}$
- Co-60 in ground water: none detected

# Summary of leak (continued)

- Water discharged to sewer system: 2746 gallons
- Qty of Co-60 discharged to sewer system:<1.5  $\mu\text{Ci}$
- 10CFR limit for discharge to sewer system:  
1,000,000  $\mu\text{Ci}$
  
- Radiation dose to members of the public: zero
- Number of federal, state, or local regulation violations: zero
  
- If a person had used the tank water as their source of potable water, it would have increased their average annual radiation exposure by <1.5%.

# Most Important Lesson Learned

- When you decide to notify people of an event - who you notify is important, but even more important is the ORDER that you notify those people. Reactions may not be rational.