



U.S. Department of
ENERGY



GLOBAL THREAT REDUCTION INITIATIVE

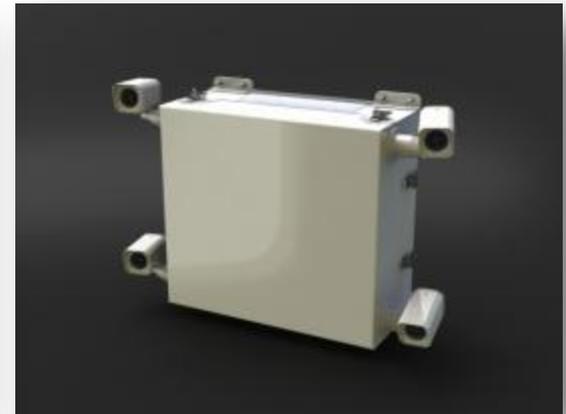
DOMESTIC SOURCE SECURITY OVERVIEW



❑ **Mission:** Reduce and protect vulnerable nuclear and radiological material located at civilian sites worldwide

❑ **Goals:**

- ❑ Convert research reactors and isotope production facilities from HEU to LEU (permanent threat reduction)
- ❑ Remove and dispose of excess nuclear and radiological materials (permanent threat reduction)
- ❑ Protect high priority nuclear and radiological materials from theft and sabotage through a sustainable threat reduction model



GTRI Threat Introduction Video

Domestic Material Protection Program overview video:

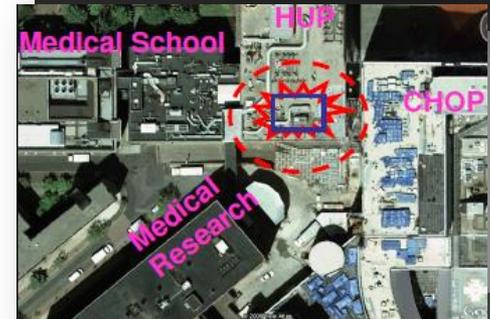
<http://www.y12.doe.gov/library/videos/domestic-material-protection-program>

GTRI Recommended Security Upgrades

- Participation is Voluntary
- GTRI upgrades are paid for with federal funds
- Before a contract can be agreed to for security enhancement installation, DOE requests site sign a “Sustainability Statement” which indicates a good faith commitment to operate, maintain, and sustain upgrades
- Not totally free: Your time and effort will be required to ensure success

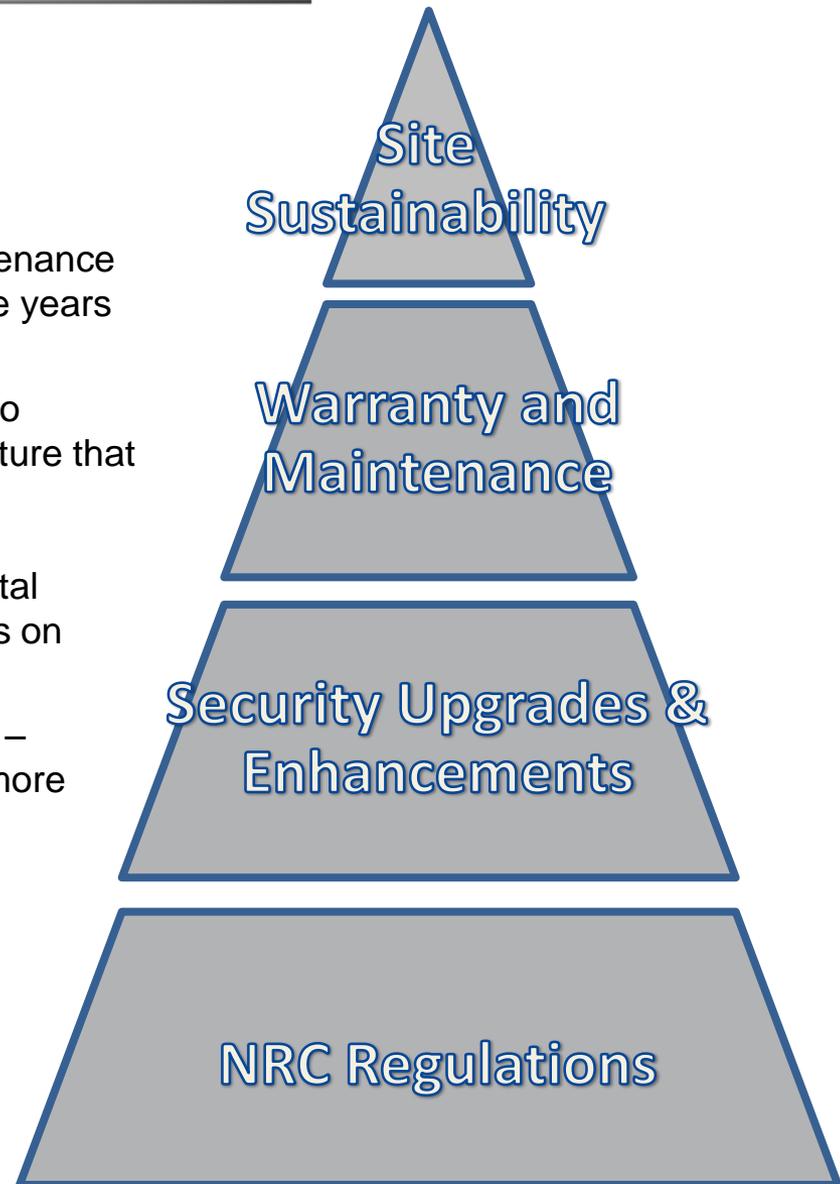
Sustainable Threat Reduction Elements

- Sustainability starts now
- Effective equipment maintenance program
- Budget planning
- Response force policy and procedures



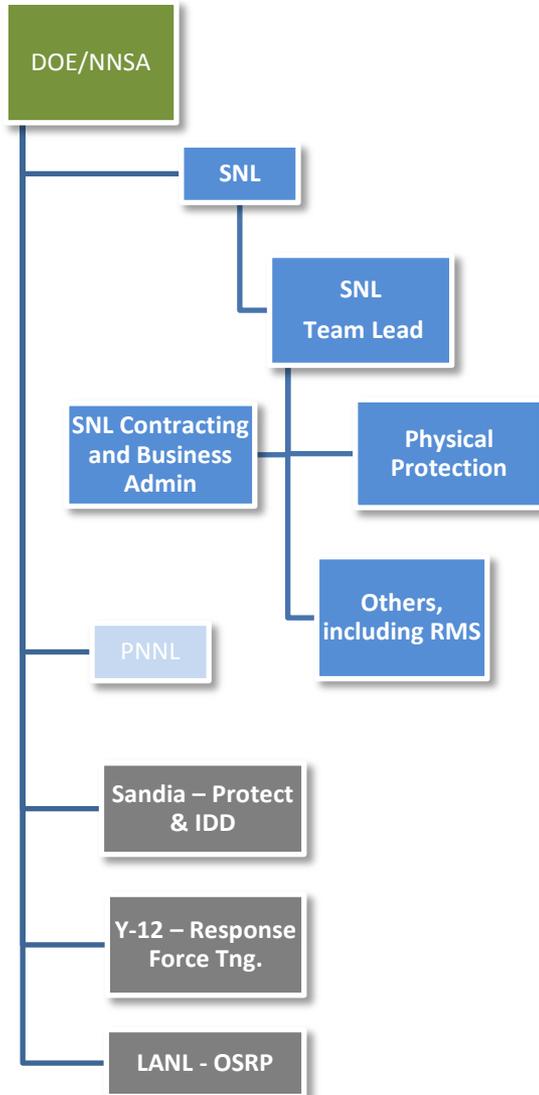
Sustainable Threat Reduction

- ❑ **End Goal = Sustainable Threat Reduction**
- ❑ Enhancements include three years of warranty and maintenance support on installed intrusion detection equipment and five years for GTRI Remote Monitoring System
- ❑ Program assists partner sites throughout the partnership to address and develop elements of their overall security culture that will ensure sustainability in the out years
- ❑ Existing security system, site operations, and environmental conditions are considered when making recommendations on additional enhancements
- ❑ GTRI Physical Protection experts focus on a defense – in – depth approach that starts at the target and adds one or more layers of protection beyond the target
- ❑ Upgrades are site specific and completely voluntary
- ❑ It is assumed by GTRI that volunteer sites are in compliance with the NRC regulations at the time of the assessment. All GTRI recommended enhancements compliment but do not replace existing regulator requirements

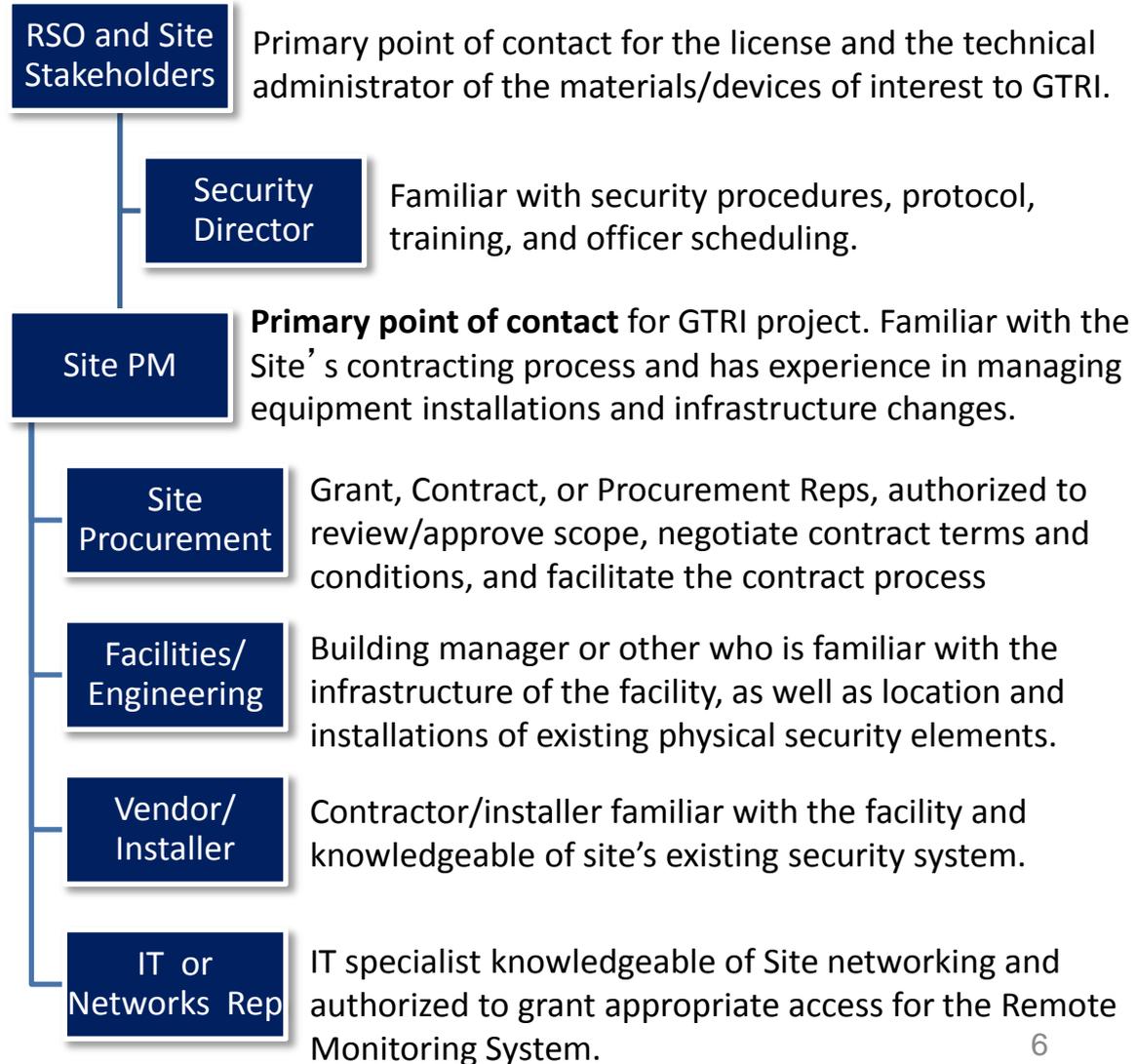


Roles and Responsibilities

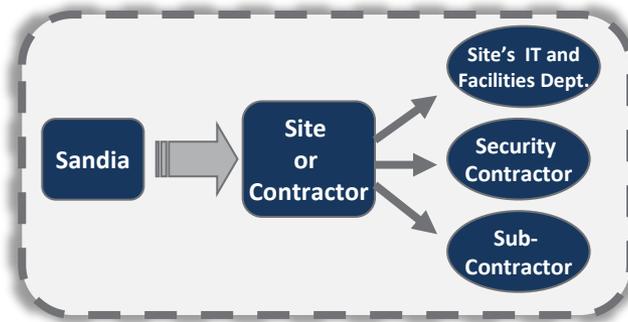
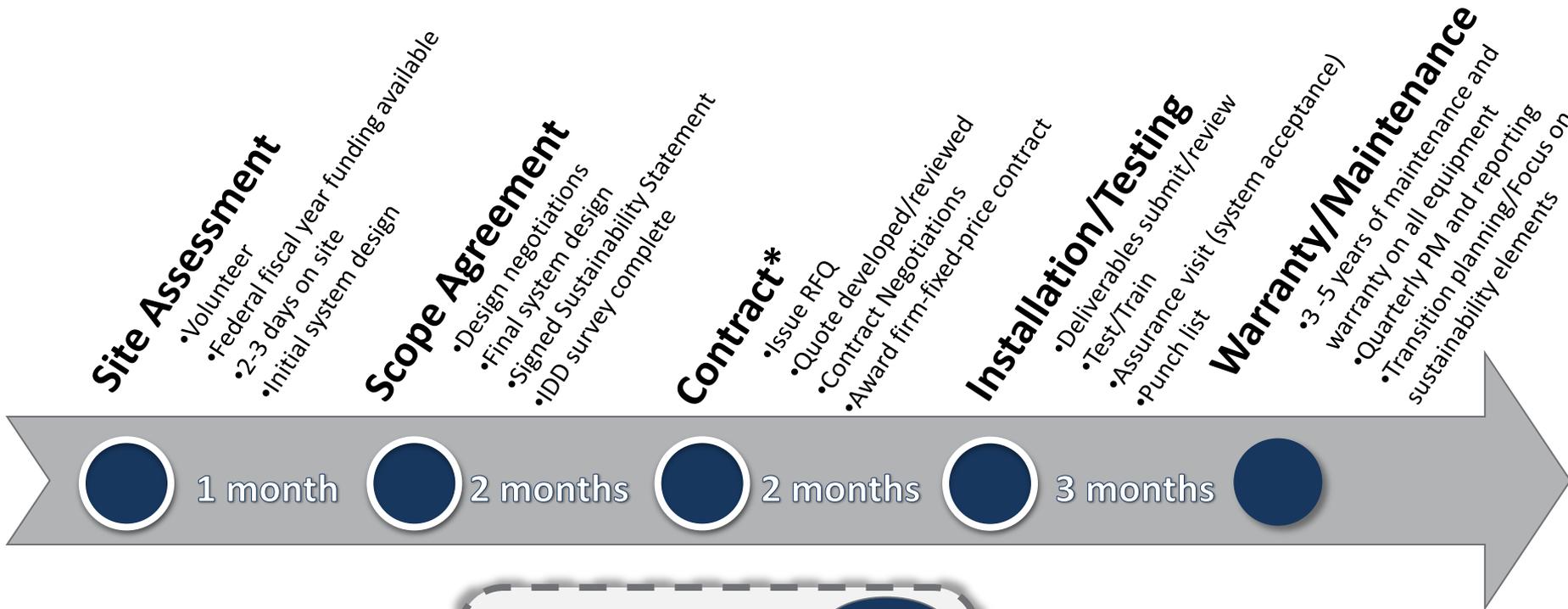
GTRI Domestic Protection



Site



Security Enhancement Process



*Areas that have been identified as causing significant delay in program completion at a site

Alarm Response Training

- Offered to partner sites once after upgrades
- Conducted at Y-12 National Security Complex in Oak Ridge, Tennessee
- Invitees include onsite responders, site radiation representative's, and local law enforcement



In-Device Delay (IDD)

- Installed on selected irradiators to increase the inherent delay for source removal
- Pre-IDD installation survey developed in conjunction with NRC



Table Top Exercises

- Provided in a joint cooperation with NNSA and FBI
- Funded by NNSA
- Scenarios are site specific and directed
- Conducted at select domestic nuclear and radiological sites



Off-Site Recovery Program (OSRP)

- Recover disused sources and retired irradiators
- OSRP - <http://osrp.lanl.gov>

- GTRI has developed a strategic approach to further reduce the risk of vulnerable radioactive materials.

Convert

- Leading an initiative to provide non-radioactive alternatives for radioactive sources
- Exploring incentives for licensees to replace high activity devices

Remove

- Expanding and accelerating disposition of disused and unwanted sources

Protect

- Continuing to enhance security for radioactive devices that do not have non-radioactive replacements



New Initiatives - Alternative Technologies

- 2008 National Academies of Science Report Recommendation:
 - In addition to actions related to radioactive cesium chloride, the U.S. government should adopt policies that provide incentives (market, regulatory, or certification) to facilitate the introduction of replacements and reduce the attractiveness and availability of high-risk radionuclide sources.
- 2010 Task Force Report Recommendation 10:
 - The Task Force recommends that the U.S. Government, contingent upon the availability of alternative technologies and taking into consideration the availability of disposal pathways for disused sources, investigate options such as a voluntary prioritized, Government-incentivized program for the replacement of Category 1 and 2 sources with effective alternatives, with an initial focus on sources containing CsCl.
- GTRI is looking at providing financial incentives for licensees to “convert” to alternative non-isotopic based technologies
- PNNL to issue Request for Information (RFI) to garner interest in this program

<https://gtri-cirp.labworks.org>

Access Code: CIRP_RFI



Pacific Northwest NATIONAL LABORATORY
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Cesium Irradiator Alternative Technology Request For Feedback

The Global Threat Reduction Initiative (GTRI) is part of the Department of Energy's National Nuclear Security Administration (DOE/ANS). With partners in more than 100 countries, GTRI's mission is to reduce and protect vulnerable nuclear and radiological material located at civilian sites worldwide.

This is a "first line of defense" program that works to prevent terrorists from acquiring materials that could be used in a weapon of mass destruction, a crude nuclear bomb, a radiological dirty bomb, or other acts of terrorism. NNSA's efforts, which aim to remove unneeded nuclear and radiological materials or secure those materials still in use, are voluntary and federally-funded. GTRI achieves its mission through three goals:

- CONVERT research reactors and isotope production facilities from the use of highly enriched uranium (HEU) to low enriched uranium (LEU).
- REMOVE and dispose of excess nuclear and radiological materials.
- PROTECT high priority nuclear and radiological materials from theft.

Since 2008, GTRI's domestic nuclear and radiological security program has supported these goals through physical protection enhancements and the recovery of disused and unwanted sources at civilian sites such as hospitals, blood banks, universities, and research institutes around the U.S.

Battelle, operator of the Pacific Northwest National Laboratory (PNNL) is one of the implementing agents for GTRI and is currently assisting the program in exploring the use of federal subsidies to promote the replacement of certain high activity radiological sealed sources used in medical treatment, biological research, sterilization, and other industrial applications with commercially available non-radioactive alternative technologies. Voluntary replacement of devices using high activity radiological sealed sources with non-radioactive alternative technologies accomplishes permanent threat reduction and supports the recommendations of the U.S. NRC-led Radiation Source Protection and Security Task Force*.

Non-radioactive replacement technologies currently exist for several medical and research applications that have historically used Cesium-137 irradiators. PNNL is soliciting feedback from the Cesium-137 irradiator user community on these types of alternative technologies and whether users would be interested in replacing their Cs-137 irradiator with a commercially available non-radioactive alternative technology if Federal subsidies were made available. This feedback will be used by PNNL in analyzing the feasibility of, and strategies associated with, a future Federal program that would provide financial assistance to users for the removal of Cs-137 irradiators and replacement with commercially available non-radioactive alternative technologies.

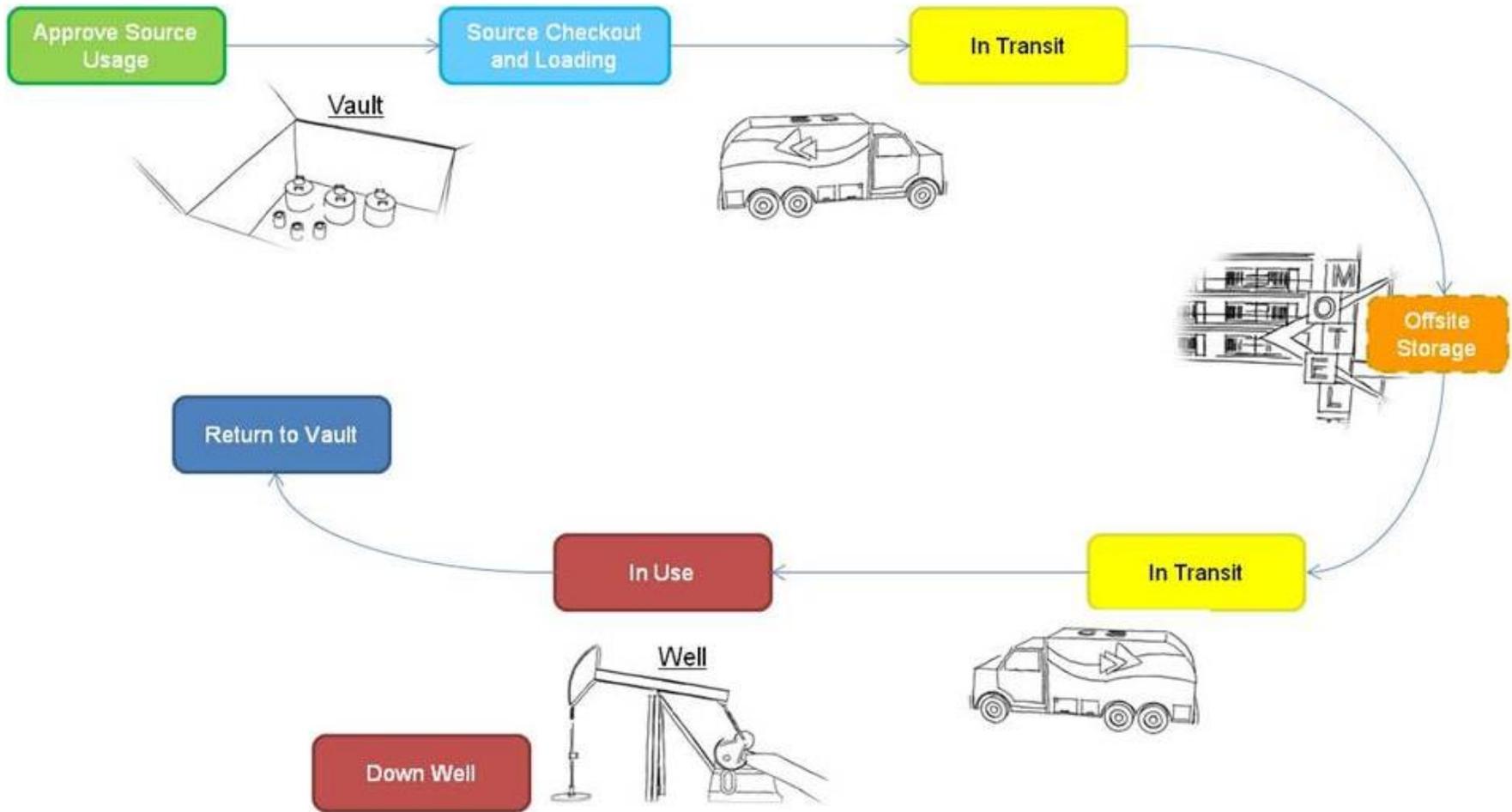
PNNL understands that users may have many questions related to the performance, financial viability and reliability of non-radioactive alternative technologies and whether the alternatives are even feasible for certain applications. In addition to gathering feedback on interest in replacing Cs-137 irradiators, PNNL hopes to use the information gathered through this request for feedback to identify what additional data or information Cs-137 irradiator users may need to better inform their decision to switch to a non-radioactive replacement technology. We appreciate your feedback and look forward to working with each of you. Please select "Next" below to provide your feedback to PNNL on this important national security issues.

The 2010 Radiation Source Protection and Security Task Force Report (<http://www.nrc.gov/security/byproduct/2010-task-force-report.pdf>)

Next + Exit and clear survey

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New Initiatives - Mobile Source Tracking



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