



# □ GTRI Mission & Program Goals

## MISSION

REDUCE AND PROTECT VULNERABLE NUCLEAR AND RADIOLOGICAL MATERIAL LOCATED AT CIVILIAN SITES WORLDWIDE.

## GOALS

1. CONVERT
2. REMOVE
3. PROTECT

## CONVERT



CONVERT RESEARCH REACTORS AND ISOTOPE PRODUCTION FACILITIES FROM THE USE OF HIGHLY ENRICHED URANIUM (HEU) TO LOW ENRICHED URANIUM (LEU)

THESE EFFORTS RESULT IN PERMANENT THREAT REDUCTION BY MINIMIZING AND, TO THE EXTENT POSSIBLE, ELIMINATING THE NEED FOR HEU IN CIVILIAN APPLICATIONS – EACH REACTOR CONVERTED OR SHUT DOWN ELIMINATES A SOURCE OF BOMB MATERIAL.

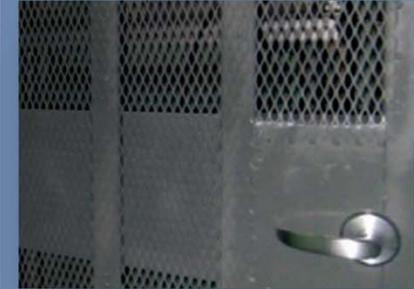
## REMOVE



REMOVE AND DISPOSE OF EXCESS NUCLEAR AND RADIOLOGICAL MATERIALS.

THESE EFFORTS RESULT IN PERMANENT THREAT REDUCTION BY ELIMINATING BOMB MATERIAL AT CIVILIAN SITES – EACH KILOGRAM OR CURIE OF THIS DANGEROUS MATERIAL THAT IS REMOVED REDUCES THE RISK OF A TERRORIST BOMB.

## PROTECT



PROTECT HIGH PRIORITY NUCLEAR AND RADIOLOGICAL MATERIALS FROM THEFT AND SABOTAGE

THESE EFFORTS RESULT IN THREAT REDUCTION BY IMPROVING SECURITY ON THE BOMB MATERIAL REMAINING AT CIVILIAN SITES – EACH VULNERABLE BUILDING THAT IS PROTECTED REDUCES THE RISK UNTIL A PERMANENT THREAT REDUCTION SOLUTION CAN BE IMPLEMENTED.



# Mo-99 Production and Usage

- Mo-99 Production Background

Foreign research reactors produce 100% of the U.S. supply of Mo-99. Canada currently supplies approximately 60% of this important radiopharmaceutical. Mo-99 is used to generate Tc-99m.

- Medical Usage

- Tc-99m is used in approximately 80 percent of all nuclear medicine diagnostic procedures, and in roughly 50,000 diagnostic and therapeutic nuclear medicine procedures performed daily in the United States, including diagnosis of heart disease, treating cancer, and studying organ structure and function.
- ~1 in 13 residents will receive nuclear medicine procedures from this material this year.
- Canada also produces other medical isotopes for the U.S. such as Iodine-131 and Xenon-133.

