

ORNL – SAFEGUARDS AND SECURITY : The Global producers of the 8 radionuclides of particular security concern

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Project Report

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Introduction

The scope of this assignment was to identify research and production nuclear reactors that are producers of significant quantities of eight specific radionuclides that are of security concern: Americium-241; Californium-252; Cesium-137; Cobalt-60; Iridium-192; Plutonium-238; Radium-226; and Strontium-90, by Mr. David Lambert, the Program Co-Manager of the Material Protection, Control, and Accounting Division of Oak Ridge National Laboratory’s Nuclear Nonproliferation Programs. The ultimate goal of this report is to aid in prioritizing the security risk for world-wide producers of these eight radionuclides.

Nuclear non-proliferation is important because there is a danger of societal rebels or extremist political or religious groups using certain radiological sources to create widespread panic and negative economic consequences (Tuyle et al. 2003). Lax security measures, such as legitimate users’ abandonment of stockpiles resulting in “orphan sources,” provide tantalizing targets for terrorists (Buxbaum 2004).

The following graph illustrates some source indexes that investigators at Los Alamos have identified as being sources of concern (Tuyle et al. 2003):

Source Status Concern Indices for Current Circumstances

