

PREFACE

The threat that non-nuclear weapon states could acquire nuclear weapons using commercial reactor-grade plutonium has been a focus of my work for almost my entire 44 year career. Though the United States first revealed the nuclear weapon potential of reactor-grade plutonium in 1976 and various other experts have repeatedly reinforced this point, a segment of the nuclear power industry determined to use plutonium as reactor fuel despite its highly uneconomical nature has continued to deny this fact. Over the past year, I published a series of papers on my website, <http://www.proliferationmatters.com>, which addressed the arguments from this segment of the nuclear industry. These papers demonstrate that reactor-grade plutonium can be used to produce nuclear weapons that would have a predetonation probability no higher than that of weapons using weapon-grade plutonium. The weapons using reactor-grade plutonium would be the exact same size and weight as weapons that used weapon-grade plutonium and they would require no special cooling. By coating the plutonium core with a thin layer of uranium, the gamma radiation would be significantly less than that of an unshielded weapon-grade plutonium core. For this book, I have put my series of papers together into a unified whole. I have added an introduction, chapters one and nine, refined and sharpened some of my analysis, and corrected some minor errors. Where there are differences between this book and my previous papers, the book should be taken as authoritative.

This book focuses on the production of nuclear weapons by nations not terrorists. Whether or not terrorists can produce nuclear weap-

ons is highly uncertain and not very dependent on the type of plutonium that they might attempt to use.

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This book is the product of the author's personal research and the analysis and views contained in it are solely his responsibility. Though the author is also a part-time adjunct staff member at the RAND Corporation and a faculty member of the Pardee RAND Graduate School, this paper is not related to any RAND project or the Pardee RAND Graduate School and therefore these organizations should not be mentioned in relation to this book. I can be reached at *GregJones@proliferationmatters.com*.

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