



International Atomic Energy Agency

IAEA Nuclear Security Series

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Panel Discussion 2-1 “Nuclear Security”

International Forum on Peaceful Use of Nuclear Energy and Nuclear Non–Proliferation
2-3 February 2011, Tokyo, Japan

IAEA - Improving Nuclear Security

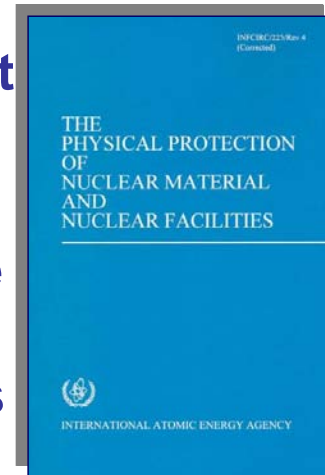
- Promoting international legal instruments and implementation
- **Developing recommendations and guidelines**
- Evaluation and advisory services (input to INSSP)
- HRD - Education and training, NSSC
- Information services — ITDB, Nusec
- Coordinated Research Projects - CRP
- Risk reduction - Technical improvements, PP upgrades and material relocation, borders, major public events



Nuclear security guidance

Related international guidance:

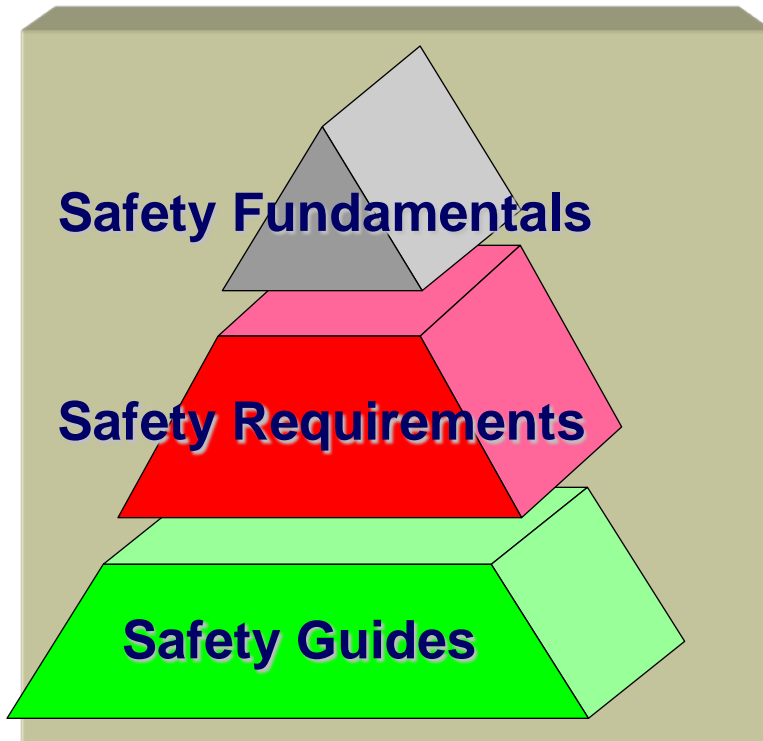
- Nuclear Security Fundamentals (GC(45)/INF/14) - 2001
- INFCIRC/225/Rev. 4 Recommendations on physical protection of nuclear material and facilities
- TECDOC-967 – Guidance and considerations for implementation of INFCIRC/225
- TECDOC-1276: Handbook on PPS
- Code of Conduct on the Safety and Security of Radioactive Sources (INFCIRC/663)
- Guidance on the Import and Export of Radioactive Sources (INFCIRC/663)
- Categorization of Radioactive sources RS-G-1.9
- Handbook on Nuclear Law Vol 1 and Vol 2
- Nuclear Security Series



Structure of Safety and Security Documents

Global reference point for high level of nuclear safety and security

NUCLEAR SAFETY STANDARDS



Mature stage through transparent development process

NUCLEAR SECURITY SERIES



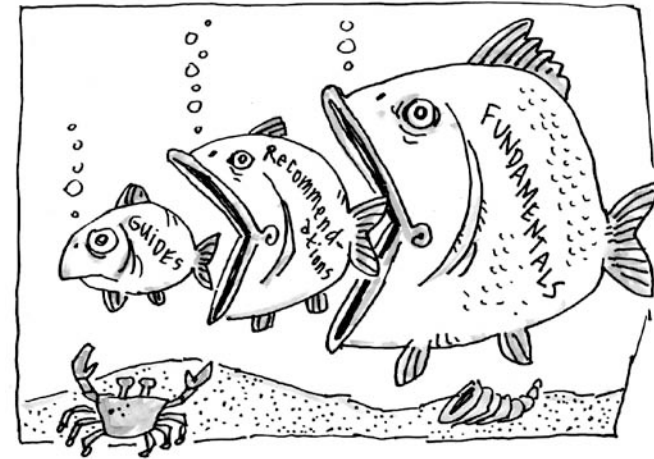
Initial stage of development



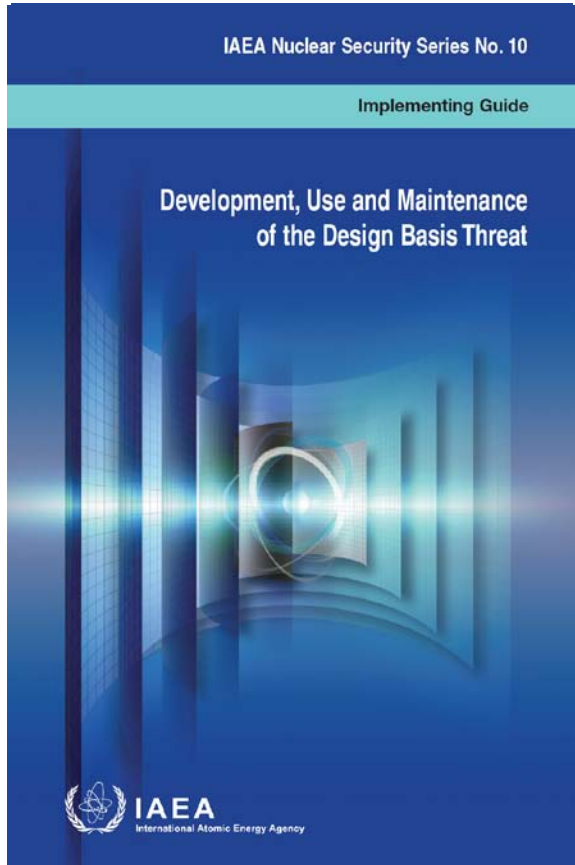
Nuclear Security Series

Hierarchy of Documents

- Fundamentals (PRINCIPLES)
 - Objectives and principles
 - Basis for *Nuclear Security Recommendations*
 - Essentials from international instruments
- Recommendations (WHAT)
 - General approaches, actions, concepts and strategies
 - Applications of *Fundamentals*
- Implementing Guides (HOW)
 - Broad guides on applying *Recommendations*
 - Ways & means of implementing *Recommendations* at systems level
- Technical Guidance
 - Reference Manuals, Training Guides, Service Guides



Nuclear Security Series



Nuclear Security Series:

- 14 publications so far
- >15 under development

<http://www-pub.iaea.org/MTCD/publications/>



Nuclear Security Series – Published as Technical Guidance 2006-2010

- 1 Technical and Functional Specifications for Border Monitoring Equipment
- 2 Nuclear Forensic Support
- 3 Monitoring for Radioactive Material in International Mail Transported by Public Postal Operators
- 4 Engineering Safety Aspects of the Protection of Nuclear Power Plants against Sabotage
- 5 Identification of Radioactive Sources and Devices
- 6 Combating Illicit Trafficking of Nuclear and other Radioactive Material – Handbook
- 12 Educational Programme in Nuclear Security



Nuclear Security Series

published as Implementing Guides in 2008 and 2009



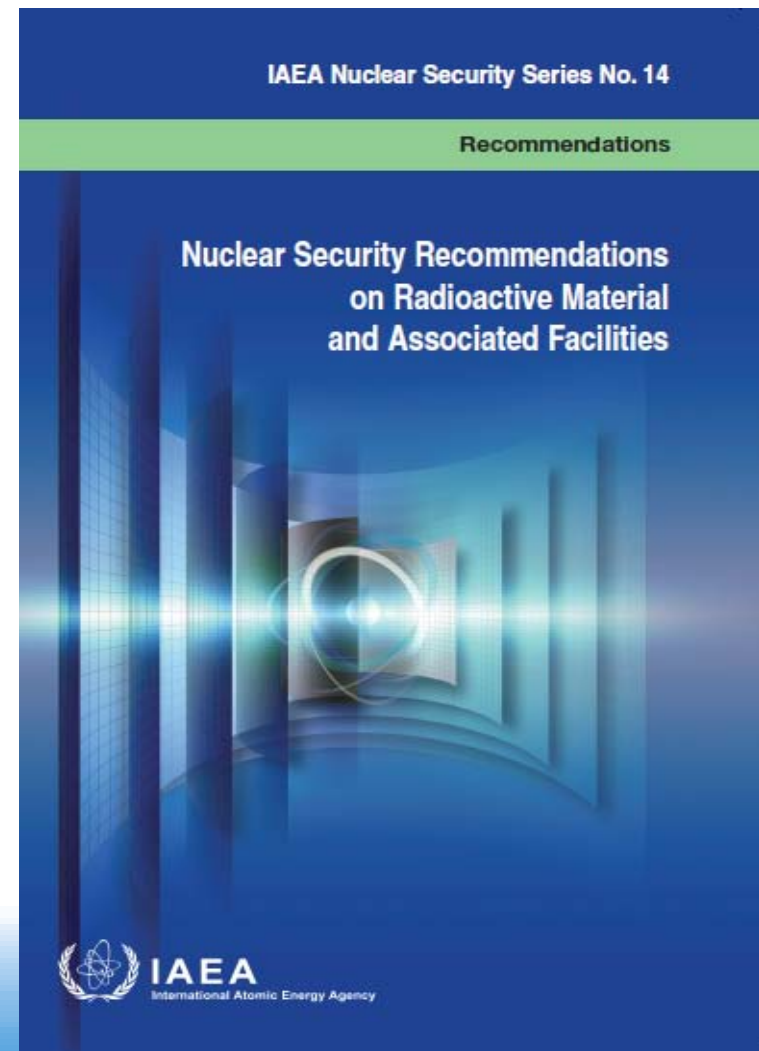
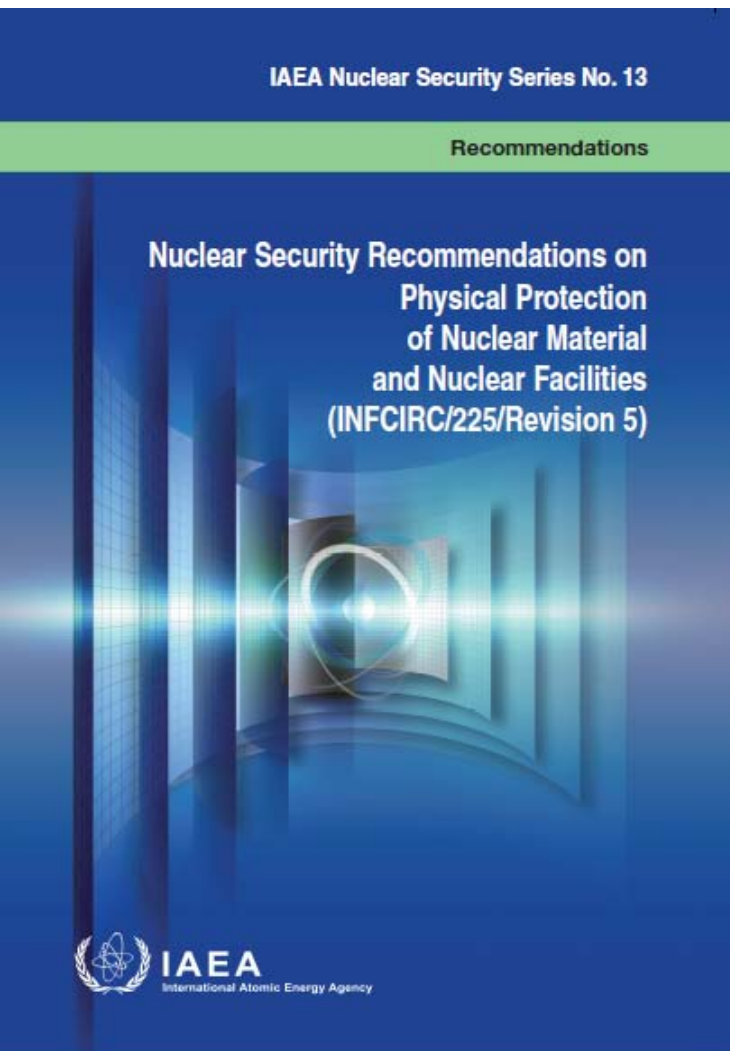
- 7 Nuclear Security Culture
- 8 Preventive and protective Measures Against Insider Threats
- 9 Security in the Transport of Radioactive Material
- 10 Development, Use and Maintenance of the Design Basis Threat
- 11 Security of Radioactive Sources



Nuclear Security Series published as Recommendations in 2011

http://www-pub.iaea.org/MTCD/publications/PDF/Pub1481_web.pdf

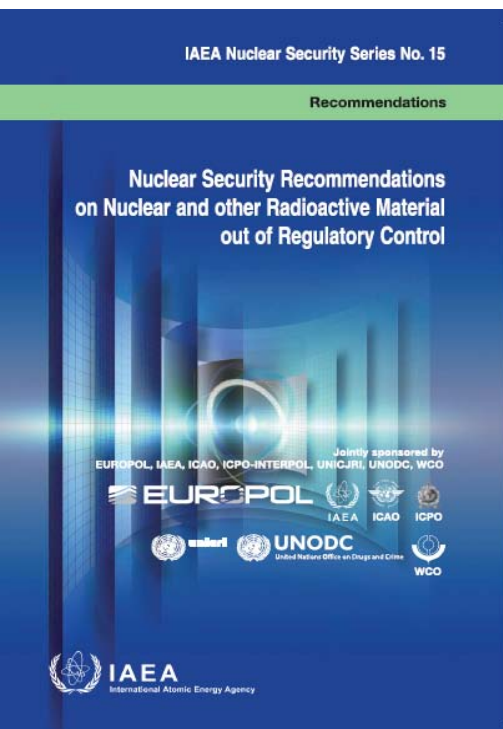
http://www-pub.iaea.org/MTCD/publications/PDF/Pub1487_web.pdf



Nuclear Security Series - Current Focus

To be published in 2011:

- Nuclear Security Fundamentals – Essential elements
- Nuclear Security Recommendations On Radioactive Material Out of Regulatory Control, NSS#15
- International Legal Framework for Nuclear Security, IAEA International Law Series No. 4



The International Legal Framework
for Nuclear Security

IAEA International Law Series No. 4



IAEA
International Atomic Energy Agency



Other NSS publications, expected in 2011-2012

- Identification of Vital Areas at Nuclear Facilities
- INPRO Manual on Physical protection
- Computer Security at Nuclear Facilities
- Nuclear Material Accountancy and Control at Facilities
- Nuclear Security at Major public events
- Radioactive Waste Security
- Nuclear Security for New Nuclear Power Plants
- Protecting and confidentiality of nuclear security information
- Protection Against Sabotage
- Physical protection of research reactors
- Procedures for examining legal shipments of radioactive mat.
- Security of fissile/radioactive material in transport
- Risk assessment and State management of nuclear security regime
- Responsibility and Management for Nuclear Security
- Nuclear Security Glossary



Nuclear Security Recommendations on Physical Protection of Nuclear Material and Nuclear Facilities - NSS No 13

➤ Two types of risk covered:

- risk of unauthorized removal with the intent to construct a nuclear explosive device**
- risk of sabotage**

➤ Not covered:

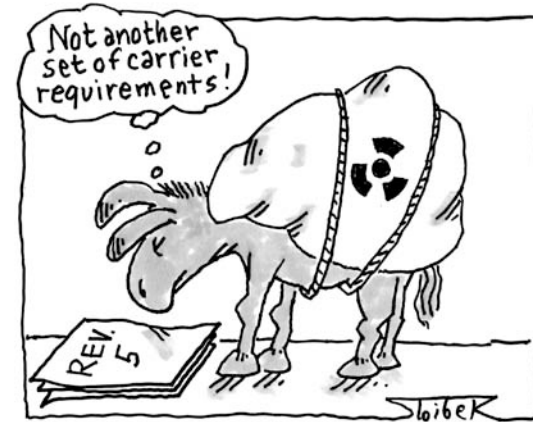
- risk of unauthorized removal which could lead to subsequent off-site dispersal**

(Nuclear Security Recommendations on Radioactive Material and Associated Facilities NSS No 14 apply)



Nuclear Security Recommendations on Physical Protection of Nuclear Material and Nuclear Facilities NSS No 13

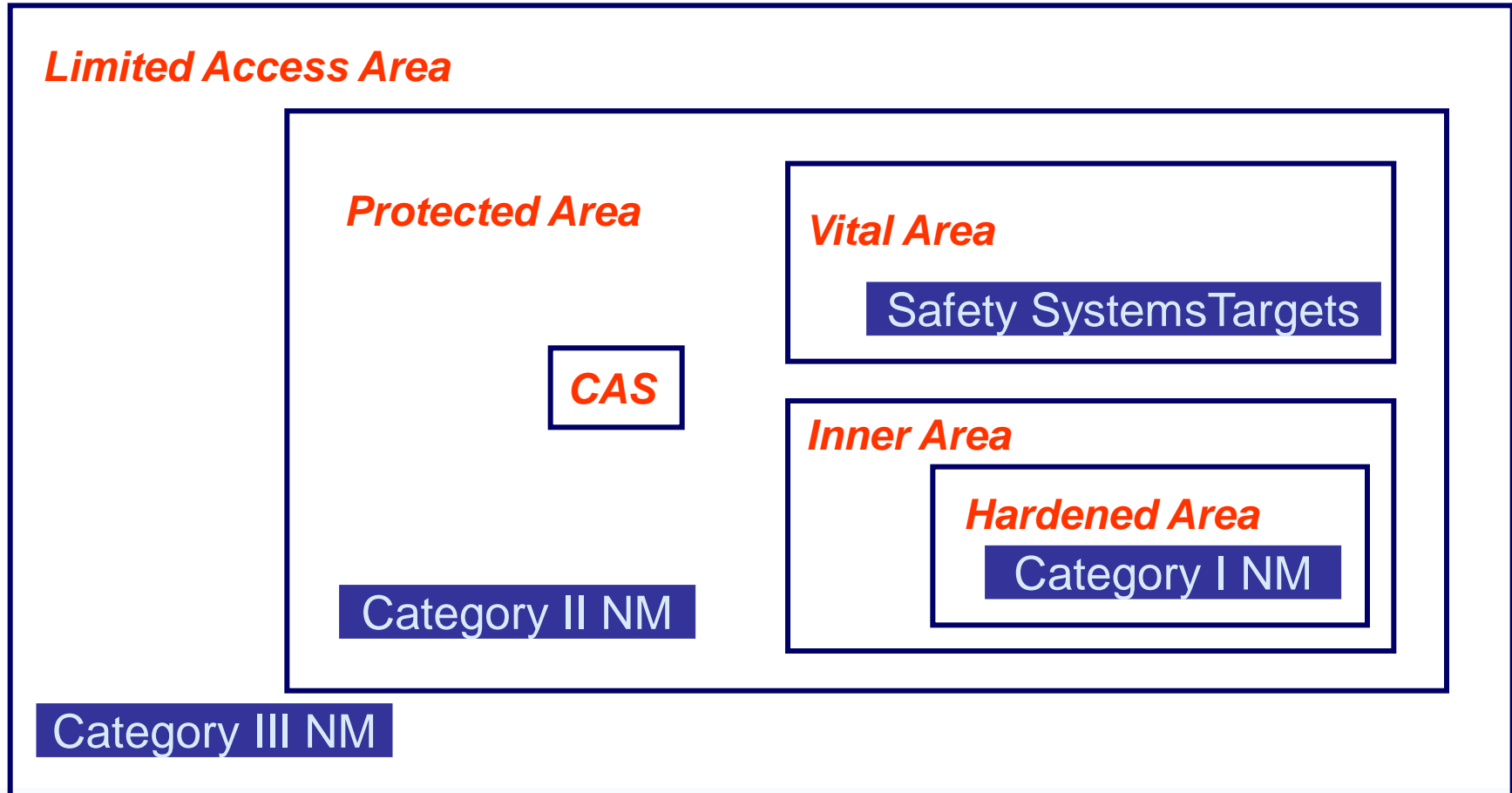
- Similar to the INFCIRC 225 Revision 4
- Based on the 4 objectives:
 - ✓ To protect against unauthorized removal
 - ✓ To locate and recover missing nuclear material
 - ✓ To protect against sabotage
 - ✓ To mitigate or minimize effects of sabotage
- Requirements related to the implementation of the 12 fundamentals principles of 2001 Fundamentals
- Categorization of nuclear material integrated in one section
- Specific section on transport of nuclear material
- New requirements on licensing
- New requirements on prevention of sabotage
- New requirements concerning interface with safety and system for nuclear material accountancy and control
- New requirements concerning the response to a malicious act



Nuclear Security Recommendations on Physical Protection of Nuclear Material and Nuclear Facilities NSS No 13

➤ Clarification on site areas

- ✓ Limited Access Area -new concept: *limited and controlled access*



Nuclear Security Recommendations on Radioactive Material , NSS No 14 - Scope

- Protection of all types of radioactive material
- Protection of **nuclear material** against unauthorized removal for subsequent exposure or dispersal
- Security of radioactive material throughout its lifecycle: manufacture, supply, receipt, possession, storage, use, transfer, import, export, **transport (specific section)**, maintenance, and recycling or disposal
- Severe **non-radiological** consequences **not addressed**



Nuclear Security Recommendations on Radioactive Material , NSS No 14

- **Implementation of the 4 Objectives:**
 - ✓ To establish and maintain the security throughout their entire lifecycle
 - ✓ To achieve and maintain a high level of security for each radioactive source that is commensurate with the potential hazard
 - ✓ To prevent unauthorized access or damage to, and theft or unauthorized transfer of
 - ✓ To response to any malicious act involving a radioactive source under regulatory control
- **Establishment of a national nuclear security regime**
- **Implementation of 10 of the 12 Essential Elements**
- **Risk management approach**
- **Recommendations on Security of radioactive material in use and storage**
- **Recommendations on Security of radioactive material in transport**
- **Management of Safety and Security Interfaces**



Nuclear Security Recommendations on Nuclear and other Radioactive Material out of Regulatory Control, NSS No 15

INTRODUCTION

OBJECTIVES OF A STATE'S NUCLEAR SECURITY REGIME

RECOMMENDATIONS FOR STATE'S NUCLEAR SECURITY REGIME FOR NUCLEAR AND OTHER RADIOACTIVE MATERIAL OUT OF REGULATORY CONTROL

RECOMMENDATIONS ON PREVENTIVE MEASURES.

RECOMMENDATIONS ON DETECTION MEASURES.

RECOMMENDATIONS ON RESPONSE MEASURES

RECOMMENDATIONS ON INTERNATIONAL COOPERATION

DEFINITIONS

REFERENCES



Nuclear Security Recommendations on Nuclear and other Radioactive Material out of Regulatory Control, NSS No 15

- **22 recommendations for State's nuclear regime for nuclear and other radioactive material out of regulatory control.**
- **25 recommendations for preventive measures;**
- **24 recommendations for detection measures**
- **24 recommendations for response measures**
- **16 recommendations for international cooperation.**

