Document Preparation Profile (DPP)

1. IDENTIFICATION

Document Category:	**Safety Guide**
Working ID:	**DS419**
Proposed Title:	**Radiation Safety in Well Logging**
Proposed Action:	**New document**
Published Title/Date	**-**
Safety Series No.:	**-**
SS Committee(s):	**RASSC, TRANSSC**
Technical Officer(s):	**Trevor Boal**

2. OBJECTIVE

The objective of the proposed Safety Guide is to promote safety in the use of radiation sources used for well logging by providing guidance on safety measures specific to this practice. The Safety Guide will provide guidance on meeting the requirements of the Basic Safety Standards (BSS) and other relevant publications in the *Safety Standards Series*. With the needs of the end users in mind, the Safety Guide is expected to contain informational and educational material as annexes.

3. BACKGROUND

The mining and oil industries make extensive use of radioactive sources, and in some cases radiation generators, for the purposes of characterizing wells and boreholes. A need has been identified for specific, detailed operational information to ensure the safe use of well logging sources. This safety guide is part of a series of practice specific safety guides for industrial uses of ionizing radiation e.g. for industrial irradiators, industrial radiography, nuclear gauges, and isotope production facilities that are currently planned or under development.

4. INTERFACES

This Safety Guide will interface with the following Safety Standards:

1. FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS, INTERNATIONAL ATOMIC ENERGY AGENCY, INTERNATIONAL LABOUR ORGANISATION, NUCLEAR ENERGY AGENCY OF THE ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT, PAN AMERICAN HEALTH ORGANIZATION, WORLD HEALTH ORGANIZATION, International Basic Safety Standards for Protection against Ionizing Radiation and for the Safety of Radiation Sources (1996)

2. INTERNATIONAL ATOMIC ENERGY AGENCY, Legal and Governmental Infrastructure for Nuclear, Radiation, Radioactive Waste and Transport Safety, GS-R-1, 2000

3. INTERNATIONAL ATOMIC ENERGY AGENCY, Preparedness and Response for a Nuclear or Radiological Emergency, GS-R-2, 2002

4. INTERNATIONAL ATOMIC ENERGY AGENCY, Regulations for the Safe Transport of Radioactive Material, TS-R-1, 2005

5. INTERNATIONAL ATOMIC ENERGY AGENCY, Occupational Radiation Protection, RS-G-1.1, 1999

6. INTERNATIONAL ATOMIC ENERGY AGENCY, Assessment of Occupational Exposure due to External Sources of Radiation, RS-G-1.3, 1999

7. INTERNATIONAL ATOMIC ENERGY AGENCY, Building Competence in Radiation Protection and the Safe Use of Radiation Sources, RS-G-1.4, 2000

8. INTERNATIONAL ATOMIC ENERGY AGENCY, Categorization of Radioactive Sources, RS-G-1.9, 2005

9. INTERNATIONAL ATOMIC ENERGY AGENCY, Safety of Radiation Generators and Sealed Radioactive Source, RS-G-1.10.

10. INTERNATIONAL ATOMIC ENERGY AGENCY, Regulatory Control of Radiation Sources, GS-G-1.5, 2004

11. INTERNATIONAL ATOMIC ENERGY AGENCY, Radiation Safety in Industrial Radiography, draft Safety Guide DS408.

12. INTERNATIONAL ATOMIC ENERGY AGENCY, Radiation Safety of Gamma, Electron and X ray Irradiation Facilities, draft Safety Guide DS409.

13. INTERNATIONAL ATOMIC ENERGY AGENCY, Radiation Safety for Nuclear Gauges, draft Safety Guide DS420.

14. INTERNATIONAL ORGANIZATION FOR STANDARDIZATION, Radiation Protection - sealed radioactive sources - General requirements and classification, ISO 2919, Geneva, 1999.

15. INTERNATIONAL ATOMIC ENERGY AGENCY, Code of Conduct on the Safety and Security of Radioactive Sources, IAEA, Vienna, 2004.

16. INTERNATIONAL ATOMIC ENERGY AGENCY, Recommendations for Physical Protection of Radioactive Materials and Associated Facilities, including Transport, draft Security Recommendations

17. INTERNATIONAL ATOMIC ENERGY AGENCY, Security of Radioactive Sources, draft Security Implementing Guide

18. INTERNATIONAL ATOMIC ENERGY AGENCY, Security During the Transport of Radioactive Material, draft Security Implementing Guide,

It will also refer to several technical and educational materials developed by the Agency, including relevant modules of the Agency's post-graduate education course in radiation safety.

Potential cosponsors, such as the International Labour Organization, will be consulted, and development work will involve both regulators and experts from the source manufacturers and supply industry.

5. OVERVIEW

The Safety Guide will cover the design, construction and performance criteria for radiation sources used for logging; responsibilities of relevant parties; operational procedures, including safe handling and radiation monitoring; and storage, transport and disposal of sources; and it will provide guidance on developing local working rules applicable for each site. It will also provide guidance on safety measures and security measures that are designed and implemented in an integrated manner.

6. PRODUCTION: Provisional schedule for preparation of the document, with expected dates:

Approval of DPP by the Steering Committee – by February 2008
Approval of DPP by RASSC, TRANSSC – March, April 2008
Development: (drafting and consultant meetings) – April to July 2008
First review of draft by RASSC – November 2008
Editing and further development following RASSC advice – to January 2009
Approval of draft by the Steering Committee – February 2009
Review by RASSC, TRANSSC for submission to Member States comment – April 2009
Member States comment period – May to August 2009
Approval of final draft by the Steering Committee – August 2009
Approval of final draft by RASSC, TRANSSC – October 2009
Endorsement of draft by CSS – November 2009
Submission to Publications Committee – December 2009
Target publication date – first quarter 2010.

OUTLINE CONTENTS
(preliminary only)

1. INTRODUCTION
   - Background
   - Objective
   - Scope
   - Structure

2. REQUIREMENTS AND RESPONSIBILITIES
   - Manufacturer and supplier
   - Licensee
   - Installer and User
   - Radiation Protection Officer

   (This Section will provide guidance for the responsible parties on meeting the relevant key requirements of the BSS.)

3. RADIATION SAFETY PLAN
   - Radiation protection programme
   - Occupational protection
   - Local working rules
   - Monitoring equipment and procedures
   - Installations, repairs and maintenance
   - Emergency procedures
   - Security, storage and transport of sources
   - Safety-Security interfaces
   - Auditing and reporting
   - Decommissioning

   (This Section will cover the preparation and implementation of the site-specific radiation safety plan.)

4. SAFETY MEASURES FOR SPECIFIC SOURCES AND USES
   - Sealed gamma sources
   - Neutron sources
   - Radiation generators

   (This Section will provide detailed guidance for specific types of source, covering source requirements, classification of areas, marking and warning signs and systems, defence in depth, maintenance, decommissioning, individual and workplace monitoring, recovery of lost, stuck or damaged sources, etc.)

APPENDICES
(If any)

ANNEXES
(Possible illustrative examples)

REFERENCES

CONTRIBUTORS TO DRAFTING AND REVIEW

BODIES FOR THE ENDORSEMENT OF IAEA SAFETY STANDARDS