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ORPAS Training for the Appraisal Team
- Mutual Learning Opportunities -

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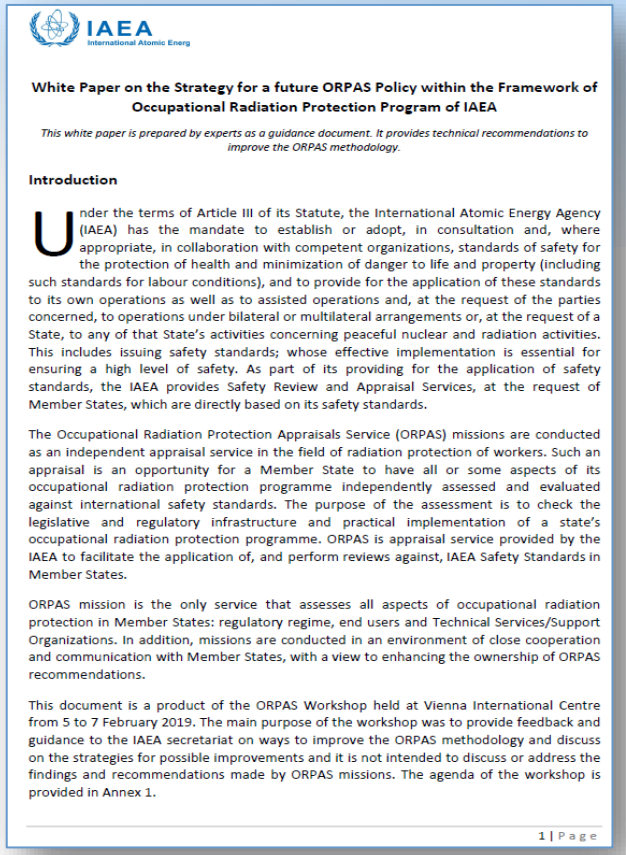
Radiation Safety & Monitoring Section, NSRW

Developed with guidance from Workshops

- **2019 Workshop**
- Training for reviewers on ORPAS methodology including practical sessions on assessment of ARM
- Introduction of strategy to conduct interviews for regulatory aspects of occupational exposure control, different types of TSPs and operators including assessment of reviewer's performance
- Practical session "*Agendas of such events and material for practical sessions could be prepared in consultation with the ORPAS reviewers*"



IAEA

White Paper on the Strategy for a future ORPAS Policy within the Framework of Occupational Radiation Protection Program of IAEA

This white paper is prepared by experts as a guidance document. It provides technical recommendations to improve the ORPAS methodology.

Introduction

Under the terms of Article III of its Statute, the International Atomic Energy Agency (IAEA) has the mandate to establish or adopt, in consultation and, where appropriate, in collaboration with competent organizations, standards of safety for the protection of health and minimization of danger to life and property (including such standards for labour conditions), and to provide for the application of these standards to its own operations as well as to assisted operations and, at the request of the parties concerned, to operations under bilateral or multilateral arrangements or, at the request of a State, to any of that State's activities concerning peaceful nuclear and radiation activities. This includes issuing safety standards; whose effective implementation is essential for ensuring a high level of safety. As part of its providing for the application of safety standards, the IAEA provides Safety Review and Appraisal Services, at the request of Member States, which are directly based on its safety standards.

The Occupational Radiation Protection Appraisals Service (ORPAS) missions are conducted as an independent appraisal service in the field of radiation protection of workers. Such an appraisal is an opportunity for a Member State to have all or some aspects of its occupational radiation protection programme independently assessed and evaluated against international safety standards. The purpose of the assessment is to check the legislative and regulatory infrastructure and practical implementation of a state's occupational radiation protection programme. ORPAS is appraisal service provided by the IAEA to facilitate the application of, and perform reviews against, IAEA Safety Standards in Member States.

ORPAS mission is the only service that assesses all aspects of occupational radiation protection in Member States: regulatory regime, end users and Technical Services/Support Organizations. In addition, missions are conducted in an environment of close cooperation and communication with Member States, with a view to enhancing the ownership of ORPAS recommendations.

This document is a product of the ORPAS Workshop held at Vienna International Centre from 5 to 7 February 2019. The main purpose of the workshop was to provide feedback and guidance to the IAEA secretariat on ways to improve the ORPAS methodology and discuss on the strategies for possible improvements and it is not intended to discuss or address the findings and recommendations made by ORPAS missions. The agenda of the workshop is provided in Annex 1.

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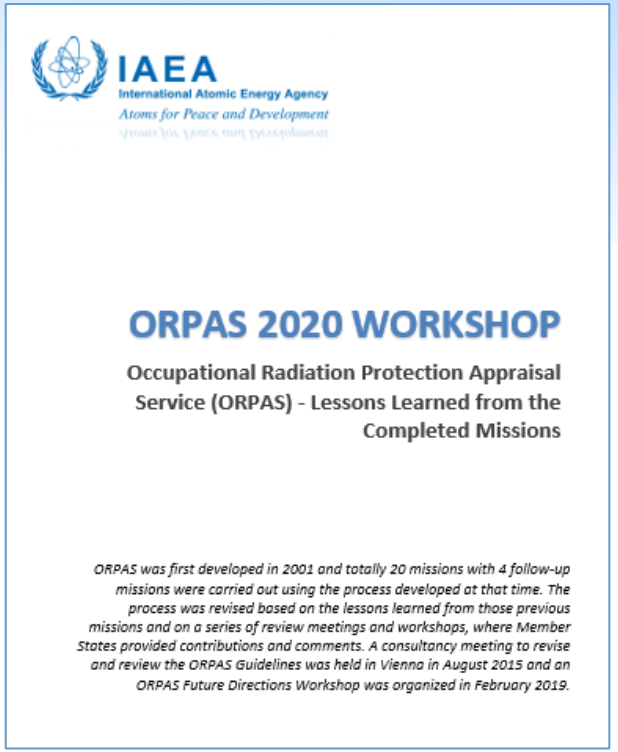
Future Directions Workshop
5-7 February 2019
& White Paper

2020 Workshop

- Specific recommendations
  - Team: Develop a review checklist and conduct an initial team training and meeting to discuss first impressions (before the preparatory meeting)
  - Depending on the country request: Training on the conduct of RP measurements such as dose rate and ventilation system (fume hoods and hot cells) measurements. *"These measurements were found to be very useful in verifying equipment design and performance as well as in identifying key safety issues. "ORPAS reviewers training may include topics for such measurements."*
  - Narrow scope mission: Training on occupational radiation protection for the host country
- Prepare a package to be used for virtual events

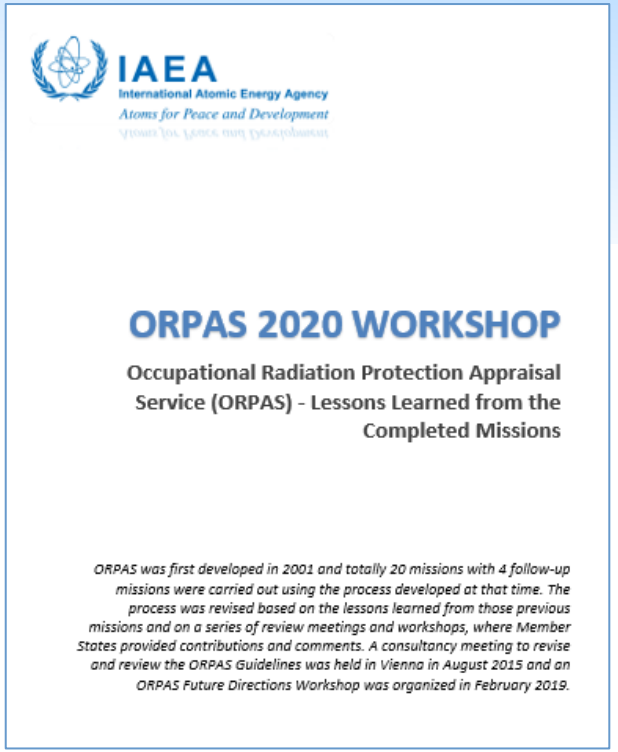


2020 Virtual Workshop
27-29 October 2020

ORPAS METHODOLOGY & PREPARATION FOR THE 2021 TECHNICAL MEETING

2020 Workshop

- Different formats and content
  - Train the trainers
  - Potential Reviewers
- SARIS and Qs
- Pre-mission training for the host country
- Training during the preparation period, *"Training activities could be considered as an opportunity to review of competence of ORPAS team with different roles and responsibilities. Technical training could be considered according to the needs of each Region"*
- Training on interview (mimic possible scenarios) and report preparation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ORPAS 2020 WORKSHOP

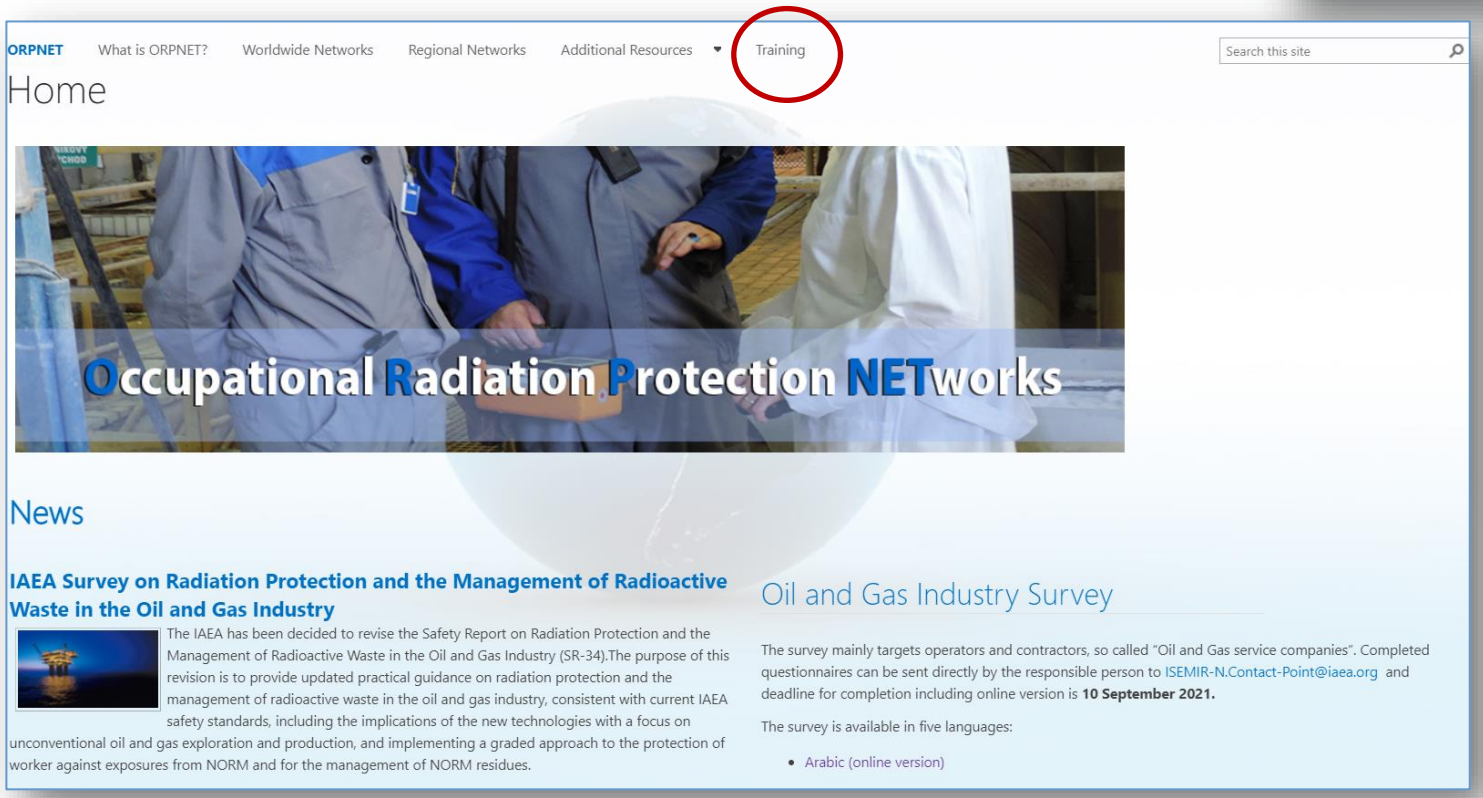
Occupational Radiation Protection Appraisal Service (ORPAS) - Lessons Learned from the Completed Missions

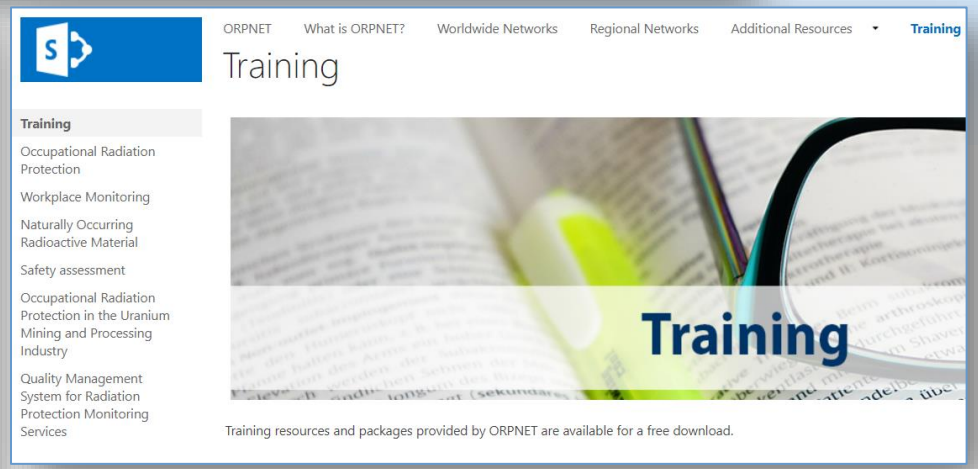
ORPAS was first developed in 2001 and totally 20 missions with 4 follow-up missions were carried out using the process developed at that time. The process was revised based on the lessons learned from those previous missions and on a series of review meetings and workshops, where Member States provided contributions and comments. A consultancy meeting to revise and review the ORPAS Guidelines was held in Vienna in August 2015 and an ORPAS Future Directions Workshop was organized in February 2019.

2020 Virtual Workshop
27-29 October 2020

ORPAS METHODOLOGY & PREPARATION FOR THE 2021 TECHNICAL MEETING

Training on ORP





https://nucleus.iaea.org/sites/orpnet/home/SitePages/Home.aspx

- Training on ORP , based on GSR Part 3 and GSG-7
- Downloadable in ppt format
- Lectures in English and Spanish

ORPNET, e-learning

IAEA launches new online training course in occupational radiation protection

The IAEA has released new training material on occupational radiation protection. The material is based on GSG-7, which provides general guidance on the development of occupational radiation protection programmes in accordance with the requirements of GSR Part 3, and addresses the sources of radiation likely to be encountered in workplaces.

The course is publicly available in English within the IAEA's learning management system.

View the course >>

Occupational Radiation Protection based on General Safety Guide No. GSG-7

The purpose of this course is to increase understanding of the occupational exposure control requirements contained in GSR Part 3 and how these safety standards fit within the IAEA Safety Standards hierarchy. Participants will learn how to fulfil the requirements of GSR Part 3 with respect to occupational exposure and GSG-7 recommendations relating to planned, existing and emergency exposure situations for occupational exposure.

The course contains 10 modules and covers:

- Framework for occupational radiation protection;
- Exposure of workers in different exposure situations;
- Monitoring and recording;
- Assessment of occupational exposures;
- Management system for service providers;
- Occupational exposure control measures;
- Protection of workers in special cases
- Workers' health surveillance.

This e-learning course was funded under the IAEA Regional Technical-Co-operation Project on Enhancing National Capabilities on Occupational Radiation Protection in Compliance with Requirements of the International Basic Safety Standards (RAS/9/080).

- Available under IAEA's Learning Management System
- Requires Nucleus account

IAEA | Learning Management System
powered by CLP4NET

OPEN-LMS | English (en)

Home > Courses > Nuclear Safety & Security > Nuclear Safety > Occupational Radiation Protection > Management and Control of Naturally Occurring Radioactive Material (NORM)

Enrolment options

Management and Control of Naturally Occurring Radioactive Material (NORM)

Natural resources that are extracted from the ground such as coal, oil, natural gas and other mineral ores contain various amounts of natural radioactivity. When these resources are extracted and processed, their natural state can be modified which may result in the enhancement of the natural radioactivity content originally present. Such enhancements may be observed in the residues or the waste created and/or in the products or by-products and are sometimes high enough to pose a risk to workers, members of public and the environment if they are not controlled properly. Materials of this kind are commonly referred to as Naturally Occurring Radioactive Material or NORM.

The International Basic Safety Standards (GSR Part 3) establishes requirements for industrial activities involving NORM. For the application of the IAEA Safety requirements on NORM activities, consideration needs to be given to radiation protection of workers, the public and the environment for a wide range of industrial activities on a global basis.

This e-learning course provides guidance based on GSG-7 on fulfilling the requirements of GSR Part 3 with respect to worker protection in industrial processes/operations involving NORM.

The course includes 15 modules and covers:

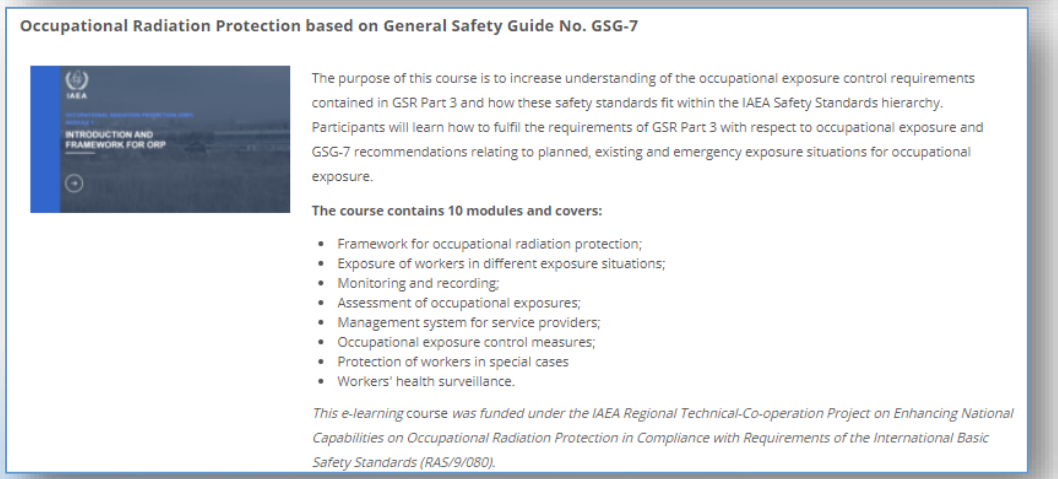
- Overview of natural radionuclides and NORM;
- Overview of the industrial activities involving NORM and an indication of those that are most likely to require regulatory consideration;
- Guidance on regulatory control (focusing on the application of a graded approach);
- Radiation protection issues for workers and the public associated with materials containing NORM;
- Guidance on the characterization of NORM and the assessment of exposures;
- Guidance on the management of NORM residues and the disposal options for NORM wastes;
- Guidance on the transport of NORM.

This e-learning course was funded under the IAEA Regional Technical-Co-operation Project on Enhancing National Capabilities on Occupational Radiation Protection in Compliance with Requirements of the International Basic Safety Standards (RAS/9/080).

Before taking this course, participants are advised to complete the training on Occupational Radiation Protection based on General Safety Guide No. GSG-7

https://elearning.iaea.org/m2/

ORPNET, e-learning



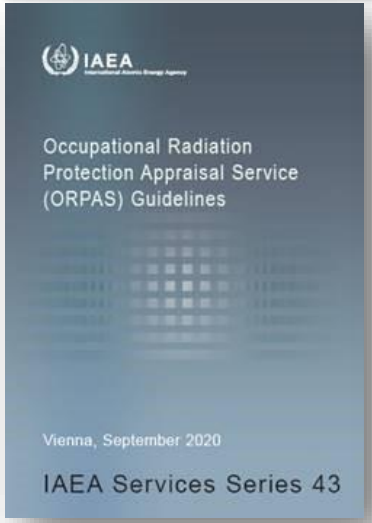
https://elearning.iaea.org/m2/

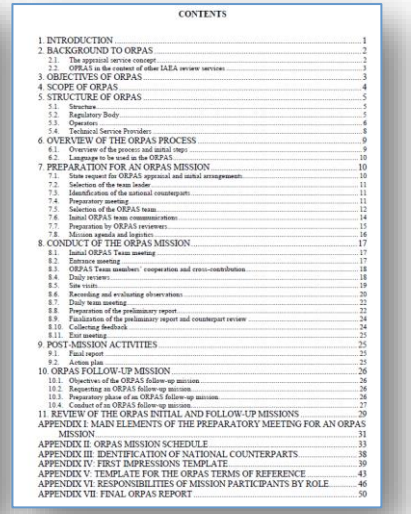
- Harness interactive technologies and communication systems to assist MSs in building their capacity in the field of RP of workers.
- Guidance on
  - Occupational exposure
  - Assess occupational exposure (internal and external);
  - Control exposure due to natural sources at work;
  - Protect emergency workers from radiation exposure;
  - Monitor the health of persons exposed to ionizing radiation at work.
- Customized using the latest digital technologies
- Works best on modern devices and up-to-date browsers
- All courses offer a certification upon successful completion

Training for ORPAS Reviewers (5 days programme)

Lectures and Interactive Exercise

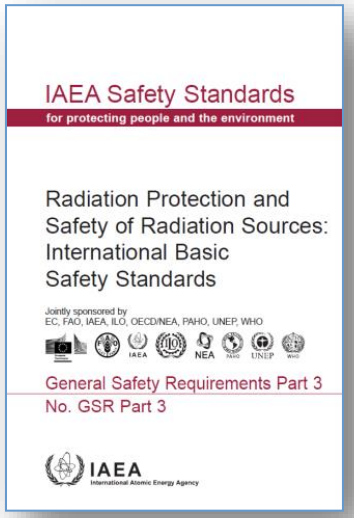
- Familiarity with the ORPAS Guidelines

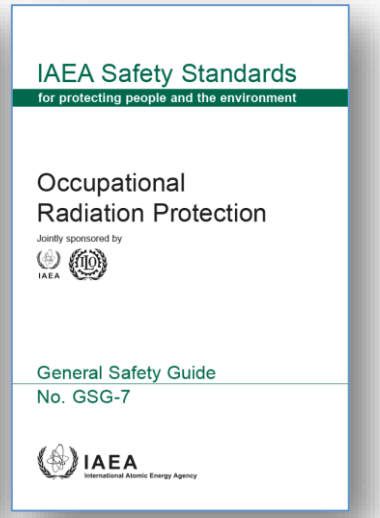




- 1 day (or 2 days for virtual)
- Guideline principles, responsibilities & roles
- Timeline and structure
- 4 modules

- Refreshing module for applicable Safety Standards for benchmarking





- Reference to available material
- 3 days
- 10 modules

- Conduct of
  - Review of ARM, completed Qs, SARIS report
  - First Impression Template
  - Preparatory meeting
  - Mission
  - Follow-up mission
  - Preliminary report

- Roundtables (RB, TSP &Operator), 1 day
- Interactive sessions (simulating situations)
- Tactics for proper interviews
- Implementation by experienced ORPAS reviewers
- Working together /Team spirit

Core module / core business; Interviews and drafting preliminary report

- To be conducted in the format of roundtables
  - Requires experience
  - Preparation is the key through ARM
- Social aspects and communication skills pay an important role
- It is not only technical details , “science and values”
- Assessment of safety culture (organisational aspects)

Initial impressions

APPENDIX IV: FIRST IMPRESSIONS TEMPLATE

FIRST IMPRESSIONS ON THE ORPAS ADVANCE REFERENCE MATERIAL	
Name and Country of the Reviewer:	
Host Country:	

The reviewers are expected to review the completed ORPAS questionnaires and other relevant advance reference material summary reports related to their review areas. They need to be familiar with the IAEA Safety Standards relevant to their review areas (particularly GSR Part 3 and GSG-7), and with the ORPAS Guidelines. At least two weeks before the mission the reviewer is requested to return her/his first impressions in the format and with the content indicated in this table.

1. ISSUES TO INVESTIGATE AND OPEN QUESTIONS

List in brief (possibly in bulleted format) the potential issues that need further interviewing and/or discussion to clarify whether they present any non-compliance with the IAEA Safety Requirements. List also those issues that are not clearly described in the ORPAS questionnaires or in the advance reference material summary report and need further clarification during the interviews. In the list please identify the location of the issues in the text (e.g. by page number, paragraph number, line number).

- …
- …

2. DRAFT RECOMMENDATIONS

List in brief (possibly in bulleted format) those issues found in the ORPAS questionnaire or in the advance reference material summary report which seem to be in non-compliance with an IAEA Safety Requirement related to the review area. Give reference to the requirement non-complied with by identifying the number and subject of the Safety Requirement (e.g. GSR Part 3 Requirement 24: Arrangements under the radiation protection programme) and, if possible, the relevant paragraph (e.g. 3.88). Please also identify the location of the issues in the text (e.g. by page number, paragraph number, line number).

- …
- …

- In advance review
- To be completed two week before the mission
- Checklist (!)

Report

- Outcomes of an ORPAS mission:
  - Areas for improvements of the ORP arrangements to meet IAEA safety standards are identified;
  - **Recommendations and suggestions** related to the identified areas for improvement are made;
  - Assistance, if necessary, with the development of an action plan to achieve improvements is provided

Recommendations

When to propose

- **Where arrangements to meet the IAEA Safety Requirements are missing, incomplete, or inadequately implemented.**

- Specific, realistic and designed to result in tangible improvements to ORP programme effectiveness.
  - Based on IAEA Safety Requirements, and the basis (i.e. the relevant Requirement(s)) for the recommendation is clearly documented in the mission report.
  - All identified non-compliances against IAEA Safety Requirements lead to a recommendation.
  - Formulated such that they are succinct and self-explanatory.
  - Clearly specify the responsible party and use 'should' language (for example, "the regulatory body should…"; "the TSP should…").
  - Recommendations that Counterparts consider may take a long time to be implemented, or that the ORPAS Team considers as a high priority, include interim goals, which would be set out in the ORPAS report and in due course, by agreement, transferred to the host country's updated action plan.

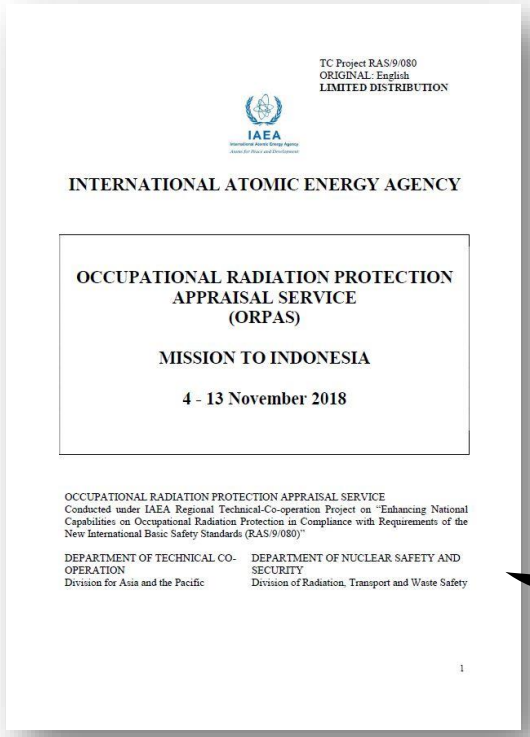
Suggestions

- **Identified opportunities for improvement not directly related to inadequate conformance with IAEA Safety Requirements.**
  - Means of achieving this aim.
- Contribute to improvements in national arrangements for ORP but are primarily intended to stimulate the **National Counterpart's management and staff to consider new or different approaches that may enhance performance**.
  - Each suggestion has a basis either in IAEA Safety Requirements or in Safety Guides, as appropriate.
  - The basis for the suggestion is clearly documented in the mission report.
  - Suggestions are formulated such that they are succinct and self-explanatory.
- They clearly specify the responsible party and use 'should consider' language (for example, "the National Counterpart should consider…").
- A suggestion may be proposed in conjunction with a recommendation or may stand on its own following a discussion of the associated background.

Good Practices

- Identified in recognition of an **outstanding organization, arrangement, programme or performance** superior to those generally observed elsewhere.
- It will be worthy of the attention of others as a model in the general drive for excellence.
- Good Practices also reference a basis similar to suggestions, and the basis is clearly documented in the mission report.
- Notable aspects of organization, arrangement, programme or performance that does not fully meet the Good Practice criteria can be highlighted in the text of the report.

Appraisal Findings



TC Project RAS/9/080
ORIGINAL: English
LIMITED DISTRIBUTION

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INTERNATIONAL ATOMIC ENERGY AGENCY

OCCUPATIONAL RADIATION PROTECTION APPRAISAL SERVICE (ORPAS)

MISSION TO INDONESIA

4 - 13 November 2018

OCCUPATIONAL RADIATION PROTECTION APPRAISAL SERVICE
Conducted under IAEA Regional Technical-Co-operation Project on "Enhancing National Capabilities on Occupational Radiation Protection in Compliance with Requirements of the New International Basic Safety Standards (RAS/9/080)"

DEPARTMENT OF TECHNICAL CO-OPERATION
Division for Asia and the Pacific

DEPARTMENT OF NUCLEAR SAFETY AND SECURITY
Division of Radiation, Transport and Waste Safety

1

RECOMMENDATIONS, SUGGESTIONS AND GOOD PRACTICES

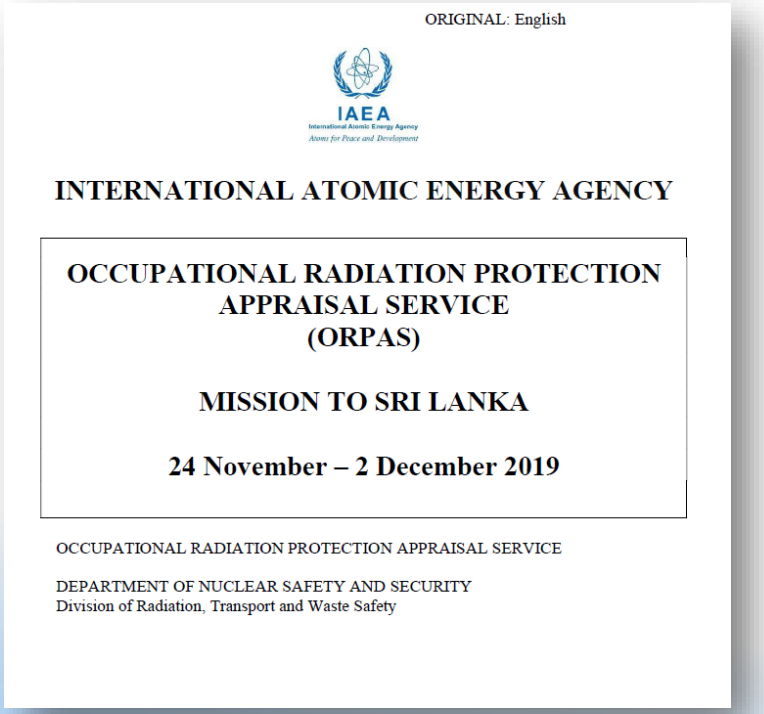
BASIS:	**GSR Part 1 Requirement 16 Paragraph 4.5 states that:** *"The regulatory body has the responsibility for structuring its organization and managing its available resources so as to fulfil its statutory obligations effectively. The regulatory body shall allocate resources commensurate with the radiation risks associated with facilities and activities, in accordance with a graded approach."* **GSR Part 1 Requirement 18 states that:** *"The regulatory body shall employ a sufficient number of qualified and competent staff, commensurate with the nature and the number of facilities and activities to be regulated, to perform its functions and to discharge its responsibilities."*
OBSERVATION:	SLAERC has very limited resources and currently undertakes many different types of activities.
R1:	**Recommendation: SLAERC should limit its activities to regulatory functions.**
R2:	**Recommendation: SLAERC should allocate resources commensurate with the radiation risks, in accordance with a graded approach.**
BASIS:	**GSR Part 3 Requirement 3 states that:** *"The regulatory body shall establish or adopt regulations and guides for protection and safety and shall establish a system to ensure their implementation."*
OBSERVATION:	The Draft Regulations based on GSR Part 3 have not been published yet.
R3:	**Recommendation: SLAERC should publish the Draft Regulations as soon as possible.**

Areas for Regulators:

- General Responsibilities of Registrants, Licensees and Employers
- General Responsibilities of Workers
- Legal Regulatory Framework
- Monitoring Programmes Technical Services
- Requirements for Radiation Protection Programmes

Mission report

- Format and typical content is available in the Guidelines
- Samples are available at ORPAS CP
- A sample is the ORPAS report to Sri Lanka



ORIGINAL: English

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INTERNATIONAL ATOMIC ENERGY AGENCY

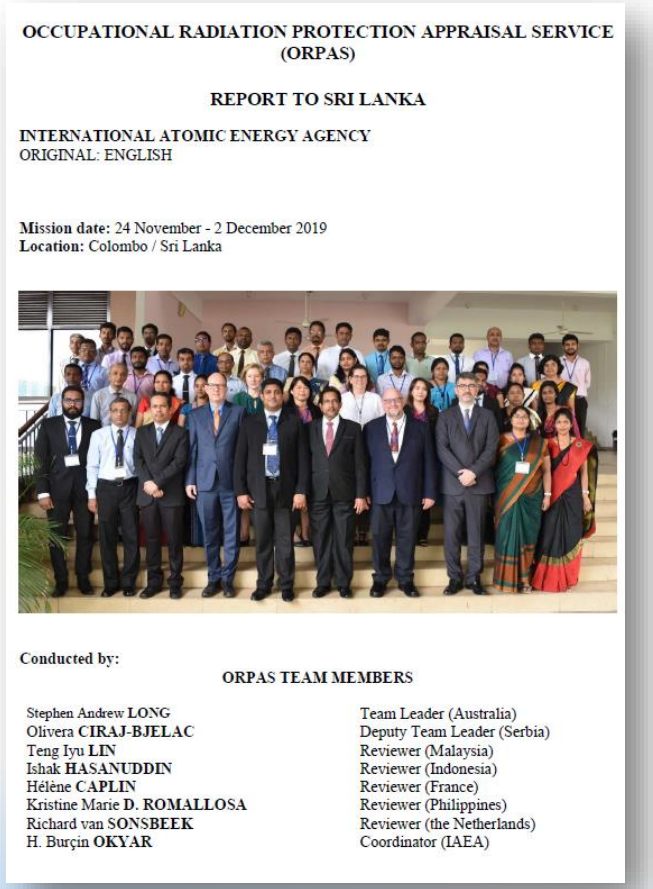
OCCUPATIONAL RADIATION PROTECTION APPRAISAL SERVICE (ORPAS)

MISSION TO SRI LANKA

24 November – 2 December 2019

OCCUPATIONAL RADIATION PROTECTION APPRAISAL SERVICE

DEPARTMENT OF NUCLEAR SAFETY AND SECURITY
Division of Radiation, Transport and Waste Safety



OCCUPATIONAL RADIATION PROTECTION APPRAISAL SERVICE (ORPAS)

REPORT TO SRI LANKA

INTERNATIONAL ATOMIC ENERGY AGENCY
ORIGINAL: ENGLISH

Mission date: 24 November - 2 December 2019
Location: Colombo / Sri Lanka

Conducted by:

ORPAS TEAM MEMBERS

Stephen Andrew **LONG**	Team Leader (Australia)
Olivera **CIRAJ-BJELAC**	Deputy Team Leader (Serbia)
Teng Iyu **LIN**	Reviewer (Malaysia)
Ishak **HASANUDDIN**	Reviewer (Indonesia)
Hélène **CAPLIN**	Reviewer (France)
Kristine Marie **D. ROMALLOSA**	Reviewer (Philippines)
Richard van **SONSBEEK**	Reviewer (the Netherlands)
H. Burçin **OKYAR**	Coordinator (IAEA)

Timeline and Structure

Stage	Schedule	Responsibility
Prepare outline of draft report	Before commencing the review mission	Team Leader
Prepare preliminary appraisal report (main findings only)	Before the exit meeting in the host country	Team Leader (with the assistance of the whole team)
Complete preliminary appraisal report (including the reports of national counterparts for specific facilities)	Within two weeks of returning from the host country	Team Leader
Review completed preliminary appraisal report	Within two weeks of receiving the report from the Team Leader	Reviewers
Create draft appraisal report	Within two weeks of receipt of all comments from the Team members	Team Leader
Finalize formatting, final editing and IAEA approval	Within one week of receipt of draft appraisal report from the Team Leader	IAEA Coordinator
Dispatch draft appraisal report to host country for comments	Immediately	IAEA Coordinator
Collect comments from all participating organizations in the host country and send to the IAEA Coordinator	Within four weeks of receipt of the report from the IAEA Coordinator	National Coordinator
Consider host country comments and agree on necessary modifications	Within two weeks of receipt of comments from host country	Reviewers
Complete final appraisal report	Within one week of agreeing on any modifications with the Team Leader	IAEA Coordinator
Distribute appraisal report	Within sixteen weeks after the completion of the mission visit	IAEA Coordinator

PART I	○ Introduction ○ Description of the Occupational Radiation Protection Appraisal Service ○ Outline of the ORPAS procedure ○ Details of the meetings and visits during the review mission ○ Findings, conclusions, recommendations, suggestions and good practices on review areas (regulatory body, operator and technical service provider) ○ Feedback to the IAEA, if any ○ Supporting annexes: Participating organizations and list of ORPAS Team members ○ About follow up mission or any future actions
PART II	○ Facility descriptions (national counterparts) and list of persons met ○ Detailed findings of the individual facilities appraisal ○ Conclusions and recommendations

ORPAS Training – *to conclude*

- **Hands-On Training on How to Conduct IAEA ORPAS Missions**
- Goal: Preparing experts to carry out ORPAS reviews
  - Maintaining and refreshing the pool of expert reviewers
- Open to all Member States
- To be organized in 2022
- March/ April 2022
- Most probably virtual
- Training for the ORPAS mission to Slovakia (to be organized depending on the request of host country)
- Seeking for volunteers for long-run Training Programme (where and when needed)

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Thank you!

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