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de l'énergie atomique

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Regulatory Guide

PREPARATION OF A QUARTERLY HEALTH
PHYSICS COMPLIANCE REPORT FOR A
URANIUM FUEL FABRICATION PLANT

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Canada

PREFACE

1. Siting, design, manufacture, construction, commissioning, operation, and decommissioning of nuclear facilities, or the production, possession, use and disposal of prescribed substances, in Canada or under Canadian control, are subject to the provisions of the Atomic Energy Control Act and Regulations administered by the Atomic Energy Control Board (AECB).
2. In addition to the Atomic Energy Control Regulations, three other categories of Regulatory Document are employed by the AECB. These are:

Generic Licence Conditions - standard sets of conditions that are included in particular AECB licences of a common type, unless specific circumstances indicate otherwise;

Regulatory Policy Statements - firm expressions that particular "requirements" not expressed as Regulations or Licence Conditions be complied with or that any requirements be met in a particular manner but where the AECB retains the discretion to allow deviations or to consider alternative means of attaining the same objectives where a satisfactory case is made; and

Regulatory Guides - guidance or advice on any aspect of the AECB's regulatory process that is given in a manner less rigid than that intended by Policy Statements.

3. In developing Regulatory Documents, the AECB publishes its proposals as Consultative Documents in order to solicit comments both from the nuclear industry and from the public. This is done prior to releasing any Regulatory Document in final form. In certain cases, after the period for public comment, a Consultative Document may be issued for "trial use". This is done for a limited period of time to gain practical experience. Following the period of trial use, the revised document is re-issued for further public comment prior to release in final form.
4. Comments on Consultative Documents and suggestions for new Regulatory Documents and for improvement to those that exist are encouraged and should be directed to the Regulations Development Section of the AECB.
5. Copies of Consultative Documents, Regulatory Documents and related index lists are available in both English and French on request from the Office of Public Information. Requests for technical information on and interpretation of documents should be addressed to this office.
6. The Atomic Energy Control Board may be contacted as follows:

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**PREPARATION OF A QUARTERLY HEALTH
PHYSICS COMPLIANCE REPORT FOR A
URANIUM FUEL FABRICATION PLANT**

A. OBJECTIVES

1. Purpose of a Quarterly Health Physics Compliance Report

In accordance with the relevant condition in his operating licence, the operator of a licensed uranium fuel fabrication plant must demonstrate that the plant has and will continue to have an acceptable health physics program in effect. Radiological surveillance and monitoring results can partly provide assurance of this fact, and a comprehensive written report on the facility's health physics program and its results will communicate this information to the Atomic Energy Control Board.

2. Purpose of this Guide

The purpose of this guide is to outline, for the management and staff of a licensed uranium fuel fabrication plant, the requirements of a comprehensive review of the quarterly performance of its health physics program. Some topics for inclusion in a typical quarterly health physics compliance report are listed and briefly described in this guide. Although the report format need not be exactly as presented in this guide, the report should cover the indicated topics where applicable, as well as any others which may be relevant.

B. CONTENTS OF A QUARTERLY HEALTH PHYSICS COMPLIANCE REPORT

1. Introduction

Briefly summarize such pertinent details of the report as adherence to company and regulatory limits, how often company and regulatory limits were exceeded and any new health physics developments.

2. Radiation Surveillance and Monitoring Results

2.1 Occupational Health

2.1.1 Contamination Monitoring

(a) Air

Include results of both static air and breathing zone sampling for uranium and report airborne activity in Bq/m^3 . Make any relevant comments regarding routine or non-routine need for respiratory protection.

(b) Surface

Include results of both fixed and removable surface contamination monitoring for uranium and report results in kBq/m^2 .

2.1.2 Internal Radiation Dosimetry

Provide urinalysis results in $\mu\text{gU/L}$ and, if applicable, thorax burden measurements in mgU .

2.1.3 External Radiation Dosimetry

Report on whole body (gamma) doses, whole body skin (gamma plus beta) doses and extremity doses. Express all dose results in mSv .

2.2 Environmental Protection

2.2.1 Liquid Effluent Analysis

Provide results, expressed in Bq/L , of uranium concentration in liquid effluent(s) released from the plant.

2.2.2 Effluent Air Analysis

Report on uranium levels in air, expressed in Bq/m^3 , for all effluent air outlets from the plant.

2.2.3 Other (where applicable)

Include results of soil sampling (Bq/kg), dust fallout analysis (Bq/kg), environmental water monitoring (Bq/L) and boundary air monitoring (Bq/m^3) for uranium. These results indicate whether or not uranium is being released into the public domain.

C. PRESENTATION OF RADIOLOGICAL SURVEILLANCE AND MONITORING RESULTS

Present the information requested in Section 2 in tables, graphs, histograms or frequency distribution charts. Also provide brief written summaries which include the following details:

- (a) appropriate company action limits and the corresponding regulatory limits;
- (b) the significance of the results;
- (c) an explanation of any results which exceeded company action limits or regulatory limits;
- (d) corrective actions taken to remedy problems identified either in item (c) or elsewhere; and
- (e) any changes made in or contemplated for monitoring equipment or procedures, action limits or status of certain employees as Atomic Radiation Workers.

Some of the analytical results may be too numerous to present individually in this report; therefore, averaging of results is acceptable as long as any individual result which exceeded an established limit is identified and explained.

If possible, present results in SI units as indicated in the above text. If necessary, substitute smaller or larger units than specified. However, since analyses can be done by various methods, report results in the units in which they are measured and do not convert them to other units.