

Dear Ms. Orendi:

These are comments from Washington state regarding information presented in FSME-10-011. Thank you for the opportunity to review the draft copy DS379, IAEA International Basic Safety Standards for Protection Against Ionizing Radiation and for the Safety of Radiation Sources, dated January 2010.

Our answers to the document's three questions:

- 1) Is the document relevant and useful?

In our opinion, the real significance of this document is in its very encompassing table of nuclide specific exempt activity concentrations on pages 112- 123, and nuclide activities for de minimis health and safety levels. These have regulatory significance and may set precedence. Also the bulk clearance exemption activity concentrations table gives a completely new angle for the concept of blending that is currently being considered by the Nuclear Regulatory Commission.

The document is relevant to the extent that agencies who adopt the ideas will support and implement the standard.

There are some excellent ideas about maintaining dosimetry records in DS379 that are not covered as thoroughly by Nuclear Regulatory Commission or State regulations.

- 2) Are scope and completeness adequately covered by the document?

This document is very complete and may be overwhelming for small companies. It is better suited for major regulatory bodies and large scale commercial nuclear power, fuel fabrication facilities, and other large users of the materials. The sub-items of each part are detailed clearly and specifically.

- 3) Does the document represent the current consensus among specialists in the field, and are the ideas expressed clearly?

We think this has been done well.

We have several suggestions:

Radiation hazards should be evaluated according to their total impact on the environment and not just their radiological hazard to individuals. This is specifically reasonable for waste disposal operations.

In Paragraph 3.125 – We think manufacturing of and evaluation for the quality assurance of a source or device should be added.

In Section I-10 – It reads “Clearance may be granted to subject to...” Please delete the first *to* in that sentence.

In the Glossary – It references committed equivalent dose. The H in the formula parts of $H_t(t)$ has an overstrike that makes the formula unreadable.

X-Ray Specific Suggestions and Comments:

Hand-held X-ray units are being used worldwide for routine dental, forensic, and veterinary use. We suggest that IAEA include a reference to this, along with their recommendations for safe use.

We do not agree with section 3.143 under "Medical Exposures" where it states that "Dose limits are not to be applied to medical exposures."

Many states and some countries have dose limits. Considering the phenomenon of "dose creep" for computed and digital radiography that causes increasing patient exposures, we suggest that IAEA establish limits. The document includes reference values for radiographic exams, so it might be time to change the philosophy for not applying dose limits for patient exposures.

On a related issue, we like section 3.161 since it calls for optimization of medical exposures, i.e. striking the balance between image quality and dose.

Section 3.168 calls for quality assurance for medical X-ray applications. We also think this is a good idea.

Emergency Response Specific Suggestion:

In section I.17, “nuclear” includes nuclear explosions. In such an event, there is no way to ensure that radiation risks would be minor. Fallout will create exposure problems up to miles away. There are ways to ensure the loss of life is minimized and protect people from long term effects. While a nuclear explosion is unlikely, it is not impossible. The document should mention this but does not need to be addressed in detail.