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**From:** Cody Cuthill [<mailto:cody@normtek.com>]

**Sent:** Saturday, August 30, 2014 8:39 AM

**To:** Consultation

**Subject:** Proposed PTNSR

With regards to section 31 radiation protection program. To exclude transporters of radioactive materials from even excepted packages does not seem to promote radiation safety. This is compounded when you have NORM materials which have been given a high A2 value than any other radionuclides. After all what is the difference from Ra226 as NORM or that under the control of the CNSC. The reasons for increasing the A2 value for NORM is understandable but should be seriously looked at if excluding an RPP. Transporters Radiation Protection Programs can be very simple as the programs are based off the level of hazard the company actually has. If it is only an exempt package they handle then the program is simple (CNSC GD-320). Typical radiation protection outlines companies should maintain a radiation protection program if the exposures to workers have a potential to exceed 1 mSv/a. In the NORM industries this is confusing as the RPP through its work procedures creates a work environment where workers do not exceed the 1 mSv/a. Because this industry has no formal regulations and typical safety personnel have little radiation experience they assume no RPP is needed. What is not understood I what is the "potential"

Anyone handling radioactive materials whether above Health Canada's NORM guidelines or those controlled under the PTNSR should have a RPP that is detailed enough to control worker exposures for the materials being handled. Principle of ALARA would apply. It is not too much to ask a company to develop a RPP

Yours Truly,

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**From:** Cody Cuthill [<mailto:cody@normtek.com>]

**Sent:** Saturday, August 30, 2014 9:24 AM

**To:** Consultation

**Subject:** Proposed PTNSR

It is my understanding the CNSC has elected not to adopt ICRP's recommendations on a dose constraint value on the basis those under its control are licensed and the regulatory limit of 1 mSv/a is well understood. This is understandable, however, under the packaging and transport most transporters are not required to be licensed. Is it the intent of the PTNSR to adopt a dose constraint as recommended by the ICRP?

Yours Truly,

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**From:** Cody Cuthill [<mailto:cody@normtek.com>]  
**Sent:** Monday, September 01, 2014 9:44 AM  
**To:** Consultation  
**Subject:** Proposed PTNSR

Further to the proposed changes to the PTNSR we would changing section 2(2)(a) as follows:

- (a) that is naturally occurring, with the exception of section 31, and has not been processed or has been processed only for purposes other than its extraction and that is not intended to be processed for its use, provided that it has
- (i) a specific activity less than or equal to 70 kBq/kg, or
  - (ii) an activity concentration that does not exceed 10 times the activity concentration limit for exempt material values set out in the IAEA Regulations, or
  - (iii) a dose rate of less than 2  $\mu$ Sv/hr on the external package

Reasonale:

Addition of these wordings would allow for a better level of safety during the loading, unloading and transport of naturally occurring radioactive materials (NORM). NORM is considered a waste to industry in Canada and is essentially unregulated with no monitoring, compliance or enforcement of the Canadian NORM guidelines. To apply the suggest comments would provide for worker protection in this unregulated industry.

As a Radiation Protection Plan (RPP) is the basic requirement for radiation protection it should be excluded even if the exclusion limits for radionuclides of natural origin are increased over radionuclides under the CNSC. The CNSC has licenses, which are required to develop RPP's as part of their licensing requirements, however the NORM waste management industry has no such requirement if this is excluded from the packaging or transport requirements.

Most Oil and Gas NORM is less than 70 Bq/g and is managed by waste management companies on open concrete pads or in large tanks. Many companies are not testing as there are no officers inspecting, monitoring or enforcing Health Canada's NORM guidelines. Some of these tanks can exceed 25  $\mu$ Sv/hr om contact and waste be less than 70 Bq/g. As a result workers can be exposed to these materials during the packaging and loading of these materials at levels above 1 mSv/a. If the CNSC maintained a RPP was still required at levels of the A2 value and not that of 10 times it then reasonable assurances workers would be protected would be achieved.

The same hazards exist from radionuclides under the control of the CNSC regulations as those of NORM which have been excluded. The exclusion of NORM by the IAEA would still assume regulatory control under IAEA document Legal and Governmental Infrastructure for Nuclear, Radiation, Radioactive Waste and Transport Safety(GS-R-1). In Canada no regulations presently exist for NORM as recommended by this document. Health Canada has published the Canadian NORM Guidelines which were developed, in part, for regulators to provide the basis for more detailed policies and procedures. Even though these were originally developed in 2000 no province has developed any formal regulations or even more detailed policies or procedures. This This has left industry who have little experience in radioactive materials to interpret these guidelines on an ad hoc basis. Most industries that handle NORM do not

understand what a radiation protection program is. In addition provincial regulators do not have the experience of that of the CNSC. One OH&S officer required us to change the name of our radiation protection program to "Exposure Control Plan" as he thought it better aligned with OH&S regulations. Workers are being exposed as a result of packaging radioactive materials due mainly to the fact no regulations exist. To further exclude the requirement of an RPP from that of the same nuclides as controlled by the CNSC would increase potential workers to NORM. Exposures confirming workers receive less than the prescribed dose limit of 1mSv/a can easily be obtained through the implementation of a RPP. Inclusion of the requirement to have an RPP for the packaging and transport would effectively control worker exposures.

Applying a dose limit would further ensure worker safety with little cost to industry. The dose limit above corresponds to section 36 and as such a corresponding dose limit would provide another level of safety for workers in the NORM waste management industry. Since this is essentially an unregulated industry with no inspection, monitoring or enforcement officers, ensuring the packaging of radioactive materials and the transport is governed in accordance with radiation protection best practices and procedures, it is important to maintain some direction to industry to ensure worker protection.

Yours Truly,

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