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(10)

BWXT
Nuclear Operations Division
P.O. Box 785 • Lynchburg, VA 24505-0785 • Phone: 434.522.6000 • Web site: www.bwxt.com

October 23, 2006
06-162

Secretary, U.S. Nuclear Regulatory Commission,
Washington, DC 20555-0001
ATTN: Rule Making and Adjudications Staff

Reference: License SNM-42, Docket 70-27

Subject: BWX Technologies, Inc. Comments to RIN 3150-AH40 Occupational Dose Records, Labeling Containers, and the Total Effective Dose Equivalent

Dear Sir or Madam:

BWX Technologies, Inc (BWXT) commends the Nuclear Regulatory Commission's efforts to reduce the administrative and information collection burdens on the NRC and Licensees and appreciates the opportunity to comment on the proposed changes expressed in RIN 3150-AH40. BWXT:

- Endorses the proposed changes to 10 CFR 20.1003 "Definitions" and 10 CFR 50.2 "Definitions"
- Endorses the proposed change to 10 CFR 20.2104(a)(2)
- Proposes revisions to the proposed changes to 10 CFR 19.13 and 10 CFR 20.195 in order to ensure that 10 CFR Part 70 licensees can realize the benefits of the proposed revisions.

Template = SECY-067

SECY-02

Specifically, BWXT suggests the following revisions to the proposed changes:

- Revise the proposed change to 19.13 (b)(1) to state "the individual's occupational dose exceeds 1 mSv (100 mrem) TEDE or 1 mSv (100 mrem***) to the lens of the eye, to the skin of the whole body, and to the skin of the extremities; or***"

- Revise the proposed change to 20.195(g) to state "Containers holding licensed material (other than sealed sources that are either specifically or generally licensed) at a facility licensed under parts 50, 52, ***or 70*** of this chapter, that are within an area posted under the requirements in 20.1902, if the containers are:

The Attachment contains discussion of BWXT's suggested revisions. Without these revisions, 10 CFR Part 70 licensees will be excluded from the significant benefits of the changes for no real reason.

Sincerely,

Leah R. Morrell
Manager, Licensing & Safety Analysis
(Licensing Officer

Enclosure

c: U.S. NRC, Region II
NRC, W.C. Gleaves
NRC, Resident Inspector

# ATTACHMENT TO BWXT COMMENTS ON RIN 3150-AH40

## Proposed New 10 CFR 19.13 (b)

Each Licensee shall make dose information available to workers as shown in records maintained by the licensee under the provisions of 10 CFR 20.2106. The licensee shall provide an annual report to each individual monitored under 10 CFR 20.1502 of the dose received in that monitoring year if:

(1) the individuals occupational dose exceeds 1 mSv (100 mrem) TEDE or 1 mSv(100 mrem) to any individual organ or tissue; or

(2) The individual requests his or her annual dose report.

COMMENT

Section 19.13 (b) (1) needs to explicitly state that the criterion is applicable to the whole body, to the lens of the eye, to the skin of the whole body and the skin of the extremities. The section should be written;

(1) the individuals occupational dose exceeds 1 mSv (100 mrem) TEDE or 1 mSv (100 mrem) to the lens of the eye, to the skin of the whole body, and to the skin of the extremities; or

In the Nuclear Regulatory Commission's proposed 19.13 (b) (1), Committed Dose Equivalent for all organs is covered by the section, as it states "any organ or tissue". In the discussion, the clear intent is that the proposed section be applied as above. The listed organs and tissues in the discussion receive readily monitored dose from external sources. Ten CFR 20 Appendix B Table 1 "Occupational" states that the dose equivalents for extremities (hands and forearms, feet and lower legs), skin, and lens of the eye are not considered in computing committed effective dose equivalent, but are subject to limits that must be met separately. *The intent of the change needs to be explicit in the regulation.*

Dose to organs from internal sources are clearly considered to be addressed in the TEDE portion of the regulation, via summation of CEDE into TEDE and summation of CDE into CEDE, as they are not listed in the discussion as organs and tissues to be considered. Separate treatment of CDE is confirmed by the Regulatory Guide 8.34 and Regulatory Guide 8.7. Both guides exempt licensees from calculating CDE unless the CEDE is at least 1 Rem, yet the reporting criteria here is 0.100 Rem.

Separate treatment of CDE is not justified, as application of 100 mrem limit to CDE would remove the benefit of the regulatory change. Organ dose is often substantially greater than the TEDE. For example, in the case of ICRP 68 Class F Uranium, a CEDE dose of 6 mrem implies a bone surface dose of 100 mrem. Unless the intent of the regulatory change is made explicit in the change, many licensees will derive no benefit at all from the change. We strongly urge that the organs and the tissues to be considered be explicitly identified in the regulation as they have been in the discussion.

# ATTACHMENT TO BWXT COMMENTS ON RIN 3150-AH40

Labeling Containers 10 CFR 20.195

Proposed language

Exemptions to labeling requirements

(f) Installed manufacturing or process equipment, such as reactor components, piping, and tanks; or
(g) Containers holding licensed material (other than sealed sources that are either specifically or generally licensed)at a facility licensed under parts 50 or 52 of this chapter, not including non-power reactors, that are within an area posted under the requirements in 20.1902 if the containers area:

(1) Conspicuously marked (such as by providing a system of color coding containers) commensurate with the radiological hazard;
(2) Accessible only to individuals who have sufficient instructions to minimize radiation exposure while handling or working in the vicinity of the containers; and
(3) Subject to plant procedures to ensure they are appropriately labeled, as specified in 20.1904 before being removed from the posted area.

The Nuclear Regulatory Commission states in the discussion "that it has determined that the exemption to labeling requirements under 10 CFR 20.1905 is not appropriate for materials licensees because of the many different types of radioactive material in containers at facilities such as hospitals and universities." However not all material licensees are the same. Many, particularly the SNM licensees, have less variation in radioactive materials types than do power production facilities. More appropriate wording would be:

(g) Containers holding licensed material (other than sealed sources that are either specifically or generally licensed) at a facility licensed under parts 50, 52, or 70 of this chapter, that are within an area posted under the requirements in 20.1902, if the containers are:

(1) conspicuously marked (such as by providing a system of color coding containers) commensurate with the radiological hazard;
(2) accessible only to individuals who have sufficient instructions to minimize radiation exposure while handling or working in the vicinity of the containers; and
(3) Subject to plant procedures to ensure they are appropriately labeled, as specified in 20.1904 before being removed from the posted area

A Part 70 licensee's variance in radiological hazards is less than that of a part 50 or 52 licensee. As can be seen from the attached table, Part 50, 52, and 70 production facilities have broadly consistent waste or contaminated material streams within their facilities. Universities and hospitals generate a wide variety of treatment or research wastes that are nearly pure and therefore the hazard types as well as the activity are quite variable. The composition of waste or contaminated material in these facilities is not necessarily consistent by location or in time and they should be excluded from this provision. In sharp contrast, in Part 70 ,50 of 52 production facilities the composition of

waste or contaminated material is consistent and limited as it is driven by the over riding purpose of the facility and work area, not by research or patient requirements. In this group, variation in hazard from container to container is least in Part 70 facilities. The over whelming hazard in a Part 70 facility is internal only, as is demonstrated in the attached table. In Part 50 and 52 facilities, external whole body exposure, external shallow dose exposures and internal exposures are all of importance. We conclude that the exemption is clearly valid for Part 50 and 52 facilities and is therefore valid for Part 70 facilities, which have less variability in stored material and a much smaller hazard set.

ATTACHMENT TO BWXT COMMENTS ON RIN 3150-AH40

## Stored Material and Hazard Type Vs Licensee Type[5]

| Licensee Type → | Part 50 or 52[3] | Hospital Complex[4] | Research University[4] | Part 70 SNM[3] | Hazard External Shallow | Hazard External Whole Body | Hazard Internal |
|---|---|---|---|---|---|---|---|
| Stored material | | | | | | | |
| Pure tritium[1] | limited | Limited/no | X research | no | Very limited | na | X |
| Weak pure beta emitters (C 14, S 35, Ca 45, Tc 99) | limited | X medical treatment | X research | limited trace[2] | X | na | X |
| Pure strong beta emitters (P 32 or Sr 90 for example) | Limited –fission product Sr 90 | X medical treatments research | X research | Limited trace[2] | X | limited | X |
| Concentrated radiodine or other volatile isotopes | Limited - normally trace restricted in time | X medical treatments research | X research | no | X | X | X |
| Shortlived accelerator produced radionuclides | no | X medical treatments and activation products | X medical treatments and activation products | no | X | X | X |
| Pure photon emitters (Co 60, Fe 55, Cr 51) | X | X | X | no | **X**[5] | **X**[5] | **X**[5] |
| Beta gamma emitters | X | X | X | Limited ( uranium daughters)[2] | **X**[5] | **X**[5] | **X**[5] |
| SNM | limited | no | Limited | X | limited | limited | X |
| Total categories | 2 of 8 | 6 of 8 | 7 of 8 | 1 of 8 | | | |
| Totals limited | 4 of 8 | 1 of 8 | 1 of 8 | 3 of 8 | | | |

1. Possible concentrated in heavy water source to aid startup and certain presence as a trace constituent in a nuclear power facility.
2. Uranium et al can bear traces of constituents from fuel reprocessing.
3. Waste types in facility predominantly similar, limited possibility for radiological compositions significantly variant from the normal. Activity levels can vary greatly.
4. Waste types in facility can be pure or nearly pure, likely to vary in time and place with medical treatment or research. Waste from drum to drum May or may not be similar. Hazard types can vary considerable from drum to drum et al. Activity levels can vary greatly.
5. Hazards bolded and underlined are major hazards of Part 50 and 52 facilities. Note the contrast with the single major hazard of the Part 70 facilities (in shadow).

Leah R. Morrell
Manager, Licensing & Safety Analysis
Nuclear Operations Division
BWX Technologies, Inc.
P. O. Box 785
Lynchburg, VA 24505-0785
(434) 522-6570 Fax: (434) 522-5570

BWX Technologies

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# Fax

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|---|---|---|---|
| **To:** | Evangeline Ngbea | **From:** | Leah Morrell |
| **Fax:** | (301) 415-1672 | **Date:** | November 28, 2006 |
| **Phone:** | (301) 415-4123 | **Pages:** | 7 (Including the fax cover) |
| **Re:** | BWXT Comments to RIN 3150-AS40 | **cc:** | |

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**•Comments:**

**As discussed with Stuart Schneider, we are resubmitting comments to RIN 3150-AH40 without the "Official Use Only" designation on the letter and attachment. Please contact me if you have questions.**

**Leah Morrell**
**Manager, Licensing & Safety Analysis**
**BWX Technologies, Inc.**