To whom it may concern,

Thanks for revising the .900 rules and creating a more robust framework of rules for all types of accelerators. Listed below are my comments.

(1)
.0903(b) Since accelerators are not governed by the NRC, a little more guidance would be helpful for how to create an accelerator license application. For radioactive material licenses there are the NUREGs and various other guidance documents but accelerators have no NRC guidance documents. For accelerators , I would modify .0903(b) to include a note in the regulations defining the location of an NC guidance document for accelerator licenses.

(I) Additional guidance regarding required information for accelerator licenses is found at https://radiation.ncdhhs.gov/rms/rmsforms2.htm(Rev01).htm

(2)
.0903(b)(3) Applications specified in this Rule are available at:
www.ncradiation.net/rms/rmsforms2.htm(Rev01).htm
That is the wrong website. Please correct it to the current one which is
https://radiation.ncdhhs.gov/rms/rmsforms2.htm(Rev01).htm

(3)
10A NCAC 15 .0907 has different requirements for human use and non-human use warning devices, and I would not separate them. If the negatives outweigh the positives in medical facilities to having a 15 second audible alarm before the machine produces radiation, then the same argument can be made for research facilities as well.
In all accelerator facilities, both medical and research, I personally think 10 CFR 20.1601 covers appropriate safety concerns, but repeating it seems reasonable to stress its importance. Therefore, to make accelerators safe and not exactly copy NRC's 10CFR 20.1601, I would repeat 10 CFR 20.1601 and make the minor edit to instituting not one of the following 4 options but make it required that two of the 4 options are implemented. So the proposed written rule would be the following:

.0907(a) The licensee shall ensure that each entrance or access point to a high radiation area from an accelerator has two or more of the following features—

(1) A control device that, upon entry into the area, causes the level of radiation to be reduced below that level at which an individual might receive a deep-dose equivalent of 0.1 rem (1 mSv) in 1 hour at 30 centimeters from the radiation source or from any surface that the radiation penetrates;

(2) A control device that energizes a conspicuous visible or audible alarm signal so that the individual entering the high radiation area and the supervisor of the activity are made aware of the entry; or

(3) Entryways that are locked, except during periods when access to the areas is required, with positive control over each individual entry.

(4) Continuous direct or electronic surveillance that is capable of preventing unauthorized entry.

.0907 (b) Barriers, temporary or otherwise, and pathways leading to high radiation areas shall be identified in accordance with Rule .1601 of this Chapter

In this manner you have still the audible alarm if you want it, but it also provides other options to have appropriate warning devices, which would all enhance safety.
As a side note Pennsylvania's accelerator rules regarding warning devices 228.41a
https://www.pacodeandbulletin.gov/Display/pacode?file=/secure/pacode/data/025/chapter228/s228.41a.html&d=
and Illinois accelerator rules 32.390.40
https://www.ilga.gov/Commission/jcar/admincode/JCARTitlePart.asp?Title=032&Part=0390
do not require audible alarms. So North Carolina would not be the first state to not require audible alarms regarding research accelerators.

(4)

.0908(c) Please make results of such tests held for 3 years not 2 years. Almost all of the paper records for radiation safety are held for 3 years. Please be consistent with the majority of records, otherwise things are just harder to remember for inspectors and licensees.

(5)

.0909(h) Make it 3 years not 2 years for records to enhance consistency.

(6)

.1903(a)(3) You define an AU listed on agreement state license, but do not say agreement state registration, and most other states for accelerators use registrations. Did you mean the regulation to be only for licenses and not registrations?

(7)

.1904(c) calibrated in accordance with Rule .0927. Not sure what reg .0927 is?

(8)

.1905(4)(A) Didn't define what unintended deviation is. The problem is this reg is so strict that if a deviation occurred by .1% of the intended plan, then technically this is an unintended deviation. Might be good to include some parameters saying what is within a normal variation, and what is an unintended deviation.

(9)

.1908(3) I would prefer if the survey instruments are calibrated to +-20% only. This is in compliance with 10 CFR 35.61, and it is what most facilities calibrate their survey meters

to. Why would accelerators require greater accuracy for survey instruments than other medical or technical uses?

(10)
.2002 I would change the definition to the following.
“Animal” means any animal other than human, and it can be wild or domestic, living or dead.

(11)
.2008(a)(3) should be changed to the following.
(3) To satisfy the requirements of Subparagraph (a)(2) of this Rule, the licensee shall consider a point as calibrated if the indicated dose rate differs from the calculated dose rate by not more than 20 percent.

Sincerely,
Matt

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