June 22, 2015

Cardelia Maupin
Office of Nuclear Material Safety and Safeguards
U. S. Nuclear Regulatory Commission
Washington, DC 20555

RE: Request for Comments on Potential Changes to 10 CFR Part 20, Standards for Protection against Radiation. (FSME-14-076)

Dear Ms. Cardelia,
The Organization of Agreement States (OAS) Executive Board (Board) has reviewed the above document and respectfully submits the following comments for consideration by the NRC.

Issue #1-Updated Methodology and Terminology
General Comments:

- The Board supports updating 10 CFR Part 20 to align with the International Commission on Radiological Protection Publication (ICRP) 103 methodology and terminology.

Q1-1 What are the implications of terminology change? Specific costs?

- The terminology change will require updating of software and/or hardcopy forms used to record and manage personnel exposures in a facility's radiation protection program. While this may take some time and effort, the impact and cost should be minimal. The quantitative differences between the calculated TEDE and TED in specific instances are generally quite minor and generally should not impact a facility's operation.

Q1-2 What would be an appropriate implementation time frame and approach to transition of terminology?

- The Board recommends a minimum of three years implementation time frame. Additionally, the Board thinks some type of "grandfathering" clause should be considered for any changes in numerical values/limits/standards to allow complex sites that have developed clean up plans/standards to use existing values rather than adopt new ones. Similarly, Agreement States reviews of such sites would also need to allow flexibility.

Q1-3 How should the calculations of effluent concentration be modified to reflect advances in modeling that are now available? Views on age and gender weighted composite?

- The Board supports the use of age- and gender-averaged dose conversion factor (DCF)s, based on the set of ICRP reference computational phantoms, for establishing regulatory limits on environmental intakes of radionuclides. The use of age- and gender-specific DCFs for regulatory purposes should not be considered, however, as it is inappropriate for radiological protection of the general public and would excessively burden licensees. From a practical standpoint, the inclusion of gender- and age-specific concentrations will generally result in default to the use of the most conservative number, since a licensee cannot control the population that may be exposed.

Q1-4 What dose level should used for effluent concentrations to demonstrate compliance?

- The Board recommends that NRC continue to use the public dose limit of 0.5 mSv (50 mrem) as the basis for the effluent concentration limits for the radionuclides in 10 CFR Part 20, Appendix B, Table 2, Columns 1 and 2.

Issue #2-Lens of the Eye
General comments:

- The Board supports the recommendation of the Health Physics Society (HPS) that the NRC perform further evaluation before making any decisions regarding a reduction to the dose limit for the lens of the eye. While recent data appears to support a lower dose limit, additional study is recommended to establish a more reliable dose-effect relationship.

Q2-1 Is closer alignment or adoption of the ICRP Publication 118 recommendations regarding the dose limits to the lens of the eye appropriate given the scientific information now available?

- See above

Q2-2 How should the impact of a radiation induced cataract be viewed in comparison with other potential radiation effects?

- While the Board believes that efforts to prevent cataracts should be taken, additional study is recommended to establish a more reliable dose-effect relationship.

Q2-3 What mechanisms could be applied to keep the cumulative exposure to the lens of the eye below the threshold of 0.50 Gy (50 rad)?

- The Board supports the HPS comment on this item.

Q2-4 What methods should be allowed for measurement or assessment?

- The Board supports the HPS comment on this item.

Q2-5 What methods should be allowed for recording dose when eye is protected?

- The Board supports the HPS comment on this item.

Q2-6 What is the impact on licensee activities?

- The largest impact would be the increased cost of additional eye protection to hospitals who conduct to fluoroscopic x-ray programs.

Q2-7 What is the impact on State regulatory programs?

- State regulatory programs would most likely make this change for both radiation machine users and could experience some resistance from radiation machine users in making these changes.

Issue #3-Embryo/Fetus
General comments:

- The Board does not support change of the dose limit for the embryo/fetus of a declared pregnant occupational worker from 5 mSv (500 mrem). The NRC has not presented the scientific demonstration of risk to show that decrease is needed.

Q3-1 Are there any significant anticipated impacts associated with reducing the dose limit to the embryo/fetus of a declared pregnant woman, including operational impacts? What are the potential implementation and operational costs?

- An unintended consequence may be that whereas a women would declare her pregnancy with a 5 mSv (500 mrem) limit, she may choose not to declare with a 1 mSv (100 mrem) limit because she may not be able to perform her regular duties with that low of a dose constraint. If the pregnancy isn't declared, it could result in the pregnant worker being exposed to more than 5 mSv (500 mrem) because the limit would then be 50 mSv (5 R) for the undeclared woman.

Q3-2 Are there any benefits or impacts associated with applying the reduced dose limit over the entire gestation period, or only to the period after declaration?

- The Board recommends that the NRC consider a reduced dose limit based on the number of weeks after conception as the most sensitive time period is 10-17 weeks. After 17 weeks, the dose limit could be raised.

Q3-3 Are there any anticipated implementation impacts on recordkeeping if the dose limit to the embryo/fetus is lowered to 1 mSv (100 mrem)? What are the potential implementation and operational costs?

- Depending upon the particular occupation and likelihood of receiving a radiation dose, implementation of a reduced dose may warrant more frequent dosimeter exchanges although this would need to be balanced with the detection limit of the chosen dosimetry such that dose is "missed", and the occupational potential for exposure. More frequent dosimetry exchanges will result in increased licensee costs and some additional recordkeeping.

Q3-4 Are there technological implementation issues, such as limits of detection, which would make adoption of the ICRP Publication 103 recommendation difficult in certain circumstances?

- Limits of detection would make implementation of lower dose rate difficult.

Q3-5 Are there data on actual dose distributions to the embryo/fetus of a declared pregnant worker? What are the trends for these data?

- The Board has no comment on this.

Issue #4-Individual Protection – ALARA
General comments:

- The Board does not support revising or adding regulatory requirements regarding a licensee's as low as reasonably achievable (ALARA) program. Most, if not all, licensees already have administrative control levels. The NRC has demonstrated no

need to change the current framework. In addition, the vast majority of licensees currently do not exceed 10% of annual occupational dose limits.

Q4-1 What are the implications of adding specific ALARA planning and implementation requirements? What changes to programs would be anticipated? What would be the potential implementation and operational costs?

- The implications would depend upon the specificity of the planning requirements. Specific ALARA planning and implementation requirements would be difficult for some types of operations/licensees. Operations/activities with very defined or repetitive activities (e.g., pharmaceutical manufacturing/production; industrial radiography activities; decommissioning; etc.) would have less difficulty in doing such ALARA planning. Those operations or activities which vary greatly from day to day (e.g., diagnostic nuclear medicine licensees; broad scope licensees.) would likely have a more difficult time developing specific planning elements.

Q4-2 What regulatory language should be used for an additional ALARA planning requirement, and what is the rationale for this language?

- The requirements and guidance would have to be sufficiently flexible to allow for different types of operations, but yet remain meaningful. Perhaps a threshold should be developed below which no ALARA planning would be required (e.g., average annual dose less than 1 mSv (100 mrem)? 5 mSv (500 mrem)?).

Q4-3 How does each of the described methodologies for addressing when an individual approaches the year work for different classes of licensed use? What are the benefits and impacts of the various approaches to ALARA planning on the various types of licenses?

- The Board has no comment on this.

Q4-4 Should licensees be allowed to establish different ACL's for different groups of individuals? Basis?

- Licensees should likely be allowed to establish different ACL's for different groups, since all occupations would not necessarily be exposed under the same conditions.

Q4-5 How do the different options impact the ability of licensees to best address protection within their programs?

- The Board believes that the current requirements for ALARA programs provide adequate protection.

Q4-6 Are there other ways to evaluate occupational lifetime cumulative exposure that could be considered?

- The Board has no comment on this.

Q4-7 What are the potential impacts of requiring a licensee to account for exposure from concurrent employment with another licensee? Are there any dosimetry vendors that provide concurrent dose records? Should the NRC consider provisions that would require individual occupational workers to provide their occupational dose information in addition to requiring such information from licensees?

- The current regulations already require a licensee to account for exposure from concurrent employment with another licensee. The burden should be placed on the licensee to obtain that information from their employee.

Q4-8 Should States be allowed to use more restrictive or prescriptive requirements if NRC decides to use performance based approach?

- Yes

Issue #5-Metrication: Traditional vs SI Units
General Comments:

- The Board supports the change to use of the International System of Units (SI) in radiation protection regulations, but recognize the need by licensees and Agreement States to have a transition period to move from the use of conventional units.

Q5-1 Will promulgation of amendments to the 10 CFR part 20 regulations with dose limits and other measurements shown in dual units, with the SI units shown first, followed by the traditional units in parentheses, cause an undue burden or hardship upon any licensee or class of licensees?

- Changing the regulations to show dual units should not cause an undue burden upon licensees. However, there will be a significant impact to Agreement States who will be required to amend their regulations to show dual units. Because this will need to be balanced with all other required regulatory changes, Agreement States should be given up to 5 years to implement this change.

Q5-2 Should 10 CFR 20.2101(a) be revised to allow licensees the option of providing records in SI units or in traditional units? Should licensees be allowed to provide reports in the units used in licensee records? Should licensees be required to record and report in both sets of units?

- Licensees should be allowed to use either SI units or traditional units.

Q5-3 Should the NRC amend the appendices for 10 CFR part 20 to show values in SI units only, in traditional units only, or in both sets of units?

- Both. For Appendix B tables, there should be 2 tables rather than putting both units in one table.

Issue #6-Reporting of Occupational Exposure
General Comments:

- The Board does not support expansion of additional categories of licensees that should be required to submit annual occupational exposure reports under 10 CFR 20.2206(a). The NRC has not demonstrated that accumulating additional annual exposure data would be of any significant value. In addition, the vast majority of licensees currently do not exceed 10% of annual occupational dose limits.

Q6-1 What criteria should the NRC use to identify additional categories of licensees that should be required to submit annual occupational exposure reports in accordance with 10 CFR 20.2206(a)?

- See above

Q6-2 What are the benefits of collecting occupational exposure information in one central database in order to assess the total annual occupational exposure of those individuals who work at more than one licensed facility or contractor facility during the calendar year and receive occupational exposures at these facilities?

- The Board sees no benefit.

Q6-3 Should Agreement States be required to adopt regulations that are compatible with the requirements in 10 CFR 20.2206?

- If the NRC wants to monitor the exposures of different types of licensees, they can request the dosimetry companies to report their data to the NRC directly. This would be more efficient than having the dosimetry data sent to the states, and then the states have to review it and potentially forward it to a central repository. This would be a significant impact to Agreement States, especially if NRC adds medical broadscope and academic license to the categories that need to report.

Q6-4 Should the NRC consider a gradual expansion of the 10 CFR 20.2206 licensee reporting categories in a step-wise fashion (e.g., staggered compliance dates for different categories of licensees)?

- The Board has no comment on this.

Q6-5 What are the potential implementation and operational costs associated with expanding the occupational exposure reporting requirements?

- See answer to Q6-3

We appreciate the chance to comment on this subject, and stand ready to answer any questions you may have.

Sincerely,

Michael Welling

Michael Welling
OAS Chair
Director Radioactive Materials Program
Virginia Dept of Health
109 Governor St, 7th Floor
Richmond, VA 23219