

Director for Radiation Safety  
Ministry of Health  
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By Email

**Submission on behalf of the New Zealand Veterinary Association Te Pae Kīrehe regarding the review of ORS C9 2020**

The New Zealand Veterinary Association Te Pae Kīrehe (NZVA) welcomes the opportunity to comment on the review of the Code of Practice for Veterinary Radiation: ORS C9 2020. As the largest professional body representing veterinarians across Aotearoa New Zealand, NZVA supports our members through education, standard setting, advocacy, and wellbeing initiatives. This submission is provided by our Companion Animal Veterinarians Branch (CAV), which represents a significant portion of the profession working in clinical companion animal practice.

The current Code of Practice for Veterinary Radiation provides a solid regulatory foundation for ensuring safety in veterinary radiographic settings, particularly in relation to conventional radiography and radioactive materials. However, we believe that several areas require further clarification or updates to reflect modern veterinary imaging practices and ensure the Code remains practical and fit-for-purpose in contemporary clinical environments.

One area of concern relates to the increasing use of digital radiography systems in companion animal practice. Digital systems, both computed radiography (CR) and direct digital radiography (DR), are now commonplace and bring many advantages, including rapid image acquisition and post-processing flexibility. However, these same advantages have introduced new safety challenges. A key issue is the risk of 'dose creep', where operators may unintentionally use higher exposure settings than necessary, relying on post-processing to correct image quality. This is a well-recognised phenomenon in day-to-day practice and represents a meaningful deviation from the dose optimisation principles embedded in radiation safety.

We recommend that the Code specifically address digital radiography, including the need for quality assurance processes such as regular detector calibration, checks for artefacts, and the use of exposure indices (e.g., Exposure Index or Deviation Index values). These should be reviewed against technique charts to support continual optimisation. Staff training in selecting appropriate exposure settings based on patient size and anatomy is also essential to mitigate the risk of unnecessary exposure.

Alongside the rise in digital systems, handheld X-ray units, particularly for dental and mobile services have become more common. While the Code rightly encourages the use of fixed equipment over handheld units, there is currently limited practical guidance for safe use when handheld units are necessary. We believe the Code would benefit from clearer expectations around the use of support stands or remote triggering devices, the mandatory use of personal protective equipment (PPE), and guidance on design standards and maintenance requirements. In most cases, wall-mounted dental X-ray units remain the safest and most appropriate option for small animal practice, and we suggest this be acknowledged in the Code.

Several other areas would also benefit from clarification. For example, the Code requires each facility to appoint a Radiation Safety Officer (RSO), but it is not clear whether this role must be held by a veterinarian or may be delegated to a suitably trained and experienced veterinary nurse. We would support the latter, and suggest the Code explicitly allow for either role, provided appropriate training has been undertaken.

Further, Clause 3(c)(iii) refers to the requirement for a "primary barrier" of 2 mm lead equivalence at 100 kVp. It is unclear what is meant by "primary barrier," and whether this applies to dental radiography or other specific

installations (e.g., lead lining in X-ray tables). We suggest a clear definition and additional guidance here would be valuable, particularly given recent discrepancies in audit expectations.

The Code also refers to housing animals treated with radioactive materials in a “well-ventilated” room. We believe it would be helpful to define what constitutes adequate ventilation in this context, whether by specifying minimum air changes per hour or another measurable standard.

Regarding user authorisation records, Clause 6 of ORS C9 requires a list of authorised users with evidence of qualifications and current Annual Practising Certificates (APCs). Some clarity would be useful on whether copies of APCs must be held onsite, or if recording the expiry date is sufficient to be compliant.

Finally, while the associated Compliance Guide touches on dose constraints, the Code itself does not explicitly state dose limits for radiation workers, pregnant workers, or members of the public. Including these thresholds in the Code would provide greater clarity and alignment with international norms. For reference, Australia defines annual dose limits as 20 mSv for radiation workers, 1 mSv for pregnant workers (over the course of pregnancy), and 1 mSv for members of the public. Including these figures would assist in planning, dose monitoring, and incident investigation processes.

## Recommendations

- Specifically address digital radiography in the Code of Practice for Veterinary Radiation, including the need for staff training and quality assurance processes.
- Include clear expectations around the use of support stands or remote triggering devices, mandatory use of PPE, and guidance on design standards and maintenance requirements.
- Acknowledge that, in most cases, wall-mounted dental X-ray units remain the safest and most appropriate option for small animal practice.
- Allow for both veterinarians and veterinary nurses to be appointed as Radiation Safety Officers, provided appropriate training has been undertaken.
- Include a clear definition and additional guidance about the requirement for a “primary barrier” of 2 mm lead equivalence at 100 kVp.
- Include a clear definition about what constitutes adequate ventilation, whether by specifying minimum air changes per hour or another measurable standard.
- Clarify whether copies of Annual Practising Certificates must be held onsite.
- Include dose limits for radiation workers, pregnant workers, or members of the public.

In conclusion, we strongly support the objectives of the Code and commend its role in promoting radiation safety within veterinary practice. The recommendations outlined above are intended to support clarity, consistency, and practicality, especially for companion animal clinics where technology and workflows have evolved significantly since the Code was first introduced. We would welcome further engagement to support the development of updated guidance or additional implementation tools.

Nāku iti noa, nā,



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