

Protection and Safety Programme Advice – Dental X-Ray

A protection and safety programme tells how the licensee will protect people and the environment. This programme should include management arrangements, procedures and equipment.

After FANR has reviewed and accepted the programme, it will become a part of the licence. That is, licensees must meet the commitments they have made in these programmes.

A dental X-ray protection and safety programme should have the following:

1. Information about the licensee

Include

- The number and types of dental X-ray equipment that the licensee uses
- The number of staff who use dental X-ray equipment
- A floor plan showing dental X-ray equipment and nearby areas including patient waiting areas
- Patient workload

2. Radiation safety policies

Provide a commitment to comply with FANR regulations and licence conditions. Include a commitment to support this protection and safety programme.

Include a procedure to notify FANR at least thirty days before any significant changes to equipment, responsible staff or radiation protection arrangements.

3. Management structure

Include an organization chart showing the reporting chain. Include the duties of dentists and dental x-ray technicians. Include a requirement that they must be qualified for their duties, including training, accreditation or equivalent. Include a procedure for making sure that they understand and acknowledge their duties.

4. Occupational Protection

Include what will be done to keep workers' doses within your dose constraints (an occupational dose constraint of 3 mSv/year is regarded as reasonable). Include a procedure to train workers about what they should do to protect themselves from radiation.

Specify controlled areas, which should include all rooms in which dental X-ray equipment is used. Include how access to these areas is restricted when X-ray equipment is in use.

Provisions for personal protection should include that all staff should be out of the room or at a shielded console during exposures.

5. Individual monitoring

Either provide for individual monitoring or provide an evaluation showing that workers are not likely to receive more than 2 mSv/yr.

If you choose individual monitoring, provide written procedures for worker dose assessments. Include how workers who are monitored are identified. Include arrangements for using an approved dosimetry service and rules for returning and changing dosimeters. Include how the RPO will review doses and how accumulated doses will be recorded. Include procedures for dealing with worker overexposures and lost or damaged dosimeters. Include investigation levels. Provide procedures so that dose records contain the information FANR requires, are kept as long as FANR requires, and are made available to workers. Include a procedure for reporting worker doses to FANR every six months.

6. Patient Exposure Protection

Include assigning responsibility for patient protection to the senior dentist in the practice. Include assigning responsibility for ensuring that the dental X-ray equipment is properly calibrated.

Include how patients' exposures will be kept to the minimum required for effective dental diagnosis.

For accidental patient exposures, include procedures to investigate and report:

- Any exposure given to the wrong patient or causing a dose significantly different from what was planned;
- Any equipment failure, accident, mistake or other unusual event that might have made a patient get an exposure significantly different from what was planned.

Include how records will be maintained for at least five years so that past doses can be assessed.

7. Public Protection

Provide the licensee's procedures for keeping doses to the public below an acceptable public dose constraint of 0.1 mSv/yr. (FANR will consider a dose constraint of up to 0.3 mSv/year if the Licensee provides a reason for why a dose constraint of 0.1 mSv/year is impractical¹.) Include shielding designs and use of controlled areas.

¹ See FANR Regulatory Guide 007, 'Radiation Safety', page 11.
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8. Safety of dental X-ray equipment

Discuss how the licensee will make sure that it buys the right equipment for its needs and how it will make sure the equipment meets international quality standards.

Provide inspection, calibration & maintenance procedures. Discuss how equipment will be tested according to international standards. Include software.

Include how the licensee will keep dental X-ray equipment secure, including

- Keeping an inventory of all items of dental X-ray equipment, including their descriptions and where they are located;
- Keeping all items of dental X-ray equipment from being damaged, and keeping unauthorized persons from using them

This section should also include procedures for controlling dental X-ray equipment, including

- Procedures to keep it from being transferred unless the receiver is authorized to have it;
- Procedures to notify FANR after receiving or transferring it;
- Procedures to send FANR the licensee's inventory of dental X-ray equipment twice each year

9. Operating procedures

These should be written procedures for workers to follow. They should be clearly displayed or easy for workers to find and should be written in all of the languages that the workers may use.

10. Employee training

Provide the radiation safety training program for all staff who work directly with dental X-ray equipment. The training should emphasize the procedures the workers must follow. Include how worker attendance at training will be recorded and how the workers will be tested to make sure the training has been effective.

11. Incident reporting and investigation

Provide procedures for reporting incidents and accidents to FANR and procedures for investigating them. Include procedures to meet the reporting requirements in of FANR-REG-24, Articles (19) and (41).