Protection and Safety Programme Advice – X-Ray Security Scanners

A protection and safety programme describes 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.

An X-ray security scanner protection and safety programme should have the following:

1. Information about the licensee

Include

- The number and types of scanners that the licensee uses
- The total number of workers allowed to use the scanners
- A floor plan showing where the scanners are when they are working and where they are stored.
- State how many days a year the scanners are used

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 up to the senior manager. Include the duties and authorities for radiation safety of managers, supervisors and workers. Be sure to include the radiation protection officers and their duties, authorities and access to managers. Include a requirement that only qualified workers may run scanners. Include a procedure for making sure that workers 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.

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. 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 impractical[1].) Include taking public protection into account when buying scanners.

7. Safety of X-ray security scanners

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

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

Include how the licensee will keep scanners secure, including

- Keeping an inventory of all scanners, including their descriptions and where they are located;

- Keeping the scanners from being stolen or damaged, and keeping unauthorized persons from using them either while the scanners are ready for use or while they are stored.

This section should also include procedures for controlling scanners, including

- Procedures to keep scanners from being transferred unless the receiver is authorized to have them;

- Procedures to notify FANR after receiving or transferring a scanner;

- Procedures to send FANR the licensee's inventory of scanners twice each year

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[1] See FANR Regulatory Guide 007, 'Radiation Safety', page 11.

8. 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.

9. Employee training

Provide the radiation safety training program for all workers who work directly with scanners. 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.

10. 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, Article (19).

11. Import/Export

Provide the licensee's procedure for getting permission from FANR to import and export scanners. Licensees must ask FANR for a permit in advance of each shipment.