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AMENDMENT 1
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Nuclear facilities — Ventilation penetrations for shielded enclosures

AMENDMENT 1

Installations nucléaires — Traversées de ventilation pour enceintes blindées

AMENDEMENT 1

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Clause 2

Delete ISO 3452, *Non-destructive testing — Penetrant inspection — General principles*.

4.2, third and fourth paragraph

Replace the paragraphs with the following:

"Where the ventilation duct penetrates the wall in a zigzag, the duct-mounting appliance shall be enclosed in a material providing the same level of protection as the shielding wall. The material should be at least three times denser than the wall, if it is made in concrete with an usual density (for example between 2,2 t/m^3 and 2,4 t/m^3) (see Figure 2).

Annex C gives other examples of conventional duct penetrations for shielded enclosures.

These rules are applied to cast-iron screws for protection against gamma radiation with an 0,5 MeV < energy < 2,5 MeV (1 MeV = 1,6 10^{-13} J) used for the reconstitution of the shielding properties of the walls.

All these calculations have to be verified by radiological protection calculation, in order to validate the effectiveness of the reconstitution of the shielding properties, in particular to cover other energies or concrete density."

4.3.1, second paragraph

Replace the paragraph with the following:

"The helixes are made from a metallic material (examples for the helix unit can be the use of a lamellar graphite cast iron or spheroidal graphite cast iron as a result of a preliminary material study, stainless steel,…).

NOTE The consideration of this paragraph doesn't apply for neutron shielding."

4.3.2

Replace the text with the following:

"Because of their helical shape, these protection helixes can ensure the following:

a) shielding continuity with an attenuation against gamma radiation equivalent to that of the wall to be penetrated;

b) the passage of air or gas through the wall with the creation of a pressure drop as low as possible.

The design of the additional protection in order to reconstitute protection equivalent to straight through passages shall be conducted on a case-by-case basis."