N176. Improved Plant Designs Reduce Dose By A Factor Of 20

Collective doses at new Siemens-built reactors are a factor of 20 lower than they are in its older plants. This is the result of a range of improvements including:

- Plant layout and component arrangement
- Shielding
- Component design, with respect to maintenance and repair
- Material selection (avoiding cobalt)
- Design and operation of purification systems
- Auxiliary equipment for maintenance and repair (manipulators)
- Primary water chemistry
- Quality assurance
- Operator training

Although some of these cannot be applied easily to an existing plant and have to be included in the actual design, many of these measures have been applied to older plants. This has helped to lower annual exposures in existing plants.

Taken from "Improved Plant Designs Reduce Dose by a Factor of 20," R. Hock, Nuclear Engineering International, pp. 55-56, May 1992.