Radiological protection of outside workers

Who are they under the Community directive?

Directive 90/641 defines an outside worker as any worker (category A), whether employed temporarily or permanently by an outside undertaking, including apprentices, trainees, students and self-employed service providers, who performs activities in a controlled area and is likely to receive an effective dose above 6 mSv/year.

What obligations do outside undertakings and operators have to such workers?

Outside undertakings must, either directly or by contractual agreement with operators, ensure the radiological protection of their workers. The operator of a controlled area is responsible for the operational aspects of the radiological protection of these workers.

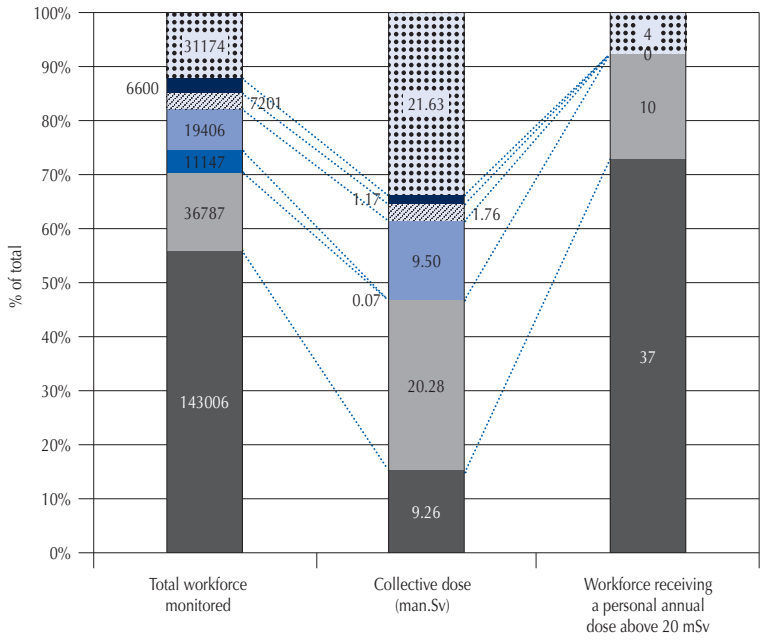
What obligations do States have?

Member States must subject outside undertakings to reporting or authorisation requirements, according to the activities, set up a radiological monitoring system and issue an individual document. The directive lays down the particulars that such a document must contain, and the principles for its use by operators or monitoring authorities, such as the procedure for updating it after each activity performed.

How many workers are covered by these provisions in Europe?

No report has yet been published on the implementation of this directive. Recently, however, the Commission asked the French centre for research into nuclear protection assessment (CEPN)[1] to carry out a survey on the implementation of the directive.

France: outside worker exposures in 2004



- Outside service providers (monitored by IRSN and LCIE)
- Workers in CEA facilities monitored by the IRSN laboratory
- Workers in Cogema facilities monitored by Cogema laboratories
- EDF (staff – monitored by LCIE)
- Research/IPN/CNRS/IreS
- Industry – workforce classed as "non nuclear" and "general"
- Medical and veterinary activities

IRSN: Institute for Radiological Protection and Nuclear Safety
LCIE: Conformity Testing and Assessment Agency
CEA: French Nuclear Research Agency
EDF: French National Power Company
IPN: Institute of Nuclear Physics
CNRS: National Council for Scientific Research
IReS: Subatomic Physics Research Institute

Source : IRSN, Rapport DRPH/ 2005-09

[1] Centre d'étude sur l'évaluation de la protection dans le domaine nucléaire, www.cepn.asso.fr.

The findings of that study have not yet been published, and the word is that the study has turned up a number of difficulties in the form of inconsistencies between the texts of the two directives relating to the definition of outside undertakings and national differences in implementation: coverage only of category A workers or both categories, limitation to the nuclear sector or coverage of all sectors, in particular the medical sector, and non-destructive testing.

The data supplied by Member States for the CEPN study are posted on the Esorex[2] site. These show significant variations between the figures sent in and those published nationally for some countries. France, for example, reports 17 000 outside workers, whereas the French institute for radiation protection and nuclear safety (IRSN)[3] assessment of radioprotection for workers in 2004 reports 31 174 outside workers monitored.

What dose?

Esorex has published the first European review of occupational exposure trends between 1996 and 2000; it finds that the average annual personal dose decreased from 2.2 mSv to 1.5 mSv and that the collective dose decreased in the same proportion. The only sector differentials are that average annual exposure decreased less in "general industry" than in the nuclear industry, where the dose is 1.8 mSv. The study lists only three sectors (medical, nuclear, general industry), so "general industry" therefore covers outside undertakings in particular.

The IRSN provides additional details on these exposure inequalities between the different categories of workers. It reports that 35% of outside workers received doses higher than 1 mSv/year. The highest doses (5 mSv/year) were received by employees of subcontractor firms working on nuclear power plant unit outages, compared to doses of about 3.5 mSv/year received by contractors for the French nuclear research agency Commissariat à l'Énergie Atomique.

The IRSN also provides further information on inequalities in the different sectors of activity. Most monitored workers are in the medical and veterinary sector which, while accounting only for 15% of the collective dose, includes the most exposed workers. The agency reports that workers employed by nuclear power plant operators receive the same collective dose, but there are seven times fewer of them, and none received a dose above 20 mSv in 2004 (7 medical and veterinary workers received doses above 50 mSv). Workers in sub-contractor and general industry undertakings receive the highest collective doses – over half the total collective dose – whereas personnel make up 26% of the total monitored workers.

The report notes that the nuclear industry has made progress in reducing collective doses since the end of the 1990s, but that following a decrease in the 1990s, the number of doses[4] above 20 mSv has still remained unchanged in three sectors: medical, subcontractors for operators and general industry.

Conclusions

Even from the available data, it can be said that outside workers receive higher doses than workers employed by nuclear power plant operators. So, having a specific directive for outside workers has not so far delivered the same level of protection to all nuclear power workers. The basic directive needs amending to cover all workers and to make a reference back to the framework directive which provides rights for all workers. Work specifiers' responsibilities to sub-contracting firms also need clarification. ■

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[2] www.esorex.cz.
[3] Institut de radioprotection et sûreté nucléaire, *Radioprotection des travailleurs. Bilan 2004*, www.irsn.org.
[4] Averaging 50 to 100 workers a year.