

THE ROLE OF INFORMATION, EDUCATION AND TRAINING IN REDUCING DOSES

J.J. LE COZ - J. ABRAS

Department of Safety, Radiation Protection and the Environment
EDF/DEPT, SAINT-DENIS (FRANCE)

SUMMARY

During the early years of EDF's nuclear reactor construction programme, there was intensive initial training aimed at informing new generations of workers of the work they were going to doing. This ambitious objective, aimed at putting an increasing number of units into service in total safety and at rates of up to 6 to 8 units per year, was a success.

The mass training programme which centralised and concentrated on knowledge of the process and procedures, was ideally suited to the requirements of a standard population of reactors and to the various trades concerned, which were less varied and numerous than those of today. The present situation is slightly different and training should be directed towards the experience of operations, retrofits and knowledge of new technologies.

Accordingly, we have moved towards a more individual style of management for a greater body of knowledge.

The population concerned consists of some 50 000 workers. This document sets out the policy implemented by EDF:

- mobilisation of EDF managers and contractors,
- integrating the ALARA concept into specific operations,
- reducing the amount of information.

Today, the ALARA concept represents an excellent opportunity for making progress. Man, his knowledge, his experience and initiative, represents the most important source for progress in the field of radiological protection. In order to be able to use his creative potential to the full, man must be imbued with both a radiological protection culture and a safety culture. This must be the main priority of nuclear operators.

FOREWORD

In order to provide quality electricity generation at the lowest possible cost and under the best possible conditions of security and safety within its installations, EDF must:

- develop the professionalism of the people concerned through operation itself (EDF personnel) and maintenance operations (EDF and contractor personnel);
- improve and maintain the safety and quality culture;
- improve the quality of relationships between those involved in maintenance by enabling them to become part of a close partnership approach.

EDF's DOSIMETRY POLICY

Since 1991, EDF has committed itself to a policy of optimising collective dosimetry and this has already resulted in a reduction of approximately one third over five years. This will to succeed is being maintained to make EDF one of the best nuclear operators in the world.

In so far as personal dosimetry is concerned, the objective of not more than 20 mSv for each worker should be achieved before the year 2000.

For this, it was decided to implement systematically the concept of the optimisation of dosimetry (ALARA). The various aspects which influence dosimetry (training, operation, maintenance, experience feedback, information processing system, etc.) are described in terms of progress.

INFORMATION AND TRAINING ON THE OPTIMISATION OF DOSIMETRY

An initial analysis of the reasons for high dosimetry has shown that significant improvements can be made by basing information on an extremely simple concept, the ALARA concept: defining dosimetric targets during operational preparation, measuring performances through site monitoring, analysis of discrepancies (and, if necessary, corrective actions) and obtaining feedback of experience after completion.

It was decided to embark on a campaign of awareness for EDF managers and for contractors. The performance and durability of radiological protection depend first on the total commitment of senior management followed by the rest of the employees. Getting men to reflect carefully before taking decisions, rejecting improvisation, adopting a systematic approach to solving problems, identifying and controlling doses is not a natural process and only senior management can initiate and develop this style of management in accordance with the requirements and specific nature of the company (heat lagging, auxiliaries, valves and fittings).

The second stage could be called "communications in the field". Communications with workers is the responsibility of both the contractor and of EDF personnel (training on arrival on site, ALARA posters, displaying dosimetry targets and performance for unit shutdowns, presence of an ALARA team on the site, etc.).

The sites with the worst records were analysed according to the ALARA concept and dosimetry targets are fixed together by the contractor and EDF when orders are placed. For certain operations, models are used to train operators.

Extension towards more detailed analysis, through collective dosimetry targets, is being considered for 1996.

In so far as prototype sites are concerned, EDF operates a specialised centre, the CETIC, where it is possible to develop certain operations (actions and positions of workers, tool modifications, etc.).

CONCLUSION

EDF, together with its contractors, should return to being one of the leading nuclear operators in terms of radiological protection. The required optimisation of dosimetry will be achieved through the awareness of all those concerned (senior managers, managers and other workers), training in the ALARA concept, increased professionalism including careful preparation, monitoring of operations (dosimetry and quality), training on models, if necessary, and experience feedback from sites.

All this, of course, goes to create the radiological protection and safety culture of everybody concerned within the nuclear industry.