

# FINNISH NUCLEAR WASTE PROGRAMME - INFORMATION ACTIVITIES AND PUBLIC ACCEPTANCE

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## ABSTRACT

Information activities in the Finnish nuclear waste programme are concentrated in the deep drilling programme aiming at selection of a repository site for Teollisuuden Voima Oy's spent fuel by the year 2000. Emphasis in the present information work is laid on different target groups in the five communities, in which bedrock studies are carried out. An approval of the location community is needed before the construction of the repository can be started. This provides a systematic information programme in order to increase confidence in the safety of the final disposal of nuclear waste. TVO's nuclear waste facilities already in operation, or under construction, offer good possibilities for increasing public acceptance.

## INTRODUCTION

The Finnish nuclear power utilities Teollisuuden Voima Oy (TVO) and Imatran Voima Oy (IVO) operate four nuclear reactors. The units TVO I and TVO II at the Olkiluoto site in the Eurajoki community are owned by TVO. The other two units Lo1 and Lo2 at Loviisa are owned by IVO.

Most of the information activities needed in the Finnish nuclear waste management programme are connected with TVO's waste management, as the company carries out field studies in order to find a suitable site for the final repository for the spent fuel from the Olkiluoto power plant. IVO has an agreement with the Soviet fuel supplier on the return of the spent fuel from the Loviisa power plant to the Soviet Union.

The Nuclear Energy Act provides that the location community has to accept the construction of a nuclear facility before the construction can be started. This means that an approval of a local council will be needed for a final repository for spent fuel soon after the target year of site selection, which is 2000. A systematic information programme is necessary already in an early phase in order to increase public confidence in final disposal.

## BACKGROUND AND EARLIER EXPERIENCES

Waste producer is responsible for realization of safe management of spent fuel, low- and intermediate-level operating wastes (LLW/ILW) as well as of decommissioning wastes. A description of TVO's technical waste management programme is in Ref. (1).

### Final repository for LLW/ILW

TVO started the field investigations at Olkiluoto in 1980 with the aim to study, whether the bedrock of the power plant area is suitable for final disposal of LLW/ILW. After several intermediate stages (site report in 1982, preliminary safety analysis report in 1986), the construction of the repository was started without any significant delay in April 1988. Before the excavation work could be started, the approvals of the authorities and the Eurajoki community

were necessary. There have been no significant local acceptance difficulties in this repository project. The repository will be commissioned in 1992.

### Interim Storage For Spent Fuel

The construction of an interim storage facility for spent fuel began in 1984. Also this facility is located at the power plant site of Olkiluoto. The store was commissioned in 1987. The project proceeded without appreciable opposition.

### Final Repository For Spent Fuel

A site for the final repository for spent fuel has to be selected by the year 2000. Operation is planned to be started by the year 2020.

During 1983-85, about 100 potential areas were selected as candidate sites for field investigations. The location communities were informed of the possibility of field investigations in the future. In Finland, no approval of a community is needed for field studies, only a landowner's permit is necessary. The possible investigations aroused both negative and positive responses from the communities. The reason for positive interest was the foreseen possibility of remarkable economical benefits offered by a repository in the future (working places, tax income).

Before starting the actual field investigation programme aiming at selection of a site, TVO drilled a deep test borehole in 1984 (Lavia). The purpose of this borehole was to test and develop rock investigation methods. The drilling project aroused strong reactions and opposition in the community. Many people believed that the purpose was to construct later a repository at the same site. In spite of the opposition, the tests were carried out in the borehole as planned in 1984-86.

In March 1986, the first site was selected for field investigations (Ikaalinen). The plan was to select several other sites later, during the years 1987-88. The selection caused immediately a strong opposition in the community. An argument of the opponents was that there will be no other site candidates. The field work was not started, although the landowner's permit would have allowed the

studies. Thereafter, the Chernobyl accident made the selection of any other site difficult during 1986.

Five areas were selected for the field investigations in 1987. They are located in the Kuhmo, Hyrynsalmi, Konginkangas, Sievi and Eurajoki communities. One of these areas (Eurajoki) is near to the Olkiluoto power plant site in the same community. The selection of the five areas was published simultaneously in five local press conferences. Exhibitions on bedrock studies were opened at the communities. TVO's representatives were present in the communities one week after the selection answering questions and delivering information material. The field work was started at the first two areas immediately.

### INFORMATION ACTIVITIES

#### Goals

The general goal of information activities is to support TVO's technical waste management programme and to increase confidence in it in order to

- make possible the realization and R & D work of waste management according to the schedules without too strong opposition
- have adequate public acceptance by the point of time when a local council has to take stand on the construction of a facility in their community.

Furthermore, information activities should improve understanding of the waste management in general, as wastes are considered by laymen to be one major problem of nuclear energy.

#### Messages

Some messages repeated often in the information work by TVO are

- solutions exist for nuclear waste management and final disposal
- waste management proceeds; interim storages are already in operation, final disposal will soon be started
- safety is guaranteed by thorough research work
- money needed in the future is available (funding arrangements)
- disposal of wastes deep in crystalline rock is a good example of environmental protection.

#### Target Groups And Actions

As regards acceptance, the most difficult task in TVO's waste management programme is the selection of a site for the final repository for spent fuel. The key question is the need to increase local acceptance of final disposal by the

year 2000 to such a level that a local council can accept the facility.

The decision-makers in the site investigation communities (members of local councils and governments, officials) are informed of bedrock studies and technical solutions of final disposal. TVO has founded five separate cooperation groups with the communities. Several meetings have been arranged annually with these groups to keep the members well informed of the progress of the programme. Also the need for local information activities is a topic regularly discussed in these groups.

Local inhabitants are informed of TVO's activities via media and directly. Press conferences have been arranged during the important phases of the field programme (start of deep drilling etc.). Open houses for public have been arranged during deep drilling at each site. TVO has in each investigation community a small local office, where people have a possibility to get information.

Big open meetings with public are avoided, because it has appeared that it is difficult to generate neutral discussions in them. A few panel discussions have been arranged by local organizations, and TVO's representatives have participated in them. Discussion in newspapers has at times been active.

Special groups, e.g. teachers and Lions and Rotary clubs, have asked for information and lectures on nuclear waste management. Communication with this kind of small groups has been assessed very useful.

Many local groups have visited TVO's power plant site at Olkiluoto. The reactor hall and waste management facilities have been shown to them. It has been found that these visits decrease significantly prejudices against nuclear power and waste management.

The research scientists, authorities and other experts working in the field of nuclear waste management are kept informed of the progress of TVO's waste management programme with the aid of seminars and visits to facilities and investigation sites.

Several types of materials are needed in order to be able to inform the different target groups. E.g. the following material has been used in TVO's programme:

- brochures
- videos
- exhibition
- own periodical.

### PRESENT STATUS AND OUTLOOK

Nation-wide public acceptance of final disposal is low in Finland. According to the opinion poll made by the University of Tampere, the argument "Nuclear wastes can

safely be disposed of in the Finnish bedrock" was accepted by 21% of the Finns as 52% did not accept the argument in 1989. There has, however, been a slight positive trend in the figures in recent years. In 1983, the corresponding figures were 14% ("yes") and 57% ("no"). Opinions in the power plant communities differ remarkably from the average. In Eurajoki, 36% answered "yes" and 46% "no" in 1989.

Information work is needed most in connection with site selection studies of spent fuel repository. Interest in the studies is nowadays clearly local, contrary to the years before 1987, when it was nation-wide. In two investigation communities opponent groups have been organized. Name lists against final disposal have been gathered for delivery to the decision-makers in all five communities. Furthermore, negative positions have been taken up in the long-term plans of some communities.

In spite of prejudices and opposition, TVO has been able to proceed in the technical site investigation programme according to the schedule. Compliance with the original plans and schedules is considered of primary importance in order to enhance the credibility of safe final disposal.

The next step in the programme is to select 2-3 sites for additional studies by the end of 1992. The aim is to select these sites and to continue studies in as good cooperation with the communities as possible. This requires continuous information activities, in which the past experiences have to be taken into consideration.

Apart from local information activities, communication with national decision-makers and political parties will be

important in the 1990's. According to the Nuclear Energy Act, an approval of the government and final acceptance of the parliament are needed for the construction of a repository.

Nowadays, no special need for information activities is connected with the spent fuel storage facility, as to acceptance of its operation. Local acceptance of the LLW/ILW repository is very good, too. However, both of these facilities can be utilized in order to increase public confidence in TVO's waste management and to support the site selection studies of spent fuel repository. The facilities have been shown to many visitor groups. Several press conferences have been arranged during the construction work of the LLW/ILW repository. In fact, the LLW/ILW repository is nowadays the only newsworthy project of TVO's waste management programme in the nation-wide media.

In the near future, the commissioning of the LLW/ILW repository in 1992 may offer a good chance of improving public acceptance of disposal of nuclear wastes. By the year 2000, when the site will be selected for the spent fuel repository, at least the local acceptance of final disposal should be better than it is today.

#### REFERENCES

1. V. RYHÄNEN, "Nuclear Waste Management of Olkiluoto Power Plant," Waste Management '90, Tucson, Arizona, February 25 - March 1, 1990.