

Annual Report 2003



Annual Report 2003 **POSIVA**

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HIGHLIGHTS IN 2003

The Municipality of Eurajoki granted the construction permit for the underground characterisation facility ONKALO

Site works related to the construction of ONKALO were started in the Olkiluoto research area

Planning and design documents for the construction of ONKALO were completed and delivered to the authorities for review

The programme for research, development and technical design for 2004–2006 was completed

The first disposal facility description specific to Olkiluoto was completed

POSIVA'S MISSION, VISION AND STRATEGY

MISSION

Responsibility for the management of spent nuclear fuel after interim storage.

Implementation of safe final disposal of spent nuclear fuel in bedrock.

VISION

To implement the final disposal of spent nuclear fuel generated by Finnish nuclear power plants in a safe, economical and timely fashion.

To win both domestic and international acknowledgement for the expertise displayed by the Company.

To earn the trust of the society in the operations of the Company.

STRATEGY

The main objective – the start of final disposal in 2020 – will be pursued in stages.

The underground characterisation facility ONKALO will be built by the year 2010 and the application for the construction license of the final disposal facility will be filed with the authorities by the end of 2012.

Spent nuclear fuel management

– starting points

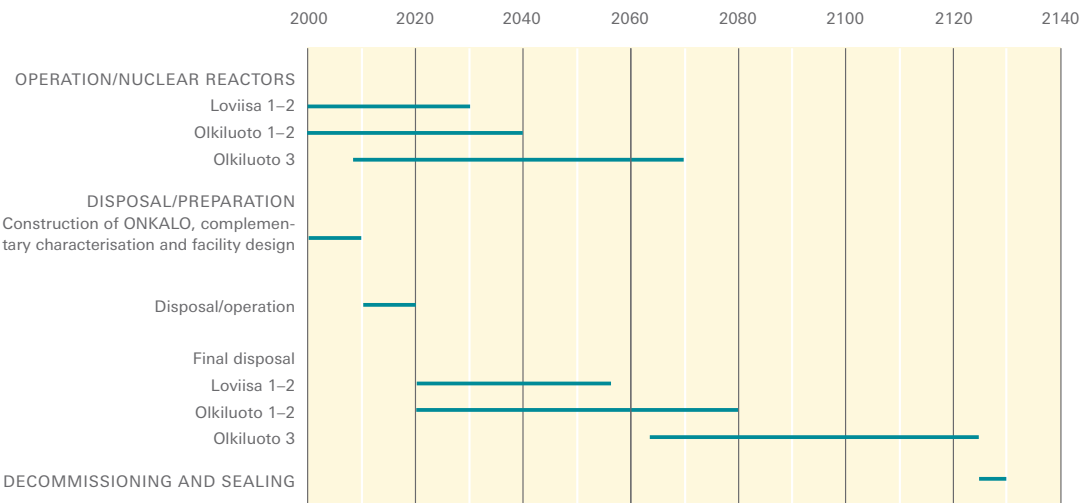
Pursuant to the Nuclear Energy Act, nuclear waste generated in Finland shall be processed, stored and disposed of within Finnish territory. The responsibility for waste management lies with the power companies, Teollisuuden Voima Oy and Fortum Power & Heat Oy. Their responsibility covers all the operations up to permanent final disposal of the nuclear waste. Posiva Oy, owned by the power companies, is in charge of the practical implementation of final disposal, as well as for all the required prior research and design work.

Preparations for the final disposal of spent nuclear fuel have been in progress in Finland for

some 25 years. Posiva has concentrated operations in Olkiluoto, where the final disposal facility of spent nuclear fuel will be constructed in compliance with the policy decision taken by the Finnish Government in 2000.

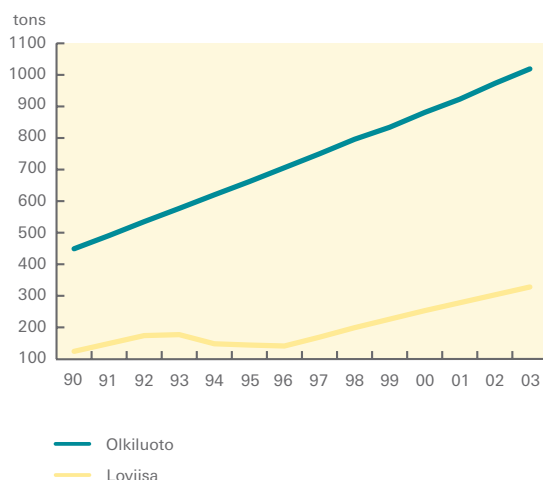
After the policy decision the planning of final disposal proceeds to the next stage, the construction of an underground characterisation facility. The construction of the facility, ONKALO, will start in Olkiluoto in 2004. According to the overall project schedule final disposal will start in 2020. The application for the construction of the final disposal facility is to be filed with the Government by the end of 2012.

GENERAL TIMETABLE FOR DISPOSAL OPERATION



Until the actual start of final disposal, the spent nuclear fuel will be kept in interim storage pools built within the power plant areas. By the end of 2003, the total amount of spent nuclear fuel in interim storage at the power plants of Loviisa and Olkiluoto was ca. 1350 uranium tons.

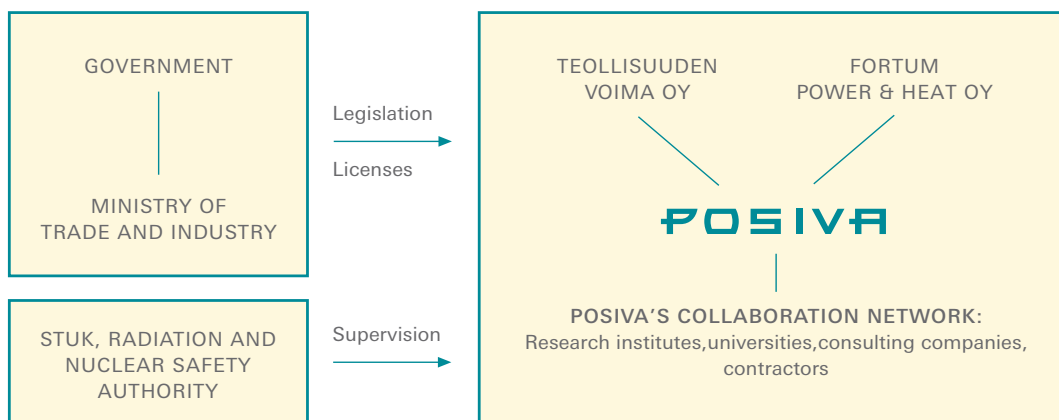
AMOUNT OF SPENT NUCLEAR FUEL IN URANIUM TONS STORED AT THE OLKILUOTO AND LOVIISA POWER PLANTS



Pursuant to the policy decisions of the Government, the final disposal facility to be built in Olkiluoto can be used for the final disposal of all fuel generated by the existing nuclear power plant units and by the new unit. The total amount will be at most ca. 6500 uranium tons.

In compliance with the principles defined in the Nuclear Energy Act, the funds for the implementation of nuclear waste management are collected in advance in the price of nuclear energy, and transferred to the State Nuclear Waste Management Fund. In 2003 the reserves in the Fund totalled ca. EUR 1300 million. The reserves in the Fund will also cover the decommissioning costs of the nuclear power plants.

NUCLEAR WASTE MANAGEMENT IN FINLAND



Managing Director's Review

Since the policy decisions taken in the Government and ratified in the Parliament at the beginning of this decade, the final disposal project for spent nuclear fuel has proceeded toward the implementation stage as planned. Posiva is currently preparing for the construction of the underground characterisation facility ONKALO in Olkiluoto in the Municipality of Eurajoki, which has also been selected as the final disposal site.

In addition to ONKALO, Posiva prepares the final disposal project in other ways, as well, to ensure that the construction of the encapsulation plant and the underground tunnels can be started in the 2010s and that the final disposal will be in operation in 2020. Finland is among the first countries to proceed to the implementation stage of a final disposal project. This has already attracted wide international interest in the Finnish nuclear waste management programme.

Construction of bedrock facility about to start

The future construction project of ONKALO was evident in Posiva's operations in many different ways during the reporting year. The plans for the underground characterisation facility were completed in the spring of 2003. Another decision relevant to the project concerned the location of the tunnel running at a depth of 500 meters. With the plans completed and the location defined, the planning of the actual implementation of ONKALO could be started in 2003.



"HIGH QUALITY AND EXPERTISE ARE ABSOLUTE REQUIREMENTS IN THE CONSTRUCTION OF ONKALO. THE CHARACTERISATION FACILITY EXCAVATED DEEP IN THE ROCK WILL LATER ALSO FACILITATE THE POSITIONING OF THE ACTUAL FINAL REPOSITORY IN THE OLKILUOTO BEDROCK."

- VEIJO RYHÄNEN, MANAGING DIRECTOR -

The Municipality of Eurajoki granted the construction permit for the research facility in the summer of 2003 and site works for ONKALO started toward the end of the year. Comprehensive reports on ONKALO and the characterisation and research programmes to be implemented there were completed and delivered to the Radiation and Nuclear Safety Authority STUK for review. The excavation of the access tunnel deep inside the bedrock in Olkiluoto is expected to start in the summer of 2004.

Overall schedule finalised

With more specific details about ONKALO-related plans and other future projects made available, the Ministry of Trade and Industry finalised the overall project schedule. The next significant milestone is in 2012, by which Posiva shall compile the material required for the construction license of the final disposal facility to be applied for from the Government. The programme for research, development and technical design for the years 2004–2006 was completed at the end of the reporting year and delivered to the authorities for review.

The decision on the construction of the new Olkiluoto 3 nuclear power plant unit influences also the operation of Posiva. The spent fuel generated by the new unit is to be disposed of in the final disposal facility, which initially was to be built for the needs of the existing plant units in Olkiluoto and Loviisa. The additional tunnels required for the fuel from the new unit will be integrated in the plans and construction of the final disposal facility. The addition of the new unit has moved the end point of the final disposal schedule to the 2100s.

Development of operations

Long-term planning is of crucial importance in a company like Posiva where the completion of the project from the initial stages to the final implementation extends over several decades. The long-term strategy of Posiva was adjusted during the reporting year, paying particular attention to the detailed and concrete finalising of the project plans for the future years and to the changes that have taken place in the Company's operating environment.

The development of the Company's operation has been the focus of special attention, as the progress made in the project in the recent years has resulted in an expansion of the operations with actual construction becoming part of Posiva's activities in addition to research and development work. The Company has also recruited new personnel in plenty.

Activities initiated to develop the Company's operations include the revision of the Quality System into a more extensive Operational System, the launching of a training and development programme for the personnel, and the development of risk management. The purpose of these all is to improve Posiva's resources to implement the final disposal of spent nuclear fuel generated by Finnish nuclear plants in the bedrock in a safe and environmentally benign manner.

I wish to extend my gratitude to the personnel, the shareholders and our collaboration partners for successful and good cooperation in 2003.

VEIJO RYHÄNEN

Operations of the Company

SITE INVESTIGATIONS IN OLKILUOTO

Investigation reports for ONKALO

Research work has focused on the investigations required for ONKALO. Drillings and investigation trenches have been conducted to obtain substantiating information for the selection of the entrance opening and the orientation of the tunnel. For authorities and other interest groups, in particular, comprehensive template documentation has been drawn up, consisting of

- *description of current baseline in Olkiluoto*
- *outline planning of ONKALO for main drawings stage*
- *characterisation and research programme for ONKALO*
- *assessment of ONKALO's impact on final disposal conditions*
- *monitoring plan for possible impact.*

Although a characterisation facility by nature, the objective is to later integrate ONKALO in the final disposal facility. For this reason, the requirements that apply to the construction of the actual disposal facility need to be considered from the very start in the implementation of ONKALO. The aim is particularly to minimise the disturbances caused by ONKALO in the bedrock in Olkiluoto in comparison with the current baseline. The description of the current baseline is a summary of the conditions in Olkiluoto to the extent known at present; and by means of the monitoring programme the correctness of ONKALO's estimated impact can be assessed.

Initially two alternative locations on opposite sides of the research area were studied as pos-



"THE IMPLEMENTATION OF ONKALO REQUIRES VERSATILE EXPERTISE AND COMPETENCE. COLLABORATION AND INTERACTION BETWEEN RESEARCHERS, DESIGNERS AND CONSTRUCTORS IS OF CRUCIAL IMPORTANCE."

- NILS-CHRISTIAN WIKSTRÖM, PROJECT ENGINEER;
AIMO HIIRONEN, SITE MANAGER; AND SARIANNA
ALHONMÄKI-AALONEN, SAFETY ENGINEER -

sible entrance openings. In 2003, investigations focused on the southeast part of the area, on the north side of the road that leads to Olkiluoto. The aim was to find an as optimum location for the entrance with respect to rock mechanics and flow conditions as possible. Additional investigations have been carried out to ensure that the tunnel would not penetrate any rock sections that might cause water leaks. Another starting point was to avoid locating the entrance right above a rock section in which the final disposal tunnels will run.

Equipment development and measurements

The preparations for ONKALO research have involved also development of equipment. For the research activities, existing equipment and methods used in holes drilled or auger bored from the surface can be used to a great extent. Some equipment will need to be modified for underground use. The high hydrostatic pressure and the saline ground water deeper in the bedrock, for example, set requirements for the equipment materials and their strength. On the other hand, the “over-pressure” also facilitates research activities: no pump is needed for water sampling, but water can be run under natural pressure to sampling equipment installed in the bedrock facility.

Stringent time limits have been determined for the research to be carried out in connection

“CAREFUL PREPARATIONS HAVE BEEN MADE FOR THE CONSTRUCTION OF ONKALO. ALL INFORMATION OBTAINED DURING THE CONSTRUCTION PROJECT SHALL BE ACCURATELY DOCUMENTED FOR THE ASSESSMENT OF THE SELECTED SOLUTIONS AT DIFFERENT STAGES OF THE PROJECT.”

- MARKO ARENIUS, PROJECT ENGINEER -



with the excavation of the access tunnel to prevent breaks in the excavation work or disturbances in the phasing of the work. Consequently, precise plans and instructions will be prepared for the gauging holes to be drilled at the end of the tunnel after every third excavation round, for example. Other investigations closely tied with the progress of the excavation work include geological surveys of excavation surfaces and investigations conducted in pilot holes.

Supervision and environmental monitoring

The construction of ONKALO will cause a disturbance in the bedrock, which will mainly manifest itself as changes in the ground water flow system and in the chemical environment. In order to establish the magnitude and extent of the changes, a monitoring system for implementation of sufficiently precise and extensive change measurements will be planned in Olkiluoto. The designed monitoring programme comprises rock mechanical, hydrological, hydrogeological and geochemical measurements. The environment in Olkiluoto as well as any changes that may take place will also be monitored. Measurements and investigations are carried out on the ground and in measurement holes drilled in the bedrock before the excavation of ONKALO is started, and measurements will be continued underground as the excavation of the access tunnel proceeds.

DESIGN OF ONKALO

Start of construction decided after obtaining construction permit

In August, the Building Committee of the Municipal of Eurajoki unanimously approved the application for ONKALO's construction permit. The application filed in May was accompanied by e.g. the site plan for the characterisation facility, the main drawings and the descriptions of system principles. General technical documentation on

ONKALO was delivered to Radiation and Nuclear Safety Authority STUK for review.

An area south of the Korvensuo basin, in the centre part of the Island of Olkiluoto, was selected as the location for the entrance to ONKALO.

Investigations show that the bedrock is of good quality there and the conditions favourable for construction. The location is good also in terms of land use in Olkiluoto. The planned location and layout of the tunnel system in ONKALO provide good opportunities for research activities in the underground facility and later for flexible integration of the final disposal facility in the bedrock surrounding ONKALO.

After the construction permit was obtained, the final decision on the start of the construction could be made and the implementation planning stage commenced.

In conjunction with design for realisation, the material for the invitations to tender for the excavation of the ONKALO tunnel was prepared and the invitations sent out to prospective contractors.

The planning of the construction site and the preparations for the building of utilities were started toward the end of the year. This involved forest logging as well as excavations for water supply, electrical and telecommunications lines. Investigation points, drainage, roads, lighting and electrification were also enhanced in areas around ONKALO.

In connection with the filing of the application for ONKALO's construction permit, Posiva organised a press conference in Olkiluoto in the spring. In the autumn, the Company published a brochure about the construction of ONKALO and the final disposal project in Finnish, English and Swedish.

FINAL DISPOSAL TECHNOLOGY

Horizontal disposal as an alternative

In Posiva's reference disposal concept, the copper canisters are placed vertically in holes drilled in the tunnel floor. As an alternative to this solution, Posiva is developing in collaboration with the Swedish nuclear waste company SKB a concept in which the canisters are embedded in the final disposal tunnel in a horizontal position. Prior to the emplacement into the tunnel, the canister is packed together with the buffer bentonite in a perforated steel container. The basic design of this solution was completed in 2003. The most impor-



"SAFETY IS THE NUMBER ONE ISSUE IN THE CONSTRUCTION OF ONKALO. ZERO ACCIDENTS IS THE STARTING POINT IN ALL THE OPERATIONS."

- SARIANNA ALHONMÄKI, SAFETY ENGINEER -



“ONKALO IS BUILT FOR RESEARCH AND DEMONSTRATION PURPOSES. THE FACILITY WILL GIVE AN OPPORTUNITY TO, FOR EXAMPLE, TEST THE BEHAVIOUR AND THE PROPERTIES OF THE MATERIALS TO BE USED IN THE SEALING AND BACKFILLING OF THE REPOSITORY TUNNELS.”
- JOHANNA HANSEN, DESIGN COORDINATOR -

tant aspects of the design work included the development of the required drilling and emplacement technique as well as the assessment of the performance of the system. The design and development work will be taken to the next stage, with the objective of demonstrating the functioning of the solution by means of full-scale trials.

The development of bedrock construction methods has focused on the use of low-pH cement as the rock injection for the tunnels. This project has also been implemented in cooperation with SKB. The work has involved development and testing of several potential sealing compounds. As a result of the work, various compound alternatives have been determined, one of the most promising comprising Finnish furnace slag and silica as base materials. According to current plans, low-

pH cement will be used already in ONKALO in order to diminish water leaks into the facility.

ENCAPSULATION TECHNOLOGY

Canister design harmonised with SKB

Canister design was continued in collaboration with SKB. The details of the plans for the external copper canister and the internal canister were fine tuned so that at present the canisters that SKB and Posiva plan to use for the fuel generated by boiling water reactors are in practice identical.

In the canister manufacturing technology, development work still focused on the manufacture of the cylindrical part of the external copper canister with an integrated bottom. Several manufacturing methods have been studied up till now. The methods were developed in cooperation with Outokumpu Poricopper and SKB. The development of the electron beam welding system for sealing of the canister's copper lid was also continued.

Posiva concluded a technology cooperation agreement with Patria Plc for the implementation of welding trial programmes using the electron beam welding system. The final plans for the key equipment of the encapsulation plant, the transfer vehicle and the automatically guided vehicle, were scrutinised.

During the year, the alternatives for the transport of spent fuel from Loviisa to Olkiluoto were studied. This included the comparison of the transport mode, by road, rail or sea, as well as studies of the routes and the transport casks. The list of the required permits and the cost estimate for the transports were also updated.

The technology used in the welding and inspection of the canister lids was presented to representatives of Satakunta-based media in the encapsulation laboratory of SKB in Oskarshamn in 2003. The visit included also a presentation of the final disposal trials conducted in SKB's Hard Rock Laboratory in Äspö.



"THE METAL CANISTER THAT WEIGHS MORE THAN 20 TONS IS THE MOST IMPORTANT TECHNICAL RELEASE BARRIER IN THE FINAL DISPOSAL CONCEPT. THE NODULAR CAST IRON CORE IS ENCLOSED BY A 5 CM THICK COPPER CANISTER, WHICH IS EXTREMELY HIGHLY RESISTANT TO CORROSION."

- NILS-CHRISTIAN WIKSTRÖM, PROJECT ENGINEER -

DISPOSAL FACILITY DESCRIPTION

Repository located in Olkiluoto described for the first time

The preliminary design stage, during which the plans for the final disposal facility were adapted to the specific conditions in Olkiluoto, was completed in 2003. The plans were compiled into a facility description report that describes not only the construction of the repository but also the operating principles of the final disposal facility in 2020 when the final disposal of spent nuclear fuel is planned to commence. In the operating description, the assessment of potential disturbances in

normal operation as well as in emergencies was also evaluated.

The disposal facility description will serve as a basis for further design work as well as in the estimation of the total costs of the final disposal facility and the future costs of nuclear waste management.

The report is mainly based on the preliminary design stage material produced in 2003, the preliminary design stage of the encapsulation plant completed in 2002, the main drawings of ONKALO and information obtained from Posiva's technical working reports.

Upon completion of the facility description, representatives of Satakunta-based media were invited to Olkiluoto for a presentation, based on this description, of the design work involved in the final disposal project and the implementation of final disposal in Olkiluoto.

COOPERATION WITH MUNICIPALITIES

The cooperation group formed by Posiva and the Municipality of Eurajoki met five times during the year to e.g. discuss current communication matters of both parties, the progress of Posiva's final disposal project and issues related with the renovation and planning of use of the Vuojoki Manor.

The Vuojoki Manor renovation project proceeded during the year as planned. Key issues included implementation planning for the alteration of the Manor, the investigation of financing alternatives for the alteration as well as the planning and start of operation of the Vuojoki Foundation. The Foundation was entered in the Register of Foundations on 13 October 2003.

In compliance with the rental agreement between Posiva and the Municipality, Posiva received possession of Vuojoki Manor as of 1 January 2004.

Posiva's representatives have also participated in various forms of municipal cooperation organised by Teollisuuden Voima Oy.

INTERNATIONAL COOPERATION

Close cooperation between Posiva and SKB continued. The most significant projects carried out in collaboration between the two companies were connected with the development of the horizontal disposal concept and the use of low-pH cement, filling technology as well as the development of canister manufacture and canister closing technique.

A notable part of research work carried out to investigate the safety of final disposal is at present realised in collaboration with other EU member states. Extensive, real-scale trials and tests that simulate the performance of the final disposal system in real conditions play a particularly important role. All in all, Posiva participated in fourteen research and development projects realised as part of the European Commission's 5th and 6th framework programmes and provided part of the funding for also some other joint ventures. Posiva takes



POSIVA HAS CONTINUED CLOSE COOPERATION WITH THE MUNICIPALITY OF EURAJOKI. THE RENOVATION OF THE VUOJOKI MANOR WILL START IN 2004.

- MARKKU KETTUNEN, ADMINISTRATION MANAGER -

also part in the NetExcel expertise network of European nuclear waste management companies that focuses on surveying and prioritising research on nuclear waste management.

Posiva's experts participated in nuclear waste management related operation of OECD's Nuclear Energy Agency (NEA), the European Commission and the International Atomic Energy Agency (IAEA). Posiva was also represented in the Radioactive Waste Management Committee (RWMC) that coordinates the work of NEA's working committees, as well as in the Integration Group for Safety Case (IGSC), which concentrates on long-term safety, and the Forum on Stakeholder Confidence (FSC) that aims at developing interaction with interest groups.

Posiva Oy is a member of the Association for Environmentally Safe Disposal of Radioactive Materials (EDRAM), founded in 1998 by nuclear waste management organisations from 11 different countries.

Toward the end of 2003, Posiva and the US Department of Energy signed a Memorandum of Cooperation that outlines the exchange of information between the two organisations on issues related to final disposal.

The first review meeting pursuant to the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management was held in Vienna in the autumn. The meeting found the overall arrangements of nuclear waste management in Finland to be good. The spent nuclear fuel final disposal project, in particular, was considered successful.

International interest in Posiva's operations was evidenced by several international visits. More than 40 visitor groups from other countries visited Olkiluoto for a presentation of Posiva's operations and research activities.

Board of Directors' Report

FINANCIAL YEAR 2003

In 2003, Posiva's operation continued in compliance with the specified objectives. Posiva Oy's main line of business is the management of spent nuclear fuel generated by the Olkiluoto and Loviisa nuclear power plants, after interim storage that takes place within the power plant areas, as well as research and development work in the field of spent fuel management. Financing for the Company's activities in its main line of business is received from the shareholders. In addition, the Company also provides other expert services related to nuclear waste management on assignment to its shareholders and other customers.

Posiva's key project is the final disposal of spent fuel generated in the Finnish nuclear power plants. The conditions for the joining of the new nuclear power plant unit to be built in Finland, Olkiluoto 3, as well as the impact it will have on the spent fuel final disposal arrangements were agreed upon in more detail in 2003. The impact of the new nuclear power plant unit will be taken into consideration in the technical implementation of final disposal as well as in the overall project schedule.

During the financial year covered by this report, the operation of the company focused on the planning of the underground characterisation facility to be constructed on the island of Olkiluoto in Eurajoki, as well as on other preliminary activities that are necessary for this construction project. Similar to previous years, Posiva's operation included also long-term research and development activities, such as development of technical solutions for encapsulation and final disposal, bedrock investigations in Olkiluoto, which has been selected as the final disposal site, and safety assessments.

Authorities have supervised the progress of the final disposal programme that will take Posiva to the actual construction of the final disposal facility in the 2010s, with the operation of the facility starting in 2020. The Ministry of Trade and Industry finalised the overall project schedule so that Posiva shall be ready to apply for the construction permit on the final disposal facility in 2012.

During the financial year covered by this report, a total of ca. EUR 13.2 million was spent on research and development, accounting for 70.7% of the turnover.

SHAREHOLDERS

The Company's shareholders and their shares of ownership are:

Teollisuuden Voima Oy (Parent Company)	60 %
Fortum Power and Heat Oy	40 %

ADMINISTRATIVE BODIES

BOARD OF DIRECTORS

Teollisuuden Voima Oy	Mauno Paavola Ami Rastas
Fortum Power and Heat Oy	Heikki Raumolin Heikki Väyrynen (till 8 April 2003) Pekka Leskelä (as of 8 April 2003)
Chairman	Mauno Paavola
Secretary	Veijo Ryhänen

The Board convened 11 times in 2003.

WORKING COMMITTEES APPOINTED BY THE BOARD OF DIRECTORS

Technical Committee

Teollisuuden Voima Oy	Eero Patrakka Jukka Kangas
Fortum Power and Heat Oy	Ilpo Kallonen Jyrki Kohopää
Posiva Oy	Veijo Ryhänen Timo Äikäs Jussi Palmu
Chairman	Ilpo Kallonen
Secretary	Jussi Palmu

The Committee convened 8 times in 2003.

Construction Committee

Teollisuuden Voima Oy	Rauno Mokka Juha Riihimäki
Fortum Power and Heat Oy	Gustav Wallén Kauko Silventoinen
Posiva Oy	Veijo Ryhänen Mauri Toivanen
Chairman	Rauno Mokka
Secretary	Mauri Toivanen

The Committee was set up on 16 September 2003 and it convened once in 2003.

Financial Committee

Teollisuuden Voima Oy	Lasse Bergström Eero Patrakka
Fortum Power and Heat Oy	Heikki Raumolin Irja Vekkilä
Posiva Oy	Markku Kettunen Jussi Palmu
Chairman	Heikki Raumolin
Secretary	Jussi Palmu

The Committee convened 6 times in 2003.

Communication Committee

Teollisuuden Voima Oy	Tellervo Taipale
Fortum Power and Heat Oy	Christian Leisio
Posiva Oy	Veijo Ryhänen Timo Seppälä
Chairman	Tellervo Taipale
Secretary	Timo Seppälä

The Committee convened 6 times in 2003.

MANAGING DIRECTOR

Veijo Ryhänen

MANAGEMENT GROUP

Chairman	Veijo Ryhänen
Members	Markku Kettunen, <i>Administration Manager</i> Jussi Palmu, <i>Manager,</i> <i>Business Planning</i> Timo Seppälä, <i>Communications Manager</i> Mauri Toivanen, <i>Construction Manager</i> Juhani Vira, <i>Research Director</i> Timo Äikäs, <i>Director, Engineering</i>
Secretary	Markku Kettunen

The Management Group convened 15 times in 2003.

AUDITORS

Pekka Nikula, CPA, appointed by SVH Pricewaterhouse
Coopers Oy

Risto Järvinen, CPA

PERSONNEL

Personnel and business locations

In 2003, the Company employed an average of 38 people on a permanent contract and 2 people on a fixed-term contract.

By a temporary arrangement, Posiva operates in Olkiluoto in premises rented from Teollisuuden Voima Oy. The planning of permanent business premises for Posiva in Teollisuuden Voima Oy's central office in Olkiluoto, as well as in Vuojoki Manor, has been started.

RESULT AND FINANCING

The Company's turnover was EUR 18.6 million, with the main line of business accounting for EUR 17.6 million. The total depreciation charged was EUR 31,000, corresponding to maximum depreciation on fixed assets under the Business Tax Act. Fixed assets connected with nuclear waste management were recorded in annual expenses in compliance with the Business Tax Act § 45a. The Income Statement shows neither a profit nor a loss. The Company's financing situation has been good throughout the year. The Company took out a long-term loan of EUR 252,000 from Teollisuuden Voima Oy for the purposes of the Vuojoki Manor Agreement and transferred the loan over to the Municipality of Eurajoki. Net financing income totalled EUR 70,000.

FINANCIAL YEAR 2004

In the financial year 2004, Posiva's operation is expected in the main to continue similar to the year 2003. The construction of the underground characterisation facility ONKALO will start in 2004. The turnover of the Company is expected to grow over the previous year.

Financial statements

INCOME STATEMENT

	1.1.–31.12.2003		1.1.–31.12.2002	
Turnover		18 620 928.87		14 622 139.20
Other operating income		236 391.02		591 380.40
Personnel expenses				
Salaries and fees	1 993 045.53		1 689 413.64	
Indirect employee costs				
Pension costs	370 377.61		292 962.99	
Other indirect employee costs	101 399.66	-2 464 822.80	87 107.17	-2 069 483.80
Planned depreciation		-30 790.37		-20 291.31
Other expenses		-16 429 788.22		-13 191 946.37
Operating profit (-loss)		-68 081.50		-68 201.88
Financial income and expenses				
Other financial and interest income				
From other	214 134.00		207 312.20	
Interest and other financial expenses	-144 476.20	69 657.80	-138 031.71	69 280.49
Operating profit (loss) before appropriations and taxes		1 576.30		1 078.61
Income taxes		-1 576.30		-1 078.61
Profit for the Financial Year		0.00		0.00

BALANCE SHEET

	31.12.2003		31.12.2002	
ASSETS				
Fixed assets				
Intangible assets				
Intangible rights	10 649.97		13 615.81	
Other long-term expenditure	37 154.10		12 127.36	
Advances	174 895.98	222 700.05	0.00	25 743.17
Tangible assets				
Buildings	117 553.51		122 451.57	
Machinery and equipment	36 904.85	154 458.36	20 500.53	142 952.10
Investments				
Shares in other Group companies	2 236.90		2 236.90	
Other shares and holdings	9 216.70		9 216.70	
Other loan receivables	6 895 738.62	6 907 192.22	6 643 456.73	6 654 910.33
Current assets				
Receivables				
Current				
Sales receivable	357 075.81		66 031.66	
Receivables from other				
Group companies	220 779.44		169 482.34	
Prepaid expenses and accrued				
income	343 173.24	921 028.49	595 838.90	831 352.90
Cash in hand and at bank		6 107 222.55		4 269 423.68
		14 312 601.67		11 924 382.18
LIABILITIES				
Shareholders' equity				
Share capital	1 681 879.26		1 681 879.26	
Accumulated losses	0.00		0.00	
Profit for the financial year	0.00	1 681 879.26	0.00	1 681 879.26
Liabilities				
Long-term				
Loans from other Group				
companies	3 733 771.97		3 481 490.08	
Other long-term liabilities	2 152 805.46	5 886 577.43	2 152 805.46	5 634 295.54
Current				
Advances received	839 584.47		174 610.05	
Trade payables	2 422 040.77		2 142 495.09	
Loans from other Group				
companies	1 545 945.00		461 474.62	
Other current liabilities	270 608.67		369 486.94	
Accrued liabilities and deferred				
income	1 665 966.07	6 744 144.98	1 460 140.68	4 608 207.38
		14 312 601.67		11 924 382.18

FUNDS STATEMENT (EUR 1000)

	2003	2002
Business operations		
Operating profit	-68	-68
Adjustments of operating profit 1)	31	20
Change in working capital 2)	2 046	1 032
Interest income	214	207
Interest expenses	-144	-138
Taxes paid	-2	-1
Cash flow from business operations	2 077	1 052
Investments		
Investments in fixed assets	-239	-24
Divestments of fixed assets	0	60
Loans granted	-252	-252
Cash flow from investments	-491	-216
Financing		
Change in long-term liabilities	252	252
Cash flow from financing	252	252
Change in liquid assets	1 838	1 088
Liquid assets 1.1.	4 269	3 181
Liquid assets 31.12.	6 107	4 269
1) Adjustments of operating profit		
Depreciation and value adjustment	31	20
	31	20
2) Change in working capital		
Increase (-) or decrease (+) in non-interest bearing receivables	-90	385
Increase (-) or decrease (+) in short-term non-interest bearing liabilities	2 136	647
	2 046	1 032

ACCOUNTING PRINCIPLES

Valuation principles and methods, and accruals

Valuation of fixed assets

Intangible rights, other long-term expenditure, and machinery and equipment are capitalised at their direct acquisition cost, less planned depreciation. Planned depreciation is the maximum depreciation under Business Tax Act. Acquisition costs of fixed assets used for nuclear waste management as stipulated in the Nuclear Energy Act are booked as annual expenses.

Depreciation periods are as follows:

Intangible rights	Straight-line depreciation over 10 years
Other long-term expenditure	Straight-line depreciation over 10 years
Software	Straight-line depreciation over 5 years
Machinery and equipment	25% reducing balance rate

Research and product development expenses

R & D expenses are booked as expenses during the financial year in which they occur.

Consolidated financial statements

No consolidated financial statements have been prepared because Posivia Oy is a dormant company and has no impact on the Company's performance or non-restricted shareholders' equity.

Parent company

Posiva Oy is a subsidiary of the TVO Group, which is a subgroup of the PVO Group.

The parent company in the PVO Group is Pohjolan Voima Oy, domicile Helsinki.

The parent company in the TVO Group is Teollisuuden Voima Oy, domicile Helsinki.

A copy of the consolidated financial statements of the PVO Group can be obtained from the Main Office of the Group, at Töölönkatu 4, 00100 Helsinki.

A copy of the consolidated financial statements of the TVO Group can be obtained from the Office of the Group, at Töölönkatu 4, 00100 Helsinki.

NOTES TO INCOME STATEMENT

	2003	2002
1. Turnover		
Income, main line of business	17 557 343.30	14 077 192.52
Income, auxiliary line of business, shareholders	188 306.50	278 499.94
Income, auxiliary line of business, other companies	875 279.07	266 446.74
	18 620 928.87	14 622 139.20
2. Other operating income		
Rental income	70.00	73.00
Damages	2 015.63	0.00
Subsidies received	234 305.39	591 307.40
	236 391.02	591 380.40
3. Personnel expenses		
Average number of employees on permanent contract	38	34
4. Depreciation		
Depreciation plan		
Planned depreciation is the maximum depreciation under Business Tax Act. Acquisition costs of fixed assets used for nuclear waste management are booked as annual expenses (EVL 45 a\$)		
Planned depreciation		
On intangible rights	2 965.84	2 965.74
On other long-term expenditure	10 905.16	5 670.25
On buildings	4 898.06	5 102.15
On machinery and equipment	12 021.31	6 553.17
	30 790.37	20 291.31
5. Financial income and expenses		
Interest income from long-term investments		
From other	169 554.46	163 247.41
Interest income from long-term investments, total	169 554.46	163 247.41
Other interest and financial income	44 579.54	44 064.79
Interest income from long-term investments and other interest income, total	214 134.00	207 312.20
Interest expenses and other financial expenses		
To other Group companies	90 506.12	84 199.08
To other	53 970.08	53 832.63
Other interest and financial expenses	144 476.20	138 031.71
Financial income and expenses, total	69 657.80	69 280.49

NOTES TO BALANCE SHEET

6. Fixed assets

Intangible	Intangible rights	Other long-term expenditure	Advances	Intangible total
Acquisition cost 1.1.2003	29 657.91	114 645.32	0.00	144 303.23
Increase	0.00	35 931.90	174 895.98	210 827.88
Acquisition cost 31.12.2003	29 657.91	150 577.22	174 895.98	355 131.11
Accumulated planned depreciation 1.1.	16 042.10	102 517.96	0.00	118 560.06
Planned depreciation 1.1. – 31.12.	2 965.84	10 905.16	0.00	13 871.00
Book value 31.12.	10 649.97	37 154.10	174 895.98	222 700.05
(=undepreciated acquisition cost)				

Tangible	Buildings	Machinery and equipment	Tangible total
Acquisition cost 1.1.2003	138 183.20	66 268.58	204 451.78
Increase	0.00	28 425.63	28 425.63
Decrease	0.00	0.00	0.00
Acquisition cost 31.12.2003	138 183.20	94 694.21	232 877.41
Accumulated planned depreciation 1.1.	15 731.63	45 768.05	61 499.68
Accumulated depreciation on decrease	0.00	0.00	0.00
Planned depreciation 1.1. – 31.12.	4 898.06	12 021.31	16 919.37
Book value 31.12	117 553.51	36 904.85	154 458.36
(=undepreciated acquisition cost)			

Investments	2003	2002
Shares in other Group companies		
Shares in subsidiaries		
Posivia Oy, Helsinki no. of shares 120 / ownership 100% / share capital 2522.82, dormant company (no consolidated financial statements prepared)	2 236.90	2 236.90
Other shares and holdings	9 216.70	9 216.70
Other loan receivables	6 895 738.62	6 643 456.73
	<u>6 907 192.22</u>	<u>6 654 910.33</u>
7. Receivables from other Group companies		
Sales receivable	220 779.44	169 482,34
8. Adjusting entries for assets		
Accrued interest income	95 755.02	91 347.53
Other accrued income	247 418.22	366 671.94
Pre-paid expenses	0.00	137 819.43
	<u>343 173.24</u>	<u>595 838.90</u>
9. Liabilities to other Group companies		
Long-term liabilities	3 733 771.97	3 481 490.08
Current liabilities		
Advances received	1 173 876.70	261 915.08
Trade payables	320 728.94	151 689.05
Accrued liabilities and deferred income	51 339.36	47 870.49
	<u>1 545 945.00</u>	<u>461 474.62</u>
Total	<u>5 279 716.97</u>	<u>3 942 964.70</u>
10. Adjusting entries for liabilities		
Interest liabilities	29 601.07	29 601.07
Salary accruals and indirect employee costs	529 754.00	372 909.00
Estimate of expenses not yet charged	1 106 611.00	1 057 630.61
	<u>1 665 966.07</u>	<u>1 460 140.68</u>

PROPOSALS TO THE ANNUAL GENERAL MEETING

The company has no distributable retained profit. The Board deduces that no dividend can be paid.

Olkiluoto, on 11 February 2004

Mauno Paavola

Heikki Raumolin

Ami Rastas

Pekka Leskelä

Veijo Ryhänen
Managing Director

AUDITORS' REPORT

TO THE SHAREHOLDERS OF POSIVA OY

We have audited the accounts, the financial statements and the management of Posiva Oy for the financial year 1 January – 31 December 2003. The financial statements drawn up by the Board of Directors and the Managing Director include the annual report as well as the income statement, the balance sheet and the notes to the financial statements. On the basis of the audit we have performed, we make this statement on the financial statements and the management of the Company.

The audit has been performed in compliance with good auditing practice. The accounts as well as the principles followed in drawing up the financial statements, the content and the presentation have been examined to a sufficient extent to state that the financial statements are free of material defects and deficiencies. In the examination

of the management, we have examined the legality of the activities of the Board of Directors and the Managing Director as set out in the Companies' Act.

We therefore state that the financial statements have been prepared in accordance with the Accounting Act and other legislation governing the preparation of financial statements. The financial statements present true and sufficient information about the result of the Company's activities and its financial standing, as stipulated in the Accounting Act. The financial statements can be adopted and the members of the Board of Directors and the Managing Director discharged from liability for the financial year audited by us. The proposal of the Board of Directors concerning distribution of dividend is in compliance with the Companies' Act.

Helsinki, on 9 March 2004

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CPA



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