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QUINSAM COAL LTD.

MINISTERIAL PRESENTATION  
BY  
QUINSAM COAL LTD.

December 11th, 1979  
John Tribe,  
Manager Quinsam Project

QUINSAM COAL LTD.

Date: December 11th, 1979  
Time: 8:00 a.m.  
Place: Oak Room  
Legislative Building  
Parliament Buildings  
Victoria, B.C.

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Addendum I ELSAM Brochure

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SUMMARY

The objective of this presentation is to obtain concurrence from the Province of British Columbia on the Quinsam Coal project in general and in particular on the port facility at Discovery Point. A letter of intent from ELSAM of Denmark, (see Addendum II) provides the projected production date for Quinsam Coal Ltd. as mid 1983 and this date dictates the basis of our planning.

Concurrence is essential at this time in order to meet the development timetable of the project. Both Quinsam Coal Ltd. and ELSAM are at the point in negotiations where significant amounts of money and time must be invested to develop a transportation system which will provide the maximum economy for both parties. In addition to this prime motivation for requesting a statement of concurrence, there are two other factors associated with the use of Discovery Point which must be integrated during sales negotiations, leasing arrangements and compensation for the Campbell River Indian Band, and contractual material handling agreements with Western Mines. These two areas cannot progress to the necessary level of contractual arrangements without positive assurances regarding the use of Discovery Point.

Quinsam Coal Ltd. has examined all potential port facilities within the operating radius of Campbell River and proven that there is no utopian port facility. It is not possible at any location to satisfy without compromise all the technical, biophysical, socio-economic and emotional concerns.

Within the technical, biophysical and economic constraints of the marketing opportunity now available to Quinsam, the only solution is Discovery Point.

The positive aspects of this project include; full time non-seasonal employment for more than 200 people, stability and diversification of the economic base within the community. Since Campbell River derives its basic income from the forest and mining industry, the development of the Quinsam project can only be a further enhancement and benefit to that community.

The lack of positive assurance would seriously jeopardize not only the Quinsam Coal project but would also be prejudicial to all other coal development on Vancouver Island.

55000 - 60000 DWT vessels

Problem: docking facility

- existing Western Mena dock is, in Quinsam's view, the only option.

### REGULATORY PROCEDURES

It is not the ambition or intent of Quinsam Coal Ltd. to circumvent the regulatory process as outlined in the "Guidelines for Coal Development". Rather, Quinsam Coal Ltd. has undertaken all studies that have been asked of it covering the full range of technical, biophysical and socio-economic analyses. Consultations between the developer, consultant and government have mutually evolved a project scenario which maintains the environmental integrity of the area, during and after mining.

Under the encouragement of the British Columbia Government to keep the public of Campbell River informed and involved, Quinsam Coal Ltd. since its inception through initiation and invitation has been involved in numerous meetings and presentations. The identified technical concerns arising from these meetings have been studied and beneficial material changes have been incorporated into the project plans. In addition to the proponents specific involvement, the biophysical and socio-economic consulting firms employed, were specifically directed to interview local government, regional government and any interest groups - confirming that no technical concerns would be ignored.

Emotional concerns, which are unidentified, but were expressed by minority activists could not be dealt with except to stress technical solutions.

A review of the regulatory procedures that have been addressed and completed are shown below:

1. Quinsam Coal Ltd. submitted its prospectus to the B.C. Government on December 8th, 1977. This provided a general outline of the proposed exploration and mining programs.
2. The Stage I - Preliminary Assessment was submitted on January 26th, 1979 with the intent of outlining the potential development impacts and identifying alternative solutions to be explored.

As well, Quinsam is proceeding with the following work:

1. Stage II - Both in 1978 and 1979 meetings were undertaken with individual line agencies of the Provincial Government to guide the terms of reference for baseline data acquisition of the Stage II submission. At this time the terms of reference for this submission have been agreed to by the developer and the Coal Guidelines Steering Committee. This detailed assessment is currently being assembled and is targeted for submission late this year or early in 1980. Its purpose will be to detail the development program, analyze the alternative mitigative measures and to state the preferred approach for each aspect of the development.
2. Stage III - Operational plans and approval applications will be initiated during early 1980.

RESOURCE SELECTION

In the very early stages of the relationship between Weldwood of Canada Limited and Luscar Ltd. an evaluation was made of all the potential coal resources under Weldwood's control. Their coal resources extend from Deep Bay in the south to Campbell Lake in the north and covers approximately 118,000 acres. (Figure 1) This 184 square mile area includes all the known coal measures in this portion of Vancouver Island.

Based on the best available information, which included regional geologic mapping, old workings, drillholes and test adits; an evaluation was carried out to locate the site with the greatest potential for surface mining. The potential for underground mining is very real but the extreme geologic complexity and inherent high risk severely restricts the economic viability at this time. It is worthy of note that the evaluation done in 1976 is still valid even with some three years of additional work being done.

The total assessment was divided into five areas as shown in Figure 2. For the purposes of comparison the following table shows the results of the 1976 evaluation.

Coal Reserve Potential  
By Type and Area  
In Short Tons

Area	Underground	Stripplable	Total
Quinsam	134,091,396	70,196,544	204,287,940
Campbell River	108,003,456	---	108,003,456
Anderson Lake	32,171,040	8,952,768	41,123,808
Cumberland	335,213,208	17,565,472	352,778,680
Tsable River	<u>389,530,350</u>	<u>---</u>	<u>389,530,350</u>
TOTAL	999,009,450	96,714,784	1,095,724,234



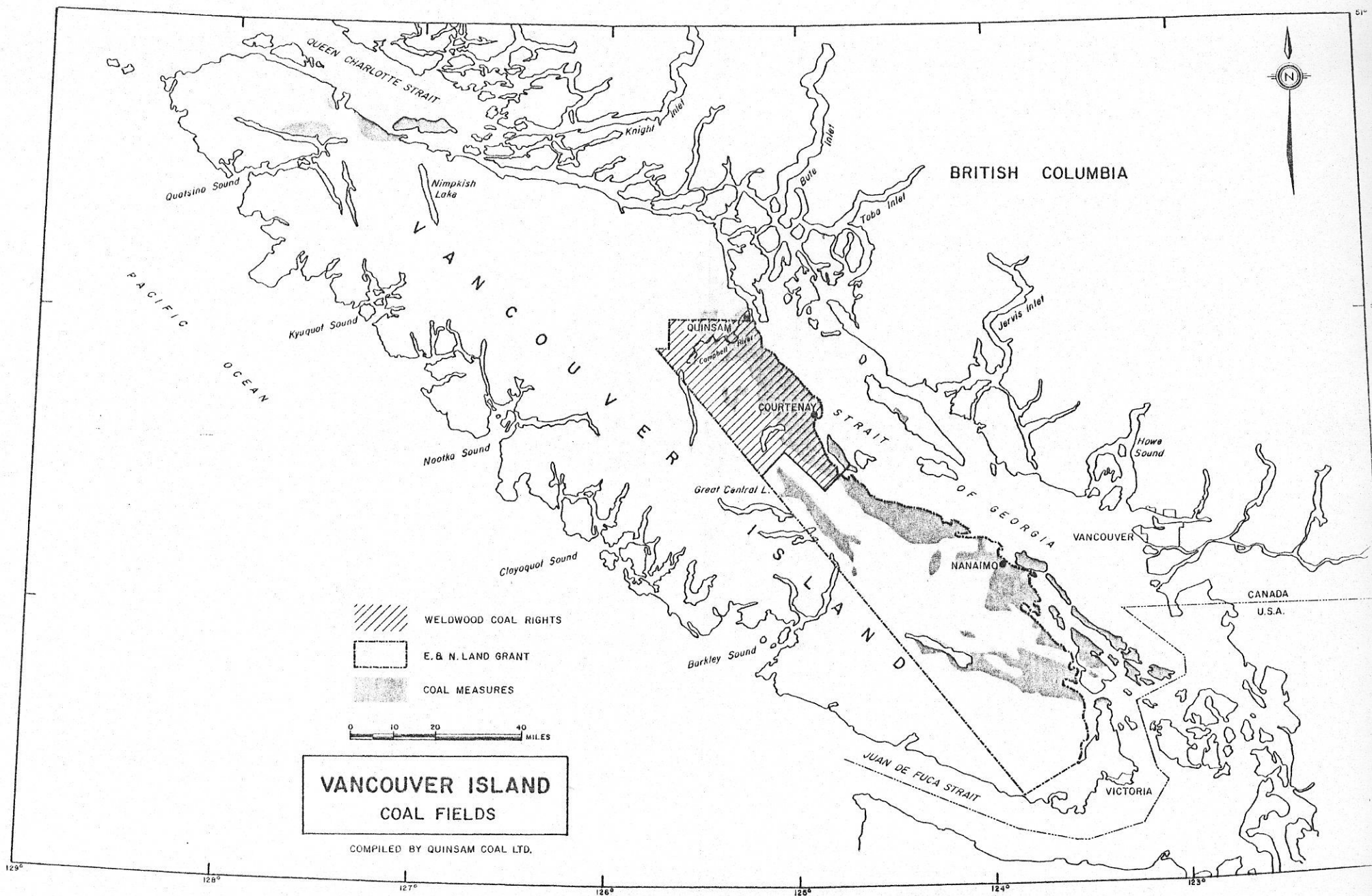
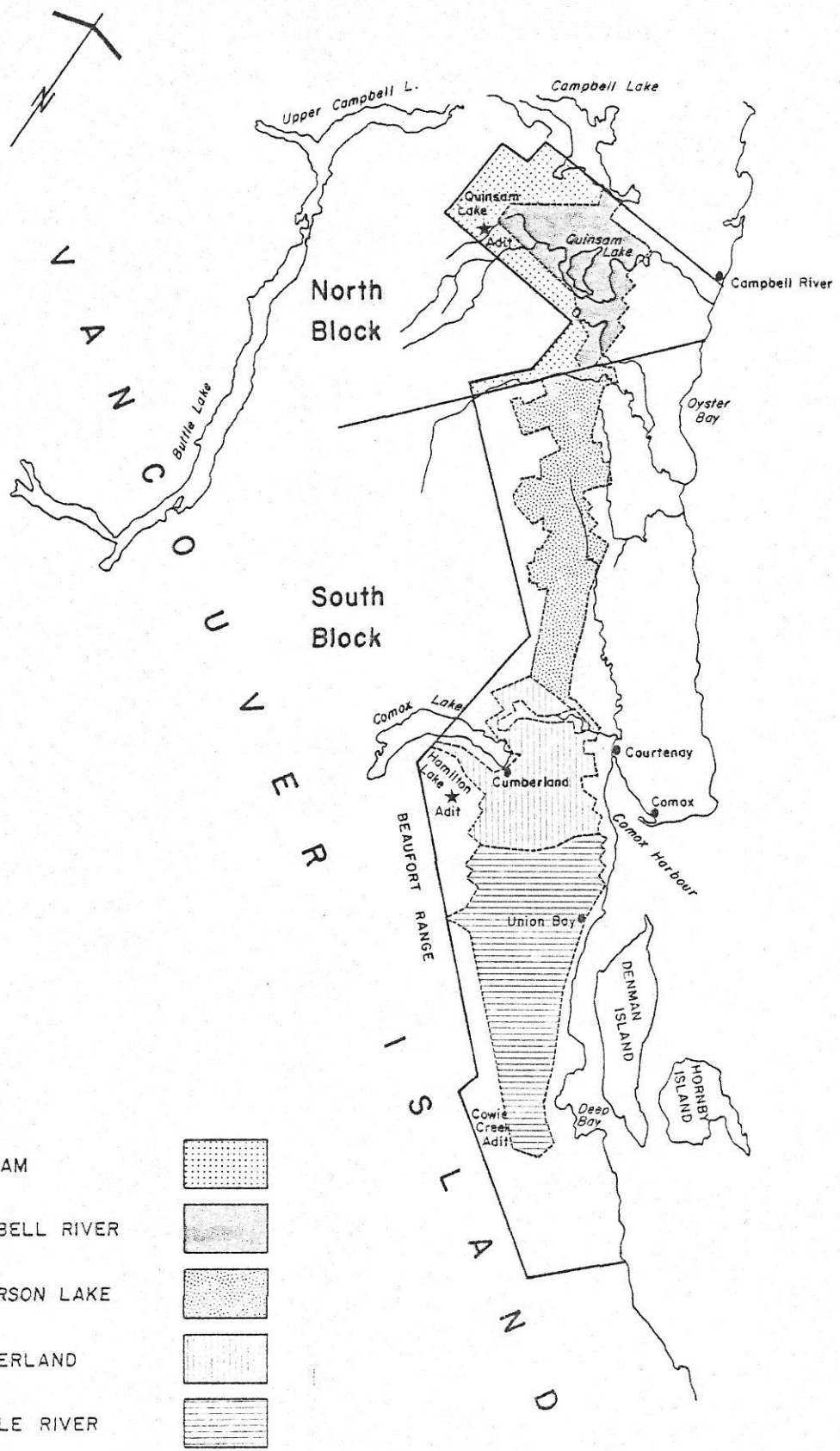







Figure 1



- QUINSAM 
- CAMPBELL RIVER 
- ANDERSON LAKE 
- CUMBERLAND 
- T'SABLE RIVER 

QUINSAM COAL LTD.	SCALE 1" = 3 Miles approx.		TITLE DESIGNATED COAL AREAS OF WELDWOOD PROPERTY	DRAWING NO.  Figure 2
		BY DATE		
VANCOUVER ISLAND	DRAWN	R. Valencia 5 Dec. 79		ISSUE
	CHECK			
	APPR			

REVISIONS

It is obvious from this comparison that the Quinsam area has the greatest potential for initial development, both in terms of surface mining and future underground development.

Having made this very basic assessment the partners agreed to pursue the development in the Quinsam area. The knowledge and experience gained in the initial development will be the guide to any future developments.

## HISTORICAL REVIEW

Once the initial resource review and selection was completed a development plan was adopted and work on the project began. The first step was to confirm the geological assessment with further drilling and to develop some basic mine plans around this information. Marketing assessments in 1977 showed potential sales opportunities for 1981 which put the project on an extremely tight schedule with respect to regulatory matters.

However, it became increasingly apparent through spring and summer of 1978 that the combination of world economics and the natural gas energy surplus of the Pacific Northwest was providing a very difficult marketing problem for the Quinsam product. In October of 1978 it was necessary to de-emphasize the project and to concentrate only with international marketing, environmental and regulatory matters.

Since inception Quinsam Coal Ltd. has recognized the encouragement from the Provincial Government regarding coal development in British Columbia. In May of 1979, as a result of the Company's international marketing drive a potential customer (ELSAM POWER POOL) became interested and was provided with both a site tour and a technical presentation of the project. Their resulting evaluation and comparison with other alternatives encouraged them to enter into negotiations for a substantial tonnage of thermal coal from Quinsam Coal Ltd. On October 24th, 1979 those negotiations culminated in a "letter of intent" from ELSAM to purchase coal in 1983.

ELSAM POWER POOL

ELSAM is a Danish partnership of seven power producing plants. (See Addendum I) This partnership is responsible for the purchase of fuels for the generating plants, the construction of power stations and transmission lines as well as co-ordinating the financing of these projects.

The ELSAM partnership was formed in 1956 in the interests of security, continuity and economy. ELSAM is responsible for the power supply for about 54% of the Danish population and in 1977 had an installed capacity of 3,356 M.W. Denmark has had an historic electrical expansion rate of 9-10% annually.

Most of the generating plants of the ELSAM group are dual fueled plants with a total annual (1977) fuel equivalent consumption of 2.5 to 3 million tons of heavy oil or coal equivalent. The coal yards can hold stocks of up to one year's inventory based on maximum coal firing.

Although ELSAM is willing to pay a premium for our coal, based on surety of supply, political stability and tidewater proximity there are obviously limits to their willingness. Their one major concern is Quinsam's ability to load large vessels (i.e. 55 to 70,000 DWT). The greatest advantage of tidewater proximity could be totally eroded by an inadequate loading facility. (i.e. less than 55,000 DWT)

## PORT FACILITY

The port facility both in terms of sizing and site selection is difficult and controversial. It has been the subject of several studies by Quinsam and others. Although each study conducted has had a different emphasis provided in its terms of reference all studies have reached the same very basic conclusions. In point form these can be listed as:

1. Discovery Passage by its very nature imposes some very real technical and safety constraints.
2. All potential locations would be subjected to the same intense environmental scrutiny and mitigative protection systems.
3. The emotional arousal of activist groups is independent of actual location.
4. There is no location which can be proposed which will be totally satisfactory to all those interested.

Based on the factors listed above and in consideration of an economically viable project each of the following requirements must be satisfied. Only Discovery Point is capable of meeting all of these.

1. Panamax size facility
2. Navigational safety
3. Economic viability
4. Environmental compatibility
5. Land use compatibility
6. Available for 1983 shipment

### TIMING CONSTRAINTS

The marketing opportunity available to Quinsam carries with it very definitive time constraints. These constraints revolve around achieving an operating mine in 1983. The critical items in order of importance are:

1. Negotiations for Facility Use
  2. Dragline
  3. Electrical Power Supply
- 
1. Negotiations for Facility Use: Quinsam must begin immediately to negotiate the costs for land, road useage, port facility useage and lease payments to the Campbell River Indian Band.
  2. Dragline: In order to satisfy customers requirements for coal in 1983, Quinsam will commit \$1,700,000.00 in dragline prepayments in 1980. The critical dates of this unit are:
    - Mar. 1980 Firm contract for coal sales concluded
    - Apr. 1980 Detail dragline specifications
    - May 1980 Receive bids for dragline
    - Jun. 1980 Place dragline order
    - Aug. 1981 Prepare erection site
    - Oct. 1981 Commence erection
    - Nov. 1982 Commission dragline
    - Apr. 1983 Dragline must be operational
  3. Electrical Power Supply: power supply will involve approximately a \$200,000.00 prepayment in 1980 to B.C. Hydro. B.C. Hydro has informed Quinsam that they would require at least three years lead time to supply electric power. The lead time would commence after Quinsam has made a firm committment to take power.

CONCLUSION

Quinsam Coal Ltd. concludes:

- Discovery Point is the only viable tidewater location in the entire Campbell River area to establish a coal loading port capable of accommodating Panamax sized vessels
- The project cannot proceed to fruition without positive assurance from the Province of British Columbia that Quinsam Coal Ltd. will be given authority to construct and utilize a coal loading facility at Discovery Point
- All technical, bio-physical and socio-economic factors have been adhered to in concert with the Coal Guidelines Steering Committee of the Province of British Columbia
- Quinsam Coal is on record that the project will maintain the environmental integrity of the area
- The Quinsam project is the forerunner of all coal development on Vancouver Island.



ADDENDUM I  
ELSAM BROCHURE

## foreword

The main purpose of the Danish power producing companies is to secure the national consumption of electricity – continually, economically and with due consideration to the environment.

The Danish power supply is divided into two main blocks operating respectively east and west of the Great Belt.

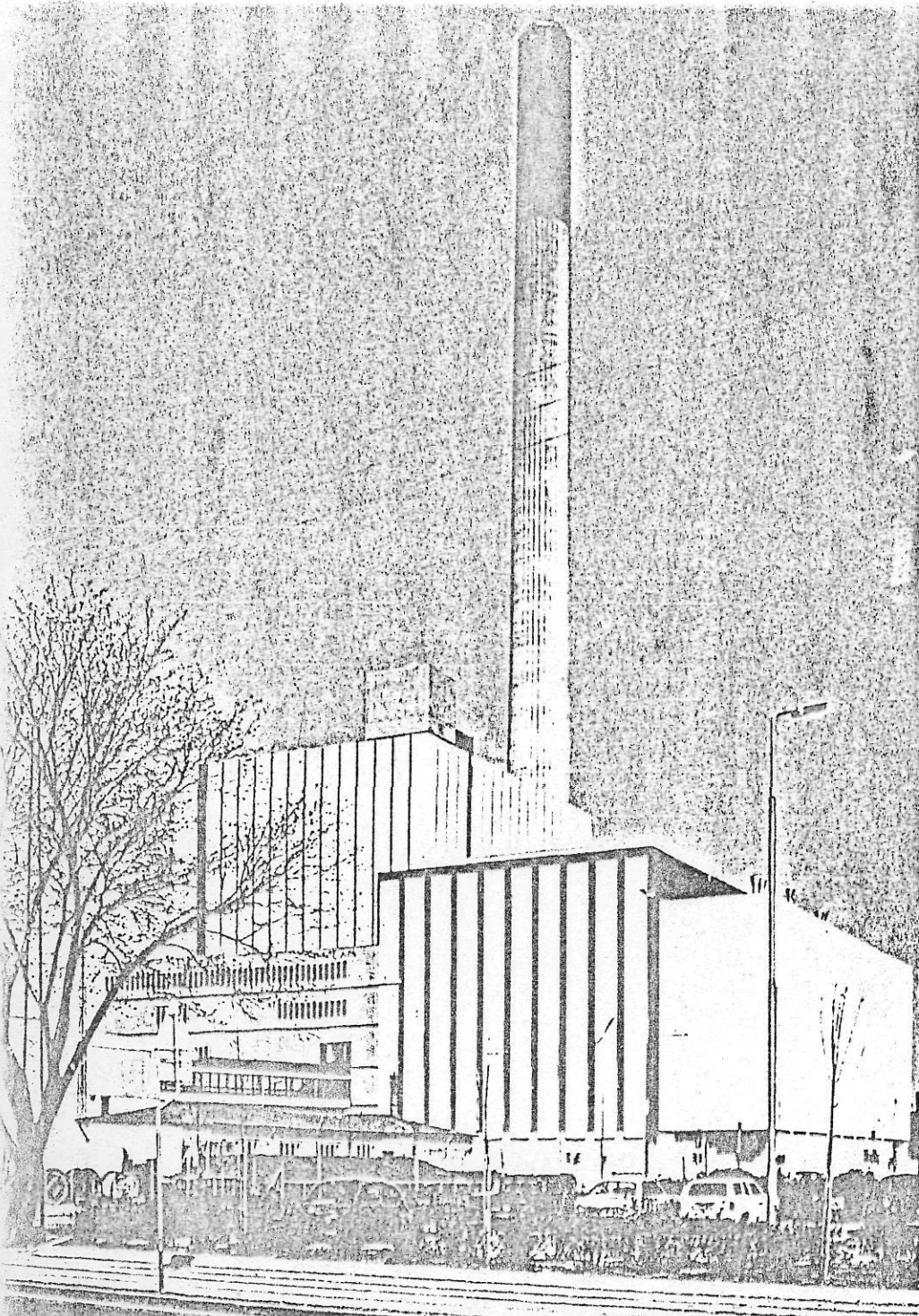
In the western part of Denmark the electricity production is carried out in narrow cooperation between a number of power producing plants, the ELSAM power pool.

The pool serves approximately half of the Danish population and covers a little more than 50% of the national electricity consumption which in 1974 was 18 TWh ( $18 \cdot 10^9$  kWh).

The seven partners in the coordinating partnership ELSAM are Fynsværket, Midtkraft, Nordjyllands Elektricitetsforsyning, Nordkraft, Skærbækværket, Sønderjyllands Højspændingsværk and Vestkraft. They each own one or two power stations and each of them are owned by their own group of three to fifteen municipal or cooperative distribution companies.

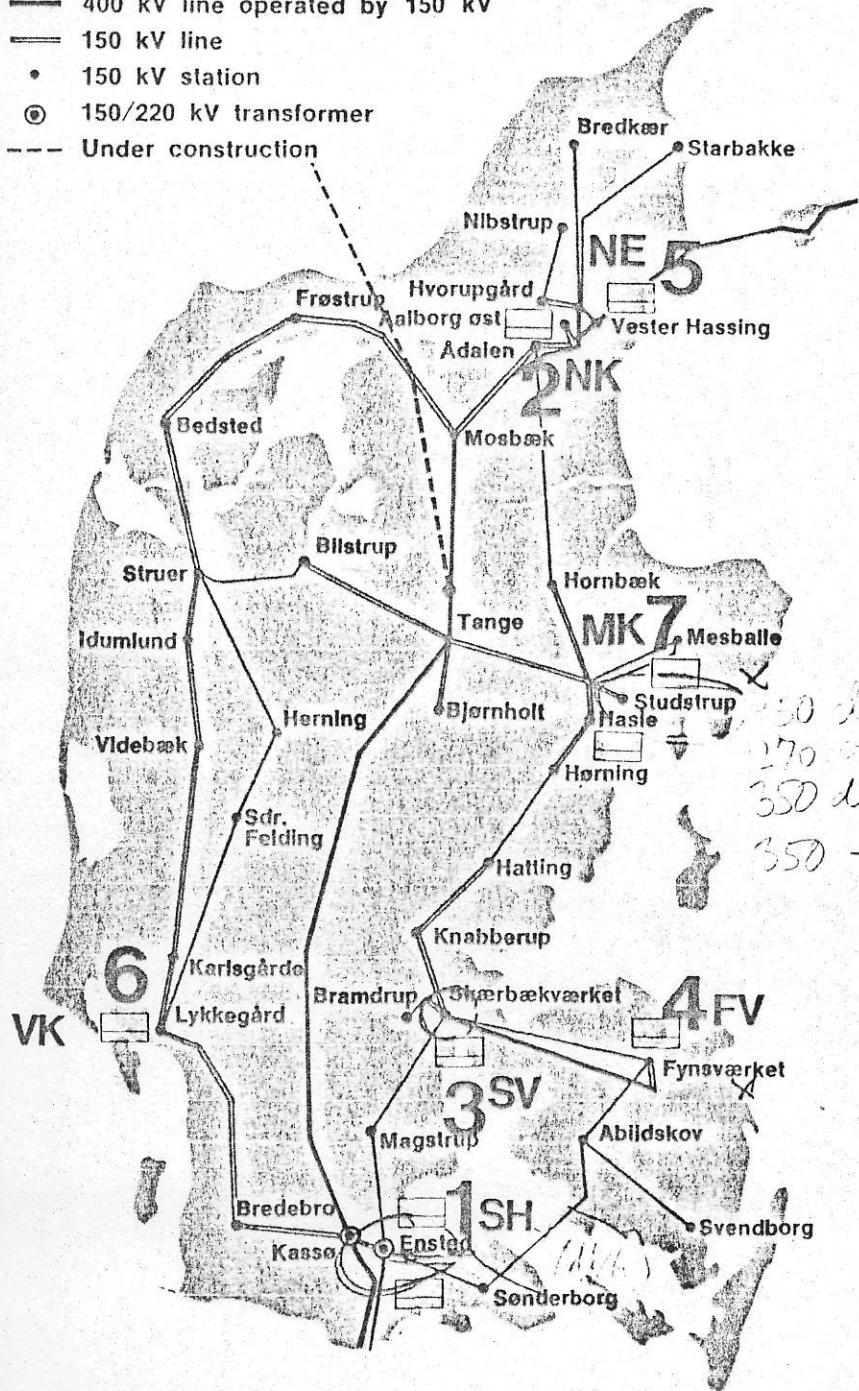
ELSAM itself coordinates system planning and operation, purchases fuel, constructs power stations and main transmission lines and -stations and coordinates financing.

How this is done is described in the following.

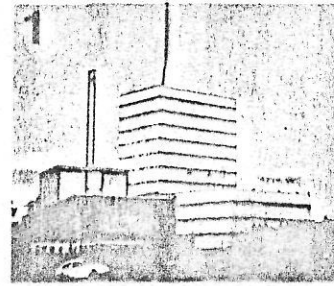


Nordkraft  
in Aalborg –  
total capacity  
450 MW.

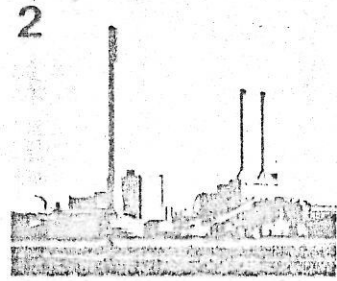
- 220 kV line
- 400 kV line operated by 150 kV
- 150 kV line
- 150 kV station
- ⊙ 150/220 kV transformer
- - - Under construction



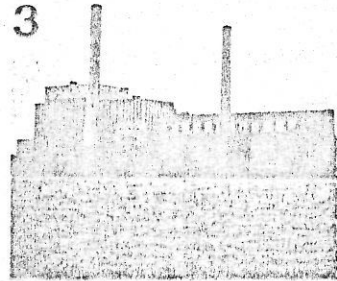
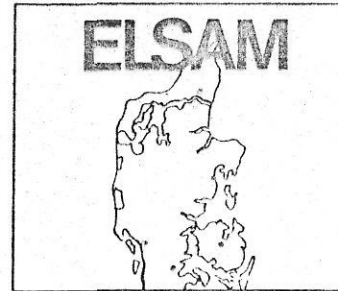
350 dual 67  
 270 oil 72  
 350 dual 83  
 350 - 84



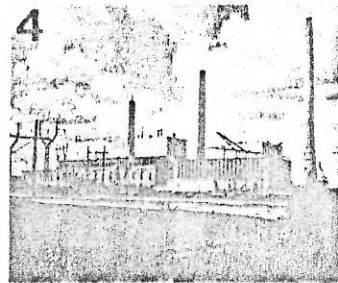
1  
 An/S  
 Sonderjyllands Højspændingsværk



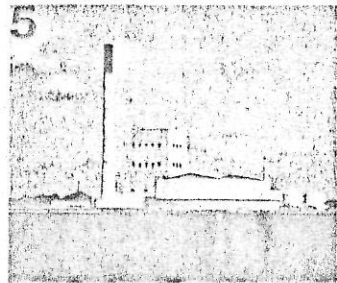
2  
 I/S Nordkraft



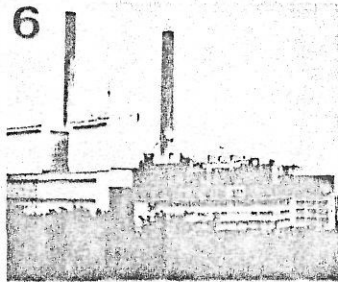
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 I/S Skærbækværket



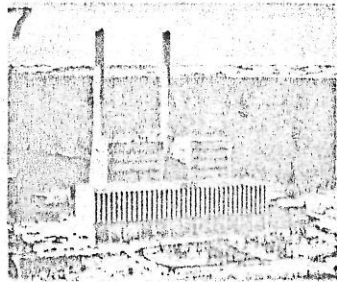
4  
 I/S Fynsværket



5  
 I/S Nordjyllands  
 Elektricitetsforsyning



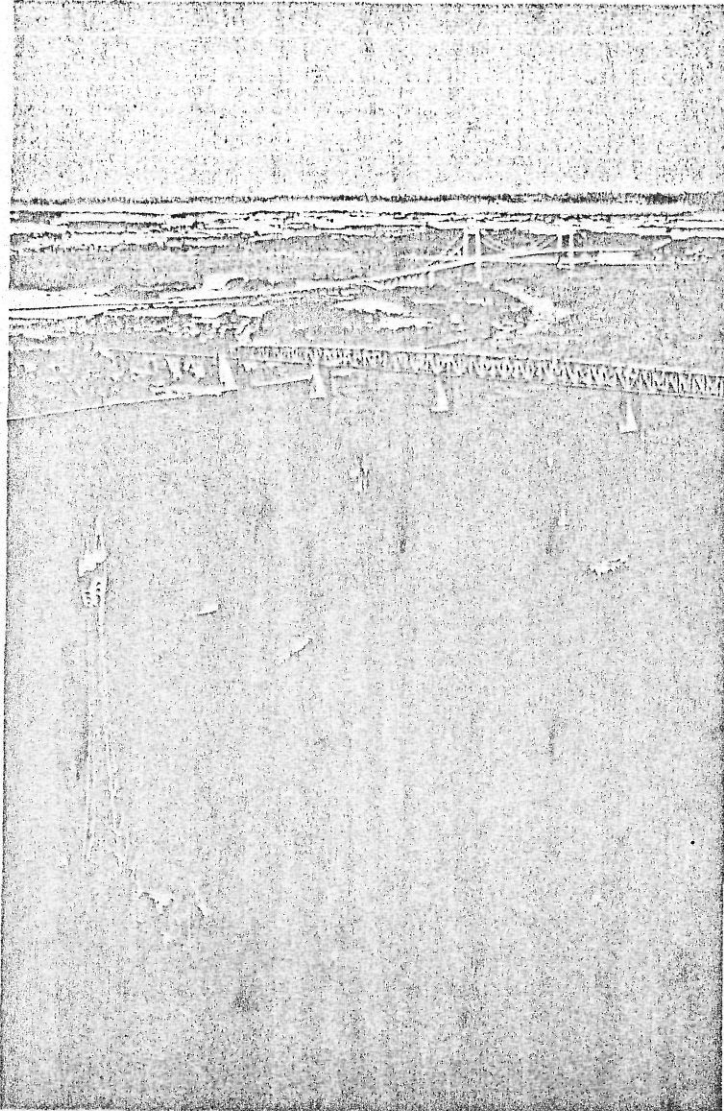
6  
 I/S Vestkraft



7  
 I/S Midtkraft

## system planning

The power and traffic connection between Funen and Jutland.



The power extension plan which is made annually for the next 5–10 years appoints where and when to install new capacity and stipulates unit size and technical qualities for instance whether the units are to be nuclear-, oil- or coal-fired, and whether destined for base load or peak load use.

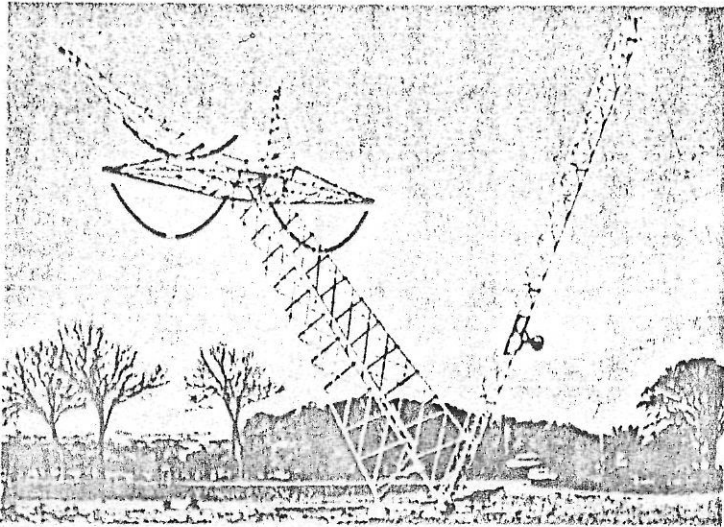
The grid extension plan – also made annually for the next 5-years period – fixes where and when to build 400 and 150 kV lines and stations and AC or DC interconnections with neighbouring power groups.

System planning is made in close cooperation with the partners. It is based on a set of parameters such as growth rates, prices etc. and on reliability criteria to ensure sufficient spare capacity and the ability to manage certain combined line and unit faults without a breakdown of the system. The calculations are made as computer simulations of system operation and economics for e.g. 20 years under varying conditions and alternative extension plans.

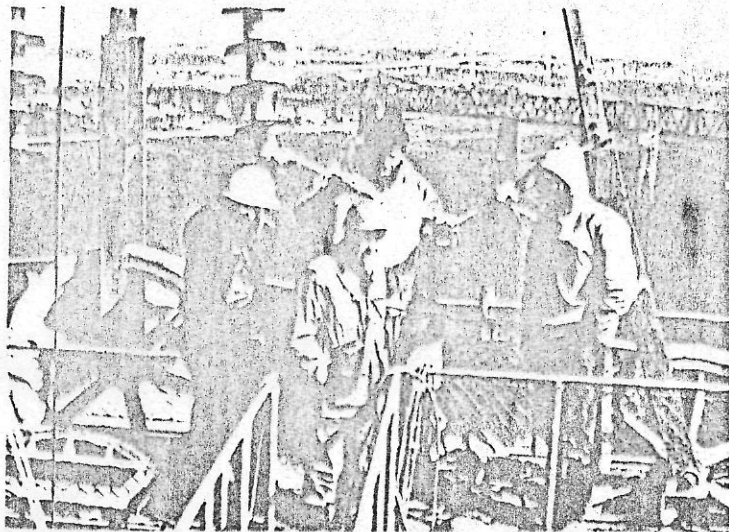
The interconnection of the ELSAM system with other systems outside Jutland and Funen makes it necessary to coordinate the planning with the planning in NORDEL (the Scandinavian system) and UCPTÉ (the Central-European system).

Installed capacity as per the 1st of April 1975 is 3088 MW. The latest extension plan for the system comprises a 300 MW conventional oil-fired unit in Vendsysselværket near Aalborg in 1977, a 500 MW DC interconnection with Norway in 1976, a 800 MW 400 kV AC interconnection with Germany in 1978, half of a German/Danish owned 600 MW coal/oil-fired unit in Enstedværket near Aabenraa in 1979 and a 600–900 MW nuclear unit as soon as possible, probably in 1984.

Erection of a  
400 kV tower.



Construction  
of the 400 kV  
connection  
between Funen  
and Jutland.



## grid construction

The 60 kV systems are owned and constructed by the ELSAM partners. The 150 kV lines are owned either by the partners or by ELSAM. Ownership depends on the main use of the lines as either distribution or interconnection lines.

All stations for the transformation from 150 kV to 60 kV are owned and built by the partners.

All 400 kV lines and stations for the transformation from 400 kV to 150 kV are owned and built by ELSAM.

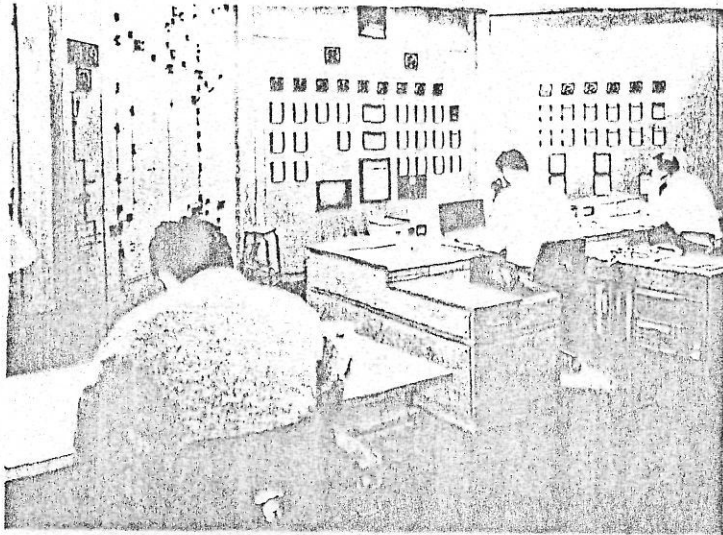
In cooperation with the partners ELSAM specifies technical quality rules and standards for line and station construction at 150 kV and 400 kV.

Fault protection of the grid is planned by ELSAM.

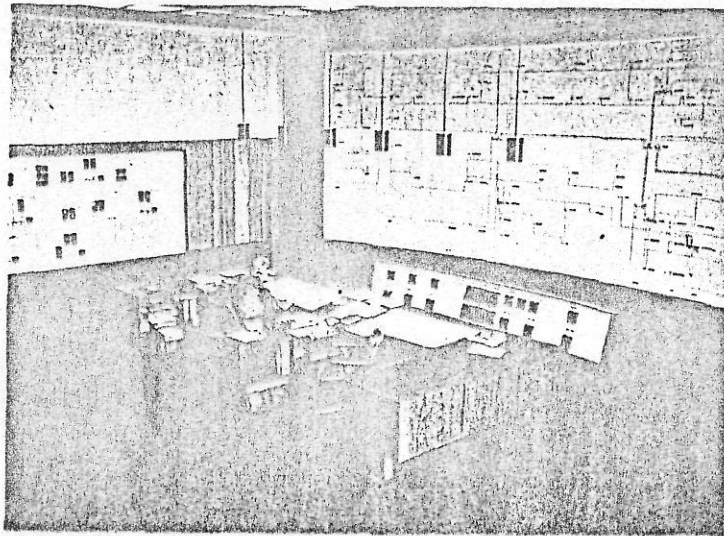
The ELSAM grid forms part of the central european grid by a 220 kV AC interconnection line, extended in 1979 by a 400 kV line. ELSAM also is interconnected to Sweden by a 250 MW DC link (Konti-Skan) built in 1965. The 500 MW DC-connection to Norway, now under construction for operation from 1976, is built by ELSAM in close cooperation with ELSAM's Norwegian partner, Vassdragsvesenet. The project comprises the DC-station, the adjoining 400/150 kV station and about 80 km overhead line. The cable will be laid by Vassdragsvesenet.

## system operation

Central control room at Elsam.



Regional control room at Midtkraft.



All units of the system are operated according to a total load dispatching scheme aiming at getting optimum reliability and economy of the system.

A unit and line revision plan is made annually and corrected daily to adjust for the unavoidable breakdowns of machinery.

Out of the total available units the most economic group is chosen for operation every specific day and hour after district heating and other restrictions and demands have been taken into consideration. The loading of each unit for the best economy of the total group is then calculated for every 15 minutes around the clock and transmitted to the power station operators.

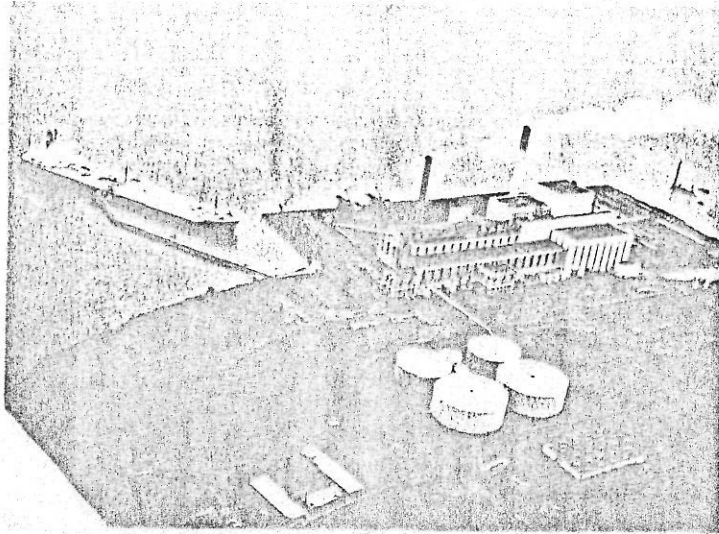
A security assessment program permits the system operator to assess before making decisions as to what might happen, if a certain line or unit is taken out or put into service.

The interconnections with Germany and Sweden give immediate stand-by capacity in case of breakdowns, thereby, to a great extent reducing the demands on running and installed reserve capacity. The interconnections also make it possible to sell and buy power on long-term or hour-to-hour agreements. Many of these agreements are discussed and proposed by the NORDEL operation committee.

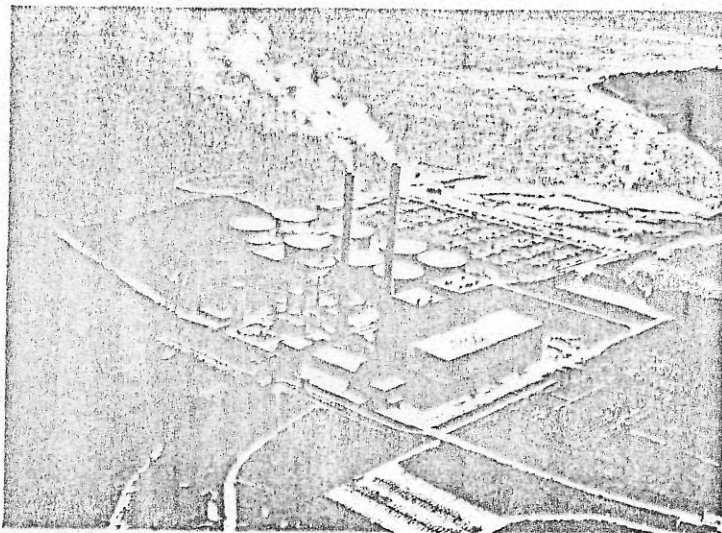
A vital part of the system operation is the telecommunication between the power stations, the grid stations and the dispatching center.

An equally vital part of the system operation is the relay protection, which operates automatically in cases of faults on the lines.

A 78.000 tons tanker at the Skærbæk Oil harbour.



The coal and oil harbour at the Studstrup power station.



## fuel purchase

(Eisamoil)

The annual fuel consumption of the power stations is equivalent to 2,5-3 mill. tons of heavy fuel oil. However, up to half of this quantity can be substituted by coal as most of the plants are dual fired for burning either coal or oil.

The coal is bought mainly from Poland and USSR but has also been supplied from Australia, USA and South Africa. In order to make the supply of long distance coal more competitive, Elsam is presently improving harbour and discharging facilities, i.e. a new coal harbour with a water depth of 16 metres is being developed and will be opened in 1978 and this will allow bulk carriers of up to 100.000 dwt to discharge.

The coal yards can hold stocks of up to one year's capacity based on maximum coal firing.

The heavy fuel oil, which is the only type of oil used, is bought from refineries all over the world and supplied in tankers of up to 85.000 dwt (from mid 1976 up to 150.000 dwt). When supplying power stations at harbours with more shallow draught the tankers first discharge part of their cargoes at harbours with deeper draughts.

Elsam is presently increasing its tank storage capacity in order to be able to maintain larger reserves of oil. The current tank capacity represents approximately nine months of the normal oil consumption. Elsam plans to increase the fuel oil storage capacity in proportion to the growth in electrical consumption.

# power station engineering

(Kraftværksgruppen)

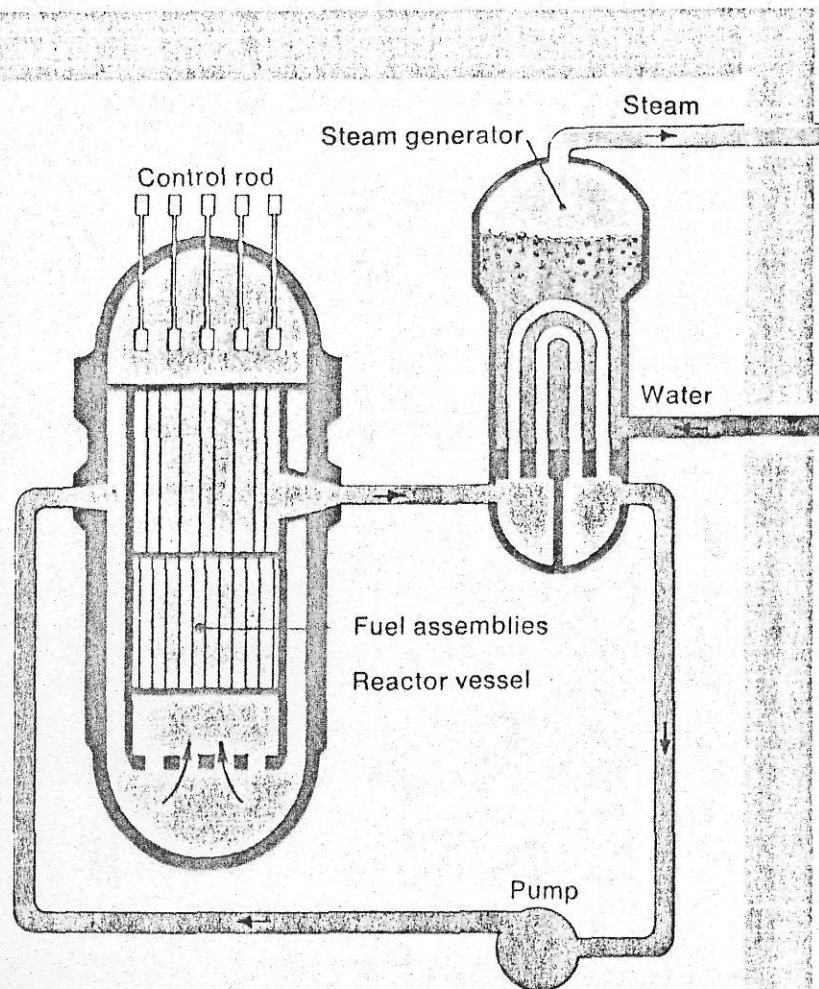
ELSAM's power station design and construction group (Kraftværksgruppen) was established in 1972. The staff was formed from experienced construction engineers from the ELSAM into one very efficient team. The engineering team will be in charge of the design and construction on all jointly owned plants, i.e. nuclear plants and peak load plants, as e.g., air storage plants. The team furthermore acts as consultants to partners extending, inviting tenders, buying, supervising constructions etc. to the extent wanted by the respective partners.

The nuclear plants will be owned by ELSAM most probably in a joint ownership with the KRAFTIMPORT on Zealand.

Right now (1975) ELSAM is drawing up specifications for the first Danish nuclear plant, based on a preliminary project and a site investigation made in close cooperation with the general planning authorities of the country. Light water reactors and the Canadian Candu-reactor are of special interest.

Other preliminary investigations form the basis of price calculations for various types of power stations considered in the production system.

The engineering team specifies technical rules and standards for power station design and construction in order to maintain a reasonable standard of supply for all ELSAM partners.



Light water reactor of the PWR-type.



# finances

Total balance  
sheets of  
the pool  
1. 4. 1975

	Assets		Liabilities	
	mill.d.kr.	%	mill.d.kr.	%
Plant	3721	81		
Materials and Fuels » »	287	6		
Cash, loan, debtors etc. » »	608	13		
Short-term loans etc. » »			377	8
Long-term loans » »			471	10
Depreciation and Funds » »			3768	82
Total	4616	100	4616	100

The very close cooperation between the power stations through ELSAM means that large amounts of energy and power and correspondingly of money are interchanged between the companies and ELSAM. The accounting system controls the flow of money. The objective of the accounting system is to share the costs and the advantages of joint planning and operation justly among the partners, simultaneously maintaining the interest of each partner in obtaining the best possible financial results.

Some of the costs are pooled or shared and others are equalized. The different accounting systems used in the different cost fields are such that the final per unit result tends to be very much the same for all partners.

The main cost headings are those of fuel, coal firing facilities, tank farms, harbour facilities, fixed costs and running costs of power stations, construction costs of grids and stations, grid losses, export, import, general administration, construction, operation and planning.

ELSAM finances its own projects through savings, depreciations, loans and contributions from the partners. These finance their projects and contributions to ELSAM through savings, depreciations and loans. The rather long intervals of 7-15 years between the extensions at each specific partner give "local" bulges of available funds or deficits which are smoothed through a mutual money lending system inside the pool.

The pool as a total is self-financing to a very great extent and hopes to remain so in future even with the heavier demands of "going nuclear".

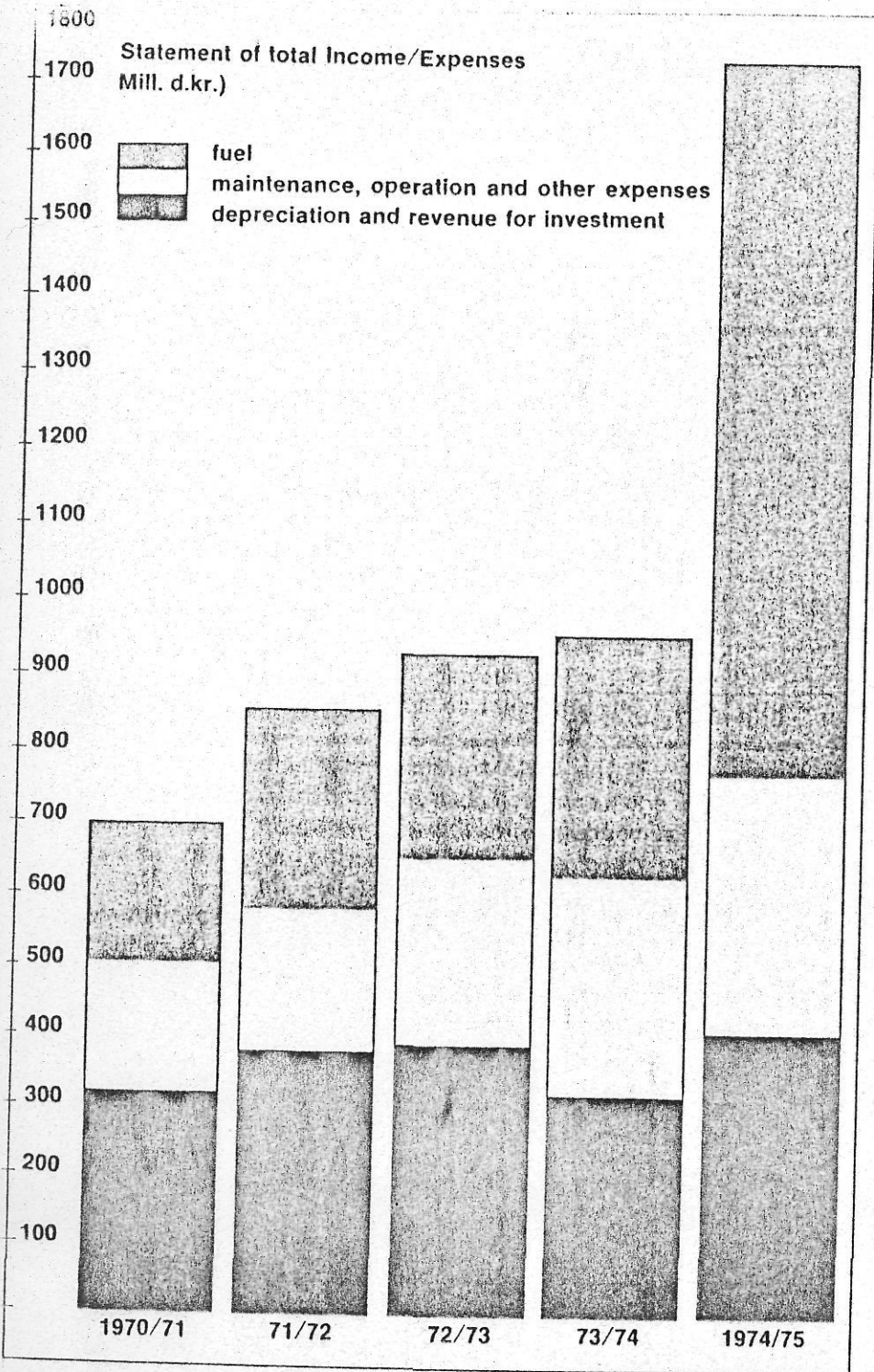
The first nuclear plant will bring a bulge in the total costs which it might be appropriate to even out by means of a loan.

The ELSAM partners are themselves partnerships (one is a cooperative society) and their owners are municipalities or cooperative societies. Therefore liability is unlimited and direct all the way back to the consumers, who are the true owners of the whole system.

Loans granted ELSAM are therefore guaranteed conditions comparable to those of the best state loans.

According to Danish law the partners in a partnership are taxed directly and since the partnership structure reaches all the way back to the consumers no income tax is paid by the power producing or distributing companies. For the same reason no profit is paid, all money gained is used for financing the extensions.

The close financial cooperation and the high interest level make coordinated financial planning imperative. Short term, medium term and long term plans are made continually by ELSAM and the partners.



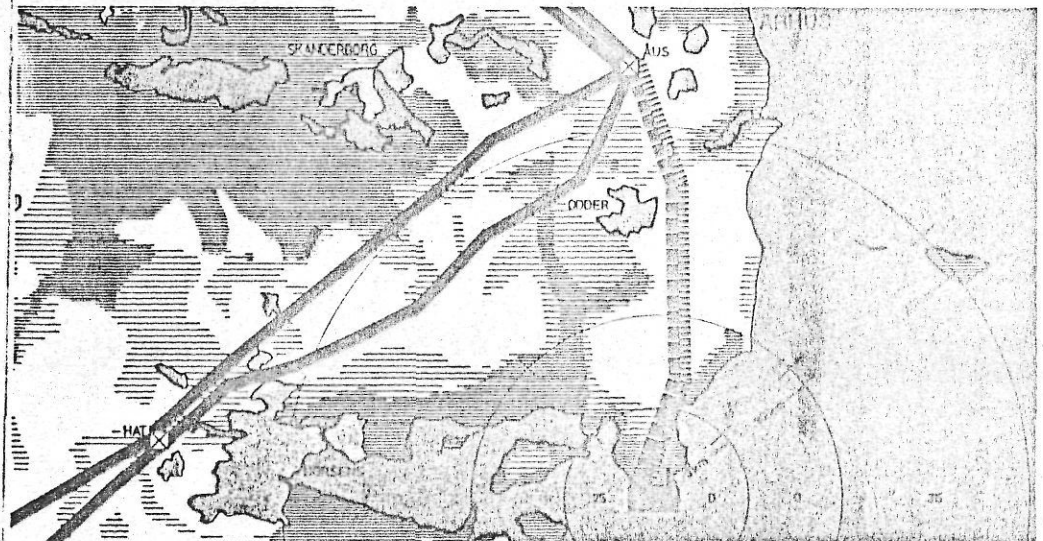
## the future

Through many years the rate of increase of electricity consumption in Denmark has been 9-10% p.a. Although the much higher fuel prices subsequent to the oil crisis of 1973 has reduced this figure, it is expected that the rate of increase at least to same degree will be resumed after a while.

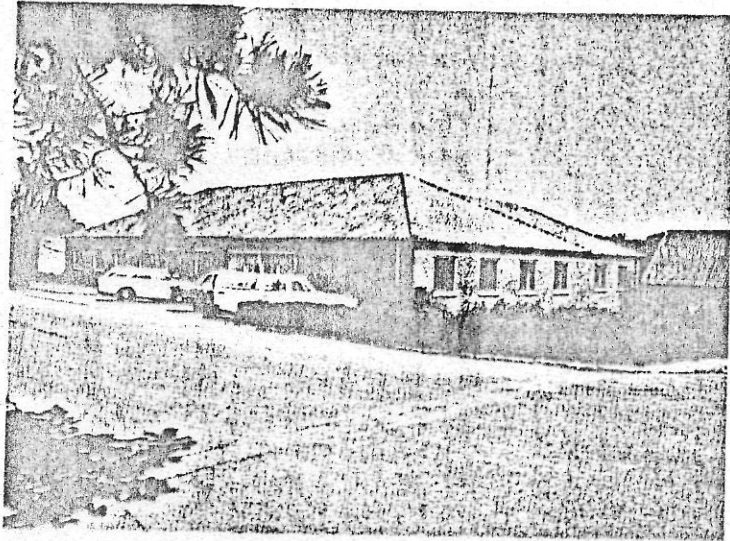
Energy planning is highly necessary for the power companies. ELSAM's energy policy is formed together with the power companies of Zealand and in close cooperation with the authorities.

ELSAM expects nuclear power to become the main basis of the future power production since it is considered to be safe, reliable, friendly to the environment and the cheapest way of production. It is of course important in a small country to join all available forces in the large task of "going nuclear". Therefore discussions on cooperation on a countrywide basis has started with the Kraftimport organisation on Zealand.

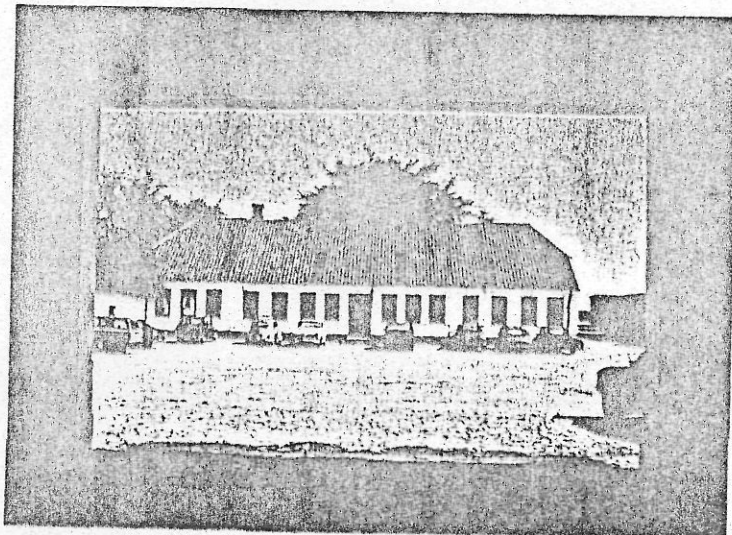
The proposed position of the first danish nuclear power plant 36 km south of Århus.



The main office of Elsam in Skærbæk by Fredericia.



Office for Elsam's power station construction team in Skærbæk.



## board, management and staff

The boards of the ELSAM partners consist of local political representatives and board members of the distribution companies.

The ELSAM board consists of the chairman, the vice-chairman and the managers of the seven ELSAM partners.

The most important decisions in ELSAM are taken by the total of the boards of the partners.

The management comprises three main fields of activities a) fuel purchasing b) power station engineering and c) system planning, operation, financing etc.

The ELSAM management and the seven managers of the partners form a committee responsible for the technical coordination between ELSAM and partners.

The total staff of the pool consists of about 2000 people. About 200 of these are on the ELSAM staff itself.

The position of the main office of Elsam.



**ELSAM**

7000 Fredericia, Denmark

Phone: 05 - 56 25 00

Elsam:

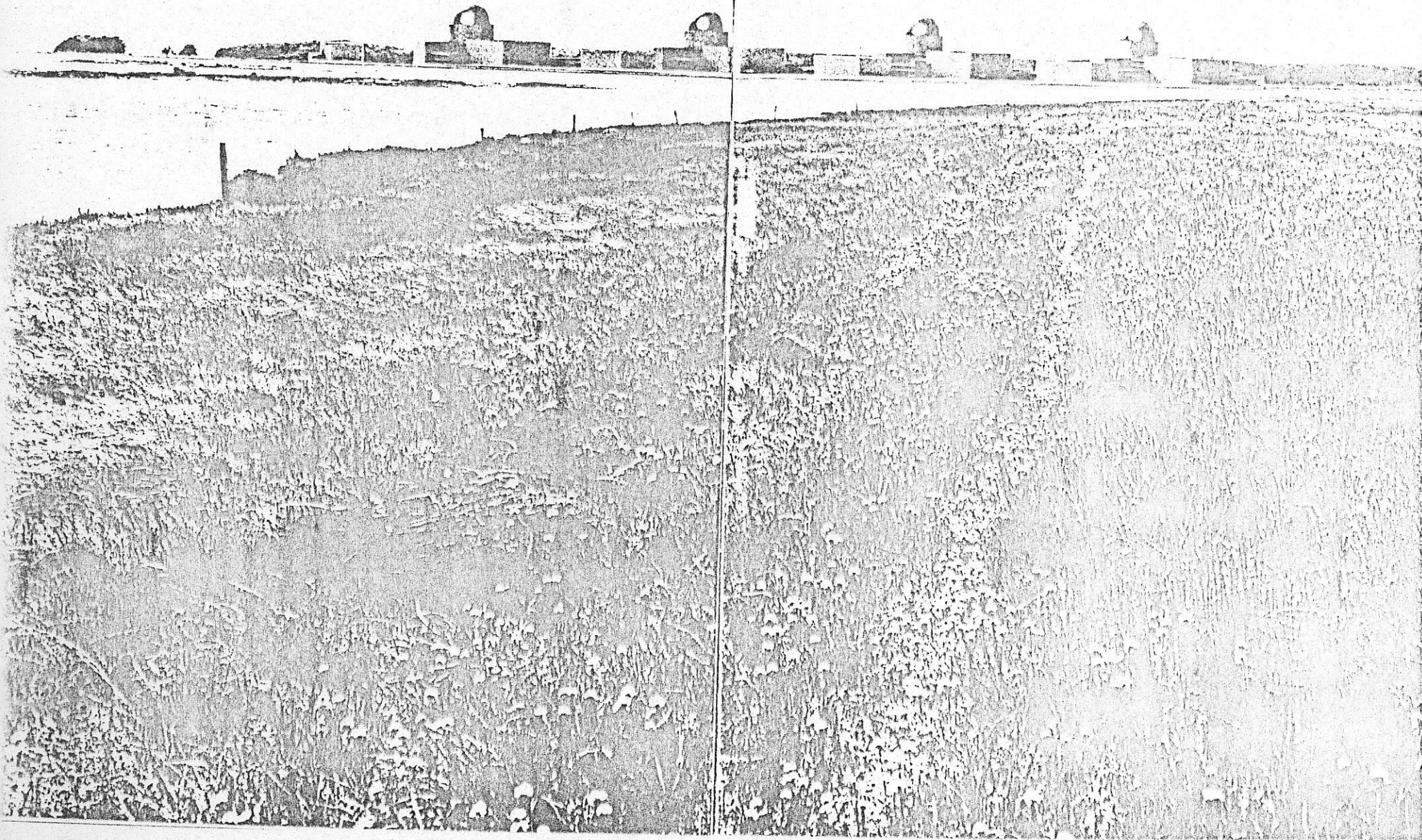
Telex 51130 elsam dk

Elsam oil:

Telex 51138 elsamo dk

Elsam power station engineering group:

Telex 51151 elsamk dk



### Interconnections:

The Elsam transmission system is connected to the German system by two 220 kV overhead lines with a transmission capacity of 200 and 300 MVA, respectively. The capacity is limited by the coupling transformers.

To the Nordic countries Elsam is connected by two DC-links one to Sweden with a transmission capacity of about 250 MW and one to Norway with a capacity of about 500 MW. The link to Norway functions as a peak power plant for the Elsam area with a maximum power of 250 MW.

In 1977 the net import from Sweden was 34 GWh (import 374 GWh, export 340 GWh).

The net import from Germany was 57 GWh (export 82 GWh, import 139 GWh).

The net export to Norway was 195 GWh (export 774 GWh, import 579 GWh).

The total net export for the Elsam area in 1977 was 104 GWh. The corresponding figures for the preceding years were

1973/74 - net export	164 GWh
1974/75 - net export	239 GWh
1975/76 - net export	94 GWh
1976/77 - net export	226 GWh

### Security of Supply:

Energy not delivered due to outages on the 150 or 60 kV level was in:

1973/74	94 MWh
1974/75	219 MWh
1975/76	468 MWh
1976/77	48 MWh
1977	99 MWh

For 1977 this corresponds to an outage of 3 minutes of Elsam's maximum demand.

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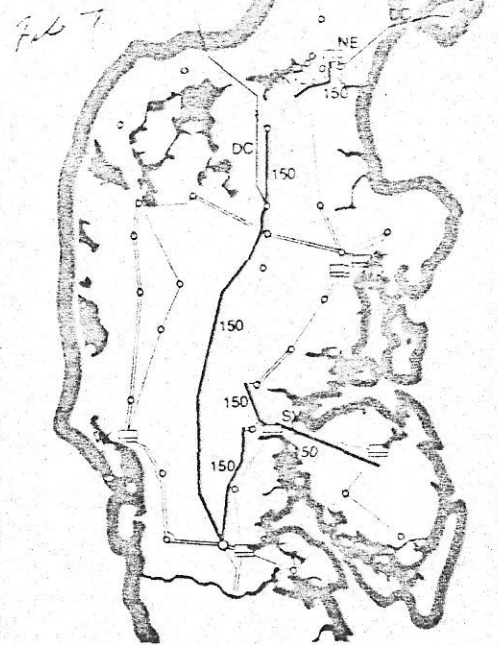
51151 elsam dk

51138 elsam dk

### The main transmission system Jutland-Funen

- 150 kV substation
- ≡ Power station
- 150 kV line
- 220 kV line
- 400 kV line
- DC 250 kV DC-line

### THE ELECTRICITY SUPPLY JUTLAND-FUNEN 1977 ELSAM



Res. lamens. uventerne

MAMMEN ODENSE

Elsam -  
The Jutland-Funen Power Pool.

**Partners of Elsam:**

I/S Fynsværket	FV
I/S Midtkraft	MK
I/S Nordjyllands Elektricitetsforsyning	NE
I/S Nordkraft	NK
I/S Skærbækværket	SV
An/S Sønderjyllands Højspændingsværk	SH
I/S Vestkraft	VK

These companies are owned by groups of distribution companies, which are either municipal companies, co-operatives or partnerships. The municipal companies as well as most of the others supply the consumers direct, but in some cases distribution is effected through subsidiary companies or transformer associations.

**Service Area:**

The seven companies within Elsam produce practically all the electricity consumed in Jutland and Funen, that is the area west of the Great Belt. On the 1st July 1977 the population in this area was 2.755.000, which is approx. 54% of the total Danish population. The amounts of electrical energy consumed east and west of the Great Belt are almost equal.

**Purpose:**

Elsam was founded in 1956. The purpose of Elsam is - for the benefit of the electricity consumers - to achieve the best possible technical and economic development and operation of the generating and transmission system in Jutland and Funen with due regard to national requirements. This includes the optimum use of combined production of electricity and district heating. Accordingly operation and development of the generating and main transmission system are coordinated by Elsam Fuel for the generating plants is purchased by Elsam and Elsam is responsible for interconnections and agreements with power supply undertakings outside Jutland-Funen.

**Summary 1977**

	Installed capacity MW	Maximum load MW	Production GWh	Sales within own area GWh	Generating units MW	Planned extensions	
						Year	Size MW
FV	623	334.0	2365.3	1627.4	$2 \times 5^1 - 2 \times 38 + 73 + 195 + 269$		
MK <sup>2</sup>	565	500.9	2480.1	2459.7	$42 - 2 \times 70 - 152 - 263$	1983	330
NE	438	184.3	1179.1	908.3	133 - 305		
NK <sup>2</sup>	450	193.2	1329.4	1006.9	$2 \times 5 - 7 - 2 \times 29 + 41 + 69 + 269$		
SV	492	365.1	1666.5	1793.0	$2 \times 31 - 59 + 102 + 269$		
SH <sup>2</sup>	259	260.5	883.7	1256.7	$17 - 42 - 57 + 144$	1978	330 <sup>3</sup>
VK	504	383.1	1376.6	1942.0	$17 + 34 - 60 + 136 + 257$		
Jointly owned	25		0.6		25		
<b>Total</b>	<b>3356</b>	<b>2221.1</b>	<b>11291.3</b>	<b>10994.0</b>			

The figures shown are net values.

- 1 Dieselunits
- 2 Installed capacity is limited by boiler capacity.
- 3 Half of a German/Danish owned 660 MW unit.

**Abbreviations:**

- 1 GWh = 1 million kWh.
- 1 MW = 1000 kW.

The system load factor based on the maximum demand met was 56.5%.

Consumption per capita 3800 kWh.

Compared with 1976 the maximum demand met increased by 6.8%.

Compared with 1976 sales increased by 7.3%.

ADDENDUM II  
ELSAM LETTER OF INTENT

DET JYSK - FYNSKE



ELSAM ARBEJDE

Mr. A.K. Wilson  
Vice-President, Marketing  
Luscar Ltd.  
800 Royal Trust Tower  
Edmonton Centre

EDMONTON, Alberta T5J 2Z2 - CANADA.

Mr. P. Desjardins  
Vice-Chairman of the Board  
P.O. Box 2179  
1055 W. Hasting St.

VANCOUVER, B.C. V6B 3V8 - CANADA.

BREV NR.: E-B/305

VOR REF: PS/it

DATO 24th October, 1979

Dear Sirs,

QUINSAM PROJECT

You have proposed supplying to ELSAM, during a twelve year period commencing 1983, a total of 12,250,000 short tons of steam coal from a mine which you would open for this purpose at Quinsam near Campbell River, British Columbia. This proposal evolved from our meetings at Campbell River on May 24th, 1979, and in Denmark the week of September 2nd, 1979, and was summarized by you in correspondence dated September 12th, 1979.

The purport of your proposal was recently referred to the ELSAM Board of Directors. We now wish to advise that the Board's reaction to the idea was favourable, and that the Board is prepared to accept it subject to the terms and conditions being incorporated in a mutually acceptable coal supply agreement, and provided also that the present uncertainty regarding Campbell River port facilities for loading the coal onto ships for transportation to Denmark can soon be resolved.

Your proposal is predicated upon your being allowed to utilize the existing Western Mines dock at Campbell River to load vessels which ELSAM would supply for the movement to Denmark. In order to minimize the substantial ocean freight charges involved, ELSAM would employ the largest vessels capable of transit through the Panama Canal. It would be necessary to maintain at dockside a sufficient stockpile of coal to permit these vessels to be loaded promptly upon arrival at the port.

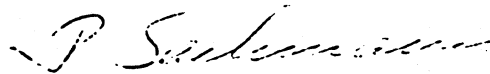


You have advised that arrangements can be made with Western Mines to obtain the required coal storage area, and to install the necessary conveyors and shiploaders etc. on the existing dock. However, the plan to use this dock will require certain government approvals and we understand that it is not as yet certain whether such approvals will be forthcoming.

ELSAM is ready to proceed with this mutually beneficial coal mining project whenever it can be established that the Western Mines dock together with a suitable area for stockpiling coal will in fact be available for the shipment of Quinsam Coal latest medio 1983.

Yours very truly,

E L S A M



P. Sachmann