

KIITG

keep it in the ground. inter-
national stop uranium mining
news letter. april 1982



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ABOUT THIS NEWSLETTER

This is a newsletter linking together in an information chain people all round the world working to stop uranium mining. It is a participation publication, and all people are invited to send articles to us. We also publish scientific information which groups can use in their campaign. An amazing amount can be shared, and there is a lot to be gained from learning from the knowledge and experience, solidarity and support of others.



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KIITG is thankful once more to the Dutch foundation NOVIB for their generous financial assistance this year.

Apart from one major grant, we feel that Keep It In The Ground must have a self-supporting money base. So that we are not always dependent on grants. Our aim is to increase the number of subscribers to KIITG - and for those who wish, to increase the number of members. Members pay f40 a year and receive either the WISE bulletin or the KIITG for 10 issues. Subscribers pay f25 for 10 issues. As a member you support the work as well as pay for the publication.

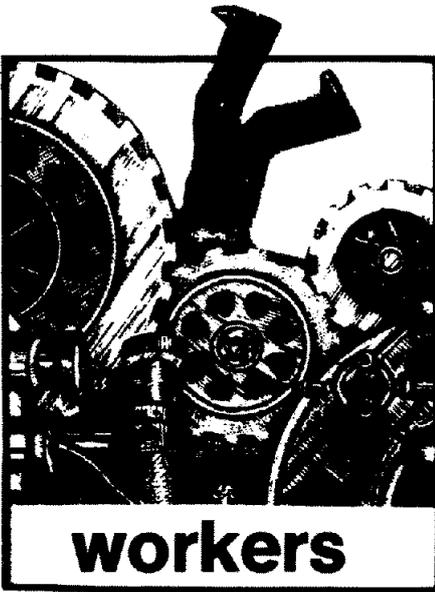
Please pass copies of KIITG on to friends. Ask groups to subscribe.

This issue of Keep It In The Ground is the combined work of the Amsterdam staff, the Australia and Washington relays, and information from other relays and friends. Lin Pugh is the editor.

Please freely re-publish our news, that's our purpose! BUT...please say that the news is from KIITG. Thanks. Copyright 1982.

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TRADE UNIONS KEEP NO URANIUM POLICY

The Australian Conference of Trade Unions (ACTU) voted during their recent Executive Meeting (March 12) to maintain their policy against the mining of Australian uranium. The policy was created in September 1979, and in recent months has been under threat of change by more conservative elements in the ACTU Executive.

The Trades and Labour Councils in the states of Queensland, South Australia and the Northern Territory opposed all attempts to water down the policy. On the contrary, these TLC's are looking for ways to reinforce the policy.

The question now facing the ACTU is how to implement the bans. A sub-committee has been set up to advise the working party set up to look into this. The sub-committee consists of officers of the ACTU plus representatives of the unions who will have to implement the policies, for example the Water-side Workers Unions and the Transport Workers Unions.

The sub-committee wants to know if there are other trade unions in other countries willing to support actions by Australian unions, especially if strikes in Australia would be broken by military intervention.

Last December the Executive took a tentative decision to drop the policy of uranium bans, due to pressure from the government under the newly created Section 45D of the Trades Practices Act in which trade unions were being threatened with fines of thousands of dollars. Trade Unions in Darwin refused to load uranium from October last year, and in Queensland unions had banned uranium shipments since February 1981. International pressure (see KIITG 19 and 20) probably helped considerably in having the bans maintained.

The new policy, which will mean that unions will now have more direction and support in maintaining the bans at the workplace, will have a definite effect on the new plans the government is considering of opening the Koongarra and Jabiluka uranium deposits to uranium mining companies (see Gulliver File).

The key unions are:

*Mr Ian McLean
State Secretary, ATEA (Telecommunications Employees Association)
93 Fortescue Street, Spring Hill,
4000 Queensland, Australia*

*Mr Hugh Hamilton,
State Secretary, BWIU (Builders Workers)
130 Petrie Terrace
Brisbane, 4000 Australia Q.*

*Mr Fred Whitby
General Secretary, Trades and Labour Council of Queensland,
Trades Hall, Upper Edward St
Brisbane 4000 Q, Australia.*

Many thanks to the Australian relay in Glen Aplin for this news.

CALLS FOR WIDER BANS ON MINATOME MINE IN QUEENSLAND

Throughout the debate around whether or not the ACTU would change its bans on uranium policy, the Australian Telecommunications Employees Association sought ACTU support to widen bans against the French company, Minatome Australia Ltd.

The ATEA state branch is objecting to Minatome's development of the Ben Lomond uranium mine near Charters' Towers in Queensland.

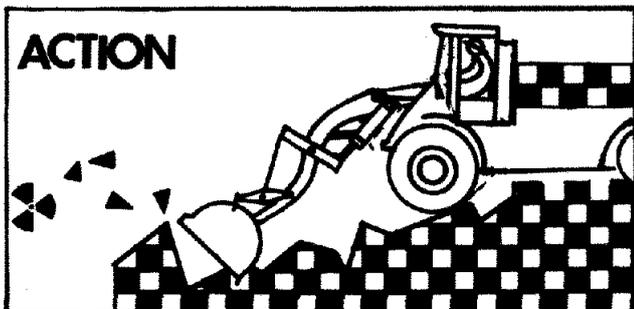
The ATEA was seeking to change the emphasis of its anti-uranium campaign to prevent new sites being developed.

"It is much easier to stop mines getting off the ground than to try to close operations employing people", the state secretary for the ATEA, Ian McLean said in January.

Mr McLean said the ATEA, the Australian Postal and Telecommunications Union, the Electrical Trades Union and the Municipal Officers Association had applied bans designed to deny Minatome the communications and power needed to enable the mine to become operational. ACTU support would be needed to have union action spread among unionists in general.

Ben Lomond is at this stage only paper work, the mine is in the pre-developmental and feasibility stage. Plans are to begin the mining in 1985 or early 1986.

contact : Ian McLean/ATEA
93 Fortescue Street
Spring Hill, 4000 Q
Australia



COUNCIL REJECTS URANIUM ORE DEPOT

UK: A controversial application by the transport firm Edmundson Freightliners to store uranium ore at its depot in Middleton near Morecambe, Lancashire, UK, was rejected by the Lancaster City Council on February 15. The company

wanted permission to store up to 90 containers, each holding 48 drums of uranium yellowcake, in their open-air storage site.

Mr Charles Wilson, the Chief Planning Officer, said the main objections were that the oxide was highly toxic and radioactive, security at the site would be inadequate (the site is surrounded only by a six-foot high fence), the city council has declared a nuclear free zone, the material is allegedly from Namibia, in contravention of a United Nations ruling, and the British Nuclear Fuels and the Central Electricity Generating Board (BNFL and CEGB) have adequate storage area themselves.

This is the first time that a council in England has included uranium storage in its understanding of "nuclear free zone" (in some cases nuclear free zones only refer to weapons storage, for example). Their rejection of the application is a victory for local and national campaigns around this issue, which began four months ago when the application was filed. Since then, people have asked authorities where the yellowcake originates. The only answer to date is "no Comment" and that BNFL has claimed the ore does not belong to them but that it could, eventually, pass through their hands. Activists believe that the ore comes from the Rio Tinto Zinc mine in Namibia, and that the unknown buyer (perhaps URENCO, South Korea or Switzerland) is stockpiling while the world price of uranium is low (US\$23 per pound).

During the hour long debate, not one councillor spoke in favour of the project. The council went against the advice of the Council Officers.

source: WISE Oxford, Partizans and the Guardian. Feb 16 1982

contact: Lancashire Half Life
c/- Students Union, Lancaster Univ, Lancashire, UK.





INVITATION TO THE 3 EUROPEAN ANTI-URANIUM CONFERENCE

TOPIC: INTERNATIONAL COOPERATION IN THE STRUGGLE AGAINST URANIUM MINING

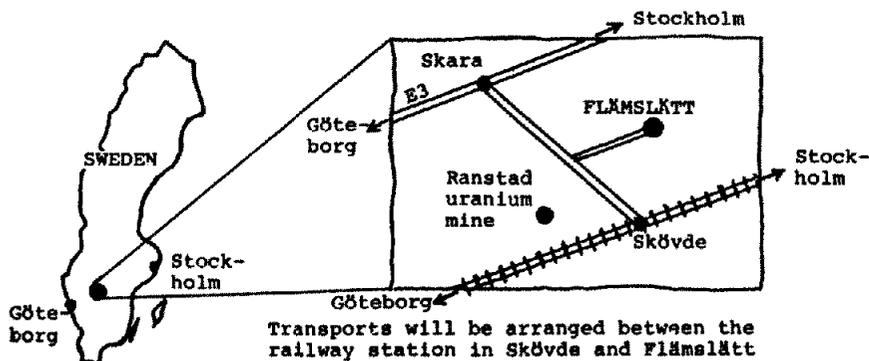
Time: 11th - 14th June 1982

Place: Flämslätt conference and recreational centre, owned by the Swedish Church (see map below)

Organizers: Skövde Miljöforum i cooperation with the Uranium Committee within the Peoples Campaign Against Nuclear Power (Folkkampanjen Mot Kärnkraft)

Preliminary program:

- | | |
|---------------|---|
| Friday 11.6 | Arrival during the day
Dinner
Plenary meeting |
| Saturday 12.6 | Tour by bus to study the nature, culture and economics of the Billingen-Falbygden area in relation to the impact of the Ranstad uranium mine
Picnic lunch
Public meeting at Flämslätt in the afternoon
Dinner
Convivial gathering, maybe sauna and bath in the lake |
| Sunday 13.6 | Work in groups, plenary meetings etc on the cooperation topic |
| Monday 14.6 | Summing up, press conference, closing the conference. Departure |



DEAR FRIENDS,

At the 2:nd European Anti-Uranium Conference in Bad Alexandersbad the Swedish representatives made a preliminary invitation to Sweden 1982. This is the final invitation to the 3:rd conference in Sweden.

Information on the conference

We have the intention that this conference should concentrate on two topics:

- 1) The international cooperation against uranium mining.
- 2) Information on the situation in the area You are visiting.

We welcome any other ideas! The program will be finally decided later. Please send Your wishes concerning the program as soon as possible!

We ask You to bring some information on the situation in Your area. Why not a few posters to create a small exhibition at the conference. You are also asked to prepare ideas and proposals on the cooperation topic.

Flämslätt, a recreational and conference centre owned by the Swedish Church, is situated in a beautiful area with a lot of small lakes surrounded by leafy woods and small villages. The distance to Skövde (town and railway station on the main railway between Stockholm and Göteborg) is 13 km and to Ranstad uranium mine 16 km.

Accommodation will be at Flämslätt. The cost for the participants for overnight in 2-bed rooms and meals from Friday afternoon to Monday morning is 200 Swedish kr. Please bring your own bed-clothes or sleeping-bag!

When we have received Your announcement, You will get more detailed information on the conference. You are recommended to plan the journey so that You arrive at the railway station in Skövde before 16 pm Friday 11 June.

The working language of the conference will be English at first hand. Translation to French and German will be arranged if needed. Your announcement should be sent to Skövde (please use the enclosed registration form) before 15 April 1982.

Best wishes
and see You at Flämslätt

Olov Holmstrand
Olov Holmstrand

If You are not going to the conference, please leave this invitation to someone You think might be interested!

Hopefully we will see many of our KIITG readers at the conference. I also hope people will also have constructive criticisms of KIITG, and that we can have time during the meeting to talk about communication in general.

REGISTRATION FORM

Please send in your NAME
ADDRESS
COUNTRY
NUMBER OF

PERSONS

PREFERRED

LANGUAGE

Please also send 200 Skr per person and transfer that to bank account number 7582-20-14372 at Föreningsbanken, Skövde, Sweden.

Send that before April 15, to
Agneta Norinder
Karl Dahlins Väg 6B
S-541 51 Skövde
Sweden

ANTI URANIUM BILL DRAFTED IN MINNESOTA

The State Legislature has finally decided to hear the draft bill proposed over a year ago by the Minnesota Ad Hoc Coalition on Uranium Mining. The hearing took place in February - we have not yet heard what the results were.

A year ago the Coalition decided to draft a bill, with the help of the local Law School Advocacy Clinic, which would guarantee that uranium mining wouldn't spring on them unexpectedly in the next few years. There was a general agreement that they could not achieve an out-and-out ban on uranium because people need more time to come to the same conclusion, namely that uranium development can not be carried out safely. So in the meantime they felt something was needed to ensure full public debate before any steps are taken beyond drilling. Also, facing reality, they knew the bill couldn't cost the state anything. The Uranium Development Act fulfills these goals cleverly, but in a fair and realistic way, according to the Coalition.

Ad Hoc Coalition on Uranium Mining,
Box 322, Barnum, Minnesota 55707 USA.

TENNESSEE VALLEY AUTHORITY NEW MINE OPPOSED IN NEW MEXICO

The Tennessee Valley Authority (TVA), a regional Federal Agency, has announced the possible opening of a new uranium mine in conjunction with Kerr McGee Nuclear. This possible new mine site borders the closed Bokum mine. The Sandoval Environmental Action Community (SEAC) had representatives at a meeting called by TVA at the Bokum mine office and SEAC submitted written comments on how the Environmental Impact Statement at the mine should be prepared. SEAC and others suspect that TVA will mill ore from this possible mine at the nearby Bokum mill, although TVA denied this. Recent demand for power from the TVA has dropped and there is reason to question the need for the mine, SEAC write in their newsletter.

On the western border of Sandoval County, the SOHIO Western Mining Co. has applied to the New Mexico Environmental Improvement Division (EID) for renewal of their Radioactive Materials License for their uranium mill near Seyboyeta. SEAC has sent written comments on the operation of this mill with a request for a public hearing to be held as part of the process of the renewal of the EID. The waste tailings area at the millsite may actually be owned by the Seyboyeta Land Grant - that is, land given already to the Seyboyeta people. There is documented seepage of waste material either under or through the containment dam. The dam is itself constructed of tailings. This seepage is rapidly migrating off of SOHIO's site into land owned clearly by the Land Grant. The sandstone formation that is the aquifer for the nearby village of Paguete is threatened by this leakage since the shale that separates the sandstone from the waste area may have waste material leaking through it.

The SOHIO mill has been closed since April. SOHIO has recently lost contracts for yellowcake - the mill product of uranium ore - and with the continuing deterioration of the uranium market

there is little chance that they will be replaced. SOHIO may not actually be planning to reopen this mill and the license renewal may only be a device to delay or avoid dealing with the serious problems of their waste containment system. If the mill officially closes SOHIO is required by law to begin stabilisation and reclamation of its mill site. A renewal of the Radioactive Material License could be an attempt to avoid this, to the great detriment of the environment and local residents. SEAC believes a public hearing to be essential in considering this license renewal application.

SEAC

P. O. Box 1220, Bernalillo,
New Mexico 87004 USA

URANIUM DRILLING IN PINE COUNTY, MINNESOTA

Rocky Mountain Energy (RME) completed drilling three holes in Pine County, and is continuing on their fourth of up to 10 planned exploratory borings in their search for uranium in Minnesota. The holes are as close as 50 feet to each other, and range from 410 to 460 feet deep on a site a couple of miles southwest of Sturgeon Lake. The completed holes have been sealed and abandoned and reports have been filed, as required by state law.

Health Department personnel took readings monitoring radon in the air around and on the drill holes, and almost-background levels have been reported - although final data is not yet available.

Because Pine County has no local controls over uranium exploration, the company did not need to obtain any local permission. The majority, but not all, of local governments in Minnesota do not assert any local controls over uranium exploration.

Why are they still exploring even though the market is so bleak? RME head geologist Ed Ullmer explains: out west, other uranium mines have had to close, but RME still has a favourable contract

with one buyer, so can keep some prospects open. RME marketing studies have shown that there may be an eventual upswing in the price of uranium. If they find a deposit of uranium, it would take 7-8 years to do environmental studies and obtain necessary permits. By then RME hopes the price of uranium would be up. Ullmer admits it would take quite a rich find to make uranium mining feasible today.

So far, Ullmer says, "We haven't hit a damn thing". They predicted geological structures in east Minnesota as rich as those in Canada and Australia, but the predictions are a bit wrong.

EXXON is the only other company currently exploring in Minnesota for uranium. Union Carbide is applying for a license, though they are expected to search for non-radioactive base metals.

*from Loni Kemp,
reproduced in Northern Sun News Feb 1982.*

IN OUR OWN BACKYARDS: Uranium Mining in the United States A 29-minute film by Pamela Jones and Susanna Styron, exploring the impact of uranium mining on the environment, on the health of workers and on nearby residents. The film features interviews with former uranium miners and also with the widows of deceased miners. Health experts describe the disastrous effects of the 1979 tailings spill at a uranium mill near Church Rock, Arizona, and U.S. Nuclear Regulatory Commission experts responsible for nuclear fuel safety. Also included is footage from a tour of one of seven Kerr-McGee uranium mines and an interview with a spokesman for the Kerr-McGee uranium mines and an interview with a spokesman for the Kerr-McGee Corporation whose claims that the company has acted responsibly with regard to worker safety is juxtaposed against examples of blatant irresponsibility. An excellent organising tool for people working against uranium mining. Available in 16mm film or video-cassette from:
Bullfrog Films, Oley, PA 19547
USA. Tel: (215) 779-8226.

STOP HONEYMOON

On May 14 and 15 Australian anti uranium groups will hold Australia's first ever demonstration at the site of a uranium mine. Plans also exist to occupy the mine site, 75 km north of Broken Hill, in South Australia.

The Honeymoon Uranium Project was given Federal Government Approval on October 27 last year, and is a joint venture between MINAD, wholly owned by CSR, Carpentaria Exploration Co (COC), 48% overseas-owned, and TETON Co, 100% owned by USA based UNC Resources Ltd. Current Australian ownership is 63%. Present Commonwealth policy calls for 75% Australian ownership of all uranium projects.

Approval has, however, been granted.

LEACH MINING: The process for mining uranium at Honeymoon involves pumping an acid solution into the ground, allowing it to dissolve the uranium, and sucking it out through an extraction well. The full scale operation would consume per year:

- 12,000 tonnes of sulphuric acid
- 3,000 tonnes of hydrogen peroxide
- 1,800 tonnes of sodium carbonate
- 1,500 tonnes of ferrous sulphate
- 650 tonnes of quicklime
- 80 tonnes of ammonia
- 30 tonnes of sodium hydroxide.

These chemicals mixed with the ground water make up the 10 million gallons of solution that will be present underground at any time during the operation of the mine.

The daily flow through the mine will be 2 million gallons, over the life of the mine some 5000 million gallons of solution will be pumped through the ground. This will be accomplished using approximately 75 wells over an area of about 24 hectares.

THE ENVIRONMENT: Honeymoon Mine is situated in an arid zone with a rainfall of less than 200 mm per annum.

Underground water occurs at three levels in the area. The uranium targeted for extraction occurs at the lowest of these aquifers.

Water from the upper aquifer is used for the people involved at the mine site. The lower aquifers are not fit for human consumption. However while at present no interchange apparently occurs between the three aquifers, when 75 wells are sunk through all three levels the case may be different. The Environmental Impact Statement (EIS) states that "ground water from all three aquifers rise to approximately the same level, suggesting the occurrence of a hydrolic connection between the aquifers." (page 16). At various stages the impermeable layer of clay between the aquifers is not present. This means that there is most likely to be interaction between the aquifers with contaminated water (acid and bearing metals) affecting the potable topmost aquifer.

Of greater concern to the local inhabitants is the fact that the Great Artesian Basin is only 50 km, and Lake Frome only 100 km, from the site. In an area where water is so scarce that it must be carried in by train for human consumption, the destruction of underground water supplies is greatly feared by the local people.

A CASE STUDY: In the United States a similar method of mining was used at the Iragarary Wyoming Mineral Co mine.

On March 14 1979, chloride levels were forced to exceed the "upper control limit" (alkaline rather than acid solutions were used in this case). Overpumping (taking out more liquid than was going in) was begun on March 27th. In April it was agreed that overpumping was not correcting the problem, apparently the wells themselves were leaking. By late August a major series of cracks in the casing and leakage to the upper zone was discovered. The Nuclear Regulatory Commission said that "degradation of water quality in the shallow aquifer from ammonia and importation of heavy metals is now occurring."

CHURCH ROCK: One of the companies involved in Honeymoon, TETON, is 100% owned by the United Nuclear Corporation (UNC) of America.

On July 16th 1979 the wall of a tailings dam at a mill owned by UNC in Church Rock New Mexico, broke, spilling 100 million gallons of liquid and 1100 tonnes of uranium tailings into the Rio Puerco. A hearing into the causes of the accident revealed that UNC knew in 1976 that the soil and bedrock on which the dam was built were unstable. At the time of the accident there was 50% more waste in the pond than was allowed. The 125 families in the area filed a suit, but meanwhile their water and the water of their stock, which is for these rural Indians the means of livelihood, is heavily contaminated. The spill has to this day not been satisfactorily cleaned up. TETON now proposes to responsibly manage 75 bores pumping acid and dissolved heavy metals through potable water.

THE EIS CRITICISM: A general criticism is that the study was rushed. Sampling of Radon 222 was done in a "variety of weather conditions" but only in 7 days. Due to good rains in 1979, the flora described in the EIS is not typical, the flora description being based on three visits to the site. Avifauna was observed in March, the time of minimal activity of birds in the area. As Greenpeace said in their summary "One cannot determine the ecology of an area simply by listing some species that occur some time in some number".

The EIS does not examine alternatives at all. These include alternative plans of mining, of processing, of waste disposal, of water management. The greater issue, the desirability of uranium mining, is not dealt with at all.

On employment the EIS simply says that "the project will provide new employment opportunities". In fact each job created will cost approximately A\$250,000 and the whole project will only employ 50 people, not necessarily locals.

If Honeymoon goes ahead it will provide justification for other similar mine projects. At Beverley Lake near Lake Frome, both in

South Australia, there is a deposit 5 times larger than at Honeymoon. It is to be extracted using the same in situ leaching method. BEVERLEY IS DIRECTLY ABOVE THE GREAT ARTESIAN BASIN.

MAY ACTION IN BROKEN HILL:

On May 14 and 15 a national action will take place at the Honeymoon uranium mine and in Broken Hill. Organising groups have been set up in each capital city and in regional centres. As the action occurs during school holidays we are hoping that lots of students and teachers will travel to Broken Hill. Non-violence training and group activities will begin in March.

contact+ FOE, 366 Smith Street
Collingwood 3066 Vic Australia.
tel (03) 4198700

Northern Sun News, June 1980



FINLAND HAS NEW DRILLING

The village of Leppäkorpi, 80 km west of Helsinki in southern Finland, is where the most promising Finnish uranium deposits are expected to be found. The Finnish Geological Research Institute has already done 37 test drillings near the village. Further drilling through the icy lake nearby have been prepared. If the mining goes ahead, open pit mining is favoured.

The local people are very concerned with these developments. There are several small lakes in the area, and the people are concerned about water pollution. The town people have formed a committee to organise resistance to the mining, and intend to use all political and administrative means to that end.

The committee calls on people to send them information on the effects of open pit mining and of test drilling in lakes. They welcome experiences and ideas on organising resistance to uranium mining. They also welcome support and solidarity letters which will give the people courage in their resistance.

contact: *Leppäkorven Kylätoimikunta*
c/- Liisa Tamminen
SF-09930 Leppäkorpi
Finland

source: *WISE Helsinki*



RESOURCES



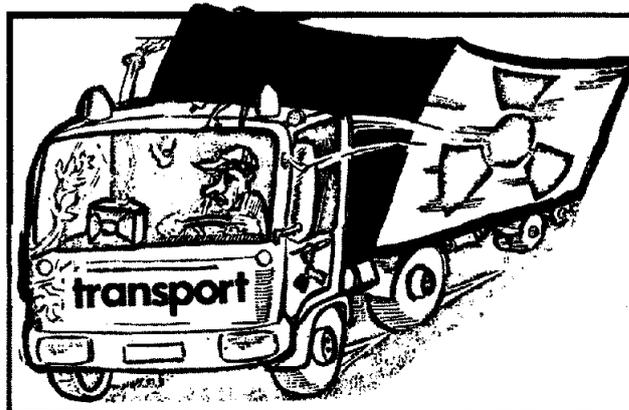
TRIBAAL

On March 17 the new magazine of the Workgroup Indigenous Peoples in the Netherlands will be launched in Amsterdam. This is a continuation of the Russell Tribunal publications together with the magazine WIZA, on Indians of South America and their struggles and lives.

Tribaal will come out every two months, and will have theme issues ranging from cultural issues to the bomb testing in the Pacific.

WIP

Minahastraat 1, Amsterdam, the Netherlands. tel 020-925050.



TRACING AUSTRALIA'S URANIUM TRANSPORTS

We made a silly slip-up in KIITG Nr 19 with the background article by Frank Muller. Frank sent a letter, plus new information, which we publish here as well. Sorry, mate.

Dear friends,
I refer to the article of mine which you published on pages 4-6 of the February issue of KIITG. Unfortunately the article, as edited, is not altogether clear due to omission of two particular tables and the sections of text relating to them. The tables relate to the sources of conversion and enrichment services.

You will note that I say a shipment of uranium for sale to a Japanese utility is likely to be destined for the Eldorado plant at Port Hope or the Comhurex plant at Pierrelate. This is only evident if you consult the table "Committed Suppliers of UF₆", which indicates that for the period 1980-1990 it is estimated that 54% of Japan's conversion services will be provided by Japan and 34% by France. Of course, it is possible that the specific shipments from Australia could be converted in the United Kingdom or Japan, as the table indicates that some of Japan's conversion needs are met by these countries. It is only on the basis of this table that an educated guess can be made. Obviously, if anyone has specific contractual information that would be better.

In the case of enrichment, I noted that it is most likely that

uranium supplied to Finland would be enriched in the USSR and that supplied to Japan, enriched in the USA. This is apparent from the table on sources of enrichment services which indicates that over the period 1976-1990 it is estimated that 100% of Finland's enrichment services will be provided by the USSR, and 83.4% of Japan's by the USA.

I also enclose a recent answer to a parliamentary question which updates the list of Australian uranium sales contracts. You will note that Queensland Mines Ltd has now arranged sales to France.

Yours sincerely

Frank Muller

... the additions ...

COMMITTED SUPPLIERS OF UF6

countries requiring UF6	USA	CANADA	UK	FRANCE	USSR	TOTAL
France	..	7	..	93	..	100
UK	..	..	100	..	..	100
Japan	1	54	11	34	..	100
FRG	1	23	37	39	..	100
Italy	94	..	6	..	..	100
Sweden	38	7	..	55	..	100
Switzerld	61	9	17	13	..	100
Canada	has no need of conversion for domestic use					
USA	82	14	4	..	..	100
Finland	..	27	..	..	73	100

In France and the UK commercial conversion normally operates on a continuous basis, with no attempt being made to segregate.

The attached answer to a parliamentary question on enrichment services contains a table setting out enrichment capacity by country and another gives estimates of the sources of supply of enrichment services by customer country up until 1990. From this it is evident, for example, that uranium supplied to Finland will be enriched in the Soviet Union and that uranium supplied to Japan is most likely to be enriched in the United States.

It is interesting to note that the Australian Safeguards office recently spent A\$25,000 to acquire a mini computer "to assist recording movemnet overseas of Australian uranium ore through its various processes".

This is the estimate of enrichment services required over the period 1976-1990 inclusive, by country and source as a percentage of total expected deliveries:

SOURCE	USA	USSR	URENCO	EURODIF
France	10.3	10.6	0	79.0
United Kdm	0	11.5	88.5	0
Japan	83.4	0	0	16.6
FRG	46.6	31.1	21.1	1.2
Italy	6.7	14.5	0	78.9
Sweden	90.1	9.9	0	0
Switzerld	83.9	0	6.3	9.8
Finland	0	100	0	0

Canadian reactors do not require enriched uranium

source: Committee on Foreign Relations.
US Senate May 1977

The Minister for Trade and Resources was asked the following question in Parliament on 13th October 1981:

"In relation to export contracts for Australian uranium (a) who was the supplier, (b) who was the purchaser, (c) what quantity was involved, (d) what price was involved, (e) what was the expected or contracted annual export quantity and (f) where will conversion and enrichment be undertaken, for each contract concluded as at 12 October 1985 for export from 1975."

The Minister, Mr Anthony, replied: "In the period 1970-72, the then Government approved contracts for Australian companies to supply uranium to a number of overseas power utilities in Japan, the United States of America, and the Federal Republic of Germany with deliveries through to 1986. Since its decision in August 1977 to proceed with the further development of Australia's uranium resources, the Government has approved additional contracts

for the supply of Australian uranium to overseas utilities and companies by Australian

companies. Details of these contracts are as follows:

SELLER	BUYER	PERIOD	QUANTITY
<u>APPROVED 1972 OR EARLIER</u>			
Mary Kathleen Uranium Ltd	Commonwealth Edison Co (USA)	1976-85	2,125
Mary Kathleen Uranium Ltd	Tokyo Electric Power Co Inc (Japan)	1977-86	1,100
Mary Kathleen Uranium Ltd	Chugoku Electric Power Co Ltd (Jap)	1976-86	1,000
Mary Kathleen Uranium Ltd	Shikoku Electric Power Co Ltd (Jap)	1977-79	407
Mary Kathleen Uranium Ltd	Kernkraftwerke Brunsbuttel GmbH (Federal Republic of Germany)	1976-81	664
Energy Resources of Aust Ltd	Kyushu Electric Power Co Inc (Japan)	1977-86	2,000
Peko Wallsend Operations Ltd and Electrolytic Zinc Co Australasia Ltd	Chubu Electric Power Co Ltd	1977-82	1,300
Queensland Mines Ltd	Shikoku Electric Power Co Inc (Jap)	1977-85	2,230
Queensland Mines Ltd	Kyushu Electric Power Co Inc (Jap)	1977-83	1,000
<u>APPROVED SINCE 1977</u>			
Peko Wallsend /EZ	Korea Electric Co	1983-92	2,500
Queensland Mines Ltd	Teollisuuden Voima Oy (Finland)	1981-89	900
Peko Wallsend/EZ	Indiana and Michigan Electric CoUSA	1982-90	2,250
Energy Resources Aust	Rheinisch-Westfaelisches Electrizaetswerk (RWE) AG (FRG)	1982-96	9,094
ERA	Saarberg-Interplan Uran. GmbH (FRG)	1982-96	5,456
ERA	Urangesellschaft GmbH (FRG)	1982-96	5,820
ERA	Japan Australia Uranium Resources Development Co Ltd (Japan)	1982-96	13,413
ERA	Oskarshamnsverkets Kraftgrupp A.B. (Sweden)	1982-94	3,150
ERA	Synatome Societe Anonoyne (Belgium)	1982-94	1,575
Queensland Mines Ltd	Electricite de France	1982-88	2,600

In addition, Queensland Mines holds letters of intent with Japanese utilities for the supply of 1,790 short tons U308 between 1982 and 1988.

In each of the above contracts the quantities stated are nominal figures. Quantities under the contracts can vary up to 10%. There has also been a good deal of re-scheduling of delivery dates and quantities under the pre 1973 contracts and in some cases deliveries may be completed before the time scheduled.

Conversion will take place in Canada (Eldorado Nuclear Ltd), France (Comhurex), the United Kingdom (BNFL) and the United States of America (Allied Chemical Corp and/or Kerr-McGee Nuclear Corp) with enrichment in France (Eurodif), the USA (DoE) or the USSR (Technabsexport).

To preserve commercial-in-confidence information the Minister was unable to provide contractual information on pricing details.



DRAFT AGREEMENT INITIALLED FOR JABILUKA URANIUM

The draft agreement between the companies concerned and aboriginal interests has been initialled in the Northern Territory of Australia, March 1 1982.

According to the Financial Times, party to the agreement were the traditional aboriginal owners

of the land where the deposit lies, and Australia's Pancontinental Mining and Getty Oil of the U.S.

pancontinental, which has been trying to obtain permission to develop the site for 10 years, has 65% of the joint venture set up to exploit Jabiluka, Getty Oil has the remaining 35%.

Both sides have agreed not to announce the terms of the proposed deal yet, but it is expected to result in payments of several million dollars, plus royalties to the traditional owners. The agreement has still to be approved by the Federal Government and put to local Aborigines for further comment.

Pancontinental expects to begin mining at the end of May - after the wet season.

It is expected that mining - or at least construction, could begin by the end of the wet season in May, by Pancontinental Chairperson Tony Grey thinks that is a bit premature. He first wants to have the contracts.

Jabiluka is 150 miles east of Darwin right inside the Kakadu National Park. This park was established to protect land rights under the previous government, as this area is particularly sacred to the Aboriginal people of the region.

The Jabiluka mine would have a life of 25 years and produce A\$18 billion worth of uranium. Denison Mines, the Canadian company, now expects to be able to sign a similar agreement for the Koongarra uranium deposit, also within the boundaries of the Kakadu National Park. Denison however has first to organise a partner in Australia who will have at least a 75% ownership in the mine - to satisfy Australia's foreign investment guidelines.

Financial Times March 2 1982



SOUTH AFRICA SWITZERLAND AUSTRALIA - A LINK UP?

Two events, perhaps related, happened in the uranium trade in February:

- Australia announced it is about to sign a nuclear fuel supply agreement with Switzerland
- Switzerland agreed to supply enriched uranium to South Africa.

According to a report in "The Australian" newspaper of Feb 4, talks between Australia and Switzerland have tentatively come up with an agreement that Australia could supply Swiss nuclear plants in exchange for Switzerland supplying nuclear technology - probably enrichment technology, to Australia.

Put that beside the other news, that Switzerland will supply South Africa from its own supplies of enriched uranium, until South Africa itself can get uranium from the Valindaba enrichment plant under construction at the moment. That news we heard via the Nucleonics Week, information journal of the nuclear industry. NW suggested that the Swiss corporation, Kaiseraugst, would supply South Africa's two Koeberg nuclear power plants, built by Framatome near Capetown, with uranium not being used in the Swiss nuclear programme -- because the Swiss nuclear programme is presently having difficulties keeping its head above water. (Recently 25,000 people demonstrated in Switzerland against the government's delayed decision to build the Kaiseraugst nuclear power plant.)

NW said that one reason for the Swiss-South Africa purchase is to remove much of the leverage held by the U.S.A to force South Africa to comply with full-scale safeguards provisions in the nuclear non-proliferation act of 1978.

Switzerland continues to have collaboration with South Africa in the nuclear field. It is also scheming, through secret talks with the Australian government, to put one foot inside the door when the government comes to seriously discuss which company

it wants to partner its uranium enrichment programme. With things happening like these in the trade world, maybe we should also put the South Africa Uranium Enrichment Corporation on the list of companies wanting to "help" Australia out in this. So far it looks like Russia is the only one not making overtures.

NW, Feb 18 1982
The Australian, Feb 4 1982

CANADA AND JAPAN AGREE ON N-FUEL PACT

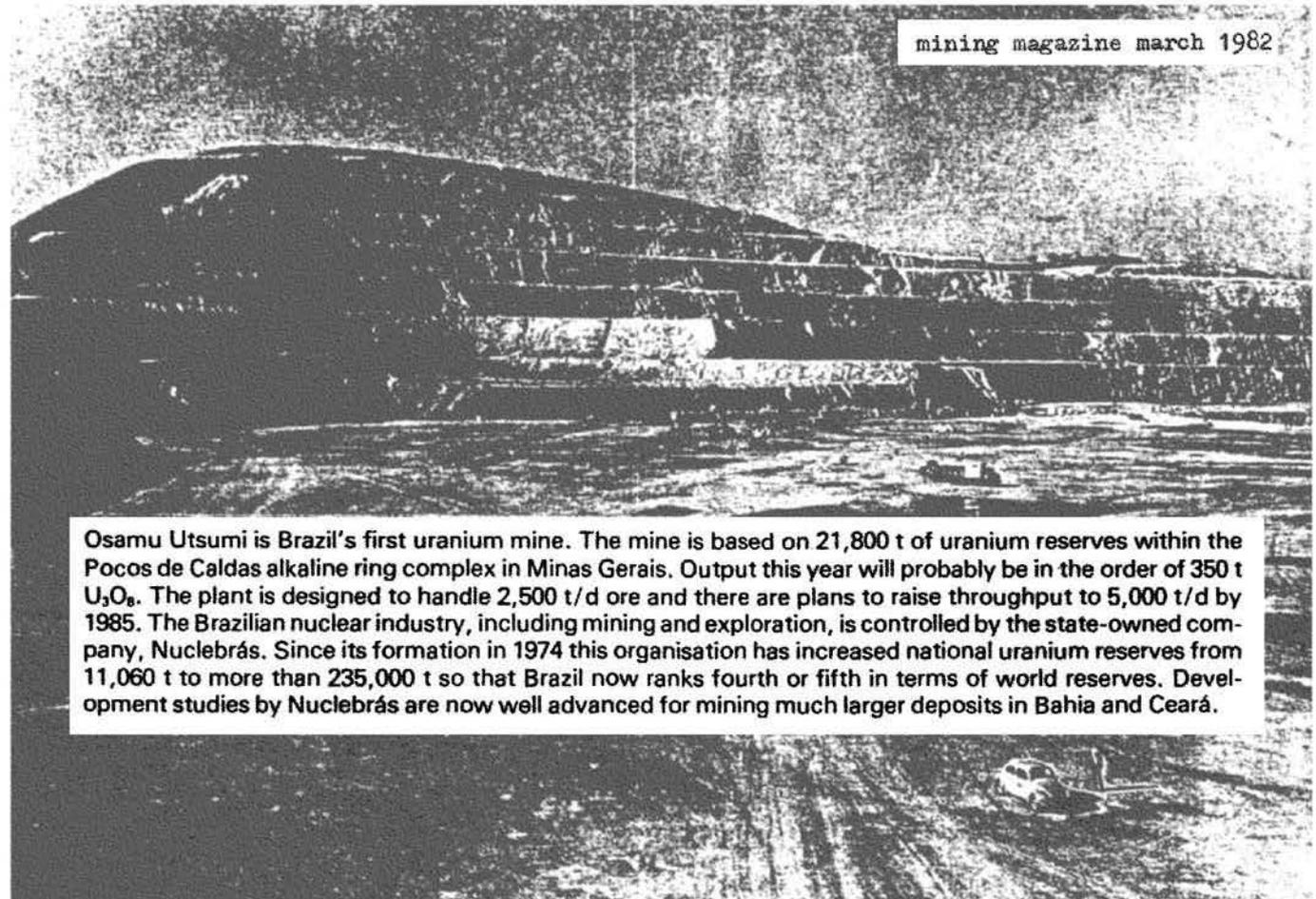
JAPAN: Canada has agreed to sign a long-term agreement with Japan under which the largest uranium supplier for this country will substantially ease restrictions on reprocessing of spent nuclear fuels, officials said 6 Feb 1982. Details of the agreement will be discussed between Science and Technology Agency (Japan) and Canadian officials in June.

Japan recently concluded a similar arrangement with Australia for the reprocessing of spent nuclear fuels.

Under the existing agreement concluded in 1978, Japan is required to obtain prior approval from Canada in reprocessing spent nuclear fuel in and out of Japan. According to the Canadian proposal, it is no longer necessary to obtain such prior approval. Japan will only be required to present Canada list of plants used for reprocessing spent nuclear fuels, including overseas commissioning, under the proposed long-term accord.

Officials speculate that Canada made the proposal because it did not want to lag behind Australia in these days when there is a huge excess of uranium on the world market.

Source: *Japan Times*, 7 Feb '82.
Contact: *WISE Tokyo*.



mining magazine march 1982

Osamu Utsumi is Brazil's first uranium mine. The mine is based on 21,800 t of uranium reserves within the Pocos de Caldas alkaline ring complex in Minas Gerais. Output this year will probably be in the order of 350 t U_3O_8 . The plant is designed to handle 2,500 t/d ore and there are plans to raise throughput to 5,000 t/d by 1985. The Brazilian nuclear industry, including mining and exploration, is controlled by the state-owned company, Nuclebrás. Since its formation in 1974 this organisation has increased national uranium reserves from 11,060 t to more than 235,000 t so that Brazil now ranks fourth or fifth in terms of world reserves. Development studies by Nuclebrás are now well advanced for mining much larger deposits in Bahia and Ceará.

scientific studies

...Where we left off last time

where human lungs were irradiated were not only consistent with the observations of lung cancer in uranium miners, but indicate that excess lung cancer occurs at lower radiation levels than could be adequately studied among [U.S.] uranium miners.' The statistical data derived by the Commission on the basis of analysis of samples are consistent with the foregoing conclusions."

- regarding the obligations to workers and their families: "The Commission sees no excuse for not telling working people the truth, however difficult and imperfect that may be. Nor is it tolerable that there should be no forum in which representatives of workers can engage other parties in the responsibility system in frank deliberation over the risks to health involved in work."
- the Commission makes numerous recommendations based on its analyses.
- hundreds of references.

- 25) Haque, A.K., and Collinson, A.J., "Radiation dose to the respiratory system due to radon and its daughter products, Health Physics, 13: 431-443, 1967.

- radiation is highest in segmental bronchi.
- at levels of 10.1×10^{-12} Ci/l (about 1/3 the MPC for a 40 hour week as recommended by the ICRP - 1956), the dose at a depth of 30 microns (a basal cell) is 13.8 rads, and with a quality factor of 5, the rem dose is 69 rem, much higher than the maximum of 15 recommended by the ICRP for limited exposure of internal organs.
- at existing MPC value (3×10^{-11} Ci/l) the dose is 41 rad and even taking excellent ventilation into account cannot be lower than 25 rad (125 rem), which is much higher than the maximum recommended 15 rem for an individual organ.
- good mathematical and statistical study with 60 references.

- 26) Hearings before the Subcommittee on Research, Development and Radiation, of the Joint Committee on Atomic Energy, "Radiation Standards for Uranium Mining", March 17, 18, 1969, and "Radiation Exposure of Uranium Miners", May 9, 10, 23, June 6-9, July 26 and 27, August 8 and 10, 1967. U.S. Government Printing Office, Washington, D.C.

(-increased radiation exposure produces increased lung cancer).

- 27) Hewitt, D., "Radiogenic lung cancer in Ontario uranium mines, 1955-1974", Commission Project Document, May 1976. (in Report of the Royal Commission on the Health and Safety of Workers in Mines).

-population 15,094 workers - shows 81 lung cancer deaths versus 45.08 expected, violent accidents 400 versus 212.38 expected, arteriosclerotic heart disease 195 versus 287.69 expected, the latter possibly due to medical fitness selection of miners.

- U.S. level in mines approximately 10 times greater radiation than Ontario mines.
 - highest exposure in Ontario 375 WLM before death.
- 28) Holoday, D.A., Evaluation and Control of Radon Daughter Hazards in Uranium Mines, Washington, D.C., U.S. Department of Health, Education and Welfare, No. [NIOSH] 75-117, November 1974.
- (-U-238 produces radon and daughters which account for most radioactivity in uranium mines, especially radon (Rn-222 producing alpha rays, half-life = 3.8 days), Radium A (Po-218 producing alpha rays, half-life = 3 minutes), Radium C' (Po-214 producing alpha rays, half-life less than 1 second).)
- 29) Holoday, D.A., Doyle, H.N., "Environmental Studies in the Uranium Mines", Radiological Health and Safety in Mining and Milling of Nuclear Materials, Vienna; International Atomic Energy Agency, Volume 1, 9-20, 1964.
- U.S. Public Health Service study from 1950-1963 of various uranium mine radon levels and miner exposures.
 - 1952: greater than 44% of early mines had WL of greater than 10 WL radon concentration, less than 16% had radon concentration less than 0.49, 23.3% had radon concentration from 2.5 to 10 WL.
 - 1962 approximately 4% of mines had WL of greater than 10 WL radon concentration, approximately 33% had radon concentration less than 1.0, 29% had WL between 3 - 10 WL radon concentration.
 - "In many mines the atmospheric concentrations of radon daughters still exceeded the recommended levels."
 - "The use of dilution ventilation as the sole method of control has reached the point of diminishing returns."
- 30) Jacobi, W., "The dose to the human respiratory tract by inhalation of short lived Rn-222 and Rn-220 decay products", Health Physics, 10: 1163-1175, 1964.
- the Findeisen and Landahl model is considered inadequate.
- 31) Lorenz, E., "Radioactivity and lung cancer; a critical review of lung cancer in the mines of Schneeberg and Joachimsthal", Journal of National Cancer Institute, 5 (1): 1-16, August 1944.
- primary cancer of the lung (1875-1939) = 43%, (1921-1939) = 52% of deaths in miners.
 - a review of many early studies done on those miners with various factors being blamed for the carcinogenesis.
 - daily radon concentrations estimated at 3,000 pCi/l of radon.
- 32) Lundin, F.E., Archer, V.E., Smith, E.M., and Wagoner, J.K., "Lung cancer among U.S. uranium miners: current assessment of risk", presented to the American Public Health Association, Miami, Florida, 1967.
- (-risk estimates have increase over time.)
- 33) Lundin, F.E., Lloyd, J.W., Smith, E.M., Archer, V.E., and Holoday, D.A. "Mortality of Uranium miners in relation to radiation exposure, hard rock mining and cigarette smoking - 1950 through September 1967", Health Physics, 16: 571-578, 1969.
- studied 3,414 white underground uranium miners and 761 non-white.
 - 398 deaths versus 251 expected; violent 120 versus 50.5 expected respiratory tract malignant neoplasms 62 versus 10 expected.

- prior hard rock mining had little overall effect on lung cancer incidence.
 - smoking alone would not explain the marked excess.
 - higher cumulative exposure levels related directly to increased incidence of cancer.
 - 60 respiratory cancer deaths were observed among smoking white uranium miners versus 15.5 expected in a smoking non-uranium mining sample, therefore a 4 fold increase.
 - non smoking uranium miners have 1.7 excess respiratory cancer deaths per 10,000 person-years versus cigarette smoking uranium miner excess of 17 per 10,000 person-years.
 - smoking differences among them could not account for the progressively increasing cancer risks as radiation exposure increased.
 - excess lung cancer was noted down to less than 120 WLM (p less than 0.01).
 - an excellent, comprehensive analysis.
- 34) Lundin, R.E., Wagoner, J.K., Archer, V.E., "Radon Daughter Exposure and Respiratory Cancer: Quantitative and Temporal Aspect", NIOSH-NIEH, Joint Monograph #1, Springfield Virginia, National Technical Information Service, June 1971.
- (increased lung cancer in uranium miners due to radon and daughters,
 - increased lung cancer down to 120 - 359 WLM category, and other studies indicate excess cancer at even lower levels.
 - dose rate does not influence cancer risk at 120 - 359 WLM.
 - extensive statistical analysis.)
- 35) Milham, S., "Workers dying from cancer and other causes", Occupational Mortality in Washington State 1950-1971, HEW publications # (NIOSH 76-17, volumes A, B, and C), 1976.
- 36) Miller, H.T., "Radiation Exposures associated with surface mining for uranium", Health Physics, 32 (6): 523-527, June 1977.
- hazards from beta and gamma radiation; uranium dust and surface contamination in open pit mining are about the same as for underground mining.
 - main difference is the very low radon and radon daughter exposure.
 - gamma radiation dose equivalent is approximately 60 - 170 mrem/hr.
 - alpha: radon concentrations in the pit are less than 10 pCi/l.
 - radon daughter concentration is less than 0.3 WL and average rate on daughter concentration is less than 0.06 WL.
 - maximum uranium airborne concentration = 1.7 mg/m³.
 - a 6 month study.
- 37) Muller, J., Wheeler, W.C., "Causes of death in Ontario uranium mines (second report)", May 1974.
- development of the Nominal Roll.
 - 41 lung cancer cases in 8,000 miners (1955-1972) gave an excess of 28 over the 13 lung cancer expected deaths.
 - persons on the uranium Nominal Roll have increased risk of lung cancer in Ontario. Risk increased with cumulative exposure and linear hypothesis is consistent.

- Bancroft: risk of miners = 2.2 X the normal chance of lung cancer.
- "there is now no longer any real question of recommending a level of exposure to ionizing radiation that in the light of present knowledge can be considered absolutely safe."
- "direct epidemiological evidence in the circumstances of exposure of the particular working population is considered to provide the best basis upon which to review the standard for exposure to radiation."
- disagrees with the conclusions of Stewart and Simpson.
- previous work history shows exposure to less than 1 WLM/annum in Ontario non-uranium mines.
- the Nominal Roll provides no evidence supporting the hypothesis of a threshold of exposure below which there is not significant excess risk.
- must have "regard to the human risks that are acceptable in return for the benefits of nuclear power" (based on - accidents and lung cancer risk).
- "in the absence of evidence of a threshold below which it may be presumed that there is no risk, it is prudent to assume that the risk of excess lung cancer increases with ionizing radiation from zero exposure."
- sputum cytology is not suited to massive application in occupational medicine.

38) National Academy of Sciences, The Effects on Populations of Exposure to Low Levels of Ionizing Radiation: Report of the Advisory Committee on the Biological Effects of Ionizing Radiation (BEIR report), November 1972.

- "The doubling dose [for genetic defects] for chronic radiation is estimated to fall in the range of 20 - 200 rem."
- "It is calculated that the effect of 170 mrem per year (or 5 rem per 30-year reproduction generation) would cause in the first generation between 100 and 1,800 cases of serious, dominant or X-linked diseases and defects per year (assuming 3.6 million births annually in the U.S.)", and about 5 fold larger incidence at equilibrium.
- "Added to these would be a smaller number caused by chromosomal defects and recessive diseases."
- "In addition to those . . . caused by single-gene defects and chromosome aberrations are congenital abnormalities and constitutional diseases which are partly genetic. It is estimated that the total incidence from all these including those above, would be between 1,100 and 27,000 per year at equilibrium(again, based on 3.6 million births.)"
- "The Risk in Terms of Overall Ill-Health. The most tangible measure of total genetic damage is probably 'ill-health' which includes but is not limited to the above categories. It is thought that between 5% and 50% of ill-health is proportional to the mutation rate. Using a value of 20% and a doubling dose of 20 rem, we can calculate that 5 rem per generation would eventually lead to an increase of 5% in the ill-health of the population. Using estimates of the financial costs of ill-health, such effects can be measured in dollars if this is needed for cost-benefit analysis."
- Such calculations based on these data from irradiated humans lead to the prediction that additional exposure of the U.S. population of 5 rem per 30 years could cause from roughly 3,000 to 15,000 cancer deaths annually, depending on the assumptions used in the calculations."

-Some recommendations were: "The public must be protected from radiation but not to the extent that the degree of protection provided results in the substitution of a worse hazard for the radiation avoided."

"There should be an upper limit of manmade non-medical exposure for individuals in the general population such that the risk of serious injury from somatic effects in such individuals is very small relative to risks that are normally accepted. Exceptions to this limit in specific cases should be allowable only if it can be demonstrated that meeting it would cause individuals to be exposed to other risks greater than those from the radiation avoided."

"Medical radiation exposure can and should be reduced considerably by limiting its use to clinically indicated procedures utilizing efficient exposure techniques and optimal operation of radiation equipment."

"In addition to normal operating conditions in the nuclear power industry, careful consideration should be given to the probabilities and estimated effects of uncontrolled releases."

-In General: "Concern about the nuclear power industry arises because of its potential magnitude and widespread distribution. Based on experience to date and present engineering judgment, the contribution to radiation exposure averaged over the U.S. population from the developing nuclear power industry can remain less than about 1 mrem per year."

[Not only does this figure either spread out the higher worker exposure over the general population or not include them at all but this figure must be based on the premise that "if everything goes perfectly well then everything will go perfectly well".

Its calculation must be providing that:

- there are no transportation accidents or hijacking,
- that there are no accidental serious reactor releases, accidents or sabotage,
- that no-one builds a reactor or uranium mills or reprocessing plants in major earthquake areas,
- that no country which buys a reactor and develops nuclear weapons ever uses them,
- that waste disposal methods are developed for tailings as well as reactor waste,
- that there is no environmental contamination from storage of such waste,
- that "no reactor fuel processing plant or repository anywhere in the world is situated in a region of riots or guerrilla activity, and no revolutions or war - even a 'conventional' one - takes place in these regions. The enormous quantities of dangerous material must not get into the hands of ignorant people or desperados. No acts of God may be permitted." (Hannes Alfvén (Nobel Laureate in Physics, 1970), Bulletin of the Atomic Scientists, May 1972.)]

- "Whether we regard a risk as acceptable or not depends on how avoidable it is, and, to the extent not avoidable, how it compares with the risks of alternative options and those normally accepted by society."

this section next time further...