

KIITG

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



SUBSCRIPTIONS

A subscription to the Keep It In The Ground costs £25 for individuals (\$5.00, \$12.50) and £50 for institutions per year (10 issues).

Up until this stage the KIITG expenses have been financed by the Smiling Sun Foundation, Novib and NCO. This year we are facing the big problem: they are most likely unable to continue funding us. This means that to continue to publish KIITG, we have to ask our friends and readers for more assistance. Several donations of £100 would be very wonderful.

GIRO: 4088285

Look on the back cover for your nearest relay. If there is no relay in your area, subscribe direct via WISE Amsterdam.

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.



WISE is financed in part by international sales of Smiling Sun buttons and stickers. For every button you buy, ± 70% goes to the local group selling the button and 10% goes to WISE to help finance the international information service. Use the Smiling Sun, now available in over 40 languages, to help finance your local group and support WISE at the same time.

For enquiries about sales of Smiling Sun materials in your country or region please write to:
OOA, Ryegade 19, 2200 Copenhagen N, Denmark.

wise

World Information Service on Energy

WISE was set up by safe energy activists in 1978 to function as an international switchboard for local and national safe energy groups around the world who want to exchange information and support one another.

WISE now has relays in 11 countries and a worldwide network of grassroots contacts.

We are funded by the anti-nuclear movement through sales of the Smiling Sun symbol 'Nuclear Energy? No Thanks'.

For information on WISE publications and on how to become a member or give financial support contact:

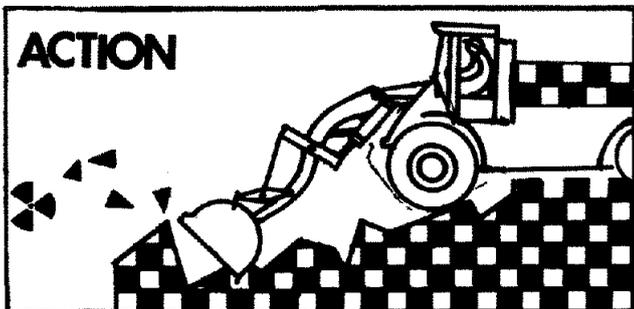
WISE-Amsterdam, Blasiusstraat 90,
1091 CW Amsterdam, The Netherlands,
Tel.: 020-924264, Post Account:
40.88.285

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.

TABLE OF CONTENTS

ACTION	Oglala (USA), Big Mountain, New York Water, Honeymoon, Nova Scotia, South Africa/ Netherlands.....	3-6
TRANSPORT	Japan, Australia.....	6-10
EXPLORATION	USA, resource.....	10-12
TAILINGS	USA.....	12-14
RESOURCES.....		14
THE GULLIVER FILE	Industry News.....	14-16
SCIENTIFIC STUDIES	From Physicians for Social Responsibility.....	16-19
BACKPAGE	WISE Addresses	



OGLALA TRIBE LOSES COURT BATTLE FOR THE BLACK HILLS

The court battle launched by the Oglala Sioux Tribe (one of the Lakota Nations) of Pine Ridge, South Dakota, in their efforts to reclaim the Black Hills, ended Monday January 18, when the U.S. Supreme Court refused to hear their appeal. The appeal was from lower court rulings limiting the Lakota (Sioux) Nations to a cash settlement rather than the land itself. The tribe's lawyer, Russel Barsh, said that the focus of the continuing battle to reclaim the lands would now shift to the United Nations where, since 1980, the Human Rights Commission has been investigating a charge by the Lakota that the U.S. government's handling of the Nation's claim violates international law.

The case was filed in July 1980, several weeks after a Supreme Court decision, stating that the Black Hills had been wrongfully taken from the Lakota Nations, awarded them \$17 million plus interest for a total of \$105 million. Many Lakota people rejected the payment, asking for an injunction to prevent the federal government from distributing the money. The Lakota people want the land, their sacred "Paha Sapa", and asked that the land now owned in that area by the federal government (about 80% of the Black Hills) be returned. The other 20% of the land covered under the 1868 Fort Laramie Treaty would remain in the hands of the farmers and ranchers who now occupy it.

In addition to demanding the return of the land, the July 1980 lawsuit sought \$10 billion in compensation for the removal of non-renewable resources as well as \$1 billion in additional damages for "hunger, malnutrition, disease and death".

While massive exploitation of the minerals were carried out under the auspices of the U.S. government, the Lakota Nations were pushed into poverty and forced to live in small spaces on the once huge reserves. Uranium-tailings have contaminated the aquifers that lead to the reservation (and farmers') wells. Unusually high rates of spontaneous abortions (6½ times the national average), cancer and genetic defects and breathing complications in newborns prevail among the people of Pine Ridge. The Lakota holy land has been spoiled by gold, uranium, and land speculators.

In their Supreme Court appeal, the Sioux argued that the lower court rulings had deprived them of a meaningful remedy for an acknowledged deprivation of Constitutional rights. The Supreme Court's failure to overturn those rulings will, according to their legal brief, "shake the permanence and enforceability to the civil rights of all Americans". The Supreme Court Justices made no comment on the decision.

The American system of "checks and balances" assigns court responsibility for reviewing complaints that Congress has disregarded the Bill of Rights. The First and Fifth Amendments forbid Congress to take private property for essentially private purposes, or where the taking substantially impairs religious freedom. The Oglala Sioux contend that the confiscation of the Black Hills destroyed their church, and had no "public" purpose. It gave a vast wind-fall to fortune hunters who earlier entered the area in violation of federal law to stake mining claims -- including George Hearst, founder of the Hearst dynasty, whose Homestake Mining Company had taken \$100 million out of the Hills by 1900 and \$1 billion by 1980.

The Court's decision opens the way for huge strip mining projects for both coal and uranium, a massive physical assault opposed by regional environmentalists and ranchers as well as the Native Americans. Direct beneficiaries of the decision include Union Carbide, United Nuclear (a division of Homestake), and the TVA (Tennessee Valley Authority), participants in a plan to develop a chain of uranium mills and nuclear reactors in the Hills. Exploratory operations already have destroyed rock formations

and shrines sacred to the Sioux people.

The attorneys for the Oglala, Mario Gonzalez and Russel Barsh, have made clear that the fight for the Hills in the Courts - especially internationally, will continue. "The time will come", warned Gonzalez, "that Americans will receive the same hostile reception abroad as White South Africans. Perhaps that will jolt Congress into taking action to deal with this issue like a responsible government anxious to keep the respect of its dwindling number of allies. We regret this case will provide fuel for anti-American sentiments abroad, but that will be the inevitable consequence".

"The Court's decision was flagrantly political," co-counsel Barsh said, "and the American people have a right to know that it puts their own civil liberties in peril." For the first time in the nation's history, he explained, Congress may limit or abolish civil liberties without fear of judicial intervention. "The Sioux are only the first. Tomorrow, Congress may snatch away the rights of women, or blacks, or the poor in this country, and send them Treasury checks, say, \$500 for the right to vote, or \$200 for free speech. If the present conservative Administration is tempted to subvert the Bill of Rights, now is their chance."

Throughout these court proceedings, the Hills have remained occupied by the Crazy Horse and the Yellow Thunder groups. In the last week of February the question of the legality of the Yellow Thunder Camp will go before a Federal District Court judge. Should the Court decide against the Lakota, specially trained troops of U.S. marshalls are standing by with helicopters, gas and weapons to remove the people of Yellow Thunder Camp.

To support the Camp, Greenpeace and the American Friends Service Committee have organised an Emergency Mobilisation Network. This will bring a number of supporters to the site in times of emergency, and if necessary make it possible, by non-violent means, to blockade the marshalls. The plan is to set up "Buffer Zones" surrounding the Yellow Thunder Camp.

contact: Oglala Sioux Legal Department
PO Box 862, Pine Ridge, SD 57770
USA tel *605 (867-5197)

BIG MOUNTAIN ALERT

In October last year the Bureau of Indian Affairs notified more than 9000 Dine (Navajo) residents of the Joint Use Area of the Navajo and Hopi reservations that as of January 1982, only 249 of them would be permitted to continue grazing livestock. These Dine are presently living on one million acres of land which the government has designated as Hopi Partitioned Lands (HPL) from which they are to be removed by 1986, according to the Navajo Hopi Land Dispute Act of 1974. This law's amendments P.L. 96-305, requires that stock reduction be completed by January of 1982. Several attempts to repeal these laws have failed.

Louise Benally, who is facing federal charges relating to obstruction of the completion of a barbed wire fence partition in 1980, states that "the people will not allow the livestock to be impounded. If they impound the sheep they will have to impound the people. The people will resist."

The Big Mountain Dine Nation has also written to WISE, asking us to pass the following message on to friends who wish to send financial support and letters of support: please get in contact with the Big Mountain Dine Nation itself, and not through the American Indian Environment Council. Apparently the messages do not come through via that channel.

*Big Mountain Dine Nation
c/o Kee Shay
Box 203 Orailir, AZ 86039 USA*

*OR
Larry Anderson
Box 342, Fort Defiance, AZ 86509*

TO PROTEST THE RELOCATION

*Ted Krenzke, B.I.A.
1951 Constitution Ave, NW
Washington DC 20245*

*Percy Deal
Chair, Navajo Land Dispute Committee
Navajo Nation
Window Rock, AZ 86515 USA*



NEW YORK CITY WATER IN DANGER

Last month we carried a small story on this rather chilling, Gulf Oil plan to mine uranium in the area of water reservoirs serving New York City - as well as the local area. Here is more information, on both the mining and the opposition.

Gulf Oil originally purchased the mineral rights to 164 acres of rolling hilltop near South Fallsburg, NY, but now the lease has been expanded to 430 acres. This land is located above one hotel and another is opposite - both cater for tourists all year round.

Ironically, the lease is on the site of an egg farm and just upstream is the Neversink River. The Neversink is one of the four reservoirs which make up the complex Delaware Water System, which supplies New York City residents with 50% of their drinking water. As leases are expanded and new ones taken out, city drinking water becomes threatened.

The Delaware System draws water from the Cannonsville, Pepacton, Neversink and Rondout Reservoirs. Total capacity of the system is 320.4 billion gallons of water. The Delaware has two tunnels, the East and the West, which join at the Rondout, then cross the Catskill system and go on to feed into the Croton System before reaching to New York City.

Possible contamination of the Neversink could result if leases are taken upstream from South Fallsburg. This mining could seriously damage most of the water supply of New York City since the Delaware System drains into the Croton. The Croton System supplies the City with 10% of its water. If droughts, similar to the one which occurred in the summer of 1981, become more commonplace, water will become a most precious resource. The risk of radioactive contamination can not be afforded.

As far as area citizens have been able to determine, exploration has not begun on the leased property near South Fallsburg. Yet the fact that another parcel of land has been leased, is not reassuring. To date, Vermont and New Jersey have passed uranium mining bans after several communities were threatened. In December of 1980, the town of Warwick, NY, permanently banned exploration and mining of uranium ore which caused Exxon and Chevron to abandon test sites.

Several areas, which include north-east New Jersey and Southwest New York, are part of a 1000 square mile area called the Reading Prong. The area in which the Reading Prong is located is known to geologists as the Scranton Quadrangle. In a National Uranium Resource Evaluation (NURE), the Bendix Field Engineering Corp has listed several areas which seem to be favourable for uranium exploration in New York. These sites show that there could be as much as 20,000 lbs of uranium ore available at each site.

Communities impacted by this study should consider looking into the possibility that leases to mineral rights may have been taken out around these areas. Citizens should also consider working with their town council to pass exploration and mining bans before companies like Exxon, Chevron and Sohio lease property. On the state level, citizens are asked to write to their senators asking for their support on proposed legislation to ban uranium exploration and mining. In particular, residents of Ulster, Orange and Sullivan counties should write Senator Richard Schermerhorn to support a uranium ban. Activists in the New York City area should contact Friends of The Earth (tel 212- 675-5911) to join their meetings of the New York State Coalition Against Uranium Mining.

source The Waste Paper vol 4 No 1 (1982)
3164 Main Street, Buffalo, NY 14214.



THE HONEYMOON OVER BEFORE IT BEGINS?

The Campaign for a Nuclear Free Australia is organising a week of action and occupation of the HONEYMOON (BHP) uranium mine in South Australia in May. The mine is operating at the pilot stage, using leach (in situ) method. The week of action begins May 8, and will be an information forum. On May 14 there will be a public meeting in the town hall, and then the occupation of the site will begin. Organisers are looking for information on the in situ process - please send that to Nick Thieberger, 7 Fulham Rd, Alphington 3078, Victoria, Australia.

ANTI URANIUM MINING GROUP INCORPORATES IN NOVA SCOTIA

Citizens Against Uranium Mining, a Chester (NS) based public membership group, was formally incorporated as a non-profit society at its Annual Meeting on January 20. What they plan to do with this society is to bring about a moratorium on uranium exploration in Nova Scotia and to prevent mining from taking place. CAUM plans to continue its educational work to alert people to the dangers of uranium mining and the nuclear fuel cycle.

A permanent moratorium is the goal.

Uranium exploration in Nova Scotia is presently tapering off because pre-election promises to temporarily suspend issuance of new licenses or renewals is in effect pending hearings to be held by a select committee of the Legislature have been given. This committee, which was disbanded by the election call before it had taken any action, has recently been replaced by a Judge, Robert McCleave, to conduct a "public inquiry".

The original committee did not include the health or environment ministries, only development ministries.

CAUM was greatly encouraged in its activities by the announcement of the doctors group, the Nova Scotia Medical Association, who voted unanimously at the end of last year to urge the provincial government to put a stop to uranium mining.

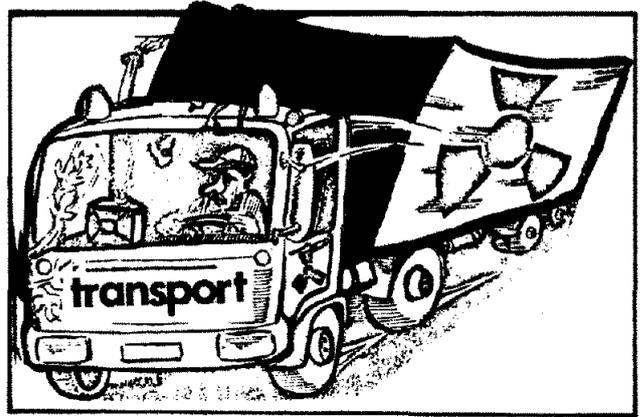
*Citizens Against Uranium Mining
PO Box 281
Chester, Nova Scotia, Canada
tel 275-3361*

CAMPAIGN AGAINST NUCLEAR CONTACT BETWEEN SOUTH AFRICA AND THE NETHERLANDS

The Anti Apartheid Movement in the Netherlands is sending an open letter to the Dutch government protesting the illegal transport and enrichment of uranium from Namibia in the Netherlands. In March the Dutch Parliament will discuss its foreign policy.

Meanwhile, since the November meeting of the anti nuclear and anti apartheid groups in the Netherlands, several groups are researching transport routes of Namibian and other uranium through the country.

contact: Anti Apartheids Beweging Nederland
Postbus 10500, 1001 EM Amsterdam
Netherlands. tel (020) 237335



1000 KM PROTEST AGAINST NUCLEAR FUEL TRANSPORT

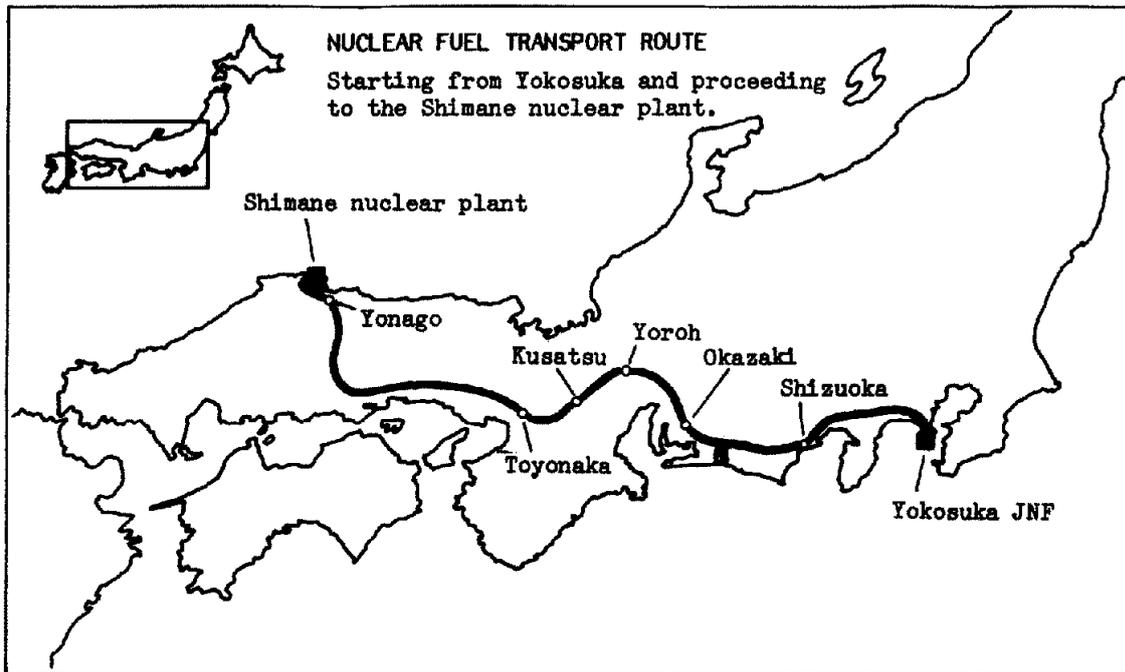
On November 10, 81, 103 nuclear fuel rods were loaded onto 13 trucks from the Japan Nuclear Fuel Service in Yokosuka (home port of the Midway of the U.S. 7th Navy fleet), and transported to the Shimane nuclear plant. About 40 resident groups along the 1000 kilometer route participated in various actions to observe and block the transport. However, the security was very tight under extremely heavy guard. This year's protest action against the transport to Shimane was the largest of the previous four years.

In Japan, the "beginning of the nuclear chain" is the transport of nuclear fuel rods. Most of Japan's fuel is processed for use in the power plants in the U.S.A.

A day prior to departure, about 20 people from Shimane and Kansai regions visited the Chugoku Electric Co., which operates the Shimane plant, and the Shimane prefectural government, to demand the cancellation of the dangerous transport. At the same time, people led by the Yokosuka Citizen's group also went to JNF to make the same demand.

At 3 pm on November 10, the trucks leaving JNF in Yokosuka were met by a group of 70 workers, citizens and students, but these people's protests were suppressed by riot police and most of them were slightly injured. The trucks took a detour to avoid the protest, and police checked all those who tried to follow the trucks. One person was detained in a coffee shop for 30 minutes.

From Shizuoka prefecture to Hamaoka, where the Citizen's Group Against the Hamaoka Nuclear Plant kept watch, to Okazaki, where a group took part for the first time, to Nagoya, where the Anti-Nuke Kinoko-no-kai (Mushroom Group) carried on, police tried to prevent any protest. Yet at the Yoro Intersection on the Meishin Highway, the Kinoko-no-kai managed to hand



out flyers to the truck drivers asking them to support the protest. In Shiga prefecture, a councilman even took part in the watch but the police closed off the Kasatsu Intersection to prevent the followers from entering. Public Workers Union members in Toyonaka City were picked up the watch there, and later groups from Kurashiki and Yonago, took over when the trucks turned off at the Ochiai Intersection to go through the Chugoku area. After passing through Matsue, the trucks arrived at the Shimane plant at 11 am of the 12th, as scheduled.

Workers in Matsue City held a protest rally and a march was attempted by 60 citizens, but riot police prevented them from it. Along the entire route, riot police suppressed the protests under guise of preventing a hijack of the fuel, but the protests drew sympathy from many ordinary citizens. The mass media also began taking up the issue.

We particularly want this information to reach our readers in France. Spent fuel from the Oi nuclear power plant is now in France, as is fuel from the Hamaoka plant.

contact: No Nukes News Japan
c/o JISHU-KOZA
1-3-7 Mukogaoka, Bunkyo-ku
Tokyo, Japan 113 tel 03-815-1648



AUSTRALIAN COUNCIL OF TRADE UNIONS
MEDIA RELEASE Dec 8 1981

The ACTU Executive after considering a report of the meeting of unions concerned in the mining, milling and export of uranium held on Thursday 26th November 1981 and a report on discussions in Darwin on the 1st and 2nd December 1981 and the recommendations arising from meetings of transport workers, seamen and water-side workers in Darwin including the call for a Special Federal Unions Conference as early as practicable in the New Year for the purpose of considering the application of present ACTU policy and the recommendations made by the Darwin meetings, DECIDES:

Having regard to the view expressed by the unions involved in the meeting on the 2nd December 1981 the Executive recommends to the Waterside Workers Federation of Australia and the Seamen's Union of Australia in respect of Brisbane and the Transport Workers Union, Seamen's Union of Australia and the Waterside Workers Federation of Australia in respect of Darwin, that subject to the normal union labour being utilised that uranium products be handled for export, pending further consideration at the next ACTU Executive meeting. In order to prepare a full report of the circumstances and ways in which ACTU policy is being implemented in respect to uranium mining and

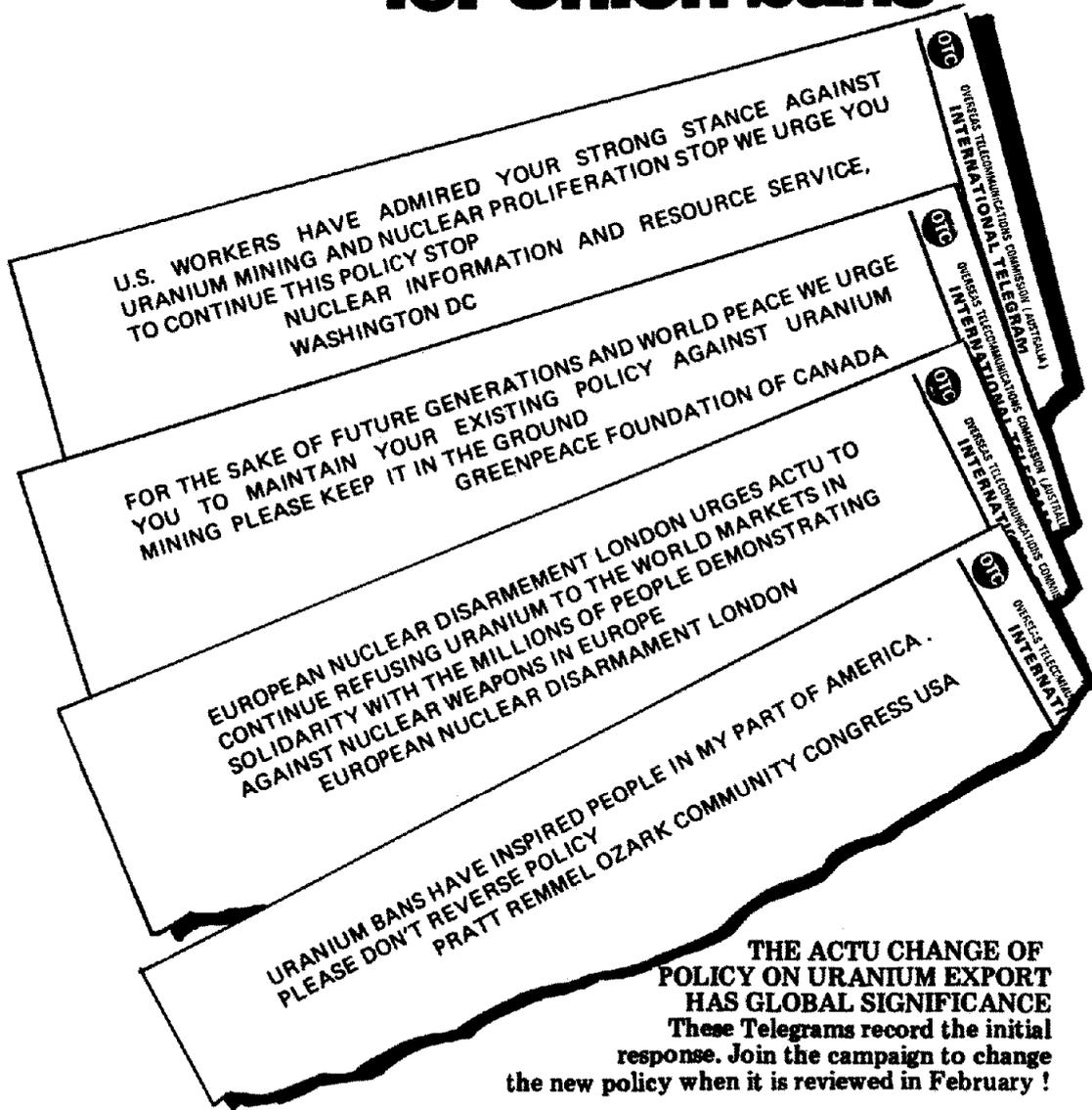
milling and the options facing the ACTU, a Working Party comprising ACTU Officers and a representative from unions directly involved shall be constituted. The Working Party shall report to the next Executive. The Executive in the light of that report will consider the holding of a Special Federal Unions Conference or a Special ACTU Congress.

The ACTU calls on all affiliates to guarantee maximum industrial and financial support to any affiliate attacked under the provisions of the Trade Practices Act for carrying out policy related to this matter.

ACTU, 254 La Trobe Street, Melbourne, Vic
tel (03) 347 3966 Australia

**The meeting of the ACTU Executive to discuss the Working Party report will be held March 9-12 - this is a postponement on the originally stated date of February. The Australian activists against uranium mining, including many unionists, would welcome all letters of support for the old policy - send them to John Speight, Amalgamated Metalworkers and Shipwrights Union, (he is also involved in the Movement Against Uranium Mining, so we give that address), 250 George Street, Fitzroy 3065 Vic.*

International support for Union bans



AMERICA

STRONGLY SUPPORT ACTU ANTINUCLEAR POLICIES
REGINA GROUP FOR A NON NUCLEAR SOCIETY
SASKATCHEWAN ECOLOGY ALLIANCE, CANADA

THE CANADIAN COALITION FOR NUCLEAR RESPONSIBILITY SUPPORTS YOUR
CURRENT POLICY ON URANIUM STOP WE STRONGLY URGE YOU TO
CONTINUE THIS POLICY.
CCNR MONTREAL, CANADA

WE FIRMLY SUPPORT YOUR PRESENT ANTI NUCLEAR POLICIES AND URGE
YOU TO CONTINUE FIGHTING.
INTERCHURCH URANIUM COMMITTEE SASKATCHEWAN CANADA

FRIENDS OF THE EARTH/USA URGES THE ACTU TO MAINTAIN ITS BAN ON
URANIUM MINING. A REVERSAL OF THIS HISTORIC BAN WILL BE A BLOW TO
WORK FOR PEACE AND AGAINST NUCLEAR POWER WORLDWIDE. IN THE
SPIRIT OF SOLIDARITY WE URGE YOU TO RECONSIDER LIFTING THE BAN.
F.O.E. (USA)

YOUR STRUGGLE STRENGTHENS US ALL. MAINTAIN BANS. LEAVE URANIUM
IN GROUND.
NORTHERN SUN ALLIANCE MINNESOTA USA.

WE OF THE BLACK HILLS ALLIANCE SUPPORT YOUR CURRENT POSITION
BARRING URANIUM MINING AND TRANSPORTATION. WE SALUTE YOUR
COURAGEOUS AND TIMELY STAND AGAINST THIS DEVELOPMENT. YOUR
COURAGE GIVES US STRENGTH TO CONTINUE IN OUR STRUGGLES.
BLACK HILLS INDIAN ALLIANCE, USA

PACIFIC

PACIFIC CONCERNS RESOURCE CENTRE ENDORSES ACTIONS OF UNION
ATTEMPTS TO IMPLEMENT ACTU POLICY ON URANIUM AND URGES
ACTU EXECUTIVE TO CONTINUE SUPPORT OF BANS ON EXPORT OF YELLOW
CAKE. WE LOOK WITH HOPE TO YOUR CONTINUED LEADERSHIP FOR
NUCLEAR FREE PACIFIC AND WORLD.
PCRC STEERING COMMITTEE, HAWAII

ACTU'S POLICY AND ACTIONS AGAINST URANIUM MINING AND EXPORT
HIGHLY APPRECIATED. PLEASE HOLD YOUR STRONG POSITION TO KEEP
WORLD NUCLEAR-FREE SOLIDARITY
NO-NUKE NEWS JAPAN/JISHU-KOZA
ROMAN BEDOR / BELAU-PACIFIC-CENTRE

UNITED KINGDOM

CONTINUE BANS ON URANIUM KEEP OUR WORLD FREE FROM NUCLEAR
DEATH NO POWER STATIONS MEANS NO BOMBS.
SCOTTISH COALITION RESISTING THE ATOMIC MENACE (SCRAM) SCOTLAND

FRIENDS, WE APPEAL IN SOLIDARITY WITH ABORIGINES STOP THREAT TO
WORLDPEACE STOP POISONING ENVIRONMENT
BLACKBAN URANIUM.
STUDENTS AGAINST NUCLEAR ENERGY -UK.

URGE ACTU OPPOSE URANIUM EXPORTS FOR SAKE FUTURE GENERATIONS
LONDON GREENPEACE GROUP

EUROPE

THE INTERNATIONAL CONFERENCE OF COORDINATION OF THE ANTI-
NUCLEAR MOVEMENT STRONGLY APPEALS TO THE AUSTRALIAN TRADE
UNION MOVEMENT TO CONTINUE ITS ANTINUCLEAR POLICY. THE
WORLDWIDE STRUGGLE AGAINST THE NUCLEAR THREAT NEEDS YOUR
SUPPORT.SOLIDARITY.—
SECRETARIAT - ICC, SWITZERLAND

WE URGENTLY REQUEST THAT THE ACTU POLICY OPPOSING URANIUM
MINING AND EXPORT BE MAINTAINED . THERE IS STILL NO SOLUTION
TO THE WASTE STORAGE PROBLEM, ABORIGINAL LAND RIGHTS ARE
DESTROYED, WORKER HEALTH IS DESTROYED IN URANIUM MINES, URANIUM
BECOMES NUCLEAR BOMBS NO MATTER WHAT SAFEGUARDS SAY.

THE ACTU POLICY HAS BEEN AN EXAMPLE TO AND STRENGTH FOR THE
EUROPEAN ANTI NUCLEAR AND PEACE MOVEMENTS. IN RECENT MONTHS
MILLIONS HAVE MARCHED TO STOP NUCLEAR WEAPONS. UNIONISTS IN
BRITAIN STAND READY TO BLOCKADE SHIPMENTS OF AUSTRALIAN
URANIUM THE DUTCH TRADE UNIONS WILL DISCUSS THE ACTU POLICY THIS
WEEK.

THE UNDERSIGNED SUPPORT THE DARWIN DOCKWORKERS AND ASK THE
ACTU TO STAY STRONG IN THEIR ANTINUCLEAR POLICY.
FRIENDS OF THE EART (HOLLAND), WOMEN AGAINST NUCLEAR POWER
(HOLLAND), DUTCH WORKGROUP INDIGENOUS PEOPLES, DUTCH ENERGY
COMMITTEE (INCLUDING SOME POLITICAL PARTIES ANTI NUCLEAR MOVEMENT)
KEEP IT IN THE GROUND INTERNATIONAL STOP URANIUM MINING
NEWSLETTER (WISE)

WE HAVE FOLLOWED YOUR STRUGGLE AGAINST YELLOW CAKE EXPORTS TO
FEED NUCLEAR INDUSTRY AND BOMB MAKERS. KEEP FIGHTING DON'T GIVE
UP NOW . IN SOLIDARITY—
AGENOR PROGRESSIVE SOCIALIST GROUP (BRUSSELS)

PLEASE DON'T LIFT URANIUM EXPORT BAN. YOU ARE IN FRONTLINE OF
STRUGGLE AGAINST PROLIFERATION OF NUCLEAR WEAPONS. YOUR
DECISION IMPORTANT FOR US.IN SOLIDARITY —
JAAK VANDENEULEDROUCKE VOLKSUNIE FLEMISH AUTONOMY PARTY
BELGIUM, AND MEMBER OF EUROPEAN PARLIAMENT

WE WERE DISMAYED TO LEARN THAT YOU ARE CONSIDERING LIFTING THE TRADE UNION BAN ON THE NUCLEAR INDUSTRY, AND THAT AUSTRALIA IS SELLING URANIUM ON THE OPEN MARKET TO ANY COUNTRY WITH CASH.

NUCLEAR PROLIFERATION IS THE GREATEST THREAT TO MANKIND TODAY. WE URGE YOU TO STAND BY POSITIONS PREVIOUSLY ADOPTED, IN THE INTEREST OF ALL HUMANITY.

WILLIAM P. WINPISINGER
INTERNATIONAL PRESIDENT
INTERNATIONAL ASSOCIATION OF MACHINISTS AND AEROSPACE WORKERS
USA

URGE YOU TO MAINTAIN BAN ON URANIUM EXPORT MASS MOVEMENT OF CONCERNED EUROPEANS CHALLENGING MISSILE MADNESS MORE URANIUM MEANS MORE BOMBS AND INCREASED THREAT WORLD PEACE
IN SOLIDARITY -

ROLAND BOYES, FABRIZIA BADEL, ANNEMARIE LIZIN, LUCIANA CASTELLINA, MARIO CAPANNA, ANN CLYWD, WIM ALBERS, JOHAN VAN MINNEN, BODIL BOSERUP, (MEMBERS OF EUROPEAN PARLIAMENT FROM UK, HOLLAND, ITALY, BELGIUM, DENMARK)

STRONGLY URGE YOUR CONTINUED SUPPORT FOR ANTI URANIUM POLICIES TO PROTECT WORKERS AND LIMIT PROLIFERATION IN THIS PERIOD OF SERIOUS RISKS TO WORLD PEACE. PAST REASONS FOR TRADE UNION OPPOSITION REMAIN AS IMPORTANT AS EVER.

RALPH NADER
ANNA GYORGY, DIRECTOR CRITICAL MASS ENERGY PROJECT

REQUEST YOU RETAIN ACTU POLICY ON URANIUM MINING AND EXPORT. AUSTRALIAN UNION POLICIES HAVE INSPIRED 8000 DOCTORS AND MILLIONS OF OTHERS IN USA AND EUROPE RE MEDICAL DANGERS OF URANIUM MINING RADIATION WORKER HEALTH AND SAFETY AND PROLIFERATION OF NUCLEAR WEAPONS. LEADING NUCLEAR SCIENTISTS NOW PREDICT NUCLEAR WAR WITHIN 10 YEARS BECAUSE OF PROLIFERATION AND COLD WAR ERA. PENTAGON IS NOW PREPARING CIVILIAN HOSPITAL BEDS FOR RADIOACTIVE CASUALTIES FROM NUCLEAR WAR IN EUROPE. NRC REPORTED FOUR DAYS AGO INTERNATIONAL SAFEGUARDS TOTALLY INADEQUATE. MONEY AND PROFIT PROPAGATES THE ARMS RACE. AUSTRALIAN URANIUM WILL CERTAINLY FUEL PROLIFERATION AUSTRALIAN UNIONS HAVE OUTSTANDING INTERNATIONAL REPUTATION FOR INTEGRITY IN FACE OF ENORMOUS GOVERNMENT PRESSURE AND CORPORATE LOBBYING. THE MORAL URANIUM POLICY OF ACTU HAS MADE ME PROUD TO BE AUSTRALIAN.

DR. HELEN CALDICOTT BOSTON USA



These support telegrams were some of those received by the A.C.T.U. from around the world on December 8th 1981.

Send your letter now, urging the A.C.T.U. Executive to maintain the Anti-Uranium Policy adopted at the 1979 A.C.T.U. Congress.

Copies of this leaflet and a petition available through Friends of the Earth, 366 Smith Street, Collingwood - (03) 419 8700.

EXPLORATION

HAZARDS OF URANIUM EXPLORATION: THE COVER-UP CONTINUES

The nuclear industry has recently suffered serious defeats at the hands of informed and aroused citizens - like the moratoria against uranium mining and exploration in various countries and states in the US and Canada.

Faced with the growing corporate interest in Wisconsin uranium deposits, the Legislative Council's Committee on Mining formed a special Subcommittee on Uranium Exploration Safety in May

of 1980. The subcommittee's assignment included a study of drilling methods used by the mining companies to determine any personal or environmental impacts from release of radioactive contaminants during or after drilling. In response to widespread citizen concern about uranium exploration, the committee requested the Wisconsin Department of Health and Social Services (DHSS) to devise a radiation monitoring program to measure radiation levels around uranium exploration drilling holes.

The Center for Alternative Mining Development Policy (you will remember them from the study on drilling we published recently) reviewed the DHSS program when it was first proposed in June 1980, and pointed out that the inadequacies in the monitoring program

would allow the companies to later claim that radiation in the region of the mining and milling operation is natural background radiation. This is precisely what the uranium industry has already done in Southwest uranium districts. (See "A critique of the DHSS Radiation Monitoring Process" in The Mining Monitor, Vol 1 No 2 Nov 1980)

In addition to excluding major sources of radiation from the monitoring program, the DHSS design does not even meet the basic minimal standards for monitoring as outlined by the Nuclear Regulatory Commission (NRC) in 1979. Nor did the monitoring program address the problem of monitoring radiation when companies are looking for base metals that may be associated with uranium. The Center concluded that the program was hastily put together to accommodate the drilling schedule of the mining companies, and was not designed to assess the health and environmental hazards of uranium exploration and drilling.

Despite the major flaws in the radiation monitoring program, the Wisconsin Geological and Natural History Survey continues to publicise the DHSS program as a "comprehensive radiation monitoring program for uranium exploration drill-holes". The uranium mining industry has been citing the results of this program to support their claims that there are no adverse health or environmental impacts from uranium exploration drilling. On April 9 last year an Exxon representative used the program to support their attempt to obtain a uranium drilling permit from the St Louis Planning Commission in northern Minnesota. The permit was initially granted only to be revoked by the St Louis County Board after intense public criticism of the planning commission.

Minatome cited the DHSS program as proof "that our exploration does not produce any change in the natural background radiation level which has existed prior to our work". Minatome is working in the Upper Peninsula of Michigan. They say "radiation can be controlled during mining so human exposure is kept within levels which exist naturally and in which people live and will continue to live".

These views were printed in an editorial in The Daily News, and were part of 1981's pro-uranium propaganda media blitz organised by Operation Action U.P., a pro-business lobbying organisation. The theme of this blitz was

"uranium scares some people because it is radioactive, but it doesn't frighten those who know a lot". Charming. Operation Action sponsored a conference for information on uranium for the public in 1979, and refused to invite experts critical of the industry.

But, of course, the arguments of nuclear opponents did get heard despite Operation Action U.P., and within one year five counties in the U.P have passed uranium exploration bans.

The DHSS study is now being used as a model for a similar study that the South Dakota uranium industry has convinced the South Dakota Department of Health to undertake. As long as the paper exists - even when the studies can be proved false - it is something to wave about, they think.

In all these cases of corporate collusion, the uranium industry realises that it can no longer rely upon spontaneous public acceptance of its activities. The uranium industry must take increasing responsibility for controlling the flow of information to the public on the issue of uranium mining. The coordination between the industry and the numerous state governments and pro-business lobbies is an objective lesson for the anti nuclear movement. Without closer coordination and communication among the various groups involved in anti-uranium education and organising, it will be difficult to prevent a repeat performance of the uranium exploration cover-up.

from Al Gedicks, The Mining Organiser
Dec 81.

background

URANIUM EXPLORATION CASE HISTORIES

This is the new publication from the International Atomic Energy Agency (Oct 1981). It is the result of a meeting of uranium industry experts on the successes they have had in uranium exploration recently - 20 cases were described in detail. The methods, geographic, topographic and climactic details were included in the more "promising uraniferous areas" such as Argentina, Australia, Brazil, Canada, Czechoslovakia, Greenland, France, South Africa, Sweden, the USA and Zambia. In addition to the descriptions of method and approach, and the analyses of the various histories, a great deal of lively expert discussion is included in the book.

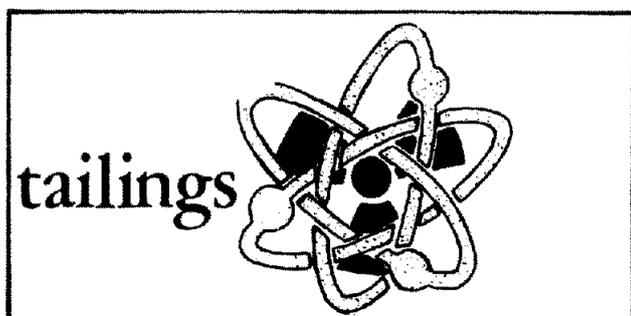
The meeting was called together by the Joint Group of Experts on Research and Development in Uranium Exploration Techniques set up by the OECD Nuclear Energy Agency and the IAEA as part of a programme to improve the rate of uranium discovery by collecting and systematically analysing information about the general practice of uranium exploration.

The destined readership is: Uranium geologists and explorers, geophysicists exploration and mining companies.

Cost: Austrian Schillings, 630.
(about \$40 US, f93)

IAEA, Wagramerstrasse 5, PO Box 100,
A-1400 Vienna, Austria

**maybe your local library can buy a copy*



THE URANIUM MILL TAILINGS RADIATION CONTROL ACT IN JEOPARDY

More than 100 million tons of radioactive wastes from the mining and milling of uranium ore were generated in the U.S. before Congress saw fit, in late 1978, to provide the legislative framework to do something about the problem. Finding that uranium tailings "posed a potential and significant radiation health hazard to the public", Congress sought, through adoption of the Uranium Mill Tailings Radiation Control Act (UMTRCA) of 1978 to make every reasonable effort to stabilize, dispose and control such wastes "to prevent or minimize environmental hazards" associated with them. Unfortunately, three years and 50 million more tons of tailings later, the original intent of the "Mill Tailings Act" is under attack and has to a great extent been circumvented. The *Southwest Research and Information C.* has produced a brochure which discusses in some detail the current efforts in Washington to gut the Mill Tailings Act. It summarises the major provisions of the legislation, the potential and proven health and environmental impacts

of uranium activities and how concerned individuals in areas where uranium tailings are found can help in the campaign to preserve the Act - the only federal legislation ever written to deal with the nationwide problems of mill tailings.

HEALTH HAZARDS

The mining and milling of uranium ore brings a variety of naturally occurring radioactive and nonradioactive materials to the surface in amounts high enough to present a public health hazard if left uncontrolled. The major radioactive elements, all derived from the uranium 238 decay chain, include thorium, radium and radon and its daughters. Toxic trace metals such as selenium, molybdenum, cadmium and zinc, and chemical compounds formed from mill process solutions also occur at hazardous levels in mill tailings. Radon and its daughters, in addition to causing lung cancer in uranium miners, also increases the risk of a variety of fatal, non-malignant respiratory diseases. Radium, thorium and uranium, if inhaled or ingested in small doses over a long period of time (chronic exposure) can give rise to lung cancers, bone cancers and cancers of organs in the lymphatic system, such as the liver and the spleen. Additionally, radiation exposure to the fetus or female and male reproductive organs may increase the risk of birth defects and disease over multiple generations. Chronic exposure to toxic heavy metals can lead to organ dysfunction, birth abnormalities and central nervous system disorders. Preliminary data gathered in the Four Corners Area show that spontaneous abortions, stillbirths and congenital abnormalities have increased as much as two times among Navajo children born to parents in uranium districts.

MILL TAILINGS ACT PROVISION

When Congress amended the definition of by-product under the Atomic Energy Act (AEA) of 1954 to include uranium mill tailings and established two main sections of UMTRCA, it directed various government agencies to begin to deal with the problems associated with abandoned mill tailings piles and operating uranium mills. TITLE 1 authorised the Secretary of the Department of Energy (DOE) to cooperate with states to

cleanup, dispose or stabilise tailings piles, abandoned processing facilities, and vicinity sites (those areas and/or structures in which mill tailings were known to have accumulated or been used for construction purposes) within those states. The U.S. Environmental Protection Agency (EPA) was given responsibility for setting standards and criteria for the cleanup and disposal of the inactive tailings sites, and a timetable to set such standards of one year from the enactment of the Mill Tailings Act. TITLE II authorises the U.S. NRC to develop new and more stringent regulations governing operations at active mills and tailings facilities. NRC was authorized to come up with a set of mill-licensing criteria and require states having "agreements" with the agency to regulate mills and tailings operations to adopt rules and regulations at least as stringent as the NRC's.

TITLE I REMEDIAL ACTION

Under Title I, DOE was required to identify specific inactive tailings sites requiring remedial action, and authorised to enter into cooperative agreements with affected states and Indian tribes, assess potential health hazards to the public, set site priorities for remedial actions, prepare environmental assessments and impact statements, and carry out the program within seven years of the promulgation of inactive-site standards by EPA. NRC was given authority under the Act to assist DOE in planning remedial programs and preparing applicable documents.

Recently DOE reportedly has decided to weaken EPA's inactive-site standards rather than adopt them as working criteria. The DOE once assumed that all sites rated high priority would be removed from their present locations and disposed in remote areas away from populations and natural resources. However, after industry anger over what it termed the agency's "excess concern for health" in early 1981, DOE backtracked and is only planning to remove the tailings pile at Durango because of its location on the banks of the Animas River. As a result, such high priority sites as those near Salt Lake City and Shiprock, New Mexico now may

be stabilised in place.

The move to stabilisation in place is seen by residents near tailings sites as a blatant federal disregard for their legitimate concerns, especially on Indian reserves. Many local communities adjacent to tailings piles are adamant about having the wastes removed and are under the impression the federal government will perform the clean-up and removal operations within the next few years. If the EPA standards are weakened, stabilisation in place for high priority sites will heighten the risks from mill tailings, both inactive and active, and will lessen the degree of protection to nearby citizens.

EPA now expects to have final inactive site standards promulgated by March 1982. UMTRCA mandated EPA to have such standards finalised by May 1980. What may end up as a two-year delay in the setting of final remedial action has prompted the Sierra Club - representing several residents near inactive tailings sites, to file suit in mid 1981 against both DOE and EPA asking a federal court to order both to comply with the Mill Tailings Act time provisions to avoid further delays in cleanup operations.

RECENT THREATS TO ACTIVE SITE RULES

In the three years since the passage of the Mill Tailings Act, the uranium industry has mounted a sophisticated lobbying and information campaign in an effort to gut key portions of UMTRCA. At the root of this effort are the continuous financial problems of the uranium market, problems which began to appear in 1979, only a few months after the Act became Law. Since 1978, the spot-market price for a pound of yellowcake has dropped from \$46 to \$26 per pound due to the virtual absence of domestic uranium buyers - private electric companies now are delaying or dropping decisions to build capital-intensive nuclear power plants. Consequently, the industry has used a multi-pronged strategy to get out of its current financial crisis: 1) litigation to challenge the NRC's authority to adopt mill-licensing regulations; 2) lobbying efforts in Washington to weaken or undercut key provisions of the Act and to withhold funds from the NRC for implementation and

enforcement of the licensing rules recently promulgated.

A coalition of uranium corporations claimed in a lawsuit filed against the NRC in April 1981 that the mill-licensing criteria were "arbitrary and capricious", not based on any real health hazards and an overstepping by the NRC of its statutory authority to regulate by-product material. The coalition, led by Kerr McGee Nuclear Corp, has asked federal court in Denver to set aside the rules as invalid. The case is still pending. Organizations supporting the industry's position include the American Mining Congress, Mountain States Legal Foundation, the State of New Mexico and a number of uranium companies. National Wildlife Federation and Southwest Research and Information Center filed a Friend-of-the-Court brief in support of the NRC regulations.

Congressional re-entry into the foray began in mid-summer 1981 as lawmakers pressured by industry sought to prevent NRC from enforcing the rules and to save Agreement States from having to comply with them by the 8 Nov 1981 deadline. An amendment proposed by New York representative Samuel Stratton in August to the fiscal 1982 Energy and Water Appropriations bill prohibited NRC from using any funds to implement or enforce the Oct 3 1980 licensing rules during fiscal 1982 and provided that no state should be required to adopt any of the new regulations to satisfy UMTRCA's compliance provisions. The appropriations bill and attendant "Stratton Amendment" sailed through a largely uninformed Congress with little more than 5 minutes of discussion in November, and signed into law by President Reagan Dec 4 1981.

Citizens have been urged by the Southwest Research and Information Center to perform all possible things to influence Congresspersons of the need to strengthen, not weaken, UMTRCA.

**SOUTHWEST RESEARCH AND INFORMATION CENTER
PO Box 5424, Albuquerque, NM 87106 USA
(tel 505- 844 3941 ext 1702)*

RESOURCES

BEN LOMOND - A FRENCH URANIUM MINE IN QUEENSLAND?

The Campaign Against Nuclear Power in Queensland has produced a broadsheet on the involvement of the French nuclear industry, in the form of Minatome (formerly Pechiney) in the Ben Lomond area of Queensland. It also includes a summary of French plans to assist in the building of an enrichment plant in the State - and France's promise to buy a large portion of the plant's production.

Now the USA, URENCO, and Japan have plans to help build enrichment facilities in Australia.

*CANP, OCC Environment Centre,
147 Ann Street, Brisbane City, Qld
Australia. tel 229 7143*



GLUT OF URANIUM HURTS MINERS (WORKERS)

Partly because of the changed public attitudes toward nuclear energy after the Three Mile Island accident in 1979, the growth of the nuclear industry has slowed so much that the price of yellowcake tumbled at the end of last year from \$40 a pound to \$23 a pound, according to a New York Times article of Dec 22 1981. At the same time, about 8000 workers - more than a third of the total work force at Grants, New Mexico, are out of jobs, victim to the mines closing.

Last year twice as much ore was mined as was consumed in the U.S. - so the Grants community will have to wait at least four or five years before the mines which have recently closed will re-open.

Meanwhile, in Canada the tale of over-production continues - and once

more many people are out of work. Despite a 45% electrical over-capacity at peak, Ontario Hydro is continuing an ambitious nuclear programme and attempting to sell its surplus to the northern United States. Nevertheless it announced it would take 9% less deliveries from Denison Mines. Denison hopes that overseas companies will continue to buy - then they say they will not put workers jobs at risk. (Strange, the sudden concern about jobs).

JAPAN'S NUCLEAR BUDGET SLATED TO GO UP BY 7.1% TO \$1.3 BILLION IN FISCAL 1982

The ordinary budget, \$813.7 million, represents a 0.6% increase from the current fiscal year (April 1 to March 31). The remainder, \$506.3 million, up 17.6%, will be made available by the Electricity Generating Source Development Account, which, in effect, is tax on power generated.

A lion's share of the budget, as set forth by the Ministry of Finance, is earmarked for the Power Reactor and Nuclear Fuel Development Corp (PNC), which receives a 0.5% increase to \$574.9 million, including \$166.2 million for fast breeder projects, and \$115.6 mill for spent fuel reprocessing, an increase of 37.6%. Reflecting the completion of the prototype centrifuge enrichment plant in the second half of 1981, PNC's enrichment funding is going down to \$43 million from \$107.9 million. Of PNC's \$27.5million budget, up 6.6% for overseas uranium exploration nearly one half will be spent in Mali and Niger. Roughly \$9 million in total will be spent by PNC equally in Australia and North America, including costs for running subsidiaries in Canada and Australia.

source *Nucleonics Week*, Jan 21 1982

LAKE-WAY GO-AHEAD

The Lake Way uranium deposit near Yeelirrie in Western Australia will be developed. On Jan 19 the Australian government gave the go-ahead. This was after the federal government approved the foreign investment arrangements. CSR (Colonial Sugar Refinery) acquired the U.S. company Delhi International Oil, the parent company of Delhi petroleum which has 53.5% interest in Lake Way. the other partner is Vam Ltd. The partners have not announced contracts. (In KIITG 17 p 17 we had a Lake-Way story) contact: CANE, 530 Wellington St, Perth 6000 Australia.

JAPAN AND AUSTRALIA SIGN NEW NUCLEAR REPROCESSING PACT

Japan and Australia initialled on Jan 19 a new nuclear power agreement authorising Japan to reprocess Australian uranium by submitting to the Australian government a list of plants where the work will be done. The agreement was signed in Canberra between Minister at the Japanese Embassy Takashi Tajima, and P.C.J. Curtis, first assistant secretary of the Ministry for Foreign Affairs, after three and a half years of negotiations. Agreement became possible after the Australian government dropped its demand for prior approval in the reprocessing of the Australian uranium.

Japan hopes the new agreement will set a precedent for similar negotiations with the United States due to begin also in January. Japan is required by the U.S. and Canada, its chief uranium suppliers up to now, to get prior approval in the reprocessing of used nuclear fuels.

Australia had asked Japan to first obtain prior Australian approval if it wanted to transfer Australian uranium to a third country. It also asked Japan to get prior Australian approval in enriching the low enriched uranium to more than 20%, as well as in the reprocessing.

According to the Japanese press, this major Australian concession has a background of serious oversupply of uranium worldwide due to the setback in development of nuclear power. And the industry weekly *Nucleonics Week* explains that the negotiations started in August 1978, but the initial talks failed because the two parties had to wait for the conclusion of the International Nuclear Fuel Cycle Evaluation in February 1980. In all, the two countries have held seven official negotiators meetings, and five unofficial and secret meetings, the latest one in 1981 on the occasion of the opening of the Ranger uranium mine.

In Japan, the agreement has to be submitted to parliament once the chore of "polishing phrases for highly slight alteration without evr changing the substance" is complete. The Australian parliament does not have to approve the amendments.

sources *Mainichi Daily News* Jan 22 1982
Nucleonics Week, Jan 21 1982.

MINATOME IN WESTERN AUSTRALIA

The French mining company Minatome plans to begin pilot leach tests in May at Manyingee near Oslow in Western Australia. This is 1500 km north of the state capital, Perth. The State Minister for Conservation and Environment refuses to require an Environmental Impact Statement (EIS) from the company before they begin. Yet an EIS was required at both Yelirrie and the Honeymoon (South Australia) deposit before the commencement of pilot tests. The Campaign Against Nuclear Energy in Perth will take further action through the Environmental Protection Act.
contact: CNFA, 537 Wellington St, Perth 6000 WA, tel (09) 321 2269

RIO TINTO ZINC IN TAKEOVER BID FOR TWO U.K. FIRMS

Rio Tinto Zinc announced plans on Nov 23 to pour hundreds of millions of dollars into a giant cement mixer. RTZ, a British based multinational mining giant, proposed to buy Thomas W. Ward and then bid for slightly less than 50% of Tunnel Holdings Ltd (the part not held by either Ward or RTZ). This would all cost \$350 million, at least. Ward, however, did not welcome the offer, and said that its shareholders would also not appreciate the takeover. If they succeed, RTZ would be the second largest U.K. cement mixer.

source The Wall Street Journal, November 23 '81

MIDWEST LAKE PROJECT DELAYED

Developers of the Midwest Lake uranium project in Canada have postponed development of their Northern Saskatchewan mine for at least five years. Construction of the project was to have started in 1982 or 1983, with production commencing in late 1985. It was to have been the next major uranium mine to come on stream following the Key Lake project. The postponement means the Midwest project office in Saskatoon will be reduced in size "considerably", according to representatives of Canada Wide Mines, the project's operating partner. About 30 persons currently work at the Midwest office.

The uranium deposit is about on scale with that being developed at Cluff Lake. The superintendent of the mine blamed poor uranium markets for the slowdown and said development will not proceed until there are indications that markets are improving.

source: Star Phoenix, Dec 4 81.



scientific studies

Here we republish part of the section on uranium mining and low-level ionising radiation from the book by Physicians For Social Responsibility. In KIITG we began this section from PSR, and will continue till we have completed those first 20 pages from their manual, Health Dangers of the Nuclear Fuel Chain and Low-Level Ionising Radiation. The San Francisco Bay Area address is: PO Box 5454, Berkley, CA 94705, USA

Bale, W.F., and Shapiro, J.V., "Radiation dosage to lungs from radon and its daughter products", Peaceful uses of atomic energy: Proceedings of the International Conference in Geneva, New York, United Nations, page 233-236, 1956.

(-principal hazard in uranium mine atmosphere is radon daughters-- isotopes of lead, bismuth, polonium, and thallium.

-3 x 10⁻⁹ Ci of radon/l gives tracheal epithelium dose of 0.2 rad/day.)

Altshuler, B., Nelson, N., and Kuschner, M., "Estimation of lung tissue dose from the inhalation of radon and daughters", Health Physics, 10: 1137-1161, 1964.

- The cancer-related dose (largest dose to shallow basal cells) associated with 1 Working Level of radon daughters is estimated to be 20 rads/year for nose breathing at 15 l/minute.
- Comparison with animal studies shows working level may not be safe and that 30 pCi/l of daughters (0.1 WL) may not be too conservative for MPC (maximum permissible concentration).
- In 1960, 1 WL = 3×10^{-10} Ci/l = 300 pCi/l of radon daughters (which is the daughter activity in equilibrium with 100 pCi/l of radon), was adopted by the American Standards Association as a MPC.
- "there is sufficient probability that the effective dose has been underestimated to justify the introduction of a safety factor"
- Good table of radon daughters, which include radioactive Polonium, Lead and Bismuth, half lives and alpha energy.
- The Findeisen and Landahl model of the respiratory system used is considered inadequate. Its low suggested dose should therefore be lower.
- 42 references.

Archer, V.E., "Lung cancer among populations having lung irradiation", letter to editor, Lancet, 11(7736): 1261-1262, 4 December 1971.

- has table of excess lung cancer/year/WLM(rad)and(rem)/million persons for Sweden, Joachimsthal, Newfoundland, etc. miners and A-Bomb survivors.
- U.S. uranium miners had 1.8 excess cancer/year/WLM/million persons.
- 1 WLM approx. = 2 rads approx. = 6 rem.
- Radiation not only emerges as the only common carcinogenic agent but is associated quantitatively with excess lung cancer.
- Ventilation reduced the radon daughter concentration in U.S. mines by a factor of 5-10.
- Radiation dose/response curve is approximately linear from fairly high levels down to the 0-dose/0-response point.

Archer, V.E., and Simpson, C.L., "Semi-quantative Relationship of Radiation and Neoplasia in Man", Health Physics, 9: 45-56, 1963.

(-Increased lung cancer in uranium miners is likely a specific result of radiation injury).

Archer, V.E., Wagoner, J.K., and Lundin, F.E., "Cancer mortality among uranium mill workers", Journal of Occupational Medicine, 15: 11, 1973.

- No increase respiratory cancer in uranium mill workers but there was a significant excess of malignant disease of the lymphatic and hematopoietic tissue.

Archer, V.E., Wagoner, J.K., and Lundin, F.E., "Lung cancer among uranium miners in the U.S.", Health Physics, 25: 351-371, 1973.

- 3,366 white underground uranium miners and 780 non-white studied
- found excess respiratory cancer if exposure was equal to or more than 120 WLM.

- no association with non-uranium hard rock mining and respiratory cancer.
- 58 deaths from respiratory cancer in underground smoking uranium miners which adjusted for smoking habits the expected was 15.5.
- among non-smokers, expected 0.5 versus observed 2.
- proves the hypothesis that underground uranium workers are constitutionally pre-disposed to develop respiratory cancer is untenable.
- miners may be misclassified into higher WLM's, therefore lower level risk may be underestimated.
- when adjustments were made for latent period and total radiation exposure, no difference in respiratory cancer was found between miners with high exposure rates to those with lower rates. Suggested that radon daughter exposure may be more effective per unit dose in inducing cancer at lower total doses than at high ones.
- cessation of smoking does little to decrease the respiratory cancer risk among uranium miners, whereas after several years the risk drops to near normal levels if a non-uranium miner stops smoking.
- the epidemic among uranium miners is not subsiding.
- a detailed examination of data.

Archer, V.E., Wagoner, J.K., and Lundin, F.E., "Uranium Mining and Cigarette Smoking Effects on Man", Journal of Occupational Medicine, 15 (3), March 1973.

- A good article which showed the cumulative effect of radiation and cigarette smoking, and belies the oft-heard claim that the increased incidence of cancer in this industry is related to smoking alone. We are also in possession of a personal communication from Dr. Archer from January of 1977 in which he states, "anyone who argues that Radon is not carcinogenic unless it is combined with smoking is basing his statements on some of our early studies where the followup time was short. Our later studies on animal experiments definitely refute that viewpoint." "The use of the linear hypothesis definitely underestimates the risk of cancer from Radon daughters at low dosage."

Archer, V.E., Magnuson, H.J., Holaday, D.A., Lawrence, P.A., "Hazards to health in uranium mining and milling", Journal of Occupational Medicine, 4: 55-60, 1962.

- "1. Uranium miners in the Colorado Plateau have been under epidemiologic surveillance since 1950; during this time the working population has increased from approximately 350 to nearly 6,000.
- 2. Deaths in a study group of 3,317 miners, followed 2-9 years between 1950 and 1959, with 13,270 person-years of observation, have been analyzed by the life-table technic.
- 3. Preliminary calculations applied to a cohort of 907 whites with 3 years or more of uranium mining experience show 5 lung cancer deaths to have occurred where 1.1 was expected; 8 deaths from heart disease other than arteriosclerotic where 0.4 was expected; and 10 deaths from non-motor-vehicle accidents where 2.5 were expected. All of these differences are interpreted as significant at the 95 per cent confidence level.
- 4. Concurrent environmental surveys of uranium mines have shown a high proportion of operating mines with concentrations of radon daughter products above the recommended working level of 1.3×10^5 MeV of potential alpha energy per liter of air."

- "Implication of elevated lung cancer risk is supported by suggestive trends in the prevalence of abnormal sputum samples collected in 1960. Furthermore, since the close of the latest life-table analysis there have been 4 more confirmed lung cancer deaths and one additional case diagnosed."

Federal Radiation Council, Guidance for the Control of Radiation Hazards in Uranium Mining, Report #8, revised, September 1967.

(-12 month exposure to 1 WL = 35 rad dose.

-extensive statistical analysis of increased lung cancer in uranium miners.)

Ham, James (Commissioner), Report of the Royal Commission on the Health and Safety of Workers in Mines, Ministry of the Attorney General, Province of Ontario, Toronto, Canada, 1976.

- "Frederic LePlay, a distinguished French sociologist and inspector general of the mines of France in the late nineteenth century, said that the most important thing to come out of mines is the miner. I share his conviction today."

- Ham report shows that of 956 deaths on the Ontario Uranium Nominal Roll of 15,094 people (who worked longer than 1 month) there were 81 deaths of miners or former miners from lung cancer during the period 1955-1974 (versus 45 expected-using vital statistics for the male population of Ontario as a whole).

- typical exposures in Ontario mines were under the 100WLM range. The average numbers of WLM's was 74.5 for the lung cancer cases and 32.8 for the survivors.

- "Though the exposures reported in the present study are small compared with those reported from Colorado, they are just as likely to overstate the quantity of radiation actually needed to produce cancer . . . ". The lapse in time between the initiation of lung cancer and its result in death "provides an opportunity for subjects who have already been affected by prior exposure to accumulate further exposures, which contribute nothing to the outcome already determined and yet add to the apparent dose."

- ". . . to be at all plausible in relation to the Ontario experience, a postulated threshold would have to be lower than 10 WLM (total exposure)."

- ". . . there is no general agreement on the number of Rems of biologically effective irradiation corresponding to the energy of alpha irradiation in Rads."

- "Thus a representative of the Atomic Energy Control Board stated before the Commission that exposures of 4 WLM per annum and 12 WLM per annum could both be consistent with the maximum permissible biological dose of 15 Rems per annum to the lungs as allowed by the regulations under the Atomic Energy Control Act for atomic radiation workers."

- Reviewing the study by Lundin et al, "Radon Daughter Exposure and Respiratory Cancer, Quantitative and Temporal Aspects", Joint Monograph No. 1, National Institute for Occupational Safety and Health, National Institute of Environmental Health, Washington D.C., June 1971, the Ham Commission states: "The most recent major study indicates that there is an excess risk of lung cancer at exposures down to and including the range 120-359 WLM. This report concludes in part that 'these evaluations have failed to find any plausible alternative to the hypothesis that radon daughter exposure is causally related to the excess lung cancer risk in the 120-359 WLM category' and that 'other epidemiological studies of situations