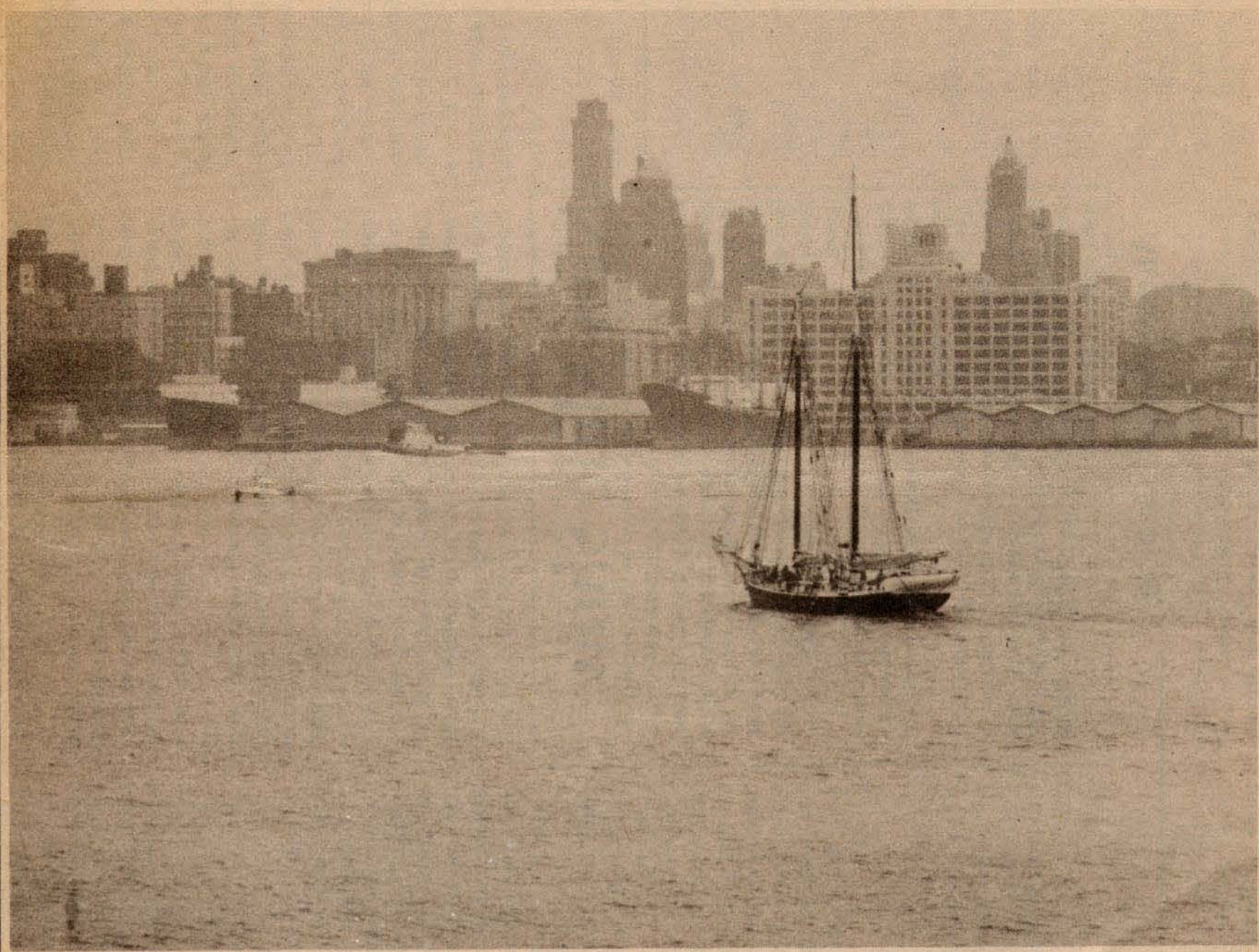
the Waste Paper

sierra club
radioactive waste
campaign



Residents in New York City are not presently threatened by irradiated fuel transport since federal court upheld a ban on February 19, 1982. Yet, questions remain whether the Dept. of Transportation will challenge this ruling, re-route certain shipments or begin transport by sea?

Inside:

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Volume 4 No. 2

Town Hall Rebellion Vindicated

On February 19, 1982, the U.S. Federal Court in New York City threw out the Department of Transportation's (DOT) regulations which would have pre-empted the more than 211 local restrictions and ordinances on nuclear waste shipments. The DOT regulation would have mandated the hazardous shipments on interstates and through urban areas, such as New York City. It was a major victory for citizen activists across the land. Since 1976, citizens have participated in what some call the "town hall rebellion" – the rebellion by local city councils, county and state legislatures who refused to believe the Nuclear Regulatory Commission's reassurances that the shipment of highly irradiated nuclear fuel posed no hazard to their communities, and enacted local laws to prevent these shipments.

A crucial aspect of the debate has always been do local jurisdictions have the right and authority to address shipment route and regulations? Often more conservative city council attorneys refused to consider the question on the grounds that they would be overstepping their proper authority. Now with Judge Sofaer's carefully worded, 140-page decision, a green light has been given to local jurisdictions to pass more restrictive ordinances and bans and to press Congress for better testing of the casks.

As a result of the Judge's decision, all local ordinances and bans will remain in effect. It is not clear what the utilities and DOT will do now. The decision could be appealed or the nuclear industry could ask Congress to rewrite the law under which DOT acted, the Hazardous Materials Transportation Act (HMTA) and ask Congress to exempt DOT from National Environmental Policy Act (NEPA) provisions, but any of these maneuvers would take months or years to implement. Perhaps, the most likely counter move will be a push for DOT to rewrite the regulations so as to avoid Judge Sofaer's criticisms.

"DOT is not free to disregard public concern however unjustified it may be in the Department's view . . . NEPA requires DOT to meaningfully consider evidence of possible social impacts." ***Judge Abraham Sofaer, Friday, February 19, 1982.***

The Federal District Judge Sofaer stated in his decision "DOT erroneously concluded it is free to subject unwilling states and localities to risks of potential catastrophe that DOT itself deemed 'credible' . . . when those risks are avoidable." The judge faulted the agency for not studying alternatives to, and social impacts of routing nuclear shipments directly through metropolitan areas, as required by the National Environmental Policy Act. The judge called DOT's findings "arbitrary and capricious," and said it exceeded its Congressional mandate under HMTA. He was particularly critical of DOT's apparent unconcern for the social impacts of HM-164. "DOT's response to the evidence of public concern was to deem the concern unwarranted. The public, DOT stated, is incapable of rationally appraising the consequences of accidents." "But," the judge insisted, "DOT is not free to disregard public concern however unjustified it may be in the Department's view – NEPA requires DOT to meaningfully consider evidence of possible social impacts." The next time you are charged with being an emotional "radiation hysteric" you might want to whip out this citaiton from the judge's decision.

Judge Sofaer noted that DOT has not carefully evaluated the consequences of a major nuclear accident in an urban area, nor fully explored questions of shipping container survivability in an accident, nor the effects of human error. The judge questioned DOT's light dismissal of the option of barging this dangerous material around New York City.

In the reprieve offered by the Judge's decision, activists are urged to adopt the cask recall strategy described on page 5 . Copies of the 140-page decision are available from the Campaign for $15.00 plus postage.

The Thor One Trail

Highly toxic material destined for nuclear reactors located in Japan regularly travels Western New York and U.S. highways. Tons of uranium, in an extremely hazardous gaseous form called uranium hexafluoride (UF), cross Canadian borders near Buffalo, N.Y. en route to enrichment facilities in Ohio, Kentucky or Tennessee.

Whether the resulting cargo of enriched uranium travels to Japan by crossing the continental U.S. or by returning to traverse Canada, is unknown to *the Waste Paper.* Any tips from readers on this would be appreciated.

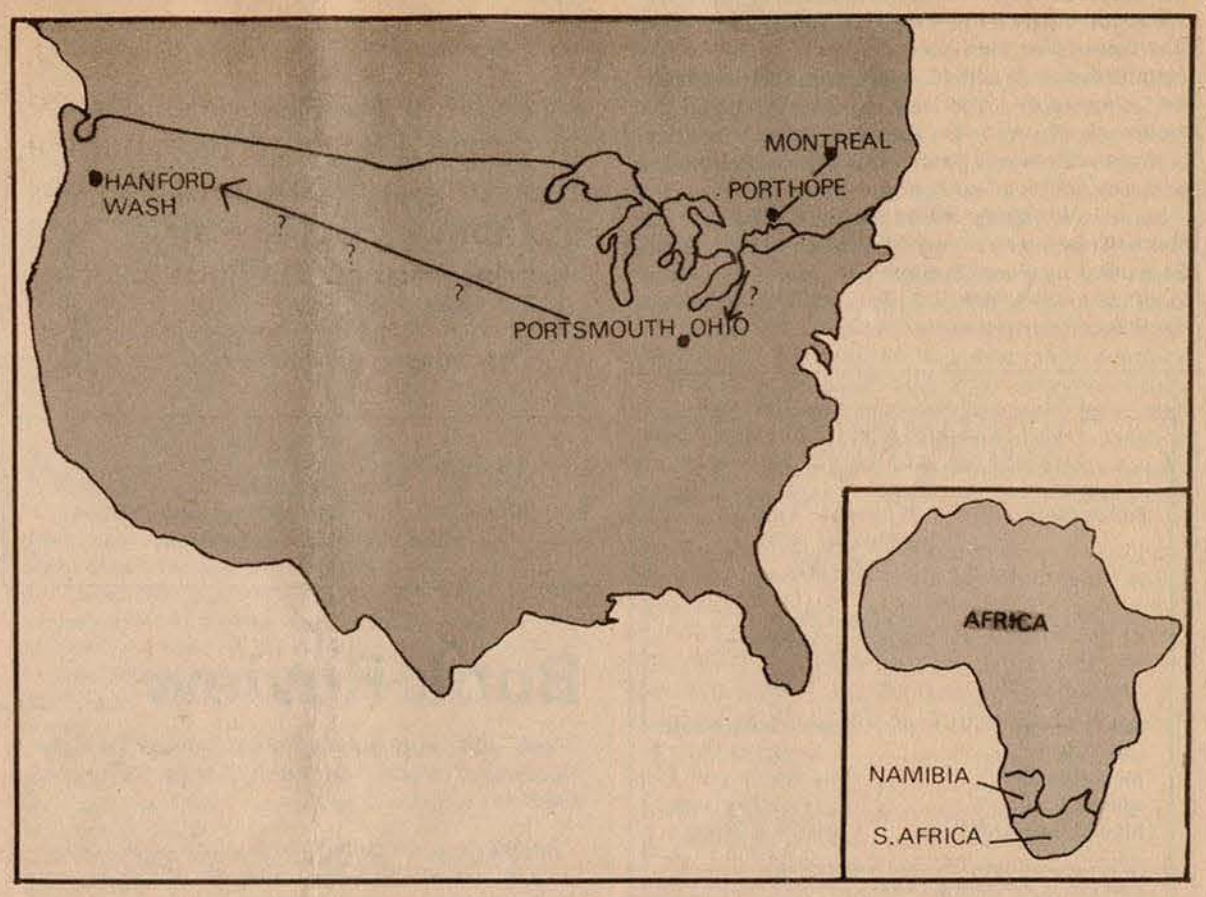
This nuclear trails begins in Namibia, a tiny country, about twice the size of California in South West Africa. Namibia, as Black Africans call this former German colony, is a United Nations trust territory – illegally occupied by South Africa since 1947.

Worldwide, utility companies have found Namibia's soil ladened with precious minerals – diamonds, nickel, zinc and lead. Yet the most valuable, more strategic than precious, is uranium ore, the fuel for nuclear reactors; namibia holds 26% of the world's supply.

The Japanese Connection South Africa's chief exploiter of the Namibian ore is Rio Tinto Zinc (RTZ) of the United Kingdom. The company mines and refines the ore into yellowcake (uranium oxide) and holds several contracts with foreign countries. RTZ runs the world's largest mine, the Rossing, with an output of nearly 5,000 tons of yellowcake annually. It is the RTZ contract with Japan which directly impacts on U.S. residents.

RTZ has contracted to sell 8,200 tons of Namibian yellowcake between 1977 and 1985 to a Japanese utility. The yellowcake is transported to Canada in large freighters identifiable by their macho-mythical names like Thorswave, Thor One and Thorscape. It is unloaded at the Port of Montreal and then shipped to Eldorado Nuclear in Port Hope, Ontario located on Lake Ontario. Here, the yellowcake is converted into UF6, a highly flammable gas.

Since uranium hexafluoride is highly volatile, it is normally shipped as a solid. Analysis by *the Waste Paper,* based on government reports, shows that these shipments can be lethal out to a distance of three miles in an acident involving a fire. The hazard is primarily chemical in nature to fluorine which, when combined with moisture, becomes a deadly hydrofluoric acid.



UF_6 Meltdown Under normal transport, UF_6 is shipped in metal cylinders. In an accident involving a fire, the solid UF_6 would melt at a low temperature – 147° F. As it melted, a colorless liquid would be produced. This liquid would fill the cylinder and build up pressure until it exploded, releasing a toxic cloud.

Unlike other radioactive materials, the escaping UF_6 would be visible as a white cloud. The concentrated materials would then be carried whatever way the wind was blowing. Although the probability of a fire is low – fire occurs in 1% of all rail accidents and 1.6% of all truck accidents, the consequences would be devastating.

This highly toxic material may enter the U.S. at any of the commercial vehicle and rail bridges,

Continued on page 3

Radscope

Mob Linked to Nuke Security

According to the *Rochester Democrat and Chronicle* of February 28, 1982, guards at the Ginna, Peach Bottom and Indian Point 2 nuclear reactors are linked to the mob. Leaders of the parent organizations to the Power Plant Police and Security Officers Local 1 have been indicted by a federal grand jury in Brooklyn, N.Y. on racketeering and embezzlement charges.

These charges have been the result of a 2-year federal investigation of the parent organizations, the Federation of Special Police and Law Enforcement Officers and the Allied International Union of Security Guards. Daniel Cunningham, president of both unions, was accused by the grand jury of stealing $250,000 from the unions, of attempting to bribe federal investigators and of setting fire to the union offices in Great Neck, N.Y. shortly after union records were subpoenaed by federal organized crime investigators. Union officials have also been indicted on federal tax fraud charges.

At one of the affected reactors, Peach Bottom, located in Pa., Barns International Security Services which has the contract to provide security at the plant, has requested the National Labor Relations Board to take away Local 1's right to represent the guards because of the alleged organized crime connections.

Guards at the plants are responsible for monitoring all the elaborate NRC security systems and for preventing unauthorized personnel entry onto the site. If organized crime has access to classified security information at reactors, the pretense at security is a complete mockery. *Waste Paper* readers are urged to write Congress members and ask for an investigation of links between security guards and organized crime at the three nuclear power plants.

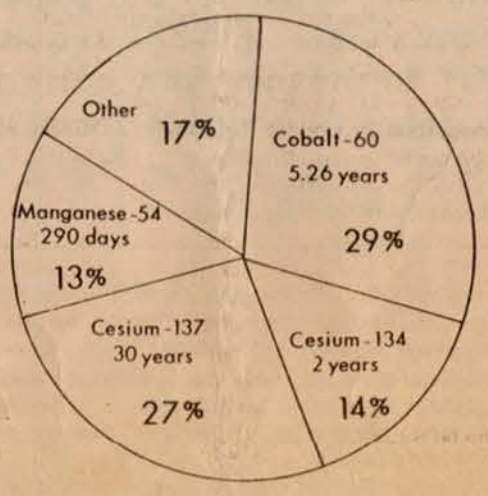
The Curie Fury

The nuclear utilities have continuously used the medical profession as a cover to promote the siting of low-level nuclear waste dumps. The argument is simple and it hits home . . . If citizens do not agree to allow a dump site for radioactive waste, radiation treatments for cancer patients will cease.

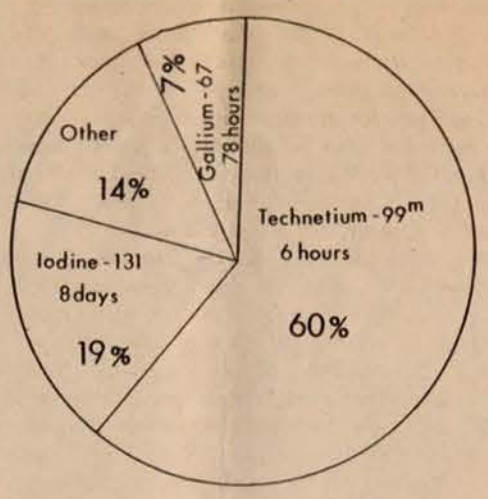
Yet this information is extremely misleading. The medical waste stream represents *25%* of the volume of solid waste and contains *less than 1%* of the total radioactivity disposed of annually. Therefore, the toxicity of medical waste is *far less* than that of nuclear power plant waste.

In a Government Accounting Office study, the Nuclear Regulatory Commission stated that 97% of medical waste has a half-life of less than 60 days. Below are two charts which show the element, half-life and percentages of waste produced at an average hospital and average boiling water reactor each year. Notice that 60% of the hospital waste is Technetium 99m with a half-life of six hours. This means that Technetium 99m need only be stored for a few months before it is no longer toxic. (The m stands for metastable. Technetium 99 is toxic for thousands of years.) On the other hand, a majority of the reactor waste must be kept isolated from the environment for a few hundred years.

Sources for these charts include: "Characterization of Selected Low-Level Solid Radioactive Waste Generated by Four Commercial Light Water Reactors," EPA-ORP-TAD-77-3, Dec. 1977, and "Institutional Radioactive Wastes," NUREG/CR 1137.



Reactor Waste Stream



Medical Waste Stream

the Waste Paper

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Spring, 1982

Suffer Fools Gladly

by Mike Levinson

"Mention had been made of some new astrologer, who wants to prove that the Earth moves and goes around, and not the Sun . . . This fool wants to turn the entire art of astronomy upside down!"
Martin Luther, 1539

Martin Luther's insulting comment of six centuries ago referred to Nicolas Copernicus, an astronomer from Poland, who in the mid 16th century challenged the ruling Ptolemaic order. Copernicus proposed that our planet was *not* the center of the universe as had been the previous assumption, but that the earth revolved around the sun. *For over a century,* those in control, fought this revolutionary doctrine and the new scientific movement. Leaders of the time were determined to hold onto their established monopoly over knowledge and thought.

In this tradition, the nuclear industry today, in support for nuclear economics and determined to maintain a dogmatic monopoly on energy-related scientific knowledge, attempts to fight reason. It took over 100 years before the established order accepted the Copernican heliocentric theory. How long will it be until the nuclear establishment listens to the reason of safe energy critics?

The historian Norwood Hansen compares the controversy to that of a person riding on a merry-go-round; if an individual is observing from a rotating chair on the outside of the revolving ring, it is possible for that person to interpret either the center of the merry-go-round or the chair as the nucleus of the system of motion. As illogical as the latter interpretation may be, it was much like the one endorsed by the boys on top in the 16th century. These "leaders" conveniently chose to see the Earth as center of the universe in order to justify the validity of their overall political doctrines and the legitimacy of their rule. The nuclear establishment finds itself in a similar position: In order to perpetuate themselves as the scientific (and moral) "leaders" of the world, these people must adhere to the nuclear doctrines as the absolute truth, despite voluminous evidence to the contrary, and despite mounting opposition.

Copernicus found himself isolated with little support, as did many of the early members of the anti-nuclear movement. His theories were condemned by leading intellectual institutions (the universities of Wittenberg, Rostock, Sorbonne, and Tubingen) and political orders such as the Roman Catholic Church and the Congregation of the Index. He was also ridiculed by other contemporary academics and scientists as a fool and heretic. But the Age of Reason prevailed, and as Norwood Hansen wrote: "In the 16th and 17th centuries, the name Copernicus became a battle cry against the establishment." Finally, as people's eyes opened, the old order's naivete and arrogance became apparent, and Copernicus' theories were eventually accepted.

How long will it be until the nuclear establishment admits the fallacy of its doctrines? How long before today's "fools" become next year's wise folks?

Mike Levinson, formerly of WESPAC is now coordinator of the New York State Nestles Boycott campaign.

Book Review

RADWASTE: A Reporter's Investigation of a Growing Nuclear Menace by Fred Shapiro, 288 pages, 1981.

Radwaste is an excellent resource book for anti-nuclear activists as well as a terrific primer for anyone interested in this engulfing, global problem. The author, Fred Shapiro, of *The New Yorker* magazine, has travelled across the country and gathered information on uranium mill tailings piles, low-level waste dumps, Manhattan Project sites, high-level waste and irradiated fuel build-up.

He begins with the first nuclear reaction that took place at the University of Chicago in 1942 and closes with an important discussion on disposal alternatives such as shooting the waste to the moon, shipping it to the South Pole and injecting it into shale and deep seabeds.

Shapiro has a helpful glossary which is a must for people unfamiliar with the terribly confusing nuclear terminology. One of the most important contributions Shapiro has made in *Radwaste* is that he successfully tears down the myth that low-level waste is essentially innocuos booties and gloves from nuclear workers.

Each chapter is packed with details illustrating that the growing problem of nuclear waste can no longer be ignored. Although the book is written from a reporter's perspective rather than a scientist's one, it is highly recommended for all. Available from Random House of New York for $14.50.

NFS Bows Out
Taxpayers Left Holding the Bag

A NRC License is vanishing into thin air, the fate of 162 tons of irradiated fuel is still unresolved and millions of dollars of clean-up costs are being dumped into the taxpayers laps. This is the deal Congressman Stan Lundine and Senator Pat Moynihan are so proud about.

On February 19, 1982, following three weeks of round-the-clock negotiations, the New York State Energy Research and Development Authority (NYSERDA) and Nuclear Fuel Services (NFS) came to financial agreement on clean-up of the high level waste tanks at West Valley, N.Y. The agreement is excellent for NFS, a subsidiary of the wealthy, multinational company, Getty Oil, and extremely disadvantageous for state and federal taxpayers. The company will put up a meager $9.4 million, leaving the taxpayers the remainder of the clean-up bill which may reach billions.

Numerous uncertainties regarding the irradiated fuel sitting in the closed-down reprocessing building and the two radioactive burial grounds at the site remain. Despite these uncertainties, NFS will have left the site at the end of February – except for one NFS staffer who will look after the state-licensed burial ground pending the completion of negotiations on the burial ground (see below). Shortly, thereafter DOE and its conductor, Westinghouse, will begin the delicate and complex experiment of attempting to clean-up the liquid high level waste sitting in underground tanks at the site.

The Irradiated Fuel Question The financial agreement, worked out at the end of January in secret meetings in Albany and Buffalo, touch every aspect of the West Valley site. The main sticking point has always involved the irradiated fuel in the fuel pool, and the radioactive burial grounds. Under contract with NFS, four utilities are storing the toxic fuel in the pool (Commonwealth Edison, Jersey Central Power and Light, Rochester Gas and Electric and Wisconsin Electric Power). This fuel was shipped to NFS between 1972 and 1975. It has been sitting at the site ever since.

As part of the Feb. 19 NYSERDA-NFS agreement, the utilities have written the state acknowledging responsibility for the fuel. The utilities will negotiate with NFS and the NYSERDA, the rental fees to continue storing the fuel and a final removal date. How such a date will be determined given the major uncertainties regarding the siting of a final resting place for the fuel is unknown. If agreements with the utilities regarding the irradiated fuel are not reached *within one year*, the entire Feb. 19 agreement is off and the matter must go back to trial.

NFS also owns 11.5 tons of irradiated fuel which is stored in the West Valley pool. This will be removed by January, 1987. The state is hoping to have the utility fuel removed at about the same time. Since there is no final repository to which the fuel can be taken, where will it go? Rumor has it that the Department of Energy (DOE) will take possession of the fuel to use in an experimental dry storage program. But whether DOE will conduct this experiment at West Valley or elsewhere remains to be seen. Conceivably, DOE could store the fuel in dry casks on site, indefinitely. The date of 1987 was selected because it is the earliest date when DOE may need the irradiated fuel pool for the solidified waste produced by the high level waste cleanup operations.

NRC-Licensed Burial Ground Major concessions were offered by the state on the radioactive waste burial grounds at the site. Previously, the state had demanded over $20 million for clean-up costs at the NRC-licensed burial grounds. Now the state has withdrawn all financial claims.

The NRC-licensed burial ground contains numerous "hot" items from the past reprocessing operations, including fuel hulls (which contain a significant residue of the irradiated fuel), contaminated parts from the plant, and buried irradiated fuel, itself. Citizens throughout the country are now aware of the hazards associated with transporting irradiated fuel down city streets. Few are aware that some of this extremely toxic material was dumped *directly* into the ground at West Valley and then, unceremoniously covered with concrete. Also, a large amount of plutonium resides in the burial ground. This material will remain toxic for several hundred thousand years. (Recently, high levels of radioactive tritium have been discovered in a ravine at the site of the burial ground. To determine whether radioactivity is migrating, the NRC is sponsoring studies by the U.S. Geological Survey. This will require the drilling of monitoring wells this summer.)

Under the new agreement, the license for the NRC-licensed burial ground will be *suspended.* DOE will take over a caretaker role plus the burial ground may be re-opened for burial of radioactive materials generated by the high level waste solidification operations. If the agreement regarding the irradiated fuel pool is reached within one year, *the license and all financial claims will be terminated.*

Dangerous Precedent To allow the NRC license for the burial ground to lapse, without a public hearing to determine whether the site is properly decommissioned, is a new, exceedingly dangerous, precedent. In effect the license is being "laundered" by DOE. The license is to be first "suspended" and then after one year, terminated. For other burial grounds, such as the Sheffield, Ill. burial ground licensed by the NRC, full hearings are taking place to determine whether the site is properly decommissioned. Apparently, an exception is being made in the NFS case.

At how many other NRC-licensed facilities will this license "laundering" be implemented? If the NFS precedent is allowed to stand, what will prevent utilities, whose reactors are shut down and needing decommissioning, to simply transfer the facility to DOE for "experimental" work on decommissioning, simultaneously, suspending the license. With alarming ease utilities could get rid of problems, transferring costs to the unwary taxpayer and avoiding public oversight! In the case of NFS, who will pay for the clean-up of the burial ground, if any remedial work is required? *Who* will determine if remedial work is required? – DOE staff, in behind-closed-doors sessions? The implications for public health and safety are grave, indeed.

The State-Licensed Burial Ground The state-licensed burial ground, used between the years 1963 and 1975 for commercially produced "low level" solid waste, will be maintained by one NFS staffer, pending negotiations with the New York State Department of Environmental Conservation (DEC). DEC will determine what remedial action is to be taken by NFS before the company leaves the site. A hearing on this matter will be held one year from now – *after NFS has left the site.* (Remember there is a one year deadline for all outstanding matters to be settled or the entire agreement is put into jeopardy).

When and if the DEC hearing takes place, the agency will decide what steps must be taken by NFS to place this commercial burial ground in satisfactory permanent state, so that the wastes are isolated for the thousands of years required. It is open to question what purpose a hearing will serve once NFS has left the site or how DEC would recover additional costs anyway. Given the fate of the NYSERDA-NFS lawsuit it is hard to imagine DEC embarking on another lawsuit vs NFS. Furthermore, the agreement signed on Feb. 19 specifically excludes the possibility of NFS being held fiscally responsible for any remedial action at the state-licensed burial ground which is not pumping out of water in the trenches or cap and cover improval. In other words, costs associated with exhumation, which is supported by the Buffalo Common Council and the Erie County Legislature are excluded. And presto the taxpayer is zapped again.

What will be happening to all NFS personnel at the West Valley site? NO need to get teary-eyed about their welfare; making a mess is good business. Westinghouse is hiring all NFS personnel at the site, and bringing in their own complement from outside. Few job openings will be therefore available. Supposedly only six new persons, secretarial types, will be hired from the West Valley area. Job applications are coming in at the rate of 20 per day.

Costs and Benefits With the agreement between NFS and the State signed, the costs and benefits to the State are now becoming clearer. The NFS reprocessing operation has been a very bad business deal for the State. Initial construction costs of $32 million brought immediate jobs to Western New York. In terms of reprocessing business, about $21 million was brought in over the six-year operating history of the plant, from 1966 to 1972; $10 million of this money paid back State loans to the company. Insignificant revenues were brought in from NFS commercial burial operations. Over the years, NFS contributed $4.9 million to a "perpetual" care fund. As part of the agreement, NFS will ante-up an additional $9.4 million. The total revenue to the State is therefore on the order of $55 million.

The costs to the State will loom much larger. The total Federal cleanup bill will range between $400 million and several billion, 10% of which will be paid by the State. This does not include State monitoring costs, plus the health effects, cancers and genetic effects, to workers and the public, which must be factored into the equation. The total cost of monitoring and maintaining the burial grounds is unknown at this time. *It is not inconceivable that the ultimate costs for these burial grounds will exceed the costs for the high level waste cleanup.* The bottom line is $55 million brought into the State by the company NFS/Getty, and perhaps, $40 million, to $100 million, or more paid by the State, and $900 million, or more by Federal taxpayers.

Estimating clean-up costs is about as hard as it once was to estimate nuclear power plant construction costs. Just as "too cheap to meter" nuclear power has produced one ratepayer hike after another, the clean-up of this dirty industry is going to heavily burden future taxpayers as clean-up costs keep going up and up. At a time of budget crisis in New York State, it is disappointing to see a state agency make such a toothless deal with one of the richest corporations in the world.

New Offices

The Campaign announces its moving to 78 Elmwood Avenue, Buffalo, New York 14201 on March 15, 1982. Our new home will accommodate the Campaign and the regional office for the New York Atlantic Chapter of the Sierra Club. We are pleased to announce the opening of a downstate office in White Plains, NY. The address there is 255 Grove Street, White Plains, NY 10602 or phone (914) 949-9700. This office will focus its work on the decommissioning of Indian Point I reactor in Buchanan, NY, uranium mining in Sullivan County and the Northeast Transport Project. Anyone interested in working on any of these projects should contact Mina Hamilton in White Plains.

Thor One Trail

Continued from page 1

probably the Lewiston-Queenston, the Rainbow or the Peace Bridge near Niagara Falls and Buffalo, N.Y. It is unknown as to how many shipments pass through U.S. communities regularly. It is also unknown along exactly which railroad lines the hazardous materials travel. Given the fact that railroad lines criss-cross the heart of Buffalo, it is clear that many inner-city residents are at risk for shipments that are primarily benefiting South Africa and the Japanese utilities. Despite these risks, which are particularly worrisome because of deteriorating and degraded railroad beds, Transnuclear Corporation, a U.S. shipping firm, has an import license to bring "unlimited quantities" of uranium across the Canadian border.

The reason the yellowcake is transformed into UF_6 in the first place is that uranium can only be enriched when it is in a gaseous form. (Uranium ore after mining and milling is about .7% uranium, yet 3-4% is required for nuclear reactor fuel.) The gas is pumped through thousands of porous membranes to separate the lighter Uranium-235 used in reactors from the Uranium-238. Only France, Britain, Russia, China and the U.S. have these expensive, complicated plants. Since Canada does not have an enrichment plant, the yellowcake must be shipped to one of the U.S. facilities in Paducah, Ky., Oak Ridge, Tenn. or Portsmouth, Ohio.

At this point, it is unclear whether the enriched uranium is fabricated into fuel rods in the U.S. or sent back to Canada. One logical route for the enriched fuel would be to travel from one of the three U.S. enrichment facilities then to fuel fabrication plants in Columbia, S.C. or Richland, Wash. From there, the fuel would be exported to Japan. But there is nothing logical in this crazy trail followed by the nuclear fuel chain.

Continued on page 4

Nuclear Transport

Shipping Casks

Pressure Cooker on Wheels

A preview of the ongoing Council on Economic Priorities (CEP) study on near term options for handling irradiated fuel has just come off the press. The study headed by Dr. Marvin Resnikoff, formerly Co-Director of the Sierra Club Radioactive Waste Campaign, and involving researchers Lindsay Audin and Leslie Birnbaum, promises to send shock waves through the nuclear industry.

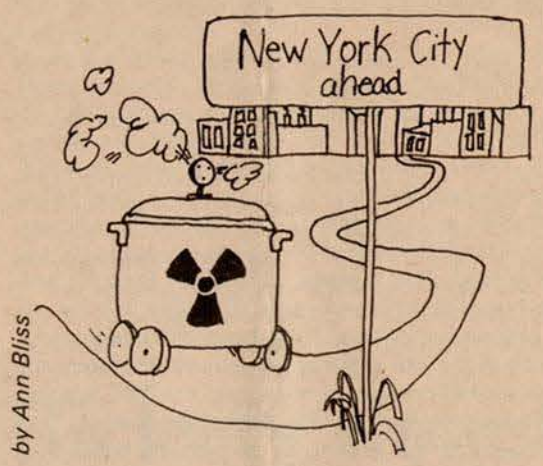
Some of the findings which are summarized in the just-released newsletter:

* There will be 120 shipments travelling across the country *per day* by the year 2000. This assumes 150 operating reactors on line – the 70 or so operating plus another 80 under construction.

* The Achilles' heel of casks are pressure valves which once unseated are not likely to reseat. In summer of 1981, General Electric (GE) removed from service four rail shipping casks because GE designers, to save costs, substituted plastic for metal in the valve. Plastic will, of course, melt in a fire. The Nuclear Regulatory Commission (NRC) has never investigated the safety of the variety of valves and seals on shipping casks. The agency has focused all its risk assessment studies on whether the heavy, 25-ton to 100-ton casks will be breached in an accident.

* Casks are pressure cookers on wheels. Casks are pressurized to 150 to 300 lbs. per square inch (psi) but casks have only been tested pressurized to 10 psi.

* NRC calculations regarding the consequences of an irradiated fuel accident in an urban area is seriously flawed. The computer code, which was



by Ann Bliss

based on the Rasmussen Report, on estimates of the effects of a nuclear reactor meltdown, *excludes the effects in the first quarter mile.* With reactor accidents this exclusion makes sense because nobody lives within a quarter mile of a plant. But with cask accidents, the first quarter mile, is the area where the radiation levels will be most intense.

* Volunteer fire departments with virtually no training in radiation emergency procedures will have to respond to an accident. Of two million fire fighters nationwide, only 250,000 are paid, full-time professionals. This leaves *1,750,000 volunteer* firefighters unprepared for highly dangerous, radiological accidents.

* *Seventy-six percent* of truck accidents take place at speeds greater than 32 mph. Yet NRC regulations require casks to survive a collision of only 30 mph onto an unyielding barrier.

* The NRC testing requirements used to certify casks were developed *in 1961.* Since that time, the interstate highway system has been constructed which means trucks routinely travel at speeds in excess of 60 mph and literally hundreds of chemicals are now travelling the highways which burn at temperatures in excess of the fires for which the casks have been tested. Many of these chemicals have only been discovered in the last twenty years so, of course, testing requirements do not meet these special requirements.

* *No casks presently moving on the highways or rails have been actually physically tested.* Tests have all been by computer simulation or hand calculations.

Because of these and other important findings, CEP is advocating the withdrawal from service of the seven remaining casks currently in use, until safety questions have been addressed.

If you, too, are worried by the lack of adequate testing of these casks why not clip out this article and send it to your local Congressperson and ask for their support.

The Council on Economic Priorities Newsletter is available by writing to: CEP, 84 5th Avenue, New York, New York 10011 and enclose $1.

Thor One Trail

Continued from page 3

Citizens in Western New York, as well as along major highways leading from Buffalo to the enrichment plants, should ask local City Councils to investigate the UF_6 shipments. What routes are being followed? What are the conditions of the railroad lines being used? How many train derailments have occurred along these routes? These are some of the questions U.S. residents should start asking.

Citizens might also wonder why their local health and safety is at risk to allow Canada to process Namibian ore. Back in 1970, the United Nations' Security Council passed a resolution urging its member states not to engage in trade with Namibia and not to recognize any authority by South Africa over the country. Both the U.S. and Canada agreed to that resolution. Now both are looking the other way as the Namibian shipments come through. *The Waste Paper* would welcome any information on the Namibian connection.

News Flash

On February 28, 1982, a train accident just 35 miles north of Toronto, caused utter chaos among emergency preparedness teams, fire fighters and nearby communities. Several chemical cars, including one containing hydrofluoric acid, derailed as a result of a cracked wheel on a car. According to the Canadian Broadcasting Company, it took 10 hours *for emergency squads to respond to the accident. Finally 1,200 persons were evacuated including farmers who were told to leave their animals behind. Evacuation occurred four different times. For the first seven hours of the accident, the Canadian government called for a complete news blackout due to the total confusion in dealing with derailment. Several cars burned for days. Fortunately, the hydrofluoric acid was found in a ravine and had not been breached.*

As we go to press, *we learn that Mitsubishi International Corp. has an import license to the U.S. for South African yellowcake. Their license runs from January 1982 to December 1984 for a grand total of 1.3 million kilograms of uranium. The yellowcake will be shipped by rail from Baltimore, Md. to U.S. enrichment facilities. The material will eventually be used for reactors by Kansai Electric Co. of Osaka, Japan.*

Reactors Facing Crunch

Fuel Pools Near Capacity

The Sierra Club Radioactive Waste Campaign is launching a NORTHEAST NUCLEAR TRANSPORT PROJECT. This will be an extension of our organizing and educational work into the northeast and mid-Altantic region. The focus of this project will be transportation routes leading to seven reactors in the region.

These seven reactors located on the map will be running out of on-site storage space for irradiated fuel within the *next five to seven years.* That may sound like a reasonable amount of time, but the utilities need at least *six years* to come up with an alternative plan for storing their fuel. This means that the utilities are facing a serious crunch.

Either the reactors will have to be shut down by the date their irradiated fuel storage is exhausted, or the highly toxic fuel will be shipped off site – to another reactor with extra storage space in an irradiated fuel pool or to an AFR (away-from-reactor) storage facility. The AFR concept would get the utilities off of the waste hook. The fuel would be bought at the reactor gate by the Department of Energy for a one-time fee and presto, the problem becomes the property of the U.S. taxpayer.

All Options Equal Risks There are several on-site storage options available to the utilities facing this crisis such as building additional storage pools, pin storage or dry storage. But each of these "solutions" have major drawbacks to both utilities and citizens. An addition storage pool on site (with a capacity for 20 years worth of fuel) will cost a staggering $90 million. So this option is opposed by the electric companies.

Pin storage is an experimental, dangerous technology which would involve shearing off the tops of the fuel assemblies and re-arranging the fuel rods so that the cladding of the rods actually *touch.* There are major criticality and heat-up problems associated with this type of storage.

Dry storage is the stacking of fuel in extremely costly casks in a new building, constructed adjacent to the reactor. Citizens are, understandably, concerned that this storage technique will lead to the development of the reactor site, itself, as a permanent repository.

Congress Wants an AFR? Given the high financial and public health costs associated with each of these options, the nuclear industry is strongly pushing for the AFR "solution" in 1982. All of the major waste bills (see *Legislative Update,* page 6) moving through the U.S. Senate and the House include provisions for an AFR. If AFR legislation passes, it means that each of the reactors listed on the accompanying map will start shipping irradiated fuel down unsafe highways or deteriorating railroads within the next few years. If the bill does not pass, the utilities will be strongly tempted to move forward with unsafe and untried on-site storage schemes.

The Northeast Nuclear Transport Project will develop and circulate educational materials on the irradiated fuel storage and transport problem, work with local groups to organize communities and educate county and state legislators regarding the available options, promote local citizen in-put into what "solution" the utilities choose, and help pass resolutions calling for withdrawal of unsafe casks currently travelling in the U.S. In Spring of 1982, the Campaign will be conducting workshops in both Pa. and Mass. which will initiate the project.

Reactor Phase-Out If your community surrounds one of the impacted reactors or will be affected by nearby transport routes, write the Sierra Club Nuclear Transport Project, 78 Elmwood Ave., Buffalo, New York 14201.

And remember one option available to communities confronting this problem is to phase the impacted reactors out over the next five to seven year period during which the irradiated fuel pool is filling up. Five to seven years of planning should be sufficient to start getting in place realistic, economical and feasible energy alternatives.

Name That Cask

On a recent trip sponsored by Greenpeace to watch whales off of Cape Cod, we learned that cetologists (folks who study whales and dolphins) have named one of the humpback whales, frequently cited off the coast, Othello. *The Waste Paper* is sponsoring a contest for names of the seven irradiated fuel casks remaining on the highways and railroads. This way, instead of referring to IF-300 or NFS-4 we can refer to Cerberus, Hades, Dr. Jekyll or whatever. Let us know your ideas. Winners will receive a free copy of our *Waste Paper* T-shirt. This is normally an exclusive not-for-sale item given to *Waste Paper* authors.

the Waste Paper

Mining for Nuggets:
Researching For The Safe Energy Movement

by Lindsay Audin, copyright 1982 by Citizens Institute for a Positive Energy Policy

What pulled you into the struggle against nuclear power? You probably heard about the dangers of radiation and/or the mistakes and cover-ups of the government and nuclear industry. But where did such information come from and how did it get to you?

For every hour you spend reading a book or article on nuclear power, you can bet there are at least several weeks' worth of research to dig up and organize that information. In my ten years in the anti-nuclear movement, I have come to believe that such work has created the binding force that energizes and justifies our efforts. After all – we may not always agree on tactics, but we share a common understanding of the danger of atomic power.

Research can be a drudge but it can also be fun, and sometimes fascinating. I have always gotten a kick out of putting two or three pieces of data together and discovering something completely on my own. I recall, for example, proving that the Nuclear Regulatory Commission (NRC) allowed irradiated fuel shipping casks to be used even after the agency had been told of their possible defects. As more of us seek out and find these "nuggets," or pieces of information, the true record of nuclear power will become clearer to the public and our movement will gain further momentum and strength.

By now I can hear you saying "sure, that's great, but I don't have weeks to spend reading and writing, and I'm no expert, either; what can I do to get into research on a level I can handle?" Well, here goes!

Getting Started There are several levels of research open to the non-professional. Many activists, for example, use prior research (in the form of popular books and articles) when compiling a report. Others go back to the data sources of such articles; this usually means checking specific references and the bibliographies in better books on nuclear power. Deciding just how deeply you wish to get involved will help you focus on a specific approach.

Next, define your goal as clearly as possible: just exactly what is it that you wish to prove? Inevitably, any issue you approach will ooze into unexpected areas so, an early, narrow limitation will make your job easier. Unless you have promised your research to someone else, you can always revise your goal later.

Before jumping into research techniques, here are four suggestions for the novice researcher:

1. get organized, even if it kills you; keep a notebook of your ideas, a telephone directory of contacts and set aside a box or drawer for files

2. allow yourself plenty of time for everything

3. assume the answer is out there, even when the going gets rough, and

4. never, never be too proud to ask for help from other researchers.

Research Techniques Safe energy research is a lot like writing a college term paper. It involves finding resources, reading a lot and taking careful notes as you proceed. It also involves the development of a sense of skepticism and curiosity that tells you when something doesn't sound right, and it's not *how much* you read, but *how well you understand,* that makes the difference.

But where do you find information? Warning: in this country, there is no dearth of data. Rather, there is an ocean of paper and microfilm ready and willing to suck you down with its undertow of mass and contradictions. While there are no hard and fast rules on finding data, here are a few "life preservers" that may at least keep you afloat.

Continued on page 7

Flash

The mock drill on March 3, 1982, to warn 258,000 residents living near the Indian Point nuclear reactor of a potentially hazardous nuclear accident at the nuclear power plants was a flop. The sirens failed to go off. Of the 88 installed sirens, only a few could be heard, the rest were barely audible or silent. This exercise in futility cost the four impacted counties over $2 million.

What's in a Weld?

Last spring, we reported in our article on "The Bechtel Administration," that an internal audit of the Alaska pipeline, for which Bechtel was responsible for quality control, had problems on 4000 welds. (Over 500 X-rays were defective and missing.) In November, we learned from a welder at a naval shipyard near Portsmouth, VA that the Trident submarine had a 40% defective weld rate.

Now we have heard that welds on shipping casks have *never been examined* for flaws. Since the casks are now radioactively contaminated, they cannot be checked by radiography for defective welds. And because of the particular type of steel used in casks, neither can they be checked by sonic methods. Feeling any better about those 120 shipments per day coming your way?

Cask Recall Strategy

The national ramifications of the recent New York city ruling on Department of Transportation nuclear waste shipment regulations are still unclear. The Campaign believes communities should not wait and find out. In communities where there are continuing threats of irradiated fuel transport – specifically in upstate New York at the Thousand Island Bridge near Clayton, N.Y., in Portsmouth, Va. and in Michigan, citizens should still press their city council or bridge authority to pass restrictive ordinances.

Where bans and other restrictions, such as pre-notification, are in effect, or in areas where such bans will meet stiff opposition, communities should start to pressure local legislatures to pass the following resolution calling upon the U.S. Congress to recall casks until they have been adequately tested. These casks clearly pose more of a threat than thousands of cars like the Pinto which have been recalled by automobile manufacturers for faulty gas tanks which caused fires when these cars were hit from behind.

Casks must be tested for realistic highway and railway conditions and local health and safety officials must be trained to act knowledgeably in the event of an irradiated fuel transport accident.

Proposed Spent Fuel Transport Resolution

WHEREAS, this body has become aware of pending shipments of highly irradiated nuclear fuel in its nearby vicinity, and

WHEREAS, the existing shipping casks used to transport irradiated fuel have never been subjected to full-scale tests to ascertain their ability to withstand present standard tests, and

WHEREAS, the present cask standards are not sufficient to simulate potential accident conditions on routes used to ship irradiated fuel, and

WHEREAS, many such casks have been found to be defective despite federal efforts at quality control, and

WHEREAS, irradiated fuel shipments from nuclear reactors will increase sharply in the near future,

BE IT RESOLVED that _____ _____, after learning of the details concerning the above matters, calls upon the United States Congress to:

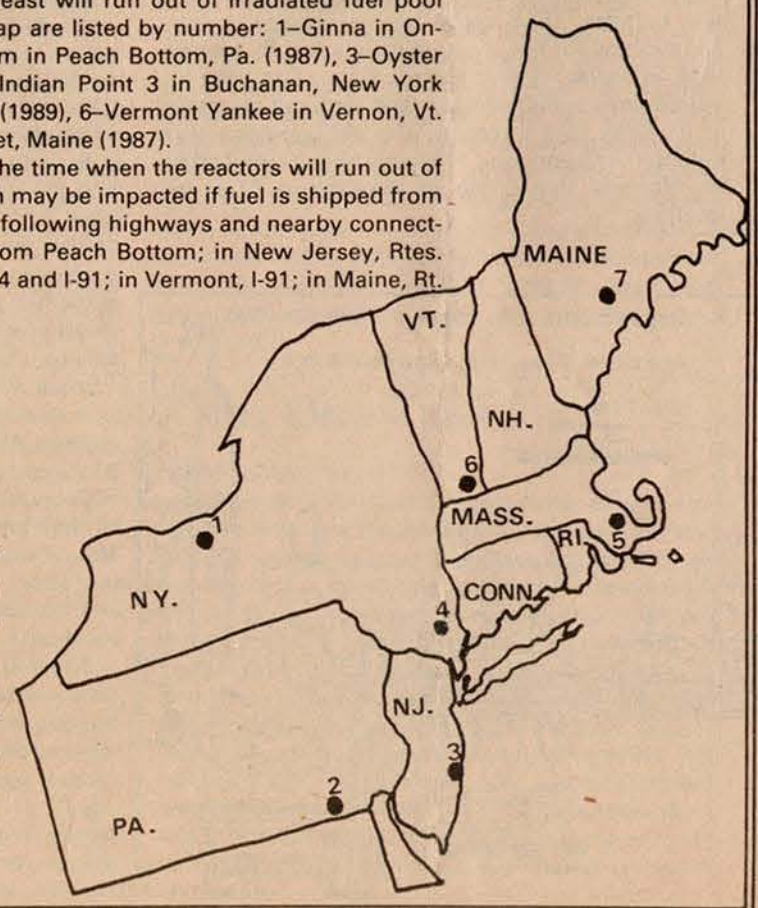
1. **investigate the deficiencies of present cask testing and standards and produce a report on them;**
2. **require the Nuclear Regulatory Commission and the Department of Energy to suspend the Certificates of Compliance of all existing irradiated fuel shipping casks;**
3. **require the Nuclear Regulatory Commission, in conjunction with the National Transportation Safety Board, to develop improved standards for fabrication, testing and quality control of defect-free irradiated fuel shipping casks;**
4. **require the Nuclear Regulatory Commission and the Department of Transportation to develop and order use of all irradiated fuel storage and transport options that minimize shipments of irradiated fuel until a licensed facility for final and safe disposal of irradiated fuel has been established.**

RESOLVED ON THIS DAY, _____ _____

(a brief on temperatures, drops, etc. would accompany the resolution and would serve as the educational tool to convince the members of the group to support the resolution; this document could be referenced where the above says "after learning of the details. . .")

Seven nuclear reactors in the northeast will run out of irradiated fuel pool space by 1989. The reactors on the map are listed by number: 1–Ginna in Ontario, New York (1988), 2–Peach Bottom in Peach Bottom, Pa. (1987), 3–Oyster Creek in Toms River, N.J. (1987), 4–Indian Point 3 in Buchanan, New York (1988), 5–Pilgrim I in Plymouth, Mass. (1989), 6–Vermont Yankee in Vernon, Vt. (1988) and 7–Maine Yankee in Wiscasset, Maine (1987).

The year in parentheses represents the time when the reactors will run out of fuel storage space. Communities which may be impacted if fuel is shipped from these reactors include those along the following highways and nearby connecting routes: in Pennsylvania, Rt. 222 from Peach Bottom; in New Jersey, Rtes. 37, 70 and I-95; in Massachusetts, Rt. 44 and I-91; in Vermont, I-91; in Maine, Rt. 1 and I-95 and in New York, Rt. 9.



"Utilities need at least six years to come up with an alternative plan for storing their fuel. This means that seven northeast reactors face a serious crunch from 1987-1989."

Sneak Preview

Upcoming in the Summer issue of *the Waste Paper:* Ocean Dumping of Radioactive Waste, and a Comic Strip on Radioactive Waste by Ken Gale and Leslie Stern-Bergh.

Legislative Update

Udall Bill Under Attack

The threat of Away-From-Reactor (AFR) storage at West Valley, N.Y, Morris, Ill. and Barnwell, S.C. is growing in Congress. Representative Morris Udall's (D-AZ) bill, which eliminates AFRs, is now being strongly challenged by House Republicans.

Although it is the most sensible of a whole slew of legislation from a public health and safety viewpoint, H.R. 3809 is under attack. The Udall Bill attempts to establish a step-by-step careful policy for a federal repository to store high-level nuclear waste from commercial reactors.

At the outset, the Udall Bill included military waste but, unfortunately, House Republicans were successful in striking this language. Waste is waste and toxic military material should be included in national legislation. This exemption leaves the back door open for disposing military waste without public oversight and without Nuclear Regulatory Commission licensing.

On the other side of the coin, H.R. 3809 has strengths: it prohibits the use of unlicensed "demonstration" dump sites, such as the Testing and Evaluation facilities currently being promoted by the Reagan Administration and it calls for public hearings on any site to be recommended for site characterization, which includes borings, excavations and on-site testing.

Two severe problems which need attention in the bill are the time frame for site selection which currently calls for three sites in two geologic media to be identified within one year of the bill's enactment and the need for an environmental impact statement required under the National Environmental Policy Act.

Since the Reagan Administration has made a strong commitment to nuclear energy and "solving" the nuclear waste problem, it is clear that there is intense pressure to pass a nuclear waste bill this year. Citizens should write their representatives and urge them to insist that Udall keep AFRs out of HR. 3809.

As we go to press, we hear that Udall is under pressure to allow a Department of Energy financed mini-AFR, a 1,700 metric ton facility to his bill. Supposedly, this facility would not be Barnwell, S.C., Morris, Ill. or West Valley, N.Y. Write Udall today and let him know that you OPPOSE any further federal bailouts. Let the utility pay for additional storage of irradiated fuel, not the federal taxpayers via the Department of Energy.

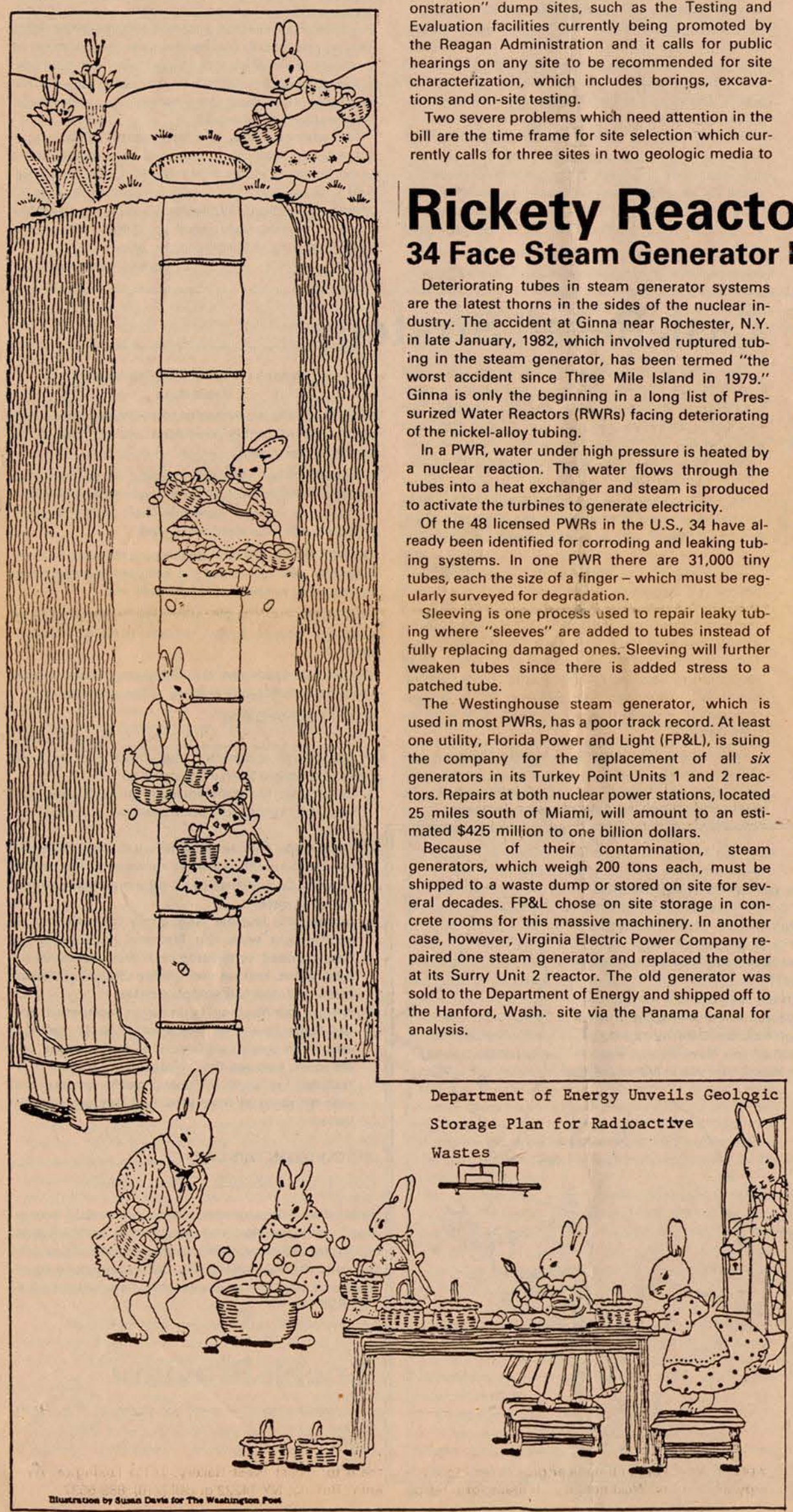


Illustration by Susan Davis for The Washington Post

Rickety Reactors

34 Face Steam Generator Problems

Deteriorating tubes in steam generator systems are the latest thorns in the sides of the nuclear industry. The accident at Ginna near Rochester, N.Y. in late January, 1982, which involved ruptured tubing in the steam generator, has been termed "the worst accident since Three Mile Island in 1979." Ginna is only the beginning in a long list of Pressurized Water Reactors (RWRs) facing deteriorating of the nickel-alloy tubing.

In a PWR, water under high pressure is heated by a nuclear reaction. The water flows through the tubes into a heat exchanger and steam is produced to activate the turbines to generate electricity.

Of the 48 licensed PWRs in the U.S., 34 have already been identified for corroding and leaking tubing systems. In one PWR there are 31,000 tiny tubes, each the size of a finger – which must be regularly surveyed for degradation.

Sleeving is one process used to repair leaky tubing where "sleeves" are added to tubes instead of fully replacing damaged ones. Sleeving will further weaken tubes since there is added stress to a patched tube.

The Westinghouse steam generator, which is used in most PWRs, has a poor track record. At least one utility, Florida Power and Light (FP&L), is suing the company for the replacement of all *six* generators in its Turkey Point Units 1 and 2 reactors. Repairs at both nuclear power stations, located 25 miles south of Miami, will amount to an estimated $425 million to one billion dollars.

Because of their contamination, steam generators, which weigh 200 tons each, must be shipped to a waste dump or stored on site for several decades. FP&L chose on site storage in concrete rooms for this massive machinery. In another case, however, Virginia Electric Power Company repaired one steam generator and replaced the other at its Surry Unit 2 reactor. The old generator was sold to the Department of Energy and shipped off to the Hanford, Wash. site via the Panama Canal for analysis.

Since 1975, four other Westinghouse generators have failed and several others face severe tube wall thinning and rupture in the near future. The Surry Unit 2 reactor in Virginia, Point Beach Units 1 and 2 in Wisconsin, Ginna in New York, Prairie Island in Minnesota and Oconee 2 in South Carolina, have all shut down for steam generator repairs or replacement. For Westinghouse's confidence in their product, the steam generator has a one-year warranty. (Can you be sure if it's Westinghouse?)

Due to the epidemic of steam generator failure, a newly designed one will be available in 1985. But until then, all reactors licensed through 1984 will receive the older, defective model. To date, several PWRs are scheduled to receive Westinghouse steam generators by 1984. Of course, with continued construction delays, it is unclear as to how many reactors will actually be licensed with the problem-ridden Westinghouse mechanism.

The Ginna steam generator problem is not a new one. Since the reactor went on line in 1970, it has been shut down *10 times* because of leaks and cracks in various valves and pipes. Before the Jan. 1982 accident, the latest shutdown occurred last summer when a routine inspection revealed corrosion in tubing of one of the generators.

Hacksaw The accident at Ginna illustrated how serious the nickel alloy tubing corrosion problem can be. A Rochester Gas and Electric official stated that the photos of the tubing rupture were very dramatic. "It looks like somebody went in with a hacksaw. Some of the tubes showed severe denting and external degradation," he said.

At Ginna, the implications of the accident go far beyond just the issue of the cost of the repairs of the faulty tubes. It may be that the entire steam generator system should be replaced to avoid more accidents in the near future. If ratepayers are going to have to bear the high costs of the replacement jobs, the issue of the buildup of irradiated fuel in the spent fuel pool at the plant (see *Reactors Facing Crunch,* page) becomes highly relevant. If Ginna is going to have to shut down in five years because of the fuel build-up problem, do ratepayers want to invest money now in a reactor whose lifetime may only be a few more years?

Some of the other reactors facing the tube corrosion dilemma include: Indian Point 2 and 3, both utilizing Westinghouse steam generators, Millstone 2 in Connecticut, Salem I in New Jersey, San Onfore in California and Oconee 2 in South Carolina. Shortly after the Ginna accident, the undamaged Three Mile Island Unit I, which was scheduled to restart this year, was discovered to have severe leaking and cracking of 4,000 tubes. Of those, 153 had actual leaks.

Citizens should find out whether Westinghouse steam generators are utilized at nearby PWRs. Communities should call for a full investigation into tubing systems of all PWRs to determine the seriousness of corrosion or leakage. With 34 PWRs suffering from this problem, accidents at Ginna, Pt. Beach, Prairie Island and other plants may soon plague the industry. Unfortunately, each "minor" accident has the potential to develop into a major accident.

Mining for Nuggets

Continued from page 5

1. Seek help from sources already familiar with the topic; most novice researchers waste an inordinate amount of time re-discovering fire in the midst of an inferno. Go to the local library and check out books and articles that touch upon nuclear energy and see if the facet in which you're interested is listed in the tables of contents or indexes. Be sure to visit bookstores as well, since new publications are coming out every month.

2. If there is an issue which involves money (and what, in America, doesn't), there is an advocacy group promoting it, a public interest group opposing it, a government committee investigating it and an agency trying to regulate it. All of these bodies have collected data that is available to you, probably for free, if you can figure out the names of the organizations and the right approach. For most research in this area, there are a half dozen national groups that can be helpful in steering you to good resources.

For Congressional committees and federal regulatory bodies, use the Almanac of American Politics, the Congressional Yellow Book (two private publications that together list all federal agencies, usually with their officers and chiefs of staff) or any of several booklets available from the local chapter of the League of Women Voters. Most such books are available at legal libraries, such as at a local law school or county government library. There are similar listings for most state and county agencies, too. Call the information operator for the county seat or state capital to get a number. A note on committees: contact the chairperson's office to see if the committee with the appropriate name actually has jurisdiction. Sometimes several committees share responsibility and occasionally an odd committee may have coverage. Also, don't forget to call the district office of your Congressperson. They exist to answer your questions.

3. If none of the above helps you get a contact, try this approach: if a national group exists on the issue, it has an office in Washington and/or New York City and you can make up their name and find it in the directories for those two places. Why? Because Washington is where the power is, and New York City is where the money is and no group that's hustling an issue wants to be far from money and power. If you want to consult a telephone directory for a city on which you do not live, large, central libraries usually carry out-of-town directories.

4. Exercise care in your approach. *Never, ever* send a handwritten letter asking for "everything you have on nuclear wastes," or whatever. Type everything you do. Keep a carbon copy in a file, or the rough draft in a spiral notebook. Always date your letters. Be specific in your inquiries. List your questions by number and give a hint as to what kind of data you want in return.

If an agency wants to charge you for a document or get finicky over releasing it, use a front. Ask a sympathetic local legislator, church leader, community group secretary or educator to make the same request *but on an official letterhead.*

5. There are many different kinds of studies, most of them heavy on the technical side. If you're new to the issue, stick to the popular books and articles, the analyses performed by safe energy groups and governmental review bodies such as the U.S. General Accounting Office and testimony before legislative and regulatory agencies. Once you have a grasp of the lingo (e.g., cladding, containment, isotope, SCRAM), you should not be intimidated by the NUREGs and the DOE/ETs (which are the prefixes to documents published by the Nuclear Regulatory Commission and the Department of Energy.)

The best place to start is the Office of Public Affairs of an agency; describe what information you want, and a public information officer will usually steer you in the right direction. If a more technical study contains charts or units unfamiliar to you,

by Ann Bliss

speak to an instructor who deals with the matter in question, or read a portion of an undergraduate textbook covering the issue. *You will be amazed at how quickly you can learn the details of an issue once you take the time to develop your background knowledge of it.*

When approaching any densely technical material, start with the summary. Does it deal anywhere with your issue? Are any of its conclusions of interest to you? Does the table of contents or index direct you to sections related to your topic? Read them after you read the summary. Look over the references used to write the chapters and check any appendices supporting the chapters. How old or reliable are the references? Are the same references mentioned over and over again? Are there questionable assumptions in the appendices? Is the author referencing his/her own work?

6. Be skeptical of everything you read – including your own finished work. It may seem paranoid, but when I read anything, I assume there's a lie or half-truth hidden somewhere – and I keep an eye out for it. Unfortunately, I often find it in publications from both sides of the issue.

7. Phone call inquiries are often tedious but can often yield subjective data of use in later research. Here's my method. Write down a one line description of the data you need since you'll have to repeat it 5 or more times as you get bounced from one bureaucrat to another. Having it in writing keeps one on track. Call the public affairs department and ask them to direct you to the individual responsible for handling your topic. If the person you get can't help, ask where to go if that information was needed by his/her department. *Get the name of every person you speak to for future reference.* Be very patient and polite, no matter what kind of a jerk you get on the line. Try to keep good notes, including the date and time, during the conversation and write a summary of the call if it yielded useful information.

Informational Resources Just as there are legal libraries for people involved in law, there are also collections of documents on technical issues, and specialized bodies that study them. Some most often used resources are:

* the New York Times, as a source of items to check out and, occasionally, the Wall Street Journal.

* Nuclear Regulatory Commission's Citizen's Guide to Information. For this brochure, call toll-free 800-638-8282.

* Congressional testimony (usually gathered into printed volumes available through the committee that held the hearing).

* National Technical Information Service – NTIS (the central respository for almost all technical literature produced in the U.S.).

* Several federal research bodies that issue reports on any matter that involves the federal government (e.g., Office of Technology Assessment – OTA).

* Federally funded libraries maintained by private contractors or laboratories (e.g., Office of Nuclear Waste Isolation – ONWI).

* Public affairs publication departments of the agencies themselves, Nuclear Regulatory Commission, Department of Energy, Department of Transportation and their subdivisions.

* Public Document Rooms (PDRs) which contain all papers made public by all federal agencies; they can be accessed by visit or by letter, if you can be specific about the documents you want. There is a PDR near every licensed facility and central PDRs exist in Washington, D.C. Most of them are well organized and usually staffed by friendly helpful people. Do not feel intimidated – the layperson can and should use these facilities.

* Booklets, flyers and propaganda that are available from pro-nuclear organizations such as the American Nuclear Society, the Atomic Industrial Forum, and many companies involved in the nuclear industry.

* Mailings, news releases, etc. coming from some of the above groups and information and newsletters of the opposing sides in the struggle. Be sure to get on the mailing list of all groups so you can keep current on document listings, events and new publications.

The lesson here is that there are many resources. It's often handy to find a mentor (in the form of someone experienced in the area) to give you a little guidance.

Many documents are available on microfiche as well as in bound paperbacks. Microfiche pages are film negatives, each containing up to 98 pages (very reduced, but still legible). They are cheaper to buy and easier to store than books, and libraries often will allow you to check out fiche readers.

In general, it's best to get on the mailing list of all groups that have them so you can keep current on document listings, events and new publications. I also try to stay in touch with activists focusing on other areas of interest to me and trade information with them. Remember: even if you come up with a "nugget," it's worthless if it just sits in your filing cabinet. Put it into a useable form (e.g., a letter or short article) and send it to a group with a widely circulated newsletter. Better yet, send it to several groups!

There are other techniques and resources, and you'll develop some on your own, but the most important guideline is one of *attitude.* Good researchers are confident of finding an answer and persevere. They also know that no one can be "spoon fed" with the right data; it takes some effort on your part. But it can be the most rewarding work you'll ever do.

Lindsay Audin, a frequent contributor to the Waste Paper and expert on nuclear waste transport, has just completed a slide show on that issue. For more information call (914) 941-0648 or write to him at 1 Everett Avenue, Ossining, N.Y. 10562.

New Staff

The Campaign is pleased to welcome Diane D'Arrigo and Wilbert Lacy to the staff. Diane will take on the role of researcher and Wilbert will be the Campaign Field Secretary.

Much of Diane's work will focus on the state-licensed burial ground at West Valley, where nuclear waste from reactors and hospitals were dumped into soil trenches. Chronic problems at the site, such as radionuclide migration, threaten the drinking water of western New Yorkers.

Diane hails from William Smith College in Geneva, N.Y. She received a B.S. in Chemistry with a concentration in Environmental Science in 1978. She has organized and canvassed with the New York Public Interest Research Group and Citizen's Alliance. She has also been employed with the FMC Chemical Company in Middleport, N.Y.

Wilbert has studied printing and secretarial science and has attended Bryant and Stratton Business College in Buffalo, N.Y. His work will involve managing the office, where requests from all over the world come in daily.

WELCOME DIANE AND WILBERT!

New Slide Show

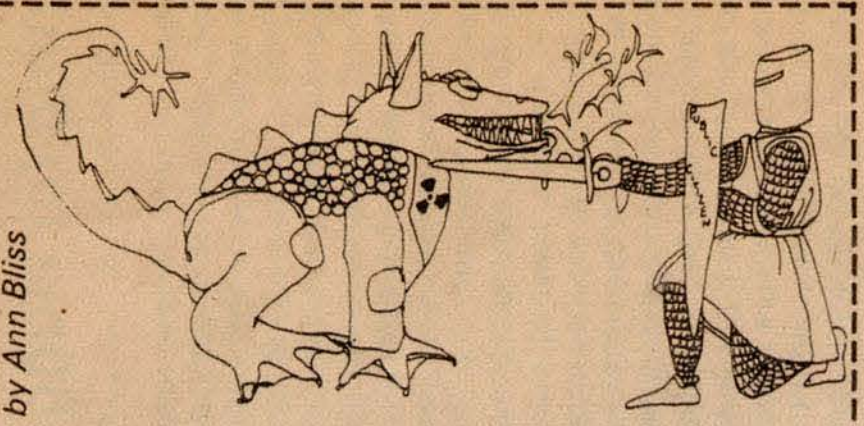
A new slide show has been released by the Campaign entitled, *"Low-Level Legacy – A Profile of Radioactive Waste Dump Sites."* The slide show was the brainchild of a Campaign task force concerned about the upcoming push to site new low-level dumps across the nation, specifically the northeast and midwest. An important tool for activists all over the country, the slide show includes sections on the Sheffield, Il., Maxey Flats, Ky., and West Valley, N.Y., dumps.

The show lasts approximately 20 minutes and is accompanied by a written script. There are over 80 slides including charts, maps and vivid photographs of open trenches at burial grounds in the U.S.

In New York, the slide show can be accompanied by a speaker from the Burial Ground Task Force to discuss, in greater detail, problems that plague the low-level waste dump at West Valley, New York. Slide show rental is $15 per week and cost to purchase the show is $55. Taped script will be available.

"Auntie Nuke" Cookie?

The Yeast West Bakery of Buffalo, NY would like to sell an "Auntie Nuke" cookie which would benefit western New York anti-nuclear groups and safe energy work. Yeast West needs your ideas for a recipe with all natural ingredients. If you have ideas for a recipe or for a label for the cookie, please send them to: Yeast West Bakery, 241½ Lexington Avenue, Buffalo, NY 14222 or call (716) 883-5537.



by Ann Bliss

How can YOU begin to slay the atomic waste dragon? Being informed is the first step. And it's all right here in *the Waste Paper,* the world's first newspaper on nuclear waste. In the past we've brought you articles about the Manhattan Project dumps, Gulf Oil's exploration for uranium in downstate New York and the Reagan Administration's close ties to the Bechtel Corporation. We've got the facts and the figures – all for you! Only $8 for this important quarterly.

Please make checks payable to the Atlantic Chapter Radioactive Waste Campaign. Send to: Sierra Club Radioactive Waste Campaign, 78 Elmwood Avenue, Buffalo, NY 14201.

- ☐ **Enclosed is $8 for a year's subscription to *the Waste Paper.***
- ☐ **I would like to volunteer some time for the Radioactive Waste Campaign. I would like to help with research, clerical, organizing, public speaking, writing or visual art. (Please circle your interest)**
- ☐ **I want to stop generating radioactive waste. Here is my contribution to the Campaign.**

Reinie Pressman

We regret the loss of a hard working volunteer Reinie Pressman. Much of Reinie's work involved answering mail and literature requests that pour into the Campaign headquarters regularly. Reinie was a long time activist of the Sierra Club and always brought a smile into the office with her. She was 64 years old and died on January 1, 1982. We will all deeply miss her.

In the Fall edition of *the Waste Paper,* Vol. 4 No. 1 the article entitled "Thorium Dump" which discussed the Maywood, New Jersey radioactive waste dump was written by Ann Spanel. Ann is a freelance writer from New York City and has helped organize the State Coalition on Uranium Mining. In error, we neglected to credit her work.

"I think from a long-range standpoint – I'm talking about humanity – the most important thing we could do is start having an international meeting where we first outlaw nuclear weapons to start with, then we would outlaw reactors too." ***Admiral Rickover before a Joint Economic Committee of Congress on Thursday, January 28, 1982.***

SIERRA CLUB RADIOACTIVE WASTE CAMPAIGN

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