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POLLUTION AND ENVIRONMENTAL PROBLEMS, INC.
P.O. Box 309 Palatine, Illinois 60067
312/381-6695

March 1, 1983

50-454

FOR: U.S. Nuclear Regulatory Commission
Atomic Safety and Licensing Board

FROM: Catherine Quigg, research director
Pollution and Environmental Problems, Inc.
200 East Wood Street, Palatine, Illinois 60067
(312/381-6695)

RE: Public Testimony--Licensing of Byron Nuclear Power Plant

NUCLEAR REACTOR ACCIDENT CONSEQUENCES INCREASE AS NATION MOVES TOWARD HIGH BURNUP REACTOR FUEL: U.S. NRC HAS YET TO REDEFINE ACCIDENT SOURCE TERMS

The nuclear industry is moving increasingly toward high burnup fuel in its lightwater reactors--meaning the fuel will be more enriched with uranium and will be irradiated for much longer times in the reactor. The Byron nuclear power plant will be no exception.

Until recently, standard burnup has been about 33,000 megawatt days per ton of uranium (Mwd/t), but the nuclear industry now plans to burnup fuel to as high as 65,000 Mwd/t. Wide-scale application of high burnup fuel is anticipated by 1985. Already license amendments for use of high burnup fuel have been issued to North Anna, Surry and the Calvert Cliffs stations --and more similar amendment requests are expected by the NRC.

Because new high burnup fuel will contain uranium which is more highly enriched than the current type of fresh fuel, there is a potential for criticality problems and the question arises whether or not it will be safe to store the high burnup fuel in today's pools designed to hold standard fresh fuel prior to core loading. If, for some reason, it becomes necessary to remove the fuel from the core early in its irradiation cycle--even more significant nuclear criticality problems may occur.

Fuel irradiated for longer time periods in the reactor will be thermally hotter and its decay period will take longer than standard burnup fuel, thus necessitating longer storage times in the spent fuel pool. For high burnup fuel--seven years after removal from the reactor core--the cooling capacity required per fuel assembly would be a factor of two greater than that needed for existing standard fuels. The heat given off would be 1,000 watts per assembly for high burnup fuel versus 500 watts for standard fuel. For long term storage onsite or offsite, there would be a 100 percent increase in cooling capacity requirements for each high burnup irradiated fuel assembly. Moreover it will not be possible, even with longer storage times, to move high burnup fuel in the same transport casks as standard burnup fuel.

The quantity of long-lived radioisotopes (i.e. cesium with a 30 year half-life) in high burnup fuel will be greater than standard burnup fuel--<u>some almost doubling.</u> (See attached Table 5 from DOE/EA-0118). Most traditional

DS03

accident analyses follow the U.S. NRC's 10CFR, Part 100 in which the reactor loses just radioactive iodine and noble gases. The NRC is now obliged to consider Class 9 accidents in which the whole core melts and the containment building ruptures. In this case, high burnup fuel with its greater quantities of long-lived fission products is a much greater problem than today's lower burnup fuel. The production of some long-lived fission products is not linear, but rather the amount of transuranics may triple or quadruple and there will be far more alpha and neutron radiation to contend with after an accident. For example, the U.S. Department of Energy estimates that the 25 percent increase in ruthenium-106 alone in higher burnup fuel "would likely lead to an increase in the lung dose of about ten percen5."

Slowly but steadily, without public hearings or discussion, utilities are going to high burnup fuel. The equivalent of one reactor core has already been irradiated to 45,000 Mwd/t in various reactors throughout the United States. All utilities will not go to full core high burnup immediately, but many will increase in increments of 500 Mwd/t as they refuel. (PWRs replace 1/3 core and BWRs replace 1/4 core each year.)

The accident consequences reported in the Reactor Safety Study (WASH-1400) and earlier accident studies were based on very low burnup fuel--with a high burnup of 26,400 Mwd/t. (See Figure VII, F-2 from RSS, page VII-141 attached.) There have been no safety analyses or accident assessments by the NRC available to the public that are based on high burnup fuel. Thus it is impossible to reach a definitive conclusion regarding the impact of partial or complete cores of high burnup fuel in the assessment of public risk after a core melt accident.

Until these studies are performed, all quantitative analyses of risks from nuclear power plant accidents in all documents, including NUREG-0880 and WASH-1400, must be considered outdated, misleading and irrelevant to U.S. nuclear power reactors currently on line and anticipated in the future--as they continue to increase their fuel burnups and thus the fission products in their reactor cores. New safety analyses should also be required for fresh fuel pools and irradiated fuel pools to determine if there is increased risk of accidents or radioactive releases. All NRC source term documents are obsolescent and must be revised to have any meaning in the real world.

No nuclear reactors should be licensed in the absence of this vital information...including the Byron Nuclear Power Station near Rockford, Illinois.

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Letter from NRC dated November 1, 1982 attached.

DIST

Subj	PComella	Dircks
Circ	FArsenault	Roe
Chron	DFRoss	Rehm
SEBR/rf	RBMinogue	GCunningham
RGrill	EFConti	JPhillips
Bridgers/	EDO-12394	
LSapp -	RES-D02901	
EDO r/f		

NOV 01 1982

Ms. Catherine Quigg, Research Director
Pollution and Environmental Problems, Inc.
~~Post Office Box 309~~ 2001 Wood St.
Palatine, Illinois 60067

Dear Ms. Quigg:

Your letter of October 11, 1982 to Mr. Chilk requesting a report of progress on your petition has been referred to me for response.

The U.S. Nuclear Regulatory Commission (NRC) staff has been working towards resolution of this matter and a recommendation to the Commission is expected shortly.

The use of high burnup fuel in commercial nuclear power plants has increased. The program to demonstrate this technology is well advanced and the NRC staff is evaluating the results. License amendments have been issued to North Anna, Surry and the Calvert Cliffs stations to utilize these fuels and more similar amendment requests are expected.

The staff has indications that the use of high burnup technology will have significant economic impacts, i.e., reduction in uranium mining and milling as well as more cost efficient generation of electricity. If the impacts of Commission actions in permitting the use of this technology are purely economic or social, Section 1508.14 of the CEQ Regulation (40 CFR 55978) indicates that the National Environmental Policy Act (NEPA) does not require an Environmental Impact Statement (EIS) be prepared.

The evaluations conducted for the three license amendments granted to date have indicated that no significant safety implications are involved in allowing the use of high burnup fuel at those plants. NRC research programs directed at refining severe accident source terms could possibly modify these conclusions, as they apply to all plants using high burnup fuel.

OFFICE▶							
SURNAME▶							
DATE▶							

The type of environmental impact analysis appropriate to the question of general usage of high burnup fuel in commercial nuclear power plants will depend on the conclusions reached on overall safety significance.

You will be informed of further progress and of any action the Commission takes on your petition.

Sincerely,
Original Signed by

Denwood F. Ross, Jr.

Robert B. Minogue, Director
Office of Nuclear Regulatory Research

OFFICE	DHSWM/SEBR	DHSWM/SEBR	DHSWM/BR	DHSWM/D	RES/DD	RES/D	NRR/DL/CPS
SURNAME	RGrill/mf	EFConti	PComella	FArsenault	DFRoss	RBMinogue	LRubenstein
DATE	10/ /82	10/22/82	10/25/82	10/27/82	10/ /82	10/ /82	11/1/82

NRC FORM 318 (10-80) NRCM 0240

OFFICIAL RECORD COPY

Send as written 2/15/83 Statement

The Honorable Ivan Smith
Atomic Safety and Licensing Board
Federal Building
211 S. Court
Rockford, Illinois

Dear Judge Smith:

What follows is an abbreviated list of our concerns about the Byron Nuclear Power Station and nuclear power in general.

It is alleged:

1. that the Byron Nuclear Power Station has pressurized steam reactors of the same design as a nuclear power plant in Yugoslavia. The Yugoslavians have shut down this plant and requested that Westinghouse, the manufacturer of the pressurized steam reactor, rectify the design so that it will be safe. In a public broadcast on WNIU (DeKalb, March 1, 1983, 7:55 AM), Commonwealth Edison's spokesman replied to this allegation by stating that Westinghouse isn't sure how to rectify the design, and, furthermore, does not appear to have a committment to do so. Therefore, according to the spokesman, there is no point in waiting for the design to be made safe. This is hardly a responsible or intelligent attitude. In fact, it shows very poor judgement and causes us to question the ability of Commonwealth Edison to administer a plant safely.

2. that there is a lack of a safe evacuation plan even in the minimum 10 mile zone. Commonwealth Edison claims this is not its responsibility. Perhaps not, but the utility should bear <u>some</u> responsibility for such a plan. It is, after all, running the plant. After the experience at Three Mile Island, we don't feel we can believe any statements of a public utility regarding the safety of these plants.

3. that not only are these plants extremely expensive to build, but that maintenance and decommission of them are also extremely expensive. We may be assured that <u>all</u> of these costs will be passed on to us, the consumers. As consumers we have dialed back, turned off, and conserved conscientiously, yet rates will continue to rise meteorically as long as Commonwealth Edison is allowed to pursue this form of energy. As lifelong residents of Illinois, a state rich in coal reserves, we don't understand the necessity of using expensive nuclear fuel when coal is

abundantly available. There is the fact, too, that coal can be made to burn cleanly and safely.

4. that Commonwealth Edison has given the Committee for Energy Awareness a 3.5 million dollar grant, out of our pockets to conduct an advertising blitz concerning the safety of nuclear power. If this form of energy is so safe, why is it necessary to spend all this (and more) money to convince us?

5. that despite the Committee for Energy Awareness' advertisements to the contrary, there is still no guaranteed, safe, long-term solution to the disposal of nuclear waste. What of future generations to come? Will they be able to survive in a world we continue to contaminate? No other civilization, to our knowledge, has had to answer this question. No other civilization has had to consider the safety of future generations. If we are the first to do so, we may not be the last to have a chance.

Thank you for considering our testimony. We would like to add that, contrary to Commonwealth Edison's allegations, there are many people who believe as we do. There is increasing skepticism of, and disillusionment with Commonwealth Edison's energy policies. The public concerns raised in this letter, whether voiced by many or few, should not be casually dismissed.

Respectfully,

Jacob J. Skala 231 River Dr.
Sharon Y.Skala DeKalb, Illinois 60115

Jacob J. Skala
Sharon Y. Skala

Jean M. Dale 111 So. Sycamore
Norma M. Youhn Genoa, Illinois 60135

Jean M. Dale
Norma Youhn

Conn Hickey Serve as written testimony

REPORT SUMMARY

Commonwealth Edison will make annual 20% rate increase requests over the next six years which, if granted, will triple Northern Illinois electrical rates by 1986.

These rate increases are being requested primarily to have ratepayers pay the financing costs for the construction of the $5,000,000,000 Byron and Braidwood power plants.

Given demand growth trends since 1973, neither of the these plants are needed to meet electrical demand.

Since 1974, Edison's annual demand growth predictions have averaged 4.2 times actual annual load growth. The company's decision in the late 1970's to contiue building these plants was rationalized by these exaggerated predictions, as are its current claims that the plants will "soon be needed."

Through the 1970's Edison has had tremendous excess capacity and has only operated at an average of 55% of capacity. Unlike businesses subjected to the discipline of the market, Edison has been able, through its domination of the Illinois Commerce Commission (ICC), to transfer to its customers the cost of this 45% idle capacity. When energy was cheap this cost was not so burdensome, but now that energy is becoming expensive the cost is becoming unaffordable.

Because they are not needed, the continued construction of the Byron and Braidwood power plants was and continues to be a serious business mistake which should be paid for by the stockholders and not the ratepayers.

Edison has continued construction of these unneeded plants for two reasons. First, Edison's allowable profits are calculated by the ICC (before the ICC sets prices) as a fixed percentage of its operating plant capacity (called the "Rate Base"). Therefore once Edison started its plants, it wanted to complete them as soon as possible to get them into this Rate Base. The bigger the Rate Base the bigger its profits, regardless of plant utilization. Second, Edison believed that it could get the ICC to pass the added costs of the additional idle capacity onto the ratepayers.

Unless these annual 20% rate increases are stopped, the tremendous waste and inefficiency that Edison is fostering in our energy production could well undermine the entire Northern Illinois business climate.

By intervening in the rate case before the ICC, organizations and businesses can help block the increase. Moreover, in the event the ICC does grant a substantial portion of the permanent 20% increase (as opposed to the 9% "interim" increase granted in November), only intervening organizations and their individual members will get the increase back if the courts later overturn the increase.

In August, Commonwealth Edison (Com Ed) requested a 19.7% rate hike from the Illinois Commerce Commission (ICC). Approximately 80% of this rate hike and 60-80% of the sizeable rate hikes we can expect over the next 6 years are needed solely to finance Com Ed's $5 billion construction program of the Byron and Braidwood power plants. If this $5 billion construction program continues on schedule, your electricity bills will probably triple in 6 years, including fuel cost increases which are passed on automatically. (See p. 5, footnote (1).)

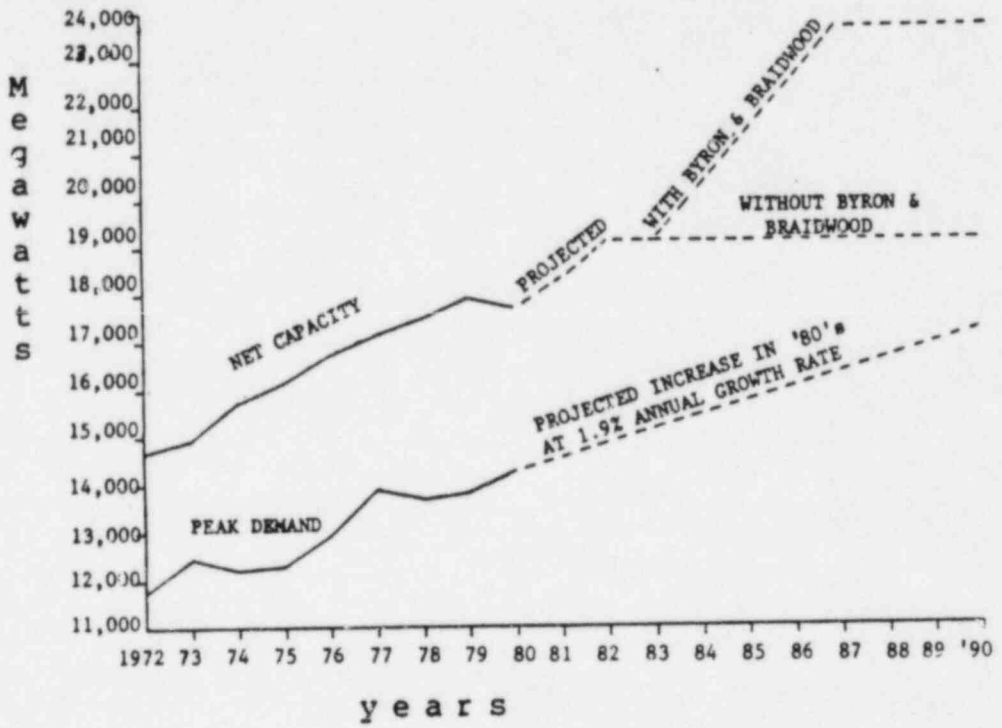
NEW POWER PLANTS ARE NOT NEEDED

If these two new plants were needed, if generating capacity were not keeping up with consumer demand, that would be one thing. But the plants simply are not needed.

Graph 1 illustrates the extent of Com Ed's excess generating capacity in the 1970's. The top line shows how much electricity Com Ed was capable of selling (Net Capacity); the bottom line charts the amount of electricity sold during the one hour of greatest use in the year (Peak Demand), usually the hottest day of the summer when air conditioners are working hardest. From 1973 - 1980, Com Ed maintained an average of 27.6% more generating capacity than it needed to meet peak demand. This is twice the reserve it needed even by its own liberal estimates. Since 1978, maintaining this excess capacity has cost ratepayers over half a billion dollars. (See p. 5, footnote (2).)

GRAPH 1:

NEED FOR NEW PLANTS



Assuming peak demand continues to increase in the 1980's at the same 1.9% annual rate it has since the onset of the energy crisis in 1973, Graph 1 also shows that without the $5 billion Byron and Braidwood plants, Com Ed will still have a capacity in 1990 that is well above peak demand. If the plants are completed on schedule in 1987, Com Ed will have a capacity that is 47% above peak demand.

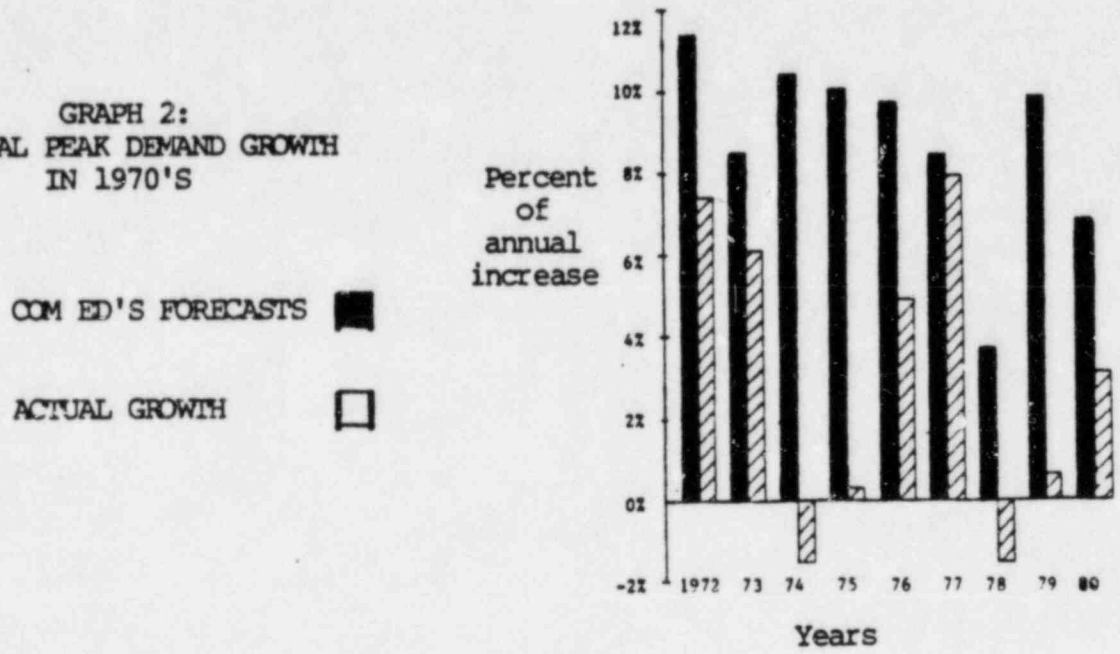
What Graph 1 does not show is that Com Ed's average utilization of this generating capacity through these same years (1972-1979) was only 55% (9,000 megawatts). No other business in America could survive a prolonged

period of using only 55% of its plant capacity. Com Ed was a very profitable company during these years only because the consumers were paying for the average 45% idle capacity.

COM ED'S CONSISTENT OVER-PREDICTIONS

Graph 2 contrasts Com Ed's yearly predictions of the increase in electrical demand with the actual growth in demand each year during the 1970's. The graph shows that every year Com Ed grossly over-predicted demand growth, and showed absolutely no interest in learning from prior years' mistakes or from actual trend lines as the decade progressed. Since 1974, Com Ed's annual growth predictions have averaged 4.2 times actual annual growth.

GRAPH 2:
ANNUAL PEAK DEMAND GROWTH
IN 1970'S



These inflated predictions are vitally important because they are used as the basis for Com Ed's yearly power plant investment decisions. Thus year after year Com Ed used exaggerated predictions to justify the continuation of a construction program which actual growth figures clearly indicated was not needed.

Com Ed continues this practice today. Com Ed's current prediction of a future 4% increase in peak demand is the demand growth Com Ed needs to justify its current projected completion dates for the Byron and Braidwood power plants. This 4% predicted growth is more than twice the average 1.9% actual annual growth since 1973. The actual annual increase in peak demand since 1977 has been an even lower 0.7% per year.

A SERIOUS INVESTMENT MISTAKE

In 1976, Com Ed had only invested 3% of the now estimated $5 billion cost of the Byron and Braidwood power plants. But in 1976, at a time when it was operating at 55.2% of capacity, when it already had twice as much excess generating capacity as it needed to meet peak demand, and when peak demand had actually fallen by 1% over the last two years, Com Ed predicted a 9.7% annual growth rate and began to pour billions of dollars into two unneeded new power plants. Why did Com Ed make this grave investment mistake?

THE RATE STRUCTURE HAS ENCOURAGED UNNEEDED POWER PLANTS

Under Illinois utility regulation allowable utility profits are calculated (before rates are set) as a fixed percentage, around 10%, of the dollars the utility has invested in completed power plants and lines (the "Rate Base"). After the size of the profits has been set, the Illinois Commerce Commission (ICC) sets the rates so that the company can achieve this profit amount given the volume of projected sales.

Com Ed has interpreted this formula simply to mean that the more power plants it builds, the greater will be its profits, regardless of whether those plants are needed or the electricity the plants produce is sold. If consumers don't buy the available electricity, if sales don't keep up with forecasts, the ICC has in the past simply raised the consumers' rates for the smaller amount of electricity we do use. The less we buy, the more we pay for what we do buy.

Com Ed's managers and owners therefore thought they had nothing to lose if they overpredicted and overbuilt. They believed the ICC would simply pass the costs of excess capacity onto the ratepayers. And now that declining sales growth and massive construction cost overruns are squeezing Com Ed's profit margins, they have predictably asked the ICC to do just that.

THE RISK BELONGS TO THE STOCKHOLDERS

Under capitalism, the owners of a private business risk some of their own money by investing it in the hope that the resulting increase in sales will return their original investment to them plus a profit. Everything depends on their prediction of future demand and sales.

If their predictions are right, their wealth is increased. If they overpredict and therefore overinvest, they lose money because they must pay for the increased (and unused) capacity out of their own pockets rather than out of increased sales. Thus if Com Ed were in a competitive free enterprise situation, its owners simply could not afford to continue expanding its already excessive capacity.

THE ICC BAIL-OUT

The ICC, in its regulation of the utility monopolies, is supposed to replace the competitive free enterprise market and force these monopolies to be as efficient as possible. It is supposed to discourage the development of inefficient, wasteful excess capacity and protect the ratepayers who would otherwise be at the mercy of the utility monopoly. It is supposed to give the company its allowable profits only if the company is managed efficiently.

But to-date the ICC has completely ignored this responsibility for enforcing efficiency. Instead it has operated on the peculiar principle that no matter how ill-advised Com Ed's business decisions may be, Com Ed must be allowed to implement them and the ratepayers—rather than the owners—must be forced to pay for them.

In granting Com Ed a 14% rate hike on February 6, 1980, the ICC wrote:

> Theoretically, the shareholders bear the risks relating to management's use of funds entrusted to them. As a practical matter, . . . as for the risks of the Company's construction program . . , requiring stockholers to bear

certain risks may result in driving down the market value of the Company's common stock to a level where more stock cannot be issued.

By its own admission therefore the ICC is violating the most fundamental principle of the free enterprise system, namely that the private owners bear the risks and pay for the losses caused by investment mistakes.

The ICC is justifying its approval of letting Com Ed finance and continue its investment mistakes with ratepayers' money by claiming that in the long run it will cost the ratepayers less to subsidize the completion of the two plants now, and that delaying completion until the plants are needed will only add to the eventual cost to the consumer. But this is only true because the ICC plans to add the interest expenses of carrying partially-built plants to the Rate Base (and therefore into consumers' rates) when the plants are completed.

If one strips away the circular logic from this argument, what the ICC is telling us is that it is cheaper for the ratepayers to pay for Com Ed's investment mistakes now rather than later. But under the rules of free enterprise the ratepayers should never be forced to pay for these errors and none of the costs stemming from premature construction should go into the Rate Base.

THE CHRYSLER ANALOGY

Chrysler, for the very same reasons as Com Ed, got into deep financial trouble in the late 1970's. But while the Chrysler stockholders lost their dividends, the Com Ed investors continue to be paid a 13% dividend by the ratepayers while all their risks and losses are passed onto the same ratepayers. Nearly all of the $389 million (14%) rate increase the ICC gave Com Ed in February of this year will go to Com Ed shareholders in dividends in 1980.

Chrysler's losses forced it to change its investment strategy, but Com Ed is being given government go-ahead to compound its problems by continuing its unneeded building program. It is as if Chrysler had gotten the federal government to force all taxpayers to go out and buy a big Chrysler Imperial that they would not use and pay 20% more for it to boot.

If Com Ed really believes its current prediction of a 4% annual growth in peak demand, it should risk its owners' money--not the ratepayers'--in its construction program.

A DANGER TO OUR BUSINESS CLIMATE

The American economy can no longer afford the wastefulness and inefficiency of utilities that undertake vast expansion programs while underutilizing current facilities. Utilities are using up a large percentage of the available investment capital in Illinois at a time when it is desperately needed for re-industrialization.

If the ICC allows our electrical rates to triple in 6 years, the entire business climate in Northern Illinois will be gravely endangered. The cost of everything here will increase as producers, service agencies and local and state government pass on their increased costs.

Instead of throwing scarce capital away on makework, we should be creating jobs by retrofitting our businesses and homes to reduce energy waste. Conservation and reasonable investment for growth, not inflationary over-construction, are the keys to a secure energy future.

REPORT DOCUMENTATION(3)

YEAR	CAPACITY(4) MEGAWATTS (MW'S) NET CAPACITY	PEAK DEMAND	RESERVE MARGIN	COM ED FORECASTS V. ACTUAL—1 YEAR DATE OF FORECAST	FORECASTED GROWTH MW'S	%	ACTUAL GROWTH MW'S	%	BYRON & BRAIDWOOD CONSTRUCTION MILLIONS OF $'S INVESTED	ESTIMATED TOTAL COST IN MILLIONS	ESTIMATED COST/KW FROM PLANTS	COM ED RATES V. INFLATION (CPI) RATE/KWHR SYSTEM AVERAGE	CONSUMER PRICE INDEX
1973	14954	12462	19.0%	10/72	1000	8.5%	712	6.1%		$1,838	$410	2.20¢	132
1974	15778	12270	30.8%	3/74	1298	10.4%	-192	-1.5%				2.57¢	147
1975	16373	12305	36.2%	1/75	1230	10.0%	35	0.3%	$ 60	$2,117	$474	3.01¢	161
1976	16711	12907	29.5%	9/75	1195	9.7%	602	4.9%	$ 138	$2,391	$534	3.25¢	170
1977	17169	13932	23.2%	5/77	1083	8.4%	1025	7.9%	$ 406	$2,392	$534	3.38¢	182
1978	17480	13720	27.4%	11/77	618	3.7%	-212	-1.5%	$1,066	$3,140	$701	3.79¢	195
1979	17914	13804	29.8%	6/79	1350	9.8%	84	0.6%	$1,417	$3,528	$787	4.22¢	217
1980	17717(5)	14228	24.5%	5/80	946	6.8%	424	3.1%	$1,918	$4,926	$1,099	5.83¢	248
AVG YEARLY INCREASE, 73-80	1.9%		7.6%		1103	8.4%	261	1.9%		15%	15%	15%	9%
1987: COM ED PLANS:	23921	18723							$4,926	$4,926			
PROJECTIONS BASED ON AVG YEARLY INCREASES, 1973-1980:	16243		47%						$7,163		$1,598	BASED ON NEEDS OF CONST'N PROGRAM: 17.49¢	

(1) This is a 20% compounded annual increase and is probably conservative. According to ICC Exhibit 10.2 of the last Com Ed rate increase case, Com Ed will need 10% additional revenue per year for the next 6 years just to finance its construction program. This calculation is probably too low as the estimated cost to complete the 2 power plants has increased 40% since the calculation was made. Added to this 10% annual increase will be 1) automatically-passed-through fuel cost adjustments, which have averaged 6% per year since 1973, and 2) the effects of inflation on normal operating expenses, assumed conservatively here to be 4% per year. Also sales have fallen 2% this year, and rates will have to rise just to compensate Edison for the lost revenue.
(2) To calculate the cost of excess capacity, we identified Edison's newest power plants which comprise the company's excess capacity for each year analyzed. The capital cost of completed plants, which if subtracted from Edison's system capability would yield a reserve margin in the range of 14% were added to arrive at a "value of excess capacity." The value of the excess capacity was then multiplied by 18% to arrive at an annual cost to consumers. This figure (value of excess capacity mulitiplied by 18%) was then adjusted for fuel cost benefits or penalties associated with plants representing excess capacity. The costs in millions were: 1978=$147.5, 1979=$178.5, 1980=$193.5 for a total of $519,000,000.
(3) All figures used in this report are based on Commonwealth Edison Company documents filed with the ICC for rate hearings.
(4) All reserve margins were calculated using Edison's reserve formula in effect at the time of annual peak demand.
(5) On the 1980 peak day, Com Ed had over 3,000 MW'S out of service, so that its actual reserve margin was much smaller. This is an example of Edison's management's inability to efficiently manage their operations and capacity.

THE CAMPAIGN AGAINST THE RATE HIKE

The Campaign Against the Rate Hike is a coalition of businesses, local governments, labor unions, neighborhood groups, social service agencies, church groups, citizen action groups, senior citizen groups, and individual citizens which is co-ordinating a campaign against the rate hike throughout Com Ed's service area in Northern Illinois.

The Campaign's strategy is based on the belief that the ICC has already demonstrated its bias toward granting the rate hike request and will only be dissuaded from doing so by a well co-ordinated campaign combining:

1) mass based political pressure exercised through the intervention process;
2) sound, well-documented technical and economic arguments in the hearings;
3) threatened legal action if the ICC grants Com Ed a substantial increase;
4) efforts to amend the law in Springfield to change the rules under which the ICC and Com Ed are operating.

WHY INTERVENE?

In the context of this 4-part strategy there are two compelling reasons why your organization should formally register as an intervenor in the rate case.

First, it is only by intervening that you can be sure that your voice is really heard, that your concern will really be felt by the four commissioners who currently make up the Illinois Commerce Commission. The commissioners are appointed by the Governor and are sensitive—as is the Governor himself—to public concern when it is expressed directly and forcefully. Without interevening, you can have no formal input into the process by which the rate request will be decided.

Second, if the ICC grants a substantial part of the request (as it did for the previous request on February 6, 1980), the Campaign Against the Rate Hike will immediately take the ICC to circuit court for failure to carry out its responsibilities to regulate the utility under Illinois law. We believe we have a sound case with a good chance of winning in circuit court.

When we file this lawsuit we will ask the court to "stay" the rate increase for the intervenors while the court is deciding on the case. This will prevent Com Ed from collecting the increase while the court hears the case, a process that could take a year or more. We believe that as long as the intervenors agree to pay the increase into a court-supervised escrow account the court will grant the stay (which it is empowered to do under Ill. Rev. Stat. Ch 111 2/3, sec. 75) because: 1) without a stay there could be (what the law calls) "irreparable injury" to the intervenors (namely that without the stay the intervenors could not get their money back from Com Ed if the court decides to overturn the rate hike), and 2) we will have a reasonable substantive argument.

NON-INTERVENORS WILL NOT GET THEIR MONEY BACK

If the court later overturns the rate increase, only those covered by the stay (i.e. those who have intervened) will get their money back (with interest) from the escrow account they have been paying into. For all those who did not formally intervene the increase will be considered a valid rate between the time it was granted by the ICC and the time it was overturned by the court. (See Cerro

Copper Products Co. v. ICC, 65 Ill. App. 3d 764, 382 NE2d 143(4th dist., 1978) and Mandel Brothers, Inc. v. Chicago Tunnel Terminal Co. (1954). 2 Ill.2d 205, 117 N.E.2d 774.)

There are no disadvantages, liabilities or costs involved in intervening. The intervening organization can be as involved in the formal hearing process as it would like to be. The Campaign is organizing expert testimony for the hearing and will help co-ordinate the involvement of organizations that would like to participate.

An organization can intervene on behalf of its members and its members will then be protected by the court-issued stay if we have to go to court.

The actual act of intervening is very simple to perform. Simply follow the directions in filling out the attached intervening forms, have them notarized and send them to the four indicated addresses.

A few of the organizations that have intervened as of November 5, 1980 are:

Industry:
- U.S. Steel Corporation
- Bell and Howell Corporation
- Chrysler Corporation
- General Motors Corporation
- Nabisco Corporation
- Sherman-Williams Corporation

Governments:
- Rockford School Board
- Winnebago County Board of Health
- City of Dekalb
- Northern Illinois University
- City of Waukeegan
- City of Evanston
- City of West Chicago
- Illinois Department of Transportaton
- Illinois Attorney General
- States Attorney of Cook County
- Chicago Transit Authority
- Winnebago County Board

Other Local Organizations:
- Winnebago County Council on the Aging
- Rockford YWCA
- National Council of Negro Women, Rockford Chapter
- Board of Directors of Rockford Jewish Community Center
- United Auto Workers Local 592 (Sunstrand)
- United Auto Workers Local 225 (Mechanics)
- International Association of Machinists District Lodge #10
- Garfield Avenue Residents Organization
- Blackhawk Federation of Teachers
- Jerusalem Baptist Church

639½ East Lincoln Highway
DeKalb, IL 60115

February 24, 1983

Judge Ivan Smith
c/o ASB/NRC
Federal Building
310 South Court Street
Rockford, IL 61101

Dear Judge Smith:

I am writing to you as a concerned citizen living in DeKalb who feels very strongly that the risks and the costs associated with the nuclear power plant at Byron are not worth it.

Ionizing radiation blows in the wind. Nuclear power plants have leaks and have accidents and have toxic wastes for which there is no easy disposal plan. The rate hikes that Com Ed would hand to us to finance the finishing of the plant are much more than I or anyone I know can afford. We don't need the Byron plant, we can't afford the Byron plant, and speaking for myself and dozens of friends and concerned citizens of this area, and, I am sure, other areas just like it, WE DON'T WANT THE BYRON PLANT.

Please take these genuine fears and concerns into account. Thank you for listening.

Sincerely,

Rebecca Parfitt

Rebecca Parfitt

NORTHWEST ILLINOIS CAMPAIGN AGAINST THE RATE HIKE

20% INCREASE THIS TIME,
200% INCREASE IN SIX YEARS

An informational report on the Commonwealth Edison's 19.7% rate hike request, summarizing the circumstances surrounding the request and what your organization can do to prevent it and protect yourself from it.

For further information or documentation of facts used in the report contact the Campaign at the address below.

November 5, 1980

321 WEST STATE STREET, SUITE 714, ROCKFORD, IL 61101 • (815) 965-9668

In August, Commonwealth Edison (Com Ed) requested a 19.7% rate hike from the Illinois Commerce Commission (ICC). Approximately 80% of this rate hike and 60-80% of the sizeable rate hikes we can expect over the next 6 years are needed solely to finance Com Ed's $5 billion construction program of the Byron and Braidwood power plants. If this $5 billion construction program continues on schedule, your electricity bills will probably triple in 6 years, including fuel cost increases which are passed on automatically. (See p. 5, footnote (1).)

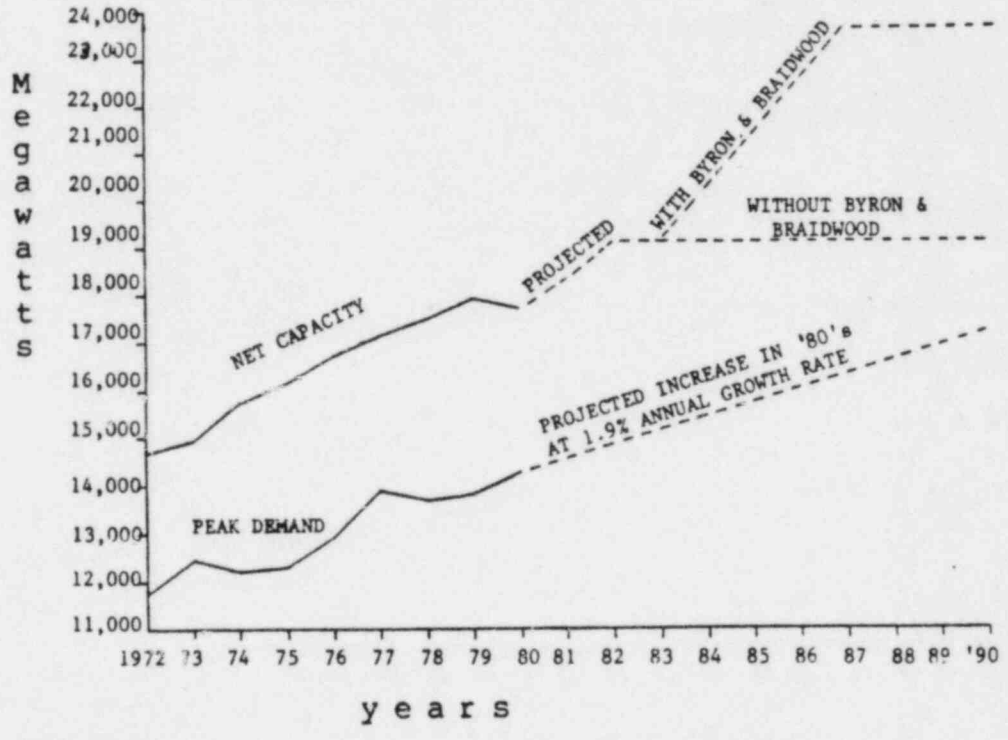
NEW POWER PLANTS ARE NOT NEEDED

If these two new plants were needed, if generating capacity were not keeping up with consumer demand, that would be one thing. But the plants simply are not needed.

Graph 1 illustrates the extent of Com Ed's excess generating capacity in the 1970's. The top line shows how much electricity Com Ed was capable of selling (Net Capacity); the bottom line charts the amount of electricity sold during the one hour of greatest use in the year (Peak Demand), usually the hottest day of the summer when air conditioners are working hardest. From 1973 - 1980, Com Ed maintained an average of 27.6% more generating capacity than it needed to meet peak demand. This is twice the reserve it needed even by its own liberal estimates. Since 1978, maintaining this excess capacity has cost ratepayers over half a billion dollars. (See p. 5, footnote (2).)

GRAPH 1:

NEED FOR NEW PLANTS



Assuming peak demand continues to increase in the 1980's at the same 1.9% annual rate it has since the onset of the energy crisis in 1973, Graph 1 also shows that without the $5 billion Byron and Braidwood plants, Com Ed will still have a capacity in 1990 that is well above peak demand. If the plants are completed on schedule in 1987, Com Ed will have a capacity that is 47% above peak demand.

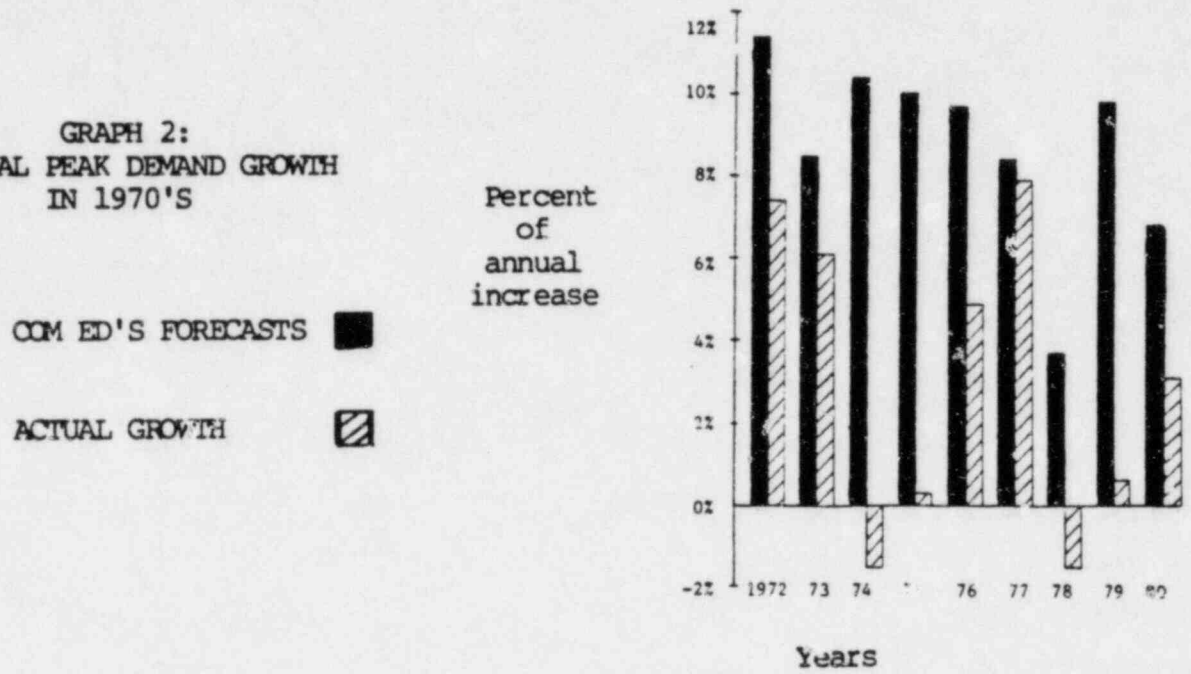
What Graph 1 does not show is that Com Ed's average utilization of this generating capacity through these same years (1972-1979) was only 55% (9,000 megawatts). No other business in America could survive a prolonged

period of using only 55% of its plant capacity. Com Ed was a very profitable company during these years only because the consumers were paying for the average 45% idle capacity.

COM ED'S CONSISTENT OVER-PREDICTIONS

Graph 2 contrasts Com Ed's yearly predictions of the increase in electrical demand with the actual growth in demand each year during the 1970's. The graph shows that every year Com Ed grossly over-predicted demand growth, and showed absolutely no interest in learning from prior years' mistakes or from actual trend lines as the decade progressed. Since 1974, Com Ed's annual growth predictions have averaged 4.2 times actual annual growth.

GRAPH 2:
ANNUAL PEAK DEMAND GROWTH
IN 1970'S



These inflated predictions are vitally important because they are used as the basis for Com Ed's yearly power plant investment decisions. Thus year after year Com Ed used exaggerated predictions to justify the continuation of a construction program which actual growth figures clearly indicated was not needed.

Com Ed continues this practice today. Com Ed's current prediction of a future 4% increase in peak demand is the demand growth Com Ed needs to justify its current projected completion dates for the Byron and Braidwood power plants. This 4% predicted growth is more than twice the average 1.9% actual annual growth since 1973. The actual annual increase in peak demand since 1977 has been an even lower 0.7% per year.

A SERIOUS INVESTMENT MISTAKE

In 1976, Com Ed had only invested 3% of the now estimated $5 billion cost of the Byron and Braidwood power plants. But in 1976, at a time when it was operating at 55.2% of capacity, when it already had twice as much excess generating capacity as it needed to meet peak demand, and when peak demand had actually fallen by 1% over the last two years, Com Ed predicted a 9.7% annual growth rate and began to pour billions of dollars into two unneeded new power plants. Why did Com Ed make this grave investment mistake?

THE RATE STRUCTURE HAS ENCOURAGED UNNEEDED POWER PLANTS

Under Illinois utility regulation allowable utility profits are calculated (before rates are set) as a fixed percentage, around 10%, of the dollars the utility has invested in completed power plants and lines (the "Rate Base"). After the size of the profits has been set, the Illinois Commerce Commission (ICC) sets the rates so that the company can achieve this profit amount given the volume of projected sales.

Com Ed has interpreted this formula simply to mean that the more power plants it builds, the greater will be its profits, regardless of whether those plants are needed or the electricity the plants produce is sold. If consumers don't buy the available electricity, if sales don't keep up with forecasts, the ICC has in the past simply raised the consumers' rates for the smaller amount of electricity we do use. The less we buy, the more we pay for what we do buy.

Com Ed's managers and owners therefore thought they had nothing to lose if they overpredicted and overbuilt. They believed the ICC would simply pass the costs of excess capacity onto the ratepayers. And now that declining sales growth and massive construction cost overruns are squeezing Com Ed's profit margins, they have predictably asked the ICC to do just that.

THE RISK BELONGS TO THE STOCKHOLDERS

Under capitalism, the owners of a private business risk some of their own money by investing it in the hope that the resulting increase in sales will return their original investment to them plus a profit. Everything depends on their prediction of future demand and sales.

If their predictions are right, their wealth is increased. If they overpredict and therefore overinvest, they lose money because they must pay for the increased (and unused) capacity out of their own pockets rather than out of increased sales. Thus if Com Ed were in a competitive free enterprise situation, its owners simply could not afford to continue expanding its already excessive capacity.

THE ICC BAIL-OUT

The ICC, in its regulation of the utility monopolies, is supposed to replace the competitive free enterprise market and force these monopolies to be as efficient as possible. It is supposed to discourage the development of inefficient, wasteful excess capacity and protect the ratepayers who would otherwise be at the mercy of the utility monopoly. It is supposed to give the company its allowable profits only if the company is managed efficiently.

But to-date the ICC has completely ignored this responsibility for enforcing efficiency. Instead it has operated on the peculiar principle that no matter how ill-advised Com Ed's business decisions may be, Com Ed must be allowed to implement them and the ratepayers—rather than the owners—must be forced to pay for them.

In granting Com Ed a 14% rate hike on February 6, 1980, the ICC wrote:

> Theoretically, the shareholders bear the risks relating to management's use of funds entrusted to them. As a practical matter, . . . as for the risks of the Company's construction program . . , requiring stockholers to bear

certain risks may result in driving down the market value of the Company's common stock to a level where more stock cannot be issued.

By its own admission therefore the ICC is violating the most fundamental principle of the free enterprise system, namely that the private owners bear the risks and pay for the losses caused by investment mistakes.

The ICC is justifying its approval of letting Com Ed finance and continue its investment mistakes with ratepayers' money by claiming that in the long run it will cost the ratepayers less to subsidize the completion of the two plants now, and that delaying completion until the plants are needed will only add to the eventual cost to the consumer. But this is only true because the ICC plans to add the interest expenses of carrying partially-built plants to the Rate Base (and therefore into consumers' rates) when the plants are completed.

If one strips away the circular logic from this argument, what the ICC is telling us is that it is cheaper for the ratepayers to pay for Com Ed's investment mistakes now rather than later. But under the rules of free enterprise the ratepayers should never be forced to pay for these errors and none of the costs stemming from premature construction should go into the Rate Base.

THE CHRYSLER ANALOGY

Chrysler, for the very same reasons as Com Ed, got into deep financial trouble in the late 1970's. But while the Chrysler stockholders lost their dividends, the Com Ed investors continue to be paid a 13% dividend by the ratepayers while all their risks and losses are passed onto the same ratepayers. Nearly all of the $389 million (14%) rate increase the ICC gave Com Ed in February of this year will go to Com Ed shareholders in dividends in 1980.

Chrysler's losses forced it to change its investment strategy, but Com Ed is being given government go-ahead to compound its problems by continuing its unneeded building program. It is as if Chrysler had gotten the federal government to force all taxpayers to go out and buy a big Chrysler Imperial that they did not need and pay 20% more for it to boot.

If Com Ed really believes its current prediction of a 4% annual growth in peak demand, it should risk its owners' money—not the ratepayers'—in its construction program.

A DANGER TO OUR BUSINESS CLIMATE

The American economy can no longer afford the wastefulness and inefficiency of utilities that undertake vast expansion programs while underutilizing current facilities. Utilities are using up almost 20% of the available investment capital in Illinois at a time when it is desperately needed for re-industrialization.

If the ICC allows our electrical rates to triple in 6 years, the entire business climate in Northern Illinois will be gravely endangered. The cost of everything here will increase as producers, service agencies and local and state government pass on their increased costs.

Instead of throwing scarce capital away on makework, we should be creating jobs by retrofitting our businesses and homes to reduce energy waste. Conservation and reasonable investment for growth, not inflationary over-construction, are the keys to a secure energy future.

REPORT DOCUMENTATION(3)

YEAR	CAPACITY(4) MEGAWATTS (MW'S) NET CAPACITY	PEAK DEMAND	RESERVE MARGIN	COM ED FORECASTS V. ACTUAL--1 YEAR DATE OF FORECAST	FORECASTED GROWTH MW'S	%	ACTUAL GROWTH MW'S	%	BYRON & BRAIDWOOD CONSTRUCTION MILLIONS OF $'S INVESTED	ESTIMATED TOTAL COST IN MILLIONS	ESTIMATED COST/KW FROM PLANTS	COM ED RATES V. INFLATION (CPI) RATE/KWHR SYSTEM AVERAGE	CONSUMER PRICE INDEX
1973	14954	12462	19.0%	10/72	1000	8.5%	712	6.1%		$1,838	$410	2.20¢	132
1974	15778	12270	30.8%	3/74	1298	10.4%	-192	-1.5%				2.57¢	147
1975	16373	12305	36.2%	1/75	1230	10.0%	35	0.3%	$ 60	$2,117	$474	3.01¢	161
1976	16711	12907	29.5%	9/75	1195	9.7%	602	4.9%	$ 138	$2,391	$534	3.25¢	170
1977	17169	13932	23.2%	5/77	1083	8.4%	1025	7.9%	$ 406	$2,392	$534	3.38¢	182
1978	17480	13720	27.4%	11/77	618	3.7%	-212	-1.5%	$1,066	$3,140	$701	3.79¢	195
1979	17914	13804	29.8%	6/79	1350	9.8%	84	0.6%	$1,417	$3,528	$787	4.22¢	217
1980	17717	14228	24.5%	5/80	946	6.8%	424	3.1%	$1,918	$4,926	$1,099	5.83¢	248
AVG YEARLY INCREASE, 73-80	1.9%		27.6%		1103	8.4%	261	1.9%		15%	15%	15%	9%
1987: COM ED PLANS:23921	18723		28%						$4,926	$4,926			
PROJECTIONS BASED ON AVG YEARLY INCREASES, 1973-1980:	16243		47%						$7,163		$1,598		

(1) This is a 20% compounded annual increase and is probably conservative. According to ICC Exhibit 10.2 of the last Com Ed rate increase case, Com Ed will need 10% additional revenue per year for the next 6 years just to finance its construction program. This calculation is probably too low as the estimated cost to complete the 2 power plants has increased 40% since the calculation was made. Added to this 10% annual increase will be 1) automatically-passed-through fuel cost adjustments, which have averaged 6% per year since 1973, and 2) the effects of inflation on normal operating expenses, assumed conservatively here to be 4% per year. Also sales have fallen 2% this year, and rates will have to rise just to compensate Edison for the lost revenue.

(2) To calculate the cost of excess capacity, we identified Edison's newest power plants which comprise the company's excess capacity for each year analyzed. The capital cost of completed plants, which if subtracted from Edison's system capability would yield a reserve margin in the range of 14% were added to arrive at a "value of excess capacity." The value of the excess capacity was then multiplied by 18% to arrive at an annual cost to consumers. This figure (value of excess capacity mulitiplied by 18%) was then adjusted for fuel cost benefits or penalties associated with plants representing excess capacity. The costs in millions were: 1978=$147.5, 1979=$178.5, 1980=$193.5 for a total of $519,000,000.

(3) All figures used in this report are based on Commonwealth Edison Company documents filed with the ICC for rate hearings.

(4) All reserve margins were calculated using Edison's reserve formula in effect at the time of annual peak demand.

THE CAMPAIGN AGAINST THE RATE HIKE

The Campaign Against the Rate Hike is a coalition of businesses, local governments, labor unions, neighborhood groups, social service agencies, church groups, citizen action groups, senior citizen groups, and individual citizens which is co-ordinating a campaign against the rate hike throughout Com Ed's service area in Northern Illinois.

The Campaign's strategy is based on the belief that the ICC has already demonstrated its bias toward granting the rate hike request and will only be dissuaded from doing so by a well co-ordinated campaign combining:

1) mass based political pressure exercised through the intervention process;
2) sound, well-documented technical and economic arguments in the hearings;
3) threatened legal action if the ICC grants Com Ed a substantial increase;
4) efforts to amend the law in Springfield to change the rules under which the ICC and Com Ed are operating.

WHY INTERVENE?

In the context of this 4-part strategy there are two compelling reasons why your organization should formally register as an intervenor in the rate case.

First, it is only by intervening that you can be sure that your voice is really heard, that your concern will really be felt by the four commissioners who currently make up the Illinois Commerce Commission. The commissioners are appointed by the Governor and are sensitive—as is the Governor himself—to public concern when it is expressed directly and forcefully. Without interevening, you can have no formal input into the process by which the rate request will be decided.

Second, if the ICC grants a substantial part of the request (as it did for the previous request on February 6, 1980), the Campaign Against the Rate Hike will immediately take the ICC to circuit court for failure to carry out its responsibilities to regulate the utility under Illinois law. We believe we have a sound case with a good chance of winning in circuit court.

When we file this lawsuit we will ask the court to "stay" the rate increase for the intervenors while the court is deciding on the case. This will prevent Com Ed from collecting the increase while the court hears the case, a process that could take a year or more. We believe that as long as the intervenors agree to pay the increase into a court-supervised escrow account the court will grant the stay (which it is empowered to do under Ill. Rev. Stat. Ch 111 2/3, sec. 75) because: 1) without a stay there could be (what the law calls) "irreparable injury" to the intervenors (namely that without the stay the intervenors could not get their money back from Com Ed if the court decides to overturn the rate hike), and 2) we will have a reasonable substantive argument.

NON-INTERVENORS WILL NOT GET THEIR MONEY BACK

If the court later overturns the rate increase, only those covered by the stay (i.e. those who have intervened) will get their money back (with interest) from the escrow account they have been paying into. For all those who did not formally intervene the increase will be considered a valid rate between the time it was granted by the ICC and the time it was overturned by the court. (See Cerro Copper Products Co. v. ICC, 65 Ill. App. 3d 764, 382 NE2d 143(4th dist., 1978))

There are virtually no disadvantages, liabilities or costs involved in intervening. The intervening organization can be as involved in the formal hearing process as it would like to be. The Campaign is organizing expert testimony for the hearing and will help co-ordinate the involvement of organizations that would like to participate.

An organization can intervene on behalf of its members and its members will then be protected by the court-issued stay if we have to go to court.

The actual act of intervening is very simple to perform. Simply follow the directions in filling out the attached intervening forms, have them notarized and send them to the four indicated addresses.

A few of the organizations that have intervened as of November 5, 1980 are:

Industry:
- U.S. Steel Corporation
- Bell and Howell Corporation
- Chrysler Corporation
- General Motors Corporation
- Nabisco Corporation
- Sherman-Williams Corporation

Governments:
- Rockford School Board
- Winnebago County Board of Health
- City of Dekalb
- Northern Illinois University
- City of Waukeegan
- City of Evanston
- City of West Chicago
- Illinois Department of Transportaton
- Illinois Attorney General
- States Attorney of Cook County
- Chicago Transit Authority

Other Local Organizations:
- Winnebago County Council on the Aging
- Rockford YWCA
- National Council of Negro Women, Rockford Chapter
- Board of Directors of Rockford Jewish Community Center
- United Auto Workers Local 592 (Sunstrand)
- United Auto Workers Local 225 (Mechanics)
- International Association of Machinists District Lodge #10
- Garfield Avenue Residents Organization
- Blackhawk Federation of Teachers
- Jerusalem Baptist Church

Utilities defend $20 million cost of ads

By Dean Schott

Chicago area utilities spent nearly $20 million last year to advertise their services and themselves—a practice that consumers complain needlessly adds to their already high bills for electricity, natural gas and telephones.

According to many consumers, utilities are monopolies that should use their advertising money to reduce customer bills, rather than to produce slick TV commercials, billboards and newspaper advertisements.

If that happened, it would be more symbolism than substance, say executives of Commonwealth Edison, Peoples Gas and Northern Illinois Gas. They say utility bills would fall between 12 cents and 44 cents a year for their average residential customer.

At Illinois Bell, officials said its 3 million customers would end up paying more on their bills, not less, if the company dropped its $12.8 million-a-year advertising program. The company's advertising more than pays for itself in savings and new income, which helps keep rates lower, Bell executives insist.

NEVERTHELESS, Michael V. Hasten, departing chairman of the Illinois Commerce Commission, said, "Utility advertising is a serious bone of contention with consumers, and we have hacked away at the expenses. People get annoyed, and I must say, I get annoyed too."

Largely because of federal legislation in 1978, the commerce commission has taken a tougher approach on which advertising expenses come from consumers' pockets. Before 1978, consumers were paying for all kinds of expenses, ranging from monthly recipes with their bills to corporate goodwill advertising.

Today, if the advertising deals with conservation, safety, new prices or new services, the consumers pay. Stockholders pay if the ads promote the company, special appliances or controversial positions.

For example, customers were not billed for Edison's recent "Don't Take Tomorrow for Granted" TV campaign, featuring actor John Houseman on a merry-go-round that grinds to a halt without electricity. However, consumers do pick up the tab for seasonal ads telling them about the shift to higher prices in the summer and the return to lower prices in autumn.

An $800,000 newspaper campaign kicked off by Peoples Gas last month to explain why natural-gas bills were rising will be charged to stockholders. Occasional radio advertisements and brochures inserted with monthly bills warning customers to be aware of leaking gas are paid for by consumers.

ADS BY ILLINOIS Bell telling customers they can return broken telephones to company service centers for replacement are charged to consumers. The company spent $450,000 on the campaign but, a spokesman said, it saved $4.3 million because the company could cut back on installers making home repairs.

Customers did not pay the cost of newspaper ads last month when Illinois Bell announced it needed $185 million more in revenues. But they did pay last June when Bell won a $219.4 million rate increase and the company explained the higher charges in newspaper ads.

Gerald Keenan, ICC consumer affairs director, said, "Utility advertising is so visible it creates consternation among customers. We get letters from consumers asking why we let utilities advertise. I tell them because the U.S. Supreme Court said they could."

The court ruled in 1980 that a New York State utility has First Amendment rights like anyone else and could advertise.

Keenan said consumers' reaction against advertising far outweighs its size in a utility's budget. "Advertising is only a small part of a company's expenditures," he said.

JOHN MAXSON, Edison advertising supervisor, said the company's 1982 advertising bill of $3.25 million pales in comparison with its $1 billion annual fuel bill and its $500 million annual tax bill.

"To eliminate advertising isn't going to make a difference," Maxson said. "It would be dishonest to claim bills would be changed drastically if we cut out advertising."

Although Commonwealth Edison proposed spending $3.67 million on advertising this year, the commerce commission last month permitted Edison to bill its 2.9 million customers for only $750,000. That amount represents 20 cents of the typical residential customer's bill of $546.24 in a year, Maxson said.

When Peoples Gas wanted to charge its nearly 900,000 customers $1.8 million for its advertising expenses, the amount was sliced to $800,000 by the commerce commission last month. Peoples' average customer will be charged 44 cents a year as part of an annual bill of $842.94, said John Lawrisuk, the company's vice president.

AT NORTHERN Illinois Gas, the advertising cost for the average customer amounts to 12 cents in an annual bill of $707. The company spent nearly $2 million in 1982, but the commerce commission allowed it to collect only $170,000 from its 1.45 million suburban customers.

The situation at Illinois Bell is different because of competition.

Robert R. Campbell, Bell's advertising manager, said his company advertises for services and equipment where there's competition, such as long-distance and design-line telephones but does not advertise where the company has a monopoly, such as local calling.

"I appreciate the concerns of the ratepayer," Campbell said. "If I got the impression that advertising was not necessary, I could understand their anger and I would resent it too."

But he added, "Consumers are paying less because we do advertise."

MEDICAL IMPLICATIONS OF NUCLEAR POWER

by Dr. Helen Caldicott

Australian-born and educated, Dr. Helen Caldicott practices pediatrics at Boston's Children's Hospital Medical Center. An environmental activist since 1971, she virtually single-handedly educated and inspired the Australian public to protest—and bring a halt to—French atmospheric testing in the South Pacific.

Nuclear power poses the greatest public hazard the world has ever encountered because of the inevitable contamination of the biosphere with plutonium and radioactive wastes. Cessation of all forms of nuclear power is the ultimate form of preventive medicine.

The fuel cycle of nuclear power plants is complex, but not too difficult to understand. It has many biological and medical implications which must be understood by the average person in the street as well as by the politicians who make most important decisions for society.

In this article, I describe the fuel cycle step by step, and explain the medical dangers arising from each step.

1. Mining. Uranium is the fuel for atomic reactors. When it is mined from the ground it emits a radioactive gas called radon which is often inhaled into the lungs of miners where it converts after four days to lead 210 which remains radioactive for more than 100 years. Radiation in the body is carcinogenic (cancer-causing). It has been discovered in the U.S. that up to 20% of uranium miners die of lung cancer over a 20 year period of mining.

2. Milling. After the uranium is mined it is then milled and refined. Thousands of tons of waste ore (called tailings) are discarded and left lying in huge heaps on the ground. The tailings generated in the U.S.A. over the next 24 years may produce 45 cases of lung cancer in the world per year for tens of thousands of years. The causative agent is again the gas radon which is continually emitted from the waste uranium in the tailings.

3. Enrichment and fuel fabrication. The uranium is then enriched and fabricated into fuel rods which are transported to the nuclear reactor, and placed in the reactor core. A typical 1000 megawatt reactor contains 526 bundles and each bundle consists of 12 rods. The radioactive uranium produces heat by fission which is utilized to generate electricity. During this process uranium is converted to many radioactive daughter products which are the ashes or wastes of nuclear power. Once a year one quarter of the rods are removed from the reactor core because their generating life has ceased. The rods are both thermally and radioactively very hot. They must be stored on racks in cooling ponds containing water for weeks prior to removal for more permanent storage elsewhere or possible reprocessing. They now contain a very large amount of biologically dangerous radioactive materials including strontium 90, iodine 131, cesium 137 and plutonium.

4. Reprocessing. Eventually it is hoped these rods will be transported in caskets to a reprocessing plant where they will be dissolved in nitric acid.

During reprocessing, the plutonium is purified and removed from the solution, in powder form as plutonium dioxide. It will then be used as either fuel for atomic bombs or fuel for "breeder nuclear reactors" (reactors which breed plutonium). It is at this point in the fuel cycle that the greatest dangers arise once the plutonium is separated. Plutonium is an extremely potent cancer producing material, appropriately named after Pluto, the God of Hell. It enters the body by inhalation of contaminated air, where it is deposited in the lungs. Because of its potent cancer producing properties the acceptable body dose has been set at less than 1 millionth of a gram (an invisible particle). There is some evidence this level has been set too high. Cancer will not appear until 15 or 20 years after inhalation. By extrapolation, 1 lb of plutonium, universally dispersed, would be adequate to kill every man, woman and child on earth. Because plutonium is the basic material of atomic bombs, it is more valuable than heroin on the black market, and therefore vulnerable to theft by terrorists, racketeers, non-nuclear nations and deranged individuals. Reactor grade plutonium makes inefficient but dirty bombs. It also has a curious physical property of igniting spontaneously when exposed to air, thereby producing tiny aerosolised particles which are dispersed by wind currents and available for inhalation by humans and animals.

By the year 2,020 in the U.S.A. the industry will have produced 30,000 tons of plutonium, most of which will be in powdered form. There will be 100,000 shipments of this material annually on the highways of America. Plutonium must be transported very carefully, packed in small quantities in separate containers because only 10 lbs. is "critical mass" which means that a spontaneous atomic explosion could occur if 10 lbs. or more were compacted together in a finite space. One could envisage disastrous consequences if a truck were to crash and discharge some of its deadly contents.

The most crucial property of plutonium is a half life of 24,400 years, (half life of a radioactive substance is the period of time for half a given quantity to decay, and a similar period for half of the remaining radioactivity to decay, ad infinitum). Therefore radiation from man-made plutonium will exist on earth for at least half a million years. To illustrate the enormous medical problems arising from the physical properties of plutonium: If an individual dies of lung cancer engendered by plutonium, his body will return to dust, but the plutonium lives on to produce cancer in another human being.

Although it will be used as "fuel" in breeder reactors, more plutonium will be produced than will be utilized. So there will be a continual net increase in plutonium manufactured. The nuclear industry has not yet decided what to do with all this plutonium.

5. Waste Storage. There are no permanent safe methods of disposal and storage available at this point in time. After the plutonium is extracted from the radioactive waste, very dangerous biological elements remain, which have no further use and are pure waste products. This remaining solution contains some plutonium, radioactive iodine, strontium 90, cesium, as previously mentioned, and many other highly toxic radio-nuclides. Because it is extremely hot, the solution must be stored and

cooled continously for years. Currently tanks with a 30 year lifespan are being used. Every month numerous leaks of radioactive wastes are reported in the U.S.A. in quantities from several gallons to 200,000 gallons. When this dangerous fluid leaks it inevitably contaminates the local water system and the various elements are taken up by the food cycle. Radioactive iodine, stronium 90, and cesium are absorbed by roots of grass and vegetables and are further concentrated in the flesh and milk of animals when they eat the grass.

Iodine 131, strontium 90 and plutonium are concentrated in milk, both human and animal. Cesium is concentrated in muscle (meat) and plutonium is also concentrated 1,000 times in fish compared to the background water concentration. These substances are invisible, tasteless and odourless. It is impossible to know when one is eating or drinking or inhaling radioactive elements.

6. Biological properties of radioactive waste. All cells of the body have a central nucleus which contains genes, the basic inherited material which controls all our characteristics (colour of eyes and hair, size, facial characteristics, enzyme systems etc.). Genes are changed by radioactive particles. Cells and genes which are actively dividing (as in fetuses, babies and young children) are most susceptible to the effects of radiation. If a gene which controls the rate of cell division is altered by radiation, the cell may divide in an uncontrolled fashion to produce cancer and leukaemia. It may take from 15-30 years before cancer appears after the cell is exposed to radiation. If a gene in the sperm or egg is altered by a radioactive particle, the young may be born either with an inherited disease, or the baby may appear normal, but will transmit the damaged gene to future generations, to become manifest in later years.

Radioactive iodine is absorbed through the bowel wall, and migrates in the blood to the thyroid gland where it may produce thyroid cancer.

Strontium 90 is also absorbed through the bowel after being ingested in contaminated milk, and is incorporated in bone because it chemically resembles calcium. This element causes osteogenic sarcoma-a highly malignant, lethal bone tumor, and leukaemia, a cancer of the white blood cells. The blood cells are formed in the bone marrow, and are therefore subjected to the effects of radiation from strontium 90 in the adjacent bone.

Cesium 137 is deposited in muscles of the body where it can produce malignant changes.

Plutonium is one of the most carcinogenic substances known. It is not absorbed through the bowel wall, except in infants in the first four weeks of life when it is ingested in milk. As previously described, infants are extremely sensitive to the toxic effects of radiation. The route of entry of plutonium is by inhalation of contaminated air into the lungs. Small particles of plutonium are deposited deep in the respiratory passages, where they remain for years. It is accepted that one millionth of 1 gram of plutonium is sufficient to produce lung cancer 15-30 years after initial inhalation of the element. Plutonium is also absorbed from the lungs into the blood stream where it is carried to the liver (to produce a very malignant liver cancer), to bone (where like strontium 90, it causes osteogenic sarcoma and leukaemia), and it is selectively taken up from the circulation by the testes and ovaries where, because of its incredible gene changing properties, it may cause an increased incidence of deformed and diseased babies, both now and in future generations. Plutonium also crosses the placenta from mother's blood into the blood of the fetus, where it may kill a cell responsible for development of part of an organ, e.g. heart, brain, etc. causing gross deformities to occur in the developing fetus. This mechanism for production of fetal deformities is called teratogenesis and is different from the deformities caused by genetic mutation in the egg or sperm, because although the basic gene structure of the cells of the fetus is normal, an important cell in the developing fetus has been killed leading to a localized deformity. (Similar to the action of the drug thalidomide).

Massive quantities of radioactive wastes are being and will be produced in the future. The safe storage of waste is unsolved, and even if there were a present-day solution, we could not predict a stable society or world for half a million years; we could not guarantee incorruptible guards, or moral politicans and we certainly cannot prevent earthquakes, cyclones or even wars. Waste is leaking now, inevitably it will leak in the future. We could therefore predict epidemics of cancer and leukaemia in children and young adults, and an increased incidence of inherited disease (there are 2,000 described inherited diseases). It is also inevitable that plutonium will be stolen and utilized for atomic weapon production (2 tons of plutonium are presently unaccounted for in the U.S.A.).

It has been claimed that 80-90% of all cancers may be caused by environmental pollutants. There was a 5% increase in cancer in the U.S.A. in the first seven months of 1975, and a total 3% rise in 1975.

Goverments spend millions of dollars researching causes of cancer, leukaemia, and inherited disease, but simultaneously spend billions of dollars in an industry that will directly propagate these diseases.

As a doctor, I appeal to my fellow medical colleagues to investigate this enormous present and potential threat to our patients, and to urgently initiate programs of prophylactic medicine. I also appeal to the Mothers and Fathers of the world to educate themselves about the medical dangers of nuclear power and to demand from government a safe future for their children, grandchildren and descendants.

1217 Michigan Avenue
Rockford, IL 61102
March 1, 1983

To the NRC Licensing Board

Dear sirs:

We ordinary citizens of Northern Illinois do not need the electricity which will be generated by the Byron Nuclear Power Plant.

We cannot afford the repeated rate hikes needed to pay for Byron.

We are gravely disturbed over the dangers to human life and to the environment created by the growing number of nuclear power plants in Northern Illinois.

All nukes leak radiation. Radiation, cumulatively built up in the bodies of our children and grandchildren will endanger their lives. It can cause mutations in their gene structure which will permanently effect the future of the human race.

In infinite wisdom, God set the sun 91 million miles away from the earth. Not in Byron, Illinois.

Doris Peters
Rockford, Illinois

Feb 27, 1983

The Honorable Jean Smith
Atomic Safety & Licensing Board

Dear Sir;

Although not opposed to Nuclear Power, I believe it is imperative that the health and safety concerns of the citizens in the impacted areas be thoroughly addressed.

In this regard I urge you to carefully consider all the concerns about the Byron Power Plant that have been raised by SAVE and the League of Women Voters.

C. Jack Edwards, M.D.
Asso. Prof. Medicine
Univ. of Ill, COM, at Rockford

To: The Atomic Safety and Licensing Board

I am opposed to the licensing and opekation of the Byron Nuclear Power Station for the following reasons:

1. I live in Sterling, Illinois. Some schools in my City have been selected as relocation sites in the Evacuation Plan. I am acquainted with these schools and do not belive them to be large enough nor properly equipped to deal with the diversity of need in such an emergency

2. The proposed Nuclear Warhead Program of the Energy Deft would involve the reprocessing of commercial nuclear waste from individual plants, such as Byron, for the development of weapons. This would be a direct violation of the Atoms for Peace Program of 1953.

3. I am opposed to the exploitation of the energies of radioactivity because my imagination worries me. It has been proposed that the safe use of nuclear power may not only depend upon the control of what is known to happen. The use of such power may lead us to the discovery that we have been proceeding with an incomplete understanding of what has been occurring. Down the line it may be revealed to us that our actions have proven to be the disjunction of a most complicated relationship. There have been other instances of where we have so emphasized the alleged benefits of a new technology, that we have failed to see its long term effects. One of these days the Universe might get a little tired of being shoved around and it just might throw something back at us. Maybe this sounds a little anthropomorphic, but what happened to Skylab?

Sincerely,

Sinnissippi Alliance For
the Environment (SAFE)
326 N. Avon St.
Rockford, IL 61103
815/962-7373

IS BYRON WORTH THE RISK ?

No.

The demand for electricity is not there. Commonwealth Edison can now produce 40% more electricity than we can use. Byron is not needed now, and will not be needed for the next 30 years.

The life of the nuclear plant at Byron may last 30 to 40 years, if they are lucky. In thirty to forty years we just might need more electricity - but by then they will have to build another nuclear plant.

Byron costs $3 billion and is still not finished. Paperwork, inspections, problems with the steam generators, an effective evacuation plan - all have to be resolved before Byron can be turned on.

Putting Byron in cold storage for a number of years would actually improve Commonwealth Edison's cash flow ($150 million the first year; $60 million in the years following). To complete the construction program, Com Ed needs at least three more 20% rate hikes.

And finally, nukes leak, whether they have an accident or not. And the risk of a serious accident is there, especially if Com Ed rushes to turn on the plant.

So is the risk of ionizing radiation blowing in the wind worth the benefits of more electricity that we can't afford and can't use ?

No.

Write to:

Judge Ivan Smith
c/o ASB/NRC
The Federal Building
~~310 South Court Street~~
Rockford, IL 61101

Tell him that you can do without the added risk of a nuclear power plant operating in Byron, Illinois.

Sponsored by: ~~CONCERNED~~ CITIZENS

My name is Beth Galbreath. I am a Rockford resident (734 Parkview Av. 61107), a professional employee of a Rockford social service organization, a wife and mother of other Rockford residents, and a volunteer in community work. I and others like me care deeply about Rockford, its quality of life, and the health of its children, because we live here--so we care in a way that visitors from Washington or Chicago cannot, no matter how they may try.

It has been said to me that we in Rockford should have no concern about the Byron nuclear plant--that it is the concern only of those who live in Byron and Oregon. Yet we in Rockford are only 15 miles away--well within the circle of its heaviest radioactive influence, even under normal operating conditions.

Our children, as well as the children in Ogle County, will be affected by this plant. But our children ARE in fact citizens of Ogle County! I understand that Ogle has the highest concentration of youth camps in Illinois. My own daughter spends time each year at an Ogle County youth camp, and I lead groups of children on camping trips to the same facility.

As a youth leader I am aware how vulnerable the children in a camp are. Most youth-serving agencies do not have the money to have evacuation buses standing by during camp sessions. It is simply impossible to plan a quick mass evacuation of Ogle County youth camps with the resources and vehicles available--even assuming that the county's roads would not be blocked by private - vehicle-owning evacuees. Even in the off-season, when I am there with my group, we do not have enough motive power to transport the whole group in an emergency.

I am sure the numbers of children involved, even at the height of the summer season, must seem small compared to the number of people in Rockford and in Ogle County who would also need evacuating--but the ratio of cars to people is much higher among the permanent residents. And I would also point out that children are most vulnerable to radiation damage. They are our precious future--yet we build a nuclear plant in the middle of an area where they and others go for spiritual nurture and for education about our natural heritage!

I want to make it clear that I am not speaking for my agency or any other member of any youth agency, but only for myself and my family, though our concern includes all the children.

I also want to stress that I am not concerned only about major accidents, but also about everyday, so-called "normal" emissions. These emissions are said to be "well within safety limits" and pose "no hazard to the public"--yet there is NO evidence for a threshold of radiation danger. Every bit of radiation, no matter how small, causes some damage--the less radiation, the fewer cases of damage, but there is still damage. And children are the most easily damaged.

Again and again we are told that yes, the research may show that radiation causes cancers, leukemia and genetic defects--yes, there is a small chance of a nuclear disaster-- but these chances are so small that we should accept the risks as part of the price of economic well-being. Nuclear power is good for business, we are told--and Rockford needs jobs.

A microcephalic infant has a normal-sized face but underdeveloped cranial vault, leading to severe mental retardation. This defect, sometimes genetic, has also been associated with exposure to ionizing radiation during pregnancy.

we have spent
around $3,000
we plan on another $3,000
worth of -
to us that is a lot of money
but we have no doubt that we
we will raise that and present
a worthwhile case.

Well, northern Illinois has much more generating capacity than its customers have needed for many years now, and it hasn't seemed to help yet. In spite of plentiful electricity, industry continues to flee the area. How can we expect another nuclear plant to attract business--especially a nuclear plant which is part of a multi-billion dollar construction program that drains millions of investment dollars out of the northern Illinois economy every week? Especially a nuclear plant with some of the worst cost overruns in history--a plant which can do nothing but drive up the cost of electricity in northern Illinois?

I know that money talk is excluded by the rules of this proceeding. But money is indeed a safety issue.

First, if Commonwealth Edison is really the terrible manager its demand projections suggest, and if it is really in the terrible financial shape it claims each time it asks the state ICC for a rate hike, then it cannot be considered financially responsible enough to be trusted with another radiactive baby. It can't be trusted not to go bankrupt and dump the baby on the public dole.

Nor can it keep coming to the people for more money. Northern Illinois is suffering a depression--a depression brought on by many factors, but lack of electricity was NOT one of them. The money to safely operate Byron for 40 years and then guard its remains for several thousand simply is not here-- not in Commonwealth Edison's accounts, not in the state's coffers, not in the people's pockets. The money will not be there until northern Illinois is able to attract new-style industries to replace those we are losing permanently.

For Commonwealth Edison, that means that corners have been cut in construction and corners will be cut in operation. And that is a safety issue.

Yet in the end no amount of money can operate a nuclear plant safely--because it is not systems, but people, who build and run machines. Three Mile Island never should have happened, but it did--because of people. People are not perfect. They cannot be perfect. So we cut corners and pretend we can set "safe limits" for radiation exposure and try to ignore the fact that Byron's emissions will just add to the emission burden already borne by northern Illinoisans from all of Commonwealth Edison's other supposedly "safe" nuclear plants. And the levels of radioactive materials in our air, water and food keep building. And our risks of a real disaster keep mounting.

I ask this board, if it must be blind to economic arguments, to be TRULY blind to economic arguments! If the scales of justice may not be weighted on the intervenors' side because the plant is too expensive and not needed, then struggle mightily not to weight the scales on Commonwealth Edison's side because of the huge and foolish investment it has poured into this radioactive lemon.

And if money is **truly** muzzled in these proceedings, then the voice of Reason will be clearly heard, saying "Don't fire up the Byron plant!"

Beth L. Galbreath
734 Parkview Av.
Rockford IL 61107

CRITICAL MASS ENERGY PROJECT

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Washington, DC 20003

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NUKES FACE THE BOTTOM LINE

by Joe Guerra

The President's answer to the energy crisis has been to hold up free enterprise as the key to increased energy production. The forces of the market should dictate the allocation of our limited resources, controls should be lifted, profits should increase, and government should get out of the energy business.

Thus, the administration slashed federal funding for solar energy, alcohol fuels, and conservation programs by more than two-thirds, and eliminated funds for ocean thermal energy and hydropower altogether. In the final energy budget, Congress sharply cut cost-efficient programs such as conservation and solar energy development—though not as severely as the administration would have liked. The budget for solar energy, for example, was reduced by 45 percent, instead of the 70 percent the President sought.

When it came to nuclear power, however, the administration displayed precious little faith in the free market. The President got nearly $2 billion in taxpayer subsidies for the commercial nuclear industry.

After thirty years and $37 billion of taxpayer support, nuclear power contributed less energy last year than firewood.

The administration's rationale, of course, is that nuclear power is a potentially "unlimited" source of energy, and therefore a solution to our dependence on foreign oil. The sad fact is, however, that in 1980 nuclear power provided only 3.7 percent of our total energy needs. After thirty years and $37 billion of taxpayer support, nuclear power contributed less energy last year than firewood.

More importantly, nuclear power is basically unrelated to the oil shortage. Of all the oil consumed in this country, only 7 percent is used to generate electricity. Since what nuclear power produces is electricity, it can do absolutely nothing to reduce our dependence on the other 93 percent.

This country derives nearly 73 percent of all its energy needs from oil. If nuclear power suddenly replaced every oil-fired generating station, we would still depend on oil for 67 percent of our needs—hardly a state of energy independence.

Most of the oil consumed in this country is used for transportation and agribusiness, and as feedstocks for chemical manufacture. We can't use nuclear power (i.e., electricity) to fertilize our crops, just as we can't pave our highways with it, refine it into ammonia, or power our trucks with it.

Still, the President seems so enamored of nuclear power that he has exempted it from his commitment to free enterprise, perhaps because without the continued support of taxpayer money, there is every reason to believe that nuclear power would not survive the rigors of competition.

Even before the accident at Three Mile Island, new orders for

Joe Guerra is editor of Critical Mass Energy Journal, *a branch of Public Citizen, Inc.*

nuclear plants had come to a complete standstill. Since 1975, fifty previous orders have been canceled. Wall Street analysts are steering their clients away from investments in nuclear power, and major investors, such as insurance companies and pension funds, are quietly pulling their money out of utilities with large nuclear programs.

In March, Merrill Lynch, the Wall Street brokerage firm, published a study that listed eighteen planned plants as "ripe for cancellation." The report, "Nuclear Power—The Outlook for the 80s," concluded that deciding not to build a nuclear facility would have "positive effects" on the near term financial outlook for a considerable number of major utilities.

At the same time, Komanoff Energy Associates, a New York-based group of energy economists, released a study showing that capital costs for nuclear plants increased by 142 percent between 1971 and 1978, (before the accident at Three Mile Island), and that they can be expected to rise at an equally dizzying rate during the 1980s. The study, which compared capital cost increases per kilowatt hour for nuclear and coal-fired power plants, found that while safety and environmental regulations will continue to drive up the costs of both, the lifetime generating costs of new nuclear power plants will exceed those of new coal plants by 35–50 percent.

"This suggests," the report concludes, "that many reactors currently under construction could be scrapped in favor of new coal-fired plants with advanced emissions control with little or no economic penalty." This is exceedingly bad news for the nuclear industry, whose main competitor is no longer oil, but coal. Despite the fact that for thirty years the federal government has sought through enormous subsidies and protective legislation to create a favorable environment for the nuclear industry, nuclear power is losing the battle to coal.

Utilities are banking on increased demand for electricity to cover the ever-increasing costs of building nuclear plants, but they are caught in a vicious inflationary spiral. As capital costs rise, the price of electricity is forced up, thereby encouraging conservation. In the eight years since the 1973 oil embargo, the nation's utilities have consistently over-estimated the demand for electricity—once by as much as 600 percent. Last year's 1 percent increase fell far short of the industry's historical 3 to 4 percent projections, indicating once again that consumers are learning how to use less energy more efficiently. The ultimate irony is that nuclear plants end up discouraging the demand they were built to supply. By the time they come on-line, the electricity they generate is so expensive that consumers find new ways to conserve.

The bottom line is that in spite of huge federal subsidies, nuclear power is dying of its own economic weight. The promise of clean, inexpensive atomic energy has never materialized, and taxpayer money is being diverted to support an industry that could not survive on its own.

In September the administration unveiled its second round of Fiscal 1982 budget cuts. Once again nuclear spending emerged essentially unscathed--and once again renewable resource and conservation funding sustained deep cuts. In fact, the administration is now discussing the possibility of eliminating these programs altogether in 1983. If the President insists on ending government support for these programs, many of which are cost-effective and have already begun to help us break our dependence on foreign oil, then he should end federal hand-outs to the nuclear industry as well. After living off taxpayers for thirty years, it's time that nuclear power submit to the free market's judgment.■

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Ratepayers' Money at Work

Nuclear Industry May Need $42 Million to "Set the Record Straight"

By Joe Guerra

Setting the record straight. That's what the nuclear industry hopes to do through a series of radio and TV advertisements designed to calm public fears about issues such as radiation hazards and waste disposal. Some of the industry ads have already appeared on television stations in the Harrisburg, Pa. area, home of the Three Mile Island nuclear plants.

Speaking before a gathering of utility executives last May, Georgia Power Company Chairman Robert Scherer unveiled five new ads developed by the industry-backed Committee for Energy Awareness (CEA), that downplay the risks of radiation exposure from operating plants and explain the industry's plans for disposing of high-level waste.

In Mid-June, the ads appeared in Harrisburg. Residents in that area already have a high understanding of nuclear power, though it is certainly not the one the CEA hopes to convey. Showing the spots in such hostile territory is perhaps the acid test of their effectiveness. It is not CEA, however, but General Public Utilities, owner of TMI, that is paying for the spots, a curious action in light of that utility's much-vaunted financial instability.

"We're naturally delighted someone is using the ads," CEA Director Harris said, but he added that in future CEA will pay for television time. At this point the Committee is still trying to decide exactly when and where to begin placing the ads, but Harris is hopeful that they'll be on the airwaves sometime in the fall.

"We need to attack the festering problem of public misunderstanding. . . agressively, and to provide enough funding to give our efforts a chance to make the difference."

"We need to attack the festering problem of public misunderstanding. . . aggressively," Scherer told his utility brethren, "and to provide enough funding to give our efforts a chance to make a difference."

Setting the record straight, especially on a nationwide basis, is going to cost some money. CEA, which will distribute and place the ads, is trying to raise between $25 and $42 million from the industry, primarily the utility sector. That's up from its 1981 budget of $4.5 million. Scherer, who chairs CEA's board of directors, called for utility generosity when the Committee's fundraisers come knocking. "The problem is more serious, the crisis is more urgent and the media — TV — that can help us is more expensive," he explained.

The crisis, as the industry sees it, is its declining popularity with the public. "There's been a misunderstanding about nuclear power which is evident in the recent drop of public support," CEA Staff Director Bill Harris told CMEJ. That misunderstanding, Scherer argues, is the result of some bad press the industry has received, specifically, coverage of "malfunctions, operational failures and the ongoing series of cancellations," which have misled the public into thinking the industry is giving up on nuclear technology. "We must demonstrate that we are not," Scherer told his fellow executives.

Thus the need to "set the record straight," the theme of CEA's ads, which feature Dr. Leonard Sagan of the Electric Power Research Institute. Sagan, identified as "a leading authority on environmental medicine," describes the industry's deep geological storage plans for high-level waste in three of the ads, and compares average public exposures to radiation from sources such as the sun, medical treatment and nuclear plants in the other two. The ads will also "show that we need nuclear power to contribute to full employment and a strong economy," said Harris.

The CEA tested the 30- and 60-second spots in Grand Rapids, Michigan, polling viewers before and after the ads were run. Although the results of the study are not yet final, and CEA declined to give any statistical information, the Committee claimed the spots had changed viewers' minds and significantly increased the public's "understanding" of nuclear issues. "This mid-polling confirms that public attitudes on a nuclear subject can be significantly and positively changed," Scherer said.

In at least one sense, it is fitting the ads are making their commercial debut in Harrisburg, the spiritual birthplace of CEA. The Committee was formed shortly after the TMI accident, in an effort to set the record straight on the nation's worst nuclear accident. Veteran industry watchers may recall the print ads CEA ran back then, including one that made the now famous claim (or infamous, depending on your point of view) that the accident proved the system worked.

In 1980, the Committee consisted almost entirely of utility executives who volunteered their time, and staff on loan from the Atomic Industrial Forum. Today it boasts a 14-member board of directors and a full-time staff of nine. And if the industry responds to Mr. Scherer's call to arms, CEA will become far and away the largest disseminator of pro-nuclear information. Its $25 to $42 million budget will dwarf the AIF's 1981 public affairs budget of $22 million and Edison Electric Institute's $5 to $6 million budget (only a portion of which is devoted to nuclear issues).

By comparison, the Safe Energy Communication Council, a coalition of safe energy, media reform and environmental groups formed in response to CEA's first media blitz, has two full-time staff members and a budget of approximately $70,000.

CEA does far more than advertise on behalf of the industry, though. It also solicits pro-nuclear endorsements from national organizations, distributes information to civic groups and schools, and directs and coordinates grassroots lobbying efforts. CEA is responsible for lining up the official support of the National Association for the Advancement of Colored People and the American Association of University Women, and has also enticed groups such as the Urban League, American Association of Retired Persons and the League of Women Voters to join in its "American Energy Week," an annual event featuring industry-financed public forums.

If its enormous budget materializes, these outreach efforts will certainly increase. And staff director Harris is confident the money will be raised. "Most of the industry agrees that this program is needed," he said. Which makes it likely that the American public will soon be hearing a lot about nuclear power — from one side of the issue.

Nuclear Industry Television Ads: Two Examples

Video	Narration
Dr. Leonard Sagan — in plane — in G. C. Station —at Lincoln Memorial	Radiation. It's all around us. It increases as we get closer to the sun and the stars, like in this cross-country flight. Or here in the mountains of Colorado. Here in Grand Central Station, the granite emits radiation, as it does at America's most famous memorial. In fact, all of those places expose me to much more radiation than I'm getting right here at this operating nuclear plant. Most people aren't aware of that. That's why we brought you this message, to set the record straight.
— at nuclear plant U.S. Committee for Energy Awareness	
ragtime music over b/w film of old lab ragtime music ends modern lab patient in hospital ship at sea city lights map; 15 nations colored animation of cylinder being wrapped, sealed and buried U.S. Committee for Energy Awareness	In 1892, Dr. Wm. Roentgen began the study of radiation. Since then, generations of scientists have continued this work, providing us with nuclear medicine, a nuclear powered navy, and electricity from nuclear energy. Now scientists have developed the next vital step in this research, the safe and permanent disposal of nuclear waste. In fact, this process is already beginning in 15 nations including the United States. The method is to permanently seal off the waste from our environment by condensing it, reducing its volume, wrapping it in metal and wrapping it again, covering it with concrete and burying it in deep geologic formations stable for millions of years. The concept is endorsed by the prestigious National Academy of Scientists. Most people aren't aware of that. That's why we brought you this message, to set the record straight.