

Approved 3/24/87
Date

MINUTES OF THE SENATE COMMITTEE ON ENERGY & NATURAL RESOURCES

The meeting was called to order by Senator Merrill Werts at
Chairperson

8:00 a.m. ~~XXX~~ on March 19, 1987 in room 123-S of the Capitol.

All members were present except:
Senator Eric Yost

Committee staff present:
Ramon Powers - Research
Don Hayward - Revisor
Nancy Jones - Secretary

Conferees appearing before the committee:
Adrian Arnoldy, Mayor, Tipton, Ks.
John Kostick, Frankfort, Ks.
Donna Haverkamp, Beattie, Ks.
Becky Dunlap, Beattie, Ks.
David Ebbert, Quinter, Ks.
Russell Stewart, Quinter, Ks.
Mike Beam, Kansas Livestock Association
John Blythe, Kansas Farm Bureau
Howard Tice, Kansas Wheat Growers
Shaun McGrath, Sierra Club

Motion was made to approve minutes of the March 12 & 17, 1987 meetings by Senator Gordon, seconded by Senator Langworthy. Motion carried.

Hearing continued for proponents on:

HB 2108 - Concerning radioactive and hazardous waste

Adrian Arnoldy stated passage of HB 2108 is a responsible step in the handling of nuclear waste. Kansas must protect the environment to retain a quality of life for future generations. Thinking has been on the basis of a short term cost saving rather than long term responsible environmental safety.
(Attachment A)

Becky Dunlap testified as favoring withdrawal from the Compact immediately to avoid future problems of clean up, loss of the quality of life and health problems. Ms. Dunlap expressed concern about a possible re-evaluation of some low level waste and the total amount of acreage needed for a facility site. Quality control could become a problem with employment of less than 20 part time employees for a facility. Ms. Dunlap questions there will be economic development for the state under the Compact. (Attachment B)

John Kostick stated this bill is necessary to provide some protection against contamination of groundwater from burial of LLRW. One potential siting area is in Marshall County which has been described as totally inappropriate for this method of disposal by Frank Wilson of the Kansas Geological Survey, yet Dames & Moore's study has identified 842 sites with the same geological formation. Mr. Kostick feels groundwater studies have received a low priority in site selection and the enhanced shallow land burial planned by the Compact Commission is not the best or safest, only the lowest cost method. The use of concrete to line a trench is short sighted since waste materials will remain for hundreds of years and concrete will last only 50 years. Better disposal methods must be found before more contamination is added to our environment. (Attachment C)

Senator Gordon requested copies of Frank Wilson's geological survey be made available to the Committee

CONTINUATION SHEET

MINUTES OF THE SENATE COMMITTEE ON ENERGY & NATURAL RESOURCES,
 room 123-S, Statehouse, at 8:00 a.m. ~~XXX~~ on March 19, 1987

David Ebbert testified as being very concerned about potential impacts of LLRW burial on family lands designated as potential siting areas by the Compact. No burial techniques have demonstrated permanent isolation of radioactive wastes. More time must be taken to develop new techniques for disposal since storage is permitted under federal law. Mr. Ebbert expressed a grave concern regarding the possibility of Gove County as a burial site since the Ogallala formation and Dakota Aquifer supply water for farming and they could be affected by burial of waste. Mr. Ebbert feels the generators of waste should assume responsibility for it and placing a dump in Kansas will demonstrate official failure to protect Kansas resources. (Attachment D)

Russell Stewart presented a history of the area in which he resides which has been designated a potential siting area for a disposal facility. Waste burial would be very detrimental to the water supply due to the geological formations. Mr. Stewart opposes transportation of any waste across the state and favors storage at Wolf Creek of waste generated at the facility. (Attachment E)

Donna Haverkamp strongly opposes burial of LLRW in Marshall and Nemaha Counties. Leaching from burial could affect Kansans for generations to come and destroy a way of life such as farming and the existence of small towns. Mr. Haverkamp feels new technology can be developed for a safer means of disposal than underground burial. (Attachment F)

Shaun McGrath testified that the proposed legislation effectively eliminates burial methods as being inappropriate and even hazardous to the environment. LLRW landfills in the U.S. have not proved successful and the record of hazardous waste burial further supports a ban on LLRW burial. Mr. McGrath fully supports the ban on emplacement of LLRW in salt mines and supports Kansas retaining responsibility for determining the method of storage rather than placing this decision in the hands of a developer. Mr. McGrath further questions if it is in the best interest of Kansas to remain in the Compact. (Attachment G)

John Blythe outlined the policy on hazardous waste adopted by the Farm Bureau. The organization believes that technology exists for the safe storage and disposal of LLRW and above ground disposal or storage should assure greater protection against escape into the surrounding water and soil. (Attachment H)

Mike Beam stated the KLA has no policy position regarding membership in the Compact or location of a site, but does feel Kansas statutes should prohibit underground burial of both high and low level radioactive waste. Water contamination would have a serious impact on farming as food production is the primary business for Kansas. The KLA also has no position on whether radioactive waste is stored in Kansas but does feel there must be a ban on burial of waste. (Attachment I)

Howard Tice stated the scope of Attorney General Stephen's concerns is supported. Mr. Tice feels there has not been sufficient attention given to possible contamination of soil and water which in turn affects livestock. Kansas depends on exportation of wheat and grains and cannot afford the reputation of exporting contaminated products as this would certainly have a devastating effect on the economy. (Attachment J)

Written testimony was given Committee members by Marsha Marshall (Attachment K), John McClure (Attachment L) and the Kansas Gas & Electric Company. (Attachment M)

Meeting adjourned. The next meeting will be March 20, 1987.

Sierra Energy - Guest List

3-19-87

John Blythe	Manhattan	Ks Farm Bureau
MIKEB BEAM	TOPEKA	Ks LUSTK. Assn.
Robert G. Anderson	TOPEKA	Mid Cont Oil & Gas Assoc
Ross Martine	TOPEKA	KPC
Mary Ann Bradford	Topoka	League of Women Voters KS
Ed Reinert	"	"
Rex Buchanan	Lawrence	Ks. Geological Survey
Marshall Clark	topeka	KEPCO
William E. Buchanan	Emporia	
Bruce ROTH	Emporia	
Joe Hodge	Tulsa	Day Well Gas
Kathy L. Pitre	Tulsa	Cities Service & G.
Russell Stewart	Quinter KS	
Kevin Chestnut	Okmulgee, Ok	
Howard Miller	Atchison	Ks Assn of Wheat Growers
Chip Wheeler	Topoka	Waste Management, Inc.
David Ebbert	Quinter	
Rachel Greenwood	Frankfort	
John M. Hostick	Frankfort	
Dick Russell	Frankfort	Natural Resources Defense Council
Shawn McGrath	Topoka	Sierra Club
Ken Lassman	Lawrence	Kansas Area Watershed Council
J. ROGER KELLEY	OKLAHOMA CITY	Midcontinent Oil & Gas Assoc / ^{Sum} ETP
JERRY CONRAD	TOPEKA	KG&E

The community of Tipton feels that we must pass HB 2108. This is another step in the responsible handling of nuclear wastes, which is now in question.

It seems a bit irresponsible to think it is forbidden to burn trash because of pollution, but it is ok to bury nuclear wastes. This bill only makes moral sense and is good for Kansas.

Any state which does not protect their environment is not concerned with the future generations quality of life. We must learn from our past record, the short sided planning of our disposal methods.

We know of the proven technology of dealing with the problems. So far we have been more incline to think of short term cost savings rather than long term responsible environmental safety.

The cave man left their future generations for millions of years a chance to have a liveable environment and we call them uneducated.

Today, in 1987 with our continuous poisoning of our environment I wonder if we can truthfully say we are the morally educated ones.

Mayor,

Adrian Arnoldy
Tipton KS

A
energy
3-19-87

I am Rebecca Dunlap from Beatrice, Kansas, a 32 year old housewife, mother of three, nurse, concerned citizen. I am here today to tell you why I am for HB 2108.

Kansas is one of the low producers of waste in the five state compact. It is my opinion that if we Kansans decide to stay in the compact, our representative to the compact should point out that "in each of the other 8 organized compacts, waste volume is the most important factor in determining the host state."*

Marshall and Nemaha counties' power suppliers do not buy nuclear generated electricity, therefore we should not be subjected to the waste.

There is a fault line in Nemaha County that was not apparently taken into consideration by the engineers who choose the sites.

I am very concerned about the probability of our water supply becoming contaminated due to the inevitable leaking from the proposed shallow-landfill type burial. A large portion of our rural residents are dependent on rural water.

I am extremely concerned after reading

a report in the "Sierra Club radioactive waste campaign fact sheet" about landfill leaks in humid areas with average rainfall between 30-40 inches/year. I believe we average 32 inches/year of rain and I'm sure you are all aware of our summer-time humidity.

I have a problem of storing all low-level waste in one landfill. Wet waste resins which include cesium-137 is water soluble. An average reactor produces about 500 curies/year. Because of the toxicity, longevity, and mobility it should not be dumped in landfills.

I believe Kansas should withdraw from the Central Interstate Low-level Radioactive Waste Compact at whatever cost, immediately. I strongly believe that we will have future problems that would cost far more to the taxpayers with regards to clean up, creation of a Super-fund, loss of life, loss of ~~life~~ quality of life to those who develop or are born with health problems. Human life has to be guaranteed its safety.

The Nuclear Regulatory Commission does not appear to be answering to the people in that it was mentioned by a K.O.H.E.

official Dave Ramono that they are considering the re-evaluation of some low-level waste in a lesser category.

Conceivably this deregulated waste could end up in the local sanitary landfill. If the NRC is going to re-evaluate waste, it is my opinion it should be according to its toxicity, longevity, and mobility and stored accordingly.

I was also informed by Mr. Ramono on March 5 that the dump site would involve 1500 acres. A 30 ac. x 50 ac. site. On March 17th I was told by Mr. Ramono that the site would be no more than 80 acres.

The bottom line is that I don't believe there are any guarantees to any of my concerns. Will it be only 80 acres, forever? Once a low-level site is established, what is to keep it from being up-graded to a high-level site? What is to keep our taxes from increasing as a result of future clean-up.

I am for taking care of our own Kansas waste, only I believe we are going about it all wrong. Let us learn from ^{the} past mistakes ^{that were made} across our great nation. Underground burial can not be depended upon.

I understand a site will employ less than 20 people part-time. My problem with this is, that with a variety of employees there will be an eventual problem of quality control - that standard procedures will at times be sub-standard.

The low-level waste dump by itself can not possibly justify itself to those promoting economic development. If the trade-off is indeed, as I have heard, the 3 Billion, \$ atom smasher, is there a guarantee our state will indeed get it? What consolation is there for those of us who would be affected by the dump?

I urge you to take political responsibility, that your one vote can make a difference, to stop the desecration of our land, to vote yes to stop the burial of radioactive waste in Kansas!

Rebecca J. Dunlap
Rt 2 Box 2
Glatte, KS 66406
913-353-2511

TESTIMONY BEFORE SENATE COMMITTEE ON ENERGY AND
NATURAL RESOURCES BY JOHN KOSTICK DATED
MARCH 18, 1987 RE: HOUSE BILL 2108

I feel that this Bill is necessary and desirable. It provides a measure of protection against the kind of groundwater and other contamination that has resulted from burial of radioactive material in other states. Of the six low-level waste sites in the United States, three have been shut down because of erosion and water migration beneath the site in one case and because heavy rains flooded trenches in the other two. In one case, there were official assurances that contamination could not move more than half an inch in 24,000 years, yet ten years later contamination was found 100 feet away. The point is underground burial is questionable at best, and the consequences of ill-advised action are irreversible. Once nuclear waste gets into the groundwater, it can't be fixed or cleaned up at any cost. Allowing shallow land burial of nuclear waste invites disaster. Dealing with this hazardous material in this way is like sweeping it under the rug. No one will know what's going on down there until it's too late.

Several sites are being considered for this kind of dump in northeast Kansas, including Marshall County where I live. These sites are in an area described by geologists as glacial fill. This means that glaciers, in passing over this area, broke up the rock formations and left a deep mixture of rock and softer soils in a rolling landscape. While this lends itself to the kind of excavation being considered, the movement of groundwater in this area is unpredictable. There is already a serious problem of nitrates from fertilizer and other agricultural chemicals appearing

C
Energy
31981

in unsafe levels in well water in these areas, and this is primarily from surface application. Frank Wilson of the Kansas Geological Survey has described this kind of formation as totally inappropriate for this method of disposal. Yet, Dames & Moore, a Houston consulting firm for the Central Interstate Low-level Radioactive Waste Compact, against the advice of the Kansas Geological Survey, is considering 842 sites in this kind of formation.

It is particularly disturbing that in the very planning of burial sites, public safety seems to have been passed over by considerations of expediency. We are told that studies of groundwater movement of these potential sites will be made in the next phase of planning. If these studies have been going on since 1985 and a developer must be chosen by June of this year, groundwater studies seem to be getting very low priority. And who can assure us that every contractor who operates such a facility on a profit basis will always take the utmost of care, when what he is doing is burying containers where no one will see them again? Below ground storage of nuclear waste cannot be effectively inspected or monitored for leaks. Should such material leak into water supplies and food sources, the damage could be severe and permanent. Enhanced shallow land burial is being planned by the Interstate Compact because it is the lowest cost method of disposal, not the best or safest. Whatever short-term economic advantages there might be must be weighed against the long-term cost. Using concrete which may last 50 years to line a trench that will contain material which will be hazardous for hundreds of years, is singularly short-sighted. A better method

of disposal must be found. We already face critical problems of every other kind of pollution of our environment. We should not compound our problems and visit them on our children by allowing such a faulty practice as shallow burial of radioactive waste.

By: 
John Kostick

Dated: March 18, 1987

from the Philadelphia Enquirer

The federal government tells communities that radioactive waste . . .

But promised jobs just don't come

By Donald L. Barlett
and James B. Steele
Insight Staff Writers

When an underground nuclear-waste burial vault was proposed for a rural county in northwest Texas, a pamphlet touting the benefits was distributed to residents.

"Preliminary estimates are that construction employment will peak at about 1,700 to 5,000 persons within about four years," it said. "Following construction . . . employment will subside to . . . 870 to 1,100 persons for 30 years. Direct purchases of goods and services are expected to create an additional 1,800 service jobs. New workers may increase the long-term population growth of the area."

Although the sales pitch sounds a lot like Fredrick P. Beierle, the supersalesman of nuclear-waste, the pamphlet was written and distributed by the U.S. Department of Energy.

In doing so, the department was simply resorting to a longstanding practice of nuclear-waste promoters, both public and private: extolling the economic benefits of nuclear waste to counteract fears about the radioactive material. But the jobs have never materialized.

One of the first and most successful of the waste-for-jobs promoters was the late Nelson A. Rockefeller, former governor of New York. Rockefeller employed this approach in 1963 when he presided at the ground-breaking for a private plant at West Valley, N.Y., to reprocess highly radioactive fuel rods from commercial power plants. Said Rockefeller, who had led the campaign for the plant:

"Its greatest importance is attracting new industry to this area. It places New York in the forefront of the atomic age now dawning [and] will make a major contribution toward transforming the economy of western New York and the entire state."

Local newspapers quickly picked up on the theme.

"The world's first privately owned, nuclear fuel reprocessing plant may spark the growth of this tiny rural town into Cattaraugus

County's largest community," claimed the Salamanca (N.Y.) Republican-Press.

The newspaper added that the plant eventually would make the village of West Valley, 30 miles south of Buffalo, an "urban area with a population of 24,000 . . . within 10 to 20 years."

None of these predictions came true. Employment at the reprocessing plant peaked in 1968, when the work force totaled 264. In time, the number dwindled to 50.

Plant expenditures topped out at \$5.6 million in 1971. The total of the real estate taxes paid by the plant operator to town, county and school district was less than \$1 million.

From 1960 to 1980 the population of Cattaraugus County increased only slightly, from 80,187 to 85,697. West Valley is still a village, with a population of about 400, unchanged from the early 1960s.

Instead of serving as a magnet for economic growth in western New York, the reprocessing plant evolved into one of the costliest white elephants of the nuclear age — an economic and technological failure that the federal government is now cleaning up at a cost that could top \$1 billion.

For taxpayers nationwide, it would have been cheaper if the New York legislature and Congress, back in 1963, had just appropriated the \$32 million it took to build the West

Valley plant and given it to local residents to spend as they pleased.

Kentuckians, too, were once promised jobs and new industries if they would go along with a nuclear-waste garbage dump in the state.

After a private company proposed a low-level-waste burial ground at Maxey Flats in 1962, state officials endorsed the bid and stressed the economic advantages the dump would bring.

"The biggest problem faced by the atomic industry is waste disposal," said James N. Neel Jr., director of the Kentucky Atomic Energy Authority. "Therefore, this site is of basic importance to Kentucky. Its location here is expected to attract a number of atomic plants to this state."

Maxey Flats went into operation in 1963, and about 4.7 million cubic feet of radioactive waste was buried there over the next 14 years. It was shut down in 1977 after health officials found that radioactivity kept seeping off the site.

As for the burial ground's success in promoting industrial development, a state legislative report summed up the results in 1977:

"Contrary to previously held hopes, the existence of Maxey Flats has not caused the location of a single nuclear industry in Kentucky. All the hopes and aspirations ex-

2/11/79
sell

Kostick

... will bring jobs — and it's a tempting prospect for depressed areas

pressed for nuclear industry in the early Sixties has come to nothing, and the Commonwealth has had to search elsewhere to expand its industrial base."

Because of the radiation leaks from Maxey Flats' trenches, Kentucky now faces a potential multimillion-dollar cleanup bill. For the state, which has not yet resolved what to do about the faulty burial plot, the prospect of cleaning up Maxey Flats is an especially bitter pill.

For not only did Maxey Flats fail to attract industry and create jobs, but 99 percent of the nuclear waste buried there came from other states.

Some of the most extravagant predictions of economic growth from nuclear waste have come from the federal government in its quest to find a site for an underground repository to bury the highly radioactive waste from commercial nuclear reactors.

So far, the Energy Department has made field tests and held hearings in parts of Texas, Utah, Mississippi and Louisiana in an attempt to decide on a site for a potential repository in salt.

In each area, the department has sought to downplay the potential hazards of such a facility and has emphasized instead the economic benefits it would bring to an area.

To make its case, the department prepared

a 67-page booklet entitled "Answers To Your Questions About High-Level Nuclear Waste Isolation," which it distributes freely in regions where public hearings are held.

A repository would not only create thousands of construction jobs and a full-time work force of 870 to 1,100 people, the department says, but it also would have the following impact on a town:

- "4,000+ Increased Population."
- "1,200+ New Families."
- "1,200+ New Housing Units."
- "Additional Public Services."
- "\$800 Million Repository Capital Construction Cost."
- "Increased Local Commerce, Tax Revenues, Bank Deposits."
- "New Railroads"
- "Improved Highways."

"As the population grows," the Energy Department's booklet continues, "the social nature of nearby communities may change, and there will be increased demand for housing, new roads and highways, and community services such as health care and education facilities.

"Any large development such as a repository will bring new tax revenues into a community to help pay for the services and facilities needed."

The emphasis on jobs and economic devel-

opment has had a strong appeal in two Texas counties, Swisher and Deaf Smith, near Amarillo. The Energy Department has drilled test holes into a salt formation underlying the two counties to determine if it might be used to bury highly radioactive waste.

Sparsely populated and rural, Swisher and Deaf Smith are heavily dependent on agriculture and related industries, and are constantly seeking to diversify their economies.

In addition, the two are among the poorest counties in Texas (19.3 percent of Swisher's families and 14.3 percent of Deaf Smith's are below the poverty level), and so the Energy Department found a receptive audience when it promised jobs and fat payrolls for the area selected for the repository.

When some local opposition arose to the department's drilling project, the agency sent officials into the two counties to sell residents on the concept.

"They did a real good selling job, especially on what it would do for the economy," said Wendell Tooley, publisher of the Tulla Herald. "This was the first time we'd got the positive side; up to now we'd just heard the scary stuff. But afterward, a lot of townspeople were saying things like, 'Well, the government's not going to do anything that'll hurt anybody, so let's let them come on in.'"

While promising jobs, commerce, new public facilities and more tax revenues, the de-

partment downplays any potential dangers in the repository:

"DOE and its predecessor agencies have had thousands of man-years of experience managing radioactive waste and maintaining health and safety programs to reduce the risk of radiological releases to levels as low as reasonably achievable. . . .

"The technical experts generally agree that the geologic disposal method is technically sound and the concept that will be available the earliest."

The department's promotional booklet, however, does not mention other federally funded studies that have concluded that a repository would pose a hazard to humans and the environment.

A study made in 1978 for the Environmental Protection Agency (EPA) by Arthur D. Little Inc., the nationally known Cambridge, Mass., consulting firm, concluded that some deaths would almost certainly occur during the life of a repository from human intrusion or from seepage of radioactive materials into groundwater.

A follow-up report by the EPA had this to say about a salt repository:

"Each type of reference salt repository would cause about 200 health effects, almost all of them premature cancer deaths."

The study defined "population health effects" as "fatal cancers and genetic effects."

My name is David Ebbert. I live in Cove County south west of Quinter. I am a farm hand and horticulturalist. I received my Bachelor of Science degree in Environmental Studies from Western Washington University in 1979 and worked on hazardous waste problems in Illinois for two years before moving to Kansas. My father's family settled in Quinter several generations ago and I am very concerned about the potential impacts of radioactive waste burial on family land identified as preferred siting areas and concerned about the impact of burial anywhere in Kansas.

It is my intention here to state briefly some of my conclusions on this issue and to see what ^{questions} seem most important or unanswered to this committee. *relevant this point to understand your questions and discuss them.*
This committee and the legislature have acted on hazardous waste disposal issues in the past. Kansas has prohibited the burial of toxic chemical wastes. Many of the same principles apply to burial of radioactive materials. The main policy differences have resulted from the fact that the federal government has had a separate regulatory scheme for radioactive materials because of their origins and use in weapons and power reactors. The same need for isolation from the environment exists with both classes of materials-- chemically hazardous and radioactive.

So far no burial techniques have been demonstrated to provide the permanent isolation of radioactive wastes which is mandated by federal law and is certainly a moral and economic requirement for us. It is no more reasonable to bury radioactive wastes in Kansas than it is to bury chemical wastes here. Prohibition on radioactive burial is a logical extension of environmental protection policy in Kansas.

We are required to manage ^{the} radioactive wastes of Kansas. And a burial ban cannot ignore that.

It is widely admitted that pre-1989 methods of burial are a failure. Time must be allowed to test new methods before we spend millions and depend

D
Energy
3-19-81

fully on means less than 8 years old. We are allowed under federal law to store our wastes instead of immediately burying them. It makes sense to do so and let disposal methods mature in the interrim.

Presently, burial regulations of the Nuclear Regulatory Commission allow radioactive contamination of the environment. Because of the direct potential for damage any burial in Kansas proposed under these standards is sure to be opposed in court by citizens if their officials don't act first. The regulations could be overturned because of their conflict with the worthy statutory goal of permanent isolation. Then Kansas wouldn't have storage plans but would have expensive burial plans that would be inoperative.

We are faced with a difficult question. How do we contain materials whose danger out lives structures we build or the ability of geologic media to hold them in place? Our answers shouldn't be hasty.

Regarding burial: even when we exclude the most obviously unsuitable areas for burial we still are left with many theoretical and practical problems.

In Gove County, identified as having the greatest land area under consideration for radioactive waste burial in the state, the suitability of burial there is seriously questionable. Though most of the saturated areas of the Ogallala aquifer have been excluded by Dames and Moore Phase II -- it isn't clear that unsaturated Ogallala formation areas have been excluded.

Aside from that, the entire area is underlain with the Dakota Aquifer which is currently used by farmers and residents without access to Ogallala or alluvial water. The Dakota, larger than the Ogallala, is our water reserve for the future in western Kansas and should not be placed at risk by radioactive waste burial. Burial is proposed in the shales overlying the Dakota. The shales' properties as an aquatard are cited in making such a choice. The hydrologists who study our area tell me that these shales do transmit water to the Dakota, and in the areas of faulting and fracture can transmit water rapidly.

Another question about Dames & Moore why is Castle Rock a preferred Siting Area?

three

The people of western Kansas are not willing to sacrifice our future to blindly take on a problem created for someone else's material benefit. The clean up costs and the destruction of resources from burial failure rule out our acceptance of these methods in our area. Because we are Kansans and taxpayers we feel that way about burial anywhere in Kansas.

We are reasonable people. We are willing to help our state find the best long term solution to this problem. If we can really be convinced in the end that western Kansas land is the best final resting place for above ground storage of radioactive wastes we will have to consider that. But we can't in good conscience consider that now, before the generators of this waste have done their best to take care of the problem they have created. We didn't create it. Why is this problem on our backs?

The industry's only suggestion to date is to give this to the state of Kansas. Is there any justice in that? Any responsibility shown there?

Kansans are just beginning to understand this bargain. And they are getting mad. The operators of Wolf Creek had better make a pretty serious stab at taking care of their own problems or citizen cooperation will be zero. *The way 8,000 people in Beloit last night - Rangers going to hold us accountable*
The way KG&E et al can show some responsibility is to admit the limits of present disposal options and agree to actively study and develop long term interrim storage at Wolf Creek. If they can store spent fuel for the life of the reactor surely ~~they~~ they can store low level waste.

To say at the same time "Radioactive waste is your problem, rural Kansas" and "We will continue making as much as we want" defies credulity and civility.

We can't cooperate with that kind of despotism.

A radioactive waste dump in Kansas will be a tangible reminder to citizens of official failure to protect Kansas resources.

I admit that on-or near-site storage doesn't get waste out of sight and

four

out of mind; but it may not be as expensive as the alarmists claim. Above ground on-site storage does away with the necessity of extensive new geologic studies. These studies are a large part of the projected costs of burial. Bypassing those costs brings waste management within financial reach. And building engineered storage as it is needed makes the cash flow of development easier to meet. It also makes us safer from federal commandeering of our facilities in an "emergency".

We know that our officials and news organizations cannot be experts on these issues; but I want to make it clear that there ^{are} citizens informed and vitally concerned who are willing to make this a balanced policy debate if you will seek us out and listen. I appreciate the opportunity to talk with you today and

urge passage of HB 2102.

Russell Stewart - Quinter

We own the land for one of the proposed sites. ~~Of course~~, deeply we are concerned about the possibility of the storage being on our land. We've farmed this land for over 50 yrs & there are families around that have been there twice that long - so this isn't a 'fly-by-night' or 'suitcase farmer' area. It's not 'hobby' farming either - farming & ranching are the ~~one~~ & only sources of income for the area.

As a matter of fact to insure the on-going operation of this family farm we have just completed the merger of my father-in-law's farm with our own so it can be passed on to future generations - and that's really what we should be concerned with - not people my age but our grandchildren.

The area I'm talking about lies between 2 water sheds - Smoky Hill River & Huckleberry Creek. This is an area of fast run-off ground that is fairly shallow - 40-60 ft. to shale formation. Of course, water can't penetrate these formations so it runs back into the stream flow in a short period of time. Now, if ^{you} follow this flow ~~far enough~~ you'll find it goes to Hair & eventually ^{eventually} here to Topeka.

But, I'm not just concerned about an area south of Quinter. If my information is correct (E) way over 1/2 of the waste that is generated

is generated
at Deep Creek, so I question the wisdom of
moving it away from that area. We already
have provision for storing the hi-level waste
on site so I believe its a mistake to risk
moving it the ^{length} ~~width~~ of the state & contaminate
another area. Not only that we all know that
the more we haul this stuff around the greater
risk we have of having an accident with a load
of it.

I do believe you have moved in the right direction
by banning the ^(check if Senate passed the bill.) underground storage of this waste
& I encourage you to consider & exhaust every option
& alternative to the 5-State Compact, including
withdrawal (even at the rumored 5 million dollar
withdrawal fine).

In conclusion, I'm asking you to consider
the quality of life we're providing for not
just my grandchildren but your grandchildren
as well!

My name is Donna Newkamp and I reside in Beattie, Kansas. I am here today to show my support for banning low level burial dumpsites. If burial of low level nuclear waste material are not banned, Marshall and Nemaha county's have a strong possibility as being a selected area.

What kind of sound evidence do we the public have that assures us and generations to come that we will not experience some type or form of difficulties with the burial system.

For instance there is a rock quarry located approximately one mile west of Beattie. Dynamite is used to break away layers of rock so it can be crushed into different types of graded material. How does the shock vibrations that are carried through the ground affect the burial systems?

If concrete is used as a form of container, what guarantees the public that it would not crack and leak nuclear waste into our underground water tables. Before any major decision is made on burial dumpsites we need to look at every possible situation that could very well happen, such as seasonal changes that would affect the ground temperatures.

Today we are faced with many problems to keep our water free from contamination so it will be usable for everything and everyone:

If a leakage did occur in a burial dumpsite and seaped into our water system it would not only affect our health but also our way of life. Since nuclear waste is radiation we would have it in us and could very possible pass it on to our children which would show up in birth defects such as retardation, and diabetes extremities being disformed. Also there would be a lot more people with various types of cancer.

Farming is a main source that keeps our small towns existing. For instance if the water was contaminated and the livestock ingested it, the farmer could not butcher it for himself or sell it to make a profit. And if there is no profit for the farmer then he has less purchasing power.

If a leakage ever occurred in a burial dumpsite, could the state or the government afford to spend thousands or maybe millions of dollars to clean up the environment.

I am proud of northeast Kan. as we have the famous Pony Express station and the known historical court house in Marysville, also we have beautiful countryside and the friendliness of our neighbors. I believe if Marshall county ever had a low level burial nuclear dumpsite that our rich farmland would eventually be wasteland if a leak occurred.

On a May spring day the sun just cresting over the eastern rolling hills countryside, the shadow of the huge roof of the barn stretching out on the freshly cut yard.

The farmer awakes with the rooster crowing, the smell of spring in the ~~air~~ ^{air} and the birds in the trees chirping to praise life.

He goes to do his daily chores which begins a full days work. With a burial dumpsite nearby could you a person have the confidence of the character I described above, I know I couldn't.

I would feel why care I don't have anything might to pass on to my son the barn would

runned down, ~~my~~ hearing the banging of a barn door against the badly weathered boards, the wind whistling through the broken barbed wire fence.

It would dampen a person's attitude of doing his or her best in today's society. It could be seen probably from the local coffee shop to the students which are trying to learn in schools. Children would feel depression from their parents and it would show up in their attitudes and grades in school.

Life is a closely knitted chain if one link breaks, it all starts to unravel.

I consider life as a gift, we should help preserve it to our best knowledge and enjoy it to our fullest extent. Let's give our children and generations ahead the joy of living life with pride, not with a site of fear over their heads wondering when a leak out could occur.

I am for banning dual nuclear dumpsites for the reason that we are living in an ever changing world. With new technology being discovered every day, I feel the future scientists will find a better way to dispose of nuclear waste.

Thank you for taking time out to hear my opinion.



SIERRA CLUB

Kansas Chapter

March 18, 1987

To: Senate Energy and Natural Resources Committee
From: Shaun McGrath

Re: Support for HB2108 prohibiting the below surface burial of radioactive waste

The Sierra Club is a non-profit organization concerned with the preservation and protection of wildlife and the environment. Our Kansas Chapter membership is nearly 1800. The Sierra Club has been involved in the issue of radioactive waste disposal since 1978 when the Sierra Club Radioactive Waste Campaign was formed.

HB2108 before you today clearly addresses the heart of the low level radioactive waste (LLRW) issue: What is the safest and most responsible manner to store LLRW? Although the bill introduced by Representative Roe does not offer specific solutions to this problem, it narrows the field of possibilities by effectively eliminating methods which have been proved inappropriate, and in some instances, hazardous to the environment.

The history of LLRW storage in landfills in the U.S. gives credence to the argument of prohibiting the burial of such waste. Of the six commercial radioactive landfills which have operated in the U.S., three are now closed because of problems. All three have had water infiltration into trenches, subsidence of trench covers and erosion. At each site, radioactivity has migrated and expensive remedial actions are continuing. Rather than stabilized, maintenance-free landfills, the sites have required active maintenance within ten years of trench closure.

The record of hazardous waste burial in Kansas, as this committee is well aware, further supports the argument to include radioactive materials in with the current ban on hazardous waste burial.

The House Sub-committee amendment to HB2108 ensures that emplacement of LLRW in salt mines is included in the ban. Such a ban already exists in Louisiana, an Interstate Compact member state. This prohibition simply makes sense. Salt is extremely water soluble, is highly corrosive, and does not hold the radionuclides effectively. When salt is heated, water is attracted to the heat sources, such as canisters of radioactive waste. Water moving through the salt becomes brine. When this brine reaches the radioactive waste materials, the glass or ceramic waste forms will break down and the radioactive materials will leach out. It has only recently been recognized that this leaching can occur in months, rather than thousands of years, as had been previously assumed.

The possibility of such pollution coming from the Lyons salt mines seems very likely considering the findings of an EPA study. The report on the mines reads, "considerable volumes of water

6
Energy
3-19-87

migrated in an unpredicted manner...as a consequence of dissolution of salt by ground water seeping into the repository. Seepage was along an abandoned drill hole that, like most, had not been cased and plugged."

A very convincing argument for passing this legislation concerns our relationship to the Compact. As now, the Compact Commission will choose a developer who then designates the method of storage. By passing HB2108, you will take the process of determining the method of LLRW storage in the state of Kansas out of the hands of the developer, and place it in the hands of the state.

There have been conflicting interpretations of the compact laws regarding the authority of Kansas to pass such a bill as HB2108. Article VI, part B of the law states: "No party state shall pass or enforce any law or regulation which is inconsistent with this compact." To this, the Attorney General responded "...this would not appear to preclude the State from enacting strict regulations concerning the methods by which LLRW should be stored, treated and disposed of..." No citations are given, however, supporting how the Attorney General arrived at this conclusion. Furthermore, the conclusion is not strongly stated: "this would not appear to preclude..."

If Kansas, by being in this compact, can not enact strict regulations concerning the methods by which LLRW would be stored, I ask you, is it truly in our interest to remain in this compact? By first withdrawing from the compact, Kansas could pass HB2108. The Sierra Club strongly encourages you to take this approach.

Thank you for hearing my concerns today.



PUBLIC POLICY STATEMENT

SENATE COMMITTEE ON ENERGY AND NATURAL RESOURCES

H.B. 2108 - Disposal of Radioactive Waste -- Prohibiting Underground Burial

March 18, 1987
Topeka, Kansas

Presented by:
John K. Blythe, Assistant Director
Public Affairs Division
KANSAS FARM BUREAU

Mr. Chairman and Members of the Committee:

I am John K. Blythe, Assistant Director of the Public Affairs Division of Kansas Farm Bureau. These brief comments are on behalf of the farmers and ranchers who are members of Farm Bureau in Kansas. We are here as proponents of H.B. 2108.

The Kansas Farm Bureau is organized in all 105 counties with Boards of Directors and committees in each county. A most important activity of the Kansas Farm Bureau and the 105 county Farm Bureaus is the **development of policy** for the organization.

Policy development begins at the county level with the county policy committee. The suggestions and ideas for policy are sent to the State Resolutions Committee -- tentative resolutions are drafted by the Committee and are sent to the 105 county Farm Bureaus for their review and consideration prior to the Annual Meeting of the Kansas Farm Bureau. The voting delegates elected in each county meet at the Annual Farm Bureau Meeting where all issues are discussed and voted upon as policy for the organization.

Mr. Chairman, I review this procedure simply to indicate the elaborate process of policy development of the Farm Bureau and the opportunity for input from the total membership. It was through this process that a statement relating to **Hazardous Waste Disposal** was adopted by the voting delegates as policy for 1987.

Our Farm Bureau members have a deep concern for the quality and safety of our environment, our soil, our water and the air that we breathe. It was after much discussion by the State Farm Bureau Resolutions Committee and the full delegate body that the following Farm Bureau policy on **Hazardous Waste Disposal** was adopted:

Hazardous Waste Disposal

Storage, identification, packaging, transportation, and disposal of hazardous waste materials must be adequately researched and developed to insure safety for Kansas citizens and the natural resources of this state.

We believe the Governor and the Kansas Legislature working cooperatively, in order to provide for safe storage and disposal of hazardous wastes, should assure that:

1. Kansas does not become a dumping ground for waste materials coming from other **states or nations**;
2. Only qualified, technically-competent persons, corporations, or entities are granted authority to develop a site or sites for disposal or storage of radioactive or other hazardous wastes, with such entity being fully liable for safe operation of such site or sites;
3. There is adequate protection against escape, dispersion or erosion of hazardous waste into the soil and waters surrounding any disposal site; and
4. Operators of such sites shall be bonded for \$3 million to compensate adjoining landowners in case of escape or dispersion of such waste.

Mr. Chairman and Members of the Committee, you have spent considerable time this session in an attempt to arrive at the proper solution to the disposal of hazardous waste. Our policy statement reflects our concern for the safety of our environment. We believe that the technology does exist for the safe storage and disposal of hazardous waste. We believe the storage should be above ground and so designed that it can be inspected in an orderly fashion. Above ground disposal and storage should assure that there is protection against escape and dispersion of hazardous waste material into the soil and water surrounding such a disposal site.

Mr. Chairman and Members of the Committee, we are a **proponent** of H.B. 2108.

Thank you for the opportunity to present this policy and these few comments to the Committee.



2044 Fillmore • Topeka, Kansas 66604 • Telephone: 913/232-9358
Owns and Publishes The Kansas STOCKMAN magazine and KLA News & Market Report newsletter.

STATEMENT OF THE
KANSAS LIVESTOCK ASSOCIATION
IN SUPPORT OF
HB 2108
BEFORE THE SENATE ENERGY AND NATURAL RESOURCES COMMITTEE
SENATOR MERRILL WERTS, CHAIRMAN
PRESENTED BY
MIKE BEAM
EXECUTIVE SECRETARY, COW-CALF/STOCKER DIVISION
MARCH 19, 1987

The Kansas Livestock Association (KLA) is a trade organization made up of approximately 9,000 members located in all of the 105 counties. KLA, founded in 1894, has members who are actively involved in numerous aspects of livestock production which include cow-calf and stocker producers, feeders, sheep producers, swine operators and general farming and ranching enterprises. On February 24, 1987, KLA's Board of Directors voted to support HB 2108 which prohibits the underground burial of high-level and low-level radioactive waste.

Mr. Chairman and committee members, I'm Mike Beam with the Kansas Livestock Association and we support HB 2108. As you know, most of our members are landowners, tenants and residents of rural communities. Many of our members have expressed fear and deep concern about the establishment of a radioactive waste site near their homes and places of business. KLA has no policy position for the location of such site or if Kansas should continue or terminate its membership with the Central Interstate Low-Level Radioactive Waste Compact. We simply want to say we

I
Mike Beam
3-19-87

feel Kansas statutes should prohibit the underground burial of high-level and low-level radioactive waste.

Farmers and ranchers have a deep appreciation for water quality. There appears to be a risk of underground water contamination near an underground storage location. Our members use water for domestic use and for crop and livestock production. If a major water source is polluted with radioactive chemicals, it could impact the local community and the thousands of U.S. citizens who consume Kansas grown food products. Food retailers could conceivably refuse to buy any of this state's commodities if one small area of the state proves to have a radioactive water polluting problem. My point is, food production is the primary business for Kansas and we should always be conscious of our product's wholesomeness and safety image.

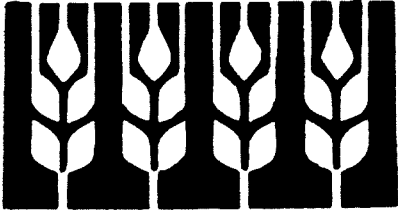
Kansas landowners have experienced a substantial decline in land values (sale price) and equity in the last five years. Think of the impact a water contamination incident could have on an area. Farm and ranch land would have little value if the water was not usable. I've been told the half-life of some radioactive chemicals are thousands of years. It doesn't matter how fertile farm land may be if there is no water. I view this bill as a clean water assurance measure.

From a practical point, it seems it would be difficult to monitor the condition of storage facilities if they are buried underground. It appears to me if there is to be storage of radioactive waste it should be above ground where it can be observed daily. Underground storage tends to be forgotten.

In closing, I'd like to remind the committee that KLA has no position on if radioactive waste should be stored in Kansas except to say it should

not be buried underground. There is a precedent for prohibiting underground burial of "hazardous" waste. Let's extend this policy to radioactive waste by passing HB 2108. Thank you.

**KANSAS ASSOCIATION
OF WHEAT GROWERS**



TESTIMONY

House Bill 2108

Senate Committee on Energy and Natural Resources

Chairman, Senator Merrill Werts

Submitted by Howard W. Tice, Executive Director

On behalf of the members of the Kansas Association of Wheat Growers, I appreciate this opportunity to submit our views in support of House Bill 2108.

Having had the opportunity to hear testimony presented on the first day of hearings, I will not repeat what has already been said. I will state, for the record, that we are in agreement with most of the views expressed in support of this bill. I would especially single out Attorney General Bob Stephen's remarks as covering the broad scope of our members' concerns very well.

There is one question that has not been raised in previous testimony, and that concerns the effect on crops grown on land near a leaking disposal site. If, indeed, a site is built, using only the bare minimum of safety regulations, so that the developer or contractor can increase profit margins, and ground water is contaminated as a result of leaks, any growing crop which takes up that water, will be affected. If the crop is a feed grain, or if the land is used for pasture, livestock are also affected. Of course, if cattle drink from a pond fed by contaminated ground water, there would be a more direct effect from the contamination, either in milk or meat.

With all the public health concerns that have been stated, it is imperative that this state implement the strictest possible regulations for disposal of hazardous and low level radioactive waste material. Many reasons have already been stated supporting above ground disposal, as opposed to burial of these waste materials. I would urge this committee to look at the technological and safety aspects of this issue as your highest priority in determining what is right for the people of Kansas. Don't let the threat of possible lawsuits interfere with proper judgement of what is right and wrong.

Passage of House Bill 2108 will open the door for Kansas to institute regulations for above ground storage, that will insure proper construction, maintenance and monitoring of the dump site. It is a strong statement that Kansas is serious about the safety of its citizens, now and in the future.

This committee can bow to the pressure of threatened lawsuits, or it can take a firm stand for the safety of its citizens. We urge the passage of House Bill 2108 to protect our ground water, and our food supply.

J
Energy
3-19-87

Kansas Natural Resource Council

Testimony before the Energy Subcommittee
of the House Energy and Natural Resources Committee
In Support of HB 2050 and HB 2108
concerning disposal of radioactive waste
February 3, 1987
by Marsha Marshall

The Kansas Natural Resource Council is a nonprofit public interest organization that promotes sustainable energy and natural resource policies and practices.

Both radioactive waste bills before you address two methods of disposal, which is defined in PL 99-240 as "permanent isolation". The federal law only addresses low level wastes, but these two bills were drafted in response to growing concern that Kansas is the leading candidate for the first low level radioactive waste site in the Central Interstate Compact region.

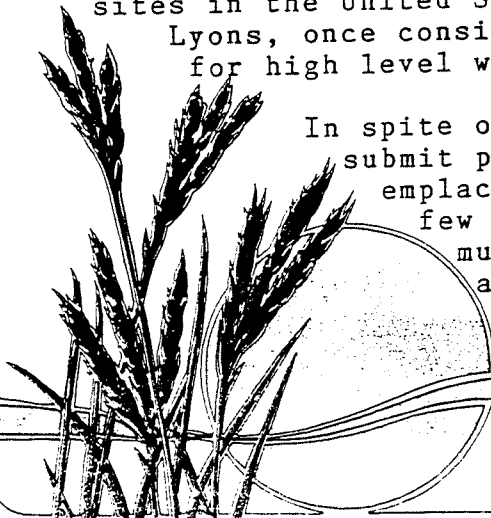
In my view, designing a facility for permanent isolation of low level wastes through either burial or emplacement in bedded salt formations is a highly unrealistic performance objective, for three reasons:

1. Longevity of low level wastes. The hazards "low level" wastes far exceed the thirty year design life of proposed low level compact dumps. For example, cesium 137 in ion exchange resins produced by nuclear power plants must be kept isolated from the environment for 300 years. Reactor internals from decommissioned reactors include niobium 94, with a 20,000 year half-life.

2. Lack of experience. The compact anticipates disposing of decommissioned reactors in waste facilities (Nebraska and Arkansas both have plants that could be decommissioned during the first thirty years.) Yet a commercial sized nuclear reactor has never been decommissioned. In fact, commercial nuclear reactors have only been in existence for 30 years.

3. Poor disposal track record. Three of the six commercial burial sites in the United States have been shut down. (See fact sheet) Lyons, once considered by federal authorities as the ideal site for high level wastes, was rejected because of geologic flaws.

In spite of these problems, developers are expected to submit proposals for certain forms of burial and emplacement of wastes in Lyons salt mines in the next few months. If Kansas is chosen as a host state, it must take title to the site, and could be forced to assume liabilities for site failures after the design life of the facility.



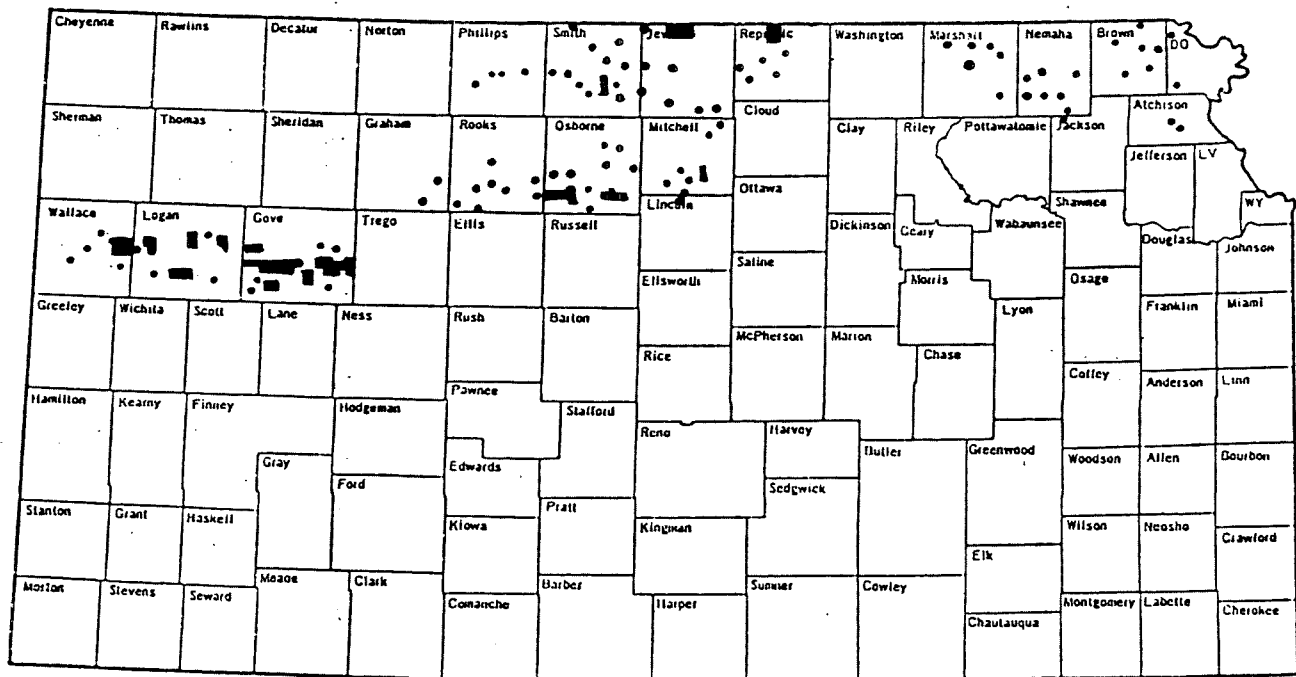
K
Energy
3-19-87

While these bills do not set out a plan for how the state of Kansas could best manage its radioactive wastes, they nevertheless identify and prohibit two untenable disposal options. I urge your support for both pieces of legislation.

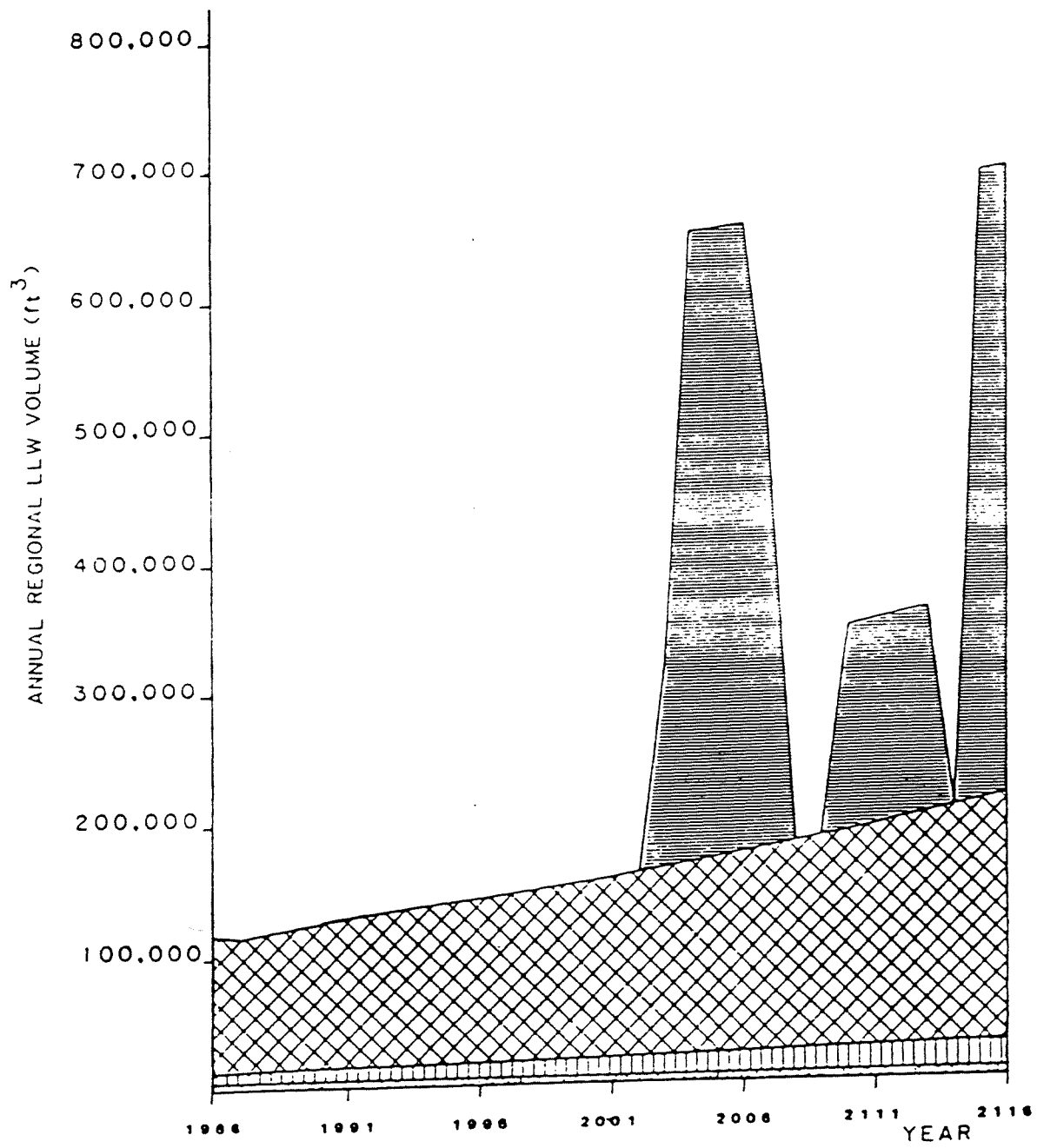
Figure 1

For your further information, a November draft of the Dames and Moore Phase II study identifies 18 Kansas counties with "preferred siting areas." (not counting Rice county) Nebraska has 10 counties with psa's, Arkansas has 2 counties, Louisiana has one, and Oklahoma has none. Below is a map indicating the approximate location of "preferred siting areas" in Kansas.





KNRC Graphic



ANNUAL REGIONAL LLW GENERATION RATE - PLANNING SCENARIO



LLW GENERATION SOURCE:

-  REACTOR DECOMMISSIONING
-  OPERATING REACTORS
-  INDUSTRIAL
-  INSTITUTIONAL

NOTE: ASSUMPTIONS DISCUSSED IN SECTION 3.0

June, 1986 DAMES & MOORE

FIGURE 4

Is shallow land burial an appropriate disposal option?

Of the six LLRW sites in the U.S., three have been shut down.

- * Sheffield, IL, 1967-1976: Closed because of erosion and water migration beneath the site.
- * Maxey Flats, KY, 1963-1977: Closed because water from heavy rains overran the trenches. Cost to the state will be \$35 million to contain the problem.
- * West Valley, NY, 1963-1975: Shut down due to heavy rains flooding the trenches.
- * Hanford, WA, and Beatty, NV, both in dry climates, have no reported migration. Barnwell, SC, the largest site, has a relatively good record.

Many states are considering alternatives to shallow land burial.

- * Kentucky and Illinois, two states with experience in LLRW disposal, stipulate in their compact a method OTHER THAN shallow land burial.
- * Texas, New York, Pennsylvania, and the DOE facility in Oakridge, Tennessee, prohibit shallow land burial. Massachusetts is seeking prohibitive legislation.

Should low-level radioactive waste be redefined?

LLRW is presently defined by what it is not: high-level radioactive waste, i.e., spent fuel rods; most transuranic elements (isotopes heavier than naturally-occurring uranium); and re-processing liquids.

Consequently, LLRW includes such elements as iodine 129 (hazardous life: several million years); cesium 137 (hazardous life: 300 years); strontium 90 (hazardous life: 280). A material's hazardous life is determined by multiplying its half-life by 10.

Who is responsible for low-level radioactive waste?

- * Raymond Peery, director of the Compact Commission to which Kansas belongs, estimates that 90% of the LLRW will come from the 7 nuclear power plants in the 5-state region.
- * The remaining 10% is produced by hospitals, universities, and industry.
- * Most of the waste produced by hospitals has a hazardous life of 60 days.
- * The LLRW site planned for our compact will be responsible for waste disposal for 30 years. Then, another site will be chosen--for the next 30 years.
- * The question of liability in the case of an accident is still unanswered. There is an exclusion on personal property insurance policies for radioactive exposure. Also, the insurance industry refuses to insure waste industries.

This fact sheet was prepared by the Kansas Natural Resource Council, a statewide nonprofit membership group promoting sustainable natural resource policies. Free brochure and newsletter available upon request.

John D. McClure
Box 72
Glen Elder, KS 67446

I support H.B. 2108, banning the underground burial of radioactive waste in Kansas. This bill doesn't say that we refuse to deal with our wastes. It simply sends the message that Kansas will not allow it's radioactive waste to be managed irresponsibly.

The Nuclear Regulatory Commission has acknowledged that exposure to any amount of radiation in addition to normal background levels, poses a potential health threat. In addition to this, radioactive wastes often include chemicals such as PCB's which have been contaminated with radiation. Ordinarily it would violate Kansas statutes to bury these chemicals but because they are contaminated with radiation they are classed as radioactive waste and can be disposed of by land burial. Given these facts, we should make certain that the state of Kansas stores its radioactive waste in a way that offers the least opportunity for future releases of radiation and hazardous substances into our environment.

There are methods of isolating radioactive waste from our environment that are far superior to underground burial. Some of these technologies are outlined in the Dames & Moore Central Interstate Regional Waste Management Plan. Of the technologies examined by this plan, Enhanced Shallow Land Burial is expected to release more radiation into the environment over the long term than any of the above ground storage systems listed. These above ground storage systems are not just untried ideas. Currently radioactive waste is being stored in longterm above ground facilities in France and Canada with at least one facility under construction here in the U.S. .

One of the principal arguments against above ground technologies are their costs. Again referring to the Regional Waste Management Plan, the per cubic ft. cost is expected to be from 15% to 20% higher for above ground systems compared to shallow land burial. However these figures don't make allowances for the huge cleanup costs incurred if a dumpsite leaks. I feel the environmental and financial costs of a failed radioactive waste dump are more than the citizens of Kansas should be asked to bear.

Almost everyone has had the unpleasant experience of buying something cheap to save money and then discovering that your "bargin" wouldn't do what you expected of it. In the long run it would have been less expensive to buy what you needed in the first place. Usually you don't get any more than what you pay for.

L
Energy
3-19-87

In summary , radioactive waste management is a problem that will never be solved by following the "out of sight, out of mind" policys of the past. The following comment from the Regional Waste Management Plan is an example of this line of thinking. A disadvantage of above ground storage facilities is, that their "Greater visability may hinder public acceptance." H. B. 2108 recognizes the flawed nature of this line of thought and will be a good first step for Kansas in the developement of a sound longterm radioactive waste management policy.

Thank you.

SENATE ENERGY AND NATURAL RESOURCE COMMITTEE

TESTIMONY CONCERNING HOUSE BILL NO. 2108

The following written testimony is being provided in behalf of Kansas Gas and Electric Company, Kansas City Power and Light Company, and Kansas Electric Power Cooperative, Inc.

The following comments are provided in opposition to the amending of K.S.A. 1986 Supp. 65-3458 to include prohibiting the burial disposal of low-level radioactive waste in Kansas.

Extensive federal regulations currently exist concerning the technical and safety considerations for underground burial of low level radioactive waste. In the past, there have been some technical problems with a few of the now non-operational low-level radioactive waste disposal sites in the United States. It was for this reason that in January, 1983, that the Nuclear Regulatory Commission (NRC), adopted Title 10, Chapter 1, Code of Federal Regulations, Part 61 (10CFR61), rules and regulations outlining the Licensing Requirements for Land Disposal of Radioactive Waste.

The presently operating low-level radioactive waste facilities and any future facilities must operate in compliance with 10CFR61 regulations.

M
Energy
3-19-87

Part 61 is intended to apply to land disposal of radioactive waste and contains the procedural requirements and performance objectives applicable to any method of land disposal. It contains specific technical requirements for near surface disposal of radioactive waste which involves disposal in the uppermost portion of the earth, approximately 30 meters.

The Nuclear Regulatory Commission has stated their position on siting suitability in NUREG-1241, Licensing of Alternative Methods of Disposal of Low-Level Radioactive Waste. This siting criteria states that various alternative disposal methods or engineered structures and barriers can not be viewed as a planned substitute for a suitable site. According to the NRC, 10CFR61 regulations would pertain to above ground as well as below ground disposal facilities. No matter what method of disposal is considered, the siting criteria are applicable.

Disposal of radioactive waste in near-surface disposal facilities has the following safety objectives: protection of the general population from release of radioactivity, protection of individuals from inadvertent intrusion, protection of individuals during operations, and finally to ensure stability of the site after closure.

A cornerstone of the system is stability - stability of the waste and the disposal site so that once emplaced and covered, the probability of water access to the waste can be minimized. Migration of radionuclides is thus minimized, long-term active maintenance can be avoided, and potential exposures to intruders reduced.

Page 3

These extensive federal regulations have been developed and instituted to ensure the protection, health and safety of the public regarding low-level radioactive waste disposal facilities.

Another very important issue raised by HB 2108 is whether its passage would put Kansas in conflict with the Compact. As we understand it, the Compact prohibits passage or enforcement of any law or regulations inconsistent with the compact. Prohibiting below ground low-level radioactive waste burial or disposal in Kansas could result in the other four states considering Kansas to have passed regulations which are inconsistent and in conflict with the Compact. Under these circumstances Kansas may have its membership revoked.

What are the consequences if Compact membership is revoked or Kansas withdraws from the Compact? It appears that Kansas would no longer be in compliance with the Low-Level Radioactive Waste Policy Act, as amended (the "Act"). The penalty for not complying with the Act is that Kansas hospitals, universities, and industry may be denied usage of the existing regional disposal facilities. Without the ability to dispose of low-level radioactive wastes, some Kansas facilities could be required to curtail or discontinue operations.

Without the unanimous consent of the other Compact states, voluntary withdrawal cannot be effective for five years after notice of withdrawal is given. Attorney General Robert Stephan stated in a March 5, 1987 opinion, that withdrawal now could cost the state as much as

in the Compact, costs could be as low as \$5 million. Stephan also noted that withdrawal from the Compact would guarantee a disposal site in Kansas.

House Bill No. 2107 or other bills overlooking Kansas' responsibilities under Federal and State law, which could result in Kansas leaving the Compact are not in the best interest of the State, the electric rate payers, or the States; industries.

In addition, based on the existence and implementation of federal comprehensive rules and regulations, there is not an adequate basis for the State of Kansas to prohibit underground burial of low-level radioactive waste in the State.

The organizations I represent are eager to work with appropriate state government representatives in any way to ensure safe, and to the extent practicable, economic waste disposal.

ATTACHMENT

NEED TO DEFINE UNDERGROUND BURIAL

Before Kansas outlaws underground burial of low level radioactive waste they need to evaluate what is being defined as underground burial. Many of the alternative disposal concepts to shallow land burial could be eliminated based on this definition. NUREG-1241, Licensing of Alternative Methods of Disposal of Low-Level Radioactive Waste, describes some of the alternative disposal concepts that need to be looked at. Below-ground versus below grade must be evaluated.

- Below-Ground Vaults: A below-ground vault is any enclosed engineered structure built at least partially below the original surface of the earth and used for disposal of low-level radioactive waste. No portion of the structure would protrude above the final surface grade.

- Above-Ground Vaults: An above-ground vault disposal unit is an engineered structure or building with floor, walls, roof and limited access openings on a foundation near the ground surface. At least some portion of the structure would be above the final post closure surface grade. This means a portion of these structures are below surface grade.

- Earth-Mounded Concrete Bunkers: Low-level waste packages of radioactive material are emplaced above ground at natural grade in earthen mounds (tumli). Thus, an earth mounded concrete bunker may

involve both above ground and below-ground construction, and may include waste encapsulation and backfilling with both concrete and earth.

If care is not used in defining underground burial even some types of above ground alternatives may be eliminated.

government agencies, and the NRC. This should also serve to provide all interested parties, including the public, with timely and objective assessments of the public and environmental protection aspects of proposed alternative waste disposal methods.

3.4 Descriptions of Alternative Disposal Concepts

Each of the design concepts described below has either been evaluated as a waste disposal alternative to shallow land burial or is currently being used or considered for that purpose in other countries. Descriptions of these design concepts are included here to help define the range of design characteristics considered to be within the framework of the existing regulatory requirements of 10 CFR 61. The concepts are described in more detail in NUREG/CR-3774.

- Below-Ground Vaults: A below-ground vault is any enclosed engineered structure built at least partially below the original surface of the earth and used for disposal of low-level radioactive waste. No portion of the structure would protrude above the final surface grade. A below-ground vault could be fabricated from the engineering materials discussed below for above-ground vaults. The vault could be built with engineered walls and roof; the floor could be natural soil or rock, treated soil or rock, or engineered materials. The vault, as an integrated structure, also has the characteristic of limited access to its interior space, such as a doorway or portal or hatch opening. Operational access to the vault from the surface may be in the form of an excavated ramp, which is built and then covered over at closure. During operations, however, the vault may have more extensive access, depending on its design. See Volume 2 of NUREG/CR-3774 for a more complete description of variations in conceptual design and operation of below-ground vaults.
- Above-Ground Vaults: An above-ground vault disposal unit is an engineered structure or building with floor, walls, roof, and limited access opening on a foundation near the ground surface. At least some portion of the structure would be above the final postclosure surface grade. The vault would be built from engineered structural materials. Fabrication could be of masonry blocks, fabricated metal shapes, reinforced cast-in-place or sprayed concrete, pre-cast concrete, or plastic or fluid media molded in various solid shells. All of these materials have been used to construct vaults. There are no existing regulatory constraints on material selection or shape of the vault as long as it can be demonstrated by the license applicant that the performance objectives of 10 CFR 61 can be achieved. See Volume 3 of NUREG/CR-3774 for a more complete description of variations in conceptual design and operation of above-ground vaults.
- Earth-Mounded Concrete Bunkers: The design of earth-mounded concrete bunkers may include the features of trenches, below-ground vaults, and earth mounds. This disposal method may also rely on mandatory requirements on waste form or site operation, such as specialized packaging and encapsulation. The basic design of an earth-mounded concrete bunker currently used in France segregates wastes according to level of radioactivity. Wastes with higher levels of radioactivity are embedded in concrete below ground. Waste packages with lower levels of radioactivity are emplaced above ground at natural grade in earthen mounds (tumli). Thus, an earth-mounded concrete bunker may involve both above-ground and below-ground

construction, and may include waste encapsulation and backfilling with both concrete and earth. See Volume 4 of NUREG/CR-3774 for a more complete description of variations in conceptual design and operation of earth-mounded concrete bunkers.

Shaft Disposal: The term "shaft disposal" refers to a near-surface disposal alternative in which wastes would be disposed of in shafts or boreholes augured, bored, or sunk by conventional construction methods. The shafts could be lined or unlined and of various sizes. Lining could be concrete, metal, or other suitable structural material. See Volume 5 of NUREG/CR-3774 for a more complete description of variations in conceptual design, use, and operation of shaft disposal.

Mined Cavity: The term "mined cavity" for the purpose of this discussion includes enclosed cavities developed in the removal of natural resources. Open-pit mines and surface mines are excluded from consideration. Mines vary greatly in geologic setting, types of excavation, and manner of resources extracted. See Volume 6 of NUREG/CR-3774 for a more complete description of the mined cavities.

If specific disposal facility designs are brought to the NRC for evaluation, the NRC staff will provide prelicensing guidance to help ensure that key issues will be identified and resolved before licensing and that NRC's regulatory requirements are incorporated into the applicant's program. However, until such time as detailed technical information on designs is submitted, the NRC staff believes that regulatory guidance must be sufficiently general to avoid placing unnecessary constraints on the development of new design concepts. The nature of any new NRC regulatory requirements will be based on the extent to which an individual proposed disposal design is shown to conform to the existing technical requirements of 10 CFR 61 or is compatible with meeting the performance objectives set out in 10 CFR 61 when combined with other components of the disposal system.

The following general guidance is provided for features and characteristics of various alternative disposal concepts that may present problems in demonstrating compliance with the 10 CFR 61 performance objectives. Requirements to reassess and potentially modify other components of the disposal system are also discussed. This guidance is intended to assist waste disposal engineers, license applicants, and States in identifying a preferred waste disposal design.

3.5 Design Considerations

Land disposal facilities must be sited, designed, operated, closed, and controlled after closure to achieve the performance objectives set forth in Subpart C of 10 CFR 61. The combination of performance objectives and technical requirements establishes a systems approach to waste disposal. The components of the "system" include the site and its characteristics, the facility and disposal unit design, the waste, facility operations and closure, intruder barriers, and institutional controls. Environmental monitoring is used to assess the system's performance. Reliance is not placed on any one component of the system. Rather, all interact in achieving the performance objectives. Design of the facility and disposal units plays an important role in the performance of the waste disposal system.