

Senate

GOVERNMENT AFFAIRS COMMITTEE

Minutes of Meeting - April 24, 1975

Present: Chairman Gibson
Senator Walker
Senator Dodge
Senator Gojack
Senator Hilbrecht
Senator Schofield

Also Present:
See the attached Guest Register

The thrity sixth meeting of the Government Affairs Committee was called to order at 4:15 P.M. by Chairman Gibson with a quorum present.

AB-491 Liberalizes provision for greyhound racing and pari-mutuel wagering. (BDR 41-1387)

Assemblyman Jeffrey went over the changes their committee made on AB-491 and urged its support. Mr. Jeffrey had a copy of a petition from the Henderson Chamber of Commerce in support of AB-491. He also had a copy of a letter from the City Council in Henderson giving full support to AB-491. (See the attached)

David J. Funk, Las Vegas Downs, had a copy for the committee on the Economic Impact for the first 100 days of the first year in operation. (See the attached). Mr. Funk feels that greyhound racing is a very profitable business.

Harry J. Frost, Racing Commission, stated that the Nevada State Racing Commission supports AB-491, in the reprinted form. He also felt that the bill should be passed without any further amendments. (See the attached statement signed by the Racing Commission)

Mayor Stewart, Henderson, stated that he was in full support of AB-491 in the amended form.

Jack Statton, Gaming Control Board, stated they had no objection to the reprinted version of AB-491.

Motion for "Do Pass" by Senator Hilbrecht, seconded by Senator Dodge, motion carried unanimously.

AJR-15 Urges the Energy Research and Development Administration to choose the Nevada Test Site for disposal of nuclear wastes and for solar energy research under the Solar Energy Research, Development and Demonstration Act of 1974. (BDR 1030)

Assemblyman Mann, stated that the Chamber of Commerce in Clark County is in favor of AJR-15. Mr. Mann suggested that the Governor's

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veto be put back into the bill.

Mr. Malon Gates, representing R.S.S.F., Manager of the Nevada Operations Office, passed out copies of the latest edition of the E.R.D.A. News regarding radioactive wastes. Mr. Gates thought if the committee could see the whole process on this matter they would have a better understanding of the project to store radioactive wastes in Nevada.

Mr. Gates slide presentation included the following topics, (1) Nuclear fuel cycle process. (2) Retrievable surface storage facilities. (3) Types of canisters used for storage; a canister will hold 6.3 cubic feet of radioactive waste, canisters go through various tests to assure safety. (4) water basin storage facilities, showing their removal system, (5) maps indicating the various places throughout the United States for the proposed storage facilities. At the conclusion Mr. Gates indicated that the first canisters will be stored in 1983.

Mr. Bill Flanagan, Field Operations Manager at the Mercury test site. Mr. Flanagan felt that in Nevada they had a good record for safety in the work they have been doing over the years. Mr. Flanagan read his prepared testimony to the committee and passed out copies for each member. (see the attached) His concluding remarks indicated that Nevada was a very logical choice for this storage facility and the people in Nevada would be acceptable to the idea.

Senator Dodge stated that he would like something in the bill that insured environmental safety and wondered if this could be added to the bill.

George Hawes, representing the A.F.L.C.I.O. stated that they were in favor of AJR-15 as it will be a great economic boost to the Nevada people.

Elmo DeRicco, Conservation Department, passed out a copy of his testimony that was given before the Assembly Committee on Government Affairs. Mr. DeRicco is in favor of this bill.

Ted Lawson, representing the Nevada Labor Counsel, stated that they were in favor of AJR-15.

Professor Sill, representing himself as an interested resident of Nevada and authority on nuclear wastes. Professor Sill had written testimony and passed out copies to each committee member. (See the attached). Professor Sill is against AJR-15, and recommended that the committee form a subcommittee to study all the facts concerning nuclear wastes and what Nevada would be committing itself to regarding a storage facility.

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Katherine Hale, spoke in opposition to AJR-15. She had her written testimony and a map indicating certain areas of Nevada that could be adversely affected by this storage facility. (See the attached)

Assemblywoman Wagner spoke in opposition to AJR-15. Mrs. Wagner stated that this bill was "railroaded" through the Assembly and she feels that there should be much more study done in this area before considering such a measure.

Assemblywoman Jean Ford spoke in opposition to AJR-15 and reiterated Mrs. Wagner's testimony. Mrs. Ford went to a seminar on nuclear wastes and felt that there is much we don't know about the far reaching effects and possible harm to Nevada if this bill is enacted. Mrs. Ford suggested references to nuclear waste be removed and put more emphasis on research for solar energy.

Susan Orr, Foresta Institute, spoke in opposition to AJR-15, passed out copies of her testimony and supporting documents. (See the attached)

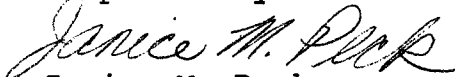
The committee discussed the possible values that scientists could discover in nuclear wastes and why the storage facilities should be of the nature that these canisters could be used some day. It was decided to study the materials that were presented during the meeting as well as materials obtained from the Assembly Government Affairs committee during their hearing on AJR-15. (see the attached)

The following people did not have the opportunity to speak in opposition of AJR-15 but wanted to be reflected in the minutes:

Jane McCarty, Roza Meadieros, Bruce Bunker, Kristy Klosterman
 Bob Gamber, Kathleen H. Winnington, Greg Knisley, John Taylor,
 Jeff Micer, Rex Jacobian, Christopher Brown - interested Nevadans!

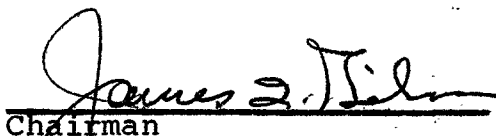
As there was no further business the meeting was adjourned at 6:30 p.m.

Respectfully submitted,



Janice M. Peck
 Committee Secretary

Approved:



Chairman

S E N A T E

AGENDA FOR COMMITTEE ON GOVERNMENT AFFAIRS
 THURSDAY
 DATE April 24, 1975 TIME 2:45 P.M. ROOM ... 345

<u>Bills or Resolutions to be considered</u>	<u>Subject</u>	<u>Counsel Requested*</u>
AJR-15	Urges the Energy Research and Development Administration to choose the Nevada Test Site for disposal of nuclear wastes and for solar energy research under the Solar Energy Research, Development and Demonstration Act of 1974. (BDR 1030)	Notify: Governor's office, Assemblyman Mann Elmo DeRicco, Noel Clark, Bill Flangas
AB-491	Liberalizes provision for greyhound racing and pari-mutuel wagering. (BDR 41-1387)	Notify: Assemblymen Jeffrey & Sena State Racing Commission, Gaming Control Board, Mr. Hannifan

* Please do not ask for counsel unless necessary

GUEST REGISTER

GOVERNMENT AFFAIRS COMMITTEE

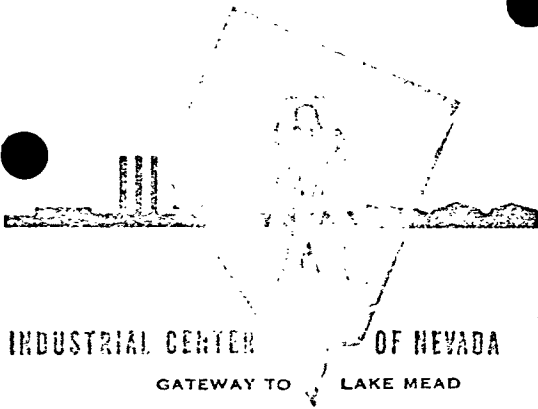
DATE:

4-24

THOSE WISHING TO TESTIFY SHOULD IDENTIFY THEMSELVES BEFORE GIVING TESTIMONY.....

NAME	DO YOU WISH TO TESTIFY	BILL NO.	REPRESENTING
Edward Van Sickle	Yes		Frigate Induso, Dayton
Terry A. WARD	No.		
Larry Holmz	No.		Self
Ellie A Reed			Las Vegas Downs,
David J. Funk	Yes	AB-491	" " "
Harvy J. Frost	yes	AB-491	Chairman Nevada State Racing Comm.
Husht Lumbro	no		Las Vegas Downs
Lauraine Palm	no		Foresta Institute
Jean Taylor	no		Foresta Institute
John James	NO	AJR-15	Siena Nevada College
George Ward	N		Siena Nevada College
Joris N Brown	NO		S.N.C
George Hansen	NO		self
Bruce E. Kirkus		AJR 15	KSMK Radio Truckee City
Rosa Hadziros		AJR 15	KSMK Radio Truckee City
Kristy Klosteman	yes	AJR 15	Self Self
Mary Jane McCarthy	yes	AJR 15	Self
Greg Kniseley	YES	AJR 15	for Yvonne McClain (Consumer League of Nevada)

Susan Orr	Yes	AJR 15	Foresta Institute
Bill Whitney	No	AJR 15	Humanity
Charles Watson Jr	YES	AJR 15	Nevada Outdoor Recreation Ass'n. (NORA)
ELUO DERICCO	YES	AJR 15	DEPT OF CONSERVATION
HERMAN HALL	No	AJR 15	- - ✓
JOHN MILLER	YES	AJR 15	PETITION OF 1600 PEOPLE PROTESTING
JEFF MINER	NO YES		SELF THE SITE.
Rex Toitschin	NO NO	AJR [#] 15	NO Future life without Radioactivity
Christopher Brown	Yes	AJR 15	Self and children
BONITA BRIDON	YES	AJR 15	PEOPLE FOR AN INFORMED CHOICE
Vic Hill	NO	AJR 15	DIVISION OF WATER RESOURCES
Katharine G. Hale	✓	AJR 15	
Dr. R.C. Sill	Yes	AJR 15	Self as Physics Professor

**HENDERSON NEVADA CHAMBER OF COMMERCE**

152 Water Street

89015

565-8951

April 3, 1975

Senator James I. Gibson
Assemblyman John Jeffrey
Assemblyman Nash Sena
Legislative Building
Carson City, Nevada

Honorable Legislators:

The Board of your Chamber of Commerce of Henderson, Nevada supports A. B. 491 and requests your action toward an early passage.

Sincerely,

HENDERSON CHAMBER OF COMMERCE

Donald M. Dawson
President

DMD:rt

CITY OF HENDERSON

1210

CITY HALL 243 WATER STREET 702/565-8921
HENDERSON, NEVADA 89015

Gateway to Lake Mead Resorts

April 3, 1975

Assemblyman John Jeffrey
Nevada State Legislature
Legislative Building
Carson City, Nevada 89701

Dear Jack:

The City Council of the City of Henderson has unanimously voted to support A.B. 491 and requests your action toward an early passage.

Sincerely,



Donald M. Dawson
City Manager

DMD:ss

LAS VEGAS DOWNS
ECONOMIC IMPACT
FIRST 100 DAYS
FIRST YEAR OF OPERATION

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During the 100 day construction period of Las Vegas Downs, over \$3,000,000.00 will be spent in the Greater Las Vegas area with the larger portion of this amount going into direct payroll.

During the first year of operation, an additional \$500,000.00 will be spent preparing the facility for Horse Racing which will commence 300 days following the start of Dog Racing.

Also during the first year of operation, a total of \$2,691,000.00 will be spent by the Las Vegas Downs Greyhound Operation in the form of Payroll, Advertising, Utilities and many other varied expenses.

FIRST 100 DAYS -and- FIRST YEAR OF OPERATION

First 100 days of construction.....	\$3,000,000.00
First Year additional construction.(Horse Facilities).....	500,000.00
First Year expense items directed into the economies of:	
HENDERSON-LAS VEGAS-&-NEVADA.....	2,691,000.00
First Year Pari-Mutuel Taxes Paid To:	
State of Nevada.....	\$400,000.00
City of Henderson.....	200,000.00
Nevada Racing Commission.....	200,000.00*
Total First Year Pari-Mutuel Taxes Paid.....	800,000.00
TOTAL OF FIRST 100 DAYS AND FIRST YEAR OF OPERATION.....	<u>\$6,991,000.00</u>

*A large portion of the tax which is designated for the Racing Commission will be passed on to the various agricultural districts of Nevada.

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LAS VEGAS DOWNS
ECONOMIC IMPACT
SECOND YEAR OF OPERATION

Starting the second year, Horse Racing will have become a reality and an additional \$800,000.00 will be spent to improve both the Horse and Dog Racing Facility. Again, the greater portion of this \$800,000.00 will be going into direct payroll.

With the addition of Horse Racing, those expense items being spent by Las Vegas Downs into the Nevada economy will exceed \$3,500,000.00.

SECOND YEAR OF OPERATION:

Second Year construction expense.....	\$ 800,000.00
Second Year expense items directed into the economies of:	
HENDERSON-LAS VEGAS-&-NEVADA.....	3,500,000.00
Second Year Pari-Mutuel Taxes Paid To:	
State of Nevada.....	\$543,000.00
City of Henderson.....	181,500.00
Nevada Racing Commission.....	271,500.00*
Total Second Year Pari-Mutuel Taxes Paid.....	996,000.00
TOTAL OF SECOND YEAR OF OPERATION.....	\$5,296,000.00
TWO YEAR TOTAL.....	<u>\$12,287,000.00</u>

*A large portion of the tax which is designated for the Racing Commission will be passed on to the various agricultural districts of Nevada.

LAS VEGAS DOWNS
ECONOMIC IMPACT
THIRD YEAR OF OPERATION

During the Third Year of operation, an additional \$1,000,000.00 in construction will be required to continue to bring the Las Vegas Downs Racing Complex up to date. Again, the greater portion of this \$1,000,000.00 will find its way into the form of payroll.

The expense items being expended into the Nevada economy will by this time (Third Year of operation) exceed \$4,442,175.00.

THIRD YEAR OF OPERATION:

Third Year construction expense.....\$1,000,000.00

Third Year expense items directed into the economies of:

HENDERSON-LAS VEGAS-&-NEVADA..... 4,442,175.00

Third Year Pari-Mutuel Taxes Paid To:

State of Nevada.....\$588,300.00

City of Henderson..... 199,650.00

Nevada Racing Commission..... 294,150.00*

Total Third Year Pari-Mutuel Taxes Paid..... 1,082,100.00

TOTAL OF THIRD YEAR OF OPERATION.....\$6,524,275.00

THREE YEAR TOTAL.....\$18,811,275.00

*A large portion of the tax which is designated for the Racing Commission will be passed on to the various agricultural districts of Nevada.

LAS VEGAS DOWNS
ECONOMIC IMPACT
FOURTH YEAR OF OPERATION

During the Fourth Year of operation, it will again be necessary to spend another \$1,100,000.00 in construction to complete the Las Vegas Downs Racing Complex. Again as in the previous years, this \$1,100,000.00 expenditure will contain a considerable amount of new payroll.

The expense items being expended into the Nevada economy will by this time (Fourth Year of Operation) exceed \$4,723,470.00.

FOURTH YEAR OF OPERATION:

Fourth Year construction expense.....	\$1,100,000.00
Fourth Year expense items directed into the economies of:	
HENDERSON-LAS VEGAS-&-NEVADA.....	4,723,470.00
Fourth Year Pari-Mutuel Taxes Paid To:	
State of Nevada.....	\$657,030.00
City of Henderson.....	219,615.00
Nevada Racing Commission.....	328,515.00*
Total Fourth Year Pari-Mutuel Taxes.....	1,205,160.00
TOTAL OF FOURTH YEAR OF OPERATION.....	\$7,028,630.00
FOUR YEAR TOTAL.....	<u>\$25,839,905.00</u>

*A large portion of the tax which is designated for the Racing Commission will be passed on to the various agricultural districts of Nevada.

LAS VEGAS DOWNS
ECONOMIC IMPACT
FIFTH YEAR OF OPERATION

In the fifth year, for all practical purposes, all construction will have been completed and plans will call for more expansion in not less than two years.

The expense itmes will continue and those amounts being expended into the Nevada economy in this year will exceed (Fifth Year of Operation) \$5,274,377.00.

FIFTH YEAR OF OPERATION:

Fifth Year expense items directed into the economies of:

Henderson-Las Vegas-&-Nevada.....\$5,274,377.00

Fifth Year Pari-Mutuel Taxes Paid To:

State of Nevada.....\$711,844.00

City of Henderson..... 241,577.00

Nevada Racing Commission..... 355,922.00*

Total Fifth Year Pari-Mutuel Taxes..... 1,309,343.00

TOTAL OF FIFTH YEAR OF OPERATION.....\$6,583,720.00

FIVE YEAR TOTAL.....\$32,423,625.00

*A large portion of the tax which is designated for the Racing Commission will be passed on to the various agricultural districts of Nevada.

LAS VEGAS DOWNS
DEPRECIATION SCHEDULES
YEARS ONE THRU FIVE

SCHEDULE 1

	Year 1	Year 2	Year 3	Year 4	Year 5
Cost of Building	2,600,000.00	2,340,000.00	2,106,000.00	1,895,400.00	1,705,860.00
Depreciation 15 yr. 150% Dec. Bal.	<u>260,000.00</u>	<u>234,000.00</u>	<u>210,600.00</u>	<u>189,540.00</u>	<u>170,586.00</u>
Remaining Balance	2,340,000.00	2,106,000.00	1,895,400.00	1,705,860.00	1,535,274.00
Cost of Equipment	900,000.00	675,000.00	506,250.00	379,690.00	284,770.00
Depreciation 8 yr. 200% Dec. Bal.	<u>225,000.00</u>	<u>168,750.00</u>	<u>126,560.00</u>	<u>94,920.00</u>	<u>71,190.00</u>
Remaining Balance	675,000.00	506,250.00	379,690.00	284,770.00	213,580.00
Cost of Horse Facilities Yr. 1 (Phase II)		500,000.00	450,000.00	405,000.00	364,500.00
Depreciation 15 Yr. 150% Dec. Bal.		<u>50,000.00</u>	<u>45,000.00</u>	<u>40,500.00</u>	<u>36,450.00</u>
Remaining Balance		450,000.00	405,000.00	364,500.00	328,050.00
Cost of Horse Facilities Yr. 2 (Phase III)			600,000.00	540,000.00	486,000.00
Depreciation 15 Yr. 150% Dec. Bal.			<u>60,000.00</u>	<u>54,000.00</u>	<u>48,600.00</u>
Remaining Balance			540,000.00	486,000.00	437,400.00
Cost of Horse Equipment Yr. 2 (Phase III)			200,000.00	150,000.00	112,500.00
Depreciation 8 Yr. 200% Dec. Bal.			<u>50,000.00</u>	<u>37,500.00</u>	<u>28,125.00</u>
Remaining Balance			150,000.00	112,500.00	84,375.00
Cost of Horse Facilities Yr. 3 (Phase IV)				700,000.00	630,000.00
Depreciation 15 Yr. 150% Dec. Bal.				<u>70,000.00</u>	<u>63,000.00</u>
Remaining Balance				630,000.00	567,000.00
Cost of Horse Equipment Yr. 3 (Phase IV)				300,000.00	225,000.00
Depreciation 8 Yr. 200% Dec. Bal.				<u>75,000.00</u>	<u>56,250.00</u>
Remaining Balance				225,000.00	168,750.00
Cost of Horse Facilities Yr. 4 (Phase V)					900,000.00
Depreciation 15 Yr. 150% Dec. Bal.					<u>90,000.00</u>
Remaining Balance					810,000.00
Cost of Horse Equipment Yr. 4 (Phase V)					200,000.00
Depreciation 8 Yr. 200% Dec. Bal.					<u>50,000.00</u>
Remaining Balance					150,000.00
Total Depreciation For The Year	<u>485,000.00</u>	<u>452,750.00</u>	<u>492,160.00</u>	<u>561,470.00</u>	<u>614,201.00</u>

LAS VEGAS DOWNS
CASH FLOW AFTER INCOME TAXES
AND CAPITAL IMPROVEMENTS
YEARS ONE THRU FIVE

	Year 1	Year 2	Year 3	Year 4	Year 5
300 Performances Dogs	863,365.00	1,000,408.00	1,179,311.00	1,391,338.00	1,616,123.00
100 Matinees Dogs*	163,950.00				
100 Performances Horses**		519,865.00	579,375.00	634,135.00	682,685.00
Cash Flow-Operations	<u>1,027,315.00</u>	<u>1,520,273.00</u>	<u>1,758,686.00</u>	<u>2,025,473.00</u>	<u>2,298,808.00</u>
Interest Payment	420,000.00	420,000.00	420,000.00	420,000.00	420,000.00
Cash Flow Before Taxes (1)	<u>607,315.00</u>	<u>1,100,273.00</u>	<u>1,338,686.00</u>	<u>1,605,473.00</u>	<u>1,878,808.00</u>
Depreciation (Schedule 1)	485,000.00	452,750.00	492,160.00	561,470.00	614,201.00
Taxable Income	<u>122,315.00</u>	<u>647,523.00</u>	<u>846,526.00</u>	<u>1,044,003.00</u>	<u>1,264,607.00</u>
Income Taxes at 48%	58,715.00	310,811.00	406,332.00	501,121.00	607,011.00
Less Investment Credit	<u>(61,250.00)</u>	<u>(2,535.00)</u>	<u>(14,000.00)</u>	<u>(21,000.00)</u>	<u>(14,000.00)</u>
Income Taxes Payable (2)		<u>308,276.00</u>	<u>392,332.00</u>	<u>480,121.00</u>	<u>593,011.00</u>
Cash Flow After Income Taxes (1)-(2)	<u>607,315.00</u>	<u>791,997.00</u>	<u>946,354.00</u>	<u>1,125,352.00</u>	<u>1,285,797.00</u>
Cash From Prior Year		107,315.00	99,312.00	45,666.00	71,018.00
Horse Facilities***	<u>(500,000.00)</u>	<u>(800,000.00)</u>	<u>(1,000,000.00)</u>	<u>(1,100,000.00)</u>	
Cash Flow End of Year	<u>107,315.00</u>	<u>99,312.00</u>	<u>45,666.00</u>	<u>71,018</u>	<u>1,356,815.00</u>

* Dog Matinees to be run first year only.

** Day-time Horse Racing begins in second year.

*** Funds from cash flow to provide Horse Racing and expand complex.

SENATE HEARING ON ASSEMBLY JOINT RESOLUTION 15

April 24, 1975

My name is Richard C. Sill. I live at 720 Brookfield Dr., Reno. I am a fifteen year resident of Nevada.

I am a Professor of Physics at the University of Nevada, Reno. My testimony will be relatively brief but I must identify my qualifications for this testimony.

I hold three college degrees AB - double majors in Physics and Mathematics, MA - in Physics and a PhD (University of Nebraska, 1954) with major in Physics and related minors in astrophysics and mathematics.

I have been a professional astronomer (Lick Observatory, University of California); a research engineer (Liquid Propellant Section, Jet Propulsion Laboratory, Calif. Inst. of Technology); a research physicist (Stanford Research Institute); and have done postdoctoral studies in several institutions including the Massachusetts Institute of Technology and the University of London (England). I have taught at the University of California, Berkeley; University of Nebraska; New Mexico Institute of Mining and Technology, Socorro New Mexico; and at the University of Nevada.

I have worked on weapons at the Jet Propulsion Laboratory and at the Stanford Research Institute and have held high security clearance at both institutions.

In addition to the above I was a several year member of the Nevada State Radiological Safety Board; the Assistant Director, Production Committee, Nevada State Office of Emergency Planning (under Governor's Sawyer and Laxalt; Deputy Chief of the Interim Radiological Defense Center, Office of Civil Defense, Menlo Park, California with one third of California under our jurisdiction.

I have been for three years Chairman of the University of Nevada Environmental Studies Board, and last year was Chairman of the Energy Advisory Committee of the UNR President.

My research field is systems, atomic physics, and condensed states of matter. I am a member of a number of honorary and professional societies including Phi Beta Kappa and the American Physical Society.

In addition to the short testimony I will submit to this committee, I will attach three attachments:

1. A recent editorial from the Nev. State Journal which discusses some aspects of a several year study of energy and resources conducted in cooperation with the Environmental Studies Board of UNR.
2. Correspondence to and from Governor O'Callaghan regarding the radioactive waste disposal problem before you today.
3. An excerpt from a letter to my wife from Dr. L. Douglas DeNike a clinical psychologist whose practice includes violence prone elements. In this letter Dr. DeNike remarks in part (paragraph 2)

"I was most impressed with Professor Sill's letter to the Governor, which was included in the set of statements on the Salt Lake City hearings distributed by Susan Orr of Foresta Institute. Your husband shows an extraordinary depth of appreciation for the social factors which must constitute outer limits for the utilization of dangerous technologies."

My testimony is as follows:

TESTIMONY

Assembly Joint Resolution 15 addresses three items which must be treated separately.

1. It seeks action that will improve the economic situation in Southern Nevada. It is apparent real need exists for appropriate action that will help remedy the unemployment rate there.
2. It seeks to encourage solar energy research and demonstration projects in Nevada. This is quite desirable and appropriate.
3. It seeks to encourage utilization of Nevada as a, if not the, major storage site for radioactive waste from the entire country. With this I must take categorical issue.

What this resolution will do if adopted will endanger Nevada beyond any reasonable degree. In addition, it will encourage the United States to try to meet the projected energy needs of the country by massive reliance on successive forms of nuclear energy.

Studies I have participated in make me certain we can maintain a high standard of living, a tolerable unemployment level, a society with opportunity and progress by utilizing the traditional characteristics of our system and do so without meeting the commonly accepted exponential growth in use of energy and resources. It will require diversification of energy sources including some nuclear energy.

This is more likely to be the path the country will follow if no state does as AJR 15 would do, namely invite its land be used for all radioactive waste storage.

But negative aspects are just as important as positive ones. And both locally and nationally, excessive reliance on nuclear energy will force us to go to breeder reactors which make weapons grade plutonium a socially common commodity. This absolutely guarantees that we shall have to become accustomed to terrorist activities using nuclear weapons that will result in both the loss of several major American cities per year due to detonation of clandestine atomic bombs and the imposition on America of a police surveillance and security system, that will constitute the virtually total loss of personal freedom. In addition, the detonation of nuclear weapons and terrorist breaching of radioactive processing, transportation and waste storage facilities will render extensive areas of the United States uninhabitable for thousands of years.

Senate Hearing on Assembly Joint Resolution 15
Testimony by Richard C. Sill - April 24, 1975

Do not play with this sort of fire on the mistaken idea that what Nevada does is unimportant. AJR15 carries within it the seeds of destruction of Nevada, much of the United States, and of democracy and freedom in this country and probably the rest of the world.

A handwritten signature in cursive script that reads "Richard C. Sill". The signature is fluid and somewhat stylized, with the first and last names being more prominent than the middle initial.

Richard C. Sill, PhD
Professor of Physics

A Spieldel Newspaper

Richard J. Schuster Publisher
William M. Clemens Controller
Dean C. Smith Advertising Director
Donn L. Wheeler Production Manager
John P. Oates Circulation Manager
Warren L. Lerude Executive Editor
Robert M. Nitsche Managing Editor
Tyrus R. Cobb Associate Editor
Frank H. Delaplane News Editor
Foster Church Editorial Page Editor

Sunday, April 20, 1975

Editorials

The System as a Tool

Discussion of world energy problems has died dramatically since last year's "energy crisis" which forced America to wait in lines at gas pumps and endure overheated homes.

The problem of energy and resource depletion is still real, however. And if discussion is not as loud as it was a year ago, it's the subject of grave speculation in the academic community.

Reviewing the options that appear open, many serious thinkers distressingly arrive at one conclusion: Only a dictatorship in America can discipline the American populace to endure the massive change in its way of life needed to prevent economic chaos.

It's a grim forecast.

Viewing current trends, and recalling incidents of lawbreaking that occurred during last winter's gasoline shortage, it's not as impossible a prospect as some might believe.

Enormous increases in the price of oil have caused America's balance of payments deficit to surge dramatically. Some believe that at this rate, the nation will be bankrupt within a decade.

Americans are slow to change their habits, however. And Congress is moving slowly in providing leadership.

Beyond the danger of consuming too much expensive energy, there is also the danger of depleting the earth's non-renewable resources which, as the world becomes more industrialized, are running out faster than research can provide substitutes.

Clearly, matters cannot continue at this rate.

Is a dictatorship, that would forcibly allot resources and control growth the only answer?

Perhaps not.

A group of scholars at the University of Nevada, in cooperation with the Environmental Studies Board, believe they have gone one step beyond this grim forecast. They predict that industrial-economic growth and democracy can continue only if the American system is altered to encourage the saving of energy.

According to one spokesman, "Our considerations at the University of Nevada indicate to me it is possible to separate industrial-economic growth and the rate of energy and resource use."

In short, it does not necessarily require an increase in energy use to allow economic and industrial growth.

A classic example is the enormous growth in the use of computers, which, because of advances in the use of transistors, integrated circuits and crystals, consume far less energy than they did a decade ago.

"Quick computations," according to the studies group spokesman, "indicate known and extant technology (if miraculously substituted for that being used today in American society) could permit us to live equivalent life styles with something like one-half the energy we are using today."

American industry and society developed wasteful habits in a time when it appeared natural resources were limitless and when energy was cheap.

During the time of growth, the government encouraged certain industries and certain practices by means of subsidies.

Timber franchises, land grants, mineral subsidies, oil depletion allowances, river basin and hydroelectric developments all stimulated economic growth.

There is no reason why the system, that so successfully encouraged industry to expand, could not also write laws that would make it in the interest of industry to conserve energy and natural resources.

The studies group at the university sees self interest as the most positive and dynamic force for change. Now, however, self interest guides Americans toward wasteful consumption.

"Dictatorship is at best not a happy form of government under which to live. Self interest, on the other hand, does not need policing and hence is a stability producing social factor.

"If the federal government wishes to do so, it can write regulations and prepare tax and other laws ... that will define a different path of positive self interest, and in a way fully compatible with American traditions. The vast industrial economic machinery will begin finally to do desirable new things and old things differently."

Solar power, for instance, is considered uneconomic by industry and builders. If the government would make tax free loans available to homeowners wishing to install solar heating plants; if it would write tax laws to encourage industry to produce these plants; if it would offer other tax incentives to make development of solar power profitable, the production of solar power would naturally begin to seem highly attractive.

Other energy saving devices and methods that might be encouraged by proper tax legislation and incentives are sailing vessels, increased use of insulation, increased mass transit and railroad trains.

One member of the environment committee estimates that if some energy saving incentives were put into effect, it would take not longer than two years for industry to respond.

The spokesman has an interesting rebuttal to sincere advocates of totalitarianism who argue dictatorship is the only way to efficiently and equitably distribute goods and services: "They claim the system is immoral when in fact it is actually amoral. It is a tool to be used and it can be used as a tool of liberation rather than one of oppression."



DEPARTMENT OF PHYSICS
(702) 784-8792

October 19, 1974

The Honorable Mike O'Callahan
Governor, State of Nevada
Carson City, Nevada 89701

Dear Governor O'Callahan:

There are two overriding factors which cannot be ignored in any large scale radioactive material use, transport, or storage, and these two factors virtually define what is allowable, irrespective of where the materials are being produced, used, transported, processed, or held. First is the absolute certainty that commando type operations will be staged against the United States, using the potentiality these materials have or will have shortly to compel our compliance with ransom demands of the participants. Suicidal groups might stage the operations to destroy the United States or achieve revenge for some real or imagined reason. This certainty demands the assurance that at no stage in the history of the materials can they be allowed to be vulnerable to such tactics. If this safety cannot be guaranteed, any vulnerable stages must be short in duration and receive maximum military protection while in process. Such groups as the Symbionese Liberation Army would be hard to respond to if they were able to install several technically competent members with plastic explosives inside an operating fast breeder reactor facility, for example, or were able to interrupt in a significant degree a processing or storage phase so conceived that such interruption could produce dispersal of the materials. The SLA is but one of many groups whose members would endanger innocent bystanders without thought, or perhaps would do so deliberately to achieve some form of ransom. Danger to themselves would in no way inhibit their actions.

As famine deepens in the world over the next several decades, one can expect nationals of the stricken countries or their American sympathizers to utilize similar tactics to force us to ship food to their homeland, although there is no way America can feed ourselves and the whole world. There are other groups who would not bother with ransom, but would be content to destroy or disrupt for revenge or other purposes.

It is therefore startling to read in the pertinent Draft Environmental Statement (WASH-1539), page 3.1-33, that "retrievable surface storage facilities will not be designed for continued waste confinement following the direct impact of massive or explosive missiles such as large meteorites or aircraft. Such events are of such low probability of occurrence that they are considered to be incredible." This statement means that equivalent internal sabotage could be successful and that the contemplated processes are not secure, thereby guaranteeing such attempted sabotage will occur somewhere.

The Honorable Mike O'Callahan
10/19/74. Page 2.

Little solace is to be found in the immediately preceding section, Pages 31-32 and 33, dealing with sabotage. This section concludes, "Results of these studies (now underway to evaluate both the probability and consequences of various acts of sabotage) will be discussed in the final environmental statement to the extent that this can be done without jeopardizing the security of the project" (emphasis added)--an admission the hazard exists and that those outside the AEC will not be consulted or informed. Several of the existing technologies referred to in the impact statement are so potentially susceptible to disruption (water basin and aircooled vault storage concepts in particular) they should never have been seriously considered. None of these Environmental Statement references is at all reassuring.

The second of the two important factors is the provision that use, processing, transport, or storage must be so conceived and executed that, at any stage, social or power disruption cannot result in the dispersal of the materials. The distinction between storage and disposal (WASH 1539, page 1, 2-7) is therefore not admissible except in the sense of retrievable and irretrievable, respectively, of materials sufficiently immobilized so as to be not dispersible by overt action.

If our society disintegrates, everything will stop where it is, and the radioactive waste processing must be safe as it is and where it is. If not, a dependable process must exist that will be set in motion automatically in the event, so that the materials will move immediately into safe and irretrievable disposal. Any disruption that causes ordinary processes--physical, technological, industrial, social, or even hierarchical--to falter or fail must be covered. A massive depression, for example, might have this effect, as could a system wide power failure (such as that occurring some years ago in New York and New England) or revolution, war, insurrection, or even a progressive failure of the educational system to train adequate personnel for the proper maintenance or management of the advanced systems involved.

There are many subsidiary questions and factors to be considered, but the two major problems I have discussed argue strongly for a different approach to hazard assessment than is being employed. If everyone cooperates, we can achieve remarkable things technologically, but that cooperation is certain not to occur where so powerful an instrument is created for the use of malefactors, dissidents, enemies, or victims of circumstance. At the very least, compliance with the safety requirements would be easier if the entire history of the radioactive materials from fuel enrichment to disposal occurs in a circumscribed region, although power distribution would be much more difficult and expensive under such a plan. If this cannot be accomplished, we may have no choice but to be highly restrictive in our use of such materials. This means significant conservation in the use of energy, as is being recommended by the Ford Foundation energy study. While such a

The Honorable Mike O'Callahan
10/19/74. Page 3.

policy decision is beyond the scope of the current Environmental Statement. It represents another scenario that must also be considered (See WASH-1539, Pages 1, 2-3 and 4).

In the meantime I urge a serious re-astoring of thought away from the current pattern, which seems thoroughly irresponsible to me because it is unrealistic. A new environmental statement still in draft form is needed and new hearings staged, this time with extensive publicity and advanced warning and with copies of the environmental statement made readily available (unlike what has occurred this time). In no way can we allow the National Security to be so flagrantly jeopardized as is done in the proposed procedures for handling radioactive waste. Nevada should not be a party to reckless behavior on this scale.

Respectfully yours,

Richard C. Sill

Richard C. Sill, Professor of Physics
Chairman, Environmental Studies Board
and
former Assistant Director, Production
Committee, State Office of Emergency
Planning (under Governors Sawyer
and Laxalt)
Former member, State Radiological
Safety Board

cc Mr. Norman Hall, Member
Nevada Radiological Materials Storage
Advisors Committee
Chairman of Subcommittee for Storage
and Management of Commercial High
Level Nuclear Waste Materials
Department of Conservation and
Natural Resources
Carson City, Nevada

Also other copies for distribution



DEPARTMENT OF PHYSICS
(707)-784-6792

November 5, 1974

Ref. my letter dated Oct. 19, 1974.

Honorable Mike O'Callaghan
Governor, State of Nevada
Executive Chamber
Carson City, Nevada 89701

Dear Governor O'Callaghan:

Thank you for your letter dated October 25, 1974 which discusses your position about high level radioactive waste storage in Nevada. Your letter included a copy of your letter dated October 26, 1974 to the AEC. Both letters lead me to worry that I did not make my points clear. Let me try again with just one aspect of the situation.

I am afraid the entire governmental apparatus is making decisions that basically assume everyone in the world is as law abiding as are Americans. I repeat---when the famine in the world deepens, we can expect the most extreme forms of pressure (including terrorist commando tactics) which will hit us where it will hurt most; and the nuclear power, radioactive waste storage complex must not be accessible to such disruption. You as Governor of one of the states most immediately likely to be endangered can do much to bring some patriotic rationality into this picture. I urge you to reconsider your position, and take the lead among governors in getting a realistic rather than the current idealistic review of the radioactive waste problem, a review that can pin point what we really can or must do in regard to nuclear power and its waste.

Respectfully yours,

Richard C. Sill

Richard C. Sill, Professor of Physics
Chairman, Environmental Studies Board
Chairman, Energy Advisory Committee
UNR 1973-74

Former Assistant Director, Production
Committee State Office of Emergency
Planning (under Governors Sawyer and
Laxalt)
Former Member State Radiological Safety
Board

cc: President Max Milam
Other copies for distribution



THE STATE OF NEVADA
EXECUTIVE CHAMBER
CARRON CITY, NEVADA 89701

MIKE O'CALLAGHAN
GOVERNOR

November 21, 1974

Professor Richard C. Sill
University of Nevada
Department of Physics
Reno, Nevada 89507

Dear Professor Sill:

Thank you for your follow-up letter of November 5, on the subject of high level radiation waste material storage.

I recognize the military question which you pose with regard to the safety of stored material. I believe safeguards must be maintained in order to secure such a facility to the maximum possible against terrorist action.

In my letter of October 28, to the Atomic Energy Commission, I stated: "The committee did not address itself to some of the broader questions which the AEC must itself decide in cooperation with the American people. These include the question of nuclear generation of electric power in the first place..."

I feel this broad national question is one which my office cannot alone answer; but rather one which individuals such as yourself must pursue with national government officials. I will, in the meantime, attempt to maintain for Nevada the position of seeking honest and realistic answers to questions regarding radiation waste disposal until residents of the state can reach a consensus on the subject.

Sincerely,

Mike O'Callaghan
Mike O'Callaghan
Governor of Nevada



ZERO POPULATION GROWTH

March 10, 1975

Mrs. Marjorie Sill
720 Brookfield Drive
Reno, Nevada 89503

Dear Mrs. Sill:

Enclosed are some items of interest pertaining to the dumpsite issue and the broader question of antisocial exploitation of radioactive materials.

I was most impressed with Professor Sill's letter to the Governor, which was included in the set of statements on the Salt Lake City hearings distributed by Susan Orr of Foresta Institute. Your husband shows an extraordinary depth of appreciation for the social factors which must constitute outer limits for the utilization of dangerous technologies. I think Susan can benefit from your mature counsel, and you from her strong investment in the dumpsite issue, and I wish you well for joint success in this most vital of all environmental battles.

I assume you will take the appropriate steps to bring the resources of the Sierra Club national office to bear on this truly national threat. I will drop a note to Mike McCloskey urging that the Club take this on with the same priority given Mineral King or the Alaska pipeline.

With very best wishes,



L. Douglas DeNike, Ph.D.
Vice-President

Enclosures

Katharine Gardiner Hale
1101 Keystone Avenue
Reno, Nevada 89503

Transcript of Statement of
Katharine Gardiner Hale
given at
Nevada State Legislature
Carson City, Nevada
on
April 24, 1975

Gentlemen and Gentlewomen,

My name is Katharine Gardiner Hale; I have lived in Reno for 14 years. During that time, I have developed a deep regard for Nevada and I submit that we must forego immediate economic benefits in favor of long-term consideration of the state's potential productivity. I was reproved at the Assembly hearings for calling A.J.R. 15 an economic bill, yet Lloyd Mann, its sponser, was quoted by the Gazette Journal as saying "Somebody is going to pick up that \$1.5 billion and I want it to be Nevada." To my mind, the bill is a bit of a bribe. We are promised money and solar energy research (unfunded), if we prostitute our state for 250,000 years.

I have testified at the A.E.C. (now E.R.D.A.) hearings in Salt Lake City, and before our local Assembly. One of the major contributors to both hearings was Mr. Flangas, a mining engineer. I have discussed his testimony with Mr. G. Martin Booth, III. who has a Masters degree in geology from Mackay School of Mines, has spent eight years, worldwide, as a petroleum geologist; and the past seven years as an independent consultant in geothermal energy, petroleum and hard mineral resources. My testimony is not intended to be in vituperation of Mr. Flangas' remarks. It is intended to show that much of what he said was generalized or speculative. With all due respect to his background, the fact that Mr. Flangas is primarily a spokesman for the Las Vegas Chamber of Commerce does not make him a spokesman for the larger interests of humanity.

It would be foolish to ignore or minimize the grave need for jobs and money. Our economy has been based on an exchange of money for money, rather than for culture or research or any of a thousand other economic devices. I have great faith in the

"Sage" State. This state has strength and beauty that deserves more than a "fast-buck" approach. It has always been called "dry and barren" because it was originally passed over by an essentially agricultural western movement requiring lush valleys and temperate climates. But we are no longer an agricultural nation, and it's time we re-evaluate Nevada's resources.

Mr. Flangas stated that there was no inter-valley ground water flow; and that, if by some unforeseen accident, radioisotopes did find some underground water, that the tuff would filter them out. Mr. Robert Horton, who did the AEC study at Fallon, says there is substantial evidence that ground H₂O travels from valley to valley. I have given each of you a map taken from the Nevada Bureau of Mines and Geology report: Interbasin Ground-Water Flow in Southern Nevada. It was co-authored by Richard L. Naff, George B. Maxey, and Robert F. Kaufmann, for March 1974. It distinctly shows water flow, going through N.T.S. land.

Concerning the filter aspects of tuff, Mr. Horton states that certain clays might retain the radioactive wastes but water-soluble wastes would migrate through any soil or rock. Mr. G. Martin Booth stated that "tuff itself might trap some wastes but that Mr. Flangas did not account for fissures and faults. Such flaws might reduce hundreds of years of water passage to as little as ten years."

What is tuff? It is often referred to as volcanic tuff and consists of the smaller kinds of volcanic detritus. Detritus is anything broken away from the mass. At this time, I request permission to stand, and explain this beautifully detailed map.

It shows young ^{tertiary} territory and quaternary volcanic formations in Nevada. "The western U.S. is geologically far more unstable than that part of the country East of Denver. Of the eleven (11) western states, Nevada is one of the most seismologically and geologically active." (G.M.B.)

"The Nevada Test Site is wholly within a main volcanic center. Many of the strata are just a few million years old, to probably a few thousand years old. Specifically, there are areas mapped by the U.S. Geological Survey, within the N.T.S., and on its periphery, which are probable quaternary age. Quaternary age may be defined as the age we are living in today to as old as approximately 1.5 million years. It is likely that exceptionally strong seismic activity may develop within and on the periphery of N.T.S. during the interval" (a geologist calls thousands of years an interval!) "when dangerous radioactive wastes are stored there." (G.M.B.)

The caldera are pink circles, outlined in black. A caldera occurs when "many cubic miles of volcanic rock are

brought to the surface and come out in such quantities that they spread out over 100's of square miles, leaving a void which becomes a cavity within the near surface of the earth." Their presence is an indication of more seismic activity in the future, which could be quite severe.

"Some of the most recent and well known and largest calderas in the whole state of Nevada are over the Nevada Test Site" (G.M.B.)

We have heard much of the technology and well-trained staff at N.T.S. In fact, the number of personnel is at rock-bottom and the technology required is entirely different from that needed for underground testing. The underground testing produces radiation that dissipates. As we all know, Nagasaki and Hiroshima are currently inhabited by a million people (800,000 1964 census) who could not live, if those land parcels had been polluted by the wastes which we intend to invite to our state.

In response to the argument: "N.T.S. is already polluted, a little more won't hurt;" (Flangas) I say: "We must define what kinds of radiation are involved and outline their different lifespans and levels of toxicity.

I respectfully ask that my senators find an expert to disseminate facts for us all concerning the radioisotopes with which we will deal. We've been told they'll be solid. We've been told they'll be liquid. What are they?

Nuclear power plants routinely release these radioisotopes: Barium Lanthanium 140, Strontium 89 and 90, Iodine 131, 133, and 135, Cesium 134, 137 and 144, Cobalt 58 and 60, Manganese 54, Zinc 65, Xenon 133, 135, 137 and 138, and Krypton 83, 85, 87, 88 and 89. All of these are accumulative in the environment and in humans, and potentially fatal. I want to know what controls are being used in the power plants and which radioisotopes we will be "caring for."

Before we give a green light to E.R.D.A., concerning waste storage, we should consider that one conceivable outcome would be our eventual acceptance of an instate nuclear power plant. Even if we never did the latter, the storing of wastes gives E.R.D.A. the chance to create more as soon as possible. The plants and their wastes are inextricably entwined. An average plant produces 200,000 grams of Plutonium 239 per year. That doesn't sound disastrous until one realizes that one gram could cause thousands of lung cancers; and that it will remain deadly forever (in non-geological jargon).

Scientists have yet to discover ways to store, neutralize, or dispose of it. Nothing is perfect; but the emergency

core-cooling system which is supposed to prevent disaster, if the main cooling system fails, has been tested in a smaller scale breeder reactor six times . . . six times it has failed. The AEC admitted in 1974 that it's safeguards were inadequate and asked for more money to improve security. Congress appropriated the funds but Ford vetoed it for lack of money.

We cannot afford to not afford the precautions.

We are all in a terrific bind. We want to do the right thing with the energy crisis. The people who have spent their lives trying to create clean energy, (scientists, environmentalists, et al) have developed an understandable blind spot. They want to save us, so badly. It reminds me of a patient I cared for; he was psychologically affected by cortisone. He could only see the future and grandiose goals and was incapable of working out the detailed means to his ends. He and E.R.D.A. are in a similar position; that of eagerly striding forward in the name of progress and dismissing anyone who asks, "How will you do this?" by labeling the question conservative and counter-productive. To my mind, progress is necessarily destructive. But there comes a time when it is so destructive that it becomes recessive in terms of it's benefit to humanity.

What I hope I have shared with you today is a sense of the time it took for us to get here and the relative haste with which we make our decisions. This state of ours is OLD. So OLD that we cannot readily grasp the statistics that tell us how old it is. Let me share an ounce of perspective. Richard Carrington said: "If the earth's history could be compressed into a single year, the first 8 months would be without life, the next two would see the most primitive creatures, mammals wouldn't appear until the second week in December, and no Homo Sapiens until 11:45 p.m. on December 31st. The entire period of man's written history would occupy the final 60 seconds before midnight."

When we consider how difficult it has been to grasp this subject, it helps to remember how very young and inexperienced we are, compared to other natural forms. We do not know what goes on under the earth yet. We do not even know what really goes on under our skins. When we do, we may be able to preserve them both with a minimum of wrinkles.

If we don't aggravate the contamination at N.T.S. "we could be sitting on the greatest geothermal opportunity in the country. The state could conceivably be self-sufficient in terms of energy and even provide power for surrounding states (\$\$\$\$!)." (GMB)

The Powers That Be designed our universe so that the oldest nuclear reactor, the sun, is about the right distance

from its users: 93,000,000 miles. Why, if the wastes are not all that dangerous to store, do we not have regional depositories in the Eastern and Midwestern sectors of the country? The U.S. Geological Survey is a competent, respected and scientific organization. Nonetheless, it is within the domain of Federal Bureaucracy. Our senators might consult the technologists in the state of Nevada who have considerable expertise in science and engineering within the state. Some of these are Desert Research Institute, the Nevada Bureau of Mines and Geology, the Department of Water Resources and the private sector of objective scientists.

Thank you.

1237

Senator Gibson
Nevada State Committee on Government Affairs
State Legislature Building
Carson City, Nevada 89701

April 1, 1975

Dear Senator Gibson,

I understand that your committee will be considering AJR15 which contains a proposal urging the Energy Research and Development Administration to locate a radioactive waste "disposal" facility at the Nevada Test Site. (In ERDA's terminology, "disposal" refers to permanent disposition rather than "storage" which is seen to be temporary and retrievable management of the commercially generated atomic wastes the government is currently concerned about.)

I would like to be advised of the date of your committee's hearings on the Resolution as soon as it has been set.

I would also like to urge you to recognize the ominous and controversial nature of the proposal and the consequent need to invite learned testimony from both proponents and opponents of the measure. It is very important to always be clear about the character of radioactive waste storage/disposal that is being referred to in discussion: interim or permanent, surface or buried, form (solid, liquid or contaminated "artifacts"), high-level or trans-uranium contaminated. These qualifying factors were not made clear during the Environment and Public Resource Committee hearings in the Assembly, which resulted in serious misunderstanding about the nature of the project.

The idea for commercially generated radioactive wastes to be stored in Washington, Idaho or Nevada is most fully developed in WASH 1539, the AEC-now-ERDA Draft Environmental Impact Statement on "Management of Commercial High Level and Trans-uranium Contaminated Radioactive Waste". It is a government proposal. The final impact statement has now been postponed for at least a year because 1.) the first was found to be inadequate in its presentation of alternatives and detailed technical information, and 2.) the idea for interim storage may be scrapped by the government altogether so that they can put all their money and effort into developing permanent disposal pilot projects. At any rate, the final impact statement should provide more detailed information about the plans for managing the highly toxic and volatile radioactive wastes and the criteria for site selection. Any waste storage/disposal discussion should be kept in the context of what we know and don't know from ERDA...they make the proposals and the decisions.

Foresta has been gathering information on nuclear waste storage since the governor first held hearings. We would be more than glad to share what we know with the Government Affairs Committee, to suggest people who can give knowledgeable testimony, and to let committee members have access to our library and files, should they so desire.

We feel that the potential threat nuclear power poses to the environment and its inhabitants -- for 250,000 years if industry develops the fast-breeder -- demands that every aspect of the process receive careful and rational consideration. A Resolution may not carry the weight of law, but it does indicate a public sentiment...whether or not it represents an informed public view will be a matter of conscience for the Nevada legislators.

I look forward to hearing from you.

Most sincerely,



Susan Orr
Program Coordinator

1239

"In the recent past, there have been a number of occurrences at reactors where human error resulted in undesirable situations. None of these situations represented a threat to the health and safety of the public. The absence of more serious effects is largely the result of good luck."

-AEC Division of Reactor Licensing
Reactor Operating Experiences
No. 69-9

"We cannot rely on good luck and good intentions to achieve safe plant operation."

-L. Manning Muntzing, Director of
Regulation, USAEC, Nov. 26, 1973

"In my opinion, there are no measures we can take that will eliminate the possibility of a major nuclear accident."

-Walter H. Jordan, formerly
assistant director, Oak Ridge
National Laboratory,
Nuclear News, October 17, 1971

"...(W)ithin the AEC it has been the policy that designs should not be required to provide protection against pressure vessel failure. So the question of whether or not such an event was credible did not arise. The reason is very simple - no design was available for a building which could withstand the consequences of pressure vessel failure, so it was decided to accept the risk."

-Peter Morris, Directorate of AE
Regulatory Operations, at Julich
Meeting International Atomic
Energy Agency, Feb. 5-9, 1973

"In all of this (growing interest in nuclear safety) there has developed a serious credibility gap. It seems apparent that the AEC isn't nearly as certain about nuclear safety as it ought to be. It has suppressed unwelcome evidence of possible hazards that have been discovered by its own researchers. When the researchers have pressed their doubts on higher officials, the AEC suppressed their reports and terminated their experimental programs, and sometimes researchers have been fired."

-Dr. W.N. Peach, Univ. of
Oklahoma, in "The Energy Outlook
for the 1980's," prepared for the
Joint Economic Committee of the
Congress (Dec. 1973)

Nuclear technology is a "fail-safe" technology. Once a critical error is made, there can be no turning back; consequently no errors can be made.

-Wilson Clark, 1974

Since all levels of radiation are hazardous, setting radiation protection standards is essentially a matter of applying moral judgments to cost/benefit analyses. It involves an evaluation of how much life and good health we, as a nation, are willing to sacrifice in the interest of having nuclear power. There is reason to conclude that present radiation standards are too high. While the issue of proper protection standards is beyond the scope of this booklet, it is important to understand that existing standards-even if met-will result in serious injury to health and life in a not insignificant percentage of the population.

After two years' study a National Academy of Sciences-National Research Council committee found that the current radiation protection standard of the AEC would, if the entire population were exposed to the maximum permissible exposure, "eventually lead to an increase of 5% in the ill'health of the population."*** The committee also estimated that this level of radiation exposure "would cause from roughly 3,000 to 15,000 cancer deaths annually."****

While there is a considerable body of information about the deleterious effects of radiation on man, there is a serious lack of precise knowledge about the possible environmental and health impacts of radioactive chemicals that may be released into the environment through the handling of vast amounts of radioactive wastes. Of particular concern is the uncertainty in assessments of the long-run environmental and health effects which may result from the biological concentration and transport of long-lived radionuclides.

Citizens' Guide: The National Debate on the Handling of Radioactive Wastes from Nuclear Power Plants
 ***National Academy of Sciences-National Research Council, The Effects on Populations of Exposure to Low Levels of Ionizing Radiation, Nov. 1972
 ****Based upon these estimates, the committee concluded as follows:

"The present guides of 170 mrem/year grew out of an effort to balance societal needs against genetic risks. It appears that these needs can be met with far lower average exposures and lower genetic and somatic risk than permitted by the current Radiation Protection Guide. To this extent, the current Guide is unnecessarily high."

There is no evidence at all for any safe threshold of radiation exposure.

The 150 nuclear plants already planned or operating will produce more long-lived radioactivity in this country every year than about 130,000 Hiroshima bombs.

Nuclear energy is "clean" only the way coal is "clean." They are both clean, provided you keep their deadly pollutants out of the environment.

-D.F. Ford and H.W. Kendall

Page 3

It is within the capability of sub-national groups (e.g. "Black September") to construct a nuclear weapon from such materials that are available in the commercial nuclear power program. Moreover, given the hazards of plutonium, it would not be necessary to turn this material into a weapon in order to undertake a terrorist campaign. The threat simply to disperse this immensely toxic material, among the most potent of cancer-causing agents, would be adequate for terrorist purposes. (A quantity of plutonium the size of a grain of pollen is sufficient to cause lung cancer in mammals.)

-D.F. Ford and H.W. Kendall

The radioactive wastes created in nuclear power plants are extremely toxic and persistent poisons...Nuclear power plants are expected to have a service life of 40 years. Yet the wastes each one creates will become a lagacy from this transient existence to future generations for nearly geological periods of time.

-D.F. Ford and H.W. Kendall

AEC's Director of Regulation, L. Manning Muntzing, admitted to a Congressional Committee (JCAE): "I'm really concerned about some of the surprises we see."

SOME NUCLEAR 'SURPRISES'

Discovery in 1972 that nuclear engineering firms have built the Prairie Island and Kewaunee plants with steam lines running underneath the control rooms, where a rupture of a line could destroy the controls and kill the nuclear plant operators; extensive modifications will be required in about six plants.

Failure of the vital emergency core cooling system to provide AEC experts with assurance of effective performance; the system, which has never had a large-scale test, failed six out of six miniscale tests in late 1970.

As of Spring 1974, the emergency cooling system has never had a successful large-scale test.

Discovery in 1971 that the allegedly watertight salt mine chosen for radioactive waste storage in Kansas was full of holes; the AEC has been forced to improvise "surface storage" plans.

Confirmation by the National Academy of Sciences in November 1972 that low-level radiation exposure is at least 500 percent more harmful than the experts had previously admitted; this surprise had already forced the AEC to suggest drastically reduced "permissible emissions" from nuclear power plants.

Discovery by the North Anna Environmental Coalition in August 1973 that two nuclear power plants in Virginia had been built on an earthquake fault in undeniable violation of AEC policy.

Apparently nuclear experts did not foresee, either, that on Nov. 11, 1972, three skyjackers would threaten to bomb the nuclear reactor at Oak Ridge, Tenn.; helpless, the AEC shut down its reactor and evacuated. The skyjackers did not carry out their threat.

1212

Resource People: Nuclear Energy
and Radioactive Waste Storage

Natural Resources Defense Council, Inc.
664 Hamilton Avenue
Palo Alto, California 94301
--Terry R. Lash, Ph.D.
--John E. Bryson, Esq.

Office of Energy Research and Planning
Office of the Governor, State Capital
Salem, Oregon 97310
--Joel Schatz, Director
--Robert Murray

Environmental Policy Center
324 C Street SE
Washington D.C.
--Wilson Clark, energy consultant
wrote Energy for Survival

John Goffman, M.D., Ph.D.
Professor of Medical Physics at UC
--former Assoc. Director of Lawrence Radiation Lab
--outspoken critic of promotion of nuclear power
--Dr. Arthur Tamplin and Goffman wrote Poisoned Power
(Rodale Press, 1971)

Robert F. Mueller, Ph.D.
Planetary Branch of NASA's
Goddard Space Flight Center

Union of Concerned Scientists
--Daniel Ford, Director of UCS
--Henry Kendall, prof. at MIT

Harold Urey, Nobel scientist
Prof. Emeritus, Chemistry
UCAL San Diego

Hannes Alfvén, Nobel Laureate (Physics)
Royal Institute of Tech.
Stockholm & UCSD

Alvin Weinberg, Ph.D.
former director of ORNL
Oak Ridge National Laboratory

Glen Seaborg, Nobel Laureate (Chemistry)
Associate Director of Lawrence Lab
(U.C., Berkeley)

Milton Shaw, former Director
AEC Div. Reactor Development & Tech.

Robert Gillette, Science

Dr. Ralph Lapp, Energy Consultant
Alexandria, Va.

Hans A. Bethe, Nobel Physicist
Cornell University
Laboratory of Nuclear Studies

Carl J. Hoyer, ex employee at AEC's
Idaho Safety Research Center

Donald Geesaman, biophysicist formerly of AEC
now at School of Public Affairs
University of Minn.

John T. Edsall
Prof. of Biochemistry,
Harvard University

Paul R. Ehrlich
Prof. of Biology
Stanford University

David R. Inglis
Prof. of Physics,
University of Massachusetts

Linus Pauling
Nobel Laureate
Prof. of Chemistry,
Stanford University

Harold Urey
Nobel Laureate
University Prof.
Emeritus, Chemistry
Dept. University of California
San Diego

George Wald
Nobel Laureate
Higgins Prof. of Biology
Harvard University

James D. Watson, Nobel Laureate
Prof. of Biology
Harvard University

For A Habitable World, Inc.

ROUTE 1, BOX 540 - PAYETTE, IDAHO 83661

April 17, 1975

Committee on Government Affairs
NEVADA STATE SENATE
Carson City, Nevada

Assemblymen: Re: ASSEMBLY JOINT RESOLUTION NO. 15 - Nuclear Wastes

Numerous thoughtful citizens of Idaho have expressed admiration for the sponsors of this Resolution, in that its proposal to ERDA that the Nevada Test Site be used for disposal of nuclear wastes, if accepted, would relieve the NRTS/INEL Site near Idaho Falls from the likelihood of being so used.

Although NRTS/INEL already has been named a nuclear waste repository, under circumstances set forth at page S-3142 of the Congressional Record of March 6, 1970, it seems evident now that the Idaho state administration which requested such designation (July 23, 1969) did not fully take into consideration the problems associated with permanent disposal there of radioactive materials as long-lived as plutonium-239. The NRTS/INEL ground, as you doubtless are aware, lies above an important aquifer of the Snake-Columbia river system. Obviously it would not be wise to commit to this earth materials certain to remain a threat to human life for possibly a million years. As recently as three weeks ago, a severe, earth-cracking temblor (scale 7.5) shocked the area from an epicenter only 100 miles away.

While your Nevada site has none of these disadvantages, we cannot help remarking that even one-tenth of a million years considerably exceeds man's competence to predict geological changes. So wherever the present store of plutonium wastes come to rest, decision as to even relative safety for future generations for so long a period will amount to little more than guesswork. Such being the case, your Committee ought not to assent lightly to Nevada's becoming part of the plutonium syndrome.

The old Pu-239 wastes must somehow be taken care of, but new wastes of this sort need not be created. Power reactors based upon a thorium cycle, rather than uranium, wind up with wastes much shorter lived.

Why not, therefore, make the offer of your Resolution a contingent one? Why not propose the Nevada Test Site as a disposal site for present commercial reactor wastes, provided the reactor program producing plutonium wastes authorizes the building of no further such reactors, and provided further, that all present U.S. light-water reactors producing plutonium wastes be phased out in accordance with a specific timetable?

Respectfully submitted,

FOR A HABITABLE WORLD, INC.
Paul Kiepe
Paul Kiepe, President

2351 Westfield Ave.
972-1721

April 2, 1975

Editor,

Nevada voters should decide if we want our state to be a radioactive dump for nuclear wastes.

This matter is too big, too crucial to be decided by the legislature, the governor or even the Las Vegas Chamber of Commerce.

The world's best scientists cannot even agree on where we go from here with nuclear power. As Dr. Hannes Alfvén, Nobel laureate in physics said, "In the nuclear industry...no acts of God can be permitted."

Those Nevada officials asking to have the wastes stored here must tell us why they are so willing to gamble with our lives and our lands. Is Nevada that desperate for a couple hundred new jobs and additional "economic benefits?"

The AEC (now Energy Research & Development Administration) does not have a comforting safety record. Nevadans should be aware, for example, that some 500,000 gallons of hot nuclear waste have been spilled on the ground at the nuclear disposal site in Washington over the last three decades.

If the AEC is soft on safety, it is little better on candor. The agency is noted for dealing with critics within its ranks by firing them or otherwise making their lives difficult, e.g. harassment, blacklists and dossiers.

In a recent bizarre case, Karen Silkwood, an employee of Kerr-McGee, the nation's largest uranium producer, was killed en route to a meeting with a New York Times reporter. Her car ran off the road and investigations indicated the vehicle may have been rammed from behind. She was carrying information alledging that

Kerr-McGee was falsifying quality control records on plutonium fuel rods. The critical material disappeared following the accident. The Justice Department is now reportedly investigating the incident.

The Times reporter planning to meet Silkwood was David Burnham, the man who broke open the Serpico story of police corruption in New York City. Prior to the scheduled meeting, Burnham had combed through hundreds of memos and letters, according to a story in Rolling Stone, March 27, 1975, and had "learned the AEC had a ten-year record of blue-penciling alarming data, soft-soaping test failures and glad-handing an industry that increasingly appeared not to know what it was doing."

There are many more horror stories and the AEC has a library of encouraging words to counter them. A lot to sift through.

I urge Gov. O'Callaghan and other supporters of this waste disposal plan to study this matter as if the lives of all Nevadans depended on it--they just might. Then let the people decide.

James A. Nelson

Reno

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March 10, 1975

Assemblyman Paul May
State Legislative Building
Carson City, Nevada 89701

Dear Mr. May,

This letter deals with Assembly Joint Resolution (AJR) 15 which: "urges the Energy Research and Development Administration to choose the Nevada Test Site for disposal of nuclear wastes and for solar energy research under the Solar Energy Research, Development and Demonstration Act of 1974.

As the Resolution is written, it constitutes a mandate from the people of Nevada and this, in fact, does not exist. Enclosed you will find a copy of "A Citizen's Bill of Rights on Nuclear Power". This document has been voted on and established as policy for the Consumer League of Nevada in the field of nuclear establishments.

When we speak of storing nuclear wastes, it is imperative that we understand what this "waste" is. Waste products accumulate from nearly all stages of the nuclear fuel cycle. High level wastes, those that may be stored in Nevada, are generated at reprocessing plants where plutonium and uranium are separated from fission waste products. These wastes emerge in liquid form and are initially stored in tanks. These wastes are extremely hazardous.

Extremely low amounts of radiation can cause cancer and genetic mutations. Many radioactive elements can concentrate in plants and animals at hazardous levels. This danger grows more acute as time passes. Less than 5% of the nation's energy (electricity) is presently generated by nuclear power plants, but that amount is expected to be in excess of 50% by the year 2000. Because of the rapidly growing nuclear establishment there should be wide spread consideration of the fundamental aspects of radioactive waste generation and storage.

Although radioactive wastes are generated at each stage of the nuclear fuel cycle, including mining, milling, enriching and fabricating fuels, the principal wastes are created from nuclear power plant operations. Accumulated fission products and fission by-products are separated from reusable isotopes in the reprocessing of spent fuels. These wastes are high-level radioactive substances. High-level wastes have high heat generation rates. The two principal radionuclides of concern are strontium-90 and cesium-137, which emit very intense beta radiation that in the absence of considerable external cooling causes high-level liquid wastes to boil for decades. In the management of wastes, this heat must be dissipated in order to prevent it from breaking down the structural materials encasing the wastes.

Affiliate Of The Consumer Federation Of America

The fission by-product, such as plutonium-239, has a half-life of over 24,000 years. This means that radioactive wastes that are contaminated with plutonium have to be contained for a period approaching 500,000 years.

Although the two broad types of waste, fission products and by-products, are distinguishable, current and proposed commercial spent fuel reprocessing does not physically separate them. Thus, all the high-level wastes must be contained for a period of nearly half a million years, under conditions of perfect stability.

The Resolution states that the AEC has, over the years, demonstrated an outstanding concern for nuclear safety. The past experiences of the AEC are not encouraging. I have enumerated their safety record to clarify my concerns. At the AEC facility at Hanford, Washington, liquid radioactive wastes have been stored in underground tanks. A number of these containers have leaked, with the result that over 400,000 gallons of highly radioactive materials have seeped into the ground, permanently contaminating it.

One leak that occurred in the spring of 1973 went undiscovered for 55 days, allowing 115,000 gallons to seep into the ground. Although readings on the tanks were taken each day, personnel did not recall the previous day's readings, and their supervisors were said to be over-burdened with other work and did not make the comparisons.

If we have not been able to control the wastes that have been generated, can we expect to achieve perfect control required for long-term isolation? The answer is NO.

Is the transportation of radioactive wastes safe? Recently, a steel cask with highly radioactive cesium and cobalt, taken from the Pilgrim Station reactor in Massachusetts, fell off a truck in Middleboro, and rolled down a 200 foot slope. It did not burst, however, this is only one example of the enormous risks posed by transporting nuclear materials.

Sabotage and theft enter into the picture of nuclear waste storage. Diverted materials might be made into atom bombs or other devices for blackmail and terror. The adequacy of AEC safeguards measures has received recent attention from the General Accounting Office, the AEC, critics of nuclear energy, and the Congress.

Limited insurance liability is another inherent problem when we deal with the nuclear establishment. Without its federal subsidies, nuclear power would not be economically feasible. One of the key subsidies is the limitation on liability of nuclear power companies in the event of an accident and the government indemnity for payment of some damages.


To eliminate this roadblock to the development of the nuclear industry, the Congress in 1957 enacted the Price Anderson Act which sets a statutory ceiling of \$560 million on insurance coverage for one nuclear power plant catastrophe regardless of the scope

of the actual damage. A recent 1974 report prepared for the AEC by Dr. Norman Rasmussen of MIT found that a reactor accident could cause 5500 deaths, 90,000 injuries, and 6.2 billion dollars in property damage. The report admitted these figures could be in error by a factor of three. Moreover, this accident was only the worst considered by the Rasmussen report, it is not the worst possible accident. The corporations which construct and operate nuclear power plants with their deadly potential destruction are liable for only the cost of their premiums on the maximum amount of insurance available from private sources; as of 1972, this was \$95 million dollars. Realizing that we will not be building a nuclear power plant, these facts are relevant, because the AEC wishes to store the highly radioactive wastes that are generated by these nuclear power plants in Nevada.

If there were to be a same leakage from the storage of radioactive wastes, are the people in Nevada aware of the insurance coverage? I think not. If your home is destroyed, you can't count on your homeowner's coverage...it has a total exclusion against damage from a nuclear accident. If your auto is destroyed or contaminated, your auto policy has the same type of exclusion as does your homeowner's policy. If you're injured, your health insurer may be bankrupt as claims mount up. Those concerns do exist and should be examined with the closest scrutiny possible.

In conclusion I wish to say that the Nevada State Legislature and its Legislators do not have the expertise in the field of nuclear radioactive waste storage, they must be required to read appropriate materials that would enable them to understand and ask questions; and they should not take the right away from every Nevada citizen to become a part of that decision making process. I would recommend that the bill be separated into two parts: one dealing with the AEC's choice of the Nevada Test Site for disposal of nuclear wastes and the AEC's solar energy research under the Solar Energy Research, Development and Demonstration Act of 1974.

Respectfully submitted,


Yvonne McClain,
1st Vice President

cc: Governor Mike O'Callaghan

People for an Informed Choice ✓

Legislator Robert Rebinsen

Legislator Douglas Bremner

Legislator Robert Price

Legislator Tom Hickey

Legislator Eugene Echels

The following is a bibliography of some of the material and information that is available for your consideration:

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Kermitt Waters

TESTIMONY BEFORE THE NEVADA STATE SENATE COMMITTEE ON GOVERNMENT AFFAIRS APRIL 24, 1975

My name is Yvonne L. McClain and I am representing the Consumers League of Nevada (CLN) before this Committee. I am currently serving as the 1st Vice President of CLN, which is an all volunteer organizations to protect and promote consumer interests in Nevada.

The Consumers League of Nevada is against the establishment of a high-level radioactive waste storage facility that is proposed for the Nevada Test Site. The following remarks will clarify our position.

Responding to the Governor and the initial environmental impact study, ^(NRS# 152A) CLN, stated that "The study also fails to present the detailed basis for its conclusion that a solution will be found before a disastrous management mistake occurs." CLN has also asked for full disclosure of all memoranda, reports, studies, and decision papers to allow the public to decide and make a determination as to the pro's and con's of this project. This Resolution, A.J.R. 15, that is before you today, takes all rights and privileges away from those who live in Nevada and call it home.

We are discussing the storage of radioactive by-products and dangerous elements such as iodine, strontium, cesium and worst of all, plutonium. Plutonium is the most toxic substance known to man. It has a half-life of 24,000 years, which means that after that period of time, half of it is as lethal as it is today. After an additional 24,000 years, one-quarter of it is still lethal, and so forth. So plutonium must be stored for hundreds of thousands of years, away from contact with man, in containers and loca-

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APRIL 24, 1975

tions that must be 100% immune to fires, earthquakes, bombs, sabotage, mechanical or technical failure, corrosion, and human error.

I am sure that you are aware of the 115,000 gallons of radioactive waste that leaked out of some steel containers in Hanford, Washington, contaminating not only the soil but the Columbia River water table. So much plutonium was found in trenches in the area that some scientists believe a fission chain reaction could occur. Such leaks in varying degrees are occurring all across the country. And more and more wastes continue to accumulate. The AEC (or the newly established ERDA) tries to minimize the waste problem by pointing out how small it is in volume. They overlook the fact that it is radioactivity, not the volume, that counts. Radioactivity is measured in microcuries, since one curie is considered a very large dose. By the year 2000, this country will have accumulated billions of curies of radioactive wastes, stored in a manner similar to those that leaked out at Hanford.

One can find in an AEC fact sheet entitled Commercial High-Level Radioactive Waste the following explanation of how much waste we are talking about. "All the high-level waste generated at commercial spent fuel processing plants by the year 2000 would fill no more than 80,000 canisters when solidified and shipped to a federal repository ten years later. All 80,000 canisters could be placed in storage basins taking up to 5 to 15 acres of land. A canister will probably be about one foot in diameter and ten feet long, made of steel, welded shut and containing about six cubic feet of solidified high-level radioactive waste. About sixty cubic feet, or ten canisters-full, of this type of waste would come from

the thirty metric tons of spent fuel taken each year from a typical 1000 megawatt light-water-cooled reactor." 80,000 canisters and 15 square miles are treated as if it were a trivial amount.

We will be creating "Stonehenge" pillars of concrete planned to store A-waste, as noted in the Los Angeles Times on Sunday, May 5, 1975.

In a press release from the Nuclear Regulatory Commission, they say that "More than half (888) of the 'abnormal occurrences' reported in 1974 were of little significance in terms of safe operation of the nuclear power plants, and one of the more than 1400 events had any impact on public health and safety." CLN feels that the unsafe operation of Nukes have a deliberate impact on public health and safety. We must take note of the safety record as we can not minimize its effect on future generations. The state of the technology at this time is still experimental. On December 10, 1973, 13 out of the 38 "operable" nuclear plants were completely shut down due to malfunctions or accidents, and several other were operating at a reduced capacity. (Information taken from Ralph Naders, THE SUNDAY BULLETIN, Philadelphia, January 20, 1974.) The WALL STREET JOURNAL reported on May 3, 1973, "Utilities find, the facilities costlier, less efficient than they had expected...The incredibly complex facilities are plagued by breakdowns that experts blame on faulty engineering, defective equipment and operating errors." The October, 1973 AEC Task Force study on safety states, "Review of the operating history (of) 30 nuclear reactors indicated that during the period of 1-1-72 to 5-30-73 approximately 850 abnormal occurrences were reported to the AEC. Many of (them) were significant and of a generic nature...forty per cent were traceable to some extent to design and/or fabrication related deficiencies. The remaining

incidents were caused by operator error, improper maintenance, inadequate erection control, administrative deficiencies, random failure, or a combination thereof." (Excerpts from "Study of the Reactor Licensing Process" AEC, Oct. 1973, by The Union of Concerned Scientists, P.O. Box 289, MIT Br. Sta., Cambridge, MA 02139.) It is difficult to see how the industry claims that the chances of a "maximum credible" accident are almost negligible. Accidents which have happened have been caused by unforeseen combinations of human and mechanical failures against which the odds were astronomical. (Excerpt from THE CONGRESSIONAL RECORD, S.6608-9, Human Error and Atomic Power, V.119, No.52, Sen. Mike Gravel.)

The AEC's public pronouncements run counter to the agency's own experts' studies and the opinions of scientists in and out of the AEC. (Found in Hetzger, Peter, THE ATOMIC ESTABLISHMENT, Simon & Schuster, 1972 for examples.) Dixie Ray even claimed on "Meet the Press" on April 14, 1974 that a big nuclear plant accident would be no more serious than an airplane crash, ignoring the effects of radioactivity in the environment that would cause cancers and genetic mutations to future generations.

Two principles have been applied to the problem of radioactive wastes. One is the dilution and dispersal of low-level radioactive wastes that is slowly poisoning our biosphere and that it tends to become concentrated again in the tissues of living organisms. The other principle is containment and concentration of high-level radioactive wastes. Containment of high-level wastes for any length of time had defied solution; there is NO KNOWN MATERIALS that will contain these hot wastes for more than about 20 years. One idea to store long-lived wastes was burial in abandoned

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APRIL 24, 1975

salt mines, but after fifteen years of study and over \$100 million, the site chosen at Lyons, Kansas, had to be abandoned because it was found to be only a few hundred yards from large holes which were filled with water.

Presently the highly lethal wastes are stored in huge underground tanks in a program of perpetual care. After the spent fuel is removed from the reactors, once a year or so, it is first stored underwater for months to permit the shortest lived radioactive elements to die out. Then, at the reprocessing plant, the fuel is dissolved in acid solutions and the useful materials removed. Further sorting out chemically of shorter-lived elements allows them to be set aside to decay. The highly concentrated long-lived strontium-90 and cesium 137, and others which have half-lives of 30 years or more, are extremely hot radioactively and thermally and will boil into the atmosphere if it is not constantly stirred or cooled. These tanks last about 20 years, or sometimes less, before corrosion and radiation damage causes them to buckle and leak.

With this less than impressive record of safety and utmost concern for the human race and the preservation of the same, the Consumers League of Nevada has adopted the following policy:

A CITIZEN'S BILL OF RIGHTS ON NUCLEAR POWER

1. The public is entitled to full and candid information about the dangers and benefits of nuclear power in language they can understand, not just obscure technical jargon and Madison Avenue propaganda.
2. The nuclear establishment, including the AEC, utility companies, nuclear manufacturers and the insurance industry, has the obligation to disclose all information about the dangers of nuclear power.
3. The nuclear establishment has the obligation to make all relevant information readily available nationwide and not simply to store it in document rooms in Washington. Because of the unprecedented danger, failure to make readily available all information should be subject to severe criminal penalties.

4. The public is entitled to participate fully in all nuclear power decisions at all levels and at the earliest possible time. The public should not have these decisions rammed down their throats.
5. The public is entitled to have nuclear power plant decisions made on the local as well as the state and federal levels of government with meaningful input by citizens who will be directly affected. All decisions should not be made by federal officials.
6. The public is entitled to government regulations of the atomic energy industry designed to protect the citizen rather than to promote and protect the interests of the nuclear establishment. The health and safety of the public should come ahead of the corporate health and safety of the nuclear establishment.
7. The public is entitled to full protection for all damages caused by nuclear accidents. The financial risk of any accident should fall on the nuclear establishment, not on the public.
8. The public is entitled to a legal system that will guarantee compensation for the special types of injuries caused by nuclear radiation, such as genetic damage and delayed diseases, that may not be compensable under present law.
9. The public is entitled to an insurance industry that actively promotes safety and the public interest rather than one that serves as a mere adjunct to the nuclear establishment.
10. The public is entitled to full legislative monitoring of the risks and benefits of nuclear power. Responsibility should not be abdicated to a Congressional Joint Committee on Atomic Energy that has a vested interest in nuclear power and has traditionally been part of the nuclear establishment.
11. The public is entitled to a nuclear policy that protects present and future generations against unreasonable dangers. Future generations should not be given the oppressive burden of the storage of the present generation's nuclear waste.
12. The public is entitled to an energy policy that in no way compromises national security. The public should not be subjected to nuclear Trojan Horses susceptible to sabotage and attack by conventional weapons.
13. The public is entitled to a comprehensive national energy policy with full environmental protection to assure a safe and sufficient supply of power rather than the present circus of hazards and inadequacies.
14. Until the previously mentioned rights are assured, the public is entitled to a moratorium on the further expansion and operation of the NUCLEAR ESTABLISHMENT.

To conclude my testimony, I wish to quote Dr. Hannes Alfvén, Nobel Laureate in Physics, writing in the May, 1972, Bulletin of the Atomic Scientists:

"FISSION ENERGY IS SAFE ONLY IF A NUMBER OF CRITICAL DEVICES WORK AS THEY SHOULD, IF A NUMBER OF PEOPLE IN KEY POSITIONS FOLLOW ALL THEIR INSTRUCTIONS, IF THERE IS NO SABOTAGE, NO HIJACKING OF THE TRANSPORTS, IF NO REACTOR FUEL PROCESSING PLANT OR REPROCESSING PLANT OR REPOSITORY ANYWHERE IN THE WORLD IS SITUATED IN A REGION OF RIOTS OR GUERRILLA ACTIVITY, AND NO REVOLUTION OR WAR--EVEN A "CONVENTIONAL ONE"--TAKES PLACE IN THESE REGIONS. THE ENORMOUS QUANTITIES OF EXTREMELY DANGEROUS MATERIAL MUST NOT GET INTO THE HANDS OF IGNORANT PEOPLE OR DESPERADOS. NO ACTS OF GOD CAN BE PERMITTED."

Thank you for giving the Consumers League of Nevada time to present this testimony for your consideration.

Respectfully submitted,


Ivonne McClain

A VIEW ON NUCLEAR POWER MORATORIUM

by

John W. Gofman, M.D. Ph.D.

Delivered at CRITICAL MASS '74 Conference

Ralph Nader, Chairman

Statler Hilton Hotel

Washington, D.C.

November 15-16, 1974

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A VIEW ON NUCLEAR POWER MORATORIUM

John W. Gofman

I should like to outline why a moratorium on construction of any further nuclear power plants plus a phaseout of existing plants is essential.

There seems to be a widely-held view that "reasonableness" argues for the discovery of an acceptable middle ground between the opponents and proponents of nuclear power as one of our energy options. I cannot accept this view, since there does not appear to be any reasonable prospect that a middle ground can be found.

The essence of the problem is exceedingly simple, arising from the immutable laws of physics. If we generate nuclear power to meet any significant proportion of our energy use, we create astronomical quantities of radioactive fission products and plutonium-239. Since no serious opponents or proponents of nuclear power contest the extreme toxicity of long-lived radioactive fission products and of plutonium -239, the problem becomes, straightforwardly, whether or not these substances can be virtually perfectly isolated from the biological environment almost forever.

Let us examine this "almost forever" requirement.

For the prominent long-lived fission products, such as Strontium-90 and Cesium-137, with half-lives of approximately 30 years, the requirement is roughly 99.99% containment (isolation from the biosphere) for some 1000 years.

For plutonium-239, with a half-life of 24,000 years, the requirement is roughly 99.999% containment for some 250,000 years.

The proponents of nuclear power recognize these requirements and say they will provide the technical modalities required to achieve the necessary isolation. In taking this position they demonstrate a total divorcement from common sense and the real world. They ask society to believe a miracle will be accomplished.

It would be difficult enough, given the frailties of all high technology, to promise a technical solution to the requirements. But it is orders of magnitude more difficult to promise this given the frailties of human societies and political entities.

In the past 60 years we have experienced two full-scale World Wars, numerous lesser but bloody conflicts, an acceleration in revolutionary activity, and almost unbounded guerrilla terrorism within and between countries. Who is so all-seeing as to predict that suddenly societies will become tranquil and totally peaceful? This would certainly be a requirement for societies basing their energy supply upon nuclear power.

In the USA, for example, a fully developed nuclear power industry will mean the commercial annual handling and transport of some 600,000 pounds of plutonium-239. The consequences of escape of 10 to 100 pounds of plutonium-239 to the environment in certain forms can be beyond comprehension -- for hundreds of thousands of years. Can anyone accept the credibility of those who casually reassure us plutonium-containment will be performed flawlessly, under all circumstances essentially forever?

And can anyone accept the credibility that guardianship of the radioactive fission products, in whatever storage form is decided upon, will be 99.99% perfect for 1000 years?

It is time to dismiss the nonsense of those who promise such miracles as being in the same class as the therapeutic promises of nostrum-vendors in travelling carnivals.

Since the promise of such miracles is patently ridiculous, it follows that going ahead with nuclear power represents a monstrous abrogation of rights, in advance, for the hundreds and thousands of generations of living beings who will follow those alive today. What right do we have to build in the prospect of irreversible health consequences (genetic injuries and deaths, cancers, leukemias) at a level that could negate all public health advances of the past few centuries?

Any statement that the nuclear power industry has thus far accomplished containment is simply false. The nuclear industry monitoring has varied from unreliable to non-existent. There is little reason from experience to believe the nuclear industry even knows what level of containment it has achieved thus far.

Were the problem one of better technical fixes, it might be credible that the learning curve would ultimately lead to an adequate solution. But the problem is not one of technical fixes; rather, it is one of predicting almost perfectly the history of human societies for the next several millenia and hundreds of millenia. Any reasonable person would use common sense in appraising the promises of the latest vintage of super crystal ball gazers.

Finally, the nuclear power proponents end up with the argument that society must accept this monstrous risk because "there is no alternative". It so happens that a considerable body of scientific and engineering opinion holds that such alternatives as solar energy are both technically and economically feasible, particularly when coupled with even rudimentary measures of energy conservation, to solve our energy requirements.

If reasonableness is desired by the proponents of nuclear power, it must start with them. They have mounted an unconscionable propaganda campaign to ridicule alternative sources of energy and to prevent a full,

open objective evaluation of both the feasibility of the technologies and of the economics aspects. Such an objective evaluation is urgently required and must be achieved. But the situation is not so urgent that we must accept nuclear power first. By no means.

It is clear that the nuclear option represents the last gasp of a hopeless world. The proponents of nuclear power recognize this, but they hope for a miraculous technical fix that can abolish the realities of human history.

Far better for the opponents and proponents to set aside the nuclear controversy through a total moratorium on nuclear power for now. All the efforts should then be expended in a serious evaluation of alternative energy sources with prospects brighter than a contaminated planet. There will be plenty of time to choose a horrible alternative later, but I doubt extremely seriously this will be necessary.

11/8/74

APRIL 24, 1975

STATEMENT IN REGARD TO A.J.R. 15
IN GOVERNMENT AFFAIRS COMMITTEE

My name is Elmo J. DeRicco, Director of the Department of Conservation and Natural Resources.

I should like to point out that the Radioactive Materials Storage Advisory Committee did not function within the framework of the Department of Conservation and Natural Resources. It was an independent Committee appointed by the Governor. The Department provided some supporting services, and the Assistant Director, Norman Hall, served as a member, and as its Secretary. He is present if you need additional information.

The First Reprint of A.J.R. 15 includes the recommendations of the Committee.

The Committee recommended that Nevada should continue to be considered as a site for the nuclear waste storage, with the conditions as enumerated in the resolved portion of A.J.R. 15.

I urge your favorable consideration of A.J.R. 15.

For the record, I am submitting copies of the report prepared by the Radioactive Materials Storage Advisory Committee.

NEIL D. HUMPHREY
Chancellor

October 23, 1974

The Honorable Mike O'Callaghan
Governor
State of Nevada
Carson City, Nevada

Dear Governor O'Callaghan:

Report of Nevada Radioactive Materials
Storage Advisory Committee

An error was made in the Committee's report and a clause was omitted which had been agreed to by the Committee. Section 4, Item 6, on page 6, should be amended by the addition of the following wording in the third line from the end of the paragraph:

"...that a seismic hazards study be made, involving the same degree of conservatism as the AEC's 'Seismic and Geologic Siting Criteria for Nuclear Power Plants';..." Paragraph 6 would then read as shown on the enclosed.

I regret that this error was made in the final compilation of the Committee's report.

Very truly yours,

Neil D. Humphrey
Neil D. Humphrey
Chancellor

NDH:ja
Enclosure

cc: ✓ Members of Nevada Radioactive Materials
Storage Advisory Committee

6. If the AEC tentatively selects the Nevada site, the Committee strongly recommends that the Governor take advantage of Dr. Pittman's suggestion that a technical committee be appointed and funded to work with the AEC in development of the site-specific draft environmental impact statement, and to carry out the long-term commitments expressed in the Governor's commission to the present ad hoc Committee. For example, this technical committee should see to it that all of the regulations and handling of waste be accomplished according to the agreement, standards and descriptions as presented in the Atomic Energy Commission's environmental impact statement; that certain specific physical requirements be mutually agreed upon which are not now clearly stated in the draft environmental impact statement, such as that the storage site should be in an enclosed topographic and geologic basin; that specific possible biological effects be carefully studies, especially the possibility of concentration of radioactive materials in the plant-animal chain; that a seismic hazards study be made, involving the same degree of conservatism as the AEC's "Seismic and Geologic Siting Criteria for Nuclear Power Plants"; and, in general, that the risk to the health and safety of the public be reduced to the smallest satisfactory amount.

October 18, 1974

The Honorable Mike O'Callaghan
Governor of Nevada
State Capitol
Carson City, Nevada 89701

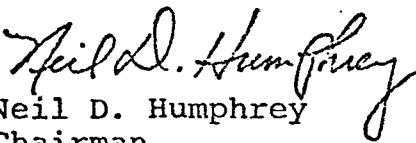
Dear Governor O'Callaghan:

The report of the Nevada Radioactive Materials Storage Advisory Committee is enclosed and is respectfully submitted to you on behalf of the Committee.

The Committee instructed me also to inform you that each member of the Committee has reviewed and evaluated the AEC environmental impact statement regarding the storage of commercial high level and transuranium-contaminated radioactive waste, and their personal comments are included in the addendum to the report. The Committee also noted that it was recognized that there were many alternatives which should have been more fully discussed in the final impact statement; however, in view of the short period of time available for review and evaluation, neither the Committee nor its individual members could deal with all of these alternatives.

The Committee thanks you for this opportunity to be of service to the State. Unless further directed by you, we assume that we have completed the assignment you gave us and that we are, therefore, discharged.

Cordially,


Neil D. Humphrey
Chairman

NDH:bjs
Enclosure

REPORT OF NEVADA RADIOACTIVE MATERIALS
STORAGE ADVISORY COMMITTEE

Section I - Committee's Charge

The Nevada Radioactive Materials Storage Advisory Committee was appointed by Governor Mike O'Callaghan on September 20, 1974.

The Governor's Executive Order cited the Committee's purpose and responsibilities as follows:

1. To review and evaluate the Atomic Energy Commission's Environmental Impact Statement¹ regarding the storage of high-level radioactive materials.
2. To ensure that the Atomic Energy Commission adequately advises the public of its proposal and disseminates relevant information pertaining thereto.
3. To elicit and encourage maximum public comment on the proposal.
4. To request any and all additional information from the Atomic Energy Commission pertaining to the environmental consequences of storing high-level radioactive waste material in the manner and location proposed.
5. To appear at and participate in hearings, conferences and meetings conducted by the Atomic Energy Commission or other agencies, institutions or entities investigating the environmental consequences of storing

¹U.S., Atomic Energy Commission, Management of Commercial High Level and Transuranium-Contaminated Radioactive Waste, Draft Environmental Statement, No. WASH-1539 ([Washington]: n.n., September, 1974).

- radioactive material.
6. To conduct those public meetings necessary to properly evaluate the environmental ramifications of using the Nevada Test Site as a repository for high-level radioactive material.
 7. To prepare a summary of the Committee's findings, conclusions and recommendations relating to the aforesaid project and submit that summary to the Governor no later than October 21, 1974.

Section II - Organization

The Committee is composed of the following members:

Dr. Neil D. Humphrey, Chairman
Chancellor
University of Nevada System
405 Marsh Avenue
Reno, Nevada 89502

Mr. Norman Glaser, Vice Chairman
State Environmental Commission
Box 1
Halleck, Nevada 89824

Senator Richard Blakemore
P. O. Box 672
Tonopah, Nevada 89049

Dr. James Deacon
Biology Professor
University of Nevada, Las Vegas
Las Vegas, Nevada 89109

Dr. H. E. Grier
Senior Vice President
EG&G, Inc.
P. O. Box 15090
Las Vegas, Nevada 89114

Dr. Alan Ryall
Seismologist
Mackay School of Mines
University of Nevada, Reno
Reno, Nevada 89507

Mr. Harley E. Harmon
P. O. Box 990
Las Vegas, Nevada 89101

Dr. George B. Maxey
Director
Center for Water Resources Research
Desert Research Institute
Reno, Nevada 89507

Mr. Hank Tester
KLVX-TV
5700 Mountain Vista
Las Vegas, Nevada 89120

Mr. Harry Wald
Caesar's Palace
3570 Las Vegas Boulevard South
Las Vegas, Nevada 89109

Mrs. Daisy Talvitie
1421 Dorothy Avenue, #2
Las Vegas, Nevada 89109

Dr. A. T. Whatley
Executive Director
Western Interstate Nuclear Board
P. O. Box 15038
Lakewood, Colorado 80215

Mr. Jack Parvin
District Engineer
Nevada Highway Department
P. O. Box 170
Las Vegas, Nevada 89101

Mr. Dick Thomas
Teamsters Local No. 995
P. O. Box 1870
Las Vegas, Nevada 89101

Mr. H. M. Byars
Byars Construction Company
P. O. Box 748
Reno, Nevada 89504

Mr. Norman Hall, Assistant Director
Department of Conservation and
Natural Resources, Room 213
201 South Fall Street
Carson City, Nevada 89701

Mr. Roger Trounday, Director
State Department of Human Resources
308 North Curry, Room 203
Carson City, Nevada 89701

Mr. Noel Clark, Chairman
Public Service Commission
222 East Washington Street
Carson City, Nevada 89701

Section III - Committee's Activities

1. A meeting was held October 1, 1974, in Las Vegas, which all members attended. Dr. Frank Pittman, Director of the Division of Waste Management and Transportation, Atomic Energy Commission, Washington, D. C., reviewed with the use of slides the environmental impact statement entitled Management of Commercial High Level and Transuranium-Contaminated Radioactive Waste (WASH-1539).

Following an extensive discussion, Chairman Humphrey appointed a subcommittee to prepare a preliminary draft of a report, and urged all members of the Committee to submit their statements to the subcommittee to be incorporated in the preliminary draft. This subcommittee was composed of Norman Hall, Chairman, Dr. James Deacon, Dr. H. E. Grier, and Dr. George B. Maxey.

2. The subcommittee met on October 7, 1974, in Las Vegas, with all members present.

3. On October 8, 1974, the Committee toured the proposed area at the Nevada Test Site.

4. Public hearings were held in both Las Vegas and Reno, conducted by a hearing officer and court reporter to receive comments from the public, during the hours of 4:00 to 8:00 p.m. on October 11.

5. The Committee met October 17, 1974, in Las Vegas.

6. The media were notified of all meetings of the Committee.

Section IV - Summary of Opinions of Committee Members

The comments of Committee members who wished to present individual statements are attached hereto, and while there is a healthy diversity of opinion, several salient points emerged.

1. The Committee members feel the present conceptual impact statement presents insufficient data to recommend positively either against or for the acceptance of the project in Nevada before the site-specific draft environmental statement is prepared, debated, and understood by the general public. However, the feeling is that we should encourage the Atomic Energy Commission to continue to consider Nevada as a possible storage site in their deliberations.

There is a strong feeling that an agreement between the State and Federal governments outlining the exact responsibilities of each should be negotiated if the Nevada Test Site

is chosen and that the State should do sufficient investigation and monitoring to ensure that over the long period of time envisioned, the necessary safeguards are implemented and continue, both as to storage and transportation. It is believed that the Governor of Nevada should have veto power over the location of a storage site and that the Atomic Energy Commission should agree that if further evaluation of the proposed site shows it to be unacceptable to the State of Nevada the AEC will not seek to use it for storage purposes.

2. The Committee feels that if the water-shield concept is to be used, Nevada should not be considered. The commitment of the State's precious water resources to a project where equivalent air-cooled alternatives exist is not warranted.

3. From the presentations made to the Committee, the consensus is that the simplicity and apparent safety of the sealed-cask system is to be preferred since the Site has more than adequate land for this type of installation.

4. The limited transportation network in Nevada makes it imperative that secure and safe transportation be a prime consideration from the beginning of the project, and the provision for a railroad should be implemented before waste operations start.

5. While there is general public acceptance of the AEC's activities at the Nevada Test Site that present radiation problems, the further use of the Site as a storage area must

be undertaken only after an extensive and timely series of 1272 public disclosures and meetings, concurrent with the development of the final environmental impact statement.

6. If the AEC tentatively selects the Nevada site, the Committee strongly recommends that the Governor take advantage of Dr. Pittman's suggestion that a technical committee be appointed and funded to work with the AEC in development of the site-specific draft environmental impact statement, and to carry out the long-term commitments expressed in the Governor's commission to the present ad hoc Committee. For example, this technical committee should see to it that all of the regulations and handling of waste be accomplished according to the agreement, standards and descriptions as presented in the Atomic Energy Commission's environmental impact statement; that certain specific physical requirements be mutually agreed upon which are not now clearly stated in the draft environmental impact statement, such as that the storage site should be in an enclosed topographic and geologic basin; that specific possible biological effects be carefully studied, especially the possibility of concentration of radioactive materials in the plant-animal chain; that a seismic hazards study be made; and, in general, that the risk to the health and safety of the public be reduced to the smallest satisfactory amount.

Section V - Recommendations to the Governor

1. Nevada should continue to be considered as a site for

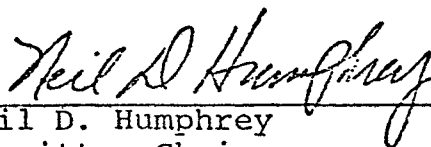
the waste storage project if

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- a. air cooling is utilized;
- b. rail transportation to the site is established;
- c. State and local entities can cooperate in and contribute to the development of the AEC's site-specific environmental impact statement;
- d. it can be demonstrated that adequate radiation safeguards for storage and transportation can be developed and implemented.

2. The Governor should establish a funded technical advisory committee, the committee to include at least two members of the general public, to provide Nevada's input to and evaluation of the Atomic Energy Commission's site-specific environmental impact statement.

Respectfully submitted,



Neil D. Humphrey
Committee Chairman

Addendum

A. Statements of Committee members

1. Dr. H. E. Grier ✓
2. Mr. Hank Tester ✓
3. Mrs. Daisy Talvitie
4. Dr. James Deacon ✓
5. Dr. Alan Ryall ✓
6. Dr. George B. Maxey
7. Dr. A. T. Whatley ✓
8. Mr. Jack Parvin
9. Mr. H. M. Byars
10. Mr. Norman Hall ✓
11. Mr. Roger Trounday

B. Statements of the public

1. Transcript of public hearing held October 11, 1974, in Las Vegas.
2. Transcript of public hearing held October 11, 1974, in Reno.
3. Letter from Neil B. Jensen, County Clerk, on behalf of the Board of County Commissioners, White Pine County.
4. Letter from Mr. Nick Orphan, City Clerk, on behalf of the City Council of Ely.
5. Letter from Dr. Joseph A. Warburton, Chairman, Radiological Safety Board, University of Nevada System.
6. Letter from Dr. Richard H. Brooks, Department of Anthropology, University of Nevada, Las Vegas.

7. Letter from Dr. Andrew C. Tuttle, Department of Political Science, University of Nevada, Las Vegas.

8. Letter from Mr. Lewis Scott, Instructor in Radiologic Technology, Western Nevada Community College.

9. Letter from Mr. Larry Franks, Radiological Safety Officer, University of Nevada System.

10. Letter from Dr. David L. Conroy, Department of Philosophy, University of Nevada, Reno.

11. Letter from Mrs. Jeanne Hewitt.

12. Letter from Mr. Andrew V. Anderson.

13. Letter from Mr. Bill Fiero.

14. Letter from Dr. Thomas P. O'Farrell, Laboratory of Desert Biology, Desert Research Institute.

15. Letter from Dr. David Dickinson, Electrical Engineering Department, University of Nevada, Reno.

16. Letter from Mrs. Charles H. Pearson.

17. Letter from Mr. Paul R. Duckworth.

18. Letter from Dr. Terry Lash and Mr. John E. Bryson of the Natural Resources Defense Council.

19. Letter from Mr. J. E. Washum.

20. Letter from Mr. Jerry Chernik.

21. Letter from Amy Bargiel.

22. Comments of Frank Young, Interstate Nuclear Board.

23. Letter from Mrs. Elizabeth A. Riseden. ✓

24. Letter from Mrs. Karen Ernst. ✓

25. Letter from Mrs. Vivian Graham.

26. Letter from Mr. and Mrs. Clarence Johnson.

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27. Letter from Patricia van Betten, with enclosures.