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May 1, 1972

TO: Honorable Teno Roncalio  
Attn: Jackie Franks

FROM: *Warren H. Donnelly*  
Warren H. Donnelly  
Specialist, Science and Technology

VIA: Charles S. Sheldon II *CSS*  
Chief, Science Policy Research Division

SUBJ: Speech in opposition to AEC project Wagon Wheel

This responds to your request of April 19, as supplemented and changed by my telephone discussion with your office on April 26 for a speech in opposition to AEC project Wagon Wheel.

A draft is attached.

It draws heavily upon the AEC's draft environmental impact analysis of last January. You will note that it does not greatly emphasize accidental release of radioactive wastes which will be generated by the detonation of nuclear explosive devices to stimulate production of natural gas. Past tests, such as Gasbuggy, indicate that accidental release is not a substantial issue. There is the issue of deliberate release which I mention. Rather the theme of the speech has to do with opposing the project because if it is successful it could lead to extensive use of nuclear stimulation in Wyoming and other western States with undesirable results.

Based upon my conversation with your office, the speech is written in a free swinging style, so you may wish to look it over in case I have swung too far.

Please let me know if we can be of further assistance.

Enclosure

WHD:jkb





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PROJECT WAGON WHEEL: WHAT IT IS,  
WHY IT SHOULD BE STOPPED AND HOW TO DO IT.

A STATEMENT OF OPPOSITION  
BY  
THE HONORABLE TENO RONCALIO

The attached has been prepared for the personal use of the Member requesting it in conformance with his directions and is not intended to represent the opinion of the author or the Congressional Research Service.

Warren H. Donnelly  
Specialist, Science and Technology  
Science Policy Research Division

May 1, 1972



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PROJECT WAGON WHEEL: WHAT IT IS,  
WHY IT SHOULD BE STOPPED, AND HOW TO DO IT.

A STATEMENT OF OPPOSITION

Introduction and summary:

Project Wagon Wheel: how can one be against something with such a quaint, western sounding name with its connotations of the <sup>u</sup>corageous pioneers who with great fortitude and persistence took their Conestoga wagons ~~a~~cross the plains and over the mountains to settle here. But calling a cougar a pussycat does not make it one. Neither does calling a skunk a wood-pussy diminish its odor. It still stinks. And so does Project Wagon Wheel.

Project Wagon Wheel. That is the common element which brings us together here today. Students, businessmen, farmers, merchants and homemakers; men and women from many walks of life who are joined in their opposition to this proposal to set off atomic bombs under Wyoming for the benefit of a few natural gas companies and their distant customers.

Our goals are simple and direct. They are to:

1. Oppose Project Wagon Wheel
2. Oppose the Plowshare program of the Atomic Energy Commission which gave birth to this project.
3. Turn Federal money from Plowshare to the finding of alternatives to this ill conceived undertaking.

By the time we are finished, I hope that the bureaucrats back in Washington and the executives in the plush board rooms of the gas companies and the utilities will have learned to their regret what the determination, the courage, and the persistence of pioneer stock can accomplish.



But first I must caution you that stopping Wagon Wheel will demand a maximum effort, otherwise forget it. What we really are meeting about here is to find ways to divert and turn aside the built up momentum of a very powerful Federal agency as it moves massively towards one of its pet goals, no matter how ill advised we may think that goal may be.

Out topic today is Project Wagon Wheel and the Plowshare Program. What are they? Why? Who is behind them? What is our cause of concern? What are the alternatives? What can we do about it? As we address these questions, we will do well to keep in mind that the scientists and engineers, the business executives and their financial advisers who are backing this project are not in league with the devil. Many of them are people who you would be glad to associate with. They are, however, possessed of a dangerous ~~dillusion~~<sup>delusion</sup>, which is that the demand of the American economy and public for natural gas gives them the right to assault Mother Earth by setting off atomic bombs deep within her skin. Our common denominator is opposition to that ~~dillusion~~<sup>delusion</sup>. Our common purpose is to make sure it does not come to pass.

Project Wagon Wheel: What is it?

He who would exorcize a ~~dillusion~~ should first know what that ~~dillusion~~ is. So it is appropriate that we outline what we know about Project Wagon Wheel, and about the Atomic Energy Commission and its misguided attempts to find civil uses for atomic bombs.

The AEC was established in 1946 to make bombs. It took over the wartime bomb project of the Army. Much of that work was done not far from here -- in Western terms that is -- at Los Alamos, in New Mexico. In 1945 Congress rewrote the original legislation to encourage civil use of nuclear power. Atomic scientists, particularly those at the bomb laboratories, soon began



to speculate about turning their atom bombs to civil use. Out of this came the AEC's Plowshare Program with its theme of turning these weapons to peaceful uses. Initially the Plowshare proponents had grandiose ideas about excavating harbors with big hydrogen bombs, and for a while they were seriously promoting a project to blast a new canal across Central America with nuclear explosives. Fortunately these proposals have run their course and now only their memories remain as evidence of a curious aberration of thought by otherwise logical men. But some other plowshare ideas still exist. There are proposals to melt tar sands with heat of nuclear explosives, to stimulate oil production by fracturing oil bearing rock, and to stimulate natural gas production by breaking up the rock that is impregnated with this natural fuel. This last idea is the parent of Project Wagon Wheel.

The AEC spends about \$2.5 billion a year. Of this \$6.9 million was for Plowshare in Fiscal Year 1972. For Fiscal Year 1973, the AEC is asking for \$6.8 million for this purpose. In my opinion, this should be wholly eliminated. The AEC gets its money in a two step process. First, Congress must enact an annual authorization for AEC activities. Next, Congress must appropriate money to fund the authorized activities. There is no requirement that all the authorized activities be funded. This process gives three groups in Congress an annual opportunity and an annual responsibility to think over what the AEC is doing, where it is going, and to influence its activities. These three are the Joint Committee on Atomic Energy, the Appropriations Committee in the House of Representatives and its counterpart in the Senate.

If we propose to oppose Wagon Wheel and Plowshare through Congress, then it is the members of these three committees that we must reach and persuade.



The natural gas industry also is very much involved, financially and otherwise. That industry has joined with the AEC in jointly financing and carrying out plowshare experiments to produce natural gas. For Wagon Wheel, its industrial sponsor is the El Paso Natural Gas Company.

Coming back to the project itself, Wagon Wheel is a technical experiment intended to demonstrate what its proponents see as a promising use of atom bombs. In the words of a recent AEC description:

Project Wagon Wheel is expected to prove a major step toward determining whether nuclear stimulation of a large vertical section of a low-permeability gas reservoir will enable commercial development of these gas resources.

More specifically, this project calls for detonation of not one but five atom bombs in a single deep well. Each bomb will be the equivalent of 100,000 tons of TNT in explosive force.

And the benefit to be obtained from this assault upon the earth is information which, as the AEC puts it, ". . . will be used to evaluate the technical, environmental and economic potential of this technique in the project area and elsewhere.

As an added step of technological elegance - or is it conceit - the designers of Wagon Wheel propose to explode these five bombs sequentially. That is, the bottom bomb will be set off first and then each of the other four in turn, with a time delay of several minutes between each blast. The explosive depths and vertical spacing between the bombs will be selected, in theory, to break up a zone of rock almost 3,000 feet thick laying between 9,000 to 12,000 feet below the surface. This zone contains some 600 total feet of sandstones that bear natural gas -- which brings us to the economic reasons for the experiment.



But before the AEC can proceed with its plans for Wagon Wheel, it needs to carry out a preliminary test. The current budget request includes \$1.27 million for that test shot --- named Yacht -- to be fired on the AEC's Nevada test site in the winter or spring of 1973. A successful outcome will be necessary for Wagon Wheel to proceed. So one way to oppose Wagon Wheel is to oppose the funding of Project Yacht.



Where is it?

The place for the Wagon Wheel assault upon mother earth is Sublette County in west-central Wyoming, within a 90,000 acre tract known as the Pinedale Unit. The Unit comprises federal, State of Wyoming and fee oil and gas leases held by the El Paso Natural Gas Company, the Mountain Fuel Supply Company, and the Hondo Oil and Gas Company.

The specific location for this proposed misadventure is in the northeastern part of the Green River Basin about five miles southeast of the New Fork River. Salt Lake City is 175 miles to the northeast. The nearest towns or villages are Pinedale, population 950; Big Piney, with its population of 570, Marbleton with 220, and Boulder with its population of 75, all located 10 to 20 miles from the well where these five atom bombs will be set off.



Why Project Wagon Wheel, or one cost of our energy habit.

There is but one reason for Wagon Wheel and its assault upon the earth. That is to supply our energy habit. The fundamental reason for the project is to demonstrate so called "nuclear stimulation" to release natural gas from the earth so as to satisfy our insatiable demand for energy and our consequent consumption of this irreplaceable, exhaustible natural resource. If we are to prevail against Wagon Wheel and the future it could portend, we must understand that our society has become addicted to the use of energy. Like an addict, we seek ever larger fixes to satisfy our appetite for kilowatt hours, for tons of coal, barrels of oil and cubic feet of natural gas. What our national withdrawal symptoms could be, can be seen in the effects of power shortages of the past few years. You know and I know that the cure for addiction is not to increase the addict's supply just because he wants it. That is the certain path to disaster.

So as we meet about Wagon Wheel today, it is important that we carefully look at the reasons advanced for it.

We start with the generally accepted claim that there is now a shortage of natural gas in the United States, and that this shortage has been aggravated by increased demand for natural gas as tightened requirements for air quality have pushed other fuels from the market. Natural gas is our cleanest fuel. The gas industry now expects that by 1985 the demand for natural gas could exceed our domestic supply by 10 to 20 trillion cubic feet a year. If such a shortage comes to pass, then we may be in real trouble in terms of national energy security,



and certainly in terms of our national balance of trade. The pressure to resolve this shortage has caused the industry to look longingly at the natural gas trapped in impermeable rock formations of the western United States, which cannot now be recovered economically with conventional technology. Nuclear stimulation, it is thought, could change all of that. It is established that about 300 trillion cubic are potentially recoverable by using nuclear bombs to break up and fracture the rock of those gas reservoirs. AEC expects that if Wagon Wheel successfully produces the information they want, then within a few years enough bombs could be set off in Western rock to fill ten percent of the projected annual natural gas shortage.

Underlying this argument is the assumption that we have no choice but to supply this ever increasing demand for natural gas. President Nixon in his June 4, 1971 Message to Congress on Energy articulated this theme, saying that the Administration is pursuing ". . . progress in nuclear stimulation experiments which seek to produce natural gas from tight geologic formations which cannot presently be utilized in ways which are economically and environmentally acceptable." The President then said: "Additional supplies of gas will . . . be one of our most urgent energy needs in the next few years." He sees "nuclear stimulation" as a "quick fix," expecting that it could be developed in about five years if vigorously pursued, and capable of supplying significant quantities of gas in a shorter time than possible by other alternatives. The Government expects that this gas could be recovered at a wellhead price of 30¢ to 60¢ per thousand cubic feet.



What would success imply?

A good reason to oppose Wagon Wheel is what its success would imply.

While there is presently no specific plan for follow-on experiments or field development of the Pinedale Unit after Wagon Wheel, the El Paso Natural Gas Company has emphasized that a successful experiment coupled with Federal legislation to provide nuclear explosive service and AEC regulation to permit the sale of nuclear stimulated gas could lead directly to early field development.

If the project is successful, if Congress and the AEC acquiesce, and if the local public can be talked into accepting the idea, then about half of the 25 sections which have proven gas-in-place may be developed with two wells per section. Given a go-ahead, the gas companies and the AEC would hope to "stimulate" from five to seven wells during the first year. The AEC forecasts stimulation of ten wells in 1977, twenty in 1978, and a continuing increase of ten wells per year to a peak of 50 wells in 1981. Thereafter, these promoters of "nuclear stimulation" anticipate a levelling off at 40 to 50 new wells per year for several years and then decline. Bear in mind that each "stimulation" probably means possibly five or more underground nuclear bomb bursts per well!

What would this do for the West? It would provide natural gas, contaminated with radioactive materials, which the industry expects to flow at a volume of about one billion cubic feet per day until about the year 2000. Then the area would have been sucked dry, and the "nuclear stimulators" would take their technology elsewhere.



But meanwhile some 1500 to 2000 direct gas industry employee would have moved into the area and generated demands for expanded schools, homes, businesses and other services. Then, well before the value of these social and business investments had been recouped, the gas would be gone and the gas workers, would go away, leaving the counties and municipalities and local businesses with facilities no longer needed as the population began a painful contraction.

Most of the gas produced would go to users outside of Wyoming, who would enjoy their clean fuel with no thought that they might have any responsibility for environmental and economic effects at the gas fields. And little of the profit would stay within the State.

Is this the future we want for the counties of Wyoming?



Environmental effects

If Wagon Wheel technology could free up trillions of cubic feet of western natural gas, worth half a billion dollars per trillion cubic feet at the wellhead, why are we so much concerned about it? Why don't we just go along for the ride and hope some big crumbs from that multi-billion dollar operation will fall into the communities of the gas rich States?

The overwhelming reason, in my opinion, why we must oppose Wagon Wheel is that we have absolutely no right to so assault and plunder God's dear earth so that the small part of the world's population which lives in the United States can extend their energy habit for a few more years.

I know we need fuel and energy. I know the shape of your future, my future and that of our children, will depend upon how wisely we use our irreplaceable resources. We still have a few years in which to bring our energy mania under control, and in- to obviate the alleged need to fracture much of the west for the natural gas beneath its soils.

What about the environmental effects of Wagon Wheel? Will one nuclear experiment blow the Sublette County sky high? Will there be imminent disaster? Will a cloud of radioactive fall-out fall upon Salt Lake City and kill thousands?

I wish the dangers were so plainly and visibly obvious. But they are not, which adds to our difficulties. The environmental



and social effects begin to become formidable when we start to think of a schedule that would set off underground nuclear bombs somewhere in the State every week.

To illustrate my concern, let us turn to estimates of the AEC itself. Last January the AEC released a draft environmental statement on Wagon Wheel. I want to tell you what the AEC said about some of the anticipated environmental effects from this one test, and as I do so, try to imagine the implications for 100 or more follow-on "nuclear stimulation" for this one gas field alone.

#### Release of radioactive materials

First of all, there would be a deliberate release of radioactive materials to the environment from Wagon-Wheel. This would occur during the intermittent release of some 3 billion cubic feet of gas by burning, or flaring during evaluation of the well. This flared gas would contain some 10,000 curies of radioactive tritium, some 11,000 curies of radioactive krypton, and about 2,000 curies of radioactive argon. Considering the principle that no unnecessary exposure to radiation is desirable, why was flaring chosen? The AEC is candid on the matter. In discussing alternatives to flaring, the AEC concedes that either the storage of the produced gas or its controlled combustion, and storage of the combustion products, would be practicable alternative. However, and here I quote the AEC's draft environmental report, ". . . implementation of these procedures is estimated to more than double the cost of the Wagon Wheel experiment." So here we find a deliberate release of substantial radio-



active materials to the air being justified for reasons of economy. There has been enough recent questioning of our knowledge of prolonged exposure to low levels of radiation that I question economic expedience as sufficient reason for the AEC's approach.

What price safety?

Now I know that proponents of Wagon Wheel will argue that in comparison with radioactive materials which exist in nature, the effect of this addition to the earth's inventory of radioactive materials is small. Perhaps it would be for one well. But what of the day when hundreds of nuclearly stimulated wells would be producing millions of cubic feet of gas, with each cubic foot carrying its burden of radioactive tritium, krypton and argon? And make no mistake, those radioactive atoms would reach the environment in one way or another.

#### Contamination of ground water

Then there is the matter of radioactive contamination of ground water. The AEC argues that exploratory drilling indicates that the five nuclear bombs of Wagon Wheel will be exploded far beneath the underground waters and so the perils of contamination are nill. Perhaps this is true for this test. But the value of AEC assurances have certainly depreciated in the light of the recent Kansas controversy. Some of you may recall that the AEC had planned to convert an unused salt mine in Kansas into a perpetual storage place for the enormously radioactive wastes from nuclear power plants. Initially the AEC assured everyone that there was no possibility of these wastes getting into the ground waters of Kansas. But more recent work by



by State geologists proved the AEC wrong, and now the AEC is searching for another site. Had the State of Kansas blindly accepted comforting reassurances of the AEC, it might have wound up some years hence with a very nasty problem on its hands. So every State in dealing with the AEC must look after its own interests.

For Wagon Wheel, I remain to be convinced that we can rely upon the reassurance of the AEC report that ". . . no adverse hydrologic effects would be anticipated." Perhaps AEC is correct this time. But I want an impartial, neutral, uninvolved, scientifically competent body to tell me so.

#### Earth shock

Wagon-Wheel is literally going to shake up over 300 square miles of Sublette County within 10 miles of the test well. The promoters anticipate some 200 to 400 claims for damage and have thoughtfully budgeted \$65,000 to pay them. Presumably the budget includes costs of preparing some buildings before hand to withstand the ground shock, which is expected to produce an acceleration one-third that of gravity within an eight mile radius. The damage expected is described as plaster cracking and falling bricks. But then when we read between the lines, we can see a different picture, if the gas industry ever gets to the shot-a-week stage.

Let me read to you what the AEC says about ground motion effects:

The transient ground motion generated by the Wagon Wheel experiment will produce the most noticeable effects on the environment. There will be some damage to man-made structures . . . The adverse effects of ground motion on residential and commercial structures and associated outbuildings will primarily be architectural damage (i.e. plaster cracks, fallen bricks, etc.).



this architectural damage is estimated at approximately \$65,000. Pre-detonation remedial work is considered in this damage estimate.

In its sanitized language, AEC says that precautionary measures will be taken to safeguard the occupants of all structures subjected to predicted ground motion accelerations of one tenth gravity or more. This involves everyone within 700 square miles! Occupants of all structures within the one-third G zone will be requested to evacuate the area.

After this disarming statement, the AEC goes on to indicate that there could be other damage, there is the seismic of major structures, such as, bridges, dams, mines, towers, and communication facilities.

There are 18 bridges which have been identified within 20 miles of the test site that are significant structures because of size, cost and use. An additional 57 bridges and culverts are located on county roads or local ranches. The AEC already appears to be setting a backfire to limit its liabilities by pointing out that, and again I quote, that: "Damage is expected at several minor structures primarily because of existing conditions, many of which are currently in a failed condition."

The telephone and power companies are involved too. Some bracing of pole-mounted transformers will be taken as a "precautionary measure" within 6 or 7 miles of the site.

Despite reassuring words of minimum impact, the AEC notes that temporary roadblocks may be established both on U.S. Highway 187 and State Highway 351. In addition, inhabitants of the area will be advised to ". . . use secondary roads with caution and to avoid travel during the detonation period. . ."



Is this what we want for Wyoming? Roadblocks once a week as highway and bridge engineers scurry about to see whether the roads and bridges are safe? As for the bridges, are we satisfied that a quick eyeballing will really prove their safety after being shook up by future Wagon Wheel blasts?

Two dams near the site will have to be drained at least partially to minimize damage, while the water tower at Big Piney, 20 miles away, will have to be partially drained and its structure guyed. Farmers and ranchers in the vicinity of the site will be expected to drain their irrigation canals prior to detonation. How would you like to multiply those effects one hundred fold?

And if Wagon Wheel is a marked success, we can expect a drive by the gas companies to get in and shake up the west before it becomes more populated. The AEC phrases it delicately, noting that it would be annoying to the local residents to have their activities disrupted every few days because of detonations. So out of this has come the idea of what AEC calls "multiple well stimulations." In a single day, a series of wells would be stimulated, with the detonations a few minutes apart, until all explosions are completed! After a day of that, the local populace would be bouncing around like Mexican jumping beans! If this be progress, I'm not impressed.

It is so easy for bureaucrats working in Washington office to write easily about draining resevoirs, and irrigation canals, about pre-detonation maintenance of buildings, bridges, and other structures.



But how would you like to live in Wyoming a decade hence when this could be happening once a week? Well, at least you would not be bored!



Alternatives to Wagon Wheel

The AEC tacitly assumes the only course into the future is to find more and more ways to use up our exhaustible resources. In considering alternatives to this project, the AEC does not once mention conservation of energy as a way to reduce the growth of demand for and so lessen the pressures to expand supplies of natural gas. Not once in its analysis did AEC propose that we turn our attention to eliminating such inane wastes of energy as using electric ranges in the kitchens of air conditioned houses where each kilowatt hour of electricity used in cooking requires at least another kilowatt hour to pump it out of the house; where heat from refrigerators, color television sets, high intensity lighting is all dumped into air conditioned spaces so that more electricity must be used to remove it. Not once did the AEC indicate alternatives of reducing pressure on oil supplies by measures such as so increasing the tax upon gasoline that automobile owners would abandon their 10 mile-per-gallon gas gulpers and opt for smaller, safer, cheaper cars that would go three or even four times as far per gallon. Reducing pressure on oil supplies plus a serious effort to develop means of getting sulfur out of oil could go far towards reducing the demand for natural gas.

Also, AEC lightly passes over the availability of using that major renewable source of energy, the sun, saying it ". . . awaits major technological progress." Yet I can tell you that a technology now exists for heating and cooling houses, and perhaps schools and shopping centers and single story factory buildings by solar energy. All it lacks is a market, and that market does not exist today because of national policies which sought to make energy so cheap that no one would seriously consider measures to conserve it.



I submit that were the AEC to spend its plowshare money on improving solar heating and cooling, we could quickly provide a means for leveling off the demand curve for natural gas and perhaps even reduce that demand. But that approach holds no promise of profits for the natural gas companies, and so it remains unexplored.

Perhaps we should remember that the road to perdition is posted and blazed all the way!



Fortunately, An AEC Regulation Will be Needed.

There is one factor working in favor of those who oppose Wagon Wheel and its potential progeny. Before there can be a market for gas produced by nuclear stimulation of gas fields, the AEC must change its regulations so that this gas can be sold commercially. The trade press of the nuclear industry indicates a stand-off situation, with the industry unable to sell such gas until it is permitted to do so by AEC regulations, but AEC will not change the rules until the industry has nuclear-stimulated gas to sell. Reportedly, AEC Chairman Schlesinger is unapproachable to industry on the Plowshare Program. We can hope and work to continue this stand-off, for in doing so we may cool off the economic eagerness of the promoters of Wagon Wheel.



What To Do About It.

Opposing Wagon Wheel will not be easy. Meeting here as we are today may be interesting, and even give us an inner glow of excitement as we contemplate the victory of we small Davids over the Goliath of the Atomic Energy Commission and the natural gas interests.

My friends, we have a much graver problem than did David, and it is one that will not be resolved by a happy casting of one stone. What we must do is to generate so much nuisance in the courts, and bring so much pressure to bear in county, State and Federal agencies and legislatures that the AEC will cancel this experiment, that the AEC will abandon its plowshare program, and that the AEC will instead turn its scientific and technical resources to finding less objectionable ways out of our energy dilemma and to developing and demonstrating improved ways to conserve energy.

What tactics and strategies can we use?

At the county level, we can work for ordinances and land use ordinances which prohibit any activity which will create significant ground shock outside of the property lines of a place of business. We can seek ordinances which would forbid the drilling of wells for the nuclear stimulation of gas wells. We can seek severance taxes upon natural gas produced by nuclear stimulation, taxes steep enough to make such ventures unattractive to the financial analysts who advise the gas companies.

At the State level, we can enlist the aid of the State Radiological Health Officer and the senior State geologist in making sure that strong dissents are filed to the AEC's draft environmental statement. We can agitate with the Council on Environmental Quality to obtain public hearings on the radiological safety and all of the environmental effects of Project Wagon Wheel.



Looking to Congress, we can work to mobilize opposition to any legislation which would permit the AEC to commercially make, place and detonate nuclear explosives for gas stimulation or any other purpose.

We can put pressure on Members of the Joint Committee on Atomic Energy to use their influence to turn off the Plowshare Program, or at least to tighten up its control.

We can seek to convince members of the appropriations committees of both the House and the Senate to eliminate plowshare funds from the AEC's appropriations.

We can support legislation which would require the AEC to subject Wagon Wheel and any future experiments with underground nuclear explosives to the same licensing procedures that it requires for nuclear power plants. And once that legislation is passed, we can organize to intervene in the public hearings that would be required.

But I must warn you that the price of effective opposition of effective intervention is high.

The pressures of a billion dollar market are great, as are the pressures of technological pride of the scientists and engineers who would create peaceful uses for the bomb.

This is not to say we cannot prevail.

It is today that you and everyone whom you can find who shares your views will work together with a singleness of purpose and dedication.



What I Am For and Against

I oppose Project Wagon Wheel because it is an unreasonable intrusion into the private lives of the people of Sublette County, what with the closing of roads, evacuation of dwellings, damage to structures, and the litter and ~~trax~~<sup>s</sup> of countless busibodies who can be expected to come in the hope of excitement.

I oppose Project Wagon Wheel because if it is permitted ~~an~~<sup>to</sup> proceed and is successful, it would substantially alter economic and social life in this and surrounding counties without any participation of the duly authorized county and State governments.

I oppose the AEC's Plowshare Program because it could lead to yet another proliferation of nuclear devices and further complicate the delicate balance of world peace.

I oppose Project Wagon Wheel because if successful it could bring closer the time when each cubic foot of natural gas we burn in our kitchens, in our home heater, in our industrial furnaces, could carry man-made radioactive materials into our environment.

Now lest you think I am wholly negative today, consider what I am for:

I am for ideas and measures to break our energy habit. Sooner or later our trip will be over. Our withdrawal will be less painful the sooner we act.

I am for redirecting the AEC's plowshare budget into perfecting our renewable sources of energy, such as solar energy and geothermal energy, wind and tidal energies.

I am for measures, which if nuclear stimulation is inevitable, would give each State government the unqualified right to decide whether or not



such nuclear bombs should be exploded within its jurisdiction.

I am for measures, which if nuclear stimulation is inevitable, would at least assure the public of the opportunity to be heard in mandatory hearings to be held before each application.

I am for increased support for the Environmental Protection Agency so that it can build up and strengthen its professional staff to better assess AEC analyses of the environmental impacts of nuclear stimulation, and to better advise the State and county officials about all environmental effects of such stimulations.

I am for measures which would decrease the pressures on natural gas by making use of coal and oil more attractive.

Fellow opponents of Wagon Wheel, there you have my statement of opposition to this idiocy and my thoughts on what can be done about it. I hope that you will find them as interesting to think over as I have found them exciting to prepare. Thank you.