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In the 1960s and 70s, the El Paso Natural Gas Company proposed Project Wagon Wheel in southwestern Wyoming. Located in Sublette County, Wyoming, it would have used five nuclear devices to stimulate natural gas in tight sandstone formations. The Wagon Wheel Information Committee, a local organization, opposed the project. By using two public policy models, ones by Charles O. Jones and Deborah Stone, it is shown that additional insight is gained by using multiple models than if either was used alone to explain Wagon Wheel. 

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USING PUBLIC POLICY MODELS TO EVALUATE NUCLEAR STIMULATION
PROJECTS: WAGON WHEEL IN WYOMING

by
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Using Public Policy Models to Evaluate Nuclear Stimulation Projects:
Wagon Wheel in Wyoming

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Chapter 1: Introduction

Energy has always been a central concern in the United States of America. Its use and distribution has been the focus of debate in both the legislative and the executive branches of government. The mere threat of a shortage has often been enough to spur a change in government policy. The late 1960s were no different in this respect. What was different was the tone of the discussion. Where in the past it had included only conventional fuels and conventional methods of extracting them, the 1960s introduced the term “nuclear stimulation” to the nation’s lexicon.

The early days of the atomic era saw a broad push to use nuclear technology in as many diverse arenas as possible beyond weapons development. Used as a tool in both domestic and international policy, the United States Atomic Energy Commission pushed to find different uses for nuclear technology. “Project Plowshare” was the name given by the Atomic Energy Commission to the project that sought “to find practical industrial and scientific uses for nuclear explosives.”¹ The Atomic Energy Commission could make the biblical leap to beat its “swords into plowshares”² because the bomb was considered a sword.

¹ Atomic Energy Commission. 1964 Financial Report. 17.

² Isaiah 2:4

In the forward to Project Plowshare by Ralph Sanders, Willard F. Libby noted that “Project Plowshare is both a policy and a means of fashioning weapons of destruction into tools of peace.” Libby also noted:

In Plowshare we once again see the dual nature of technological development—evil when improperly used, benign when wisely and humanly used. Atomic energy, like any technology, is morally neuter; the arrangement within the atom is neither good nor bad. Atomic energy in a reactor is blessed with no greater spiritual value than the atomic energy in an explosion.³

Either as a policy or as a means of fashioning weapons of destruction into tools of peace, Project Plowshare did not lack controversy. Plowshare started when the Soviet Union resumed nuclear weapon testing during the summer of 1961.⁴ Once the Soviet Union broke the test-ban treaty, the United States was free to restart their testing program and to start Project Plowshare experiments that had been held up for three years.⁵

In some respects, Project Plowshare was an extension of President Dwight D. Eisenhower’s “Atoms for Peace” program initialized on September 6, 1954. Standing in a Denver television studio, Eisenhower waved a radioactive magic wand over a counter. Once he waved it, “an automatically controlled power shovel ... scooped up the symbolic shovelful of earth” at the site of the first commercial power plant being built in

³ Sanders, Ralph. 1962. Project Plowshare: The Development of the Peaceful Uses of Nuclear Explosions. Washington, D.C.: Public Affairs Press. v.

⁴ Project Plowshare came into existence on November 26, 1956 when the Atomic Energy Commission “approved (an) in-house conference on peaceful uses of nuclear explosives.” The following February the Lawrence Radiation Laboratory (LRL) hosted the first Plowshare Symposium discussing, “Industrial Uses of Nuclear Explosives.” In July 1957, the LRL “formally established Project Plowshare to investigate the non-military applications of nuclear weapons.” (Wham, Glenn A. “Western Interstate Nuclear Board: Plowshare Technology Assessment: Final Report Implications to State Governments.” September 1973. ____ : Western Interstate Nuclear Board. A-1)

⁵ Sanders, 1962. 4.

Shippingport, Pennsylvania.⁶ A year later, Atomic Energy Commission Chairman Lewis L. Strauss flipped a switch, sending atomic power into the utility grid. The Atoms for Peace program promised “nuclear powered planes, trains, ships, and rockets; nuclear energy would genetically alter crops and preserve grains and fish.”⁷ In his dedication to Atoms for Peace, USA 1958, Eisenhower noted that “We are learning that atomic energy is a unifying force when it is devoted to the cause of peace. It brings together nations whose scientists and engineers confer the benefits of discovery and technology on all mankind.”⁸ Nuclear technology had made the 180-degree turn from being a weapon of destruction to a tool for the promotion of peace between nations. It also was a tool for the use of engineers, politicians, and businessmen, each eager to promote their use of nuclear technology as the latest innovation.

Project Plowshare would share the stage with Atoms for Peace. However, under Project Plowshare, nuclear weapons would be “used to dig harbors and canals, move mountains, and blast loose valuable mineral deposits.”⁹ Between the Atoms for Peace program and Project Plowshare, the future of the atomic age was indeed bright. The policy to find and expand the peaceful uses of technology was going to benefit Americans.

Plowshare’s focus shifted in the late 1960s to nuclear stimulation, a process where natural gas trapped in tight formations is released. The AEC’s 1972 Annual Report gives a glowing review of research progress and notes that President Richard Nixon, in 1971,

⁶ Hilgartner Stephen, et al. 1982. Nukespeak: Nuclear Language, Visions, and Mindset. San Francisco: Sierra Club Books. 44.

⁷ Hilgartner, et al. 1982. 43.

⁸ Hogerton, John F. 1958. Atoms for Peace: USA 1958. Cambridge, Massachusetts: Arthur D. Little Inc., for the United States Atomic Energy Commission. Dedication.

had “cited this nuclear stimulation technology as one of four Federal technological efforts undertaken to alleviate the Nation’s natural gas shortage.”¹⁰ Indeed, on June 4, 1971, Nixon had delivered a “Special Message to the Congress on Energy Resources,” that incorporated the term “nuclear stimulation” while describing efforts to reduce the current shortage of natural gas. In the message, Nixon states “this relatively clean form of energy is in even greater demand to help satisfy air quality standards. Our present supply of natural gas is limited, however, and we are beginning to face shortages which could intensify as we move to implement the air quality standards.” Nixon noted that federal effort to help alleviate the shortage included “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.”¹¹ The policy of the United States was set: Nuclear Stimulation was going to be used to alleviate the impending natural gas shortage.

There were a total of four nuclear stimulation projects during the Plowshare years, three of which were detonated. The first stimulation project detonated by the Atomic Energy Commission was Project Gasbuggy near Farmington, New Mexico, in the northwestern corner of the state. Project Gasbuggy, a single 29 kiloton nuclear device, was detonated December 10, 1967, and received little negative publicity. In fact, the project was “heralded by the New Mexico Governor, the State’s Senators, and members

⁹ Hilgartner, et al. 1982. 43.

¹⁰ Atomic Energy Commission. 1972 Financial Report. 36.

¹¹ Nixon, Richard. 1971. Public Papers of the Presidents: Richard Nixon 1971. 710.

of the Joint Committee on Atomic Energy.”¹² The newspaper coverage in New Mexico was generally positive. For example, the day after the test shot, one newspaper included a photograph of a Native American with an employee of the El Paso Natural Gas (EPNG) Company. The caption read, “Space Age First Helps First American.”¹³ Pamphlets describing the project were printed in Spanish and English and distributed widely.¹⁴ Interestingly, “New Mexico congressmen consistently pressed for progress on Gasbuggy, and some were unhappy with the AEC (Atomic Energy Commission) for what they felt were unwarranted delays in the Gasbuggy timetable.”¹⁵ This project was welcomed and encouraged by members of the state’s government. Project Gasbuggy was considered a technical success according to many. The evaluation of the project was that the “shot stimulated gas flow into the well to a degree somewhat greater than had been possible through conventional techniques, but uncertainty remained as to how much improvement had occurred.”¹⁶ The project went forward because of overwhelming support from both elected officials and those living in the area.¹⁷

¹² Kreith, Frank and Catherine B. Wrenn. 1976. The Nuclear Impact: A Case Study of the Plowshare Program to Produce Gas by Underground Nuclear Stimulation in the Rocky Mountains. Boulder, Colorado: Westview Press, Inc. 49.

¹³ Ibid. 55.

¹⁴ Ibid. 54.

¹⁵ Ibid. 54.

¹⁶ Ibid. 68.

¹⁷ Today a plaque marks the point of detonation on the surface:

PROJECT GASBUGGY
NUCLEAR EXPLOSIVE
EMPLACEMENT/REENTRY WELL (GB-ER)

SITE OF THE FIRST UNITED STATES UNDERGROUND NUCLEAR
EXPERIMENT FOR THE STIMULATION OF LOW-PRODUCTIVITY
GAS RESERVOIRS. A 29 KILOTON NUCLEAR EXPLOSIVE WAS

The second nuclear stimulation project, Project Rulison, in Colorado faced a tremendous amount of opposition, including a lawsuit filed by environmentalists opposing the project. Project Rulison, a single nuclear device of 40 kilotons, was detonated September 10, 1969, near the town of Rifle, Colorado. The site was beneath 73-year-old Claude Hayward's 292-acre potato-patch. Initially offered \$100 a month for the rest of his life to use the property, Hayward declined. Later "the AEC came back around with a whiskey bottle and got him good and juiced up and said they would pay him \$200 a month for the rest of his life."¹⁸ Heyward signed.

Unlike Gasbuggy, the Rulison project faced opposition from a number of protestors both at the scene and in the court system. The day the project was detonated, four protestors paired off and just before detonation made their presence known using fireworks inside the secured zone. A helicopter swept two of the protestors out of the area while the other two remained and experienced the blast's shock waves. Another

DETONATED AT A DEPTH OF 4227 FEET BELOW THIS SURFACE
LOCATION ON DECEMBER 10, 1967.

NO EXCAVATION, DRILLING, AND/OR REMOVAL OF
MATERIALS TO A TRUE VERTICAL DEPTH OF 1500 FEET IS
PERMITTED WITHIN A RADIUS OF 100 FEET OF THIS SURFACE
LOCATION. NOR ANY SIMILAR EXCAVATION, DRILLING,
AND/OR REMOVAL OF SUBSURFACE MATERIALS BETWEEN
THE TRUE VERTICAL DEPTH OF 1500 FEET TO 4500 FEET IS
PERMITTED WITHIN A 600 FOOT RADIUS OF T 29 N. R 4 W. NEW
MEXICO PRINCIPAL MERIDIAN, RIO ARRIBA COUNTY, NEW
MEXICO WITHOUT U.S. GOVERNMENT PERMISSION.

UNITED STATES DEPARTMENT OF ENERGY
NOVEMBER 1978.

(Bureau of Atomic Tourism, The. "Project Gasbuggy."
(<http://www.oz.net/~chrisp/gasbug.htm>) Site visited March 23, 1998. 2:30 p.m. MST.)

protestor was in the US Supreme Court when the bomb went off. Tom Lamm, brother of future Colorado Governor Dick Lamm, appealed to the Supreme Court to stop the project and lost. Tom Lamm said he “got kicked all over the court, but everybody was real nice because they all knew that I was just a dumb kid from Colorado.” After the ruling was released, Tom Lamm spent time thanking clerks, avoiding the press waiting for him outside. When he finally left the building, “the first thing they said was that the bomb just went off.”¹⁹ Meanwhile, local residents met the Rulison detonation with a “fun afternoon.” In fact, one local resident “remembers being irritated by the protestors who’d come in from out of town.”²⁰ The preliminary results “indicated that the experiment had demonstrated the technical feasibility of nuclear stimulation of gas in the Rulison field.”²¹ In evaluating the project, the Colorado Department of Public Health and Environment states that:

Despite the evidence that radioactive contaminants in wells of this type would be low from stimulated natural gas, this type of experiment was eventually terminated. Many factors contributed to its demise. The factors included poor economics, biomedical concerns, reduced demand for new domestic supplies of gas, and apprehension from the general public.²²

There were several noteworthy outcomes of the Rulison project. First, Heyward never got any money for letting the bomb go off beneath his potato-patch: under the contract he

¹⁸ Yates, Scott C. “The Day They Bombed Colorado.” Westword. February 26, 1998. 23-24.

¹⁹ Yates. 24.

²⁰ Yates. 24.

²¹ Kreith, Frank and Catherine B. Wrenn. 1976. The Nuclear Impact: A Case Study of the Plowshare Program to Produce Gas by Underground Nuclear Stimulation in the Rocky Mountains. Boulder, Colorado: Westview Press, Inc. 106.

²² Colorado Department of Public Health & Environment. “PROJECT RULISON.” (http://www.cdphe.state.co.us/lr/en_rulis.htm) Site accessed March 23, 1998. 4:00 p.m. MST.

signed, Heyward “got paid only if the well made money for the energy companies.”²³ Second, in 1974 through a citizen’s initiative, Colorado voters amended the state’s constitution to require any project to detonate a nuclear bomb in Colorado “must first pass a statewide vote of the people.”²⁴ Third, Dick Lamm credits Rulison with helping to “launch the state’s environmental movement along with his candidacy for governor.”²⁵ Rulison faced substantial opposition from environmentalists but went forward anyway.

The third nuclear stimulation project was Project Rio Blanco. The project, detonated May 17, 1973, was located in western Colorado in Rio Blanco County. The project differed substantially from its predecessors because it used three 30-kiloton nuclear devices stacked vertically and detonated simultaneously. The objective of Rio Blanco was to determine if detonating the nuclear devices would result in the three rubble chimneys collapsing together into one large chimney, thus producing more natural gas.²⁶ Technically speaking, Project Rio Blanco was a failure. In its summary of the project the Colorado Department of Public Health and Environment noted that, “Further analysis in mid-June, 1974, revealed that there was no communication between the top and the lower chimneys,” thus defeating the purpose of the design.²⁷

The dynamics of the Rio Blanco political situation were dramatically different from Gasbuggy and Rulison. The energy crisis had hit home in Colorado during the preceding winter when “Denver public schools were briefly forced to curtail the school

²³ Yates. 27.

²⁴ Yates. 27.

²⁵ Yates. 23.

²⁶ Kreith and Wrenn. 125-126.

²⁷ Colorado Department of Public Health and Environment. “PROJECT RIO BLANCO.” (http://www.cdphe.state.co.us/lr/en_riobl.htm) Site accessed March 24, 1998. 9:30 a.m. MST.

week because of (their) inability to heat school buildings.”²⁸ Additionally, Colorado’s Governor, John Love, tried to “play a much more active role early in the Rio Blanco decision-making process.”²⁹ Whether or not Love actually had the ability to veto Rio Blanco, after he allowed Project Rio Blanco to proceed, he resigned to “accept a position as Nixon’s energy chief.”³⁰

Unlike Rulison, the strongest voices opposing Project Rio Blanco came not from environmentalists but from industry. TOSCO, The Oil Shale Company, took center stage with their argument that the project would “destroy the opportunity to exploit overlying oil-shale formations.”³¹ However in the end, local residents appeared to be in favor of Rio Blanco. In fact, “a Rio Blanco county commissioner expressed exasperation that some of Colorado’s elected representatives seemed to pay less attention to the local area residents who favored the project than to some ‘so-called experts who live as far away as Connecticut.’” Project Rio Blanco was detonated because the resistance was muted—local residents favored the project and elsewhere the story got “lost amid coverage of Watergate and other stories of the day.”³²

Project Wagon Wheel was to be Wyoming’s nuclear stimulation project, nestled in Sublette County. However, unlike its predecessors, Wagon Wheel was not detonated. The county is located in southwestern Wyoming and in 1970 had a population of 3,755.

²⁸ Kreith, Frank and Catherine B. Wrenn. 1976. The Nuclear Impact: A Case Study of the Plowshare Program to Produce Gas by Underground Nuclear Stimulation in the Rocky Mountains. Boulder, Colorado: Westview Press, Inc. 126.

²⁹ Ibid. 127.

³⁰ Steele, Mary Ann. “Summary of WWIC Efforts Which Prevented the Wagon Wheel Project From Being Detonated.” Undated. 20.

³¹ Kreith and Wrenn. 137.

³² Yates. 27.

There were four towns between ten and twenty miles from the blast site in Sublette County, Wyoming:

Town	Population (1972)
Pinedale	950
Big Piney	570
Marbleton	220
Boulder	75

Wagon Wheel, had it been tested, would have detonated five nuclear devices sequentially from bottom to top between 9,220 feet and 11,570 feet below the surface of Sublette County. The detonations would have created an underground rubble chimney approximately 2,800 feet high and about 1,000 feet in diameter.³³ The five nuclear devices would have been 100 kilotons each³⁴ and detonated approximately five minutes apart.³⁵ It was estimated by geologist William Barbat that “the nuclear energy to be released in the stimulation of Wagon Wheel ... is about 35 times as great as the energy of the gas which is expected to be produced.”³⁶

After the blast, EPNG would have waited between four and six months to allow for the decay of “short-lived radioisotopes” before test production of natural gas. Even then there would be some release of radiation during the 325-day flaring of the well. According to the AEC, “the resulting total maximum radiation dose which would be received by a local resident from the production testing activity is found to be a small

³³ “AEC Supports Nuclear Blast Near Pinedale.” Casper Star Tribune. February 1, 1972. 2. The article refers to the blast in the past tense: “The blast was expected to result....” Perhaps the author(s) of the article had a vision that it would never actually occur.

³⁴ Each device would have been approximately five times as powerful as the World War II atomic bombs. (“AEC Says Plans for ‘Wagon Wheel’ OK.” Casper Star Tribune. April 1, 1972. 11.)

³⁵ Frank. “Dangers of Wagon Wheel.” Casper Star Tribune. May 10, 1972. 10.

³⁶ Mackey. “Who’s ‘Plowed Under’?” Casper Star Tribune. June 25, 1972. 5.

fraction of the natural background radiation.” The AEC did not anticipate contamination of groundwater, either.³⁷

Had the test been successful in stimulating natural gas, it would have been mild compared to what the AEC planned when EPNG started full field production. There could have been as many as forty to fifty nuclear detonations a year, some within a mile of Pinedale, Wyoming,³⁸ while the AEC said it was feasible “such nuclear explosions might occur in different wells 7 to 10 times a year.”³⁹ University of Wyoming geologist and rancher Dr. Ken Perry said the area could “become the earthquake center of the world” based upon the AEC prediction.⁴⁰

The call of policy to expand the use of nuclear technology was one with which many people took issue. The ways in which people responded to the four nuclear stimulation projects is helpful when reviewing various approaches to the public policy process. For example, and the case study used in this thesis, the Wagon Wheel Information Committee opposed Project Wagon Wheel. The efforts of the group’s members are an excellent vehicle to further examine modeling, while at the same time modeling can be used to examine why Project Wagon Wheel was stopped.

Modeling is an attempt to represent reality in a fashion by representing the essential characteristics that drive whatever decision being made. It is a method “to gain

³⁷ “AEC Supports Nuclear Blast Near Pinedale.” Casper Star Tribune. February 1, 1972.

2.

³⁸ Frank. “Dangers of Wagon Wheel.” Casper Star Tribune. May 10, 1972. 9.

³⁹ “Little Support for Nuclear Project at Pinedale.” Casper Star Tribune. March 23, 1972.

1.

⁴⁰ *ibid.*

insight into phenomena that the scientist cannot observe directly.”⁴¹ However, there is not one kind of modeling that can be used to describe each and every situation. Indeed, political scientists have developed several different types of modeling processes, both linear and recursive approaches that attempt to explain how policy is created. I believe it is dangerous to rely on one model to explain a situation. Using more than one model will shed light on different aspects of a real-life event and enhance understanding.

This thesis will review two different approaches to the study of policy creation in chapter two. Chapter three will present a more detailed technical and social history of the Wagon Wheel case study. In chapter four, the two approaches to policy creation will be applied to the Wagon Wheel case study. Finally, chapter five will review the Wagon Wheel case study against the other three nuclear stimulation projects outlined in this chapter, and be evaluated as a learning tool.

⁴¹ Frankfort-Nachmia, Chava and David Nachmias. 1996. Research Methods in the Social Sciences. New York: St. Martin’s Press. 44.

Chapter Two: Reviewing Approaches to Policy

Political scientists have created any number of public policy models in an effort to explain how policy is created. For instance, The Challenge of Democracy textbook uses Charles Lindblom's rational model as an example for students of American government,¹ and Emery Roe's Narrative Policy Analysis "applies contemporary literary theory to extremely difficult public policy issues."² As noted in chapter 1, a model is an attempt to represent reality in a fashion by representing the essential characteristics that drive whatever decision being made. It is a method "to gain insight into phenomena that the scientist cannot observe directly."³ In essence, using a model will help explain parts of a process that might otherwise be unexplainable or hidden from the light of day. I chose to focus on the models offered by Charles O. Jones and by Deborah Stone because they offer the opportunity to view Wagon Wheel in many different lights. The Jones model is a clinical approach, while the Stone model presents a recursive approach that examines many facets. Combined, they demonstrate that no one model can shed light on all aspects of any given situation.

¹ Janda, Kenneth et al. 1998. The Challenge of Democracy. Boston: Houghton Mifflin Company. 257-258.

² Roe, Emery. 1994. Narrative Policy Analysis. Durham, North Carolina: Duke University Press. ix.

³ Frankfort-Nachmia, Chava and David Nachmias. 1996. Research Methods in the Social Sciences. New York: St. Martin's Press. 44.

A policy, as defined by Charles O. Jones, is a decision made by someone that provides for “behavioral consistency and repetitiveness” associated with governmental efforts “to resolve public problems.”⁴ His model is a linear scenario in which policy is successfully implemented or it fails because key steps are ignored or overlooked by those attempting to implement the policy.⁵ The process Jones recognizes as the route for policy to follow falls into four different and distinct stages:

1. Problems are presented to the government for its consideration
2. The government then finds a response to the problem
3. Once the solution is found, than implementation begins
4. Finally, the program is evaluated and adjusted or terminated when reviewed.

The initial stage of Jones’ model is the process through which problems are presented to government for its consideration. Jones terms this, “Getting Problems to Government,” and then breaks it down into five steps.

Initially, somebody must perceive the problem and define the problem in terms that are understandable. Jones’ example revolves around vandalism to a subway car and the costs it imposes on citizens when “the transit authority announces a fare increase to pay the costs of repairing damage.”⁶ The second, third, and fourth steps are aggregation, organization, and representation. The three can be combined with ease. Aggregation is the collecting of people interested in an issue. Organization, the next step, occurs when these people decide to respond in a collective fashion to an issue. This action often

⁴ Jones, Charles O. 1984. An Introduction to the Study of Public Policy: Third Edition. Monterey, California: Brooks/Cole Publishing Company. 26.

⁵ This reflects in the title of the first chapter, “The Causes of Policy Failures Are, at Root, Political.”

⁶ Jones. 52.

comes through interest groups.⁷ The fourth step, representation, is a “means of access to government for publics with problems.”⁸ These three steps tie together for representation cannot effectively occur unless aggregation and organization have occurred before it.

The final step in getting a problem to government is the “agenda setting” step. It is the most difficult to achieve and the most difficult to maintain. Indeed, Jones spends more time discussing “agenda setting” than any other aspect of the first step. Success at this stage can be measured when the government takes up the issue, either by placing it on the legislative agenda or by signing a contract to solve a problem. Making a problem unattractive to be against is one method of achieving placement on the agenda, such as Walter Mondale’s efforts against child abuse in the late 1960s. Mondale noted after passage of a law that, “not even Richard Nixon could be for child abuse.”⁹ Agenda setting is a critical step in the ultimate success of any project.

Once a problem has successfully been placed on the agenda, the focus shifts to the second stage in Jones’ model, the “action in government” stage. There are three steps within this stage: formulation, legitimation, and budgeting. Formulation, the first step in the second stage, is the process through which a plan is developed to alleviate a need or to act on the problem in question.¹⁰ Once a plan has been formulated, it moves onward.

The second step in the “action in government” stage is the legitimation of programs. Jones ties legitimation and approval together as a whole. As such, this step involves getting the authorization to proceed by, in Jones’ model, a majority of those who have a vote and exercise that vote to agree with your position. This is the most critical

⁷ Jones. 53-54.

⁸ Jones. 54.

⁹ Jones. 70.

step in any program. Majority building is not an easy process by any account. For example, building a majority in Congress includes collecting knowledge “about who favors what and why,”¹¹ and building multiple majorities. Jones notes that in Congress more than a dozen majorities are needed for any major bill, without counting amendments, in order for authorization.¹² Each majority may take a substantial effort through different strategies to be built. This is more impressive when you remember that in some cases a two-thirds majority needs to be built in the US Senate in order to block a filibuster.¹³ The second stage closes with budgeting. Any project that is allowed to move forward must receive funding in order to proceed.¹⁴

The third stage, implementation, is the process through which action is taken by the government to solve whatever problem was defined and program developed. In the abstract, Jones calls it easy to understand: “Getting the job done.”¹⁵ However, for the administrator of a program, the path to implementation can have any number of potholes. For example, “many programs are developed and implemented without the problems ever having been clearly defined.”¹⁶ The actual tools and methods of implementation are both numerous and delineated in a verbose manner.

Immediately following is the fourth stage, where the program reports back to government for evaluation and adjustment or termination. This fourth stage is the point

¹⁰ Jones. 77.

¹¹ Jones. 117.

¹² Jones. 117-118.

¹³ Jones. 119.

¹⁴ Jones. 140.

¹⁵ Jones. 165.

¹⁶ Jones. 166.

at which the government determines “whether government programs are worth doing.”¹⁷ The term evaluation is a broad and inclusive term in eyes of Jones, including “all the many forms of appraisal that take place within a political system, including those by politicians, journalists, citizens, judges, bureaucrats, and so on.”¹⁸ It can take several different forms: political, organizational, and substantive. For example, a political evaluation would ask if a program distributes “benefits to all states and congressional districts.”¹⁹ These evaluations can take many different forms, and leads toward adjustment or termination of the program.

Contrasting Jones’ linear approach is Stone’s recursive approach. Instead, Stone suggests that the policy process is a fight over ideas, arguments, and language. Using the market models as a base, Stone takes great pains to draw-out the distinctions between the market and the polis, or the political society. The differences between the two are numerous and help illustrate why it is difficult to impose economic analysis on the political decision making process. For example, the market views the unit of analysis, as the individual, while in Stone’s model of the polis, the unit of analysis is the community. This distinction is important because policy occurs in communities that are “trying to achieve something as communities.”²⁰ Within the subtext of community, membership becomes an overriding concern because “membership definitions and rules determine who is allowed to participate in community activities.”²¹ There are similar struggles over public commons issues or who determines what is the public interest, to name a few.

¹⁷ Jones. 197.

¹⁸ Jones. 199.

¹⁹ Jones. 200.

²⁰ Stone, Deborah. 1997. Policy Paradox: The Art of Political Decision Making. New York: W.W. Norton & Company. 18.

Stone presents her story in three different parts: Goals, Problems, and Solutions. The struggle over the different points within these realms represents the struggle over ideas and the struggle over policy. For example, Stone identifies the All-American goals of equity, security, and liberty as important to policy.

In her discussion of equity, Stone invokes an example using chocolate cake and how it can be equally divided among a classroom full of students. While her simple definition is the “same size share for everybody,” this discussion of equity introduces readers to several other “complicated” definitions of equity in the political society.²² What appears to be Stone’s most equitable distribution system, dividing the cake up equally among those who are in attendance at that day’s class, turns out to be surrounded by protesting students. Those students who had skipped class, those who had not enrolled in the class, and those who had not enrolled in the university all protest the division of the cake. The result is the realization that the method may have “equal slices but unequal invitations.”²³

Two other methods of distribution include equal voting opportunity, with the winner taking all, and the concept of “unequal slices but equal blocs.”²⁴ The “unequal slices but equal votes”²⁵ method of achieving equality is based on the premise that democracy works and that somebody can be elected to the position of eating the one chocolate cupcake that Stone was able to bake. The other method of equality achieves

²¹ Stone. 19.

²² Stone. 43.

²³ Stone. 40.

²⁴ Stone. 40.

²⁵ Stone. 41.

equity by ranking the participants—in the case of Stone’s chocolate cake, by gender. This approach to equity corrects previous *de facto* discrimination that occurred.

Stone’s All-American goal of security is reflected in terms of “need.” The most basic definition of need is the basic necessities for human survival.²⁶ However, like equality, need is complicated when considered in the political realm. In the political realm, “a society decides whether needs are real or legitimate.” One example of a political determinate of need can be found in the qualifications to receive welfare.²⁷ In Stone’s model, those needs recognized by the community “as legitimate and tries to satisfy as a community might be termed ‘public needs.’”²⁸ Covering these basic needs, whether energy or welfare, are the basis of society.

Finally, Stone devotes considerable attention to liberty. Once again Stone provides us a basic definition before complicating it with political considerations. According to Stone’s basic definition, “People should be free to do what they want unless their activity harms other people.”²⁹ Once political issues muddy the waters, three key questions arise. The initial concern is to determine the point at which other people’s liberties are being harmed. Is the mere threat of an elevated risk of injury or loss the point at which government can trigger restraints? Does the government need to be concerned about spiritual, religious, emotional, or psychological harms to individuals? Similar concerns can be observed when directed toward communities, organizations, and groups. Finally, determining whose liberty needs curtailing becomes an issue.³⁰

²⁶ Stone. 87.

²⁷ Stone. 99.

²⁸ Stone. 101.

²⁹ Stone. 120.

³⁰ Stone. 120.

Stone then devotes considerable time considering problems and how they are framed in public policy debate. The framing of problems can be made with symbols, numbers, causes, interests, and decisions. Symbols, for example, can be narrative stories, synecdoche, metaphors, and ambiguity. In Stone's model, stories can principally be framed in two distinct ways: stories of decline or stories of helplessness and control. The typical story of helplessness and control runs along these lines:

The situation is bad. We have always believed that the situation was out of our control, something we had to accept but could not influence. Now, however, let me show you that in fact we can control things.³¹

This type of story is “gripping because (it) speaks to the fundamental problem of liberty—to what extent do we control our own life conditions and destinies?”³² Stories can be extremely powerful and effective tools when attempting to influence people.

In cases of synecdoche,³³ another type of symbolic speech, a part of a whole truth is used to defame (or praise) the whole. Stone uses the example efforts by those opposed to Occupational Safety and Health Administration (OSHA) regulations as her chief example. For example, it was announced by some that OSHA had required that all buckets were to have holes in the bottom. The use of synecdoche ignores the whole story where 50 children each year drowned in large plastic buckets that people save from construction projects. Instead, OSHA had “suggested that the buckets be redesigned to tip over if a child fell in,” not that that every bucket have a hole drilled in the bottom.³⁴

Stone then spends time with interest groups—the sides people take on any given policy issue. Stone uses the example of the American Medical Association (AMA) and

³¹ Stone. 142.

³² Stone. 142.

³³ Pronounced sin-ECK-da-key (Stone. 145.)

its stance toward national health insurance to show how interests can affect policy. The AMA was able to mobilize physicians by making them believe “that their freedom was being threatened.” In this case, when national health insurance was first proposed, it was seen as “diffused benefits for the entire population paid for by diffused costs.” After the AMA had mobilized their membership the issue turned into “concentrated benefits for labor unions and their allies, the elderly and poor, versus concentrated costs for physicians.”³⁵ In most policy debates there are several interests that attempt to influence the outcome.

Stone closes out her discussion of problems with “decisions” and how they are made, whether rational or within the political realm. In a rational decision making process, the decision-maker first establishes the goals of the decision. Second, the decision-maker will brainstorm alternatives for achieving the goal. Thirdly, he or she will evaluate each alternative and the possible effects. Finally, the decision-maker will select the alternative that will achieve the goal. However, in the political realm, the community’s individuals and interest groups complicate this process, as they try to keep alternatives on the table, or take them off.

Stone closes out her work with a discussion of the various solutions to problems. The use of inducements, rules, facts, rights, and powers are the five principle methods to implement solutions to public policy problems. No fact is unbiased, because “even the simple act of naming an object places it in a class and suggests that it is like some things and unlike others.”³⁶ Stone asks if an action is an act of terrorism or a police action—

³⁴ Stone. 147.

³⁵ Stone. 225.

³⁶ Stone. 507.

depending upon who is doing the describing. Stone is quick to note that if “killing” becomes “bringing about cessation of cardiopulmonary functions,” we are still conveying “a certain set of values, too—perhaps disrespect of humanity and life.”³⁷

Finally, Stone examines power in terms of constitutional engineering, “based on the idea that different types of collective decision-making processes yield different kinds of outcomes.”³⁸ There are three types of changes to these structures in American politics. The first is to “change the membership of the decision-making body” in question, the second is to “change the size of the decision-making body,” and finally, to shift where the decision is made within government.³⁹

Jones and Stone present two dramatically different ways of viewing the policy process. Jones’ linear approach is quick and easy to understand, while Stone’s recursive approach presents a series of areas that are argued over, in the end shaping both the overall political debate and the outcome of policy. The Jones linear approach is extremely helpful when considering the timed sequences of different events. Stone’s recursive approach will bring in subtle aspects that might otherwise be overlooked in the analysis. Combined the two different approaches to the study of public policy will provide a method to explain more of the circumstances surrounding any given event.

³⁷ Stone. 307-8.

³⁸ Stone. 351.

³⁹ Stone. 353.

Chapter 3: A History of Wagon Wheel

This chapter, a history of the Wagon Wheel nuclear stimulation project, is divided into two parts. The first portion is designed to present a pure technical and chronological history of the project. The second portion, labeled “public participation,” presents the response of area citizens and of politicians to Project Wagon Wheel.

Technical History

In 1954, the El Paso Natural Gas Company (EPNG) found a gas field between 7,500 and 10,700 feet below the surface south of Pinedale in Sublette County, Wyoming.¹ EPNG drilled six wells and estimated there were approximately four trillion standard cubic feet of natural gas in the field. However, the natural gas was in low-permeability sandstone formations and the available technology to fracture the rock did not justify building a pipeline to the field.² A worker at the original site said, “You’ll have to blow the hell out of the rock to get the g- d- gas.”³ Another worker, an oil field contractor, told Owen Frank in the late 1950s, “The only way they’ll get it out is to set off

¹ EPNG acquired its rights to the Pinedale Unit in 1954, the same year they discovered the reserves. [El Paso Natural Gas Company. Project Wagon Wheel Technical Studies Report. ii.]

² Frank, Owen. ““Only way to get it out.”” Casper Star Tribune. May 9, 1972. 9.

³ “Work force of 2,000 seen for Wagonwheel.” Casper Star Tribune. February 14, 1972. 9.

an atomic bomb down there.”⁴ The nuclear stimulation concept for the Pinedale unit was proposed to the AEC by EPNG in 1958.⁵

In 1963 several government agencies agreed to a feasibility study of nuclear stimulation, and in December 1967 Gasbuggy, the first nuclear stimulation project, was detonated near Farmington, New Mexico. The results of the test explosion encouraged EPNG to sign a contract a year later to study Wagon Wheel.⁶ EPNG described Wagon Wheel as

a joint effort between El Paso Natural Gas Company and the Federal Government of the United States of America to further develop the use of underground nuclear explosions to stimulate low permeability natural gas reservoirs. Cooperating on the project are El Paso Natural Gas Company, the U.S. Atomic Energy Commission (AEC), and the U.S. Department of Interior as specified in Contract No. AT(26-1)-422 between the United States of America and El Paso Natural Gas Company, dated December 24, 1968.⁷

It should be noted that there are conflicting dates as to when the project was initially started. Some sources suggest that the project started January 24, 1968 when “a detailed project definition was begun by the El Paso Natural Gas Company, U. S. Atomic Energy Commission, and the Department of the Interior to evaluate the potential of nuclear

⁴ Frank, Owen. ““Only way to get it out.”” Casper Star Tribune. May 9, 1972. 9. In 1972 Owen Frank was the State Editor for the Casper Star Tribune, but he does not specify what position he held in the late 1950s, except that he refers to himself as “this writer.” In addition there is no evidence as to what position the oil field engineer held and with which company he worked for.

⁵ El Paso Natural Gas Company. Project Wagon Wheel Technical Studies Report. ii.

⁶ Frank. ““Only way to get it out.”” Casper Star Tribune. May 9, 1972. 9. Ironically, while “Gasbuggy” project encouraged EPNG, a University of Colorado study of the second nuclear detonation, “Rulison,” decided it was an economic failure. The project produced \$1.4 million worth of natural gas, but cost \$11 million. (“Rio Blanco Opposed.” High Country News. March 16, 1973. 11.)

⁷ El Paso Natural Gas Company. 1971. Project Wagon Wheel: Technical Studies Report. El Paso: El Paso Natural Gas Company. ii.

stimulation techniques in the Pinedale, Wyoming area.”⁸ The same document reveals that July 30, 1969, the WASP (Wyoming Atomic Stimulation Project) project was started. It was “composed of seven independent oil companies, the U.S. Atomic Energy Commission and the Department of the Interior (and) began a detailed project definition of using nuclear explosions in the Pinedale, Wyoming area.”⁹ In any case, Wagon Wheel differed from Gasbuggy because “its goals include obtaining cost information as well as technical information.” Gasbuggy’s objectives were to figure out the engineering, but not to be a profitable investment.¹⁰ There was little publicity about Wagon Wheel in the Wyoming area. The first article I located on Wagon Wheel in the Casper Star-Tribune, the only statewide newspaper in Wyoming, was published February 1, 1972.¹¹

Wagon Wheel was scheduled for 1973 when initially announced, but as time progressed, the date for the test moved forward.¹² On June 14, 1972, the Casper Star Tribune noted in that EPNG had delayed the test until 1974.¹³ A day later the Rock Springs newspaper confirmed this with a front-page story stating EPNG had announced Wagon Wheel would not be conducted in 1973, and that 1974 might not be feasible.¹⁴ Less than a month later, Dr. James Schlesinger, then head of the AEC, predicted the test

⁸ Whan. 1973. A-3.

⁹ Whan. 1973. A-4.

¹⁰ El Paso Natural Gas Company. Project Wagon Wheel Technical Studies Report. ii.

¹¹ “AEC Supports Nuclear Blast Near Pinedale.” Casper Star Tribune. February 1, 1972. 2.

¹² “AEC Supports Nuclear Blast Near Pinedale.” Casper Star Tribune. February 1, 1972. 2. One article suggests that EPNG wanted to fire the test in 1972, but was set back by a lack of funds. (Frank, Owen. ““Only way to get it out.”” Casper Star Tribune. May 9, 1972. 9.)

¹³ “Plowed under.” Casper Star Tribune. June 14, 1972. 4. Editorial.

¹⁴ “No Wagon Wheel Blast Possible In ’73: EPNG.” Rock Springs Daily Rocket-Miner. June 15, 1972. 1.

was at least five years away—in 1977.¹⁵ In September, the AEC said, “the project is still in the design stage and no execution has been authorized as yet,” and that the test would probably not occur before fall 1974.¹⁶ Confusion reigned as the project was planned for spring 1974 in October,¹⁷ while in December, it was “slated to take place sometime in 1975.”¹⁸

The exact date Wagon Wheel died is also unclear. President Nixon’s budget for fiscal year 1974 did not include funding for tests under Plowshare, which included Wagon Wheel.¹⁹ By May 22, 1973, Wagon Wheel had “been shelved at least temporarily because of lack of funding.”²⁰ According to one source, new AEC chair Dr. Dixy Lee Ray “announced that Project Wagon Wheel was dead for the foreseeable future,” but a search of the references cited failed to turn up supporting evidence.²¹ Additionally, the Casper Star Tribune appears not to have quoted Ray about Wagon Wheel during May 1973.

The test-well drilled for Wagon Wheel was never used in a nuclear test but was employed by EPNG to conduct tests of “Massive Hydraulic Fracturing” (MHF) during 1974 and 1975. MHF is a method where water is pumped into a well until the pressure of the water causes the rocks to fracture. The study used the well originally drilled for

¹⁵ “AEC chief says 1977 for Wagon Wheel test.” Casper Star Tribune. July 8, 1972. 7.

¹⁶ “AEC estimates damage from Wagon Wheel.” Casper Star Tribune. September 22, 1972. 13.

¹⁷ “Wagon Wheel gets new questions.” Casper Star Tribune. October 3, 1972. 1.

¹⁸ “Each WW well gives tax return.” Casper Star Tribune. December 2, 1972. 5.

¹⁹ “AEC budget has no test funds.” Casper Star Tribune. January 31, 1973. 11.

²⁰ “Roncalio requests cutoff of gas stimulation money.” Casper Star Tribune. May 22, 1973. 11.

²¹ Kreith and Wrenn. The Nuclear Impact. 168.; the authors site both the Rocky Mountain News on May 12, 1973 and the Denver Post on May 22, 1973.

Wagon Wheel,²² and concluded the MHF “technique employed [was] not commercially feasible.”²³

Public Participation

It’s not really clear when the news about Wagon Wheel was made known to the public. However, on December 1, 1971, a letter was written to Wyoming Governor Stanley K. Hathaway referring to a November 8, 1971, Associated Press dispatch from Amchitka, Alaska. According to the letter, the AEC “was planning or conceiving of nuclear blasts in Wyoming.” The author of the letter, whose identity was not revealed, urged the governor to “fight against any AEC doings in Wyoming.”²⁴ Governor Hathaway responded December 10:

I am not aware of any planned nuclear test blasts by the AEC for Wyoming. I am confident that if the AEC plans such action that it will take the necessary precautions to protect the health and safety of Wyoming citizens and our environment.²⁵

If Hathaway did not know about Wagon Wheel when he wrote the letter, he learned about it on February 1, 1972, the date the first 1972 article about Wagon Wheel was published in Casper Star Tribune.²⁶ Six days later the Casper Star-Tribune published an editorial on the project. Entitled, “Shaking Up Ecologists,” the paper noted “we can anticipate at least some murmurs of disapproval from conservationists.” The editorial goes on to defend the project by noting “Similar nuclear stimulations, like Gasbuggy and

²² El Paso Natural Gas Company. Pinedale Unit MHF Experiments Final Report. 2.

²³ El Paso Natural Gas Company. Pinedale Unit MHF Experiments Final Report. 1.

²⁴ Plumme. The Wagon Wheel Contention. 7.

²⁵ Plumme. The Wagon Wheel Contention. printed in back of book, about page 198.

²⁶ “AEC Supports Nuclear Blast Near Pinedale.” Casper Star Tribune. February 1, 1972. 2.

Rulison have failed to shake up the Rockies -- but there is always that prospect of shaking up the ecologists.” Ending on an upbeat note, the paper hoped the “experiment will contribute to relieving the future shortage of natural gas in this country.”²⁷ While the Casper Star Tribune was in favor of Wagon Wheel, it was evident the public, at least in Sublette County, did not agree with the paper. When, in a later editorial, the Casper Star Tribune stated “Emotional conservationists, as usual, grabbed the scene at a meeting in Pinedale,”²⁸ the paper received a heated letter from Phyllis Birr, member of the Wagon Wheel Information Committee (WWIC).²⁹

The Wagon Wheel Information Committee had been formed by a group of local residents, “to impartially gather all pertinent information regarding the Wagon Wheel Project.”³⁰ As a result of its study, WWIC opposed the nuclear stimulation project. Before arriving at that conclusion, extensive work was done:

The committee has consulted experts in various fields connected with petroleum exploration, geology, nuclear physics, and game and fish biology. Data submitted by a wide variety of organizations, including the Atomic Energy Commission, Lawrence-Livermore Laboratory, El Paso Natural Gas and others, was read and analyzed. Information on both sides was made available to the people of Sublette County, through their Library System and public meetings, in order that the Committee might have the benefit of informed public opinion in reaching its conclusion.³¹

Birr’s letter countered the editorial, stating the meeting in question, held March 20, 1972, “was conducted on an intelligent and organized basis,” further adding that the

²⁷ “Shaking Up Ecologists” Casper Star Tribune. February 7, 1972. 4. Editorial.

²⁸ “Welcome Wagon Wheel” Casper Star Tribune. March 25, 1972. 6.

²⁹ Birr was also a journalist for the Pinedale Roundup, according to Sally Mackey. [Mackey. 1995. Phone interview by author.]

³⁰ Wagon Wheel Information Committee. Undated (1973). Statement of Opposition to Project Wagon Wheel. Pinedale, Wyoming: Wagon Wheel Information Committee. 2.

³¹ Ibid.

newspaper's "attitude is one of total ignorance of the situation."³² It was not her first letter on Wagon Wheel, the first being to High Country News, an environmental newspaper then based in Lander, Wyoming.³³ She was responding to an editorial by the newspaper's editor, Tom Bell. Bell had written the planned atomic devices were "the sort of thing once dropped on an alien people another world away. Now it is being dropped in our laps."³⁴ Birr wrote about WWIC stating, "We have formed a committee ... with the sponsorship of our County Commissioners," and added, "we urge all your readers to write to their elected representatives to protest this rape of our Country. We feel that nuclear detonation is not the only answer to retrieving this natural gas."³⁵

Neither the AEC nor EPNG was represented at the initial meeting where over 500 people gathered to learn more about Wagon Wheel. It was mentioned during the meeting the AEC had admitted, "if Pinedale were more populated, the gas stimulation would not be economically feasible."³⁶ Shortly after the meeting, a local insurance agency used Wagon Wheel to its advantage. The agency placed an ad with the word "Wagonwheel" in bold print at the top, followed by "THERE, WE'VE CAUGHT YOUR ATTENTION. Why not drop in to discuss your insurance?"³⁷

The Wyoming Wildlife Federation and the Green River Valley Cattlemen's Association called a second meeting. It was held April 29, with representatives of the AEC and EPNG in attendance. The meeting was well attended and lasted for five-

³² Birr. "Emotional Ecologist?" Casper Star Tribune. April 4, 1972. 5. Letter to the Editor.

³³ High Country News is now based out of Paonia, Colorado.

³⁴ Bell. "High Country." High Country News. March 17, 1972. 2.

³⁵ Birr. "Help on Wagon Wheel." High Country News. March 31, 1972. 15. Letter to the Editor.

³⁶ "Little Support for Nuclear Project at Pinedale." Casper Star Tribune. March 23, 1972.

1.

hours.³⁸ At the meeting Phillip Randolph, director of the El Paso Nuclear Group, and others assured residents there was “little potential danger.”³⁹

The draft Environmental Impact Statement (EIS) was issued in January 1972, followed by the final EIS in April 1972. The draft EIS had a photograph of the well site during the drilling. The document covered the background of Wagon Wheel, probable environmental impact, “adverse environmental impact which cannot be avoided,” as well as alternatives and “environmental effects of contemplated future action.”⁴⁰ The final EIS covered similar ground and included 91 pages of public comments and responses by the AEC. Once the final EIS was released it was not considered by many,⁴¹ including US Senator Gale McGee (D-Wyoming), as complete or adequate. McGee decried the EIS, claiming it “was premature, failed to cover the overall impact, and failed to comply with some criteria laid out for the preparation of such reports.”⁴² Randolph agreed the EIS was premature as it “contained language that was alarming to the layman. ...the report was satisfactory to technical persons working in the field.”⁴³ Whether or not Randolph was correct in his assessment of the EIS, it was followed by an announcement by EPNG that “independent experts from Colorado State University are being engaged as a team of

³⁷ Plumme. The Wagon Wheel Contention. 117.

³⁸ Plumme. The Wagon Wheel Contention. 118.

³⁹ “Meeting Told Wagon Wheel Danger Slight.” Rock Springs Daily Rocket-Miner. May 2, 1972. 1.

⁴⁰ Atomic Energy Commission. 1972. Draft Environmental Statement: Wagon Wheel Gas Stimulation Project. i.

⁴¹ The Associated Students of the University of Wyoming (ASUW) passed a resolution stating “the AEC has not proved conclusively that radiation levels following the test would be safe, and alleged an AEC environmental impact study conducted on the project was biased and partial.” (“Students would delay gas blast.” Casper Star Tribune. May 18, 1972. 18.)

⁴² “McGee asks AEC revise evaluation.” Casper Star Tribune. August 23, 1972. 27.

consultants to expand the bio-environmental studies already carried out.”⁴⁴ However, the two experts, as well as the earlier EISs, were blasted in an article in the Jackson Hole

News:

El Paso is only now being forced to undertake comprehensive studies to indicate the possible effects of their blast.

That would be fine, if the studies appeared a bit more objective. Buried in this week’s announcement we find that Dr. Keith Schiager, a CSU radiation ecologist, is to be on the investigating team. Sounds impressive until you remember that Dr. Schiager was one of the few scientists at a meeting held last spring at Big Piney who spoke in favor of the Wagon Wheel project. Judging from this experience, can we expect Dr. Schiager to be objective?

Unfortunately, Dr. Schiager doesn’t appear to be as much of a liability to the team as Dr. H. G. Fisser, range management expert from the University of Wyoming. According to the El Paso release, “Previous studies by Dr. Fisser and others ... have indicated that the project Wagon Wheel detonations will not have observable effects upon the ecology and environment of the area.”⁴⁵

This study was not the only order of the day after the EIS was released. A report by professional biologists from the U.S. Bureau of Sport Fisheries and Wildlife said “the location of the site should be re-evaluated with consideration for the possible ‘adverse effects’ it might have on fish in nearby streams.”⁴⁶ In December 1972, the AEC announced that “information for a scientific decision on Project Wagon Wheel will not be available at least until late summer of 1974.” AEC said it needed “continued scientific work in Wyoming ... before [it] could consider whether to proceed.”⁴⁷ The actions by EPNG and the AEC did not appear to inspire confidence in the public.

⁴³ “No Wagon Wheel Blast Possible In ’73: EPNG.” Rock Springs Daily Rocket-Miner. June 15, 1972. 1.

⁴⁴ “Biology experts to study ‘Wagon Wheel’.” Casper Star Tribune. August 15, 1972. 11.

⁴⁵ “This Week’s Offering!” High Country News. September 29, 1972. 3.

⁴⁶ “Wagon Wheel gets new questions.” Casper Star Tribune. October 3, 1972. 1.

⁴⁷ “Wagon Wheel data is two years away.” Casper Star Tribune. December 17, 1972. 17.

EPNG and AEC also came under fire for their attitude toward area bridges and irrigation systems. Randolph said he “questioned whether it was the company’s social responsibility to retain an engineering firm for ‘a quarter of a million dollars’ when only one or two ranchers use the bridge.”⁴⁸ According to Randolph, four bridges were examined but,

Our big problem is -- how do you be responsible? What is a socially responsible position? Crossing a bridge to that one man whose living is dependent on crossing a river is damned important. Whether ownership is by the public or a private individual, we will seek a way to work with those people affected.⁴⁹

Technical studies estimated the expected damage to be approximately \$65,000, including significant damage to a highway bridge about 5.5 miles away.⁵⁰ In 1971, Dames and Moore, “a company nationally recognized for its competence in the field of applied earth sciences,” conducted a study “to see if there would be an effect upon selected dams, reservoirs, canals, streams, buildings and other surface features as a result of an underground nuclear test.”⁵¹ However, the study had overlooked irrigation systems. One local rancher was Floyd Bousman, co-chairman of WWIC, who lived ten miles away in Boulder, Wyoming. Bousman claimed the test would “destroy concrete irrigation structures on his ranch.” Randolph said the motion would be four feet at the well, “but

⁴⁸ “‘Wagon Wheel’ Blast Might Damage Bridges.” Casper Star Tribune. February 13, 1972. 2.

⁴⁹ “Work force of 2,000 seen for Wagonwheel.” Casper Star Tribune. February 14, 1972. 9.

⁵⁰ Bell, Tom. “Wagon Wheel -- Mark of Progress.” High Country News. March 31, 1972. 11.

⁵¹ “El Paso continues work on Wagon Wheel project.” Casper Star Tribune. July 14, 1972. 13.

only one-eighth of an inch at Bousman's ranch."⁵² Bousman, as commissioner of the Boulder Irrigation District, also objected to the EIS valuation of the Boulder Dam at \$150,000. The dam, built in 1965, cost over \$280,000 to construct, with an estimated replacement cost in 1973 of \$430,000.⁵³ The original technical studies by EPNG seemed inadequate, even to the company, as they as fit to do additional study.

For some reason this study was not adequate and Dames and Moore returned during the summer of 1972 to conduct a "more detailed study," which took into account comments from the AEC, county residents, and various other federal and state agencies.⁵⁴

Bousman wrote a letter to the editor of the Casper Star Tribune:

I am writing in regard to the recent press release by EPNG in which they list the dams, etc. which they are now going to study in conjunction with Dames & Moore, for possible damage from the Wagon Wheel Project.

I wonder how many people realize that these are all things that EPNG and the AEC, in their environmental statements said had already been done, when in fact they had not been done.

Is it any wonder there is such a large credibility gap?⁵⁵

WWIC continued opposition to the test throughout the fall and conducted a "straw vote" during the 1972 elections. Any resident, after voting in the general election, was encouraged to participate in the straw vote outside. The vote had, "no legal effect on the future of the planned nuclear detonations,"⁵⁶ but the results indicated strong opposition to Wagon Wheel. Out of 1,670 people who voted in the election, 1,230 chose to express their opinion about Wagon Wheel: "873 said they opposed Wagon Wheel, while 262 said

⁵² Frank, Owen. "Opinions Vary Widely On Wagon Wheel Blast." Casper Star Tribune. May 2, 1972. 8.

⁵³ Wagon Wheel Information Committee. Undated (1973). Statement of Opposition to Project Wagon Wheel. Pinedale, Wyoming: Wagon Wheel Information Committee. 11.

⁵⁴ *ibid.*

⁵⁵ Bousman. "Credibility gap?" Casper Star Tribune. August 3, 1972. 5.

they favored continuation of the project. Ninety-five individuals had no opinion.”⁵⁷ WWIC members were concerned about the election being called into question, they had the local sheriffs collect the ballots and two ministers count them.⁵⁸ A spotlight was put on the results when Congressman Teno Roncalio (D-Wyoming) said it appeared EPNG would “not live up to promises that it wouldn’t ‘cram Wagon Wheel down the throats of Sublette County residents’.”⁵⁹ Pinedale resident Mildred A. Delgado wrote to the Casper Star Tribune claiming the 501 people who did not vote, 95 who were undecided, and the 262 who voted for Wagon Wheel comprised 49.6%, while those who voted against comprised 50.4%. She also noted that although Roncalio won the election statewide, as WWIC’s choice for U.S. Congress he was defeated by Bill Kidd⁶⁰ (R-Wyoming) in the Sublette County vote 900-761.⁶¹ Birr, one of two people to respond to the newspaper, wrote, “Since when do people who do not vote automatically register as a vote ‘for’ something[?]”⁶²

⁵⁶ “Take straw vote on Wagon Wheel.” Casper Star Tribune. November 7, 1972. 11.

⁵⁷ “‘Straw Vote’ opposes WW.” Casper Star Tribune. November 9, 1972. 17.

⁵⁸ Mackey. 1995. Phone interview with author.

⁵⁹ “Teno chides El Paso on ‘promises’.” Casper Star Tribune. December 7, 1972. 17.

⁶⁰ It is unknown what stance Bill Kidd held on Wagon Wheel. A letter by Floyd Bousman dated October 3, 1972 in the “Statement of Opposition” states that Kidd “is apparently afraid to take a position on Wagon Wheel” (p 20). On the other side of the aisle, the state’s Democratic Party did pass a resolution at its state convention “calling for a moratorium on all nuclear stimulation projects including Wagon Wheel. The Republican Convention tabled a similar resolution.” (Steele, Mary Ann. “Summary of WWIC Efforts Which Prevented the Wagon Wheel Project From Being Detonated.” Undated. 10.)

⁶¹ Delgado. “More ‘realistic’ account.” Casper Star Tribune. December 18, 1972. 3. Letter to the Editor. The official results of the 1972 elections record that Bill Kidd received 900 votes while Teno Roncalio received 764 (Hanson, Thyra. 1973. 1973 Wyoming Official Directory and 1972 Election Returns. Cheyenne, Wyoming: State of Wyoming. 135.)

⁶² Birr. “Gross errors claimed.” Casper Star Tribune. December 22, 1972. 6. Letter to the Editor.

WWIC, in a December 1972 letter, asked for a meeting with the AEC, officials of EPNG, and members of the Wyoming congressional delegation. The meeting was scheduled and planned for U.S. Senator Cliff Hansen's (R-Wyoming) office in Washington.⁶³ Birr, Bousman, and other members of WWIC made plans to arrive on February 4, 1973. Roncalio arranged for WWIC to meet with the Environmental Protection Agency on February 5, in addition to the meeting with the AEC and EPNG on February 7.⁶⁴ Bousman, the day before WWIC's meeting, appeared on NBC's "Today" show to help publicize his and the WWIC's opposition to Wagon Wheel.⁶⁵ Even before the meeting, an "AEC official promised Wyoming citizens ... he will ask the AEC head to consider making Project Wagon Wheel dependent on a citizen's referendum."⁶⁶ It turns out Roncalio was a step ahead of the group, pressing for change in the AEC.

Roncalio, a staunch opponent of Wagon Wheel, had tried unsuccessfully during the summer to cut funding for Wagon Wheel from the AEC's budget.⁶⁷ In January 1973, House Speaker Carl Albert appointed the congressman to the Joint Committee on Atomic Energy. Roncalio said, "I sought this post to give Wyoming a voice in atomic energy developments, ranging from the proposed Project Wagon Wheel...."⁶⁸ Roncalio announced, less than a week after being appointed, that the AEC's budget for Plowshare programs did not "include funds for any test events in fiscal 1974."⁶⁹ Nixon's budget "delayed Project Wagon Wheel until late 1977 -- at the earliest," according to Hansen.

⁶³ "AEC meeting is scheduled." Casper Star Tribune. January 9, 1973. 9.

⁶⁴ "EPA-Wagon Wheel meeting Feb. 5." Casper Star Tribune. January 31, 1973. 11.

⁶⁵ "Bousman to be on 'Today' show." Casper Star Tribune. February 6, 1973. 9.

⁶⁶ "Wagon Wheel vote to be considered." Casper Star Tribune. February 6, 1973. 1.

⁶⁷ "Roncalio loses fight to stop Wagon Wheel." Casper Star Tribune. June 10, 1972. 5.

⁶⁸ "Teno joins group on atomic energy." Casper Star Tribune. January 27, 1973. 12.

⁶⁹ "AEC budget has no test funds." Casper Star Tribune. January 31, 1973. 11.

He added that even if Congress restored funds for the fiscal year 1974 budget, it was “rather apparent that the Office of Management and Budget (OMB) would impound those funds also.”⁷⁰ Roncalio went one step further in his analysis, claiming the more people studied Plowshare, the sooner it was going to end, saying:

It appears to me that the more we study the entire Plowshare Program, the more it is doomed. ... I say that is because previous attempts at this type method have not been commercial.⁷¹

The Congressman made the request to eliminate the \$3.8 million in the AEC budget for nuclear stimulation in mid-May 1973, saying, “Despite years of research, including Projects Gasbuggy and Rulison, this technology has not produced one cubic foot of salable natural gas.... the AEC should terminate this program and direct its attention to far more pressing needs in reactor programs.”⁷² Wagon Wheel had already been delayed by cuts in funding, now the entire concept of nuclear stimulation was about to be shelved. WWIC’s goal was achieved: Wagon Wheel was halted. Even if it had not been stopped by Roncalio, Bousman said “the people were willing to organize a county-wide or even state wide referendum ‘and devote ourselves all our lives if need be to end this thing.’”⁷³ Once the shaft was used for the MHF test, the threat of nuclear stimulation passed, although, the WWIC continues to exist and hold meetings today.

In the next chapter, I will apply the Wagon Wheel case study to the two models that I reviewed in chapter two, using the same structure used in chapter two.

⁷⁰ “Nixon budget delays Wagon Wheel Plans.” Casper Star Tribune. February 3, 1973. 7. The article refers to \$2.7 million that had been impounded from Plowshare in fiscal year 1973. Impoundment is a procedure where the president directs funds appropriated by Congress not be spent.

⁷¹ *ibid.*

⁷² “Roncalio requests cutoff of gas stimulation money.” Casper Star Tribune. May 22, 1973. 11.

⁷³ “AEC may drop Wagon Wheel.” Casper Star Tribune. February 9, 1973. 11.

Chapter 4: Case Study

Recalling the discussion of models in chapter two, the application of Charles O. Jones' approach to the Wagon Wheel story yields some interesting results. Jones attempts to describe the difference between successful policy implementation and unsuccessful policies through linear scenarios in which policy is either successfully implemented or fails to be implemented because steps are ignored or overlooked. Jones' description of the early 1960s being the end of the New Deal and the start of an era where government worked toward fixing problems that had no advocacy group bares an uncanny resemblance to Wagon Wheel.

Wagon Wheel was a behemoth that emerged fully formed from the federal government as far as citizens in Sublette County were concerned. It was a technocratic approach to solving the energy crisis made without local consultation because the national policy implications were clear. Using nuclear stimulation projects to release natural gas from tight sandstone formations would solve the nation's energy crisis. In the eyes of a technocrat, it was one of the best ways to alleviate the energy shortage. Even when Plowshare programs are reviewed today, some scientists still like the idea, such as Dr. Edward Teller, the father of the hydrogen bomb. Today, Teller "believe(s) the idea was a good one that was hamstrung by people with an irrational fear of nuclear

weapons.”¹ However, Wagon Wheel ran into opposition at the local level. Members of the WWIC, more interested in preserving their way of life, were opposed to the project, despite the many benefits that the entire nation would reap.

There are two distinct ways to evaluate the Wagon Wheel experience in light of Jones’ approach to the policy process. If one views this from the larger perspective of the Project Plowshare rubric, the WWIC forced Congress to review Project Plowshare and to make adjustments to it. This review is the fourth, and last, stage in Jones’ model where the program reports back to government for evaluation and adjustment. However, viewing Wagon Wheel as a semi-independent project, returns a different evaluation of the program. First I will examine this process from the perspective of Wagon Wheel as a semi-independent project, followed later by a review from the perspective of the WWIC’s impact on Project Plowshare.

Under Jones’ model, the Wagon Wheel policy initiative failed at the second stage, “action in government,” where proposals were formulated to solve the problems and the legitimization process. The first stage of the process, “getting problems to government,” is accomplished in the case of Wagon Wheel, without any significant problems, from the perspective of EPNG.

Perceiving and defining the problem, one of the parts of making government aware, were achieved in several different ways for Wagon Wheel. The first definition of the problem occurred in 1954 when EPNG found a gas field² south of Pinedale that “was in low-permeability sandstone formations.” They contacted the AEC in the late 1950s in

¹ Yates, Scott C. “The Day They Bombed Colorado.” Westword. February 26, 1998. 23.

² EPNG had located what is termed the “Pinedale Unit.”

order “to study the nuclear stimulation of the Pinedale Unit.”³ Another method through which a problem was perceived and defined for the government was the future shortage of natural gas, and energy in general, that threatened the American economy. The strongest signal that this crisis had the government’s attention came in the form of President Richard Nixon’s address that stated, “Our present supply of natural gas is limited, however, and we are beginning to face shortages which could intensify as we move to implement the air quality standards.”⁴

Aggregation, organization, and representation are the next set of steps in making the government aware of the problem. The success of EPNG at these three steps is evidenced by the presence of the contract between EPNG and the AEC. EPNG was able to describe Wagon Wheel as,

...a joint effort between El Paso Natural Gas Company and the Federal Government of the United States of America to further develop the use of underground nuclear explosions to stimulate low permeability natural gas reservoirs. Cooperating on the project are El Paso Natural Gas Company, the U.S. Atomic Energy Commission (AEC), and the U.S. Department of Interior as specified in Contract No. AT(26-1)-422 between the United States of America and El Paso Natural Gas Company, dated December 24, 1968.⁵

For example, in the case of representation, a “link between people, their problems, and government,”⁶ EPNG had a strong link between themselves, their problem, and the government. The national government, through the AEC, was well aware that EPNG had natural gas trapped in tight sandstone formations.

³ Frank, Owen. ““Only way to get it out.”” Casper Star Tribune. May 9, 1972. 9.

⁴ Nixon, Richard. 1971. Public Papers of the Presidents: Richard Nixon 1971. 710.

⁵ El Paso Natural Gas Company. 1971. Project Wagon Wheel: Technical Studies Report. El Paso: El Paso Natural Gas Company. ii.

⁶ Jones. 54.

The final step to gaining governmental acknowledgement of the problem in Jones' model is the "agenda setting" stage. EPNG's nuclear stimulation programs achieved status as a "new" agenda item when the first contracts were signed for Project Gasbuggy⁷ near Farmington, New Mexico. Once it was on the agenda, EPNG's challenge was to maintain it as a "continuing" agenda item. Signing the contract for Project Wagon Wheel was one way to accomplish this goal. In the eyes of EPNG, the AEC had only to provide the nuclear device and the project could move forward. In terms of Wagon Wheel, bringing the problem to the attention of the national government and getting it placed on the agenda was accomplished with a great deal of ease by EPNG because they had already successfully placed other nuclear stimulation projects on the agenda.

The project, however, ran into trouble once it was on the agenda and the government was acting internally. This stage of the policy process includes formulation, legitimization, and budgeting. In Jones' model, the formulation step presented a large number of problems. Jones' model for a policy that failed at the formulation step was then President Jimmy Carter's efforts to implement a comprehensive energy strategy. The formulation of the program was completed in 90 days with virtually no input "from congressional and business leaders." As a result, the Senate was lobbied in order to change the President's proposals, and the proposal was dead.⁸ Wagon Wheel failed this

⁷ Project Gasbuggy was also project between the AEC and EPNG. Project Rulison and Project Rio Blanco in Colorado were projects between the AEC and other companies.

⁸ Jones, Charles O. 1984. An Introduction to the Study of Public Policy: Third Edition. Monterey, California: Brooks/Cole Publishing Company. 107. Interestingly enough, President Carter appointed James Schlesinger to head the task force that assembled the "National Energy Program." Schlesinger was chairman of the Atomic Energy Commission during the majority of the debate over Wagon Wheel. Dr. Dixy Lee Ray

step in the second stage because there was little input from Congress, from local business groups, or from local citizens. Local citizens were put in the position of having to object to the project and to lobby the AEC and EPNG to try and stop the project. The WWIC acted as their interest group and lobbied to have the project stopped.

Wagon Wheel also suffered problems during the legitimization step of Jones' process. EPNG was unable to build a majority that was willing and that wanted to carry out the nuclear stimulation project in Sublette County. The AEC and EPNG assumed that everybody would support the project when it was announced. They had limited success early on in the process when the mayor and town council unanimously supported Wagon Wheel in March 1972.⁹ The Casper Star-Tribune even expected the AEC and EPNG to be successful with the endeavor:

The AEC is getting used to this outcry over nuclear stimulation tests. Two similar projects were conducted in Colorado and New Mexico, without cataclysmic effects. And the much bigger one at Amchitka only produced a tidal wave of emotion.

So it heartening to find some support for scientific endeavor to unlock new reserves of natural gas—the cleanest burning fuel we have.¹⁰

However, the formation of the WWIC threatened the majority that the AEC and EPNG expected to build in support of the project. Those threatening the expected majority in favor of Wagon Wheel were called a variety of names, from “emotional conservationists”¹¹ to “organized pressure groups encouraging more bureaucratic

was appointed chairman in early 1973, just before the Wagon Wheel Information Committee went to Washington D.C..

⁹ “Welcome Wagon Wheel.” Casper Star Tribune. March 25, 1972. Editorial. 6.

¹⁰ “Welcome Wagon Wheel.” Casper Star Tribune. March 25, 1972. Editorial. 6.

¹¹ “Welcome Wagon Wheel.” Casper Star Tribune. March 25, 1972. Editorial. 6.

control.”¹² As the influence of those opposing Wagon Wheel grew, the committee saw Congressman Teno Roncalio (D-Wyoming), Senator Cliff Hansen (R-Wyoming), and Senator Gale McGee (D-Wyoming) join the WWIC in opposing Wagon Wheel.

As the members of Wyoming’s congressional delegation began to question the reasoning behind Wagon Wheel, people in support of the project questioned their credibility. The strongest attack on a member of Wyoming’s delegation came from Dr. Edward Teller, the father of the hydrogen bomb. In an interview with the Casper Star-Tribune, Teller attacked the intelligence of Senator McGee:

Wyoming Sen. McGee makes it difficult to go ahead with this, Dr. Teller said, referring to a letter McGee had written denouncing the proposed Wagon Wheel project in Sublette County, 20 miles south of Pinedale.

“By exploiting this scare, and behaving like a Democrat, McGee makes it difficult to go ahead with it (Wagon Wheel),” Dr. Teller said.

“This is underground mining, without the miners going underground,” he said. He pointed out that the Soviet Union is much further along with this than the United States.

“The Russians don’t let their Senator McGees write idiotic letters,” Dr. Teller quipped.¹³

Teller shored up his comments about Senator McGee by noting that while he didn’t “like Sen. McGee, I vastly prefer him to the USSR.”¹⁴ As the Sublette County citizens began

¹² Delgado, Mildred A. “More ‘realistic’ account.” Casper Star Tribune. December 18, 1972. Letter to the Editor. 3.

¹³ Skalla, Judy. “Dr. Edward Teller defends Wagon Wheel.” Casper Star Tribune. September 17, 1972. 1.

¹⁴ Skalla, Judy. “Dr. Edward Teller defends Wagon Wheel.” Casper Star Tribune. September 17, 1972. 1. In a letter to Senator Hansen, Floyd Bousman responded to Teller’s comments (Wagon Wheel Information Committee. Undated (1973). Statement of Opposition to Project Wagon Wheel. Pinedale, Wyoming: Wagon Wheel Information Committee. 20):

I was pleased to read the recent statement by Dr. Teller during his visit to Sheridan (Wyoming) a short time ago, because this statement has given the people of Wyoming a clear insight as to the type of people who are employed by the AEC, as well as an indication of their contempt for

opposing the project the AEC and EPNG found their presumed support in Congress vaporize. The AEC and EPNG's ability to form a majority to legitimize their project quickly vaporized as well.

Instead the WWIC was able to form an overwhelming majority of Sublette County, Wyoming, residents that opposed the detonation of the Wagon Wheel project. The organization's straw poll, held during the November general elections, proved this:

- 970 OPPOSED Nuclear Stimulation of Natural Gas in Sublette Co., Wyo. (Project Wagon Wheel)
- 279 FAVORED Nuclear Stimulation of Natural Gas in Sublette Co., Wyo. (Project Wagon Wheel)
- 105 UNDECIDED about Nuclear Stimulation of Natural Gas in Sublette Co., Wyo. (Project Wagon Wheel)¹⁵

By Jones' standard, the WWIC had achieved what had proved elusive for the AEC and EPNG in Sublette County: Legitimation of their position. With the results of the county residents straw poll in hand, the WWIC had a powerful tool they could use to lobby Congress.

Although the WWIC was trying to stop only the Wagon Wheel project, they saw their fight affect all of Project Plowshare. In Jones' model, Project Plowshare had already withstood the first two stages of the policy process and was being implemented, the third stage. Once the WWIC had presented their credentials to Congress and were viewed as a legitimate interest group, its objections to Wagon Wheel forced Project Plowshare to experience the fourth stage of Jones' model. Ultimately this review led to the termination of funding for Plowshare experiments in fiscal year 1974.

anyone disagreeing with them. His childish blast at Senator McGee indicated, too, the AEC's willingness to play politics in a way that suits its purpose.

Interestingly, the Sublette County citizens did not question the primary assertion of the AEC and EPNG, and indeed of President Nixon, that the United States was facing an energy crisis and a shortage of natural gas. Residents were even in favor of developing the natural gas in the Pinedale Unit, albeit using more conventional means. At the time, Mrs. Sally Mackey was in favor of “using an advanced type of hydraulic fracturing to break open the gas-bearing structure.”¹⁶ Her desire to develop the field suggests her acquiescence to the supposition that the nation needed development of natural gas.

However, once they achieved legitimation of their position, the WWIC ventured to Washington in order to lobby Congress and the AEC. Because the WWIC desired to prevent the implementation of Wagon Wheel and because of their acquiescence to the problems surrounding natural gas, the group was forced to fight the proposal during the second stage. Achieving legitimation through the straw vote was the most effective action that the WWIC was able to take toward that goal. The affect on other Plowshare projects was stunning.

One early shot across the bow of Plowshare came from Teno Roncalio, even before the WWIC had achieved legitimacy. In June 1972, Roncalio put forth “an amendment that would have cut \$10.5 million from the Atomic Energy Commission ‘Plowshare’ program for development of peaceful uses of nuclear energy for Fiscal 1973.” This amendment was defeated without a vote.¹⁷ The following January, the

¹⁵ Wagon Wheel Information Committee. Undated (1973). Statement of Opposition to Project Wagon Wheel. Pinedale, Wyoming: Wagon Wheel Information Committee. 2.

¹⁶ Frank, Owen. “Opinions Vary Widely On Wagon Wheel Blast.” Casper Star Tribune. May 2, 1972. 8.

¹⁷ “Roncalio loses fight to stop Wagon Wheel.” Casper Star Tribune. June 10, 1972. 5.

AEC's Plowshare budget request for fiscal year 1974 was trimmed by \$3 million to \$3.8 million compared to the fiscal year 1973 budget. The budget did "not include funds for any test events in fiscal 1974," but would "continue development of gas stimulation technology, together with a modest research and development effort on the underground extraction of minerals."¹⁸ WWIC's efforts to stop Wagon Wheel ended up dooming much of Project Plowshare's budget.

Jones' fourth stage involves the evaluation of the program, and this is indeed what happened to Project Plowshare. Roncalio visited Cheyenne in late March 1973, and said, "It appears to me that the more we study the entire Plowshare Program, the more it is doomed." He added that it was doomed "because previous attempts at this type method have not been commercial."¹⁹ The previous nuclear stimulation projects came under close scrutiny as well at the same time. A study by the University of Colorado called the 1969 Rulison test "an economic failure," and that "the AEC had paid out more than \$73,000 for damage done to homes and buildings belonging to area residents." The study also noted that "no gas has ever been taken from the Rulison well for commercial purposes."²⁰

Shortly after, Roncalio testified before a "Senate subcommittee that nuclear stimulation to free natural gas poses serious energy tradeoffs and environmental consequences that may be serious enough to cancel out the benefits." Roncalio also "urged the A.E.C. to concentrate on the reactor program and attack natural gas reservoirs

¹⁸ "AEC budget has no test funds." Casper Star Tribune. January 31, 1973. 11.

¹⁹ "Wagon Wheel doomed: Teno." Casper Star Tribune. April 1, 1973. 17.

²⁰ "Doubts raised over Rio Blanco project." Casper Star Tribune. April 1, 1973. 23.

with conventional methods.”²¹ Roncalio also suggested that after the Rio Blanco project was completed that, “the AEC should terminate this program.”²² In the end, Roncalio was able to report that Wagon Wheel was dead, “as dead as anything can be without any money appropriated for it.”²³ The approach of the Jones model worked, as an independent project Wagon Wheel failed during the legitimation stage and as a part of Project Plowshare, it forced an evaluation and eventual termination of the program.

Using Deborah Stone’s approach to policy works with the Wagon Wheel case study as well because it sheds light on different aspects of the events in Sublette County. For example, Stone’s discussion of equity yields three different ways to view the role of the Wagon Wheel Information Committee (WWIC). Her initial model of equity, where all those attending class receive a piece of cake, or “equal slices but unequal invitations,”²⁴ aptly fits the discussion of Wagon Wheel. In addition, her description of equal voting rights and “unequal slices but equal blocs” also play a role in the equity that was achieved in Pinedale.

Stone’s “equal slices but unequal invitations”²⁵ method of equity yields a solution that closely resembles the initial discussion surrounding whether or not the Wagon Wheel nuclear stimulation project would go forward and be detonated. Initially, in the case of Wagon Wheel, the Atomic Energy Commission (AEC) and El Paso Natural Gas (EPNG)

²¹ “Teno says nuclear blasts pose serious consequences.” Casper Star Tribune. May 13, 1973. 6.

²² “Roncalio requests cutoff of gas stimulation money.” Casper Star Tribune. May 22, 1973. 11.

²³ Nauman, Ethel. “Teno talks about issues during visit to Wyoming.” Casper Star Tribune. May 30, 1973.

²⁴ Stone, Deborah. 1997. Policy Paradox: The Art of Political Decision Making. New York: W.W. Norton & Company. 40.

²⁵ Stone. 40.

shared the cake and the decision-making ability that went along with it. Neither the Wagon Wheel Information Committee (WWIC), nor the state, nor the local government²⁶ was invited to participate and each then protested their lack of inclusion. Senator Cliff Hansen had assured the public of their inclusion in an interview May 4, 1972:

James Schlesinger, Chairman of the Atomic Energy Commission assured me that if they weren't able to persuade the people of Sublette County that this project was to be good for the area, the project wouldn't be executed.²⁷

WWIC was in the process of trying to establish its role as representative of the public as well as the committee's position as a player at the table.

Two other methods of describing equity work well in evaluating the Wagon Wheel case study and WWIC's efforts at establishment. Describing equity in terms of everybody having an equal right to vote yields one of the ways the WWIC attempted to claim its position at the table. Despite the fact the AEC or EPNG never officially sanctioned a public straw vote over Wagon Wheel, the WWIC held its straw vote on November 7, 1972, during the general election. Of those who voted in the general election, 78 percent participated in the straw vote. Seventy-one percent of those participating opposed the Wagon Wheel project.²⁸ This particular method of equality does not accurately describe the relative position of the various actors in the Wagon

²⁶ A document published in July 1973 on the use of nuclear explosives notes that, "Although state and local governments have not been sponsors of joint industry-government nuclear explosive projects, their cooperation and assistance are sought. Their records are valuable for the wealth of information they contain, and their council and assistance are of great benefit in shaping a project plan and gathering information." (Arnett, Joseph T. 1973. Industry and Nuclear Explosives. New York: Atomic Industrial Forum, Inc. 17.)

²⁷ Wagon Wheel Information Committee. Undated (1973). Statement of Opposition to Project Wagon Wheel. Pinedale, Wyoming: Wagon Wheel Information Committee. 64.

²⁸ Wagon Wheel Information Committee. ii.

Wheel project in the end. It does describe how the WWIC wished to include local citizens in the debate over Wagon Wheel and establish its position as the group representing the opinion of the Sublette County citizens. The efforts toward the group's establishment as the citizen's representative will be amplified throughout this chapter.

The end of the process toward becoming a recognized voice yielded WWIC considerable power, a position where its rank gave them an amount of power that could be described as "unequal slices but equal blocs."²⁹ By demanding representation in the decision making, WWIC was attempting to become equal with the AEC and EPNG. By playing on the same field as the AEC and EPNG, the WWIC was in a better position to influence Wagon Wheel.

Stone's goal of security is defined as a "need," and need is defined as the basic necessities for human survival.³⁰ On the national level, Wagon Wheel was justified again and again by the impending shortage of natural gas and the need for more of this energy source. In the draft EIS, the project's background included a description of the natural gas shortage:

A shortage of natural gas now exists in the United States. Demand has exceeded the available supply and the natural gas industry has been forced to limit new customers or additional service to present users. Industrial growth, population increases, a general upgrading of the standard of living, and the fact that natural gas, where it is available, is usually less expensive than any other energy source, are prime factors in the increased use of natural gas. The additional fact that this clean fuel is able to meet increasingly stringent air quality standards has further escalated the demand and aggravated the shortage.³¹

²⁹ Stone 40.

³⁰ Stone 98.

³¹ Atomic Energy Commission. 1972. Draft Environmental Statement: Wagon Wheel Gas Stimulation Project. 2.1

At the local level, the debate was framed in dramatically different terms. The members of the WWIC believed that Wagon Wheel represented a threat to their way of life: their liberty. The sentiment will be explored further in a discussion of liberty later in this chapter.

Meanwhile, the AEC and EPNG tried to sell the project to the community as a method to provide jobs. Phillip Randolph, from the El Paso Natural Gas Company, had an optimistic view of the Wagon Wheel test and the resulting economic boom, “a successful blast ‘might see 40 wells in the area by 1983, with a work force up to 2,000 persons.’”³² Yet preserving the Sublette County way of life with 2,000 people employed in the gas fields seems unlikely, especially when one considers that the county’s entire population in 1970 numbered only 3,755. The goal of WWIC in this case was to emphasize the rights of the county’s citizens to determine what happens in their community. The struggle between the national goal of finding more natural gas and the local goal of preserving their way of life was a struggle over need and security.

Liberty is another basic goal within politics. In a definition uncomplicated by politics, liberty is the idea that “People should be free to do what they want unless their activity harms other people.”³³ Yet, when confronted with political problems, the definition is no longer so easy. Three questions Stone asks in relations to liberty apply strongly in this situation:

- At what point are other people’s liberties being harmed?

³² “‘Wagon Wheel’ Blast Might Damage Bridges.” Casper Star Tribune. February 13, 1972.

³³ Stone. 120.

- Is the mere threat of an elevated risk of injury or loss the point at which government can trigger restraints?
- Does the government need to be concerned about spiritual, religious, emotional, or psychological harms to individuals?

Those in charge of Wagon Wheel asked these questions early on, particularly in relationship to the local bridges and other irrigation structures. Phillip Randolph of EPNG made this observation:

Our big problem is -- how do you be responsible? What is a socially responsible position? Crossing a bridge to that one man whose living is dependent on crossing a river is damned important. Whether ownership is by the public or a private individual, we will seek a way to work with those people affected.³⁴

The WWIC believed that Wagon Wheel represented “a possible violation of our individual rights, accompanied by the eventual destruction of our way of life.”³⁵

Floyd Bousman, co-chairman of the WWIC, amplified this sentiment in a statement to Congress:

We feel that the rights of local citizens are violated when government and big industry combine to foster a technology that causes seismic damage to property and danger to health of local residents without their consent and in the face of their opposition. We believe that adequate compensation will not be made for structural damage and cannot be made for some types of damage.

We feel that we are being discriminated against because our area is sparsely populated—as though a citizen’s rights diminish in direct proportion to his distance from his neighbors.³⁶

³⁴ “Work force of 2,000 seen for Wagonwheel.” Casper Star Tribune. February 14, 1972. 9.

³⁵ Wagon Wheel Information Committee. Undated (1973). Statement of Opposition to Project Wagon Wheel. Pinedale, Wyoming: Wagon Wheel Information Committee.

³⁶ Committee on Interior and Insular Affairs. 1973. Nuclear Stimulation of Natural Gas. Washington: U.S. Government Printing Office. 37. At one point an AEC official had admitted, “if Pinedale were more populated, the gas stimulation would not be

The committee was not interested in alleviating the nation's shortage of natural gas, but the preservation of their way of life in Sublette County.

The framing of problems in policy debate can be made with a number of different tools. One of the tools that best fits the Wagon Wheel experience is the use of a story of helplessness and control, a symbolic expression of what was happening in the community. The typical story of helplessness and control, and the story WWIC promoted in its efforts to stop Wagon Wheel, runs along these lines:

The situation is bad. We have always believed that the situation was out of our control, something we had to accept but could not influence. Now, however, let me show you that in fact we can control things.³⁷

Stone notes these types of stories are “gripping because they speak to the fundamental problem of liberty—to what extent do we control our own life conditions and destinies?”³⁸ Phyllis Birr's response to a Casper Star Tribune editorial that claimed “emotional conservationists, as usual, grabbed the scene at a meeting in Pinedale,”³⁹ is an example of this type of story. Birr, a member of WWIC, claimed that “the meeting was conducted on an intelligent and organized basis,” and sponsored by the WWIC and the Sublette County Commissioners.⁴⁰ This letter served to two purposes. The first was to tell the newspaper that there was more than one reasoned opinion about Wagon Wheel. The second was to help the WWIC establish its power as an interest group in the state. Prior to this letter, the connection between WWIC and local governments was not well

economically feasible.” (“Little Support for Nuclear Project at Pinedale.” Casper Star Tribune. March 23, 1972. 1.)

³⁷ Stone. 142.

³⁸ Stone. 142.

³⁹ “Welcome Wagon Wheel.” Casper Star Tribune. March 25, 1972. Editorial. 6.

established, although government officials had spoken at the meeting sponsored by the WWIC. At the meeting in question, the Mayor of Pinedale, Jay McClain, expressed the initial essence of the story of helplessness and control. McClain said, “I don’t believe this test is the answer, and I believe we should float an injunction against the project, if only for sufficient money for damages against us.” He concluded his remarks by saying, “If we can’t stop it, we should try.”⁴¹ McClain was not the only elected official to doubt the ability of the community to stop the project. In April Governor Stan Hathaway visited Pinedale, as a part of his “Capitol-for-a-Day” program. At that time, “he admitted to concern over flaring of the gas and possible inadequacy of compensation for damages, but he emphasized that he didn’t think either he or the local people had any power to stop it.”⁴² June 1972 saw the Casper Star-Tribune render a similar opinion about local citizens trying to oppose Wagon Wheel, “We doubt if the rural population of western Wyoming can prevent a major technical effort to develop more natural gas in that area.” The newspaper was still in favor of the experiment and closed by suggesting that a delay would allow technical problems to be addressed and “El Paso and the AEC time to do a better selling job in Sublette County.”⁴³

The straw poll held during the general elections in November demonstrates the attitude change in the WWIC and the area’s citizens. By December, Congressman Teno Roncalio was worried about the promises EPNG had previously made. He announced that “it appears that El Paso Natural Gas Co. will not live up to promises that it wouldn’t

⁴⁰ Birr, Phyllis. “Emotional Ecologist?” Casper Star Tribune. April 4, 1972. Letter to the Editor.

⁴¹ “Little Support for Nuclear Project at Pinedale.” Casper Star Tribune. March 23, 1972.

⁴² Steele, Mary Ann. “Summary of WWIC Efforts Which Prevented the Wagon Wheel Project From Being Detonated.” Undated. 8.

‘cram Wagon Wheel down the throats of Sublette County residents.’⁴⁴ Five days later, WWIC was in the paper again, trying to increase its influence over Wagon Wheel.

WWIC chairman Floyd Bousman asked US Senator Cliff Hansen to arrange a meeting with the AEC Chairman, James Schlesinger. Bousman’s stated purpose was to ask Schlesinger to “honor his commitment,” that “if the people of Sublette County could not be persuaded the project ‘was good for the area, the project wouldn’t be executed.’⁴⁵ The organization was demonstrating to the AEC and to EPNG, that they could “control things.” Once a meeting with the AEC was scheduled, WWIC had gone from being a group of county residents to a quasi-official county sponsored organization that could influence government policy. The committee and citizens had fulfilled the idea that, “now, however, let me show you that in fact we can control things.”⁴⁶

The use of synecdoche, a part of a whole truth is used to defame (or praise) the whole, was present throughout the campaign over Wagon Wheel. Perhaps the best example of synecdoche can be found in Casper Star-Tribune editorials. An editorial from February 7, 1972 notes that “similar nuclear stimulations, like Gasbuggy and Rulison have failed to shake up the Rockies.”⁴⁷ The Casper Star-Tribune used the Gasbuggy and Rulison detonations to demonstrate the lack of problems caused by previous nuclear stimulation projects in New Mexico and Colorado. Countering the argument put forth by the newspaper was an engineer’s study of an apartment complex in Rifle, Colorado, that experienced damage as a result of Rulison experiment, although the owner of the

⁴³ “Plowed under.” Casper Star Tribune. June 14, 1972. Editorial. 4.

⁴⁴ “Teno chides El Paso on ‘promises’.” Casper Star Tribune. December 7, 1972.

⁴⁵ “Wagon Wheel opposition seeks meeting with AEC.” Casper Star Tribune. December 12, 1972.

⁴⁶ Stone. 142.

complex was not compensated for the damage until the following December.⁴⁸ Limiting the scope of their editorial allowed the Casper Star-Tribune to make the Wagon Wheel project sound acceptable and the environmentalists opposing the project sound ridiculous.

By any definition, the WWIC was an interest group, one of several “interests” surrounding the Wagon Wheel project. The WWIC’s goal was to stop the nuclear stimulation project from being detonated. Toward that goal, the WWIC mobilized the community. WWIC’s statement of opposition to the project included statements from:

- The Boulder (Wyoming) Irrigation District,
- The Town of Pinedale Wyoming,⁴⁹
- Pinedale (Wyoming) Chamber of Commerce, and
- Rock Springs (Wyoming) City Council⁵⁰

EPNG, the industrial sponsor of the project, worked to counter the WWIC by obtaining endorsements from professionals in favor of the project and the AEC. The battle over Wagon Wheel became a fight over credibility of the groups fighting over the project. When framed in terms of a national debate, EPNG had a tremendous advantage in this fight. Its project was sponsored by the AEC, a government agency, and was patterned after two other nuclear stimulation projects that had been deemed successful in the eyes of many: Gasbuggy near Farmington, New Mexico, and Rulison near Rifle, Colorado. EPNG’s credibility was reinforced by the notion that it was helping to stave off the

⁴⁷ “Shaking Up Ecologists.” Casper Star Tribune. February 7, 1972. Editorial.

⁴⁸ Wagon Wheel Information Committee. Undated (1973). Statement of Opposition to Project Wagon Wheel. Pinedale, Wyoming: Wagon Wheel Information Committee. 53-59.

⁴⁹ A proclamation signed by the mayor and city councilmen.

impending national energy shortage that threatened the basis of the American economy. The WWIC, on the other hand, had a tremendous credibility gap to over-come on the national stage. EPNG thought it would be able to ignore the group and move ahead with its plans for Wagon Wheel. Yet the WWIC persisted by holding public meetings and a public straw vote. The committee's efforts at becoming recognized as a voice for the community on the national stage were achieved after the straw vote. In terms of public relations, the organization's trip to Washington D.C. was a resounding success.

While in Washington, D.C. in February 1973, the WWIC was able to get Floyd Bousman, its chairman, to appear on NBC-TV's "Today Show."⁵¹ Bousman appeared opposite Phillip Randolph of the El Paso Natural Gas Company. After the show, the WWIC received a letter from Bill Monroe, the Washington, D.C. News Editor for NBC's "Today Show." In the letter, Monroe wrote, "And I'm not sure who's the most audacious, you folks taking on the AEC and El Paso or the AEC and El Paso taking on the small community."⁵² The committee's efforts at being recognized on the national stage also worked when their "Statement of Opposition" was printed in its entirety in an appendix to the Nuclear Stimulation of Natural Gas hearing document,⁵³ and when they had meetings with the AEC in Washington D.C..

On the local stage, however, the roles were reversed. The WWIC enjoyed tremendous credibility because of its local roots, while the AEC and EPNG had to

⁵⁰ Rock Springs, Wyoming, is a town located about 75 miles south and east of the Wagon Wheel test site. The town suffers from subsidence, the process where abandoned coal mines collapse causing damage to surface structures.

⁵¹ "Bousman to be on 'Today' show." Casper Star Tribune. February 6, 1973.

⁵² Steele, Mary Ann. "Summary of WWIC Efforts Which Prevented the Wagon Wheel Project From Being Detonated." Undated. 18.

overcome strong local opposition. It should be noted that early on the AEC and EPNG were able to win a vote of confidence from the mayor and town council of Big Piney, Wyoming.⁵⁴ However, in many respects the AEC and EPNG shot themselves in the foot with their technical studies reports and the Environmental Impact Statements (EIS) with regards to irrigation structures. In the draft EIS, the AEC rendered an opinion that:

Studies indicate that, in order to minimize damage to hydraulic structures it is desirable to drain at least partially the reservoirs behind two dams in the immediate Wagon Wheel area. The water level behind Ward Ball Dam, about 9 miles from the emplacement well, should be reduced to maintain the integrity of the structure. If the reservoir is drained in the fall, it would be refilled by precipitation in sufficient time to accommodate the next demand for irrigation water (late spring). Therefore, the effects of the loss of irrigation water would be minor.

With regard to the Boulder Lake Dam, studies have indicated that it would be desirable if the reservoir level were no higher than the upstream toe of the dam (approximately 24 feet below the dam crest) at the time of detonation. If the detonation takes place in the fall this will require little or no additional drainage of the reservoir.⁵⁵

The final EIS contained the same statements in the body of the work and comments from the public in the appendix.⁵⁶ It is not known if the public made any responses to these statements in the EIS to the AEC at this time. In other works, principally a report by the Dames and Moore Engineering firm, similar statements generated a significant response from officials of the Boulder Irrigation District.⁵⁷ In the Dames and Moore Report, the

⁵³ Committee on Interior and Insular Affairs. 1973. Nuclear Stimulation of Natural Gas. Washington: U.S. Government Printing Office. 253-284.

⁵⁴ "Welcome Wagon Wheel." Casper Star Tribune. March 25, 1972. Editorial.6.

⁵⁵ Atomic Energy Commission. 1972. Draft Environmental Statement: Wagon Wheel Gas Stimulation Project. __:__. 3.14.

⁵⁶ Atomic Energy Commission. 1972. Environmental Statement: Wagon Wheel Gas Stimulation Project. __:__. 3.15.

⁵⁷ This report has not been located, however comments published in the "Statement of Opposition" suggests the observations in the "Dames and Moore Report Summary" were more detailed than the two paragraphs in the EIS.

Ward Ball Dam had a replacement cost of \$50,000 and had been built in 1965 for \$33,500. The report overlooked the fact

that the main purpose for this dam is to maintain the natural water table in the adjacent irrigated lands. The reservoir water surface elevation is regulated rather precisely year around. The area of influence is not exact but observation wells indicate all lands in the project downslope from the reservoir will cause drainage of these lands. Refilling the reservoir will also require refilling the soil profile previously drained. Water for this purpose comes from that stored over the winter in Boulder Lake Reservoir. Since Boulder Lake water would not be available, there would be some loss of production.⁵⁸

With regards to Boulder Lake Dam, the Boulder Irrigation District was again critical of the Dames and Moore Report. The group noted that the valuation of the dam at \$150,000 was less than the \$280,000 construction cost of the dam and far less than the estimated replacement cost of \$430,000, assuming five percent inflation. The report also noted that the, “Lowering of the water level to normal dead storage for the detonation may preclude securing a beneficial amount of storage for early season use.”⁵⁹ The AEC and EPNG suffered a tremendous credibility problem at this point. It was only magnified when EPNG announced that the Dames and Moore Company was going to conduct “a second and more detailed study”⁶⁰ as a follow-up to the one that had generated the comments from the Boulder Irrigation District.

In this battle of interests, the AEC and EPNG lost the local battle early on and consequently lost the national battle. The WWIC fought long and hard to establish its position as the voice of the Sublette County residents. Ultimately, because the committee

⁵⁸ Wagon Wheel Information Committee. Undated (1973). Statement of Opposition to Project Wagon Wheel. Pinedale, Wyoming: Wagon Wheel Information Committee. 11.

⁵⁹ Wagon Wheel Information Committee. Undated (1973). Statement of Opposition to Project Wagon Wheel. Pinedale, Wyoming: Wagon Wheel Information Committee. 11.

built its power from the grassroots and proved its position with a straw poll on the issue of Wagon Wheel, the WWIC was able to prevail in their quest. The mistakes and miscalculations of the AEC and EPNG won the WWIC its public relations campaign.

Stone closes out her discussion of problems with “decisions” and how they are made, whether rational or within the political realm. A rational decision, as designed by Stone, goes through four steps:⁶¹

- define the goal
- imagine alternative means to achieve them
- evaluate the consequences to the alternative
- choosing the alternative that will achieve the goal

In the political realm, this set of steps is complicated with “appeals mounted by people with stakes in the outcome,”⁶² such as EPNG and the WWIC. The goal of EPNG was to go forward with Wagon Wheel, toward that end the company wanted to ensure that Wagon Wheel was seen as the only viable alternative. EPNG used the national energy shortage to justify the project. Stone’s observation that “controlling the number and kinds of alternatives considered is the essence of the political game,”⁶³ puts WWIC in the spotlight. It wanted to ensure that not conducting the Wagon Wheel project was considered as well. The mere presence of the interest group and its actions forced the AEC and EPNG to consider the possibility that they should not move forward.

⁶⁰ “El Paso continues work on Wagon Wheel project.” Casper Star Tribune. July 14, 1972.13.

⁶¹ Stone. 233.

⁶² Stone. 243.

⁶³ Stone. 245.

President Richard Nixon was able to define the goal as stopping future energy shortages. The AEC and EPNG wanted the sole solution in Sublette County to be the nuclear stimulation of natural gas. The WWIC forced the consideration of alternative solutions and forced the AEC and EPNG to reconsider the consequences to their preferred alternative. Ultimately, their presence at the table forced a change in the alternative that was selected. The well in question went from being a nuclear stimulation test site, to a well that tested Massive Hydraulic Fracturing.

Stone's discussion of facts,⁶⁴ one of several solutions to political problems, resembles in large part what happened during the debate over Wagon Wheel. The ability to frame and name facts wields tremendous influence over debate because "even the simple act of naming an object places it in a class and suggests that it is like some things and unlike others."⁶⁵ Early on in the midst of the debate, the Casper Star-Tribune realized this connection. When reporting about the meeting in late April, initially the reporter wrote that "residents of the area give little indication if they support the project or are undecided."⁶⁶ However, in the next two paragraphs, the reporter realizes the importance of words:

The only clue to these people is their choice of words in referring to the nuclear device.

⁶⁴ In her book, Stone uses the public relations campaign for "Atoms for Peace" by the nuclear industry after World War II as an example. Stone notes that:

It included the usual school materials; documentary films for television (note again the rationalist metaphor of documenting pure facts); traveling exhibits, sponsorship of science fairs; aid to colleges in establishing nuclear engineering curricula; and the development of a Boy Scout merit badge in atomic energy (Stone, 314).

⁶⁵ Stone. 507.

⁶⁶ Of course, the author of the article, Owen Frank, neglects to mention that people might be opposed to the project.

Those opposed call the device “an atomic bomb.” Those who have not formed an opinion against the project, and there are many, use the term “nuclear explosive.”⁶⁷

EPNG’s Phillip Randolph showed some level of frustration with the tenor of the discussion. He noted that the project had brought in a lot of experts, but that “the opponents had closed minds.”⁶⁸ Determining whether the nuclear devices were called bombs, devices, or explosives could control what image the public had of the project.

Even a seemingly neutral or positive term, such as “nuclear device” in the hands of a skilled writer could have a strongly negative connotation:

Take the Wagon Wheel project just across the Wind River Mountains from us. Fifty miles away,⁶⁹ as the crow flies, they are preparing for an “atomic device.” That was the sort of thing once dropped on an alien people another world away. Now it is being dropped in our laps.⁷⁰

Early on the battle over whether Wagon Wheel was going to employ a nuclear bomb, a nuclear explosive, or a nuclear device, was truly a battle over public opinion. However, as the WWIC gained legitimacy, the debate shifted away from the name of the device. By February 1973 when the members assembled its “Statement of Opposition” to the project, the WWIC employed the language of the AEC and EPNG:

On the basis of this study, we find the use of nuclear explosives a totally unacceptable means for developing the Pinedale gas unit.⁷¹

⁶⁷ Frank, Owen. “Opinions Vary Widely On Wagon Wheel Blast.” Casper Star Tribune. May 2, 1972. 8.

⁶⁸ Frank, Owen. “Opinions Vary Widely On Wagon Wheel Blast.” Casper Star Tribune. May 2, 1972. 8.

⁶⁹ From Lander, Wyoming.

⁷⁰ Bell, Tom. “High Country.” High Country News. March 17, 1972. Editorial. 2.

⁷¹ Wagon Wheel Information Committee. Undated (1973). Statement of Opposition to Project Wagon Wheel. Pinedale, Wyoming: Wagon Wheel Information Committee. 2.

The AEC and EPNG had won the battle over the facts of the matter, but the WWIC had managed to pull the rug out from under them. The WWIC employed EPNG's language to make its point and win the war over the facts.

The WWIC's use of power throughout this time period was extremely effective and, in many respects, is the strongest link to Stone's model. Stone suggests that power is "based on the idea that different types of collective decision-making processes yield different kinds of outcomes."⁷² From day one, the goals of WWIC were consistent with the three different ways Stone suggests can change the structure of American politics. Initially, when the WWIC started to establish its position as a voice of the Sublette County citizens, it was attempting to "change the membership of the decision-making body" and to "change the size of the decision-making body."⁷³ Although Stone presents these as two different concepts, in the case of Wagon Wheel they are closely tied together. From day one the group wished to "change the membership" by making sure the WWIC could have a say in whether or not Wagon Wheel pressed forward. At the same time, by legitimizing its position and pressing to be included, its goal was to increase the size of the decision-making body.

Ultimately, though, when WWIC achieved its goal of being recognized as a legitimate player at the table it was able to effectively, if not inadvertently, shift where the decision over Wagon Wheel was made within the government. Shifting where the decision was made reflects on Stone's third way to change the structure of American politics.⁷⁴ From the start, the AEC held the ability to make the ultimate decision about

⁷² Stone. 351.

⁷³ Stone. 353.

⁷⁴ Stone. 353.

the detonation of Wagon Wheel. Once the WWIC was able to claim a place at the table, US Representative Teno Roncalio worked at pulling the decision away from the table and put it in the hands of Congress. Appointed to the Joint Committee on Atomic Energy,⁷⁵ Roncalio was able to announce that the AEC's budget request for fiscal year 1974 did not "include funds for any test events,"⁷⁶ thus preventing Wagon Wheel from occurring that year. The fight was not over for several months, with Roncalio having to request \$3.8 million to be eliminated from the AEC budget in May to eliminate "underground nuclear stimulation programs."⁷⁷ However, by claiming the committee's place at the table, the WWIC shifted the decision over Wagon Wheel to Congress for Congressional consideration as a budget item. WWIC's desired solution was achieved.

⁷⁵ "Teno joins group on atomic energy." Casper Star Tribune. January 27, 1973. 12.

⁷⁶ "AEC budget has no test funds." Casper Star Tribune. January 31, 1973. 11.

⁷⁷ "Roncalio requests cutoff of gas stimulation money." Casper Star Tribune. May 22, 1973. 11.

Chapter Five: Concluding Thoughts

The benefits of using multiple approaches to the study of any given policy issue are demonstrated in this thesis. Charles O. Jones and Deborah Stone's differing approaches to the policy process allowed different aspects of the Wagon Wheel story to surface and play out. Jones' approach is important because it explains the Wagon Wheel history in what is almost a linear approach. Stone, on the other hand, offers a tapestry that enriches the Wagon Wheel story. Combined, the two models explain a lot of the circumstances, individually neither is sufficient to explain all of the political dynamics surrounding Project Wagon Wheel.

Jones, for example, did an excellent job throughout his model of reminding us about the actual legal steps involved in getting a project like Wagon Wheel from the drawing board to detonation. The Jones model takes into account the early stages of Wagon Wheel when El Paso Natural Gas found the gas field, as well as EPNG's efforts to get the contract signed. The linear approach also takes into account the broad national implications of Wagon Wheel and the impending energy crisis. Stone, on the other hand, provides a rich tapestry that brings to light the debate over what Wagon Wheel was going to use: a nuclear device, explosive, or bomb. Stone's discussion also reveals how partial truths, in the form of synecdoche, can be used to sway public opinion. Their approaches, while different, are complimentary since they both turn on the same point: the public

straw vote. Both models agree that the vote proved to be a pivotal point. In Jones, it was the point the legitimization failed, while in Stone, it provided the Wagon Wheel Information Committee (WWIC) a place at the table.

WWIC's extraordinary efforts caused Project Wagon Wheel to not be detonated. The group of local citizens, who fought long and hard, prevented the project. However, three other nuclear stimulation projects in the West were detonated. There are some basic differences between these four nuclear stimulation projects that are worthy of examination in order to enhance the understanding of Project Wagon Wheel's failure. The Atomic Energy Commission was able to succeed with projects where it failed with Wagon Wheel in large part due to the nature of the opposition. Not one of the first three stimulation projects was strongly opposed by local residents. Project Gasbuggy was widely supported from New Mexico's congressional delegation on down to the nearby Native Americans. Project Rulison faced opposition from citizens across the state of Colorado, but local residents were either in favor of the project or neutral. Local residents supported Project Rio Blanco, with opposition coming from outside of the area. Project Wagon Wheel, on the other hand, faced strong opposition from local residents through the WWIC, which spent considerable time and efforts legitimizing their position.

That said, it should be noted that there have been some fundamental shifts with respect to the National Environmental Policy Act (NEPA) since the Wagon Wheel controversy. NEPA was signed into law January 1, 1970. The Draft Environmental Impact Statement for Wagon Wheel was released in January 1972, two years after the law took effect. The agency was still learning how to follow the requirements of NEPA.

The Calvert Cliffs⁷⁸ decision in 1971 was one of the first court decisions with respect to NEPA. The decision required the AEC to comply with NEPA in future projects, such as Wagon Wheel. The draft EIS for Wagon Wheel came out less than a year after the decision. Legal precedent was in the process of being made. If a project like Wagon Wheel were proposed today, it would have to run the gauntlet of NEPA regulations in place today. Local citizens would have substantially more access during the entire process and hearings would have been held to obtain public comment on the Draft Environmental Impact Statement.

Wagon Wheel could be considered a case study of how people from outside of Wyoming have wanted to exploit the state and how vocal local organizations, such as the WWIC can successfully oppose such actions. EPNG, as early as 1958, asked the AEC for assistance in extracting natural gas out of low-permeability sandstone formations near Pinedale, but contracts and publicity did not appear publicly for another 11 years. The threat of five nuclear detonations threw fear into a small community, inciting a group of ranchers and ecologists to go on a quest to Washington to stop the test of nuclear stimulation. In the end, Wagon Wheel was halted and the sword was not a plowshare, it remained an unwanted implement of war.

⁷⁸ *Calvert Cliffs Coordinating Committee v. U.S. Atomic Energy Commission*, *Federal Reporter 2nd* (499 F. 2nd), 1109, *Environmental Reporter Cases* (2 ERC) 1779, *Environmental Law Reporter* (1 ELR) 20346 (D.C. Circuit Ct., 1971). (As cited in Kreith and Wrenn. 166.)

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