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Safe Power Vermont: A Look Into The Campaign To Retire The Vermont Yankee Nuclear Power Station.

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Safe Power Vermont:

A look into the campaign to retire the Vermont Yankee Nuclear Power Station.

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PIM 68

A Capstone Paper submitted in partial fulfillment of the requirements for a Master of Sustainable Development at the SIT Graduate Institute In Brattleboro, Vermont USA.

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Abstract

This case study provides an in-depth look into the campaign to retire an aging nuclear power plant located in the southeast corner of Vermont. The Vermont Yankee Nuclear Power Station (VY) began commercial operations in 1972 under a forty year operating license issued by the Nuclear Regulatory Commission (NRC). Opposition to the plant's existence has been unwavering and has increased in intensity since the sale of the plant in 2002. The Vermont Yankee Nuclear Power Corporation (VYNPC), a consortium of local and regional utilities, sold VY to an out-of-state corporation owner known as Entergy. The company was quick to apply for approvals from the state and federal governments, to increase the plant's power production, to store spent nuclear fuel on-site and for a twenty year license extension. Advocates were unsuccessful at blocking the power up-rate and the construction of an on-site spent fuel storage facility, but were successful in blocking the plant's license extension.

Advocates new in order to be successful they must collaborate in an effort to pass legislation that would bring the power of deciding VY's fate to Vermont's General Assembly and ultimately the people. The decision was made to form a coalition... Safe Power Vermont. In 2006, the coalition and its supporters won the passage of ACT 160, which empowered the legislature to vote on VY's continued operation based on issues related to reliability and economics. The coalition was successful again when in 2010 the Vermont Senate voted not to consider the plant for continued operation past March 2012. Currently, the legality of the legislation is under scrutiny in a federal district court in a case brought by Entergy.

The case study narrative follows the arch of VY's operational life and history while tracking the evolution of the campaign by highlighting key moments that facilitated outcomes. J. Unsicker's "Advocacy Circles" Map is used as a method of organizing information and as a lens to analyze the data. This is done in an effort to assist other advocates in succeeding in similar movements across the United States. The research and prospective given here, has been acquired from personal experience collaborating directly with local and regional advocacy groups involved in the campaign, as well as independent research.

Introduction

My practicum was spent gaining knowledge in the fields of policy advocacy and renewable energy. I spent time working with the Safe Power Vermont coalition as an intern with the Vermont Public Interest Research Group (VPIRG) a member organization. VPIRG collaborates directly with other advocacy organization, through the coalition, in their effort to retire the Vermont Yankee Nuclear Power Station (VY) on schedule in March 2012. As a VPIRG graduate intern, I helped the Clean Energy Advocate and the field organizing team in implementing various tactics aimed at raising awareness among constituents and mobilizing them to take action. I conducted research into coalition targets and opponents, produced informational materials and helped organize activists for action. I was fortunate to have worked with the coalition during the January 2010 Senate vote, which denied the current owner of the plant, Entergy Nuclear Vermont Yankee's (ENVY), its request for a Certificate of Public Good from the state. Under Vermont law, Entergy cannot operate the plant past the original forty-year licensing period, which expires in March 2012. The Nuclear Regulatory Commission (NRC) recently approved Entergy's request for a twenty year license extension. In most states the NRC is the only regulator of commercial nuclear power plants. But, in 2006 Vermont became the first state to pass legislation that enables the legislature to vote on whether it is in the public's interest to continue operating VY. The legality of the Act 160 and the decision made by the Vermont Senate is currently being contested by Entergy in a federal district court.

I was first introduced to the issue by Professor Jeff Unsicker¹ while attending his introductory course on Policy Advocacy in the fall of 2008. After learning the extent of the plant's physical deterioration, history of frequent failures and the mass of highly radioactive waste being stored on-site, I was shocked to hear that the NRC was considering Entergy's application for a license extension. It seemed inevitable that VY would receive an extension considering the NRC had never denied one. I grew up in central VT and attended high school in Putney; only twenty miles north of the reactor. Never before had I considered the

¹ SIT Graduate Institute in Brattleboro, VT

implications of hosting a nuclear power plant and its impact on the ecological, social and economic sustainability of the host region. I knew cleaner, safer energy alternative existed that could be deployed locally using renewable sources. Operating VY beyond its designed capacity and operational life increases the chance of a major accident occurring, which could decimate the local ecology and economy. And, with no solution for disposing of the waste that has been produced over the past forty years it is unconscionable to produce another twenty years worth. The continued operation of VY exposes current and future generations to undue risk.

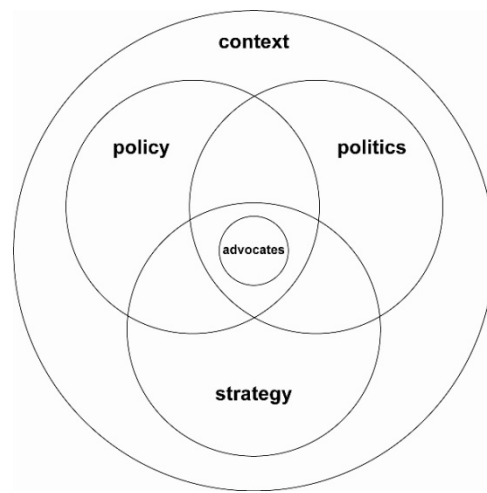
I immediately wanted to get involved in the campaign. I had learned that a dedicated network of local and regional advocacy groups had worked tirelessly to pass a key piece of legislation that gave the power to determine VY's fate to the state legislature via Act 160. I began volunteering with the Vermont Citizens Action Network (VCAN), the lobbying arm of the Citizens Awareness Network (CAN), in the Fall of 2008 helping the coalition in their efforts to raise awareness among voters in key legislative districts throughout Vermont. I went door-to-door delivering informational pamphlets, talking with constituents about the issues and collecting voter signatures who supported the initiative. I was later given the opportunity to work with Nuclear Free Vermont (NFV), a small grassroots organization, who in collaboration with CAN, VCAN and Safe Power Vermont had acquired a grant with the primary goal of winning the Act 160 vote. To achieve this, the coalition needed to gain enough constituent support in priority districts to pressure those legislators who may be more apt to vote in favor of retiring.

During my time at VPIRG I was offered a position as an installer with a regional renewable energy company. For over a year and a half, I have been installing solar electric, and hot water systems for residential and commercial customers. It has been a rewarding experience to have a direct impact on increasing renewable energy supplies in Vermont.

Purpose of capstone

The purpose of this case study is to provide an in-depth look into the campaign to close VY in order to gain a better understanding of advocacy and the process of policy change

specific to energy issues in Vermont. It is done in an attempt to assist other advocates in succeeding in similar movements across the United States. The arch of the narrative follows VY operational history while tracking the evolution of the campaign, and the coalition by highlighting key moments that helped in facilitating successful outcomes. The research and



prospective given, has been acquired from both personal experiences collaborating with the individuals and groups involved in the campaign, and through independent research and analysis. As a method of organizing and interpreting the information I have utilized the Unsicker’s “Advocacy Circles” Map. Above is a visual representation of the Advocacy Circles Map, which has been adapted from materials provided by J. Unsicker from 2008 to 2010.

The map provides a frame work for analyzing the advocate role and effectiveness within the advocacy context. As described by J. Unsicker, it is “... a simple way to visualize the dynamic, iterative dimensions of the reality or territory of advocacy.”² The advocates operate within the political, strategic and policy circles, which are imbedded with the larger context. Advocates represent the group of persons, a formal or informal organization, seeking to influence one or more policy issues. To be effective, advocates must have or develop the capacity to:

- analyze and act in accordance with the larger context;
- carry out policy research and analysis,
- identify and navigate a political system composed of numerous different actors,
- develop and carry out various approaches for influencing policy makers, and
- monitor, evaluate and learn from all of the above.

The first four of those activities represented by the other circles. Advocates are at the nexus of them all, linking them all together. The context circle represents the immediate political-economic-cultural context at a specific moment or period in time. The three remaining “arenas” or circles (Policy, Politics and Strategy) represent the areas that advocates are

² Unsicker, 2010, pp. 12

constantly analyzing and acting within or simply, the “what,” “who” and “how”. In contrast to a map, the over-lapping circles suggest that there is ongoing activity in each arena and that those activities continually interact and influence those in the other arenas.

In the Policy arena, advocates and other actors carry out research and/or less formal forms of information gathering that result in the definition of a problem or set of problems, their causes and one or more policy goals that are designed to address the cause(s) and solve the problem(s). In the arena of Politics, there are formal and informal systems by which policies are made, changed and implemented, as well as numerous actors who are engaged in this system. The main actors are the targets (those policy makers who need to be influenced), allies, opponents, and the general public. In the Strategy arena, the advocates plan and carry out activities that they believe will help them influence targets and thus achieve their policy goals. This includes (a) analyzing the political systems and actors, including themselves, and (b) combining that knowledge with their policy goals to formulate intermediate and short term objectives for specific strategies and tactics.

Context

The notion of an atom has existed for centuries, but only within the last one hundred years have we begun to understand the enormous power contained in its tiny mass. In the years proceeding and during World War II, most atomic research and development focused on weapons creation. After the war, the United States government wanted to encourage the development of nuclear technologies for peaceful civilian applications. In 1946, Congress passed the first iteration of the Atomic Energy Act with the intent to regulate nuclear energy development in the United States (U.S.) and manage the nuclear weapons technology it had jointly developed with England and Canada during the war. The act mandated that nuclear weapons development and nuclear power management would be regulated by a civilian agency dubbed the Atomic Energy Commission (AEC). It was later amended in 1954 to include increased support for the nuclear power industry.³

³ Atomic Energy Act of 1954

By the mid-1950s, scientists had demonstrated that nuclear reactors could produce reliable energy output, and in 1957 the first commercial nuclear power plant was built in Shippingport, Pennsylvania. In 1974 the Energy Reorganization Act was passed abolishing the AEC and splitting its functions between two new agencies: the Nuclear Regulatory Commission (NRC) and the Energy Research and Development Administration - now the Department of Energy (DOE). Today, the NRC regulates the nuclear power industry in the U.S., while the DOE is responsible for overseeing the development and production of nuclear weapons, as well as the promotion of nuclear power.

In 1982 the Nuclear Waste Policy Act established the US government's responsibility to provide a place for the permanent disposal of high-level radioactive waste and spent nuclear fuel, as well as the generators' responsibility to bear the costs of permanent disposal. The legislation tasked the DOE with finding, constructing, operating and decommissioning a permanent geological repository for the waste. The Environmental Protection Agency (EPA) is responsible for setting public health and safety standards for release of radioactive materials from a repository, and the NRC is tasked with communicating the regulations governing construction, operation and closure to federal officials and the public. Currently, owners of nuclear reactors are required to pay the costs of disposal through a fee paid by consumers of the power.

In 2002, under heavy opposition from local residents and other groups, construction began on the Yucca Mountain Nuclear Waste Repository in Nevada; eighty miles northwest of Las Vegas. Operations at the facility were effectively terminated with the passage of the 2011 federal budget, which defunded operations at the site. The closure was due to economic constraints, as well as concerns over the long-term integrity of the facility and its impact on public health. The DOE continues to look for an appropriate repository, but no timeline has been given for when a repository will begin accepting radioactive waste.

Vermont Yankee – A History

In 1966, the Vermont Yankee Nuclear Power Corporation (VYNPC)⁴ applied to the AEC for a permit to build a nuclear reactor along the banks of the Connecticut River in southeastern Vermont. The proposal came during the height of nuclear power expansion in the U.S. Many projects faced stiff opposition from local advocacy organizations, concerned citizens and officials. It sparked a national movement led by anti-nuclear activists and environmentalists who were concerned over the long-term effects of nuclear technologies. The VYNPC faced similar opposition from local groups, but developers were able to thwarted efforts to stop the project, and in 1967 construction began. Two years later, the VYNPC applied for an operating license to operate the reactor, and on November 30, 1972 the Vermont Yankee Nuclear Power Station, or Vermont Yankee (VY), began producing power for the New England power grid with a forty year operating license from the AEC.

From 1972 to 2001 the plant operated reliable with few major incidents or issues. This record of service began to deteriorate in 2002 when, Entergy Nuclear Vermont Yankee, LLC (ENVY), a subsidiary of Entergy Nuclear Incorporated, purchased VY from the VYNPC. Entergy created two subsidiaries, an owner ENVY and operator Entergy Nuclear Operation (ENO) to limit the parent company's liability exposure. Through the sale, ENVY received the reactor complex, all nuclear fuel inventories and related site real estate. The sale included a revenue sharing agreement (RSA) and a power purchasing agreement (PPA). Under the PPA, three of the former owners, including two Vermont utilities⁵, buy a portion of the electricity produced by VY at a set price; approximately 4.5 cents per kilowatt hour (kWh). The RSA stipulates that fifty percent of the revenue generated from energy sales greater than a fixed market price is shared among the signatories. Both contracts expire in 2012.

Entergy's recent efforts to obtain new PPAs from Vermont utilities have failed and in May 2011 Green Mountain Power (GMP), a former owner of VY and PPA/RSA contract signatory, announced that it signed a PPA with NextEra Energy Resources LLC, owner of the

⁴ VYNPC was a consortium of eight utilities from the northeast: Central Vermont Public Service Corp. (35 percent); Green Mountain Power Corp. (19 percent); New England Power Company (22.5 percent); Connecticut Light and Power Co (9.5 - percent); Central Maine Power Co (4.0 percent); Public Service Company of New Hampshire (4.0 percent); Cambridge Electric Light Co (2.5 percent) and Western Massachusetts Electric Co (2.5 percent).

⁵ Central Vermont Public Service (CVPS) and Green Mountain Power (GMP)

Seabrook Nuclear Power Plant in New Hampshire. The twenty-three year agreement is a fixed-price contract that adjusts with inflation.⁶ Entergy also assumed liability for managing the decommissioning fund and the decommissioning of the plant upon its retirement.

Corporate Spin-off

In 2007 Entergy announced plans to “spin-off” six of their eleven reactors. The company created two new firms: Enexus and EquaGen. Enexus would be the standalone owner of the six reactors Entergy planned to “spin-off”, including the Pilgrim, James A. FitzPatrick, Indian Point reactors 2 & 3, Palisades and Vermont Yankee nuclear power plant. EquaGen, a new limited liability corporation, would take a fifty percent ownership of Enexus, as well as Entergy’s five remaining reactors (Arkansas Nuclear One, Cooper, Grand Gulf River Bend and Waterford 3). In-turn, Entergy would have fifty percent ownership of EquaGen Nuclear LLC. In their application to the Securities and Exchange Commission (SEC), Entergy listed twenty-one risks associated with the “spin-off” of these nuclear holdings. Summarized, they represent acknowledgements by Entergy that Enexus would carry substantial debt and such a low investment rating that it would negatively affect the company’s ability to obtain financing. This would make it difficult to pay for plant upgrades and operating costs. They also concede that a market for the stock did not yet exist and if one failed to develop the company’s asset value would not be adequate; bring into question the company’s long-term sustainability.⁷ In order to overcome these short-comings, Entergy promised lower prices on power.

The proposal was heavily criticized for appearing as if Entergy executives and shareholders were trying to isolate themselves from any financial or ethical responsibility incumbent upon the owner and operator of the second largest fleet of nuclear reactors in the U.S.⁸ Even so, in 2008 the proposal was approved by both the Federal Energy Regulatory Commission (FERC) and the NRC. The Michigan and Massachusetts state regulators, hosts to

⁶ Curran, 2011

⁷ U.S. Securities and Exchange Commission, 2008

⁸ Exelon Nuclear Partners, a division of Exelon Generation, is the largest in the U.S. and third largest in the world; operating seventeen reactors on ten different sites.

the James A. Fitz Patrick and Pilgrim reactors respectively, also approved the proposed restructuring; however, in February 2010 the Vermont Senate, under the authority of ACT 160, voted not to review Entergy's application for a Certificate of Public Good (CPG); killing the initiative within the state. Later that year, the New York Public Service Commission (NYPSC) rejected the proposal stating that it appeared financially unstable and not in the public interest. This effectively ended Entergy's plans for Enexus and EquaGen. Entergy's plan to "spin-off" its reactor fleet helped advocates solidify Entergy's image as an out-of-state corporate owner that does not have the interests of Vermonters at heart.

Relicensing

On March 21, 2011 the NRC granted Entergy a twenty year extension to their federal license to operate VY. Under current state law, Entergy will not be able to operate the plant past March 2012 without a CPG. In April 2011, Entergy filed a federal suit against Vermont seeking an injunction to prevent enforcement of Vermont law regarding VY's license extension or any regulating operations and on-site storage of spent fuel. Entergy also wants the court to issue a judgment that federal law preempts Vermont (state) law.

The extension has also been contested by the Vermont Department of Public Service (VDPS) and the New England Coalition (NEC) who filed suit against the NRC citing the relicensing of VY is in violation of the Clean Water Act. By law, Entergy must have a license to uptake and discharge water into the Connecticut River located adjacent to the plant. When the NRC approved Entergy's license extension it did so without the plant obtaining either a water quality certificate from the EPA or a waiver from the state. The plant uses water from the river for running and cooling the reactor. Water from the plant is often discharged back into the river causing significant rises in water temperatures within the vicinity of the plant. This can have a negative impact on the aquatic ecosystem.

Decommissioning

Over the past eight years Entergy has failed to fulfill its commitment to maintaining a sufficient balance in the decommissioning fund, which was created by the previous owners to

cover the costs of dismantling the facility. Upon purchase of VY in 2002, Entergy assumed the responsibility for managing the fund. Since transfer of ownership, Entergy has contributed zero dollars to the fund, which has resulted in a funding shortfall of over \$500 million. Entergy has repeatedly change its position in an attempt to evade the responsibility and now argue that they have no direct responsibility for the fund.⁹ As a result, the fund currently has less than half of the \$1 billion decommissioning is estimated to cost. If the fund balance is insufficient to cover the cost of decommissioning, it is likely that Vermont ratepayers will have to pay the difference.

Both ENVY, and ENO signed a Memorandum of Understanding (MOU) with the Vermont Public Service Board (VPSB), which regulates the activities and actions of utilities within the state. As it pertained to decommissioning the MOU states that:

1. Decommissioning to be complete by March 31, 2022.¹⁰
2. Decommissioning must meet standards outlined by the NRC
3. ENVY would provide additional funds or other acceptable financial assurances as needed to ensure that funding will be sufficient to accomplish decommissioning
4. ENVY is to use its power to assure that the spent fuel is removed from the site in a reasonable manner and as quickly as possible
5. ENVY is responsible for meeting all future decommissioning costs and any increases needed in the contributions for decommissioning will not be passed on to Vermont consumers.¹¹

In its approval of sale, the VPSB reiterated that the corporation had accepted the financial risks associated with owning, operating and decommissioning VY and the corporation would bear the burden alone. Vermont utilities and ratepayers would be shielded and any contributions needed to ensure decommissioning upon shutdown would not be passed on to Vermont consumers.¹² Entergy has repeated stated its understanding of the decommissioning liability. In a 2001 corporate news release, Entergy acknowledged that upon purchase of VY it would

⁹ Curry, 2008

¹⁰ State of Vermont Public Service Board, 2002

¹¹ Entergy Nuclear Vermont Yankee, 2009

¹² Entergy Nuclear Vermont Yankee, 2009

take control of nuclear fuel inventories and assume liability for the decommissioning and the fund.¹³

Ten years of Entergy's own 10-K filings with the SEC, from 2001 to 2009, also assert acknowledgement of Entergy's liability for funding decommissioning. These filings require the Entergy to show all its assets and liabilities, which include its financial obligations relating to all activities and costs associated with decommissioning VY. It was stated again in a 2002 corporate new release, "... [Entergy] would assume all financial and operational risks of increases in operating and fuel costs, decommissioning costs, used fuel costs, nuclear waste disposal costs, cost of any accidents at VY, costs of premature shutdowns and/or extended outages."¹⁴

Decommissioning involves three main activities: removing the industrial facilities, transporting storing and safeguarding the spent fuel stored on-site, and finally, restoring the site for future use. Removing the industrial facilities involves removing the reactor vessel and the miles of radioactive piping, tanks, chambers, as well as tons of contaminated soil below and adjacent to the reactor complex. Currently, components are dismantled and shipped to a storage facility in Tennessee, Texas or Utah. The remainder of the non-radioactive areas such as administrative buildings and workshops are recycled or deposited in local land-fills. In all, over 670,000 cubic feet of low-level radioactive material and an estimated 135,000 cubic feet of contaminated soil will be removed from the site.

All nuclear reactors slated for decommissioning require a "cooling-off" period to allow some of the radiation to dissipate before work can safely begin. Due to the shortfall in decommissioning funding, Entergy proposes to put VY into a condition called SAFESTOR. SAFESTOR is one alternative to the prompt decommissioning of a retired nuclear power plant. It enables the company to postpone decommissioning up to sixty years.¹⁵ This scenario

¹³ Entergy Corporation, 2001

¹⁴ Entergy Corporation, 2002

¹⁵ Nuclear Regulatory Commission, 2008

transfers the responsibility for decommissioning to future generations and does not capitalize on the experience and skill of the existing workforce.

Decommissioning and restoring the VY site to a “green field” will likely be one of Vermont’s largest industrial projects. Entergy’s estimates that the cost of decommissioning will approach a billion dollars or more by 2012.¹⁶ The decommissioning process requires the collaboration of nuclear safety and engineering experts to design and implement a comprehensive safety and demolition plans. There will be an obvious need to employ qualified contractors and labors to carry-out the various stages. TLG Services, Inc, a subsidiary of Entergy, estimates that removing VY’s reactor facilities alone will cost over a half a billion dollars and take one million working hours to complete. Entergy contracts with TLG Services, to design decommissioning plans and implement them. In a 2007 report, *Decommissioning Cost Analysis for the VYNPS*, TLG Services concluded that prompt decommissioning is the most appropriate and cost-effective option for VY. The process would be more efficient and cost effective if the company capitalized on the skills and abilities of the existing workforce.¹⁷ TLG Services also recognized that expedited clean-up ensures the responsibility for decommissioning is not transferred to future generations.

Spent Nuclear Fuel Storage

A large part of the decommissioning involves safely removing the spent fuel from the cooling pool, transporting it to a storage facility and safeguarding it against natural, and human threats. Over 140 million pounds of spent nuclear fuel has been generated from commercial reactors in the U.S. and an additional 4.4 million pounds is generated annually by operating reactors. The majority of which will be radioactive for tens of thousands of years.¹⁸ As of 2011, there is over 1.3 million pounds of spent fuel being stored on-site at VY. The majority, 1.1 million pounds, is stored in a cooling pool located several stories above and adjacent to the nuclear reactor. This storage tank is positioned outside the reactor’s containment vessel, which

¹⁶ Vermont Department of Public Service, 2008

¹⁷ TLG Services, Inc., 2007

¹⁸ Alvarez, 2011, Nuclear Regulatory Commission, 2009; Congressional Research Service, 2004

is a steel reinforced concrete structure that encases the reactor. It is designed to contain the release of radiation and radioactive material in the event of a meltdown or explosion. The pool at VY currently holds three times the amount of spent fuel stored at Fukushima Dai-Ichi's crippled Unit 4 reactor in Japan.¹⁹

The remainder of spent fuel at VY is stored on-site in dry casks at an Independent Spent Fuel Storage Installation (ISFI). Entergy obtained approval from both the state and NRC to establish an ISFI in 2006. The company initiated the process to avoid exceeding the cooling pool's licensed capacity; enabling the plant to continue operating. Plant managers began transferring the older spent fuel assemblies from the pool into dry-casks in the spring of 2008. A malfunctioning crane dropped the first loaded cask of spent fuel four inches to the concrete floor of the refueling room. The accident was later attributed to the failure of a relay in an overhead crane - the crane was reportedly tested in 1975 for only about 70% of the weight of a fully loaded cask.

This method of storage is becoming more common at reactor sites throughout the U.S. due to the absence of a federal repository. Currently, twenty of the nation's 104 operating reactors have ISFI storage facilities. In 2010 the federal government cancelled plans to complete construction on a repository in Nevada at the Yucca Mountain Nuclear Waste Repository. As a result, this nuclear waste must be safeguarded at VY and other sites across the nation for the foreseeable future.²⁰ Multiple lawsuits seeking damages have been brought against the federal government for failure to open a spent-fuel repository as required by the 1982 Nuclear Waste Policy Act.

Timeline of Incidents

Over its thirty-nine year operating life, VY has experienced numerous incidents, many occurring within the last decade. Many opponents point to the plant's aging infrastructure and the added stresses of an up-rate in power output authorized by state and federal officials in

¹⁹ Alvarez, 2011, pp. 1

²⁰ Nuclear Regulatory Commission, 2008

2006. The approval allowed Entergy to increase power production by twenty percent – from 514 megawatts (MW) to 620 MW.²¹ The rate of deterioration is exacerbated by corporate cost-cutting policies that result in deferred maintenance schedules and staff limitations. Since 2004, there have been over fifty incidents at the plant. Some of the more notable events are described in the following paragraphs in an effort to provide contextual detail.

In June of 2004 a fire broke out in one of the plant's transformers causing an immediate shutdown of reactor operations or SCRAM. In the same year, Entergy was cited by the NRC for inadequacies in tracking spent fuel inventories when plant managers were unable to locate two irradiated fuel rods. They were found later at the bottom of the cooling pool. Inspectors also discovered numerous cracks in the plant's steam dryer. This component is not part of the critical safety system, but its proper function is important to reliable reactor operation. Other reactors have experienced problems with steam dryer cracking resulting in pieces breaking off and falling into steam lines that lead to the turbine. These pieces could disrupt the proper function of components down the line. The steam dryer's role is to reduce the moisture content of the steam coming from the reactor. This increases the life of reactor components and reduces the amount of radiation present in the steam as it exits the reactor. Additional cracks have been discovered during inspections in 2005 and 2008. After an inspection in July 2010, the NRC states the deterioration of the steam dryer at VY is considered a critical indicator of aging and stress at the plant.

One of the most significant events that has come to define the physical state of VY was the collapse of a cooling tower in August of 2007, causing a fifty percent reduction in power output. The collapse was a result of the degradation of the support structure. Contributing factors were determined to be the failure of managers to look at industry wide problems, inadequacies in routine inspections and financial constraints.²² The collapsed portion was repaired, but in the Summer of 2008 a leak was discovered that later was found to be a result of

²¹ Nuclear Regulatory Commission, 2006 & 2011

²² Gunderson, 2009

inadequacies in the repairs performed on the collapses tower section. A followed up inspection in Fall discovered that structural support brackets located in the cooling towers were inadequate for the load and required reinforcement. These findings highlight the lack of oversight from plant managers and the NRC, as well as the reactive nature of the plant's maintenance policy.

Starting in 2009, plant managers begin detecting a series of leaks containing radioactive water within the plant that require immediate repairs and reductions in the plant's power output. At one point the leak was purging as much as sixty gallons of highly radioactive water per minute. The most significant, was discovered the following year on January 7th when Entergy notified regulators that workers had detected elevated levels of radioactive tritium in a groundwater monitoring well at the plant. It was later confirmed that underground piping was among the possible sources of the contamination. This was significant due to an earlier testimony given to the VPSB by Entergy executives, in which they stated that there were no underground tanks or piping at the plant that could contained or carry radioactive water. During the cleanup workers find another, more potent radioactive isotope in the soil near the leak strontium-90; a byproduct of nuclear fission and linked to cancer and leukemia. Strontium-90 has also been found in fish caught in the river adjacent to the plant.

An investigation was immediately launched to determine if there was an attempt by Entergy executives to misled state officials. As a result, ENVY vice-president Jay Thayer, the executive responsible for operations at VY, is relieved of his duties following revelations of questionable statements he made to state officials in which he denied the existence of underground pipes that were later found to be the source of radioactive leaks. The NRC also found that Entergy is out of compliance with the minimum industrial standards for groundwater protection at VY, citing failures regarding "leak detection methods," "enhancements to prevent spills or leaks from reaching groundwater," "preventive maintenance of equipment to minimize the potential of radioactive material," and failure to establish "a site-specific groundwater monitoring plan".

In addition to structural and mechanical failures, Entergy has been cited numerous time for failure to comply with federal regulations relating to maintenance and radioactive

containment. In 2009 a maintenance supervisor is suspended after testing positive for alcohol during a random fitness-for-duty test. It was the third known incident of a VY employee testing positive for a controlled substance in the past two years.

This timeline highlights an ongoing concern that Entergy's commitment to safety and being forthright with the public, state and federal regulators and safety agencies. Other nuclear plants around the country where radioactivity has been found in groundwater have seen their costs of decommissioning climb significantly.

Vermont

Vermont (VT) is a relative small state both geographically and demographically. As of 2010, the state maintains a population of just over 625,000 inside a land area of roughly 9,000 square miles. It is a rural state where the majority of the population live in small, rural communities many relying on Vermont's natural resources to sustain their lives and livelihoods. As a result, Vermont possesses a unique sociopolitical culture whose values are rooted in the relationship citizens have with the natural environment. Conserving Vermont's distinctive landscape and resource base is at the center of many political debates and is a key factor in charting Vermont's social and economic development. This physical and emotional bond has fostered a strong sense, and desire for personal freedom and independence. Even as Vermonters fought, and fight for freedom and independence they understand that to protect their freedoms they must work together for the common good of the larger community. This is sentiment is captured in the state's motto... freedom and unity.

Vermont is also known for its many firsts. It was the first state to join the original thirteen colonies and in doing so, became the first state to outlaw slavery. It was the first state to print a postage stamp and the first to provide its citizens with a state university. More recently, it became the first state to enact legislation that empowered the state's legislature to vote on the continued operation of the VY. Act 160, passed on May 8, 2006, states that a nuclear energy generating plant may only be operated in Vermont with the explicit approval of the General Assembly after full, open and informed public deliberation and discussion with respect to

pertinent factors, including the state's need for power, the economics and environmental impacts of long-term storage of nuclear waste, and choice of power sources among various alternatives.²³ This legislation has become the cornerstone in the fight to close VY on schedule in 2012.

Advocates

The success of advocacy depends on the support and involvement of many people. Consolidating and using this kind of citizen power depends on the willingness and capacity of individuals and groups to collaborate to achieve common goals. One organizational tool used to facilitate collaboration is the formation of coalitions and alliances. Their purpose is to bolster advocacy efforts by consolidating the strengths and resources of diverse groups to acquire a more powerful voice for invoking change. The Safe Power Vermont coalition has become a powerful voice in the fight to ensure VY is retired in 2012. Thus far, the coalition has succeeded in building and sustaining a large, diverse constituency that has had a direct impact on legislative action and policy. This section provides an overview of the coalition's, its membership, its organizational structure, function and governance.

Safe Power Vermont – Vision & Mission

In her book, *Coalitions and Partnerships in Community Health*, Francis D. Butterfoss identifies five essential characteristics of successful collaboration: 1) shared creation: joint action for mutual benefit, 2) interdependence and reciprocity, 3) mutual authority and accountability, 4) shared responsibility, risks, resources and rewards, and 5) inherent conflict and dynamic tension (2007, pp. 27)

The Safe Power Vermont coalition grew out of a need for coordination and collaboration among individuals and groups who opposed the continued operation of VY. The union was catalyzed by the 2001 sale of VY to Entergy. The New England Coalition (NEC), Citizens Awareness Network (CAN) and Nuclear Free Vermont (NFV) were the founding members of the coalition. Over the years they have been joined by other state-wide and

²³ Vermont General Assembly, 2006

regional organizations who shared similar goals such as the Vermont Public Interest Research Group (VPIRG), Vermont Citizens Action Network (VCAN), Toxics Action Center (TAC), Sierra Club, the Vermont Yankee Decommissioning Alliance (VYDA) and Greenpeace. There are many other unaffiliated yet well informed and active citizens that participate in actions organized by one or all of the coalition members.

The coalition does not explicitly state its vision, but the prioritizing of goals and objectives is driven by the essence of a vision, which can be imaged as an equitable Vermont community that builds futures through the creation and implementation of policies that are considerate of the ecological, social and economic needs of both human and natural ecosystems. This definition is dynamic and may not be wholly agreed upon by all coalition members over time and space. The coalition's mission is stated in many forms and formats, but is loosely interpreted as a desire to educate, organize and activate key constituencies in Vermont to move public policy and build awareness among community members. Supporters do share three main goals, which are 1) to retire VY is retired on schedule in 2012, 2) to ensure that the decommissioning process beings promptly upon closure of the plant, and 3) to replace the power with a combination of energy conservation, increased efficiency and thoughtful application of renewable energy technologies within the state.

Vision and mission statements constitute the core of organizational stability and effectiveness. The importance of such statements is discussed extensively in the literature. In her book, F. Butterfoss defines a vision statement as an inspiring and uplifting image that is understood and shared by members of a community. They are broad enough to be inclusive of diverse viewpoints and can be easily communicated to new members (2007, p. 224). In essence, a vision statement describes how a coalition, and its partners view themselves in the advocacy context and their role in those processes contained within. A mission statement compliments a vision statement by stating the fundamental reason for the organization's

existence, i.e. the purpose of collaboration.²⁴ It describes WHAT a coalition, or organization is going to do and WHY.

Safe Power Vermont - Organizational Structure and Governance

The coalition's organizational structure and governance allows for autonomy and equality among member organizations. Each organization is governed independent of the coalition and often organize and/or participate in actions outside of the coalition's strategic mission. Chad Simmons, a long-time nuclear activist and coalition organizer, described the coalition's organizational structure "... as adaptive, highly flexible and fluid (personal communication, May 16, 2009)." This relationship has shown to be beneficial during times of conflict, when members may feel differently about the effectiveness, or practicality of a particular strategy or tactic. For example, in 2009 elements of the coalition were passionate about amending a resolution to various town's ballots on Town Meeting Day, which asked voters to disallow the continued operation of VY. Some member organizations felt that there was a possibility that this tactic could work against the coalition's strategy if the results were not in favor of closing VY. Those organizations that opposed the ballot measure choose not to participate directly in the organizing effort. The proponents implemented the ballot measure and were highly successful. Out of the thirty-eight towns that voted on the issue, thirty-two voted to close VY.²⁵

The coalition generally meets once a month more frequently if an event or action is planned, or if there is an abrupt change in the advocacy context such a policy or debate. At least one representatives from each member organization tries to attend the meetings. Meetings are run by one or more facilitators who organizes the agenda, prioritize topics for discussion and keep participants on track. Minutes are recorded and distributed amongst members and within the broader network. The responsibility for facilitating meetings and recording the minutes is shared among member and changes periodically. Lead organizers and activists also hold frequent meetings to update each other on current events, to solidify strategy and tactics,

²⁴ Butterfoss, 2007, pp. 225

²⁵ Audette, 2009

as well as to garner additional support. Constituents and other members of the public have access to aggregated information on current events and campaign developments via the network created among coalition members and their partners.

Coalition members are not bound by any formal agreements, rather they share an informal understanding of the value of their partnership and the role it plays in advocating for the public interest. The absence of a formal description of each member organizations role and responsibilities can result in confusion, inequality and disillusionment. C. Simmons (personal communication, May 16, 2009) noted that the lack of clarity in the roles, and to some extent responsibilities of members resulted in an internal conflict. To some extent, this ambiguity is mitigated by active and open communication among members and their partners, as well as the ability of the leadership to resolve such conflicts justly and in a timely fashion. It is apparent when review the coalition's success that the organization is capable of analyze the sociopolitical environment, adopt an effective strategy and adapt the appropriate tactics to achieve desired outcomes.

Safe Power Vermont – Coalition Members

The NEC is the longest-standing member of the current network and fought against the construction of VY and other nuclear power plants being constructed during the 1960s and 1970s. The NEC was pivotal in convincing the governor of Maine to request an independent safety assessment of the Maine Yankee Nuclear Power Plant, which ensured an open and transparent review of the findings. Assessors found that complacency and the failure to identify or promptly correct significant problems was apparent as demonstrated by previously undiscovered deficiencies in the reactor cooling system. Assessors found other weaknesses such as inadequacies in ventilation systems, documentation that lacked rigor and completeness and inadequate emergency operation procedures. Assessors noted that throughout the assessment process operators lacked a questioning attitude, which, in their judgment, "...was not conducive to discovering equipment problems, but rather to accepting equipment

performance.”²⁶ The company acknowledged that economic pressures had limited their ability to complete projects and employ technologies that would improve plant safety and performance. This ultimately led to the plant’s owners discontinuing plant operations in 1997; fifteen years before its operating license expired.

CAN was formed in the wake of a near catastrophic accident at the Yankee Rowe Nuclear Power Plant that occurred in 1992. The citizens of western Massachusetts banded together to achieve a similar outcome as the NEC in Maine. CAN’s advocacy efforts instrumental in the process by which the owners of the plant decided to discontinue operations. CAN has since expanded into five states, including Vermont. The organization advocates for intervention by the governments of Massachusetts and New Hampshire whose citizens share the risks associated with being “downwind” of a nuclear reactor, but have no voice in determining the fate of VY; often referring the situation to “radiation without representation”.

CAN created VCAN to act as its lobbying arm enabling the coalition to hire a paid lobbyist who advocates directly to Vermont legislators and gains critical information regarding their position on various issues such as VY. This information is used by coalition members to rank legislators in order to target individual legislators for further advocacy efforts. Today, CAN continues to capitalize on their strength as a grassroots organizer and its success using direct action.

NFV was formed by a group of concerned citizens from Brattleboro, VT and other communities within Windham County. Initially the group focused on getting a non-binding resolution on the 2002 Town Meeting Day ballot in as many towns across Vermont as possible in an attempt to raise awareness and demonstrate broad support. The resolution called for citizens to vote in favor of retiring VY on schedule in 2012. The resolution won overwhelmingly support from many of the local communities bolstering NFV’s effort to block the sale of VY to the Entergy Corporation, approval of a 20% “up-rate” in power generation and the approval of on-site radioactive waste storage in dry casks. Though the outcomes were

²⁶ U. S. Nuclear Regulatory Commission, 1996

less successful than had been hoped, the group was able to mobilize a large numbers of influential community leaders and their constituents who's influence resulted in various safety and economic concessions including below market rates on the electricity sold to Vermont consumers generated by VY. NFV continues to use Town Meeting Day as a platform for demonstrating public opposition and continue to win support from communities across Vermont.

Safe Power Vermont & the Vermont Public Interest Research Group (VPIRG)

Founded in 1972, VPIRG is one of Vermont's leading non-profit advocacy organizations. The organization is supported by over 20,000 members, private donors and grant funding. Their stated mission, "...is to promote and protect the health of Vermont's people, environment and locally-based economy by informing and mobilizing citizens statewide."²⁷. In 1975, VPIRG established the Vermont Public Interest Research and Education Fund (VPIREF) to facilitate community outreach and education. The organization focuses its efforts on public policy issues that present opportunities to educate and activate key constituencies by building awareness of the vital links existing between Vermont's ecosystems, communities and economy. This is done in hopes of invoking policy change that will lead the state, nation and the world down a more sustainable path. Issue areas range from environment protection and conservation, health care, consumer protection and good governance. The organization has be instrumental in the passage of many state legislative acts dealing with these issues.

VPIRG and the VPIREF are managed by a fifteen member Board of Trustees administered by a President, Vice-President, Secretary and Treasurer. The Board is composed of local professionals and business owners who are passionate about advocating for the public interest. Collaboratively they prioritize issues and actions while managing the financial sustainability of the organization. The organization employs nine staff members: an Executive Director, Associate Director, Office Manager, Development Manager, Clean Energy Program

²⁷ www.vpirg.org

Director, Health Care Advocate, Environmental Health Advocate, Field Director and a Field Associate. VPIRG also has an extensive network of volunteers and organizes a statewide door-to-door canvass each summer.

The Executive Director is responsible for implementing the Board's short- and long-term goals, as well as supervising each advocates progress on initiatives relating to their particular issue. The Executive Director is also engaged in promoting VPIRG's and its positions national and is also active in other advocacy organizations. The Associate Director is responsible for supervising the day-to-day operations of VPIRG; working together with the Office Manager and Development Manager to maintain a balanced budget and to ensure that at the end of each fiscal year there are sufficient funds to cover the coming years expenses. This is accomplished through advertising, direct and indirect communication with members and donors, organized events and grant writing. The team is also responsible for maintaining VPIRG's extensive list of members and donors.

The Advocates work closely with the Field Director and Associate to design and implement an effect strategy that will achieve positive outcomes using tactics which are relevant to the advocacy context. While the Vermont Legislature is in session Advocates spend a majority of their time meeting with legislators, testifying before various legislative committees and holding public forums for constituents. The Field Director and Associate coordinate actions with VPIRG's network of allies to maximize the impact each has on achieving the goal of each campaign. Staff members and volunteers characterize themselves as advocates and organizers who are working to protect the public interest by supporting policies that help to improve the quality of life in Vermont.

Recently, VPIRG has launched a Solar Communities initiative through a new entity called VPIRG Energy with the simple goal of make installing solar electric and hot water systems more affordable for Vermont homeowners.²⁸ They have negotiated discounts with local vendors, worked to bundle incentives reducing the upfront cost to customers and arranged for

²⁸ <http://www.vpirgenenergy.org/>

low interest financing. The organization has begun working with residents in over ten communities throughout Vermont. Over time, they hope to be able to offer this opportunity to more communities.

In collaboration with Safe Power Vermont and its allies, VPIRG is able to react quickly to changes in policy debate. The organization's ability to act quickly and appropriately within the advocacy context can be attributed to good research and analysis, identifying the various actors and navigating the political landscape, clear strategy and tactical precision, as well as an effective method of monitoring and evaluation.

Policy

Proponents of VY believe the plant is vital to the local and regional economy. They argue that the plant's closure would have a considerable negative impact on Vermont's economy, which would be exacerbated locally due to the loss of employment, reduced economic activity and decreased tax revenue. VY is one of the largest employers in Vermont and is among the top five in Windham County with just over 500 employees. The loss of this workforce would likely cause a decline in local home values, suppression in new home construction and may lead to lay-off in other sectors of the economy increasing the burden on local and state governments. Overall, the potential loss to the Vermont economy has been estimated to be from \$1.5 billion to \$5.1 billion over the twenty year relicensing period.²⁹ These estimates do not take into account the labor required to decommission the plant and clean-up the contaminated site. The entire reclamation process can take fifteen years or longer. Decommissioning projects at other reactors have required the retention of as much as fifty percent of the workforce.³⁰

Proponents also believe that nuclear energy is a "clean" source of energy due to its low carbon emissions and any replacement power supply would be carbon intensive, such as coal and oil, which would increase Vermont's carbon footprint contributing to the anthropomorphic

²⁹ GDS Associates, Inc., 2009

³⁰ New Horizon Scientific, LLC., 2007

phenomena known as climate change. They rarely mention the tons of highly radioactive waste that is currently being stored at VY and the reality of it remaining there into the foreseeable future. Closure of VY would eliminate any further production of radioactive waste.

Opponents to the continued operation of VY believe Entergy has been negligent in operating an aging nuclear power plant twenty percent above its designed generation capacity. The practice has added additional stresses to the already weakened infrastructure, which has been made event by recent events at the plant, i.e. cooling tower collapse, tritium leaks, etc. The plant also does not meet current design safety standards and would not be built today. The only reason to continue operating the plant is for short-term financial gain. Moreover, there is no guarantee that the reactor will prove reliable and in these volatile times it is wiser to create a diversified and decentralized energy infrastructure that relies more heavily on in-state power generation.

Entergy continues to show itself as an entity that cannot be trusted to operate the plant in the interest of Vermonters. The company has repeatedly blocked legal and legislative attempts to hold it accountable for decommissioning funding, as well as other state and federal such as water quality, fence-line radiation emissions and transparency of information. Entergy executives have mislead legislators and have tried to dissolve themselves of any liability through attempted sale and corporate restructuring. The concern is that Vermont ratepayers, and possible taxpayers will have to cover the shortfall in funding, which may include long-term payments for securing the nuclear waste stored in Vermont. Advocates also believe that allowing the plant to continue operating past its design life unduly exposes current, and future generations to the environmental and economic risks associated with operating such a facility and storing the radioactive waste.

VY provides about 250 MW or roughly one-third of Vermont's energy needs; the remainder is sold on the wholesale electric market. The plant represents only two percent if the total generation capacity on the New England power grid. Advocates believe the power can be replaced through a diverse package of energy solutions that includes conservation, efficiency and renewable energy. Policy initiative that target energy efficiency and renewable energy can

generate significant environmental, social and economic benefit by generating long-term employment opportunities, lowering energy costs and reducing the internal, and external impacts of energy generation. Efficiency is known for being the cheapest source of "power" costing, on average, 2-3 cents per kWh. Vermont utilities purchase power from VY at a rate roughly fifty percent higher than efficiency and in 2012 this "cheap" rate expires with the PPA. A 2007 report to the VDPS report showed that efficiency could reduce power consumption in Vermont by 215 MW by 2015 (GDS Associates, Inc., pp. 1). This represents a significant portion of the power purchased from VY.

Vermont is not the first state to face this situation. The citizens of Sacramento, California voted to close the Rancho Seco reactor in 1988 after an incident that caused a sixty percent loss in generation capacity; calling into question the plant's reliability and economic viability. The plant was closed in 1989 and the Sacramento Municipal Utility District (SMUD), owners of the reactor, replaced the power with a diverse package of energy solutions including small hydro, gas, solar, wind, efficiency and conservation. Rancho Seco was a large 1,000 MW reactor. Vermont's portion of Vermont Yankee is less than twenty-five percent of that. Much of the skilled workforce at Rancho Seco was retained and employed in the decommissioning process. In essence, VY does not offer a net benefit for Vermonters. Overtime, the relationship with its owner, Entergy, will cost more than investing in sustainable energy alternatives and efficiency.

The NRC has exclusive authority over the safety aspects of licensing nuclear reactors, however, states retain jurisdiction over economic questions such as the need for additional generation, the type of facilities to be licensed, land use, ratemaking and reliability.

Act 160

In 2006, Vermont became the first state to pass legislation empowering the state's General Assembly to regulate the nuclear power industry in the interest of the public good. Act 160 passed with resounding support in both the Vermont House (unanimous vote) and the Senate (18-5), and was signed into law by the presiding Governor, Jim Douglas. Even Entergy

supported the initiative quoted through a spokesperson as saying, "We commend the Legislature, especially the House Natural Resources (and Energy) Committee, for putting a lot of effort into drafting a bill that should serve the state well." Further stating that, "They [Entergy] recognized the importance of fully addressing the question of Vermont's future energy supplies."³¹

The law requires prior approval from the General Assembly to operate a nuclear power plant and store spent nuclear fuel in the state. The law also limits the state's authority to issues relating to reliability and economic "best interests". The state does not have jurisdiction over plant safety, which is reserved by the NRC. The NRC has yet to deny a license extension and has been criticized for being too close to the industry.³² Under the authority of Act 160, the Vermont Senate voted twenty-six to four not to allow the VDPS to consider Entergy's application for a Certificate of Public good. Simultaneously, the federal government is pushing to expand the fleet of nuclear reactors in the US and extend the life of existing reactors. With a commitment to renewables, conservation, and efficiency, Vermont could become a leader in job creation based on alternative energy.

Today, the coalition is still focused on ensuring that VY is retired on schedule 2012 and decommissioning is initiated as soon as safely possible. They also continue to hold Entergy liable for the cost of decommissioning VY and storing the spent fuel. And, are committed to supporting the implementation of state energy policies that incentivize the use of renewable energy technologies for both commercial and residential customers, pushes for increases in energy efficiency and promotes the importance of energy conservation. Much of the strategic and tactical planning is awaiting the federal court's decision regarding Entergy's case against Vermont, but advocates continue to engage their supporters in the issue and work to counteract Entergy's influence among politicians and the public.

Politics

³¹ Associated Press, 2006

³² Zeller, 2011

The lines of authority between states and the federal government are, to a significant extent, defined by the 10th Amendment of the U.S. Constitution and relevant Supreme Court cases. Legally, states are not considered a creation of the federal government; rather the states compose the federal government; both operate within a system of parallel sovereignty. The sovereignty of the federal government is strictly limited to the terms of the Constitution, whereas state sovereignty is limited only by 1) the sovereignty and powers that states have transferred to the federal government via the Constitution, and 2) the provisions of its own constitution, which usually (but not always) sets certain parameters for the exercise of the state's sovereignty.³³

When it comes to regulating nuclear power plants, the U.S. Supreme Court agrees that both state and federal law applies to nuclear power. In the case of *Pacific Gas & Electric Co. vs. State Energy Resources Conservation and Development Commission* (1983) the court held that a state statute regulating economic aspects of nuclear power plants such as the need for additional generating capacity, type of generating facilities to be licensed, land use and ratemaking was not preempted by the federal Atomic Energy Act of 1954. The case provides a framework that has guided other cases involving preemption of federal authority.

Overlap between state and federal authority is present in all sectors of the economy. The energy sector is no different. At the beginning of the 20th century electricity was generated and delivered to consumer by a number of independent electrical utilities, but in the mid-1900s utility companies began to merge at a rapid pace and, overtime, the industry has come to be dominated by a few regional and national monopolies. Between 1933 and 1936, the Roosevelt administration's "New Deal" policies brought federal regulation to the wholesale electric market.³⁴ Today, regulatory authority sits with the Federal Energy Regulatory Commission (FERC), which holds jurisdiction over interstate electricity sales, wholesale electric rates, hydroelectric licensing, natural gas pricing, and oil pipeline rates.

Over the years, states have enacted legislation to regulate the activities and actions of utilities operating locally through utility commissions, such as the Vermont Public Service Board

³³ U.S. Const., amend. X, § 1

³⁴ Dworkin, 2008

(VPSB). Vermont has two entities that regulate the activities and actions of utilities operating within the state: the VPSB and the Department of Public Service (VDPS). The VPSB is a quasi-judicial board that supervises the rates, quality of service and overall financial management of Vermont's public utilities. It also reviews the environmental and economic impacts of energy purchases and facilities, the safety of hydroelectric dams, the financial aspects of nuclear plant decommissioning and radioactive waste storage, and the rates paid to independent power producers. The Board is tasked with providing an independent, fair and efficient means of resolving public utility disputes and guiding the development of state utility policies and rules to best serve the long-term interest of Vermont and its residents, as defined in Title 30 VSA §3 and §9.

The VDPS is an agency within the executive branch of Vermont state government. The Department's role is to represent the public interest in matters regarding energy, telecommunications, water and wastewater. The department achieves this by: 1) representing the public interest in utility cases before the VPSB, federal regulatory agencies, and state and federal courts, 2) providing long range planning for the state's energy and telecommunications needs, 3) ensuring benefits are shared among ratepayers, 4) promoting energy efficiency, 5) administering federal energy programs, 6) resolving utility customer complaints, 7) informing the public about utility-related matters, and 8) making and administering contracts for the purchase of power on behalf of the state. As the public's advocate, VDPS is a separate agency from the VPSB.

Both houses of the Vermont legislature are responsible for overseeing energy development and economic sustainability. Each has their respective committees discuss and draft policy. The coalition has used these committees to their advantage and employs a two-prong approach to advocacy. On the one hand they advocate directly to the legislature and its committees while raising awareness and building a constituency at the grassroots level. They direct their advocating power at:

- State Legislators
 - Speaker of the House
 - Senate President/Pro Tem/Governor

- Natural Resource & Energy Committees
 - Economic Development Committees
- The Public
- Local Business

The coalition allies itself with:

- Legislators & state officials
- Local Business
- Local Media
- Local Communities
 - Town Meeting Votes – 2009 & 2010
- Voters
- Other advocacy organizations

Strategy

A well planned strategy acts as a road map that keeps advocates and activists on track through the chaos of a changing sociopolitical environment. The strategy helps organizers: 1) remain focused on the objective(s), 2) undeterred by their opponents attempts to block change, 3) keeps them steady in their message and 4) unifies their allies. An effective strategy is designed around short-term objectives that are clear, specific and attainable, which relate directly to the long-term goal(s) of the campaign. A strategy requires advocates to identify their target(s) and how they can be influenced.

The coalition’s strategy is guided by four core beliefs: 1) Act 160 remains the “best opportunity” to close VY, 2) legal action taken by the coalition members against government agencies such as the NRC and the VTDPs and Entergy continue to be fruitful in delaying the process to the advantage of the advocates 3) public outreach and direct action have effectively raised public awareness, influenced public opinion, pressured policy makers and Entergy officials, and helped in mobilizing a powerful constituency; and 4) the use of media has been an effective tool at raising awareness and influencing key stakeholders in both the social and political arenas.

The passage of Act 160 was a turning point in the movement and solidified the coalition’s purpose. To achieve this success advocates took the time to carefully craft its

message. Rather than make the bill a pro- or anti-nuclear power vote, in their literature and meetings with legislators, advocates spoke about “good governance” and the responsibility of the legislature for “due diligence” on a critical issue facing the future of the state. They argued that such decisions should be made “in Vermont by Vermonters”; not by the NRC or an out-of-state corporate owner like Entergy. This struck at the heart of Vermont values and helped to garner support from legislators and their constituents.

Coalition leaders and advocates worked closely with supportive legislators to amend the bill; mandating studies of the economic, health and environmental impact of extending VY’s operations. The law required the state to hold public hearings periodically throughout the review process. In the end, with no hope of defeating the bill, the oppositional leadership supported the initiative as a good governance bill.

Districts are targeted and prioritized based on information obtained directly from legislators and/or their constituents. This information is used to rank officials in terms of their relative position on a particular issue. For example, if Representative X supports one of the coalition’s initiatives they would receive a lower ranking and their district would be less of a priority. Organizing efforts have been focused mainly in those districts whose legislators are unsure of their position or not yet committed to one. The primary goal of organizing in targeted districts is to build a constituency through awareness raising and inspire them to act in their own interest. This strategy has been effective at mobilize constituents and directly impacts the political positions legislators take.

Following the impact studies and public engagement processes, advocates began push for a legislative vote on the issue. The collation’s leadership, together with their allies in the legislature discussed the best method of introducing the issue into the General Assembly and in which house would they be most successful. Ultimately, it was decided to introduced the resolution into the Senate Committee on Natural Resources and Energy as a resolution to keep the VPSB from reviewing Entergy’s application for a CPG. The resolution won overwhelming support from the majority of Vermont’s Senators and their constituents. The decision to force the vote in the Senate as opposed to the House of Representative was based on simple numbers.

Vermont has thirty Senate seats and 150 Representatives; coalition leaders realized that they would have a greater impact by concentrating their resources on fewer targets. Advocates had also gained the support of key Senators, including the Senate President, who held sway over the more progressive elements within the caucus.

Since the 2010 Senate vote, coalition members have continued to share in the responsibility of organizing constituency in key legislative districts throughout Vermont. While the coalition applies pressure from the bottom through its grassroots organizers and activist, it also employs a lobbyist to communicate directly with key legislators. This has been a very effective method of gathering information that has been helpful in determining tactics and timing. The coalition has organized numerous protests and rallies throughout the state. The coalition has also been proactive in arranging public forums where constituents can discuss the issues with their representatives in a “town hall” style meeting and has coordinated numerous events that showcase experts in related fields who speak on the issues and their impacts.

Tactics

In the world of community organizing and policy advocacy, tactics means doing what you can with what you have. The premise of tactics is to develop a mechanism that will maintain a constant pressure on the opposition or target. A good tactic is directed, clearly identifies or singles out the target to constituents, personalizes the target by humanizing public and private institutions and lastly, polarizes the target using socio-cultural norms to stigmatize behavior. A successful tactic is also one that supporters are willing, and able to do, can be deployed quickly and sustained over a long period of time. Not only is pressure essential to compel the establishment to make its initial concessions, but the pressure must be maintained to make the establishment deliver.³⁵

Having a clear and poignant message is an essential element in successful deploying campaign tactics. The message must strict at the core values and beliefs that each person holds. The message must be framed in such a way as to impassion a sense of urgency and a need for

³⁵ Alinsky, 1971, pp. 142

action. The framing process entails narrowing research down to the most salient, important points. A frame can be defined as a organizing principle that is socially shared and persistent over time that work symbolically to bring meaningfully structure to the world around us.³⁶ Frames can be defined using three levels of frames. Level one frames focus on big ideas such as freedom, justice, community, success, prevention, responsibility and sovereignty. Level two frames present issue-types like the environment, health, safety, climate change, reliability and the economy. Level three frames speak to the specific issue(s); for example, nuclear waste storage, job development, state revenue generation and renewable energy.

The message is as important as the messenger. Picking the right person and/or forum affects how the message is heard. Individuals earn credibility based on how well they communicate. Thorough research, command of the facts and accuracy is what distinguishes an effect . “The best strategy for change is to have public opinion on your side. That, more than clever tactics, is what wins advocacy efforts and protects them (Schultz, 2002, pp. 82).”

Messages

- Major safety concerns related to the aging nuclear facility
- No viable system for disposal of nuclear waste (stored on-site)
- Local environmental contamination due to leakage of affluent from the facility
- Inadequate emergency evacuation plan in the event of a radiological release

Communicating the message in a bold and compelling way, will help make the issues more meaningful and applicable to Vermont citizens. That is why framing a message is crucial.

Vermonters are divided on the issue of nuclear power and VY. Voters see VY as creating good paying jobs and an important source of revenue for the local economy. The coalition has realized that they cannot win this argument, even by talking about the jobs that will be created moving to clean energy economy. Instead, the coalition pivots back to its core message - closing the plant as scheduled is the safe and responsible thing to do. Entergy’s position is that it is, “committed to keeping Vermont’s environment strong and healthy” and producing “pollution-free energy” that contributes to the state’s low carbon footprint.

³⁶ Frameworks Institute, 2011, pp. 5

Advocates responded by highlighting the not so clean aspects of VY such as the radioactive waste and underground tritium leaks.

Messengers

- Advocacy groups
 - New England Coalition (est. 1960s)
 - Citizens Awareness Network (est. 1992)
 - Nuclear Free Vermont by 2012
 - Vermont Public Interest Research Group
 - Toxics Action Center
 - Conservation Law Foundation
 - Vermonters for a Clean Environment
- Vermont legislators and other local officials
- Citizens

Taking Action

- Efforts made to try and stop the construction of VY
- Creating ballot initiatives on Town Meeting Days
- Blocking the sale of VY
- Bring attention to the issue regionally and nationally
- Organizing displays of civil disobedience, i.e. protests
- Lobbying the Vermont legislator and local representatives

Evaluation & Learning

Reflecting upon my research and experience has enabled me to identify some of the strengths and weakness of the coalition, as well as to offer a perspective on future opportunities and potential threats. Using a SWOT analysis, I am able to present my findings in a more clear and concise framework. The framework is helpful in illustrating where the coalition has been, where it is at and where it may go in the future.

Strengths

- Strong internal and external networks
- Large constituency
- Committed volunteer base
- Adaptability & Flexibility
- Knowledge base of leadership & staff
- Experience of leadership & staff
- Out-of-state support

Weaknesses

- Monitoring & Evaluation
- Lacking continuity of leadership
- Limits of technology as a communication tool
- Lack of organizational diversity

Opportunities

- Creating alliances with labor organization, institutes of education and small business groups
- Deepening out-of-state support
- Monitoring & Evaluation
- Increase organizational diversity

Threats

- Membership fatigue
- Funding
- Internal conflict
- Future verdict
- Lack of organizational diversity

The analysis identified opportunities for organizational growth and development, as well as identified potential threats to stability of the organization and its sustainability. The research identified five key recommendations that may need consideration as the coalition moves forward in its efforts to win this precedent setting vote. Below are listed the key recommendations:

1. Revisit the vision and mission
2. Solidify organizational framework (roles & responsibilities)
3. Seek partnerships with key stakeholder groups
4. Formal resource sharing agreements (MOU's)
5. Look at "time banking" as an incentive for volunteer participation

This moment provides a good opportunity for coalition members to re-evaluate the function and functionality of the organization. roles and responsibilities, also must be clarified to avoid internal conflict and increase efficiency within the coalition. The coalition must begin to seek partnership with key stakeholder groups such as labor organizations, educational institutions and small business groups. These three stakeholder groups are essential in VT's energy transition. Establishing memorandums of understanding (MOU'S) between member organizations can stream line resource sharing and ensure that all parties are contributing to the campaign equally. Lastly, to increase the volunteer base there may be a need to provide incentives. "Time banking" is a method that allows an individual to "bank" their time spent working for the campaign and use it at a later date to elicit help from another individual in the in the time banking system. This could be an effective way of garnering the support needed to sustain the campaign.

Vermont is at a crossroads. Vermont can lead the way toward future innovation or not. Vermonters have an opportunity to lead the way and set the tone for clean, safe energy for generations to come.

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