

Energy and Emergency for the Office of Emergency Preparedness

Brian Lindseth

Department of Sociology
University of California, San Diego

Paper Presented at the Anthropology of the
Contemporary Research Collaboratory Workshop, January 2008

WORKING DRAFT

NOT FOR CITATION

Energy and Emergency for the Office of Emergency Preparedness

Brian Lindseth

Department of Sociology
University of California, San Diego

Introduction

In 1971, the United States consumed energy at the rate of 69,000 trillion BTU's per year. By 1980, this figure will swell to 96,000 trillion, a 39 percent increase; and, by 1990, energy consumption will increase to 140,000 trillion BTU's per year, a 103 percent increase over 1971¹.

In 1972 the Office of Emergency Preparedness, led by director George Lincoln and Robert Kupperman, released a report focusing on the problem of energy. Emerging out of a cold war context initially focused on the prospect of civil defense in the face of a possible Soviet attack, the Office of Emergency Preparedness (OEP) succeeded the Office of Civil Defense Mobilization, which in turn succeeded the Office of Defense Mobilization before it.

Eschewing more traditional measures such as the ratio of energy consumption to GNP, the book aims at a more nuanced view, breaking down the field of energy consumption into sectors—transportation, industry, electric utilities, and residential and commercial—representing the primary pathways along which energy is consumed². Aggregated energy consumption is also broken down by types of fuel consumed—fossil fuel, hydropower, and nuclear³. Perhaps more importantly, the authors are always looking to the future. Each of these breakdowns are projected forward from the time of writing to forecasted 1980 and 1990 levels.

Further, this report made sweeping recommendations for changes in the use of energy. Its

1 . energy_doc_1.pdf, 1.

2 . As of the time of writing, transportation accounted for 25%, industrial for 29%, household and commercial for 21%, and electrical generation for 25%. Page 7.

primary message? Conserve—use less energy.

Why would an office created with a legacy of concern for civil defense and amid efforts at mobilizing the national security state by preparing for emergencies be concerned with energy conservation?

In this report I will address this question as a way of investigating the larger question of how the larger field against which the OEP was to intervene—emergency—shifted over the years, expanding to include a heterogeneous set of issues. Before delving into this larger topic, perhaps it would be helpful to provide a bit more context for the emergence of the OEP.

Background

The Office of Emergency Preparedness was formed in the opening years of the 1960s as a part of an earlier effort to mobilize before the threat of conflict with the Soviet Union. For many historians, the late 1940s and early 1950s proved important years in establishing the position that came to define the terms of America's cold war agenda⁴. I would like to suggest, in addition, that these years are important in considering the emergence of a rationality of preparedness that came to inform the efforts of the Office of Emergency of Preparedness and others, before and since.

Shortly on the heels of George Kennan's Long telegram and the Clifford-Elsey report, 1947's National Security Act created the National Security Resources Board aimed at aligning the nation's resources in the event of a conflict with the Soviet Union. Perhaps hindered by Truman's fiscal conservatism and desire to avoid a garrison state—also making his initial resistance to the degree of mobilization, and spending, outlined later in NSC-68—the National Security Resources Board faltered as a weak instrument of mobilization⁵. In March of 1949 the Board recreated the Office of Civil

3 . Fossil fuel accounting for 95.4%, hydropower for 4.1%, and nuclear for .6%. Page 6.

4 . Gaddis, Pierpaoli, Hogan.

5 . See Pierpaoli especially, but also Hogan.

Defense, originally closed in June 1945. Later, in September, the US was shocked to discover that the Soviet Union had detonated its first atom bomb, years ahead of forecast. And in October, Mao declared People's Republic of China. In June of the following year, the Korean War broke out, and Truman's emphasis on economizing came to be replaced with a focus on building a national security state. Many, such as the NSRB as well as the Secretary of Defense stopped short of requiring controls to reorient the economy to a state of mobilization⁶. Just one month after the outbreak of the Korean War, Truman delivered a message to Congress asserting that US action in Korea would require wartime powers for armament and mobilization. In September, the passage of the Defense Production Act answered this request in providing avenues for defense spending with the declaration of national emergency. In late November, China changed the face of the war as over two hundred thousand Chinese soldiers moved south and inflicted a devastating defeat to the UN forces. Three days later General MacArthur reported to the UN “we face an entirely new war”⁷. The early days of December saw the scale of US efforts to mobilize increase dramatically. Truman decided that the NSRB would not be up to the task of mobilization and with an Executive Order he created the Federal Civil Defense Administration which, empowered by the Federal Civil Defense Act, took charge of preparing educational materials for civil defense bodies at the state and local level. More importantly for the present discussion on December 16th, Truman declared a state of national emergency—allowing him to invoke the powers conferred by the Defense Production Act—and created a powerful new agency in the Office of Defense Mobilization (ODM) headed by Charles E. Wilson, former president of General Electric. While the NSRB continued on as an advisory body for the president, the creation of the ODM left it without power and largely disregarded until it was dissolved in 1953.

While in many ways, Truman's declaration of national emergency was legal in nature, serving to legitimize the basis for efforts to mobilize the nation before the prospect of war, I believe that the sense

6 . See Pierpaoli for this account.

7 . Ibid. p42.

of urgency leading up to this declaration can be appreciated in cultural terms as anticipation of the prospect of nuclear war. For historians such as Hogan, Pierpaoli, and Kaufman, the beginning months of the Korean War set the stage for much of the rest of the cold war. America would approach the Soviet threat through mobilizing resources to a degree unusual in peacetime. While this level of mobilization began in the Korean war, it continued throughout the remainder of the cold war and came to play a large role in defining notions of the cold war national security state⁸. Other analysts, such as Sharon Ghamari-Tabrizi construe the importance of the Korean War in terms of the US discovery that the Soviets had detonated their first atom bomb, in late August 1949. Given this realization along with the entrance of Communist China into the Korean War, Ghamari-Tabrizi traces the fears of many Americans that the Soviets could also enter the conflict—making the Korean War the beginning of World War III and quite possibly a gateway to nuclear holocaust⁹. If these writers are correct then we can see how this fear of nuclear annihilation might form an important moment in a genealogy of preparedness in the face of catastrophe. Mobilization, and the emergence of a national security state, becomes intertwined with the emergence of the logic of preparedness. Below I will address the ways in which this sense of emergency expanded from the fear of nuclear war, but first I will situate the OEP within the same legacy of mobilization that marks the Office of Defense Mobilization.

The ODM was only to exist for eight years before the Office of Civil and Defense Mobilization took its place. Amid overlapping duties between the ODM and the Federal Civil Defense Administration, all functions were transferred to the president and merged under the Office of Civil and Defense Mobilization¹⁰. And in a series of Executive Orders, the Office of Emergency Planning was created in the opening years of the 1960s—to be renamed the Office of Emergency Preparedness in 1968. In July of 1961 Executive Order 10952 moved many civil defense functions and personnel to the Department of Defense as the Office of Civil Defense. The Office of Civil Defense Mobilization lived

8 . Hogan, Pierpaoli, Kaufman.

9 . Ghamari-Tabrizi, 2005.

on, however, and was responsible for

emergency resource management and policy development, natural disaster planning and coordination under Public Law 81-875, continuity of government, telecommunications coordination, assistance to the President in supervising the maintenance of the strategic stockpile and overall responsibility for reviewing and recommending on the total nonmilitary defense program ¹¹.

Later, in September 1961 the OCDM was renamed Office of Emergency Planning. In summer of the following year, the organization was restructured along the lines suggested by a internal staff study, and Executive Order 11051 was issued to restate the OEP mission. Perhaps it would be worthwhile to quote from the Order here at length:

PRESCRIBING RESPONSIBILITIES OF THE OFFICE OF EMERGENCY
PLANNING IN THE EXECUTIVE OFFICE OF THE PRESIDENT WHEREAS
national preparedness must be achieved and maintained to support such varying
degrees of mobilization as may be required to deal with increases in international
tension, with limited war, or with general war including attack upon the United
States; and WHEREAS the national security and our continuing economic growth
and prosperity are interdependent, appropriate attention must be directed to effective
coordination of emergency preparedness measures with national economic policies
and objectives; and WHEREAS mobilization readiness and civil defense activities
can be accomplished most effectively and efficiently through the performance by

10 . LBJ 4-5.

11 . LBJ 3.

departments and agencies of the Government of those emergency preparedness functions related to their established roles and capabilities; and WHEREAS responsibility for emergency preparedness involves virtually every agency of the Federal Government, and there is need to provide a central point of leadership and coordination in the Executive Office of the President ¹².

Ambiguities as to possible overlapping functions between the OEP and the Office of Civil Defense were addressed with a 'Memorandum of Understanding' between the two agencies in 1964. Here the OEP maintained responsibility for “ 'primary' (generally, interstate) resources, while the State and local governments, with OCD planning assistance, would have responsibility for use of 'secondary' (intrastate) goods” ¹³.

Emergency in the beginning

In order to approach the question of how OEP notions of emergency changed—and frame the question of how conservation fits in with OEP's techniques of preparation, we can begin by looking at notions of emergency in the early years of the OEP.

What counted as an emergency in the early years of the OEP? In the beginning emergencies tended towards a stronger focus on national security. This focus continued into the later years, but it seemed to be less central. Another contrast can be found in the extent to which nuclear attack was, in the earlier years, the primary threat. While the focus on nuclear attack can be found in later years it can be seen as structuring OEP's sense of emergency in the earlier years. It was at this time that emergencies seemed to take the form of nuclear attack and other threats that were much more vaguely defined and seemed to operate a something like a residual, catch-all category.

12 . <http://www.disastercenter.com/laworder/11051.htm>

13 . LBJ 11.

This division of emergencies into nuclear and non-nuclear can be seen in several places in OEP documents. One example seems to represent a relatively large effort on the part of the OEP as referenced in the internal history of the OEP during the years of President Johnson, named The Office of Emergency Planning During the Administration of President Lyndon B. Johnson, November 1963 – January 1969. Here, the document is described as follows:

The National Plan for Emergency Preparedness represented the culmination of two years of intensive cooperative effort by OEP with other agencies. It modernized and codified the principles of civil emergency preparedness, the authorities for emergency action, and the preparations and emergency responsibilities of Federal, State and local governments, of business, industry, and labor, and of the general public. The National Plan has been widely distributed and remains the principle document of civil emergency preparedness¹⁴.

In the document itself, the division between nuclear and non-nuclear emergencies remains largely in the background but seems to structure the discussion. For example, Part I of chapter 15, 'Housing,' on 'Special Planning Factors,' is divided into three parts--"Limited Emergency," "General Nuclear War," and "Recovery"¹⁵. A similar division can be seen in the beginning of chapter 12 ("Resource Management"). Here 'Planning Factors' include "International Tension and Limited War" on the one hand and "General Nuclear War" on the other (there is no 'Recovery' section in this chapter). The former category covers the case of "a conventional or limited war"¹⁶. Here the primary difference between the categories seems to be the use of nuclear weapons. One set of plans applies in the case of

14 . lbj_adm.pdf, 67.

15 . The latter appears to apply to both a limited emergency and general nuclear war. See page 2 of chapter 15 in natnl_plan_63.pdf.

16 . 3-4 in the chapter.

an all out nuclear war and another set applies in a war in which nuclear weapons are not used but also in the underspecified case of “international tension.”

This early 1960s focus on nuclear attack can be seen in other OEP endeavors as well. One such effort was the report “Central Programming After Nuclear Attack,” prepared by members of PAC and the Resource Management Division. The report starts off tracing the responsibility of the OEP director as outlined in section 203 of executive order 11051 “for developing 'an overall emergency system for reaching central program decisions for the utilization of resources,' including 'the central consideration of the supply requirements evaluation of planned programs' and 'the central determination of national resource utilization programs under varied conditions of national emergency.” The report goes on to note that the Director's “responsibilities comprise a range of emergency planning for implementation under a variety of conditions, from pressure situations within a cold war environment, through situations of limited war to full scale war, both conventional and nuclear”¹⁷. Although the report traces its authority to this executive order and what seems to be a broader sense of emergency, the report is focused almost entirely on planning for the aftermath of a nuclear attack. The aftermath is dissected into phases (the survival phase, the priorities phase, and the central resource management phase) and “anticipat[ing] the eventual need for a capability to make and execute central resources management decisions”¹⁸.

Another set of OEP efforts focusing on nuclear attack is represented in the development of a study named NAHICUS for “Nuclear Hazards in Continental US.” The study was driven by the NREC during Joseph Coker's tenure as director and represented an ongoing study¹⁹. The enclosed tables on the photocopied document outline the likelihood of the availability of kinds of government resources in spans of time after an attack (10%, 50%, and 90% probability for “available without

17 . First page of text or fifth page in in ctrl_progr_atk_62.pdf.

18 . Page 2 of text or 6 in ctrl_progr_atk_62.pdf.

19 . nrec_nahicus_63.pdf for example, mentions NAHICUS-62 and NAHICUS-63 reports.

delay,” “after 15 days,” “after 90 days,” and “indefinitely denied and destroyed”²⁰.

More of this focus on emergency seen as a nuclear attack can be seen in an elaborate simulation or gaming exercise from 1960 through 1962 and named 'Spadefork.' While most of the documents used in the simulation itself were dated 1962, there was planning related correspondence leading up to the simulation dating from 1960. The simulation itself appeared to be fairly elaborate and was focused on the aftermath of a nuclear attack. The NREC prepared maps of projected explosions along with anticipated levels of radiation exposure. And there were weather forecasts to better predict the post explosion flows of radioactive fallout. Further, there were a number of different types of telegrams—action telegrams, situation telegrams, and telegrams between various Federal agencies—that place the simulation dates in late September 1962. Here is an example of a simulated news release:

News Release / Toledo / September 25 (UPI) - It is reliably reported that Jimmy Coffey is effectively in control of the Detroit area. He maintains that since no legal government existed in Detroit it was necessary for one to assume control

Another, follow up document contained the following anticipated response by the OEP: "Expected reaction / OEP to react to assure the re-establishment of a legally constituted government"²¹. While the exercise is interesting in itself and certainly as an example of simulation as a technique of preparedness, here I am using it primarily as an example of the extent to which emergency, in the early 1960s, seemed to focus on nuclear attack. Where other emergencies were addressed, they seemed to be lumped together in a residual or catch all

20 . Page 4 of nrec_nahicus_63.pdf.

21 . These documents were not copied but can be found in 63A – 660; 86:18:7; boxes 3 – 5 and, to a lesser extent, in 64A-927, boxes 14-15. All of the documents referenced directly here came from the former boxes.

category of 'other' emergencies.

Another example of the focus on nuclear attack can be drawn from what would become a component of energy. In July of 1960 the Stanford Research Institute published a report on 'The Effects of Nuclear Attacks on the Petroleum Industry,' one of a set of four reports contracted by the Office of Civil Defense Mobilization, one of the OEP's predecessors²². The report anticipates a potential nuclear attack, including locations of the targets and the area of radiation fallout, determined from the forecasted weather. The report includes damage estimates in terms of distance from ground zero provided by the AEC and anticipated days from attack that a shortage would take place by state. Despite the anticipated devastation, the report concluded that “[s]ufficient gasoline and distillate stocks and production capacity are expected to be available after the five attacks studied to provide fuel for essential threshold recovery requirements.” Further, the report recommended various pre-attack measures including apprising the petroleum industry of anticipated fallout radiation as a way of “encourag[ing] refineries to establish procedures to develop techniques for operating in fallout conditions,” prepare plans for the production of machinery to aid in post attack petroleum production, and stockpile refinery components. The report provides a fascinating glimpse into the ways that one of OEP's predecessors anticipated the future--and, more specifically, the future of an important component of the nation's infrastructure. Perhaps more relevant to the current consideration is what they saw when they looked into the future—a nuclear war.

And what did they see later? It's a bit harder to define any central current underlying the multitude of projects that the OEP took on. In the words of George Lincoln, reflecting back over the events of 1969,

[s]everal things having an important bearing on civil emergency preparedness have

²² . The other reports covered post attack impacts on farm production, rail transportation and the availability of medical supplies.

occurred during the past year. Our experience in Operation Foresight and Hurricane Camille and the consequences of the Federal role in disaster prevention and assistance, together with our involvement in offsetting the public impact of postal and transportation strikes and the possibility of fuel and electric power shortages this summer, all suggest a new emphasis and direction in Federal preparedness based on achieving capabilities to respond to whatever crises arise, be they natural, man-made or war caused.

Natural disasters had always had a place for the OEP, but here we see postal and transportation strikes next to fuel and electric power shortages. And how does Lincoln collect together these heterogeneous elements? As “whatever crises arise, be they natural, man-made or war caused”²³. This sense of indeterminacy can be found in the preceding administrative history as well—The Office of Emergency Planning During the Administration of Lyndon B. Johnson, November 1963 – January 1969. Here, in late 1968, the author tells us

The following chapters of this narrative recount major events and policies in the basic areas of OEP responsibilities—new and old, during the Johnson administration. Each demonstrates, though to different degrees, a kind of evolution in aim and effort. Together they form a collage of diverse elements with enough in common to convey a sense of unity²⁴.

The trajectory of OEP involvement with energy

²³ . Office of Science and Technology Subject Files 67-73. NN3-396 095 001. 396-650. 43:29:07, in a letter marked only to “Secretary.”

The case of energy provides an interesting example of how something such as “fuel and electric power shortages” came to occupy a similar problem space as nuclear war or hurricanes. Perhaps it bears emphasizing first that it was no accident that Lincoln included power shortages in his letter. In the administrative history of the OEP, covering the years of his 'stewardship' of the OEP, he notes that, “[o]ver 30 percent of my personal time has been taken up with oil and energy matters”²⁵ Bracketing for now the question of why energy came to be seen as an important concern for the OEP, here I would like to address the question of how it came to be a focal point.

The first point at which I saw oil enter discussion in the OEP archive was in 1963. Here a number of documents discussing oil import controls culminate in a report signed by Edward McDermott, then director of OEP. We learn that an investigation dating from May of 1961 (begun under OCDM) under presidential proclamation 3279 of 3/10/59 calling for the surveillance of oil imports for purposes of national security²⁶. To provide more context, in 1957 Eisenhower called for a voluntary oil import control program for reasons of national security. Largely unsuccessful, in 1959 the restrictions on oil imports became mandatory²⁷.

In the OEP archives we see much discussion on the prospect of 'residual oil imports' or imports of dirtier oil often used to fuel such things as heaters for older buildings. Although these residual oil imports did not constitute a sizeable portion of oil imports and were not included as a part of the 1957 voluntary plan, they had since come under debate. And McDermott recommends in carefully worded sentences that relaxing import restrictions would be “consistent with national security”²⁸.

Although this debate emerged after the quantity of US oil imports exceeded exports in the late

24 . New Dimensions of Civil Preparedness, 1969-1973: A Report to the President, p 24.

25 . The Office of Emergency Planning During the Administration of Lyndon B. Johnson, November 1963 – January 1969, 10. Copied as lbj_adm.pdf.

26 . McDermott letter. Part of “oil 1963 – boxes 2-3”, 64A-927. Copied as oil_import_63.pdf
McDermott was a JFK appointee who served as OEP director from 2/62 – 1/31/65.

27 . Yergin, especially 535-538.

28 . McDermott letter.

1940s²⁹, it came before OPEC came to exercise the power that many saw behind the oil crisis of the early seventies. In other words, there are many reasons why we—as observers positioned after the 1970s and after two more recent wars in the Persian Gulf--can imagine that reliance on foreign oil could constitute a problem. But why were oil imports a problem for Eisenhower or the OEP—and how did they threaten national security?

According to Daniel Yergin's account, the 1957 voluntary and 1959 mandatory restrictions were not about national security at all. They instead resulted from the political pressure exercised by domestic producers of oil and represented by figures such as then Senator of Texas, Lyndon B. Johnson. In this context, Eisenhower saw 1957 voluntary quotas as “a nice balance” between the pressure of domestic oil producers to enact import restrictions and the pressure of companies who relied upon foreign oil. Unsurprisingly, the balance did not hold as companies relying upon foreign oil did not have any incentive to participate in the voluntary agreement, and so two years later mandatory restrictions were put in place. It is perhaps an interesting historical footnote that McDermott's logic resembled that of Eisenhower. Both emphasized the ways that lack of restrictions to trade could promote good relations and greater access to oil³⁰. Nonetheless, if Yergin is correct, then the OEP's analysis of oil in terms of national security in the early 1960s presents itself as a curious precursor to the events that would follow.

If OEP involvement with oil began with analyzing national security risks that may or may not have originated with the concern of national security, their involvement by the late 1960s and early 1970s quickly took on a much more immediate character. In the earlier analysis, we find McDermott and the OEP searching for legal justification to link their recommendations with the goal of national security. Opening a section entitled 'Rationale of Control,' the report asserts that “Authority to regulate imports is limited to the control deemed necessary to prevent imports of an article from threatening to

29 . Yergin, *The Prize*.

30 . McDermott letter. Yergin, especially 535-538.

impair the national security”³¹. In a footnote, the report cites a national security amendment section 8 of trade agreements extension act of 1958 that provides “a way of taking whatever action is needed to avoid a threat to the national security through imports”³². Interesting, the report also touches upon an alternative legal link between import restrictions and the same act, “Serious injury to a particular industry, which is the principle consideration in the escape-clause procedure, may also be a consideration bearing on the national security position in particular cases, but the avoidance or remedy of injury to industries is not the object per se”³³.

Later reports on oil and other forms of fuel have a much more immediate character. By spring of 1970, we see a “Report on the Coal Supply and Power Requirements for the Summer of 1970”--a report authored in March addressing the “likelihood of coal stock shortages for electric utilities to meet power demands during the summer of 1970” in response to a request from the Honorable H. R. Haldeman, Assistant to the President³⁴. Just a few months later—in August, we see a similar report forecasting for “the winter power situation” for the following winter. Here we learn that

In many respects the problem for the winter will be similar to the situation of this summer with some shortages of generating capacity and fuel supply problems. The geographical pattern will be different, however with the areas expected to have generating capacity shortages being the Pacific Northwest, New England, and Mimi, Florida. Some systems in other areas could have inadequate capacity if the large, new generating plants scheduled to come on line this fall are not available³⁵.

Given this attention to seemingly short term fuel supply forecasts, it offers little surprise when we see

31 . oil_import_63.pdf, 4.

32 . oil_import_63.pdf.

33 . Ibid.

34 . energy_shortg_70.pdf, 1

a report from December of 1970 providing a forecast for the following summer and a “Survey of Fuel and Energy Problems” from April 1973 addressing the spring and summer of the same year ³⁶.

How did the OEP come to take on such work—work that stands out in contrast with the more mathematical and abstract character of much of the NRAC/SED work of the same time? OEP involvement with energy began, as we have seen, in analytical reports on the advisability of oil import restrictions with respect to national security. There is less indication how precisely this earlier involvement might have led to the OEP's involvement in the later seasonal forecasts on power outtages. The latter are filled instead with a more practical urgency--”[t]he coal natural gas, and residual fuel oil supplies continue to be tight and spot shortages are likely” ³⁷. In Nixon's 1971 “Energy message” address to Congress, a larger picture begins to unfold

A major cause of our recent energy problems has been the sharp increase in demand that began about 1967. For decades, energy consumption had generally grown at a slower rate than the national output of goods and services. But in the last four years it has been growing at a faster pace and the forecasts of energy demand...have been undergoing significant upward revisions.

This accelerated growth in demand results partly from the fact that energy has been relatively inexpensive in this century. During the last decade, the prices of oil, coal, natural gas, and electricity have increased at a far slower rate than consumer prices as a whole. Energy has been an attractive bargain in this country – and demand has responded accordingly³⁸.

35 . dom_c_subc_energy_71.pdf, no internal pagination, p12 of pdf.

36 . jt_fuel_board_mix_73.pdf and jt_board_fuel_71.pdf.

37 . dom_c_subc_energy_71.pdf no internal pagination – p12 in pdf.

38 . pres_energy_deftns_71.pdf, 1.

In a climate of concern about energy, and the impacts of demand outstripping supply in seasonal outtages, the OEP came to play a role in managing 'the energy crisis.'

Energy itself

How did this crisis look—and to what extent did the OEP and others approach it as a more or less coherent object? In Nixon's address, we can already see the beginnings of an answer in the way oil, coal, natural gas, and electricity are linked together as components of the larger entity, 'energy.' This tendency to aggregate types of fuel into a larger entity recalls the opening quote,

In 1971, the United States consumed energy at the rate of 69,000 trillion BTU's per year. By 1980, this figure will swell to 96,000 trillion, a 39 percent increase; and, by 1990, energy consumption will increase to 140,000 trillion BTU's per year, a 103 percent increase over 1971³⁹.

Throughout this 1972 report, levels of fuel consumption are converted into British Thermal Units (BTUs)—most commonly in units of Trillions⁴⁰. This point is unsurprising but perhaps significant insofar as it indicates how different forms of fuel have been rendered commensurable in umerical form. Further—in the same 1972 report, we encounter detailed attention to the ways that kinds of energy can be related to each other. In fact, such conversaion rates occupy part of the recommendation that the book offers:

In principle, if consumers could accept dual fuels (or energy forms), advances in energy convertability could offer leverage in national or regional energy

39 . energy_doc_1.pdf, opening quote.

40 . energy_doc_1.pdf, see note on bottom of page 70, for example

conservation measures....Electrically-powered moter vehicles could compete for local private transportation now dependent on gasoline exclusively....Electricity for overnight charging of car batteries could be made available in neighborhoods and industry depots , comparable to today's service stations⁴¹.

Convertability or “the capacity to use energy inputs in alternate forms” not only describes the ways different forms of fuel can be switched around to add up to the same aggregate demand, it can also be approached with a view towards lowering the aggregate demand. Here, the report provides a listing of mechanisms of convertability or 'energy converters' ranked by efficiency. An electric generator is overall more efficient than a large electric motor, but a large electric motor is more efficient at converting electrical to mechanical energy⁴². Here we have an image of sources of fuel—coal, oil, natural gas—by sector that can be added together into aggregate energy consumption on an abstract level (in terms of BTUs) and then broken down again in multiple ways—to fuel 'energy converters' that transform one form of energy into another (thermal to mechanical, say) or assigning different types of fuel to the same sectors. Although transportation currently relies primarily on gas powered cars, the overall demand needed can be lowered by splitting transportation between gas and electric cars. Commensurable units, such as BTUs and energy converters provide techniques for rendering energy into a more coherent entity. But energy as faced by the OEP was more complicated than this.

If 1967 saw the increase in demand for energy that Nixon referred to, it also saw uncertainty due to the six day war between Israel and Egypt as well as the passage of the Clean Air Act, legislation marking emerging concerns linking energy use with the environment. In a somewhat terse reference in the administrative history of Johnson's years, we learn “[i]nternationally, 1967 saw the Middle East oil

41 . energy_doc_1.pdf, 66-72, 69 for quote.

42 . Ibid, 67.

emergency and appointment of an Emergency Petroleum Supply Committee from the industry”⁴³ The relation between these twin concerns—dependence on foreign and potentially unstable oil supplies and the pollution resulting from the use of energy—came to occupy an important place in the larger 'energy question.'

As an object of policy, energy was comprised of forms of fuel but also framed by concerns for national security and concern for the environment. And these concerns could not always be resolved in a straightforward way. For example, national security concerns dictated less dependence on unstable sources of foreign oil and greater reliance upon domestic energy sources such as coal. On the other hand, coal was a much dirtier form of energy and would conflict with environmental for things such as air quality. Both national security and environmental concerns would have to be approached together, as separate but interrelated components of energy⁴⁴. By the time of his administrative summary—by early 1973, George Lincoln could look back and reflect that,

These responsibilities [in 'the energy field'] have been carried out with due recognition of the extreme complexity and the indivisibility of our energy fabric – a fabric comprised of the combined energy sources (natural gas, coal, oil, hydro, and nuclear power) woven in the context of national security, consumer prices, foreign

43 . LBJ 14.

44 . On the opening page of the 1972 report we can find a succinct expression of the dual concerns that constituted energy. In the opening paragraph: “The United States faces the prospects of serious energy shortages over the next several decades. The problem arises from a combination of several factors; increasing consumption, the limited supply of favored primary fuels and the constraints placed on energy production and distribution by environmental considerations.” And later: “the nation's limited fuel resources are being depleted and the United States is becoming increasingly dependent on foreign oil and gas supplies, a trend which could adversely affect national security. Yet the large quantities and forms of energy being used are causing serious pollution problems which threaten the nation's health and natural environment. These problems are highly interdependent, and measures to alleviate one can exacerbate another. For example, a recent study estimates that the removal of lead from gasoline for pollution control will cause an increase up to 1 million barrels per day in our petroleum needs by 1980, thus worsening the nation's supply requirements. Clearly no one of these problems can be addressed apart from or to the neglect of others; any overall solution must take all into

policy, new technological endeavors, and economic and environmental considerations

....

A major advance in the past four years has been the recognition of the need to view our expanding energy requirements as a whole, and to move in a coordinated way on many fronts if we are to meet these requirements within a reasonable time frame⁴⁵.

Further, the “indivisibility” of the “energy fabric” called for a concerted response. In Nixon's 1971 address to the nation, he declares that, “[t]he Nation has been without an integrated energy policy in the past. One reason for this situation is that energy responsibilities are fragmented among several agencies”⁴⁶. Instead of having nuclear energy represented by the Atomic Energy Commission, environmental concerns represented by the nascent Environmental Protection Agency, Nixon called for a more unified response in a proposed Department of Natural Resources that would serve as a “single structure uniting all important energy resource development programs”⁴⁷. Later in the address, he argues that the “establishment of this new entity would provide a focal point where energy policy in the executive branch could be harmonized and rationalized”⁴⁸.

In the interim, other interagency groups had already been created to investigate energy properly,

account” energy_doc_1.pdf, 1.

45 . lincoln_hss.pdf, 24.

46 . pres_energy_deftns_71.pdf, 13.

47 . Ibid, 2.

48 . Ibid, 13. In another OEP document focused on a larger scheme of reorganization, the imperative to create a Department of Natural Resources invokes ecology: “One of the most notable developments in public consciousness in recent years has been a growing concern for protecting the environment and a growing awareness of its highly interdependent nature. The science of ecology – the study of the inter-relationships between living organisms and their environments – has experienced a sudden rise in popularity. All of us have become far more sensitive to the way in which each element of our natural habitat affects all other elements. Unfortunately, this understanding is not yet reflected in the way our Government is organized. Various parts of the interdependent environment are still under

as a whole. The Joint Board on Fuel Supply and Fuel Transport was created with George Lincoln as its head⁴⁹. And another group, the Energy Subcommittee of the Domestic Council emerged in early 1970. This latter group was responsible for the publication of the 1972 report, The Potential for Energy Conservation, drawing on the analytical resources of the OEP through Lincoln and NRAC head Robert Kupperman⁵⁰. The OEP played a driving role in both groups. Just as the Joint Board was headed by Lincoln's leadership and the involvement of the OEP, so was the Energy Subcommittee brought into existence by the OEP. In the words of one Domestic Subcommittee report, the “White House directed OEP to undertake a comprehensive survey of the 'nationwide energy crisis.’ “ And, the OEP “brought together the various government specialists to identify the many interrelated problems and to jointly develop solutions.” In doing so they were acting “as a coordinator and advisor for the president in emergency matters”⁵¹. The energy crisis in its 'indivisibility' had become an emergency—precisely the sort of thing for the OEP to manage.

Here we have an image of energy emerging as a more or less coherent field of policy intervention composed of the interrelated yet often conflicting concerns of the environment on the one hand and national security on the other. While OEP involvement began as a function of national security, it soon came to include environmental concerns as well. At the same time, the ways in which these concerns were interrelated posed a challenge for the ways in which they were spread across different agencies. So new, inter-agency organizations emerged to confront this new object. And as 'the energy crisis' came to be seen as an emergency, it made sense that the OEP would take the lead in addressing it.

Conclusion

the purview of the highly independent Federal offices” connally_nixon_reorg_71.pdf, 10.

49 . lincoln_hss.pdf 24.

50 . energy_doc_1.pdf, 2.

In many ways, this answers the question of how energy came to occupy such a central role for the OEP. The question of why energy came to occupy such a central role for the OEP is necessarily more speculative. In order to approach this question, we must reinsert the energy crisis as one of the OEP's concerns, as one example of the kind of emergency they faced.

We have seen how earlier OEP notions of emergency seemed to be oriented around the prospect of nuclear war as documents often categorized emergencies in classes of 'war' and 'other.' With a sense of the place of the OEP as a successor to agencies charged with mobilization in the face of nuclear war, this makes sense. Later, however, the OEP's sense of emergency seems to lack this kind of focus. We get a sense of this more diffuse and inclusive notion of emergency in Lincoln's reflections that the events of 1969 “suggest a new emphasis and direction in Federal preparedness based on achieving capabilities to respond to whatever crises arise, be they natural, man-made or war caused”⁵². And a year before this, in 1968, the author of the OEP history during Johnson's years provides a similar sense of fragmentation in the “basic areas of OEP responsibilities” as “form[ing] a collage of diverse elements”⁵³.

What could account for the inclusion of energy as an emergency—or the broadening of the OEP's sense of emergency more generally? One explanation could be the timing of the inception of the OEP. Just over a year after the OEP was formed, the Cuban missile crisis brought the prospect of nuclear war closer than it has been before or since. In relaxing its focus on nuclear war in the later 1960s, perhaps the OEP was simply following the

51 . dom_subc_energy_71.pdf (no internal pagination--p 8 and 9 in pdf).

52 . Office of Science and Technology Subject Files 67-73. NN3-396 095 001. 396-650. 43:29:07, in a letter marked only to “Secretary.”

53 . New Dimensions of Civil Preparedness, 1969-1973: A Report to the President, p 24.

concerns of the times. While the diminished threat of nuclear war could account for the diffusion in OEP activities, it does not necessarily account for the places where their attention came to rest.

Another possible explanation could lie in the broadening of the OEP's analytical focus in the mid to late 1960s. In June of 1966, Farris Bryant, appointed Director of the OEP in March of 1966 formed an ad hoc committee, the Program Planning and Budget team, to tackle the problem of the ways in which the OEP approached emergencies. Following a review of the committee's findings and organizational strategies to meet Bryant's hopes that the OEP incorporate more analytically driven and scientific approaches, a new organization was approved in March of 1967. According to the account provided in the Lyndon B Johnson Administrative Summary, the

OEP already had considerable computational and analytical capability, particularly in the areas of vulnerability estimation and damage assessment. Efforts were now begun to expand this base and broaden its role. A program of training and recruiting added new skills and talents to complement the existing staff capabilities. In order to draw on the experience of leaders in the field of systems analysis and operations research, wide use was made of consultants. In certain fields of activities, such as network analysis, OEP was able to attract some of the country's best expertise⁵⁴.

With this organizational make over, the “new focal point for the Agency became the National Resource Analysis Center”⁵⁵, which came to represent 1/4th of OEP's employees. By 1968 the NRAC staff included 50 PhDs, most recruited in the previous year. Although Bryant asserted that the OEP mission remained the same, he also asserted that the reorganization would allow “greater flexibility for

54 . Page 188

55 . 188.

response to emergencies”⁵⁶. Similarly, the higher level account in the LBJ summary asserts that “[t]he Agency was thus widening its horizons somewhat but mainly deepening its attention to the problems of emergency preparedness”⁵⁷.

We can see some of the outcomes of this organizational transformation and the resulting emphasis on the NRAC clearly. Early examples include an analysis of off shore natural gas pipeline systems for the Federal Power Commission. Another example included network analysis for GSA about Federal telecommunications facilities. More preparedness-focused examples included 1968 Stockpile Dispersal and Natural Disaster studies. David Rosenbaum, who appears to have been doing consulting work for the OEP, interestingly noted in a letter to the OEP that “I believe the systems analysis operation at OEP is the most important thing of its kind since the founding of RAND in 1948”⁵⁸. In order to provide a sense of the new focus of the OEP, I will provide a sample of NREC work from the late 1960s and early 1970s including examples that shed some light on the organization's interest in network analysis and the use of computers.

Examples of this increased focus on the NRAC could be multiplied, but does it account for the broadening of the OEP's sense of emergency? SED head Kupperman does appear to have played a leading role in providing analysis for 'the energy problem.' On the other hand, the bulk of the focus of the NRAC and SED seems to contrast in many ways with the OEP's involvement with the energy problem. NRAC/SED reports were often very abstract in nature, posing problems in the generalizable terms offered by mathematics. While we certainly see the stamp of quantification in the OEP's involvement with energy, it is of a much more mundane sort than that found in NRAC/SED work employing more novel approaches such as network analysis, topographic networks, econometric

56 . 187.

57 . 190.

58 . He was based in the Polytechnic Institute of Brooklyn. Resource Analysis – NRAC; 72A 6638; NWDD 978112.

modeling, or graph theory. Further, the increasing influence of the NRAC does not account for the kinds of things that they study. While it might address an increasing reliance upon mathematical approaches, it does less to answer the question, why energy. This is a similar problem with relying upon the Cuban missile crisis as an explaining the ways in which OEP's sense of emergency morphed. The decreasing threat of nuclear war more generally could have facilitated a broadening of OEP's emergency, but it does less to address why certain topics were chosen and not others.

Perhaps a more compelling reason approaching the inclusion of energy—and any number of other objects--can be found in their role in relation to vital systems. An article entitled “Vital Systems Security” by Stephen Collier and Andrew Lakoff connects concern for the security of vital systems as an important component of a rationality of preparedness. We can see vital systems security in “government efforts to protect key infrastructures (roads, electricity grids, communications, food and water supply), institutions (markets and government entities), public services (hospitals), and to increase the capacity to respond to and recover from the events that threaten them”⁵⁹. What kinds of things threaten vital systems? Hurricanes, terror attacks, epidemics, ecological catastrophes, and earthquakes⁶⁰. A rationality of preparedness dictates that such threats be imagined in order to bolster our ability to respond and recover from them if they do happen⁶¹. In this article, Collier and Lakoff trace the emergence of this form of security to the early days of the cold war, in imagining the deployment of an atomic bomb on US territory.

It is not difficult to see the logic of vital systems security in the work of the Office of Emergency Preparedness. The name of the office itself expresses the rationality guiding this form of security. And we can see the OEP focused on precisely the same kinds of threats—perhaps most obviously in their studies on the prospect of nuclear war, their work in providing assistance in the face

59 . Stephen J. Collier and Andrew Lakoff , “Vital Systems Security,” 4.

60 . Page 4.

of natural disasters such as hurricanes and their focus on continuity of government in the event of these and other kinds of threats. Further, we can see the OEP visualizing components of the US as vital systems.

Telecommunications provides a good example. In the administrative history covering the Johnson years, we encounter the following curious passage:

To live – even to survive – modern mankind must communicate.

Telecommunications have become the central nervous system of our civilization.

Effective functioning of the complex structure of political, economic, and social organization is possible because means are available to transfer rapidly massive amounts of information over great distances. If, for some reason,

telecommunications were suddenly suspended, the structure of modern society would collapse. None of man's other instruments are as completely integrated into a working system nor as all pervasive as his telecommunication⁶².

Interestingly there is no explicit mention of how telecommunications might be suspended. We can see the infrastructure of telecommunications itself is the object of OEP attention here. The OEP is concerned with telecommunications because it is vital to the proper functioning of 'modern society.' Following this passage there is further reflection on how the continuity of government relies on telecommunications, in keeping the President in touch with the various parts of government when it might encounter a threat to its stability. We further learn the history of OEP's focus on telecommunications. In 1951 Truman appointed a Telecommunications Adviser in the White House. When Eisenhower took office, the position was shifted to the Office of Defense Mobilization. And in

61 . 6.

62 . LBJ history, 122.

1962, Executive Order 10995 established the position of Director of Telecommunications as a part of the Office of Emergency Planning, to be occupied by one of the organization's associate directors.

While the OEP seems to represent a clear organization expression of vital systems security, how does this address the inclusion of energy into their responsibilities—or the emergence of a much more diffuse notion of emergency? Here I would like to suggest that we can see the logic of vital systems security playing a role in both the inclusion of energy as a topic and the evolution of OEP's sense of what counts as an emergency.

We can see vital systems security as providing a logic that can connect up the disparate topics Lincoln covers in his reflections on the important events of 1969. Hurricanes offer little surprise given their prominence in OEP's day to day activities. No surprise there. But he also mentions “postal and transportation strikes” and “the possibility of electric power shortages”⁶³. In his administrative history, we see transportation receive more attention. Here he notes that “transportation is a particularly sensitive area because transportation stoppages, unlike stoppages in most industries, tend quickly to have cumulative effects on commerce, public life and the national security which could be ruinous”⁶⁴. Like telecommunications, transportation matters to the OEP because it comprises a vital component of modern society. And like telecommunications, transportation must be protected against vulnerabilities such as strikes. Strikes also represent a threat to the postal system. Power outages, transportation and postal strikes and hurricanes all represent ways in which vital systems are vulnerable. They are threats.

The importance of energy to vital systems is almost so obvious as to escape attention. Energy is what drives all kinds of vital systems. Without an available supply of petroleum, things like

63 . Lincoln letter.

64 . Page 31

transportation and postal strikes would be non issues as delivery vehicles would be useless. If telecommunications and transportation are seen as vital to the OEP's mission, it is not difficult to imagine energy as also vital in fueling all stripes of needed systems. Further, the logic of vital systems security goes a long way in explaining the inclusion of any number of the objects of NRAC/SED analysis.

Given the importance that we have seen attributed to telecommunications, it is perhaps not surprising that communications networks would be one focal point for NRAC/SED analysis. One NRAC/SED report--TM-117 On the Smallest Branch Cuts in Directed Graphs by JN Ayoub, IT Frisch from 1969--addressed a “problem of interest in the design of invulnerable communication nets.” In the report this problem was approached in the mathematical terms provided by topographic networks or “the design of graphs in which the number of branches in the smallest cut exceeds a specified number”⁶⁵. In the report the authors are concerned with the task of extending findings from undirected graphs into directed graphs.

Another 'technical manual,' TM-108 by IT Frisch from UC Berkeley and H Frank of the OEP is also concerned with devising a mathematical, generalizable way of approaching the design of more stable systems. In the abstract, however, the authors report that

“[w]e prove two theorems which greatly simplify the formulation of a variational problem, the design of topographic networks. The mathematical problem corresponds to the following physical situation. Consider a topography on which a system of roads is to be constructed so as to be able to handle a given steady state number of cars per unit time, while minimizing the cost of constructing the system. The cost per unit area is proportional to the elevation of the point, and the capacity in cars per unit width is a given function, determined by the capability of the terrain to

support a given weight⁶⁶.

In the introduction this summary is repeated with an additional sentence: “Of course, other physical problems involving the layout of pipelines, power grids and similar systems with various types of cost functions and capacity functions can be similarly formulated and treated”⁶⁷. The report is concerned, in other words, with producing a generalized way of thinking through the design of a variety of vital systems such that the resulting system would be more stable, less vulnerable.

Hopefully these examples, although brief, provide a taste of the ways in which much NRAC/SED work can easily be seen as focusing on creating generalized ways of designing and maintaining vital systems. More to the point here, we can see their inclusion as expressing a logic pervading the efforts of the OEP, a concern for the security of vital systems. While OEP concern for systems such as telecommunications and transportation were verbalized, their concern for energy does not seem to have benefited from such explicit treatment⁶⁸. Far from weakening the link between energy and vital systems security, I believe that it rather expresses the extent to which Western society became dependent on energy, particularly following the glut of cheap oil in the mid century that seems to have played a largely unheralded role in transforming the American landscape in the image of the automobile. While the energy crises of the 1970s rendered reliance upon energy more visible, its effect seems to have been more or less short-lived. Important strands of work did continue on, however. Another report could approach the links between OEP work on energy with the similar emphasis on vulnerability found in the Lovens' Brittle Power on the one hand or in the quantified systems approaches characteristic of the work of the International Institute for Applied Systems Analysis

65 . Page 2 in sed_tm117_branch_cuts.pdf.

66 . Page 3 in sed_tm108_topogr_netws_69.pdf.

67 . Page 3

68 . Or one that I was able to locate so far, at any rate

(IIASA) on the other⁶⁹. In general, however, the atmosphere of crisis that marked a widespread concern for energy in the 1970s dissipated. And yet, following the seeming vindication of the Intergovernmental Panel on Climate Change more recently, we find ourselves amidst a revived concern for energy—now framed by the prospect of global warming. This current revival of interest makes OEP's analysis of energy--and recommendation of conservation—seem, in retrospect, strangely prescient. It remains to be seen, however, how energy might become, once again, visible as a field of policy intervention and how it might be linked with the drive for vital systems security.

⁶⁹ . Interestingly Lovens seems to have been influenced by the work of C.S. Holling, himself an analyst at IIASA

Bibliography

Gaddis, John Lewis. The Cold War: A New History. New York: Penguin Press. 2005.

Ghamari-Tabrizi, Sharon. The Worlds of Herman Kahn: The Intuitive Science of Thermonuclear War. Cambridge: Harvard UP. 2005.

Hogan, Michael J. The Iron Cross: Harry S. Truman and the Origins of the National Security State, 1945 – 1954. Cambridge: Cambridge UP. 1998.

Pierpaoli, Paul G. Truman and Korea: The Political Culture of the Early Cold War. Columbia: University of Missouri Press. 1999.

Yergin, Daniel. The Prize: the Epic Quest for Oil, Money, and Power. New York: Simon & Schuster, 1991.