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THE ALLIANCE AGAINST DISARMAMENT: THE ATOMIC ENERGY COMMISSION, THE NATIONAL SECURITY COUNCIL, AND THE JOINT CHIEFS OF STAFF

Mary D. Wammack

*The Division of Biology and Medicine recognizes that it is not its function
to set standards for the military nor to impede the operations of the
Department of Defense.
Shields Warren, 1951*

Division Director, Atomic Energy Commission

*It is the unanimous view of the Joint Chiefs of Staff and the Armed Forces
Policy Council that dealing with arms regulation in advance of the settlement of the major political issues
is unrealistic and contrary to the best interests of
our national security.*

Memorandum for the President, 1955

Of the discussions that took place at the highest policy levels during the administration of Dwight D. Eisenhower, those concerning the possibility of a diplomatic solution to the arms race with the Soviet Union were among the most urgent and, perhaps, the most consequential in their failure. In the United States, members of the Eisenhower cabinet and other agencies and departments analyzed and addressed the consequences of various diplomatic proposals. Throughout that assessment phase, the National Security Council, the Joint Chiefs of Staff, and the Atomic Energy Commission joined in steadfast opposition to arms limitations. On the international plane, the United Nations and allies of each country, fearing the worst, urged compromise. Nevertheless, the United States and the Soviet Union ultimately rejected every possible diplomatic solution over the issue of verifiability, arguing that any procedure to monitor compliance would violate their respective national security. Rhetorical sparring and enmity grew as the international community brought ever more pressure to bear upon the two superpowers and confrontation seemed ever more likely. As a result, efforts to limit the arms race between the United States and the Soviet Union actually led to an escalation of weapons development and experimentation. The costs of that escalation were enormous—in terms of budgets and lives: the development and display of atomic and particularly hydrogen weapons by

both nations resulted in radioactive material contaminating, in the form of fallout, every region of the globe.

From this fact emerge the two interrelated questions that drive this study: what were the factors that contributed to the diplomatic failures of 1950s arms limitation talks between the United States and the Soviet Union? and, how did those failures affect the development and experimentation of atomic weaponry? This essay narrows those broad issues and addresses both questions from a domestic viewpoint, illustrating how the increased militarization of post World War II America affected domestic relationships between military branches, the Atomic Energy Commission, and US citizens; and, how that same militarization ultimately influenced foreign policy during the administration of Dwight D. Eisenhower. With reference to the existing literature, selected (and declassified) records of the Atomic Energy Commission, minutes and documents of the National Security Council and the Joint Chiefs of Staff, and other contemporary sources, I argue that it was the formation of a partnership between the military and Atomic Energy Commission—a civilian board established by Congress designed, under the Atomic Energy Act of 1946, to limit military influence—that shaped the direction of weapons development and thwarted efforts to breach the diplomatic impasse over arms limitation and reduction.

A brief overview of the underlying assumptions of this analysis and a contextual summary of the postwar period establish the boundaries of this examination. Section II reviews how the military persuaded the AEC to recommend a continental test site in 1950 and how a receptive NSC garnered presidential approval. Section III examines the consequences of that decision to illustrate the ways that the AEC's accommodation to militarism increased the risks inherent in the testing of atomic weapons. Finally, since disarmament threatened the structure of the 1950s militarized state, Section IV addresses that issue and the obvious contradictions in what one UN attaché considered “the basic inconsistency between simultaneous armament and discussion of disarmament.”¹

I. Assumptions

¹ “Minutes of Meeting with the Panel of Consultants on Disarmament at the Department of State, April 28, 1952” *FRUS*, 1952-1954, Vol. II, National Security Affairs, 905. William Sanders, United States Army, attended the meeting as one of the contingent representing the Department of State.

Compensatory legislation provides ample evidence that the cold war atomic arms race injured and killed countless unwary Americans. Apologetic but unrepentant, Congress has repeatedly reminded the victims that their suffering, while unfortunate, was unavoidable. This essay proposes an alternative: That atomic weapons development was crucial to the nation's security during the cold war, but the program—had it heeded the concerns of its own health experts—could have been a relatively safe one.² It will be assumed here, as it undeniably was then, that as a totalitarian state with atomic weapons in its arsenal, the Soviet Union and Soviet-style communism posed a very real threat to the United States, to its interests and allies, and to weak nation-states. Within such a context, atomic weaponry was essential. Militarization of the AEC, however, was not. Military initiatives, and supporters of those initiatives within the AEC, made atomic development more hazardous than it needed to be. As has been the case with historical critiques of the excesses of McCarthyism, flurries of covert operations, Vietnam, and other features of the cold war, the character and intensity of the nation's atomic weapons program deserves renewed scrutiny.

The atomic weapons complex was uniquely posed when the nation shifted into the cold war culture in 1949/1950. Because the Army's Manhattan Project had relied primarily upon private industry, the military and independent scientific laboratories and advisors entered the cold war already fortified by mutually-dependent institutional bonds.³ Yet, as an

² The historical record shows that expert advice regarding health hazards was haphazardly applied—gaining currency primarily when the advice coincided with the military's definition of necessity. Examining the devastation that remained scattered about the desert after "Trinity," the Manhattan Project's chief health physicist, Stafford Warren, reported that the fallout hazard extended for more than 90 miles, and that no other test of "Trinity's" magnitude should ever be attempted unless performed in an area that was free of population for at least 150 miles. "Report on Test 16 July 1945" Warren to Groves, 21 July, 1945, *Top Secret Correspondence of the Manhattan Engineer District*, [TSCMED]. Later, as Chief Medical Officer for Operation Crossroads, Warren reiterated that fallout was the most dangerous, and fickle, product of atomic weapons testing and that Bikini, since already ruined, should be the only place that such tests were held. Warren to Admiral Parsons, 18 January 1947, Warren MSS, box 77. The government refused to allow Warren to publish the results of his findings on fallout, and his analysis of the lethality of fallout "hot spots." Warren to Viola Warren, 14 June 1947, Warren MSS, box 1. Despite evidence from 1948 tests at Eniwetok that found fallout from low-level atomic weapons prohibitively dangerous within a radius of 300 miles, the AEC considered the Nevada Test Site an acceptable location. In 1949, Shields Warren—head of the AEC's Division of Biology and Medicine, warned of long-term consequences of strontium 90 atmospheric contamination, and in 1951 objected to the detonation of bombs from towers because of the increased amounts of fallout produced and also to the Army's decision to test the mettle of their soldiers and the effects of radiation upon them by stationing troops dangerous close to atomic detonations. See p. 12, f.

³ A veritable "who's who" of powerful corporations: Monsanto, Du Pont, General Electric, United Fruit Company. Ernest O. Lawrence, founder of Lawrence Livermore Laboratories and the University of California, Berkeley, Radiation Laboratory was especially adept ingratiating himself to representatives from both ends of the spectrum. He maintained military ties formed during his association with the Manhattan Project while courting the liberal and reformist David E. Lilienthal, first chairman of the AEC. During the 1950s, Lawrence joined with arch

underappreciated model for the Eisenhower era military/industrial complex, the ulterior motivations and behaviors that parallel the stated purpose of those types of relationships have been, in the case of atomic development, little explored.⁴ Many historians have been content with interpretations that either rationalize the entire atomic weapons endeavor as required (sometimes at any cost); or, at the opposite end of the spectrum, condemn the entire atomic weapons project as unnecessary and illegitimate.⁵

The reasoning that characterizes these histories is benignly anchored to the peculiar circumstances of the era in general and atomic testing in particular, and a review may help explain not only the thinking of historians, but also provide some clues as to why such a dangerous enterprise was not more fully critiqued at the time. The most cogent explanation is that the secrecy associated with atomic science precluded its intricacies from becoming part of the public discourse at the time and for the duration of the cold war; also, the AEC's legislatively-mandated civilian stewardship and operational secrecy drew attention away from its early-1950s altered character. Additionally, in a cultural context, Eisenhower himself compartmentalized the issue when he introduced public/private partnerships and nuclearism into the national conversation. His commitment to garner support for nuclear armament through the psychological mobilization of the American public resulted in what historian H.W. Brands has termed "nuclear nationalism."⁶ The capstone to this rhetorical bombardment was Eisenhower's 1961 farewell address. Evidencing, perhaps, that he had come to believe his strategy altogether too persuasive and effective, Eisenhower spoke of the "unwarranted influence [of the]

conservatives to oppose any discussion of disarmament. *Passim*, microfilm reels 17, 49. *Papers of Ernest O. Lawrence*, The Bancroft Library, University of California, Berkeley. [EOL]

⁴ Notable exceptions include, for wartime alliances, Ronald Powaski, *March to Armageddon* (New York; London: Oxford University Press, 1987) and Martin J. Sherwin's poignant, *A World Destroyed: Hiroshima and the Origins of the Arms Race* (New York: Vintage Books, 1987); for the post-war period in general, see Gregg Herkin, *The Winning Weapon: The Atomic Bomb in the Cold War* (New York: Knopf, 1980); and, for a study of the cold war in particular, see Fred Kaplan, *The Wizards of Armageddon* (Stanford, CA: Stanford University Press, 1983).

The co-option of science by government had influences on the accumulation and organization of knowledge that have outlasted the original purposes of that alliance. Stuart W. Leslie, *The Cold War and American Science: The Military-Industrial Complex at MIT and Stanford*, (New York: Columbia University Press, 1993) 9-12.

⁵ Polarized perspectives are available for the Hanford plant: Michael D'Antonio, *Atomic Harvest* (New York, NY: Crown Publishers, 1993) stands in sharp contrast to the "worth any cost" perspective of Michele Stenshjem Berber's *On the Home Front: The Cold War Legacy of the Hanford Nuclear Site* (Lincoln, Neb.: University of Nebraska Press, 1992). See also Valerie Kuletz, *The Tainted Desert: Environmental and Social Ruin in the American West* (New York: Routledge, 1998); Stewart L. Udall, *The Myths of August* (New York: Pantheon Books, 1994); Leslie J. Freeman, *Nuclear Witnesses: Insiders Speak Out* (New York: W.W. Norton, 1982); John Fuller, *The Day We Bombed Utah*, (New York: New American Library, 1984); Hilgartner, Bell, O'Connor, *Nukespeak, Nuclear Language, Visions and Mindset* (San Francisco, CA: Sierra Club Books, 1982).

⁶ H. W. Brands, *The Devil We Knew*, (New York; Oxford: Oxford University Press, 1993) 71-72.

military/industrial” complex and warned of dire consequences should that hydra-headed entity seize additional levers of power. Finally, to this cognitive terrain must also be added the temporal barriers and dramatic events that help shape public and historical understanding even as they may obscure or overshadow ideological and institutional continuities.

By focusing on such continuities, this essay will suggest that domestic realities—the militarization of the AEC and the backing it garnered from the National Security Council—played more of a role in setting the trajectory for atomic weapons development in the 1950s than either presidential policies or international events. Though civilians ostensibly governed the AEC throughout its history, the military assumed tacit control of the Commission in 1950 when supporters of civilian control (particularly AEC Chairman David E. Lilienthal) were overwhelmed with the decision to develop hydrogen weapons.⁷ Despite the AEC’s shift in purpose, the military’s complete domination of the AEC may not have been possible without a corresponding transformation of ideology within the National Security Council.⁸

Only reluctantly endorsed by Truman, the protocol known as NSC 68 transformed the post-war policy that had emphasized political containment of communism to one that relied upon military containment.⁹ The ideological underpinnings of NSC 68 and its reliance upon extensive military mobilization were not abandoned with Eisenhower’s administration; rather, NSC 68 became the model, refined and incorporated into subsequent policy directives.¹⁰ This alignment of the two bulwarks of the cold war American state gave the AEC a nearly-limitless and unregulated ability to initiate weapons development, pursue testing schemes continentally and in the Pacific, and rationalize the expansion of classification systems. The result was a constitutionally- debilitating ensemble of maneuvers whereby the AEC evaded congressional, and even presidential, oversight.

⁷ Mary D. Wammack, *Chain Reaction: The Tragedy of Atomic Governance*, MA Thesis, UNLV, 1999.

⁸ Michael J. Hogan has elegantly assessed post-war militarization and the institutionalization of permanent mobilization through the National Security Council in *A Cross of Iron: Harry S. Truman and the Origins of the National Security State 1945-1954* (Cambridge, UK: Cambridge University Press, 1998).

⁹ For NSC 68, see Ernest R. May, ed. *American Cold War Strategy: Interpreting NSC 68* (Boston: St. Martin’s Press, 1993).

¹⁰ See, for example, the March 10, 1953 memorandum from the Roger Keyes, Deputy Secretary of Defense to the Joint Chiefs of Staff regarding input on a review of policy procedures, NSC 730-c, to bear in mind “currently approved national security policies, objectives or commitments.” [page unnumbered] *Documents of the National Security Council*, Eighth Supplement, [DNSC] Thus did reviews of national security policy become little more than mechanisms to supplement, and increase, existing levels.

II. Atomic energy vs. Atomic bombs: The militarization of the Atomic Energy Commission

'In the long run,' as Lord Keynes once pointed out quite reasonably, 'we shall all be dead.' The opinion was voiced in more hopeful times. It now seems likely that the run for most of us may be considerably shortened.

James Newman, 1951.¹¹

The government tested atomic weapons in Nevada from 1951 until the United States and the Soviet Union entered into an unofficial testing moratorium on atmospheric weapons in 1958. The National Security Council convinced President Truman that continental testing was necessary, and that Nevada—and not the Pacific Proving Ground—was the most suitable site for such tests. Although the Korean War is most often cited as the reason for an accelerated testing schedule and a convenient “backyard” facility, that argument relies too heavily upon the beneficiaries’ own rationale and not enough on the sequence of events that led to the decision. In fact, after the 1946 Atomic Energy Act stripped the military of its unilateral control over atomic science, the Army, envious of the atomic largesse that the Navy enjoyed at the nation’s Pacific Proving Grounds, asked repeatedly for a continental weapons testing facility. The Korean War was influential only insofar as it was the ultimate justification for a \$214 billion military mobilization—a windfall that eased intraservice rivalries and led to the formation of a military coalition.¹² The military gained control over atomic science because it was opportunistic, not because it was needy. The ways that the AEC's subordination affected atomic weapons testing is the focus of this section, but a brief summary of the events leading up to that transformation will provide a useful introduction.

In 1947 Congress, recognizing the need for a coordinated and fiscally-viable approach to post-war defense, passed the National Security Act. The Act created the Department of Defense (DOD), the National Security Council (NSC) to advise the president on all foreign or domestic matters, the Joint Chiefs of Staff (JCS) to represent the armed forces and provide military advice, and the Central Intelligence Agency.¹³ As an alternative to his failed military unification scheme, Truman hoped the bill would coordinate national purpose and reduce costly inter-service rivalries. George Marshall, Truman’s secretary of state, was one of the most prescient of

¹¹ James Newman, “Review of *The Hell Bomb*” *The New Republic*, January 22, 1951, 29.

¹² By contrast, the 1951 expenses for Korea were estimated at \$13 billion. Hogan, *Cross*, 309. For additional support of this argument, see Wammack, 226-233.

the Act's opponents. Marshall feared that the Act gave the military too much influence: The armed forces would become too influential in directing the president's foreign policy choices, would undermine the importance of the secretary of state's diplomatic efforts, and would receive unwarranted control over non-military, national assets.¹⁴ The military coalition that Marshall prophesied failed to emerge during his term as secretary of state. Post-war budget cutbacks left the branches at each others' throats, and the NSC became little more than a forum for the armed forces to engage in "open political warfare."¹⁵

In 1948 Dean Acheson, Marshall's successor, addressed a clamorous ensemble of domestic and international discontents with fresh ideas. The Berlin Crisis was in its seventh month and the NATO treaty was still unsettled. Before he had completed a year in office, the Soviet Union had tested its first atomic weapon and China had fallen to the communists. Domestically, the House Unamerican Activity Committee's attack on the Truman administration picked up steam with the denouncement of Alger Hiss, an Acheson friend and brother of Acheson's protégé Donald Hiss.

Fear of communism – real and imagined, at home and abroad – permeated American society, politics, and science. With his administration under domestic political attack and the seeming international failure of America and its allies to control the spread of communism, Truman considered alternatives to the "political containment" policy endorsed by Marshall. Acheson promoted the recommendations of Paul Nitze, his newly-appointed head of policy planning. The result was NSC 68, a now-legendary document that brought together the ideological foundations and the strategic initiatives that characterized the cold war. Because the massive military build-up envisioned in NSC 68 required an equally massive budget, Truman and fiscally-conservative insiders resisted the adoption of that policy.¹⁶ The "logjam" broke free

¹³ National Security act of 1947, US Congress, *US Statues at Large*, 80th Congress, 1st sess., 1947, vol. 61.

¹⁴ Hogan, *Cross*, 56-57. Later, as Secretary of Defense, Marshall announced he would restrain the military's influence over national security. During a June 27 meeting of the National Security Council, Marshall announced that he would abide by the statutory requirement to relay JCS recommendations, he was under no burden to agree with them and would state his own opinion at meetings. As to recommendations from the secretaries of the branches, Marshall would consider them a factor only in his own, personal, deliberations depending upon their "importance." "Minutes of the 95th Meeting of the National Security Council" Wednesday, June 27, 1951. *Minutes of the National Security Council*, Third Supplement, [MNSC]

¹⁵ Charles E. Neu, "The Rise of the National Security Bureaucracy", *The New American State*, Louis Galambos, ed. (Baltimore: Johns Hopkins University Press, 1987) 88.

¹⁶ An insightful critique of NSC 68 that includes a compelling discussion of its detractors is Robert P. Newman, "NSC (National Insecurity) 68: Nitze's Second Hallucination," *Critical Reflections on the Cold War: Linking*

with the onset of the Korean War in June 1950 and Truman approved NSC 68 in December 1950. It “subverted Truman’s attempt to recapture the [budget] initiative. . . side-tracked the president’s initial strategy of deterrence. ” As Michael Hogan elegantly summarizes, “national security became the common currency of most policy makers, the arbiter of most values, the key to America’s new identity.”¹⁷

These events accommodated the military’s plans to reclaim authority over atomic science. The Army had fought for continued military control at the end of the war, and after the passage of the civilian-oriented Atomic Energy Act, argued unceasingly that making it dependent upon the AEC’s outspoken champion of civilian control, Chairman David E. Lilienthal, threatened national security.¹⁸ Truman consistently backed Lilienthal, rebuffing all appeals, including those from the military’s congressional allies, for military custody of the bomb.

The following selected history of the post-war arguments for custodianship, while reflective of the military’s long-standing disregard for the hazards of weapons experimentation, demonstrates that AEC leadership was the key to military control. The Army, envious of the Navy since 1946 and weapons tests in the Pacific, began in 1947 to lobby for a continental test site where it could experiment with lower yield tactical weapons and troops. In their request, the Army refused to consider the hazards its proposal posed, insisting that the sooner Americans became accustomed to “the possibility of an atomic explosion within a matter of 100 or so miles of their homes” the better.¹⁹ The AEC refused that 1947 request, and the Army renewed it in 1948. Again, the AEC refused, citing “unresolved questions concerning off-site hazards to the United States Public.”²⁰ Ever tenacious, the military argued in 1949 that it required a continental test in advance of the already-planned Pacific Greenhouse Series. Yet again, the AEC based its refusal on health and safety considerations. The AEC’s grasp on civilian oversight finally did

Rhetoric and History, Martin J. Medhurst and H.W. Brands, eds. (College Station TX: Texas A&M University Press, 2000) 55-94.

¹⁷ Hogan, 304, 313.

¹⁸ The best summaries of the Army’s official requests, and their unofficial lobbying of conservative members of congress are in Lilienthal’s diary entries. David E. Lilienthal, *The Diaries of David E. Lilienthal* (New York: Harper & Row, 1964) 121-123, 217-219, 233-234, 348-351, 373-377. Stuart Symington had been campaigning for the Air Force, boasting in an early 1949 speech about the B-36s capacity for atomic bombs.

¹⁹ Memorandum to Army Chief of Staff from Commanding Lieutenant General Hull, cited in International Physicians for the Prevention of Nuclear War and The Institute for Energy and Environmental Research, *Radioactive Heaven and Earth*, (New York: The Apex Press, 1991) 53.

²⁰ Committee on Operational Future, Nevada Proving Ground, “Summary of Minutes” January 14, 1953.

disintegrate in 1950 when Lilienthal resigned after Truman decided, against the AEC's majority recommendation, to authorize the H-Bomb's development.²¹

The ramifications of Truman's decision, based upon his belief that the Soviets were capable of developing "the Super," extended beyond Lilienthal's resignation, the expenditure of resources and talent, and the eventual successful creation of hydrogen weapons. The two commissioners who had disagreed with the majority AEC opinion against hydrogen development, Gordon Dean and Lewis Strauss, did so with the backing of conservative members of congress who, preferring military trusteeship, had not only battled Lilienthal throughout his tenure, but had been highly critical of Truman and his policies.²² Dean would succeed Lilienthal as chairman of the AEC and Strauss succeeded Dean.²³ Together, the two men retained control of the AEC throughout the period of atmospheric testing.

A new direction at the highest levels of government and Dean's ascendancy to AEC chairman gave the JCS an opportunity to win its long-fought war for the atom. In 1950 the AEC shifted resources into weapons development and asked the NSC to recommend a continental testing site. President Truman created the Nevada Test Site on December 18, 1950; and, because the NSC assured him the site would be used only for a "few relatively low-order detonations on an emergency basis," did so before the Army Corps of Engineers had completed studies on radiological factors.²⁴ Six weeks later, "Able" caused doors to slam in nearby Las Vegas, and four more detonations followed within two weeks. By the time Truman left office, twelve atom bombs exploded in the Nevada desert, and three of those were equivalent to, or greater than, the 21 KT weapon dropped on Nagasaki.

²¹ Truman made his decision against the recommendation of all but two members of the AEC and the General Advisory Council.

²² Lilienthal opposed Dean's appointment to the commission. When Truman asked for his opinion, Lilienthal told him that he thought Gordon Dean's "chief qualification was that Brien McMahon had sponsored him two years ago and was pressing hard to get him appointed how." At that time, McMahon was one of Truman's harshest critics. Lilienthal, 472.

²³ Although Roger M. Anders, Historian with the US Department of Energy, argues in "The Atomic Bomb and the Korean War: Gordon Dean and the Issue of Civilian Control" that Dean championed civilian control because he resisted the wholesale turnover of weapons to the JCS, his tacit cooperation with the military regarding continental weapons testing, Pacific hydrogen testing, and the diversion of resources intended for civilian appropriation of atomic science, tells a different story. *Military Affairs*, 52:1 (Jan., 1988) 1-6

²⁴ Jeff Adler, "A-Bomb Testing Posed No Dangers" *Las Vegas Sun*, December 18, 1978. 1, 4.

III. Camp Desert Rock

Incidentally, for reasons which I am not quite clear on myself, we changed the name of this place to Nevada Proving Ground.

*Carroll L. Tyler, Test Director, Tumbler-Snapper Series,
to members of the press invited to witness
an atomic weapons test.²⁵*

Tyler's comment to reporters regarding the site's changed name reflected a profound change in its identity and purpose. From the relatively-innocent place that the NSC convinced Truman it would be—a place for scientists to test bomb components before full-scale experimentation in the Pacific—to a “proving ground”—an area set aside solely for bombs and weapons testing, not unlike the Nevada Proving Ground that had donated a portion of its facility to the AEC, or Utah's Dugway Proving Ground. The address, submitted to the AEC for approval along with briefing scripts from other speakers, was designed to introduce the press to his role in an upcoming 1952 weapons test. Few Americans at the time would have been unaware of the term “proving ground” and by mentioning it amidst a summary of his duties as test director, Graves staked out the military's claim to the AEC facility—symbolically plunging an Army standard into the rocky ground of Camp Mercury.²⁶

The military's appropriation of the AEC to its own ends resulted in the diversion of funds that had been earmarked for peaceful uses—medical research, university fellowships, atomic energy—to weapons development. Because bombs and tactical weapons depleted material resources, the expansion required additional sources and contracts for ore, factories, and refineries. The AEC “mobilized” universities and research centers and its contractors employed tens of thousands in jobs from uranium mining to precision electrical instrumentation. More important for the purpose of this essay, however, is that the military sacrificed health and safety concerns of troops and civilians to its two main goals: the development and perfection of

²⁵ “AEC Information Plan and Materials for Shot 3, Tumbler-Snapper Test Series” April 15, 1952, 11. AEC 505/25 Defendant's Exhibit DX 21949, *Prescott v. US*.

²⁶ Though scientists cooperated with the military in encouraging the AEC to construct a continental testing facility, Drs. Norris E. Bradbury and Darol Froman from Los Alamos Scientific Laboratory argued in 1953 that the military's occupation threatened scientific utilization. Bradbury complained, “I regard the tendency to use the NPG for the purpose of weapons system tests, for civil defense effects tests, for troop indoctrination and maneuvers, and for the reportorial press as quite outside the original concept of this site. Indeed this trend, if continued, can force us to abandon this site for no other reason than that the military have taken it over.” “Summary of Minutes, Committee on Operational Future, NPG” Santa Fe Operations Office [SFOO] January 14, 1953.

weapons and training personnel for atomic warfare. By cooperating with the military, the AEC also began practices that subordinated health and safety concerns and, when not completely oblivious to the issue, marginalized its own Division of Biology and Medicine, finding ways to avoid rather than address safety issues.

Two examples, one from Lilienthal and one from Dean, illustrate the striking difference in emphasis that militarism made to Dean's regime. In response to a military request for the expansion of weapon facilities in July 1949—and a “whopper” at that—Lilienthal sought information regarding the consequences of fallout from atomic bombs. How many bombs might it take to “contaminate the atmosphere? . . . Stafford Warren and others put [the number] very low. . . E.O. Lawrence and his people think this is rot.” Both men Lilienthal consulted had potential biases: Warren, Dean of UCLA medical school, had resigned his Naval commission in disgust over the Navy's nonchalance about the hazards of fallout. He based his opinion on extensive experience with atom bombs. He had been the chief medical officer on the Manhattan Project, had directed the establishment of survivor studies in Japan, and, while managing the scientific and medical teams during the Navy's 1946 Pacific testing, had dealt with frightening levels of fallout. Lawrence, on the other hand, may have had a number of reasons to minimize the danger, but one in particular is unavoidable—as founder and owner of Lawrence Livermore Laboratory, any decision to increase the nation's stockpile could only help his bottom line. Lilienthal requested an additional, independent, report. It disagreed with Lawrence's opinion. Even then, Lilienthal remained wary: “We must try to get a reasonable answer.”²⁷

During Dean's tenure as chairman, he subordinated safety to military demands and employed public relations schemes to manipulate public opinion and legitimize the subordination. In an AEC meeting held on May, 1952, after the second year of weapons testing in Nevada, Shields Warren of the Division of Biology and Medicine warned of dangerous levels of fallout resulting from tower detonation of moderate yield devices. The minutes reflect that Warren told the commission that it should be “careful in the future to avoid tests when the winds in the upper air reach high velocities. . . . the Tower Shot [“Easy”- 12 kt] reinforced his conclusion that we cannot risk any [larger] continental shots.” In response, Dean could have cancelled tests pending further study or gone on record as supporting the decisions of the

²⁷ Lilienthal, 553. Though beyond the scope of this analysis, the difficulty Lilienthal faced in finding objective assessments of the dangers of radioactivity were only magnified by the insular culture of cold war science.

military regardless of the risks. Or, he could have recommended an approach that balanced military needs with off-site safety by limiting the size of tower shots and recommending that test managers consider the cancellation of tests to reduce off-site fallout.²⁸ Instead, he sidestepped the safety issue altogether, suggesting that “a popular article on fall-out to reduce the possibility of public anxiety. . . might be helpful.”²⁹

Though only a rough beginning to the public relations campaigns that the AEC would develop to protect the military, Dean’s comments came after a short but powerful burst of energy by the military that had already totally undermined the authority of the AEC and the Division of Biology and Medicine to regulate the terms of troop exposure.³⁰ In 1949, in preparation for the Army’s plan to introduce and attempt to accustom troops to radioactive fallout, Warren contacted Dr. Joseph G. Hamilton of the University of California, Berkeley’s Crocker Laboratory and provided him with all available information to launch a thorough appraisal of the problem. Hamilton determined that troops might remain operational if not psychologically disturbed, but noted that the root issue was internal radioactive poisoning from inhalation. Recommending more experimentation to determine, with precision, the exact strata of safe to dangerous levels, Hamilton recommended that no such maneuvers be attempted until lengthy experiments had been performed using “large monkeys such as chimpanzees,” warning that the AEC could

²⁸ “A tower shot is preferable. . . because we can fix zero time with accuracy. . . [to] time signals to open camera shutters. . . and turn on electrical equipment.” Alvin C. Graves, “AEC Information Plan and Materials for Shot 3, Tumbler-Snapper Test Series” April 15, 1952, 20. AEC 505/25 Defendant’s Exhibit DX 21949, *Prescott v. US*.

The military preferred tower shots because, though unrealistic in a battlefield sense, they offered greater control over the detonation and the measurement of bomb yield. Because detonations occurred closer to the ground’s surface, tower shots magnified the bombs effects with a greater production of fallout material, and a corresponding higher concentration of fissionable products within that fallout, from cratering effects.

²⁹ Harold D. Anamosa, Acting Secretary, Atomic Energy Commission, meeting no. 694, “Minutes [with deletions] May 14, 1952.” Warren referenced a “conclusion” made prior to the 1951 testing series that tower shots were not suitable in desert areas. Warren refused to approve tower shots for the military and recommended that it choose an alternate method or place for such testing, because of the risks associated with the long-term inhalation hazard from radioactive material of long half-life being constantly stirred by activity or winds. The ocean would be preferable since it would absorb the fallout and limit the risks. Office Memorandum to General James McCormack, Jr., Director Division of Military Applications from Shields Warren, M.D., Director Division of Biology and Medicine, February 21, 1951. US DOE Archives, Collection DMA, Box 3783, Folder MRS 7. An unnamed committee overruled Warren, approving a test that would lift an approximate amount of “50,000 cubic yards” of radioactivitized material from a bomb crater. “Meeting of a Committee to Consider the Feasibility and Conditions for a Preliminary Radiologic Safety Shot for Jangle, Los Alamos Scientific Laboratory, May 21 and 22, 1951. *Prescott v. US*, Defendant’s exhibit DX390241.

By 1959, Warren had left the AEC to become the US representative to the UN Radiation Committee.

³⁰ The most thorough summary and analysis of troop deployment amidst atomic weapons remains Allan Favish, “Radiation Injury and the Atomic Veteran” *Hastings Law Journal*, 32:1, 1981.

otherwise be accused of recklessly endangering human lives, “a little of the Buchenwald touch.”³¹

The combined efforts of Warren and Hamilton mattered little to the Army which insisted that its soldiers needed realistic training. When the military requested permission in October 1951 to over-expose troops by stationing them within one mile of ground zero, Warren told the AEC to refuse the request. Rather than confront the Army itself, the commission decided to turn the matter over to test director, Carroll Tyler. Warren contacted Tyler to warn him that overexposures of servicemen were unacceptable and that Tyler himself—and not the Army—would have to explain any non-emergency instances. Warren suggested that Tyler encourage the Army to comply by employing a little “ingenuity” rather than needlessly risk lives. Warren believed a seven-mile limit would give troops enough realism without endangering them, but Tyler granted the Army permission to deploy at five and one-half miles.³² Despite what must have been his obvious frustration, Warren’s October recommendation demonstrated the deference he and the AEC accorded the military: “The Division of Biology and Medicine recognizes that it is not its function to set standards for the military nor to impede the operations of the Department of Defense.” Yet, even Warren could not resist pointing out that the Commission was the *only* responsible entity—“both in fact and in the public mind.”³³ With the development and military appropriation of the continental test site, the armed forces impeded the statutory responsibilities of the AEC by insinuating themselves between the public and the only possible guardian of public health issues related to atomic testing.

By the mid-1950s, the AEC and the military could no longer completely cloak their arrogant and reckless behavior. The development and detonation of hydrogen weapons by both the US and the USSR made fallout an issue of increasingly important international concern, and the AEC, unable to monopolize the flow of fallout-related information, found itself on the defensive from above and below. Disturbing details emerged from reports issued regarding fallout, including those from the genetic-effects studies of Japanese children, the United Nations

³¹ Joseph G. Hamilton, M.D. to Shields Warren, M.D., Director of Division of Biology and Medicine, November 28, 1950. A copy of this document is in the author’s possession. (Though the copy is stamped as one from an original at the Bancroft Library at Berkeley, the original was not located within microfilm records in the Joseph G. Hamilton collection there, included in the Ernest O. Lawrence Papers, in July, 2000, and so the whereabouts of the original is, to this author’s knowledge, unknown.)

³² Warren to Carroll Tyler, Santa Fe Operations Office, October 11, 1951. Included in the minutes of Advisory Committee for Biology and Medicine, September 12 and 13, 1952, US DOE Archives, 326 US Atomic Energy Commission, Collection Secretariat, Box 1271, Folder B & M7, Biology & Medicine adv. CMTE, vol. 1.

Commission on Fallout, the National Academy of Sciences, and a host of independent scientists unassociated with the US atomic program.³⁴ Public opinion had shifted so decisively after fallout showered a Japanese fishing vessel that even AEC commissioners became confused. In May 1954, President Eisenhower “reconstituted” a special committee of the NSC to “consider the question of possible suspension of thermonuclear weapons test operations.”³⁵ Then, at an August AEC meeting, Commissioner Thomas E. Murray, having no idea of the outcome of the president’s action and despite the fact that thermonuclear (hydrogen) weapons were not tested in Nevada, asked whether the NSC had decided to “discontinue the use of the Nevada Proving Grounds.” Being assured that it had not, Murray joined the committee in approving the 1955 testing series.³⁶ The president’s action, together with the enormous publicity that fallout had received, altered the AEC’s statutory routine of asking the president for permission to expend radioactive material for tests. Instead of the usual simple listing of the types of tests requested by various agencies (DOD, Federal Civil Defense Administration) Chairman Strauss inserted a paragraph informing the president that the 1955 tests would be of “small enough energy yield and fired under such conditions as to reduce hazard to the public to a minimum.” Strauss’s reference to a *reduced* hazard evidences the fact that information formally secreted within the AEC’s insular bureaucracy—that fallout posed risks—was no longer secret. Unable to rely upon its long-standing denial that fallout posed *any* off-site hazard, the chairman’s request alluded,

³³ Ibid.

³⁴ British scientists were especially forthcoming; a result, perhaps, of the less-secretive (at least less apt to rely upon anti-communism as a reason for the withholding of data) atmosphere of the United Kingdom Atomic Energy Agency compared to the US AEC. See for example J. Rundo, who concluded that “tests be held to a minimum consistent with scientific and military requirements and that appropriate steps be taken to correct the present status of confusion on the part of the public.” “Measurements of Cs137 in Human Beings in the United Kingdom”, (Atomic Energy Research Establishment: Harwell, UK, 1958) 276.

Two incidents demonstrate that the UK showed more consideration for its citizens than did the US: When the Windscale reactor had an accidental release of radioactivity, the government dumped all milk that could possibly have been contaminated into the ocean, and continued to monitor dairy herds and reimburse those farmers affected by the continual confiscation of milk until a clean product emerged. In contrast, when US scientists began studying the accumulation of Strontium 90 in milk in a North Dakota milk shed beginning in 1953, it secretly studied the problem. When publicity from 1956 through 1961 began to affect the amount of milk that people drank, the government cooperated with the milk industry in developing a machine that would remove *most* of the Strontium 90 from dairy products. Comments from radio address, Bea Lucille Bridges, Executive Director of the New England Dairy and Food Council, “Fallout—What It means to Massachusetts and New England” December, 1961, Boston radio, audiotape. Box 56, *Edward Teller Papers*, Hoover Institution Archives, Stanford, [ETP]

³⁵ AEC Meeting 982 Minutes, 5-7-54, [Item (7) only, remainder deleted] DX21940. US DOE Archives, RG 326 U.S. Atomic Energy Commission, Collection Secretariat, Box 1277, Folder O& M 12 National Security Council.

³⁶ “Atomic Energy Commission, Meeting No. 1020” minutes [with deletions]. 344. U.S. DOE Archives, Record Group 326 US Atomic Energy Commission, Collection 1951-1958 Secretary File, Box 1263.

instead, to the testing series as one necessary for the national defense, and thus worth some hazard.³⁷

During this time, concerned Americans clung to the solace provided by well-known public personalities in the atomic field and public and private universities—most rather quietly associated with private laboratories—that fallout really was nothing to worry about. Unfortunately, most of this comforting flurry of information came from those entities associated with AEC or defense contracts and was thus not nearly as objective as most believed.³⁸ Alarmed when the AEC began to lose its momentum in quelling the storm, industrialists and scientists jumped into the fray.³⁹ In doing so, scientists from universities and laboratories rationalized the hazards from fallout with the same national defense arguments and anti-communistic rhetoric as the AEC, but they also argued that the risks from fallout were negligible when balanced against common risks to health. One ambitious report from Harlan B. Jones with the University of California Radiation Laboratory at Berkeley reported that although fallout had a “deleterious effect upon man’s health” it was small compared to the “life-span loss per person,” figured in days, caused by smoking, being 25 percent overweight, having 25 percent elevated lipoproteins, driving an automobile, or working in industry.⁴⁰ Arguments comparing fallout to lifetime

³⁷ The president approved the series on September 9, 1954. August 20, 1954, letter to President Eisenhower from AEC Chairman Lewis L. Strauss. US DOE Archives, Record Group 326 US Atomic Energy Commission, Collection 1951-1958 Secretariat Files, Box 1263, Folder NIR & A 7 Teapot, Vol. 1.

All of this took place after Chairman Strauss had been called before Congress (more than once) to explain why he had issued misleading statements regarding the *Lucky Dragon* incident.

³⁸ Scientists became increasingly important in the post-war period and as the cold war wore on. See especially, Paul Forman, “Behind Quantum Electronics: National Security as a Basis for Physical Research in the United States, 1940-1960” *Historical Studies in the Physical and Biological Sciences* 18:1; Aaron L. Friedberg, “Science, the Cold War, and the American State” *Diplomatic History* 20:1; Gregg Herken, “In the Service of the State: Science and the Cold War” *Diplomatic History*, 24:1; Stuart W. Leslie, “Playing the Education Game to Win: The Military and Interdisciplinary Research at Stanford” *Historical Studies in the Physical and Biological Sciences*, 18:1; Barton J. Bernstein, “Four Physicists and the Bomb: The Early Years” *Historical Studies in the Physical and Biological Sciences*, 18:2.

³⁹ While much of the publicity centered on high Strontium 90 levels from hydrogen testing in the Pacific, the media began to investigate the problems associated with fallout from lower-yield, atomic tests performed in Nevada—a circumstance that might have led to suggestions that the continental site be closed. *The Bulletin of the Atomic Scientists* (*passim*) had a history of negatively assessing the AEC’s activities in Nevada, but popular magazines with a broader readership posed a much greater threat. See Paul Jacobs, “Clouds from Nevada: A Special Report on the AEC’s Weapons-Testing Program” *The Reporter*, May 16, 1957, 10.

The AEC could also intervene with the news media on behalf of the private institutions and their scientists. When *Time* had prepared a story that did not suit Edward Teller, Lewis Strauss, in his capacity as Chairman of the AEC arranged to have the article “anesthetized.” Strauss to Teller, March 8, 1954. Box 4, Item 3, ETP.

⁴⁰ “A Summary and Evaluation of the Problem with Reference to Humans of Radioactive Fallout from Nuclear Detonations” January 14, 1957, 34. Document No. 113452, EOL. See also a report prepared by Thomas L. Shipman, M.D. (a member of the AEC’s Division of Biology and Medicine) for Los Alamos Scientific Laboratory,

background radiation made fallout seem innocuous by comparison.⁴¹ And yet, even those making the arguments could not have failed to recognize an important distinction: human beings who smoke, eat food that will raise their lipoproteins, drive a car, or work in industry make a conscious *choice* to do so—only a very few had an opportunity to escape fallout.⁴² Additionally, human beings live in equilibrium with background radiation—comparisons of environmental sources of radiation with radiation from fallout fail to address the fact fallout was an additional, and thus potentially harmful, burden.

The AEC attempted to negate the public response to the growing evidence of radiobiologic hazards with appeals to patriotism or, sometimes, by claiming that outside researchers had based their studies on incomplete information. Predictably, however, they primarily tried to avoid the issue altogether for fear, as with adverse reports of genetic damage, that they might be “making any statement that the newspapers could pick up as a matter of disagreement between the AEC and a scientific paper.”⁴³ Instead, they reminded the public of the crucial relationship between atomic testing and national security. Within the organization itself, however, commissioners’ requests for information were sometimes not satisfied with trite justifications. A top-secret response to one such request evidences not only the customary disregard for civilians and the hazards they faced from military testing; but also, and more disturbing, stereotypical prejudices the Division of Biology and Medicine harbored against some

“Milk Production and the Age of Fallout” under a letterhead that emphasized the laboratory’s relationship with the University of California. “Advance Copy: Hold For Release: June 27, 1957) Document No. 113982, EOL.

The Regents of the University of California were not oblivious to the fallout controversy that pointed directly at their facilities, nor of the soothing press releases that emerged from under their letterhead. In a letter to Lawrence dated July 10, 1957, the Edwin W. Pauley, chairman of the Regent’s board, told Lawrence to keep them all “thoroughly” informed. Pauley closed his remarks by reminding Lawrence that he belonged to a community larger than that composed of those involved with atomic weapons: “This is a grave responsibility that we owe to humanity in general and neither you, nor I, would ever want to be accused of not having informed the entire Board of all material on hand, or on all phases, of this important subject.” Pauley to Lawrence, Document No. 113079, EOL.

⁴¹ See the testimony of Ernest O. Lawrence and Dr. Edward Teller before Congress, “Fallout from Nuclear Weapons Tests—Summary-analysis of Hearings” May 5-8, 1959. (US Government Printing Office: Washington, D.C., 1959)

⁴² The grandchildren of Norris Bradbury, head of Los Alamos, did once. In a televised interview, Bradbury’s daughter-in-law remarked that when she, her husband, and their children lived in St. George, Utah, Bradbury warned them in advance of an atomic test to advise them to take his grandchildren and leave the area for a few days.

“Coverup at Ground Zero” *Turning Point*, Associated Broadcasting Network, 1994. (copy in author’s possession).

⁴³ “Minutes of the 58th Meeting of A.E.C. Advisory Committee on Biology and Medicine” [with deletions] November 16 and 17, 1956. At the same meeting, the committee also agreed, for psychological reasons, to allow islanders from Rongelap to return to their island despite dangerous levels of radioactivity there because “of the already relatively high exposure to which these natives had already been subjected.” In making this recommendation to the AEC, the committee inserted a cautionary statement that any re-evacuation would affect “world opinion” and jeopardize the “continuation of weapons testing.” *Prescott v. US*, Defendant’s exhibit DX 22404.

of those “downwinders.” In response to a National Academy of Sciences report that recommended a more restrictive radiation exposure standard, members of the Division disagreed. They quibbled with NAS's unclear definitions for “individual persons” and “general population,” and argued that the entire problem might be irrelevant because:

The numbers of people involved around the Nevada Test Site might not constitute a “general population” yet it probably would be difficult to categorize many thousands of people as “individual persons.” Further, *there is in a sense ‘inbreeding’ within this population.*⁴⁴

This military usurpation of AEC was indicative of a larger pattern of militarization in the early years of the cold war, and one example suggests it caused a slippage of the president’s authority as well. By November 1952, the military’s stature had risen so dramatically that the JCS had begun to control the terms of NSC policy reviews, disabling not only other members of the council, but also the president himself. A memorandum detailing for President Truman the 126th meeting of the NSC reflects that the NSC had agreed to recommendations from General Walter B. Smith, director of the CIA, and other NSC committees that the NSC begin a “project to provide a more adequate basis for planning for the security of the United States.” As envisioned, the endeavor would include an across-the-board review of all civilian and military components pertaining to national security and result in the compilation of “Commander’s Estimates” for use by the president and NSC should emergency deployment become necessary. Though undefined (at least as declassified) it can be inferred from the memorandum’s context that the information included in these estimates would include a complete inventory of military resources, together with their location and other information that might be necessary. The JCS and the secretaries of the armed forces conditionally agreed to the review, but only if they alone were allowed to undertake the “project.” Smith commented “with all deference to the Joint Chiefs of Staff,” that the review required not only military, but civilian-type information as well, and that NSC staff could accumulate the necessary information from all agencies, including the armed forces. Truman asked for comment on what he conceded was a “controversial” subject and most, including General Omar Bradley, agreed that the estimates required more than the

⁴⁴ Italics mine. Additionally, the report noted that although the existing standard might “double the mutation rate. . .this would be for a relatively small number of persons in terms of the general population.” “Report to the General Manager by the Director of Biology and Medicine” Appendix A “Background and Discussion” 3. Submitted and circulated for AEC consideration “during the week of November 12, 1956.” AEC 141/33. *Prescott v. US*, Defendant’s exhibit DX 22410.

military alone could provide. The JCS then refused to cooperate because “such evaluations. . .involved the war plans of the United States,” except insofar as the JCS agreed to provide “oral presentations on the problem to whatever group of the National Security Council it was determined should receive such information.” Truman could have, of course, demanded that the military provide the required information—if only to him—but he failed to confront the JCS, suggesting only that the NSC set up an ad hoc committee to address the problem of how the military information might be incorporated into a strategic summary.⁴⁵

Truman’s tenure was coming to an end, so it was perhaps reasonable for him not to have pushed the JCS into a comprehensive study that might not have been useful to Eisenhower. Nevertheless, it seems quite contrary to the constitutional chain of command, and to the intent of the National Security Act, for the JCS to have flatly refused to provide even an “eyes-only” written inventory of its resources. Clearly, and although Smith’s recommendation is unavailable, the estimates he suggested would have been far too comprehensive to be delivered orally. Like children who cling to the hope that the “right” question will not be asked, the Joint Chiefs and/or the secretaries obviously intended to withhold information by providing oral answers to questions posed—leaving it to their interrogator to guess at what they might have up their respective sleeves.

The armed forces had come to view their entitlement and mission as so grandiose as to absolve them from responsibility for their peacetime, constitutional, duties--both to their commander-in-chief, and to the citizens they were to protect. The necessity to guard the nation from the real enemy, the USSR, led the military to view with suspicion and regard with animosity anyone who might learn their secrets or, through public opinion, begin to thwart their ability to amass their self-determined necessities. Perhaps as much as the USSR, the armed forces came to fear American citizens. And they had good reason for, as Hogan points out, the “most important constraints on the national security state were those built into the country’s democratic institutions and political culture.”⁴⁶

IV. (Dis)Armament

⁴⁵ “Memorandum for the President” November 28, 1952, MNSC

⁴⁶ Hogan, *Cross*, 475.

We will match the USSR in honest balanced reduction of armaments or we will outmatch them in military strength.
*Harry S. Truman, 1951*⁴⁷

In late December 1950, one month before Dean Acheson advised Truman to proceed with the hydrogen bomb, he told David Lilienthal that if the US military policy remained resistant to international arms control and the nation's leaders continued to declare their backing for such control, then America would be committing "a fraud upon ourselves." Lilienthal agreed, concluding that the government would end up "in the soup."⁴⁸ It might be surmised that Lilienthal used the common American colloquialism to sum up his view that the contradictory behavior would lead to budgetary or political problems down the road. It is possible, however, that Lilienthal feared a more devastating reality. Highly critical of unnecessary secrecy and, as AEC chairman, also always extraordinarily careful to protect national security, Lilienthal used coded language in conversation and in his diary entries. In connection with the hydrogen bomb—the "Super"—Lilienthal routinely substituted "Campbell," "Campbell's Soup," or simply "soup." Thus, it may have been that the phrase "in the soup," for the eloquent and articulate man who abhorred the use of atomic science for weapons development, encapsulated his calculated fear that the nation was headed for atomic or nuclear catastrophe.

The failure of the United States and the Soviet Union to agree to the UN's disarmament and international atomic energy agency resolutions must rank among the most tragic "lost causes" of the twentieth century. Because there were no meaningful attempts to settle both issues, atomic and hydrogen bombs became common currency in struggles for national security and symbolic capital in the market of international prestige. Thus, as nuclear weapons proliferated, so too did nuclear demonstrations.⁴⁹ Those who came to bear the burden, though, began to do so only after the symbols disappeared. When the smoke cleared from these raw displays of might, radioactivity circled the globe and descended without notice upon many who cared not one whit about the number of planes that flew over the Kremlin on May Day or over Washington on Independence Day. The monumental exhibitions of state power hid minutiae that ranged from the resourceful to the grotesque: Soviet physicists learned the secrets of the United

⁴⁷ "Report to the American People on International Arms Reduction", November 7, 1951. Cited in "Minutes of the Meeting of the Secretary of State with the Panel of Consultants on Disarmament" April 28, 1952, n. 4. *FRUS* 1952-1954, Vol. II, National Security Affairs, 898.

⁴⁸ Lilienthal, 615.

States' first hydrogen bomb by collecting snow in cardboard boxes during the same year that a US laboratory smuggled the bones of dead children from third-world countries into the States to chronicle, but (apparently) not consciously consider, the distribution of Strontium 90.⁵⁰ The militarization of both nations pursued its own logic before which the combined weight of the UN General Assembly and the energy and efforts of well-meaning individuals were unable to slow its gathering momentum.

Indirectly, however, the UN resolutions, by focusing international attention on the mounting tension between the United States and the Soviet Union, led to the only real compromise reached during the 1950s—the 1958 unofficial moratorium on nuclear testing. Setting aside the expenditure of resources caused by nuclear proliferation, fallout was its main consequence and it was international attention provoked by the fallout problem and a consequent Soviet challenge that, in 1958, finally led Eisenhower to agree to a temporary moratorium on nuclear testing. Before addressing that moratorium, however, it will be useful to summarize how the cumulative effect of multiple but interrelated circumstances prevented any meaningful progress on the UN's pleas.

Prior to the moratorium, the United States held an atomic advantage over the Soviet Union and relied upon the bomb as a backup should negotiations fail. It was from this confident position that US negotiators—for Truman and Eisenhower—went to the table unwilling to make meaningful concessions.⁵¹ Additionally, the rhetoric designed to support both administrations' goals brought national security to the forefront and the inflated public fears, making the issue a useful political tool for congressmen and their influential supporters. Bolstered by seemingly-limitless budgets and the ability to wield enormous political leverage from the country's insecurities, the JCS resisted every initiative for arms limitation or reduction. In doing so, the armed forces took the issue from the NSC chambers to the public, relying upon the lobbying efforts of those, like Ernest Lawrence, who had everything to gain from continued escalation.

⁴⁹ NSC staff reported that the Soviets had noticed the 1954 hydrogen bomb test (Bravo 1954), but had avoided publicizing it within the Soviet Union. Instead, they distributed “propaganda” through their satellites, “Moscow hammers away. . .” “Recent Atomic Tests and World Reaction Thereto” MNSC, 66.

⁵⁰ Sakharov, *Memoirs*, 158; Project Gabriel, Hacker, *Elements*, 183, 382 n. 184, 185, 186.

⁵¹ On August 27, 1954, NSC staff prepared “A Review of the United States Policy on the Regulation, Limitation, and Balanced reduction of Armed Forces and Armaments.” The NSC requested the review of the basic principles of the existing disarmament analysis (NSC 112 (July 1951)) “as a matter of urgency” and concluded that “The disarmament doctrine [of] three decades or so. . . had been detrimental to the security of the United States.” MNSC, 5.

US Ambassador Cohen made the initial proposal for disarmament before the UN General Assembly during the fall of 1951; yet, throughout the decade, the United States remained as recalcitrant as the Soviet Union toward agreeing to the resulting Joint Resolution. As then-Secretary of State Dean Acheson explained to a committee in 1952, he had hoped the proposal would give the nation an advantage in world opinion over the Soviets.⁵² It did not. Instead, the Soviets used the same forum to blame America for relying too heavily upon the superiority of its weapons, arguing that it had blocked all reasonable attempts to develop workable solutions. As Eisenhower said later, US policy was increasingly being made on the basis of world opinion as shaped by Soviet declarations.⁵³

Anti-communism was a useful tool for presidents and policymakers, but during the early years of the cold war it became so effective that those who had used it to good effect may have regretted that they did so. By setting up the “domino theory” the Truman Doctrine absorbed funds that Truman would have better put to use for social programs.⁵⁴ Likewise, Eisenhower’s pre-election accusations that Truman had “bungled us perilously close to World War III” thwarted his attempts to balance the budget.⁵⁵ Korea was the springboard—hefty defense contracts, especially in the West, left local boosters and politicians envisioning only growth, not reduction, as the war ended. By the end of Eisenhower’s first year in office, three-quarters of the US budget was consumed in the interests of national security and one-third of the nation’s business relied on the defense industry.⁵⁶

Such domestic extremes had an international effect that bore directly on arms control. Though an effective stimulant for growth, anti-communist rhetoric had a negative effect on the ways that European allies and others perceived the United States. Because of this, the support that Truman and Eisenhower expected in response to their persistent attempts to discredit the communists in the international community failed to emerge. In its 1953 annual report to the president, the Psychological Board reported that Western Europe had become heavily, and

⁵² “Minutes of the Meeting of the Secretary of State With the Panel of Consultants on Disarmament”, April 28, 1952. *FRUS*, 1952-1954, Vol. II, Part 2, 896-897.

⁵³ “Minutes of the 269th Meeting of the National Security Council, Camp David, Maryland”, December 8, 1955, MNSC, 11.

⁵⁴ Hogan, *Cross*, 119-120.

⁵⁵ Eisenhower, “Philadelphia Address”, September 1952, in Martin J. Medhurst, *Dwight D. Eisenhower, Strategic Communicator* (Greenwood Press: Westport, Conn., 1993). Eisenhower’s rhetoric has been the focus of numerous studies. See Martin J. Medhurst, ed., *Eisenhower’s War of Words* (East Lansing, MI: Michigan State University, 1994).

⁵⁶ Hogan, *Cross*, 473.

increasingly, critical of US foreign policy. Europeans feared a trend toward “isolationism” based upon intensified polarization between the America and the Soviets; and, additionally, decried the United State’s anti-communist “hysteria.” By contrast, the Soviet’s “peace initiatives” seemed more rationally motivated.⁵⁷ The accuracy of the Psychology Board’s report was validated in 1956 when the United Kingdom and France expressed their discomfort with their tense geographical position between two atom-rattling giants. During UN disarmament negotiations, the two nations refused to join in the US proposal, submitting instead a joint “working paper” of their own that synthesized the American and Soviet proposals.⁵⁸ Tough talk had backfired, and when it caused the nation’s two most important NATO allies to publicly separate themselves from the American position, it only strengthened Soviet resolve and prestige.

The differences between Truman and Eisenhower on the use of atomic weaponry affected the shape of their diplomatic strategies and goals. Alike in terms of the ways each expressed anti-Soviet sentiments—fanning domestic anticommunism, failing to genuinely participate in the formation of an International Atomic Energy Agency or in negotiations for arms reduction—the two administrations held fundamentally different views with regard to the use of atomic weapons. As has already been noted, while the NSC allowed for the coordination and continuity of national security policy, it also easily accommodated the changing emphasis of different administrations. Although there is evidence that by 1952 Truman had considered threatening the Soviet Union with atomic bombardment over Korea, serious consideration of the use of atomic weapons was not brought before the NSC during his term in office.⁵⁹ Publicly, too, Truman was essentially noncommittal and when asked, refused only to say that he would not *rule out* their use.⁶⁰ Long convinced that communists were not persuaded with subtlety, Eisenhower escalated atomic weaponry from the realm of theoretical possibility to a potentiality. At a February 11, 1953, meeting of the NSC convened to consider a UN proposed strike against the Chinese at

⁵⁷ “Status of United States Programs for National Security as of June 30, 1953”, 8. The Psychological Program, 1. *Documents of the National Security Council*, Eighth Supplement.

⁵⁸ “United Nations Status of Disarmament Negotiations,” State Current Foreign Relations, No. 17, April 25, 1956, 1. *Minutes of the National Security Council*, Third Supplement. This was a change from their earlier alliance with the US in 1952. “Summary of Significant Developments Since the Adoption of NSC 112 on 19 July 1951” 46, 54. *Minutes of Meetings of the National Security Council*, Third Supplement, 1995.

⁵⁹ *New York Times*, August 3, 1980, 22.

⁶⁰ *Public Papers of the Presidents of the United States, Harry s. Truman, 1950* (Washington, D.C.: U.S. Government Printing Office, 1965) pp. 726-727, reprinted in Dennis Merrill, Thomas G. Patterson, eds., *Major Problems in American Foreign Relations, Volume II: Since 1914*. (Boston; New York: Houghton Mifflin Company, 2000), 310.

Kaesong, Eisenhower was unequivocal: “We *should* consider the use of tactical atomic weapons.” Dulles agreed, and while the Pentagon began to assess the danger to friendly forces and consider other targets, the NSC Planning Board developed “contingency plans” for the end of the war.⁶¹

Within the context of this analysis, Eisenhower’s official “conventionalization” of atomic weapons had a paradoxical effect upon arms negotiations. On the one hand, the ideological transfer⁶² of atomic weapons into the regular arsenal routinized them and devalued any moral or ethical qualms that might have persisted regarding the use of weapons of mass destruction. In this way, they strengthened the hand of US negotiators who relied upon, and insisted upon the maintenance of, logistical and numerical superiority.⁶³ On the other, this devaluation of the *meaning* of atomic weaponry infected nuclear weapons as well, and the frightening potential of conventional hydrogen weapons escalated the importance of a diplomatic solution to the arms race.⁶⁴ With the development of the Soviet hydrogen weapon in 1954 and thus near parity, agreement became feasible and even more necessary. Verification of the terms, however—proof of arms reduction, amounts of stored radioactive material, and even troop force levels—remained a barrier.

Despite mounting tensions, and increasing willingness on behalf of the State Department to reach some, however meager, rapprochement with the Soviet Union, the military repeatedly refused to consider any plan. In 1954, the JCS opposed a Department of State “working group” proposal for disarmament because it was based on an “invalid” conclusion that disarmament was “feasible” and “in the U.S. interest.” In a comprehensive breakdown of DOD disagreements

⁶¹ Richard H. Immerman, *John Foster Dulles: Piety, Pragmatism, and Power in U.S. Foreign Policy* (Scholarly Resources, Inc.: Wilmington, DE, 1999) 68-69.

⁶² *Ideological* because at this time, prior to the nuclearization of warheads and missiles, and prior, too, to the establishment of a permanently atomically-armed Air Force, all nuclear material remained in the custody of the Atomic Energy Commission at the disposal of the president. The armed forces possessed non-nuclear components only.

⁶³ For tangible evidence of this effect, see the 1954 review of US disarmament policies that concluded: “for the foreseeable future the achievement of international armament regulation will not be in the best interest of the security of the United States and the Free World.” MNSC, 28. This, of course, flew in the face of Eisenhower’s assertions in his “Atoms for Peace” speech of December, 1953: “. . .let no one think that the expenditure of vast sums. . .can guarantee absolute safety for the cities. . .The awful arithmetic of the atomic bomb does not permit such an easy solution.”

⁶⁴ In this regard, see the flurry of taunts that occasioned the Soviet’s successful detonation of a “tactical” hydrogen weapon “eight to ten times” the power of Nagasaki. AEC Chairman Strauss’ response in the *New York Times* boasted that although the Soviets could destroy New York City, the American hydrogen bomb could level cities with the “destructive capacity of 600 to 700 times that of Hiroshima and Nagasaki. *New York Times*, March 27, 1954, 1; April 1, 1954, 1.

with State's proposals, the JCS agreed with only one other submitting agency, the AEC. The AEC had considered verification of the Soviet atomic stockpile an "impossibility."⁶⁵ Again, on June 27 and June 28, 1955, the JCS and the Secretary of Defense objected to a proposal for disarmament.⁶⁶ In response, Harold E. Stassen (special assistant to the president for disarmament) gathered the JCS together to inform them that their refusal to agree to any discussion of disarmament absent a solution to the "world's political problems" was entirely unrealistic.⁶⁷

All of the debates concerning disarmament took place against the backdrop of mounting concern about fallout from hydrogen weapons. Fallout could no longer be ignored—nor separated from the issue of disarmament—after the detonation of "Bravo" in March 1954 caused the death of a Japanese fisherman aboard the *Lucky Dragon*, radiation burns and illnesses to others on the ship, the emergency evacuation (after a two-day delay) of a nearby island, and the pollution of a substantial region of Japanese fishing waters.⁶⁸ Fallout not only became part of the civilian discourse on disarmament, it began to permeate the NSC chambers as well. In a November 1955 meeting concerned with a proposed change from 1961 to 1957 as the date when the Soviets might reasonably be expected to achieve equality with the US in terms of arms, AEC Chairman Strauss based his approval for the change on the Soviet's success with its accelerated nuclear program. The JCS's Admiral Radford qualified Strauss's mention of the Soviet achievement with reference to the hazards involved in nuclear testing, if not specifically to the "Bravo" incident: "of course the Russians cared nothing whatever about accidents. We [have] to be careful of human life and accordingly more careful in our testing."⁶⁹

Once the dangers of fallout began to circulate throughout the media, the reality of arms escalation caused a shift in the terms of the debate over disarmament. Congressional hearings,

⁶⁵ "Department of Defense Comments on State Department Working Group Review of United States Policy on Control of Armaments, Dated 29 November 1954" MNSC.

⁶⁶ "The statement that 'There is general agreement within the participating agencies. . . ' does not accurately reflect the view of the Joint Chiefs of Staff." "Memorandum for the Secretary of Defense. Subject: U.S. Policy on Control of Armaments", 27 June 1955, 1. "It is the unanimous view of the Joint Chiefs of Staff and the Armed Forces Policy Council. . . that dealing with arms regulation in advance of the settlement of the major political issues. . . is unrealistic and contrary to the best interests of our national security. "Memorandum for the President" 28 June 1955, MNSC, 1.

⁶⁷ "Principal Points Raised in Planning And Discussion of Governor Stassen's Revised Proposals Concerning Control of Armaments, June 33, 1955" MNSC, 1.

⁶⁸ The most powerful encapsulation of these events is contained in the PBS documentary "Race for the Superbomb", *The American Experience* (WGBH: Boston, 1999).

⁶⁹ "Minutes of the 266th meeting of the National Security Council" November 15, 1955, 8. MNSC..

prompted in part by accusations of negligence and deception on behalf of the AEC and concern over the military's continued growth, forced the AEC and the DOD to rely in 1957 upon industry contacts for support. Edward Teller tried to quell the growing fears, but ended up causing some confusion among insiders and congressmen with his promises of a "clean" bomb that he claimed was already in the works.⁷⁰ Teller's unfounded comments regarding a fallout-free bomb took Ernest Lawrence, his boss, by surprise. Drawing attention away from Teller's startling remarks, Lawrence de-emphasized the "clean" bomb concept, focusing during the hearings and in a meeting with Eisenhower on the importance of nuclear progress to national security. The congratulatory mail he received from the AEC upon his return to California evidences the incestuous relationship between the commission, the military, and (at least one) influential industrialist. Strauss's special assistant, J.H. Morse, Jr. (Captain, USN) gushed:

Everything has gone beautifully. Most important for all is the President's mental approach, vitally altered by the fact that for the first time he sees real reason for continued tests. . . he is not likely to accede to deceptive Russian offers to stop. . . Furthermore, Congress will not accede if the President does.⁷¹

Paul A. Foster, Assistant General Manager for AEC International Activities, drew allusions to 1920s pacifists and "women's group clubs" who had been swayed by British and Japanese propaganda before praising Lawrence. "I devoutly wish that our national leaders preached less about the horrors of war and more about the horrors of defeat at the hands of a cunning and Godless Communism."⁷²

In the end, it was a "Godless" communist who figured out a way to end the proliferation of, at least, Strontium 90, within the atmosphere. By 1958, fallout had become an increasingly important political issue, domestically and internationally. It added potency to the arguments of those who favored disarmament, and competing articles in popular journals by prominent scientists coupled the two issues, bringing them to the forefront together. While Teller's personal motivations cannot be known, he based his pronouncement of objection to disarmament in a *Foreign Affairs* article on the inadequacy of any possible system of verification even as

⁷⁰ Edward Teller, handwritten notes, 1957. EOL.

⁷¹ Morse added a PS: "I explain wherever possible that weapons can be made so clean that radioactive fallout is no longer an important factor in determining their application. Militarily speaking, they are then "completely" clean. Morse to Lawrence, July 2, 1957, 1. EOL.

⁷² Foster to Lawrence, July 8, 1957, 1-2. EOL

Nobel Prize winning physicist Isidor Rabi publicly voiced his opinion that inspection and verifiability were scientifically possible, especially given the enormous stakes involved in continued escalation. The sharp distinction between these two positions also divided Eisenhower's advisors in the NSC. Strauss favored Teller's position, but Eisenhower's disarmament specialist Harold Stassen believed Rabi correct. The division prompted Eisenhower to reconsider his original position and the NSC to order the first study on "losses consequent" to a "total suspension of nuclear tests" since the beginning of the atomic age.⁷³ Mounting international pressure to address in some meaningful way the problems posed by fallout from nuclear weapons exerted just enough leverage to push Eisenhower and Khrushchev to agreement. On April 4, 1958, Khrushchev publicly announced that the Soviet Union would unilaterally cease testing nuclear and atomic weapons while waiting for agreement on the UN Resolution. Four days later, on April 8, 1958, Eisenhower agreed that the US would cooperate in an unofficial moratorium.⁷⁴

been possible without so much hardship. If successful, this essay has illustrated that it might have been.

V. Conclusion

There is an ominous trend in this nation. . . . The drift goes back, I think, to the fact that we carried over to days of peace the military approach to world affairs.

Justice William O. Douglas, January 13, 1952⁷⁵

When Dulles met with his committee on disarmament to discuss the upcoming agreement to cease testing, General Alfred M. Gruenther told him that the AEC had opposed the agreement because they were "just beginning to tap possible new developments for testing in higher latitudes." To Dulles, Gruenther dismissed their opposition, saying that he believed there was not much "glitter" on the AEC promise.⁷⁶

⁷³ "Memorandum of Discussion at the 350th Meeting of the National Security Council" January 6, 1958, 541, 545. *FRUS*, National Security Policy; Arms Control and Disarmament, Microfiche Supplement, 1998.

⁷⁴ "Memorandum of Conversation" April 8, 1958, *FRUS*, National Security Policy; Arms Control and Disarmament, Vol. III, 1996. 590.

⁷⁵ William O. Douglas, "The Black Silence of Fear," *New York Times Magazine*, January 13, 1952, 7.

⁷⁶ "Memorandum of Conversation" April 8, 1958, *FRUS*, National Security Policy; Arms Control and Disarmament, Vol. III, 1996, 595.

At the end of his splendid critique of the post-war national security state, Michael J. Hogan asks if US victory in the cold war might have been gained at less cost.⁷⁷ As a component of the cold war, it is worth considering, too, whether atomic and nuclear superiority, or even satisfactory stability, might have Civilian control dissolved with Lilienthal's departure and militarism drove atomic weapons development ever forward toward the "glitter" that Gruenther wisely counseled was but a spectre of something perhaps more terrifying. Along the way, accelerated development and testing schedules fostered reckless, even criminal behavior. Scientists camouflaged their biases behind reams of data that reached illogical conclusions and Lewis Strauss, as Chairman of the AEC, argued before Congress that the radiation burns on the skin of a dying Japanese fisherman had not resulted from fallout, but from a combination of poor diet and sunburn. Many can be named and blamed; but there is no room here, nor is there within the business of history, for wholesale condemnation. Many, many others played a sincere role in the machinery of the cold war. They did their duty, just as Lt. Gen. James V. Edmundson, who served as Strategic Air Commander for the US Air Force. Looking back now, Edmundson remembered that fears of a surprise Soviet attack were so persistent that SAC remained on continual atomic alert for years, but "We couldn't think of any other way to keep it from happening."⁷⁸

⁷⁷ Hogan, 482.

⁷⁸ As recorded in the PBS documentary, *Race for the Superbomb*.