

Negotiating Global Nuclearities: Apartheid, Decolonization, and the Cold War in the Making of the IAEA

*By Gabrielle Hecht**

ABSTRACT

Throughout most of its history, the International Atomic Energy Agency (IAEA) has been portrayed as a technical agency in which geopolitics are either extraneous or inappropriate. This chapter argues that this separation of technology and politics was discursive and never enacted in practice. Looking at the role of South Africa in the early history of the agency, this chapter shows that the IAEA's technopolitical regime was the continually contested outcome of negotiations between visions of a hierarchical, bipolar global order structured by cold war tensions and visions of a decentralized global order inspired by decolonization. This chapter also explores how dynamics between the apartheid state, decolonizing nations, and the United States inflected the meanings and implications of the "nuclear" in IAEA technopolitics. "Nuclearity"—that is, the degree to which a nation, a program, a policy, a technology, or even a material counted as "nuclear"—was a spectrum, not an on-off condition. Both nuclearity and its implications emerged in substantive ways from the dynamics between cold war and postcolonial visions of the world.

INTRODUCTION

After years of relative obscurity, the International Atomic Energy Agency (IAEA) has received a lot of public attention over the past decade. International political discourse—and journalistic coverage thereof—portray the IAEA as the most authoritative judge of a nation's ability to produce atomic weapons. In this discourse, the agency's impartiality is guaranteed by both the technical qualifications of its inspectors and the diversity of their national origins. The verdict of IAEA weapons inspectors determines whether the nation under scrutiny has become a "rogue state" or has remained within the bounds of acceptable technopolitical behavior. When the United States ignored IAEA findings about Iraq's nuclear weapons capabilities, international protest grounded itself in results of the IAEA inspections process to insist on the failure (or fabrication) of U.S. "intelligence" and the illegitimacy of its war efforts. At least symbolically, most political leaders treat the IAEA as the ultimate arbiter of global nuclearity, notwithstanding the agency's inability to temper

* Department of History, University of Michigan, 1029 Tisch Hall, Ann Arbor, MI 48109-1003; hechtg@umich.edu.

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bellicose behavior—be it that of the world’s most powerful nation or of the world’s worst pariahs.

A complex, historical explanation for the IAEA’s failure to control the spread of nuclear weapons would require a volume unto itself, an endeavor attempted by some international relations experts.¹ Although they vary in their approach, these scholars all frame their work primarily in cold war terms. They agree that the IAEA’s main mission at its inception was to transcend East-West divisions and (with the exception of the IAEA’s official historian) focus the bulk of their attention on the agency’s role in negotiating the terms of successive nonproliferation regimes. Some even distinguish between politics “intrinsic” to the IAEA’s *raison d’être*—and therefore appropriate subjects of debate within the agency—and those that remained “extraneous,” and hence inappropriate.² The distinctions in this analytic scheme appear straightforward. “Intrinsic” politics deal directly with “nuclear” matters, such as U.S.-Soviet negotiations over safeguards. “Extraneous” politics introduce “other” (presumably “non-nuclear”) agendas—such as those that led to the expulsion of apartheid South Africa from the IAEA’s board of governors in 1977 and from its General Conference in 1979.

This approach misses two key elements in the history of the agency. First, the IAEA’s technopolitical regime³—the political programs, technical and scientific practices, and institutional ideology that constituted and governed its structure and development—was not merely a product of cold war politics. It was also a product of decolonization politics. More accurately, it was the continually contested outcome of negotiations between visions of a hierarchical, bipolar global order structured by cold war tensions and visions of a decentralized global order inspired by decolonization.⁴ Second, the meanings and implications of nuclearity in IAEA technopolitics were neither universally agreed upon nor stable in time or space. Nuclearity—that is, the degree to which a nation, a program, a policy, a technology, or even a material counted as “nuclear”—was a spectrum, not an on-off condition. Both nuclearity and its impli-

¹ Lawrence Scheinman, *The International Atomic Energy Agency and World Nuclear Order* (Washington, D.C., 1987); David Fischer, *History of the International Atomic Energy Agency: The First Forty Years* (Vienna, 1997), offers an insider’s history of the agency. The most sophisticated historical analysis is Astrid Forland’s “Negotiating Supranational Rules: The Genesis of the International Atomic Energy Agency Safeguards System” (Ph.D. diss., Univ. of Bergen, 1997).

² Scheinman, *International Atomic Energy Agency and World Nuclear Order* (cit. n. 1), 210.

³ Gabrielle Hecht, *The Radiance of France: Nuclear Power and National Identity after World War II*, Inside Technology series (Cambridge, Mass., 1998)

⁴ Fischer, *History of the International Atomic Energy Agency*; and Forland, “Negotiating Supranational Rules” (both cit. n. 1), both acknowledge the role of “developing nations” in the history of the IAEA and take some elements of postcolonial geopolitics in the agency seriously. Fischer argues that the influence of the “Group of 77” (G-77, the so-called nonindustrialized countries) on agency policies grew stronger beginning in 1973. But the tone of his analysis suggests that this influence was an obstacle to be overcome, rather than its own legitimate force, and that accusations of safeguards as “neocolonial” practices were frivolous, rather than serious, expressions of an alternate vision of global technopolitics. He celebrates the IAEA’s role in distributing nuclear technology to developing nations and describes them as “aid programs” without excavating the self-interest of donor nations, the geopolitical conflicts involved in distributing funds and technologies, or the utility of the programs themselves. Forland treats the positions expressed by some “third world” nations—especially India—with greater analytic seriousness, but not in much depth. Her analysis is strongest in showing that nations and institutions had very different ideas about safeguards. Rather than constituting the IAEA’s *raison d’être* from the start, she argues, safeguards (as policy and practice) emerged in fits and starts from negotiations among these competing ideas. Still, she and Fischer both ultimately offer teleological narratives depicting the agency as moving inexorably toward more effective safeguards, in which political obstacles posed by India and other nations are steadily overcome on the road to “technical perfection” (Forland, 132).

cations emerged in substantive ways from the dynamics between cold war and post-colonial visions of the world.

The conclusion to this chapter suggests ways in which this double reframing of IAEA history can help to account for the stunning inadequacy of today's international non-proliferation regime. Before we can get there, though, we need to understand more about how cold war and postcolonial politics confronted each other in the agency and how this confrontation shaped negotiations over the substance and meanings of nuclearity. To achieve this, I have chosen a somewhat unorthodox route, via the South African archives.

South Africa's role in the early history of the International Atomic Energy Agency offers a unique lens on early struggles over the meanings of global nuclearity. In the late 1940s, South Africa had signed contracts with the Combined Development Agency (CDA) to supply thousands of tons of uranium for American and British weapons programs. South Africa's importance as a uranium producer led to its inclusion in the original eight-nation group that began drafting the IAEA's statute in 1954. South Africa subsequently secured a position on the agency's board of governors, thereby remaining among the most powerful second-tier nations in the organization until its expulsion in the late 1970s.

The apartheid nation's influence was controversial from the start. As new African nations joined the agency in the early 1960s, the opposition to South Africa's position initiated by Egypt, India, and (more discreetly) the Soviet Union gained momentum. Newly postcolonial countries construed South Africa's centrality in the world's only truly global nuclear institution as a major affront, an indication of the West's insincerity about decolonization and racial equality. South African delegates to the IAEA navigated these storms by triangulating between three points: (1) the relationship between technology and politics that the IAEA should properly define and enact; (2) the degree to which uranium production constituted a nation's level of nuclearity in the global hierarchy defined by the IAEA; and (3) the definition and testing of a dual national identity for South Africa as both "Western" and "African."

FRAMING GLOBAL NUCLEARITIES

The IAEA had its immediate origin in Eisenhower's famous Atoms for Peace initiative. Initial negotiations on a draft statute for the agency began in 1954 and involved eight nuclear weapons states and uranium suppliers in NATO and the Commonwealth: the United States, the United Kingdom, France, Canada, Australia, Belgium, Portugal, and South Africa. In 1956 the drafting group expanded to include the Soviet Union, Brazil, India, and Czechoslovakia. This group of twelve submitted a draft to the UN in September of that year, right around the decolonization of Morocco, Sudan, and Tunisia. In July 1957, the IAEA officially came into existence, and Ghana became independent. By the end of 1960, another eighteen nations had gained independence from colonial empires. Of these, five had—or would soon have—confirmed uranium reserves: the Central African Republic, Gabon, Madagascar, Niger, and Zaire.

The IAEA's board of governors would both reflect global nuclearities and shape their future, so its composition was hugely contentious. In order for the IAEA to have political credibility, both West and East needed adequate representation. In order for the agency to have technical credibility, expertise had to play an important role in selection. But these criteria made the Indian delegation anxious. Wouldn't the IAEA

simply end up reproducing the global imbalances perpetrated by the twin processes of colonialism and industrialization?⁵ India's solution gained easy acceptance: combine nuclear "advancement" with regional distribution in the selection criteria for board membership. The delineation of regions simultaneously reflected cold war tensions and anticipated decolonizations: North America, Latin America, Western Europe, Eastern Europe, Africa and the Middle East, South Asia, Southeast Asia and the Pacific, and the Far East. In 1956, the twenty-three seats on the board of governors were then defined as follows:

1. Five seats to the member states "most advanced in the technology of atomic energy *including the production of source materials*": the United States, the Soviet Union, the United Kingdom, France, and Canada.
2. Five seats to the "most advanced" states, again "*including the production of source materials*," in regions other than those covered by the top five: South Africa, Brazil, Japan, India, and Australia.
3. Two rotating seats to uranium producers: Belgium and Portugal would alternate on one seat, and Czechoslovakia and Poland on the other.
4. One seat, designated by the board, to a supplier of technical assistance. This seat seemed likely to rotate among the four Scandinavian countries.
5. Ten seats elected by the IAEA's General Conference (which represented all members), "with due regard to equitable representation on the Board as a whole, of the members in the [eight] areas."⁶

The focus on "advancement" thus made the obsession with technological rankings that dominated cold war discourse a structural feature of the IAEA. But the regional framework—even as it sought to replace a narrative of inequality with one of expertise⁷—conjugated that advancement into a postcolonial tense.

What made a nation count as "most advanced in the technology of atomic energy including the production of source materials"? Indeed, what were "source materials," and to what degree did producing these constitute a significant manifestation of nuclearity?

These were high-stakes questions for South Africa. By 1957, the IAEA was the only international organization in which the increasingly ostracized nation could hope to have major influence. Concretely, South African delegates anticipated that the IAEA would play a critical role in shaping the emerging uranium market. Uranium production had saved many of South Africa's gold mines from collapse and would surely continue to be central to the nation's economy. A permanent seat on the IAEA Board, therefore, seemed vital to the growth of South Africa's uranium industry. Only by invoking technical expertise and imbrication in the West's nuclear systems could

⁵ This concern resurfaced at the general conference on the statute. According to the leader of the South African delegation, Arab, Asian, and some Latin American delegations raised concerns parallel to those they were raising at UN General Assembly meetings, concerning the "'undemocratic' nature of the Statute, and the perpetuation of an elite of 'have' nations which would repeat the inequalities of the first industrial revolution." "Conference on the Statute of the International Atomic Energy Agency, First Progress Report, 20th September to 2nd October 1956," Oct. 4, 1956, BLO 349 ref. PS 17/109/3, vol. 2, National Archives of South Africa, Pretoria (hereafter cited as NASA).

⁶ Fischer, *History of the International Atomic Energy Agency* (cit. n. 1), 39–40 (my italics).

⁷ Beverly Sauer, "The Multi-Modal Character of Disciplinary Knowledge in South African Coal Mine Safety Training" (talk, Univ. of Michigan, Ann Arbor, Sept. 13, 2004).

South Africa hope to secure a spot, since mounting opposition to apartheid would make it impossible to get elected to a board seat.

Much hinged, therefore, on the nuclearity of “source materials.” There were (at least) two forums in which this mattered. The first had to do with global hierarchies of nuclearity. If producing “source materials” was a full-fledged nuclear activity, then producers of those materials would sit further up the hierarchy. If the nuclearity of “source materials” was weak, however, then their producers couldn’t count on much clout in the IAEA. The second forum had to do with the technopolitics of safeguards: control over the flow and use of nuclear materials and technologies. Again, if “source materials” were strongly nuclear, then they should be subject to strict safeguards; otherwise, controls could be more cursory. In this section, I will address the first forum by looking at the implications of uranium’s shifting nuclearity for global hierarchies. The last section of the essay will take up the implications of the nuclearity of “source materials” for early safeguards discussions.

In the decade following World War II, the nuclearity of uranium seemed self-evident. It was constituted by a set of technopolitical assumptions and practices, which went something like this:

- Uranium was the only naturally occurring radioactive material that could (with considerable effort, granted) fuel nuclear weapons.
- Atomic bombs were a fundamentally new kind of weapon, capable of rupturing not only global order but the globe itself. They were (if you believed Western political rhetoric) single-handedly responsible for obviating the old colonial order in favor of a new nuclear order.⁸
- Uranium was a rare ore. If the West could monopolize its supply, it could keep the Communist ogre at bay and make the world safe for democracy. It was, therefore, imperative for the West to find and secure all sources of uranium around the world. Nothing mattered more than this (and certainly not the institution of apartheid on the southern tip of Africa).⁹
- Uranium’s position at the core of Western nuclear systems made it imperative to proceed as secretly as possible. Geological surveys, actual and potential reserves, means of production, terms of sales contracts—state secrets one and all.¹⁰

And if uranium’s nuclearity imposed secrecy, that secrecy in turn reinforced its nuclearity. Uranium was the only ore subject to legislation specifically targeted at ensuring the secrecy of its conditions of production.

But global agreement on the nuclearity of uranium would soon fray. By the mid-1950s, it had become clear that while pitchblende (very high-grade uranium) was rare, lower grades of uranium were not. In fact, an astonishing variety of geological conditions could lead to uranium ore—the stuff was everywhere. Meanwhile, the Soviets had tested an atomic bomb and clearly planned to continue doing so. They had found

⁸ Gabrielle Hecht, “Rupture-Talk in the Nuclear Age: Conjugating Colonial Power in Africa,” *Social Studies of Science* 32 (2002): 691–727.

⁹ Thomas Borstelmann, *Apartheid’s Reluctant Uncle: The United States and Southern Africa in the Early Cold War* (New York, 1993); Jonathan E. Helmreich, *Gathering Rare Ores: The Diplomacy of Uranium Acquisition, 1943–1954* (Princeton, 1986).

¹⁰ *Ibid.*

their own sources. So a western monopoly of the “source material”—if defined simply as uranium in whatever raw state it occurred—would be impossible. The challenge lay not in finding uranium but in processing it to weapons-grade quality.

Just as the final discussions on the IAEA statute got underway, therefore, the nuclearity of uranium ore eroded. One tangible manifestation of this erosion was the fact that nations in Western and Eastern Europe whose only claim to nuclear fame lay in their uranium production would have to rotate seats on the IAEA Board. In a blatant attempt to increase its own standing in the hierarchy, India had already tried once to relegate South Africa and Australia to mere “producers” (rather than the “most advanced” in their regions), which would have forced those two nations to share a seat.¹¹ The United States and the United Kingdom helped their Southern Hemisphere allies resist these efforts, but all signs indicated that more challenges were to come. Anticipating these, the South African delegate pushed mightily, and successfully, to include the “production of source materials” as an indicator of nuclear “advancement.”¹² Yet he also foresaw that uranium production wouldn’t suffice to keep South Africa’s status as “most advanced” in the region. In the long run, South Africa could not “sit back and rely upon [its] importance as a producer or . . . position in the West.”¹³ How, then, could South Africa ensure long-term influence in the agency? For its delegates, the answer lay in triangulating among three technopolitical positions:

1. advocating a maximal separation between technology and politics within the agency, and asserting that the IAEA should be pursuing technical, *not* political, agendas;
2. rehearsing the history of South Africa’s imbrication in western nuclear networks, while simultaneously situating their nation firmly in Africa, thereby testing the national identity cultivated by their government;
3. emphasizing South Africa’s non-uranium, nuclear accomplishments, which in turn involved lobbying Pretoria for the establishment of an atomic energy program.¹⁴

To get a sense of what these positions involved, let us first take a look at some general performances of the first two positions (the third emerged somewhat later). We’ll then turn to a series of IAEA debates on nuclearity and “development,” in which South African delegates deployed all three positions simultaneously.

The man who would become South Africa’s primary representative and policy maker at the IAEA, Donald Sole, was a career diplomat. A native English speaker, he had taken a degree in history from Rhodes University in Grahamstown. Posted in London during World War II, he became the close colleague of several Afrikaner members of the foreign service. These friendships and his own mastery of Afrikaans (as well as a shortage of qualified Afrikaner diplomats) probably helped him survive the elections that brought the Nationalist Party to power in 1948. Sole continued to

¹¹ “International Atomic Energy Agency,” Annex to South Africa Minute No. 79/2, 28/7/56, 4. BLO 349 ref. PS 17/109/3, vol. 2, NASA.

¹² Donald B. Sole, “‘This Above All’: Reminiscences of a South African Diplomat” (unpublished memoirs, Cape Town, n.d.).

¹³ “International Atomic Energy Agency,” Annex to South Africa Minute no. 79/2 (cit. n. 11), 10–1.

¹⁴ “Statement by Mr. W. C. du Plessis, Leader of the South African Delegation, on Oct. 1, 1956,” 2, BLO 349 ref. PS 17/109/3, vol. 2, NASA.

rise in the diplomatic ranks, representing South Africa at the UN before getting selected for its delegation to the IAEA drafting group. Sole's unpublished memoirs suggest that he deplored (without actively opposing) the increasing racism of apartheid, not the least because the resulting isolation of his nation made his job as a diplomat increasingly difficult. Although his loyalty to the government never wavered, he frequently struggled to find ways to make South Africa more palatable internationally and sometimes tried to temper Pretoria's more excessive isolationist practices.

Early on, Sole decided that the best way to navigate international opposition to apartheid in the IAEA was to depoliticize the terms of negotiations by focusing on technical issues. Although a common strategy in nuclear politics around the world, this approach had special resonance in South Africa, where the apartheid government justified a range of policies by insisting that they emerged from administrative, business, or technical considerations—not political ones. Sole's opening speech at the first IAEA general conference in 1957 declared that "this Agency should be primarily a technical Agency. Political considerations, of course, cannot and should not be excluded from the functioning of an organization of this character, but they should be allowed the minimum possible influence . . . If they are permitted to get out of hand, this Agency can all too easily develop into a propaganda forum—into yet another platform for the wasteful and time-consuming exposition of conflicting ideologies."¹⁵ For most delegates from other nations, this statement appeared to refer to East-West tensions. So who could possibly disagree? For Sole, meanwhile, insisting on the technical functions of the IAEA would lay the foundation for arguing that objections to apartheid were purely political and hence not appropriate subjects for IAEA consideration and debate.

Similarly, Sole fought to keep the IAEA autonomous from the UN. At the 1956 statute conference, Russian, Indian, and Czech delegates had tried to place the IAEA under direct UN control, probably anticipating that the growing influx of postcolonial nations would favor them. Sole "strongly resisted this development" but only got anemic support from the United States and the United Kingdom, which had much less at stake. To rally others to their cause, South African delegates played on fears about the dilution of national sovereignty¹⁶ and "stressed the dangers inherent in the possibility of the Agency being called upon to give reports on the action of members. This, we pointed out, might open the way to United Nations interference in the domestic affairs of individual members." After intense lobbying, Sole won a compromise—namely that only UN actions "in accordance with the [IAEA] statute" could be considered by the agency. In other words, only UN resolutions pertaining to nuclear matters would be relevant to the IAEA.

For most members, this seemed reasonable enough: after all, the IAEA's *raison d'être* surely revolved around managing global nuclearity—not global affairs more generally. Not so for India, which was poised to become the leader of postcolonial geopolitics and the nonaligned movement and had the most to gain from close relations

¹⁵ "Statement Delivered by Mr. D. B. Sole, Leader of the South African Delegation at the Opening of the General Debate of the First General Conference of the International Atomic Energy Agency," Oct. 7, 1957, 3–4, BLO 349 ref. PS 17/109/3, vol. 2, NASA.

¹⁶ As Forland shows in "Negotiating Supranational Rules" (cit. n. 1), the infringement of IAEA actions on national sovereignty was a persistent theme in agency discussions, one raised most often by India and a few other nonwestern nations.

with the UN. The Indian delegate wasn't fooled for a second, and he objected that Sole's amendment was "too restrictive." According to Sole, the Canadian representative "thereupon enquired whether the Group should assume from the Indian representative's reasoning that he wished the United Nations to go 'fishing' in the affairs of member states. The latter, in some confusion, then withdrew his objection." Sole wasn't fooled either, of course. He understood only too well India's "success in giving the impression of speaking on behalf of the new African countries" and feared that "the Afro/Asian alignment may be perpetuated under Indian leadership in the Agency itself."¹⁷ His report to Pretoria concluded that "we should take careful note of the struggle which led to the inclusion of those five words '*in accordance with this Statute.*' This proves conclusively that they were specifically included (unanimously) to prevent such 'fishing expeditions.'"¹⁸

Sole thus managed to obtain some sort of statutory separation between technology and politics. Of course, the edges of nuclearity remained nebulous. He knew that quarrels about what counted as appropriate actions for the IAEA would continue to erupt. He had succeeded, however, in defining some boundaries for such discussions and would not hesitate to invoke these in the years to come.

Meanwhile, tensions over South Africa's presence in the IAEA had taught Sole that he would have to carefully manage his country's national and geopolitical identity. A discursive strategy with deep roots in the history of the South African state readily presented itself: for decades, Afrikaners had styled themselves simultaneously western and African. Set against the rise of black African nationalism, this approach might seem grotesque. Yet the duality of identity discourse only strengthened during the cold war/apartheid period. On the one hand, apartheid leaders saw theirs as a western nation, qualifying as such because of political heritage, ancestry, corporate connections, and sophisticated industrial infrastructure—not to mention white rule and fervent anticommunism. In this, they were supported by the still-segregated, even more rabidly anti-communist United States.¹⁹ On the other hand, Afrikaner nationalism insisted on its own African-ness: Afrikaners had cut the tie to Europe, pioneered the land, suffered mightily at the hands of British colonialism, and made South Africa their God-given homeland. The National Party's 1948 victory was the culmination of centuries of struggle and offered a unique opportunity to forge the most "advanced" African nation in the history of the world—so advanced, indeed, that it would barely count as African at all. Western-African dualities had woven the institutional and cultural fabric of apartheid; they were central to its logic.²⁰

South African diplomats used the IAEA as a laboratory for testing the robustness, credibility, and function of this discursive duality. From the beginning the duality had a specifically nuclear manifestation: South Africa both produced uranium for western nuclear systems (receiving special technical and financial favors as a result) and qualified as the "most advanced" nuclear nation in Africa. But Sole and his colleagues understood that duality would have to be relentlessly performed to maintain its power.

Accordingly, having secured the opening slot in the IAEA's first general debate in October 1957, Sole seized the opportunity to remind the assembly of South Africa's

¹⁷ "Final Report on the Conference on the Statute of the IAEA, 20th September to 26th October 1956," Nov. 6, 1956, BLO 349 ref. PS 17/109/3, vol. 2, NASA.

¹⁸ "International Atomic Energy Agency," Annex to South Africa Minute no. 79/2 (cit. n. 11).

¹⁹ Borstelmann, *Apartheid's Reluctant Uncle* (cit. n. 9).

²⁰ Hermann Giliomee, *The Afrikaners: Biography of a People* (Cape Town, 2003).

contribution to western nuclear development while simultaneously asserting his nation's African-ness. In particular, he described a 1957 radioisotopes conference held in Pretoria that hosted experts not just from colonial territories but also from the Central African Federation, Ghana, the United Nations, and the World Health Organization.²¹ Listing these participants obliquely addressed the question on everyone's mind: Could nonwhite scientists visit or work in South Africa? Sole finessed the point: "We shall do what we can to assist others who may be less fortunately placed than we are . . . In fact we have always been ready to grant research facilities to guest workers from other countries . . . Just before I left South Africa in July, we were happy to welcome two scientists from Japan who were given every facility both in Government Institutes and in the private Laboratories of our uranium industry."²² Sole thereby implied that foreign nonwhite researchers would receive courteous treatment in South Africa. He glossed over one little-known fact: namely, that Japan's significance as a trading partner had led the government to grant Japanese visitors "honorary white" status.²³ No records survive of how Pretoria handled the visit of Ghanaian and Central African scientists.

As the activities of the IAEA got under way in earnest, Sole would come back to these two themes (technology/politics; western/African) again and again. He would also concern himself ever more intently with the strength of South Africa's own nuclearity. Triangulating among these three points would steer him through one of the most contentious issues in the agency's early history: the role that the IAEA should play in the emerging practices of international "development."

NUCLEARITY AND "DEVELOPMENT"

Debates about the relationship between nuclearity and "development" revealed and reinforced a deep split between the West and the Rest over the *raison d'être* of the IAEA. At least rhetorically, everyone agreed that promoting the "peaceful uses of atomic energy" was the IAEA's central mission. With tiresome predictability, official speeches and press releases the world over endowed this mission with a high moral purpose. In practice, however, the world's nuclear leaders—be they uranium producers or system builders—had more mundane interests in mind: building reactors, making nuclear power commercially viable, and creating a market for technologies and uranium that would sustain their own nuclear industries.²⁴ Hopes for a global military and economic panopticon embedded in Atoms for Peace²⁵ thus found even wider expression in the IAEA. The West would sell to the Rest, while somehow (the details remained fuzzy) ensuring that ensuing programs would serve civilian, rather than military, ends. By providing a bigger market, the Rest would help the West commercialize its own nuclear power systems. To work best for the West, the IAEA should channel its resources to nations that could develop nuclear infrastructures quickly, rather than function as yet another international development agency. Perhaps inspired by Sole's

²¹ "Statement Delivered by Mr. D. B. Sole" (cit. n. 15), 3.

²² Ibid.

²³ Jun Morikawa, *Japan and Africa: Big Business and Diplomacy* (Johannesburg, 1997).

²⁴ In "Negotiating Supranational Rules" (cit. n. 1), Forland sketches out how commercial considerations shaped the ways that the United Kingdom and Canada, in particular, approached safeguards.

²⁵ See John Krige, "Atoms for Peace, Scientific Internationalism, and Scientific Intelligence" (this volume).

eloquence, many western delegates justified this perspective by insisting that the IAEA should focus on “technical” tasks, augment the world’s overall nuclear capacity and expertise, and leave “politics” to the UN. But the Rest had a different view. From the beginning, India had led newly independent, “developing” nations in arguing that the IAEA should ensure that emerging nuclear hierarchies not perpetuate global inequalities. They concurred that the agency should spread nuclear systems but (for equally self-interested reasons) argued for a broader distribution of resources. On no account should politics be left out of discussions.

So, how did these differences manifest themselves in policy negotiations?

The United Kingdom argued that the IAEA should only fund economically viable reactor projects. Of course, this approach would “necessarily limit the construction of power projects to the most advanced countries and the ‘have nots’ would argue that instead of assisting the underdeveloped areas of the world, the major Agency activity in its earlier years would be concentrated on strengthening countries which already possess comparatively highly developed industrial complexes.”²⁶ To counter this objection, the U.S. Atomic Energy Commission (AEC) proposed that the agency sponsor three “demonstration reactors” to test the viability of nuclear power in different geographic (read: geopolitical) settings. The AEC offered to provide substantial (if unspecified) funding for these provided that the reactors ran on enriched uranium. Conveniently enough, in the late 1950s only the United States designed commercially oriented enriched uranium reactors. Bypassing Soviet, French, and Canadian natural uranium designs, this seemingly generous American offer therefore sought to make U.S. technology the basis for worldwide nuclear development. The Canadians, meanwhile, argued that both the United States and the United Kingdom were jumping the gun. They instead advocated education programs as the first step: “since the provision of adequate training for atomic scientists and atomic engineers is an essential preliminary to the development of a large-scale market in uranium after 1965, the major producers have a direct interest in stimulating the provision for such training whenever possible.”²⁷

As a uranium producer, South Africa had similar stakes in the IAEA’s development policy. South Africans hoped the agency would provide a means of tracking competing uranium producers and of establishing a market price for uranium, which they wanted to influence.²⁸ They also hoped the IAEA might serve as a marketplace for customers and suppliers to have direct contact. None of these prospects materialized in the first two years, leading Sole to fear in 1959 that South Africa had “considerably over-rated [the IAEA’s] importance so far as the immediate future of our uranium industry is concerned.”²⁹ As nuclear programs gained momentum, however, Sole’s discreet marketing efforts began to pay off.³⁰ By 1961, both France and Israel had ap-

²⁶ “Atomic Energy Agency: Planning of the Operational Programme for the First Few Years,” Feb. 1, 1957, BLO 349 ref. PS 17/109/3, vol. 2, NASA.

²⁷ *Ibid.*

²⁸ “First General Conference of the IAEA: Final Report,” Nov. 5, 1957, BLO 349 ref. PS 17/109/3, vol. 2, NASA.

²⁹ “Report of the South African Delegation on the Third General Conference of the IAEA,” Oct. 8, 1959, BLO 349 ref. PS 17/109/3, vol. 2, NASA.

³⁰ In addition to his activities at the IAEA, Sole joined two South African scientists on a nuclear tour of Europe in the late 1950s. The group visited nuclear research and development facilities throughout the continent, in a thinly veiled effort to peddle South African uranium. This tour is described in his unpublished memoirs: Sole, “‘This Above All’” (cit. n. 12).

proached Sole about buying South African uranium, and there was good reason to think that other customers would soon follow.³¹

South Africa thus had economic as well as political reasons to advocate a narrow promotional agenda for the IAEA. Sole found the idea of a demonstration reactor seductive and asked his government “whether a bid should be made for the erection of one of the demonstration reactors in Africa, although not necessarily in the Union in view of the difficulties which would arise in accommodation of nonwhites from other parts of the African region.”³² His superiors in Pretoria ignored his question, however. Instead, they specifically instructed him to “apply the brakes” to broadly based initiatives for educating budding scientists in developing nations. But Sole understood the delicate situations produced by South Africa’s declining international stature better than Pretoria. He urged caution. “Rather than return a blank negative to any and every attempt on the part of the under-developed countries to secure help,”³³ South Africa should back a few, select proposals. For example, supporting an IAEA fellowship program would constitute “an important gesture vis-à-vis the under-developed countries”³⁴ that didn’t cost too much. Though South Africa shouldn’t expect overt thanks from such countries in return, this kind of gesture mattered for retaining the goodwill of nations such as the United States and Canada. The West was well disposed toward South Africa for many reasons but shouldn’t be forced into awkward standoffs over such issues.

Budget constraints made questions about resource allocation particularly contentious. For example, in 1959 the agency was considering sponsorship of two possible conferences: one on radioisotopes, and another on small- to medium-size power reactors. The South African secretary for external affairs—who by then seemed to have a better understanding of nuclear systems—instructed Sole to promote the latter topic. “From the Union’s point of view, any development which will encourage the increased consumption of atomic fuel and thus help to narrow the widening gap between production and consumption, would of course be of considerable value.”³⁵ In subsequent years, the South African delegation continued to press for concrete steps toward commercial-scale nuclear development, repeatedly asserting that “the development of nuclear power is the main eventual goal in the Agency’s work.”³⁶ In this, Sole continued to privilege the technical over the political. The IAEA, he said, “shall attract good scientists only if the Agency has *scientific prestige* and scientific prestige is unfortunately *not* built up on programs of technical assistance.”³⁷ South Africa’s

³¹ “Mr. Sole’s Attendance at IAEA Board Meetings,” Dec. 2, 1961, TES 1004 ref. F5/362/5, NASA.

³² “Atomic Energy Agency: Planning of the Operational Programme” (cit. n. 26).

³³ “International Atomic Energy Agency: Comments on the Report by the Executive Secretary to the Second Session of the Working Group—Document—IAEA/PC/WG.2(S),” n.d. [ca. April 10, 1957], 1–2, BLO 349 ref. PS 17/109/3, vol. 2, NASA.

³⁴ *Ibid.*, 3–4.

³⁵ “Meeting of the Board of Governors of IAEA: June, 1959,” June 12, 1959, BVV83 13/1 ref., vol. 6, NASA. See also “Report of the S.A. Delegation on the Third General Conference of the IAEA,” Jan. 12, 1960, BVV83 13/1 ref., vol. 6, NASA.

³⁶ “Seventh Regular Session of the General Conference of the International Atomic Energy Agency: Report of the South African Delegation—Part I,” Oct. 7, 1963, BVV84 13/1, vol. 7 and annex, NASA. See also “Address Delivered by Mr. D. B. Sole, General Conference,” Sept. 19, 1962, BVV84 13/1, vol. 7 and annex, NASA.

³⁷ “IAEA General Conference 1959: Statement Delivered in the General Debate by the Leader of the South African Delegation, Mr. D. B. Sole, on 23rd September 1959,” BLO 349 ref. PS 17/109/3, vol. 2, NASA.

technopolitical strategy thus combined a push to expand uranium demand with an aversion to providing development funds to postcolonial states.³⁸

The next step in this logic suggested that a nation's legitimacy within the IAEA rested on its nuclearity: the more nuclear a nation, the louder its voice should be. Of course, the converse applied as well. Sole accordingly expressed disgust at the 1959 general debate:

Once again very few of the under-developed countries participated in the debate . . . [T]he Agency is of real value to them only in the fields of technical assistance, including fellowships, and the distribution of scientific and technical information. Even in these fields, so far as many of them are concerned, their interests are limited. Nevertheless, many of [these] countries . . . were responsible for transforming one of the issues before the conference—assistance to less developed countries with the production of nuclear power—into a major debate. They have clearly been persuaded by the results of studies and research during the past year that the introduction of small and medium power reactors into some of the less developed countries will be feasible in the fairly near future and the Agency will be under considerable pressure in the coming months to accelerate its program in this field.³⁹

Was Sole truly oblivious to the irony that the very conference he'd supported on small and medium reactors had made developing nations think they were feasible? The logic of apartheid had sent him into a tailspin: only technical assistance programs could help developing nations acquire the infrastructure and expertise that would legitimate (according to his reasoning) their participation in the debate.

As a first attempt to resolve the question of what the IAEA should actually do, the board of governors sought a middle road between strengthening existing programs and addressing global inequalities. It decided to sponsor regional training centers in parts of the world already somewhat—but not overly—"advanced" in nuclear research and development. Of course, this in turn involved evaluating the nuclearity of potential candidates. The first mission targeted Latin America. In part because Brazil and Argentina were competing for designation to the board as the region's "most advanced" nation, the mission encountered some controversy over which laboratories should be visited and which experts should participate.

Those squalls paled next to the storm that erupted when the United Arab Republic (UAR)⁴⁰ expressed interest in establishing a regional training center in Cairo in 1958. The UAR's initial proposal welcomed research from "friendly nations," implicitly excluding Israel. Undoubtedly hoping to benefit from a probable impasse, Turkey put in a rival bid for a regional training center, with strong support from both Israel and South Africa.

For most delegates, the main source of contention came from conflict in the Middle

³⁸ "Seventh Regular Session of the General Conference of the International Atomic Energy Agency: Report of the South African Delegation." See also "Address Delivered by Mr. D. B. Sole." (Both cit. n. 36.)

³⁹ "Report of the South African Delegation on the Third General Conference of the IAEA" (cit. n. 29).

⁴⁰ The United Arab Republic was established as a union between Egypt and Syria in February 1958; the hope was that more Arab nations would join. Syria withdrew in 1961, but Egypt continued to use the name until Nasser's death in 1970. Given how rapidly this proposal for an IAEA regional training center followed the founding of the UAR, it seems likely that UAR leaders viewed such a center as a potential technopolitical expression (and creator) of Arab unity that would itself provide incentive for other nations to join. This interpretation would need to be tested in the Egyptian archives, however.

East. But Sole saw the UAR proposal as the first step in an Egyptian plot to usurp South Africa's seat on the board of governors as the region's "most advanced" nation. The Egyptian statement at the 1958 general conference, describing an extensive R&D program that included significant regional cooperation, confirmed his suspicions.⁴¹ Sole dourly reminded his secretary of external affairs that "the Union of South Africa . . . has at present *no* reactor, *no* national isotope centre and is not in a position to accept trainees from other countries in the regional area."⁴² (The latter for racist reasons.) Most humiliating of all, the Egyptians seemed disposed to gloat: "the head of the Egyptian Atomic Energy Establishments extended to me a cordial invitation to visit . . . Obviously he would like me to come and see for myself the extent of Egyptian progress."⁴³

The UAR challenge made it all the more imperative that South Africa launch its own atomic energy program. For several months, Pretoria had been sitting on two proposals. One involved establishing a separate Atomic Energy Board (AEB). The other involved developing an atomic research program under the auspices of the nation's Council for Scientific and Industrial Research. Sole strongly supported the first proposal, which he felt would make a stronger statement about South Africa's commitment to nuclearity and provide a powerful argument to keep the South African seat on the board of governors.⁴⁴ In the end, and partly (though only partly) for this reason, that's precisely what the Pretoria government decided to do.

Meanwhile, discussions about prospective training centers in the Middle East/Africa region continued. When the time came to send an IAEA delegation to visit the region's nuclear installations, Sole jumped in. "The region" included the whole African continent. Surely, the delegation shouldn't be restricted to the Middle East? Working the corridors of the IAEA, Sole reminded Britain, France, Belgium, and Portugal (all colonial powers in Africa) that such a restriction would be "detrimental to the long-term interests of the rest of the region." The Belgians were building a research reactor in the Congo—could that not provide a plausible site for another regional center, "rather than have the Agency focus all its attention and assistance" on Cairo? "It is important," Sole added self-righteously, "to protect the rights and interests in this matter of the African countries and territories as opposed to the Middle East countries and territories."⁴⁵ Sole thus deployed South Africa's privileged position as a western nuclear fuel supplier while simultaneously claiming to speak for all Africa. The tactic worked: the board of governors agreed that the IAEA delegation should visit all the countries in the Middle East/Africa region that could claim any substantial nuclear activities.

To determine which countries qualified, the IAEA sent out questionnaires to the possible destinations. The questions were broadly conceived to include all possible manifestations of nuclearity. They pertained to:

⁴¹ "United Arab Republic: Progress in the Atomic Energy Field," Oct 3, 1958, BLO 349 ref. PS 17/109/3, vol. 2, NASA.

⁴² *Ibid.*

⁴³ *Ibid.*

⁴⁴ *Ibid.*; "IAEA: Missions to Egypt," Nov. 19, 1958, BLO 349 ref. PS 17/109/3, vol. 2, NASA; "South African Delegation to IAEA Conference," Aug. 24, 1957, 2, BLO 349 ref. PS 17/109/3, vol. 2, NASA.

⁴⁵ "IAEA: Proposal to Establish a Regional Centre in Cairo," March 25, 1959, BLO 349 ref. PS 17/109/3, vol. 2, NASA.

- teaching programs
- special facilities for experimental training in nuclear physics
- radiochemical and radioisotope laboratories
- the presence of source materials in the soil and corresponding prospecting programs
- the current and expected state of the nation's atomic energy program
- the presence of chemical and metallurgical ore processing and purification plants
- the availability of research workers in nuclear physics and related fields
- the availability of health physicists and other radiation protection experts
- the degree to which the government was prepared to help finance prospective regional training programs
- the current extent of atomic energy cooperation with other states in the region.⁴⁶

Mightily pleased with how he'd influenced the calibration of this barometer of nuclearity, Sole recommended that Pretoria send "comprehensive replies" to these questions, even though it did "not aspire to provide the headquarters of any regional training centre in the area." In the long run, these replies would inevitably "have some bearing on the rival candidature of the Union of South Africa and the UAR for designation as the most advanced Member State in the area." Given his government's recent approval of an extensive atomic research and development program, Sole felt confident that South Africa would top the region's nuclearity barometer in technical matters. There was, perhaps, just one sticking point: the increasing isolation of the apartheid state meant that claims about regional cooperation wouldn't be too credible. Nevertheless, Sole suggested that under this rubric South Africa emphasize "the degree of co-operation which subsists with the metropolitan States having territorial responsibilities in the area."⁴⁷ Here, then, was another test of South Africa's dual identity as western and African.

Ever the creative diplomat, Sole was inspired by debates on the Cairo training center to further develop a vision of South Africa as a regional leader. The Commission for Technical Co-operation in Africa South of the Sahara (CCTA) offered the ideal paradigm, including as it did colonial powers (Belgium, France, Portugal, and the United Kingdom), newly independent nations (such as Ghana and Liberia) and apartheid-infested southern Africa (Nyasaland, Rhodesia, and South Africa). In short, the organization enacted precisely the sort of western-African duality so central to the national identity being crafted by South Africa's Afrikaner government.⁴⁸ Sole began a campaign on two fronts: In Vienna, he pushed the IAEA to formalize relations with the CCTA. In Pretoria, he pushed his government to get more involved in CCTA activities.

Ismael Fahmy, the UAR governor, strongly resisted the Vienna push by questioning the political legitimacy of the CCTA. Apparently pursuing its own dual-identity strat-

⁴⁶ "Questionnaire: Information Required for Studies Relating to the Establishment of Regional Atomic Energy Training Centers in the Middle East and Africa," June 25, 1959, BLO 349 ref. PS 17/109/3, vol. 2, NASA.

⁴⁷ "Establishment of Radioisotope Training Centers in Africa and the Middle East," June 30, 1959, BLO 349 ref. PS 17/109/3, vol. 2, NASA.

⁴⁸ Though, in fact, Afrikaners in the South African government didn't necessarily see this, and Sole had to push hard on his own government to participate actively in the CCTA—so on this issue, he was leading a battle on two fronts.

egy, the Egyptian government “was completely opposed to the concept inherent in the CCTA constitution of a distinction between sub-Saharan Africa and the rest of the continent.”⁴⁹ In a backroom meeting with the “Western powers,” Sole suggested that Fahmy just wanted to “divert Agency attention and resources from Africa south of the Sahara in favor of . . . the Mediterranean littoral in general and . . . Cairo in particular.”⁵⁰ Meanwhile, rumors were spreading “that the African members of the CCTA have never agreed to the conclusion of a relationship agreement with the IAEA. . . . It is alleged that CCTA is a creation of the ‘colonialists’ and it is recalled that the colonial powers concerned for a long time did their best to keep the United Nations out of Africa.”⁵¹ The United Kingdom came to South Africa’s rescue. It defended the CCTA’s legitimacy by trotting out the good old technology-politics distinction: the functions of the CCTA, argued the British delegate, “were essentially technical, hardly political at all, and very useful.” A formal relationship agreement with the IAEA would be no more than an accord between two technical agencies. Besides, geography should calm fears of illegitimacy: the fact that “the Commission was a genuinely African association was proved by the fact that its headquarters were at Lagos.”⁵²

WHO SPEAKS FOR AFRICAN NUCLEARITY?

As decolonization overtook the continent, the scramble to define and represent African nuclearity became almost surreal. In 1960, for example, Ghana applied for IAEA membership. Delegates fell over each other in a rush to sponsor it. Sole reported that “in order to forestall an anticipated initiative on the part of the United Arab Republic to introduce a resolution approving Ghana’s admission to membership which would be co-sponsored by members of the Afro/Asian bloc,” the UK delegation had proposed that the Commonwealth bloc introduce and sponsor the resolution. Caught between the imperatives of apartheid and those of western-ness, Pretoria had instructed Sole by secret telegram that his support for Ghana “should go no further than affirmative vote.”⁵³ But Sole feared that “for South Africa to have been the sole member of the Commonwealth *not* to co-sponsor the resolution approving the admission of Ghana would have been regarded as a purely political gesture on the part of a delegation which had been among the foremost in pleading that international politics be kept out of the Agency.” He chose to remain true to his own diplomatic strategy. Claiming that his office hadn’t deciphered the secret telegram until it was too late, Sole replied that he’d already signed on to cosponsor Ghana’s application.

A month later, the IAEA’s general conference entertained proposals to increase the representation of the Africa/Middle East region on the board of governors. To maintain its African credentials, Sole decided, South Africa had to retain “such initiative as is possible. Inevitably, even in the IAEA where our reputation stands high, we are suspect in the eyes of other African states, but this year we are the only *African* representative on the Board and we cannot for one moment afford to let the other [elected]

⁴⁹ D. B. Sole, “IAEA: Relations with CCTA,” June 29, 1960, BLO 581 ref. PS 31/3/13, pt. 1, NASA.

⁵⁰ D. B. Sole, “IAEA: Relationship Agreement with CCTA,” March 19, 1960, BLO 581 ref. PS 31/3/13, pt. 1, NASA.

⁵¹ D. B. Sole, “IAEA: Relations with CCTA,” Sept. 17, 1960, BVV84 13/1, vol. 7 and annex, NASA.

⁵² “Report of the South African Delegation to the Fifth General Conference of the IAEA,” Oct. 12, 1961, 30–1, BVV84 13/1, vol. 7 and annex, NASA.

⁵³ Secretary for External Affairs, Pretoria, to S.A. Legation, Vienna, Sept. 19, 1960, BVV84 13/1, vol. 7 and annex, NASA.

representative of the area, Iraq, act as a spokesman for Africa.”⁵⁴ Sole worked furiously behind the scenes with delegates from Tunisia, Ethiopia, Ghana, Iraq, Morocco, and even the UAR to draft “an amendment to the Statute designed to ensure adequate African representation.” The resulting resolution was swiftly and unanimously adopted. For Sole, “the whole episode provided striking evidence of the extent to which East, West, and neutralists are competing for the favor and support of Africa.” He hoped his government would capitalize on the “prestige” he was building in the IAEA in order to “improve our relations with the rest of the Continent. In this respect, we [must] exercise a little more imagination than we have displayed in the past.”⁵⁵ Sole’s efforts fell on deaf ears. The apartheid state continued to isolate itself diplomatically: just a few months later, Prime Minister Hendrik Verwoerd withdrew South Africa from Commonwealth membership.⁵⁶

Meanwhile, ongoing decolonizations continued to threaten South Africa’s board seat, both by offering alternative candidates and by increasing the number of post-colonial nations likely to oppose it. In 1961, for example, the Republic of Congo announced it was contemplating the reactivation of its uranium industry and the renegotiation of contracts inherited from Belgium. For Sole, this move boded ill:

This is in line with the ambitions of India (who took the main initiative for the Congo to apply for membership) to secure the replacement of Belgium, as a producer member on the board of governors, by the Congo (Leopoldville). The argument runs that Belgium owes her seat to production in the Congo . . . [I]t can be expected that the Europeans will bring pressure to bear on Belgium not to . . . acquiesc[e] publicly in any demand which may be forthcoming from the Congo, since to do so undermines also the position of Portugal on the Board (already under heavy fire) and would, in the event of this claim succeeding, lead inevitably to the loss of a European seat on the Board.⁵⁷

In the event, Congolese uranium production was not reactivated, and colonizers managed to hold on to their seats.

By 1963, a temporary consensus had emerged on the various issues under debate. To Sole’s delight, the IAEA did sign a formal agreement with the CCTA in the context of a range of other agreements (including one with Euratom). Board representation of the Africa/Middle East region had increased by two seats, making South Africa’s position considerably more secure. To his dismay, however, the Regional Training Centre for the Arab Countries opened in Cairo, giving a serious boost to Egyptian nuclearity. In addition, 1963 saw the admission of another three new African nations to the IAEA: Gabon (a uranium producer), Ivory Coast, and Nigeria. IAEA director general Sigvard Eklund heralded these developments as “further steps toward close collaboration with African countries” and important examples of the kind of regional collaboration the agency should encourage and support.⁵⁸

⁵⁴ “Report of the South African Delegation to the Fourth General Conference of the IAEA,” Oct. 4, 1960, BVV84 13/1, vol. 7 and annex, NASA (my italics).

⁵⁵ *Ibid.*, 34–5.

⁵⁶ See Giliomee, *The Afrikaners* (cit. n. 20), 529, for more on the apartheid state’s relations with the Commonwealth.

⁵⁷ “Report of the South African Delegation to the Fifth General Conference of the IAEA” (cit. n. 52), 3.

⁵⁸ “Address by the Director General of the International Atomic Energy Agency, Dr. Sigvard Eklund, to the Seventh Session of the General Conference,” Sept. 24, 1963, 3, BVV84 13/1, vol. 7 and annex, NASA.

But Sole bemoaned these developments, particularly when twenty nations signed a “Declaration on the Incompatibility of the Policies of Apartheid of the Government of South Africa with the Membership of the IAEA.” The statement condemned the racism of the apartheid government and urged the IAEA to conduct “a review of South Africa’s policy in the context of the work of the Agency.”⁵⁹ Sole presented a written response accusing the declaration of being “purely political” and insisting that the IAEA was “not a proper forum” for such matters. He categorically denied the accusation that “all Afro-Asian scientists are unacceptable on South African territory and that it is impossible for members of the Afro-Asian group to take part in any seminar organized in South Africa.”⁶⁰ At the conference itself, Sole lobbied hard against the motion to exclude South African participation. He received promises of backroom support from several delegates who had come to respect him personally. Most important, though, was U.S. support: “the fact that they were prepared to use their lobbying machine on our behalf was in itself a useful factor in its effect on the general attitude of some delegations.”⁶¹ The motion did not pass.

Clearly, though, South Africa would have to work continually to maintain the legitimacy of its place near the top of the global nuclear hierarchy. “Only a simple majority of the members of the Board is required to oust us from our position,”⁶² Sole remarked. He knew that “the Afro-Asian upsurge, combined with the continued preoccupation with politics, will bring South Africa very much under the harrow.” The only solution was to help the IAEA remain narrowly nuclear and not become “just one more international organization for the provision of technical assistance which provides at the same time a platform for the propagation of varying ideologies, Western, Communist, Neutralist, anti-White, anti-colonialist and the rest.”⁶³ At the same time, and regardless of the government’s foreign policy in other domains, South Africa had to continue upholding the interests of sub-Saharan Africa as a region.⁶⁴ The government’s discursive duality was vital for its survival in the IAEA.

SAFEGUARDS AND THE REGULATION OF NUCLEARITY

Early negotiations over safeguards were just as driven by tensions between cold war and postcolonial geopolitical paradigms as those we’ve examined so far. The United States was the most vocal promoter of safeguards agreements, but most other nations selling nuclear technologies and materials at least paid lip service to their desirability. As historian Astrid Forland argues, commercial considerations strongly shaped the approach that selling nations took toward safeguards.⁶⁵ Unsurprisingly, buyers of nuclear systems were less than thrilled at the prospect of controls over end use. India in particular argued that regulating technological access through safeguards perpetuated

⁵⁹ “Joint Declaration by a Group of Members in Africa and Asia Regarding South Africa,” General Debate and Report of the Board of Governors for 1962–63, agenda item 10, Oct. 1, 1963, BVV84 13/1, vol. 7 and annex, NASA.

⁶⁰ “Statement by South Africa,” General Debate and Report of the Board of Governors for 1962–63 (cit. n. 59).

⁶¹ *Ibid.*

⁶² “Report of the South African Delegation to the Fifth General Conference of the IAEA” (cit. n. 52), 23.

⁶³ *Ibid.*, 32.

⁶⁴ *Ibid.*

⁶⁵ Forland, “Negotiating Supranational Rules” (cit. n. 1), especially chaps. 2 and 3.

colonial inequalities, defeating what they saw as the very purpose of the IAEA. Of course, no one *wanted* to develop nuclear weapons, Indian delegates asserted, but nevertheless an important principle was at stake. Even more than other nuclear topics, struggles over safeguarding the global nuclear order were saturated with morality talk. But in this domain as in others, more mundane concerns drove the practices that actually emerged. Once again, South Africa's archives reveal not just the country's own aims but also those of other nations. Let us see how by returning to 1956.

For South Africa, the safeguards matter was really a subset of the uranium market issue. South Africans worried that the imposition of safeguards would affect the marketability of their uranium. The Canadians were similarly concerned: "there is little doubt . . . that [the Canadians] regard us as their main potential competitor in export markets for uranium and wish to ensure that their competitive position is not weakened by commitments [i.e., safeguards] which we do not also accept."⁶⁶ Evidently, Canadian delegates had approached their South African counterparts to determine where they stood on including a use-control clause in uranium sales contracts.

So where *did* South Africa stand on this question? Sole knew that Pretoria's Department of External Affairs would strongly object to international controls on uranium exports, which necessarily infringed upon the sovereignty so dear to Afrikaner nationalists. But he urged Pretoria to resist its isolationist impulses in order to maintain American goodwill. "To defend a position in which the Union was the only country which refused to enter this system in one way or another . . . would lead to all kinds of difficulties."⁶⁷ Besides, South Africa could derive practical benefit by cooperating, notably by making acceptance of safeguards conditional on securing both similar acceptance from its competitors and board membership. Persuaded by these arguments, Secretary of External Affairs G. P. Jooste sought to make controls palatable to the rest of the government by noting that the IAEA's draft statute only committed agency members to accepting safeguards for transactions conducted *through the agency*. Contracts concluded separately would be exempt. "We consider, therefore, that acceptance by the Union of membership in the Agency does not in itself commit the Union, as a producer of source material, to Agency controls or safeguards. Nor would membership, in our opinion, create a moral commitment to apply Agency control over bilateral agreements."⁶⁸

W. C. du Plessis, Sole's colleague on the South African IAEA delegation in 1956, feared that other delegates would recognize this approach as a cop-out and that real dangers inhered in not publicly embracing controls. Besides, he argued, controls wouldn't really affect South Africa's uranium business. First, safeguards would not apply to the existing CDA contracts. Second, controls "would operate in the recipient country only and would not cover production or any processing of source materials in the country of origin." Third, controls of uranium oxide wouldn't be as stringent as controls of "fissionable materials." Meanwhile, the danger of *not* accepting controls

⁶⁶ "Peaceful Uses of Atomic Energy: International Safeguards," Aug. 21, 1956, BLO 349 ref. PS 17/109/3, vol. 2, NASA. Forland offers further details on Canadian concerns—see "Negotiating Supranational Rules" (cit. n. 1), 103–4, 135–7.

⁶⁷ "Peaceful Uses of Atomic Energy: International Safeguards" Aug. 21, 1956 (cit. n. 66). For more of same, see David Fischer, Secret Correspondence Z4/5/1, Aug. 21, 1956, BLO 349 ref. PS 17/109/3, vol. 2, NASA.

⁶⁸ "Peaceful Uses of Atomic Energy: International Safeguards," Sept. 8, 1956, BLO 349 ref. PS 17/109/3, vol. 2, NASA.

was that South Africa could “be accused of having willfully, and in pursuit of its own economic interests, taken the risk of widening the area of international insecurity.” Finally, even if the South African government didn’t accept a moral obligation to promote safeguards, Canada did. In their eagerness to outbid competitors, the Canadians might seek to persuade the United States that South Africa didn’t respect U.S. foreign atomic energy policy: “on one occasion during the Conference, a member of the Canadian delegation, in the presence of some State Department and AEC officials, referred jokingly to what he termed South Africa’s apparent unwillingness to show its hand in regard to safeguards in bilateral agreements.” Du Plessis couldn’t tell whether this was an innocent joke or a deliberate attempt to undermine South Africa’s relationship with the AEC, “but the incident illustrates the possibility that the Canadians may bring pressure to bear on Washington.”⁶⁹

So South Africa would have to accept safeguards. But what exactly did this mean? What did safeguards consist of? What would be safeguarded, and how? These were all open questions, and there was ample opportunity to shape answers in advantageous ways.

The most basic question involved definitions. Clearly “fissionable materials” required safeguards. Yet how did one define a “fissionable material”? When and how did a “source material” become a “fissionable material”? The statute drafters appointed a technical committee to settle these questions. The report of the scientist who represented South Africa on this committee is worth quoting at length:

[We] approached the task of definitions, bearing in mind that the determination of what constituted fissionable materials would be strongly related to the inspection and safeguarding provisions of the Statute, that the definitions would have to be essentially practical, rather than “textbook” in nature, that they must be legally watertight and must take account of certain political implications.

The Indian representative was clearly keen to ensure (a) that natural uranium was not defined as fissionable material and (b) that the concentration of plutonium, U235, U233, etc., required before a “source” material became a “fissionable” material were relatively high . . .

[We] adopted the view that natural uranium fitted best into the source material category, although it is of course a fissionable material (but then so is U238 under appropriate conditions), that the term “special fissionable material” should be used, that the line dividing source and special fissionable materials should be at the 0.7% enrichment level . . . and that it was desirable to ensure that source material irradiated only momentarily in a reactor must become “special fissionable materials” in terms of the definitions.

The definitions proved astonishingly difficult to draw up. In the final session of the subcommittee, the fourth new or amended draft was adopted with the Indian representative abstaining on the ground of an inconsistency, in his view, in that if a small amount of say U235 were added to say U238, the resulting materials would fit into the definitions for both “special fissionable material” and “source material.”⁷⁰

The difference between “source materials,” “special fissionable materials,” and “fissionable materials” mattered because each would be subject to different controls. The Indians wanted the greatest possible latitude built into the official IAEA definitions and so preferred the more ambiguous term “fissionable materials.” They lost the

⁶⁹ “Peaceful Uses of Atomic Energy: International Controls,” Nov. 20, 1956, BLO 349 ref. PS 17/109/3, vol. 2, NASA.

⁷⁰ “International Atomic Energy Agency,” Annex to South Africa Minute no. 79/2 (cit. n. 11).

final vote on this question. The final IAEA statute did not treat “fissionable materials” as a distinct, definable product. Instead, it specified three other categories: “source materials,” “special fissionable materials,” and “uranium enriched in the isotope 235 or 233.”⁷¹ Significantly, there *was* general agreement that uranium oxide with an average 235 or 233 content should count as “source material” for the purposes of safeguards. Each delegation had its own reason for this, ranging from preserving the marketability of uranium oxide to leaving the greatest latitude possible in its use. For our purposes, the point is that these definitions created a barometer of nuclearity, with “source materials” being the least nuclear and therefore subject to the most relaxed safeguards and “special fissionable materials” being the most nuclear and therefore subject to more stringent safeguards.

Definitions, of course, were only the first step. Actual controls remained to be worked out. For uranium producers, the critical question was: *Which* stage of production would be subject to *which* safeguards? The United States and Britain initially wanted to control “every stage from the sale of source material until the manufacture of the end product—plutonium.” They soon realized, however, that truly controlling each phase would be highly impractical. Instead, they suggested “work[ing] backwards through the various processes from plutonium towards the original materials in the hope of fixing upon some intermediary points where controls can be effectively applied.”⁷² Such was the task of the IAEA’s new safeguards division.

The Canadian scientist chosen to head this division had been involved in his own nation’s studies on safeguards, and the South African delegation actually found his presence reassuring. “Having been so closely concerned with Canadian uranium he is fully seized of the concern of the producers of uranium that if any safeguards are to be applied to source material, they should be simple to operate and not . . . unduly affect the saleability of the product in a competitive market. The system of accountability for source material which he favors is clearly far less elaborate than the American AEC has had in mind and may well be limited to straight-forward book-keeping returns coupled with spot inspections every six or twelve months.”⁷³ Such book-keeping wouldn’t be too onerous. Indeed, it wouldn’t represent any extra work beyond what uranium producers did for their own purposes—as long as they were willing to open their books to IAEA inspectors.

Even if the process for safeguarding “source material” was satisfactory, however,

⁷¹ In the end, Article XX of the statute specified the following definitions:

“1. The term ‘special fissionable material’ means plutonium-239; uranium-233; uranium enriched in the isotope 235 or 233; any material containing one or more of the foregoing; and such other fissionable material as the Board of Governors shall from time to time determine; but the term ‘special fissionable material’ does not include source material.

2. The term ‘uranium enriched in the isotope 235 or 233’ means uranium containing the isotopes 235 or 233 or both in an amount such that the abundance ratio of the sum of these isotopes to the isotope 238 is greater than the ratio of the isotope 235 to the isotope 238 occurring in nature.

3. The term ‘source material’ means uranium containing the mixture of isotopes occurring in nature; uranium depleted in the isotope 235; thorium; any of the foregoing in the form of metal, alloy, chemical compound, or concentrate; any other material containing one or more of the foregoing in such concentration as the Board of Governors shall from time to time determine; and such other material as the Board of Governors shall from time to time determine.”

See appendix 1 in Fischer, *History of the International Atomic Energy Agency* (cit. n. 1), 490–1.

⁷² “Safeguards on Sale of Source Materials,” Dec. 27, 1957, BLO 349 ref. PS 17/109/3, vol. 2, NASA.

⁷³ “IAEA: Development of a Safeguards System,” Oct. 31, 1958, BLO 349 ref. PS 17/109/3, vol. 2, NASA.

another problem immediately followed: What should be done about small quantities of “special fissionable material” that, in larger quantities, would be subject to stricter safeguards? Could small quantities of (say) enriched uranium be exempt? If so, what was the threshold for exemption? The United States wanted to apply safeguards to quantities of uranium between two and ten metric tons if the uranium-235 content was between 0.5 and 1.0 percent. (Any quantity above ten metric tons would be subjected to full safeguards.) Sole reported that these figures were based on the “contention that more than 200 grams of fully enriched uranium represents a dangerous quantity” and that two metric tons of natural uranium were required to produce 200 grams of enriched product.⁷⁴ But here he thought that politics had to trump technology: “whatever the theoretical technical justification for this, it is quite certain that *politically* . . . it is impossible to equate 2 tons of natural uranium with 200 grams of fully enriched material as a potential danger to international security.”⁷⁵ On a practical level, he argued, a huge amount of knowledge, effort, and money was required to transform two tons of natural uranium into 200 grams of bomb-grade material. The building of the required technical system couldn’t fail to escape international notice and could itself be subject to a set of controls. South Africa should firmly insist on exempting ten or fewer tons of uranium with less than 1 percent U235.

As the chairman of the board of governors in 1960, Sole was in an excellent position to lobby for this outcome. He soon secured the support of the UK delegates, who in turn rallied other Commonwealth uranium producers. The UK high commissioner also lobbied the United States, arguing that the “South African proposal would benefit . . . all the producers of source materials. If this concession could be made in their favor, they would be more likely to give active support to Agency safeguards in general—and the support of the producers was a *sine qua non* if safeguards were to be effective.”⁷⁶ Sole, meanwhile, made it clear that if his ten-ton threshold were rejected, South Africa would not consider the IAEA safeguards system binding on bilateral agreements concluded outside of agency auspices.⁷⁷ With a combination of threats and incentives, he won his case.⁷⁸

Despite this victory, Sole remained skeptical about the proposed safeguards system. The good news for South Africa was that he didn’t think that “the edifice to be constructed will be more than a façade.”⁷⁹ While potentially useful for international relations, he doubted—prophetically, as it turned out—that the system would do much to prevent the spread of atomic weapons. Based on what he’d heard from Homi Bhabha, for example, he felt sure that India would eventually build a bomb.⁸⁰

To ensure that even this “façade” would not unduly encumber South Africa’s activities, Sole focused his energy on two dimensions of safeguards practices. First, he sought to minimize controls on “source materials.” He wanted to make absolutely certain that uranium mines and ore-processing plants would not count as “conversion

⁷⁴ Memorandum 137/10/9, Dec. 31, 1960, BPA 25 ref. 31/32, pt. 1, NASA.

⁷⁵ *Ibid.*

⁷⁶ *Ibid.*

⁷⁷ “IAEA: Safeguards against Diversion,” Feb. 27, 1960, BPA 25 ref. 31/32, pt. 1, NASA.

⁷⁸ The ten-ton threshold still applies. See the IAEA’s INFCIRC/66/Rev.2, Sept. 16, 1968, as posted on the agency’s Web site: <http://www.iaea.org/Publications/Documents/Infcircs/Others/inf66r2.shtml> (accessed Oct. 18, 2004).

⁷⁹ “Report of the South African Delegation to the Fourth General Conference of the IAEA” (cit. n. 54).

⁸⁰ *Ibid.*

plants,” and therefore not themselves be subject to safeguards. Since many uranium-producing countries shared this priority, the specific exclusion of mines and ore-processing plants from the definition of a “conversion plant” passed unproblematically. At the same time, he led a largely successful campaign to liberalize other controls over “source materials,” arguing that this would prevent a uranium shortage when commercial nuclear power finally became a reality.⁸¹ Second, he worked extensively on the “Inspectors’ Document,” which governed the selection of IAEA inspectors and their rules of conduct. The selection of inspectors was a source of particular anxiety for several departments in the apartheid state, which all worried about whether South Africa would be forced to subject itself to inspections conducted by Indians or black Africans.⁸² Realizing only too well that this racial framing would not fly in Vienna, Sole translated this concern into one about national sovereignty—which most IAEA members shared, and which indeed was a broader issue during the negotiation of personnel for any type of diplomatic mission.⁸³ It then became easy to work into the “Inspectors’ Document” that the inspected country could “reject any individual Agency inspector *without* giving any reasons for its rejection,” as long as it didn’t reject *all* proposed inspectors.⁸⁴

CONCLUSION

In 1977, Sole’s fears proved prophetic. Now comprising seventy-seven nations, the group he’d described as “the Afro-Asian upsurge” demanded that South Africa be ousted from the board of governors and replaced by Egypt. Twenty years later, the IAEA’s official historian, David Fischer—who had been Sole’s junior colleague on the South African delegation for several years (a biographical detail mentioned nowhere in the book or its jacket⁸⁵) before leaving the South African foreign service to join the IAEA’s full-time staff—describes the event as follows:

In June 1977, the Board decided by a vote of 19 to 13, with one abstention, to uphold the Chairman’s nomination of Egypt as the Member State in Africa “most advanced in nuclear technology including the production of source materials.” Egypt’s nuclear program was very modest and it produced no source materials (i.e., uranium) but worldwide revulsion against apartheid made it politically inevitable that the South African Government would sooner or later lose its seat on the Board. This revulsion also led to the rejection of the credentials of the South African delegation when the General Conference met

⁸¹ “Statement by Mr. D. B. Sole, Leader of the South African Delegation, in the General Debate: 25th September 1963,” BVV84, 13/1, vol. 7 and annex, NASA.

⁸² “Die Vooregte en Immunitete van Internationale Atoomkrageagentskapinspekteturs,” Dec. 9, 1959, TES 1004 ref. F5/362/5, NASA.

⁸³ “The Rights, Privileges, and Immunities of IAEA Inspectors,” Dec. 3, 1959, TES 1004 ref. F5/362/5, NASA.

⁸⁴ For more on the “Inspectors’ Document,” see Fischer, *History of the International Atomic Energy Agency* (cit. n. 1), 247–8.

⁸⁵ While I do not mean to suggest any sort of conspiracy by calling attention to this biographical fact, readers may find its elision particularly striking in light of the details that were supplied by Hans Blix, then director general of the IAEA, in his preface to Fischer’s 1997 book (*History of the International Atomic Energy Agency* [cit. n. 1]): “David Fischer took part in the negotiation of the IAEA’s Statue in 1954–56 and served on the IAEA’s Preparatory Commission. From 1957 until 1981 he was the Agency’s Director and subsequently Assistant Director General for External Relations. In 1981 and 1982 he was Special Adviser to Director General Eklund and to myself. Since then he has served as a consultant to the IAEA on many occasions.”

in New Delhi in September 1979. After a democratic government had taken power in Pretoria, South Africa, with Egypt's concurrence, regained its seat on the Board in 1995.⁸⁶

Though mild in tone, this description is unequivocal in its interpretation: Egypt's nuclearity could not match that of South Africa, which therefore was ousted for purely political reasons—a fact proven by its reinstatement after the fall of the apartheid government. Fischer was too much the diplomat to comment explicitly on the appropriateness of South Africa's expulsion. In 1987—the year after the South African government declared a state of emergency to quell black insurgency, the year after Mikhail Gorbachev initiated *perestroika*—U.S. political scientist Lawrence Scheinman was far less delicate in his assessment. “The treatment of South Africa by its political opponents in the IAEA starkly illustrates the problem of politicization,” he wrote. He concluded his brief account of South Africa's ousting by noting that the United States “while condemning apartheid, has opposed all the actions described above on the basis of the principle of universality and the practical importance of South Africa to nuclear matters.”⁸⁷ In his view, the treatment of South Africa was an example of “political opportunism,” an attempt on the part of “those with a relatively limited interest in the basic purpose of the agency to hold hostage the substantial interest of others in order to secure their own political objectives.”⁸⁸

My foray into the early history of the IAEA shows that such interpretations serve merely to reinforce a teleological view of the agency as one whose only true, legitimate purpose was to ease cold war tensions and guard against nuclear proliferation. They unquestioningly deploy the very objects of negotiation in the early years of the agency: the meanings of nuclearity, and the boundaries between the technical and the political. In so doing, they reproduce a vision of global order in which cold war concerns trump postcolonial ones every time—a vision in which postcolonial nations have less right to weigh in on nuclear issues by the simple virtue of being less nuclear.

The distortions effected by this vision have become increasingly clear in the last decade as more nations have acquired nuclear weapons. Designating them “rogue nations” elides the fact that these nations did not acquiesce to the imposition of a global nuclear order that never acknowledged the legitimacy of their voices. As George Perkovich has argued so eloquently in his analysis of India's atomic bomb,⁸⁹ it also elides the domestic and regional motivations nations have for developing nuclear weaponry, motivations which—for them—trump the nonproliferation goals of western nations. Condemnations of safeguards and nonproliferation treaties as neocolonial may be intensely self-interested, but they are also genuine expressions of an alternative vision of the technopolitics of global order. In making this point, I am in no way condoning the resulting proliferation of nuclear weapons. Paralleling Perkovich's analysis, I am simply arguing that unless we understand this dimension of the making of global nuclearity, we cannot hope to find workable solutions to proliferation.

This chapter has examined how South Africa—with substantial support from the United States, the United Kingdom, and others—attempted to assert a global consensus on the meanings of nuclearity and the boundaries between the technical and

⁸⁶ Fischer, *History of the International Atomic Energy Agency* (cit. n. 1), 93–4.

⁸⁷ Scheinman, *International Atomic Energy Agency and World Nuclear Order* (cit. n. 1), 211.

⁸⁸ *Ibid.*, 210.

⁸⁹ George Perkovich, *India's Nuclear Bomb: The Impact on Global Proliferation* (Berkeley, 1999).

the political. These attempts took heterogeneous forms and sometimes met with considerable success. In setting up a process by which to canvass the African continent prior to establishing a training center in Cairo, Sole helped to define the markings on a barometer of nuclearity that ultimately served to legitimate South Africa's presence on the board of governors for twenty years. His ability to institutionalize a separation between the IAEA and the UN did put a leash on postcolonial politics in the IAEA for twenty years, even if in the end the "G-77" succeeded in ousting the apartheid nation. Sole's relentless insistence on the separation of technology and politics served the United States, the United Kingdom, and other western allies well, and they repaid South Africa handsomely with continued support to the bitter end (when thirteen nations voted to keep South Africa *in* the agency). His success in whittling away at safeguards practices helped make his own prophecy—that these would be little more than façades—come true.

In 1993, the world learned that South Africa itself had been a "rogue nation." It had defied the very global nuclear order it had helped to build, the order from which it was expelled by those it had sought to exclude. The moment of revelation was also cast as a moment of redemption: in the same breath that F. W. de Klerk confessed to South Africa's nuclear weapons capacity, he announced its dismantling. Bombs, enrichment plants, testing grounds—all gone, destroyed, never again to see the light of day. In 1994, South Africa's first democratic elections ensured that global political redemption followed nuclear redemption. In 1995, South Africa was readmitted to the IAEA. The emerging consensus *within* South Africa concerning the reasons for the bombs' destruction (namely, to prevent their falling into the hands of a black government) shimmered only faintly on the edges of global discourse, which basked in the glow surrounding the world's first undoing of nuclear sin. IAEA inspectors rushed to verify the destruction of the weapons and turned South Africa into the poster child for nuclear nonproliferation. In a final, jaw-dropping irony, tenacious officials at the South African Nuclear Energy Corporation (NECSA, formerly the AEB) insist that the IAEA itself has forbidden them from releasing whatever archives remain concerning the South African weapons program, for fear that these might fall into the hands of other "rogue nations."

It is difficult to imagine how this latest erasure of history will help to dismantle nuclear weapons elsewhere.