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Denise Kiernan, *The Girls of Atomic City: The Untold Story of the Women Who Helped Win World War II*. New York: Touchstone, 2013. Pp. xvii, 371. ISBN 978-1-4516-1752-8.

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While most of the world faced the reality of the atomic bomb in August 1945 with shock and disbelief, an international team of scientists and thousands of factory workers had been striving for years to construct the weapon before America's enemies could do so. *The Girls of Atomic City* provides an intimate look into the day-to-day lives of individuals—mostly women—who moved to Oak Ridge, Tennessee, to assist with, according to Secretary of War Henry L. Stimson, the “greatest achievement of the combined efforts of science, industry, labor, and the military in all history” (258).

Denise Kiernan is a journalist, television writer and producer, and the author of several previous books. Her latest volume is based on research in the primary source material of the Atomic Energy Commission in the National Archives in Atlanta, Georgia, and various libraries across the United States. Most significantly, she relies on interviews with the “young adventurers, male and female, who traveled to Oak Ridge, Tennessee, during World War II ... to enrich uranium for the world's first atomic bomb used in combat” (x).

Kiernan builds upon previous cultural and social studies of Manhattan Project communities<sup>1</sup> to spotlight the crucial role that women, in particular, played in the war effort. She concentrates on the experiences of nine women hired on at the Clinton Engineer Works (CEW) near Oak Ridge, Tennessee, in the hills of Appalachia. She recounts the intensive efforts to recruit personnel from the South to work in the massive plants designed to enrich “Tubealloy.”<sup>2</sup>

CEW employed thousands of workers in three main plants as well as in support roles required in a city of some seventy-eight thousand residents. Kiernan's female subjects, she is careful to point out, told their stories “happily and enthusiastically and never, ever with even the slightest bit of bravado” (xi). They represented a cross section of American society, from college-educated chemists to eighteen-year-old secretaries taking shorthand for military officers, to African-American janitorial workers whose job was to clean the, at the time, largest building in the United States.

Kiernan explains just why these women came to East Tennessee. Celia Szapka, for example, a secretary from Pennsylvania, moved from the Manhattan Project's original offices in New York City at the request of her supervisors, a relocation she believed would help “bring a speedy and victorious end to the war. That was enough for her” (7). This sentiment is a consistent refrain of Kiernan's interviewees. Jane Greer, a statistician-mathematician from Paris, Tennessee, recalls that the job had other attractions as well: interesting work, good pay, “and a town full of mannerly young men at your beck and call” (46). Still, Kiernan notes in her chapter “To Work” that “CEW was a social limbo in many ways, neither here nor there, where transplants felt at once rootless and immediately grounded. New place, no history, instant community. A fresh start for some” (110).

One of the more interesting accounts is that of Kattie Strickland, an African-American from Auburn, Alabama, who relocated with her husband, Willie, to work in janitorial services at K-25, the giant plant designed to enrich uranium via gaseous diffusion. Leaving their children behind in Alabama, the Stricklands

1. E.g., Peter Bacon Hales, *Atomic Spaces: Living on the Manhattan Project* (Urbana: U Illinois Pr, 1997), Jon Hunner, *Inventing Los Alamos: The Growth of an Atomic Community* (Norman: U Okla Pr, 2004), Charles W. Johnson and Charles O. Jackson, *City behind a Fence: Oak Ridge Tennessee, 1942-1946* (Knoxville: U Tennessee Pr, 1981), Elaine Tyler May, *Homeward Bound: American Families in the Cold War Era* (NY: Basic Books, 1998), and Russell B. Lowell, *At Work in the Atomic City: A Labor and Social History of Oak Ridge, Tennessee* (Knoxville: U Tennessee Pr, 2004). Other Manhattan Project sites included Los Alamos, NM, and Hanford, WA.

2. I.e., uranium. Some scientists working on the project knew exactly what Tubealloy was, but project leaders like Gen. Leslie R. Groves strictly compartmentalized the information to which individual CEW workers were privy in order to ensure the success of the overall effort.

adapted to the segregated housing and frequent intimidation and harsh treatment by white guards. Kattie lived in “a 16-foot-by-16-foot ‘hutment,’ a square plywood box of a structure that had a potbellied stove sitting right smack-dab in the middle, its stovepipe heading out through the low roof. There were no real windows, no glass, only shutters. And she would be sharing the 256-square-foot space with three other women, not with Willie” (47–48).

Even legally married African-American couples, “primarily laborers, janitors, and domestics” (47), were not allowed to live together on the “Reservation” (48). Petitions sent to project managers requesting better living conditions fell on deaf ears. The “Colored Camp Council” highlighted the “patriotism and sacrifices of the black community”<sup>3</sup> in its attempts to effect change, but those who signed the petitions “found themselves on the receiving end of a robust background check, but no new homes” (145–46).

White residents had to cope with the challenges of living in a planned community that few imagined would remain after the war (97). Mud-filled roads and yards, rationed goods, limited community services, and nosy neighbors—some of them officially reporting “suspicious” activity to project managers—were commonplace.

Agents approached a group of recipe-swapping, sock-darning housewives one afternoon and demanded to know the topic of their conversations. What were they talking about in there, with their needles and thread? Why, they demanded, were these women meeting on such a regular basis, and so secretly? The situation blew over when the women explained theirs was a run-of-the-mill coffee klatsch. Darn those socks, ladies. But maybe try not to be so subversive about it. (184)

Project workers also faced security checks by armed guards when entering the reservation, and had to put up with censorship of their letters to family and friends. They were encouraged to adopt social norms set by the government and could be fired for asking too many questions about the true nature of their work. “Signs and billboards posted throughout the Reservation reminded all to mind their ‘loose lips,’” and the residents’ handbook advised that “a safe rule to follow is that What you do here, What you see here, What you hear here, please let it stay here” (64). Oak Ridge, as the author cleverly puts it, was “an Orwellian backdrop for a Rockwellian world” (167).

A chapter on the “Rhythms of Life,” concerns the psychological strain on the women in Oak Ridge—“a potent mix of anxiety and inspiration.... [T]he anxiety of not knowing, of being watched, of worrying you might say something out of turn, and the inspiration to stay on the job and do it well, because whatever you were working on was going to help end the war. That much you knew, that much you had been promised” (134).

Despite the stringent controls on behavior and speech, a sense of excitement and opportunity pervaded a city where “*Everything’s goin’ in and nothin’s comin’ out*” (21)<sup>4</sup> and houses were erected about every thirty minutes during the height of construction (88).<sup>5</sup> “CEW was in many ways an outpost best suited to the young, those for whom enthusiasm trumped exhaustion and the sense of adventure outran hardship” (96). A spirit of solidarity and collective effort permeated the town; Kiernan’s subjects often repeated the phrase “All in the Same Boat” (320). There was also a distinctive vibrancy and dynamism in the air of a city whose inhabitants were, on average, only twenty-seven years old (138).

To give readers some sense of the single-mindedness of project managers, Kiernan describes a haunting scientific experiment performed on an African-American construction worker in Oak Ridge without his knowledge. In order to understand the effects of radiation on the human body, doctors employed by project authorities injected Ebb Cade with plutonium shortly after he was admitted to the Oak Ridge Army hospital

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3. E.g., Kattie and her coworkers put in overtime to help pay for the state-of-the-art B-25J bomber, *Sunday Punch* (cost ca. \$250,000), flown by 1st Lt. Tom Evans of Knoxville (220–21).

4. Kiernan repeats this phrase several times to emphasize the mystery surrounding what was being produced in Oak Ridge. Some of the women at CEW joked that they were manufacturing drab green paint or informational war films (118).

5. The architectural firm Skidmore, Owings, and Merrill, part of the Pierce Foundation, was hired to design plans for the city. Experienced in modular house construction, the firm worked with the Celotex Corporation to fabricate houses made of “Cemesto” (a mixture of cement and asbestos) for Oak Ridge residents—“a potent mix of prefabulousness” (83).

following an auto accident. They then withheld adequate treatment of his injuries for about three weeks so that collections of “biological samples—tissues, urine, feces—[could] ... be tested for the presence of plutonium, to see how it would travel, how much of it would remain in the body, and what effect it might have on HP-12 [viz., Mr. Cade]” (221). Doctors also removed fifteen of Cade’s teeth to see if the plutonium had spread into them (222). Leaving aside the racist aspect of this experiment, Kiernan’s shocking account shows that the goal of developing an atomic weapon often took precedence even over protecting the health of project employees.<sup>6</sup>

Kiernan describes the critical part played by James Edward (Ed) Westcott in preserving the history of the site. Now in his 90s, Westcott was the sole official photographer chronicling daily life in Oak Ridge. A sampling of his photographs included in the book gives readers a clearer picture of the routines of daily life “behind the fence” in Oak Ridge. The images include hutment life in “Gamble Valley,” patient residents queuing at the post office, grocery store, and the mobile library-on-wheels, and women diligently manning instruments at the Y-12 plant.

Kiernan writes a superb account of the first atomic bomb test near Alamogordo, New Mexico (16 July 1945), and the debate among policymakers and military leaders over whether, when, and how to deploy the apocalyptic new weapon in the Pacific Theater. When the attacks on Hiroshima and Nagasaki in August 1945 revealed the true consequences of their hard work, Oak Ridge employees felt a mix of emotions—relief, shock, and disillusionment.

The book concludes with an interesting discussion of life in Oak Ridge during the Cold War era and beyond, when “The pioneer spirit that had carried residents through the war ... had to evolve into an entrepreneurial one” (297). Not till June 1960 was Oak Ridge fully transformed into an independent, “normal” civilian town.

The book does have a couple shortcomings. Though the author provides a detailed description of community services in her chapter “Only Temporary—Spring into Summer, 1944,” one would have liked to see more on the remarkable Oak Ridge school system. Kiernan observes that “the best schoolteachers ... had been lured to CEW” (147), but gives little detail about their qualifications (most of the high school faculty had master’s degrees) or the influence of a highly educated workforce demanding high standards for the education of their children. Students and scholars will also be frustrated by the replacement of footnotes in the text proper with thirty-some pages of annotated chapter-by-chapter discussions of sources at the back of the book.

*The Girls of Atomic City* is a most valuable addition to the growing body of work on Manhattan Project communities. It will interest and inform both general readers and historians, particularly because Denise Kiernan’s concentration on the experiences of women reveals another way that “the legacy of the Manhattan Project continues to impact the social, environmental, and political landscape of the world” (314).

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6. See further Eileen Welsome, *The Plutonium Files: America’s Secret Medical Experiments in the Cold War* (NY: Dell, 1999).