Radiation Exposure Compensation Programs in the US[1]

Tomoyo TAMAYAMA
Researcher of US Nuclear Policies
Yuichi YOKOYAMA
Peace Researcher

1. Introduction

Since the atomic age began in the 1940s, the United States has repeatedly produced victims of severe environmental contamination and radiation exposure in the process of developing, testing, and using nuclear weapons in particular and nuclear technology—for both military and commercial purposes—in general. The primary example of this is the Manhattan Project, in which the US conducted the first atomic test at the Trinity Site in New Mexico and, a month later, dropped atomic bombs on Hiroshima and Nagasaki in Japan. US nuclear policies have dramatically increased radiation victims since then, both inside and outside the country. An increasing number of domestic radiation workers were exposed to radiation within the US, such as uranium miners and onsite participants at nuclear tests. Nevertheless, the vast majority of the victims are civilians—for example, "downwinders" who were exposed to radioactive fallout from nuclear test sites, such as the Nevada Test Site and sites in the Pacific, especially in the Marshall Islands, and even in places far from the sites of the massive nuclear tests.

In many cases, these victims and survivors have been forgotten; they have been left to suffer radiation-induced illnesses without sufficient compensation. Many of them have been excluded from legal systems, which lack adequate measures for saving their lives and recovering their damages. Worse still, the radiation effects on marginalized communities like Indigenous nations have gone even more unnoticed. The so-called "National Sacrifice Zones"—areas where the residents are left exposed to environmental pollution, including

[1] This article was proofread by Annelise Giseburt.

radioactive contamination—have often been imposed on Indigenous lands where the peoples' livelihood heavily depends on their natural surroundings. The Navajo Nation, for example, has lost many lives because of uranium mining and exploration and, at the same time, the radioactive fallout from the Nevada Test Site.

The struggles of these radiation victims finally attained public recognition in the 1980s—after about four decades of battles with prolonged radiation health effects and numerous court cases they filed against the state and federal governments. Many victims had died from radiation-induced cancers or related lung diseases by then.

As a result of the victims' long-term endeavors, the US currently has three laws comprising the federal system for compensating radiation exposure victims, and each of them is respectively administered by different departments. The first is the Radiation Exposure Compensation Act (RECA), which compensates downwinders, onsite participants, and uranium workers under the administration of the Department of Justice (DOJ). The second is the Energy Employees Occupational Illnesses Compensation Program Act (EEOICPA) for energy workers, and the Department of Labor (DOL) is responsible for adjudicating claims under the act. The third is for radiation-exposed veterans, or so-called "atomic veterans," provided by the following two acts administered by the Department of Veterans Affairs (VA): the Veterans' Dioxin and Radiation Exposure Compensation Standards Act (VDRECSA) of 1984 and the Radiation-Exposed Veterans Compensation Act (REVCA) of 1988. This article aims to briefly overview these American legal schemes for radiation exposure compensation.

2. Radiation Exposure Compensation Act (RECA)

As is mentioned in the previous section, the US nuclear development program produced radiation exposure victims through employing tens of thousands of workers in the uranium industry and conducting approximately 200 above-ground nuclear tests from 1945 to 1962. The nuclear testing exposed neighboring residents and test participants, both military and non-military, to radioactive fallout. Among these victims, radiation health effects became prominent in the 1960s and 70s, and an increasing number of them started filing lawsuits against the federal government or the Atomic Energy Commission alleging their failure to warn about the risk of radiation effects. While most of the victims ended up losing their legal battles, the increasing demand for a political resolution provided momentum in Congress to formulate an act entitling victims with serious illnesses to partial compensation. Eventually, on October 5, 1990, Congress passed the Radiation

Exposure Compensation Act (RECA)[2], which contains Congress's apology on behalf of the nation to the certified victims and their families. Its scope was expanded later, on July 10, 2000[3].

Compensations based on this act are administered by the Radiation Exposure Compensation Program, which was established in April 1992 within the Constitutional and Specialized Tort Litigation Section (CSTL) in the Torts Branch, Civil Division of DOJ. DOJ's regulations authorize the program office to utilize existing records when examining claims, so that "claims can be resolved reliably, objectively, and non-adversarially, with little administrative cost to either the individual filing the RECA claim or the United States government" (DOJ 2022b). Compensation awards are funded by the Radiation Exposure Compensation Trust Fund, established in the Treasury based on Section 3 of RECA.

One of the significant characteristics of RECA is that it does not require the claimants to establish a causal relation between their diseases and radiation exposure. Instead, meeting the eligibility criteria presumes effects of radiation exposure. The claimants are entitled to a one-time lump sum compensation if they worked or lived in the designated areas and periods and that they are diagnosed as having specified diseases. Against the historical backdrop of victims' legal actions demanding compensation, DOJ (2022b) describes this feature saying, "This unique statute was designed to serve as an expeditious, low-cost alternative to litigation." At the same time, however, there are many restrictions.

RECA classifies individuals eligible for compensation into the following three categories: (1) "Uranium Workers" including uranium miners, millers, and ore transporters, who were "employed in the uranium industry during the build-up to the Cold War" (DOJ 2022a); (2) "Onsite Participants" at above-ground nuclear tests; and (3) "Downwinders," who lived in the downwind area affected by the radioactive fallout emitted by the tests. The amount of the compensation and eligibility criteria vary in accordance with the categories (DOJ 2022b). The claims can be made by a specified surviving family member if an eligible individual is deceased. The following subsections briefly outline RECA's provisions regarding the scope of coverage specified for each category of victims and the termination of the compensation.

2.1 Uranium Workers

RECA entitles eligible uranium workers to a one-time, lump sum compensation of $100,000 (Section 5 of RECA). To be eligible, a claimant is required to demonstrate their employment in a specified location and period and a diagnosis of a specified disease.

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[2] Radiation Exposure Compensation Act of 1990, 42 U.S.C. § 2210 note.
[3] Radiation Exposure Compensation Act Amendments of 2000, Pub. L. No. 106–245, 114 Stat. 501.

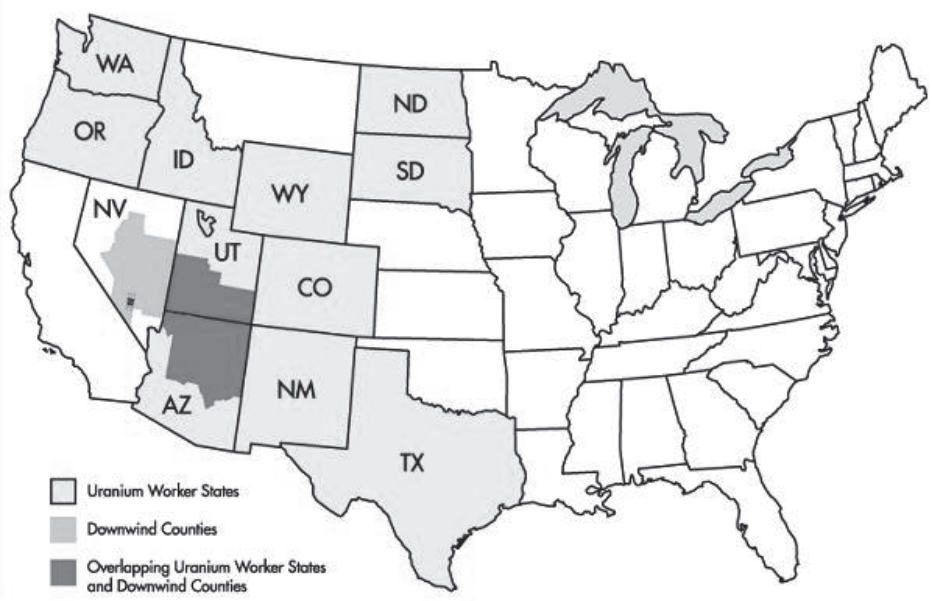

Image 1: RECA Covered Areas[4]

(1) Scope of Coverage: Location and Time

RECA requires an eligible claimant

- to have worked as a miner in a covered uranium mine located in a designated state[5] (see Image 1) for at least one year, or to have been exposed to 40 or more working level months of radiation through their employment in the mine during the period between January 1, 1942 and December 31, 1971; or
- to have worked as a uranium miller or ore transporter for at least one year during the above period.

(2) "Compensable" Diseases

An eligible uranium miner is required to submit written medical documentation that, after radiation exposure in the abovementioned location and period, they have contracted at least one of the following diseases: lung cancer, fibrosis of the lung, pulmonary fibrosis, silicosis, pneumoconiosis, and cor pulmonale related to fibrosis of the lung. A uranium miller or ore transporter is eligible for the benefit if diagnosed as having at least one of not only the above diseases but also renal cancer and chronic renal disease.

[4] The United States Department of Justice. *RECA COVERED AREAS*. 2022. Map, the website of the United States Department of Justice, "Radiation Exposure Compensation Act," updated May 6, 2022, https://www.justice.gov/civil/common/reca.

[5] The states of Colorado, New Mexico, Arizona, Wyoming, South Dakota, Washington, Utah, Idaho, North Dakota, Oregon, and Texas.

2.2 Onsite Participants

Eligible Onsite Participants are entitled to one-time compensation of up to $75,000. Like the Uranium Workers, the Onsite Participants are required to demonstrate onsite participation in a specified nuclear test and submit documents proving diagnosis of a specified disease.

(1) Scope of Coverage: Definition of "Onsite" Participation in a "Test Involving the Atmospheric Detonation of a Nuclear Device"

RECA defines this category of an eligible claimant as an individual who "participated onsite in a test involving the atmospheric detonation of a nuclear device" (Subclause (a)(1)(A)(i)(III), Section 4 of RECA). DOJ (2022b) explains that "onsite" means "duty above or within the Pacific Test Sites, the Nevada Test Site, the South Atlantic Test Site, the Trinity Test Site, any designated location within a naval shipyard, air force base, or other official government installation where ships, aircraft or other equipment used in an atmospheric nuclear detonation were decontaminated; or any designated location used for the purpose of monitoring fallout from an atmospheric nuclear test conducted at the Nevada Test Site." The "test" in the above provision is limited only to at least one of the nuclear tests US conducted before January 1, 1963 (DOJ 2022b).

(2) "Compensable" Diseases

Specified diseases include leukemia (but not chronic lymphocytic leukemia), multiple myeloma, lymphomas (other than Hodgkin's disease), and primary cancers of the following organs: lung, thyroid, male or female breast, esophagus, stomach, pharynx, small intestine, pancreas, bile ducts, gall bladder, salivary gland, urinary bladder, brain, colon, ovary, and liver (except if cirrhosis or hepatitis B is indicated).

2.3 Downwinders

RECA provides that eligible Downwinders shall receive $50,000. They are required to submit documents proving their physical presence in a specified location and period as well as diagnosis of a specified disease.

(1) Scope of Coverage: Location and Time

To be eligible, a claimant must demonstrate their physical presence in the "affected area"—specified counties deemed to have been affected by radioactive fallouts from the Nevada Test Site. The specified counties are in the states of Utah, Nevada, and Arizona. See the table below (Table 1) for the list of the counties in the "affected area" (also see Image 1 for the location of the counties).

State	Counties
Utah	Washington, Iron, Kane, Garfield, Sevier, Beaver, Millard, Wayne, San Juan, and Piute
Nevada	White Pine, Nye, Lander, Lincoln, Eureka, and the northern part of Clark County (townships 13 through 16 at ranges 63 through 71)
Arizona	Coconino, Yavapai, Navajo, Apache, and Gila

Table 1: List of the Counties in the "Affected Area"

An eligible Downwinder had to be "physically present in the affected area for a period of at least 2 years during the period beginning on January 21, 1951, and ending on October 31, 1958," or "physically present in the affected area for the period beginning on June 30, 1962, and ending on July 31, 1962" (Paragraph (a)(2), Section 4 of RECA).

(2) "Compensable" Diseases

Since the same diseases are specified as compensable for Onsite Participants and Downwinders, see the previous subsection of this article (2.2 (2)) for the list of the diseases.

2.4 Program Sunset

Among all the RECA claims DOJ has received as of May 3, 2022, approved ones number more than 39,000 in total, and the compensations awarded to the certified victims amount to more than 2.5 billion dollars.[6] July 2022, however, will mark "22 years after the date of the enactment of the Radiation Exposure Compensation Act Amendments of 2000 [July 10, 2000]" (Paragraph (g), Section 3, Radiation Exposure Compensation Act Amendments of 2000)—which is both the filing deadline for RECA claims and the termination date of the Trust Fund. DOJ published a notice[7] in 2020 to clarify claim filing procedures at the deadline. In the notice, DOJ announced, "RECA claims that bear a date of July 11, 2022 on the postmark or stamp by another commercial carrier shall be deemed timely filed upon receipt by the Radiation Exposure Compensation Program" (p. 79119).

With the end of the program approaching, Congress has been discussing extension of the Radiation Exposure Compensation Program under RECA. On April 28, 2022, the Senate passed a bill for the "RECA Extension Act of 2022" to extend the program for two years, and the House of Representatives passed the bill on May 11, 2022[8]. With the President's

[6] The United States Department of Justice. 2022. "Awards to Date 05/04/2022." Accessed May 8, 2022. https://www.justice.gov/civil/awards-date-05042022. Note that the data on the awards is updated periodically.

[7] Radiation Exposure Compensation Act: Procedures for Claims Submitted at the Statutory Filing Deadline, 85 Fed. Reg. 79,118 (Dec. 9, 2020) (to be codified at 28 C.F.R. pt. 79).

[8] RECA Extension Act of 2022, S. 4119, 117th Cong. (2022). https://www.congress.gov/bill/117th-

signature, the compensation program under RECA will be extended for about 2 years, until "2 years after the date of enactment of the RECA Extension Act of 2022"[9].

3. Energy Employees Occupational Illness Compensation Program Act (EEOICPA)

The Energy Employees Occupational Illness Compensation Program Act (EEOICPA) was passed by Congress on October 30, 2000[10]. Taking effect on July 31, 2001, Part B of EEOICPA offers compensation to those who were diagnosed with a specified disease after exposure to radiation, beryllium, or silica through employment at a specified facility of DOE (including its predecessor agencies such as the Manhattan Engineering District) or a specified entity such as DOE contractors, subcontractors, and beryllium vendors. Part B also grants compensation to those uranium workers who have received compensation under RECA. The act was amended on October 28, 2004[11], and Part E, the part introduced by the amendment, compensates contractor or subcontractor employees and RECA uranium workers or their eligible surviving families for illnesses resulting from toxic exposure, including radiation exposure, at a DOE facility or a uranium industry facility.[12]

The Division of Energy Employees Occupational Illness Compensation (DEEOIC)—a division set up in the Office of Workers' Compensation Programs (OWCP), DOL—makes decisions on EEOICPA claims. As in RECA, if an eligible individual is deceased, certain members of their surviving family may file claims under EEOICPA.

3.1 Part B of EEOICPA

Part B offers lump-sum compensation of $150,000 and payment of medical expenses for treatment of the relevant occupational illnesses from the date on which a claim for these benefits is submitted, to the following individuals and, if they are deceased, certain members of their surviving families (DOL n.d.):

(1) Employees of DOE and its contractors/subcontractors, as well as "atomic weapons employees": individuals employed at a facility processing or producing radioactive materials for the purpose of producing atomic weapons

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congress/senate-bill/4119. Accessed on May 12, 2022.

[9] RECA Extension Act of 2022, S. 4119, 117th Cong. (2022). See Note 8.

[10] Known as Energy Employees Occupational Illness Compensation Program Act of 2000, this law was enacted as Title XXXVI, Division C of the Floyd D. Spence National Defense Authorization Act for Fiscal Year 2001 (P.L. 106-398) and is codified at 42 U.S.C. §§7384–7385s-16.

[11] See Subtitle E, Title XXXI, Division C of the Ronald W. Reagan National Defense Authorization Act for Fiscal Year 2005 (Pub. L. No. 108–375, 118 Stat. 1811), which is codified at 42 U.S.C.

[12] The United States Department of Labor. n.d. "About Energy Program." Accessed May 8, 2022. https://www.dol.gov/agencies/owcp/energy/about.

To be eligible, these employees must have developed a specified cancer after beginning employment at a DOE or atomic weapons production facility covered by the act. The cancer must be determined as "at least as likely as not related to employment at the facility" (42 U.S.C. 7384n(b)) in accordance with guidelines of the Department of Health and Human Services.

(2) Members of the Special Exposure Cohort (SEC)

DOE employees, contractor/subcontractor employees, and atomic weapons employees can be categorized as "members of the Special Exposure Cohort" if they have contracted one of the 22 specified SEC cancers and have been employed for a specific period at one of the designated SEC Work Sites. Claims by SEC members are granted presumption of causation between radiation exposure and the onset of cancers, while in the case of other cancer claims as mentioned in (1), the radiation doses received by the claimants must be estimated so that the cancers are determined as "at least as likely as not related to employment at the facility."

(3) Employees Exposed to Beryllium

DOE or contractor/subcontractor employees or employees of those beryllium vendors which are specified by the act are entitled to the benefits, if they have been diagnosed with chronic beryllium disease as a result of exposure to beryllium through their employment at covered facilities.

(4) Employees at DOE Test Sites Who Contracted Chronic Silicosis

If DOE or contractor/subcontractor employees were present for at least 250 work days in total during the mining of tunnels at a DOE facility in Nevada or Alaska and developed chronic silicosis, they are entitled to the benefits.

In addition to these covered employees, Part B also offers lump-sum compensation of $50,000 and medical benefits to the uranium workers (or their surviving families) who have been awarded the $100,000 compensation based on RECA.

Employees who developed beryllium sensitivity as a result of occupational exposure to beryllium are also entitled to beryllium sensitivity monitoring.

3.2 Part E of EEOICPA

Part E offers compensation and medical benefits to eligible employees (or their eligible surviving families) who have developed one of the specified illnesses as a result of exposure to toxic substances—including radiation, as well as chemicals, solvents, acids, and metals—at certain DOE facilities. Part E also applies to the RECA uranium workers exposed to a toxic substance at one of the facilities specified in RECA. If their claims are

approved, an employee is entitled to both medical benefits and a compensation up to $250,000. The amount of the compensation is the sum of an impairment compensation and a wage loss compensation.

(1) Impairment Compensation

The amount of an impairment compensation is calculated according to the employee's "minimum impairment rating" performed by a qualified physician based on *AMA Guides to the Evaluation of Permanent Impairment* published by the American Medical Association. The "minimum impairment rating" gauges the condition of the employee who has reached maximum medical improvement—the state in which any further medical treatment is unlikely to improve their condition. The amount of impairment compensation is calculated by multiplying the percentage points of the rating by $2,500.

(2) Wage Loss Compensation

The amount of compensation to cover wage loss is calculated based on the number of years during which the employee's wage declines due to the covered illnesses resulting from toxic exposure. The details of the calculation are the sum of:

- $10,000 multiplied by the number of years during which the employee's wage drops to 50–75% of the average annual wage (AAW)[13]; and
- $15,000 multiplied by the number of years during which the wage drops to less than 50% of the AAW.

Based on review of the relevant scientific literature, DOL developed matrices called Site Exposure Matrices (SEM)[14], which show information on toxic substances used in each facility, exposure pathways, and the link between toxic substances and diseases (IOM SEM Review Committee 2013). DOL refers to SEM, together with other evidence, in the adjudication process (Vance and Anders n.d.). SEM also provides physicians with information on specific toxic substances, which helps them establish causation between toxic exposure and claimants' illnesses (Vance and Anders n.d.).

An eligible survivor is entitled to compensation of $125,000 if a deceased employee would have been entitled to the above compensation and toxic exposure at a covered facility played, "at least as likely as not," a significant role in aggravating, contributing to, or causing their death. If an "covered spouse"—defined as "a spouse of the employee who was

[13] The average annual wage (AAW) is defined as "the average earnings for the 12 quarters (36 months) prior to the first quarter of wage loss" (DOL n.d.).

[14] DOL makes the Site Exposure Matrices available at the following website. The United States Department of Labor. 2021. "EEOICP Site Exposure Matrices Website -- Home Page: DOE Facilities and RECA Sites Data." Last updated November 16, 2021. https://www.sem.dol.gov/.

married to the employee for at least one year immediately before the employee's death" (42 U.S.C. 7385s-3(d)(1))—is alive, they are to receive the compensation. If there is no covered spouse, then the payment may be made in equal shares to all covered children—the employee's children who are either under the age of 18 years, full-time students under the age of 23 years, or incapable of self-support (42 U.S.C. 7385s-3(d)(2)).

Compensation for an eligible survivor increases in the following cases:

- $25,000 is added to the $125,000 compensation, which amounts to $150,000 in total, if the deceased employee's wage dropped to less than 50% of the AAW for not less than 10 years;
- $50,000 is added to the $125,000 compensation, which amounts to $175,000 in total, if the deceased employee's wage dropped to less than 50% of the AAW for not less than 20 years.

4. Acts and Regulations on Disability Benefits for Atomic Veterans

Eligible radiation-exposed veterans are entitled to disability benefits provided by the Department of Veterans Affairs (VA), including disability compensation—provided in the form of a monthly payment—and health care benefits. Survivors or dependents of the eligible veterans may be eligible for certain benefits. The following subsections overview the disability compensation and health care benefits VA provides to eligible veterans.

4.1 Disability Compensation

The federal government, through VA, offers compensation to those veterans who suffer a "service-connected" disability—resulting from their military service—based on the Chapter 11, Part II, Title 38 of the United States Code. To be entitled to compensation, a veteran's disability needs to be proved to have been caused by some part of their service. The burden of proving a connection to their service, however, can be challenging when the causal relationship between a disability and military service is not apparent (Panangala et al. 2014).

In 1984, Congress passed the Veterans' Dioxin and Radiation Exposure Compensation Standards Act (VDRECSA) [15] to ensure that veterans are entitled to disability compensation if they have had disabilities resulting from radiation exposure in atmospheric nuclear tests or occupation of Hiroshima or Nagasaki. VDRECSA thus

[15] Veterans' Dioxin and Radiation Exposure Compensation Standards Act (VDRECSA), 38 U.S.C. § 354 note.

required VA to prescribe regulations and establish guidelines, standards, and criteria for adjudicating compensation claims for radiation exposure disabilities of these "atomic veterans." The VA regulations[16] provide that establishing service connection requires the Under Secretary of Veterans Affairs for Benefits to conclude "that it is at least as likely as not the veteran's disease resulted from exposure to radiation in service" (Sec. 3.311 (c)(1)(i), Code of Federal Regulations). While the regulations cover all claims involving radiation exposure, not only those involving the atmospheric nuclear tests or Hiroshima and Nagasaki occupation, the burden of proving service connection made (and continues to make) it difficult for many veterans to obtain compensations under VDRECSA (Lister et al. 2009).

In response to the veterans' complaints, Congress passed the Radiation-Exposed Veterans' Compensation Act (REVCA)[17] in 1988 (Lister et al. 2009; Panangala et al. 2014). The act presumes 13 specified diseases to be service-connected[18], and thus the radiation-exposed veterans—who either participated onsite at an above-ground nuclear test, participated in the occupation of Hiroshima or Nagasaki soon after the bombings, or were exposed to radiation as prisoners of war in Japan[19]—are eligible for the benefits if diagnosed with one of the specified diseases. Subsequent amendments of REVCA and VA policy changes have increased the number of the presumptive diseases to 21[20]. Further, Congress repealed the Nuclear Radiation and Secrecy Agreements Act in 1996 so that veterans are allowed to talk about their duties to establish service connection without fearing penalties (VHA 2012).

As a result of these acts, currently, approval of either non-presumptive claims under VDRECSA or presumptive claims under REVCA entitles eligible radiation-exposed veterans to disability compensation. Compensation is paid as monthly payments, and the amount depends on the veteran's "disability rating" assigned by VA based on how severe their service-connected disability is[21].

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[16] 38 C.F.R. §3.311.
[17] Radiation-Exposed Veterans Compensation Act of 1988 (REVCA), 38 U.S.C. § 101 note.
[18] The provision on the list of specified diseases (amended later as discussed later in this section) is codified at Clause (c) of 38 U.S.C. § 1112.
[19] To this definition of radiation-exposed veterans, Veterans Benefits Improvement Act of 2004 (Pub.L. 118–454, 118 Stat. 3598; codified at 38 U.S.C. § 101 note) added those veterans who were involved in "[s]ervice in a capacity which, if performed as an employee of the Department of Energy, would qualify the individual for inclusion as a member of the Special Exposure Cohort under section 3621(14) of the Energy Employees Occupational Illness Compensation Program Act of 2000 (42 U.S.C. 7384l(14))." This amendment took effect as of Mar 26, 2002 and is codified at 38 U.S.C. § 1112 (c)(3)(B)(iv).
[20] See 38 U.S.C. § 1112 for the list of the 21 diseases.
[21] The United States Department of Veterans Affairs. 2022. "About VA disability ratings." Last updated February 4, 2022. https://www.va.gov/disability/about-disability-ratings/.

4.2 Health Care Benefits

Health care and related services for veterans are provided by the Veterans Health Administration (VHA), a component of VA. Receiving a set of health care benefits called a "medical benefits package" (38 C.F.R. §17.38) requires veterans to be enrolled in the VA healthcare system (38 C.F.R. §17.36 (a)(1)).

While not all veterans are eligible for the medical benefits package (Panangala and Sussman 2019), a federal regulation (38 C.F.R. §17.36(a)(3)) provides radiation-exposed veterans enrolled in the VA healthcare system to be eligible. In order to receive these benefits, radiation-exposed veterans must first apply for enrollment in the system. Among categories of veterans eligible for enrollment, the radiation-exposed veterans are assigned Priority Group 6[22] (38 C.F.R. §17.36 (b)(6)) unless other factors—such as severe service-connected disabilities—allow them to be assigned a higher category.

In Priority Group 6, radiation-exposed veterans are not required to pay a copayment for the following health care services provided by VA: inpatient hospital care, outpatient medical care, urgent care, medication, or extended care service (e.g., nursing home care) which are for the abovementioned 21 presumptive diseases or any other disease deemed as positively associated with radiation exposure[23].

In addition to these health care services, VHA offers a free health examination called "Ionizing Radiation Registry health exam" to evaluate possible service-connected health risks (VHA n.d.). VHA (n.d.) clarifies that this exam is not used for the purpose of the disability compensation or other benefits provided by VA. The examination includes lab tests, a physical exam, and an inquiry into an exposure history and a medical history in general. In contrast to the other health care benefits, the Ionizing Radiation Registry health exam does not require veterans to be enrolled in the VA healthcare system but to satisfy one of the following conditions, according to the VA website (VHA n.d.):

- On-site participation in a test involving the atmospheric detonation of a nuclear device, whether or not the testing nation was the United States
- Participation in the occupation of Hiroshima or Nagasaki from August 6, 1945 through July 1, 1946
- Internment as a prisoner of war in Japan during World War II
- Receipt of nasopharyngeal (NP)—nose and throat—radium irradiation treatments while in the active military, naval, or air service

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[22] For detailed information on the priority groups, see the following website: The United States Department of Veterans Affairs. 2022. "VA Priority Groups." Last updated March 8, 2022. https://www.va.gov/health-care/eligibility/priority-groups/.

[23] For detailed information, see Panangala and Sussman 2020, 38 U.S.C. §1710 (e)(1)(B), and 38 C.F.R. §17.108 (e)(2), §17.110 (c)(4), and §17.111 (f)(5).

- Involved in the following “radiation-risk activities”:
    - Service at Department of Energy gaseous diffusion plants at Paducah, KY, Portsmouth, OH, or the K25 area at Oak Ridge, TN, for at least 250 days before February 1, 1992 under certain conditions
    - Proximity to “Longshot,” “Milrow,” or “Cannikin” underground nuclear tests at Amchitka Island, AK, before January 1, 1974

5. Conclusion

This article has outlined three US legal schemes for compensating radiation exposure victims: (1) the compensation program for Uranium workers, Onsite Participants, and Downwinders based on RECA of 1990 under DOJ; (2) the compensation program for energy workers based on EEOICPA of 2000 under DOL; and (3) the special veterans benefits program for radiation-exposed veterans based on VDRECSA of 1984 and REVCA of 1988 under VA. To conclude this article, this section overviews four characteristics of the US compensation system for radiation exposure victims in these schemes.

The first distinguishing characteristic of the US compensation system is its focus on radiation exposure. Chronologically, the US government first introduced radiation exposure compensation for veterans in 1980s, by ensuring disability compensation for veterans with disabilities that have resulted from service-connected radiation exposure. Later, other radiation exposure compensation programs were established to cover other victims such as governmental workers and civilians. As a result, the US compensation system as a whole currently covers various categories of radiation exposure victims. This is in sharp contrast to compensation systems in many other countries, which compensate “nuclear testing victims,” as explained by other articles in this collection of articles.

The second point to note is the definition of victims. The US radiation exposure compensation system focuses on claimant’s diseases, and approval of the claimant’s claim for compensation requires a claimant to be diagnosed with a specified disease. Even if an eligible victim is deceased, a specified disease which the victim contracted may even allow the victim’s surviving family member to receive certain benefits. On the other hand, people without a specified disease are not entitled to compensation, no matter how much they were impacted by nuclear weapons or nuclear tests. For example, victims are not compensated for being compelled to leave their land to escape from radiation exposure risks.

The third factor characterizing the US system is presumption of causality between radiation exposure and specified diseases. If an eligible individual has developed one or

more of the specified diseases, they are released from the burden of proving the causal relationship between their diseases and radiation exposure.

The last noteworthy feature is the variety of the forms of compensation. Compensation under RECA is a one-time, lump-sum compensation. EEOICPA compensation is the combination of a one-time, lump-sum compensation and coverage of medical expenses. An eligible radiation-exposed veteran is entitled disability compensation in the form of monthly payments, and VA health care services for the disease resulting from radiation exposure in service.

While the overall system covers various categories of individuals exposed to radiation, it fails to cover many victims suffering radiation effects. Narrow definitions of the compensable works or services—such as limitation of locations and time periods in which victims were engaged in work or service with radiation exposure risks—prevent various victims from obtaining compensations. As already mentioned, for example, RECA requires uranium miners to have been employed during the period between January 1, 1942 and December 31, 1971. This means that miners employed after this period, known as "post-71 uranium workers," are not eligible for RECA compensation, even if the contents of their work are the same with the eligible miners. Moreover, in the case of Indigenous victims, submission of compensation claims can be hindered by their unfamiliarity with not just the health risks of radiation exposure in the uranium industry but also US administrative procedures. For example, many Indigenous people are not accustomed to proving familial connection with a deceased victim by using documents like a birth certificate or marriage license, which hinders their claim submission process.

There have been discussions on revising the compensation schemes with such limitations. Especially now that the termination date of the Radiation Exposure Compensation Program—July 10, 2022—is approaching, Congress discussed and passed a bill for extending the program. The bill is awaiting the President's signature as of the time of writing. This bill only extends the compensation program, so even if this bill becomes law, discussions on expansion of the program[24] are expected to continue. Future changes in the radiation exposure compensation system of the United States, a nuclear superpower, will require our continued efforts and careful observation.

[24] For example, an identical bill for expanding RECA has already been introduced both at the Senate and at the House of Representatives. See the following websites for details.

Radiation Exposure Compensation Act Amendments of 2021, S. 2798, 117th Cong. (2022). https://www.congress.gov/bill/117th-congress/senate-bill/2798. Accessed on May 12, 2022.

Radiation Exposure Compensation Act Amendments of 2021, H.R. 5338, 117th Cong. (2022). https://www.congress.gov/bill/117th-congress/house-bill/5338. Accessed on May 12, 2022.

Reference List

Acts (Including Bills)

RECA and Related Acts and Bills

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