



4.21 NUCLEAR HAZARDS

SECTION 4.21 NUCLEAR HAZARD

4.21-1 HAZARD OVERVIEW

Hazard Definition

Nuclear hazards and incidents generally refer to incidents involving 1) the release of significant levels of radioactive materials or 2) exposure of workers or the general public to radiation. The primary concerns following a nuclear incident or accident is the public health impact from direct exposure to a radioactive plume, inhalation of radioactive materials, ingestion of contaminated food, water and milk, and long-term exposure to deposited radioactive materials in the environment that may lead to either acute (radiation sickness or death) or chronic (cancer) health effects.

Secondary Hazards

Public health emergencies and environmental impacts are secondary hazards of a nuclear incident. Information regarding these is provided in the Severity portion of this section.

4.21-2 LOCATION, EXTENT, AND MAGNITUDE

Location

New Jersey has three operating nuclear power plants located within the State. These facilities include the Salem Nuclear Generating Station Unit 1 and Unit 2 and Hope Creek Nuclear Generating Station.

In addition to these facilities, several facilities in neighboring states are within the 50-mile ingestion pathway zone that affects portions of New Jersey. These facilities include the Limerick Generating Station in Limerick, Pennsylvania and the Peach Bottom Atomic Power Station in Delta, Pennsylvania. Indian Point Nuclear Generating Unit 2 -Indian Point Nuclear Generating Unit No. 2 (Indian Point Unit 2) in the Village of Buchanan in upper Westchester County, New York is also within the 50-mile ingestion pathway zone; however, power operations ceased at Indian Point Unit 2 on April 30, 2020, and the fuel was permanently removed from the reactor vessel and placed in the spent fuel pool on May 12, 2020 ([United States Nuclear Regulatory Commission \[U.S.NRC\], 2022](#)). The location of these facilities in both New Jersey and in neighboring states, along with the 10-mile emergency planning zones (EPZ) and 50-mile ingestion pathway zones are highlighted in Figure 4.21-1.

Hope Creek and Salem 1 and 2

There are three nuclear power generating stations located on Artificial Island, in Lower Alloways Creek Township in Salem County. The Salem Nuclear Generating Station is composed of two pressurized water reactors, Salem 1 and Salem 2. The stations are located on the southern half of Artificial Island. The third nuclear power generating station on Artificial Island is the Hope Creek Nuclear Generating Station, which uses a boiling water reactor. It is located 0.25 mile north of Salem 1 and 2. These three generating stations are owned by Public Service Enterprise Group (PSEG). The population within the 10-mile radius surrounding the Salem/Hope Creek site is 15,645.

Artificial Island is a 700-acre man-made site created by the deposition of fill from Delaware River dredging operations. Land use in the areas adjacent to the exclusion zone (as defined by 10 Code of Federal Regulations [CFR] 100) consists of commercial, government, agricultural, and residential.

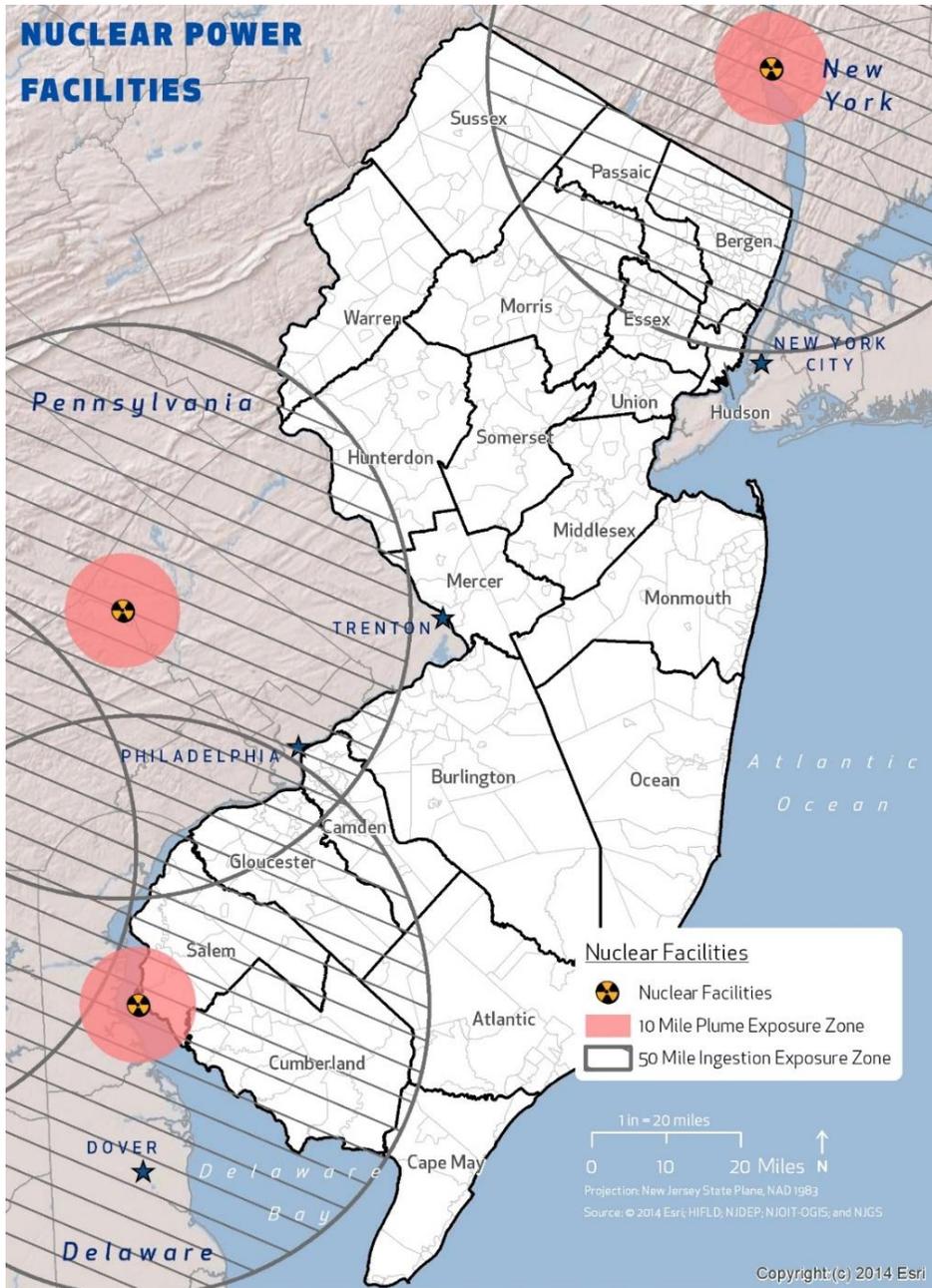
To the north and east are extensive tidal marshlands and low-lying areas. Mad Horse Creek Wildlife Management Area, located to the north and east of Artificial Island, is a State government facility that supports trapping and fishing. The wildlife area is also important for migratory birds. Within 10 miles of the site is some of South Jersey's prime agricultural land. The nearest New Jersey resident to the site is 3.9 miles away (New Jersey Department of Environmental Protection [NJDEP], 2004).

Oyster Creek

The Oyster Creek Generating Station stopped production in the fall of 2018. While it was in operation Oyster Creek Station was a single-unit, boiling-water reactor located in Lacey Township, Ocean County, near Barnegat Bay. The plant was owned and operated by Exelon Corporation (United States Nuclear Regulatory Commission [U.S.NRC], 2013; Baldauf [NJDEP], 2013).

Oyster Creek was located on 1,316 acres and is traversed by U.S. Highway Route 9. Geographically, the plant was situated in the Outer Coastal Plain near the Pinelands National Reserve. The reserve is characterized by a fragile ecosystem and a large untapped groundwater reserve. In addition, there are extensive freshwater and saltwater marshes. Barnegat Bay Inlet and the Atlantic Ocean are within 10 miles of the plant (U.S.NRC, 2013).

Figure 4.21-1 Nuclear Power Plants Impacting New Jersey



According to the [U.S. NRC](#), the Oyster Creek Nuclear Generating Station is undergoing decommissioning. Oyster Creek Nuclear Generating Station (Oyster Creek) was permanently shut down on September 17, 2018. By letter dated September 25, 2018, Exelon Generation Company (Exelon), prior owner of the facility, certified that all fuel had been removed from the reactor.

Extent and Magnitude

The U.S. NRC encourages the use of Probabilistic Risk Assessments (PRA) to estimate quantitatively the potential risk to public health and safety considering the design, operations, and maintenance practices at nuclear power plants. PRAs typically focus on accidents that can severely damage the core and that may challenge containment.

The New Jersey Office of Emergency Management (NJOEM) and the NJDEP have developed a State Radiological Emergency Response Plan with consultation from other state agencies and according to all relevant guidelines established by the Federal Emergency Management Agency (FEMA) as required by the Radiation Accident Response Act (N.J.S.A. 26:2D-37 et seq. effective October 27, 1981). The Plan includes a 10-Mile Emergency Planning Zone (EPZ) defined as the area with a radius of approximately 10 miles around a nuclear power generating station. The 10 Mile EPZ considers potential adverse public health impacts for the Plume Exposure Pathway based on the potential for acute health effects due to radiation exposure from a catastrophic accident at a nuclear power generating station. The Plan also includes provisions for the 50 Mile Ingestion Pathway Emergency Planning Zone where additional public health impacts must be considered for long term or chronic health effects that could result from the direct exposure to deposited radioactive materials or from consumption of contaminated food, water and milk. The exact size and configuration of the 10 mile and 50-mile EPZ may vary in relation to local emergency response capabilities, topography, road networks and political boundaries (Baldauf [NJDEP], 2013).

The nuclear industry has adopted pre-determined, site-specific Emergency Action Levels (EAL). The EALs provide the framework and guidance to observe, address, and classify the severity of site-specific incidents and conditions that are communicated to off-site emergency response organizations (Nuclear Regulatory Commission, 2008). Additional EALs specifically deal with issues of security, such as threats of airborne attack, hostile action within the facility, or facility attack. These EALs ensure that appropriate notifications for the security threat are made in a timely manner.

Each facility is also equipped with a public alerting system, which includes a number of sirens to alert the public located in the Plume Ingestion Pathway EPZ. This alerting system is activated by the counties of each specific EPZ. Emergency notifications and instructions are communicated to the public via the Emergency Alert System as activated by the NJOEM Emergency Operations Center. State officials also have the capability to send emergency messages as text messages to mobile devices.

4.21-3 PREVIOUS OCCURRENCES AND LOSSES

FEMA Disaster Declarations

FEMA has made no disaster declarations related to nuclear incidents in New Jersey.

Historical Events Summary

No major nuclear incidents have occurred in New Jersey. In the past 20 years, there have been two alerts at Oyster Creek and one alert at Salem/Hope Creek site (Christiansen [NJOEM], 2013).

4.21-4 PROBABILITY OF FUTURE OCCURRENCES

Three major nuclear reactor accidents have occurred in the history of civil nuclear power: Three Mile Island, Chernobyl, and Fukushima. Since the Three Mile Island accident, nuclear power has become heavily regulated; however, as with any industrial activity, it is not entirely risk-free. Incidents and accidents may happen that will lead to continued improvements in safety (World Nuclear Association, 2013).

Potential Effects of Climate Change

Power plants located along the shore may be vulnerable to the impacts of Climate Change and Sea Level Rise. Specifically Salem Nuclear Power Plant is the nation's second-largest nuclear generating complex located on the eastern shore of the Delaware River, known as Artificial Island. According to John Vidal, "flooding can be catastrophic to a nuclear power plant because it can knock out its electrical systems, disabling its cooling mechanisms and leading to overheating and possible meltdown and a dangerous release of radioactivity" (Vidal, Hakai Magazine, 2018).

4.21-5 VULNERABILITY ASSESSMENT

To understand risk, the assets exposed within the hazard area are identified. For the nuclear hazard, nuclear power plants were extracted from the Homeland Infrastructure Foundation-Level Data (HIFLD) power plant dataset and associated 10- and 50-mile buffers were created as the hazard areas to assess risk. Please note these hazard areas are considered approximate and should be treated as such. Vulnerability and potential losses are discussed in terms of these defined zones throughout the State, according to jurisdiction and State-owned and leased facilities.

Built Environment

Employees working in State buildings and critical facilities located within the 10-mile EPZ are considered vulnerable. There are only 3 State buildings in Cumberland County and 9 State buildings in Salem County that are within the 10-mile EPZ.

Community lifelines are important in ensuring the day-to-day function of society. These facilities include utilities, hospitals, and schools, among others similar in nature. According to the analysis, 37 community lifelines are located within the 10-mile EPZ of any nuclear plant, and 14,482 community lifelines are located in the greater 50-mile ingestion zone. Like State-owned and leased entities, these community lifelines need to ensure continuity of operation during a disaster. In addition to community lifelines, financial institutions and cultural and historic sites are important statewide assets. There are 246 cultural and historic sites within the 10-mile EPZ of any nuclear plant, and 647 financial institutions and 57, 531 historic and cultural sites within the greater 50-mile ingestion zone. Table 4.21-1 through Table 4.21-4 outline the number of community lifelines and other valuable statewide assets that are located in the 10- and 50- mile zones. Public and private infrastructure may be lost due to contamination from a nuclear incident. The type of infrastructure impacted would depend on the nature of the event and the extent of its effects.

Table 4.21-1 Number of State Buildings Located within the 10-Mile and 50-Mile Radii by County

County	10-Mile EPZ	50-Mile EPZ
Atlantic	0	17
Bergen	0	74
Burlington	0	9
Camden	0	51
Cape May	0	1
Cumberland	3	454
Essex	0	19
Gloucester	0	52
Hudson	0	19
Hunterdon	0	31
Mercer	0	4
Middlesex	0	18
Monmouth	0	0
Morris	0	0
Ocean	0	0
Passaic	0	192

County	10-Mile EPZ	50-Mile EPZ
Salem	9	122
Somerset	0	10
Sussex	0	141
Union	0	1
Warren	0	3
Total	12	1,218

Source: NJOMB, 2023

Table 4.21-2 Number of State Buildings Located within the 10-Mile and 50-Mile Radii by Agency

County	10-Mile EPZ	50-Mile EPZ
State	0	0
Agriculture	0	0
Banking And Insurance	0	0
Chief Executive	0	0
Children and Families	0	39
Community Affairs	0	3
Corrections	0	285
Education	0	6
Environmental Protection	12	440
Health	0	1
Higher Education	0	0
Human Services	0	69
Inter-Departmental	0	0
Judiciary	0	29
Juvenile Justice Commission	0	20
Labor and Work Force Development	0	11
Law And Public Safety	0	3
Legislature	0	0
Military And Veterans Affairs	0	46
Miscellaneous Commissions	0	1
Motor Vehicles Commission	0	48
Personnel	0	0
State Police	0	29
Transportation	0	179
Treasury	0	9
Total	12	1,218

Source: NJOMB, 2023

Table 4.21-3 Number of Community Lifelines and Other Valuable Assets Located within a 10-Mile Radius of a Nuclear Facility

County	Communications	Energy	Food, Water, Shelter	Hazardous Materials	Health and Medical	Safety and Security	Transportation	Financial	Cultural
Atlantic	0	0	0	0	0	0	0	0	0
Bergen	0	0	0	0	0	0	0	0	0
Burlington	0	0	0	0	0	0	0	0	0
Camden	0	0	0	0	0	0	0	0	0

County	Communications	Energy	Food, Water, Shelter	Hazardous Materials	Health and Medical	Safety and Security	Transportation	Financial	Cultural
Cape May	0	0	0	0	0	0	0	0	0
Cumberland	0	0	0	0	0	0	0	0	1
Essex	0	0	0	0	0	0	0	0	0
Gloucester	0	0	0	0	0	0	0	0	0
Hudson	0	0	0	0	0	0	0	0	0
Hunterdon	0	0	0	0	0	0	0	0	0
Mercer	0	0	0	0	0	0	0	0	0
Middlesex	0	0	0	0	0	0	0	0	0
Monmouth	0	0	0	0	0	0	0	0	0
Morris	0	0	0	0	0	0	0	0	0
Ocean	0	0	0	0	0	0	0	0	0
Passaic	0	0	0	0	0	0	0	0	0
Salem	5	2	4	10	4	7	5	0	245
Somerset	0	0	0	0	0	0	0	0	0
Sussex	0	0	0	0	0	0	0	0	0
Union	0	0	0	0	0	0	0	0	0
Warren	0	0	0	0	0	0	0	0	0
Total	5	2	4	10	4	7	5	0	246

Source: HIFLD, 2006, 2007, 2012, 2014, 2017, 2018, 2019, 2020, 2021, 2022; NJOGIS, 2019, 2020; NJ TRANSIT, 2021; PANYNJ, 2023; USDOT, 2022

Table 4.21-4 Number of Critical Facilities Located within a 50-Mile Radius of a Nuclear Facility

County	Communications	Energy	Food, Water, Shelter	Hazardous Materials	Health and Medical	Safety and Security	Transportation	Financial	Cultural
Atlantic	12	2	11	42	9	29	1	2	450
Bergen	257	31	336	1826	396	1060	56	238	12,246
Burlington	23	1	21	147	47	94	15	14	1,715
Camden	106	23	149	673	203	456	84	31	9,936
Cape May	0	0	1	2	1	1	0	0	24
Cumberland	85	14	72	267	89	182	31	27	6,901
Essex	97	16	57	629	166	451	25	76	7,559
Gloucester	67	23	42	461	132	321	38	52	3,188
Hudson	146	22	72	943	158	374	53	57	3,042
Hunterdon	22	7	10	59	15	34	8	3	3,634
Mercer	3	1	1	3	1	4	0	0	305
Middlesex	2	0	0	0	0	0	0	0	0
Monmouth	1	0	1	1	0	0	0	0	0
Morris	29	8	35	222	85	182	10	33	1,771
Ocean	0	0	0	0	0	0	0	0	0
Passaic	114	17	58	901	213	531	28	85	3,055
Salem	41	22	46	183	42	98	23	21	2,993
Somerset	0	0	0	0	0	0	0	0	0
Sussex	44	6	24	87	24	56	3	8	570
Union	0	0	0	0	0	0	0	0	0
Warren	3	0	0	14	1	9	2	0	142
Total	1,052	193	936	6,460	1,582	3,882	377	647	57,531

Source: HIFLD, 2006, 2007, 2012, 2014, 2017, 2018, 2019, 2020, 2021, 2022; NJOGIS, 2019, 2020; NJ TRANSIT, 2021; PANYNJ, 2023; USDOT, 2022

The National Bridge Inventory contains the bridges and tunnels across the United States. Table 4.21-5 shows the number of bridges and tunnels within the 10 mile and 50-mile radii of nuclear facilities.

Table 4.21-5 Number of Bridges and Tunnels Located within a 10-Mile and 50-Mile Radius of a Nuclear Facility

County	Bridges within 10 mi of a Nuclear Facility	Bridges within 50 mi of a Nuclear Facility
Atlantic	0	12
Bergen	0	575
Burlington	0	28
Camden	0	203
Cape May	0	2
Cumberland	1	103
Essex	0	190
Gloucester	0	243
Hudson	0	130
Hunterdon	0	86
Mercer	0	6
Middlesex	0	4
Monmouth	0	0
Morris	0	160
Ocean	0	0
Passaic	0	332
Salem	7	112
Somerset	0	5
Sussex	0	58
Union	0	0
Warren	0	16
Total	8	2,265

Source: EPA, 2016; USDOT, 2022

Population and Economy

The release of dangerous levels of radiation could impact the health and safety of the population located near the nuclear power plant. Populations that reside within the 10-mile EPZ as well as the 50-mile ingestion pathway zone are considered vulnerable. The total approximate population in New Jersey within the 10-mile EPZ is approximately 4,164 people as of the 2020 Census. The total approximate population in New Jersey in the 50-mile ingestion zone is approximately 3,828,466 people as of the 2020 Census. Evacuations are a protective action within the ingestion pathway. Table 4.21-6 through Table 4.21-8 outline the estimated population of disadvantaged, socially vulnerable and overburdened communities within New Jersey located within each zone by county.

Individuals living within 10 miles of a nuclear power are the most vulnerable to the effects of nuclear hazards and may be directly exposed to radiation during a nuclear incident. Salem County is the only county the state with disadvantaged, socially vulnerable and overburdened communities within 10 miles of a nuclear power facility.

Individuals located within 50 miles of a nuclear power plant are also vulnerable to the effects of a release involving the contamination of water supplies, crops, and livestock by radioactive materials. Individuals with pre-existing medical conditions, access and functional needs, the elderly, and those without transportation may require evacuation assistance if an incident should occur.

Housing may become uninhabitable because of continued exposure from deposited radiation in the environment, depending on the extent of irradiation of particulate matter or other materials during the incident. Property may become unusable for agricultural purposes because of contaminated soil or water sources used for irrigation. A total risk exposure would be equal to the full replacement of each building and property (Baldauf [NJDEP], 2013).

Table 4.21-6 New Jersey Disadvantaged Communities within the 10-Mile and 50-Mile Radii

County	Total Countywide Population	Population within 10 mi. of a Nuclear Facility		Population within 50 mi. of a Nuclear Facility	
		Total Disadvantaged Population	% of Countywide Population that is Disadvantaged	Total Disadvantaged Population	% of Countywide Population that is Disadvantaged
Atlantic	274,534	0	0%	11,968	4%
Bergen	955,732	0	0%	101,768	11%
Burlington	461,860	0	0%	9,670	2%
Camden	523,485	0	0%	136,191	26%
Cape May	95,263	0	0%	585	1%
Cumberland	154,152	0	0%	82,815	54%
Essex	863,728	0	0%	147,336	17%
Gloucester	302,294	0	0%	25,002	8%
Hudson	724,854	0	0%	256,398	35%
Hunterdon	128,947	0	0%	0	0%
Mercer	387,340	0	0%	0	0%
Middlesex	863,162	0	0%	0	0%
Monmouth	643,615	0	0%	0	0%
Morris	509,285	0	0%	1,616	0%
Ocean	637,229	0	0%	0	0%
Passaic	524,118	0	0%	247,265	47%
Salem	64,837	1,836	3%	14,966	23%
Somerset	345,361	0	0%	0	0%
Sussex	144,221	0	0%	1,978	1%
Union	575,345	0	0%	0	0%
Warren	109,632	0	0%	1,574	1%
Total	9,288,994	1,836	0%	1,039,132	11%

Source: United States 2020 Census; White House Climate and Economic Justice Screening Tool; EPA, 2016

Table 4.21-7 New Jersey Socially Vulnerable Populations within the 10-Mile and 50-Mile Radii

County	Total Countywide Population	Population within 10 mi. of a Nuclear Facility		Population within 50 mi. of a Nuclear Facility	
		Total Socially Vulnerable Population	% of Countywide Population that is Socially Vulnerable	Total Socially Vulnerable Population	% of Countywide Population that is Socially Vulnerable
Atlantic	274,534	0	0%	14,712	5%
Bergen	955,732	0	0%	302,364	32%
Burlington	461,860	0	0%	29,928	6%
Camden	523,485	0	0%	253,042	48%
Cape May	95,263	0	0%	0	0%
Cumberland	154,152	0	0%	124,626	81%
Essex	863,728	0	0%	221,497	26%
Gloucester	302,294	0	0%	73,934	24%
Hudson	724,854	0	0%	328,936	45%
Hunterdon	128,947	0	0%	0	0%
Mercer	387,340	0	0%	0	0%
Middlesex	863,162	0	0%	0	0%
Monmouth	643,615	0	0%	0	0%

County	Total Countywide Population	Population within 10 mi. of a Nuclear Facility		Population within 50 mi. of a Nuclear Facility	
		Total Socially Vulnerable Population	% of Countywide Population that is Socially Vulnerable	Total Socially Vulnerable Population	% of Countywide Population that is Socially Vulnerable
Morris	509,285	0	0%	11,800	2%
Ocean	637,229	0	0%	0	0%
Passaic	524,118	0	0%	349,561	67%
Salem	64,837	1,841	3%	30,133	46%
Somerset	345,361	0	0%	0	0%
Sussex	144,221	0	0%	5,283	4%
Union	575,345	0	0%	0	0%
Warren	109,632	0	0%	1,484	1%
Total	9,288,994	1,841	0%	1,747,300	19%

Source: United States 2020 Census; CDC/ATSDR Social Vulnerability Index; EPA, 2016

Table 4.21-8 New Jersey Overburdened Communities within the 10-Mile and 50-Mile Radii

County	Total Countywide Population	Population within 10 mi. of a Nuclear Facility		Population within 50 mi. of a Nuclear Facility	
		Total Overburdened Population	% of Countywide Population that is Overburdened	Total Overburdened Population	% of Countywide Population that is Overburdened
Atlantic	274,534	0	0%	8,492	3%
Bergen	955,732	0	0%	540,822	57%
Burlington	461,860	0	0%	28,437	6%
Camden	523,485	0	0%	240,051	46%
Cape May	95,263	0	0%	0	0%
Cumberland	154,152	0	0%	106,874	69%
Essex	863,728	0	0%	280,516	32%
Gloucester	302,294	0	0%	103,138	34%
Hudson	724,854	0	0%	374,300	52%
Hunterdon	128,947	0	0%	0	0%
Mercer	387,340	0	0%	0	0%
Middlesex	863,162	0	0%	0	0%
Monmouth	643,615	0	0%	0	0%
Morris	509,285	0	0%	25,208	5%
Ocean	637,229	0	0%	0	0%
Passaic	524,118	0	0%	339,030	65%
Salem	64,837	1,931	3%	34,430	53%
Somerset	345,361	0	0%	0	0%
Sussex	144,221	0	0%	3,529	2%
Union	575,345	0	0%	0	0%
Warren	109,632	0	0%	1,014	1%
Total	9,288,994	1,931	0%	2,085,841	22%

Source: United States 2020 Census; NJDEP Overburdened Communities under the Environmental Justice Rule; EPA, 2016

Ecosystems and Natural Assets

The impact on the environment that a radiological event will have depends on where the event is located and the extent of irradiation. The animals, plants and other wildlife surrounding the radiological event will certainly be impacted. Underground water and soil can become contaminated when exposed to radiological material.

Impact Analysis

Severity and Warning Time

The potential public health impacts are greatest at locations nearest to the point of release from the nuclear power generating station. For planning purposes, a 10 Mile Emergency Planning Zone has been established as the area where the population has the potential to receive acute radiation doses from major releases of radiation from a catastrophic accident. The exposure pathways that are considered for the Early Phase of a nuclear accident are from direct radiation exposure to gamma radiation in the radioactive plume, inhalation of radioactive particles while submersed in a radioactive plume and from exposure to deposited radioactive materials on the ground. The Early Phase of an emergency may last anywhere from hours to days (Baldauf [NJDEP], 2013).

Consideration of the impact of deposited radiation in the environment begins with the Intermediate Phase. During this time, the public exposure pathways assessed are from prolonged exposure to deposited radioactive materials and from the ingestion of food, water, and milk that has become contaminated from deposited radioactive materials. Consideration is given to potential chronic health effects of long-term exposure to and ingestion of radioactive materials. For planning purposes, a 50 Mile Ingestion Planning Zone is established for this phase of the accident. The Intermediate phase of an accident may last from weeks to months or years, depending on the severity of the accident and the extent of the dispersion of radioactive materials in the environment (Baldauf [NJDEP], 2013).

There is often warning that a nuclear accident has occurred or has the potential to occur. Nuclear facilities must notify the appropriate authorities in the incident of an accident. The Nuclear Regulatory Commission uses four classification levels for nuclear incidents (Nuclear Regulatory Commission, 2008):

- **Unusual Event:** Under this category, incidents are in process or have occurred that indicate potential degradation in the level of safety of the plant. No release of radioactive material requiring off-site response or monitoring is expected unless further degradation occurs.
- **Alert:** If an alert is declared, incidents are in process or have occurred which involve an actual or potential substantial degradation in the level of safety of the plant. Any releases of radioactive material from the plant are expected to be limited to a small fraction of the United States Environmental Protection Agency (USEPA) Protective Action Guides (PAG).
- **Site Area Emergency:** A site area emergency involves incidents in process, or which have occurred that result in actual or likely major failures of plant functions needed for protection of the public. Any releases of radioactive material are not expected to exceed the USEPA PAGs except near the site boundary.
- **General Emergency:** A general emergency involves actual or imminent substantial core damage or melting of reactor fuel with the potential for loss of containment integrity. Radioactive releases during a general emergency can reasonably be expected to exceed the USEPA PAGs for more than the immediate site area.

Communities across the United States use outdoor warning sirens for many purposes. Sirens are used to warn the public of many hazards including fires, flooding, and other events that warrant public notifications. For the Oyster Creek EPZ, when activated, sirens will emit a three-minute steady sound. If sirens are heard, residents should tune to one of the Emergency Alert System (EAS) stations. The siren network is tested annually with a full activation. A monthly test is also conducted which operates the sirens individually or collectively for less than a minute (Exelon Generation, 2013). For the Salem and Hope Creek EPZ, when activated, sirens will emit a three- to five-minute siren. If sirens are heard, residents should tune to one of the Emergency Alert System (EAS) stations (PSEG Nuclear LLC, 2013).