2.0 SITE CHARACTERISTICS

{This Chapter of the U.S. EPR FSAR is incorporated by reference with the following departures and/or supplements.

Chapter 2 describes the geological, seismological, hydrological, and meteorological characteristics of the Nine Mile Point 3 Nuclear Power Plant (NMP3NPP) site and vicinity. The site characteristics are described in conjunction with present and projected population distribution, land use, and site activities and controls. The NMP3NPP site characteristics were developed in accordance with the relevant requirements of Title 10 CFR Part 20, Subpart D (CFR, 2007a); Title 10 CFR Part 50 (CFR, 2007b); Title 10 CFR Part 100 (CFR, 2007c); and Regulatory Guide 1.206 (NRC, 2007).}

The U.S. EPR FSAR includes the following COL Item in Section 2.0:

A COL applicant that references the U.S. EPR design certification will compare site-specific data to design parameter data in Table 2.1-1. If the specific data for the site falls within the assumed design parameter data and characteristics in Table 2.1-1, then the U.S. EPR standard design is bounding for the site. For site-specific design parameter data or characteristic that are outside the bounds of the assumptions presented in Table 2.1-1, the COL applicant will confirm that the U.S. EPR design acceptably meets any additional requirements that may be imposed by the more limiting site-specific design parameter data or characteristic, and that the design maintains conformance to the design commitments and acceptance criteria described in this FSAR.

This COL Item is addressed as follows:

{The NMP3NPP site-specific parameters and characteristics have been reviewed and compared to determine if they are within the bounds of the assumed parameters and characteristics for a U.S. EPR. This comparison is provided in Table 2.0-1 and Table 2.0-2. For the NMP3NPP site-specific parameters or characteristics that are outside the bounds of the conservative limiting assumptions presented in Table 2.0-1 and Table 2.0-2, justification of the acceptability of these conditions is provided in the associated section of Chapter 3, Design of Structures, Components, Equipment and Systems or as specified in the table.}

Table 2.0-1—{U.S. EPR Site Design Envelope Comparison} (Page 1 of 4)

| | U.S. EPR FSAR Design Parameter Value/Characteristic | NMP3NPP Design Parameter Value/Characteristic |
|--|--|---|
| | Precipitation | on |
| Rainfall | <19.4 in/hr | 16 in/hr (40.6 cm/hr) (See Section 2.4.2.3) |
| Snow (design: extreme live load, including 48-hour probable maximum winter precipitation) | <100 psf | 94 psf (4 kg/m²) (See section 2.3.1) |
| | Seismolog | у |
| Horizontal SSE Acceleration | 0.3g Peak (CSDRS shapes – See Section 3.7.) | Design Values are enveloped (See Sections 2.5.2 and 3.7) |
| Vertical SSE Acceleration) | 0.3g Peak (CSDRS shapes – See Section 3.7.) | Design Values are enveloped (See Sections 2.5.2 and 3.7) |
| Fault Displacement Potential | No fault displacement is considered for safety-related SSCs in U.S. EPR design certification. | No fault displacement potential (See Section 2.5.3) |
| | Soil | |
| Minimum Bearing Capacity (Static) | 22 ksf in localized areas at the bottom of the Nuclear Island basemat and 15 ksf on average across the total area of the bottom of the Nuclear Island basemat. | 204 ksf (See section 2.5.4) |
| Minimum Shear Wave Velocity (Low strain best estimate average value at bottom of basemat) | 1000 fps | 5900 fps (1800 m/s) (See Section 3.7.1.1.1, 3.7.1.3) |
| Liquefaction | None | None (See section 2.5.4) |
| Slope Failure Potential | No slope failure potential is considered in the design of safety-related SSCs for U.S. EPR design certification. | No slope failure potential that would adversely affect the safety of the proposed NMP3NPP (See Section 2.5.5) |
| Maximum Differential Settlement (across the basemat) | 1/2 inch in 50 feet in any direction | 0.083 inches in 50 ft for common Basemat (See Sections 2.5.4) |
| Maximum Ground Water | 3.3 ft below grade | Depth to Groundwater in Oswego Sandstone is greater than 3.3 ft. below grade el. of 270 ft. in the area of the power block (See sections 2.4.12.5,2.5.4, 3.8.5.6.1) |

NMP3NPP

Table 2.0-1—{U.S. EPR Site Design Envelope Comparison} (Page 2 of 4)

| | U.S. EPR FSAR Design Parameter Value/Characteristic | NMP3NPP Design Parameter Value/Characteristic |
|---|---|---|
| | Inventory of Radionuclides Which Could Pote | entially Seep Into the Groundwater |
| Bounding Values for Component Radionuclide Inventory | See Table 2.1-2 | See Table 2.0-2 |
| | Flood Leve | l . |
| Maximum Flood (or Tsunami) | 1 ft below grade | There is no flood potential that could adversely affect the safety of NMP3NPP. The maximum design basis flood level is 269 ft, 1 foot below plant Grade El. of 270 ft. Safety-related facility entrances at El 271 ft., Plant Grade El 270 ft. (See FSAR Sections 2.4.2 and 2.4.6 |
| | Wind | |
| Maximum Sustained Speed | 145 mph (Based on 3-sec gust at 33 ft above ground level and factored for 50-yr mean recurrence interval.) | 90 mph (40 m/s) (based on 3 second gust at 33 feet for 50 year recurrence interval) (See Section 2.3.1) |
| Importance Factor | 1.15 (Safety-related structures for 100-year mean recurrence interval.) | 1.07 (safety related structures for 100 year mean recurrence interval) (See Section 2.3.1, 19.1.5.4.1) |
| | Tornado | |
| Maximum Pressure Drop | 1.2 psi at 0.5 psi/sec | 1.2 psi (83 mb) at 0.5 psi/sec (37 mb/s) (See Section 2.3.1) |
| Maximum Rotational Speed | 184 mph | 184 mph (296 km/hr) (See Section 2.3.1, 19.1.5) |
| Maximum Translational Speed | 46 mph | 46 mph (74 km/hr) (See Section 2.3.1, 19.1.5) |
| Maximum Wind Speed | 230 mph | 230 mph (370 km/hr) (See Section 2.3.1, 19.1.5) |
| Radius of Maximum Rotational Speed | 150 ft | 150 feet (45.7m) (See Section 2.3.1) |
| Missile Spectra | 6 in Schedule 40 pipe, 6.625 in diameter x 15 ft long, 287 lb, 34.5 in ² impact area, impact velocity of 135 ft/sec horizontal and 90 ft/sec vertical. | Design values are enveloped (See Section 3.5) |
| | Automobile, $16.4 \text{ ft x } 6.6 \text{ ft x } 4.3 \text{ ft}$, 4000 lb , $4086.7 \text{ in}^2 \text{ impact}$ area, impact velocity of 135 ft/sec horizontal & 90 ft/sec vertical. (Automobile missile is considered at elevations up to 30.0 ft above grade elevation.) | Design values are enveloped (See Section 3.5) |
| | Solid steel sphere, 1 in diameter, 0.147 lb, 0.79 in ² impact area, impact velocity of 26 ft/sec horizontal & 17 ft/sec Vertical. | Design values are enveloped (See Section 3.5) |

NMP3NPP

Table 2.0-1—{U.S. EPR Site Design Envelope Comparison} (Page 3 of 4)

| | | | FSAR Des lue/Chara | ign Parameter acteristic | NMP3NPP Design Parameter Value/Characteristic |
|--|------------------|--------------------------------------|---|---|---|
| | | | | Temperatur | e |
| Air | 0% Exceedance | | | 115°F Dry Bulb / 80°F Wet Bulb (coincident) | 97.6°F Dry Bulb /74.9°F Wet Bulb (coincident) (See Section 2.3.1) |
| | Values | | | 81°F Wet Bulb (non-coincident) for UHS Design only | 82.3°F Wet Bulb (non-coincident) for UHS Design only Value bounded by U.S. EPR design envelope. (See Section 2.3.1) |
| | | Minimur | n | -40°F | -18°F (See Section 2.3.1) |
| | 1% Exceedance | Maximu | m | 100°F Dry Bulb / 77°F Wet Bulb (coincident) | 85.6°F / 71.3°F (See Section 2.3.1) |
| | Values | alues | | 80°F Wet Bulb (non-coincident) for UHS Design only | 73.8°F (See Section 2.3.1) |
| | Minimum | | n | -10°F | 22.3°F (See Section 2.3.1) |
| | | | | UHS Meteorological (| Conditions |
| Conditions resulting in Maxim Loss of Water from the UHS (So | | nd Drift | Values fo | nted in Table 2.1-3 – Design or Maximum Evaporation and s of Water from the UHS | Design Values are enveloped (See Section 2.3.1) |
| Conditions resulting in Minim UHS (Section 2.3.1) | um Water Cooling | in the | As presented in Table 2.1-4 – Design Values for Minimum Water Cooling in the UHS. | | Design Values are enveloped. (See Sections 2.3.1) |
| Potential for Water Freezing in Facility (Sections 2.4.7 and 9.2 | | orage | As presented in Section 2.4.7 and 9.2.5 | | Engineering controls are in place to prevent freezing of UHS Water Storage (See Sections 2.3.1 and 3.8.4) |
| | | | | UHS Design Para | meters |
| Maximum UHS Evaporative Water Loss | 571 gpm | | | | 571 gpm (2161 lpm) (See Section 9.2.5) |
| Maximum Drift Water Loss | ≤0.005% | | | | ≤0.005% (See Section 2.3.1.2) |
| Design Cold (outlet) Water Temperature | ≤95°F (max E | ≤95°F (max ESWS supply design limit) | | imit) | ≤95 °F (See Sections 2.3.1 and 9.2.5) |
| | | | | Atmospheric Dispersion | Factors (χ/Q) |
| Maximum Annual Average (0.5 mile - limiting sector) | <4.973E-6 see | <4.973E-6 sec/m ³ | | | 5.555E-06 sec/m³ (note a) (See Section 2.3.5) |

Table 2.0-1—{U.S. EPR Site Design Envelope Comparison}

(Page 4 of 4)

| | U.S. EPR FSAR Design Parameter Value/Characteristic | NMP3NPP Design Parameter Value/Characteristic | |
|--|--|---|--|
| | Acci | dent | |
| 0-2 hr (Exclusion Area Boundary, (EAB), 0.43 miles, symmetric portion) | <1E-3 sec/m³ | 4.424E-04 sec/m ³ (See Section 2.3.4) | |
| 0-2 hr (Exclusion Area Boundary, (EAB), 0.5 miles, asymmetric portion) | <1E-3 sec/m³ | 9.713E-04 sec/m ³ (See Section 2.3.4) | |
| 0-2 hr (Low Population Zone (LPZ, 1.5 miles) | <1.75E-4 sec/m³ | 1.289E-04 sec/m³ (See Section 2.3.4) | |
| 2-8 hr hr (Low Population Zone (LPZ, 1.5 miles) | <1.35E-4 sec/m³ | 7.120E-05 sec/m³ (See Section 2.3.4) | |
| 8-24 hr hr (Low Population Zone (LPZ, 1.5 miles) | <1.00E-4 sec/m³ | 4.191E-05 sec/m³ (See Section 2.3.4) | |
| 1-4 day hr (Low Population Zone (LPZ, 1.5 miles) | <5.40E-5 sec/m³ | 1.860E-05 sec/m³ (See Section 2.3.4) | |
| 4-30 day hr (Low Population Zone (LPZ, 1.5 miles) | <2.20E-5 sec/m ³ | 5.790E-06 sec/m ³ (See Section 2.3.4) | |

Notes:

(a) Value is a departure from a design parameter and is listed in Part 7 of the COL Application. Justification is provided in Section 2.3.5.

Table 2.0-2—{Comparison of Inventory of Radionuclides Which Could Potentially Seep Into the Groundwater} (Page 1 of 2)

| | U.S. EPR FSAR | NMP3NPP |
|---------|---------------------------------------|--|
| | Design Parameter Value/Characteristic | Design Parameter Value/Characteristic (See Section 2.4.13) |
| Nuclide | Activity (Ci/g) | Activity (Ci/g) |
| Br-83 | 3.2E-02 | 3.2E-02 |
| Br-84 | 1.7E-02 | 1.7E-02 |
| Br-85 | 2.0E-03 | 2.0E-03 |
| I-129 | 4.6E-08 | 4.6E-08 |
| I-130 | 5.0E-02 | 5.0E-02 |
| I-131 | 7.4E-01 | 7.4E-01 |
| I-132 | 3.7E-01 | 3.7E-01 |
| I-133 | 1.3E+00 | 1.3E+00 |
| I-134 | 2.4E-01 | 2.4E-01 |
| I-135 | 7.9E-01 | 7.9E-01 |
| Cs-134 | 1.7E-01 | 4.4E-01 |
| Cs-136 | 5.3E-02 | 1.1E-01 |
| Cs-137 | 1.1E-01 | 1.7E-01 |
| Cs-138 | 2.2E-01 | 2.3E-01 |
| Cr-51 | 2.0E-03 | 2.1E-03 |
| Mn-54 | 1.0E-03 | 1.1E-03 |
| Fe-55 | 7.6E-04 | 8.1E-04 |
| Fe-59 | 1.9E-04 | 2.0E-04 |
| Co-58 | 2.9E-03 | 3.1E-03 |
| Co-60 | 3.4E-04 | 3.6E-04 |
| Na-24 | 3.7E-02 | 3.8E-02 |
| Zn-65 | 3.2E-04 | 3.4E-04 |
| W-187 | 1.8E-03 | 1.9E-03 |
| Rb-88 | 1.0E+00 | 1.9E-03 1.0E+00 |
| Rb-89 | 4.7E-02 | 4.7E-02 |
| Sr-89 | 6.3E-04 | 6.7E-04 |
| | 3.3E-05 | |
| Sr-90 | | 4.6E-05 |
| Sr-91 | 1.0E-03 | 1.1E-03 |
| Sr-92 | 1.7E-04 | 1.7E-04 |
| Y-90 | 7.7E-06 | 1.1E-05 |
| Y-91m | 5.2E-04 | 5.4E-04 |
| Y-91 | 8.1E-05 | 8.6E-05 |
| Y-92 | 1.4E-04 | 1.4E-04 |
| Y-93 | 6.5E-05 | 6.7E-05 |
| Zr-95 | 9.3E-05 | 9.9E-05 |
| Nb-95 | 9.3E-05 | 9.9E-05 |
| Mo-99 | 1.1E-01 | 1.3E-01 |
| Tc-99m | 4.6E-02 | 5.7E-02 |
| Ru-103 | 7.7E-05 | 1.1E-04 |
| Ru-106 | 2.7E-05 | 6.2E-05 |
| Rh-103m | 6.8E-05 | 9.4E-05 |
| Rh-106 | 2.7E-05 | 6.2E-05 |
| Ag-110m | 2.0E-07 | 1.0E-06 |
| Te-127m | 4.4E-04 | 6.6E-04 |
| Te-129m | 1.5E-03 | 1.9E-03 |

Table 2.0-2—{Comparison of Inventory of Radionuclides Which Could Potentially Seep Into the Groundwater}

(Page 2 of 2)

| | U.S. EPR FSAR Design Parameter Value/Characteristic | NMP3NPP Design Parameter Value/Characteristic (See Section 2.4.13) |
|---------|--|--|
| Te-129 | 2.4E-03 | 3.1E-03 |
| Te-131m | 3.7E-03 | 4.6E-03 |
| Te-131 | 2.6E-03 | 3.0E-03 |
| Te-132 | 4.1E-02 | 5.0E-02 |
| Te-134 | 6.7E-03 | 6.7E-03 |
| Ba-137m | 1.0E-01 | 1.6E-01 |
| Ba-140 | 6.2E-04 | 7.1E-04 |
| La-140 | 1.6E-04 | 1.9E-04 |
| Ce-141 | 8.9E-05 | 9.7E-05 |
| Ce-143 | 7.6E-05 | 8.3E-05 |
| Ce-144 | 6.9E-05 | 7.3E-05 |
| Pr-143 | 8.8E-05 | 9.7E-05 |
| Pr-144 | 6.9E-05 | 7.3E-05 |
| Np-239 | 8.7E-04 | 1.5E-03 |

2.1 GEOGRAPHY AND DEMOGRAPHY

This section of the U.S. EPR FSAR is incorporated by reference with the following supplements.

The U.S. EPR FSAR includes the following COL Item in Section 2.1:

A COL applicant that references the U.S. EPR design certification will provide site-specific information related to site location and description, exclusion area authority and control, and population distribution.

This COL Item is addressed as follows:

{Site specific information related to site location and description is addressed in Section 2.1.1. Exclusion area authority and control is addressed in Section 2.1.2, and population distribution is addressed in Section 2.1.3.}

2.1.1 SITE LOCATION AND DESCRIPTION

{Sections 2.1.1.1 through 2.1.1.3 are added as a supplement to the U. S. EPR FSAR.

2.1.1.1 Specification of Location

A site area map for the Nine Mile Point Nuclear Station (NMPNS) site is provided in Figure 2.1-1. The coordinates of the center of the containment building for NMP3NPP are provided in Table 2.1-1 for both the Geodetic Latitude/Longitude and the Universal Transverse Mercator (UTM) coordinate systems.

Figure 2.1-2 and Figure 2.1-3 depict the NMP3NPP site and the surrounding area within 50 mi (80 km) and 10 mi (16 km), respectively. The NMPNS site occupies 921 acres (373 hectares). Within the property lines of the NMPNS site are the Nine Mile Point (NMP) Unit 1 and Unit 2 Nuclear Power Plants, a meteorological tower, a firing range, a nuclear training and learning center and a retired energy information center. In association with the construction of NMP3NPP, the meteorological tower will be moved to the southern portion of the property and the firing range will be moved to the eastern portion of the property. With the exception of Nine Mile Point (NMP) Unit 1 and Unit 2 and those listed above, no other structures are located within the NMPNS site. A religious camp is located just outside of the property lines, west of the NMP3NPP site.

The NMP3NPP site is located in Oswego County, New York. The NMP3NPP site is in the north sector of Oswego County and is along the south shore of Lake Ontario. The prominent natural features of the NMP3NPP site region are several state parks, including the Mexico Point State Park, the Selkirk Shores State Park, and the Battle Island State Park, the Curtiss Gale Wildlife Management Area, the Seaway Trail, several rivers and creeks, including Oswego River, Salmon River, and Catfish Creek, and several lakes, including Silver Lake, Lake Neahtahwanta, and Lake Ontario. Lake Ontario connects to the Oswego River at the Oswego Harbor approximately 5.9 miles (9.5 km) west of the NMP3NPP site.

Oswego County includes many incorporated cities, towns, and villages, including Fulton, Hastings, Lycoming, Mexico, New Haven, Oswego, Parish, Pulaski, and Scriba. Lycoming, Mexico, New Haven, Oswego, and Scriba are located within 10 miles (16 km) of the NMP3NPP site. The Oswego County seat is Oswego, which is approximately 6 miles (9 km) west of the site.

Lake Road (County Route 1A) is the closest main road to the NMP3NPP site and runs along the south border of the site. State Routes 104 and 104B and County Routes 1, 29, and 51 are

located south of the site, I-81 is located east of the site, and I-90 is located south of the site. Lake Road provides the main access to the site, but the road is blocked just east of the intersection of Lake Road and Lakeview Road, restricting access to the site.

One railroad is located within the vicinity of the site. The CSXT Railroad runs south of the site from Oswego, NY. There is a spur that used to serve NMP Unit 1 and Unit 2 and the James A. FitzPatrick Nuclear Power Plant (JAFNPP), but have since been disabled by paving over the portion of the tracks that cross Lakeview Road. The tracks would be reactivated for construction only; the tracks will not resume operation for any of the units after construction is completed.

The metropolitan centers closest to the NMP3NPP site are Syracuse, NY, approximately 35 miles (56 km) to the south; Rochester, NY, approximately 70 miles (113 km) to the southwest; Buffalo, NY, approximately 140 miles (225 km) to the southwest; Scranton, PA, approximately 170 miles (274 km) to the southeast; and Toronto, Ontario, Canada, approximately 235 miles (378 km) to the west.

2.1.1.2 Site Area Map

A site area map for the NMP3NPP site is provided in Figure 2.1-1. This map shows the following attributes:

- Plant property (site boundary) lines.
- ♦ Exclusion Area Boundary (EAB).
- ♦ Location and orientation of principal plant structures within the site area.
- ♦ Location of NMP Unit 1 and Unit 2 which are the only other commercial structures within the site. There are no industrial, military, transportation facilities, institutional, recreational, or residential areas on the NMP3NPP site.
- ♦ True North and Plant North.
- Highways, railways, and waterways that traverse or are adjacent to the site.
- ♦ Prominent natural and man-made features in the site area.

2.1.1.3 Boundary for Establishing Effluent Release Limits

The exclusion area is considered the restricted area. The exclusion area boundary (EAB) for NMP3NPP is a circle with a radius of approximately 2220 ft (677 m) or approximately 0.42 mi (0.68 km) except for the adjacent Ontario Bible Camp which is excluded from the EAB. The EAB is depicted on Figure 2.1-1. In accordance with 10 CFR 50.34(a)(1)(ii)(D)(1), an individual assumed to be located at any point on the EAB will not receive a radiation dose in excess of 25 rem TEDE over any two hour period following a postulated fission product release into the containment (CFR, 2007b). The EAB is established in accordance with 10 CFR 100.21(a) and 10 CFR 100.3 (CFR, 2007c).

This area will be conspicuously posted and administrative procedures, including security patrols will be imposed to control access to the area. Section 2.1.2.1 provides additional discussion regarding the control of access to the EAB.

2.1.2 EXCLUSION AREA AUTHORITY AND CONTROL

Sections 2.1.2.1 through 2.1.2.4 are added as a supplement to the U. S. EPR FSAR.

2.1.2.1 Authority

The NMP3NPP is owned by Nine Mile Point 3 Nuclear Project, LLC and Unistar Nuclear Operating Services, LLC . has been formed to be a licensee and to operate NMP3NPP. Unistar Nuclear Operating Services is a wholly owned subsidiary of Unistar Nuclear Energy (UNE) which is a joint venture between Constellation Energy Group, Inc., Constellation Energy Nuclear Group, LLC, and Electricite de France. Unistar Nuclear Operating Services and Constellation Energy Nuclear Group, Inc, for their respective parceled areas within the NMP3NPP Exclusion Area Boundary (EAB), possess the authority to determine all activities including the exclusion and removal of personnel and property. Unistar Nuclear Operating Services and Constellation Energy Nuclear Group, for their respective parceled area within the NMP3NPP EAB, will exercise dominion and control in the event of an emergency to afford protection of public health and safety. Control access to the NMP3NPP EAB within the site boundary is provided by posting the boundary and performing security patrols.]

2.1.2.2 Control of Activities Unrelated to Plant Operations

No activities unrelated to plant operation are planned within the NMP3NPP EAB. No person or entity can reside, build, or conduct other activities without approval from Unistar Nuclear Operating Services, LLC and Constellation Generation Group, LLC within the NMP3NPP EAB. However, in the event that an activity unrelated to plant operation is conducted within the NMP3NPP EAB, plant security will be notified prior to commencement of the activity to ensure that all individuals engaged in the activity may be evacuated in the event of an emergency.

2.1.2.3 Arrangements for Traffic Control

The NMP3NPP site is traversed by two roads and a rail spur. Under emergency conditions, the appropriate authority is contacted in the event that it becomes necessary to control traffic on Lake Road and on Lake View Road. When requested, the Consolidated Railroad Corporation controls railroad traffic through the area.

2.1.2.4 Abandonment or Relocation of Roads

The portion of Lake Road east of its intersection with Lakeview Road traverses a portion of the NMP3NPP EAB and will be closed to public access. A new entrance road will be constructed to allow access to NMP Unit 1 and Unit 2 from Miner Road.

2.1.3 POPULATION DISTRIBUTION

The 50 mile (80 km) radius centered at the NMP3NPP site includes all or parts of ten New York counties (Cayuga, Jefferson, Lewis, Madison, Oneida, Onondaga, Ontario, Oswego, Seneca, and Wayne) and three Canada counties (Frontenac, Lennox & Addington, and Prince Edward). The population surrounding the NMP3NPP site was projected based on the two most recent U.S. Census Bureau 1990 and 2000 decennial census data (USCB, 2000). Additional population projections were obtained for 2010, 2020, and 2030 (NYC, 2008). The Census 2000 county populations were projected to 2030 using current life expectancy and survival rates, age specific fertility rates, and rates of net migration.

Population data for the Canada Census 1996 and 2001 were obtained for Ontario Province (Statistics Canada, 2008). Additional population projections for Canada were obtained for 2010, 2020, and 2030 (OMF, 2008). Quadratic or linear equations were fit to trend lines for the

years 1990, 2000, 2010, 2020, and 2030 for U.S counties and 1996, 2001, 2010, 2020 and 2030 for Canada counties to calculate population projections for each county at decadal intervals for the period 2040 through 2080. The population distribution for the U.S. was projected within SECPOP 2000 population rosette and tables (SECPOP 2000, 2003) in 10 concentric bands at 0 to 1 mi (0 to 1.6 km), 1 to 2 mi (1.6 to 3.2 km), 2 to 3 mi (3.2 to 4.8 km), 3 to 4 mi (4.8 to 6.4 km), 4 to 5 mi (6.4 to 8.0 km), 5 to 10 mi (8.0 to 16 km), 10 to 20 mi (16 to 32 km), 20 to 30 mi (32 to 48 km), 30 to 40 mi (48 to 64 km), and 40 to 50 mi (64 to 80 km) from NMP3NPP, and 16 directional sectors, each consisting of 22 $\frac{1}{2}$ degrees.

Decadal growth rate projections for New York were entered into the SECPOP 2000 (SECPOP 2000, 2003) population multiplier for each decadal time period, as well as for the year of initial plant operation and end of plant operations. This information is used for comparison against NRC population density criteria (CFR, 2007d; CFR, 2007e). It is projected that the initial plant operation will occur in 2016. The license would expire 40 years after initial operation and, for the purposes of this evaluation the year 2056 is the end of plant operation. These populations are included with the decade populations that follow and are addressed in detail in Sections 2.1.3.1 and 2.1.3.6.

A comparable method was used to assign Canadian township and city census blocks and corresponding population estimates to SECPOP 2000 sectors. The centroids for Canadian census blocks were assigned to individual sectors and the Canadian population projections were added to the U.S. SECPOP 2000 projections for a combined U.S. and Canadian population total. Canadian census blocks included Wolfe Island and the city of Kingston (Frontenac County), Amherst Island, Bath, and South Fredericksburg (Lennox and Addington County), and Athol, Adolphustown, North Marysburg, South Marysburg, and Picton (Prince Edward County).

Sections 2.1.3.1 through 2.1.3.6 are added as a supplement to the U. S. EPR FSAR.

2.1.3.1 Population Within 10 Mi (16 km)

Figure 2.1-3 shows places of significant population grouping, such as cities and towns, and other features within 10 mi (16 km) of the site. The map includes concentric circles drawn with the NMP3NPP site at the center point, at distances of 1, 2, 3, 4, 5, and 10 mi (1.6, 3.2, 4.8, 6.4, 8.0, and 16 km). The map is divided into 22 $\frac{1}{2}$ degree segments with each segment centered on one of the 16 compass points. According to data in the U.S. Census Bureau 2000 decennial census data, Oswego is the largest community with a population of 17,954. Other major towns within the 10 mi (16 km) radius include Mexico (population of 1,572) and Minetto (population of 1,086) (USCB, 2000).

The resident population distribution within 10 mi (16 km) of the NMP3NPP site was computed using SECPOP 2000 (SECPOP 2000, 2003) which overlays the 2000 census block point data (the smallest unit of census data) on the grid of concentric circles and 16 directional sectors. Radii for concentric circles are defined by the user prior to SECPOP 2000 computations. SECPOP calculation results can be displayed, printed, or saved as a rosette, a table, a MACCS2 (MELCOR Accident Consequence Code System) site file, or a MACCS2 like comma separated variable file.

New York State census population projections for counties within the 10 mi (16 km) of the NMP3NPP site were obtained for 2010, 2020, and 2030 (NYC, 2008) and used with the U.S. Census data for the years 1990 and 2000 (USCB, 2000) to plot population trend lines for counties. Quadratic or linear equations were fit to trend lines to calculate population projections for each county at decadal intervals. Population projections were entered into the population multiplier in SECPOP 2000 for decadal years 2010 through 2080, and for the year 2016 and 2056 (the initial and final years of the operational license. Population multipliers in

SECPOP 2000 are applied to the census block point data to project population within each sector of the SECPOP 2000 rosette. The overall trend for the period 2000 to 2080 is for a reduction in resident population.

The population distributions were tabulated for all distances and in all 16 directional sectors. Figure 2.1-4 through Figure 2.1-12 illustrates the population for the year 2000 and projected population for the years 2010 though 2080. Each figure was developed using ESRI Arc GIS Version 9.2 (ESRI, 2008) and the grid sectors were populated with data from the SECPOP 2000 for each time interval. Figure 2.1-13 and Figure 2.1-14 show population projections for the year of initial operation and the year of planned plant shutdown. Each figure shows cumulative population by direction and radius. It is required that projected changes in population growth "within about five years" after initial site approval is evaluated. Initial site work would occur in the 2010 to 2012 time frame. Site preparation is scheduled for 2010 and plant construction would begin about 2012. Therefore the 2010 decade population and the 2016 population for initial operation are suitable for this evaluation.

The population within 10 mi (16 km) radius is presented for the years 2000 to 2080 in Table 2.1-2 and for Oswego County in Table 2.1-3. Transient population and related location information within the 10 mi (16 km) radius is presented in Table 2.1-6 through Table 2.1-9.

2.1.3.2 Population Between 10 and 50 Mi (16 and 80 km)

The 50 mi (80 km) radius centered at the NMP3NPP site includes all or parts of 10 New York counties (Cayuga, Jefferson, Lewis, Madison, Oneida, Onondaga, Ontario, Oswego, Seneca, and Wayne) and 3 Canada counties (Frontenac, Lennox & Addington, and Prince Edward). Figure 2.1-2 identifies significant population groupings, such as cities and towns within the 50 mi (80 km) radius. Concentric rings are drawn at 10 mi (16 km) increments between 10 and 50 mi (16 and 80 km) using the NMP3NPP as the center point. Radii divided the rings into 22 ½ degree segments centered on one of the 16 compass points. Census data for the years 1990 and 2000 and population projections for the years 2010, 2020, and 2030 were used to compute population between 10 and 50 mi (16 and 80 km) employing the same methodology used to develop the 10 mi (16 km) population grid.

The population grid from 10 and 50 mi (16 to 80 km) is illustrated on Figure 2.1-2. The 50 mi (80 km) population distributions for the years 2000 through 2080 by decade and the years of initial operation and plant shutdown for NMP3NPP are shown in Figure 2.1-15 through Figure 2.1-25. Total populations for each time period, including the years of initial operation and plant shutdown, are summarized in Table 2.1-4. County population projections for counties within or intersected by the 50 mi (80 km) radius are summarized in Table 2.1-5.

2.1.3.3 Transient Population

2.1.3.3.1 Transient Population Within 10 Mi (16 km)

Recreation is the primary contributor to short-term transient population in Oswego County. In 2006, Oswego County had an estimated 494,085 overnight visitors (OC, 2006, 2008a). The transient population from overnight visitors occurred primarily in the summer recreational period from May through September. Recreational fishing contributes to the transient population with 34,960 non-resident fishing licenses sold in Oswego. Fishing charters and river guides based in Oswego have destinations on the Oswego and Salmon Rivers and Lake Ontario. Oswego hosts several local festivals which include: Harborfest, Pumpkin Fest, Riverfront Winter Carniva, Rudin's Olde Tyme Farm Days, and Warm Up Oswego Fest. Transient

population in Oswego for Harborfest represents the largest single event. In 2006 event participation was estimated at 280,000 persons during the 4-day festival.

The U.S. Census 2000 reported that the transient population included 2,893 people in college dormitories, 722 people in nursing homes, 142 people in local jails and other confinement facilities, 94 people in homes or halfway houses for drug/alcohol abuse, 77 people in other non-institutional group quarters, 35 people in homes for the mentally retarded, 19 people in homes for the mentally ill, 11 people in religious group quarters, 6 people in agriculture workers' dormitories on farms, and 5 people in other group homes.

Table 2.1-6 (major employers), Table 2.1-7 (major recreational and attractions), Table 2.1-8 hospitals and nursing homes, and Table 2.1-9 (schools) quantify transient populations within the 10 mi (16 km) radius. The tables include addresses, latitude and longitude coordinates in relation to the NMP3NPP site. The area has four major employers. Novelis (formerly Alcan Aluminum Corporation), SUNY College at Oswego, JAFNPP, and NMP Unit 1 and Unit 2. There are two marinas (Oswego International and Wright's Landing) located in Oswego with overnight slip accommodations which are open for the recreational season May 1- October 31. The city also contains the Fort Ontario State Historic Site and three museums (H. Lee White Marine, J.D. Murray Firefighter, and Oswego Railroad). The Oswego Speedway, also located within the City of Oswego, hosts racing events and on-site camping from May to October. Special event weekends reach the speedway's capacity of 15,000 persons. There is one hospital and five nursing homes located within Oswego with a capacity of 842 persons. The Oswego County Jail is located in the City of Oswego and has an average inmate population of 140 persons. Oswego, Minetto, and New Haven have 11 elementary, middle, and high schools with the 10 mi (16 km) radius with a total student and staff population of 6,061. The SUNY College of Oswego, located within the City of Oswego, has a total student enrollment and staff of 9,375 (OC, 2008b).

The total daily transient population within the 10 mi (16 km) radius is estimated at 19,169. This estimate will fluctuate with reductions in the University student populations during the summer, and increases with recreational and tourist events from May to October. Transient populations increase substantially during special tourist and recreational events. Harborfest may add ~70,000 persons per day during the four day festival and the special events at the Oswego Speedway may add 15,000 persons for weekend events.

2.1.3.3.2 Transient Population Between 10 and 50 Mi (16 and 80 km)

Information on the transient population for the ten counties in the 10 to 50 mi (16 to 80 km) radius is provided for hospitals/medical centers, Universities, and schools. Hospitals/medical centers in the area include: Oswego Hospital (population 202, distance 5 mi (8 km); Oswego, NY), Albert Lindey Lee Memorial Hospital (population 67, distance16 mi (26 km); Fulton, NY), and the St. Josephs Hospital Health Center (population 431, distance 34 mi (55 km); Syracuse, NY). Airports certified for carrier operations include the Syracuse Hancock International (average daily passengers 6,475, distance 34 mi (55 km); Syracuse, NY; ID: SYR), and Watertown International (average daily passengers 13, distance 45 mi (72 km); Watertown, NY; ID: ART). Other small public-use airports in the area include the Oswego County Airport (distance 9 mi (14 km); Fulton, NY; ID: FZY), Airline Enterprises (distance 26 mi (42 km); Clay, NY; ID: 1H1), and Camillus Airport (distance 29 mi (47 km); Camillus, NY; ID: NY2).

There are three additional colleges within the 50 mi (80 km radius), Syracuse University (distance 36 miles; Syracuse, NY; full time enrollment: 15,859), Onondaga Community College (distance 37 mi (60 km); Syracuse, NY; full time enrollment: 5,132), and Le Moyne College (distance 38 mi (61 km); Syracuse, NY; full time enrollment: 2,517).

Students enrolled in elementary, middle and high schools within the 50 mi (80 km) radius make up the most significant portion of the transient population. The transient student populations in elementary, middle and high schools in the ten county region is comprised of: Cayuga County (enrollment 8,041 in 40 Schools, 18 Elementary, 7 Middle, 8 High), Jefferson County (22,720 enrollment in 52 Schools, 28 Elementary, 6 Middle, 8 High), Lewis County (5,385 enrollment in 20 Schools, 8 Elementary, 3 Middle, 5 High), Madison County (12,471enrollment in 30 School, 15 Elementary, 4 Middle, 5 High), Oneida County (41,471enrollment in 102 Schools, 55 Elementary, 13 Middle,18 High), Onondaga County (179 Schools, 111 Elementary, 23 Middle, 23 High), Ontario County (19,057enrollment in 38 Schools, 18 Elementary, 7 Middle, 8 High), Oswego County (enrollment 27,308 in 49 Schools, 29 Elementary, 7 Middle, 9 High), Seneca County (5,943enrollment in 23 Schools, 11 Elementary, 2 Middle, 4 High), and Wayne County (enrollment 19,754 in 48 Schools, 21 Elementary, 10 Middle, 11 High) (NYED, 2008).

A significant contribution to the transient population is expected from recreational opportunities in the 10 county region. An economic assessment of tourism on northern New York counties estimates annual tourism at 5.081 million persons (NYT, 2008).

2.1.3.4 Low Population Zone

The Low Population Zone (LPZ) for NMP3NPP is a 1.5 mi (2.4 km) radius centered on NMP3NPP. It is completely contained within the LPZ for NMP Unit 1 and Unit 2 which consists of the area within a 4 mi (6.4 km) radius of the NMP Unit 1 stack and 3.8 mi (6.1 km) radius of the Unit 2 stack (Figure 2.1-26). For conservatism, the NMP3NPP LPZ will be defined as the entire area of the NMP Unit 1 LPZ. The communities of Hammonds Corner, Lakeview, Lycoming, North Scriba, Scriba, and Shore Oaks lie within the LPZ. Approximately 50 percent of the LPZ is comprised of Lake Ontario. There are two campgrounds located within the LPZ, K&G Lodge Twin Pines and Ontario Bible Camp. The K&G Lodge operates an 8 room lodge and 16 campsites with an occupancy that ranges from 60 to 130 persons. The Ontario Bible Camp has groups of up to 500 persons and special events with attendance up to 1,500 persons. There are no nursing homes, hospitals, prisons, or schools operating within the LPZ. Major employers within the LPZ include Novelis, JAFNPP, and NMP Unit 1 and Unit 2.

The resident population distribution within the LPZ for each decade from 2000 to 2080 is denoted as the 4 mi (3.2km) radius on Figure 2.1-4 through Figure 2.1-12. The population within the LPZ includes the years 2016 and 2056 (Figure 2.1-13 and Figure 2.1-14), the expected year of initial operations and license expiration for NMP3NPP. Population density for the 4 mi (3.2 km) radius is included in for the same time periods.

There is a significant decrease in daily transient population at the sites of major employers. All major employers operate day and night shifts. Novelis has a day shift occupancy of 690 persons which is reduced to 140 persons at night. There are similar drops in occupancy at the JAFNPP and NMP Unit 1 and Unit 2. Residents in the LPZ would have the highest population at night as residents return from commutes to worksites within Oswego and surrounding counties (Table 2.1-10).

In accordance with 10 CFR 50.34(a)(1)(ii)(D)(2), an individual located on the outer radius of the LPZ for the course of the postulated accident (during the entire period of its passage) would not receive a radiation dose in excess of 25 rem TEDE (CFR, 2007e). For NMP Unit 1 and Unit 2 the LPZ encompasses an area within 4 mi (6.4 km) radius from the Unit 1 stack. It has been determined that the NMP3NPP could achieve the 25 rem TEDE within 1.5 mi (2.4 km). On-site emergency preparedness personnel have developed an Emergency Planning Zone (EPZ) that extends beyond the NMP3NPP boundary and the associated Radioactive Emergency Plan establishes evacuation routes both on-site and off-site. Under these plans, emergency

preparedness personnel would have an ample time to take appropriate protective measures to all affected individuals within and beyond the LPZ.

Facilities and institutions in and beyond the LPZ that may require special consideration when evaluating emergency plans are defined out to a distance of 10 mi (16 km). The 10 mi (16 km) radius includes the LPZ and approximates the NMP3NPP EPZ. Hospitals and nursing homes within the EPZ are listed in Table 2.1-8. Schools within the EPZ are listed in Table 2.1-9 and major recreational areas and attractions are listed in Table 2.1-7

2.1.3.5 Population Center

The nearest population centers that meet the definition contained in 10 CFR 100.3 (distance from the reactor to the nearest boundary of a densely populated center containing more than about 25,000 residents) are Clay, NY located 25.8 mi (41 km) from NMP3NPP with a population of 58,805, and Syracuse, New York located 34.8 mi (56 km) from NMP3NPP with a population of 147,306 (USCB, 2000). The distance between Clay, Syracuse, and NMP3NPP is approximately 17 and 23 times the 1.5 mi (2 km) radius of the NMP3NPP LPZ. Therefore, the requirement that the population center distance be at least one and one-third times the distance from the reactor to the outer boundary of the LPZ, as defined in 10 CFR Part 100.11(a)(3) (CFR, 2007d) is met. Transient populations were not used to establish the nearest population center.

The largest population center within the 10 mi (8 km) radial distance from the NMP3NPP is Oswego, New York. Oswego's population was 17,954 as reported in the 2000 Census Report (USCB, 2000). The transient student population at the State University of New York Oswego contributes 6,600 students to Oswego's population (SUNY, 2008).

2.1.3.6 Population Density

This section describes populations and resulting population densities in the years of initial operation and the end of operations. For the purposes of this study, it is assumed that initial operation of NMP3NPP begins in 2016. It is also assumed that the end of operations is upon license expiration which is currently projected to be the year 2056, 40 years thereafter.

Figure 2.1-13 and Figure 2.1-14 illustrate the projected population for the years 2016 and 2056 within the 10 mi (16 km) radius centered on the NMP3NPP . Figure 2.1-24 and Figure 2.1-25 provide site projected population data within the 50 mi (80 km) radius for the years 2016 and 2056. Additional population data is illustrated for the decades 2000 through 2080 in Figure 2.1-4 through Figure 2.1-12 for the 10 mi (16 km) vicinity and in Figure 2.1-15 through Figure 2.1-23 for the 50 mi (80 km) vicinity.

Table 2.1-11 shows the cumulative population in the year 2000 within the 30 mi (48 km) of the NMP3NPP site and the decadal years 2020 through 2080, including 2016 (the assumed initial year of operation) and the year 2056 (assumed year for end of operations). Table 2.1-12 shows the actual (2000 Census) and projected population density (persons/mi²) to demonstrate that the population density does not exceed 500 persons/mi² (200 persons/km²) at the time of the projected COL approval and within 5 years thereafter consistent with guidance provided in Regulatory Guide 4.7, Position C.4 (NRC, 1998) and Regulatory Guide 1.206 (NRC, 2007). Areas located exclusively over Lake Ontario were excluded in the calculation of population density. Areas located exclusively over water were excluded in calculating population densities.

Figure 2.1-24 illustrates that the population for the startup year (2016) is below a population density of 500 persons/mi² (200 persons/km²) for all radial distances 1,2, 3, 4, 5, 10, 20, and 30 mi (1.6, 3.2, 4.8, 6.4, 8.0, 16, 32, and 49 km). The highest population density at startup (2016) is

projected at was 288.9 persons/mi² (111.6 persons/km²) at the 10 mi (16 km) radial distance. The land area calculated at this distance is 132.4 mi² (342.9 km²).

Table 2.1-12 presents the total population at the end of operations data (2056). For all radial distances 1,2, 3, 4, 5, 10, 20, and 30 mi (1.6, 3.2, 4.8, 6.4, 8.0, 16, 32, and 49 km), the population is below the 1000 persons/mi² (400 persons/km²) density criterion. The highest population density at 2056 is 234.5 persons/mi² (88.3 persons/ km²) at the 10 mi (48 km) radial distance. The land area at the 10 mi (16 km) radial distance is 132.4 mi² (342.9 km²).}

2.1.4 REFERENCES

{This section is added as a supplement to the U. S. EPR FSAR.

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Table 2.1-1—{NMP3NPP Specific Location}

| Latitude/Longitude (NAD 27) (Degrees) | Latitude/Longitude (NAD 83) (Degrees) | UTM, Zone 18N (78W to 72W) (NAD 27) (Meters) | UTM, Zone 18N (78W to 72W) (NAD 83) (Meters) |
|---|---|--|---|
| N 43 30 54 | N 43 30 55 | North/South 4,818,776 | North/South 4,818,999 |
| W 76 25 03 | W 73 25 01 | East/West 385,437 | East/West 385,468 |

Table 2.1-2—{Population Within 10 mi (16 km) Radius of NMP3NPP (2000 — 2080)}

| Year | 10 mi (16 km) Radius Population |
|------|---------------------------------|
| 2000 | 39,066 |
| 2010 | 38,938 |
| 2016 | 38,408 |
| 2020 | 38,205 |
| 2030 | 36,790 |
| 2040 | 35,313 |
| 2050 | 32,943 |
| 2056 | 30,293 |
| 2060 | 29,480 |
| 2070 | 23,917 |
| 2080 | 13,815 |

Table 2.1-3—{Population for Counties Within 10 mile (16 km) Radius of NMP3NPP (2000 — 2080)}

| Year | Oswego County Population |
|------|--------------------------|
| 2000 | 122,377 |
| 2010 | 123,400 |
| 2016 | 123,326 |
| 2020 | 123,591 |
| 2030 | 121,834 |
| 2040 | 120,218 |
| 2050 | 117,573 |
| 2056 | 115,605 |
| 2060 | 114,134 |
| 2070 | 109,901 |
| 2080 | 104,874 |

Table 2.1-4—{Population Within 50 mi (80 km) Radius of NMP3NPP (2000 — 2080)}

| Year | U.S. Population | Canada Population | Total Population |
|------|-----------------|-------------------|------------------|
| 2000 | 898,625 | 73,127 | 971,752 |
| 2010 | 895,089 | 83,751 | 978,840 |
| 2016 | 883,825 | 87,613 | 971,438 |
| 2020 | 878,946 | 91,238 | 970,184 |
| 2030 | 846,294 | 97,505 | 943,799 |
| 2040 | 812,820 | 103,611 | 916,431 |
| 2050 | 758,178 | 108,218 | 866,396 |
| 2056 | 714,356 | 110,457 | 824,813 |
| 2060 | 678,489 | 111,690 | 790,179 |
| 2070 | 550,204 | 113,939 | 664,143 |
| 2080 | 317,674 | 114,994 | 432,668 |

Table 2.1-5—{Population Census (US Census 2000 and Canada Census 2001)and Projections (2010 —2080) for Counties Within 50 mile (80 km) Radius of NMP3NPP}

| | 2000 | 2010 | 2016 | 2020 | 2030 | 2040 | 2050 | 2056 | 2060 | 2070 | 2080 |
|-----------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|---------|
| | | | | | US Cou | nties | | | | | |
| Cayuga | 81,963 | 79,881 | 78,126 | 76,638 | 71,809 | 65,561 | 57,869 | 50,674 | 48,730 | 38,146 | 26,117 |
| Jefferson | 111,738 | 111,524 | 111,804 | 111,837 | 111,725 | 111,409 | 110,932 | 110,417 | 110,271 | 109,426 | 108,397 |
| Lewis | 26,944 | 26,585 | 26,146 | 25,762 | 24,388 | 22,541 | 20,187 | 17,944 | 17,333 | 13,976 | 10,119 |
| Madison | 69,441 | 69,342 | 69,401 | 69,442 | 68,895 | 68,344 | 67,531 | 66,722 | 66,498 | 65,245 | 63,773 |
| Oneida | 235,469 | 233,761 | 230,177 | 231,681 | 226,702 | 230,276 | 235,272 | 241,368 | 243,184 | 254,010 | 267,750 |
| Onondaga | 458,336 | 442,531 | 431,473 | 423,235 | 398,596 | 369,832 | 336,499 | 306,594 | 298,667 | 256,336 | 209,506 |
| Ontario | 100,224 | 103,097 | 104,043 | 104,320 | 102,981 | 99,814 | 94,513 | 88,772 | 87,129 | 77,664 | 66,116 |
| Oswego | 122,377 | 123,400 | 123,326 | 123,591 | 121,834 | 120,218 | 117,573 | 114,885 | 114,134 | 109,901 | 104,874 |
| Seneca | 33,342 | 32,099 | 30,369 | 30,059 | 27,411 | 26,571 | 24,988 | 23,722 | 23,405 | 21,822 | 20,240 |
| Wayne | 93,765 | 96,285 | 97,720 | 98,321 | 98,734 | 97,909 | 95,816 | 93,222 | 92,446 | 87,798 | 81,873 |
| Total | 1,333,599 | 1,318,505 | 1,302,585 | 1,294,886 | 1,253,075 | 1,212,475 | 1,161,179 | 1,114,320 | 1,101,796 | 1,034,325 | 958,765 |
| | | | | | Canada Co | ounties | | | | | |
| Frontenac | 138,606 | 157,080 | 164,546 | 171,500 | 183,260 | 194,456 | 202,537 | 202,537 | 207,146 | 208,040 | 210,966 |
| Lennox & Addington | 39,461 | 42,740 | 44,259 | 45,350 | 47,840 | 49,738 | 51,088 | 51,088 | 51,773 | 51,890 | 52,142 |
| Prince Edward | 24,901 | 27,530 | 28,641 | 29,810 | 32,010 | 34,555 | 36,980 | 36,980 | 39,381 | 39,381 | 41,759 |
| Total | 202,968 | 227,350 | 237,446 | 246,660 | 263,110 | 278,749 | 290,605 | 290,605 | 298,300 | 299,311 | 304,867 |

Table 2.1-6—{Transient Population Facilities — Major Employers Within 10 mi (16 km) Radius of NMP3NPP}

| Name of Facility | Address | Location | Population |
|---|--|--|------------|
| Novelis (formerly Alcan Aluminum Corporation) | 448 County Route 1A Oswego, NY 13126 | 43°29'25.47"N 76°27'18.88"W | 750 |
| James A. FitzPatrick Nuclear Power Plant | Lake Road Scriba, NY 13126 | 43°31'15.54"N 76°23'52.10"W | 515 |
| Nine Mile Point Unit 1 and Unit 2 | Lake Road Scriba, NY 13126 | Unit 1 43°31'18.72"N 76°24'35.96"W Unit 2 43°31'22.52"N 76°24'19.27"W | 1006 |
| SUNY College at Oswego | 7060 State Route 104 Oswego, NY 13126 | 43°70'2.23"N 76°32'36.82"W | 1093 |

Table 2.1-7—{Transient Population Facilities — Major Recreational Areas and Attractions Within 10 mi (16 km) Radius of NMP3NPP}

| Name of Facility | Address | Location | Population |
|--------------------------------------|---|--------------------------------|---|
| Oswego International Marina | 3 Basin Street | 43°27'45.67"N | (May 1-October 31) |
| | Oswego, NY 13126 | 76°31'12.60"W | 80-160 |
| Wright's Landing Marina | 41 Lake Street | 43°27'44.94"N | (May 1-October 31) |
| | Oswego, NY 13126 | 76°30'33.22"W | 90-175 |
| Fort Ontario State Historic Site | 1 E. Forth Street | 43°27'57.10"N | (Daily Average) |
| | Oswego, NY 13126 | 76°30'29.60"W | 25 |
| H. Lee White Marine Museum | 1 W. First Street | 43°27'51.85"N | (Daily Average) |
| | Oswego, NY 13126 | 76°30'56.35"W | 16 |
| John D. Murray Firefighter Museum | East Side Fire Station, E. Cayuga St Oswego, NY 13126 | 43°27'35.01"N 76°30'22.38"W | (Daily Average) 12 |
| Oswego Railroad Museum | 56 W. 1 st Street | 43°27'40.50"N | (Daily Average) |
| | Oswego, NY 13126 | 76°30'49.37"W | 12 |
| New Oswego Speedway | 300 E. Albany St. Oswego, NY 13126 | 43°27'25.13"N 76°28'54.85"W | (May 1-October31) Weekend Average 500-800 Special Events 15,000 |

Table 2.1-8—{Special Facilities — Hospitals and Nursing Homes Within the 10 mi (16 km) Zone of NMP3NPP}

| Name | Address | Location | Total Population |
|--|---|--------------------------------|------------------|
| Oswego Hospital | 110 West 6 th Street Oswego, NY 13126 | 43°27'14.10"N 76°30'58.86"W | 202 |
| Loretto-Oswego Health and Rehabilitation Center | 132 Ellen Street Oswego, NY 13126 | 43°26'36.64"N 76°30'45.07"W | 120 |
| Pontiac Nursing Home | 303 East River Road Oswego, NY 13126 | 43°26'41.49"N 76°29'33.61"W | 80 |
| Seneca Hill Manor Inc | 20 Manor Drive Oswego, NY 13126 | 43°23'45.85"N 76°27'33.04"W | 120 |
| St Luke Residential Health Care Facility Inc | 299 East River Road Oswego, NY | 43°26'41.44"N 76°29'33.61"W | 200 |
| Sunrise Nursing Home | 17 Sunrise Drive Oswego, NY 13126 | 43°26'44.09"N 76°31'41.07"W | 120 |

Table 2.1-9—{Special Facilities — Schools Within 10 mi (16 km) Zone of NMP3NPP}

| Name of School | Address | Location | Student Enrollment | Staff | Total Population |
|---|--|--------------------------------|-----------------------|-------|------------------|
| Charles E. Riley Elementary School | 269 E 8th St Oswego, NY 13126 | 43°26'55.52"N 76°29'38.35"W | 485 | 37 | 522 |
| Kingsford Park Elementary School | 275 W Fifth St Oswego, NY 13126 | 43°26'44.46"N 76°31'53.46"W | 444 | 33 | 477 |
| Fitzhugh Park Elementary School | E 10th and Bridge Sts Oswego, NY 13126 | 43°27'39.30"N 76°29'49.61"W | 481 | 37 | 518 |
| Leighton Elementary School | 1 Buccaneer Blvd Oswego, NY 13126 | 43°27'6.51"N 76°31'30.96"W | 544 | 39 | 583 |
| Minetto Elementary School | 2411 County Rt. 8 Minetto, NY 13115 | 43°23'58.33"N 76°28'28.04"W | 456 | 20 | 476 |
| Oswego Community Christian School | 400 East Albany St Oswego, NY 13126 | 43°27'25.28"N 76°28'36.18"W | 101 | 6 | 107 |
| Oswego High School | 2 Buccaneer Blvd Oswego, NY 13126 | 43°27'1.59"N 76°31'28.54"W | 1,723 | 112 | 1,835 |
| Oswego Middle School | Mark Fitzgibbons Dr Oswego, NY 13126 | 43°25'50.65"N 76°30'14.67"W | 841 | 61 | 902 |

Table 2.1-10—{Commuting Patterns To and From Oswego County (2000)}

| Parameter | County | Count |
|---|-----------|--------|
| Worker Outflow from Oswego County to Counties in 50 mi (80km) Radius | Cayuga | 348 |
| | Jefferson | 428 |
| | Lewis | 3 |
| | Madison | 311 |
| | Oneida | 556 |
| | Onondaga | 18,231 |
| | Ontario | 49 |
| | Seneca | 145 |
| | Wayne | 127 |
| | Total | 20,198 |
| Worker Outflow from Oswego County to Areas Outside 50 mi (80 km) Radius | Total | 1.468 |
| Worker Inflow to Oswego County from Counties in 50 mi (80 km) Radius | Cayuga | 831 |
| | Jefferson | 362 |
| | Lewis | 38 |
| | Madison | 105 |
| | Oneida | 415 |
| | Onondaga | 2,925 |
| | Ontario | 9 |
| | Seneca | 32 |
| | Wayne | 138 |
| | Total | 4,855 |
| Worker Inflow to Oswego County from Areas Outside 50 (80km) Radius | Total | 672 |
| Net Worker Outflow from Oswego County | | 16,139 |

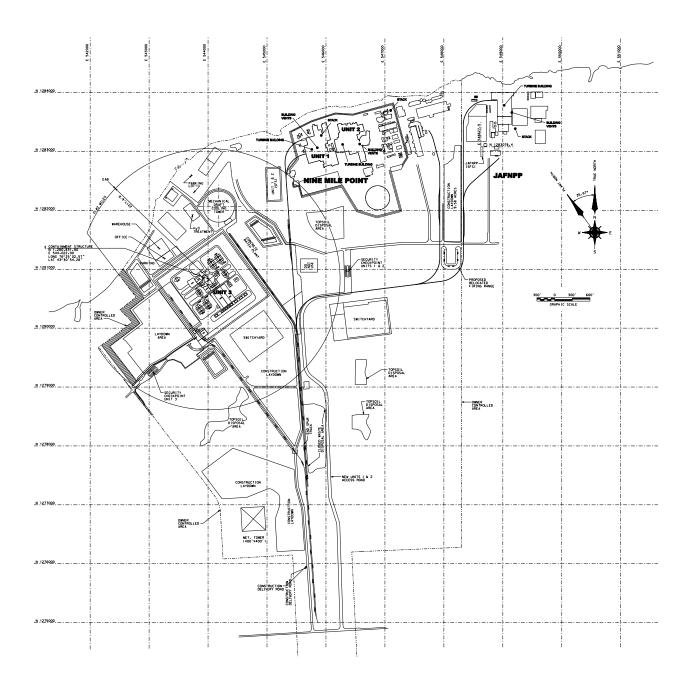
Table 2.1-11—{Actual (2000) and Projected (2016-2080) Population Within the 1 mi (1.6 km) to 30 mi (48 km) Zones of NMP3NPP}

| | SECPOP Radius (Land Area) | | | | | | | |
|------|-------------------------------|-------------------------------|--------------------------------|--------------------------------|--------------------------------|---------------------------------|---------------------------------|--------------------------------------|
| Year | 1 mi (1.6 km) (2.1 mi²) | 2 mi (3.2 km) (6.8 mi²) | 3 mi (4.8 km) (14.1 mi²) | 4 mi (6.4 km) (23.1 mi²) | 5 mi (8.0 km) (34.2 mi²) | 10 mi (16 km) (132.4 mi²) | 20 mi (32 km) (613.2 mi²) | 30 mi (48 km) (1,544.3 mi²) |
| 2000 | 90 | 677 | 1,502 | 3,453 | 5,698 | 39,066 | 101,665 | 264,727 |
| 2016 | 88 | 666 | 1,476 | 3,398 | 5,608 | 38,408 | 100,051 | 260,392 |
| 2020 | 88 | 664 | 1,471 | 3,380 | 5,575 | 38,205 | 99,484 | 258,977 |
| 2030 | 85 | 636 | 1,414 | 3,254 | 5,367 | 36,790 | 95,773 | 249,331 |
| 2040 | 81 | 612 | 1,359 | 3,124 | 5154 | 35,313 | 91,945 | 239,412 |
| 2050 | 75 | 570 | 1,268 | 2,916 | 4,809 | 32,943 | 85,778 | 223,349 |
| 2056 | 71 | 540 | 1,197 | 2,748 | 4,532 | 31,051 | 80,806 | 210,417 |
| 2060 | 68 | 511 | 1,136 | 2,611 | 4,303 | 29,480 | 76,765 | 199,870 |
| 2070 | 54 | 413 | 917 | 2,113 | 3,488 | 23,917 | 62,270 | 162,119 |
| 2080 | 32 | 238 | 528 | 1,218 | 2,012 | 13,815 | 35,921 | 93,588 |

Table 2.1-12—{Actual (2000) and Projected (2016-2056) Population Density (persons/mi²) Within the 1 mi (1.6 km) to 30 mi (48 km) Zones of NMP3NPP}

| | SECPOP Radius (Land Area) | | | | | | | |
|------|-------------------------------|-------------------------------|--------------------------------|--------------------------------|--------------------------------|---------------------------------|---------------------------------|--------------------------------------|
| Year | 1 mi (1.6 km) (2.1 mi²) | 2 mi (3.2 km) (6.8 mi²) | 3 mi (4.8 km) (14.1 mi²) | 4 mi (6.4 km) (23.1 mi²) | 5 mi (8.0 km) (34.2 mi²) | 10 mi (16 km) (132.4 mi²) | 20 mi (32 km) (613.2 mi²) | 30 mi (48 km) (1,544.3 mi²) |
| 2000 | 42.9 | 99.6 | 106.5 | 101.0 | 166.6 | 295.1 | 165.8 | 171.4 |
| 2016 | 41.9 | 97.9 | 104.8 | 147.1 | 164.0 | 290.1 | 163.2 | 168.6 |
| 2020 | 41.9 | 97.6 | 104.3 | 98.8 | 163.0 | 288.6 | 162.2 | 167.7 |
| 2030 | 40.5 | 93.5 | 100.3 | 95.1 | 156.9 | 277.9 | 156.2 | 161.5 |
| 2040 | 38.6 | 90.0 | 96.4 | 91.3 | 150.7 | 266.7 | 149.9 | 155.0 |
| 2050 | 35.7 | 83.8 | 89.9 | 85.3 | 140.6 | 248.8 | 139.9 | 144.6 |
| 2056 | 33.8 | 79.4 | 85.0 | 119.0 | 132.5 | 234.5 | 131.8 | 136.3 |
| 2060 | 32.4 | 75.1 | 80.6 | 76.3 | 125.8 | 222.7 | 125.2 | 129.4 |
| 2070 | 25.7 | 60.7 | 65.0 | 61.8 | 102.0 | 180.6 | 101.5 | 105.0 |
| 2080 | 15.2 | 35.0 | 37.4 | 52.7 | 58.8 | 104.3 | 152.6 | 146.6 |

Figure 2.1-1—{NMP3NPP Site Area Map}



Nananoque Neburgh Gouverneur City of N Loyali NNW NNE Kingston City of Claytor Belleville Tyendinaga West Philadelphia NE Prince NW Edward Bloomfield Wellington Carthage **ENE** 0 mi (80 km) Radius WNW Lowville Lake Ontario Ε Lewis W 20 ESE 48 Oneida Lake WSW Glyde 90 ewark Skaneateles era Aubum Cazenovia SE Waterloo Falls Canandaigua 20 SW 20 Ontario ⊬amilton SSE Earlville Sherburn Penn Yan McGraw Chenango Legend NMP Nine Mile Point Nuclear Power Plant Canadian Community 10 Water Body NY Lewis County Boundary Urban Area Canadian Census Subdivision Restricted Access Highway Secondary Road ← Airport

Figure 2.1-2—{50 mi (80 km) Surrounding Area}

N **Lake Ontario** NNE NNW NE NW **ENE** WNW 3 E W 104B 104 **ESE** Mexico Oswego wsw 481 /\sw SE Minetto Oswego SSE SSW S Cayuga 176 49 264 Fulton Legend NMP Nine Mile Point Nuclear Power Plant ∎miles 8 Lewis County Boundary NY Fulton Urban Area Census Designated Place Secondary Road Local Road Water Body

Figure 2.1-3—{10 mi (16 km) Surrounding Area}

N 0 NNW **Lake Ontario** NNE 0 0 ΝE NW 0 0 0 0 0 0 0 ENE WNW 22 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 20 0 W 1310 907 53 118 224 0 0 8 0 0 130 3 178 199/31\58 26 163 179 2 207 127 64 . 188 487 2137 127 207 350 158 1345 462 **ESE** wsw Mexico 191 1145 2553 343 1385 Oswego 1179 21376 SW 1035 SE 3561 1828 22173 1803 481 Minetto **Population Totals** Radius Ring Cumulative 5319 1702 (Miles) Population Population 48 0 to 1 90 90 2791 SSW SSE 587 677 1 to 2 2 to 3 825 1,502 3 to 4 1,951 3,453 Oswego 2,245 49 4 to 5 5,698 Fulton 5 to 10 33,368 39,066 Legend NMP Nine Mile Point Nuclear Power Plant ∎miles County Boundary 124 Sector Population NY 5678 Sum by Direction Fulton Urban Area Census Designated Place Secondary Road Water Body

Figure 2.1-4—{10 mi (16 km) 2000 Population Distribution}

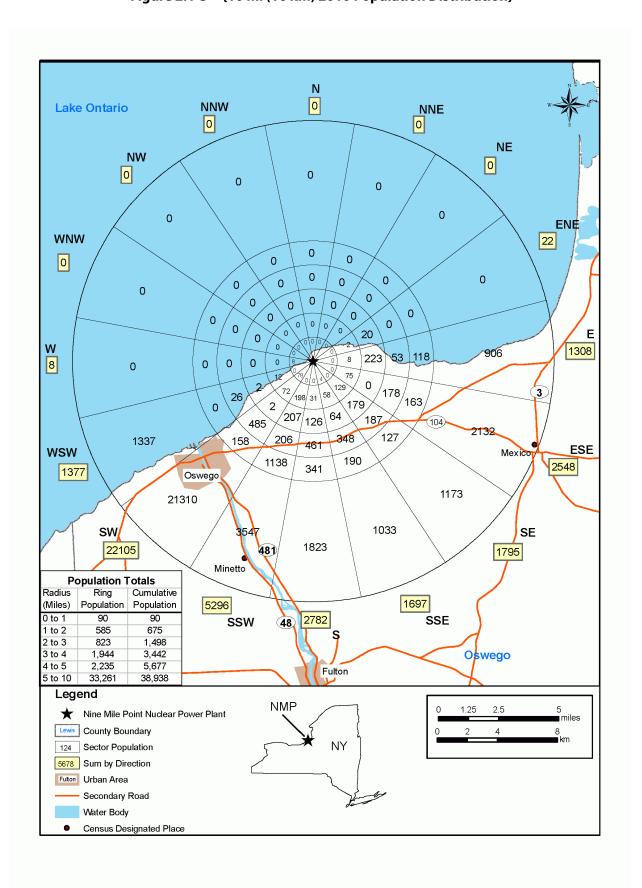


Figure 2.1-5—{10 mi (16 km) 2010 Population Distribution}

0 NNE <u>NNW</u> **Lake Ontario** 0 0 ΝE NW 0 0 0 0 0 0 0 ENE WNW 22 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 20 0 W 1283 888 52 115 220 8 0 0 0 0 0 127 195/30\57 25 159 174 0 202/124 63 **184** 104 342 1315 156 203 452 **ESE** WSW Mexico 1119 187 2498 335 Oswego 1354 1153 20896 1015 SE SW 3481 1791 1762 21678 481 Minetto **Population Totals** 5200 Ring 1668 (Miles) Population Population 2732 SSE 48 SSW 0 to 1 88 1 to 2 576 664 2 to 3 807 1,471 Oswego 3 to 4 1,909 3,380 4 to 5 2,195 5,575 Fulton 5 to 10 32,630 Legend **NMP** 125 2.5 Nine Mile Point Nuclear Power Plant miles Lewis County Boundary 2 4 8 NY 124 Sector Population 5678 Sum by Direction Fulton Urban Area Census Designated Place Secondary Road Water Body

Figure 2.1-6—{10 mi (16 km) 2020 Population Distribution}

Ν 0 NNE NNW **Lake Ontario** 0 0 ΝE NW 0 0 0 0 0 0 0 ENE WNW 21 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 19 W 1234 854 50 111 211 8 0 0 0 0 167 24 153 168 0 2 61 195_/ 120 177 104 2014 460 **_**119 1267 150 331 436 **ESE WSW** Mexico 1078 2404 322 1304 Oswego 1110 20129 972 SE SW 3356 1721 20881 1696 Minetto **Population Totals** 481 Radius Ring Cumulative 5011 1602 (Miles) Population Population 0 to 1 85 85 2629 SSE SSW 1 to 2 551 636 48 2 to 3 1,414 778 3 to 4 1,840 3,254 Oswego 4 to 5 2,113 5,367 Fulton 5 to 10 31,423 36,790 Legend NMP 1 25 ★ Nine Mile Point Nuclear Power Plant ∎miles County Boundary 2 4 8 NY 124 Sector Population 5678 Sum by Direction Fulton Urban Area Census Designated Place Secondary Road Water Body

Figure 2.1-7—{10 mi (16 km) 2030 Population Distribution}

N NNE **Lake Ontario** NNW 0 0 ΝE NW 0 0 0 0 0 0 0 ENE WNW 20 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 18 0 0 W 1182 48 106 202 7 0 0 0 0 0 0 161 180/28 \53 24 148 162 0 188 ₁₁₅ 58 170 439 104 1935 317 . 115 187 1215 142 419 **ESE** wsw Mexico 2312 1036 310 1252 Oswego 1065 19323 936 SW 3215 SE 481 1651 20041 1629 Minetto 48 Population Totals Radius Ring Cumulative 4806 (Miles) Population Population 1541 0 to 1 81 81 2523 SSE SSW Oswego 612 1 to 2 531 2 to 3 747 1,359 3 to 4 1,765 3,124 2,030 4 to 5 5,154 Fulton 30,159 35,313 5 to 10 Legend NMP 2.5 1.25 Nine Mile Point Nuclear Power Plant miles County Boundary NY 124 Sector Population 5678 Sum by Direction Fulton Urban Area Secondary Road Census Designated Place Water Body

Figure 2.1-8—{10 mi (16 km) 2040 Population Distribution}

0 NNE NNW **Lake Ontario** 0 0 NE NW 0 0 0 0 0 0 0 ENE WNW 19 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 17 Ε 0 W 768 1108 99 190 44 7 0 0 0 0 0 (109 151 168/26 49 22 136 151 0 174/₁₀₇ 55 158 411 104 1803 **1**07 295 175 1134 135 392 **ESE** wsw Mexico 966 2153 Oswego 289 1168 995 18023 SW 869 3003 SE 1539 481 18697 1520 Minetto 48 **Population Totals** Ring Radius Cumulative 4486 1432 (Miles) Population Population 0 to 1 2353 SSE 75 75 SSW 1 to 2 495 570 2 to 3 698 1,268 1,648 Oswego 3 to 4 2,916 Fulton 4 to 5 1,893 4,809 28,134 32,943 5 to 10 Legend NMP Nine Mile Point Nuclear Power Plant miles 4 8 County Boundary NY 124 Sector Population 5678 Sum by Direction Fulton Urban Area Census Designated Place Secondary Road Water Body

Figure 2.1-9—{10 mi (16 km) 2050 Population Distribution}

N 0 NNE NNW **Lake Ontario** 0 0 ΝE NW 0 0 0 0 0 0 0 ENE 17 WNW 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 15 Ε 0 W 990 685 40 89 170 6 0 0 0 0 0 98 44 20 150/23 123 (136 0 156 48 142 96 370 (104) 1615 120 156 264 1017 349 **ESE** wsw Mexico 144 863 1929 Oswego 258 1048 889 16124 778 SW SE 2689 1380 16729 1360 Minetto **Population Totals** Ring Cumulative 481 4014 Population Population 1281 (Miles) 0 to 1 68 68 48 2106 SSE SSW 443 1 to 2 511 2 to 3 625 1,136 3 to 4 Oswego 1,475 2,611 4 to 5 1,692 4,303 Fulton 25,177 29,480 5 to 10 Legend **NMP** 1.25 2.5 ∎miles Nine Mile Point Nuclear Power Plant County Boundary NY 124 Sector Population 5678 Sum by Direction Fulton Urban Area Census Designated Place Secondary Road Water Body

Figure 2.1-10—{10 mi (16 km) 2060 Population Distribution}

0 NNE NNW **Lake Ontario** 0 0 NE NW 0 0 0 0 0 0 0 ENE **WNW** 13 0 12 Ε W 804 557 73 137 5 0 0 0 0 46 0 80 110 35 16, 19 100 109 0 127 39 78 299 1309 78 215 824 97 126 283 **ESE WSW** Mexico 701 1565 209 848 Oswego 722 13088 632 SW SE 1120 13576 1104 Minetto 481 **Population Totals** Radius Ring Cumulative 3253 1040 (Miles) Population Population (48) 0 to 1 54 54 1709 SSE SSW 1 to 2 359 413 504 917 2 to 3 3 to 4 1,196 2,113 Oswego 4 to 5 1,375 3,488 Fulton 20,429 23,917 5 to 10 Legend NMP 1.25 ★ Nine Mile Point Nuclear Power Plant miles County Boundary 2 4 8 124 Sector Population NY 5678 Sum by Direction Census Designated Place Secondary Road Water Body

Figure 2.1-11—{10 mi (16 km) 2070 Population Distribution}

N NNE 0 NNW **Lake Ontario** 0 0 NE NW 0 0 0 0 0 0 0 EN₽ WNW 8 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 W 459 319 **4**1 18 3 0 0 0 0 26 0 46 63 10\21 70/ 57 63 0 73 22 66 45 46 124 476 56 73 165 **ESE** wsw Mexico 900 405 121 490 Oswego 416 7566 SW/ 259 366 SE 7848 647 637 Minetto **Population Totals** 481 Ring 1880 602 (Miles) Population Population 988 SSE SSW 0 to 1 32 32 48 Oswego 1 to 2 206 238 290 528 2 to 3 690 1,218 3 to 4 794 4 to 5 2,012 Fulton 5 to 10 11,803 13,815 Legend NMP 1.25 2.5 Nine Mile Point Nuclear Power Plant County Boundary NY 124 Sector Population 5678 Sum by Direction Urban Area Census Designated Place Secondary Road Water Body

Figure 2.1-12—{10 mi (16 km) 2080 Population Distribution}

N NNE NNW **Lake Ontario** 0 0 ΝE NW 0 0 0 0 0 0 0 EN₽ WNW 22 0 20 0 W 1292 896 52 116 220 8 0 0 0 0 74 0 128 176 26 195/31\57 162 〔176〕 2 0 [/]204/₁₂₅\ 63 186 479 104) 2108 125 344 157 204 1322 **ESE WSW** Mexico 188 1125 2520 337 1362 Oswego 1160 20994 1019 SW SE 3503 1798 21779 1775 481 Minetto 48 **Population Totals** Radius Ring Cumulative 5231 1675 Population Population (Miles) 2744 SSE SSW 0 to 1 88 88 1 to 2 578 666 2 to 3 812 1,478 Oswego 3 to 4 1,920 3,398 4 to 5 5,608 2,210 Fulton 5 to 10 32,800 38,408 Legend NMP 1.25 2.5 Nine Mile Point Nuclear Power Plant ∎miles 8 124 Sector Population NY 5678 Sum by Direction Fulton Urban Area Lewis County Boundary Secondary Road Water Body Census Designated Place

Figure 2.1-13—{10 mi (16 km) 2016 Population Distribution}

N 0 NNE NNW **Lake Ontario** 0 0 ΝE NW 0 0 0 0 0 0 0 ENE WNW 18 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 16 Ε W 1041 721 94 178 42 6 0 0 0 0 158 25 47 103 0 58 141 21 130 142 0 [′]165/₁₀₁\ 51 **149** 388 104) 1697 100 1070 126 277 368 **ESE WSW** Mexico 910 151 2028 273 Oswego 1103 937 16984 824 SW 2830 SE 1456 1431 17620 481 Minetto 48 Population Totals Radius Ring Cumulative 4122 1353 (Miles) Population Population 2223 SSE SSW 0 to 1 1 to 2 469 540 2 to 3 657 1,197 Oswego 1,551 2,748 3 to 4 1,784 4,532 4 to 5 Fulton 5 to 10 26,519 31,051 Legend **NMP** 1 25 Nine Mile Point Nuclear Power Plant miles 4 8 County Boundary NY 124 Sector Population 5678 Sum by Direction Fulton Urban Area Secondary Road Water Body Census Designated Place

Figure 2.1-14—{10 mi (16 km) 2056 Population Distribution}

Nananoque Neburgh Gouverneur NNW City of 61863 NNE Kingston Quinte 3114 City of 16110 Belleville Tyendinaga West Philadelphia 61608 NE Prince 2 NW 7867 70134 3114 9670 Bloomfield 49822 icton 50 6718 0 Carthage Wellington 6 1/3185 **ENE** 4521 0 0 3343 12000 WNW 0 Lowville 602 Lake Ontario 0 0 362 0 0 0 1106 1827 Ε 0 (80 Lewis 0 0 10250 Ē 1018 2327 3397 W 8 0 0 0 2198 5715 0 2737 3863 45 7382 8446 0 4695 Fulton 6006 15699 7124, Rome ESE 19694 23628 20270 WSW 8060 Oneida Lake 27706 6239 Baldwinsville 36276 19324 10293 91910 (17621 Rochester éwark Lyons Sherrill Cayuga 268605 ayetteville 27038 2378 28780 Svracuse \ 38117 Skaneateles Auburn 90254 Canandaigua 72259 Cazendvia Waterloo Falls 28485 SW Geneva 31530 32894 Hamilton 6 **Population Totals** 397738 62590 Radius Ring Cumulative Earlville 81 SSE SSW 101780 (Miles) Population Population Oyid ortland 0 to 10 39,066 39,066 Sherburne S 10 to 20 62,599 101,665 Seneca Chenango McGraw 20 to 30 163,062 264,727 30 to 40 375,370 640,097 Norwich Cortland 40 to 50 331,655 971,752 Legend **NMP** 10 Nine Mile Point Nuclear Power Plant Canadian Community 10 20 40 124 Sector Population NY 5678 Sum by Direction Water Body wis County Boundary Urban Area Canadian Census Subdivision Restricted Access Highway

Figure 2.1-15—{50 mi (80 km) 2000 Population Distribution}

Gananoque Neburgh Gouverneur City of 71019 NNW NNE Kingston Quinte City of 3426 16074 Belleville Tyendinaga West Philadelphia 270764 NΕ Prince 2 NW 7851 69836 10811 Bloomfield 49584 icton TV 0 Carthage Wellington 1081 6 1/3136 **ENE** 0 1520 3333 11971 WNW 0 Lowville ke Ontario 601D 0 0 362 0 0 0 1825 1106 Ε 0 (80 10246 Ē 2198 1018 2327 W 8 0 0 0 1311 7₃ς 5703 0 3852 282 45 7352 8422 0 4681 Fulton' 5991 15655 7100, Rome ESE 19645 23521 WSW 20175 8043 Oneida Lake , 10278 27588 Baldwin ville 91483 36180 19238 17557 Rochester Clyde rewark Lyons Sherrill Cayuga 267340 ayetteville 12349 26953 28674 37983 Skaneateles Auburn 89889 Cazendvia Waterloo Falls 72060 Canandaigua 28361 SW Geneva 31432 32756 Population Totals Hamilton * 395894 62411 Radius Ring Cumulative Earlville 81 (Miles) Population Population SSE SSW 101414 38.938 38,938 0 to 10 Ovid ortland Sherburne S 10 to 20 62,428 101,366 Seneca Chenango McGraw 20 to 30 162,417 263,783 30 to 40 373,762 637,545 Norwich Cortland 40 to 50 341,282 978,840 Legend **NMP** 10 Nine Mile Point Nuclear Power Plant 10 20 40 NY 124 Sector Population 5678 Sum by Direction Water Body Lewis County Boundary Urban Area Canadian Census Subdivision Restricted Access Highway

Figure 2.1-16—{50 mi (80 km) 2010 Population Distribution}

Gouverneur Neburgh Kingston City of ÑNE NNW Napanes Kingston Quinte 3635 City of 15786 Belleville Vendinaga West Philadelphia 277145 Prince 2 NW NE 2 Vincent 7716 3635 68624 11707 Bloomfield • 48717 6571 0 Carthage Wellington Watertown 6 12903 **ENE** 0 1495 0 3289 11782 WNW 0 Lowville 5911 0 0 359 0 0 0 1093 1802 Lake Ontario Ε /08)6310 Lewis 0 10077 Ē 1003 2290 3338 W 8 0 0 0 ලු o 2163 鰴 5600 0 3788 2732 富 44 7216 4599 8275 0 Fulton (5875 \6879 15363 6971 19825 19269 23104 7898 WSW Rome **ESE** Øneida Lake 27098 10093 Baldwinsville 6109 35524 18900 89810 Rochester 17242 Clyde wark Lyon Sherrill Cayuga Monroe 262492 ayetteville 26472 12122 28150 DeWitt **\$7301** Skaneateles Seneca Waterloo Falls Auburn 88283 Canandaigua 70740 Cazen 27859 SE SW Geneva 30843 32176 Hamilton • **Population Totals** 388708 61245 Radius Ring Cumulative Earlville SSE SSW 99569 (Miles) Population Population Ovid Cortland 0 to 10 38,205 38,205 Sherburne s 10 to 20 61,279 99,484 Seneca Chenango McGraw 20 to 30 159,493 258,977 30 to 40 366,996 625,973 Norwich Cortland 40 to 50 344,211 970,184 **NMP** 10 20 Legend 10 20 40 Nine Mile Point Nuclear Power Plant NY Canadian Community 124 Sector Population 5678 Sum by Direction Water Body Lewis County Boundary Urban Area Canadian Census Subdivision

Figure 2.1-17—{50 mi (80 km) 2020 Population Distribution}

Gananoque Neburgh Gouverneur City of 82342 NNE NNW Kingston Quinte 15181 3834 City of Belleville Tyendinaga West Philadelphia 82100 NΕ Prince 2 NW 3834 7413 66073 12571 Bloomfield 46917 icton 50 Wellington 0 Carthage 6 12425 ENE 1432 0 3157 11334 WNW 0 Lowville 5680 0 0 0 348 0 0 0 1051 Lake Ontario Ε 08) 607/1 Lewis 0 9696 Ē 966 2203 3204 W 8 0 0 0 2089 5385 0 3635 2629 43 6953 7955 0 Fult 5654 14800 6710, Rome ESE 18554 22244 WSW 19089 7601 Oneida Lake 26090 9693 5884 Baldwin 34179 18200 86503 16596 Rochester Clyde wark Lyons Sherrill Cayuga 252821 ayetteville 25468 1662 90 -27110 Svracuse 35899 84992 Skaneateles Auburn Cazendvia 68067 Waterloo Falls Canandaigua 26822 SE SW Geneva 29710 Onondaga 30994 Hamilton 6 **Population Totals** 374375 58977 Radius Ring Cumulative Earlville 81 SSE SSW 95883 (Miles) Population Population Ovid Cortland 0 to 10 36,790 36,790 Sherburne S 10 to 20 58,983 95,773 Seneca Chenango McGraw 153,558 20 to 30 249,331 30 to 40 353,408 602,739 Norwich Cortland 943,799 40 to 50 340,863 Legend **NMP** 10 Nine Mile Point Nuclear Power Plant 10 20 40 Canadian Community NY 124 Sector Population 5678 Sum by Direction Water Body Lewis County Boundary Urban Area Canadian Census Subdivision Restricted Access Highway

Figure 2.1-18—{50 mi (80 km) 2030 Population Distribution}

Gananoque Neburgh Gouverneur NNW City of 87435 NNE Kingston Quinte 3986 14593 City of Belleville Tyendinaga West Philadelphia 287204 Prince 2 SAW NΕ 7128 3986 23104) 63457 13570 Bloomfield Picton 50 45058 6078 0 Carthage Wellington 6 1/943 ENE 0 1383 0 3038 10884 WNW 0 Lowville 5454 0 0 0 334 0 0 0 1002 1659 Ε 0 5833 08) Lewis 9303 Lake Ontario Ē 924 2115 3080 W 7 0 0 0 0 2 2002 匌 5171 4806 3498 42 6674 4250 7641 O 5436 14208 [/]6441 17809 Rome ESE 18348 21362 WSW 7297 Oneida Lake 25078 9323 Baldwins 32830 17480 83076 **15932** Rochester Clyde wark Lyone Sherrill Cayuga 242858 24471 11203 90 26027 Svracuse \ 34487 Skaneateles 81632 Auburn Cazenovia 65382 Waterloo Falls Canandaigua 25757 SE SW Geneva 28531 29753 Hamilton 6 **Population Totals** 359600 56630 Radius Ring Cumulative Earlville 817 SSE Population Population SSW 92044 (Miles) 35,313 Cortland 0 to 10 35,313 Ovid Sherburne S 10 to 20 56,632 91,945 Seneca Chenango McGraw 20 to 30 147,467 239,412 30 to 40 339,478 578,890 Norwich Cortland 40 to 50 337,541 916,431 Legend **NMP** 10 Nine Mile Point Nuclear Power Plant 10 20 40 Canadian Community NY 124 Sector Population 5678 Sum by Direction Water Body Lewis County Boundary Urban Area Canadian Census Subdivision Restricted Access Highway

Figure 2.1-19—{50 mi (80 km) 2040 Population Distribution}

Gananoque Neburgh Gouverneur City of 90916 NNW NNE Kingston Quinte 4095 13593 City of Belleville Tyendinaga West Philadelphia 7.90699 Prince 2 SAW NΕ 6639 4095 59169 14522 Bloomfield 42025 icton TV **5**665 Wellington 0 Carthage 14522 6 11126 ENE 1286 0 2817 10136 WNW 0 Lowville 5078 0 0 0 3d8 0 3 0 0 940 1548 Lake Ontario Ε 8 5444 Lewis 0 8665 Ē 862 1962 2866 W 7 0 0 0 1867 钧 4827 0 3265 448 2353 2353 38 6228 3972 7127 🔾 Fult 5068 13251 6009 Rome ESE 16614 19926 WSW 17108 6805 Oneida Lake 23382 30623 5258 Baldwin 8694 16298 77534 ₹14871 Rochester ewark Lyons Sherrill Cayuga 226594 ayetteville 22831 10432 -24277 **\$2151** Skaneateles 76123 Auburn 60999 Cazendvia Waterloo Falls Canandaigua 24031 SE SW _{Geneva} 26616 27757 Hamilton * **Population Totals** 335523 52801 Radius Cumulative Ring Earlville **10** SSE SSW 85872 (Miles) Population Population Oyid ortland 0 to 10 32,943 32,943 Sherburne S 10 to 20 52,835 85,778 Seneca Chenango McGraw 20 to 30 137,571 223,349 30 to 40 316,668 540,017 Norwich Cortland 40 to 50 326,409 866,426 Legend **NMP** Nine Mile Point Nuclear Power Plant 10 20 40 Canadian Community NY 124 Sector Population 5678 Sum by Direction Water Body Lewis County Boundary Urban Area Canadian Census Subdivision Restricted Access Highway

Figure 2.1-20—{50 mi (80 km) 2050 Population Distribution}

Gananoque Neburgh Gouverneur City of 93261 NNW NNE Kingston Quinte 4159 12191 City of Belleville Tyendinaga West Philadelphia 930665 NΕ Prince 2 NW 5955 4159 19504) 52991 15465 Bloomfield 37609 icton 50 **5**075 Wellington 0 Carthage 15465 6 **ø**974 ENE 1158 0 2543 9101 WNW 0 Lowville 4562 0 0 0 284 0 3 0 0 846 1392 Lake Ontario Ε 08) 4865 Lewis 7788 Ē 776 1765 2578 W 6 0 0 0 1679 4324 2925 34 5568 35\$2 6389 0 Fulton 4538 11868 ⁷5378, 14860 Rome ESE 17848 WSW 15294 6097 Oneida Lake 20914 7794 Baldwin 27435 14583 69300 **ל13307** Rochester Clyde wark Lyone Sherrill Cayuga 202600 ayetteville 20441 9367 90 -21739 Svracuse \ 28773 Skaneateles Auburn 68132 54613 Cazendvia Waterloo Falls Canandaigua 21508 SE SW Geneva 23825 24851 Hamilton • **Population Totals** 300000 47301 Radius Ring Cumulative Earlville SSE (Miles) Population SSW 76863 Population ortland Ovid 0 to 10 29,480 29,480 Sherburne S 10 to 20 47,285 76,765 Seneca Chenango **McGraw** 20 to 30 123,105 199,870 30 to 40 283,314 483,184 Norwich Cortland 40 to 50 307,036 790,179 Legend **NMP** 10 Nine Mile Point Nuclear Power Plant 10 20 40 Canadian Community NY 124 Sector Population 5678 Sum by Direction Water Body County Boundary Urban Area Canadian Census Subdivision Restricted Access Highway

Figure 2.1-21—{50 mi (80 km) 2060 Population Distribution}

Gananoque Neburgh Gouverneur NNW City of 94292 NNE Kingston Quinte 4179 City of 9869 Belleville Tyendinaga West Philadelphia 94,1355 NΕ Prince 2 NW 4179 4817 42957 16399 Bloomfield 30505 icton 50 4116 Wellington 0 Carthage 16399 6 **8**076 ENE (934) 0 2050 7350 WNW 0 Lowville 3692 0 0 0 221 0 0 684 Ontario Lake Ε 0 08) 3946 Lewis 6284 Ē 623 1425 2082 **W** 5 0 0 0 1350 3502 0 2367 28 83 17 08 17 08 28 4521 2881 5172 C Fult 3679 9596 4360, Rome ESE 12066 14467 WSW 12411 4942 Oneida Lake 6299 16966 Baldwin 11832 22202 56268 10786 Rochester Clyde wark Lyone Sherrill Cayuga 164457 ayetteville 16542 90 17638 Syracuse 23341 Skaneateles 55265 Auburn Cazendvia Waterloo Falls 44240 Canandaigua 17443 SE SW _{Geneva} 19291 20128 Hamilton • **Population Totals** 243517 38291 Radius Ring Cumulative Earlville 81 SSE SSW 62327 (Miles) Population Population Ovid ortland 0 to 10 23,917 Sherburne 23.917 S 10 to 20 38,353 62,270 Seneca Chenango McGraw 20 to 30 99,849 162,119 30 to 40 391,956 229,837 Norwich Cortland 40 to 50 272,187 664,143 Legend **NMP** 10 Nine Mile Point Nuclear Power Plant 10 20 40 Canadian Community NY 124 Sector Population 5678 Sum by Direction Water Body Lewis County Boundary Urban Area Canadian Census Subdivision Restricted Access Highway

Figure 2.1-22—{50 mi (80 km) 2070 Population Distribution}

Sananoque Neburgh Gouverneur Kingston City of 94040 NNE NNW Kingston**s** Quinte 5685 4155 City of Belleville Tyendinaga Philadelphia 939596 Prince SNW ΝE 2772 Vincent 4155 91 04 24798 17324 Bloomfield 17614 icton 50 2375/ 0 Carthage 17324 Watertow 6 **4**667 **ENE** WNW 0 (537 0 1181 4233 0 Lowville Lake Ontario 2135 0 0 0 125 0 0 0 382 Ε (80 0 2276 Lewis 0 3609 W Ē 767 358 822 1203 0 3 0 0 0 2 2011 0 1362 16 2605 1663 2982 0 Fulton 2123 5534 2518/6960 8361 WSW 7165 2852 ESE Oneida Lake 9794 2203 Baldwi 6831 12789 3637 32504 6232 Rochester Clyde √ewark Lyons Sherrill Cayug Payette ville 13469 Monroe 95010 9556 4365 90 10172 Syracuse DeWitt Seneca Waterloo Falls 31903 Skaneateles Auburn Cazen 25556 Canandaigua 10063 SW Geneva 11144 11641 **Population Totals** Hamilton * 140666 Radius Cumulative Ring 22110 Earlville (Miles) Population Population 81 SSE SSW 35993 0 to 10 13,815 13,815 Oyid ortland Sherburne s 10 to 20 22,106 35,921 Seneca Chenango McGraw 20 to 30 93,588 57,667 30 to 40 132,736 226,324 Norwich Cortland 40 to 50 206,344 432,668 Legend **NMP** Nine Mile Point Nuclear Power Plant 10 20 40 Canadian Community NY 124 Sector Population 5678 Sum by Direction Water Body Lewis County Boundary Hrhan Area Canadian Census Subdivision Restricted Access Highway

Figure 2.1-23—{50 mi (80 km) 2080 Population Distribution}

Gananoque Gouverneur Neburgh 74327 City of NNE NNW Napanee. kingston**s** Quinte 3547 15883 City of Vendinaga

Belleville Indian Reserve City of ^ohiladelphia NE Prince 2 NW 2 Vincent 7757 3547 68986 11248 Bloomfield 48976 Picton 6615 0 Carthage Wellington 11248 8 12974 **ENE** 0 1507 0 3304 11851 WNW 0 Lowville 5939 Lake Ontario 0 0 362 0 0 (80/km) | 0 1097 1810 Ε 0 6358 Lewis Ē 2173 10126 1007 2301 W 8 0 0 0 5680 0 3809 45 7255 4632 8321 Or Fulto 5917 15471 7011 Rome ESE 19379 23226 WSW 19934 7939 Oneida Lake 27258 6151 Baldwin 35751 19001 10149 90287 17327 Rochester Clyde wewark Lyons Sherrill Cayug 263881 Payetteville 37504 26625 12191 90 28322 yracuse DeWitt 88761 Seneca Waterloo Falls Skaneateles Auburn Cazen 71124 Canandaigua 28023 SE SW Geneva 31046 Madison 32371 Hamilton * **Population Totals** 390795 61630 Radius Ring Cumulative Earlville SSE SSW 100143 (Miles) Population Population ortland Ovid Sherburne 0 to 10 38,408 38,408 s **3** 10 to 20 61,643 100,051 Seneca Chenango McGraw 20 to 30 160,341 260,392 629,386 30 to 40 368,994 Norwich Cortland 40 to 50 343,307 972,693 Legend **NMP** Nine Mile Point Nuclear Power Plant 10 Canadian Community 20 40 124 Sector Population NY 5678 Sum by Direction Water Body Lewis County Boundary Urban Area Restricted Access Highway

Figure 2.1-24—{50 mi (80 km) 2016 Population Distribution}

Gananoque Neburgh Gouverneur NNW City of 92444 NNE Kingston Quinte 4159 City of 12833 Belleville Tyendinaga West Philadelphia 822406 NΕ Prince 2 NW 4159 6274 Edward 15089 55746 Bloomfield 36904 icton 50 5345 Wellington 0 Carthage 15089 6 10483 **ENE** 1211 0 2668 9565 WNW 0 Lowville 4780 0 0 0 293 0 0 879 1461 Ontario Lake Ε 0 08) 5125 Lewis 8166 Ē 1757 814 1853 2701 W 6 0 0 0 0 22 1437 45<mark>4</mark>5 3075 36 5868 37\$0 6713 O Fult 4774 12489 ⁷5669, Rome ESE 15646 18785 WSW 16114 6406 Oneida Lake 4960 Baldwinsville 15372 28850 22027 8190 73032 14012 Rochester Clyde wark Lyons Sherrill Cayuga ayetteville 30292 213423 21511 9851 90 -22875 Svracuse } 71748 Skaneateles Auburn Cazendvia Waterloo Falls 57457 Canandaigua 22644 SE SW Geneva 25070 26168 Hamilton • **Population Totals** 316041 49778 Radius Cumulative Earlville Ring 81 SSE SSW 80924 (Miles) Population Population Oyid Cortland Sherburne S 0 to 10 31,051 31,051 10 to 20 49,755 80,806 Seneca Chenango McGraw 20 to 30 129,611 210,417 30 to 40 508,754 Norwich 298,337 Cortland 40 to 50 825,844 317,090 Legend **NMP** 10 Nine Mile Point Nuclear Power Plant 10 20 40 Canadian Community NY 124 Sector Population 5678 Sum by Direction Water Body Lewis County Boundary Urban Area Canadian Census Subdivision Restricted Access Highway

Figure 2.1-25—{50 mi (80 km) 2056 Population Distribution}

4 mi (6.4 km) Radius LAKE ONTARIO NMP Units 1 & 2 NMP Unit 3 Legend 0.5 2 _ ∎miles NMP Nine Mile Point Unit 3 3 0 0.5 1 Nine MIle Point Unit 1 Stack ⊐km NY Nine MIIe Point Unit 3 LPZ Nine Mile Point Unit 2 LPZ Major Highways Secondary Roads

Figure 2.1-26—{Low Population Zone}

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