

ATTACHMENT D

SUSQUEHANNA STEAM ELECTRIC STATION **SITE CHARACTERISTICS**

1. General

The Susquehanna Steam Electric Station (SSES) (41° 5' 30" N/76° 8' 55" W) is a nuclear power plant operated by the Talen Energy. Unit 1, which began operation in 1983, and Unit 2 which began operation in 1985, are boiling water reactors, each rated at 1,320 MW(e).

The minimum exclusion distance is 1,800 feet. There are no private residences located inside the exclusion area. A recreation area has been established on the tract outside of the exclusion boundary adjacent to the Susquehanna River. Talen Energy owns all the land within the exclusion area.

2. Physical Characteristics

The SSES is located in northeastern Pennsylvania, Salem Township, Luzerne County, on the west bank of the Susquehanna River. The 2,556-acre site is divided into two parts. The principal portion, having the major operating equipment and buildings, is approximately 3,000 feet west of the river. It is separated from the other portion housing the water intake apparatus by U.S. Route 11. Of the 2,556 acres, approximately 100 acres are used for the plant.

The 10-mile Emergency Planning Zone (EPZ) contains portions of Luzerne and Columbia Counties. No community within the 10-mile EPZ has a population in excess of 15,000. The 50-mile EPZ lies entirely within Pennsylvania.

Soils in the area include Chenango, Oquaga, and Lordstown. These are considered glacial outwash and glacial till soils typical of uplands and terraces. The bedrock geology consists primarily of red shales of the Catskill Formation.

The normal pool elevation of the Susquehanna River in this area is 480 feet above MSL. The topography of the plant is hilly with elevations ranging from 500 feet at the Susquehanna River to about 1,600 feet above MSL at the northwest corner of the site. The plant grade is 670 feet above MSL. The station itself is located above the floodplain.

The climate is temperate and rainy with warm humid summers and cold winters. Prevailing winds are out of the southwest and average 8 mph.

Average annual temperature is 40 degrees F and average annual rainfall is 35 inches.

3. Land Use Characteristics

The immediate vicinity of the plant is rural in character, surrounded by farms and other undeveloped land. The nearest population center is Shickshinny Borough, Luzerne County, with a population of approximately 1,108 and is about four miles north of the plant. The

nearest major population center over 25,000 people is the City of Hazleton, population approximately 25,300 about 12 miles to the southeast.

The closest airport is the Wilkes-Barre/Scranton Airport 28 miles northeast of the site.

Route 11 passes through the site in a north/south direction providing both primary and secondary access to the plant.

4. Emergency Facilities Locations

A. Emergency Operations Facility (EOF) – the EOF is located about 21 miles northeast of the site on East Mountain Boulevard in Plains Township, Luzerne County.

B. Alternate EOF – Lackawanna County EOC

C. Joint Information Center (JIC) – same as EOF.

5. Bases of Operations for Federal Support

A. Airport – Wilkes-Barre Scranton International Airport

B. FRMAC – Wilkes-Barre Scranton International Airport

C. JFO – Kingston Armory, Kingston

6. The 10-mile and 50-mile EPZs for SSES lie entirely within Pennsylvania.

TABS

1. SSES EPZ Information
2. SSES Plume Exposure Pathway Description
3. SSES Evacuation Time Estimate
4. SSES Maps, Data, and Illustrations

TAB 1**ATTACHMENT D**
SSES EPZ INFORMATION

Facility: SSES operated by Talen Energy
Location: Salem Township, Luzerne County
Site Area: 2,556 acres
Energy Production Unit 1 – 1320 Megawatts BWR/GE
Capacity: Unit 2 – 1320 Megawatts BWR/GE
Operating Status: Unit 1 has been in commercial operation since June 1983 and relicensed until 2042
Unit 2 commenced commercial operation in February 1985 and relicensed until 2044

AFFECTED JURISDICTIONS (2020 Census)

Risk County	Risk Municipality (27)	Risk Population*	Monitoring and Decon Requirement (20%)	Mass Care Requirement (10%)
Columbia County	Beaver Township	^606	122	61
	Berwick Borough	10,327	2,066	1,033
	Briar Creek Borough	597	120	60
	Briar Creek Township	2,982	596	298
	Fishing Creek Township	^796	160	80
	Mifflin Township	2,006	402	201
	North Centre Township	^947	190	95
	South Centre Township	^406	82	41
Subtotal		18,667	3,738	1,869
Luzerne County	Black Creek Township	1,909	382	191
	Butler Township	^5,952	1,190	595
	Conyngham Borough	1,825	366	183
	Conyngham Township	2,001	400	200
	Dorrance Township	2,076	416	208
	Hollenback Township	1,139	228	114
	Hunlock Township	^1,871	374	187
	Huntington Township	2,053	410	205
	Nanticoke City	10,628	2,126	1,063
	Nescopeck Borough	1,480	296	148
	Nescopeck Township	1,075	216	108
	New Columbus Borough	222	44	22
	Newport Township	4,433	886	443
	Nuangola Borough	666	134	67
	Salem Township	4,254	850	425

	Shickshinny Borough	632	126	63
	Slocum Township	1,054	210	105
	Sugarloaf Township	3,869	774	387
	Union Township	2,035	408	204
Subtotal		49,174	9,836	4,918
Grand Total		67,841	13,574	6,787

*Population within the plume exposure pathway

^Denotes part of municipality within the EPZ

Alert System Status: Talen Energy has installed 76 sirens required for coverage of the plume exposure pathway EPZ. The system is operational.

MAJOR POPULATION CENTERS

Major Cities	2020 Population	Distance from Plant
Berwick, PA	10,355	5 miles
Bloomsburg, PA	12,587	19 miles
Hazleton, PA	29,896	13 miles
Wilkes-Barre, PA	44,498	18 miles
Scranton, PA	76,110	34 miles
Williamsport, PA	27,764	46 miles
Allentown, PA	126,092	48 miles

SCHOOL DISTRICTS

School Districts with Schools Located in the EPZ

Columbia (1)

Berwick

Luzerne County (3)

Greater Nanticoke Area

Hazleton Area

Northwest Area

School Districts Outside the EPZ with Students Residing in the EPZ

Columbia (4)

Benton

Bloomsburg

Central Columbia

Columbia-Montour AVTS

Luzerne County (3)

Crestwood
 West Side CTC
 Wilkes-Barre ACTC

Host Schools that Receive Relocated Student Populations**Luzerne County (3)**

McAdoo-Kelayres Elementary School
 Hanover Area High School
 Dallas Junior High School

Montour County (1)

Danville Primary/Middle/High School

Support Counties

Support Counties	Reception Center	Mass Care Requirement 10%
Lackawanna County	Mid Valley School Complex	1,980
Lycoming County	McCall Middle School	1,172
Northumberland County	Shamokin MS/HS	393
Schuylkill County	Mahanoy Area Jr/Sr High School	1,416
Union County	Linntown Intermediate School	1,036
Wyoming County	Tunkhannock High School	681
County Total		6,678

RECEPTION CENTERS

Municipality	Total Population	Reception Center
Columbia County		
Beaver Township	606	Mahanoy Area Jr/Sr High School
Total Population	606	
Total Public Mon-Decon (20%)	121	
Total Mass Care Requirement (10%)	61	
Berwick Borough	10,327	McCall Middle School
Briar Creek Borough	597	McCall Middle School
Fishing Creek Township	796	McCall Middle School
Total Population	11,720	
Total Public Mon-Decon (20%)	2,344	
Total Mass Care Requirement (10%)	1,172	
Briar Creek Township	2,982	Shamokin Area MS/HS
North Centre Township	947	Shamokin Area MS/HS
Mifflin Township	2,006	Linntown Intermediate School
South Center Township	406	Linntown Intermediate School
Total Population	6,341	
Total Public Mon-Decon (20%)	1,268	
Total Mass Care Requirement (10%)	634	
Grand Total Population	18,667	
Grand Total Pubic Mon/Decon (20%)	3,733	
Grand Total Population	1,867	
Luzerne County		
Black Creek Township	1,909	Mahanoy Area Jr/Sr High School
Butler Township	5,952	Mahanoy Area Jr/Sr High School
Conyngham Borough	1,825	Mahanoy Area Jr/Sr High School
Sugarloaf Township	3,869	Mahanoy Area Jr/Sr High School
Total Population	13,555	
Total Public Mon-Decon (20%)	2,711	
Total Mass Care Requirement (10%)	1,356	
Conyngham Township	2,001	Mid Valley School Complex
Dorrance Township	2,076	Mid Valley School Complex
Nanticoke City	10,628	Mid Valley School Complex
Newport Township	4,433	Mid Valley School Complex
Nuangola Borough	666	Mid Valley School Complex
Slocum Township	1,054	Mid Valley School Complex
Total Population	20,858	
Total Public Mon-Decon (20%)	4,172	
Total Mass Care Requirement (10%)	2,086	

Hollenback Township	1,139	Linntown Intermediate School
Nescopeck Borough	1,480	Linntown Intermediate School
Nescopeck Township	1,075	Linntown Intermediate School
Salem Township	4,254	Linntown Intermediate School
Total Population	7,948	
Total Public Mon-Decon (20%)	1,590	
Total Mass Care Requirement (10%)	795	
Hunlock Township	1,871	Tunkhannock High School
Huntington Township	2,053	Tunkhannock High School
New Columbus Borough	222	Tunkhannock High School
Shickshinny Borough	632	Tunkhannock High School
Union Township	2,035	Tunkhannock High School
Total Population	6,813	
Total Public Mon-Decon (20%)	1,363	
Total Mass Care Requirement (10%)	682	
Grand Total – Population	49,174	
Grand Total – Public Mon-Decon (20%)	9,836	
Grand Total – Mass Care (10%)	4,919	

Totals Represent Pennsylvania Populations as of the 2020 Census

MASS CARE CENTERS

COUNTY	REQUIREMENT (10% of population)	CAPACITY
LACKAWANNA (10)		
Penn State University (Worthington Campus)		100
Mid-Valley Secondary Center		300
Mid-Valley Elementary Center		85
Scranton YMCA		125
Dunmore High School		162
Dunmore Community Center		300
Valley View High School		300
Throop Civic Center		190
Scranton High School		300
North Pocono High School		400
Total	1,980	2,262
LYCOMING (4)		
Hughesville High School		342
McCall Middle School		163
Montoursville High School		338
Lycoming College		1,096
Total	1,172	1,939
NORTHUMBERLAND (1)		
Shamokin MS/HS		546
Total	393	546
SCHUYLKILL (6)		
Mahanoy Area High School		243
Mahanoy Area Middle School		222
North Schuylkill High School		225
Shenandoah Valley School District Complex		450
Tamaqua High School		235
Tamaqua Middle School		300
Total	1,416	1,675
UNION (6)		
Linntown Intermediate School		
Lewisburg Area High School		204
Kelly Elementary School		142
Mifflinburg Intermediate School		315
Mifflinburg High School		260
Donald E. Eichorn Middle School		235
Total	1,036	1,156

WYOMING (4)		
Tunkhannock Middle School		190
Tunkhannock High School		205
Tunkhannock School Dist. Admin		150
Lackawanna Trail Jr/Sr High School		240
Total	681	785
Grand Total	6,678	8,363

EMERGENCY WORKER MONITORING/DECONTAMINATION STATIONS

COLUMBIA

Columbia-Montour Area Vocational Technical School

LUZERNE

Sweet Valley Fire Company
Wright Township Fire Company

DECONTAMINATION CENTERS FOR THE GENERAL PUBLIC

LACKAWANNA

Mid Valley School Complex

LYCOMING

McCall Middle School

NORTHUMBERLAND

Shamokin Area Middle/High School

SCHUYLKILL

Mahanoy Area Jr/Sr High School

UNION

Linntown Intermediate School

WYOMING

Tunkhannock High School

TAB 2

ATTACHMENT D

SSS PLUME EXPOSURE PATHWAY EPZ DESCRIPTION

1. LUZERNE COUNTY

Begin at the intersection of the Luzerne/Columbia/Schuylkill County line. Follow the Luzerne/Schuylkill County line southeast to the Black Creek/Hazle Township corporate boundary. Follow this boundary north to the Hazle/Sugarloaf Township corporate boundary. Continue east, then north and east again along this boundary to its intersection with the Sugarloaf/Butler Township corporate boundary. Follow this boundary northwest to the Butler/Hazle corporate boundary. Continue eastward along this boundary until it intersects with State Route 309. Take 309 north to its intersection with Interstate 80. Follow Interstate 80 east to the Butler/Dennison Township corporate boundary. Follow the boundary north to the point where the corporate boundaries meet for Butler/Dennison/Dorrance/Wright Townships. Proceed north along the Dorrance/Wright Township corporate boundary to the Nuangola Borough corporate boundary. Follow this boundary east, then north and west around the Borough to Newport/Hanover Township corporate boundary. Proceed north along this boundary to the Nanticoke City boundary. Follow this boundary east, north and west (on south side of Susquehanna River) around the City to its intersection with the Newport Township corporate boundary. Proceed along the Newport Township boundary to the Hunlock/Plymouth Township corporate boundary. Follow this boundary north to LR 40069. Take LR 40069 northwest to the Hunlock/Ross Township corporate boundary. Follow this boundary southwest to the intersection of T514/T506 (point where corporate boundaries meet for Huntington/Union/Ross Townships). Proceed north on Huntington/Ross Township corporate boundary to Huntington/Fairmount Township corporate boundary. Proceed west along this boundary to the Luzerne/Columbia County line.

2. COLUMBIA COUNTY

Begin at the intersection of the Huntington/Fairmount corporate boundary with the Columbia/Luzerne County boundary. Proceed southeast along the County line, past point where State Route 239 crosses County line to LR 19067. Take LR 19067 southwest to its intersection with State Route 487. Follow 487 south until it intersects with the Fishing Creek/Orange Township corporate boundary. Go southeast along this boundary to the North Centre Township corporate boundary. Proceed west along this boundary to the Orange/North Centre Township corporate boundary. Follow this boundary south to State Route 93. Take 93 east to LR 19038.

Follow LR 19038 south to its intersection with LR 19034. Take LR 19037 southward to its intersection with Interstate 80. Proceed southeast on Interstate 80, (across North Branch of the Susquehanna River) to LR 19020. Proceed southwest on LR 19020 to its intersection with State Route 339 (LR 19021). Follow 339 south to T415. Take T415 until it intersects with T628. Follow T628 southward to its intersection with T626. Follow T630 south to its intersection with State Route 339. Proceed southeast on 339 to the Columbia/Schuylkill

County boundary. Follow this boundary northeast to the intersection of the Columbia/Luzerne/Schuylkill County line.

TAB 3

ATTACHMENT D
SSES EVACUATION TIME ESTIMATE

			Evacuation Times for Full EPZ (hours, minutes)	
	Population	Vehicles	90%	100%
Weekday				
Fair Weather	NA	NA	NA	6 hrs 5 min
Adverse Weather	NA	NA	NA	7 hrs 35 min
Night				
Fair Weather	NA	NA	NA	4 hrs 20 min
Adverse Weather	NA	NA	NA	6 hrs 5 min
Weekend				
Fair Weather	NA	NA	NA	5 hrs
Adverse Weather	NA	NA	NA	7 hrs 10 min

NOTE: As per the KLD Report regarding ETEs, population has not grown enough to trigger a full ETE update for SSES. The information above will remain the same until an update is required based on population changes.