SUSQUEHANNA RIVER BASIN COMMISSION
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Web http://www.srbc.net

Groundwater Withdrawal Application Summary

Source Name: TW-2 **SRBC Pending No.:** 2024-086

This summary is only a portion of the application materials and is meant to provide general information about the proposed project.

1.1 Project Sponsor

Company Name:	Susquehanna Steam Electric Station
Mailing Address Line 1:	769 Salem Blvd
Mailing Address Line 2:	NUCSA4
City:	Berwick
State:	PA
ZIP Code:	18603

Contact Person:

First Name:	Kathleen
Last Name:	Ervin
Title:	Sr. Environmental Scientist - Nuclear
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Mobile:	
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1.3 Existing and Projected Facility Water Use

The usage should be entered in million gallons per day (mgd) and rounded off to the nearest one thousand gallons (three decimal places).

Projected Design Year:
2040

Total Project Water Usage	**Existing Usage (mgd)**	**Projected Usage For Design Year (mgd):**
Maximum 30-day Average Water Demand :	0.067	0.082
Maximum Daily Water Demand :	0.142	0.166
System Capacity :	0.216	0.216

1.4 Requested Withdrawal Amount:

Estimated Daily Hours of Operation per Day (Ex. = 5):	18
Maximum Instantaneous Withdrawal Rate (gpm):	150
Maximum 24-Hour Day (mgd):	0.216
Maximum 30-Day Average (mgd):	0.125

2.2 Facility Location

Please enter the address of the parcel where the Project Facility is located.

Street Address:	769 Salem Blvd.
State:	PA
County:	Luzerne
Municipality:	Salem Township
Zip Code:	18603
Subbasin:	Middle Susquehanna

2.0 Project Facility Description

The **Susquehanna Steam Electric Station** (SSES) is an existing, two unit, 2,700- megawatt (MWe), nuclear-fueled electric generating station. The Susquehanna River is the primary source of water for SSES and provides essentially all of the cooling water associated with the generation of electricity. Groundwater withdrawals from well TW-2 are used to supply water primarily for domestic use at SSES.

2.1 Project Facility Description

SSES is requesting to renew Commission Docket No. 19950301-2, which authorized the groundwater withdrawal (30-day average) of 0.125 mgd from groundwater well sources TW-1 and TW-2 at the existing thermoelectric power generation facility located in Salem Township, Luzerne County, Pennsylvania. Docket No. 19950301-2 authorized surface water withdrawal from the Susquehanna River at the rate of 76 mgd and the consumptive use of up 53 mgd. SSES is requesting to renew the groundwater withdrawal as well as, the surface water withdrawal and consumptive use approvals at the historically approved rates to maintain operations at the facility.

TW-2 is the permanent source of the non-transient, non-community water system PWS ID #2400994. The water system consists of two wells TW-2 and TW-1, which are used to provide a combined withdrawal (30-day average) rate of 0.125 mgd. However, TW-1 is a reserve source and would require an emergency use permit prior to use. Groundwater withdrawals at the SSES are used to provide domestic water, demineralized water, maintaining pump seals, and other miscellaneous uses at the facility.

SSES is a two-unit plant with General Electric boiling-water reactors and generators. NRC approved the Unit 1 operating license on July 17, 1982, and commercial operation began June 8, 1983. The Unit 2 operating license was issued March 3, 1984, and commercial operation began February 12, 1985. Units 1 and 2 both currently operate at 2700 MWe. The units share a common control room, refueling floor, turbine operating deck, radwaste system, and other auxiliary systems.

SSES uses a closed-cycle heat dissipation system (two natural draft cooling towers) to transfer waste heat from the circulating water system to the atmosphere. The circulating water and service water systems draw water from, and discharge to, the Susquehanna River. The river intake structure is located on the western bank of the river and consists of two water entrance chambers with 1 inch, on-center vertical trash bars and 3/8- inch-mesh traveling screens. A low-pressure screen-wash system periodically operates to release organisms and debris impinged on the traveling screens to a pit with debris removal equipment that collects material into a dumpster for offsite disposal. Cooling tower blowdown, spray pond overflow, and other permitted effluents are discharged to the Susquehanna River through a buried pipe leading to a submerged discharge diffuser structure, approximately 600 feet downstream of the river intake structure. The diffuser pipe is 200-feet long, with the last 120 feet containing 72 four-inch portals that direct the discharge at a 45-degree angle upwards and downstream. Warm circulating water from the cooling towers can be diverted to the river intake structure to prevent icing; this usually occurs from November through March on an as-needed basis.

NOTE: No changes to the facility are proposed as part of this renewal application.