SUSQUEHANNA RIVER BASIN COMMISSION
4423 North Front Street • Harrisburg, Pennsylvania 17110-1788
Phone (717) 238-0423 • Fax (717) 238-2436
Web http://www.srbc.net

Groundwater Withdrawal Application Summary

Source Name: Well A **SRBC Pending No.:** 2025-114

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:	Constellation Energy Generation, LLC
Mailing Address Line 1:	200 Energy Way
Mailing Address Line 2:	
City:	Kennett Square
State:	PA
ZIP Code:	19348

Contact Person:

First Name:	Debra
Last Name:	Musser
Title:	Manager Environmental Programs
Telephone:	2675337308
Fax:	
Mobile:	
E-mail:	debra.musser@constellation.com

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:
2041

Total Project Water Usage	**Existing Usage (mgd)**	**Projected Usage For Design Year (mgd):**
Maximum 30-day Average Water Demand :	0.034	0.101
Maximum Daily Water Demand :	0.099	0.101
System Capacity :	0.101	0.101

1.4 Requested Withdrawal Amount:

Estimated Daily Hours of Operation per Day (Ex. = 5):	24
Maximum Instantaneous Withdrawal Rate (gpm):	70
Maximum 24-Hour Day (mgd):	0.101
Maximum 30-Day Average (mgd):	0.101

2.2 Facility Location

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

Street Address:	River Road, Middletown PA
State:	Dauphin
County:	Londonderry Township 17057
Municipality:	Lower Susquehanna
Zip Code:	
Subbasin:	

SECTION 2.1 PROJECT FACILITY DESCRIPTION

A. Site/Facility Name
Christopher M. Crane Clean Energy Center (CCEC).

B. Anticipated long-term owner and operator
Constellation Energy Generation, LLC is the long-term owner and operator of the facility.

C. Type of Facility
CCEC is an electricity generating facility that uses nuclear energy.

D. Purpose of the withdrawal
Groundwater is supplied to CCEC from five wells: A, B, C, OSF, and 48S.

Wells A, B, and C provide groundwater for industrial use. These three production wells have been used for various functions including decay heat non-contact cooling water, reactor building emergency cooling, makeup to the fire service system, river water pump lubrication, and for the production of demineralized water.

The fourth well, OSF, supplies domestic needs and potable water. The fifth well, 48S, is dedicated solely to providing drinking water.

E. Description of site activities

The site supports the generation of electricity. The majority of the developed portions of the site are the buildings housing the nuclear reactors and support and safety systems, the cooling towers, and parking lots for the approximately 500 full-time personnel needed when the facility is in operation.

CCEC uses surface water and groundwater withdrawals for cooling tower makeup, service water, screen wash, fire service, potable water and industrial applications. The nuclear steam supply system is a pressurized water reactor “PWR”. The PWR core generates heat, and pressurized-water in the primary coolant loop which carries the heat to two steam generators. Inside the steam generator, heat from the primary coolant loop vaporizes the water in a secondary loop producing steam (URS, 2009). The steam line directs the steam to the main turbine. Cooling water flowing through the tubes of the condenser condenses the steam within the shell of the condenser. The resulting pressure differential between steam and condensate causes the turbine generator to turn, which motion produces electricity. Condensate is pumped

out of the shell of the condenser with a series of pumps, reheated, and pumped back as feedwater to the steam generators.

F. The requested quantity of the water to be withdrawn

The total combined withdrawal from the proposed well(s) A, B, C, OSF, and 48S is 0.225 million gallons per day (mgd), based on peak and 30-day average uses.

G. Provide the date operations began at the site or are anticipated to begin

The facility initially began operations in 1974 (URS, 2009), and as previously mentioned was shut down in 2019. Constellation anticipates restarting operations in 2027.

REFERENCES

URS. (2009). *SRBC Consumptive Use Modification, Groundwater Modification, and Surface Withdrawal Application.* Middletown: Exelon Nuclear.

Exelon. (2022). SRBC Consumptive Use Modification, Groundwater Modification, and Surface Withdrawal Application. Middletown: Exelon Nuclear.

URS. (2015). *40 CFR §122.21(r) NPDES Application Requirments for Facilities with Cooling Water Intake Structures for Three Mile Island.* Middletown: Exelon Generation Company, LLC.