Chapter 20 SaskPower—Planning the Shut Down and Decommissioning of Boundary Dam

1.0 MAIN POINTS

SaskPower is the principal supplier of electricity in Saskatchewan. In 2023–24, coal-fired electricity generation represented 26% of SaskPower's total available generating capacity. Shutting down coal-fired electricity generating units and transitioning away from coal-fired electricity generation was part of SaskPower's plan to achieve its commitment to reduce greenhouse gas emissions by 50% from 2005 levels by 2030.

By February 2025, we found SaskPower implemented the one recommendation we first made in 2020 related to planning for shutting down and decommissioning the Boundary Dam Power Station site.

SaskPower updated its Decommissioning and Reclamation Plan for the Boundary Dam Power Station site in December 2024. SaskPower used the cost estimate classification system adopted by the Saskatchewan Environmental Code to determine the contingency percentage used to estimate costs for decommissioning and reclaiming the Boundary Dam Power Station site. The total net decommissioning and reclamation cost, including salvage value, for the Boundary Dam Power Station site is estimated at \$270.7 million, with \$100.6 million of this being contingency costs. The Decommissioning and Reclamation Plan also included sufficient rationale for the contingency percentage chosen.

Having sufficient rationale and following good practice helps SaskPower to make reasonable cost estimates and reduces the risk of SaskPower having inadequate resources available to shut down and decommission the Boundary Dam Power Station site.

2.0 INTRODUCTION

2.1 Background

SaskPower operates under the mandate and authority of *The Power Corporation Act*. SaskPower is responsible for reliable, sustainable, and cost-effective power for its customers and the communities it serves.¹

In 2024, SaskPower had a commitment to reduce greenhouse gas emissions by 50% from 2005 levels by 2030.² Shutting down coal-fired electricity generating units and transitioning away from coal-fired electricity generation was part of SaskPower's plan to achieve this commitment.

¹ SaskPower Annual Report 2023–24, p. 11.

² Ibid., p. 12.

In 2023–24, coal-fired electricity generation represented 26% (31% at time of our initial audit in 2020) of SaskPower's total available generating capacity.³ Boundary Dam Power Station, located near Estevan, is one of SaskPower's three coal-fired power stations and has four operating electricity generating units. At February 28, 2025, two units (Units 3 and 6) operate at or near capacity, and two units (Units 4 and 5) are used primarily as a reserve source of power. **Figure 1** shows the expected shut down dates of these units.

Power Capacity (MW)	Electricity Generating Unit	Year Commissioned	Expected Year of Shut Down
531	Unit 3	1970 and retrofitted with carbon capture and storage technology (CCS) in 2014	Unknown given equipped with CCS ⁴
	Unit 4	1970	2021 ^A
	Unit 5	1973	2024 ^A
	Unit 6	1977	2027

Figure 1—Boundary Dam Power Station Electricity Generating Units at February 2025

Source: www.saskpower.com/our-power-future/our-electricity/electrical-system/system-map/boundary-dam-power-station%20 (4 April 2025) and adapted from information provided by SaskPower.

A SaskPower shut down Unit 4 in 2021 and Unit 5 in 2024 but continues to use them as a reserve source of power if needed.

SaskPower expects to decommission the Boundary Dam Power Station site once it shuts down all units at this location, which is 2030 or later.⁴

2.2 Focus of Follow-Up Audit

This chapter describes our first follow-up audit of management's actions on the recommendation we made in 2020.

We concluded, for the 19-month period ended July 31, 2020, SaskPower had effective processes, other than in the area of our one recommendation, for planning the safe shut down of coal-fired electricity generating Units 4 and 5 and decommissioning the Boundary Dam Power Station site.⁵

To conduct this audit engagement, we followed the standards for assurance engagements published in the *CPA Canada Handbook—Assurance* (CSAE 3001). To evaluate SaskPower's progress toward meeting our recommendation, we used the relevant criteria from the original audit. SaskPower management agreed with the criteria in the original audit.

To carry out our follow-up audit, we assessed relevant key documents such as SaskPower's Decommissioning and Reclamation Plan and reviewed good practice for determining contingency percentages used to estimate costs for decommissioning and reclaiming the Boundary Dam Power Station site.

³ SaskPower Annual Report 2023–24, p. 12.

⁴ Federal regulations require conventional coal-fired generating units (e.g., those not equipped with CCS) to be shut down by 2030 or after 50 years of operation, whichever date is earlier. In 2019, the Government of Saskatchewan signed an Agreement with the Federal Government on the Equivalency of Federal and Saskatchewan Regulations for the Control of Greenhouse Gas Emissions from Electricity Producers in Saskatchewan. A renewed Equivalency Agreement was signed effective January 1, 2025. Under the Equivalency Agreement, SaskPower has the flexibility to achieve carbon dioxide emissions reduction from coal-fired electricity generating units by having the Federal Government regulate its emissions on a system-wide basis as opposed to on a unit-by-unit basis, and flexibility to determine the retirement date for each of its coal-fired units. ⁵ <u>2020 Report – Volume 2, Chapter 23</u>, pp. 183–200.

3.0 STATUS OF RECOMMENDATION

This section sets out the recommendation including the date on which the Standing Committee on Crown and Central Agencies agreed to the recommendation, the status of the recommendation at February 28, 2025, and SaskPower's actions up to that date.

3.1 Cost Contingency Percentage Aligned with Good Practice

We recommended SaskPower use the cost estimate classification system adopted by the Saskatchewan Environmental Code to determine the contingency percentage used to estimate costs for decommissioning and reclaiming the Boundary Dam Power Station site. (2020 Report – Volume 2, p. 23, Recommendation 1; Crown and Central Agencies Committee agreement August 24, 2021)

Status-Implemented

SaskPower used the cost estimate classification system adopted by the Saskatchewan Environmental Code to determine the contingency percentage used to estimate costs for decommissioning and reclaiming the Boundary Dam Power Station site. SaskPower had clear rationale to support the selected contingency percentage in its Boundary Dam Power Station Decommissioning and Reclamation Plan.

SaskPower is required to follow the Saskatchewan Environmental Code and consider the requirements of the Code in its Decommissioning and Reclamation Plan including determining the contingency percentage appropriate to the project when estimating decommissioning contingency costs. The Code uses a standardized cost estimation classification system to make cost estimates and suggests contingency ranges for each class (see **Figure 2**).⁶ Using a standardized cost estimation classification system is considered good practice.

Class	Level of Project Definition ^A	Suggested Contingency Range
Class 1	50–100%	3–15%
Class 2	30–70%	5–20%
Class 3	10–40%	10–30%
Class 4	1–15%	20–50%
Class 5	0–2%	30–100%

Figure 2—Cost Estimate Classes and Suggested Contingency Ranges

Source: Adapted from *Standard Classification for Cost Estimate Classification System* established by ASTM International. ^A Level of project definition means the amount of detailed engineering or architectural planning (e.g., drawings, designs) done compared to the total amount of planning expected. The level of project definition determines the project's class (i.e., 1–5). For example, Class 1 represents a high amount of detailed planning completed resulting in a low uncertainty in the cost estimate, while Class 5 represents a low amount of detailed planning resulting in high uncertainty.

SaskPower updated its Boundary Dam Power Station Decommissioning and Reclamation Plan in 2024. We found that SaskPower used the cost estimate classification system adopted by the Saskatchewan Environmental Code in its updated Decommissioning and Reclamation Plan.

⁶ The Saskatchewan Environmental Code adopted the *Standard Classification for Cost Estimate Classification System* as established by ASTM International standards and services, <u>publications.saskatchewan.ca/api/v1/products/79428/formats/89761/download</u> (1 April 2025).

SaskPower defined the level of project definition for its Decommissioning and Reclamation Plan as approximately 10% and determined the appropriate cost estimate class as Class 4. As shown in **Figure 2**, the suggested contingency range for a Class 4 cost estimate is 20%–50%. Based on information available for the cost estimation, including engineering quantities, available site information and engineering completed to date, SaskPower determined a contingency percentage of 50% should be used to determine the estimated costs for decommissioning and reclamation of the Boundary Dam Power Station site.

We found SaskPower considered sufficient and clear rationale (e.g., additional environmental investigations necessary, further refinement of closure plans) for selecting this contingency percentage. This results in a contingency cost of \$100.6 million. The total estimated net decommissioning and reclamation cost, including salvage value, for the Boundary Dam Power Station site is estimated to be \$270.7 million.

Having clear rationale for selecting the contingency percentage and following good practice helps to ensure accurate estimates for contingency reclamation costs and minimizes the risk of cost overruns.