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June 28, 2019

**VIA HAND DELIVERY**

Diane M. Hanian, Secretary  
Idaho Public Utilities Commission  
472 West Washington Street  
Boise, Idaho 83702

Re: Case No. IPC-E-19-19  
2019 Integrated Resource Plan – Idaho Power Company's Application

Dear Ms. Hanian:

Enclosed for filing in the above matter please find an original and seven (7) copies of Idaho Power Company's Application.

Very truly yours,

Lisa D. Nordstrom

LDN:csb  
Enclosures

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BEFORE THE IDAHO PUBLIC UTILITIES COMMISSION

IN THE MATTER OF IDAHO POWER )  
COMPANY'S 2019 INTEGRATED ) CASE NO. IPC-E-19-19  
RESOURCE PLAN. )  
 ) APPLICATION  
 )  
\_\_\_\_\_ )

COMES NOW, Idaho Power Company ("Idaho Power" or "Company"), and in accordance with Idaho Public Utilities Commission ("Commission") Order Nos. 22299 and 30317, requests that the Commission accept for filing the Company's 2019 Integrated Resource Plan ("IRP"). In support of this request, Idaho Power states as follows:

**I. BACKGROUND**

1. Idaho Power's 2019 IRP undertakes a comprehensive analysis of the optimal mix of both demand- and supply-side resources available to meet the Company's resource needs over the IRP's 20-year planning horizon. To this end, the 2019 IRP assesses available demand-side and supply-side resource options, load

forecasts, and current and expected economic, market, and regulatory conditions. Based on these assessments, the Company used long-term capacity expansion software to develop potential resource portfolios consisting of a mix of different resource types and timing. The portfolios were then subjected to rigorous financial and sensitivity analysis to identify the preferred portfolio, which represents the best combination of cost and risk for Idaho Power and its customers. Based on the preferred portfolio, the 2019 IRP also identifies an action plan (“2019 IRP Action Plan”), which details the specific steps the Company plans to take in the near term to implement the preferred portfolio.

2. The complete 2019 IRP consists of five separate documents: (1) the 2019 Integrated Resource Plan; (2) Appendix A: Sales and Load Forecast; (3) Appendix B: DSM Annual Report; (4) Appendix C: Technical Report; and (5) Appendix D: B2H Supplement. A copy of the complete 2019 IRP is provided as Attachment 1 and can also be found on the Company’s website at [www.idahopower.com](http://www.idahopower.com). Interested persons may also request a printed copy of the 2019 IRP by contacting [irp@idahopower.com](mailto:irp@idahopower.com).

3. Idaho Power engages with public stakeholders when developing its IRP. To incorporate stakeholder and public input, the Company worked with the IRP Advisory Council (“IRPAC”), comprised of members of the environmental community, major industrial customers, agricultural interests, representatives from both this Commission and the Public Utility Commission of Oregon, representatives from the Idaho Governor’s Office of Energy and Mineral Resources, representatives from the Northwest Power and Conservation Council, and others. In addition, many members of the public participated even though they are not members of the IRPAC. A list of the 2019 IRPAC members can be found in Appendix C: Technical Report.

4. For the 2019 IRP, Idaho Power conducted eight IRPAC meetings. The Company also maintained an on-line forum for stakeholders to submit requests for information, and for the Company to provide responses to information requests. The forum allows stakeholders to develop their understanding of the IRP process, particularly its key inputs, which enables more meaningful stakeholder involvement during the process.

## **II. IRP GOALS AND ASSUMPTIONS**

5. The primary goals of Idaho Power's 2019 IRP are to: (1) identify sufficient resources to reliably serve the growing demand for energy within Idaho Power's service area throughout the 20-year planning period (2019-2038); (2) ensure the selected resource portfolio balances cost, risk, and environmental concerns; (3) give balanced treatment to both supply-side resources and demand-side measures; and (4) involve the public in the planning process in a meaningful way.

6. The 2019 IRP assumes that during the 20-year planning period, Idaho Power will continue to be responsible for acquiring resources sufficient to serve its retail customers in its Idaho and Oregon service areas and will continue to operate as a vertically integrated electric utility. During the 20-year planning period, Idaho Power's load is forecasted to grow by 1.0 percent per year for average energy demand and 1.2 percent per year for peak-hour demand. Total customers are expected to increase from 550,000 in 2018 to 775,000 by 2038.

7. Hydroelectric generation remains a large part of Idaho Power's generation fleet; however, hydroelectric plants are subject to variable water and weather conditions. In response to public and regulatory input, Idaho Power continues to develop more conservative streamflow projections and planning criteria for use in resource adequacy planning.

8. The 2019 IRP examined demand-side management (“DSM”) and transmission resources. DSM programs are designed to achieve prudent, cost-effective energy efficiency savings and provide an optimal amount of peak reduction through demand response programs. Idaho Power also continues to provide customers with tools and information to help them manage their own energy usage. The Company achieves these objectives through the implementation and careful management of incentive programs and through outreach and education.

9. Idaho Power’s resource planning process also evaluates additional transmission capacity as a resource alternative to serve retail customers. Transmission projects are often regional resources, and Idaho Power coordinates transmission planning regionally as a member of the Northern Tier Transmission Group. The delivery of energy, both within the Idaho Power system and through regional transmission interconnections, is of increasing importance as regional penetration of variable energy resources and their associated intermittent production continues to increase. The timing of new transmission projects is subject to complex permitting, siting, and regulatory requirements and coordination with co-participants.

### **III. IRP METHODOLOGY**

10. Idaho Power’s IRP is designed to ensure the Company has sufficient resources to reliably serve customer demand and flexible capacity needs over the 20-year planning period. In prior IRPs, the Company developed portfolios to eliminate resource deficiencies identified in a 20-year load and resource balance, using both demand and supply-side resources. The portfolios were designed to quantitatively eliminate the identified resource deficiencies, and they were qualitatively varied by resource type based on assessments that different resource types would perform differently depending on future conditions in energy markets and energy policy.

**A. Capacity Expansion Modeling.**

11. In response to feedback received during the 2017 IRP, the Company made a fundamental change to its IRP methodology. Specifically, it used the AURORA model's capacity expansion modeling capability to develop the portfolios for the 2019 IRP. In this process, the Company formulated future scenarios based on economic, market, and regulatory considerations and then allowed the AURORA model to select the optimal resources to address the conditions in each future scenario. The model selected from a wide variety of supply- and demand-side resource options to develop optimal portfolios that meet a 15 percent planning margin and regulating reserve requirements associated with balancing load, wind plant output, and solar plant output. The model can also simulate retirement of existing generation units if economic and acquire resources that are economic to displace otherwise available resources that are higher cost.

12. In meeting the objectives for planning margin and regulating reserve requirements, the AURORA model accounts for the capability of the existing system to meet the objectives and selects from the pool of new supply- and demand-side resource options only when the existing system comes short of meeting the objectives. Existing supply-side resources include generation resources and transmission import capacity from regional wholesale electric markets. Existing demand-side resources include current levels of demand response and savings from current energy efficiency programs and measures.

13. Idaho Power conducts a financial analysis evaluating the costs and benefits of the developed portfolios. The financial costs include construction, fuel, operations and maintenance, transmission upgrades associated with interconnecting new resource options, projected wholesale market purchases, and anticipated

environmental controls. The financial benefits include economic resource options that displace higher cost alternatives, projected wholesale market sales, and the market value of renewable energy certificates (“REC”) for REC-eligible resources.

**B. Boardman-to-Hemingway.**

14. Idaho Power’s 2019 IRP analyzes the addition of the Boardman-to-Hemingway transmission line project (“B2H”). That transmission addition has been a component of Idaho Power’s preferred resource portfolio since 2006. The Company has continued to analyze B2H to ensure that it remains a prudent resource acquisition. A detailed update regarding B2H is provided as Appendix D.

**C. Natural Gas Forecast.**

15. For the 2019 IRP, Idaho Power has made the decision to rely on a third-party vendor for its natural gas forecast—S&P Global Platts North American Gas Analytics. Platts provides energy consulting services for 12,000 companies worldwide. For its natural gas forecasting, Platts developed a model that it refers to as the Gas Pipeline Competition Model. To verify the reasonableness of Platts’ forecast, Idaho Power compared Platts’ forecast to Moody’s Analytics and the NYMEX natural gas futures settlement and concluded that Platts’ forecast is appropriate for the planning case forecast for the 2019 IRP.

**D. Carbon Cost.**

16. Idaho Power’s 2019 IRP accounts for the expected costs of carbon regulation and the Company’s long-standing commitment to reduce its carbon emissions. Since 2009, the Company has met various voluntary goals, initiated by shareholders, to realize its commitment to CO<sub>2</sub> reduction. As of 2018, Idaho Power’s carbon emissions intensity, expressed as pounds of CO<sub>2</sub> per megawatt-hour generated, has decreased by 46 percent compared to 2005. Carbon emissions intensity averaged

over 2010-2018 is 27 percent below the 2005 level. And, in March 2019, the Company announced a goal to provide 100 percent clean energy by 2045. Idaho Power remains committed to decreasing carbon emissions and that commitment is reflected in the 2019 IRP.

#### **IV. PREFERRED RESOURCE PORTFOLIO**

17. A fundamental goal of the IRP process is to identify a selected, or preferred, resource portfolio. The preferred portfolio identifies resource options and timing to allow Idaho Power to continue to reliably serve customer demand, balancing cost and risk over the 2019 to 2038 planning period. Although the Company has identified a preferred portfolio, “an IRP is a working document that incorporates many assumptions and projections at a specific point in time”; it is a plan that can respond to changing conditions, not a fixed blueprint.<sup>1</sup>

18. The AURORA model produced 24 different portfolios based on three natural gas and four carbon emissions adders all under two futures—one with B2H and one without. The 24 portfolios include an increase in the types of resource additions and a wider range of quantities of those resources compared to the 2017 IRP. The 24 portfolios for 2019 include varied amounts of nameplate generation additions:

- Wind (between 0 and 1,100 megawatts (“MW”))
- Solar (between 0 and 1,190 MW)
- Natural Gas Reciprocating Engines (between 0 and 614 MW)
- Natural Gas Combined-Cycle Combustion Turbine (between 0 and 1,200 MW)
- DSM (between 0 and 50 MW)

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<sup>1</sup> *In the Matter of Idaho Power Company's 2017 Integrated Resource Plan, Case No. IPC-E-17-11, Order No. 33983 at 18 (February 9, 2018).*



- Battery storage (between 0 and 105 MW)
- Pumped Storage (between 0 and 500 MW)
- Biomass (between 0 and 150 MW)
- Additional accelerated Jim Bridger power plant (“Jim Bridger”) coal unit retirements (between 0 and 708 MW)

19. Portfolio P14 was selected as the 2019 preferred portfolio (“Preferred Portfolio”). This portfolio continues the trend away from existing coal units, consistent with the 2015 and 2017 IRPs. The 2019 IRP recommends early exit from two units at Jim Bridger and confirms previous IRPs’ conclusion that the Company should exit from the North Valmy power plant (“Valmy”) Unit 2 in 2025. The 2019 Preferred Portfolio identifies the acquisition of two solar resources in 2022 and 2023 as least-cost, least-risk resources to serve Idaho Power customers as well as a B2H in-service date of 2026. It also has the following key attributes:

- Optionality. Preserving optionality is critical to prudent long-term planning. Optionality is particularly critical in a future where the reassessment of resource choice may be necessary in response to changing energy policy (e.g., carbon cost) or planning assumptions (e.g., natural gas prices). Here, optionality means conducting the required studies and preparatory efforts to shorten lead times of potential resources to mitigate quantitative and qualitative risks.

- Flexible Capacity. With the addition of 220 MW of photovoltaic (“PV”) solar, the Idaho Power system will have over 1,200 MW of on-line variable energy resources (“VER”) (wind and solar) installed capacity. While Idaho Power is developing operational experience integrating VERs and is a participant in the integration-abetting Western Energy Imbalance Market, the Company remains concerned about maintaining adequate flexible capacity to ensure VER integration

without compromising system reliability. The continued monitoring of VER variability, particularly coupled with studied effect of the added solar PV capacity in the early 2020s, may indicate that the Preferred Portfolio's flexible capacity additions are needed earlier than the late 2020s to maintain adequate system reliability.

#### **V. 2019 IRP ACTION PLAN (2019-2026)**

20. IRP action plans typically identify resource activities that the Company plans to take in the next four years.<sup>2</sup> For the 2019 IRP, the Company expanded the 2019 IRP Action Plan through 2026 to reflect the completion of the B2H project and addition additional coal plant retirements. These core resource actions include:

- The Addition of 220 MW of Solar PV Capacity (2022–2023). This capacity is associated with a power purchase agreement Idaho Power signed to purchase output from the 120 MW Jackpot Solar facility and the adjacent 100 MW Franklin Solar facility, which have projected commercial on-line dates of 2022 and 2023, respectively.
- Exit from Three Coal-Fired Generating Units by Year-End 2022, and from Two More Coal-Fired Generating Units (Five Total) by Year-End 2026. The Preferred Portfolio includes Idaho Power's exit from its share of Valmy Unit 1 by year-end 2019, Boardman power plant by year-end 2020, a Jim Bridger unit during 2022, Valmy Unit 2 by year-end 2025, and a second Jim Bridger unit during 2026. Achieving these coal-unit exits will require substantial coordination with unit co-owners, regulators, and other stakeholders. The Company also recognizes the need to ensure system reliability is not jeopardized by coal-unit exits.

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<sup>2</sup> *In re Idaho Power's 2013 Integrated Resource Plan*, LC 58, Order No. 14-253 at 17 (July 8, 2014).

- B2H on-line in 2026. The Preferred Portfolio includes the B2H transmission line with an on-line date during 2026. The 2019 IRP Action Plan includes both permitting and construction activities. Consistent with the 2017 IRP, the Company has included a longer action plan “window” for B2H given the length of time required to permit and construct the 300 mile 500 kilovolt transmission line. The pursuit of permitting and construction over the relevant action plan periods is critical to the successful and timely implementation of the Preferred Portfolio.

21. The 2019 IRP Action Plan is summarized below.

Year	Action
2019–2022	Plan and coordinate with PacifiCorp and regulators for early exits from Jim Bridger units. Target dates for early exits are one unit during 2022 and a second unit during 2026.
2019	Jackpot Solar Power Purchase Agreement (PPA) regulatory approval—on-line 2022 and 2023 (Franklin Solar).
2019	Exit Valmy Unit 1 by December 31, 2019.
2019–2021	Conduct ongoing B2H permitting activities. Negotiate and execute B2H partner construction agreement(s).
2019–2026	Conduct preliminary construction activities, acquire long-lead materials, and construct the B2H project.
2019–2020	Monitor VER variability and system reliability needs, and study projected effects of additions of 220 MW of PV solar (Jackpot Solar and Franklin Solar). Prepare to issue a request for proposal (RFP) contingent on timing of Jim Bridger unit early exits and reliability needs. Resource on-line dates 2023–2028. 100–900 MW flexible capacity and energy (ability to shift from P14 to P16).
2020	Exit Boardman December 31, 2020.
2020	Bridger Unit 1 and Unit 2 Regional Haze Reassessment finalized.
2021–2022	Continue to evaluate and coordinate with PacifiCorp and regulators for timing of exit/closure of remaining Jim Bridger units.
2022	Exit Jim Bridger unit by December 31, 2022.
2022	Jackpot Solar 120 MW on-line.
2023	Franklin Solar 100 MW on-line.
2023–2026	Procure or construct resources resulting from RFP (if needed).
2025	Exit Valmy unit 2 by December 31, 2025.
2026	Exit Jim Bridger unit by December 31, 2026.
2026	Demand response resource added (5 MW).

**VI. COMMUNICATIONS AND SERVICE OF PLEADINGS**

22. Idaho Power requests that any notices, inquiries, and communications regarding this request be provided to:

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**VII. REQUEST FOR ACCEPTANCE**

23. Idaho Power respectfully requests that the Commission issue its order accepting the Company's 2019 IRP and finding that the 2019 IRP meets both the procedural and substantive requirements of Commission Order Nos. 22299 and 30317.

DATED at Boise, Idaho, this 28<sup>th</sup> day of June 2019.

  
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LISA D. NORDSTROM  
Attorney for Idaho Power Company

**BEFORE THE  
IDAHO PUBLIC UTILITIES COMMISSION  
CASE NO. IPC-E-19-19**

**IDAHO POWER COMPANY**

**ATTACHMENT 1  
2019 INTEGRATED RESOURCE PLAN**