**Craig A. Jones** **(208) 388-2934**
**Hells Canyon Relicensing Project Manager** **fax (208) 388-6902**
**Hydro Relicensing Department** **e-mail cjones@idahopower.com**

September 29, 2004

Magalie Salas, Secretary
Federal Energy Regulatory Commission
Office of Hydropower Licensing
888 First Street, NE
Washington DC, 20426

Re: FERC Docket Number P-1971-079, Additional Information Request OP-2 for the Hells Canyon Project (FERC Project No. 1971)

Dear Ms. Salas:

On May 4, 2004, the Commission requested additional information from Idaho Power Company regarding the relicensing of the Hells Canyon Project. In that request, the Commission provided three (3) months for responding to OP-2. On June 16, 2004, Idaho Power Company requested an additional two (2) months to compile the data and submit it to FERC. On June 29, 2004, the FERC granted a revised filing date (from May 4, 2004) of five (5) months.

Therefore, consistent with the extension of time, enclosed for filing with the Commission are an original and eight (8) copies of Idaho Power Company's response to additional information request OP-2, Current Operations Scenario.

Please contact me with any questions regarding this filing.

Sincerely,

Craig A. Jones

CAJ/cs
Enclosure
By Federal Express
CC: Alan Mitchnick, FERC
Service List

Bcc: Dave Meyers, IPC
Nathan Gardiner, IPC
Jim Tucker, IPC
Jim Vasile, Davis Wright Tremaine

**UNITED STATES OF AMERICA**
**FEDERAL ENERGY REGULATORY COMMISSION**

| | | |
|---|---|---|
| Idaho Power Company | ) | Hells Canyon Hydroelectric Project |
| | ) | Project No. 1971-079 |
| _____ | ) | |

## CERTIFICATE OF SERVICE

I hereby certify that in accordance with the Commission's Rules of Practice and Procedure, I have served the foregoing document upon each person designated on the official service list compiled by the Federal Energy Regulatory Commission in the above-captioned proceeding.

Dated this 30th day of September, 2004.

Craig A. Jones
Idaho Power Company
1221 W. Idaho
Boise, Idaho 83702
(208) 388-2934

# Idaho Power Company
# Hells Canyon Complex – FERC Project No. 1971-079
# Additional Information Requests
# Service List

| | |
|---|---|
| Judy Ellis | Adams County Commissioner |
| Sara Eddie | Advocates for the West |
| Connie Kelleher | American Rivers |
| County Judge | Baker County |
| Chairman | Blaine County |
| Regional Hydro Policy Specialist | Bureau of Indian Affairs |
| Dorothy Mason | Bureau of Land Management |
| Eric Hoffman | Bureau of Land Management |
| Jim Clark | Bureau of Land Management |
| John Martin | Bureau of Land Management |
| Mel Berg | Bureau of Land Management |
| | Bureau of Reclamation |
| Dean Adams | Burns Paiute Tribe |
| Denise Turner-Walsh | Burns Paiute Tribe |
| Mayor | City of Boise |
| Robert Lothrop | Columbia River Intertribal Fish Commission |
| Jennifer Frozena | Columbia River Inter-Tribal Fish Commission |
| Carl Merkle | Confederated Tribes of the Umatilla Indian Reservation |
| Todd True | Earthjustice Legal Defense Fund |
| Daniel Ousley | Hells Canyon Preservation Council |
| Harriet Hensley | Idaho Attorney General's Office |
| Jenna Borovansky | Idaho Rivers United |
| Chairman | Jerome County |
| Lee Sherline | Leighton & Sherline |
| Chairman | Lincoln County |
| Robert Ling | Ling, Nielson & Robinson |
| Russ Hursh | Malheur County Court Judge |
| Chairman | Minidoka County |
| Scott Campbell | Moffat, Thomas, Barrett, Rock & Fields |
| Greg Haller | Nez Perce Tribe |
| Rick Eichstaedt | Nez Perce Tribe |
| Keith Kirkendall | NOAA Fisheries |
| Mark Eames | NOAA Fisheries |
| Ritchie Graves | NOAA Fisheries |
| Ed Chaney | Northwest Resource Information Center |
| Arthur Seamans | NW Professional Power Vessel Association |
| Paul DeVito | Oregon Department of Environmental Quality |
| Colleen Fagan | Oregon Department of Fish and Wildlife |

# Idaho Power Company
# Hells Canyon Complex – FERC Project No. 1971-079
# Additional Information Requests
# Service List

| | |
|---|---|
| Kurt Burkholder | Oregon Department of Justice |
| Phil Ward | Oregon Department of Water Resources |
| Steven Brutscher | Oregon Parks and Recreation Department |
| Bill McNamee | Oregon Public Utility Commission |
| Wayne Shuyler | Oregon State Marine Board |
| R. Craig Kohanek | Oregon Water Resources Department |
| Daniel Rohlf | Pacific Environmental Advocacy Center |
| Forest Supervisor | Payette National Forest |
| Chairman | Power County Commissioners |
| Tribal Attorneys | Shoshone Bannock Tribes |
| Dan Israel | Shoshone-Bannock Tribe |
| Keith Kutchins | Shoshone-Bannock Tribes |
| Donald Clary | Shoshone-Paiute Tribe |
| Jocelyn Somers | U.S. Department of Agriculture |
| Frank Wilson | U.S. Department of Interior |
| Field Supervisor | U.S. Fish and Wildlife Service |
| Walter Dortch | U.S. Forest Service |
| County Judge | Wallowa County Court |
| Forest Supervisor | Wallowa-Whitman National Forest |
| Diana Thomas | Washington County Commission |

# Responses to FERC Additional Information Request OP-2

# Current Operations Scenario

## Final Report

Jon Bowling
Engineering Leader

Hells Canyon Project
FERC No. P-1971-079

October 2004

# TABLE OF CONTENTS

# LIST OF FIGURES

# SCHEDULE A: ADDITIONAL INFORMATION REQUEST OP-2 CURRENT OPERATIONS SCENARIO

*Time Required: 5 months*

In your application, you state that your proposed project operation is representative of your current operation. Specifically, you state that modeled proposed operations represent the typical operating guidelines and constraints that Idaho Power currently follows (New License Application, Second Stage Consultation CD, page 172). In ODFW's comments on Scoping Document 1 (SD1) (dated September 22, 2003), ODFW suggests that current and proposed operations are not the same. ODFW states that in medium- and high-flow years, your proposed operation would result in releases below Hells Canyon being decreased by over 10,000 cfs during May because your proposed reservoir refill date is earlier than occurs under your current operation. ODFW further argues that current operations involve a more aggressive July/August drawdown of Brownlee reservoir than would occur in your proposed operation.

Your license application did not provide supporting evidence that your proposed operation is the same as your current operations. Therefore, please clarify your proposed May through August Brownlee reservoir operation in light of ODFW's comments, and compare and contrast this operation with recent typical operations.[1] We need this clarification to ensure that our NEPA analysis is properly structured with respect to baseline operations.

If you conclude that your proposed operations are not representative of the typical operating guidelines and constraints that you have followed since mid-2001, provide a new current operations scenario for comparison with your proposed operation. The new current operations scenario should be characterized using the information requested in AIRs OP-1, Operational Scenarios; WQ-1, Dissolved Oxygen Augmentation; and WQ-2, Temperature Control, such that the new current operations scenario can be readily compared with your proposed operations and with alternative operational scenarios.[2] Additionally, if you conclude that your proposed operations are not representative of current operations, you should revise your exhibit B tables B-1, B-3, and B-4 by adding a new column showing operational guidelines and constraints under the current operations scenario.

# 1. INTRODUCTION

Operations proposed by Idaho Power Company (IPC) are based on Hells Canyon Complex (HCC) operational constraints outlined in Exhibit B, Tables B-1 through B-4 and Figures B-1 through B-14. Modeled proposed operations are represented by five typical annual hydrologic conditions or pentiles: low, medium-low, medium, medium-high, and high. Actual Brownlee Reservoir inflows for five recent years—1992, 1994, 1995, 1999, and 1997, each of which falls into one of the pentiles—were used to model proposed operations. Seasonal target elevations for Brownlee Reservoir were developed for each of the inflow pentiles, examples of which are depicted in Exhibit B, Figures B-6 through B-8.

---

[1] We consider "recent typical operations" to be those operational guidelines and constraints that characterized your Hells Canyon Project operations from mid-2001 to mid-2003 (subsequent to the termination of the flow augmentation program).

[2] In AIR OP-1, Operational Scenarios, we asked for data in specific formats related to power economics, flood control, navigation, sediment, aquatic resources, and terrestrial resources.

Annual Brownlee flood-control target elevations in the spring, operations in the summer, and fall chinook reservoir operations in the fall are based on forecast streamflows. Actual reservoir operations are adjusted in real time with each new forecast, as described in Exhibit B. Due to the variation and uncertainty associated with forecasting Brownlee inflows, theoretical Brownlee target elevations were calculated based on actual Brownlee inflows for each pentile for use in the modeled proposed operations. The use of actual inflows for this calculation enables us to make like comparisons between scenarios without artificial adjustments due to day-to-day human intervention arising from real time events, conditions, or situations.

Actual operations for Brownlee Reservoir and outflows from Hells Canyon Reservoir in any given year can vary considerably, even within pentiles, depending on actual hydrologic conditions and streamflow forecasts, U.S. Army Corps of Engineers (ACOE) flood-control and navigation requirements, generating system reliability and capacity factors, and energy market conditions. Because it is impossible to model all the atypical conditions or events that can occur in real time, the proposed modeled operations and corresponding Brownlee Reservoir target elevations represent the most probable or typical current operations, consistent with existing and proposed operational parameters, within each of the pentiles under normal conditions in the absence of water-shaping agreements with federal agencies for salmon augmentation to aid with downstream migration through federal facilities.

# 2. RESPONSES

## 2.1. Response Regarding Typical Operations for Brownlee Reservoir from May through August

> Your license application did not provide supporting evidence that your proposed operation is the same as your current operations. Therefore, please clarify your proposed May through August Brownlee reservoir operation in light of ODFW's comments, and compare and contrast this operation with recent typical operations. We need this clarification to ensure that our NEPA analysis is properly structured with respect to baseline operations.

The following description is a clarification of IPC's proposed HCC operations for May through August under typical current and proposed operating conditions.

### *May*

During low and medium-low flow years, there is typically no flood-control requirement in May. Generally, IPC is still providing minimum flows for fall chinook spawning through emergence. If

emergence is completed in May, IPC continues to provide minimum flows and a higher daily pulsed maintenance flow to prevent the stranding of fall chinook fry that have not yet moved downstream.

During medium to high flow years, Brownlee Reservoir is typically filling in May as part of the spring flood-control operation. The rate of refill for Brownlee Reservoir and outflow from Hells Canyon Reservoir is controlled by the ACOE and varies yearly, depending on inflow forecasts for Brownlee and The Dalles reservoirs. The refill rate and fill date also varies from year to year, even within the same pentile. In other words, in some years Brownlee Reservoir refills earlier or later than in others for the same projected Brownlee inflow. This timing is at the discretion of the ACOE because the flood-control rule curves for Brownlee are not published after April 30.

Once the elevation of Brownlee Reservoir reaches 2,069 feet mean sea level (ft msl) on or after May 20, a 30-day period for Brownlee resident fish spawning is protected. During this time, the reservoir is typically not drafted more than one foot from the highest elevation reached during the 30-day period. Depending on hydrologic conditions, Brownlee Reservoir may be full on May 20 and remain within the top one foot for the 30-day period. IPC tries to be at elevation 2,069 or higher by June 7.

## *June*

During low and medium-low flow years, there is typically no flood-control requirement in June. If emergence is completed in May, IPC continues to provide minimum flows and a higher daily pulsed maintenance flow to prevent the stranding of fall chinook fry that have not yet moved downstream.

During medium to high flow years, Brownlee Reservoir may continue to refill in June as part of the spring flood-control operation. Again, it should be noted that the rate of Brownlee refill and Hells Canyon outflow is controlled by the ACOE and varies yearly, depending on Brownlee and The Dalles inflow forecasts. The refill rate and fill date also varies from year to year, even within the same pentile, as dictated by the ACOE.

The 30-day Brownlee resident fish spawning period is generally in effect until June 20, during which time the reservoir is typically not drafted more than one foot from the highest elevation reached during the 30-day period.

## *July*

The target elevation for July 4 is 2,069 ft msl or higher. Typically, Brownlee is full or nearly full at 2,077 ft msl on July 4. Under typical conditions, assuming that all the variables described in section 1 above are normal, IPC strives to keep Brownlee Reservoir nearly full throughout July to conserve storage

for August, which usually has an above average monthly system load, lower market energy availability, and higher average market energy prices.

### *August*

During August, Brownlee Reservoir is typically drafted to meet system load. In the later part of August, the streamflow forecast is examined to determine possible reservoir target elevations and Hells Canyon outflows for the upcoming fall chinook spawning period, which generally starts around the second or third week of October. Depending on energy conditions and on current and projected hydrologic conditions, it may be necessary to adjust Brownlee Reservoir's draft rate to achieve the necessary Brownlee Reservoir starting fall chinook program elevation on the specified start date. This starting elevation ensures a stable spawning flow over the period and a nearly full reservoir at the end of the spawning period around the first week of December.

## 2.2. Response Regarding May Operations for 1995, 1999, and 1997

> ODFW states that in medium- and high-flow years, your proposed operation would result in releases below Hells Canyon being decreased by over 10,000 cfs during May because your proposed reservoir refill date is earlier than occurs under your current operation.

The following analysis compares and contrasts modeled proposed operations with actual operations during May for the medium, medium-high, and high pentiles (1995, 1999, and 1997, respectively).

### *Medium Pentile—1995*

Although 1995 was used to represent the medium pentile, it was a borderline year for annual average Brownlee inflows and could actually have fallen into the medium or medium-high pentile. A comparison of proposed operations with actual operations (Figure 1) shows that the refill date for proposed operations was later than the actual date, not earlier as stated by the Oregon Department of Fish and Wildlife (ODFW). The actual amount of space to refill in May 1995 was approximately half the space to refill under the proposed operation. This situation does result in the actual average Hells Canyon outflow (29,633 cubic feet per second [cfs]) for May being approximately 3,900 cfs less than the proposed (33,510 cfs), not 10,000 cfs as indicated by ODFW. This difference is not so much due to the refill date as to the refill rate, which is influenced by the ACOE's control over the rate of refill and discharge for the HCC, since there is no published rule curve after April 30 for the Brownlee flood-control operation, as indicated in Exhibit B, Figure B-1.

## Medium-High Pentile—1999

The medium-high pentile was represented by 1999. A comparison between actual and proposed operations for May 1999, as shown on Figure 2, indicates that the proposed fill date is earlier than what actually occurred. However, the average proposed Hells Canyon outflow (29,195 cfs) is 2,900 cfs less than actual Hells Canyon outflow (32,094 cfs) for May 1999. Again, the difference is significantly less than the 10,000 cfs identified by the ODFW. Figure 2 shows that the actual ACOE controlled draft for flood control in 1999 was greater than the proposed draft dictated by the typical reservoir operation for the medium-high pentile. It can also be seen that the ACOE required IPC to pass inflows for the last half of April and first half of May. The ACOE's decision to require IPC to pass inflows and the subsequent decision to allow the company to begin refilling was a decision made in real time, based on basinwide hydrologic conditions. The hydrologic conditions could have been such that the ACOE allowed IPC to begin refilling earlier. Had that been the case, the opposite would have been true, and the reservoir would have refilled sooner than it under the proposed operation, possibly resulting in higher actual Hells Canyon outflows for May 1999.

## High Pentile—1997

For 1997, the actual and proposed typical flood-control operations for the high pentile are very similar in magnitude and duration (Figure 3). However, the proposed operation refills Brownlee Reservoir earlier than the actual operation did. The difference between average proposed Hells Canyon outflow for May 1997 (34,781 cfs) and actual average Hells Canyon outflow (37,106 cfs) is 2,325 cfs, which is also significantly less than 10,000 cfs. Again, this difference is not so much due to the refill date as to the refill rate, which is influenced by the ACOE's control over the rate of refill and discharge for the HCC, since there is no published rule curve after April 30 for the Brownlee flood-control operation, as indicated in Exhibit B, Figure B-1.

## Summary

While there are some slight differences between actual and proposed operations for the medium to high years, proposed operations use the same operational flood-control requirements and constraints that are currently being used. In actuality, IPC, under the direction of the ACOE, adjusts flood-control reservoir volumes, refill rates, and corresponding Hells Canyon outflow in real time. Each year's real-time adjustments are unique to that year, sometimes resulting in significantly different operations in May, even between years that fall within the same inflow pentile.

## 2.3. Response Regarding July and August Operations for 2001, 2002, and 2003

ODFW further argues that current operations involve a more aggressive July/August drawdown of Brownlee reservoir than would occur in your proposed operation.

The following discussion compares modeled proposed operations and actual operations for July and August during 2001, 2002, and 2003. The period from 2001 through 2003 was a drought period throughout the Snake and Columbia river basins, with all years in the low to medium-low pentiles. Hydroelectric operations during an extended drought period are generally atypical due to a significant decrease in regional reservoir storage and base streamflows, both of which result in a significant reduction in available energy in the Northwest. To meet system load in an extended drought period, real-time adjustments may need to be made to previously planned operations.

### *2001*

Figure 4 shows Brownlee Reservoir operational details for 2001. With an annual Brownlee inflow volume of 7,551 thousand acre-feet (KAF), 2001 fell into the low pentile. The typical low pentile target reservoir operation, which was derived using the actual inflow for 1992 (the low pentile modeled proposed operation), is superimposed on the graph for comparison. Under typical conditions in any given year falling within the low pentile, current and proposed operations generally follow the typical low pentile Brownlee Reservoir target elevation operation depicted in Figure 4.

Figure 4 indicates that the actual July/August draft in 2001 was more aggressive than what it would be under the typical low pentile operation. In April 2001, the agreement with the Bonneville Power Administration expired. [3] But because of the low flow conditions that the region was experiencing and through negotiations with several federal agencies, IPC agreed to release at least 100 KAF in July and 100 KAF in August from Brownlee Reservoir to aid anadromous fish migration through the lower Snake River federal system, resulting in lower July and August end-of-month elevations than may have occurred normally.

**3** In 1996, the Bonneville Power Administration entered into a five-year agreement with IPC. The agreement reimbursed IPC through an energy exchange mechanism for any energy losses it incurred as a result of participation.

## 2002

Figure 5 shows Brownlee Reservoir operational details for 2002. This year was the third year of the drought that we are currently experiencing, which has lasted five year so far. It was borderline low and medium-low pentile with an annual Brownlee inflow of 8,639 KAF. The typical medium-low pentile target reservoir operation, which was derived using the actual inflow for 1994 (the medium-low pentile modeled proposed operation), is superimposed on the graph for comparison. Under typical conditions in any given year falling within the medium-low pentile, current and proposed operations generally follow the typical medium-low pentile Brownlee Reservoir target elevation operation depicted in Figure 5.

Figure 5 indicates that slightly more draft occurred in July 2002 than would have occurred within a typical medium-low pentile operation. The difference in end of July reservoir volume between the actual operation (elevation 2,071.67) and a typical medium-low pentile operation (elevation 2,074.53) is 40 KAF. The majority of the actual July draft occurred during the first half of July. The reservoir subsequently held flat at an approximate elevation of 2,071 ft msl for the remainder of July and first half of August. The early July draft was necessary to meet load during the peak summer period while Brownlee inflow, system generating capacity, and transmission import capability were at or near their lowest point in 2002.

Due to continued drought, adverse hydrologic conditions in the region, strained electrical system capability, and higher energy prices, IPC had to rely on Brownlee storage to meet system energy requirements during the entire month of August. Had 2002 been a unique low year (that is, not associated with several years of drought), the actual Brownlee operation would likely have followed more closely the typical proposed medium-low pentile operation.

## 2003

Figure 6 shows Brownlee Reservoir operational details for 2003, the fourth year of the drought that we are currently experiencing. This year was again borderline low and medium-low pentile, with an annual Brownlee inflow volume of 9,002 KAF. The typical medium-low pentile target reservoir operation, derived using the perfect inflow forecast for 1994, which was the medium-low pentile modeled proposed operation, is superimposed on the graph for comparison purposes.

On June 25, 2003 a Valmy 2 thermal unit was damaged, resulting in a loss of system generating capacity of 267 megawatts. The Valmy unit was offline for repairs until September 8, 2003. Due to the continued drought and reduction in system and regional generating capacity, IPC was forced to use the storage in Brownlee Reservoir in July and August 2003 to meet system load. Under typical conditions in any given

year falling within the medium-low pentile, current and proposed operations generally follow the typical medium-low pentile Brownlee Reservoir target elevation operation depicted in Figure 6.

### *Summary*

The current and modeled proposed operations fall within the same operating guidelines as those outlined in Exhibit B. For modeling purposes, it is infeasible to model all possible combinations of operational variables that can occur, especially atypical operations that occur in real time. The proposed modeled operations are IPC's best attempt to capture typical operations for five typical hydrologic conditions. While there are some differences between actual real-time operations and modeled proposed operations, the same guidelines, rules, and regulatory procedures are followed for both; as a result, they are the same.

## 3. LITERATURE CITED

Hells Canyon Complex, FERC No. 1971 License Application, Exhibit B, Statement of Project Operations and Resource Utilization.

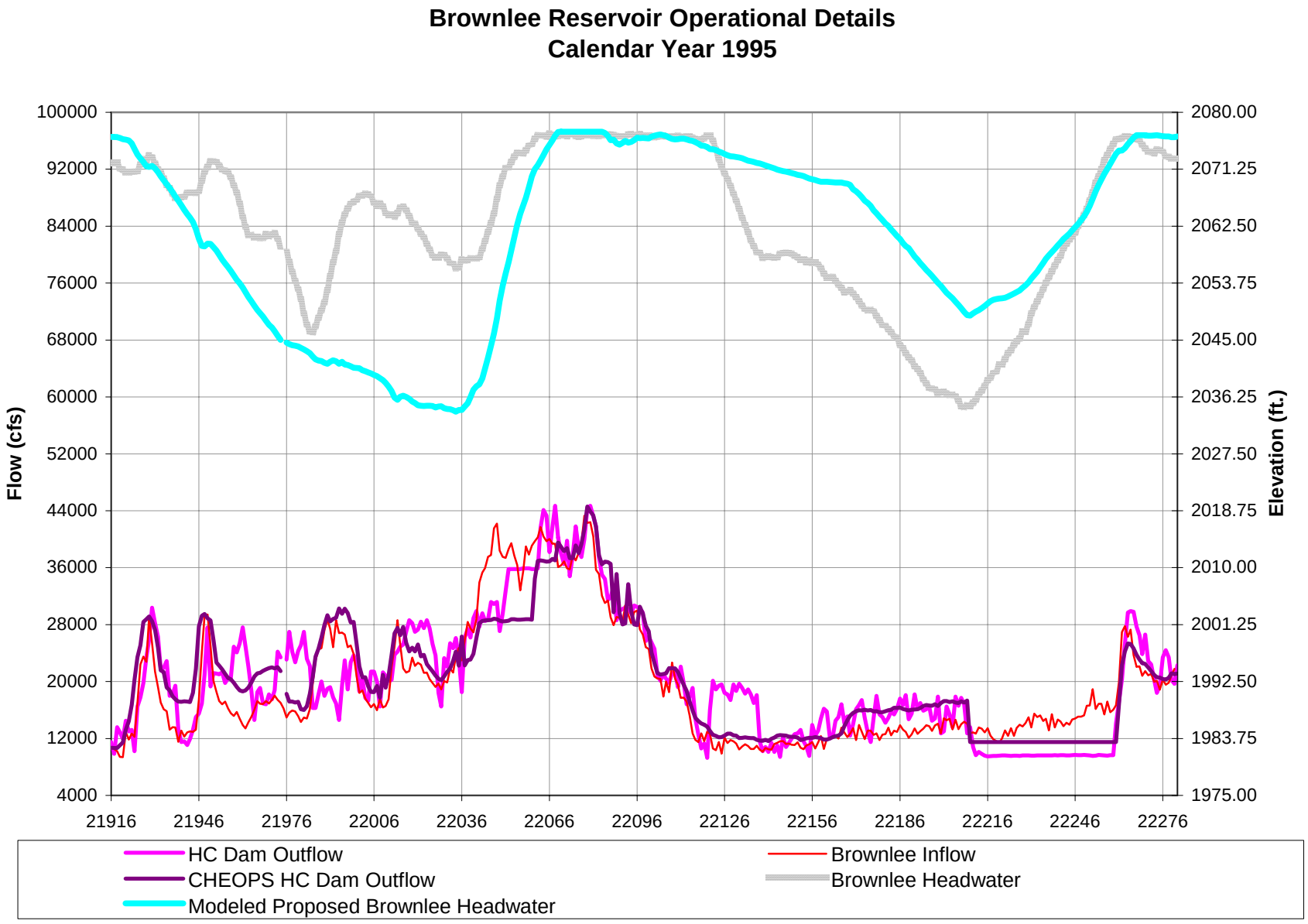


Figure 1. Operational details for Brownlee Reservoir, 1995.

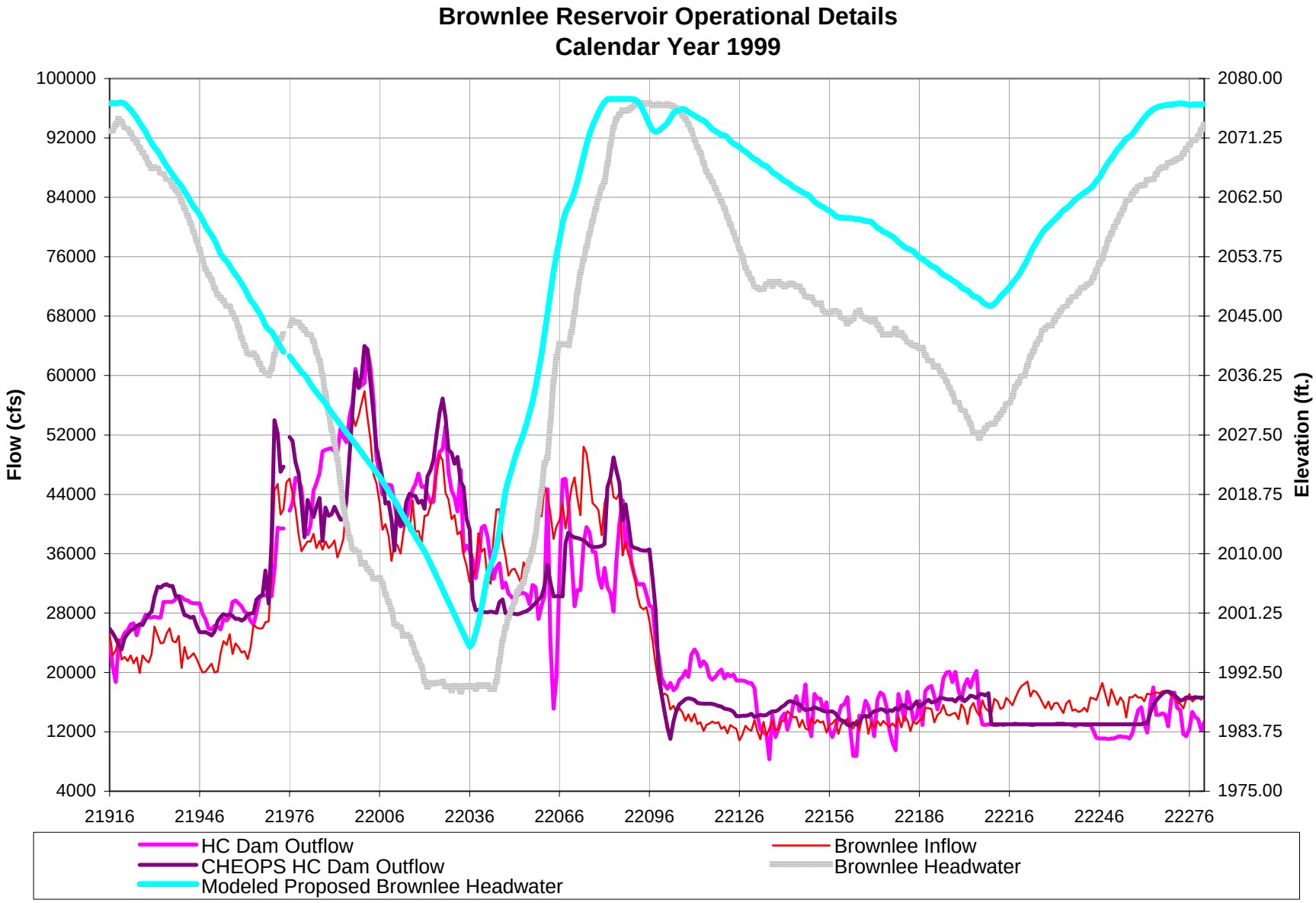


Figure 2. Operational details for Brownlee Reservoir, 1999.

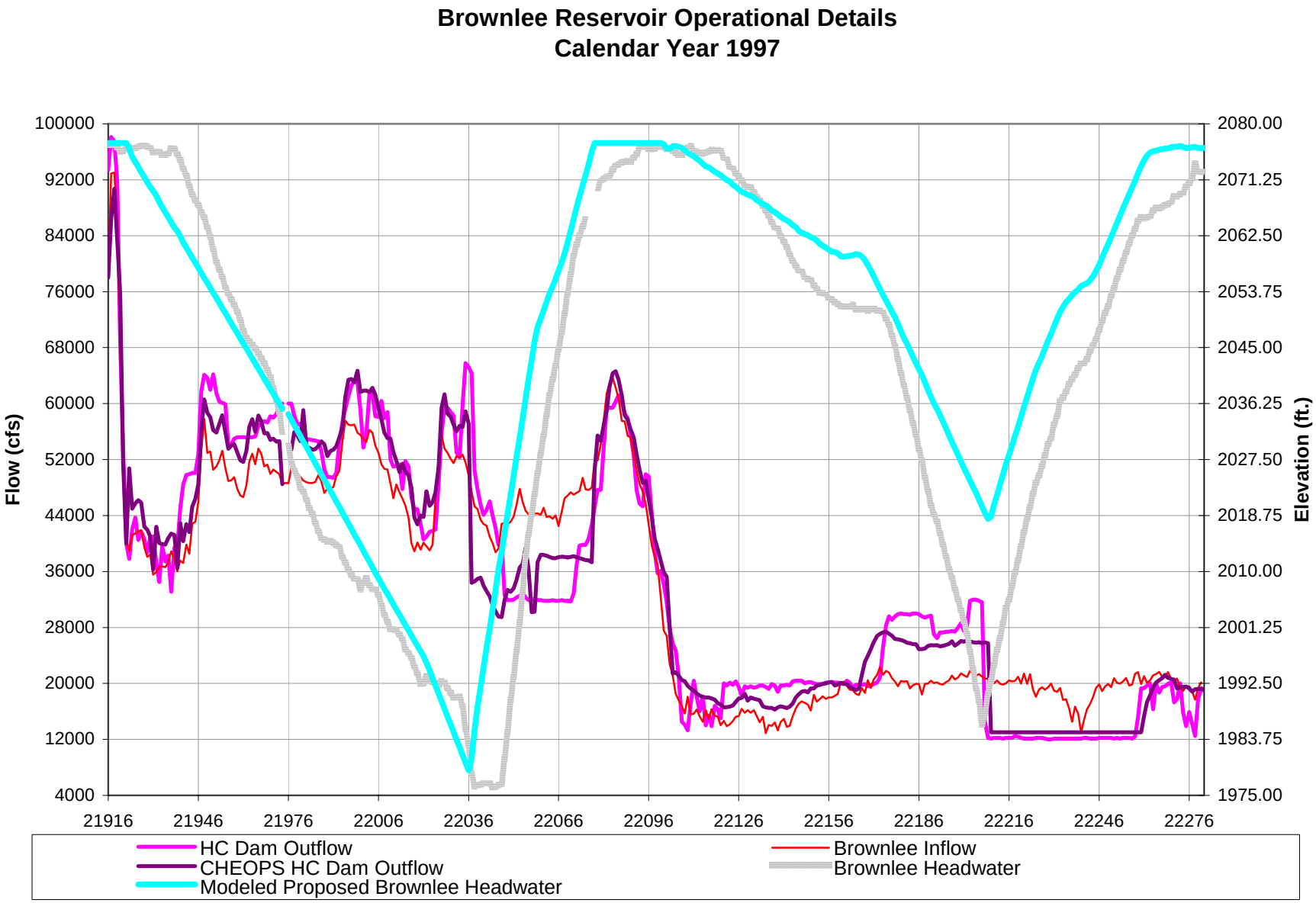


Figure 3. Operational details for Brownlee Reservoir, 1997.

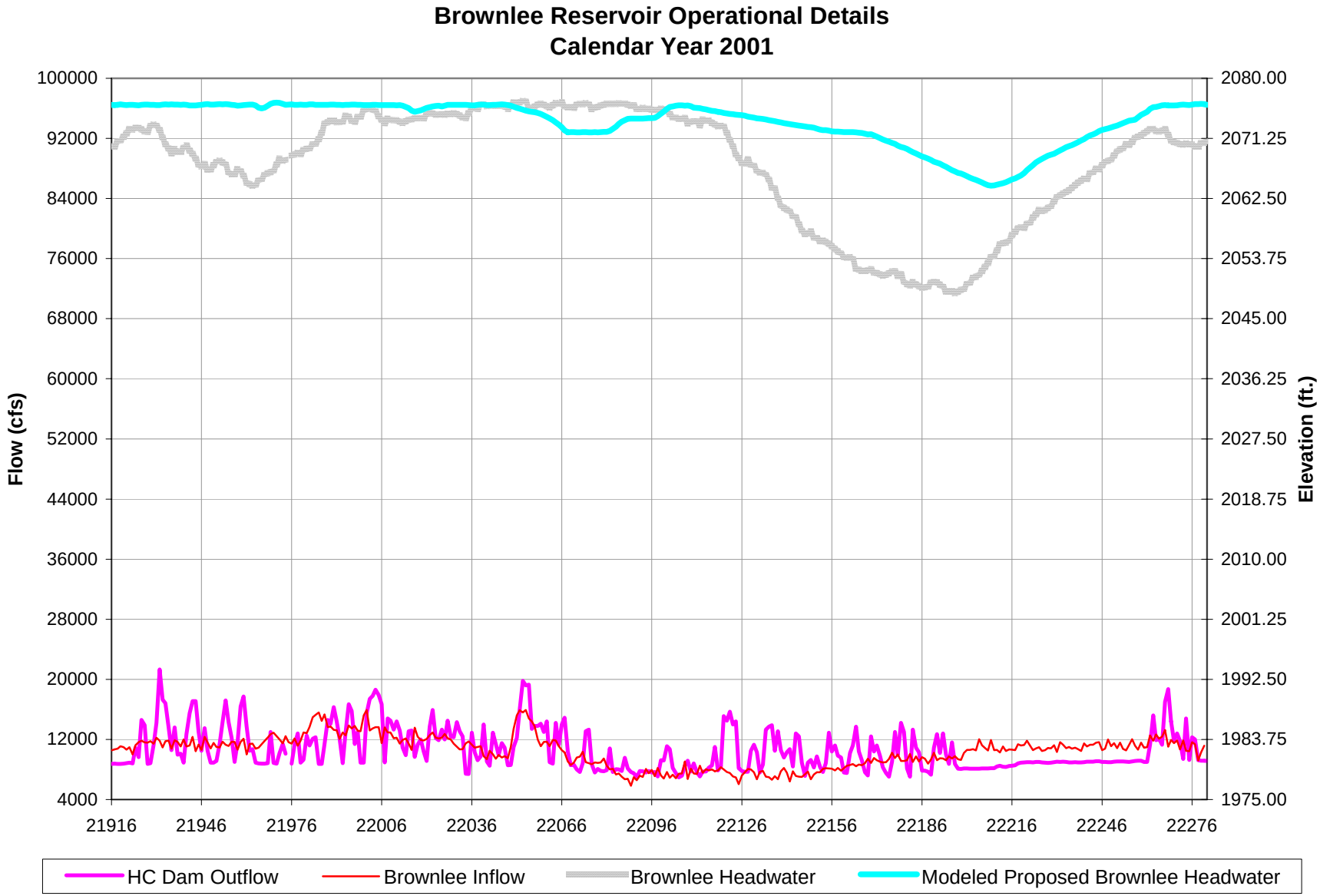


Figure 4. Operational details for Brownlee Reservoir, 2001.

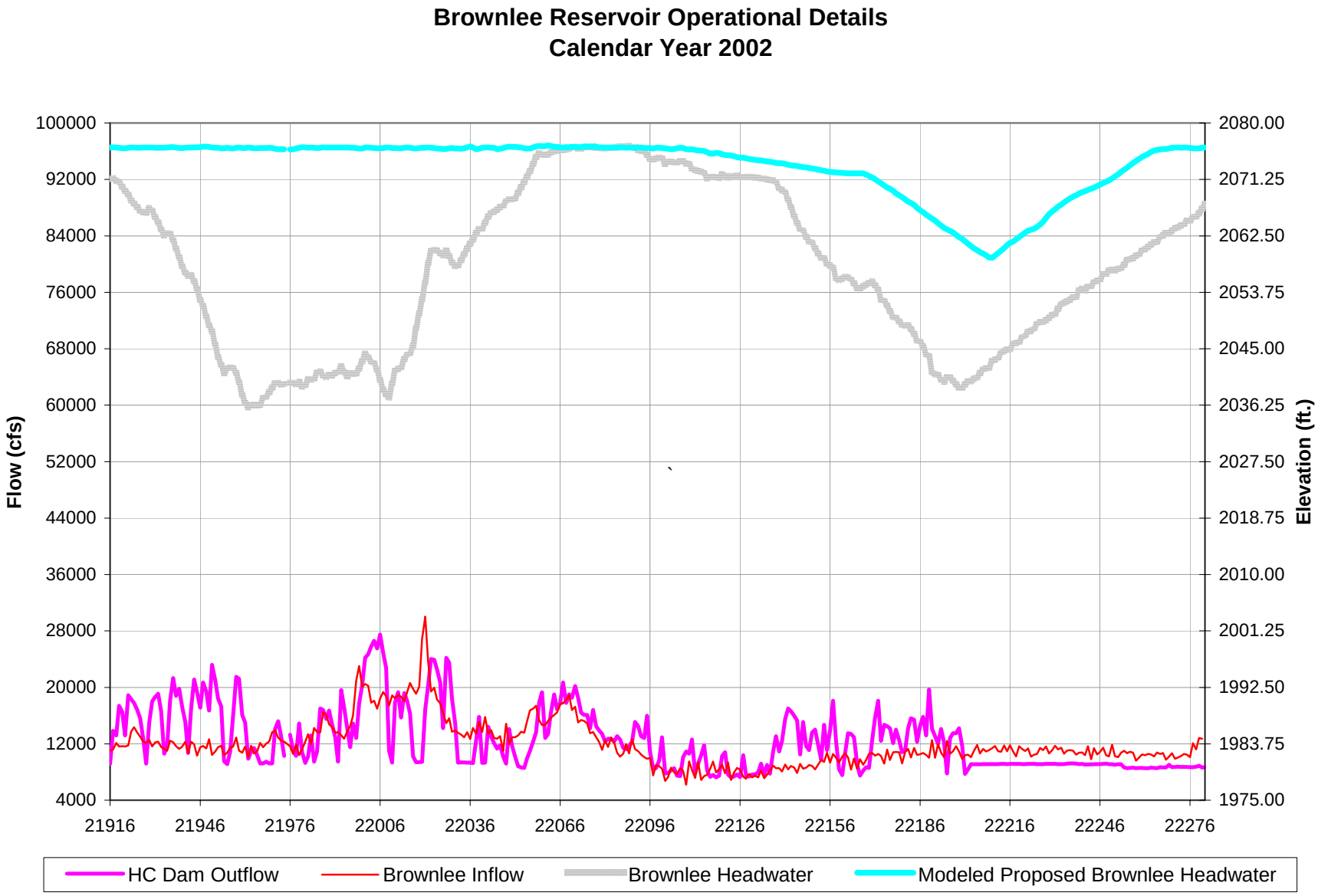


Figure 5. Operational details for Brownlee Reservoir, 2002.

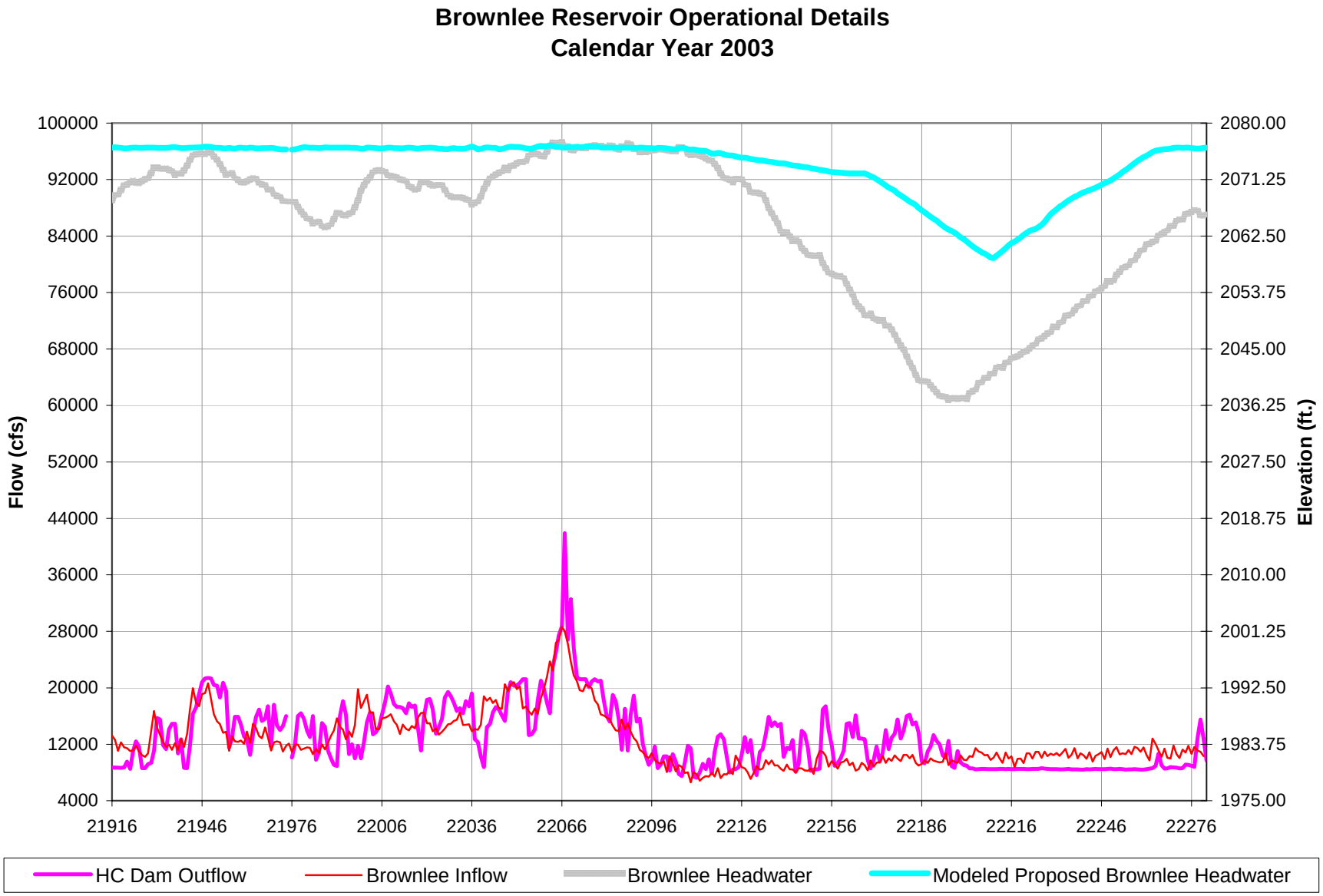


Figure 6. Operational details for Brownlee Reservoir, 2003.