



SIXTY-SECOND ANNUAL REPORT

to the

International Joint Commission

for

Calendar Year **2003**

COVERING

The effect of the regulation of water levels at  
Grand Coulee Dam on the levels of the Columbia River  
at the international boundary



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INTERNATIONAL JOINT COMMISSION

from the

INTERNATIONAL COLUMBIA RIVER BOARD OF CONTROL

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Summary of the Sixty-second Annual Report  
to the International Joint Commission by the International  
Columbia River Board of Control  
for the Calendar Year 2003

The flow of the Columbia River at Grand Coulee Dam for the 2003 calendar year totaled 81,200 cubic hectometers (65,830,000 acre-feet), about 16.4 percent below the average observed in the 90-year period of record.

The instantaneous maximum discharge of the Columbia River at the international boundary was 4,420 cubic meters per second (156,000 cubic feet per second) on June 20, about 42 percent below the mean annual flood for the 66-year period of record, and ranking fifty-eighth out of sixty-six peaks.

Instantaneous extremes of stage on Franklin D. Roosevelt Lake varied between elevations 393.098 meters (1,289.69 feet) on October 26 and 385.663 meters (1,265.30 feet) on May 24. The stage was 391.613 meters (1,284.82 feet) at midnight on December 31, 2003. Backwater at the international boundary varied during the year between 0.000 meter (0.00 foot) and 0.497 meter (1.63 feet). Backwater on December 31, 2003, was 0.055 meter (0.18 foot). Flashboards at Grand Coulee Dam were in place for all of 2003 and should remain in place in the future under normal conditions.

## SIXTY-SECOND ANNUAL REPORT (For the Calendar Year 2003)

To: The International Joint Commission

From: The International Columbia River Board of Control

(1) The Order of the International Joint Commission dated December 15, 1941, in the matter of the Application of the United States for Approval of the construction and operation of the Grand Coulee Dam and reservoir (Franklin D. Roosevelt Lake), provided for the creation of an engineering board to be known as the International Columbia River Board of Control, to which the undersigned have been duly appointed. The order provides that the Board shall conduct studies under the supervision of the Commission as to the effect of the operation of Grand Coulee Dam and Franklin D. Roosevelt Lake upon water levels at and above the international boundary, and shall submit a report to the Commission annually.

(2) During the calendar year 2003, the United States Geological Survey continued the collection of information concerning the stages and discharges of Franklin D. Roosevelt Lake, and in cooperation with the Water Survey of Canada, the stages and discharges of the Columbia River at the international boundary, upstream from the lake.

(3) The annual flow of the Columbia River at Grand Coulee Dam for calendar year 2003 totaled 81,200 cubic hectometers (65,830,000 acre-feet), about 16.4 percent below the average observed for the 90-year period of record. The instantaneous maximum discharge of the Columbia River at the international boundary during the snowmelt season was 4,420 cubic meters per second (156,000 cubic feet per second) on June 20, about 42 percent below the mean annual flood for the 66-year period of record, ranking fifty-eighth out of sixty-six peaks. Twenty-nine of the lowest peaks in the 66-year period of record have occurred in the last 31 years, indicating, in part, the effects of storage behind Mica Dam (1973) and Libby Dam (1974). The discharge at the international boundary is shown on the accompanying hydrograph. Extremes of stage recorded at midnight on the lake varied between elevations 393.098 meters (1,289.69 feet) on October 26 and 385.663 meters (1,265.30 feet) on May 24. Elevations are above mean sea level, Bureau of Reclamation datum, and adjustments of 1937. The stage at midnight on December 31, 2003, was 391.613 meters (1,284.82 feet).

(4) The analyses of data collected indicate that backwater at the international boundary varied during the year between 0.000 meter (0.00 foot) and 0.497 meter (1.63 feet). Backwater on December 31, 2003, was 0.055 meter (0.18 foot). Backwater that occurred at the international boundary during the period January 1, 1999, to December 31, 2003, as computed at 10-day intervals each month, is plotted on the accompanying graph. Backwater since the time of filling of Franklin D. Roosevelt Lake in June 1942 to December 31, 1998, is plotted on the charts submitted with previous annual reports.

(5) The Board has been informed by the United States Bureau of Reclamation that flashboards at Grand Coulee Dam were in place for all of 2003.

Respectfully submitted,

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