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OFFICE OF ENERGY PROJECTS

Project No. 137-200 and -202
Mokelumne River Project
Pacific Gas and Electric Company

March 3, 2020

VIA FERC SERVICE

Debbie Powell, Senior Director
Pacific Gas and Electric Company
Mail Code N11E
P.O. Box 770000
San Francisco, CA 94177

Subject: Minimum Flow Deviations

Dear Ms. Powell:

This letter is in response to your August 2, 2019 and February 11, 2020 filings with the Federal Energy Regulatory Commission (Commission), providing accounts of minimum flow deviations that occurred at the Mokelumne River Project No. 137. The U.S. Forest Service’s (FS) Section 4(e) Condition no. 5 specifies minimum flow requirements throughout the project area, based on water year types.¹ You reported deviations from minimum flow requirements that occurred on July 6, 2019 below Lower Bear River Reservoir and on January 30-31, 2020 below Salt Springs Reservoir. Each of these deviations are discussed in the subsections below.

**July 6, 2019 incident**

Your August 2, 2019 letter provided an account of a deviation from the minimum flow requirements below Lower Bear River Reservoir on July 6, 2019. FS 4(e) Condition 5 requires that you release a minimum flow of 50 cubic feet per second (cfs) below the dam during July of a wet hydrologic year. In your August 2, 2019 letter, you reported that flows dropped below the minimum flow requirement between 0900 hours and 1030 hours on July 6, 2019, and reached a low of 24.24 cfs. You explain that the deviation

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¹ Order Approving Settlement Agreement and Issuing New License (97 FERC ¶ 61,031), issued October 11, 2001.
occurred during testing of the Emergency Action Plan (EAP) alarms. During the test, an operator simulated a large flow event below the dam utilizing the SCADA system set to remote automatic mode. The simulated event caused the flow release valve to temporarily close. However, if operators had correctly set the system to remote manual mode, the high flow alarms would not have caused the cessation of flow. Consequently, the operators incorrectly assumed that the system was set to remote manual mode, and that actual flows were not changing. Upon completion of testing, the false high flows were no longer showing in the SCADA and the valve reopened, thus restoring minimum flows.

In your review of the incident, you concluded that the flow deviation was unlikely to have adversely affected aquatic resources, due to its short duration and small magnitude of under-release. You also notified members of the project Ecological Resource Committee (ERC) and the U.S. Forest Service (USFS) of the deviation. Finally, you state that you plan to conduct employee field training and to develop a written flow release procedure for future EAP testing to avoid a potential future recurrence.

Review of the incident indicates that the flow deviation was caused by an incorrect assumption of project operations while conducting testing. The operator incorrectly assumed that minimum flows would be maintained during EAP testing while in a remote automatic mode. However, the incorrect settings enacted by the operator during alternate operations caused the Lower Bear River Reservoir outlet to cease flow releases. Due to this operational error, the July 6, 2019 deviation will be considered a violation of your project license. However, due to the relatively brief and minor nature of the deviation, and your efforts to inform the resource agencies, no further enforcement action will be taken. This instance will be made part of the project record and taken into account during our review of similar instances in the future.

**February 1, 2020 incident**

Your February 11, 2020 letter provided an account of a deviation from the minimum flow requirements below Lower Bear River Reservoir on January 31, 2020. FS 4(e) Condition 5 requires that you release a minimum flow of 20 cfs in the Bear River below Lower Bear River Reservoir and 75 cfs in the North Fork Mokelumne River below Salt Springs Dam during January of a wet hydrologic year. In your February 11, 2020 letter, you explained that on January 30-31, 2020 at 2100 hours, project operators performed testing in anticipation of the water year designation change from wet to below normal, which would occur on February 1, 2020. As part of the testing, the operator toggled the controls to a dry water year type, then back to a wet water year type within the course of 11 minutes. However, the relay equipment malfunctioned when sending the second command to resume wet year operations. As a result, the flow setpoints remained in the dry water year setting.
The following morning at 0632 hours, the project operator discovered low flow indications in the SCADA system and switched from normal to override mode to restore minimum flow levels. At the Bear River, flows were below the minimum flow requirement for approximately 9 hours, reaching a low of 18.2 cfs. In the North Fork Mokelumne River, flows were below the minimum requirement for approximately 11 hours, reaching a low of 55.5 cfs. You reported the incident to the ERC and USFS on February 10, 2020. You also state that no adverse environmental effects were observed downstream, nor did you receive any reports of such. Finally, you state the you are further investigating the matter and working to resolve the reliability issues associated with the relay equipment.

Review of the incident indicates that it was caused by an equipment malfunction. During equipment testing, one of the radio components failed to communicate the second of two flow changes. As a result, flows were reduced for several hours. However, you corrected the under-release as soon as you noticed the error. For these reasons, the January 30-31, 2020 minimum flow deviation will not be considered a violation of your project license.

If you have any questions regarding these matters, please contact Mr. John Aedo at (415) 369-3335 or by email at john.aedo@ferc.gov.

Sincerely,

Thomas J. LoVullo
Chief, Aquatic Resources Branch
Division of Hydropower Administration and Compliance