

STATE OF CALIFORNIA
STATE WATER RIGHTS BOARD



1248

In the Matter of Applications 13681,
13682, 14919, 14920, 15551, and 15552
Held by Richvale Irrigation District
on Behalf of Joint Water Districts

Decision D 1248

Source: Middle Fork
Feather River

Counties: Plumas and
Butte

ADOPTED MAR 30 1966

Adopted

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DECISION UPON RECONSIDERATION OF DECISION D 1224

Preliminary Statement

On June 30, 1965, Decision D 1224 of the State Water Rights Board approved the Modified Middle Fork Project, which involves the appropriation of water for multiple purposes from Middle Fork Feather River and from the Main Stem Feather River in Plumas and Butte Counties. The Board's decision ordered cancellation of Application 13681, approval in part of Applications 13682, 14919, and 14920, and denial of Applications 15551 and 15552. All of these applications are held by Richvale Irrigation District on behalf of itself and Butte Water District, Biggs-West Gridley Water District, and Sutter Extension Water District (collectively referred to herein as "Joint Districts" or "Districts").

On July 30, 1965, a joint petition for reconsideration of Decision D 1224 was filed by the State Department of Fish and Game ("Fish and Game"), County of Plumas, and State Department of Water Resources ("DWR"). The petition

for reconsideration did not question or challenge many of the Board's findings, including the important findings that in an average year the modified project would not only provide a substantial amount of power, but would conserve for beneficial consumptive use 50,000 acre-feet of water that would otherwise flow unused to the ocean (p. 45).*

Decision D 1224 had carefully analyzed benefits and detriments resulting from the modified project, and had imposed many operating conditions for the protection and enhancement of recreation and of the fishery. However, several considerations pointed to the desirability of at least a limited reconsideration. On August 25 the Board issued an order granting for limited purposes the joint petition for reconsideration, and ordering that a further hearing be held to receive evidence on the following issues raised in the petition:

1. Whether new evidence as to the present value of hydroelectric power shows the Middle Fork Project to be infeasible;
2. Whether supplementary supplies of Feather River water are available to the Joint Districts, for which

* Unless otherwise indicated, page references are to Decision D 1224.

they could contract on an exchange basis with the United States Bureau of Reclamation;

3. The current price and availability of State Project Water; and

4. Possible amendment of permit conditions to insure project operation as contemplated by Decision D 1224.

The hearing on reconsideration of Decision D 1224 was held in Oroville on November 16, 17, and 18, 1965. The parties also argued these issues at a hearing held in Sacramento on January 13, 1966.

The Issues

Although the hearing on reconsideration of Decision D 1224 was limited to certain of the issues raised by the joint petition, this decision upon reconsideration will consider all substantial issues raised in the petition.

Whether New Evidence as to the Present Value of Hydroelectric Power Shows the Modified Middle Fork Project to be Infeasible

No statute or regulation of the Board specifically requires an applicant to demonstrate the financial feasibility of a proposed project. When an applicant shows a reasonable likelihood of being able to finance and construct a project, the Board does not explore this issue further unless there appears to be a good reason to do so.

Petitioners alleged that evidence discovered "subsequent to the close of the hearing, shows that, based upon present power values, the revenues derived from the power developed by the modified project falls short of financing the project." An affidavit was attached to the petition, summarizing some of DWR's negotiations with Pacific Gas & Electric Company ("PG&E") for the proposed sale of DWR's Oroville electric power. If DWR could clearly show that the modified project cannot be financed, no useful purpose would be served by approval of these applications.

The Board's order which authorized limited reconsideration referred to this new evidence and stated:

"The Board believes that this evidence should be considered at a further hearing to determine whether the hydroelectric power is comparable in quantity and character to that of the Joint Districts, and whether such evidence leads to the conclusion that the Middle Fork Project is financially infeasible, as alleged."

DWR did submit evidence that on December 15, 1964, it had solicited applications for the purchase of 710 megawatts of Oroville-Thermalito power at \$17.16 per year per installed kilowatt of capacity and 3 mills per kilowatt-hour (DWR Exh. 92-R). These prices are lower than those anticipated by applicants as needed to finance the modified project. DWR also submitted evidence that PG&E offered to negotiate for the purchase of only 400 megawatts of that power (DWR Exh. 91-R).

Comparison of the modified project power with DWR's Oroville-Thermalito power shows that the dependable power

capacity of the modified project at 41 per cent load factor would be about 114 megawatts for the initial 15-year period. It would then be about 116 megawatts at 34 per cent load factor for the remainder of the payout period.

Oroville-Thermalito will have a total dependable peaking capacity of 710 megawatts, over 6 times as large as the modified project. It will operate continuously at a 34 per cent load factor, and will rely in part on pumped-back storage.

PG&E's comment:

"Large amounts of off-peak power will be required for pumped-back storage in order to make available all capacity and energy offered from the project. However, your December 15 offer does not provide for this essential requirement. We believe that each purchaser of Oroville-Thermalito power should be obligated to supply its proportionate share of off-peak power needed for supplying the pumped-back storage. Without assurances on this subject, the Oroville-Thermalito capacity would be of questionable value." (DWR Exh. 91-R).

PG&E requires South Fork project power of Oroville-Wyandotte Irrigation District to be available for delivery on one minute's notice and might make the same requirement for power from the modified project. DWR power might not be available for delivery for about 15 minutes after notice (RT 8397).

The common practice for American manufacturers is to build electric generators that will actually produce more power than is called for in the specifications. In this way they are sure of meeting specification requirements. The resulting extra power is sometimes referred to as "stretch" (RT 8399).

PG&E would get the benefit of all stretch from the modified project but PG&E would have to buy its power from DWR on a unit basis, and DWR would get all comparable benefits.

PG&E would have substantial control over the design and operation of the power features of the modified project. It would have no comparable control over the Oroville project.

The significance of the above differences would be for PG&E to evaluate in connection with its own changing requirements.

Perhaps the most important difference between the two projects stems from Section 11670 of the Water Code. It provides that any contract made by DWR with any person other than a public agency for sale of power can be canceled upon 5 years' notice whenever the State or any financially responsible State agency makes application for the power. PG&E would be bound by contract for 45 years; DWR for only 5 years.

DWR's negotiations with PG&E lead to no definite conclusion as to the financial feasibility of the modified project because of the various differences in the quantity of power and characteristics of the two projects, and particularly because of Water Code Section 11670.

As with most proposed projects which will be dependent upon the sale of power to finance their cost, the feasibility of this project will not be determined until a contract is entered into between the seller and the purchaser of the power and the project goes to bid. Further, the interest rate at the

time of the sale of the revenue bonds to finance the project will be an important factor. Construction of the project is apparently at least 4 or 5 years in the future. A future contract and future interest rate are needed to determine the financial feasibility of this project. No cause has been shown for withholding our approval because of uncertainties in this respect.

The Districts' Need for Supplemental Water

Petitioners challenge the Board's findings that it is "reasonable for the Districts to anticipate their future requirements by projecting their current crop patterns, of which the year 1962 is a representative example" (p. 13), and "We believe it reasonable for the Districts to anticipate about 47,500 acres ultimately to be in rice, out of 82,000 acres to be supplied directly by the Districts." The significance of the latter finding is that rice requires $2\frac{1}{2}$ times as much water as general crops (p. 12), and DWR had estimated only 36,000 acres of District lands would be in rice (DWR Exh. 49).

Petitioners assert that the Board's "expectation that in the future the proportion of rice to general crops will be the same as in 1962 was based on the testimony of Mr. Cobeen, who admittedly has no qualifications as an expert in this field." This is a partial truth, but only a partial truth, as a full reading of the decision will show.

The Board's considerations included crop adaptability of the Districts' soil (p. 11), rice allotments (p. 12),

per capita rice consumption (p. 12), increased rice acreage as a result of a recent change in planting practices (p. 12), and the predictions of an agricultural expert of the University of California who subsequently was appointed to one of the top positions in the United States Department of Agriculture (pp. 12, 13). In the face of these considerations, it did not seem reasonable to predict that the Districts' total future rice acreage would be less than their present rice acreage just because that happened to be the prediction of witnesses for DWR. It did seem reasonable to project representative current crop patterns into the future for the purpose of estimating future requirements that would increase with the expanding population.

Petitioners' next contention is that, assuming "that future rice acreages will be as high as the Board expects, the very figures on duty of water cited and relied on by the Board demonstrate that the Districts will need little or no supplemental water to satisfy their future requirements." They quote from page 15 as follows:

"In order to determine whether or not use of water by the Joint Districts is excessive, use of water by other districts and areas with similar planting ratios of rice to general crops was studied. The best information obtained for this comparison was that found in Table 176 of DWR Bulletin 23-59 (Staff Exhibit 13). The Colusa Basin Drain area has a similar ratio of rice acreage to general crops as that found in the Districts. In this area the gross duty in acre-feet per acre was found to range from 9 afa to 12.1 afa, with an average of 10.5 afa."

Petitioners then comment as follows:

"The Board has correctly quoted the figures contained in Table 176 of Staff Exhibit 13, but has incorrectly interpreted them. . . . Correctly interpreted, Table 176 of Staff Exhibit 13 shows that the average duty of water in the Colusa Basin Drain is 6.2 acre-feet per acre rather than the 10.5 acre-feet per acre quoted by the Board on page 15 of the decision."

Petitioners then multiply the 6.2 acre-feet per acre by the 82,000 acres which the Board finds will be supplied directly by the Districts, and conclude that "the Districts do not need and will not need the water they expect from the Middle Fork Project."

DWR correctly points out that Table 176 of Staff Exhibit 13 is derived from Table 197 of that exhibit, and that Table 197 shows the following:

229,300 acre-feet total diversion from the
Colusa Basin Drain for the period
November 1958 through October 1959.

8,438 acres of general crops irrigated.

11,420 acres of rice irrigated.

DWR also correctly makes a seasonal adjustment. It then points out that in Table 197 there are ten diversions of water shown for which there are no corresponding acres listed as irrigated. These ten diversions are for River Farms Company, Reclamation District 108, Glenn-Colusa Irrigation District, Princeton-Codora-Glenn Irrigation District, and Provident Irrigation District. Diversions to these five entities total 113,184 acre-feet for the 1958-59 water year in Table 197.

The explanations for these diversions are contained in footnotes a, j, p, af, and ah of Table 197. These footnotes indicate that the lands irrigated by these diversions are tabulated elsewhere in Staff Exhibit 13.

It is quite correct to require acreages corresponding to water diversions before computing duty of water. DWR could have followed Table 197's footnotes and added to its totals the total acreages and the total diversions of either all or any one of the five large water users referred to above. Districts such as Glenn-Colusa have many miles of main line ditches and laterals corresponding to those of the Joint Districts, and a gross duty of water which includes the relatively large transportation losses which occur in such systems.

However, to make its computation of duty of water, DWR chose to disregard all diversions in Table 197 for which no acreage was itemized. This resulted in the elimination of irrigation districts and other large users of water. Most of the remaining diversions which were used exclusively by DWR in deriving its 6.2 afa duty of water are covered by permits and licenses issued by the Board. The Board will take official notice of its own files which show that by reason of the proximity of points of diversion to places of use, these diversions are all, or nearly all, for farmers' headgate delivery. (See, for example, Applications 11242, 11819, and 13006, Decision D 683).

DWR's own witnesses allowed for a transportation loss, primarily by seepage, of 30 per cent of the gross river diversion in computing the Joint Water Districts' requirements (RT 4119-22; DWR Exh. 65B). This was to cover losses in the many miles of main line canals and hundreds of miles of laterals of the Joint Districts between the river and the farm headgate. (RT 4119). Thus, DWR's river diversion estimate of 534,000 acre-feet (RT 4122) includes a 30 per cent loss in addition to its headgate requirement estimate of 373,600 acre-feet (RT 4119). The Joint Districts' gross duty of water for diversion at the river of 8.76 afa, when reduced by 30 per cent, almost exactly equals DWR's farm headgate duty of water of 6.2 afa derived from Table 197 of Staff Exhibit 13. DWR and the joint petitioners neglected to allow for the 30 per cent loss between the river and the farm headgate when they drafted their petition.

The Board's findings concerning the duty of water are supported by other tables and other methods of analysis.

First, let us follow Table 197's footnotes and add to its 1959 totals the total acreages and the total diversions of the five large water users whose diversions were deleted by petitioners. Their 1959 acreages appear to total 113,162, with almost 60 per cent in rice. Their March to October diversions appear to total 1,082,838 acre-feet, with a resulting duty of water of about 9.6 afa. However, many footnotes are involved, and the above figures are not unqualified, so we will not attempt

to draw any definite conclusion from them. Instead, the 1959 diversions to Glenn-Colusa will be used for purpose of comparison.

Glenn-Colusa Irrigation District has a ratio of rice to general crops indicated in Staff Exhibit 13 to be comparable to that of the Joint Districts. A DWR witness considered Glenn-Colusa's rice area to be comparable to that of the Joint Districts' (RT 4141). Table 195 entries for Glenn-Colusa, with seasonal adjustments and addition of Colusa Basin Drain water, show its 1959 gross diversion duty to have been about 10.4 afa per acre. This figure, of course, includes large transportation losses, but is still larger than the figure used by the Board for the Joint Districts.

Petitioners also cite the Western Canal Company service area immediately to the north of the Joint Districts as having a higher duty of water than that computed for the Joint Districts. Western Canal Company diversion losses between the river and farm headgate are estimated to be between 5 and 10 per cent (RT 3771). We find from the record (RT 3632, 3669) that the Western Canal Company service area receives unmeasured quantities of Butte Creek water in addition to Feather River water. Plumas County Exhibit 24 shows an abundance of water in Butte Creek in 1953, yet petitioners use only 1953 gross diversions from Feather River to calculate the duty of water for the Western Canal Company service area. The addition of Butte Creek inflow would have resulted in a lower duty of water (RT 3788, 3790, 3791).

The foregoing analysis of rice acreage and of gross river diversion duty of water is consistent with and substantiates the Board's findings of Joint Districts' water requirements in Decision D 1224. These findings were reached without giving full consideration to the requirements of the entire net irrigable acreage of anticipated future inclusions (p. 17), which would increase the total future water requirements for the Districts.

The Current Price and
Availability of State Project Water

One of the alternate sources of water for the applicants originally proposed by DWR was the State project at Oroville Reservoir. Decision D 1224 assumed that questions concerning this source had become moot, since the Districts did not sign a contract with DWR before the contract deadline date. Petitioners point out that the water from the State project is still a legal possibility for the Districts because of Water Code Section 11460, and because of recapture clauses in contracts entered into by DWR with contractors located outside the areas of origin of Feather River water.

The decision had pointed out that the initial cost of Oroville water was to be \$3.50 per acre-foot, with a \$2.00 per acre-foot surcharge for acreage in excess of 160 acres. In the competitive Western Canal area supplied by PG&E, the cost of water for irrigation of rice was only \$1.65 per acre-foot (p. 18). Already DWR's proposed price has risen to \$7.49

an acre-foot, effective in 1970, subject to the possible additional \$2.00 surcharge (RT 72, 74, Nov. 18, 1965). It does not seem reasonable for the Board to require the Districts to seek needed supplementary supplies from a source with a relatively high and escalating price.

Whether Supplementary Supplies of Feather River Water are Available to the Joint Districts, for which They Could Contract on an Exchange Basis with the United States Bureau of Reclamation

Petitioners assert:

"Before the Board finally determines that the public interest will be best served by granting permits for the Middle Fork Project, it has a duty, in the public interest, to consider exchange water as a practical, alternate source of water to satisfy the supplementary requirements of the Districts."

At the hearing on reconsideration, DWR produced no witness to testify that the Bureau of Reclamation could and would contract with the Districts on an exchange basis to meet their supplementary requirements. Apparently, the Bureau was not asked. Not even correspondence with the Bureau was offered in evidence on this point.

DWR points to Application 14803 of the Feather Water District as exemplifying a situation in which the Bureau has contracted to supply downstream areas having prior rights with certain quantities of water in exchange for water diverted from the Feather River. We are left to conjecture whether the Bureau has the quantity of water available to meet the Joint Districts'

requirements, what price it would charge, and the terms of any possible contract.

Assuming the evidence had shown, or even that further evidence did show that the Districts could obtain all needed supplementary supplies of water from the Bureau on an exchange basis, the Board would still approve the modified project. The reasons are explained in part in Decision D 1224 and will be explained further in this decision after first examining possible amendments to permit conditions.

Possible Amendment of Permit Conditions to Insure
Project Operation as Contemplated by Decision D 1224

Operation of the modified project had been considered in broad outline in Applicants' Exhibit 103. Decision D 1224 imposed further modification of operating requirements that would leave intact Nelson Point releases as shown in the operating study (except for enhanced flows below Hartman and Bald Rock Dams), but would modify releases from Clio Reservoir for two purposes: to insure that Clio Reservoir be held at as high a level as possible and to combine Clio releases with Frazier Creek natural flows in the early months of the year in order to enhance streamflows and the trout fishing below Frazier Creek in the summer months. The hearing upon reconsideration was the first opportunity of the parties to express themselves with respect to the Clio Reservoir operation and release requirements imposed for the first time by Decision D 1224.

One of the purposes of the hearing upon reconsideration was to give the parties an opportunity to suggest what objective criteria, if any, might be substituted for phrases such as "to the extent reasonably possible consistent with project operations." (See Decision D 1224, permit Conditions 15a, 16 and 19.) The objective criteria should be definite enough to insure reservoir operation and releases for recreation and fishery purposes as contemplated by Decision D 1224 to the fullest possible extent without materially interfering with the planned operation of the project so as to endanger its feasibility and prevent realization of its accomplishments.

Releases below Nelson Point Reservoir are of prime concern to Fish and Game, particularly in the trout spawning months of April, May, and June. There is no issue with respect to the period from November through March, since the Districts agree to the mandatory minimum release of 75 cfs requested by Fish and Game. In order to insure optimum flows for the spawning of trout and because the operation study shows adequate flows would be available in the summer, Fish and Game proposes that permit Condition 16 be replaced with the following mandatory language:

"16. To maintain the fishery below Nelson Point Reservoir a minimum of 75 cfs shall be released from November 1 to March 31 and a minimum of 300 cfs shall be released during the period April 1 to October 31." (Joint Exh. 1).

Permit Condition 16 now provides in part:

" . . . To the extent reasonably possible consistent with project requirements, the releases from Nelson Point Reservoir during the period April 1 through June 30 shall be at least 300 cubic feet per second."

The natural mean monthly flows at Nelson Point damsite for the 1927-1960 period include 2 months of May and 9 months of June with less than 300 cfs (F&G Exh. 54, Table 2). Fish and Game cannot reasonably object if objective criteria allow project operation comparable to natural conditions in dry years.

The applicants' operation study shows that June through October releases of 300 cfs or more would be made in all but 2 months of 34 years and one of the two months would be nearly 300 cfs (Appl. Exh. 103). Releases of 300 cfs or more will be made mandatory for this period. This leaves only the period between April 1 and May 31 for further consideration of objective operating criteria.

Applicants' Exhibit 103 shows modified project releases at Nelson Point of 300 cfs or more in all but 9 months of April, 4 months of May, 1 month of June, and 1 month of October in the 34-year period being studied. These 15 months of under 300 cfs releases could be eliminated in all but 4 years by adjustment of operations, according to the applicants (RT 38, Nov. 18, 1965). The remaining April and May months are in such critical dry years as 1929, 1931, 1933, and 1934. These are years when the runoff was less than 50 per cent of the average. There is

a very close relationship between the March 1, April 1, and May 1 forecasts of DWR for the current water-year, and the subsequent actual water-year runoff of the Feather River at Oroville. These forecasts are made in DWR's Bulletin 120 series, of which the Board takes official notice. We find it reasonable to allow April and May releases at Nelson Point to be reduced to 75 cfs in years when DWR forecasts a 50 per cent or less water-year runoff for the Feather River at Oroville. Permit Condition 16 will so provide. With that exception, permit Condition 16 will require Nelson Point releases of 300 cfs or more between April 1 and October 31, and 75 cfs or more the rest of the year.

It is possible to revise permit Condition 15a, both for the purpose of holding high the summer level of Clio Reservoir in noncritical years and to establish a reservoir operation that will insure enhanced summer streamflows below Clio of about 125 cfs in most years. Applicants' Exhibit 103 followed a rule curve that called for a drawdown of Clio Reservoir by 38,000 acre-feet between the end of June and the end of September. Applicants now propose to draw down Clio Reservoir by 38,000 acre-feet between the end of June and the end of November. (See Appl. Exh. 115R.) This would result in a constant streamflow of about 125 cfs, depending upon reservoir accretions and losses and independent of any contribution from Frazier Creek. This operating schedule would be expected to apply about 80 per cent of the time, since the operation study showed Clio Reservoir spilling in 27 of 34 years. Condition 15a will be

revised accordingly. In order to hold high the summer level of Clio, the condition will also provide that the drawdown rate of about 125 cfs cannot be increased until and unless Nelson Point Reservoir has reached minimum storage level.

A study of Applicants' Exhibits 102 and 103 makes it appear reasonable to revise Condition 18 to require a minimum conservation pool in Clio Reservoir of 75,000 acre-feet, except in critical years. In years when DWR predicts an unimpaired water-year runoff of 50 per cent of average or less, we find it reasonable to permit reduction of the minimum pool to 25,000 acre-feet by the end of September, but not less than 10,000 acre-feet at any time. Condition 18 will be amended accordingly.

However, we find that it is premature to prescribe the ultimate objective criteria to regulate reservoir releases from Clio, drawdown in Clio, and minimum conservation pool in Clio in permit Conditions 15 and 18. A period of actual operation is needed for this purpose, and the jurisdiction reserved in Condition 24 will so provide. The revised language in Condition 15 makes unnecessary former Condition 19.

Forecast percentages are more flexible than the acre-foot forecasts used in permit Condition 17 in Decision D 1224 and will be substituted on an approximately equivalent basis for the latter.

Fish and Game urged the addition of a permit condition to require the permittee to construct and maintain a fish barrier immediately upstream from the maximum water surface elevation of Nelson Point Reservoir. Testimony showed a considerable

range in design and cost of fish barriers, with their effectiveness not necessarily proportionate to their cost. Individual locations must be considered both with respect to barrier need and barrier specifications. We find that a period of actual project operation of at least five years is necessary for Fish and Game to study the need of a fish barrier at this location, to allow the parties an opportunity to agree on need and specifications, and to provide for an appropriate order by the Board if necessary.

A comparable permit condition will be added with respect to the installation at the end of the project payout period (about 50 years) of a fish barrier upstream from Bald Rock Reservoir.

Plumas County and Fish and Game propose a new permit Condition 12 to require permittee to furnish assurance to the Board that recreation facilities will be constructed, operated, and maintained that will accommodate the visitor-days and generate the additional annual recreational expenditures set forth in tables of Decision D 1224. The tables are based on an analysis of testimony by experts of DWR. While they are a partial justification for the decision, they furnish no blueprint for the needed recreation facilities. Such facilities should be carefully planned before the project is built. It would be most desirable to have the cooperation of Plumas County with respect to the Clio Reservoir area and the U. S. Forest Service with respect to reservoirs in its area. DWR has a statutory duty to

pass on the adequacy of recreation facilities proposed in an application for Davis-Grunsky funds. It has personnel experienced in evaluating and approving such plans. The Board has no comparable statutory duties or trained personnel. This is the basic reason for the reference to the Davis-Grunsky procedure in permit Conditions 12a and 12b.

If the County of Plumas or U. S. Forest Service does not invoke Clauses 12a or 12b, the permittee could apply for Davis-Grunsky funds independently of the requirements of these clauses.

It is of importance that adequate recreation facilities be constructed, operated, and maintained. The Board has no reason to doubt the adequacy of the Federal Power Commission's requirement of a recreation plan by the applicants. (See p. 52.) The Board's Davis-Grunsky requirements would of necessity be consistent with, but could supplement, the FPC requirements.

Permit Condition 12c will be added to reserve jurisdiction to the Board to require the construction, operation, and maintenance of recreation facilities as ordered by the Federal Power Commission, as possibly supplemented by recreation plans approved by DWR pursuant to permit Conditions 12a and 12b.

Permit Condition 27 of Decision D 1224 provides:

"After the end of the project payout period, the permittee shall share the net power revenues on an equal basis with the County of Plumas."

Fish and Game requests that it and County of Plumas each be assigned 50 percent of net power revenue after the end of the project payout period. There is no statutory basis for the Board to make such an order, and such an order would be clearly beyond the offer of the Joint Districts.

County of Butte has also requested a share of the net power revenue at the end of the project payout period, and the Joint Districts indicated that they had intended that the County of Butte share with the County of Plumas on some equitable basis 50 per cent of such net revenue. This possibility has been further considered by the Board. However, several considerations point to the desirability of making no change in this permit condition.

The end product of this project is about 100,000 acre-feet of water to be diverted annually to Joint Districts' lands both during and after the project payout period. The immediate benefit of this water will be to owners of lands in the Joint Districts, and enhanced land values will bring enhanced tax revenue to the County of Butte. Further, most Joint Districts' lands are located in the County of Butte, and their owners at the end of the payout period will share the net power revenue to be retained by the Joint Districts. "Net power revenues," as used in permit Condition 26 (former 27) means only such revenues as would remain after replacement of fully depreciated facilities, after the possible addition of fish barrier(s), after allowance for all operating and maintenance expenses, and after the

refinancing of new capital expenses by a new contract for the sale of power and a new revenue bond issue, if that course should be followed. This clause, of course, would not become effective unless and until an appropriate license is renewed by the Federal Power Commission.

Proposed Amendments and Changes

Formerly Pending

Before the California Water Commission

Petitions covering certain technical changes in the description of facilities and water storage at points of diversion and rediversion were described at page 7 of Decision D 1224. These changes included a redescription of annual storage in Clio and Hartman Bar Reservoirs and substitution of Thermalito Diversion Dam for Haselbusch Dam as a rediversion. Because of the releases from priority of State filings in favor of the Richvale applications, the Board in Decision D 1224 could not approve these proposed amendments or project changes because they lacked the prior approval of the California Water Commission. Water Code Section 10504.5 has subsequently been amended to transfer jurisdiction over these amendments and changes from the Commission to this Board.

In accordance with Water Code Section 10504.5, the Board finds that the technical changes and amendments referred to on page 7 of Decision D 1224 do not constitute a substantial change in the project for which a release from priority was

granted and will not conflict with the general or coordinated plan considered by the Commission when it granted the release from priority.

Reevaluation of Benefits and Detriments
Resulting from the Modified Middle Fork Project

The testimony and exhibits offered at the hearing on reconsideration have supplied the foundation for amending permit conditions to help insure project operation as contemplated by Decision D 1224. The Board reaffirms its finding that, with the modified project, significantly greater benefits from the resources involved would be realized than without any water development.

The petition for reconsideration does not allow for the benefits to result from the project, and does not fairly and accurately evaluate anticipated detriments. For instance, the petition, at page 2, refers to the decision as conceding that the deer herd in the Clio-Nelson Point area will be permanently reduced by 3,000 animals. This is not accurate. The figure is quoted as an estimate by witnesses for Fish and Game (p. 33), but the decision then states:

"This figure may be high, as local residents testified they had never seen more than a small fraction of this number of deer in the proposed reservoir areas, even under severe winter conditions."

Likewise, testimony and exhibits of petitioners which challenged anticipated streamflow enhancement of the Middle Fork

Feather River between Clio and Nelson Point Reservoirs were not based on the requirements of Decision D 1224. Joint Plumas County and Fish and Game Exhibit 3 shows releases from Clio Reservoir taken directly from Applicants' Exhibit 103 and underlines all months when it contends modified project releases would fail to meet the enlarged streamflows below Clio anticipated by Decision D 1224.

Joint Exhibit 3 is misleading in two major respects. First, it overlooks the possibility of regulating Clio storage and release requirements in accordance with Decision D 1224. No streamflow enhancement criteria had been suggested to applicants when they prepared their operating study. In the second place, Joint Exhibit 3 completely overlooks the Frazier Creek inflows which are the heart of the streamflow enhancement contemplated by the decision in permit Condition 15a. Frazier Creek inflows, in compliance with Condition 15a (renumbered 15b), can be expected to result in most inflow to Clio Reservoir between January 1 and July 1 being held there in storage, with subsequent releases from Clio supplying ample flows for trout at a time of the year when such flows are now deficient.

Furthermore, the petitioners have construed the policy and the public interest of the State of California only in the context of those statutes which declare to be beneficial the use of water for recreation and for fish and wildlife resources. The Board is well aware of those statutes and of their increasing importance to areas such as the Middle Fork Feather River. Great

care has been taken in this decision to adopt measures to minimize any detriments and to enhance all benefits that would result from this project. The Board is also well aware that Water Code Section 106 still provides that "the use of water for domestic purposes is the highest use of water and that the next highest use is for irrigation." For this reason it is of major concern to the Board that in an average year the modified project would conserve for beneficial use 50,000 acre-feet of water that would otherwise flow unused to the ocean (p. 45).

The modified project, operated in accordance with the following amended permit conditions, will result in overall benefits substantially outweighing detriments. The Board reaffirms its findings in Decision D 1224, as modified herein, and its approval of the modified project. For convenience, all permit conditions are set forth in the following Order.

ORDER

The Order in Decision D 1224 is modified to read as follows:

IT IS HEREBY ORDERED that Application 13681 be, and it is, canceled, and that Applications 15551 and 15552 be, and they are, denied.

IT IS FURTHER ORDERED that the proposed amendments to Applications 13682, 14919 and 14920, which have been approved by the California Water Commission (see Table 1 of Decision D 1224), and the additional amendments and proposed project

changes referred to on page 7 of Decision D 1224 be, and they are, approved.

IT IS FURTHER ORDERED that Applications 13682, 14919 and 14920 be, and they are, approved in part, and that permits be issued to the applicant subject to vested rights and to the following limitations and conditions:

1a. The water appropriated under the permit issued pursuant to Application 13682 shall be limited to the quantity which can be beneficially used and shall not exceed 300 cubic feet per second by direct diversion at Bald Rock Dam between about November 1 of each year and about June 30 of the succeeding year.

1b. The water appropriated under the permit issued pursuant to Application 14919 shall be limited to the quantity which can be beneficially used and shall not exceed 1,300 cubic feet per second by direct diversion from about May 1 to about June 30 and about September 1 to about October 31 of each year and 378,375 acre-feet per annum by storage in Clio, Nelson Point, Hartman, and Bald Rock Reservoirs, to be collected between about October 1 of each year and about June 30 of the succeeding year, all as more explicitly set forth in Paragraph 2 of this approved application, as amended. Direct diversion and rediversion of stored water for irrigation use under Application 14919 plus diversion for irrigation use under existing rights to the natural flow of the Feather River shall not exceed an instantaneous rate of 2,800 cubic feet per second.

1c. The water appropriated under the permit issued pursuant to Application 14920 shall be limited to the quantity which can be beneficially used and shall not exceed 1,000 cubic feet per second by direct diversion at Hartman Dam and 1,300 cubic feet per second by direct diversion at Bald Rock Dam, year-round, and 378,375 acre-feet per annum by storage in Clio, Nelson Point, Hartman, and Bald Rock Reservoirs, to be collected between about September 1 of each year and about June 30 of the succeeding year, all as more explicitly set forth in Paragraph 2 of this approved application, as amended.

2. The maximum quantity herein stated may be reduced in the license if investigation warrants.

3. Actual construction work shall begin on or before July 1, 1969, and shall thereafter be prosecuted with reasonable diligence and if not so commenced and prosecuted this permit may be revoked.

4. Construction work shall be completed on or before December 1, 1974.

5. Complete application of the water to the proposed use shall be made on or before December 1, 1990.

6. Progress reports shall be filed promptly by permittee on forms which will be provided annually by the State Water Rights Board until license is issued.

7. All rights and privileges under this permit including method of diversion, method of use and quantity of water diverted are subject to the continuing authority of the

State Water Rights Board in accordance with law and in the interest of the public welfare to prevent waste, unreasonable use, unreasonable method of use, or unreasonable method of diversion of said water.

8. Permittee shall allow representatives of the State Water Rights Board and other parties as may be authorized from time to time by said Board, reasonable access to project works to determine compliance with the terms of this permit.

9. This permit is subject to the prior rights of any county in which the water covered by the application originates to the use of such water as may be necessary for the development of the county.

10. Before making any change in the project determined by the Board to be substantial, permittee shall submit such change to the Board for its approval in compliance with Water Code Section 10504.5(a).

11. Permittee shall allow full public access to project reservoirs, consistent with safety and project operation, for recreation and fishing.

12a. If the County of Plumas requests it to do so, the permittee shall apply for a grant of Davis-Grunsky funds for the development of recreation facilities at Clio Reservoir, and the permittee shall fully cooperate with the county in the preparation of necessary recreation plans and in implementing them.

12b. If the United States, acting through the Forest Service or other authorized agency, requests it to do so, the permittee shall apply for a grant of Davis-Grunsky funds for the development of recreation facilities at reservoirs located in federal areas, and the permittee shall fully cooperate with the federal agency in the preparation of necessary recreation plans and in implementing them.

12c. The Board reserves jurisdiction for the purpose of exercising discretion to require the permittee to construct, operate, and maintain (1) recreation facilities at project reservoirs in accordance with any order of the Federal Power Commission, and (2) any consistent but supplementary Davis-Grunsky recreation facilities found to be necessary and approved by the California Department of Water Resources.

13. Construction of the dams shall not be commenced until the Department of Water Resources has approved plans and specifications.

14. In accordance with the requirements of Water Code Section 1393, permittee shall clear the site of the proposed reservoirs of all structures, trees and other vegetation which would interfere with the use of the reservoir for water storage and recreational purposes.

15a. In all years when Clio Reservoir spills on or before June 30, the controlled releases of stored water from the reservoir after July 1 shall be at a uniform rate (about 125 cubic feet per second, depending upon monthly reservoir accretions and losses) calculated to draw down the reservoir according to the following schedule:

<u>End of Month</u>	<u>Water in Storage Acre-Feet</u>	<u>Approximate Elevation of Water Surface Above Sea Level in Feet</u>
June	156,400 (capacity)	4506.6
July	148,800	4504.6
August	141,200	4502.6
September	133,600	4500.5
October	126,000	4498.4
November	118,400	4496.2

provided that the above reservoir storage schedule shall not apply and the aforesaid uniform rate of release may be increased after Nelson Point Reservoir has reached minimum storage level.

In all other years, releases for the same period shall be at a uniform rate large enough to comply with the minimum flow requirements of Condition 15c, but not more than 125 cubic feet per second until and unless Nelson Point Reservoir has reached minimum storage level; except that if and when the water stored in Clio Reservoir reaches the storage shown in the above schedule for any given date the releases for the remainder of the season shall be the same as if Clio Reservoir had spilled on or before June 30.

15b. To the extent reasonably possible consistent with project operations, releases shall be made from Clio Reservoir which, when combined with the flow of Frazier Creek, will result in the following flows below the junction of Frazier Creek with Middle Fork Feather River:

(1) At least 50 cubic feet per second between December 1 and March 31.

(2) A constant flow of at least 150 cubic feet per second between April 1 and June 30.

15c. At all times, regardless of project operations, a minimum flow shall be maintained below Clio Dam of 5 cubic feet per second plus such additional quantity, if any, which, when combined with the flow of Frazier Creek, will result in a flow of 25 cubic feet per second at the junction of Frazier Creek with Middle Fork Feather River, to maintain the fishery below that point.

16. To maintain the fishery below Nelson Point Reservoir, a minimum of 75 cubic feet per second shall be released from the reservoir between November 1 of each year and March 31 of the succeeding year, and a minimum of 300 cubic feet per second shall be released between April 1 and October 31 of each year, except that in a year when the annual March 1, April 1, or May 1 forecast (whichever is more recent) of the Department of Water Resources predicts that the unimpaired runoff of the Feather River Basin above Oroville for the water-year will be 50 per cent of the average or less, the flows below Nelson Point between April 1 and May 31 may be reduced to 75 cubic feet per second.

17. Minimum flows shall be maintained in the Middle Fork Feather River below Hartman and Bald Rock Dams of 50

cubic feet per second between May 1 and October 31 and 30 cubic feet per second between November 1 and the succeeding April 30, except that in a year when the annual April 1 or May 1 forecast (whichever is more recent) of the Department of Water Resources predicts that the unimpaired runoff of the Feather River Basin above Oroville for the water-year will be 35 per cent of average or less, the flow may be reduced throughout the seven-month period beginning May 1 to a minimum of 30 cubic feet per second, and when such forecast estimates runoff for the water-year of less than 70 per cent but more than 35 per cent of average, such flow may be reduced throughout the seven-month period beginning May 1 to a minimum of 40 cubic feet per second.

18. The following minimum conservation pools shall be maintained:

(a) Clio Reservoir: Except as necessary to maintain the minimum flow requirements of Conditions 15b and 15c, not less than 75,000 acre-feet, except that in a year when the annual April 1 or May 1 forecast (whichever is more recent) of the Department of Water Resources predicts that the unimpaired runoff of the Feather River Basin above Oroville for the water-year will be 50 per cent of the average or less, the minimum pool may be reduced to not less than 25,000 acre-feet by the end of September of that year but not less than 10,000 acre-feet at any time.

(b) Nelson Point Reservoir: Not less than 12,000 acre-feet at any time.

19a. The rate of change of controlled reservoir releases at Nelson Point Dam shall not exceed 15 per cent of the maximum release of the previous day in any 24-hour period except that a minimum daily change that would be less than 25 cubic feet per second may be increased to that rate.

19b. These rates of change will not apply when the reservoir has water flowing over the spillway.

20a. To prevent rough fish (not game species) from migrating upstream into the Middle Fork Feather River from Hartman Bar Reservoir a fish barrier shall be constructed and maintained by the permittee across said river immediately upstream from the maximum water surface elevation of Hartman Bar Reservoir. This barrier shall be approved in specifications and design by the California Department of Fish and Game prior to its construction.

20b. After the project has been in operation for a period of at least five years, the Department of Fish and Game may report to the Board its observations and recommendations as to the need of a fish barrier immediately upstream from the maximum water surface elevation of Nelson Point Reservoir. If found to be necessary by the Board, the permittee shall install and maintain a fish barrier which shall be approved in specifications and design by the Department of Fish and Game prior to its construction.

20c. If, at the end of the project payout period (about 50 years), the Board finds it to be necessary upon recommendation of the Department of Fish and Game, the permittee shall install and maintain a fish barrier immediately upstream from the maximum water surface elevation of Bald Rock Reservoir. This barrier shall be approved in specifications and design by the Department of Fish and Game prior to its construction.

21. Permittee shall install and maintain measuring devices satisfactory to the State Water Rights Board upstream from the high-water elevation of the reservoirs, immediately below the storage dams, and immediately below the junction of Frazier Creek and Middle Fork Feather River, in order that accurate measurements can be made of the quantity of water flowing into and out of said reservoirs and of the combined flows of Middle Fork Feather River and Frazier Creek.

22. Water entering the reservoirs or collected in the reservoirs during and after the current storage season shall be released into the downstream channel to the extent necessary to satisfy downstream prior rights and to the extent that appropriation of water is not authorized under this permit.

23. Permittee shall install and maintain outlet pipes of adequate capacity in the dams as near to the bottom of the natural stream channel as may be approved by the State Department of Water Resources, in order to assure that streamflow releases for trout shall be of cold water.

24. The Board reserves jurisdiction to approve or order adjustments in operation of, and streamflow releases from, Clio Reservoir, consistent with project requirements and uses for power and irrigation as shown by Applicants' Exhibits 102 and 103, as modified by this decision, when such adjustments are needed to meet recreation and fishery requirements.

25. At the end of the project payout period (of about 50 years) the streamflow releases made at Hartman and Bald Rock Dams shall be increased for the purpose of improving and restoring the trout fishery by adding to the minimum releases required herein an additional flow of 150 cubic feet per second or such lesser amount, if any, as may be determined by the California Department of Fish and Game to be adequate for such purpose.

26. After the end of the project payout period, the permittee shall share net power revenues on an equal basis with the County of Plumas.

Adopted as the decision and order of the State Water Rights Board at a meeting duly called and held at Sacramento, California, the day of 1966.

/s/ Kent Silverthorne
Kent Silverthorne, Chairman

/s/ Ralph J. McGill
Ralph J. McGill, Member

/s/ W. A. Alexander
W. A. Alexander, Member