item 1

No. F-157

IN THE

District Court of the United States

FOR THE

District of Nevada

NEVADA CONSOLIDATED COPPER COMPANY, a corporation,
Plaintiff,

vs.

CONSOLIDATED COPPERMINES CORPORATION, a corporation,
Defendant.

No. F-157

Before HONORABLE FRANK H. NORCROSS, *District Judge.*

Coppermines' Brief on Fourteenth Counterclaim

Vol. II.

II. Accounting and Power.

III. Summation of Coppermines' Claims on Metallurgy, Accounting and Power, and the Law Applicable Thereto.

GEORGE B. THATCHER,
WILLIAM WOODBURN,
WM. FORMAN, SR.,
THATCHER & WOODBURN,
FORMAN & FORMAN,
Attorneys for Defendant.

No. F-157

IN THE

District Court of the United States

FOR THE

District of Nevada

NEVADA CONSOLIDATED COPPER COMPANY, a corporation,

Plaintiff,

vs.

CONSOLIDATED COPPERMINES CORPORATION, a corporation,

Defendant.

Brief on Fourteenth Counterclaim

Vol. II. Accounting

VOLUME II.

II. ACCOUNTING:

(1) General:

(a) Concentrator.

(b) Smelter.

(c) Miscellaneous.

(2) Power.

III. SUMMATION OF COPPERMINES' CLAIMS ON METALLURGY, ACCOUNTING AND POWER, AND THE LAW APPLICABLE THERETO.

General

The contract of June 16th, 1926, provides mutual and reciprocal obligations, duties and rights. Under the terms of the contract, mining of ore bodies of one party for the other was provided for. Coppermines had no concentrator, smelter or transportation facilities and no power plant. The contract provided for the sale of certain power by Nevada to Coppermines for its mining operations, and also provided that Nevada should shovel mine certain of the ores and transport all ores at a certain definite fixed charge. Nevada also agreed to concentrate and smelt at its plant at McGill certain tonnages of Coppermines' ores upon, what we will call for convenience, a cost-plus basis. These charges in the contract are said to be in lieu of a deduction from the purchase price of the ores and concentrates of Coppermines.

Under the terms of the contract, the ores are delivered at the mine to and into the possession of Nevada. The Nevada company transports, concentrates and smelts the ores, obtains the blister copper therefrom and transports the blister to the eastern seaboard. Payment for the ores is made by the delivery of certificates or orders upon the eastern refineries for the delivery of copper equivalent to 95% of the copper in the ores and concentrates. Gold and silver are paid for in cash; gold upon the basis of the entire gold contents of the ores and concentrates received at the smelter at the rate of $20.00 per ounce, and silver upon the basis of 95% of the silver in the ores and concentrates received

at the smelter, based upon specified, accepted quotations for bar silver.

The contract is declared by Article XXIII to be an interdependent agreement and one under the laws of the State of Nevada, and to be construed and given effect only in accordance with the laws of this state.

Upon the execution of the contract the parties entered into its performance and since the date of the contract the Nevada company has delivered power to Coppermines at Kimberly, and has transported and treated, concentrated and smelted 4,218,294 tons of ore from the Emma Nevada, Ora and other claims of the Coppermines company. For these services, bills were from time to time rendered by Nevada to Coppermines, and Coppermines has actually paid to the Nevada company for these services more than $5,000,000.

The contract provides that Coppermines, for the concentrating and smelting service shall pay the "acutal cost" thereof, but this actual cost shall not include depreciation, depletion or amortization. The contract further provides that in addition to actual cost Coppermines shall pay to the Nevada company fixed sums per ton of ore concentrated and per ton of concentrates or ore smelted, as a profit. A special clause of the contract provides that if and when copper sells at 15 cents per pound and upward, then Coppermines shall pay an additional sum to the Nevada company as a "depreciation or amortization charge", this sum being upon a per ton basis and varying from 7½ cents per ton upward with any rise in the price of copper above 15 cents.

For the power sold to Coppermines for its mining operations at Kimberly, Nevada is to receive the "operating cost" including normal overhead, and 1/3 of 1 cent per kilowatt hour as a profit. In addition to the amount which Coppermines paid to Nevada as the actual cost of concentrating and smelting, and for profit, Coppermines, since the execution of the contract, has paid the Nevada company $233,000 depreciation and amortization charge.

Throughout the contract, as we will later point out, there is a studious effort and a manifest intent to strictly limit the charges, which shall be imposed upon Coppermines for the services rendered, to actual direct operating cost plus usual and normal overhead, except in those specified instances clearly set down and which clearly provide for a fixed charge.

It is our position that under the terms of this contract, Nevada is in a confidential relation, and is, in effect, a trustee. We think there can be no doubt as to the correctness of this position. Upon several occasions and during the trial of this and other counterclaims, this Court has so declared. Counsel for Nevada recognize it. Mr. Wallace said:

> "Nor do we think that even our relation to them of trustee, which we are not unmindful of, would require us to do that."
>
> (T.-4844).

Mr. Boyd, Nevada's managing director, said:

> "This is a dispute as to whether acting as trus-

tee and in a fiduciary capacity we have acted in good faith."

(T.-643).

In this connection, however, it may be well to cite some authorities to the Court in this respect. The Nevada company under the contract receives the ores, transports them, concentrates them in its concentrator and smelts the concentrates in its smelting plant. It ships the blister copper and bills Coppermines for the specific deductions provided by the contract.

In *Anderson v. Watson,* 118 Atl. 569, the Court said:

"A fiduciary, or confidential relation, when used in the same connection, exists in all cases where there has been a special confidence reposed in one who, in equity and good conscience, is bound to act in good faith or with due regard to the interests of the one reposing the confidence. The rule embraces technical fiduciary relations and those informal relations which exist whenever one man trusts in and relies upon another. The origin of the confidence reposed is immaterial.

In this case the complainants do not know how many cars of coal they mined nor the rate of compensation agreed upon from time to time from their labor, and until they receive that information cannot properly present their claim in a court of law. Nor can there be any real question that there was a fiduciary and confidential relation between the parties to this proceeding. The coal which measured the compensation to be paid to the men who mined it was weighed by the company on its own scales and by its own agents out of the pres-

ence of the miners who were, by the necessities of the case, precluded from witnessing the operation of weighing, and who were as a practical matter, required to rely upon the good faith of the company.

Under these circumstances the miners naturally and necessarily trusted and relied upon the company's good faith and the company assumed the attitude of dealing fairly with them. For these reasons in our opinion the complainants are entitled to the accounting prayed for in the bill."

In *Fox v. Hall,* 128 Pacific, 749, the Court held:

"The facts alleged and proved show the existence of a fiduciary relation sufficient to invoke the jurisdiction of a court of equity to compel an accounting, which, as the evidence shows, had been demanded of the defendant. * * * *Upon such accounting the burden would probably be upon the said defendant to establish any expenditures or credits* upon which he might rely as offsets to the *gross income shown to have been* received by him."

In this connection we desire to call the Court's specific attention to the matter of the burden of proof. Where the facts and the evidence show the existence of a fiduciary relation, and an accounting is compelled, then the burden of proof is upon the trustee to establish any expenditure or credit upon which he may or might rely as an offset to the gross income received by him.

Fox v. Hall, 128 Pac., 749.
Thatcher v. Hayes, 19 N. W., 946.
1 *C. J.,* page 643.
Marvin v. Brooks, 94 N. Y., 71.

In *Marvin v. Brooks,* the Court said:

> "Such an accounting when decreed between parties standing in a confidential relation and followed by proof of money or property entrusted to the agent throws upon the latter the burden of rendering an account and an explanation and requires him to show that his trust duties have been performed and the manner of their performance. Such a decree proceeds on the ground that the defendant stands in the attitude of an agent dealing to some extent with the money or property of the other party entrusted in a confidential relation with an interest which makes him a quasi trustee, and by reason of that relation, knowing what the other party cannot know, and bound to reveal to him the entire truth, the equitable jurisdiction has always rested largely upon such relation of confidence involving the nature of discovery and the duty of explanation. *And hence the burden of such explanation and the proof of its truth fall in such cases upon the defendant whose conduct was questioned whenever an accounting was decreed and required of him the extreme of good faith.*"
>
> (3 Greenleaf on Evidence, Sec. 353; 1 Story's Equity Jurisprudence, Sec. 315, 316).

In *Thatcher v. Hayes,* supra, it was said:

> "After full and patient consideration of the case we are constrained to say that the evidence leads us to the conclusion that Congdon's estate should be charged with the price of shingles furnished by Taft to White, the evidence satisfactorily showing that they were furnished on Congdon's debt, but we do not think the allowance can exceed the sum

stated in Congdon's letter referring to the transaction, dated December 28, 1874, in which it is given as $420.00. Without the aid of this letter we do not think the main fact could be established against Congdon, and we cannot give it effect beyond its terms. *It is not entirely plain that other allowances ought not to be made to Hayes, but the burden of proof is upon him and we cannot say that he has satisfactorily established his right to any other.''*

(See additional citations ante pp. 483-489 this Brief).

THE CONTRACT PROVISIONS AND CONSTRUCTION THEREOF

The treatment charges here under consideration are to be found in Articles XVI and XVII of the contract.

Article XVI first provides that the Nevada Company agrees to purchase all ores mined and shipped from the mining claims of Coppermines under the provisions of the contract, and to pay Coppermines for the gold, silver and copper contents of all of its ores and concentrates upon certain specified terms and rates to which we have heretofore called attention. Provision is made for the payment by Coppermines of its proportionate part of all transportation charges incurred in the shipment of blister copper from McGill to the refineries.

The contract then declares:

''In lieu of a deduction from the purchase price of said ores and concentrates, the Coppermines company shall pay the Nevada company as follows:

(a) A sum called for convenience a 'shovel mining charge' * * *

(b) A sum called for convenience an 'underground mining charge' * * *

(c) A sum called for convenience an 'ore delivery charge' * * *

(d) A sum called for convenience a 'concentrating charge', which shall be at the rate based upon the Nevada company's *actual cost of concentrating;* that is to say, for each dry ton of ore concentrated the charge *shall be the actual cost of such concentration, including usual and normal overhead charges,* plus fifteen cents (15¢) per dry ton for profit.

(e) A sum called for convenience a 'smelting charge', which *shall be* at a rate based upon the Nevada company's *actual cost of smelting;* that is to say, for each dry ton of ore and/or of concentrates smelted the charge shall be the *actual cost of such smelting, including usual and normal overhead charges, plus one dollar* ($1.00) *per dry ton for profit.*

(f) A sum called for convenience a 'depreciation or amortization charge', to cover use of the plant and equipment at mines, mills and reduction works including the power plant, if and whenever electrolytic copper sells New York, net refinery, as shown by the Engineering and Mining Journal-Press of New York, at fifteen cents (15¢) per pound and upwards, which sum per dry ton of crude ore milled and/or smelted hereunder shall be as follows:

When such selling price is fifteen cents (15¢) up to but not including sixteen cents (16¢) per pound, at the rate of seven and one-half cents (7½¢) per dry ton. * * *

(Depreciation charge rises with the rise in price of copper, with a maximum of twenty cents (20¢) per ton when copper is selling at eighteen cents (18¢) and upward).

(g) A sum called for convenience a 'cement copper treatment charge' * * *''

After providing that Coppermines reserves the right to erect at any time on two years' notice its own reduction plant in which it may elect to treat in whole or part its ores and concentrates which fall within the provisions of the contract, Article XVI continues:

"*All charges accruing* to the *Nevada Company* as above for mining, ore delivery and treatment on Coppermines Company's ores and concentrates *shall be paid by the Coppermines Company on or before the last day of the month following the month* in which shipments are made of the blister copper representing the recovered metals from the ores and concentrates so mined and/or treated.

All ores sold by the Coppermines Company hereunder shall be delivered loaded on cars at the ore bins of the mine shaft or shafts where hoisted *and no charge of any kind against the Coppermines Company for mining, transporting and treating said ores or any concentrates thereof shall be made by the Nevada Company save and except as hereinabove provided.*''

In Article XVII we find the provision for the delivery and sale, cost and profit to be paid for power, as follows:

> "* * * *The price* or charge therefor to the Coppermines Company *shall be the operating cost, including normal overhead, plus one-third* (1-3) *of a cent per kilowatt hour for profit.*"

And also, a definition of "actual cost," which we quote:

> "ACTUAL COST. The term 'actual cost' when used herein as the basis of charge for services performed or for deduction from payments to be made for the returnable metal contents of ores purchased hereunder, shall be deemed to be the *monthly average of the total of all direct operating expense,* including all administrative, fixed and general expenses chargeable specifically or by customary allocation to the departmental operations as usual and necessary expenses involved in the *ordinary conduct* of the business of the respective parties hereto. *Such actual cost,* however, *shall not include* depletion, *depreciation, amortization,* Federal Income or Profits taxes or Nevada State Bullion taxes."

Throughout Article XVI of the contract, we find repeatedly the word "actual cost" and "usual and normal overhead charges". In fact, wherever the words "actual cost" are used, or where the basis of payment is "actual cost" in Article XVI, it is always accompanied by the words "including usual and normal overhead charges". These words are found in the provisions which fix the cost of underground mining, concentration and smelting.

Fixing the price of power, the words "operating cost" are used but they are followed by the words "normal overhead".

The primary thing for the Court to consider is the meaning of the words "actual cost", and "direct operating expense" as used in the contract. The parties have endeavored to define "actual cost," but such definition was clearly not necessary.

The contract, properly analyzed, defines actual costs as:

1. The *monthly average* of the total of all *direct operating expense;*
2. Including (a) all administrative, (b) fixed, and (c) general expenses, chargeable specifically or by customary allocation to the departmental operations as usual and necessary expense involved in the ordinary conduct of the business;
3. Such actual cost shall not include depletion, depreciation, amortization, Federal Income or Profit tax, or Nevada State Bullion tax.

At this point we desire to specifically point out that the expenses which are to be "allocated" are not the "direct operating expense," but *are the administrative, fixed and general expenses only.*

The contract definition conforms to the definition of our Supreme Court. It means exactly the same as the words "actual cost * * * * including normal overhead". The definition is clear and direct. There is to be charged only the direct operating expenses and the overheads, which consist of administrative, fixed and general expenses, the overheads to be charged specifically or according to customary allocation.

The Supreme Court of this State has had occasion to define the words "actual cost" as used in mining, milling and transportation of ores. In the case of *State vs. Tonopah Extension Mining Company* (49 *Nev.* 428-436), there was before the Supreme Court the question as to whether or not the words "actual cost" include depreciation of mining, milling and transportation plant and equipment, taxes and insurance, and cost of maintenance of offices outside of the state, and whether or not these are properly deductible from gross proceeds in arriving at the net proceeds of mines for the purpose of taxation. The Court said that in arriving at net proceeds an "actual cost basis" was intended, and defined actual cost as follows:

> "The term *'actual cost'* as used in the statute *has a well known meaning among miners.* The common sense of the thing is that it means the money actually expended in the extraction, transportation, and reduction of ores. *The word 'actual' is a word of limitation, as distinguished from all costs of conducting a business.*"

That the word "actual", as used in the phrase "actual cost," is a word of limitation and not of extension is the settled rule.

> See *Mayor v. B. & A. R. Co.,* 100 N. E. 1014;
> *Old Colony R. R. Co.,* 70 N. E. 62.

Our Supreme Court and the cases cited also hold that taxes and depreciation are not "actual costs".

The expenditures of which Coppermines complains do not fall as a general thing within the general descrip-

tion of overheads and they are not administrative, fixed, or general. What Nevada did was to charge as direct operating expense, expenditures which we contend were capital in character. In a few instances, however, Nevada introduced into its general expense account capital items such as the building of the new telephone line to Ruth, the installation of the new automatic telephone exchange, the new steel fence around the plant, the remodelling of the General Manager's residence, making lawns and staff parking circle, street lighting and oiling of roads.

In view of the words of the contract and the use of the words "direct operating expense" in the definition of "actual cost", and in light of Nevada's accounting, we think the Court will ultimately be only concerned in arriving at a proper construction and definition of the words "direct operating expense".

Nevada, in practice against Coppermines, has construed "direct operating expense" as being synonymous with all operating and capital expenditures. We contend that the contract is clear and it was the intent not to extend the term "costs" but to carefully restrict and limit it.

The words "direct operating expense" are not defined in the contract and they are, therefore, to be taken in their usual and general significance unless the subject of the contract or the contents demands otherwise.

Nevada by its very cost sheets fixes the items which make up direct operating expense, and, while they vary somewhat by reason of the difference in the character

of the particular operation, whether it be in the concentrator or the smelter or the power plant, generally they are operating labor, repair labor, materials and supplies, power and water.

It should be clear that operating labor is only that labor necessary to the actual operation of the plant; that repair labor is that labor used on repair jobs on the plant; and that material and supplies, when considered with the words "direct operating expense" means such material and supplies necessarily used in the actual concentrating and smelting of the ores and concentrates, and those used in making necessary repairs.

If we turn to the usual and customary meaning of "direct operating expense" as understood in mining, we have clear-cut definitions from Mr. Haffner, Coppermines' general manager, and from Mr. Boyd, managing director of Nevada. Mr. Haffner defines "direct operating expense", or direct operating cost, as follows:

> "I knew, as all superintendents know, that I was responsible for the direct operating costs. The direct operating costs are a yardstick by which, to a great extent, the ability and the performance of the superintendent is decided. A man is considered as a good operator or as a poor operator by judging his performance in that respect, giving due consideration, of course, to the condition of the plant, the character of the operations, the character of the ores or metals treated and the general conditions surrounding the operation. * * *"
>
> (T.-8695).

"Direct operating costs are the direct expenses for labor, fuel, materials, repairs, and the direct supervision of any undertaking as distinguished from extraordinary expenditures which must be referred to the management and the board of directors before they can be incurred. In other words, it is the expenditures for which the superintendent in charge of the particular department, or the particular enterprise, is in direct control and under his direct supervision and charge."

(T.-8712).

Mr. Boyd gave us a splendid definition:

"By direct milling costs *I mean those items of expense that directly enter into the cost of milling a ton of ore, such as, crushing, grinding, floating and handling the concentrates, and the cost of the direct supervision* that is necessary in that connection, but exclusive of any apportionment of state and county taxes, Federal income tax, New York office expense, auditing expense or legal expense and things of that nature. * * * So by direct milling costs, I exclude taxes and what we call general overhead expense and I am comparing only *the costs that really spring out of the concentrating of the ores* and the necessary supervision and attention thereto."

(T.-6210-11).

Mr. Boyd's definition is equally applicable to "direct operating expense". "Direct operating expense", therefore, means the cost of milling a ton of ore, such as crushing, grinding, floating, and handling the concentrates, and the cost of direct supervision necessary in

that connection. It excludes indirect costs and overheads, and, as Mr. Boyd in substance states: "it is only that cost which really springs out of the concentration of the ore and the necessary supervision and attention thereto."

We have pointed out that in the words "actual cost" the word "actual" is a word of limitation. The intention to restrict the definition of "actual cost" is also made clear by the inclusion of the words "monthly average of the total of all direct operating expense." The term "monthly average" was advisedly inserted. It was meant to limit the cost to the monthly average for the month in which the ores were actually milled. It was not intended that an expenditure made in some previous month or previous year could be spread or allocated to the month in which the ores were treated, nor did it permit, but on the contrary was intended to exclude, any system of introducing into the monthly cost deferred charges or contemplated expenditures. This is made clear by the subsequent wording of the definition, because the definition specifically states that "actual cost" shall not include *depreciation,* depletion *or amortization.*

In this connection we also call the Court's attention to the fact that by a further provision of the contract, *payment* is to be made for the services of concentration and smelting on or before the last day of the month following the month in which shipments of blister copper are made for the account of Coppermines.

It is clear from these provisions which provide for

the finding of the monthly average and the payment, month by month, of the charges laid, that what was intended to be charged was the direct actual cost of the operation for each month and to exclude from any such charges any expenditures which were unusual or abnormal, or which were in the nature of deferred charges, or which were of such a character as should be taken care of by amortization, and to further exclude any and all expenditures of a capital character, the redemption of which is provided for by depreciation.

Accounting Rules and Practice

Let us, as a further aid to construction, now consider accepted accounting practice and the standard rules for the distribution of expenditures as between capital and operating expense.

Accounting and business practice recognize that every expenditure, in the ultimate analysis, whether for capital or for operating expense, must be returned from income. Direct operating expense and maintenance are so returned, and capital is likewise redeemed in the form of depreciation, and the theoretical setting aside of a depreciation reserve for the purpose of redeeming the plant and its equipment at the expiration of its life. Extraordinary expenses, prepaid or deferred costs and all expenditures which benefit more than one accounting period are amortized.

Standard accounting prescribes the assumption of a term of useful life for the plant and equipment and correspondingly the setting aside of a fixed portion of

current income as a depreciation allowance, which accumulated to the end of the term will return, in theory, the original capital investment in plant and equipment.

Subsequent expenditures for additions, betterments, or replacements of plant or plant items, intended and expected to serve for a number of years, are capital, and are likewise redeemed through dpreciation or amortization.

Depreciation and amortization are recognized as cost, but are always treated as indirect costs and not as a direct operating expense. The principles of cost finding which so clearly apply in this case and which, according to the testimony of Mr. Haffner, are the principles employed by the numerous mining companies with which he has been identified and which have come under his observation and study, are clearly and concisely set out in Reitell and Van Sickle's "Cost Finding for Engineers," in the chapter dealing with "Capital versus Operating Expenditures."

> "1. The Distinction Between Capital and Operating Accounts
>
> The twofold classification of accounts again comes to the front for consideration. The classification has been considered already as a basis for sorting the proper accounts to prepare the balance sheet and the statement of income, profit and loss. The capital accounts are used in the preparation of the balance sheet. They are the assets, liabilities, and ownership which set forth the salient facts in regard to the financial condition of the business. The income, profit and loss statement is prepared

from the operating accounts. These accounts record the transactions, showing the revenue received as well as the expenses incurred in obtaining the revenue.

The distinction between capital and operating accounts is sometimes referred to as the difference between capital and revenue accounts. On the books there is no difference in appearance between the two types of accounts, with the exception as to the name of the account. But a sharp distinction must be made between the two groups at all times in regard to their nature, when accounting processes are involved. These processes are divided into two periods, namely, when transactions are journalized and when financial statements are prepared.

It is tremendously important to realize and understand the distinction between a capital and a revenue expenditure at the time the transaction is journalized in a book of original entry. There is a fundamental difference between an expenditure for the purchase of an asset and an expenditure in connection with the maintenance of the same asset. If the importance of the distinction is realized, the proper account will be charged with the cost at the time of the transaction. Little danger lurks, then, in getting the item in the statement in which it does not properly belong. A transaction correctly handled in the beginning offers little or no trouble at the close of the accounting period. When financial statements are prepared, it is always important, however, to have knowledge of the fact that the proper items have been incorporated in the balance sheet and in the income, profit and loss statement.

The result of charging capital or operating accounts erroneously is to misstate the net profit or the net loss for the period. Obviously, such an error would be reflected in the ownership account. If a capital expenditure is actually made and it is charged to an expense account, the effect is to understate the asset values and profits, while expense is overstated. If an operating expenditure is actually made and it *is charged* to an asset account, asset values and profits are overstated while the expenses are understated.

2. Capital and Operating Expenditures

Decisions must be made frequently by the engineer pertaining to the transactions the nature of which makes it quite difficult to say whether a capital or an operating account should be charged. Certain well-described rules may be stated to aid in properly classifying the expenditures. Even with a knowledge of these rules, however, proper classification may be difficult to determine. For an example, use the following illustration: A new delivery truck was purchased in February. In April of the same year the name of firm, address, and other advertising matter was painted on the truck at a cost of $50. Should this cost be treated as an operating expense or should it be capitalized? While it is true that the firm will receive the benefit from the advertising as long as it uses the truck, has such advertising actually increased the value of the truck? Many large business concerns combat such dilemmas by setting an arbitrary figure above which debatable items are capitalized and below which they are treated as operating expenditures. In case of absolute doubt as to the proper

classification of the expenditure, it is better to charge an operating account instead of a capital account. By so doing conservative accounting practice is adhered to; profits will be understated rather than overstated.

Capital expenditures are those expenditures which increase the relatively permanent values or the productivity of an asset. *Expenditures made for items which will be in use or possess value for a period of time longer than one accounting period should be capitalized.* When a piece of machinery is purchased it will last, normally, more than one year. Its cost value is said to be capitalized, and it is termed a 'fixed asset'. Through the process of depreciation, the cost is charged into the operating expenses during the years that it remains in use. If the accounting period or fiscal year was 5 years in length, and the machine had an estimated life not exceeding 5 years, then the expenditure could be considered as an operating or revenue expenditure. As accounting or fiscal periods never exceed 12 months, however, any expenditure made which creates a value giving benefit for a longer period of time must be considered as a capital expenditure. Capital expenditures may be classified as additions, betterments, extensions, improvements, replacements, and renewals.

Revenue expenditures are those expenditures which do not increase the value or productivity of any fixed asset. In contrast to capital expenditures, revenue expenditures represent current operating costs, which are also known as 'operating expenditures.' Expenditures of this type confer a benefit to the business during only one fiscal period. *If the operating expenditures conferred a benefit*

to more than one accounting period, the cost would be capitalized. This is frequently the case with certain items such as expenditures made for insurance, advertising, literature, fuel, factory and office supplies, etc. If it can be ascertained at the time the expenditure is made that it will benefit more than one fiscal period, then the expenditure should be charged to a 'prepaid' expense account. Salaries, wages, taxes, insurance, fuel, power, and rent are illustrative of the operating expenditures. Such expenditures are sometimes termed 'revenue' expenditures because they are costs of obtaining the revenue or income. Expenditures for repairs, maintenance, costs of production, distribution, and administration are also treated as operating expenditures. The last three types of expenditures are described in Par. IV.

3. Additions and Extensions

Expenditures for additions and extensions are capital in nature. *Such expenditures give the already existing fixed asset values an added physical value which they did not previously possess.* The additions represent the value expended for capital assets which have not replaced any asset already in existence in the business. *Additions* may be made to land, buildings, machinery, or any other type of equipment.

4. Improvements and Betterments

Improvements and betterments to fixed capital assets represent capital charges. *Such expenditures are made for the purpose of improving the physical value or the productivity of the fixed*

assets. The application of safety devices to machinery or other equipment illustrates an improvement. The improvement safeguards the workmen from injury as long as the fixed asset is in use; therefore, the cost should be capitalized. The application of some patented device to a piece of machinery would be classed as a betterment, since it will increase or facilitate production.

5. Replacements

When a fixed asset has become obsolete or depreciated to a point where it is no longer an economical productive agent, and a new unit is purchased to take its place, a replacement has been made. Replacements represent capital expenditures. In Chapter VIII several illustrations of journal entries were shown when depreciated assets are replaced by new units.

Replacements constitute an exchange of units which are substantially equal in value. If the new unit, because of increased productivity, has a much higher cost value than the one it replaced, the additional cost is capitalized as a betterment. *When a fixed asset is replaced, the cost of the replacement is capitalized regardless of whether its cost is greater or less than the original cost of the asset being replaced.*

Small parts of an individual unit of equipment often must be replaced several times before it is necessary to replace the complete unit. Expenditures of this type do not represent capital outlay. They are to be considered as repairs or maintenance.

6. Renewals

Renewals are capital expenditures, usually made in connection with intangible assets. The costs of obtaining extended franchises, copyrights, etc., are considered as renewal costs from a technical viewpoint. Renewals should not be confused with replacements or repairs. While it is true that a fixed asset may be considered as being renewed when it replaces a complete existing unit, accounting terminology, strictly applied, classifies the new unit received in the business as a replacement. When a new cam is placed in a machine or a new carburetor is installed in an automobile, the application may be loosely spoken of as a renewal, but strictly speaking it is a repair. The application of either item does not increase the original estimated life of the asset to any material degree; therefore, the cost should be classified as a repair.

7. Repair

Repairs are treated as operating expenditures. They do not increase the value of the asset upon which they are made. *Repairs are necessary to keep the buildings and equipment in condition to operate efficiently.* Through wear and tear, lapse of time, or accident, certain parts of any capital asset must be renewed from time to time. The expenditures involved in endeavoring to keep physical assets in the maximum degree of efficiency during their life are considered repairs. Two general methods are practiced in charging repairs as a revenue expenditure. One way is to charge the cost of repairs at the time they are actually made. The other method is to anticipate the annual charge and cost each month with a proportionate part of

the cost. Chapter IX describes the method of handling the Repairs Reserve Account.

Another classification of repairs is sometimes made, known as 'extraordinary repairs'. Repairs of this nature tend to lengthen the original life of the asset affected. While some accountants advocate charging the Depreciation Reserve account for the cost of extraordinary repairs, another practice appears to have more merit. The Depreciation Reserve account should be charged only when an asset is replaced, and then only for that amount of depreciation which has been credited to the Reserve Account which is applicable to the asset being replaced. Orthodox accounting practice would seem to be *more strictly adhered to if the cost of extraordinary repairs were capitalized and charged off over the remaining life of the asset involved.*

8. Maintenance

Maintenance constitutes an operating expense. It is a broader term than repairs and usually covers the entire operating cost for some particular activity, service or group of equipment. Thus, there may be maintenance accounts for real estate (company houses owned by a coal mining concern); machine shop maintenance; and maintenance of plant production centers. Maintenance includes repairs, cost of supplies, repairmen's wages, oiling, and all other costs of the upkeep of certain specific fixed assets. Specifically, the account, Boiler Maintenance, may include such costs as material and labor for repairs, cost of washing out the boilers periodically, and inspection costs.

9. Capitalized Operating Expenditures

Certain expenditures arise from time to time the nature of which characterizes them as strictly operating expenditures from two points of view. The expenditure neither increases the value of an asset, nor does it increase the productivity of an asset. Regardless of these facts, certain expense items are capitalized. The *reason for capitalizing these expense items arises when the expenditure benefits more than one accounting period.* If this is the case, the entire cost is not charged as a cost of operations in the period in which the expense is incurred. *The cost is set up as a deferred charge to operations, and a portion is charged off over a period of years,* the number being determined by the facts involved. *Capitalizing an operating expenditure,* thus, is equivalent to *treating an expense as a temporary asset.''*

(T.-8702-8).

''Some expenditures coming under this classification are the following:

1. Cost of moving business from one location to another place.

2. Cost of rearrangement of plant equipment to facilitate production flow.

3. Cost of making repairs and improvements on landlord's property.

4. Cost of experimental and development expense.

Some other items which neither increase asset values nor represent operating expenditures, which are capitalized to be treated as deferred charges, are as listed below:

1. Organization expenses of a corporation.

2. Undepreciated cost of fixed assets which have become obsolete.

10. Aids in Differentiating Between Capital and Operating Expenditures

Certain tests may be applied which will help to determine the nature of the expenditure.

1. If the expenditure is one that increases the relatively permanent value in the business, it is a proper charge to capitalize.

2. If the expenditure in connection with the asset will increase the productivity or output, it is a proper charge to capitalize.

3. If the expenditure incurred has been merely to maintain an asset at its maximum degree of efficiency, it is a proper charge to operations.

4. If the value received from the expenditure does not extend over more than one accounting period, usually one year, it should be considered as an operating expenditure.

5. If the expenditure is in the nature of an operating expense, but circumstances warrant spreading the expense over a period of 2 or more years, then the expense should be capitalized and considered as a deferred charge to operations."

(T.-8711).

On page 107 of this same book, under the main heading of "Accounting for Depreciation and Depletion" and under the heading "The Factors of Depreciation", the book reads:

"Certain factors must be known before the rate of depreciation can be calculated. These factors are as follows:

Original cost.

Estimated useful life.

Scrap value.

Original cost means the invoice price less any discounts, *plus all other expenses incident to placing the asset in condition for use.* Such expenses include freight and cartage in, materials, and labor in setting up the asset, where necessary."

(T.-8711-12).

The principles above stated are the principles which we think and urge should guide the Court in the determination of the accounting phase of the 14th Counterclaim. It is true that Mr. Boyd attempted to distinguish between a mining enterprise and an industrial, and in effect says to the Court that, in mining, every expenditure after that originally set up should properly be charged to operating expense. Mr. Haffner clearly pointed out the error of such statement and reasoning, and told the Court that the application of the principles which we have set out apply with equal force to a mining enterprise, varying of course with the kind of a mine which you have. He said:

"The principle that is set out here is applicable with equal force to a mining enterprise. The application of the principle may be somewhat varied, depending upon what kind of a mine you have. In a mining enterprise the expenditures you make

eventually find their way into costs. Capital expenditures find their way into cost in the form of depreciation. You have certain extraordinary operating expenses that will beneficiate the entire ore body, or a large portion of the ore body, such as stripping, in the case of a steam shovel mine, or development work, in the case of an underground mine. It would not be fair to charge a month's operation, or a year's operation, with the entire expenditure for such an item done during the particular month or year. The only proper way is to spread such expenditures or amortize them over the entire ore body, or that part of the ore body that is beneficiated thereby. So that instead of charging them to the month or the year you spread that over two, three, five, or maybe ten years.

Another difference in the application of the principle depends on what kind of a mine you have. If you have a mine of a short life, or small ore reserve, such as is the case with a great number of the precious metal mines, the principle of accounting, as outlined here, is still the same, but the rate of depreciation is increased so that the capital expenditures are in that manner charged back into operations over a short period, and the rate of amortization of the extraordinary expenditures or the development expenditures are charged back in a short period of time."

(T.-8708-9).

Mr. Haffner pointed out that *copper mines, especially the great porphyries, are recognized as industrials,* and that the same principles of accounting apply to them as to the great industrials of the country. The hazard

and risk so strenuously urged by Mr. Boyd are in fact non-existent. This is clearly shown by the Brief filed with the Bureau of Internal Revenue by the Copper Producers' Tax Committee, in the preparation of which Mr. Boyd himself assisted. There it is stated (page 66):

"THE NATURE OF MINING HAZARD

The total hazard may be divided into three: risk of ore supply, risk of operation, and external risk. In respect to the first two, namely, risk of ore supply and risk of operation, mining differs from most other enterprises and must be considered by itself. The external risks, however, are those common to all enterprise; risk of scarcity, defection or cost of labor, risk of rise in cost of supplies, risk of interruption to operations, risk of political or legislative pressure, risk of weather, etc. These in the aggregate are certainly no greater for copper mining than for wheat raising or for shoe making or for running a street railway.

The risk of operation in copper mining possibly equals but probably does not exceed that for the average business."

(T.-8710).

and again, on page 67:

"All told, the risks of operation in copper mining are by no means excessive—less by far than in farming and surely less than in railroading.

In mining as a whole, the great and dominant hazard is that of ore supply. If every mining enterprise could be assured a supply of commercial ore, the risks of the metal mining business would

certainly be as low as ,if not lower than, almost any other kind of undertaking."

(T.-8710).

and again, on page 85:

"So much for the profit-making metal mines in general. Where do the copper mines stand? In steadiness of output, in length of constantly increasing scale of operation, in magnitude of profit and in certainty of future, the copper mines stood as near the top as any—perhaps it is fair to say they stood ahead of any. If past record meant anything it justified that conclusion."

and further, on page 86:

"Copper thus occupies a unique and dominating position of joint economic and geologic foundation. It has the chief advantages of coal and iron, with few of their drawbacks, and on the other hand, it has the chief advantages of the precious metals with few of their handicaps. This can only mean, geologically and economically, a security, a strength for copper and for investments in copper mines."

Nevada was and is in truth an industrial. It commenced operations about 1907. It had mined and treated up to the date of the contract, approximately 60,000,000 tons of ore and had paid $60,000,000.00 in dividends. In the words of Mr. Lakenan, it had never had a birthday. (T.-3470) (Main Case, Vol. 10, page 719). At the date of the contract it had ore reserves in excess of 80,000,000 tons. It had a greater expect-

ancy of life than when it started in 1907. In this assured position, Nevada, as we will later point out, planned a campaign of reconditioning and rehabilitation of its plant and an increase of its capacity. *The very contract between the parties contemplates twenty years operations as a minimum.*

Mr. Boyd indicated to the Court that the principles laid down in the Brief of the Copper Producers' Tax Committee were correct at the the time but that since then, and in 1928, two years after the contract, a new hazard had crept into the industry, namely that of South African competition. The contract, of course, contemplated conditions existing at its date, and at a time when there was no South African competition or threat of it. Competition is a risk inherent to all industries.

Mr. Boyd, contrary to all authorities, also declared as a principle that after the original investment in plant has been set aside in the form of depreciation reserve, all further expenditures for renewals or replacements of plant or for betterments or additions to plant, should be taken up in current operating costs, no matter how large the amount of money involved or how long the useful life of the replacement, and that this was necessary in order to fairly treat the stockholders. In this position Mr. Boyd is both illogical and inconsistent. It seems to us that the height of unfairness would be to demand that one year's stockholders or two year's stockholders should bear all of the cost of expenditures which will benefit other stockholders for twenty years

in the future. Moreover, in Mr. Boyd's co-operative effort, namely the Brief on behalf of the Copper Producers' Tax Committee,* it is said on page 56:

> "Where replacements or enlargements of important proportions, made at a single time, will benefit operations for years to come, such expenditures are properly chargeable to capital. The same is true of similar substantial additions that clearly are going to be required in the future. Such expenditures (appropriately discounted if for the future), are in some instances rightly to be deducted from total valuation to yield the value of ores only and thus the proper depletion rate."

and further, on pages 57 and 58:

> "In the case previously cited of a mine with estimated life of 20 years and a plant good for 15 years, if the plant were actually replaced by a new one at the end of 15 years, this would only be because the discovery of new ore had prolonged the life of the mine, and this new ore should bear most or all of the charge for the new plant, since, as already shown, without this new ore the old plant could be made to suffice."

The soundness of these principles was recognized by Mr. Boyd. He said:

> "Consequently in considering that matter with the Internal Revenue Department, it was *fundamental that a clear understanding be arrived at as*

---

*NOTE: This Brief was presented by practically the whole copper industry.
(T.-3748).

to what constituted a capital charge in a mining property.''

(T.-3748).

and again he said:

"We presented a Brief to the Internal Revenue Department in which these principles were set forth defining and explaining what constituted an operating charge and what constituted a capital charge in the case of a mine.''

(T.-3748).

and again Mr. Boyd said:

"But it is important expenditures for replacements made at a single time that are regarded in this Brief as capital expenditures and which are by Nevada regarded as capital expenditures.''

(T.-3756).

Mr. Boyd gives us a further test of what constitutes capital when he says:

"Then he will submit to me recommendations of capital expenditures, that is, *expenditures that either have to do with increasing capacity, or expenditures that have to do with improving the plant performance.''*

(T.-3773).

Mr. Boyd at times both recognized and stated sound accounting principles, but as the case developed Mr. Boyd brought to the Court, most unique variations which will be later shown to the Court.

Furthermore, Mr. Boyd, in dealing with mining costs, follows the principle that the stripping of a large orebody or a large expenditure for development should not be charged to the month or year in which it is made but should be spread over the life of the orebody beneficiated. In other words such large expenditures should be amortized over the period of the life of the orebody. (T.-3741-2).

This is but a capitalization of an operating expenditure and is equivalent to treating such expense as a temporary asset, capital in character.

Mr. Boyd insisted that these were what he called deferred costs and although they were set up at one time and spread over a period equivalent to the life of the orebody, Mr. Boyd refused to admit that this was amortization. The reason why he refused to recognize it as amortization is: "We do not handle our accounts that way." (T.-3868).

When deferred charges are set up and spread this is recognized as being amortization. In "Cost Finding for Engineers" (Reitell and Van Sickle), a standard authority on accounting, of which the Court can take notice, it is said as respects deferred charges:

> "Deferred charges are costs or expenses under some specific account title, the total amount of which is not properly chargeable against operations of the period in which the expenditures were incurred. * * * * * Each year a predetermined prorata portion is amortized * * * * * ." (page 197).

Further, Nevada's own system of accounting, as explained by Mr. Huffer, provides for the ironing out of the peaks and the spreading of extraordinary expenditures over what Nevada terms a reasonable period. (T.-7508). This is nothing more or less than amortization.

The principles upon which we rely, and which have been stated by Mr. Haffner, are also supported by Loomis, Suffern and Fernald, chief auditors for Nevada. Mr. Fernald, of the firm, is considered by Mr. Huffer as the leading expert in copper mine accounting. In their book on Depreciation and Obsolescence, copyrighted in 1918, it is stated:

> "The *distinction* is made between the *ordinary repairs* which do not add to the value of the property nor appreciably prolong its life, and which are properly chargeable as expenses, and the *repairs, additions and betterments which are chargeable against depreciation. This seems substantially the same distinction which we, as accountants, have been in the habit of making; viz., that there should be charged to expenses the ordinary current expenditures for repairs and minor replacements, including replacements of any parts of machines which are continually wearing out and must frequently be replaced. Depreciation is intended to spread, equitably over the life of the equipment, its original cost, and also the cost of such renewals and replacements as are only required at extended intervals and which, if charged directly into expenses when made, would result in one period bearing more and another period bearing less than its fair share of the cost.*"
>
> (T.-4094).

On page 9, the pamphlet states:

> "Provision is made in Article 170 for depreciation of plant and equipment on the basis of its useful life in connection with *oil and gas properties.*"
>
> (T.-4099).

and continues:

> *"This same provision is not stated with regard to mining properties or timber lands, but would seem naturally applicable in any case where the probable life of a mine or other property was less than that of the plant and equipment considered by itself. This provision would, of course, have no importance where there is reason to believe that the mine has a longer life than that of the plant and equipment, in which case the natural life of the plant and equipment would be the basis of depreciation.*
>
> The regulations all assume that depreciation will be on a time basis, that is, that the depreciation should be spread in equal annual amounts over the life of the property. In many cases, however, it is much fairer to charge depreciation on the basis of the tonnage handled rather than on the years of life. Although no provision is made in the regulations for using such method of depreciation, it would seem to be entirely in accord with their spirit to use this basis in those cases where it was manifestly the fairest and most equitable measure of depreciation which could be arrived at.
>
> *The new regulations do not provide for charging expenditures for replacements* (except inciden-

> tal repairs, etc.) *against operations*, but plan that the original investment in plant or equipment which is dismantled or abandoned should be written off, either as a charge against depreciation reserves previously set up or as a loss, and that the *new expenditures* should be added to capital account."
>
> (T.-4101).

Differently expressed, the principles laid down by Loomis, Suffern and Fernald are identical with those laid down by Reitell and Van Sickle, although the one was written in 1918 and the other in 1930.

In this connection we recall Mr. Huffer's endeavors to say that the principles laid down in this pamphlet deal only with industrials and business accounting, but it is clear from a reading of the pamphlet that they deal, and were intended to deal, with oil and gas and mining.

It is clear from the foregoing authorities that there is no difference in accounting principles to be applied in copper mining and other industries or public utilities. The purpose of sound accounting is to truly reflect the capital investment, the actual operating expenses and the profit or loss of the business; the same items are to be capitalized and redeemed through depreciation; the same items enter into operating expense. In mining, if you have a mine and a plant with an equal life, you depreciate the plant on the basis of its useful life. If the mine, however, has a life of ten years and the plant has a life of twenty years, you treat the mine and the plant as a unit and increase your rate of de-

preciation so that at the expiration of the life of the mine the plant will have been redeemed through the depreciation account.

Mr. Boyd, in response to the following question from the Court, said:

> "Q. Let me see if I understand you here right now. Does the cost plus charged to Coppermines, is that the only way in which Coppermines, say, contribute to the capital charges or to the capital account of the company?
>
> A. Your Honor, the cost plus charge is the only reimbursement Coppermines makes to Nevada for the treatment of its ores."
>
> (T.-3770).

Upon cross examination, however, Mr. Boyd said:

> "Q. *In your dealings with Coppermines it is advantageous to you to charge as much as you can of any major replacement to operating expense; that is true, is it not?*
>
> A. You mean, as segregated from capital, Mr. Thatcher?
>
> Q. Yes.
>
> A. *Yes, any expenditure we charge to operating expense is advantageous from that point of view, because Coppermines pays nothing on what is charged to capital.*
>
> Q. It pays no part of what is charged to capital?
>
> A. Not a penny.

Q. Not a penny, as I understand it?

A. *Except the amortization on a* 15 *cent metal price.''*

(T.-3868).

The contract before the Court contemplated and expressly provided that Coppermines should pay to Nevada for the use of its facilities:

(1) The direct operating costs;

(2) The overheads;

(3) A return of and on capital by the payment of a profit and a depreciation and amortization charge.

Nevada is receiving, therefore, the actual costs of the operation, a profit and return upon its capital investment, and depreciation and amortization to provide for the redemption of its capital and extraordinary expenditures.

Mr. Boyd endeavored to convey the impression to the Court that Nevada would be treated unfairly unless it could charge against Coppermines its tonnage proportion of the capital and extraordinary expenditures made for the plant, and further endeavored to impress upon the Court that Coppermines' attitude was unfair.

We ask the court to view this situation in light of the facts as shown by the evidence. Nevada, since the contract, spent for capital approximately $1,750,000, and for extraordinary expenditures charged to operatting expense, approximately $3,250,000, or a total of $5,-

000,000. Since the execution of the contract, during the period of which we are complaining, Coppermines' tonnage was approximately 18% of the total. Coppermines paid to Nevada as profit for concentrating, smelting and power approximately $900,000. In other words, it paid in 4½ years, a return in profit of approximately 100% or 22% per annum. During the same period Coppermines paid an additional sum for depreciation and amortization of $233,000. In other words through depreciation and amortization alone it redeemed more than 25% of the proportionate part of the cost of the proportional part of the facilities devoted to its service. In the 4½ years, if we take profit and "depreciation and amortization" charges combined, we find that Coppermines paid to Nevada in excess of $1,133,000, or approximately a quarter million dollars more than Coppermines' tonnage proportion of the total expenditure in the smelter, concentrator and power plant, of $900,000. Coppermines is claiming overcharges to the extent of approximately $600,000, which is only one-half of the amount which it paid to Nevada in profits and depreciation.

The courts, in repeated decisions, have had occasion to distinguish between capital expenditures and operating expense.

In the case of *Marsh Fork Mining Co. v. Lucas,* 42 *Fed.* 83, it was held that those expenditures which *increase output, decrease cost of production,* or *add to plant or mine value,* are capital, but that those made solely to maintain *normal* production are properly treat-

ed as maintenance items and should be charged to operating expense.

See also, *U. S. vs. Roden Coal Co.*, 39 Fed. (2nd) 425.

In

Parkersburg Iron & Steel Co. vs. Burnet, Commissioner, 48 *Fed.* (2*nd*) 163,

the facts were that the steel company accepted a government contract in 1918. Its manufacturing operations were carried on in a three story building and the greater part of the operating machinery was located on the first floor. The second and third stories were used principally for storage purposes, with a few machines operating on the second floor. The building in general was in satisfactory and adequate condition to the steel company's business.

Early in 1918, United States army engineers requested that improvement be made in lighting conditions and that certain changes in the building construction and rearrangement of factory floors be made. All the machinery on the two upper stories was removed to the first floor, and this necessitated a general rearrangement of the machinery there, the abandonment of certain machinery foundations and the laying of new ones, and necessitated the laying of an entirely new floor. The second and third floors were torn out, skylights were installed and the electric lighting system was rearranged, with necessary rearrangement of line shafting, etc. Productivity of the plant was not increased by these alterations.

The Court said:

"With respect to petitioner's contention that, since the expenditures in question did not increase the productivity capacity of the factory building—a fact which must, on the evidence, be taken as true—such expenditures are properly deductible as ordinary and necessary expenses of the business, it is sufficient to say that whether or not a given outlay actually results in ultimate advantage to the taxpayer does not determine whether such outlay is to be treated as representing permanent improvement; that is, a capital expenditure, or merely current upkeep, that is, repairs.

The true test is rather the nature of the expenditure in and of itself, for, as the government rightly contends, an alteration may be made expressly for the purpose of increasing the value of a given property; and, though it may fail to accomplish that purpose, it nevertheless may remain a capital expenditure. *The extent and permanency of the given alteration are indicative of its true character.* Here two floors of the building were torn out; its general structure was strengthened by the introduction of steel beams; a skylight was placed in the roof; new concrete foundations were constructed for machinery; a new concrete floor was laid; and the line shafting rearranged—all of which alterations have been retained. These facts indubitably stamp the expenditure for such alterations as being a capital investment, to be treated as a whole because interrelated and of substantially equal permanency, and the amount so capitalized may not, as petitioner contends, be limited to the expenditure that actually produced the only tangible benefit to the structure as a factory building, namely,

the increased natural lighting, because, as we have already seen, ultimate advantage or disadvantage to the taxpayer is not the criterion.

"The words *'ordinary and necessary expenses,'* as used in section 234 (a) (1) of the statute, *and also the words 'permanent improvements or betterments made to increase the value of* any property or estate,' as used in section 215 (b), *must be given their rational, practical meaning, according to which the alterations were unquestionably* 'necessary,' because compelled by the exigencies of the war. However, they were not 'ordinary,' but in fact extraordinary for this very reason, and they resulted in 'permanent improvements' to the property, when that phrase is interpreted in the sense that it must be assumed to be used in the statute; that is, alterations which, both by their very nature and use, are relatively permanent, although they may never in fact enhance the actual value of the property as an investment, as opposed to alterations of which both the nature and the use are relatively temporary."

The rule laid down in Parkersburg Iron & Steel Co. vs. Bernet, *supra,* is also the rule in this Circuit, and is so declared in the very recent case of

Crocker First Nat'l Bank of San Francisco vs. The Commissioner of Internal Revenue, 59 Fed. (2nd) 37.

In

Duffy vs. Central R. R. Co., 268 U. S. 55, 69 L. Ed. 846,

the facts were as follows:

The railroad had certain leases for terms of nine hundred ninety-nine years. It was bound to maintain and keep the leased property in good use and repair, and fit for efficient use. Other leases from the City of New York had various terms with the privilege of renewal. One such lease required the railroad company to pay for the interests of private owners in an old pier and to construct a new one in its place. Other leases required dredging and building of extensions to leased piers. All leases were subject to termination if the covenants and agreements were not observed.

The railroad, under the leases, spent for additions and betterments, the acquisition of private rights and old piers, and the construction of new ones, an aggregate sum of in excess of a million six hundred thousand dollars. These expenditures were claimed by the railroad company to be ordinary and necessary expenses for maintenance and operation, and/or rentals and other payments required to be made as a condition for continued use and possession of the properties.

The government, on the other hand, contended that the disbursements were capital expenditures, to be redeemed through depreciation, or addition and betterments which should be prorated over the life of the improvements or the life of the lease, whichever is the shortest.

The Court said:

> "Clearly, the expenditures were not 'expenses paid within the year in the maintenance and operation of its (respondent's) business and proper-

ties;' but were for additions and betterments of a permanent character, such as would, if made by an owner, come within the proviso in subd. second, 'that no deduction shall be allowed for any amount paid out for new buildings, permanent improvements, or betterments made to increase the value of any property, etc.' They were made, not to keep the properties going, but to create additions to them. They constituted, not *upkeep,* but *investment;* not maintenance or operating expenses, deductible under subd. first, sec. 12 (a), but capital, subject to annual allowances for exhaustion or depreciation under subd. second."

* * * * *

"In respect of the 999-year leases, the additions and betterments will all be consumed in their use by the lessee within a fraction of the term; and, as to them, *allowances for annual depreciation will suffice to meet the requirements of the statute. In the case of the pier leases, the improvements may, and probably will, outlast the term, and, as to them, deductions may more properly take the form of proportionate annual allowances for exhaustion.*"

Judge Farrington, in the case of *Reno Power Light and Water Company vs. Public Service Commission,* 300 Fed. 645, dealing with operating expenses and capital, said:

"The cost of enlarging and improving the plant is investment and should be fairly included in the reasonable value of the utility, on which the owner is entitled to a fair return, but every item thereof ought to be strictly excluded from the operating expense account."

The following are other decisions bearing upon the same subject:

In *Rarick vs. Lewistown-Reedsville Water Co.* (*P. U. R.* 1923-*C,* 105), it was held that an expenditure incident to the installation of new service mains should not be charged to operating cost.

In re *Village of Mukwonago, P. U. R.* 1922-B, 109, it was held that the expenditures made for extensions or replacements for a municipal plant cannot be charged to operating cost under the guise of materials and power.

In *Plymouth Electric Light Co. vs. State,* 120 Atl., 689, it held that expenditures and repairs upon antiquated direct current generators equalling approximately one-half of the cost of a new alternating current generator sufficient to carry the load, should be charged against the depreciation reserve and not against operating expenses.

In re *Western Gas and Electric Co.,* P. U. R. 1924-D, 681, it was held that the cost of the labor involved in installation of a capital item should, like the material or equipment itself, be capitalized.

In re *Peaks Island Corporation, P. U. R.,* 1920-D, 1038, it was held that the cost of pumping apparatus purchased and installed by a water company should not be charged to operation, but as a capital charge.

In re *Fort Scott and Nevada etc. Co., P. U. R.* 1915-F, 512, it was held that expenditures for improvements and betterments were a capital charge and were not to

be chargeable as maintenance labor to operating expenses.

We want to emphasize again that this contract, by its very terms, excludes depreciation and amortization from actual cost, and, of course, from direct operating expense and from overheads. Depreciation and amortization may, therefore, not be charged either directly or indirectly as any part of "actual cost".

Nevada made large investments and expenditures, capital in character, but by the very terms of the contract it is precluded from redeeming these large investments and expenditures as a part of "actual cost" chargeable against Coppermines. The parties contracted that Coppermines should not pay anything for depreciation and amortization as a part of "actual cost", but that depreciation and amortization should be paid only when copper sells at 15¢ per pound and up.

Coppermines has paid Nevada $233,000 for depreciation and amortization. This charge was for the purpose of redeeming, in part, the capital investment existing at the time of the contract and also such as would thereafter be made.

Nevada, by extraordinary expenditures increases plant value and Nevada owns this increased plant. It seeks to double charge Coppermines by collecting depreciation and amortization, and in addition, Coppermines' tonnage proportion of this added plant value.

Depreciation and amortization, sometimes loosely used synonymously, are to be distinguished. Mr. Justice Brandeis defines depreciation as follows:

"The annual account of a street railway, or other business is designed to show the profit or loss, and to acquaint those interested with the condition of the business. To be true the account must reflect all the operating expenses incurred within the accounting period. One of these is the wearing out of plant. Minor parts which have short lives and are consumed wholly within the year are replaced as a part of current repairs. Large plant units, unlike supplies, do not wear out within a single accounting period. They have varying service lives, some remaining useful for many years. Experience teaches that at the end of some period of time most of these units, too, will wear out physically or cease to be useful in the service. If the initial outlay for such units is entirely disregarded, the annual account will not reflect the true results of operation and the initial investment may be lost. *If, on the other hand, this original expense is treated as part of the operating expenses of the year in which the plant unit was purchased, or was retired or replaced, the account again will not reflect the true results of operation, for operations in one year will then be burdened with an expense which is properly chargeable against a much longer period of use.* Therefore, in ascertaining the profits of a year, it is generally deemed necessary to apportion to the operations of that year a part of the total expense incident to the wearing out of the plant. This apportionment is commonly made by means of a depreciation charge."

United Railways & Electric Company of Baltimore v. West, 280 U. S. 234, 74 L. Ed. 390.

All accounting authorities deal with depreciation as the wearing out of the physical elements of a plant.

Amortization is the extinguishment of an investment or expenditure by the periodic writing down of its value. Amortization is usually applied to extraordinary expenditures, extraordinary repairs and costs which benefit more than one accounting period. An example of the application of amortization is well illustrated by Nevada's method of keeping its mining costs. When Nevada incurs a large expenditure for stripping or other development of ores, it takes the total cost and applies it as a deferred cost. It does not charge it to the particular month or year in which the stripping or development is done, but estimates the total orebody benefitted and developed, and spreads the cost over the life of the orebody beneficiated. In other words, it takes this total cost and amortizes it. It extinguishes it by a fixed charge per ton of ore.

All deferred charges are but amortizing large expenditures which it would be unfair to charge to the operating cost of one accounting period.

(Haffner T.-8707-9).

It is sound accounting to capitalize extraordinary operating expenses. These expenditures neither increase the value of the estate nor increase its productivity, but when they benefit more than one accounting period they are, in fact, capitalized and the entire cost is not charged as a cost of operation in the period in which the expense is incurred. It is set up as a deferred charge to operation and a portion charged off over a period of years.

See *Reitell and Van Sickle.* (T.-8708-9).

When the contract specially excluded Depreciation and Amortization from actual cost and provided specially for its payment to be made *only under given and specific* conditions, it clearly intended that nothing should be charged directly or indirectly to cover these indirect costs except the amounts provided by and in the contract.

The contract therefore means that all items which under standard, usual, and customary practice are charged to depreciation reserve shall be so charged; that all items which, under standard practice should be amortized, will be so treated. Illustrative of standard method and practice are the following:

> *Bond discount* and *brokerage* a cost to be *amortized* out of the earnings.
>
> The *materials used to erect a building* have a certain value unassembled. When the building is complete their value is increased by what it cost to put them in that condition. But they only reach the limit of their value when used to their full extent in the conduct of the business to which they are adopted. (This should *be amortized* to determine the cost of establishing the business, an element to be considered in determining the rate base). Such expenses were charged to operation and the company was allowed to charge a rate sufficient in later years to offset deficiencies below a fair return in the first few years. Re Queen's Borough Gas & E. Co. (1911) 2 P. S. C. R. 544; Baltz v. Brooklyn Borough Gas Co. (1911) 2 P. S. C. R. 620.
>
> *Cost of change of motors* purchased and rewound

for consumers which has been charged to the *depreciation* reserve should not be included as part of original cost. Re La Porte Gas & E. Co. P. U. R. 1921 A. 824.

The *depreciation* allowance is sufficient not only to take care of all *renewals* and *replacements* that have actually been made from the initiation of the enterprise, but—(Whitten on "Valuation of Public Service Corporations").

Deficits in the operation of utility property should be *amortized* under certain circumstances. Re Indiana Bell Tel. Co. P. U. R. 1924 Al; Streator Aqueduct Co. v. Smith, 295 Fed. 385; Columbus Gaslight Co. v. Pub. Service Com., 140 N. E. 538.

Expense caused by flood (and fire) damage required to be amortized because such a loss constitutes extraordinary depreciation which may properly be considered as an item of expense of operation. Re Eastern Oregon Light & Power Co., P. U. R. 1920 D., 742; Re Murray P. U. R. 1917 C. 521; Re Sweetwater Water Corp., P. U. R. 1922 B 336.

Extraordinary operating expense not a normal yearly expense should be *amortized* over a period of years; *extraordinary repairs* should be *amortized* over *a period of their probable recurrence;* the following are cases for amortization:—(cost of *cleaning wells of* a water utility *not incurred each year*). Re Paulsboro Water Co., P. U. R. 1924 C. 263; (cost of *repairing water mains* which were frozen). Pub. Service Commission v. Pacific P. & L. Co., P. U. R. 1920 F. 954; Bingham Water District v. Itself, P. U. R. 1920 F. 209; (leaking

dam repaired). Re Douglas County Light & Water Co., P. U. R. 1920 E. 667; (cost of *leakage, surveying,* and *repair work* completed by a gas company where the leakage causing the expenditure had been *gradually accruing over a period of* 15 *or* 16 *years.*) Re Webb City & C. Gas Co., P. U. R. 1922 C. 608; (*cost of extra main pipe lines*). Re W. Va. Central Gas Co., P. U. R. 1921 E. 809; (616)—(*extraordinary expense of relining cars, promotion of business,* and a judgment for damages and injuries). Vincennes v. Central State Gas Co., P. U. R. 1920 F. 356; (*cost of painting buildings and structures* of a gas utility). Dunn v. Rutland R. Light & Power Co., P. U. R. 1923 C. 316; (*where no evidence it is an annual expense—the cost of repairing boilers and relining benches* in a gas plant). Re Northern Indiana Gas & E. Co., P. U. R. 1920 D. 470; (*the entire cost of replacing a relatively expensive part* of a *steam pump* of a water company). Re Litchfield Water Supply Co., P. U. R. 1920 D. 332; (*abnormal expense for maintenance of way and of structures*). Re Missouri S. R. Co. P. U. R. 1916 C. 607; (*repairs in the nature of deferred maintenance*). Re Southside Water Works Co. P. U. R. 1920 D. 752; (*deferred maintenance* of several years shouldn't be paid for by consumers during first year reasonable rates are authorized, but should be spread over a reasonable number of years). Re Peoples Gaslight & Coke Co., P. U. R. 1921 E. 118; (*extensive repair work* on the *plant of an automatic telephone company*). Re Bauch, P. U. R. 1921 E. 118; (where a railroad company spent a large sum for *the construction of tracks under a lease* it was held it should be amortized. Expense incurred in compensating Utility's consumers for *electrical equipment* rendered

useless by a change from direct to alternating current). Re Public Service Co., P. U. R. 1917 F. 797; (cost of *power* used by a water utility which accrued during a period of repairs on an old boiler) Re Mountain City Water Co. P. U. R. 1922 D, 762; (one-third expense for *general auditors* representing the cost of inspecting consumer's premises *every three years*) Arkansas Water Co. v. Little Rock, P. U. R. 1921 C. 73; (cost of *exploring for wells and drilling test wells* by a water company) Re Interstate Water Co., P. U. R. 1922 E. 246; (Cost of employing geologists and engineers to determine best location for a new gas well) Re Kokomo Gas & Fuel Co. P. U. R. 1921 E. 390.

Expense caused by the short circuiting of a transmission line by an army balloon should be amortized. Re Burkhardt Milling and E. Power Co., P. U. R. 1921 D, 777.

Cost of franchise should be amortized. Re New York Dock R. Co. 4 P. S. C. R. 94.

Extraordinary legal expenses in connection with rate litigation; or proceedings before a commission. Consolidated Gas Co. v. Newton, 267 Fed. 231.

Loss from floods and frost was subject to amortization; Arizona Corp. Commission v. Morenci Water Co., P. U. R. 1915 C. 525. A large sum paid for the adjustment of an accident was amortized; Re Monmouth Telph. Co., P. U. R. 1923 B. 858. In computing the cost of telephone service, it is proper to include sums set aside or paid for losses caused by storms or catastrophes; Miles v. Peoples Teleph. Co., 166 Wis. 94, P. U. R. 1917 F. 175, 163 N. W. 652. It has been held that reasonable

allowance should be made to amortize the cost of damage to telephone lines caused by storm, re Ripon United Teleph. Co., P. U. R. 1924 A, 171; and that the cost of repairing the spillway of a water company which had been injured by extraordinary rainfall should be amortized over a period of years; Re Litchfield Water Supply Co., P. U. R. 1920 D, 332. An item of $559.43 expended for sleet storm damage should have been amortized, it was held, over a period of five years rather than charged to "extraordinary depreciation," Re Central Indiana Telph. Co., P. U. R. 1918 E, 859.

Amortization of Intangibles

Intangibles must be amortized if costs in acquiring them have actually been incurred. This includes francises, patent rights, going value and going costs.

Kanasas City S. R. Co. vs. United States,
52 L. R. p. 49.

All major replacements, however, are as has been stated, chargeable against reserve funds set up for the purpose of taking care of them. Re Washington R. & Electric Co., P. U. R. 1919 F. 751; Railroad Comrs. v. Hughes Electric Co., P. U. R. 1925 A. 18. Such replacements should be charged to the depreciation reserve account rather than to operating expense as repairs and maintenance. Barth v. Hughes & D. Electric Co., P. U. R. 1922 A. 740. To the same effect, La Junta v. Arkansas Valley R. Light & P. Co., P. U. R. 1916 D, 1076; Re Monmouth Telph. Co., P. U. R. 1923 B. 858; Re Troy & H. C. Telph. Co., P. U. R. 1918 C. 668. It is improper to include the cost of replacements in

operating expenses where a provision is made therefor in an annual depreciation allowance. Re Illinois Northern Utilities Co., P. U. R. 1919 E. 932; Railroad Comrs. v. Hughes Electric Co., P. U. R. 1925 A. 18.

It has been said that direct charges to operation instead of charges to the depreciation reserve when property has been retired and new units replaced are clearly contrary to the spirit of the law pertaining to depreciation. Railroad Comrs. v. Hughes Electric Co., P. U. R. 1925 A. 18.

So it has been held that the cost of renewals and expenditures occasioned by sleet storm damage to a telephone plant should be charged to depreciation, and not to maintenance, and, therefore, cannot be considered as part of the operating expenses for rate making; Re Home Teleph. Co. P. U. R. 1919 C. 209; that currently realized depreciation should be deducted from the estimates for ordinary maintenance to be included in the operating expenses; Fort Wayne v. Home Teleph. & Teleg. Co., P. U. R. 1920 D. 83; the cost of replacing a worn-out scale is not a charge to operating expense of a gas company; Re Wisconsin-Minnesota Light & P. Co., P. U. R. 1922 D. 131; that the cost of lumber used in replacing the boxing on a gas main on a bridge and the cost of material used in replacing a main are improper charges to operating expenses; Ibid; and that the purchase price of a belt for a water plant, being in the nature of a replacement, should not be charged to operation. Re Southside Water Works Co., P. U. R. 1920 D. 752. An item for replacing an engine cylinder and one for repairing piping on a gas producer were held by the North Dakota Commission to be charge-

able to depreciation and not to operation; Re Lisbon Electric Light & P. Co., P. U. R. 1921 E. 809; and the Pennsylvania Commission held that the cost of replacing service pipes originally installed at the consumers' expense should be capitalized rather than charged to operating expenses as an extraordinary maintenance charge. Mt. Carmel v. Mt. Carmel Water Co., P. U. R. 1923 E. 573.

It should be clear that, when the parties specifically provided that amortization should not be a part of actual cost but made special provision for payment therefor, it was intended that only usual and normal direct operating expenses should be charged, and these upon the basis only of the monthly average, and that the parties intended that all extraordinary expenditures, whether for capital or operating expense, should be redeemed and paid for only out of and from the special depreciation and amortization charge provided for in the contract.

It should also be clear that when the parties excluded depreciation from actual cost, but made special provision for payment on its account, that they intended that all "permanent improvements", "additions", "betterments", "extensions" and increased plant should be redeemed only through the special depreciation and amortization charge.

THE EVIDENCE

General Program for Increased Production

The contract was entered into on June 23, 1926. It contemplated and provided by its express terms for the mining and concentrating and smelting of very substantial tonnages, namely 3,000 tons per day, of ores of Coppermines, in addition to the ores of Nevada. The contract by its express terms also contemplated a very substantial expansion of Nevada's operations in mining, concentration and smelting. Under the terms of the contract the boundary agreement theretofore in effect and which tied up large tonnages of both pit and underground ores belonging to Nevada, was abrogated for the term of the contract. Prior to the making of the contract, Nevada had a concentrating plant capacity of 12,000 tons per day, with corresponding smelter, power and transportation facilities. Mr. Lakenan testified that it was understood that 3,000 *tons per day* capacity would *additionally* provide for the treatment of Coppermines' ores. (T.-Main Case, Vol. 8, page 580).

With the execution of the contract and the removal of the boundary barriers which had theretofore existed, Nevada entered into a program of expansion, having for its purpose increased mining, and of course, an expansion and increase of its concentrator and smelter and attendant power and transportation facilities. During the period following the execution of the contract and up to 1930, it rehabilitated its smelter, power plant, and concentrator and increased the capacity thereof until in 1929 it had a normal plant capacity of 18,000

tons per day, and was able, however, with crowding, to put through approximately 20,000 tons per day.

When the contract was executed the great pipe line, nine miles in length, an artery essential to operation, was practically worn out and even in a worse condition than the power plant. (T.-3863). The smelter was badly run down, and the power plant was in a condition that if something was not done to it immediately it "would not operate and continue to operate," and, in the words of Mr. Boyd: "Something would happen which might be dangerous to property and even to the lives of the employees around the plant." (T.-3761). (Sanders T.-4307).

Concentrator

In pursuance of Nevada's plan of expansion, the concentrator was remodeled and its capacity increased, as we have said, from 12,000 to 18,000 tons per day, new thawing shed, mill offices, mill machine shop, blower buildings, compressor building and equipment were built and installed. Forrester cells were substituted for the old system. The caterpillar pan type feeders were replaced by new up to date pulley feeders. A mechanical wet lime distributing system was installed to take the place of men and shovels. A Shimmin filter, and classifiers were put into the mill. Extensive renewals and replacements were made in the crushing plant. Sections 6 and 7 were remodeled and new ball mills and pumps were installed as the first step to similar changes to all sections.

Smelter

In the smelter new Pierce-Smith converters were installed, a Cottrel plant was built, with a new roaster stock and flues, and a new roaster shop and change house was built. A new smelter pipe shop and a boiler shop—building and equipment—were erected. A new machine shop and a new garage were erected. New and additional converter balloon flues were installed for the purpose of increasing capacity. New oil reservoir, electric tilting slag and matte pots were provided, and all roasters were completely rebuilt and reconstructed. Expenditures were made for smelter yard leveling and graveling, smelter lighting and smelter heat. A new Hardinge coal pulverizer for the reverberatory was installed, reverberatories were rebuilt and a new skimming water launder from mill to smelter was installed.

Power Plant

In the power plant old boilers were reset and new boilers were installed. The blowers for the converter were changed and new and additional coal pulverizers were put into operation. New generators and generating equipment were purchased and erected, which necessitated changes in the cooling ponds and enlargement and additions to the cooling pond pumps.

New main and auxiliary steam headers were installed in the power plant as well as behind the waste heat boilers and a new connecting main between the two was provided. New exhaust steam headers were installed and the old circulating water lines were in a large meas-

ure replaced. The old pressure type feed water heaters were replaced by modern open type heaters and new floors were installed in the engine room, and the boiler room building itself was enlarged and extended.

Water Supply

In line with these additions the Duck Creek main line—nine miles in length—was completely rebuilt, and this copperized-steel pipe line took the place of the old, smaller, worn and wood stave line which had been serving the plant for over twenty years. Water development was carried on on various creeks and new feeder pipe lines installed. The new Duck Creek pipe line and other water development resulted in making available substantially *increased supplies of water, sufficient in normal seasons to continue concentrator operations at the full capacity, of* 18,000 *tons per day.* (See Nevada's Annual Report for 1929, page 12). In addition a new pumping plant was installed at the McGill Springs and an entirely new distribution system installed throughout the plant and community.

A new telephone line to Ruth was put in and a new automatic 'phone exchange was provided. The old wooden yard fence was replaced by a new steel plant yard fence. Expenditures were made for lawns and for the parking staff circle, street lighting and for the oiling of roads. The residences of the general manager, the mill superintendent, and other members of the staff were rebuilt and remodeled.

Increase in Plant Capacity

In this expansion of the smelter, concentrator and power plant, Nevada spent over $5,000,000 between the date of the contract and January 1, 1931. (Defendant's Exhibit 14th-AG-9; Bagwill T.-7758). Of this amount it charged approximately *three and a quarter million dollars to operating cost and only one and three quarter million dollars to capital expenditures.* The ultimate result of these expenditures was to increase the plant capacity so as to be able to handle normally 18,000 tons per day.

The improvements, betterments or replacements made in the smelter did not, taken alone, increase the over-all capacity of the plant, neither did any individual item standing by itself increase the capacity of the smelter; and the same applies as to the concentrating plant. In the power plant the installation of a new generator standing alone would not increase the capacity of the power plant. The combined improvements in the power plant, if they stood alone would not increase the over-all capacity of the plant as a whole. It was the combined improvements in all departments that increased the over-all capacity of the plant approximately 50 per cent.

Mr. Eustace, a witness called for Nevada, in distinguishing between capital and operating expenditures, said:

> *"The real test, however, is whether or not when you get through you had more plant than when you started."*
>
> (T.-4172).

and in the same connection, he testified:

> "Q. If as a result of the expenditure of five million dollars which was in replacements, renewals, new plant and new equipment, and all of it was made with the intent to increase capacity, and did increase capacity from 12,000 to 18,000 or 19,000 tons, is it not your opinion that it should be charged to capital?
>
> A. If this expenditure was made for the sole purpose of increasing capacity, I should say it should be capitalized."
>
> (T.-4197).

Upon direct examination, counsel and Mr. Kinnear directed attention toward individual items, and Mr. Kinnear repeatedly testified as to each of the specific items, that it did not by itself increase the capacity of the plant, but on cross examination and dealing particularly with the concentrator we have this very illustrative and illuminating testimony from Mr. Kinnear:

> "Q. I want to ask you another question. You said increased capacity depends upon increased crushing capacity in your mill.
>
> A. Increased capacity would require additional crushing capacity to crush tonnage to a normal grinding.
>
> Q. The first step is the increased crusher capacity?
>
> A. Yes, sir.
>
> Q. The second would be the increased ball mill capacity, would it not, if you were increasing the mill? That is true, is it not?

A. If your desire was an increase, yes.

Q. And the next would be, going along with that same thing, to add to your classifier, to have a larger capacity for your classifiers—is that what you call it?

A. Raking capacity?

Q. Yes.

A. Yes, if the desire was to increase the tonnage.

Q. Then all of those elements enter into an increased capacity; is that not true?

A. Yes.

Q. It would not do you any good to increase your crushing capacity alone and not make some increases in the other parts of the mill, would it?

A. No, sir.

Q. You might increase your crushing capacity one year and increase other units of the mill in the second year and then increase further in the third year, in the third unit or parts of the mill?

A. If the desire was to increase capacity, you would have to increase everything.

Q. That would be a kind of progressive reconstruction of the mill would it not?

A. If you did not have the necessary capacity in any one of the units.

Q. That is what you were doing from 1926 to 1930, doing a step at a time, increasing the capacity of the various units of the mill; is that not true?

A. We added three things which gave us increased capacity.

Q. You did not do it all at once, did you?

A. No, sir.

Q. Give me what those three things were.

A. We added two additional ball mills in 1926, the latter part of 1926; in 1928 and 1929 we added additional classifiers and remodeled our coarse crushing plant, substituting Symons cones for gyratories and an additional screening tower over our second set of rolls.

Q. Was that in 1929 or 1930?

A. 1929.

Q. And the gross effect of all three of those things was to add to the capacity of the mill?

A. From 13,000 tons to 18,000 tons or more capacity.''

(T.-3738).

Testifying with reference to the power plant, Mr. Boyd admitted that the capital expenditures which were made by Nevada, and the extraordinary amounts which were put in in repair labor, material and supplies, all contributed to an increased capacity, and decreased costs. (T.-3854-6).

We know from Nevada's various reports that all of this was a part of a general scheme and comprehensive program of expansion, increased tonnage and rehabilitation. (Annual Letter, Kinnear to Jackling, dated March 29, 1929, T.-7681; Concentrator Annual Re-

port for 1928, T.-7681-2; Annual Letter Kinnear to Jackling for 1929 dated March 12, 1930, T.-7682-3; Annual Letter Kinnear to Jackling dated March 12, 1930, T.-7684-5; Annual Letter Kinnear to Jackling dated February 14, 1931, T.-7685; Annual Letter Kinnear to Jackling dated March 1, 1928, T.-7687; Annual Letter Kinnear to Jackling dated March 2, 1929, T.-7688-9; Monthly Letter Kinnear to Jackling dated January 11, 1930, T.-7689-90; Annual Letter Kinnear to Jackling dated March 12, 1930, T.-7690-1; Annual Letter Kinnear to Jackling dated February 14, 1931, T.-7691-2; Monthly Letter Kinnear to Jackling dated January 12, 1929, T.-7693; Annual Letter Larson to Kinnear dated Feb. 21, 1929, T.-7693; Annual Letter Larson to Kinnear dated February 21, 1930, T.-7693; Smelter Preliminary Annual Report Larson to Kinnear dated Feb. 21, 1930, T.-7694-5; Annual Letter Kinnear to Jackling dated March 12, 1930, T.-7695; Annual Letter Larson to Kinnear dated February 4, 1931, T.-7696; Annual Letter Kinnear to Jackling dated February 14, 1931, T.-7696-7; Smelter Preliminary Annual Report Larson to Kinnear, February 4, 1931, T.-7698-9; Annual Letter Kinnear to Jackling dated February 14, 1931, T.-7699-7700; Annual Letter Kinnear to Jackling dated March 2, 1929, T.-7701-2; Smelter Preliminary Monthly Letter Larson to Kinnear dated April 9, 1929, T.-7702; Annual Letter Kinnear to Jackling dated March 12, 1930, T.-7702-3; Annual Letter Larson to Kinnear dated February 16, 1928, T.-7703; Annual Letter Larson to Kinnear dated February 24, 1929, T.-7704; Monthly Letter Kinnear to Jackling dated March 12, 1929, T.-7705; Month-

ly Letter Kinnear to Jackling dated July 20, 1929, T.-7705; Annual Letter Kinnear to Jackling dated March 12, 1930, T.-7706).

> *"The work of reconditioning of the smelter department which was commenced three years ago is now completed, and the plant is now in excellent physical condition."* (Annual Report to Stockholders for 1929, T.-7706).

(Annual Letter Larson to Kinnear dated February 4, 1931, T.-7708; Monthly Letter Kinnear to Jackling dated August 14th, 1928, T.-7708).

Letters and extracts therefrom are also shown on pages 7709 to 7712 of the record.

These letters show not only a general plan and program for increased capacity but show actual increased capacity, increased plant efficiency, increased plant value and decreased costs, growing out of the improvements and expenditures.

We must, in viewing the work done and the expenditures made, take into consideration that this was all done as a part of a general program for increasing capacity, decreasing cost, and to provide increased savings and recoveries. We must look at it as a unit undertaking, in which, through the expenditure of over $5,000,000, Nevada increased its over-all capacity of its whole plant, smelter, concentrator and power, and through which there was brought about the very things which are the test of capital expenditures, namely (1) increased plant capacity of 50%; (2) increased recoveries and improved metallurgy; (3) decreased costs,

and (4) an increase in the permanent value and productivity of the plant.

We urge, therefore, that the Court must view the expenditures as a whole and consider the result which flowed from them. When so viewed these expenditures come within every recognized principle and standard as capital and capital items, and cannot be deemed to be operating costs.

NEVADA'S ACCOUNTING RECORDS AND NEVADA'S DELIBERATE CONCEALMENT OF TRUE ACTUAL COSTS:

The amended fourteenth counterclaim, in substance, charges that Nevada wilfully, deliberately and intentionally, and with the intent to defraud Coppermines, furnished Coppermines with false and fraudulent settlement sheets and assay returns of Coppermines' ores as to metal contents, weight and moisture, and specifically, as respects the accounting phase, alleges that Nevada wilfully and with intent to defraud Coppermines, and contrary to and in violation of the provisions of the contract, caused to be carried into its books and records and accounts, as actual cost or operating cost for power and for the concentration and smelting of Coppermines' ores and concentrates, large sums expended by it in permanent improvements and for capital account * * * *.

Nevada admits that it furnished to the defendant false and fraudulent settlement sheets, assays and returns of defendant's ores as to metal contents, weights and moistures, and that it intentionally concealed these practices from Coppermines.

As to assays and computation of returns for settlement, it has been shown, and it is not disputed, that Nevada kept two sets of assay records of the product of Coppermines' ores milled on the pilot unit for almost six months after the execution of the contract. During that time and for a period following it, by the use of false tailing assays, by the substitution of flotation tail assays for final tail assays, and by the use of fictitious tail assays, settlements were made with Coppermines which did not conform to the actual and true assays of its pilot unit products. The evidence also shows that all records embarrassing to Nevada, or which did not conform to those kept in the metallurgical bookkeeper's office, where ordered destroyed and discarded. These records included the "A" sheets, the true assay reports, the assayers' original note books, screen analyses, computation and work sheets, moisture determinations and other records.

Nevada admits that it never informed Coppermines of this so-called "adjustment" of assay reports, or of its method of settlement, or of "conformity". It is also admitted by Nevada that Coppermines was never advised either of "conformity" or of the fact that arbitrary additions were being made to the moisture contents of its ores. It further appears that Nevada, during the period of the contract, was adding 2½% to 3% to the moisture contents of its own ores, thus decreasing its dry tonnage and, of course, decreasing the tonnage cost divisor and increasing both unit and total costs charged against Coppermines. This, too, was secretly and clandestinely carried on.

In keeping its records of cost accounts, it followed the same general scheme and policy of concealment. We contend, and in fact, it is admitted, that Nevada so kept its accounts that it is impossible to ascertain the cost of innumerable large and small items and that it so kept its records, books and cost accounts as to conceal the actual cost incurred from the beginning of the contract to the time of this trial.

During the course of the trial, Mr. Thatcher said:

"I am not sure it is necessary for us to show an exact comparable situation for the reason that Nevada seems to have kept no cost. At least that is our contention. Their costs are so concealed that it is impossible to ascertain them."

(T.-7845).

To which Mr. Chandler replied:

"There is no evidence in this case with reference to counsel's last statement. He has talked a good deal about concealing costs. There is no suggestion of any concealment of expenditures. *The total costs are on the books. Where costs are charged into operations there is difficulty in identifying expenditures and tying them up to a particular job but the totals are there.*"

(T.-7845).

There are here words, but no real denial of the fact that Nevada so concealed its costs that it is impossible to ascertain them. Mr. Chandler says "the totals are there". Of course the totals are there but they signify nothing.

Coppermines is entitled to something more than mere

totals—it was Nevada's duty and Coppermines' right to have kept and rendered clear, distinct and accurate accounts and itemized statements showing the detail of expenditures.

Perry on Trusts, Volume 2, 7th Ed. p. 1398;
Wooten Land & Fuel Co. vs. Ownbey, 265 Fed. 91.

"It follows as a corollary to these principles that the duty to account is not fulfilled by a mere general statement that the money was expended for the principal's benefit or business, or by a general denial that any of the principal's money was taken for the personal use of the trustee. Such statements * * * afford no reasonable opportunity to the principal to test the fact or the propriety of the expenditures, and give the court no basis for determining from the facts of each transaction whether the trustee has faithfully performed his duty."

Wootten Land & Fuel Co. vs. Ownbey, supra.

The totals are but a smoke screen emitted for the purpose of covering up the specific items which were, in fact, capital but charged into operating expense. It is the cost of these very items which have been charged into operation that Coppermines takes exception to and which it has so earnestly striven to identify.

An analysis of Nevada's accounts demonstrates that large sums of money for new construction, additions and betterments, and to replace worn out and depreciated equipment, were made, and that these expenditures, capital in character, were charged into direct operating expense and that the actual cost was concealed under the items of "repair labor" and "material and sup-

plies''. Mr. Haffner pointed out that the cost statements of Nevada were unique in that cost of repair labor greatly exceeded that of operating labor, and that his experience was that normally repair labor was only half of operating labor. (T.-3480). Nevada took umbrage at these statements of Mr. Haffner and insisted that it was not unique in this respect and Mr. Boyd testified that in all cases of plants which achieve low costs, repair labor substantially exceeded that of operating labor, that only in the high cost plants was operating labor more than repair labor. (T.-6222, 3). We desire to call specific attention to this testimony of Mr. Boyd's because later Mr. Boyd was compelled upon cross examination to produce operating data which completely refuted his statements and sustained Mr. Haffner. Upon cross examination Mr. Boyd produced metallurgical and cost data for plants which represent practically the entire copper mining industry of the United States. (Exhibit 14th-AC-9). The Exhibit covers a five and one-half year operating period and from it we find that, excluding the McGill plant, the average cost of repair labor is 3.92 cents per ton and the average cost of operating labor 7.48 cents per ton. We compile from the exhibit the following significant information:

Comparative Cost of Repair Labor and Operating Labor of Low-Grade Coppers Representing 95% of the Industry, Exclusive of McGill

Plant	Cost of Operating Labor	Cost of Repair Labor
Phelps Dodge Corporation		
*Copper Queen Concentrator	$.1135	$.0420
*Morenci Concentrator	.109	.060
Miami Copper Company	.05638	.03471
Inspiration Cons. Copper Company	.0894	.0258
New Cornelia Copper Company	.090	.023
Utah Copper Company		
Magna Concentrator	.0279	.0338
Arthur Concentrator	.0303	.0334
Nevada Consolidated Copper Company		
Hayden Concentrator—Ray Mines	.0738	.0384
Hurley Concentrator—Chino Mines	.083305	.061975
	$.0748	$.0392

It is significant also that at the Hayden concentrator and the Hurley concentrator, both under the direction of Mr. Boyd, operating labor substantially exceeds the cost of repair labor.

The testimony and evidence conclusively proves that

*Phelps Dodge Corporation for 1926 and 1927 only, being the only years when segregation was made. All other plants for five years or longer, according to data furnished by Mr. Boyd on request by Coppermines' counsel.

Nevada deliberately and intentionally concealed the actual operating expenses and costs.

Mr. Huffer testified:

> "Q. Where an expenditure on a particular installation or on a particular piece of work has been charged to operations, is it possible to later determine from the books the exact amount of that particular expenditure?
>
> A. No, not the exact amount.
>
> Q. Why not?
>
> A. Because the expenditures are all charged to one account or subdivision of the general account of the department. *The usual and normal or ordinary expenses are included with others, and it is impossible, under this system, to know exactly how much was charged to normal expense, and how much was actually charged to the repair under discussion.*"
>
> (T.-4002).

It is worth while here noting that Mr. Huffer distinguishes between usual, normal and ordinary expenses, and the extraordinary expenditures under discussion.

Again, Mr. Huffer, chief clerk of Nevada, able and competent, and with an intimate knowledge of the history of the transactions, which he said was so necessary to trace an item, and referring to the rebuilding of the Duck Creek pipe line, which probably cost one-half million dollars, testified:

> "Q. Can the amount expended for this replacement be accurately ascertained from the books?

A. No, not accurately.

Q. Why not?

A. *The expense was included with the usual and normal maintenance and repair expenses* of the Duck Creek pipe line."

(T.-4017).

With reference to the cost of the boilers in the power plant, Mr. Huffer said:

"Q. Was there a work order for the boilers, and the resetting of them in the power plant?

A. No.

Q. No work order for that?

A. No.

Q. And therefore the cost of that cannot be ascertained?

A. That is true.

Q. And that is also true, and there is no work order for the new pipe line, is there?

A. That is true, there is no work order for the pipe line.

Q. That is the new nine or ten miles of steel pipe line, and there is no work order at all?

A. That is true, it had no special work order, but it has the *usual current expense* job order or *account number* that we use for the main pipe line, the old line and the new line.

Q. Will your books show the cost of the Duck Creek main pipe line?

A. They will not.''

(T.-4068).

and referring to the Duck Creek pipe line and the entire water expense, he testified:

''Q. Then so far as water is concerned, I mean the main Duck Creek pipe line, expenditures for the distribution system, the McGill pumping plant and the other pumping plant, the feeder lines, the surge tank, all of those matters you have no method or means by which you can find the actual cost of them?

A. No, we have not.''

(T.-4071-2).

Mr. Huffer also told the Court that he was unable to find from his records the cost of the smelter machine shop and referring to the smelter boiler shop, he first stated that while the cost of it had been distributed in smelting costs as repairs to roaster, reverberatory and converter buildings, he could, with his familiarity with the entries and the history of the transaction, ascertain the cost from his records, but when the records were presented to him he gave it up and had to admit that the concealment was so perfect that even he could not find the actual cost of this shop building. (T.-4083-6).

The inability of Nevada to ascertin actual costs and to tell the Court what they were as respects the concentrator and smelter follows likewise as to the power plant expenditures. Dealing with the power plant, Mr. Huffer, Nevada's Chief Clerk, said:

"Q. *You don't know what you spent?*

A. *No. We kept our power costs at a definite figure. How much work was done I don't know, or how much it cost I don't know. That program was followed through the year* 1928. *The charges were made to the usual power plant cost accounts; the excess was deducted from these totals monthly and charged to a suspense account* and there only remained in the power plant cost account the amount that would make around $50 per indicated horsepower cost of power per annum."

(T.-4111).

* * *

"*These excess charges, or what we had in suspense were accumulating. We knew, shortly before the end of the year, that we could not take care of all of that expense during the current year without raising our power costs. So we asked Mr. Boyd for permission to charge the excess to capital,* knowing it was not a capital charge, but we did not care to hold it any longer on our books as a suspense account or a deferred charge, our usual practice in that connection being to clean up all accounts of that kind at the end of each year or at the end of each accounting period."

(T.-4111).

* * *

"It was general remodeling of the power plant, a cleaning up of pipe lines. In 1928 I believe they started to work on the boilers; I am not sure about that; I was through there many times but I could not definitely state periods when they were doing different kinds of work."

(T.-4111-12).

* * *

Q. And you don't know how much it cost to reset the Stirling boilers?

A. No, sir.

Q. Or to raise and reset, repair and recondition the Babcock & Wilcox boilers?

A. No, sir.

Q. Your books will not show it?

A. No, they will not.

Q. Is there any way that you can find out definitely what the actual amount spent was for reconditioning the power plant?

A. Not from my records.

Q. *What you did in presenting bills to Coppermines was just to take practically a set figure without regard to what the actual cost was?*

A. *That is true.''*

(T.-4112).

Mr. Huffer admitted that the actual amount of these extraordinary expenditures could not be ascertained from the records because of the lack of covering work orders or job numbers. (T.-4068-9, 4087 et seq.).

Work or Job Order Discontinued

Mr. Kinnear testified that *shortly before the execution* of the contract the practice of issuing job numbers had been discontinued upon the express *oral* instructions of Mr. Jackling. (T.-6872, 6874).

It is indeed a strange situation that Nevada, about to enter into the performance of a contract which re-

quired the keeping of accurate accounts as to costs, and which placed Nevada in a position of confidential relationship and the position of a trustee, should change its whole accounting system so that thereafter actual costs and the items which enter into actual costs could not be ascertained. It is indeed strange that Nevada discontinued the practice of keeping the only records from which costs and the details of costs could be ascertained.

Nevada seems to stand alone in the discontinuance of job orders or work orders. The practice is common to all large industries and to porphyry copper mining. In all large industries and mining where there is a substantial expenditure to be made work or job orders are issued so that accurate record of costs can be kept. This is standard practice. (Haffner T.-8687, Dawe T.-7820-1, Eustace T.-4175-6, records at Chino and Ray—Exhibits 14th-AM-14 and 17).

The purpose of job numbers or a job order is to find out and let the management know what the job actually costs. This practice applies not only to expenditures charged to capital but equally to expenditures that are charged to operations. It is the one and really the only way by which the management knows what a job actually costs. It is a method which enables the management to check the efficiency of the crew and the efficiency of the supervision and to convey a clear and correct picture of what is going on (Haffner T.-8687).

It appears from the testimony of Mr. Bagwill that in the construction and installation of such important

items as changing to the Forrester cell, changing the caterpillar pan feeders to pulley feeders, installation of the wet lime distributing system, installation of bowl classifiers, construction of mill machine shops and other similar new buildings, the construction of the nine mile main pipe line and other water installations, the erection of a new roaster stack, the rehabilitation of the power plant and innumerable other items, all requiring substantial expenditures aggregating in excess of $5,000,000, with individual items costing upward of half-a-million dollars, no job orders or work orders were kept, and the cost cannot be ascertained from Nevada's records.

That Mr. Jackling's oral orders to discontinue the work or job orders was followed, is shown by Mr. Bagwill's Exhibit 14th-a/c-G. Page 2 shows five job orders in 1926, up to the May month (this before the contract). After the contract not a single job order was issued for the smelter for the remainder of 1926 or for the years 1927 and 1928. In 1929, three only were issued and these were during the months of January and February.

Mr. Kinnear's attention was directed upon cross examination to innumerable specific items. He was asked, as respects these items, whether or not Nevada's books and records would disclose the actual cost of the item or items and he was further asked if the actual cost could be ascertained from Nevada's accounts and records. His uniform answers were that the cost could not be found and that it would not be disclosed from

Nevada's records and that an appraisal would have to be relied upon. (T.-3668, 3673, et seq.) Actually Nevada, for the purpose of showing what its probable expenditure for specified items had been, was compelled to present and rely upon appraisals. (Exhibits 14th-64; 14th-64a, supplemented by 14th-AD-1).

Nevada used its suspense account as a convenient vehicle in concealing costs. The method practiced in this regard is shown by Mr. Bagwill's analysis of the suspense account (Exhibit 14th-AG, pages 1 to 6) and by the testimony of Mr. Huffer on cross examination. (T.-7502-5).

The suspense account in many instances did not represent an expenditure made but an anticipated expenditure, and hardly in any instance did this suspense account represent an actual expenditure of money in dollars and cents, but these amounts were charged in and out of this account for the purpose of "leveling out" the peaks (Mr. Huffer, T.-7508) and so equalizing the cost as to not arouse suspicion. For instance, in the year 1930, $72,000 was transferred from the suspense account to operations on account of the Duck Creek pipe line improvements. Almost no work was done on the Duck Creek pipe line during the year 1930, and this charge was for work done in 1929. (T.-7504-5). Mr. Huffer did account for a small job of painting a part of the pipe line in 1930, which amounted to approximately $3000.00.

Certainly this was not contemplated by the contract when it provided that Coppermines should pay the *monthly average of all direct operating expense,* etc.

We know from the testimony to which we have referred and from the testimony of Mr. Bagwill, that it has been impossible to definitely ascertain and find the cost of innumerable items. Mr. Bagwill, in his examination and in the presentation of his exhibits, was unable to give exact amounts. He was compelled to analyze and compare, and this he did by going back to the records, if and when possible, and finding a normal cost and comparing that with subsequent monthly abnormal costs and arriving at the difference between the two as probably representing the cost of an item or items historically known to have been installed at or about that period. (T.-2914, 2919, 2999, 3000).

Nevada's method of keeping its accounts and its concealment of an actual cost is inconsistent with its duties under the contract and as a trustee. It is the duty of one in a fiduciary relation, to so keep his records and accounts that every item charged against cost can be readily identified.

We will later in this Brief present fully the laws upon this subject.

It was urged that the books and accounts of Nevada were open to Coppermines' inspection and it has been said that we actually inspected the accounts. We dispute the correctness of these statements.

It was said that Mr. Hurley, a representative of Loomis, Suffern and Fernald, inspected Nevada's accounts for Coppermines. The record, we think, is clear in this regard. Mr. Hurley was making an audit of the books. He was checking totals, and he was not making

any check of items on behalf of Coppermines. In fact Mr. Smith's letter to Mr. Huffer of April 18, 1927 (T.-2712-13) shows merely that inquiries were addressed to Mr. Hurley, but it specifically states that "neither Mr. Hurley nor anyone else has been authorized to approve Nevada's charges on our behalf." (See also other letters, T.-2710-12, 2715, 2717).

Nevada's attitude and the difficulty under which Coppermines was laboring is evidenced by Mr. Smith's letter of April 6, 1927 (T.-2710-11) asking how the additional converter had been charged. It was six months before Huffer gave Mr. Smith the requested information. During all of this time Nevada was extremely evasive in its replies to Smith's demands for information.

It is also clear from these letters above referred to that Mr. Hart was not checking Nevada's accounts and was not authorized to check them or to approve them, or to commit Coppermines to their correctness. Checking of accounts on behalf of Coppermines for the purpose of ascertaining cost, commenced with Bagwill's inspection in 1928. The accounts were so kept and so complicated in character that Mr. Bagwill, painstaking and thorough though he is, was unable to get accurate information. *Even to the date of the close of this case there has been no true accounting by Nevada. Nevada, as we have pointed out, admits that it cannot give one.* However, in the words of Mr. Chandler, "The totals are there". The most that Mr. Bagwill was able to do was to compile a schedule of some items which could be identified with some degree of certainty.

The fact that Nevada's accounts were open to Cop-

permines would have availed Coppermines nothing because of the method and practice of Nevada in keeping its accounts.

Nevada admittedly is a trustee under the contract. It entered into a contract with Coppermines to mill, concentrate and smelt its product *on the basis of actual cost plus a profit,* and when Coppermines wants to ascertain what the actual cost was, it is met with the statements that Nevada does not know what the cost was; that its books and records do not show; that it has so kept its accounts that not even Nevada can ascertain what many of the items cost, but "the totals are there."

Nevada's books and accounts as a trustee should have been of such character and so kept as to give to Coppermines complete and adequate detailed and itemized information so that it could object to any item charged and so that it could point out the item objected to and the exact amount of the charge.

Nevada's obligation, in the words of Mr. Wallace, was to give Coppermines an *honest cost* (T.-4814), and, in the words of Mr. Boyd, to act in good faith in its fiduciary capacity (T.-6434). Coppermines, unable to find actual cost of innumerable items charged against it by the concentrating, smelting, power and other departments, by letter of March 30th, 1931 (Ex. 14th a/c M, p. 77) demanded a statement which would show the cost including labor and installation, and the amount of the cost which was charged to capital, and the amount to operation. The items were specified and generally may be said to comprise the major items of which Coppermines then complained, and of which it had some

knowledge at the time of the demand. The items specified were fifty-three in number, fourteen for the concentrator, twenty-one for the smelter, six for the power plant, and twelve miscellaneous.

Did Nevada furnish the requested information? We submit that it did not. By letter of April 7th we were told that Nevada was unable to furnish information as to any of these items, save those which were charged in whole or in part to capital, and, as to those which were charged both to operating and capital, only the amount which was charged to capital, that as to the items charged to operation, the cost cannot be ascertained or segregated. As to some of these items, we were told that Coppermines had furnished a bill of particulars specifying the amount of cost thereof, and that Nevada magnanimously concedes the cost so specified by Coppermines. (See 14th a/c M, pp. 80-83, T.-12, T.-918). We could not look the gift horse in the mouth so we refused to accept the gift.

It was Nevada's duty under the contract to account openly, fairly and honestly, to refrain from concealment, to keep true records which would show the detail of costs, and not to conceal costs or make or keep deceptive records or books of account.

> "It is the duty of parties standing in the relation of trust and confidence toward each other to *refrain from concealment,* or false or deceptive representations in transactions affecting the property in which they are jointly interested * * *."
>
> *Lopinsky v. Hurvitz,* 105 S. E., 593, and other authorities ante this Brief.

ANALYSIS OF ITEMS

In connection with this discussion we will analyze and present to the Court certain individual items charged to operating expense in the concentrator, smelter, and under the heading of Miscellaneous, to ascertain whether or not, under accepted accounting practice and under the law these items should have been charged to operations. Power will be separately discussed.

Concentrator.

As to the thawing shed, the testimony is that the building was partly destroyed by fire. A new roof was put on it, the walls were raised, and the building was enlarged and improved. This building was covered by insurance, which Nevada neglected to collect, so it charged it to operating expenses and thereby seeks to recoup from Coppermines a part of its loss due to its own negligence. (T.-4812½).

The mill office building, the mill machine shop (building and equipment), the blower building (building and equipment) are new installations, with an estimated life of 100 years. (T.-3325-7).

The compressor building and equipment is a new installation, with an estimated life of 100 years and 20 years respectively. (T.-3329).

The Forrester cells are new—they replaced old Callow cells, and according to Mr. Kinnear they increased capacity, increased recoveries, decreased costs, and improved metallurgy. (T.-3656). It is estimated they will last 5 to 10 years. (T.-3236).

The new pulley feeders have a long life. (T.-3238). They replaced the caterpillar pan type, improved operating conditions and efficiency, and decreased costs. (T.-3665-6).

The wet lime distributing system was new. It replaced men and shovels. It increased operating efficiency, improved metallurgy and decreased costs. It has an estimated life of 20 years. (T.-3242, 3667).

The Shimmin filter admittedly was capital. The invoice price was charged to capital but the installation was charged to operations. (T.-4022).

The classifiers are admittedly capital and the invoice price, plus freight, was charged to capital, but the expense of installation was charged to operations. (T.-4022). One classifier was called "experimental" and charged entirely to operations. (T.-4001).

The job of remodeling sections 6 and 7 was of considerable magnitude, involving the expenditure of approximately $125,000. It was the first step toward a complete change of flow sheet. It is the last word, according to Mr. Boyd, and had for its purpose increased capacity, improved metallurgy, and will effect increased recoveries and decreased costs, according to Nevada's experts. (T.-3820).

The cleanup of the former table floor and the air header pipe on the former table floor were done as the first step toward remodeling of Sections 6 and 7, and the space formerly occupied by the tables is now occupied in part by remodeled sections 6 and 7 and the re-

mainder of the space will be occupied by the remaining sections when remodeled. Installation of the air header pipe was necessitated by the remodeling of sections 6 and 7. (T.-3671-3, 3732).

Ball mill pumps and changes involve an expenditure of almost $50,000 and were made in part in conjunction with remodeling sections 6 and 7, and included additional installations in connection with other sections. The purpose is increased capacity, improved efficiency and better metallurgy with decreased costs. (T.-3674).

All of these, with the possible exception of the thawing shed, were part of the general plan and program for increased capacity and did, in fact, increase capacity from 12,000 to 18,000 tons per day. Analyzing even the individual items we find that they decreased cost, improved recoveries, increased plant output, improved efficiency, and gave more plant than theretofore existed. According to standard accounting practice these are the elements which constitute the test of capital expenditures.

In 1927, $151,515.24 was spent in the concentrator and these items make up what Mr. Riser, (then concentrator superintendent) called "estimated cost of mill improvements." He did not classify them as direct operating expense, but called them "mill improvements." (Ex. 14th a/c M-4).

Smelter:

Pierce-Smith converters involved an expenditure of over $150,000. This installation improved working conditions, increased capacity and decreased costs. These have a life of 10 to 15 years. (T.-3171½).

The Cottrell plant proper was charged to capital. (T.-3610).

The roaster stack and Cottrell plant flue involved the expenditure of over $100,000. This was a new installation to coordinate with the Cottrell plant. It increased metal recoveries, decreased costs and improved the general efficiency of the smelter. These installations have an estimated life of 20 yars. (T.-3651).

The increased amount of flue dust that is recovered in the Cottrell plant as compared to the old roaster flue is not considered by Nevada as new material to be smelted; it therefore does not enter into the cost divisor and Coppermines therefore has to pay for its proportion for the smelting of this additional dust without any compensation in the form of increased metal recoveries. (T.-3693, 7389).

The roaster shop and change house, smelter pipe shop, boiler shop (building and equipment), machine shop, paint shop, company car and truck garage were *all new buildings,* having a long life and beyond that of the plant as a whole and greater than the life of the mines. They decreased costs, improved working conditions and efficiency, added to plant value and gave more plant than theretofore existed. The converter bal-

loon flue extension and the converter stack extension are but a part of the new converter installation, and the record shows that they improved working conditions, and were a necessary part of the increased converter capacity. (T.-3626, 3678 et seq.).

The two waste heater boilers (charged to the power plant) involved the expenditure of the large sum of $122,000. or more. They replaced three old 400 HP boilers which were not only obsolete but which had served their useful life and which were dangerous and would not pass boiler inspection. They replaced a fixed asset which had become obsolete and which was no longer an economical productive agency. (T.-3680).

The three electrical tilting slag pots were part of the program of increased capacity. They were larger than those theretofore used and replaced pots obsolete and completely worn out. They have life equivalent to the plant. (T.-3682-3).

The new oil reservoir was a new installation, will last "indefinitely", and increased efficiency and decreased costs. (T.-3684).

The reconstruction of 10 roasters was a reconstruction and replacement of fixed assets, obsolete and depreciated. Moreover they increased capacity and were a part of the general program and scheme of increased capacity and efficiency. It is estimated the reconstructed roasters will last the life of the plant. (T.-3688).

The Hardinge mill for the reverberatory coal pulverizer was a new installation and a complete change in

the method of preparing the fuel for the reverberatories. It increased efficiency and decreased costs. (T.-3654).

The skimming water launder from the mill to the smelter replaced a fixed asset which had become obsolete and completely depreciated, and which was insufficient in capacity. The new one is bigger and better and is part of the program of increasing capacity. It has an estimated life of 8 years. (See Kinnear's letter to Jackling of March 12, 1930). (T.-3183, 7706).

The cleanup of the old roaster stack and the disposition of salvage was but the first step in the building of the new roaster stack and Cottrell plant, and if the new roaster stack or the Cottrell plant are properly chargeable to capital then this item comes within the same classification. Moreover this expenditure resulted in immediate recovery of large amounts of metals. The flue dust was sent to the reverberatories and smelted, at a substantial cost, but not being considered by Nevada as new material coming into the smelter it was not placed in the cost divisor, and therefore Coppermines bore part of the cost of smelting it, but received none of the benefits.

Smelter yard leveling and graveling were all permanent improvements.

Smelter lighting and smelter heat were new installations, replacing, however, obsolete and depreciated like items, undoubtedly increasing efficiency and were part of the whole scheme and program for increased plant

capacity. These items have an estimated life of 50 and 20 years respectively. (T.-3334, 3185).

That all of these improvements were part of a general scheme and plan is shown by the Annual Report to the Stockholders for 1929:

> "The work of reconditioning of the smelter department which was commenced three years ago is now completed, and the plant is now in excellent physical condition."
>
> (T.-7706).

See also the following extract from the Annual Letter for the year 1928 from Mr. Kinnear to Mr. Jackling, dated March 2, 1929:

> "*At both the mines* and the *reduction plant the aim has been to make preparations for handling increased tonnage up to* 18,000 *tons per day to meet the increased requirements as to our own production as well as treat* 3,000 *tons per day of Coppermines' ore* which we are under obligation by virtue of our contract with this Company. *All improvements which have been made to this end have proven their worth and within the next few months we will be ready to handle in an economical manner at least* 18,000 *tons per day.*"
>
> (T.-7681).

As respects the smelter, we have the strongest character of evidence that expenditures which were charged into smelter operating cost were in fact made for permanent improvements. This comes from the smelter

superintendent, Mr. Larson, in his letters to Mr. Kinnear covering the years 1927, 1928 and 1929.

For the year 1927 Mr. Larson, by his letter dated February 18, 1928 (Ex. 14th a/c M-3); reports *"expenditures for various permanent improvements made during the year* 1927 *and charged into smelter operation accounts"* in the sum of $235,075., of which $33,300. was charged to roaster cost, $119,040.00 to reverberatory cost, and $82,635.00 to converter cost.

In a similar letter, dated February 22, 1929 (Ex. 14th a/c M-2), Mr. Larson reports *"expenditures for various permanent improvements made during the year* 1928 *and charged into smelter operating accounts"* of $316,-696.74, of which $59,919.86 was charged against roaster cost, $126,645.73 against reverberatory cost, and $130,-131.15 against converter cost.

And, finally, by letter of March 5, 1930 (Ex.-15th-a/c-M-1) Mr. Larson reports similarly for the year 1929. In this exhibit the grand total of expenditures for various *permanent improvements made during the year* 1929 *and charged into smelter operating accounts, was* $502,362.76. This letter we set out in full for the reason it so accurately and properly presents the facts and reflects Nevada's recognition that these excess costs were permanent improvements and should have been charged to capital and that the excess costs represent money spent in excess of actual operating requirements, and represents installation of items which it will not be necessary to duplicate for many years:

"Nevada Consolidated Copper Company,
McGill, Nevada

Mr. J. C. Kinnear, March 5, 1930.
General Manager,
Building.

Dear Sir:

Herewith is a set of tabulations and derived data *showing expenditures for various permanent improvements made during the year* 1929 *and charged into smelter operating accounts.* These figures are not exact but are approximately correct, and represent a field record kept during the year in conjunction with the cost statements.

ROASTERS

Construction of New Oil Reservoir		$1,534.87
Connecting Flue to Cottrell Plant and Stack (Brick and Clay)		7,346.92
Labor on Connecting Flues, Handling Brick and Flue Dust		5,000.00
Completion of Cottrell Plant and Flue Connections—K. C. Steel		672.71
Cottrell Plant Brickwork (Collins)		5,154.00
New Stack Construction		26,433.00
Removing Scaffolding and Painting Inside of Stack		666.50
Smelter Lighting		999.54
New Roaster Shop and Change House		1,200.00
Five Roasters Reconstructed:		
Shells	$5,500.00	
Shell Dismantling and Erec.	2,500.00	
Brickwork and Materials	10,000.00	
		18,000.00

New Boiler Shop and Pipe Shop Construction	3,314.60
Smelter Heat	2,606.15
Excessive General Expense	1,000.00
Three Kinnear Rolling Doors	429.00
Transfer from Concentrator—December	1,200.00
Total Roaster	$75,557.29

REVERBERATORIES

Construction of New Oil Reservoir	$1,534.86
Construction of Two New Matte and Slag Pots	1,500.00
Smelter Lighting	999.55
Smelter Heat	4,791.56
Water Service	53,660.00
Stack Repairs and New Lightning Rod	3,415.00
Expense of Changing No. 2 and No. 3 to Side Charge	4,500.00
New Boiler Shop and Pipe Shop Construction	5,120.60
New Skimming Water Launder from Mill to Smelter	12,100.00
Power Charges Absorbed by Reverbs	22,339.50
Transferred from Concentrator—December	9,500.00
Carson Patent Litigation Expense	174,328.50
Royalties—Carson Patent	12,282.03
Excessive General Expense	2,000.00
Total Reverberatory	$308,071.60

CONVERTERS

Construction of New Oil Reservoir	$1,534.89
Steel for New Circular Flue for No. 2 Converter and Balloon Flue Connections	11,386.00
Smelter Lighting	999.55
Smelter Heat	3,944.65
Water Service	41,700.00
New No. 1 Converter and Improvements	28,200.00
New Magnesite Brick Lining for No. 1 Converter	10,000.00
Trestle and Flux Bins—Materials and K. C. Steel Labor	1,066.56
New Trestle — Labor for Dismantling and Installation	500.00
New Flux Charging, Conveyors, etc.	533.00
New Boiler Shop and Pipe Shop Construction	3,564.80
Kansas City Steel Invoice Charged to F-20	4,686.00
Kansas City Steel Invoice Charged to F-11	2,074.42
New Floor Plates	1,976.00
Four Kinnear Rolling Doors	1,268.00
Transferred from Concentrator—December	4,300.00
Excessive General Expense	1,000.00
Total Converter	$118,733.87

RECAPITULATION

Roaster	$75,557.29
Reverberatory	308,071.60
Converters	118,733.87
GRAND TOTAL	$502,362.76

ROASTERS	Cost Divisor 435,517	
	Amount	Per Ton
Total cost for year, as shown on Cost Statements	$364,323.06	$0.837
Less *excess charges* as per preceding pages	75,557.29	0.174
Cost exclusive of permanent improvements	$288,765.77	$0.663

REVERBERATORIES	Cost Divisor 546,469	
	Amount	Per Ton
Total cost for year, as shown on Cost Statements	$1,120,700.92	$2.051
Less *excess charges* as per preceding pages	308,071.60	0.564
Cost exclusive of permanent improvements	$812,629.32	$1.487

CONVERTERS	Cost Divisor 65,046	
	Amount	Per Ton
Total cost for year, as shown on Cost Statements	$564,931.18	$8.685
Less *excess charges* as per preceding pages	118,733.87	1.825
Cost exclusive of permanent improvements	$446,197.31	$6.860

TOTAL ALL SMELTER DEPARTMENTS

	Amount	Cost Per Ton or New Ore and Concentrates Smelted (433438)	Cost per Pound of Blister Produced (130,092,000 Pounds)
Total as shown on Cost Statements	$2,049,955.16	$4.730	1.565¢
Less total excess charges	502,362.76	1.159	0.386¢
Cost exclusive of permanent improvements	$1,547,592.40	$3.571	1.179¢

"The above figures are shown to give a general idea of the reflection of *our permanent improvement and water development campaign on smelting costs for the year.*

The total excess cost figures of $502,362.76 *for the year* 1929 *compares with a total of* $316,696.74 *spent for similar purposes during the year* 1928.

It is not intended to infer that *all* of the foregoing improvements represent money spent in excess of actual requirements. However, the great majority does represent money that it will not be necessary to duplicate for many years.

Yours very truly,

/s/ Leonard Larson

Gen'l Supt. of Reduction Plant"

(Exhibit 14th a/c M-1).

(Italics ours except the word "all" in the last paragraph).

The Court will also note that Mr. Larson reports the *excess* charges of $1.159 per ton of ore or concentrates treated in the roasters, reverberatories and converters. From this exhibit it conclusively appears that these excess charges were not part of *direct operating expense.* We have in these three reports of Nevada conclusive proof of the allegation of our complaint:

> "That plaintiff wilfully, deliberately and intentionally, and with intent to defraud the defendant, and contrary to the provisions of, and in violation of, the contract 'Exhibit A' caused to be carried into its books and records and accounts as actual cost or operating cost to the defendant for power and for concentration and smelting of defendant's ores and concentrates, large sums expended by it in permanent improvements and for capital account * * * ".

In face of this record, Nevada's specific denial made under oath is hard to understand.

These records of Nevada disclose that for the years 1927, 1928, and 1929, $1,053,834 was expended for permanent improvements and in the installation of plant value and items which it will not be necessary to duplicate for many years, and this amount was charged into *smelter direct operating expenses.*

Can there be any question in the mind of the Court but that this sum and these expenditures were properly capital items and should have been charged to capital and not to operation? Significantly, also, Mr. Larson says, as respects these expenditures for permanent im-

provements, that "These figures are not exact but are approximately correct and *represent a field record kept during the year in conjunction with the cost statements.*" We have from Mr. Larson, that these expenditures were in addition to the actual direct operating expense and were not any part of *direct operating expense.*

If we view the items listed in Mr. Larson's letter we know, not only from the letter itself, but from definitions that have been given by Mr. Boyd and Mr. Haffner, that these items are no part of direct operating expense or cost. Certainly they did not initiate with the superintendent. They undoubtedly came about from the recommendation of the manager and the authority of the managing director or the board of directors. They were not direct operating costs within the definition of Mr. Boyd, because Mr. Boyd defines direct operating cost as

> "the cost of milling a tonnage of ore, such as crushing, grinding, floating and handling the concentrates, and the cost of direct supervision that is necessary in that connection * * * * the cost that really springs out of concentrating of the ore and the necessary supervision and attention thereto."
>
> (T-6210-11).

The cost of these permanent improvements, if we take into consideration overheads, engineering and supervision, commissions and contingencies, warehouse costs, and the like, undoubtedly exceeded the "field record" because the field record is but a mere record of

supplies, materials and labor going into the jobs of which a record is kept. To this amount of $1,053,834.50 reported by Mr. Larson there should undoubtedly be added a substantial percentage in allowance for these various "overheads" not otherwise taken into account.

No letters of similar character were produced antedating the contract or which show the same course of accounting practice in keeping of their smelter accounts prior to the contract.

We again advert to our demands for data and information concerning cost of smelter items. By our letter of March 30, 1931, we demanded of Nevada the details as to the cost of 53 specific items. We were told by Nevada's letter of April 7, 1931 that the only items of which they could give us any information were

(1) Pierce-Smith converter which cost $67,-641.48, of which 38% was charged to capital.

(2) The Cottrell Plant, which cost $172,521.30.

(3) Hardinge mill for reverberatory coal pulverizer, which cost $19,304.55, all of which was charged to capital.

and as to the other items enumerated in the demand, that they had all been charged to operating expense and that the amount expended therefor could not be segregated. We now find that a field record was kept in conjunction with the cost statements. This *"field record", "kept in conjunction with the cost statements,"* must have been known to the accounting department. In any event it was known to Mr. Larson. Why, may we ask, was it concealed from Coppermines, and not produced

in court? It is significant that Mr. Larson attended upon the trial of the 14th Counterclaim and was called and sworn as a witness, but Nevada asked him no questions concerning the Larson letters or any matter even remotely connected with them.

In Mr. Larson's letters he states that the figures represent a field record kept during the year in conjunction with the cost statements. If these field records were kept in conjunction with the cost statements, Nevada had records in its possession which should have been produced for Coppermines responsive to Coppermines demands made in its letter of March 30, 1931.

Miscellaneous.

The Duck Creek main pipe line and the water development on various creeks, and feeder lines, McGill Spring pumping plant and the new distribution system, involved an expenditure in excess of $700,000.00. The Duck Creek main pipe line replaced the old wood stave pipe line which had been used for twenty years, and was so depreciated and obsolete that it could not be maintained. The old pipe line had arrived at that stage where it was no longer an economical productive agency, and the new unit was essential if the plant was to continue to operate. (Boyd, T.-3863.) The new pipe line had increased capacity, admittedly decreased costs, gave operating efficiency and increased plant value. The water development on various creeks, and the feed lines, constituted additions and extensions. There was some replacement of old pipe which was obsolete and completely depreciated, but much of this development was

new,—involved new shafts, new lines, new pumps and other equipment, and had for its purpose and actually provided an additional water supply over that theretofore available. This also added to plant value and was a part of the aim and program of increased capacity.

As respects this, Nevada's Annual Report for 1929, page 12, says:

> "*As a result of this work the amount of available water has been increased* and is now sufficient, in normal seasons, to permit the continued operation of the concentrator at its *full present capacity of* 18,000 *tons a day.*"
>
> (Ex. 14th-217).

A forty-acre ranch was purchased in connection with the water development and the cost charged to operating expense, (T.-4071, 4800), contrary to all accounting principles except those applied by Mr. Boyd and at Nevada's McGill plant. (Eustace T.-4150).

The new telephone line to Ruth involved a substantial expenditure, of approximately $35,000.00. Although there was previously some equipment for this service this was an expenditure for additions and extensions and gave the already existing asset added physical value which it did not previously possess. The same is true as respects the new automatic phone exchange.

The new plant yard fence replaced the old plant yard fence, which was ready to fall down, after having served for twenty years. This was a steel fence, replacing an

old wooden fence. It was the replacement of a fixed asset which had become obsolete and depreciated to the point where it was no longer an economical agency.

Remodeling the General Manager's house was done for the purpose of keeping Mr. Kinnear contented. The General Manager's residence was in a bad state of repair. It had been used since 1907. It was completely remodeled and the very large sum in excess of $70,000, was spent on it. It undoubtedly had an added value after this remodeling took place. With proper maintenance its life will equal that of the mines and the plant operations. It was stated that this residence is provided as additional compensation to the manager, whoever he may be, and this compensation will extend year by year in the nature of additional salary. In other words, Coppermines is asked to pay advance additional salary for Nevada's general manager for the next twenty years. Remodeling of the general manager's residence was, we can safely assume, part of the general plan and scheme of expansion and rehabilitation.

The making of lawns and parking staff circle, new street lighting and oiling of the roads were all in the nature of permanent improvements and each and all of them have a life extending for more than one accounting period.

During the course of the examination of Nevada's witnesses an endeavor was made to show that each installation was a replacement of an existing facility, that a new brick and steel, modernly equipped machine shop replaced a shed or an old corrugated iron building,

that the wet lime distributing system replaced men and shovels, that a new roaster stack, 350 feet high, replaced an old stack which was ready to fall down, that the new steel pipe line replaced the old wooden stave pipe line which had served its useful life and which could not be maintained. These are typical illustrations of the testimony of Nevada as respects practically every item of which Coppermines complains.

We insist that in each and every instance these installations were either "additions and extensions" which give the already existing fixed asset an added physical value which it did not previously possess, or they were "improvements and betterments" which were made for the purpose of improving the physical value or the productivity of the already existing fixed assets, or they constituted "replacements"—where the fixed asset had become obsolete or depreciated to a point where it was no longer an economical productive agent and the new unit was purchased to take its place.

Such "additions and extensions", "improvements and betterments", or "replacements" are expenditures which, under accounting practice, are to be capitalized.

We insist that these installations cannot be classed as "repairs". In fact they were not even so designated during the course of the examination of Nevada's witnesses. Repairs are an operating expense. They do not increase the value of the asset upon which they are made. Repairs merely keep the building or equipment in condition to operate efficiently. They cannot be classed as "maintenance". Maintenance is an operat-

ing expense. It is a broader term than "repairs". Maintenance includes repairs, cost of supplies, repairmen's wages and other costs of *upkeep* of specific assets.

But even repairs are not always to be considered as direct operating expense. When the repair is extraordinary in character and lengthens the original estimated life of the asset, then it is to be capitalized and the amount expended for the extraordinary repairs written off through depreciation or amortization over the remaining life of the asset involved.

Nevada even though it charged these items to direct operating expense for the purpose of billing Coppermines, in actual practice capitalized them. It recognized that in any event these expenditures were not "usual and normal," that they would not re-occur for a considerable time, and that they were so large that they should not be charged against the operating cost of any one accounting period—month, quarter or year. Nevada therefore spread these expenditures and amortized them. It recognized that they should be amortized, and, in this respect and as to some of these items, this was sound accounting practice. It is our contention, however, that the contract specifically provides that Coppermines is to pay only direct operating expense plus overhead, defines this as "actual cost" and specifically excluded depreciation or amortization as a part thereof. Coppermines is required to pay amortization and depreciation only when copper sells at 15¢ per pound and upward.

An outstanding example of Nevada's attitude and conduct in making charges against Coppermines is shown by the charge made against Coppermines for a proportion of payments made to Loomis, Suffern and Fernald and for Hospital Interest and Amortization and hospital adjustments with Nevada Northern Railway Company. (Items 4, 5, 6 and 7 of Exhibit 14th a/c-A-1 and 2).

The money paid to Loomis, Suffern and Fernald was for services rendered to Nevada prior to the contract and involved Nevada 1918 Federal income taxes (Boyd T.-3807). It was proportionately charged against Coppermines, and, although admittedly a wrongful charge, we are told by Mr. Boyd that it may be adjusted at the end of the contract. (T.-3842).

The Hospital Interest and Amortization and the adjustment with the Nevada Northern Railway Company clearly is not actual cost under the contract. Nevada had an arrangement with its own company, the Nevada Northern Railway Company, as respects payments to be made by the railroad company for its proportion of the operating cost of the hospital and for the amortization of the investment. Nevada entered into a new arrangement by which the mining company gave the railway company a refund. This was a refund of payments made prior to the contract and yet it was proportionately charged against Coppermines as an item of actual cost spread over a period of several months.

The item "Hospital Interest and Amortization" was called "Amortization and Interest", was so treated

upon Nevada's books, and represented an accounting entry made for the purpose of amortizing the hospital investment. The charge was called "amortization and interest," and this is exactly what it was.

These items were called to the attention of Mr. Eustace and he said they were not proper charges against Coppermines. (T.-4184).

The Appraisals

Appraisals were made for the purpose of showing the Court that very large sums of money expended on permanent improvements had been included in the operating costs. Appraisals were necessary because Nevada kept no cost records. Appraisals were made by Mr. Galloway, Mr. Kerns, Mr. Tandy and Mr. Devore for Coppermines, and an appraisal was presented by Mr. Inwood for Nevada.

Mr. Inwood's appraisal, we think, is entitled to no weight as evidence before this Court. It was not an appraisal, but in the words of Mr. Inwood, it was an estimate. An appraisal is made for the purpose of ascertaining cost where the cost is not available. Any honest appraisal, made by a competent appraisal engineer, will accept and present in the appraisal the actual costs when they are available. Mr. Inwood, as respects the Duck Creek pipe line, said he accepted Mr. Galloway's figures for the steel which makes up the steel pipe, yet Mr. Inwood at that time had records of Nevada's in his possession which disclosed to him the actual cost of this steel. This actual cost was not set

down in Inwood's appraisal. Manifestly this was because the actual cost exceeded the Galloway appraised cost. Mr. Inwood said:

> "Q. I note that your shop foreman's report shows the plates at $135,649.93 as against $128,520.00, that you have allowed?
>
> A. Yes.
>
> Q. Which is correct?
>
> A. *I made no attempt to put the correct figure down in my appraisal.* * * *"
>
> (T.-4690).

In further illustration of Mr. Inwood's inaccuracy we cite the following instances:

Mr. Inwood estimates the cost of resetting boilers as $90,074.88 in face of the fact that Nevada, by letter of counsel, confirmed by Mr. Boyd, said:

> "The greater part of the cost, in the sum of $158,075, was subsequently transferred to capital account.

It necessarily follows that the actual cost was in excess of $158,075. (Ex. 14th-M. p. 81; T.-3850, Exhibit 14th-64, p. 48).

The lack of integrity and the inaccuracy of Mr. Inwood's appraisal is further demonstrated by the value he puts upon the new pulley feeders of $40,611.26. (Exhibit 14th-64a, p. 15). These pulley feeders were installed for 26 mills. We know from the Riser letter (Ex. 14th a/c M, p. 11) that the cost of equipping twelve

ball mills with pulley feeders was $36,000. Following out the same proportion as shown in the Riser letter, the cost of the pulley feeders for 26 mills would be at least $76,000.

Mr. Inwood presents a further fantasy comparable only to Paul Bunyan, the master logman. Mr. Inwood has four men build and install the Duck Creek pipe line in fourteen months.

The Court will probably also recall that Mr. Inwood performed another most remarkable feat when he installed three deep well pumps in three separate shafts which had depths varying from fifty to one hundred feet, at a cost of only $150. for the three pumps. (Ex. 14th-64a, p. 61; T.-4674). We might say that a deep well pump, as appears from the evidence, has a whole column of pipe in a shaft with a pump in the bottom. Atlas had nothing on Mr. Inwood, and Paul Bunyan hides his face in shame.

Mr. Galloway's appraisal, Ex. 14th-M, is carefully and accurately made and supervised by one of the outstanding appraisal engineers of the United States, thoroughly familiar with construction methods and costs. If Mr. Galloway in any wise erred it was upon the side of conservatism, and his appraisal was low rather than high. Mr. Galloway appraised what he saw. He did not include in his appraisal any amounts for wrecking or demolition of old structures or equipment.

The accuracy of his appraisal is well illustrated by reference to one item to which the Court called attention. The Court will recall that Mr. Inwood forgot

to put the whole roof on the boiler shop, and when this was included his appraisal was higher than Mr. Galloway's. (T.-4631).

Comparing the appraisals of the Duck Creek pipe line, we find:

Mr. Galloway's *appraisal* is	$390,787.00
Mr. Devore's *appraisal* is	372,104.00
Mr. Inwood's *estimate* is	245,308.00

The fairness, accuracy and conservatism of the Galloway and Devore appraisals and the unreasonableness of the Inwood estimate is demonstrated by the Larson letters. These letters are in the nature of contemporaneous records. They show the amount of excess charges for water service *allocated to the smelter* for the three years 1927 to 1929, was $214,860.59. Nevada's accounting records show that water service charged to the smelter was on the basis of 18.86%, 30.02% and 31.57%, respectively for these years. Applying these percentages to the excess amounts charged against the smelter we would have an actual cost of the Duck Creek pipe line and other water service and development amounting to $730,089.77 (Ex. 14th a/c, p. 5) this without adding anything for overhead, contingencies and engineering. In the face of these records Mr. Inwood appraises the total of Duck Creek pipe line and all water development constituting the excess water charges at $588,426.00. Mr. Galloway did not appraise all these water items but Mr. Devore finds the total amount of overcharge $757,462.91, which closely checks the Larson letters.

It is to be noted that Inwood's estimate of the cost of the entire water system rebuilding and new development is approximately $150,000.00 less than the figure derived from the Larson letters, and it is significant that in the appraisal of the Duck Creek pipe line alone, Inwood's estimate is also nearly $150,000.00 less than Galloway's appraisal.

Certain of the items which we have discussed are covered in the Galloway appraisal, and were also estimated by Mr. Inwood. They cover the items which were listed in the Coppermines' letter to Nevada of March 30, 1931. (Ex. 14th a/c M. p. 77).

During the course of the trial it was discovered that many items which make for the increased capacity in the plant and which were installed or erected as part of the general scheme of increased plant capacity and efficiency had been overlooked. The detail concerning them had not been furnished to Coppermines and in fact they were discovered during the course of the trial, and only after Coppermines had been furnished with certain of Nevada's monthly reports, pursuant to our demands. These items are embraced in an appraisal made by Mr. Inwood. (Ex. 14th-AD 1). We do not agree with the values set down by Mr. Inwood, but we must accept them for present purposes as being the only information available. The items listed in the exhibit amount to $263,293.85, from which Mr. Inwood makes certain deductions for capital and items shown twice, leaving a net amount of $187,463.21.

All of the items in 14th-AD-1 have substantial life.

They have a weighted life of not less than five years. They will, of course, be of operating value for more than one monthly accounting period, which is the basis under the contract. These items all involve installations, a part of the same general plan and program of extension to which we have adverted, and are similar in character to those embraced in the Galloway appraisal.

The capital expenditures which were charged as operating costs into McGill's water service accounts were automatically carried into smelting and concentrating costs on the basis of gallons of water used by the mill and smelter. Coppermines thus was charged a portion of these costs whenever a ton of its ore was concentrated or a ton of its ore or concentrates smelted.

As we have pointed out, Coppermines does not and cannot base its claim, for overcharges through the water service account, solely upon appraisals. Mr. Devore and Mr. Galloway made appraisals of the Duck Creek main pipe line and certain of its adjuncts. They did not have and were not given sufficient information as to what work had been done, to enable them by appraisals to determine the total excess charges which were written into Nevada's water service accounts.

As respects the water situation we know of no one more competent to present it to the court than Mr. Devore. Mr. Devore for twenty years has been connected with the Sierra Pacific Power Company as engineer and assistant manager. During this time he has been in the water business and he knows whereof he

Plate No 1

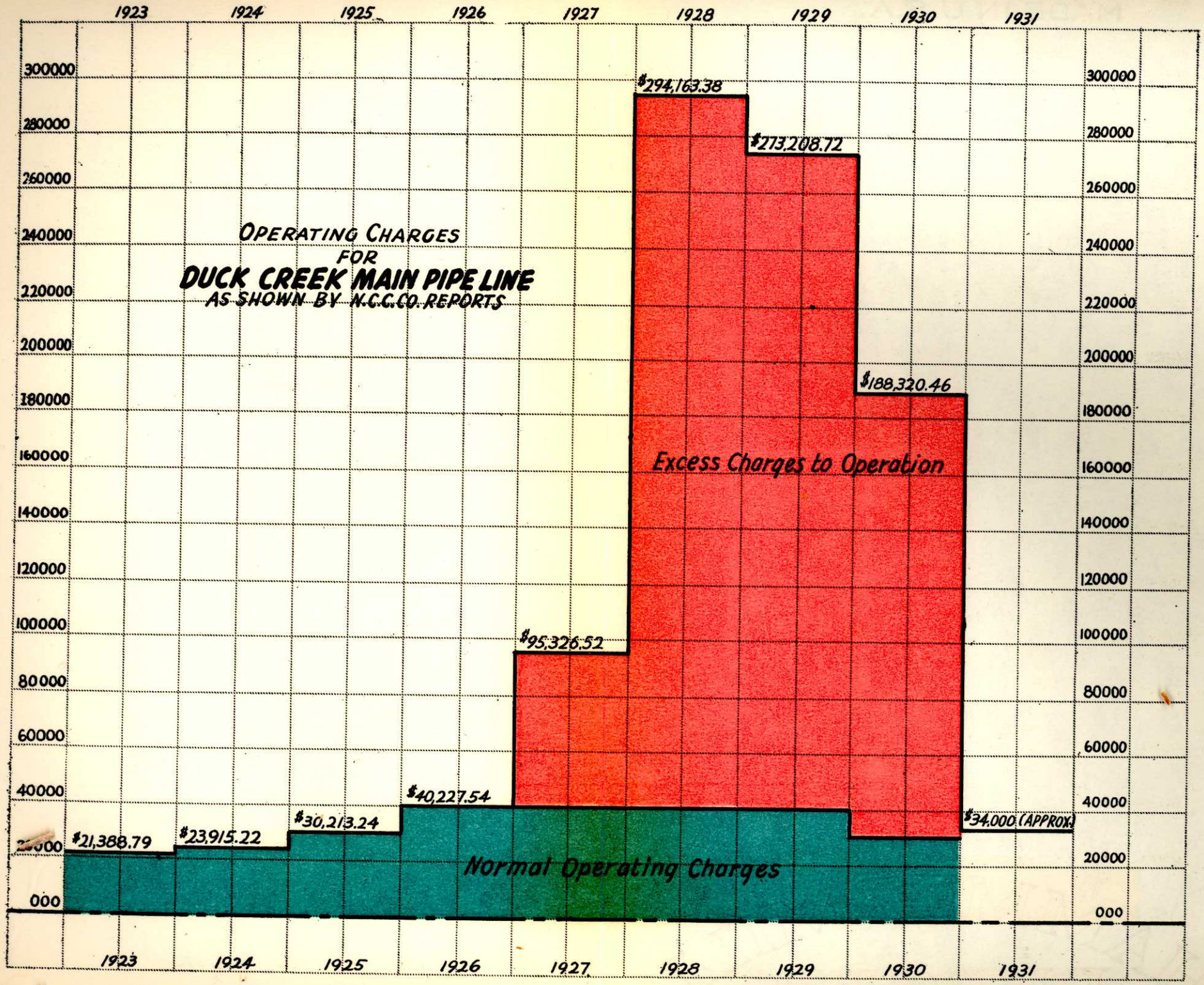

1923
1924
1925
1926
1927
1928
1929
1930
1931
300000
280000
260000
240000
220000
200000
180000
160000
140000
120000
100000
80000
60000
40000
20000
000
OPERATING CHARGES
FOR
DUCK CREEK MAIN PIPE LINE
AS SHOWN BY N.C.C.CO. REPORTS
$294,163.38
$273,208.72
$188,320.46
$95,326.52
$40,227.54
$30,213.24
$23,915.22
$21,388.79
$34,000 (APPROX.)
Excess Charges to Operation
Normal Operating Charges

Plate No 2

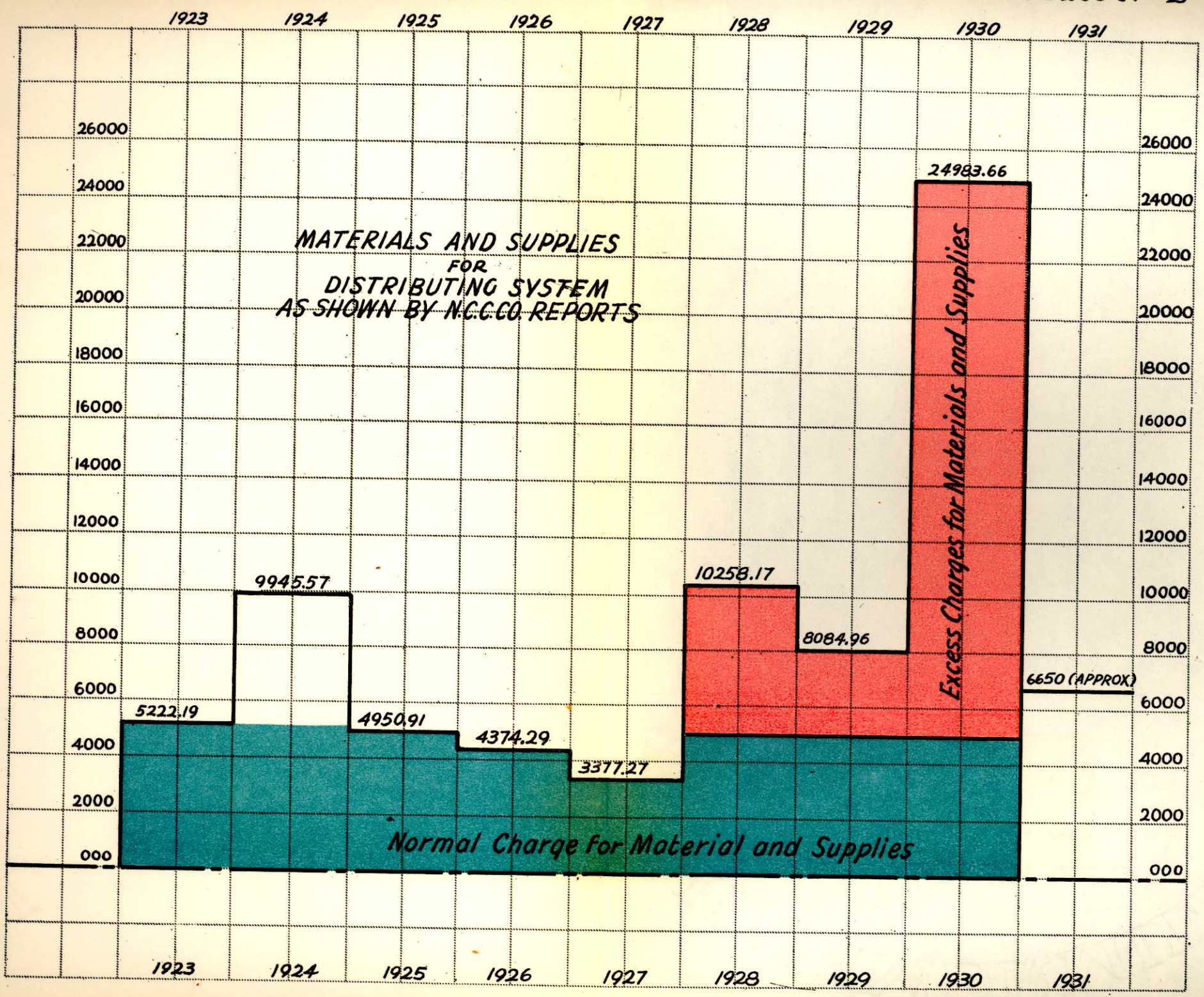
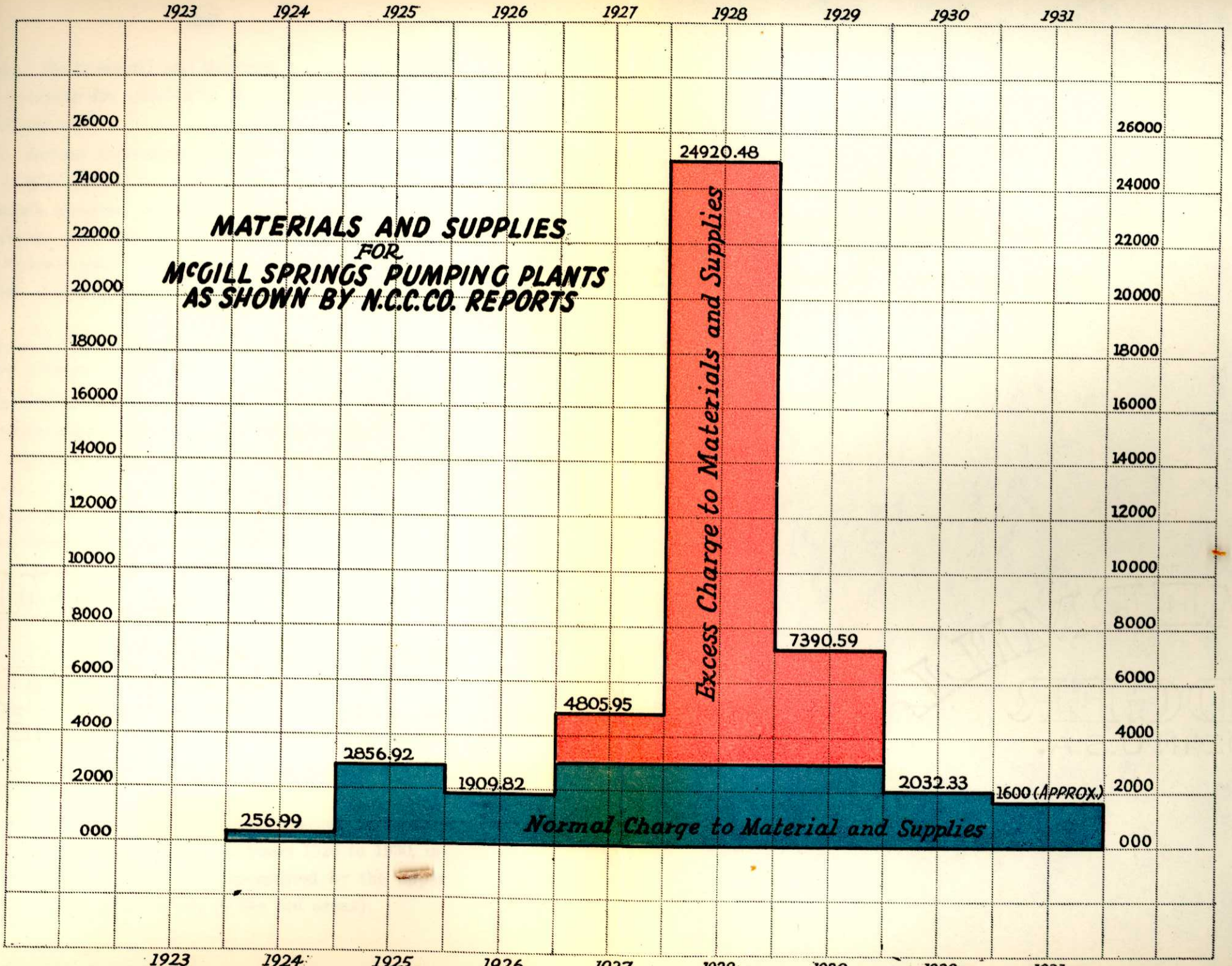

MATERIALS AND SUPPLIES
FOR
DISTRIBUTING SYSTEM
AS SHOWN BY N.C.C.CO. REPORTS
1923
1924
1925
1926
1927
1928
1929
1930
1931
26000
24000
22000
20000
18000
16000
14000
12000
10000
8000
6000
4000
2000
000
5222.19
9945.57
4950.91
4374.29
3377.27
10258.17
8084.96
24983.66
6650 (APPROX)
Excess Charges for Materials and Supplies
Normal Charge for Material and Supplies

Plate No 3


MATERIALS AND SUPPLIES
FOR
McGILL SPRINGS PUMPING PLANTS
AS SHOWN BY N.C.C.CO. REPORTS
1923
1924
1925
1926
1927
1928
1929
1930
1931
26000
24000
22000
20000
18000
16000
14000
12000
10000
8000
6000
4000
2000
000
24920.48
Excess Charge to Materials and Supplies
7390.59
4805.95
2856.92
1909.82
2032.33
1600 (APPROX.)
256.99
Normal Charge to Material and Supplies

speaks. He is careful and thorough, and his appraisals and analyses are entitled to the greatest respect and consideration.

Mr. Devore determined the excess charges amounting to $757,462.91, by an analysis and comparison of Nevada's records, viewing them in the light of his knowledge and experience. Mr. Devore deducts fair and normal costs from the actual charges and thus arrives at his figure.

Mr. Devore's Testimony on Exhibits Relating to Excess Water Charges

Mr. Devore demonstrates and presents to the Court the whole water situation in his exhibits 14th a/c N-2, N-3 and N-4, which are hereinserted as Plates 1, 2 and 3.

These three plates show graphically the charges made to the three subdivisions of McGill's water service account, namely, the Main Duck Creek pipe line, the Distributing System and the McGill Springs Pumping Plant.

The blue areas on the plates represent the normal operating expense which has been fixed by Mr. Devore at amounts which, in the light of his experience, and from analyses of Nevada's records, he deems reasonable and fair and actual cost of conducting this water service.

The Court will note the heavy charges made into these three accounts during the years 1926 to 1930, inclusive. These charges are represented by the upper lines of the graphs (on top of the red areas).

Deducting the normal operating charges (the blue areas on the graphs) from the total sums charged into these accounts, gives the excess charges for construction work as represented by the red areas. It is these charges which Coppermines complains of. They amounted to $757,462.91, and under Nevada's system of bookkeeping they were allocated chiefly to the mill and smelter. They thus became part of the milling and smelting costs and Coppermines actually paid to Nevada $149,903.59 of these improper charges. It is this sum which Coppermines claims should be refunded to it.

POWER

Power accounting presents an exceedingly difficult situation. In power Nevada reached the height of achievement in concealing costs. Substantial data, detail and information from the power department is almost completely lacking. Nevada's records do not disclose itemized detail of the expenditures made for the rehabilitation and enlargement of the plant. General or complete appraisals cannot be made. Coppermines was compelled, therefore, to present experts and expert testimony and evidence for the purpose of ascertaining reasonable costs and to show that such reasonable cost was actually attained under proper accounting practice.

At the outset we ask the Court to keep in mind certain outstanding fundamental facts and conditions which existed at and prior to the execution of the contract of June, 1926.

At the time of the execution of the contract Nevada's plant at McGill consisted of a smelter, concentrator

and power plant. The plant as a whole, with the exception of the concentrator (which was rebuilt in 1923 and 1924), was run down and badly in need of rehabilitation. The smelter and power plant were about twenty years old. Sixty million tons of ore had been mined and treated. Nevada had agreed to furnish power to Coppermines for its mining operations. It had also agreed to treat a maximum daily tonnage of 3,000 tons of Coppermines' ores.

As to the condition of the power plant, Mr. Boyd testified, in substance:

> "When I arrived in McGill in 1927 and had my first opportunity of looking over the plant thoroughly I paid particular attention to the power plant and although I am not a power plant engineer I had sufficient experience with them and knowledge of them and the responsibility for them at both Ray and Chino to make up my mind *that the power plant was in a condition that, if something was not done to it immediately, it would not operate and continue to operate and that something would happen that might be dangerous to property and even to the lives of the employes* around the plant, so I suggested to Mr. Kinnear that we get this plant back into shape."
>
> (T.-3761).

Mr. Kinnear upon direct and cross examination, told the Court that the power plant was in a badly run down condition and that these facilities had been used since the plant started, almost twenty years, that the equipment was not only unfit for service but dangerous to

operate. Mr. Franklin said that at that time the only part of the plant which was really in a serviceable condition was the 12,500 kilowatt turbo, the waste heat boilers and the 80,000 cu. ft. compressor. (T.-4440). Mr. Sanders and Mr. Franklin also testified as to the inefficiency of the plant and its hazardous condition.

Additions and extensions, improvements and betterments and replacements were essential if the contract was to be carried out and if Nevada was to carry forward its program of increased mining and treatment of ores. The Court will recall that the contract, through the removal of boundary and other barriers, released for mining immense tonnages of Nevada's ores theretofore tied up. The contract and Nevada's plans also contemplated a transition to underground mining with attendant increased demand for power. Nevada in this situation was compelled to rehabilitate this old plant and to increase its capacity. Nevada did this very thing. The evidence is undisputed that at the date of the execution of the contract the plant capacity was approximately 12,000 tons per day. It is also undisputed that the over-all normal capacity of the plant was increased during the period with which we are dealing to 18,000 tons per day and that daily tonnages in excess of this amount were mined and treated.

Bearing upon this situation, we quote an extract from Mr. Kinnear's annual letter to Mr. Jackling for the year 1928, dated March 2, 1929, as follows:

> "At *both the mines* and the *reduction plant the aim has been to make preparations for handling*

increased tonnage up to 18,000 *tons per day to meet the increased requirements as to our own production as well as treat* 3,000 *tons per day of Copper-mines ore which we are under obligation by virtue of our contract with this Company. All improvements which have been made to this end have proven their worth and within the next few months we will be ready to handle in an economical manner at least* 18,000 *tons per day.*"

(T.-7681).

The reconditioning and enlarging of the power plant was but one element, although an essential one, in a comprehensive scheme and plan of expansion and enlarged capacity. That this rehabilitation, expansion and enlargement was not an ordinary repair or maintenance, but was a part of a general program of increased capacity and complete rehabilitation is evidenced not only by the testimony of the various witnesses but by the reports from Mr. Kinnear to Mr. Jackling, the president of the company.

Extract from Annual Letter for 1928 from J. C. Kinnear to D. C. Jackling, dated March 2nd, 1929.

"Power Plant

A general revamping of the power plant has been planned and is in progress—not only to increase efficiency, but to make the plant safe against shutdowns on account of failures or accidents. *This program* includes new steam header consisting of all steel pipe, valves and fittings; two additional feed water heaters and auxiliary feed water lines.

For the purpose of *increasing boiler room* effici-

ency one battery of B. & W. boilers have been raised, giving sufficient combustion capacity, and equipped with 3-ton Aero unit pulverizers. It *is planned to raise two* Stirling boilers and equip them with water walls, thus eliminating refractories as far as possible and equip each of these boilers with one 5-ton Aero pulverizer. *When this installation is complete,* which will be about the middle of the coming year, *ample steaming capacity will be available to care for our full load even though the steam generated in the waste heat boilers may be temporarily eliminated* in case of shutdown of the reverberatory plant. *In addition to giving us additional capacity,* the *new* boilers raised and equipped with unit pulverizers should allow us to *materially increase our pounds* of water evaporated per pound of coal, which will be *reflected in the overall power plant cost.*

The converter blowing equipment, which *has been taxed to the limit in past years,* has been *revamped in such a manner that we now have ample capacity and are able to maintain maximum pressure at the converter plant. This has been one of the things mainly responsible* for our *increased production of blister in a given period.* Since the electrically driven G. E. Blowers at the concentrator making air for flotation have definitely proven their dependability, it is planned now to rebuild the Ingersoll-Rand 80,000 cu. ft. steam driven blower in the power plant, which formerly furnished air for flotation for the mill, and make it available for converter service. This blower, when revamped, can be operated on superheated steam and will result in *economy over the operation* of the present blowers and engines. By doing as mentioned above we will at all times have *ample standby capacity* for

converter service, but the alteration will not interfere with the Ingersoll-Rand blower being used for flotation air should the same become necessary by failure of one or more of the G. E. blowers at the concentrator. *The general rejuvenation of the power plant will require a greater portion of the coming year* * * * * ".

Extract from Monthly Letter for December, 1929, from J. C. Kinnear to D. C. Jackling, dated January 11, 1930:

"POWER PLANT

The rehabilitation program proposed and authorized is practically complete, with the exception of a few minor items, namely, the balance of the new waste heat steam line, the superheated steam line to the 7500 k. w. generator, and the *removal of obsolete piping* and equipment in the boiler room. *The effect of this rehabilitation* is shown in the results of the past month's operation. *The efficiency figures* for the month of December *show* 1.37 pounds of coal per indicated H. P., *as compared to* 1.62 *in* 1928. This decrease in coal consumption amounts to $27.11 per indicated H. P. Year for fuel, as compared with a figure of $32.18 *in* 1928.

Our tests show that still further reduction in this figure (which is the measure of boiler room and engine room efficiency) can be made by the installation of air preheaters behind our two new Stirling boilers and also by finer pulverization of the coal. I would recommend the purchase of preheaters for the two large Stirling boilers, the cost of which is approximately $25,000. Experimental work is being carried on towards the matters of finer pulverization of coal by an addition to the

Aero pulverizer, locally designed, and the results appear to be quite encouraging. This addition consists of a Cyclone separator in the circuit, placed in this position for the purpose of taking out the coarse coal and returning same to the feed of the pulverizer. In other words, applying the classifier principle used in wet ball mill grinding.''

(T.-7689).

Extract from Annual Letter for 1929 from J. C. Kinnear to D. C. Jackling, dated March 12, 1930:

"Power Plant

The more *important alterations and improvements* effected *at the Power Plant* during the year are summarized in the following:

1. *A* 7500 *k. w. Allis-Chalmers generator* was installed, complete with auxiliary equipment. This machine, together with the two small turbines, assures ample stand-by capacity capable of meeting immediate probable emergencies.

2. *The cooling pond was enlarged* so that it now has a capacity of 42,000 gallons per minute, as compared to 30,000 before the enlargement, which provides sufficient cooling to maintain satisfactory vacuum on the generators.

3. *A new main steam header was installed.* It is of steel construction, capable of carrying steam under 300 pounds pressure and at 600 degrees Fahrenheit. It replaced a cast iron header which was incapable of withstanding the high steam temperatures and pressures required for most efficient operation.

4. *An auxiliary steam header* was also installed to serve the auxiliary units of the plant. In construction it is similar to the main header.

5. *A water softener of* 5000 *gal.* per hour capacity was erected and put into service for treating the boiler feed-water, with a consequent marked saving in boiler tubes and elimination of shutdown and labor for cleaning boilers.

6. *The two stoker-fired* 577 *horse-power Stirling boilers were raised, revamped,* equipped with water cooled walls on the combustion chambers, and fitted for pulverized coal firing. *The change has constituted a marked improvement with respect to fuel economy, capacity and flexibility.* Still greater efficiency will be derived from these boilers when they are equipped with pre-heaters—an addition which is contemplated for the year 1930.

7. *Four obsolete and inefficient* B & W boilers were *dismantled and removed* from the boiler room during the year.

8. *Rebuilding of the Ingersoll-Rand* 80,000 cu. ft. steam driven blower was commenced. When completed, this machine will be used for supplying air to the converters. The capacity will be 50,000 cu. ft. per minute at 17 lbs. pressure. *This machine will supply converter air more economically than our present obsolete reciprocating engines used for that purpose.*

An indication of the benefit derived from the improvements that have been made in the Power Plant was shown by the December operating results. The efficiency figures for that month show that *1.37 pounds* of coal were consumed per indicated horsepower as compared to *1.62 pounds for*

1928. A conservative estimate places the coal consumption at *1.3 pounds per I. H. P. after completion of the rehabilitation program.*"

Extract from Annual Letter for 1930 from J. C. Kinnear to D. C. Jackling, dated February 14, 1931:

"Power Plant

During the past year the Ingersoll-Rand centrifugal compressor originally designed to supply the concentrator with 80,000 cubic feet of free air per minute at six pounds pressure, was revamped to furnish 50,000 cubic feet of free air per minute compressed to 17 pounds for converter use. The compressor was tried out with one converter in operation and, though it delivered the desired pressure, it was not economical to keep it in service with only one converter running.

During the year 1930, the *smelter and power plant high pressure air lines* and receivers *were thoroughly overhauled, old lines were dismantled,* and *new welded lines substituted, with a general unifying and rearrangement of departmental lines. This resulted in a greatly decreased demand on the high pressure compressors.*

The power consumption for high pressure air delivery during 1930 was *actually* 56% *less than* the previous year. The downward trend in demand can be attributed partly to plant curtailment, but the *larger percentage of saving should be accredited to the new air lines* and to more careful supervision of pipe maintenance in the way of detection and prevention of air leaks.

While the *efficiency for the whole plant has been increased, the horse power cost* per annum has remained the same. *However, this can be accounted for in improvements to the plant,* consisting of *building additions, new centrifugal compressor installation for the Ingersoll-Rand unit* and *new steam lines in the power plant and waste heat boiler plant. The following tabulation shows a comparison* of the cost of these items for 1930 against 1927, *a normal year for improvements*:

Year	Building Labor and Supplies	Centrifugal Compressor Labor and Supplies	Steam Lines Labor and Supplies
1927	$3,708.43	$6,372.63	$7,606.71
1930	34,767.67	28,480.68	25,292.72

The expenditures for these three items *should not recur in the year* 1931. All other charges, exclusive of fuel have remained fairly constant when compared with the past few years. *Computing the cost on a normal year for the above items the horsepower cost per annum for* 1930 *would be* $45.00. The cost for 1931 should compare favorably with this revised cost."

Contrast the $88,541.07 in 1930, against the *normal* for 1927 of only $17,687.77. Note also the constant and repeated statements as to decreased costs, increased capacity, improved efficiency and increase of permanent plant.

These letters are so clear that further comment and argument is unnecessary.

Coppermines Was Not Charged the Actual Cost of Power but an Adjusted Charge.

When Mr. Boyd called in Mr. Franklin to look over the job he was interested, not in costs, but in the complete rehabilitation and expansion of the plant. Mr. Franklin, in substance, testified:

> "Mr. Boyd, Mr. Kinnear, Mr. Sanders and myself were in this particular conference that I am now speaking of. I would say that the conference endured an hour or two or something like that. We were discussing about the reconstruction of the power plant in general. Both when I got through and during the discussion I got some instructions. The instructions of Mr. Boyd were that he wanted to see the plant put on a 100% basis and put in good shape, starting in first on the electrical end and proceeding on through to the air end, as well as in the boiler room; to attack those parts of the plant and the apparatus that required the most immediate attention.
>
> (T.-4429).

Mr. Franklin was given *carte blanche.* He was told to go ahead and do the job. Carrying out this plan to put the plant in 100% condition, coal pulverizers were put in the boiler room, the chain grate stokers were replaced by the unit pulverizers, two new 1124 horse power Stirling waste heat boilers were installed, boilers in the boiler room were reset and completely rebuilt, nothing being left of the old ones but the mud drums, an insignificant part. The Babcock and Wilcox boilers were divided, raised and reset, new main

and auxiliary steam headers were completed, the boiler room was extended, exhaust steam headers and branches were installed, the old pressure type feed water heaters were replaced by new open type heaters, the waste heat steam header was installed and completed, a new 7500 kilowatt turbo generator was installed, extensions were made to the cooling ponds, a new circulating water system, including two new circulating pumps was installed, and two circulating pumps were reconditioned, a water treatment plant was installed, the floors in the south end of the building were replaced, the compressors were altered to increase the air pressure for smelting purposes, and on the 80,000 cu. ft. compressor air pressure was lowered for the concentrating department. In fact everything was done necessary to bring the plant almost up to the 100% efficiency directed by Mr. Boyd. The items mentioned are, of course, but part of the expenditures. In fact, we were told that items which cost less than $5,000 were not included in the list. (T.-4213).

The contract provides "the price charged therefor * * * * shall be the operating cost including normal overhead plus 1/3 cent per kilowatt hour for profit" for power delivered to the Kimberly mine, and for the power which enters into smelting and concentration, it is to be actual cost, which under the contract is the direct operating expense plus overhead. As respects power costs, it is admitted that Coppermines was not charged the operating cost plus normal overhead, nor was it charged the actual cost of power. In power costs, Coppermines was given in modified form, "con-

formity", and power costs were "adjusted", in accordance with the formula prescribed by Mr. Boyd, Nevada's managing director.

Mr. Huffer told the Court:

> "Q. What you did in presenting bills to Coppermines was just to take power at a set figure without regard to what the actual cost was?
>
> A. That is true."
>
> (T.-4112).

Upon this subject, Mr. Boyd said that in 1927 he found the power plant in such bad condition that unless something was done immediately it could not continue to operate, so

> "I suggested to Mr. Kinnear that we get this plant back into shape. I told him that we would charge against operations only the *normal*—what might be called the *normal plant maintenance,* a sum corresponding to the amount of money we would normally pay out if we did none of these improvements, and at the end of the year any expenditures above what you might call a *normal* amount for maintenance of plant could be taken out of the operating costs and charged against capital. *I will admit that that probably is not accurate accounting but it was fair accounting and I did it for a fair purpose."*
>
> (T.-3761).

and again Mr. Boyd said:

> "A. I could not answer that, Mr. Thatcher. I gave you the total ex-fuel costs. What we meant

to do was to keep the cost of power even, and charge into it only such maintenance and repair expense as might be considered reasonable and *normal,* and keep the power the then-existing price.

Q. Then your purpose was not to maintain a normal maintenance but to maintain a normal cost during that period?

A. Yes, that is through 1928 and 1929.

Q. And to maintain that normal cost as fuel decreased you increased maintenance so as to keep the cost level?

A. Yes, as regards the years 1928 and 1929."

(T.-3861-2).

Coppermines was not to be given accurate accounting but it was to be given what Mr. Boyd termed "fair accounting", and what he conceived for a fair purpose. Coppermines was to be given "conformity." First it was to be given conformity on maintenance costs only, but later, when improvements brought about a radical reduction in fuel costs, the conformity formula was modified and the maintenance costs were raised by including items properly chargeable to capital, so that thereafter conformity was in the total cost.

Mr. Boyd's determination to give conformity in power costs is in every way comparable to Mr. Kinnear's direction to give conformity in metallurgical results. Mr. Boyd waived aside actual cost and accurate accounting and substituted for them his decision as to fair accounting. Mr. Kinnear, in metallurgical accounting, determined that the Lakenan-Fozard agreement was inequitable, and directed that it be not followed. Both Mr.

Kinnear, as respects metallurgical cost, and Mr. Boyd as to power cost concealed these practices from Coppermines. Coppermines was never advised or informed of either of them until they were disclosed through the trial of this case. We insist that the *ipse dixit* of Nevada's manager and managing director shall not be substituted for the contract of the parties.

The Court will note that the first instruction of Mr. Boyd was to go forward with the rehabilitation of the plant and to make the improvements, and at the end of the year any expenditures *above what might be called a normal amount for maintenance* should be taken out of the operating costs and charged to capital. We have from Mr. Boyd a recognition that these expenditures in the power plant for reconditioning and expansion and increased capacity were in fact capital. The plan called for extraordinary expenditures which would not have to be duplicated for many years. (T.-3855). Further, Mr. Boyd continued:

> "I thought that in view of our relations with Coppermines that Coppermines would be more than satisfied if at no cost to themselves in the way of additional power charges I got that plant out of its existing dangerous condition and got it back into shape, into such shape where Coppermines would enjoy lower power costs than if I left it alone."
>
> (T.-3761-2).

Coppermines had agreed to pay and Nevada had agreed to charge for power the actual cost when used in smelting and concentration, and operating cost plus usual and normal overhead and a profit when used by

Coppermines for mining. Depreciation and amortization are specifically excluded and, of course, capital charges are not a part of actual cost or of direct operating expense. Mr. Boyd, however, without the knowledge or consent of Coppermines, would graciously permit Coppermines to share in capital expenditures and to help build an additional plant which will remain the property of Nevada. One would think from the statement of Mr. Boyd that it was Coppermines and the enjoyment of lower costs on behalf of Coppermines that was the sole actuating purpose of Mr. Boyd in rehabilitating the power plant, this in the face of the condition of the plant which we have pointed out, Nevada's program for expansion and increased capacity, and the absolute necessity of rehabilitating the plant if it is even to continue operation.

These directions of Mr. Boyd resulted in including capital expenses in the costs charged to Coppermines and in an additional charge not provided for in the contract. It really results in Coppermines paying twice for these capital expenses, since the contract provides specific payments for depreciation.

The decreased costs to Coppermines referred to by Mr. Boyd up to date have been mythical.

Coppermines, as we have said, knew nothing about this, and so that its suspicions should not be aroused the costs were fluctuated between narrow limits so as to make it appear that they were in fact actual costs. So successfully was the scheme of concealment carried out that Nevada now solemnly declares that it cannot ascertain and does not know what the actual costs were.

The court will recall that prior to the trial and on March 30, 1931, Coppermines demanded a statement of costs, including labor and installation of the following items in the power plant:

1. Re-setting Old Boilers.
2. Installation New Boilers.
3. New Main Steam Line from Smelter and Header Lines.
4. Changes in Cooling Pond Pumps, etc.
5. Coal Pulverizers.
6. Changing 4½ pound Blower to 15 pound for Converter Air.

In response to this request Nevada advised:

"We are unable to furnish that information as to any of the items save those that were charged in whole or in part to capital. On these we can furnish the amount charged to capital. Such of the items as were so charged are now listed to you as follows (identified by your own numbers):

Plant	No. of Item	Nature	Cost	% Charged to Capital
Concentrator	4	Blower Building	$13,199.49	All
	9	Shimmin Filter	7,927.92	All
	10	Classifiers	134,667.02	All
Smelter	1	P. S. Converters	67,641.48	38%
	3	Cottrell Plant	172,521.30	All
	16	Hardinge Mill for Reverberatory Coal Pulverizer	19,304.55	All
Power Plant	2	Installation New Boilers	184,408.74	All
	4	Changes in Cooling Pond Pumps, etc.	49,260.99	All
	5	Change in Coal Pulverizer	37,583.65	All

> As to Item No. 2, called by you 'Installation new boilers', no new boilers were purchased. This item must be explained in connection with your Item No. 1, 'Resetting Old Boilers.' There were involved in these two items six boilers. The expenditures on the first two of the four Babcock and Wilcox boilers were made to reset them, and the cost thereof was all charged to operations, so that the amount expended therefor cannot be segregated. *The cost of remodeling the other two Babcock and Wilcox boilers was charged to operations except* $25,935.34, *which was charged to capital. The remaining two were Stirling boilers.* These were raised, reset and rebuilt, and the cost of so doing was charged to operations, and the greater part of the cost, in the sum of $158,475.40, was subsequently transferred to capital account."

This letter was signed by counsel, (on one occasion (T.-4747) was said to be "only a declaration of counsel"), but was written after a conference with Mr. Boyd. (T.-3850). The letter indeed discloses a strange situation. Six boilers were renewed and reset. As to the cost of renewing the first two boilers, Nevada knows nothing. As to the cost of setting the second set Nevada again knows nothing, but it says it did charge, of this cost, $25,935.34 to capital. As to the cost of renewing and resetting the last two boilers Nevada still knows nothing, except it says:

> "The greater part of the cost in the sum of $158,475.40 was subsequently transferred to capital account."

This $158,475.40 was designated as being the "greater part of the cost." Of course this shows that this was

not the entire cost. There can be no question from the very wording of the letter, that the renewing and resetting of the second two boilers and the last two boilers greatly exceeded the respective sums of $25,935.34 and $158,475.40.

In the face of the admission made by Nevada that the cost of renewing and resetting the last two boilers was in excess of $158,000, Mr. Inwood had the effrontery to declare in his Exhibit 14th-64 an estimate for these same items of but $90,024.88. From the letter we know that the four boilers, namely the second two and the last two, cost to renew and reset in excess of $184,000, yet Inwood estimates this item at only $109,756.96. (Exhibit 14th-64a, p. 48). This is but another instance of the lack of integrity in the Inwood appraisal. This Court should never have been asked to weigh the testimony and appraisals of Inwood as against the solemn admission of Nevada, made through its counsel and with the consent and approval of its managing director.

Nevada pursued, at least to a very considerable extent, the same methods of concealing costs and in padding and increasing costs, as respects power as it did with reference to the smelter and concentrator. It used the accounts of "repair labor" and "material and supplies" (excluding fuel) to cover up capital expenditures.

As respects these expenditures which were made in connection with the rehabilitation of the power plant and charged to operating costs, it was *admitted by Mr. Boyd that they were extraordinary in character, that*

they were major repairs and replacements and that these extraordinary expenses for repair labor and material and supplies made during the three years will not be duplicated again during the life of the contract and that there will be a lowering of cost as a result of these expenditures. (T.-3855). Mr. Boyd also testified that there will be a decrease in the cost of power because of the improvements which had been made, that the amount which had been charged to capital and the amount which was charged to operating expense will both contribute to lower power costs in the future. (T.-3852).

Due to the accounting instructions of Mr. Boyd and Nevada's methods in keeping its accounts, the cost of the general plan of rehabilitation of its power plant and expansion of its capacity during the period from the date of the contract on cannot be ascertained. Nevada, treating ores for Coppermines upon the basis of *actual cost* plus a fixed profit, is unable to say what the actual cost was. Occupying a fiduciary relation and one of trust and confidence, keeping the only books and accounts dealing with the transactions and the only party in a position to know the actual cost and the detail thereof, it deliberately and intentionally so kept its records that not even Nevada can now ascertain the truth.

Nevada, in an endeavor to support certain items of cost, was compelled repeatedly to resort to appraisals. These appraisals were of such items as Coppermines was able to point out. Strange it is that not a single

item was brought to the attention of the Court through the initiative of Nevada. As to the power plant, the detail of the expenditures which made up this rehabilitation and expansion of the plant are almost completely lacking. It was impossible for Coppermines to know what was done and therefore, of course, it could not make an appraisal of the work except in a few isolated instances. An estimate was made of some of the items in order to show that very large sums were involved, but it was apparent that with the information which Nevada was willing to furnish the complete information could not be presented through appraisals.

In this situation Coppermines was forced to present to this Court expert testimony as to what would be a reasonable cost of power and to compare such reasonable cost with the arbitrary charge made by Nevada under the direction of Mr. Boyd. We are compelled to contrast this reasonable cost with a cost found, not through accurate accounting, but through what Mr. Boyd declares to be "fair accounting", conceived for a "fair purpose", out of consideration for Coppermines.

Mr. Jourdin's Evidence as to Reasonable Cost of Power

Upon the question of reasonable cost Coppermines presented the testimony of Mr. W. W. Jourdin and Mr. George G. Devore.

Mr. Jourdin is an electrical expert of national standing. He has specialized in power plant designing and operation for twenty years and this work has made

him familiar with nearly all power plants of any moment. Since 1911 he has been connected either as chief engineer in charge of power plants or as a consulting engineer for power plants operated in connection with copper mining and copper treatment enterprises. He is eminently fitted, therefore, to present this phase of the situation to the Court.

Mr. Jourdin made two trips of inspection to the power plant of Nevada. These trips were made after the major portion of the rehabilitation and expansion program had been carried into effect. As to the McGill plant, its facilities and operating conditions he says in substance:

> "I would say that the McGill plant compares favorably with other plants of that size in both the industrial and public utility field. The McGill plant has two fairly new turbine generators, one installed in 1925 and 12,500 K. W. and the other installed in 1929, a 7,500 K. W. unit which has been carrying the load in recent years. They have two earlier turbines that are not so good; they are seldom operated. The two that I speak of are modern machines as to steam consumption.
>
> A number of the boilers have recently been reconstructed; new furnaces have been put under the boilers, water cooled furnaces which make them modern in every respect except as to steam pressure. They are alright as to steam pressure, however, because they will superheat the steam up to 650 degrees.
>
> They have a coal pulverizing plant that is quite new; that is it has been installed within the last several years. As I stated before, the steam con-

ditions compare favorably with other modern plants except as to the pressure being somewhat low. The vacuum is exceptionally good. I saw approximately one inch back pressure on the turbine in March which is quite good.

Most of the mining plant loads where they have a large concentrator such as at McGill, have a much higher load factor throughout the year than the average industrial plant or public utility plant. Therefore, I would say that this plant is fairly above the average plant outside the mining industry as to load conditions.

The feed water is extremely good. They never considered it necessary to treat this water up to the past two or three years. Very little treatment is required. They have put in a little softener but it does not require much treatment. It is very good feed water, extraordinarily good feed water.

The coal is fairly good. They do not seem to have any trouble in the furnaces with slag such as they do elsewhere. I will say that this coal is very easily handled. The cost of the coal is about $4.50 a ton there; that is about 18¢ a million B. T. U. It is about on an average as throughout the country.

The plant is well operated. They have competent operators and their supervision is very good.

In view of my experience in operating such plants and also as a designer of power plants and from my study of operating costs, my opinion as to the relative cost of power at McGill and at other plants operating under similar load conditions, I would say with the same price of coal and the favorable load conditions that the McGill plant costs

would probably be slightly less than the average good plant over the country. It should be a little bit less than the average plant of that capacity and type."

(T.-3039-42).

Mr. Jourdin at the outset states that there are two elements of cost to be considered. These are (1) Fuel Cost and (2) Ex-fuel Cost.

Fuel Cost

Fuel costs embrace the invoice price of the coal, the cost of transportation, and the expense of handling and preparation. The total expense of fuel is divided by the corresponding net output of power expressed in kilowatt hours or kilowatt years and this gives the unit cost used for the purpose of comparison, analysis and charges.

Mr. Jourdin testified that Nevada's method of computation of fuel costs as shown on its cost sheets is erroneous, because a part of the steam used in the power plant was generated in the waste heat boilers, located in the smelter and operated through the use of the hot gasses which flow from the furnaces, and that Nevada, in giving credit to the smelter for this waste heat steam, had charged more for it than the cost of generation in the direct fired boilers of the power plant. The charge or credit should be the same as the cost actually incurred in the power plant. (T.-3047-8).

Mr. Jourdin also pointed out a further error in calculating fuel costs at McGill. Mr. Jourdin pointed out

that at McGill all power generated is not in the form of electric energy, but consists of electric power, air power for the concentrator and smelter, and steam heat for various industrial and domestic purposes, and at McGill all this steam is calculated as representing electrical energy, and that in converting the steam used for other purposes than electrical generation errors in computation have been made. (T.-3044).

Mr. Jourdin testified that he took these errors into account in his computations and made corrections for them accordingly, but only so far as they affect mining power sold to Kimberly, and that he did not take them into account so far as smelting and concentration are concerned because the credits would offset increase in cost, and it is therefore immaterial and but a "pocket to pocket" transaction.

In presenting his testimony and his exhibits 14th-a/c-L and L-1, which deal with the cost of power delivered to Coppermines for mining purposes at Kimberly, Mr. Jourdin proceeds upon the following assumptions and considerations:

(1) The actual cost of the total amount of fuel as shown in Nevada's records is accepted.

(2) The excess credit to smelting operations for the waste heat steam delivered is corrected.

(3) Nevada's records showing the amount of power generated and amount of steam consumed in the various operations are accepted.

Mr. Jourdin analyzes the charges made for power

sold Coppermines for mine purposes at Kimberly during the years 1926, 1927, 1928, 1929 and 1930. The average load at the McGill plant during these years was 10,400 kilowatts and Mr. Jourdin testified that with a plant similar to the McGill plant and at comparable load conditions, a reasonable fuel cost would be 4 mills per kilowatt hour. (T.-3049). Mr. Jourdin had been furnished with Nevada's power plant operating data for January, 1931, and using this data he demonstrated that had all the power produced in this month been generated by the power plant direct fired boilers and converted directly into electric energy, the fuel cost would have been 4.215 mills per kilowatt hour instead of the 4.946 mills shown on Nevada's cost sheets. This is merely another way of saying that had proper credits been allowed the smelter for waste heat furnished the power plant, and had the conversion of steam and air power into electric power been correctly calculated, the fuel cost would have been 4.215 mills. (Mr. Sanders later admitted that Nevada used a factor of 1.50 instead of the proper factor of 1.34, in converting the horse power of steam and air produced into kilowatts.) (T.-4282). This resulted in reporting a low figure for total kilowatts produced, and the fuel cost per kilowatt as reported was consequently too high. The average load during January, 1931, was 5,800 kilowatts and Mr. Jourdin next shows that at a load of 10,400 kilowatts, the average during the period Coppermines complains of, this cost would be reduced about 5% or to a figure of 4 mills, as reasonable cost.

Ex-Fuel Costs.

In dealing with ex-fuel costs, they are the same both as to Kimberly power and McGill plant power. Ex-fuel costs, as the power accounts are kept at McGill, consist of:

(a) Operating labor, including local supervision.
(b) Repair labor.
(c) Material and supplies.
(d) Water expense.

The items Repair Labor and Material and Supplies have at times, in the testimony of witnesses, been grouped under the item "Maintenance". In power, which is itself a distributable account, overheads are not included. The general administrative expense is distributed only to mining, concentrating and smelting cost. (T.-9090-1). This fact will be again referred to in a discussion of the comparison of costs between McGill and Ray.

Mr. Jourdin, in analyzing the McGill costs, was immediately impressed with the abnormal ex-fuel cost. In this respect he testified in substance as follows:

> "Nevada's figure as shown in table 3 of Exhibit 14th a/c L-1, being much higher than 1½ mills, can be accounted for undoubtedly by a lot of charges in there that do not belong there, apparently in the nature of capital expenditures. I have heard the testimony here to the effect that there were capital expenditures which were included in the operating expense of the power plant. I have a table showing my detail of costs compared with those reported by Nevada."
> (T.-3053).

> "I did learn that about half a million had been spent on reconstruction work in that plant since 1926; in fact my own calculations show there must have been a considerable sum of money so expended, otherwise they would not have gotten this heavy excess over my 1.5 mills for ex-fuel."
>
> (T.-3095).

In his exhibit 14th-a/c-L-1 he says:

> "These extraordinary costs *other than fuel, which in* 1930 *almost equaled the fuel cost* (itself too high) plainly indicate that large amounts of money were included therein which by no stretch of imagination were properly chargeable to electric generation."

Nevada's witnesses all admitted that extraordinary expenses were incurred in the rehabilitation and expansion of the power plant. Mr. Boyd so testified, and also stated that they were extraordinary in character. Mr. Boyd further recognized this fact when he issued his order not to charge Coppermines the actual cost of operation, but to give it "conformity" in various forms. The admission of extraordinary expenditures is also made in subsequent testimony and statements of Nevada in its defense when we are told by Mr. Boyd, Mr. Kinnear and Mr. Huffer that the excess cost over and above the Boyd "usual and normal charges" *were in part charged to capital* and part included in maintenance.

However, after these adjustments were made in line with Mr. Boyd's instructions, Mr. Kinnear and Mr.

Huffer found that the costs were still less than the arbitrary figure designated by Mr. Boyd. They then went beyond Mr. Boyd's instructions and failed to capitalize even the remaining portion of these extraordinary expenditures. This was accomplished through the suspense account into which a part of the remaining expenses were charged and subsequently transferred into operating charges whenever the costs could include them without becoming so high as to arouse suspicion. This is shown by Exhibit 14th-AG-4, where it appears that $153,000.00 was juggled in and out of the suspense account, during the year 1929, but finally landed in power operating costs. The 1929 unit power costs were the highest of any year during the period in controversy, although the output from the power plant was the greatest.

During the trial Coppermines demanded the annual letter for 1930 from Mr. Kinnear to Mr. Jackling. The extraordinary nature of certain of the expenditures and the capital character thereof are clearly shown in this letter:

> *"While the efficiency for the whole plant has been increased, the horse power cost per annum has remained the same. However, this can be accounted for in improvements to the plant, consisting of building additions, new centrifugal compressor installation for the Ingersoll-Rand unit and new steam lines in the power plant and waste heat boiler plant. The following tabulation shows a comparison of these items for* 1930 *against* 1927, *a normal year for improvements*:

Year	Building Labor and Supplies	Centrifugal Compressor Labor and Supplies	Steam Lines Labor and Supplies
1927	$3,708.43	$6,372.63	$7,606.71
1930	34,767.67	28,480.68	25,292.72

The expenditures for these three items should not recur in the year 1931.

Mr. Jourdin's conclusions, however, were not based upon these letters or testimony, but upon his experience in connection with plants similar to that at McGill and his knowledge and familiarity with many other plants, and data available to him in his profession. Under the conditions prevailing at McGill and the load conditions there prevailing during the period in controversy and under consideration, Mr. Jourdin gives as his opinion that an ex-fuel cost of 1.5 mills per kilowatt hour would be ample. Mr. Jourdin in substance testified:

> "I get at the 1½ mills by a study of a large number of operating costs of various plants, which have been plotted for various loading conditions and curves drawn and then picking off from these curves this particular loading condition for the McGill plant. As a matter of fact, the 1½ mills is a pretty liberal figure, because most of these plants consume nearer 1 mill than 1½ mills. I have set up a number of power plant jobs where we only use 1 mill other than fuel and we may improve on these estimates, but those were always modern plants, 400 pressure plants. I am making some allowance for that in the 1½ mills. The Inspiration plant, for years before water power came in and spoiled the load by throwing a very

erratic load on the plant, and a very light load, producing power for less than 1 mill. It is a fact that its best was less than 1 mill per kilowatt hour. It seldom exceeded 1¼ mills per kilowatt hour."

(T.-3051).

"The Inspiration plant is about as near a duplicate as to capacity and operating conditions to the McGill plant as you can find. I have been there for fifteen years now and have been pretty closely connected with it."

(T.-3041).

"In view of my experience in operating such plants and also as a designer of power plants and from my study of operating costs, my opinion as to the relative cost of power at McGill and at other plants operating under similar load conditions, I would say with the same price of coal and the favorable load conditions the McGill plant costs would probably be slightly less than the average good plant over the country. It should be a little bit less than the average plant of that capacity and type."

(T.-3041-2).

(See also Ex. 14th a/c-L-1, p. 3).

In further substantiation of his conclusion that 1.5 mills was ample for ex-fuel costs for the McGill plant under prevailing conditions, Mr. Jourdin presented a reproduction of the Piggott curves. Ex. 14th a/c-L-3 and L-3a). These curves were compiled by Mr. R. J. Piggott, outstanding authority on power matters, in connection with a technical paper before the American

Society of Mechanical Engineers. The article and the charts represent data from 40 representative plants in the industrial field, and are thoroughly representative in that they are gathered from plants ranging in capacity from 1,000 to 300,000 kilowatts. (The McGill plant capacity is approximately 25,000 kilowatts).

It was the testimony of all the witnesses that ex-fuel costs will vary with output. Increase in output will decrease the unit ex-fuel cost and a decrease in output will raise them.

As to ex-fuel costs it will be found that the *out-of-pocket total expense* in dollars and cents for a *given* plant will be almost constant regardless of output so that when output is increased the unit costs decrease. It is a universally recognized principle that ex-fuel costs vary with output.

This situation is illustrated by the Piggott curves where ex-fuel cost with a yearly output of 10,000,000 kilowatt hours is shown to be 3.6 mills, and decreases to 1.7 mills with a yearly output of 50,000,000 kilowatt hours (approximately the Hayden plant). Ex-fuel cost with a yearly production of 90,000,000 kilowatt hours (approximately McGill plant, 1926-1930 average) is found to be 1.335 mills, and where the yearly output is 220,000,000 kilowatt hours, the ex-fuel cost is but 1 mill.

On the Piggott curve exhibit we have plotted the cost experienced in power plants operated in connection with copper mining and treatment enterprises.

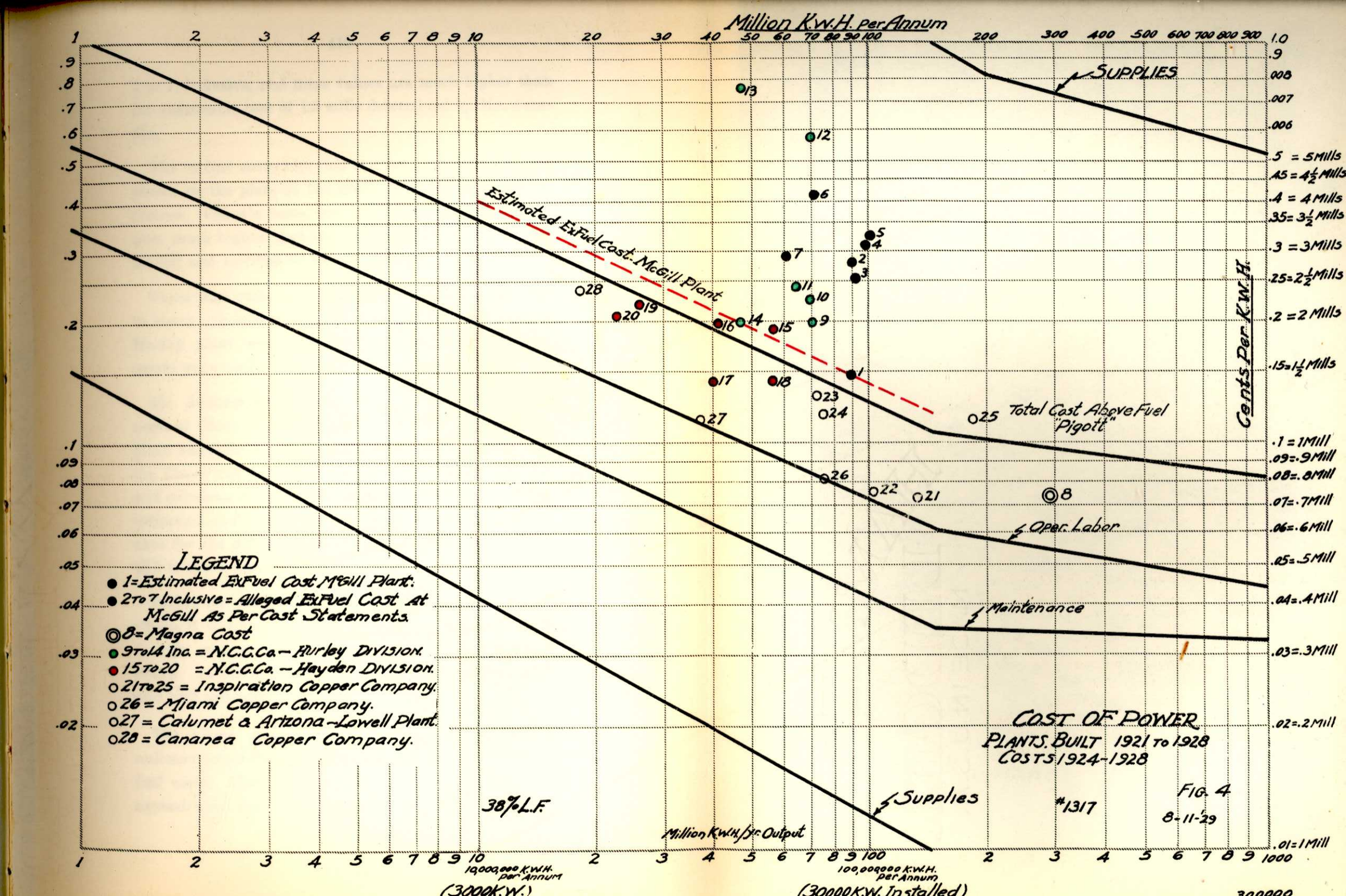
The Piggott curve is Defendant's exhibit 14th a/c-L-3,

and, with the additional information, is 14th-AK-7, and is inserted here as Plate IV.

The actual ex-fuel costs, which we claim were experienced at the McGill plant, are shown by the broken heavy red line, and, at the McGill average of annual output has been 90,000,000 kilowatts, the intersection of the broken heavy red line by the vertical line, representing 90,000,000 kilowatt hours annual output, is plotted as the point indicating the ex-fuel cost experienced at McGill.

Mr. Jourdin testified that he fixed the ex-fuel costs at McGill by using the Piggott curve; that he took a plant with an annual output of approximately 90,000,000 kilowatt hours corresponding to the average for McGill for the period from 1926 to 1930; that he carried up the vertical line on the plat until it came to the point on the Piggott curve intersecting the ex-fuel costs for a similar plant. This would have given him a cost of 1.335 mills per kilowatt hour. But Mr. Jourdin said he determined to provide a margin of safety and to allow ample for ex-fuel costs at McGill, and that he therefore moved up to 1.5 mills per kilowatt hour as being fair and reasonable ex-fuel costs for the McGill plant, and probably more than that which should have been experienced. Then he plotted the red line parallel to the Piggott curve using 1.5 mills as a base and with decreasing output down to 10,000,000 kilowatt hours per annum.

The arbitrary ex-fuel costs charged at McGill as part of the actual costs are shown as the black dots, Nos.



COST OF POWER

PLANTS BUILT 1921 TO 1928
COSTS 1924-1928

#1317

FIG. 4

8-11-29

2 to 7, inclusive, and these values are much higher than the reasonable cost of 1.5 mills determined by Mr. Jourdin.

The ex-fuel costs reported for the Chino division are shown on the plate as the green dots, Nos. 9 to 14, inclusive. Chino's costs reported are, with one exception, much higher than the reasonable cost claimed for McGill and testified to by Mr. Jourdin.

These high costs were, according to Mr. Jourdin, due to heavy expenditures made during two years when the Hurley plant was reconstructed, and these improvements apparently were included in operating cost.

Mr. Jourdin points out, however, that the ex-fuel costs at Chino in 1931 (Point 14 on Plate IV, after the plant had been reconditioned), dropped to 2 mills, and the Court will note that this cost falls on the red line and coincides exactly with Jourdin's testimony and the estimated ex-fuel cost for the McGill plant when allowance for the difference in the load at Chino and at McGill is taken into consideration.

Before the extraordinary improvements were made at Chino, it was also experiencing a cost of approximately 2 mills with an annual output of 70,000,000 kilowatt hours. In other words, the ex-fuel costs during 1926 and 1931 are very close.

The Chino statistics demonstrate that the extraordinary expenditures had practically no effect upon ex-fuel costs. They were the same before and after the expenditures were made. This corroborates Mr. Jour-

din's opinion that the extraordinary expenditures made at McGill did not substantially affect the ex-fuel costs.

The statistics submitted by plaintiff regarding the power costs at Chino can have no bearing upon the issues here because the Chino costs include charges for replacements and improvements of important proportions made at a single time which will benefit operations for years to come. These expenditures should have been charged to capital. (Mr. Boyd, T.-3755-56). Chino statistics do show very definitely that when extraordinary expenditures were not included in operating cost that the ex-fuel costs experienced at Chino coincided very closely with the charges which Mr. Jourdin gives in his opinion as fair and reasonable costs.

Ex-fuel costs at the Hayden plant of Nevada are shown by the red dots, Nos. 15 to 20, inclusive. The Court will recall that Nevada presented Ex. 14th-55 and that this exhibit purports, on pages 1 and 2, to show the ex-fuel costs experienced in the Hayden plant. This exhibit was presented by Mr. Franklin and was introduced for the purpose of showing the comparison between Hayden's ex-fuel costs and those at McGill, and to show that Jourdin's cost was unreasonably low. The Court was led to believe, and it was so stated, that these Hayden costs were upon a comparable basis and that the same items and elements of cost, and the same measures of output, were used for the purpose of comparison at McGill and Hayden.

During one of the recesses, Coppermines' representatives inspected the power records at Hayden and *it*

was then found that Plaintiff's Exhibit 14*th*-55, *pages* 1 *and* 2, *dealing with Hayden costs, did not conform to the records kept at the plant.* These discrepancies are shown by Ex. 14th-AK-6 and this exhibit gives the correct ex-fuel costs at Hayden during the period dealt with and places them upon a comparable basis with the costs at McGill.

At Hayden, overheads and other charges were included in some of the years, and in other years they were not, and delivery charges were included in some years, and in some they were not. None of these items are included or make up any part of the cost of power at McGill. There these items are distributed to other departments. The correctness of Ex.-AK-6 is not disputed, and the correct ex-fuel costs experienced at Hayden comparable to McGill are plotted on the Piggott curves (Plate IV). The red dots, Nos. 15 to 20, inclusive, representing the actual ex-fuel costs experienced at Hayden, fall, with one exception, well below the Jourdin ex-fuel cost. The only one that is higher is No. 15 and it is only slightly higher, and the average for the entire period is well below, and forcibly emphasizes the fact that very ample allowance was made by Mr. Jourdin in his fixing of reasonable cost.

The Court will note that four of the points are not only below the McGill red line but are below the Piggott line.

Ex-fuel costs actually experienced at the Inspiration plant are shown in the circles, Nos. 21 to 25 inclusive. The Inspiration plant very closely duplicates

the McGill plant as to operating conditions and capacity. (T.-3041). The Inspiration costs are actual costs found by proper standard accounting methods. A comparison of these costs with the alleged ex-fuel costs at McGill is illuminating. At Inspiration, where actual costs were found and where there was no "conformity," we find that the ex-fuel costs, with but one exception, all fall below the Piggott line. The only exception is circle 25 which would fall almost exactly on the estimated ex-fuel costs of McGill if the red line be extended.

We desire to point out to the Court that the Inspiration ex-fuel costs closely accord with the ex-fuel costs at Hayden. They are not only below the reasonable cost which we claim for McGill, but, as we have pointed out, are generally below the Piggott line.

Inspiration achieved an ex-fuel cost of 1.351 in the year 1927, even after the load had been spoiled by the tie-up with hydro-electric power from the Roosevelt Dam. (T.-3051).

On the Plate IV is also shown the ex-fuel costs for Miami, Calumet and Arizona, Lowell plant, and Greene-Cananea. Actual ex-fuel costs for all of these plants are well below Mr. Jourdin's reasonable cost claimed for McGill. At Greene-Cananea, with an annual output of only 18,000,000 kilowatt hours, the actual ex-fuel cost experienced was but 2.467 mills. Had McGill's output been but 18,000,000 kilowatt hours the Piggott curve would show the Jourdin cost then amounting to 3.1 mills per kilowatt hour, which further demonstrates that his

basic figure of 1.5 mills at 90,000,000 kilowatt hours output is reasonable and on the high side.

Defendant's exhibits and the testimony of Mr. Jourdin, all of which may be said to be summarized and graphically stated on plate IV, conclusively demonstrates that the McGill costs charged against Coppermines are out of proportion to actual ex-fuel costs, and that they cannot be justified by comparing them with ex-fuel costs experienced anywhere.

Mr. Jourdin further presented his exhibit L-8, a table giving cost and operating data for 17 different power plants. Some of these plants had larger capacity and larger output than the plant at McGill. On the other hand the plants listed were being operated with a lower load factor than at McGill. The average ex-fuel cost for the plants listed in this exhibit was 1.1 mills per kilowatt hour. (T.-3066). Three of these plants, namely plant C, the Grand Tower plant, plant L, the Tulsa plant, and plant M, the Pineville plant, had annual outputs of less than 100,000,000 kilowatt hours. These plants were directly comparable to McGill. Taking the data shown on this exhibit for each plant and deducting the fuel cost and translating from monthly to annual output we would find the following:

Plant	Annual K.W.H. Output	Actual Ex-Fuel Cost	Ex-Fuel Cost from 14th-AK-7
C-Grant Tower	5560000 × 12	4.87 —3.14	1.7 mills
	= 66720000	= 1.73 mills	
L-Tulsa	4393000 × 12	4.74 — 3.27	1.93 "
	= 52716000	= 1.47 mills	
M-Pineville	4660000 × 12	2.69 — 1.32	1.90 "
	= 55920000	= 1.37	

We find, therefore, that the "C" plant actually experienced 1.73, or almost exactly that of the average plant with the same output on the Piggott curve, which is 1.7 mills, and as to the "L" plant and the "M" plant, the actually experienced ex-fuel costs are substantially less than those on the Piggott curves.

Mr. Jourdin gives as his opinion that a fair and reasonable ex-fuel cost at McGill should not exceed 1.5 mills per kilowatt hour, and as respects this value he says that it is high in comparison to ex-fuel costs actually experienced at other plants, and that in this figure he provides an ample margin of safety.

Mr. Jourdin is supported in this estimated reasonable cost by the ex-fuel costs actually experienced in the 40 representative plants analyzed by Mr. Piggott. *In addition, this figure as to reasonable cost is in fact materially higher than actual ex-fuel costs obtained on all the power plants operated in connection with copper mining enterprises and which have been considered in the evidence in this case, with the exception of the Hurley plant of Nevada.* Even the Hurley plant produced ex-fuel costs almost exactly the same as those declared by Mr. Jourdin when extraordinary expenditures for capital investment were not introduced into the cost. Mr. Jourdin's figure is unescapable.

Throughout the testimony presented by Coppermines, the reasonable ex-fuel cost, which is sometimes called the estimated actual ex-fuel cost, is referred to as 1.5 mills. This, of course, is based upon an annual output at McGill for the period from the date of the contract

to December 31, 1930. This figure will vary with the output and this variation is shown on the Piggott curves. Counsel for Nevada cross examined at length in an endeavor to show that the Jourdin ex-fuel cost could not have been obtained until after the McGill plant had been rehabilitated. Mr. Jourdin's testimony shows that the rehabilitation primarily improved the fuel cost and that in fact it had but little effect on actual ex-fuel costs. He further stated, however, that he had given consideration to this element and in fixing the figure of 1.5 mills as the reasonable actual ex-fuel cost, he had made it higher than he otherwise would have done. He said:

> "I do insist that before these improvements were made, Nevada should be held to the 1.5 mills ex-fuel cost that I determined. The improvements did not tend to reduce the ex-fuel cost."
>
> (T.-3097).

And again:

> "I have a pretty good margin in that 1.50. I have applied that average figure throughout the period so as to take care of the possibility that this figure might be lower than that figure. I could not reasonably put down 1.6 here or 1.4 there; I just used a flat figure all the way through, because I have a pretty good margin there throughout. I intended to have in that an ample margin there to cover the entire period with which we are dealing and for any one period in that entire period, to cover not only the change in the plant addition but to cover the varying prices of material. If the reconditioning that I learned was done in the years

> 1928 and 1929, and still going on in August, 1930, had not been done and the plant was in the condition that it was before that $500,000 was spent on it, I would still insist that you should produce power other than fuel for that figure in the earlier years."
>
> (T.-3098-9).

We further point out that the testimony shows that fuel costs are the big item of total power costs. Fuel costs make up from 70% to 80% of the total cost of power. (T.-3056). Ex-fuel costs make up only from 20% to 30% of the total cost. Ex-fuel costs therefore were approximately 1/3 of the fuel cost.

Keeping this proportion in mind, namely, that ex-fuel costs are approximately one-third of the fuel costs, we find from an examination of Nevada's cost records that the average fuel cost for the years 1927 to 1930 was 5.39 mills per kilowatt hour. (Ex. 14th a/c-L-1). If the proportion is applied, the ex-fuel costs were 1.8 mills per kilowatt hour. Nevada's cost sheets, however, were erroneously kept, as pointed out by Mr. Jourdin, in that improper credits were given the smelter for waste heat. The true fuel costs at McGill were only 4 mills per kilowatt hour. Applying the proportion to this true fuel cost, we would have an ex-fuel cost of 1.33 mills per kilowatt hour. This analysis would apply to the Kimberly power. If we finally take the cost of fuel as shown by Ex. 14th a/c-L-6, which is an average for the entire period of 4.86 mills per kilowatt hour, and apply the same proportion, we would correspondingly arrive at an ex-fuel cost of 1.62 mills.

In connection with this whole discussion, we point

out that Mr. Franklin had occasion to prepare and present to the Public Service Commission of Utah a thorough and comprehensive report and estimate for a proposed plant at Magna, Utah. (Ex. 14th-a/c-T-3). The figures and calculations were not made for the purpose of litigation with Coppermines but were intended to be a thorough engineering analysis of power cost for practical use and for presentation to the Utah Commission for the purpose of arriving at what were fair and reasonable rates to be charged to a copper mining company engaged in mining and concentration of ores. Mr. Franklin there adduced an ex-fuel cost for the proposed Magna plant materially less than that which Coppermines claims to be a fair and just charge. (T.-8025).

Mr. Devore's Evidence as to Reasonable Cost of Power.

Mr. George G. Devore was next called as a witness for Coppermines upon this question of reasonable cost of power. We have previously pointed out to the Court Mr. Devore's qualifications and standing. Mr. Devore dealt with the subject from a somewhat different standpoint. He did not go into a detailed discussion of Nevada's ex-fuel costs, or the proper charges or credits for waste heat. He assumed that Nevada's records, as respects fuel, were correct. He dealt with the situation by an analysis and comparison of maintenance. Maintenance is but part of ex-fuel costs. (T.-3394½).

Mr. Devore did not go into detailed examination of Nevada's records as regards electric power, air power and steam heat. He submitted his findings and opinion on the basis of an all-electric power generation, and the record clearly evidences that this was a reasonable

and proper basis. Electric power, air power, and steam power all enter into the power account at McGill. Air power costs more to produce than electric power, but, on the other hand, steam heat costs materially less. Approximately 80% of the McGill power is electric power; 10% is air power and 10% is steam heat. Mr. Devore's consideration, therefore, of the entire production as to electric power is advantageous rather than disadvantageous to Nevada. (Jourdin, T.-8021).

Mr. Devore analyzed the charges made for repair labor, and material and supplies, and in his testimony before the Court he grouped these items under the nomenclature of "maintenance." In analyzing the maintenance charges, and in arriving at a determination of what was a reasonable maintenance cost, Mr. Devore relied upon his long, thorough and actual experience in the power field, and upon the great store of data and information at his disposal, representing actual operation of a great number of steam plants.

Mr. Devore said:

> "Based upon my experience and investigations and comparisons which I have made and based on a load factor of 75 per cent and other data available from other plants, in my judgment, the maintenance cost of the McGill plant should be .60 mills per k.w.hr. I prepared an exhibit upon the basis of a maintenance cost of .60 mills per k.w.hr."
>
> (T.-3387).

And again:

> "In using .6 of a mill for maintenance I have

allowed what I believe to be the maximum maintenance on the average for the years in question and that is based on the records heretofore discussed and from information which I have had in my experience."

(T.-3394).

(That Mr. Devore made a liberal allowance for conditions at the McGill plant is supported by the Piggott curve which shows that normal maintenance under comparable loading conditions would be .045 mills.) (Plate IV).

Mr. Devore found that the McGill plant was operating practically with a 75% load factor and, therefore, under very favorable conditions.

Load factor was explained as being the proportion that the average load bears to the peak or highest load during the same time interval. Mr. Devore in his comparison used a load factor of 75% as being comparable to the load factor at McGill. As to the effect of load factor upon ex-fuel costs and maintenance costs in particular, Mr. Devore testified:

"I found that the maintenance costs as shown by actual records of a large number of plants, does not increase materially with the increased load factor but rather it varies inversely as the load factor. The maintenance cost on the plants as indicated here are all low load factor plants. That is, as an example, a plant with a 20,000 kilowatt demand might create, under the second column of figures, a load factor of 32.8 per cent. The maintenance cost would be, as indicated, 1.8 mills. If

> that plant had turned out more kilowatt hours, and increased its load factor to 75 per cent, I have found from the records that the maintenance cost does not increase materially, the average indication being that an increase of 15 to 20 per cent in the total cost would be comparable between a 40 per cent load factor plant and a 75 per cent load factor plant; so that applying this correction to these low load factor plants we would obtain a figure which would be my estimate of the revised cost of maintenance for those plants if those certain plants were putting out additional power and increasing their annual load factor from the amounts indicated to 75 per cent.''
>
> (T.-3381-82).

Mr. Devore states that he found that maintenance costs vary inversely with the load factor, and this formula is rigorous and axiomatic. The variation, however, is not always in direct proportion and some modifications must be applied.

This compensating factor is necessary, due to the fact that an actual outlay in money for maintenance will slightly increase with the higher load factor and consequent higher output. In other words, if the load factor be changed from 40% to 75% the new maintenance cost per unit of kilowatt hour will not be exactly 40/75's of the old one, but some additional maintenance in the form of repairs and supplies will be used, and it will be higher by 15% to 20% due to the increased output of power. This 15% to 20% factor is to be applied, according to Mr. Devore, where there is a spread between 40% and 75% load factor. It will not

apply where the spread is slight or comparatively slight, or where the spread is greater than between 40% and 75%. Where the spread is large, as for instance between 15% and 20% and 75%, then something more is to be added as a compensating factor to take care of the extra maintenanec cost. When the spread is only between 60% and 75%, then the compensating factor is to be less. The formula is but a practical interpretation of actual operating experience.

Mr. Devore introduced exhibit 14th-a/c-N-7-A and exhibits 14th-a/c-N-8, N-9 and N-10. These exhibits list the actual performance of a number of steam plants with a load factor different from the McGill load factor of 75%.

Mr. Devore applied his experience, knowledge and information and calculated what the maintenance charges *would have been on each of the respective plants* had it been operated with a 75% load factor. In making the computation, Mr. Devore varies maintenance inversely with the increase in output, but makes 15% increase to compensate for the increased output and consequent out of pocket expense. He applies the 15% throughout rather than use varying percentages, although the load factor in each case is somewhat different than the basic 40%. The calculation is intended to be illustrative. That this was entirely reasonable cannot be questioned and as long as the same factor was applied to plants with load factors less than approximately 40%, as well as to the plants with load factors of more than 40%, particularly as it will be noted that the average load factor for all of the thirteen plants listed in Ex. 14th

a/c-N-7-A is 38.4%. The same applies to the plants listed in Ex. 14th a/c-N-8 where the average load factor is 48.1%, and where, of course, the 15% allowance was more than fair. The load factors in the plants listed in Exhibits 14th a/c-N-9 and N-10 were approximately 42.6% and 39.5% respectively.

Ex. 14th a/c-N-7-A deals with thirteen plants with data for the year 1922. Mr. Devore, by using a 75% load factor calculates that the average maintenance for these plants would have been .59 mills. Data was available for the year 1930 as to seven of the same plants, and they are listed in Ex. 14th a/c-N-8, and, similarly, Mr. Devore finds a maintenance cost of .43 mills. Ex. 14th a/c-N-9 deals only with the San Diego plant, and there Mr. Devore arrives at .41 mills, and for the Pasadena plant (N-10) .21 mills. These figures are all below Mr. Devore's allowance of .6 mills as reasonable and ample maintenance costs for the McGill plant.

Mr. Jourdin and Mr. Devore attacked the problem in different ways but the results are, in effect, the same, Mr. Devore's allowance for reasonable cost being slightly lower than Mr. Jourdin's.

Mr. Devore applies, with a modification or compensating factor favorable to Nevada, the well-known and accepted principle that maintenance and/or ex-fuel costs vary inversely with the load factor. This rule is positively asserted by every accepted authority:

> "General Lectures on Electrical Engineering," *by Charles P. Steinmetz, Fifth Edition,* 1918, page 44:

"The cost of electric power essentially depends on the load factor. The higher the load factor, the less the cost of power, and a low load factor means an abnormally high cost per kilowatt. This is the case in steam power, and to a greater extent, in water power.

"For the economical operation of a system, it therefore is of greatest importance to secure as high a load factor as possible, and consequently, the cost — and depending thereon the price — of electric power for different uses must be different if the load factors are different and the higher the cost, the lower the load factor."

Also, on page 46, he refers to a curve and says:

"This load curve, superimposed upon the summer lighting curves, does not appreciably increase the maximum, but very greatly increases the average load, as shown by the dotted curve in Fig. 14; and so improves the load factor, to 65.4 per cent — thereby greatly reducing the cost of the power to the station, in this way showing the great importance of securing a large motor load."

"HYDRO-ELECTRIC POWER STATIONS," *by Rushmore and Lof,* Second Edition, 1923, page 764:

"Output inherently related to load factor —'The operating expenses, which include general administration, labor, repairs, maintenance and supplies, will vary with the amount of power manufactured, that is, the load factor'."

On page 765, under the heading "Effect of Load Factor on Operating Cost", it is said:

"The cost of steam power naturally varies greatly, depending on the size of the plant, load factor, cost and heat of fuel, etc. A very complete and interesting tabulation, partly abstracted in Table LXVI, was contained in the Electrical World for July 15, 1922. It gives the result of careful analysis of the operating expenses of a large number of central stations, operating under widely different conditions. Despite the many factors which influence the operating economy and production expense, it is interesting to observe how closely the results obtained follow the load factor and coal characteristics."

"POWER IN CALIFORNIA," *by A. H. Markwart, in the Journal Franklin Institute,* August, 1927, page 176:

"One of the most important fundamentals of power production cost is the relation existing between average and maximum rate at which power is necessary to answer the demand. Costs rise as this ratio of 'load factor' lowers.

"Thus load factor becomes an important consideration in power economy."

Then in Gebhardt's *"Steam Power Plant Engineering"*, 1925, on page 870, he states:

"The total fixed charges are constant, irrespective of load factor, and shows by example that they vary inversely as load factor. That is, he gives an example, as follows:

.3 to 1 — .00148 to .00495."

"The labor charges will be practically constant. The total operating costs per year increase as the

load factor, but not directly. The cost per kilowatt hour, however, decreases as the load factor increases.''

The Boyd Formula Absorbed All Fuel Savings by Increasing the Ex-Fuel Costs.

The effect of the Boyd formula upon power charges against Coppermines, and the unreasonableness of these charges, is clearly shown in the graphic illustration, Ex. 14th a/c-L-5. This exhibit shows the output, reported total costs, fuel costs, and costs other than fuel, for the years 1927, 1928, 1929 and 1930, and for the first quarter of 1931.

The exhibit, which is here inserted as Plate V, is extremely interesting in many respects. The Court will note that the line ''C'' shows that the total costs reported are almost identical for the years 1927, 1928, 1929 and 1930. The line ''B'' shows a decided decrease in fuel cost for the year 1928—a slight decrease for 1929—a very decided drop again in 1930—and a slight increase only in 1931 when output dropped decidedly.

The ''A'' line, showing costs other than fuel, rises each year until 1930 when there is a sharp and abrupt drop in the first quarter of 1931. Viewing lines ''A'', ''B'' and ''C'' together, we find that Mr. Boyd's original instruction to charge against operations only the normal plant maintenance—a sum corresponding to the amount 'we would normally pay out if we did none of these improvements'—was not carried out.

As fuel costs dropped, the total cost did not drop but costs other than fuel were correspondingly raised

so as to keep the total power costs level. This was done for each of the years and was not limited to the years 1928 and 1929. This was intentional and deliberate, according to Mr. Boyd. Mr. Boyd testified that it was his purpose during the years 1928 and 1929 not to maintain a normal maintenance but to maintain a normal cost, and that, to maintain that normal cost, as fuel decreased maintenance charges were increased so as to keep the cost level. (Boyd, T.-3861-62).

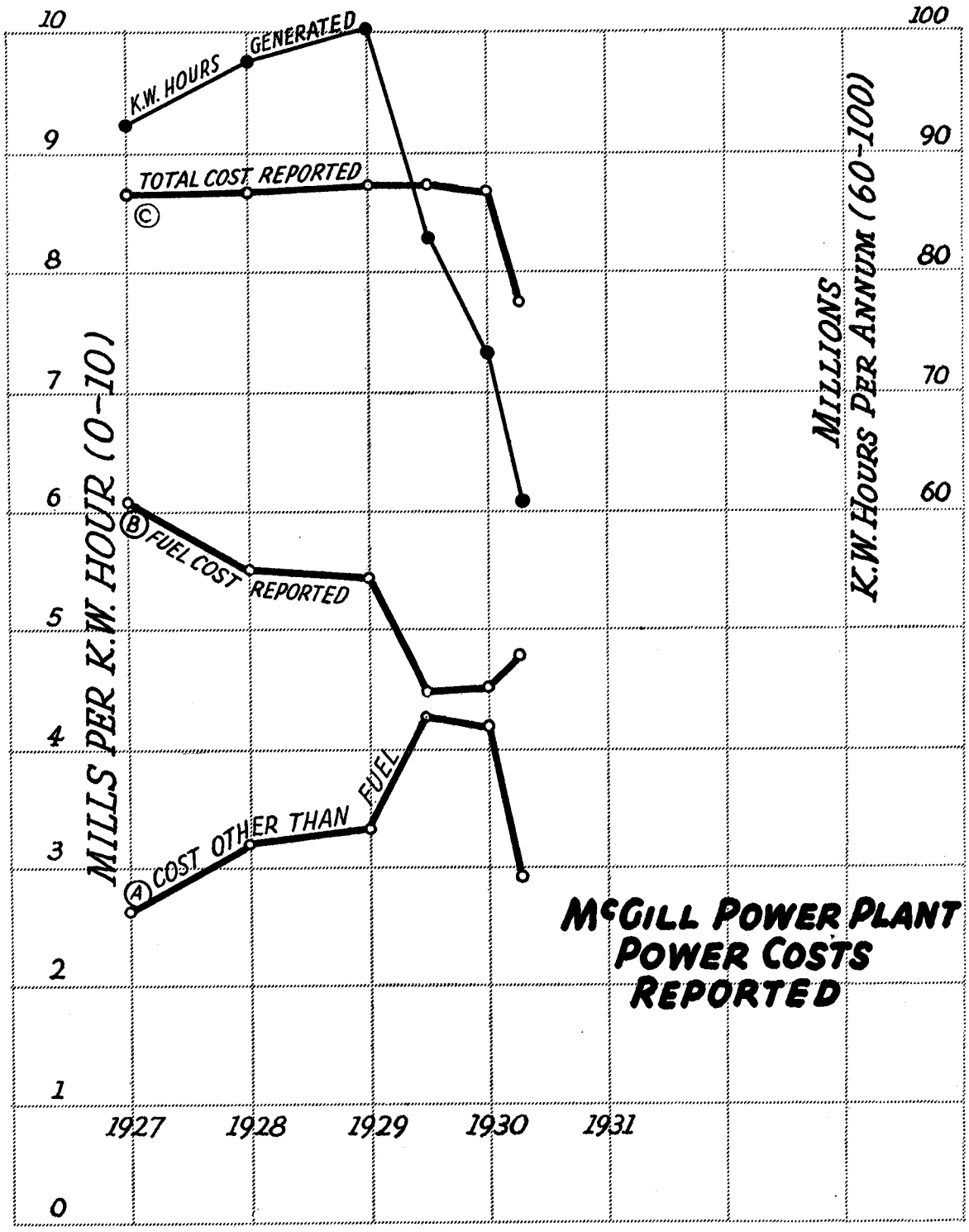
This exhibit shows that Nevada's cost as kept under the Boyd formula results in increased ex-fuel costs with increased output contrary to the accepted rule that ex-fuel costs and maintenance also vary inversely with output.

The graph, Plate V, shows that there was a decided increase in kilowatt hours generated in 1927, 1928 and 1929, but with ex-fuel costs and maintenance costs rising rapidly and abruptly. There was then no inverse ratio. In the six months of 1930 only, do Nevada's ex-fuel costs follow the usual, general and accepted rule. In 1931 power output dropped sharply and instead of the ex-fuel costs going up they go down abruptly.

To obtain this cost uniformity, actual costs for the month, or average monthly costs, were not kept, but the suspense account, a convenient vehicle for the concealment of true costs, was resorted to. (Bagwill's Exhibit 14th-AG-1-6).

Bagwill's testimony and exhibits show that during the year 1926, $20,000 went in and out of the suspense account for power; in 1927, $20,600; 1928, $55,000; 1929,

Plate No 5


MILLS PER K.W. HOUR (0-10)
MILLIONS
K.W. HOURS PER ANNUM (60-100)
K.W. HOURS GENERATED
TOTAL COST REPORTED
©
FUEL COST REPORTED
Ⓑ
COST OTHER THAN FUEL
Ⓐ
10
9
8
7
6
5
4
3
2
1
0
100
90
80
70
60
1927
1928
1929
1930
1931
McGILL POWER PLANT
POWER COSTS
REPORTED

$153,000; 1930, $38,000. All of these amounts finally landed in operating expense.

The Boyd formula as to costs, like the McGill formula as to metallurgical adjustments, stands by itself. The only authority which justifies either of them is 'the orders of the chief'.

Had the original Boyd instructions been followed, that is, to charge the actual cost, so far as fuel is concerned, and for maintenance, to charge a normal maintenance and capitalize the remainder, Nevada's bills against Coppermines would have been greatly less than those actually and finally charged.

Nevada's Records Sustain the Jourdin-Devore Costs

For the year 1926 the ex-fuel costs, according to Nevada's Exhibit 14th-39, were 2.87, and for the year 1927, 2.62, an average for the two years of 2.74. During both of those years there were charged into operating substantial amounts which were, in fact, capital and extraordinary expenditures, items which were not usual and normal but which were extraordinary and abnormal. In 1926 two coal pulverizers were installed (Exhibit 14th-34), the cost of which was approximately $25,000.00 (Exhibit 14th-64). No coal pulverizers are charged into capital during the year 1926, therefore they must have been charged into operating expense. (That coal pulverizers were proper charges to capital is admitted by Nevada in its charging of them to capital during the years 1927 and thereafter (Ex. 14th-29). Two waste heat boilers were installed in 1926 and 1927; they were appraised by Mr. Galloway at $122,000. The B. & W.

boilers were completely remodeled during these two years. They cost at least $25,000 according to the admission of counsel but the real cost is unknown. An 80,000 cubic foot compressor was altered (Exhibit 14th-34) at a very substantial cost and for more than $5,000. These two items, together with other unidentified items, would undoubtedly account for a capital and extraordinary expenditure of at least $35,000. The expenditures to which we have especially adverted would unquestionably amount to at least $182,000.

During these two years the total generated power was 182,000,000 kilowatt hours. If this be divided into the capital and extraordinary expenditures charged to operations of $182,000, we get an excess charge of 1 mill for ex-fuel costs of power. Deduct this 1 mill from the 2.74 mills which is the average for the two years, and we have a normal ex-fuel cost of 1.74 for 1926 and 1927 which is not so far from the reasonable figures and standard fixed by Mr. Devore and Mr. Jourdin of 1.50 mills. There should be no question, therefore, but that this normal ex-fuel cost of 1.74 mills, which was undoubtedly achieved in 1926 and 1927, was substantially lowered during the following years when there was increased output, and that an average of 1.50 mills was obtained for the entire period.

Nevada's Special Defense to the Power Claim

Throughout this Brief we have, from time to time, pointed out various of Nevada's contentions and defenses, and have referred to the testimony and evidence presented by Nevada in support of them. We will here

discuss briefly some special contentions and defenses which Nevada made during the course of the trial.

Load Factor

In this discussion we will deal with load factor (1) generally, (2) the effect of varying load factor on ex-fuel and maintenance cost and (3) the average load factor of the McGill plant.

(1) Load Factor Generally

We think that Nevada's attitude as to the effect of varying load factor upon ex-fuel or maintenance cost was but an attempt to confuse the Court. Every authority declares that varying load factor affects ex-fuel and maintenance costs, and, indeed, there can be no escape from it, and just why such intelligent men as Mr. Franklin and Mr. Sanders should baldly declare the contrary is incomprehensible.

Mr. Franklin said:

> "Load factor does not enter into cost in any sense whatever."
>
> (T.-4368).

Mr. Franklin made this statement in the face of all accepted authorities, and his assertion is inconsistent with his testimony given immediately preceding:

> "A. I would say that if the plant is maintained as it should be, and the *load is not further decreased* by further curtailment, *the cost should be easily maintained, or perhaps to a certain extent bettered.*

Q. Why do you qualify it with the condition 'If the load be not further curtailed,' how does that affect it?

A. *We have stand-by losses, such as shutting down boilers, the losses of heat from doing so,* and *we still maintain the crew* at the plant *and the cost continues;* so that spread over the entire month, which we do instead of allowing for the days of shut down, *it would increase the unit cost.''*

(T.-4368).

On cross examination, Mr. Franklin, endeavoring to account for certain low *ex-fuel costs* at Hayden also said that the low costs were due to the fact that at that time the Hayden plant was operating on a 100% load factor. (T.-4388-4389).

The real effect of load factor is also clearly shown by the further cross examination of Mr. Franklin:

''Q. If you were making a contract in behalf of any of your companies for power would you take into consideration, or if you were negotiating a contract in behalf of any of your companies would you take into consideration the load factor?

A. *You mean if I were buying or selling power?*

Q. If you were buying power?

A. I know of cases where they buy power where load factor is mentioned and expressed in the contract but there is always a discount when you buy power and also sell power on that basis.''

(T.-4460).

Mr. Franklin also told the Court that the Utah Cop-

per Company buys its power from the Utah Power and Light Company, and we have the following from his testimony:

"Q. And that is on contract?

A. It is.

Q. And in those contracts you have a *base rate and a discount for increasing the load factor, have you not?*

A. *Yes.*

Q. You know do you not, Mr. Franklin, that public utility corporations or rather, that public service commissions in *fixing rates invariably allow a discount for increase in load factor?*

A. Yes; there is also a demand factor and there is a penalty.

Q. So in some cases it works the other way and they fix a penalty for the low load factor as against the high?

A. They do."
(T.-4460).

Rates primarily are based on cost and it is very apparent that when Mr. Franklin is buying power he demands and insists on a discount and lower rates with an increase in the load factor.

Mr. Sanders followed Mr. Franklin's lead and he likewise made the statement that varying load factor does not make any difference in ex-fuel costs. Mr. Sander's experience, as pointed out, has been extremely limited, especially in the matter of costs and cost accounting. Mr. Sander's mere statement that varying load factor

does not make any difference in ex-fuel costs is entitled to no weight unless it is supported by experience, knowledge and authority. Mr. Sander's opinion is based only upon the fact that at the McGill plant "we never figured the load factor in our ex-fuel"; "we never had occasion to figure our load factor in the McGill plant; we never paid any attention to it," and again he said and we quote his testimony directly:

> "Q. Let me finish my question. Based on your opinion as a practical operator of long experience, you would say that at the McGill plant the load factor is entitled to no consideration in dealing with ex-fuel costs?
>
> A. *It certainly has not entered into it, or we would have kept a record of the load factor.*
>
> Q. *And you didn't keep any record of it?*
>
> A. *No, sir.*"
>
> (T.-4277).

Can Mr. Sanders have any knowledge of the effect of varying load factor upon ex-fuel costs when at McGill he never even figured it, gave it no consideration, and did not even keep a record of it?

(2) The Effect of Varying Load Factor on Ex-Fuel and Maintenance Cost

Witnesses for Nevada maintained that even if the varying load factor has an effect on ex-fuel or maintenance costs, such effect is not in accordance with the principles as laid down by Mr. Devore in Defendant's Exhibit 14th a/c-N-7-A and in similar exhibits.

The principles laid down by Mr. Devore and referred to by Nevada as the "Devore formula" have, to some extent, been discussed by us in this brief. We recognize Mr. Sanders as an exceedingly competent practical operator and superintendent of a power plant. We have a high regard for his ability as a practical operator. We do feel, however, that Mr. Sanders' experience has been limited. It has been confined to supervision of the McGill plant and his knowledge is based upon "the way we do it at McGill," so, when Mr. Sanders says "Mr. Devore was all wrong" (T.-4253) we must mentally compare the respective qualifications and experience of Mr. Sanders and Mr. Devore. Mr. Devore's qualifications and mental integrity are well known to this Court. Of all witnesses appearing before the Court in this trial, no one of them compares with Mr. Devore in lack of partisanship and in fairness of presentation.

Mr. Sanders repeatedly ignored the limitations that Mr. Devore placed on the principles laid down by him. Mr. Sanders, with some so-called mathematical computations, proceeds to distort the principle and endeavors to make a rigorous formula, applicable to all conditions, from a load factor approaching the zero value up to a load factor of 100%, and he does this only by the misuse of the 15% to 20% compensating factor.

This factor, as we have pointed out, is not unfavorable, but is favorable to Nevada. The bare principle laid down by all authorities *is that maintenance and exfuel costs vary inversely with load factor.* The compensating factor which Mr. Devore introduced is a factor that is added, or subtracted, to allow for the in-

creased or decreased actual expenditure of dollars and cents for maintenance cost when the load factor is increased or decreased.

Mr. Sanders, in his further endeavor to analyze the Devore formula and in order to prove that "Mr. Devore was all wrong," even if the principles were used with the limitation placed by Mr. Devore, introduced plaintiff's Exhibit 14th-38.

It is clear from this exhibit that Mr. Sanders did not understand the principle laid down by Mr. Devore because it was shown on cross examination that he got the formula upside down in applying it in his Exhibit 14th-38. On his redirect examination, Mr. Sanders endeavored to enlighten the Court as to what he tried to do (and we say "tried" advisedly) with this exhibit 14th-38. It was then clearly brought out that the exhibit did not show what the titles and various designations purported to show. Instead of showing what the maintenance costs on the various plants would be with the load factor increased to 75%, he took only one plant and calculated what its maintenance cost would be under the varying load factors of the remaining plants.

Mr. Sanders, in his exhibit, also got mixed up between percentage and proportion. Later Nevada's counsel pointed out that if the titles were properly changed the exhibit would in any event show that any one plant, if placed at a load factor comparable to any of the other plants, would not give the same cost. If this is what Mr. Sanders' exhibit was intended to convey,

we admit it. Mr. Devore took the average for thirteen plants for the purposes of his exhibit.

The Sanders' testimony and the exhibits dealing with the Devore formula were manifestly introduced for no other purpose than to confuse the Court and to obscure the issue. There is no other point to the Sander's exhibits. They are nothing more or less than erroneous mathematical exercises on the part of Mr. Sanders.

Once more, for the purpose of emphasis, we advert to the cross examination of Mr. Franklin where he said, as respects the Hayden plant, that the low ex-fuel costs were due to the fact that the Hayden plant at the time had a one hundred per cent load factor. He there recognized the fundamental principle that *ex-fuel costs vary inversely with the load factor.*

(3) The Average Load Factor of the McGill Plant

Witnesses for Nevada disputed that the average load factor at McGill was 75% for the period in controversy. Mr. Jourdin and Mr. Devore, in presenting their testimony and exhibits before the Court, used 75% as the load factor at McGill. This was based upon their inspection of the plant, the character of the load, and their experience as respects other plants of similar character, and their knowledge that most of the mining plant loads, where they have a concentrator such as at McGill, have a much higher load factor throughout the year than the average industrial plant or public utility. (T.-3040, 3381).

Mr. Franklin and Mr. Sanders, testifying for Nevada,

declared that the average load factor at McGill since June, 1926, had not been approximately 75%. (T.-4395, 4243). This testimony is surprising in face of the testimony which Mr. Sanders gave upon cross examination when he said that load factor had never been given any consideration at McGill and that no records had been kept of it. (T.-4277).

In order to prove that the load factor at McGill was not approximately 75%, plaintiff's exhibit 14th-36 was presented by Mr. Sanders and this indicated a load factor of 61.8%.

Upon cross examination it appeared, first, that an erroneous conversion factor from kilowatt hour to horsepower, and *vice versa,* had been used. Nevada had used a conversion factor of 1.5, although the recognized factor is 1.34. It also was disclosed that Nevada had no automatic or continuous recording devices for the recording of the power generated. It depended upon observations and the recording of these observations made by the operator every thirty minutes, and these observations were patched up to resemble a record that would be made by a graphic recording instrument. Moreover, in order to get this 61.8% load factor, Nevada selected, not individual days of any one month, nor a representative month, but a month when operations were curtailed and when the entire plant (with the exception of steam heat) was shut down for five days continuously, and when it was partially shut down for two more days. The month selected was January, 1931, and although Nevada must have had these "observations" previously,

no record or compilation of records was presented for any month of the period from June of 1926 to December of 1930. Nevada, to arrive at this 61.8% load factor, used the highest peak load that occurred during any of the operating days of January, and *applied to that the average hourly load made up of and including the days when the plant was completely or partly shut down.* It is evident that such a computation will give an unduly low average load and consequently an unduly low load factor must result.

The correct and fair way to have calculated the average load factor would have been to exclude the non-operating days. Mr. Sanders upon cross examination made such calculation, and found that the average load factor for the operating period was 84% (Ex. 14th a/c-S-2). Mr. Sanders was once more in error in his arithmetic in this calculation because the average load factor, so and correctly calculated, was 68.6%.

It was finally demonstrated by the testimony of Mr. Jourdin, and the cross examination of Mr. Jourdin by Mr. Wallace, that the correct McGill load factor was 82.4%. (T.-8147, Ex. 14-AK-2-A, pages 1 and 2).

In view of the low hourly production of 5800 kilowatts for the operating period of the month of January, 1931, as compared to the average hourly production during the period from June, 1926 to December 1930, of more than 10,000 kilowatts*, it follows that Mr. Jourdin's and Mr. Devore's use of an average load factor of 75% is indeed a reasonable one.

That the assumption of a load factor at McGill of

*The period of June, 1926, to December, 1930, was one of practically continuous operation in each month.

75% is reasonable is clearly shown by the load factor experienced at the Chino division of Nevada, at Hurley. For the years 1926 to 1929, inclusive, the Hurley plant had yearly load factors of 84.1%, 79.2%, 75.9% and 79.9%, respectively. The testimony is that the entire load at Chino was carried on the steam plant with no connections with any hydro-electric or outside plant. (Ex. 14th-53).

Nevada presented Exhibits 53 *and* 55, *being alleged power production data from Chino and Ray, in an effort to substantiate its claims that power could not have been produced at McGill since June,* 1926, *for an ex-fuel cost not exceeding* 1.5 *mills per kilowatt hour.*

We have previously made reference to these exhibits and the testimony regarding them. In the records from Chino (Ex. 14th-53) admittedly there was included in the actual operating cost large expenditures made for rehabilitation and enlargement of the Chino plant during all of the years except 1931. These large expenditures were not direct operating cost; that is made clear from the cross examination of Mr. Tempest. Illustrative and typical of the testimony is the following:

> "Q. Now take page 14, expense of major repairs in power plant taken up in departmental operating costs; on this a memorandum of cost was kept; that is correct, is it?
>
> A. That is correct.

Q. *Of course, this had Mr. Boyd's approval before it was started?*

A. *Yes.*

Q. *And this did not initiate with any superintendent?*

A. *No, sir.*

Q. Was this of the same class as being a *part of the general plant to recondition the whole plant and increase its capacity?*

A. *Yes.*

Q. And was one of the capital expenditures which was absorbed in operating costs?

A. No, sir, it was a capital expenditure.

Q. What was it?

A. *It was a heavy repair expenditure which was made to get a more efficient operating boiler plant and cut down the fuel consumption.*

Q. *It did cut down the fuel consumption, did it?*

A. Yes.

Q. *Materially?*

A. *Yes.*

Q. *Did it cut down any other costs?*

A. *It reduced the entire cost of power.*

Q. *It reduced your maintenance and repair costs?*

A. *Yes.*

Q. *And your repair labor?*

A. *Yes.*

Q. *Did it reduce your operating labor?*

A. Yes."

(T.-9414-15).

Mr. Franklin, referring to the high ex-fuel costs at Chino, said:

"Q. And in 1930 to 7.843 mills?

A. Yes.

Q. *That was due to the extraordinary expenditures made in those years for reconditioning, was it?*

A. *It was."*

(T.-4451).

Clearly, the data submitted from Chino does not show or tend to prove that an ex-fuel cost of 1.5 mills per kilowatt hour was not achieved at McGill, and it does not refute the testimony of Mr. Jourdin and Mr. Devore that the reasonable ex-fuel costs were 1.5 mills per kilowatt hour, and that maintenance did not exceed .6 mills per kilowatt hour.

Purporting to deal with Ray costs, there was presented Exhibit 14th-55. The data submitted upon this exhibit did not conform to the original records at Ray. Moreover, while originally it was testified that the items of expense at Ray and McGill had been put upon a comparable basis, the records show that at Ray line maintenance, general overhead, and other items were included in ex-fuel costs although these items are not included in McGill cost. The McGill costs are switch-

board costs; the Ray costs are switchboard costs, plus overheads, line maintenance and other items. It was also shown that for some years the Ray costs did not include these items. The situation is such, that so far as the exhibit is concerned, it presents no basis for a comparison between ex-fuel costs at Ray and McGill.

The actual records from Ray, as distinguished from this Exhibit 14th-55, and which we have presented in Exhibit 14th-AK-5 in conjunction with the testimony of Mr. Jourdin, disclose that the comparable average actual ex-fuel costs at Ray were well below the reasonable ex-fuel cost fixed by Mr. Jourdin and Mr. Devore. In every instance except one year they are well below this reasonable cost. This is true in spite of the poor load at Ray, accounted for by the fact that the Ray steam plant carries only part of the load and the balance is supplied by the hydro-electric plant of the Salt River Valley Water Users Association. This poor load is shown by the exhibit itself, and shows a variation from a low of 36.74 in 1930 to a high of 66.2 for 1929.

Nevada's special defenses, we think, are not defenses at all and they are not sustained by facts or by authorities. The authorities and the evidence demonstrate that load factor has a very direct decided bearing and effect upon cost and in accordance with the principles declared by Mr. Devore and Mr. Jourdin.

Nevada's claim that the load factor at McGill was less than 75% and that the assumption of a load factor of not less than 75% by Jourdin and Devore was erroneous, was completely disproven by the testimony of Mr.

Jourdin and by Nevada's records. It was finally shown that Nevada's load factor exceeded 80%.

Nevada's claim that the Chino and Ray power data refute the Jourdin standard of reasonable cost of 1.5 mills for ex-fuel at McGill, and Devore's .6 mills as reasonable maintenance for McGill, is not sustained by the records from these plants but the contrary is shown. At Chino, when the extraordinary capital expenditures are deducted and the plants put upon a comparable basis, we find that Chino actually achieved costs almost identical with the Jourdin and Devore standards. The true Ray records, when finally produced, and when costs were placed upon a comparable basis with McGill, showed that Ray in every year except one actually achieved lower ex-fuel and maintenance costs than those set down by Jourdin and Devore as reasonable.

It was claimed that McGill could not obtain these ex-fuel or maintenance costs but no evidence was produced to show or which tended to show or to refute the Jourdin or Devore standards for ex-fuel or for maintenance costs or to show that these figures were not a reasonable cost.

Mr. Boyd admits that he is not a power engineer. Neither Mr. Boyd nor his experts, Mr. Franklin and Mr. Sanders, expressed any opinion during the trial of the case as to what was or is a reasonable ex-fuel cost for McGill. We know that actual costs are not available or obtainable from Nevada's books. The question then for the Court to determine is: what is a fair and reasonable power cost for McGill during this time. Shall

the Court accept the power cost of Mr. Jourdin and Mr. Devore, real experts, and that cost which they declare to be the maximum reasonable power cost, or shall the Court take the cost determined by Mr. Boyd and the application of the Boyd formula, which, it is admitted, are not actual costs or found through correct accounting. We submit that there can be but one answer.

Amount of Overcharge to Coppermines for Power

In setting up the amount of money that Nevada has overcharged Coppermines for power since the beginning of the contract and up to the end of 1930, two separate divisions have been considered, and they are:

(a) Power sold and delivered to Kimberly for mine purposes; and

(b) Power used at the McGill plant which has been proportionately charged against Coppermines for concentration and smelting.

(a) Power Sold and Delivered to Kimberly for Mine Purposes

As respects the Kimberly power, it is clear that the fuel costs were erroneously calculated and that improper waste heat credits to the smelter were given, and, further, that there was an improper conversion of air power and steam heat into electric units, with the result that incorrect amounts have been charged to Coppermines on this account.

We have previously pointed out that Mr. Jourdin's testimony and his Exhibit 14th a/c-L-6 shows that the

fuel charges made for electric power sold to Kimberly were 5.45, 6.07, 5.51, 5.44 and 4.53 mills per kilowatt hour for the respective years 1926 to 1930, inclusive.

Exhibit 14th a/c-L-1 shows that if the fuel cost had been correctly figured at the McGill plant during the years 1926 to 1930, inclusive, at the load conditions prevailing, the true cost would have been about 4 mills per kilowatt hour. This figure, which checks Mr. Jourdin's experience at other plants, was derived through an analysis of Nevada's operating statistics for the month of January, 1931. Mr. Jourdin shows that the correct computation gives a fuel cost of 4.215 mills, or only 85% of the 4.946 mills as reported by Nevada for the month.

In making its claim for refund on power sold direct to Kimberly, Coppermines uses 90% instead of the 85% figure in order to be entirely reasonable. The corrected fuel costs using this 90% factor, are recorded on the Exhibit 14th-a/c-L-6, and are 4.91, 5.46, 4.96, 4.90 and 4.08, for the respective years 1926 to 1930, inclusive. The Court will note that the average for these claimed costs is 5.08 mills, or well above the 4 mill cost which Mr. Jourdin claims should have been experienced.

Coppermines maintains that, as respects *ex-fuel* costs on power delivered and sold at Kimberly, the reasonable cost thereof does not exceed 1.5 mills per kilowatt hour as an average since the date of the contract. Coppermines has been overcharged for power in that there has been introduced into the power account and into the ex-fuel costs large amounts as operating expenses which were, in fact, capital. Coppermines is entitled to

reparation for these excess charges in the amount of $49,360.61, together with interest.

(b) Power Used at the McGill Plant Which Has Been Proportionately Charged Against Coppermines for Concentration and Smelting

In setting up the amount of money that Nevada has overcharged Coppermines since the beginning of the contract and up to the end of the year 1930 for power used in the treatment of Coppermines' ores, we have assumed that the cost of fuel as shown by Nevada's books and records is correct, and that this cost of fuel is chargeable as an actual operating cost, either in the power plant, or in the smelter, and that Coppermines is required to pay its proportion of such cost.

The matter of erroneous waste-heat credit in this respect is, therefore, of no moment. If the smelter credit was too high, the smelter costs were correspondingly decreased. It was a mere matter of "pocket to pocket" expenditure. The same applies to the use of the erroneous conversion factor.

As to ex-fuel costs, however, Coppermines insists that the records of Nevada do not show the actual operating cost as far as ex-fuel costs are concerned. It is admitted that Nevada kept no record from which the actual direct operating costs can be ascertained, and it is further admitted that Nevada, under the instructions of Mr. Boyd, made no pretense of giving to Coppermines accurate accounting so far as the ex-fuel costs of

power is concerned. Coppermines was compelled in this situation to resort to expert testimony with an endeavor to arrive at and find the fair and reasonable ex-fuel costs per kilowatt hour for the period since June of 1926.

By defendant's Exhibit 14th-a/c-L-7 and 14th-a/c-N-11, of Mr. Devore and Mr. Jourdin, the distribution of power between concentrator and smelter is shown. The correctness of this distribution was not contradicted or questioned by Nevada. Applying the reasonable cost of 1.5 mills per kilowatt hour for ex-fuel costs, Nevada has overcharged Coppermines for power used in concentrating and smelting its ores in the sum of $108,419.73. Payment is demanded for this amount, together with interest. The amount claimed is slightly less than that calculated by Mr. Devore, who says that the overcharge amounts to $108,957.30.

NEVADA'S DEFENSES

We have from time to time pointed out Nevada's contentions and referred at times to the testimony and defenses presented by Nevada. We will here briefly discuss some special contentions and defenses which Nevada made during the course of the trial. Nevada contended that:

1. The methods of accounting at McGill have not been changed since the contract was entered into.

2. The methods of accounting as used at McGill are the same as those employed by other com-

panies, particularly the Ray and Chino divisions of the Nevada Consolidated.

3. That the Boyd formula of accounting should be followed at McGill in transactions with Coppermines under the contract.

1. The Methods of Accounting at McGill Have Not Been Changed Since the Contract was Entered Into

We are not particularly concerned with Nevada's methods of accounting before the contract with Coppermines of June 16, 1926, was entered into. It was agreed that Nevada should charge Coppermines the direct operating expense plus usual and normal overhead and it was not agreed that Nevada should charge Coppermines on any other basis. In view of the contention made by Nevada that its accounting system had not been changed when the contract with Coppermines had been effected, we wish to point out that it was contemporaneous with the signing of the contract with Coppermines that Nevada ceased to use the job order system and thus discontinued the only method by which actual costs could be obtained.

In this connection we wish also to call the Court's attention to Defendant's Exhibit 14th-AG-9. This exhibit shows that from May, 1912 to June, 1926, or for 14 years prior to the contract, Nevada charged into operating costs $1,078,362.19, as being expenditures for special items and by it not considered as usual and normal repairs and maintenance. During this same period Nevada charged into its capital account $7,946,

369.57, for additions and betterments, enlargements, replacing of obsolete and worn out equipment, new construction and reconstruction after a fire.

From July, 1926 to December, 1930, during a period of 4½ years after the contract with Coppermines was made, Nevada charged into operating costs $3,194,320.92 plus $197,463.21. (Exhibit 14th-AD-1). These expenditures were for rehabilitation of plant, additions and betterments, enlargements, replacing of obsolete and worn out equipment, new construction and reconstruction after a fire. During this same time Nevada charged into its capital account only $1,857,677.30.

Indeed it appears that Nevada's methods of accounting were changed when the contract with Coppermines became effective, as the ratio of extraordinary operating charges to capital charges as between the period before the contract and after the contract increased over 12 fold.

2. The Methods of Accounting as Used at McGill are the same as Those Employed by Other Companies, Particularly the Ray and Chino Divisions of the Nevada Consolidated

Mr. Boyd testified that he was familiar with the accounting methods and practices followed by porphyry copper mining companies in the Southwest, that is, in New Mexico and Arizona, (T.-3740), and testified that the McGill practice conformed thereto. Mr. Eustace testified as to the practice at Inspiration.

During one of the recesses, Coppermines was afford-

ed the right to inspect accounting records of the Nevada Consolidated Copper Company at the Ray and the Chino divisions. This inspection of records disclosed that at Ray and Chino a complete system of Job Orders was used and that costs were accurately kept. The investigation disclosed that the practices at Chino and Ray were not the same as used at McGill by Nevada. Referring to Exhibits 14th-AM-14 and AM-17 (Note: 10,000 and 20,000 are job numbers at Chino) showing charges made to capital at Ray and Chino respectively, we desire to point out certain specific items and make a comparison with identical items, or items of similar nature at McGill.

In the Concentrator:

At McGill new pulley feeders and additional feeders were installed at an estimated cost of $105,450.00 and *charged* to *operations.*. *At Ray* a similar item, installed at a total cost of $87,019.58, was *charged to capital.*

At McGill the old Callow cells were replaced by Forrester cells at an estimated total cost of $13,225.00, and all *charged to operations. At Chino* the old Callow cells were replaced by Southwestern cells (similar to Forrester cells), at an actual cost of $118,535.74, and *charged to capital. Flotation machines* together with additions and betterments and changes in the flotation section of the mill at Ray were *charged to capital.* (This change took place over several years).

At McGill new and additional *classifiers* were installed. The invoice price of the classifiers plus freight was *charged to capital* but installation expense was

charged to operations. At Ray and Chino new and additional classifiers were installed and *all expenses* in connection therewith, both invoice price, freight and installation were *charged to capital.*

At Chino the 8 ft. x 6 ft. Marcy mills were converted into 8 ft. x 12 ft. rod mills and *charged to capital.* This is comparable to the lengthening of the *Hardinge mills at McGill,* the cost of which was *charged to operations.*

At Hurley the coarse crushing plant was remodeled and *charged to capital* and a similar job was done at *McGill* but only part of the expenditure so made was charged to capital and the balance of the same remodeling job was *charged to operations.*

At Hurley Wifley pumps were installed and *charged to capital* while jobs of similar character *at McGill* were *charged to operations.*

Miscellaneous Items:

At McGill, the Duck Creek pipe line, replacing an old wooden stave pipe line, was built at an estimated cost of more than one-half million dollars, and *charged to operations. At Ray* a wooden stave line was replaced by steel pipe at an actual cost of $25,692.94 and *charged to capital.*

At McGill the old Nordberg steam pumps were replaced by electrically driven pumps at an estimated cost of $13,922.71 and *charged to operations. At Ray* some old steam pumps were replaced by electrically driven pumps, at an actual cost of $10,144.92 and *charged to capital.*

At Hayden a fence was built around a swimming pool at a cost of $1,012.14, and *charged to capital,* whereas *at McGill* a fence was built around the entire plant at a cost of $23,331.00 and *charged to operations.*

At Chino the cost of pumps, installation of pumps and pipe lines from the Bolton Ranch wells, in amount $23,603.61, was *charged to capital* (T.-9332), whereas the wells, pumps, shafts and pipe lines laid in connection with the water development *at McGill,* were all *charged to operations.*

Additions and changes to the hospital where the doctor lived *at Hayden* were *charged to capital* whereas the complete remodeling or rebuilding of the general manager's residence *at McGill* was *charged to operations.*

We point out to the Court again that at Ray and Chino costs were kept through the job order system and although the expenditures at Nevada were greatly in excess of those at Ray and Chino as respects many similar items, no costs were kept. No record of cost was available and appraisals have to be relied upon. At Ray and Chino no custom ore was being milled and no ore was treated on a cost plus basis, yet costs were kept. Nevada, at McGill, a trustee under the contract, with a duty to keep accurate records of costs, did not keep them.

In the Smelter:

Nevada has no smelter at Chino or Ray, therefore no comparison can be made for smelter items. At Nevada the practice was not consistent. We point to the con-

verters. Prior to the contract a large converter was installed, replacing a smaller one, and charged to capital. After the contract was entered into a second converter was installed, replacing an old smaller one, and this new converter was all charged to operating costs. After Coppermines commenced its audit of Nevada's accounts a third new converter was installed, replacing an old smaller converter. The cost of this third converter was charged partly to capital and partly to operations.

Mr. Dawe, smelter superintendent for the Calumet and Arizona Mining Company at Douglas, Arizona, testified that a rehabilitation program at their smelter similar to the one carried out at McGill was effected during the years 1926 to 1929. The various items entering into this rehabilitation program are in part shown on Exhibit 14th-AF-3, and the court will observe that in essential details it is directly comparable with similar items at McGill. Mr. Dawe testified that all the costs in connection with this rehabilitation program for new buildings, new equipment or changes and additions to existing buildings and equipment, smelter stacks, etc., were charged to capital. This may be compared to the costs for the similar expenditures made in connection with the rehabilitation program at McGill in the smelter, where all expenditures except the cost of the Cottrell plant were charged to operations.

Mr. Dawe testified that the policy of the Calumet and Arizona Mining Company was to charge to capital account *all expenditures* made in connection with rehabili-

tation of plant, additions and betterments, when such expenditures were made for the purpose of increasing capacity, replacing obsolete and worn out equipment, renewals or reconstruction. Mr. Dawe further testified that the policy of that company in regard to isolated expenditures that were not part of the comprehensive rehabilitation program, was to charge such expenditures to capital when the estimated cost exceeded $5,000. If the expenditures for such isolated installations were less than $5,000, they were absorbed in operating costs. In a few instances the cost of repairs or replacements originally estimated at less than $5,000 actually exceeded this sum slightly and as the particular items in question had not been previously authorized by the directors, they were allowed to remain in operating expense.

Mr. Dawe also testified that costs for the Calumet and Arizona Mining Company *were kept accurately and in detail through the job order system.*

Mr. Boyd made many sweeping statements and indulged in many generalities in his discussion upon the witness stand of accounting practice in the Southwest. Whenever opportunity was afforded so that the real practice of individual companies in the Southwest could be presented to the court the actual practice was found to be entirely different from Mr. Boyd's statement regarding it, and it clearly appears that in the Southwest standard accounting practices were followed.

3. Mr. Boyd's Formula of Accounting

Mr. Boyd's accounting principles and methods can be illustrated by the following from his testimony:

(1) That it is advantageous to Nevada to charge every extraordinary expenditure to operating expense, because only through such charge can a part of it be recouped from Coppermines.

(2) That after the plant gets in operation, then all expenditures of every kind and character are to be charged to operations, otherwise the stockholders will be treated unfairly.

(3) That the *test* as to whether an expenditure is capital or operating expense *is whether or not the expenditure is optional or compulsory. If it is optional and you can keep your money in your pocket, it is capital. If it is compulsory and you are compelled to make the expenditure, then it is an operating expense.* If Nevada decides to substitute for some portion of equipment already in existence an alternative piece of equipment which will perform the same function more efficiently or economically, and this replacement is optional, that is, they can do it if they want to, or they need not do it if they don't want to, that optional replacement in Nevada's accounts is charged to capital. If, however, a pipe line has to be replaced or the company will go out of business, "there is no option about it. You have to do it. Such replacements are operating charges according to our cost accounting." (T.-3771).

(3a) "Now what you might call this optional replacement, where you replace something that is

> doing the work but is not doing it very well, some of the mines consider that as an operating charge. It is properly an operating charge because the replacement is not really optional; it may be optional whether you do it this year or whether you do it the next year, but if the industry moves forward you have to move forward with the industry or else you will be out of business because you cannot make copper as cheaply as the other fellow."
>
> (T.-3772).

(4) "If a wooden pipe line were replaced stave by stave, if you just took out one stave after another and put in new, that would be a repair job. If you took out 10 feet of the wooden pipe at a time and put in another 10 feet of wooden pipe in its place it would be a repair. If you put in 100 feet, that would be a repair. If you ultimately replace the whole wooden obsolete dilapidated pipe line with a steel pipe line, that would be a repair. That is what we have done. We took out a piece of wooden line and put in a steel line and connected it up with the abutting old adjoining wooden line * * * it was a repair job. It was inevitable; it was just an ordinary operating expense." (T.-3826-7).

Referring to the $500,000.00 pipe line, Mr. Boyd said:

> "I consider it a repair cost. I have not any doubt in my mind about it."

These are indeed strange principles of accounting, but they were actually applied by Nevada under the direction of Mr. Boyd. Nevada, without regard to the

provisions of the contract which clearly excluded depreciation and amortization as a part of actual costs, and thereby declared that Coppermines was to pay no part of capital expenditures except through the special depreciation and amortization charge, deliberately introduced into direct operating expense capital and extraordinary expenditures, so that it could recoup a part of them from Coppermines.

Mr. Boyd's optional and compulsory theory is unique. We use the word "unique" advisedly because this test of Mr. Boyd's is not supported by a single accounting authority. Mr. Boyd was asked if he knew of any accounting authority which supported this optional and compulsory theory of his.

> "Q. Do you know of any rule of accountancy which makes such a distinction, based upon your experience?
>
> A. Yes.
>
> Q. Can you give me any authority for that?
>
> A. When you put your money in a mine at all, it is merely optional. You can put it in a bank and not risk it. That is what we are doing here at Hayden, we are putting in $25,000.00 to see if we can save that much money, we are doing that as a precaution, thinking that we may save that much money in the future."
>
> (T.-9386).

Mr. Boyd's only authority is Mr. Boyd.

The Court will probably also recall the practical application that Mr. Boyd made of this principle. There

was called to his attention an item at Hayden (Exhibit 14th-AM-14, page 2), a replacement of a wooden stave pipe with 800 feet of cast iron pipe, at a cost of some $25,000.00, and that this pipe at Hayden had been charged to capital, while similar replacements, namely the Duck Creek Pipe line, water service, etc., at McGill, much larger in both character and amount, were charged to operations. Mr. Boyd was not at all nonplussed. Resourceful as ever, he said that at Hayden the Gila River sometimes gets in flood and that he would rather put the money in that piece of pipe than take a chance of another flood holding up the operations for a week or two. This was optional; the flood had not yet arrived. (T.-9385). At McGill, Mr. Boyd could not see a similarity to the installation on North Creek where additional wells were sunk, and pumps put in, and additional lines installed for the purpose of *insuring* a water supply and augmenting the water supply. Nevada, on the North Creek development, was compelled to make the expenditure in order to get water, therefore it was operating. When you have floods in Arizona, you charge them to capital. When you have drought in Nevada you charge that to operating expense. Mr. Boyd told the Court and this without a smile, that "the work we did in Nevada was forced on us by the condition of our water supply. The work we did here (referring to Hayden) was purely optional—we might never have a flood like this again." (T.-9386).

Let us apply another of Mr. Boyd's principles, namely the one we have summarized above under 3a. Applying that principle to the Arizona flood, had Mr.

Boyd waited until the flood came about, then the expenditure would have been charged to operations and not to capital. When you provide against a threatened flood or possible flood, it is capital. When you make the same installation to take care of an actual flood, then it is operating expense.

Mr. Boyd has no doubt in his own mind that if you have an old wooden pipe line, obsolete and worn out, a pipe line which has served its useful life and which must be replaced if the plant is to continue to operate, and you replace it with a new copper-steel pipe line and spend on this new line upward of one-half a million dollars, that is a repair cost. Mr. Boyd justifying this strange statement, uses illustrations, and says "that if you have a wooden pipe line and replace it stave by stave, that would be a repair job and if you replace it 10 feet at a time or 100 feet at a time, that would be a repair." Mr. Boyd said that it was only a question of time until the line would collapse entirely. This pipe line, therefore, came within Mr. Boyd's test principle of optional or compulsory, and, of course, applying that test and rule 4, the installation of this one-half million dollar pipe line was a repair job. Mr. Boyd actually applied these principles because he tells us that the responsibility of determining whether expenditures shall be charged to capital or to operations lies with the managing director of the company. (T.-5757).

Let us apply Mr. Boyd's optional and compulsory test to another concrete example. The concentrator burned down in 1922. Nevada was *compelled* to rebuild

it if operations were to continue. Under *compulsion,* Nevada did rebuild it—the cost however was charged, not to operating expense, but to capital in an amount in excess of $3,000,000.00. This slight error in accounting on the part of Mr. Huffer can probably be accounted for, however. Mr. Boyd had not then become identified with Nevada and his unique accounting tests and principles were unknown to Mr. Huffer. We wonder just how the cost of rebuilding the concentrator would have been charged had the contract with Coppermines been then in effect.

We contemplate Mr. Boyd's principles of accounting with awe and admiration. Only the acceptance of these principles, however, can justify Nevada's accounting methods in its dealings with Coppermines.

SUMMARY OF COPPERMINES' CLAIMS UPON ACCOUNTING

The evidence shows that Coppermines has paid Nevada $175,742.06 for power delivered at Kimberly for mining purposes. The evidence also shows that Coppermines has paid Nevada $2,957,609.73, as treatment costs for its ores delivered at McGill (Richards direct smelting ore treated at a fixed price not included). In addition, Coppermines has paid Nevada $922,266.08 as profit and $233,085.36 as depreciation and amortization.* It is our contention that Nevada, acting as a trustee and in a fiduciary capacity, has fraudulently charged into direct operating expense such cost that, under all

*In addition to these charges Coppermines paid 40c per ton for shovel mining its pit ores and 20c per ton for transportation of all ore, bringing the total payments to Nevada to more than $5,000,000.

accepted rules and methods of accounting, should be charged to capital, and that Nevada has committed a further fraud of so concealing its actual costs that same could not be determined or ascertained, and is, therefore, not entitled to any compensation for its services.

We submit that the actual cost which is established, did not exceed $2,524,853.23, and that Coppermines is entitled to a minimum reimbursement of $608,498.56 up to the period ending December 31, 1930, and that it is also entitled to interest and a return of the profit paid to Nevada.

1. Power Costs.

In our discussion of the power situation we have shown that Coppermines has been overcharged for power delivered for mining purposes to Kimberly, in the sum of $49,360.61, and we have also shown that Coppermines was overcharged for power used in concentrating and smelting in the sum of $108,419.73, ($81,-851.61 for concentrating and $26,568.12 for smelting—Exhibit 14th a/c-L-7).

We contend that the reasonable cost of power as set out in this brief is indeed a reasonable cost. It is the cost that has been attained or could have been attained under comparable conditions. It is the cost that actually has been attained by the many power plants operating in connection with mining and treatment enterprises as herein discussed (the only exception being the Chino plant during the two years when complete reconstruction was being carried out).

2. Water Service Costs.

Coppermines contends that in connection with the building of the new Duck Creek pipe line, the development of additional water supply in the Duck Creek basin, the McGill Springs pumping plant and the new water distributing system, it has been overcharged in the sum of $149,903.59. Of this amount $105,473.99 was overcharged against concentrating and $44,429.60 against smelting. Coppermines bases its claim on the thorough study and analysis as given by Mr. Devore, of this particular phase of the operations, and we know of no one better qualified to give an honest, unpartisan and fair opinion on this particular matter than Mr. Devore. Coppermines' claims and Mr. Devore's opinion are substantiated by the appraisals made by Mr. Devore and Mr. Galloway of such expenditures that were made in connection with the water development and which could be appraised. Lastly, Mr. Devore is completely corroborated in his appraisal of the excess water costs by the Larson letters. The Court will recall that the excess water charges for the entire plant as computed from the Larson letters and other documents of Nevada, is almost a check with the Devore estimate.

3. Concentrator Construction Expenditures.

Coppermines contends that in the direct operating expense for the concentration of its ores it has been overcharged in the sum of $92,198.24 (Exhibit 14th a/c P). The cost of the various items entering into this sum have been arrived at mainly through appraisals made by Mr. Galloway and Mr. Tandy.

4. Smelter Construction Expenditures.

Coppermines claims that in regard to smelting costs it has been overcharged in the sum of $139,240.19 due to charging construction expenditures of a capital character to operating expense. Coppermines bases this claim on the Larson letters where actual costs of certain items are shown. The actual costs shown in the Larson letters are from the field records and necessarily do not include a proportion of general expense and overhead, but the figures as disclosed in the Larson letters have nevertheless been used. Coppermines also bases its claim on appraisals made by Mr. Galloway and Mr. Kearns.

5. General Expense.

(a) Coppermines claims that certain general expense items shown in Exhibit 14th-a/c-P, which by their very nature must be considered as capital expenditures, have been included by Nevada in its direct operating expense and that Coppermines in this respect has been overcharged in the sum of $26,324.09, of which $15,-197.32 is on account of concentrating cost and $11,126.77 on account of smelting costs. The cost of the various items has been determined from the appraisals of Mr. Galloway and from the investigations that Mr. Bagwill has made of Nevada's accounts.

(b) Coppermines claims that certain general expenses which were in part incurred prior to the contract and which deal with refund of taxes, certain hospital arrangements and legal expenses in connection

with the suit against Coppermines, have erroneously been included in direct operating expenses. In this respect Coppermines contends that it has been overcharged in the sum of $7,633.27, of which $4,406.81 is on account of concentrating costs, and $3,226.46 on account of smelting costs.

6. Supplemental Appraisals—Defendant's Exhibit 14th. AD-1.

Coppermines claims that the items enumerated in Exhibit 14th-AD-1 are for expenditures, made as part of the plan of expansion and rehabilitation, and by their nature are capital expenditures, but nevertheless they have been included in direct operating expense. Coppermines contends that in this respect it has been overcharged $35,418.84, of which $14,109.96 is for concentrating costs, and $21,308.88 on account of smelting costs.

To Summarize:

Coppermines contends that on account of fictitious and erroneous charges for power, water service, direct concentrator and smelter expense and general expense, it has been overcharged for the concentration of its ores in the sum of $313,237.93, and for the smelting of its ores and concentrates, in the sum of $245,900.02, and for mine power in the sum of $49,360.61, a total of $608,498.56.

Coppermines claims for excess charges for concentration and smelting due to excess charges made by Nevada for power, general expense, and direct charges

for concentration and smelting costs, are completely sustained by Nevada's records, the most important of which are Exhibit 14th-AM-21 dealing with concentrating costs, and the Larson letters dealing with smelting costs.

Exhibit AM-21 and Mr. Haffner's Testimony *re* Concentrating Costs.

In connection with the claim of overcharge for concentration, Mr. Haffner testified that in his opinion the charges made by Nevada against Coppermines were approximately 9¢ per ton too high. (T.-3480-83). Mr. Haffner based his opinion upon his familiarity with the cost of concentration at many other plants, and upon his knowledge of the particular ores here in question. The ores of Coppermines treated by Nevada in its concentrator, from the date of the contract to December, 1930, amounted to 3,859,634 tons, and the overcharge, according to Mr. Haffner's opinion, would therefore amount to $347,367.06, a remarkably close check with the $313,237.93 claimed by Coppermines, and based upon various estimates, appraisals and documents of Nevada's. Coppermines' check of Nevada's General Expense is only through 1928, and if a check of the General Expense items for subsequent years were included, Coppermines' claim of $313,237.93 would undoubtedly equal or exceed Mr. Haffner's estimate.

In connection with Mr. Haffner's estimate of a 9¢ overcharge for concentrating, we wish to call attention to Exhibit AM-21, pages 1 and 2. These are papers found in Nevada's files by Mr. Richards and Mr. Lewis

when they, under order of the Court, were searching through Nevada's files. The papers in question were repeatedly referred to by counsel for Nevada as "fugitive papers". If they are to be deemed "fugitive" it is only in the sense that they escaped destruction in Nevada's general cleanup of all records which might be embarrassing, and not in accord with the final records in the metallurgical and accounting departments. This document was neither casual nor fugitive. Mr. Huffer testified that he and the financial bookkeeper were the authors of the document in question. He further said that it was made up upon the express direction of Mr. Kinnear, and that he had made up many similar documents. Request was made of Mr. Huffer to search for and produce others of the same type. Mr. Huffer, however, was unable to locate any more of them. (T.-9214). This document and Mr. Huffer's testimony clearly show that Nevada was keeping a record of excess costs. These records, of course, would be embarrassing to produce and undoubtedly all others were destroyed except the one found by Mr. Lewis and Mr. Richards. We here set out Exhibit 14th AM-21:

"NEVADA MINES

Recapitulation of Milling Costs

FEBRUARY MONTH 1930

	COST PER TON OF ORE			
	As Reported	Excess Charges	Net Cost	
Plant Administration and General	.111	*.025* .022	*.089*	*.086*
Fine Grinding	.124	*.035* .028	.096	.089
Flotation Concentration	.109	*.019* .014	.095	*.090*
Concentrate Dewatering	.010	.....	.010	*.010*
Transportation of Concentrate	.006	.....	.006	*.006*
Coarse Crushing	.081	*.017* .015	.066	.062
Total Plant Milling Cost	.441	*.096* .079	.362	.345
General Overhead Expense	.075	.015	.060	
Grand Total All Milling Cost	.516	*.111* .094	.422	

Deduct—Transportation of Concentrate not included in Hayden Costs:

Plant Milling Cost ..... .362 Less .006 = .356

Total Milling Cost..... .422 Less .066 = .416"

(Defendant's Exhibit 14th-AM-21, page 1).

Note: The italicized figures in copy of Exhibit above were in pencil on the original document.

"NEVADA MINES

Excess Charges—Milling Operations

FEBRUARY, 1930

		Amount	Per Ton
Plant Administration and General			
Heating Expense, Franklin's Office	$2,621.42		
Drafting and Engineering	388.22		
Excess Water Charge	3,762.01	$6,771.65	.022
Fine Grinding			
Excess Charge for Liners and Classifiers		8,550.00	.028
Flotation Concentration			
Pumps, Launders and Elec. Equipment		4,300.00	.014
Concentrate Dewatering		----------	
Transportation of Concentrates		----------	
Coarse Crushing			
Conveyors, Grizzlies—Screens and Elec. Equip.		4,400.00	.015
General Overhead Expense			
Legal Expense—Coppermines Suit		4,427.20	.015
Total		$28,448.85	.094"

(Defendant's Exhibit 14th-AM-21, page 2).

Exhibit 14th-AM-21 shows that, according to Mr. Hufer's calculations, the excess milling charge for February month, 1930, was 9.4¢, so Mr. Huffer is not very much at variance with the opinion of Mr. Haffner when he stated that the milling charges were approximately 9¢ too high.

The exhibit shows that Nevada was keeping costs and also keeping a record of the excess costs. The production of the exhibit and the destruction of others of similar type, or the failure to produce them, is but further evidence of Nevada's deliberate and intentional concealment of actual costs.

THE LARSON LETTERS *re* SMELTING COSTS:

Mr. Larson states that the excess charges, due to "permanent improvements," for the year 1927 totaled $235,075.00. Coppermines' percentage of the tonnage during that year was 20.5760, so the excess charge to Coppermines during that year was $48,369.03. In 1928, the excess charge, due to "permanent improvements," according to the Larson letter, was $316,696.74, and Coppermines' percentage of the tonnage was 13.4001, so the excess charge to Coppermines during that year was $42,437.68. In 1929, the excess charge, due to "permanent improvements," according to the Larson letter, was $502,362.76, and Coppermines' percentage of the tonnage was 18.8649, so the excess charge to Coppermines during that year was $94,770.24. The Larson letters then show that for the years 1927, 1928 and 1929, Coppermines was overcharged on account of smelting $185,576.95. If Mr. Larson had submitted similar letters

for the last six months of 1926 and for the year 1930, and if overheads had been included, it becomes apparent that Coppermines' claim of $245,900.02 is indeed a reasonable one.

Conclusion

In determining actual cost and direct operating cost Coppermines was entitled to the application of usual, accepted customary standards and principles of accounting. Its rights under the contract are to be so measured and they are not to be determined by strange or unique formulae known only to Nevada's managing director and accounting departments.

Let us summarize the character, nature and purpose of the expenditures made for the concentrator, smelter and other miscellaneous units.

(1) They were made as part of a general plan and program of expansion, increased capacity and rehabilitation.

(2) They were made to replace obsolete units which had served their useful life, which were almost completely depreciated, and which no longer had an economic productive value.

(3) The units and items installed will not have to be replaced for many years.

(4) They were extraordinary expenditures and not usual or normal.

(5) They were made to increase capacity and to decrease costs.

(6) They did increase capacity and decrease costs.

(7) They provided more efficient operation.

(8) When completed there was more plant than previously existed.

(9) They added to the permanent value of the plant.

(10) The items for which the expenditures were made will be in use and possess value for a period of longer than one accounting period.

(11) They gave to the plant an added physical value which it did not previously possess.

(12) They improved the productivity of the fixed assets.

(13) They tended to and did lengthen materially the original life of the plant.

(14) They were a cost of rearrangement of plant equipment to facilitate production flow.

Nevada admits, through its witnesses, experts and managers that this was the purpose, character, nature and result of the expenditures made. Every standard and accepted rule of accounting declares that expenditures made for such purposes are capital in character and that they are not direct operating expense. They are not direct expenses which enter directly into the cost of concentrating a ton of ore or smelting a ton of ore or concentrates. They are not a direct cost of crushing, grinding, floating, and handling the concentrates, nor are they a direct cost of roasting, smelting or converting the ores or concentrates. They are no

part of the direct supervision necessary in connection with concentrating the ore or smelting the ores or concentrates, and manifestly can not be classified as overheads.

We submit that Nevada has violated the contract and has exacted from Coppermines more than $608,498.56 by the introduction into the costs charged to Coppermines of expenditures which were no part of actual cost as defined by the agreement of June, 1926.

Summation of Coppermines' Claims on Metallurgy, Accounting and Power, and the Law Applicable Thereto

Although the burden of proof was not on Coppermines, it has undoubtedly sustained it. The rule is settled that when questions arise between a trustee and a beneficiary as to the good faith of transactions between them, a peculiar burden is imposed upon the one in whom the trust is reposed; the burden is cast upon the trustee or other person holding a relation of trust to show that the transaction is fair and reasonable and that all proper information has been given to the other party and that true and accurate records have been kept and a true and accurate itemized account of all charges and expenses has been rendered.

The evidence shows beyond all doubt that Nevada in its dealings with Coppermines kept false and untrue assay reports; that assays and work sheets were falsified; that returns in the form of settlements were made by Nevada to Coppermines which were not based upon

the actual assays of Coppermines' ores or upon pilot unit products but upon false and fictitious assays; that assayers' notebooks and metallurgical data and records were ordered destroyed and ordered discarded; that Nevada through its officers directed the destruction of all its records which did not conform to the settlements made with Coppermines or with the accounts kept by Nevada's metallurgical bookkeeper; and that Nevada, had Coppermines demanded an inspection of assay records, would have exhibited the "D" sheets which are the false assay records.

Nevada secretly and without advising Coppermines, changed the Lakenan-Fozard agreement, by which it was agreed that pilot unit assays and results should govern as to ratio and recoveries, and substituted for it Mr. Kinnear's instructions which were later labeled "conformity".

As to the crowding of tonnage the record shows without dispute that in the months of February and March, 1927, when there was concentrated by Nevada over 281,000 tons of Coppermines' Ora ores, Nevada deliberately and intentionally crowded this tonnage through the mill at rates of from 60% to almost 100% in excess of the rates of treatment of its own ores. This was done as an experiment in order that Nevada might find out how much ore could be crowded through. There was no attempted justification of this conduct except to declare that these two months fell within the "conformity" period. The authentic records of Nevada as distinguished from litigation exhibits also demonstrate

deliberate crowding of Coppermines' ores, especially during the period between June of 1928 and thereafter; that this crowding during the period between June of 1928 and the early part of 1929 was upon the Morris-Brooks ores which, according to Mr. Sands and Nevada's tests and metallurgical records, demanded exceedingly fine grinding in order to liberate the metals for flotation.

As to reagents, the overwhelming testimony and evidence shows that Nevada applied from 25% to 40% less xanthate to Coppermines' ores than it did to its own, and that this was over the protest and in spite of the demands of Coppermines for more xanthate. During a considerable portion of the time when starvation quantities of xanthate were applied to Coppermines' ores, Nevada was milling the Morris-Brooks ores, some of which were oxidized and required larger amounts of xanthate in order to float and recover the metals. The evidence also shows that commencing in June of 1930, when xanthate was increased to the standard which Nevada applied to its own ores, recoveries increased and there was also an increase in the grade of concentrates.

The evidence and testimony and reports of real experts, such as Mr. Lain, Mr. Nutter and Mr. Lewis, demonstrates that increased recoveries of copper and gold in accordance with the claims of Coppermines would have been made with proper concentration practice and attention and had the contract provision "that the best possible results shall be obtained for Coppermines consistent with good concentrating practice" been followed.

The record shows conclusively that the so-called gold settlement of October, 1927, was obtained by fraud. Prior settlements had been made with Coppermines upon the basis of approximately 60% when the actual recoveries were practically 75% as shown by Nevada's operating records. Nevada's letters, and we refer particularly to Mr. Huffer's letter to Mr. Smith, represented that this 60% gold recovery returned in the settlement sheets was based upon *operating data.* This was shown to be untrue and it was shown that this approximately 60% was arbitrary and at the most purported to be a return only of the gold in the blister. Nevada obtained the gold settlement through the false representation that it had conducted tests on Coppermines' ores and that these tests of Coppermines' ores showed a recovery of 69.8% when, in truth, this 69.8% was the recovery attained upon the general mill heads, and the tests on Coppermines ores showed a recovery of 74.57%. This difference meant $20,000 to Coppermines had it known the facts.

Nevada secretly made additions to the moisture contents of Coppermines' ores. During the period from the date of the contract to about February of 1927 it returned as moisture content of Coppermines' ores an average of 8.23%; it reported the moisture content of its own ores at 8.34%. It admittedly was adding 2½% to its own ores during this period. The record shows conclusively that Coppermines' ores and Nevada's ores were almost identical in moisture contents over a four and one-half year period. Nevada's mine records of moisture show that these ores averaged less than 5%

in moisture. It destroyed all records showing actual moisture determinations during this time. Manifestly, at least 3½% was added to Coppermines' ores during this time. Nevada secretly added one-half of 1% and later 1% to the moisture contents of Coppermines' ores in the period from February 1927 to about December 5th or 6th, 1929, and then entirely discontinued the practice. These secret additions to moisture amounted to $116,000 in gold and copper.

It secretly added approximately 3% to the moisture contents of its own ores. This addition was arbitrary, not based on tests or information, and the 3% does not constitute moisture. Nevada refuses to say how much of the 3% is attributable to evaporation or moisture losses. This secret addition to the moisture contents of Nevada's own ores resulted in decreasing Nevada's dry tonnage and increased the per-ton cost of ore to Coppermines by more than $49,000.00.

Upon accounting, including power, the evidence disclosed that with the making of the contract Nevada, required to keep actual costs, discontinued, upon oral directions from Mr. Jackling, the practice of keeping work orders, the only method by which true, accurate and itemized costs can be kept. The evidence discloses, and this comes from Nevada's officers and accountants, managing director and counsel, that actual costs cannot be ascertained from Nevada's books and records. The new Duck Creek pipe line, water service and development were installed and no costs were kept and the actual cost cannot be ascertained from Nevada's

accounts. The cost of this water line, development and service, involving an expenditure, according to Mr. Devore and Mr. Galloway, aggregating three-quarters of a million dollars, cannot be ascertained from the books of Nevada. New buildings were built and the cost was covered up and so successfully concealed that not even Mr. Huffer, historically familiar with the transactions, can now find the true and actual or honest cost of them.

The evidence shows that the power plant—"in such condition that unless something was done with it, that it could not continue to operate and was dangerous to life and property"—was rehabilitated, reconditioned, expanded and its capacity increased yet no record was kept of the actual cost of carrying out this program, and Nevada, in presenting its bills to Coppermines for power based them not upon actual cost but upon a set figure without regard to the actual cost.

In the smelter, in the three years from 1927 to 1929, $1,053,834.50 was expended for permanent improvements, so designated by Mr. Larsen, the superintendent, in his letters to Mr. Kinnear. This amount represented, in the words of Mr. Larsen, excess costs and represented for the year of 1929 alone an excess cost of $1.16 per ton for smelting. This secret record was kept by Nevada and known to the superintendent of the smelter and to the general manager, Mr. Kinnear. A similar secret record was found in Nevada's files and showed a 9¢ per ton overcharge and excess cost for concentration due to charging permanent improvements to operating expense instead of to capital.

Nevada stands before this Court as an unfaithful and negligent trustee, guilty of actual fraud and deliberate concealment. In these circumstances and conditions, the law is clear.

THE BURDEN OF PROOF IS UPON NEVADA

Throughout the trial, the burden under the law was upon Nevada, yet it shirked this duty and confined its efforts to refute the facts produced by Coppermines, which showed it had been an unfaithful trustee.

> ". . . . Where defendant is an accounting party, as one occupying a fiduciary relation, the burden is on him to show the performance of his trust, and one who is liable to render an account has the burden of proving allowances or credits which he may claim; . . . .".
>
> 1 *C. J.*, p. 643, sec. 129;
> *Marvin v. Brooks,* 94 N. Y., 71;
> *Fox v. Hall,* 164 Cal. 287, 128 P. 749.
> *Thatcher v. Hayes,* 54 Mich. 184, 19 N. W. 946;
> *Witzel's Estate,* 10 Pa. Dist. 462;
> *Sharp v. Behr,* 136 Fed. 795;
> *Long Valley L. & D. Co. v. Hunt,* 51 Nev. 5.
>
> 'From . . . . the findings the Court took the view that the burden of proof was upon the plaintiff to show the incorrectness of the account. Such is not the law. The burden rests upon the person accounting."
>
> *Long Valley L. & D. Co. v. Hunt,* supra.
>
> 'The rule is that the burden of proof is always upon the party alleging a fraud, but there is a large class of cases which form an apparent excep-

tion. *When a question arises between a trustee and a beneficiary or between other parties who are in a fiduciary relation, as to the good faith of transactions between them, a peculiar burden is imposed upon the one in whom the trust is reposed. When the complaining party proves such relation, the burden is cast upon the trustee or other person holding the relation of trust to show that the transaction is fair and reasonable and that all proper information was given to the other party.*

To state the rule more broadly, when confidential relations exist between two persons, resulting in one having an influence over the other and a business transaction takes place between them, resulting in a benefit to the one holding the influential position the law presumes everything against the transaction, and casts the burden of evidence upon the person benefitted to show that the confidential relation was, as to the transaction at least, suspended and that it was as fairly conducted as if between strangers."

Jones Com. on Evidence, Sec. 549, page 1009, Vol. 2, 2nd Ed.

"Where the relation of trustees and *cestuis que* trust is admitted or clearly established, the *cestuis que* trust, as the true owners of the fund, have the right to the production and inspection of all documents and papers relating to it."

Perry on Trusts, 7th Ed. Vol. 2, Sec. 822, page 1398.

"A trustee or executor is bound to keep clear, distinct, and accurate accounts. If he does not all presumptions are against him and all obscurities

and doubts are to be taken adversely to him. (*The burden of proof is upon a trustee to show that the charges or expenses for which he claims credit upon an accounting were proper disbursements.*) If he enters these accounts in his private books, he is bound to produce the books, although such books contain his private accounts."

Perry on Trusts, 7th Ed. Sec. 821, Vol. 2, page 1397.

"By the well-settled doctrine of equity, a constructive trust arises whenever one party has obtained money which does not equitably belong to him, and which he cannot in good conscience retain or withhold from another who is beneficially entitled to it; as, for example, when money has been paid by accident, mistake of fact, or *fraud,* or has been *acquired through a breach of trust,* or violation of fiduciary duty and the like. It is true that the beneficial owner can often recover the money due to him by a legal action upon an implied assumpsit; but in many instances a resort to the equitable jurisdiction is proper and even necessary."

Pomeroy's Equity Jurisprudence, 4th Ed., Vol. 3, Sec. 1047, p. 2377.

"A trustee is not an agent. An agent represents and acts for his principal, who may be either a natural or artificial person. *A trustee may be defined generally as a person in whom some estate, interest, or power in or affecting property is vested for the benefit of another.*"

Taylor vs. Davis, 110 U. S. 330, 28 L. Ed. 163.

"Where a trust relation exists between parties, the *cestui que* trust is entitled to a complete accounting from the trustee, in which all data in the trustee's accounts (which it is his duty to keep) should be furnished."

Dillman vs. Hastings, 144 U. S. 136, 36 L. Ed. 378.

"The law of settlement and accounting by trustees and other fiduciaries is settled and clear; and briefly is that therein ordinarily they will be charged with all proven to have been received by them, and credited with all proven to have been properly disbursed by them. The burden is on them to disclose all relating to the trust, its extent, transaction, manner of performance, and that by competent and sufficient evidence. See Wootton Co. vs. Ownbey, 265 Fed. 91 and citations."

In re *Judith Gap Commercial Co.,* 291 Fed. 792.

"The existence of the trust imposed upon the trustees the duty of an accounting. Dillman vs. Hastings, 144 U. S. 136, 36 L. Ed. 378; Irvine vs. Dunham, 111 U. S. 327, 28 L. Ed. 444; 26 R. C. L. 252; 39 Cyc. 464. Unless the matters hereafter referred to relieve the defendant Lewis from this obligation, the burden is upon him to account to the plaintiff for all properties received by the trustees, and for the disposition thereof."

"The object of this suit is an accounting. A trustee should be not only willing but anxious to account to his beneficiary. The circumstances as shown by plaintiff's case tend to prove a lack of good faith."

Ingram vs. Lewis, 37 Fed. (2d) 259.

In

Wootten Land & Fuel Co. vs. Ownbey, 265 Fed. 91,

the Court said:

> "*When the defendant is an accounting party, and stands as one occupying a fiduciary relation toward the plaintiff, because of money or property intrusted to him, the burden is upon him to show that he has performed his trust and the manner of its performance.* He owes this duty because of the confidential relation he bears to his principal, and because he is presumed to know how he has performed his duty. 1 Mechem on Agency, (2d Ed.) 1344; 1 Corp. Jur. 643; 3 Gr. on Ev. 253; 1 Story, Eq. Jur. (14th Ed.) 625; Marvin V. Brooks, 94 N. Y. 71, 75; Little v. Phipps, 208 Mass. 331, 335, 94 N. E. 260, 34 L. R. A. (N. S.) 1046. *He must therefore prove any allowances or credits that he may claim to have made on behalf of his principal. In making proof of credits claimed by him, he should present an itemized statement, showing the details of expenditures, with the vouchers, receipts, and memoranda supporting his claim.* Meth. Epis. Ch. v. Jacques, 3 Johns. Ch. (N. Y.) 77, 114; Muir v. Kalamazoo Corset Co., 155 Mich. 441, 448, 119 N. W. 589; Campbell v. Cook 193 Mass. 251, 256, 79 N. E. 261; Chicago Title Co. v. Ward, 113 Ill. App. 327, 331; Moyses v. Rosenbaum, 98 Ill. App. 7, 9; 1 Mechem on Agy. (2nd Ed.) 1344. It was formerly the rule that the accounting party, if credible and uncontradicted, could support by his own oath sums not exceeding $20; but even in that case he must show to whom the amount was paid, for what, and when, and the whole amount of such items could

not exceed $500. Remsen v. Remsen, 2 Johns. Ch. (N. Y.) 496, 501; 2 Bates, Fed. Eq. Proc. 764; Daniell's Ch. Pl. & Pr. (6th Am. Ed.) 1227, 1228. Whatever relaxation from this rule may now be indulged, it is still requisite that the accounting party shall show in detail, and not in round sums, the items expended, and show when, to whom, and for what purpose the payments were made, so that his principal can make a reasonable test of the accuracy of his claim.

It follows as a corollary to these principles that the duty to account is not fulfilled by a mere general statement that the money was expended for the principal's benefit or business, or by a general denial that any of the principal's money was taken for the personal use of the trustee. Such statements are but the conclusions of the witness, and afford no reasonable opportunity to the principal to test the fact or the propriety of the expenditures, and give the court no basis for determining from the facts of each transaction whether the trustee has faithfully performed his duty. 1 Mechem on Agy. (2nd Ed.) 1344; New York Bay Cemetery Co. v. Buckmaster (N. J. Ch.) 33 Atl. 819; Webb v. Fordyce, 55 Iowa, 11, 14, 7 N. W. 385; Farmers' Warehouse Ass'n. v. Montgomery, 92 Minn. 194, 200, 99 N. W. 776; Willis v. Clymer, 66 N. J. Eq. 284, 287, 57 Atl. 803; In re Gaston, 35 N. J. Eq. 60, 64; Romig's Appeal, 84 Pa. 235, 237; Wolf Co. v. Salem, 33 Ill. App. 614, 617; 2 Bates, Fed. Eq. Proc. 764; 2 Daniell, Ch. Pl. & Pr. (6th Am. Ed.) 1227, 1228."

"The trustee is bound to put his *cestui que* trust in possession of the full and true state of his affairs before any settlement will bind."

26*R. C. L.*, sec. 252, p. 1387.

Jones v. Home Sav. Bank, 118 Mich. 155, 76 N. W. 322, 74 A. S. R. 377;

Diller v. Brubaker, 52 Pa. St. 498, 91 Am. Dec. 177.

In

In re *Judith Gap Commercial Co.* 291 Fed. (D. C. Mont.) 792, 795

the Court said:

> "The law of settlement and accounting by trustees and other fiduciaries is settled and clear; and briefly is that therein ordinarily they will be charged with all proven to have been received by them, and credited with all proven to have been properly disbursed by them. The burden is on them to disclose all relating to the trust, its extent, transaction, manner of performance, and that by competent and sufficient evidence. See Wooten Co. vs. Ownbey (C. C. A.) 265 Fed. 91, and citations; 39 Cyc. 476-480, 498, and citations."

IT WAS THE DUTY OF NEVADA TO KEEP TRUE, ACCURATE, ITEMIZED AND CORRECT ACCOUNTS AND RECORDS.

It was the duty of Nevada to keep a true and correct account of all its dealings with the trust property which came into its hands by virtue of its trust relationship under the contract, with its charges against such property, in order that Coppermines might at all times, by an inspection of Nevada's accounts, ascertain

whether or not such were correct, these books and accounts to be at all times open to the inspection of Coppermines. No such books or accounts were kept and Coppermines was compelled to invoke the aid of the Court in order to be able to inspect such accounts and documents as Nevada had retained and these only partly showed the truth.

Coppermines, whatever the proof may have been, could only show those charges which it could find. There can be no question but if the truth were known that hundreds of thousands of dollars in addition thereto were charged into direct operating expense which should have been charged to capital, and which can never be definitely found, because of Nevada's deliberate concealment, through its accounting methods.

In

> In re *Gaston Trust,* 35 New Jersey Equity Reports, 60,

the Court said:

> "Trustees are bound to keep clear and accurate accounts, and in case doubts or obscurities arise from their failure to do so, they should be resolved against the trustees. If the accounts of a trustee become lost through his carelessness, he should be required to bear any injurious consequences arising from their loss. The law imposes the duty of keeping accounts on trustees for the protection of their *cestuis que* trust, and a trustee will not be permitted to defeat this salutary purpose by his carelessness."

"The persons seeking the aid of the court in this matter stand bound, as sureties, for the defaults and fraud of the trustee, and have no right, therefore, to any favor or immunity that would not be accorded to the trustee."

A well considered opinion on the duty of trustees as to the keeping of accounts is the case of *Purdy vs. Johnson,* 174 Cal. 521; 163 Pac. 893, where the Court said:

"But, conceding the good faith of the trustees, the fact remains that they had by their own admission, failed to comply with the obligation which rests upon all trustees to keep full and accurate accounts of the trust funds coming into their hands, and to render an account thereof to their beneficiaries.

" 'Trustees are under an obligation to render to their beneficiaries a full account of all their dealings with the trust fund (3 Pomeroy's Equity Jurisprudence, sec. 1063; 28 Am. & Eng. Ency. of Law (2d Ed.) p. 1076), and where there has been a negligent failure to keep true accounts, or a refusal to account, all presumptions will be against the trustee upon a settlement (Lupton v. White, 15 Ves. (Eng.) 432, 440; Blauvelt v. Ackerman, 23 N. J. Eq. 495; Landis v. Scott, 32 Pa. 495). Bone v. Hayes, 154 Cal. 759, 766, 99 Pac. 172'."

"From time to time the trustees advanced money to the beneficiaries for living expenses. In the account prepared by Lutgen the plaintiff was charged with $1,228 claimed to have been advanced to her in the Salinas City Bank, and not charged to her in the original accounts. These charges are attacked as not being supported by vouchers or

by the testimony. The objection is supported by the record. The charges were based by the expert solely on memorandum checks or tags found among the papers of the bank. They were not signed by the plaintiff. Such tags do not constitute vouchers showing payment to her. Estate of Rose, 63 Cal. 349. Furthermore, many of the tags do not purport to be for remittances to the plaintiff, but contain merely the words: "For Remittance. Debit Christal Heirs." "For Check to S. F. Debit Christal Heirs Estate," "For Ck. D. K. B. Co. Debit Christal Heirs Estate"—and the like. The appellants claim that the tags of this class aggregate $700.35. The defendants do not dispute this computation, and we do not feel called upon to make a minute examination of the record to verify the figures. Regarding this charge of $1,228, the respondents say in their brief that the plaintiff was present during the trial and did not take the stand to deny receipt of the amounts specified in the tags. The fault in this argument is that which we have already mentioned as permeating the entire proceeding, viz., that it is assumed that the burden is upon the beneficiary to disprove the correctness of items in the account, whereas, in fact, *the burden is upon the trustees to prove that charges made by them are proper.*

"Numerous other items in the account are attacked by appellant, but we think we have discussed enough of them to show that the judgment appealed from cannot be sustained. The case must be remanded for the taking of a new account in accordance with the established principles of equity. The Court may either take the account itself or make a reference for that purpose. *But which ever mode is followed, the account should be stated*

in accordance with the rules to which we have adverted, i. e., that it is the duty of the trustees to support every item of their account, and that, wherever they fail to support the correctness of a charge or a credit by satisfactory evidence, the item must be disallowed. It is probable that, upon any such settlement of the account, these trustees will be compelled to forego repayment of sums which they have properly and in good faith expended for the trust, and that they will be charged as having received money in cases where they have not, in fact, received it, and could not with reasonable diligence have received it. But, if this be the result, it will follow from the failure and neglect of the trustees to perform their duty of keeping full and accurate accounts of their transactions. Their good faith cannot save them from the consequences of this neglect. *Whatever doubts arise from their failure to keep proper records or their inability to establish the items of their accounts must be resolved against them.*''

In

Freeman v. Donohoe, 223 Pac. 431,

the Court said:

''The rule relative to the duties of trustees as to keeping proper books of account and the rendering of full accounts of their dealings with the trust funds is clearly announced in the case of Purdy v. Johnson, 174 Cal. 521, 163 Pac. 893, where it is said that—

'Trustees are under an obligation to render to their beneficiaries a full account of all their dealings with the trust fund and *where there has been*

a negligent failure to keep true accounts, or a refusal to account, all presumptions will be against the trustee upon a settlement.'

"The case of Roberts v. Eldred, 73 Cal. 394, 15 Pac. 16, which was a case for dissolution of a copartnership and accounting, disclosed a condition of the books of account such as compelled the preparation of books prepared by experts who were employed by the referee and which books were made up of imperfect books kept by the defendant in the case. Speaking of the books kept by the defendant, the court, on page 396 of 73 Cal. 15 Pac. 17, said:

'Many of the accounts which he did keep were false, and credit was not given to plaintiff in cases where it ought to have been. It will not do for defendant to take refuge behind such books as these. If the result which the referee and the Court arrived at was not correct, the record should have made the error appear. *The only thing which is clearly apparent from this record beside the misconduct of the defendant is hopeless confusion in the accounts. It is eminently a case where the action of the Court below should not be disturbed'."*

In

Wylie v. Bushnell et al (Ill.), 115 Northeastern Reporter, 618,

the Court said:

"Of course, there can be no question as to the duty of a trustee to keep regular and accurate accounts during the whole course of his trusteeship, from which it can be ascertained what property has come into his hands, what has passed out, and

what remains therein, including all receipts and disbursements in cash, and the sources from which they came, to whom paid and for what purpose paid. Warner v. Mettler, supra; Lehman v. Rothbarth, 159 Ill. 270, 42 N. E. 777; 3 Pomeroy's Eq. Jur. (3d Ed.), sec. 1063; 2 Perry on Trusts (6th Ed.) sec. 821; 2 Beach on Trusts and Trustees, sec. 682.

"And these same authorities hold that these accounts should be open at all times to the inspection, on demand, of the beneficiary."

In

Fidelity & Deposit Co. v. Husbands (Ky.) 192 Southwestern Reporter, 51,

the Court held:

"The general rule which is applied in an action against a trustee of any kind for an accounting, is that, when assets are shown to have been received by him, the burden rests upon him to make a satisfactory accounting of them, and, if he does not do so, the doubts and obscurities in his accounts are to be taken adversely to him. In the absence of evidence of the actual value of property, which goes into the hands of an assignee for creditors, he may be properly charged with the inventoried value. These principles are founded in the rules of evidence and common sense. The assignee must be presumed to know what he has done with the assets of the estate which came into his hands for distribution, and what amounts he has realized from the sale of them, and what disbursements he has made, and this knowledge may be his alone. The assignee *must take the burden of all affirma-*

tive defenses to an action for an accounting against him, because otherwise it would devolve upon the beneficiaries of the trust to prove negatives, about which they may possibly know nothing and have very ill-convenient means of discovery, while the dispositions he has made of trust property and the disbursements made by him are directly within his knowledge and easy of proof by him.''

Nevada, for its services, is, under the contract, to receive actual cost, defined as direct operating cost plus overhead. In addition it is to receive amortization and depreciation to provide for redemption of plant, but above and over everything else, Nevada, under the contract and as trustee, is to receive compensation in the nature of a profit for its services, and the use of its plant. Coppermines, in order to present its case against an unfaithful, negligent, dishonest, and reckless trustee, has been compelled to spend a tremendous amount of money. It is entitled to be reimbursed for these expenditures in any final decree which may be entered in this cause.

Nevada has not only failed to keep accounts from which the true items of charges against Coppermines can be ascertained and determined but has been confessedly guilty of fraudulent concealment of facts, items, and documents, which it was its duty to keep open to the inspection of Coppermines and at all times available without the aid of the court in order that Coppermines might be fully advised of its relationship and liabilities, if any, to Nevada.

FRAUDULENT CONCEALMENT.

The general rule goes further than merely holding falsification of accounts to be a badge of fraud. Concealment of material facts or mere silence constitutes fraud in itself where there exists a duty to disclose. Such a duty clearly exists wherever there is a fiduciary relation. To this effect see:

26 *R. C. L.* 1375;

General Investment Co. v. American Hide & Leather Co., 127 Atl. 659;

Dick v. Alberts, 90 N. E. 683;

Smith v. Townshend, 92 Am. Decs. 637;

Jordan v. Jordan, 109 Atl. 181;

Bacon v. Soule, 126 Pac. 384;

Hoge v. George, 200 Pac. 96.

Consequently, falsification of reports, failures to report clearly, constitute fraud. To this effect see:

Ryder v. Bamberger, 158 Pac. 753,

in which the Court says:

> "Where by reason of a fiduciary relation there is a duty to disclose facts, failure to disclose amounts to a 'fraudulent concealment'."

In

Des Moines Terminal Co. v. Des Moines Union Ry. Co., 52 Fed. 2nd, 616,

the Court says:

"It is not enough that direct misrepresentation is avoided (by a fiduciary). Concealment and silence are fraudulent, and that, too, although they may not be with conscious intent to defraud,—a silence from carelessness and neglect."

In

Appeal of Potter, 12 Atl. 513,

the Court says:

"Such a fraud will be inferred in cases where a confidential relation is used to accomplish a transaction that is injurious to the trusting party, *even though there be no actual fraudulent intent.*"

In

2 *C. J.* 692,

it is said:

"So sedulously is this principle guarded that all acts of an agent which tend to violate his fiduciary duty are regarded as frauds upon the confidence bestowed, and are not only invalid as to the principal, but are also against public policy."

In

T. C. Power & Bros., v. Turner 97 Pac. 950,

the Court said:

"A fraudulent concealment is the intentional concealment of some fact known to defendant which it is material for plaintiff to know to prevent being defrauded; the concealment of a fact which one is bound to disclose being the equivalent of an indirect representation that such fact does not exist, and differing from a direct false statement only in the mode by which it is made."

And the leading case for the rule,

Magee v. The Manhattan Life Ins. Co., 92 U. S. 699,

has this to say:

"'A fraudulent concealment' is the suppression of something which the party is bound to disclose."

Cases supporting the same principle are:

Long v. Martin, 234 S. W. 91;

Newell Brothers vs. Hanson, 123 Atl. 208;

Continental Coal, Land & Timber Co. v. Kilpatrick, 158 N. Y. S. 1056;

Arkins v. Arkins, 77 Pac. 256;

Pitman v. Holmes, 78 S. W. 961;

Wright v. German Brewing Co. 63 Atl. 807;

Sheman v. Harbin, 100 N. W. 629;

Files v. Rankin, 153 Fed. 537.

See also

Perry on Trusts, Vol. 1, secs. 177-8

for an excellent discussion.

Frethey v. Durant, 48 N. Y. S. 839,

says:

"It is assumed that the agent or trustee has means of knowing, and does know, what the principal or *cestui que* trust, cannot know, and is bound to reveal the entire truth."

To sum up,—wherever there is a duty arising out of any relation to make a full factual disclosure, a failure to make such disclosure, mere silence is fraud in itself. It appears that such a duty clearly arises out of a fiduciary relation (authorities cited above). As a result, Nevada's failure to disclose the true facts to Coppermines amounted to fraudulent concealment, and her falsification of the assays amounted to actual fraud.

Nevada, an Unfaithful Trustee, Should not be Allowed Compensation.

Nevada's conduct under the contract has been such that it should be deprived of the profit and compensation which it has received. The rule is well settled, and indeed it appeals to equity and good conscience, that an unfaithful trustee should not be allowed compensation for his services. A trustee, dishonest or unfaithful, negligent or reckless in the performance of duties under the trust, a trustee who fails to keep proper accounts and make proper settlements or returns, should be deprived of all compensation.

Nevada has received compensation in the sum of approximately $900,000. This was in the nature of profit under the contract. For this large sum of money, Coppermines was entitled to have fair dealing and accurate accounts in relation to its property entrusted to Nevada under the terms of the contract. It has had neither. Every duty required of a trustee in his dealing with its beneficiary has been violated by Nevada. Its acts and conduct in every particular brings it within the rules which hold an unfaithful trustee shall receive no compensation.

"*Want of fidelity forfeits a trustee's right to compensation on obvious principles of justice. Hence, if the trustee is dishonest, or unfaithful, or negligent, or reckless* in the performance of the duties of the trust, *no compensation will be allowed.* Thus a trustee's commission will be forfeited where he makes use of the trust funds in his own business or neglects to invest or permits his bailee to waste the funds, or *fails to keep proper accounts and make proper settlements or returns,* and it seems however that although it is the general rule to refuse compensation for a failure to keep proper accounts, yet it is not universal."

26 *R. C. L.* sec. 259, page 1393.

"Want of fidelity forfeits a trustee's right to compensation upon obvious principles of justice. Hence, if the *trustee is dishonest, or unfaithful, or negligent, or reckless in the performance of the duties of the trust, no compensation will be allowed*: Swartswalter's Account, 4 Watts, 77; Stehman's Appeal, 5 Pa. St. 413; McCahan's Appeal, 7 Id. 56; Drysdale's Appeal, 14 Id. 531; Greenfield's Estate, 24 Id. 232; Witmer's Appeal, 28 Id. 376; Landis v. Scott, 32 Id. 495; Berryhill's Appeal, 35 Id. 245; Robinett's Appeal, 36 Id. 174; Stearley's Appeal, 38 Id. 525; Hermstead's Appeal, 60 Id. 423; Gordon v. Matthews, 30 Md. 235; Blauvelt v. Ackerman, 23 N. J. Eq. (8 C. E. Green,) 495. So where he makes use of the trust funds in his own business: Norris' Appeal, 71 Pa. St. 106; or neglects to invest: Warbass v. Armstrong, 10 N. J. Eq. (2 Stock.) 263; Frey v. Demarest, 17 N. J. Eq. (2 C. E. Green,) 71; Lathrop v. Smalley, 23 Id. 192; Knight v. Walsh, 24 Id. 498. So where

he permits his bailee to waste the funds: Dyott's Estate, 2 Watts & S. 557. And where the trustee's negligence in the management of the trust arises from kind feelings towards the widow of the intestate, his compensation will nevertheless be forfeited: Smith's Appeal, 47 Pa. St. 424. Where the trustee fails to keep proper accounts, make proper settlements or returns, compensation will be refused: Marcy's Account, 24 N. J. Eq. (9 C. E. Green) 451; Frazier v. Vaux, 1 Hill's Ch. (S. C.) 203; Fall v. Simmons, 6 Ga. 265; Kenan v. Hall, 8 Id. 417. It was said, however, in French v. Ragland, 2 Dev. Eq. 137, that although it was a general rule to refuse compensation for a failure to keep proper accounts, yet it was not universal. In Wistar's Appeal, 54 Pa. St. 60, it was held that compensation might properly be reduced, if not denied altogether on this ground. In Gee v. Hicks, Rich. Eq. Cas. (S. C.) 5, it was decided that notwithstanding a trustee's failure to make proper returns, he was nevertheless entitled to commissions on paying over the balance in his hands. So in Kee v. Kee, 2 Gratt. 116, it was held that an executor who had not kept the proper accounts, but who was nevertheless charged with all that he was justly responsible for, was entitled to the usual commissions. A mere mistake of judgment will not forfeit a trustee's right to compensation: Myer's Appeal, 62 Pa. St. 104. So where he mixes the trust funds with his own without any dishonest purpose: Parker's Estate, 64 Pa. St. 307."

17 *Am. Dec.*, p. 274, notes.

"Breach of trust or confidence.

"A court of equity will not aid one who, standing in a relation of confidence to another, commits acts in violation of his trust which, are immediately connected with the subject-matter of the litigation. Pendleton v. Gondolf (1915) 85 N. J. eq. 308, 96 Atl. 47; Helsley v. Fultz (1882) 76 Va. 675.

"Thus, in Pendleton v. Gondolf (N. J.) supra, the Court said: 'It is a maxim of equity that he who comes into a court of equity must come with clean hands; and in the ordinary application of that maxim a court of equity denies its remedies to a complainant who has been guilty of bad faith, fraud, or unconscionable acts in the transaction which forms the basis of his suit.'

"In Farley v. St. Paul, M. & M. R. Co. (1882) 14 Fed. 114, it was held that a receiver of railroad properties, who, by the aid of information acquired in his official capacity, conceived a plan to gain control of the property, was not in a position to obtain equitable relief from his associates in the fraudulent design."

4 *A. L. R.*, p. 83.

In

Hoge v. George (Wyo.), 200 Pac. 96, 18 A. L. R. 469,

the Court said:

"It is the familiar doctrine of constructive trusts that there is a presumption of fraud in every case where a fiduciary profits by a transaction with the person who confides in him. To overcome the pre-

sumption it must be shown that he who seeks to uphold the contract communicated to the other, not only the fact of his interest in the transaction, but all information he had which it was important for the other to know in order to enable him to judge of the value of his property. Tate v. Williamson, L. R. 1 Eq. 528, 14 L. T. N. S. 163, 14 Week. Rep. 449, s. c. L. R. 2 Ch. 55, 15 L. T. N. S. 549, 15 Week. Rep. 321; 2 Pom. Eq. Jur., Sec. 956; 3 Williston, Contr. sec. 1499."

In

Comingor v. Louisville Trust Co., 128 Ky. 697, 129 Am. St. Rep. 322,

the Court said:

"No doctrine is better settled than that an assignee, or other trustee, in the management of the estate intrusted to him, is bound to exercise the same care that an ordinarily prudent person would use in his own affairs under like circumstances, and for such losses, deficiencies or injuries as may be occasioned by his affirmative or negative violation of this rule, and the duties it imposes, he is answerable for the loss thereby inflicted: Perry on Trusts, sec. 770; Pomeroy's Equity Jurisprudence, sec. 1070. In Pomeroy's Equity Jurisprudence, section 1079, it is said: 'It might be supposed that the term "breach of trust" was confined to wilful and fraudulent acts which have a quasi-criminal character, even if they have not been made actual crimes by statute. The term has however, a broader and more technical meaning. It is well settled that every violation by a trustee of a duty which

> equity lays upon him, whether willful and fraudulent, or done through negligence, or arising through mere oversight or forgetfulness, is a breach of duty.' Upon the facts furnished by the record before us, and under an application of the just rule above stated, appellant's management of the estate intrusted to him was highly reprehensible and such as to manifest bad faith and gross misconduct, which this Court cannot ignore or condone, even to the extent of allowing him compensation for any part of the services he claims to have rendered as assignee. The circuit court's action in refusing him compensation was, therefore, proper, for a trustee guilty of fraud or misconduct in the management of the estate is not entitled to compensation: Perry on Trusts, sec. 919, 4 Cyc. 257."

Upon the facts presented to the Court, and the law applicable thereto, Coppermines claims that it is entitled to be reimbursed for metals on account of moisture additions in the sum of $116,339.32; on account of excessive milling charges due to the addition of 3% to the moisture contents of Nevada's ores, the sum of $49,-441.33; on account of falsification of assays and loss of copper on account thereof, $12,833.67; and because of improper metallurgical practices, the starvation of xanthate, and crowding of tonnage, *$319,823.13 on account of copper, and $90,597.20 on account of gold; and that in addition thereto there should be allowed to Coppermines $20,000.00 for additional gold during the

---

*This sum includes the amount due to falsification of assays on some eighteen settlements which was not computed in the item "Falsification of Assays."

period from the date of the contract to about September 1, 1927, or a total amount of $609,034.65. Coppermines is entitled also to recover the sum of $608,498.56 because of overcharges made in excess of actual cost of concentrating, smelting and for power furnished to Kimberly, or a total of $1,217,533.21, and that this total amount should be surcharged against Nevada as a trustee.

Coppermines also claims that it is entitled to have refunded to it the total profit paid by Coppermines to Nevada in the sum of $922,266.08.

Nevada, an unfaithful trustee, is not entitled to compensation.

Respectfully submitted,

GEORGE B. THATCHER,
WILLIAM WOODBURN,
WM. FORMAN, SR.,
THATCHER & WOODBURN,
FORMAN & FORMAN,
Attorneys for Defendant.