

BEAR RIVER COMPACT COMMISSION  
Minutes of Meetings Held in Salt Lake City, Utah,  
September 28 and 29, 1954

A meeting of the Bear River Compact Commission was held in the Senate Lounge at the State Capitol in Salt Lake City, Utah on September 28 and 29, 1954. Mr. E. O. Larson, Chairman, presided. The following Commissioners, Assistant Compact Commissioners and Advisors were present:

E. O. Larson, Chairman and Federal Representative  
Fred M. Cooper, Chairman, Idaho Compact Commission  
George D. Clyde, Utah Compact Commissioner  
L. C. Bishop, Wyoming Compact Commissioner

Orson A. Christensen	Brigham City, Utah
Jay R. Bingham	Salt Lake City, Utah
E. M. Van Orden	Lewiston, Utah
Albert B. Harris	Logan, Utah
Samuel Rex	Randolph, Utah
E. K. Thomas	Logan, Utah
Robert B. Porter	Salt Lake City, Utah
John P. Stevens	Henefer, Utah
A. V. Smoot	Corinne, Utah
Francis M. Bell	Denver, Colorado
M. T. Wilson	Salt Lake City, Utah
W. V. Iorns	Tulsa, Oklahoma
E. B. Hitchcock	Rock Springs, Wyoming
H. T. Person	Laramie, Wyoming
E. G. Thorum	Salt Lake City, Utah
S. Gerald Irvine	Salt Lake City, Utah
R. D. Stoker	Soda Springs, Idaho
Melvin Lauridsen	Montpelier, Idaho
J. Warren Serrine	Dingle, Idaho
C. R. Nate	Salt Lake City, Utah
W. N. Jibson	Logan, Utah
Mark R. Kulp	Boise, Idaho
A. L. Merrill	Pocatello, Idaho
Joseph M. Tracy	Salt Lake City, Utah
F. B. Myers	Evanston, Wyoming
E. R. Callister	Salt Lake City, Utah
Ashby Boyle	Salt Lake City, Utah
L. B. Johnson	Randolph, Utah
Robert E. Smylie	Boise, Idaho
P. W. Spaulding	Evanston, Wyoming
J. L. Weidmann	Tremonton, Utah
Van S. Wilson	Brigham City, Utah
E. J. Skeen	Salt Lake City, Utah
M. A. McMurray	Salt Lake City, Utah
Arden Pope	Sage, Wyoming

Mr. Larson introduced George D. Clyde to the Commission, explaining that the change in the Utah law last session made Mr. Clyde the Commissioner of Interstate Streams for Utah. Mr. Clyde introduced the other members of the Utah delegation.

F. M. Cooper: Mr. Tracy has served for a considerable length of time on this Commission, faithfully and well, and I would like to move we give him a vote of thanks for the efficient service he rendered on this Bear River Commission work. Seconded by A. L. Merrill. Motion carried.

Mr. Cooper, Chairman of the Idaho Compact Commission, introduced the members of his advisory committee.

Mr. C. B. Hitchcock, in the absence of Mr. L. C. Bishop, introduced the Wyoming Commission.

Mr. E. O. Larson: The first thing to be done is to appoint a secretary in place of Mr. Clinton Vernon.

Mr. Cooper moved that the meeting recess for five minutes to discuss the matter of appointment of a secretary. Seconded by George D. Clyde. Motion carried.

After the recess, F. M. Cooper moved that E. J. Skeen be appointed Secretary to the Commission. Motion seconded by E. B. Hitchcock and approved by George D. Clyde, making it unanimous.

Mr. Larson stated that the next order of business would be the reading of the minutes of the last meeting which was held on January 9, 1953 after which the minutes of the previous meetings would be read. Mr. Skeen read the minutes.

There being no changes or corrections, it was moved by L. C. Bishop that the minutes be approved as read. Seconded by Mark R. Kulp. Motion carried.

Mr. Larson asked if they would like to review the minutes of November 7, 1952 and October 16, 1952.

George D. Clyde moved that the Commission proceed with the regular business and take the minutes up later. Seconded by L. C. Bishop. Motion carried.

Mr. Larson explained that the Compact Commission had called a meeting for April, 1953 but that the Utah Legislature had modified the law creating the position of Director of the Water and Power Board for Utah and Commissioner of Interstate Streams. It was a long time before the position was filled so Utah had no Compact Commissioner. After the position was filled, there was considerable activity on the Colorado River requiring a great deal of time of Mr. Bishop and Mr. Clyde, making it difficult to set a date for the meeting. That explained why the meeting had been so long postponed.

Mr. Larson also stated that even with the delay, the Engineering Committee had gone ahead with its assignment left over from the last meeting and he called on Mr. Jibson to give the reports of the Engineering Committee.

Mr. Jibson reported on the 1953 and 1954 diversion program and explained how diversions in these years would have been affected by a compact.

In discussing Mr. Jibson's report, it was suggested by Mr. Johnson that the figure of 1 cfs per 70 acres as a point for starting regulation in the Upper Division was inadequate. Mr. Clyde suggested that the River regulation should go into effect sooner than when the divertible flow reached 1250 second-feet.

Mr. Jibson raised the question as to the importance of the provision in the Compact for cutting diversions to one second foot to 50 acres when the flow of Bear River at Border is 400 second feet or less. Past diversion records indicate very few days on which this provision would apply in the Utah section. Mr. Iorns indicated that the original figure was 700 second feet at Border when storage rights in Bear Lake are cut.

In the Upper Division, L. B. Johnson suggested that regulation should begin when the divertible flow falls to 2,000 second feet rather than at 1,250 second feet. (Diversion rate of 1:50 equals 1720 second-feet in Upper Division.)

Replying to a general query, Mr. Jibson said computations could be made on a divertible flow of 1:50 rather than the present 1,250 second-feet.

Mr. Person said if there was 400 second feet at Border, there would be enough for one second foot to 50 acres between Border and Stewart Dam.

George D. Clyde: What is the acreage irrigated between Border and Stewart Dam?

Mr. Jibson: 25,754 acres from Border to Stewart Dam. This is not a compact acreage but is acreage below the State line. The Compact acreage is lower than that by the amount of land under the Cook Canal in Idaho. The compact acreage is 23,278 acres.

A. L. Merrill: Have you considered the diversions between Stewart Dam and Last Chance Canal? Had you considered the other diversions between Stewart Dam and Last Chance Canal?

(Note: This question has reference to flow at Border when Last Chance rights are cut.)

Mr. Jibson: No -- the other diversions don't amount to a great deal.

Mr. Merrill: It amounts to around 40 cubic feet or more.

Mr. Iorns: This has been deducted before, considering Last Chance, since they have rights ahead of Last Chance.

There being no further discussions on this report, Mr. Jibson went on to discuss Report No. 27. He said this report was prepared prior to the 1953 and 1954 water years and in all reports the critical area for regulation of natural flow was considered to be in the Central Division. The 1954 water year indicated that there would have been considerable Compact regulation in the Upper Division.

L. B. Johnson: What would regulation do to Hilliard Flats?

Mr. Jibson: Regulation in 1954 would have had some effect on requirements but time did not permit going into a study on the extent of this effect.

L. B. Johnson: The Lower Utah Section went begging to the Upper Wyoming Section for water this year but under the terms of the compact, this would not be necessary.

Mr. Jibson: 1954 was not an average year but could be one in fifteen or one in twenty.

The meeting recessed at 12:00 noon for lunch to reconvene at 1:30 p.m.

Right after lunch, Mr. Jibson continued with his report.

Mr. Jibson: This study is based on existing conditions -- based

on water physically available now at the head of the sections under present conditions of regulation. This should be kept in mind.

Mr. Clyde: Why did you cut this requirement off at July 15th?

Mr. Jibson referred this question to Mr. Iorns.

Mr. Iorns: The question came up as to desire of upstream people as far as storage and water supply is concerned. If they could have a water supply for their probable requirements up to about the middle of July, that is all they would ask for. If enough supplemental storage could be supplied along with the natural flow available, they weren't interested in a water supply for the balance of the year. They raise mostly wild hay. That's all they would ask for. That was evidenced by a specific question asked of people in the upper area and the people agreed on a July 15th cutoff date. We based supplemental storage requirements on an adequate supply to this date.

Mr. Clyde feels that by using that particular date we may be doing irreparable damage since this may not be the best practice. We should fix a date based upon the best irrigation practice.

Mr. Bishop: How do they feel about this at the Flats, Fred?

Mr. F. B. Myers: All right for wild hay but precludes a second crop of alfalfa. Should run another month if they grow another crop. It will work all right for wild hay but not for winter pasture.

Mr. Iorns: In the 1949 report, (Report #8) I set up two plans for supplemental water needs of the Upper area. In that report, worked on the basis of full season delivery, we showed Utah with a full season requirement of 112,000 acre feet. The supplemental requirement on this basis was too high. In the same report, I had another plan in which there

was a full delivery over to August 1st. The water users said if we would supply an adequate water supply to the middle of July, that is all they would demand. On the basis of that indication, I prepared Report No. 19. The date demand ends is July 15th and using that, we took the available supplies based on the Evanston record and computed the supplemental water needed in the various years.

If we are going to figure up a water requirement for any year, you have to establish a season demand curve.

Mr. Cooper: We have a man here who has had practical experience in the Upper Area and we would like to have him make a statement.

Mr. C. R. Nate: The elevation of Evanston is 6900'. Hilliard Flats is about 7000'. This is the same elevation as some land I have and with similar conditions. All through, you mature your grass hay crop, which you do in most years, along after the middle of July--most people start haying in July--after that you are concerned principally with the growing of fall pasture--not much alfalfa because usually the frost gets it. This is a small part of your crop. For the most part it is grass hay and fall pasture. This must be considered. Most of the people are concerned with fall pasture. If you have a dry year, you have a fire hazard and everyone is concerned with this. We should confine this to the study of principally hay and pasture. When you get into other crops, it's not worth considering.

Mr. Myers: You can grow barley.

Mr. Nate: You are at too high an elevation to consider growing alfalfa.

Mr. Jibson concluded his report at which time Mr. Kulp asked

him to point out on his map the reservoir sites.

Mr. Joseph Tracy: Mr. Jibson, could I assume from this table (referring to Report No. 27) you have taken into consideration the existing reservoirs?

Mr. Jibson: Yes, we have.

Mr. Clyde: I am still not clear how you got these headgate requirements.

Mr. Iorns explained how he arrived at the consumptive use figures.

Mr. Jibson: This is all I have, Mr. Chairman, unless there are further questions.

Mr. Larson: Do you Commissioners have enough information now from this report that you want to discuss further the upstream storage figure, or is there more information you need? If there is, is it something we can ask the engineers to give to the Commissioners by 10:00 a.m. tomorrow? How do you want to proceed? At the last meeting, there were certain provisions of the compact the Commission decided to have revised and Mr. Skeen took the minutes of the last meeting and worked them up. We have that to consider, but first do you want to go over the upstream storage figures? How do you want to proceed?

Mr. Clyde: Mr. Chairman, I haven't had the opportunity of sitting in with you in the past and as a result, I may ask some questions or make suggestions already taken care of in past meetings. One of the issues is this matter of storage, and as I understand it, it has been approached from two directions and got to 36,000 acre feet from the upper side and 29,000 acre feet from the lower side. We should reach some

agreement relative to the storage which may be permitted upstream.

Mr. Merrill: The figure of 29,000 acre feet was a maximum based on other considerations.

Mr. Clyde: Regardless of what the figure was, it is an issue we must face and we might as well pursue it and see if we can't come to some conclusion with respect to it.

Mr. Kulp: Mr. Chairman, in that event, Director Clyde, do you have a figure you would like to recommend?

Mr. Clyde: I am not in a position to make a recommendation at this moment but I would like to talk to that point and that is, we have a resource here and we must develop it to get the most out of it, taking into consideration all the factors, recognizing all the established rights. If this requires storage in the Upper Basin, we should give consideration to that storage. You know better than I the development of the River. We are limited by certain rights on the lower reaches of the streams and then conditions have developed because of decrees covering just parts of the system and then the laws in the states must reconcile this. First, as between states, there will be no difference of priority. Is that correct?

Mr. Merrill: No! Priority of rights should be our meeting point.

Mr. Clyde: You are not writing priorities into the compact.

Mr. Merrill: I know of no priorities between states.

Mr. Clyde: If we don't write priorities into the Compact, we can forget the question of priorities as far as rights are concerned. A compact is getting together and negotiating a compromise. When the compact is concluded, there will be no priorities between states.

Mr. Bishop: I believe Mr. Clyde is right and there is no priority between states.

Mr. Clyde: My question was this--when we write this compact, we divide the waters of the River and the question of time is settled.

Mr. Cooper: I want to call your attention to one provision in the Compact as it now stands:

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"When the flow of water in an interstate tributary across a state boundary line is insufficient to satisfy water rights on such tributary in a lower state, any aggrieved water user may file a petition with the Commission alleging that by reason of diversions in an upstream state he is being deprived of water to which he is justly entitled, and that by reason thereof a water emergency exists and that interstate control of water of such tributary is necessary, it shall put into effect water delivery schedules based on priority of rights and prepared without regard to the state boundary line."

Mr. Iorns stated that the provisions respecting the preparation of water delivery schedules relate only to tributaries and to the lower river.

Mr. Cooper: You wouldn't expect the lower part of Idaho to go along when the priority of rights is not taken into consideration?

Mr. Iorns said they had prepared the first draft of the compact, taking into consideration the priority of rights and this was not approved by anyone. Consequently that basis for division in the central and upper Divisions was dropped and we have proceeded since then on a division between states on the basis of area of irrigated land in each state.

In reply to Mr. Person, Mr. Iorns said priorities were taken into consideration as far as supplies in the River were concerned. That is why they break the river into three separate divisions. The present division is on the basis of irrigated acreage. It is suggested that some

changes be made in Lower Idaho and make it on a graduated scale. We are not following a strict priority there because we are making some adjustments.

Mr. Clyde: Actually you have three different rivers. Will the action the group takes with respect to the Upper River have any relation to the action taken on the Middle River and the Lower River?

Mr. Bishop: The priorities in each division takes care of that.

Mr. Skeen: Do you have in mind discussing the division of direct flow or the storage question?

Mr. Clyde: I am trying to bring myself up-to-date as well as reach a solution. In the Upper system, the river stops at the Pixley Dam. The only states concerned above that point are Wyoming and Utah on direct flow. Would a decision as to regulation of the direct flow in the Upper River affect the Central and Lower divisions?

Mr. Jibson: The river is dried up at Pixley Dam at the lower end of the Upper Division more completely, generally speaking, than at Stewart Dam at the lower end of the Central Division. Therefore, the effect of regulation in the Central Division will be greater in the Lower Division than it would be as between the Upper and Central Divisions.

Mr. Clyde: As of this moment, the only points at issue in the Central Division are the natural flow rights? There are no storage problems involved in the Central Division as of now.

Mr. Person: There is a difference of opinion. The report indicates no storage needs but Wyoming does not concede that point. If the water is divided certain ways, Wyoming will need storage in the Central Division. — ?

Mr. Bishop: Depends on what they take away from us.

Mr. Clyde: Is there any common ground in the Central Division upon which you could provide full water rights to the lands now irrigated without infringing upon the Lower Division?

Mr. Person: We could divide it on a basis of equitable division between states and not effect any prior rights in the Lower Division.

Mr. Clyde: Under those conditions, will it be necessary to provide storage in the Central Division?

Mr. Person: Under those conditions, it would not.

Mr. Clyde: What is to prevent us from getting together in the Central Division if it requires no storage and doesn't affect the rights below?

Mr. Person: We are nearer an agreement on the natural flow rights than we are on storage.

Mr. Clyde: We have to start on these brooks and apparently they can be treated in the major as separate entities. That could be the approach. Our records are the best of any records that have been written and now it is time we should get a compact written. The Central Division could be the place to start.

Mr. Person: We have agreed that it can be divided into divisions and we have agreed on divisions but they are so closely tied to storage that if we get no storage, we'd just maintain the priority we have.

Mr. Clyde: In the last analysis, it will have to be an equitable division and maybe these states wouldn't make it. If they can't make it, someone else will have to do it for them so we should do all we can to get a compact. That's what we're here for.

Mr. Person: These things have been discussed and we should start with the storage proposition; otherwise, we are just wasting our time.

Mr. Merrill: I think the 50% business on the storage is a good line of approach.

Mr. Person: I wish the solution was that simple.

Mr. Merrill: I don't see why it shouldn't be.

Mr. Person: There are three, not two, of us involved.

Mr. Bishop: The people on Smith Fork have rights where they haven't been using the water for ten to fifty years. There are people in Idaho who also have rights that are "paper" rights only. We want a little storage to supplement what we have to release to others.

Mr. Merrill: In 1882 there was in the Central Division of Idaho 345 second feet, and 15 second feet in Wyoming. There is the difference. We have tried to use that water on 2500 acres of land all these years.

Mr. Bishop: In the Smith Fork area where they don't use it, most of it goes down to Idaho anyhow.

Mr. Nate: Plates 17 and 18 clearly tell the story as far as Smith Fork is concerned. That shows the difference and there is quite a difference between actual and headgate requirements. There is a wider gap there than anywhere along the river. In other words, the Cokeville people are taking more water than they should. That's what the studies show.

Mr. Person: That is purely an academic requirement and not actual requirements.

Mr. Bishop: You can't divert too much because it isn't there

to divert.

Mr. Johnson: You're getting it.

Mr. Nate: There is more water there this year than ever before. Much more land under irrigation this year.

Mr. Larson: Mr. Clyde stated where he wanted to start. Where do the rest of you want to start?

Mr. Bishop: There is no use talking about a compact without storage.

Mr. Merrill: There is no use talking about a compact if you are going to take the water away from us. You are taking the water away from people who have been using that water for forty years.

Mr. Bishop: Do you think we will be taking more from you than you are taking from us on Smith Fork?

Mr. Merrill: We are not taking anything that doesn't belong to us.

Mr. Clyde: May I ask Mr. Jibson if you can explain to this group where the 750,000 acre feet comes from that goes into Great Salt Lake from the Bear River.

Mr. Jibson: I believe Mr. Iorns can answer that.

Mr. Iorns: Practically all the water that goes into the Great Salt Lake develops in Cache Valley. A very small amount of it develops in the Bear River.

Mr. Clyde: Do you know the flow of the Cache Valley Streams?

Mr. Iorns: We can get it.

Mr. Clyde: We should have it and settle it permanently.

Mr. Tracy: You made a study on that, Mr. Iorns.

Mr. Bishop: From Bear Lake on down, there is more water available per acre than there is from there on up regardless of what we do with the water above or what we deliver down below. Is that true?

Mr. Iorns: That is true on the basis of irrigation season. You can take all of the runoff in the Upper part of the river and put it into storage.

Mr. Bishop: Then, the Compact should govern the river from the diversion in Bear Lake up to the head. That's the way I get it in my mind. I could be off.

Mr. Tracy: It's all appropriated down there. The ducks need water.

Mr. Johnson: I would like to support Mr. Bishop in his contention that the lands are watered better below Bear River than they are above.

Mr. Kulp: The lands down in Box Elder County are better irrigated than the lands in Upper Utah and Wyoming?

Mr. Weidmann: Well, I would say they are more intelligently irrigated. Do you mean not sufficient water? I think we have a pretty sufficient supply of water but that is what they are trying to take away and store. Actually there is no water coming down the River to us. We haven't a quarrel with you about the stream flow--all we get is the storage water in the Lake.

Mr. Iorns: Mr. Clyde asked how much of the water above Bear Lake goes into the Great Salt Lake. Mr. Iorns went on to explain this from the plates in his report.

Mr. Johnson: Why wasn't it diverted to Bear Lake for storage?

Mr. Iorns: On the rest of the river you have power production. These figures take into account every storm during the summer time and storms that came so quick they couldn't re-regulate the canals. The average for the twenty-five years is 103,000 acre feet that went into the Great Salt Lake Basin from above Bear Lake.

Mr. Merrill: The water of Bear Lake had performed a dual purpose, hadn't it? How do you distinguish this water from the water of Cache Valley and Logan River?

Mr. Iorns said that quite a study had been made of this subject and all was taken into consideration.

Mr. Jibson: There is a chart in Report No. 25 which shows the effect of upstream storage on the Lake.

Mr. Larson: Does the Commission desire Mr. Jibson to briefly review this report?

Mr. Jibson reviewed the report.

Mr. Clyde: In order to protect the users in the lower area, how much of a reserve would you have to maintain in Bear Lake for irrigation purposes only--if you have 36,000 acre-feet of storage above the Lake?

Mr. Jibson: According to this study, we find we will have to have about 900,000 acre-feet in the Lake as a reserve which must be maintained for the protection of irrigation rights.

Mr. Clyde: Is there any record which shows the water pulled out of Bear Lake for the generation of power only? Is it material or minor in quantity?

Iorns: It is minor in quantity since 1930. However, beginning

in 1947 when the Lake was brought up, it has gone up to be a material quantity. We haven't carried this study beyond 1948. 1949 was a pretty good year.

Mr. Clyde: What is the storage in the Lake now?

Mr. Jibson: At the present time, on September 20th, we had about 705,000 acre-feet in the Lake. On June 30th there was 901,000 acre-feet; July 31st, 828,000 acre-feet; and August 31st about 747,000 acre-feet.

Mr. Clyde: On the basis of previous statements, they are cutting into the irrigation reserves now?

Mr. Jibson: This seems to be correct.

Mr. Johnson asked who got all the water that had gone down. Mr. Jibson said he assumed that it went for irrigation.

Mr. Bishop: Do you have a figure of how much water was for power only?

Mr. Jibson had a chart which showed the general trend of power water that was released from Bear Lake in the twenty-five year period.

Mr. Clyde: Isn't it in the interest of the power company not to get into the box they were in in 1934. In other words, it was too low.

Mr. Gerald Irvine: We can't hold it up there if the irrigation rights need it below.

Mr. Iorns: That water could have been stored and kept in Bear Lake but wasn't. It was a time when irrigation interests didn't need the water.

Mr. Clyde: Wouldn't it be good business during years of plenty to put water into the lake instead of making power to take care of short years to come?

Mr. Irvine: That's the way we operate.

Mr. Johnson: Wasn't there a steady decline of water in the level of the Lake from September 1953 until April 1954? That wasn't for irrigation.

Mr. Irvine: It was all for irrigation. No water has been diverted for power this year.

Mr. Thorum: Mr. Iorns should explain that the water below Bear Lake is for consumptive use first and then is used for power.

Mr. Iorns: There is possibly ten out of fifteen years you couldn't have physically kept that water back up there. It is water that has spilled past due to storms or such.

Mr. Irvine: Water that goes down below Bear Lake is water that can't be stored but comes from above Bear Lake.

Mr. Iorns went on to explain Mr. Irvine's statement of what happens to the water that goes past the lower point that you couldn't control. That is where most of these small amounts over fifteen years come from.

Mr. Cooper: (Speaking to Mr. Clyde) You and I were on the same Committee when the agreement was made with the power company. They have never violated that agreement.

Mr. Iorns: If we try to write depletions into the Compact, we limit the water users' needs.

Mr. Clyde: We must take a pretty straight look at all factors and see what the effect will be before we can write a reasonable compact. Only in this way will we come out with a solution to the problem. We should make the best effort we can because it means so much.

Mr. Iorns: Before we adjourn, I would like to bring up one point--that is to have the Commissioners think particularly what kind of a program you wish to follow. We must submit our budget and tomorrow we should have some definite idea as to what we want. The Washington office is questioning whether conscientious work is proceeding on the Compact and whether certain personnel should be tied up any longer.

Mr. Larson: This can be brought up tomorrow after we find out if we can find some way of proceeding.

Mr. Merrill: Are we going to finish tomorrow?

Mr. Clyde: I think we can reach some point although we may not finish.

Meeting was recessed until 9:00 a.m. on September 29th.

September 29, 1954

Meeting convened at 9:20 a.m. with Chairman E. O. Larson presiding. Mr. Person of Wyoming was not present at this meeting.

Mr. Clyde: Yesterday morning we went over the minutes of the last meeting and considered the two previous sets and I moved we table them until later. The discussion we got into last evening has to do with the effect of upstream storage on the rights in the Lower Basin for irrigation purposes and in going over the minutes last night, I find that was the discussion of those particular sessions. I am wondering if it would be better to take up those minutes at this time to refresh our minds regarding that subject?

Mr. Larson: Which ones--the October or November?

Mr. Clyde: The November. I merely make that suggestion because I believe we must have further discussion on the question of supplies available for storage, the question of capacity of storage available, the question of the effect of such storage on the irrigation reserve in Bear Lake, and the effect of changes in the reserve on the rights of the others. We discussed the report yesterday which set up a demand curve and developed the supplemental needs on the respective canals in the Upper Division and came up with a certain summary of requirements which indicated that there would be supplemental requirement in Utah of 24,680 acre-feet, in Wyoming 14,000 acre-feet and in Idaho 9,100 acre-feet. The report also indicated that this much water is physically available and storage capacities in those amounts were available so if we can take it from there and back it down the River and see the effects of storage to meet those requirements, it might answer some of the questions.

Mr. Larson: If it is the desire of the Commission, we can have

Mr. Skeen review or read the minutes of November 7, 1952

F. M. Cooper moved the Secretary review the minutes of November 7, 1952. Seconded by George D. Clyde. Motion carried.

Mr. Skeen read the minutes of November 7, 1952

Mr. Clyde: It was mentioned yesterday by Mr. Johnson that the demand curve established represented the total water requirement. It was pointed out that irrigation interests would be perfectly happy if the demand was cut off on July 15th. That was confirmed after our discussion yesterday--in the area above Bear Lake. That is the reason for raising the question now.

Mr. Iorns: It would be the area above Pixley Dam--not Bear Lake.

The question then came up regarding diverting water for irrigation of fall pasture.

Mr. Johnson: The natural flow of Bear River is being diverted for this purpose. I think most of the people would irrigate some for fall pasture but not in a big way.

Mr. Clyde: You would not plan to use irrigation supplies after July 15th? You wouldn't plan to use it?

Mr. Johnson: This question of some water later in the year might bother some but not all.

Mr. Clyde: The question was raised of the validity of figures relative to the net loss of storage diverted for supplemental supplies between points of use and Bear Lake. You make this point that the physical character of canals is such that due to flat surface you have to use extraordinary sizes of streams for diversion and a larger percentage

gets back to the river and the net loss would be less.

Mr. Johnson: For the B. Q. West Side Canal, a full diversion would be 200 second feet which, over a period of sixty days, would flow 24,000 acre-feet of water to 5,500 acres of land--about 4-1/2 acre-feet to an acre. The average consumptive use runs about 2.5 acre-foot so the difference between the two figures or 2.6 acre-feet, is return flow in that area. To operate those canals, which have been canals say averaging 3' deep and 25' wide, a small stream of water is not effective. The land lies pretty much along the river and the slope on the canal is about 10 inches to the mile. If you must raise the water, you would back the canal a mile. Storage would have to be applied in short periods and in large quantities. This would reduce the loss materially. The return flow which originated there with the first water on the land would continue and if we are applying over 4 feet on the land and using our rights, 2.5 acre-feet of it is consumed, and 1.5 acre-feet returns to the canal below. I would like to indicate we see no method of using the water much differently than now. Woodruff-Randolph Canal is fully 10 miles on the grade as it comes to the foothills. If we try to divert water on a sharper angle, we have no grade until it begins to break just above Cokeville. Then the river begins to break to get some grade. We don't see any way to use late water over a long period. We have had some water over the last three months and have developed a little efficiency and considerable trouble among ourselves. It is physically impossible to govern our type of irrigation (we didn't make the Valley) to the type of irrigation at Cutler Dam. It is my feeling, and I would like to leave this feeling, that if we were to enter into a compact that

would give us storage at no less than 40,000 acre-feet, largely stored at Woodruff Narrows, we could continue our type of irrigation to Pixley Dam and finish our irrigating by July 15th. We would require--let's say--1200 acre-feet every day. If we have 36,000 acre-feet storage there, we could have 1200 acre-feet for 30 days. To maintain that flow of water, which is useful and usable, would not be too much over that area of about 35 miles from Woodruff Narrows or else it becomes ineffective.

Mr. Clyde: Do you irrigate by continuous delivery to each rancher?

Mr. Johnson: We try to. There is the question of delivery on that dead canal and you have an adjustment period there we haven't worked out. If we have faster ditches, we could do a lot of things you think we are neglecting. It is impossible to take turns irrigating and raise wild hay.

Mr. Clyde: When you determined the net loss as determined in the curve, was that by actual measurement?

Mr. Jibson: If you refer to future storage and our estimated depletion to the Lake, it is purely a guess. We were very conservative for two reasons. Ordinarily, storage is going to be used by the irrigators when supplies are low. We assumed that storage water will be used and reused as it goes down the river to such extent that up to 25,000 acre-feet--the whole thing is lost. These figures are more conservative than our studies indicate. Based on the fact that it would be used later and reused several times, they are especially conservative. Our knowledge is no better than others. We can make some estimates and, late in the fall before freeze up, determine the natural gain in the section

at that time and then compare the irrigation return for the summer months. You might recall that in the Upper Wyoming section we have 25% return flow and gain. As we move down, this increases progressively down the river. There is a tremendous natural gain in the Utah section. This was evident in 1954 when the first two canals were using practically all the supply. Yet the remaining canals were diverting in total more than the upper two. It is difficult to determine what is natural gain and what is return flow.

We have discussed these estimates in past meetings and we may be too high on our consumptive use. It was assumed they might change their present system and use some of the storage for fall pasture and if so, much more would be lost.

Mr. Johnson: Wouldn't it be true that the evaporation under the present cover would grow less? I think the factors all point to a much less loss than your figures point out.

Mr. Clyde: Those losses are terrific when you put the water on the meadows-- $1/4$  to  $3/8$  inch per day. You have specific measurements at Pixley Dam. You know what the diversions are. Put another 30,000 acre-feet out on the pasture and it would not any more get through than natural flow. Could there be a provision written into the Compact that the storage capacity above Bear Lake be operated in conformance with the runoff at Border that might be expected and the level of the lake which would make it most effective for power and irrigation uses? In a high year, if we could anticipate it, we could pull water out of the storage reservoirs, thus increasing the river flow before runoff started and thus provide storage capacity to hold a portion of the high water runoff

and thereby smooth out the troughs and the peaks more effectively. We should therefore take that into consideration in considering storage above Bear Lake. It appears that probably 50,000 acre-feet of storage above Bear Lake is as high as we can go because of the overall water supply limitation.

F. M. Cooper: Do you have the figures for the water applied in acre feet per acre in this particular area?

Mr. Jibson: We have the figures for the years of record.

Mr. Johnson: You also have depletion haven't you? The two ought to be quoted together.

Mr. Clyde: While we are waiting, I would like to bring up another question. We speak of "headgate requirements"; what do we mean? Is that the gross diversion or the net consumptive use?

Mr. Iorns: The gross diversion at the head of the canal.

Mr. Clyde: Suppose that the return is 50% and they divert 2.7--that means consumptive use is about 1.3 foot.

Mr. Jibson: I think our studies show that.

Mr. Iorns: The records from 1944-47 in the Woodruff-Randolph Section (the group of canals from Francis Lee down through B. Q. West Side) are not summarized in any table. For instance, I can give you the B. Q. West Side Canal. The diversion of 1944 was 3.38 acre-feet per acre; 1945, 4.38 acre-feet; 1946, 2.48 acre-feet; 1947, 2.81 acre-feet per acre. Other canals in that river reach diverted considerably higher.

Rees Land & Livestock:

1944	8.12	acre-feet	per	acre
1945	10.91	"	"	"
1946	4.86	"	"	"
1947	7.98	"	"	"

Woodruff-Randolph:

1944	2.77	acre-feet	per	acre
1945	3.01	"	"	"
1946	2.06	"	"	"
1947	3.31	"	"	"

Those are just some selected canals.

Mr. Cooper: Aren't there some canals that divert actually more than that?

Mr. Iorns: The interesting thing is the larger the canal is, the larger the amount of return flow we get back.

Mr. Bishop: Isn't it true the consumptive use is very near the same regardless of the size of the diversion?

Mr. Cooper: That is the point I'm getting at. This last year we used 2.38 acre-feet per acre. That includes natural flow and storage and we still have pretty good crops.

Mr. Tracy: Is that the measurement taken of the diversion at the source?

Mr. Cooper: Yes. We have a system where we have headgates and weirs and everything is measured so we know exactly what we are doing. The thing that looks unreasonable to us is that we are confined to 2.38 acre-feet per acre, we raise pretty good crops, and then we come up here and find people using 10.91 acre-feet per acre and still want a big reservoir so they can use more and they want to take our water. That doesn't look good to us.

Mr. Johnson: Your consumptive use is complete, is it not? If any gets back, it gets into the Malad River.

Mr. Cooper: No, it gets back to the Bear River.

Mr. Johnson: Our consumptive use is less than yours.

Mr. Clyde: Let's refer to Table 23 on Page 46 of Report 12. We are missing a bet here because these canals using large quantities of water are small outfits--they have two or three hundred acres. On the larger canals, the diversion is much lower.

Mr. Iorns: Here are some figures in the Woodruff-Randolph Section, including the diversions from the tributaries: There was in 1944 114,284 acre-feet diverted from the streams and river for irrigation. During this time the natural gain and return flow to the river amounted to 67,195 acre-feet. In 1945, 118,854 acre-feet were applied to irrigation and the natural gain and return flow to the river aggregated 68,436 acre-feet. It is on gain and return flow that we determine the total inflow into the basin area.

(Note: Figures above are for three-month period, May-July)

Mr. Cooper: We have approximately 25% return through the Black Canyon on the Bear River depending on the time of the year when we irrigate heavy on the Last Chance Project. It is about 25% that comes back into the river. That's all we can claim. Of course, one of our canals loses about 35-60% and we spent over the past five years about \$100,000,00 on our canal system making it so we don't lose so much. We place a high value on water and have found that it pays because that's the life blood of our country. I can't reconcile my thinking to the economic application of this much water on this much land. I just can't. There must be something wrong.

Mr. Johnson: Do you have farm lands or meadow lands?

Mr. Cooper: Farm lands. It looks like a ridiculous waste.

Mr. Bishop: It is hard to change your thinking from what you

are accustomed to.

Mr. Cooper: Let me continue. The history of the river written by Mr. Powell and Dr. Mead indicates the situation on Bear River. The water has been fully appropriated for years. We are now trying to divide something already appropriated and someone is going to suffer a loss. The point I would like to emphasize is that we should practice the policy of economy and make beneficial use and not deprive someone else if we don't need it.

Mr. Bishop: The return flow is much better in big amounts.

Mr. Cooper: This is true but you still suffer the loss and there is not a fair use.

Mr. Bishop: It is hard to please everyone.

Mr. Cooper: It is complex because of the variance in the use and altitude but in order to economically and sensibly handle the situation, we must get a common ground--not one where one wants one acre-foot per acre and someone else is satisfied with two.

Mr. Johnson: Mr. Van Orden reports that the pumping cost is 60 cents an acre. This is very economical. We have to take this thing the way we find it. Our consumptive use is not any higher than yours.

Mr. Cooper: We are still willing to make a compromise in spite of our difficulties. We feel you should have some storage up there but we don't feel you should have fourteen or fifteen acre-feet per acre.

Mr. Johnson: Where do you get these figures?

Mr. Cooper: If you get in addition to this application, then if you get the storage you want in addition to this or that, you get

about 12 acre-feet per acre to apply.

Mr. Johnson: When the water is there, we don't need the storage. Mr. Clyde made the point that there will be many years when the water won't be held back so the Compact should allow for it. It is years like this that we all have. We can't do anything with 23,000 acre-feet on 100,000 acres of land. We can't afford to build a dam. If you set a critical need over the lower areas, then Hilliard Flat and main stem could have all the water they want. They could help build a reservoir so we wouldn't have to call on them. But what we are trying to get at is a practical thing. Twenty years ago was a terrible year so here we are again. A number of years in that twenty, for the economy of the Basin, 40,000 acre-feet of storage would have been another resource for the Basin. In some years, our reservoir wouldn't do a lot of service if we have a continued dry spell. We feel that we would like to leave it this way with you and you can go on from there-- that the main figure over a period of forty years which should be economically effective in the Valley and at Woodruff Narrows has been 35,000 acre-feet and that would serve us if we had it. Instead of just a few of us holding up the Compact, insofar as we are concerned, we can't work on less than 35,000 or 40,000 acre-feet. Many years we won't need it because the river will supply it. That is the way we would like to leave it. That is our position--the very minimum in the economy of the Valley. Those are the conditions people are subject to naturally and we would like to fix it so our children won't have to meet the conditions that we are meeting this year.

Mr. Clyde: Is that total storage or is that the storage at the Narrows?

Mr. Johnson: We feel there are critical places on the Upper Bear River--for instance, Yellow Creek. We would like 2,500 acre-feet or 3,000 acre-feet on the Twin Creeks. It would help us to have water from Twin Creeks. There is a feasible site there for a reservoir.

Mr. Tracy: You wouldn't have to build a big dam to be economically feasible.

Mr. Johnson: We feel that is the minimum we could get by with.

Mr. Larson: Before we recess for lunch, we should determine whether we are going to meet tomorrow if we don't finish today.

Mr. Bishop: I just have to get back. I have other commitments I have to meet.

Mr. Hitchcock: I can't stay over tomorrow.

Mr. Larson: What do you say, Fred?

Mr. Cooper: I think some of our men have to leave. How about you, Mark?

Mr. Kulp: I have to leave.

Mr. Merrill: I should leave, but if necessary I can stay.

Mr. Cooper: Perhaps in view of that fact, we should not meet tomorrow.

Mr. Larson: If you don't finish today, we should have a meeting very soon. The Legislature meets in ninety days and if you have a compact to submit, we haven't much time left. Otherwise it goes on for two more years. It looks like then, Mr. Merrill, you can cancel your hotel reservation and everyone go home tonight.

Mr. Clyde: I then move we recess and reconvene at 2:00 o'clock and take up the matter of whether or not we think we can get a compact

within the next ninety days. If there is any possibility, that will be the thing to do. Otherwise, we should continue our plans for next year--whether we want to continue measurements or just what we want to do. Seconded by Mr. Cooper. Motion carried,

Meeting reconvened at 2 o'clock.

Mr. Clyde: Mr. Chairman, you will recall we were discussing headgate requirements and we were reading the headgate requirements for Rees Land & Livestock. I wanted to point out that those high headgate diversions--not requirements but diversions--are not necessarily indicative of common practice and are usually limited to only small acreages. The average headgate in Wyoming was only 2.28 acre-feet and the Middle Utah diversion was only 2.07 acre-feet. Don't get the idea that these excessive diversions are common--they are rather unusual and limited to small units.

Mr. Cooper: I have one question we would like to ask and that is in connection with the storage above the Lake. If that were set at 29,000, 35,000, 40,000 or whatever limit we finally agreed upon, would the upper users expect to fill that every year in spite of the water supply? I am directing this to Mr. Clyde.

Mr. Clyde: That question has not been discussed.

Mr. Cooper: I am thinking this--when it is evident upstream storage is going to have a tendency to deplete the supply of the lower users in short water years if you have a quantity the charts show you could take some years, you would take it all for storage purposes--particularly if you have a dam at Woodruff. You take the water and we go without? Is that it?

Mr. Clyde: That isn't my interpretation. In a short year, the water supply is short because there is no low snow and if no low snow, there is no water available for storage at the Narrows. There wouldn't be any available for storage. I don't think anyone can guarantee anything for that reason. I can't see how construction of upstream storage would mean a guarantee of storage before anything else.

Mr. Cooper: You would be willing to accept an amount allocated on a sliding scale?

Mr. Clyde: The supply would have to be determined by flow of water along the River at the time. If it can't get to Bear Lake, it wouldn't be available for storage. If such is the case, I do not think they could expect to take all the water that comes.

Mr. Bishop: They will get their percentage of the allocated water under the terms of the Compact and this is surplus water over and above the requirements and could be stored during flood season. I don't like a mass allocation of any kind. I think it ought to be on a sliding scale and the amount should be on a percentage basis over and above the necessary appropriations.

Mr. Clyde: You wouldn't necessarily interpret that as a guarantee.

Mr. Bishop: It should be prorated on a sliding scale.

Mr. Iorns: The upstream reaches of the River where you can store at certain times--for instance, at Woodruff Narrows--if you will look at the records, you will find the only time to store water there you would have to begin storing the first of October, in which case 25,000 acre-feet of capacity in most years would fill by April 1st. You

would have no space to store the high water runoff.

Mr. Bishop: All I am thinking about is irrigation water.

Mr. Iorns: The high water runoff is in entirely too many years the direct flow right. It takes the Woodruff-Randolph Section to divert a high water flow at Woodruff Narrows of around 1200 second-feet which usually comes right back again so you wouldn't want to divert that to storage because you need it for irrigation downstream, and how much effect this will have on the people down below depends on the storage time. If you apply that water, you maintain a high stream flow on this pattern we have suggested. You won't have too large an effect on total drainage above Bear Lake. You might deplete the supplies at Bear Lake by 10,000 acre-feet. If you adopt other patterns of irrigation and apply water more evenly, you consume a major part of it. Whatever effect the upstream storage will have on Bear Lake or downstream users depends on what water is to be stored and the time for storage.

Mr. Bishop: There probably should be a limitation on the percentage. If the courts will make a decree on mass irrigation, it would help. This year there was no water that could be stored.

Mr. Iorns: Bear Lake has such a large volume it can almost completely control the river. Bear Lake can usually store the water that comes into the Lake and in its operation, the Power Company looks forward to the anticipated runoff in order to store the water to save flood damage in the lower part of the River. Bear River is completely controlled and re-regulated at Bear Lake and with that and with the amount of holdover capacity available in the Lake, they can smooth out the deep declines and high peaks and if you place the upstream storage

on a percentage basis, it wouldn't be too successful. It would only create problems. Set a storage allocation above Bear Lake rather than put it on a percentage basis.

Mr. Cooper: Would that be part?

Mr. Bishop: It is a matter of not getting the water downstream. They would still get the storage winter flow.

Mr. Cooper: There is one thing I am concerned about. You have approximately 150,000 acres of irrigated land. Did you put 3 acre-feet on it this year, Mr. Johnson?

Mr. Johnson: There were thousands of acres that didn't have any. We didn't irrigate over half of the land--especially in Rich County and Lincoln County.

Mr. Cooper: You would say about how much?

Mr. Jibson: I can give you the figures in just a moment.

Mr. Iorns: Speaking of the Compact, that has been changed in the present draft of the compact to read "existing direct flow rights" and to "existing storage rights above Stewart Dam" so they couldn't store up there and violate the direct flow right.

Mr. Jibson: The group of canals had less than one-half acre foot per acre. (1954) They applied less than 16,000 acre-feet on approximately 35,000 acres of land. (Lower Utah in the Upper Division)

Mr. Merrill: Any upstream storage would have to be limited within the period of time. You couldn't permit storage during the irrigation period.

Mr. Iorns: If you have it one way--on critical flow at Border--if they wouldn't store any when Border was below 700 second-feet,

that wouldn't violate any rights. With this statement here in the Compact, you are assured of not violating rights in any year, and if you can work out flows at gaging stations, you can tell when you will have to stop storing. You will have to have a certain criteria for this.

Mr. Merrill: The Compact doesn't provide for a year around commissioner.

Mr. Iorns: You must have an organization to carry out the Compact. We were trying to identify the number of people needed to administer this compact.

Mr. Clyde: May I ask you a question relative to Page 15, Article 5, relative to storage. You quote "such additional storage right shall be subordinate (1) to existing direct flow rights, and (2) to said existing storage rights above Stewart Dam, but it shall not be subordinate to any right to store water in Bear Lake or elsewhere below Stewart Dam." Now, why should the existing storage rights above Stewart Dam not be in the same class as storage rights for consumptive use below Bear Lake? Seems to me that should be the same.

Mr. Johnson: They are all on tributaries if that makes any difference.

Mr. Clyde: That doesn't make any difference. We shouldn't do it in one case and not in the other.

Mr. E. K. Thomas: I might say why it was written that way. The first paragraph under Article V as written uses a Bear Lake irrigation reserve. The rest of the article is based on the same reserve. By using the reserve in Bear Lake, the upstream storage would be subordinate to existing flow rights and also existing storage rights in the Upper Basin.

Mr. Clyde: What you are saying is that the creation of the irrigation reserve takes care of consumptive uses below Bear Lake. I don't understand the language but is that what you intended to say? As long as the intent is there, we can get the language.

Mr. Larson: Are there any more questions?

Mr. Johnson: I would like to suggest that in my opinion if the same control operated the releases of the power company that operated the whole Lake, a sliding scale would work, but as long as we have divided control it would hardly be feasible to do that. It seems to me you have advanced a theory we could agree with that in critical cases we should be treated very much like the rest of the River. We would be agreeable to that. We don't want to find ourselves in a critical position so we would like to take advantage of the position and would be willing that the compact show control in the hands of those administering the compact and they could be given the discretion needed.

Mr. Bishop: I would like to know, Mr. Iorns, if you could tell us how long it will take to compile a streamflow study to show the effect on Smith Fork's appropriation if they are regulated and also the effect on downstream users if they are not regulated. We must have the answer to those questions before we can write a compact.

Mr. Jibson: In Report 27 on Plate 18, I show how much they would be regulated. I used one year--1948--which would have required the most severe regulation on Smith Fork since we have been keeping records, with the possible exception of 1954 which we have not computed, both under the 43-57 division and the sliding scale division

suggested at last meeting. Our conclusion on that basis, based on our headgate requirement of three acre-feet per acre is that they would still be above this headgate requirement in actual diversions.

Mr. Bishop: How much water would they receive less in acre-feet if regulated than what they are taking at the present time?

Mr. Jibson: I will have to look it up.

Mr. Bishop: Along with that, how many acre feet more do they get downstream on account of this regulation?

Mr. Jibson: You mean at Border?

Mr. Bishop: No, down at Stewart.

Mr. Jibson: They will get a certain amount at Border but by including benefits of return flow below Border, they will actually get more than arrives at Border.

Mr. Bishop: If that diversion is six acre-feet per acre the return flow is more than half that amount. My contention is that the amount they receive down below will be the same. The point is I don't like to see Wyoming people regulated and take the water from our users if the people downstream don't get it.

Mr. Jibson: Our studies show that about 50% of what they divert gets back to the river system at or below the mouth of Smith's Fork. Therefore, only 50% of the actual reduction would arrive at Border. However, return flows in Idaho from diverting this 50% will increase it to such an extent that, eventually, they will benefit by most, if not all, of the original reduction.

Mr. Bishop: That doesn't answer my question. I want to know how many acre-feet we lose and how many acre-feet the people below are getting.

Mr. Iorns: The regulation will be carried on for the benefit of the people above Stewart Dam--not anyone else.

Mr. Bishop: I still want to know how much good it will do the people down below.

Mr. Iorns: It will do them every bit as much good as it did you originally. If you apply it to the end that there is no water, you can divert it until the water is all used up.

Mr. Nate: I believe Mr. Stoker might make some remarks on that. He is measuring water up to Border and he showed me some figures today that might help. New installations are building up on the Cokeville side.

Mr. Stoker: I have some figures on the amount of water arrived at Border this year but I haven't had a chance to compare the amount of water at Smith Forks. From June 15th to July, we usually were getting 100 to 200 second feet when really they needed 400 second feet. If water was cut at Smith Forks, we should get it at Border and therefore nearly supply our rights.

Mr. Nate: And those rights are prior to 1900.

Mr. Bishop: When you require three acre-feet that had a right to but one foot to thirty-five acres?

Mr. Iorns: You can put on probably ten acre-feet to the acre in that section.

Mr. Bishop: In Colorado they have to have eight acre-feet and we have agreed to go up to six acre-feet with them. They want us to give them part of our amount to bring it up to eight acre-feet.

Mr. Iorns: We haven't said that you will be limited to

three acre-feet. We don't set that in this compact. If the water is available after Idaho gets its shares and the water is available, they can use what they need or want.

Mr. Jibson: In answer to your other question, Mr. Bishop, in 1948 the total regulation in the Wyoming section, including Smith Fork and the Main stem, amounts to approximately 6,000 acre-feet. That is the amount that would have been reduced under the compact.

Mr. Bishop: Our people would get 6,000 acre-feet less under compact than if not regulated. Then if they were unrestricted, how much would they get?

Mr. Jibson: Not restricted, it was between five and six acre-feet per acre. This would have been on about 15,000 acres. So they would have been reduced about one-half acre-foot per acre in 1948 which would have been under the most severe regulation of those years for which we had diversion records--1944-1948.

Mr. Bishop: How much more would they get downstream?

Mr. Jibson: We say they would get the entire 6,000 acre-feet.

Mr. Bishop: In other words, they wouldn't receive any return flow?

Mr. Jibson: If you were diverting six acre-feet and you reduced that diversion to three acre-feet, the percentage of return flow would probably go down on the remaining. But, of the reduction of three acre-feet only one-half gets to Border but the other one-half might be built up again below Border. They get the benefit of their own return flows on the water you have sent down to them. So

they will get more benefit than the actual amount that arrives at Border would indicate.

Mr. Bishop: If that is the case, we are going to have to have a reservoir at Border for storage.

Mr. Jibson: As a matter of fact, if we study further, we may find that the supplies would permit the Smith Fork people to use five acre-feet per acre each year without the storage, while under compact regulation.

Mr. Clyde asked whether or not this duty was established to establish a supplemental water requirement. They would all be treated alike and comparable by using that particular requirement.

Mr. Larson: We are spending too much time on details and I am wondering if we are getting anywhere--whether you want to discuss your upstream storage or how you want to proceed. We aren't making much progress.

Mr. Iorns: I think it would be well to prepare similar diagrams of what they actually received and what they would have received under regulation. This would probably answer a lot of questions. Smith Fork people would certainly not consider constructing storage if they got this amount of water.

Mr. Cooper: I would like to ask Mr. Jibson and Mr. Iorns how long it would take to prepare your studies to present to the Commission providing we arrange a meeting for the early part of December.

Mr. Jibson: We have the information, it is merely a matter of getting it together. The study doesn't take too long. We should

complete our 1954 records before coming before the Commission again and we have the whole group of canals on Smith Forks to compute. This may hold up that phase of it for a while. Without too much thought at hand, we could probably have it by then.

Mr. Clyde: Mr. Jibson, could you get that information by December 10th, or just when do you think you could get it?

Mr. Merrill: I think we should have it at least by November.

Mr. Clyde: We have much data collected but it hasn't been put together so we can see what the compact is going to be and no analysis of the current tentative draft in the light of the records. It would be highly desirable to see what this draft would do to each section of the River under the records you have.

Mr. Jibson: It has been done in some sections but not in all.

Mr. Iorns: The data is worked up but we don't use quite the same divisions. We have changed our percentage basis between the States but it could be modified.

Mr. Clyde: What do you estimate would be the earliest date you could come back before the Commission with a summary? An interpretation of the compact including all figures based on a tentative draft?

Mr. Jibson: You would want a composite effect on natural flow and regulated flow and based on compact storage?

Mr. Iorns: I don't think we could do it in less than six months.

Mr. Jibson: We probably would want to go over the estimated depletion in this new storage study. If we are too conservative or too

high, we might want to give considerable thought to a new guess. It would take several months to get together all of the data.

Mr. Larson: It might be done if U.S.G.S. would study effects on direct flow of distribution on the basis of upstream distribution under the compact allocations and Mr. Thomas of the Bureau of Reclamation would study the effect of upstream storage on supplies available below.

Mr. Johnson suggested that the regulations on the whole system should be left to the commissioner administering the compact.

Mr. Clyde: First, you must bring the record up-to-date and then analyze them. Second, apply those records to the tentative draft of the compact as far as flow is concerned. How soon can we have Mr. Thomas's records?

Mr. Thomas: It would have to be based on assumed figures on upstream storage.

Mr. Clyde: I would suggest on that basis that we pick a range of figures and let them take a look at the thing. We can probably identify that now. I would suggest 40,000, 30,000 and 35,000.

Mr. Merrill: We had that in the last meeting--20,000, 25,000, 36,000 and 40,000.

Mr. Larson stated that they do not have an analysis of upstream storage and what would be used downstream.

Mr. Thomas: When I mentioned three weeks, I wasn't figuring on a lot of studies. I was figuring on two and not more than three. If you want six or eight, it will take more time. I was thinking of running one at 35,000, one at 30,000 and possibly one at 25,000.

Mr. Jibson: Do you want it computed at two major sites or at several sites.

Mr. Thomas: That wouldn't make much difference. It will all come out in the studies.

Mr. Cooper: Referring to the minutes, it states here "from 20,000 to 40,000 in 5,000 acre-feet steps."--Page 12 of the minutes of the last meeting.

Mr. Larson: They also have this problem. If you want it in 5,000 acre-feet steps, that is quite a job. Three sets covering the range would probably give you a good idea of what happens in the Middle.

Mr. Cooper: I move, Mr. Chairman, that the study be made at 20,000, 30,000 and 40,000. Seconded by Mr. Bishop. Motion carried.

Mr. Merrill: On Page 13 of our minutes, Mr. Bishop says "If Mr. Tracy will amend that motion to state studies on 25, 25, 30 and 36. I want a study on 36 specifically because our people have gone on record that they can't go below that. I would like a study on that. If you will amend your motion to include that, I will second the motion. Mr. Tracy: I will agree to that change. Mr. Bishop: I will second it. Mr. Cooper: That's perfectly all right. Mr. Larson: You have heard Mr. Tracy's motion and Mr. Cooper's suggestion and Mr. Bishop's suggestion, and I think the record will show what it is. The motion was carried." So it was understood last time there would be a study on 20,000, 25,000, 35,000 and 36,000.

Mr. Thomas: That study has been made.

Mr. Merrill: I know--so why another?

Mr. Iorns: This will be different. We would consider the possibility of holdover storage.

Mr. Merrill: Why not use the same figures? Wouldn't it be easier if you are going to get additional information to follow the same pattern?

Mr. Thomas: It wouldn't be easier at all. You will come up with new figures. It will be made on a different basis entirely.

Mr. Merrill: Any reason why the same figures shouldn't be followed?

Mr. Thomas: It will be easier to make the studies on the 20,000, 25,000, 30,000 and 35,000 because we have more information. On three studies you can plot a curve.

Mr. Merrill: We want one at 20,000.

Mr. Thomas: That will possible take a few days more.

Mr. Larson: Will you supply what you can do the quickest? Mr. Clyde suggested 20,000, 30,000 and 40,000 and plot points.

Mr. Thomas: I don't think it would make any difference. There is no difference there.

Mr. Clyde moved that the U.S.G.S. be requested to bring the records up-to-date and to prepare a chronological summary of their findings as it relates to the tentative draft of the Compact as far as the natural flow goes with the understanding that the storage in the Upper Basin be taken care of by the Bureau of Reclamation. Seconded by Mr. Bishop. Motion carried.

Mr. Clyde: We must decide on a date for the next meeting.

Mr. Merrill: On these reports, it would be helpful to the

meeting if we could have them before the meeting so we can have an opportunity to study them and then we can discuss them. To have them before the meeting would be very helpful.

Mr. Jibson: There were a few members of the Commission who did not get their copies of the report before the meeting. I didn't try for total distribution at the time of completion.

Mr. Larson: Mr. Jibson with this work divided what do you estimate the date you could be ready?

Mr. Jibson: Suggest what date you plan on meeting and I will try to meet the deadline. We have much of the material but it will have to be modified. I think early in December I could do it, or possibly earlier.

Mr. Larson: Can we shoot for the middle of November, and I will keep very close track of you and Mr. Thomas? What about the 15th of November?

Mr. Jibson: Before you settle that, I might have misunderstood Mr. Clyde's proposition?

Mr. Clyde: I suggested that they use all the material in the reports and apply it to the tentative draft of the compact and integrate just the meaning of those data you have collected and the part they play in adaptation to the tentative draft. You have the necessary analyses but if you could summarize those chronologically and show their place in reaching your conclusions in the draft. As you make the adaptation to the compact, you will have to do that anyway.

Mr. Iorns: That will be a lot of work and parts of it should

be revised--particularly the consumptive use study can be materially improved on. Some things in there don't quite fit the bill. It probably won't change the picture.

Mr. Thomas: Would you anticipate revising the supplemental requirements now? If you do that will throw me for a loop.

Mr. Iorns: I have made certain assumptions that are not quite right now.

Mr. Thomas: If those supplemental requirements are made now, that will be a difficulty in regard to the storage studies. If they are changed, I will come up with studies that will have to be revised later on.

Mr. Jibson: If we revise consumptive use, we will have to revise supplemental requirements.

Mr. Thomas: Do you anticipate any substantial revision?

Mr. Iorns: No.

Mr. Thomas: Then I will be safe to go ahead?

Mr. Larson: Shall we try for November 15th and change it if necessary?

Mr. Clyde moved that the next meeting date be set at November 15th and 16th here in Salt Lake City. Seconded by Mr. Cooper. Motion carried.

Mr. Clyde: Between now and next meeting, the Commission should take under consideration the program for next year--whether or not we reach an agreement on the 15th and 16th of November. If we come to conclusion on the compact, we need additional information on the administration of the compact. We would, therefore, be justified in considering what we want to do next year.

Mr. Larson: Is that satisfactory with you Mr. Jibson?

Mr. Jibson: I will make a try for that date.

Mr. Iorns: There are two or three things that should be taken care of. I believe Idaho has to have in her budget requests right away. I think we should give some consideration to two things-- one is for the current fiscal year, 1953 indicated a drouth year and a number of the Commissioners felt there should be records kept on the diversions. However, 1954 on part of the River developed into a drouth condition and records were collected in 1954 also. It takes additional man work and additional money to collect these records which we did not make provision for in previous budget requests. It was tentatively understood that the Logan Office would collect these records as far as they were able to go with the expectation that the additional money needed would be forthcoming some way. The records have been collected and the bad effect has been that Logan will be \$3,000 short in meeting its payroll during the balance of the fiscal year. I believe we could at this late date get cooperative money from the Survey and matching money to go along with the State money.

Mr. Larson: In other words, you need \$500 from each State and \$1,500 from U.S.G.S.?

Mr. Kulp: Idaho is prepared to put up their \$500.

Mr. Clyde: That goes for Utah too.

Mr. Bishop: Wyoming can probably raise it in some manner.

Mr. Larson: Mr. Iorns, will this take care of everything until November?

Mr. Iorns: I would like to have an expression on one thing--if the States have included sufficient money in their budgets to take care of the rest of the program in the next biennium or not. We should have an expression from the Commission on this. Will you need these special studies from the Logan Office you have been getting in the past?

Mr. Clyde: Utah provided in its budget request a continuance of these studies but as to the detail, I would like to defer them until November.

Mr. Kulp: Idaho has done this also.

Mr. Bishop: Wyoming will do just what Idaho has done.

Mr. Iorns: When I was transferred to Tulsa, the Commission asked me to stay on as Chairman of the Engineering Committee. I question the advantage of this. The work falls on Mr. Jibson and for my part, if the Commission desires, I would like to see the Commission drop me as Chairman of the Engineering Committee and possibly designate Mr. Jibson or whomever they desire. I would be available on a consulting basis if you desired me. I think it is up to Mr. Larson.

Mr. Clyde: I would like very much to see Mr. Iorns continue either on the Committee or as advisor to it, but due to the distance from the operations, I would like to see Mr. Jibson take over the chairmanship. We need Von's services but I think we should have someone else spearheading it.

Mr. Bishop: We want to answer but we do want Mr. Iorns available.

Mr. Iorns: Washington Office has assured me I will be available.

Mr. Larson: If this is agreeable with the Commission, then Mr. Jibson will be the chairman of that Committee, but we are still calling on Mr. Iorns.

Mr. Clyde: If this is the appropriate time, I would like to have you add Jay R. Bingham to the Committee from Utah.

Mr. Larson: I assume this is agreeable.

Mr. Merrill: With reference to this Compact, there are several matters in it that should have some careful legal study and I wonder if the Legal Committee should not meet before our next meeting?

Mr. Larson felt this would be a good thing if all the Legal Committee took a crack at it.

Mr. Skeen: When would you like to meet?

Mr. Merrill: I would have to check my calendar first. If we can agree on a compact and get it ready for next session of legislature, I think it would be desirable.

There being no further business, it was moved by Mr. Cooper and seconded by Mr. Bishop that the meeting adjourn. Motion carried.