

Initial Comments of Alaskan Northwest
Natural Gas Transportation Company on
the Report of Willimas Brothers
Engineering Company to the Office
of the Federal Inspector on the
November 1981 Supplement to the
Certification Cost Estimate.

May 7, 1982

ALASKA SEGMENT

ALASKA NATURAL GAS TRANSPORTATION SYSTEM

Alaskan Northwest Natural Gas
Transportation Company

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NATURAL GAS TRANSPORTATION COMPANY ON THE
REPORT OF WILLIAMS BROTHERS ENGINEERING COMPANY
TO THE OFFICE OF THE FEDERAL INSPECTOR
ON THE NOVEMBER 1981 SUPPLEMENT TO THE
CERTIFICATION COST ESTIMATE

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UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

Alaskan Northwest Natural) Docket No. CP80-435
Gas Transmission Company)

Northwest Alaskan Pipeline) Docket No. CP78-123, et al.
Company

INITIAL COMMENTS OF ALASKAN NORTHWEST
NATURAL GAS TRANSPORTATION COMPANY
ON THE PRESIDING OFFICERS' APRIL 16, 1982
REPORT ON THE NOVEMBER 1981 SUPPLEMENT
TO THE CERTIFICATION COST ESTIMATE

Pursuant to the Commission's December 9, 1981 order, Alaskan Northwest Natural Gas Transportation Company (Alaskan Northwest) submits these initial comments on the Presiding Officers' April 16, 1982 report to the Commission on Alaskan Northwest's November 1981 Certification Cost Estimate (CCE) supplement. By these comments, Alaskan Northwest request a CCE of \$8.53 billion and a Center Point ratio of 1.267 for the Alaska pipeline segment of the ANGTS, for a total target cost estimate of \$10.81 billion for this segment.

I. BACKGROUND AND SUMMARY OF POSITION

Alaskan Northwest initially requested establishment of a \$7.896 billion CCE and a Center Point ratio of 1.292 in its July 1980 application for a final certificate of public convenience and necessity authorizing the construction and operation of the Alaska pipeline segment of the ANGTS. Alaskan Northwest filed a supplement to its July 1980 CCE and Center Point requests in October 1980 to reflect the reroute mandated by the Department of Interior right-of-way grant. This resulted in a CCE request of \$8.178 billion and a Center Point request of 1.282. 1/

The July 1980 CCE and Center Point requests, as supplemented by the October 1980 filing, were the subject of technical conferences presided over by the Commission's Alaskan Delegate and the Director, Division of Audit and Cost Analysis of

1/ Although the requested Center Point allowance of \$2.28 billion did not change, the Center Point ratio request was reduced because of the CCE increase. The Center Point ratio is derived by dividing the CCE plus Center Point allowance by the CCE. See CCE Volume V, p. 2-2 (July 1980) for the methodology used to calculate the Center Point ratio.

the Office of the Federal Inspector (OFI). Assisted by Williams Brothers Engineering Company (WBEC), the Presiding Officers submitted their Final Report to the Commission containing their recommendations on Alaskan Northwest's CCE and Center Point requests on August 14, 1981. Initial and reply Comments on their report were filed by the parties with the Commission in September and October of 1981.

Alaskan Northwest filed a second supplement to its CCE and Center Point requests for the Alaska pipeline segment on November 20, 1981. By this supplement, Alaskan Northwest requested a CCE of \$8.55 billion and a Center Point of 1.267. 2/ The November 1981 supplement contained adjustments to Alaskan Northwest's previously filed CCE reflecting a one-year schedule change to the 1986-1987 winter heating season, Alaskan Northwest's agreement with certain of WBEC's recommended changes to Alaskan Northwest's prior CCE request, material concerning items whose consideration had been deferred by the August 1981 Final Report, 3/ the necessity to purchase new construction camps, and certain design refinements associated with coordination of the pipeline design with the design of the Alaska Gas Conditioning Facility.

The November 1981 supplement was the subject of technical conferences conducted on February 16 and 18, 1982 by Presiding Officers designated by the Commission's December 9, 1981 order. The trail staff filed comments with the Presiding Officers on certain issues on March 30, 1982, and Alaskan Northwest filed a response to those comments on April 5, 1982. The Presiding Officers' report (hereinafter referred to as the Smoler/Berman Report) containing their recommendations on most of the adjustments contained in the November 1981 supplement together with the WBEC supplemental audit of the supplement was issued April 16, 1982. 4/

2/ The November 1981 filing resulted in a net increase to the CCE request of July 1980, as supplemented in October 1980, of \$373 million.

3/ These deferred items included State of Alaska socioeconomic and monitoring costs, communications and supervisory systems, project management costs, and related contingency amounts.

4/ The November 1981 supplement also requested net increases and decreases to the CCE for Affirmative Action training plan costs, socioeconomic costs, third-party monitoring costs, and highway repair costs. These areas will be addressed by the Presiding Officers in a future report to the Commission and consequently will not be addressed by Alaskan Northwest in the instant comments.

The Smoler/Berman Report recommends that the requested \$373 million increase in the CCE be reduced by \$109 million (including contingency), principally on the basis of WBEC's recommendations, and that another \$84 million (including contingency) be deferred for future decision. The Report's recommendations leave a false impression that the November 1981 supplement is replete with "computational and methodological errors." 5/ Alaskan Northwest and its Project Management Contractor (PMC), Fluor Engineers and Constructors, Inc., have carefully reviewed the Smoler/Berman Report and the accompanying WBEC supplemental audit. As explained in the attached analysis, many of these so-called "errors" are really differences in subjective judgment between Alaskan Northwest cost estimators and WBEC auditors or a continued misunderstanding of certain areas of the CCE by WBEC. Where there have been such differences in judgment, the Smoler/Berman Report has rejected or ignored the applicant's presentation in favor of WBEC's audit, even though there is no basis for substitution of WBEC's judgement and even where the WBEC audit corroborates the reasonableness of Alaskan Northwest estimate. However, based on its review of the WBEC audit, Alaskan Northwest can only agree to a \$25 million reduction to its requested CCE increase of \$373 million, most of which is accounted for by a single error. 6/

Accordingly, Alaskan Northwest requests that the Commission approve an increase in the CCE of \$348 million. The requested increase results in a total CCE request of \$8.53 billion and a requested Center Point ratio of 1.267, for a total target cost

5/ Smoler/Berman Report at 6.

6/ The bulk of the \$25 million agreed-to reduction is an \$18.2 million error in the insurance component of the Project Directorate area of the November 1981 supplement, which error was brought to the attention of the parties by Alaskan Northwest in its response to a staff data request. Alaskan Northwest further explained the insurance error at the February 16, 1982 technical conference. Tr. 60-61. The remainder of the \$25 million is comprised of approximately \$4.5 million in errors in other areas and a corresponding reduction of \$2.6 million in contingency.

estimate of \$10.81 billion. 7/ The following table compares the difference between Alaskan Northwest's July 1980 CCE, as supplemented, and the Adger/Berman and Smoler/Berman Reports' recommendations and show the amounts now requested for approval by Alaskan Northwest.

TABLE I
COMPARISON OF CERTIFICATION COST ESTIMATE AND CENTER
POINT REQUEST AS REVISED NOVEMBER 1981
(MILLIONS OF DOLLARS)

<u>Element</u>	<u>July 1980 Filing</u>	<u>October 1980 Revision</u>	<u>November 1981 Revision</u>	<u>November 1981 Reconciled</u>	<u>Adger/Smoler/Berman Recommended Approval</u>
Base Engineering Estimate	\$ 7,050	\$ 7,302	\$ 7,635	\$ 7,612	\$ 6,058
Contingency	846	876	916	914	727
Assigned Contingency	-	-	-	-	311
Total CCE	7,896	8,178	8,551	8,526	7,096
Center Point Allowance	<u>2,304</u>	<u>2,304</u>	<u>2,279</u>	<u>2,279</u>	<u>1,419</u>
Total Target Cost	10,200	10,482	10,830	10,805	8,515
Deferrals	-	-	-	-	<u>1,055</u>
Total Target Cost Without Deferrals	<u>\$10,200</u>	<u>\$10,482</u>	<u>\$10,830</u>	<u>\$10,805</u>	<u>\$ 9,570</u>
Normal Contingency	12%	12%	12%	12%	12%
Center Point Ratio	1.292	1.282	1.267	1.267	1.200

II. INDIVIDUAL ISSUES

The attached analysis of the Smoler/Berman Report and WBEC supplemental audit details Alaskan Northwest's response to their recommendations. This analysis, like the WBEC supplemental audit, is organized on the basis of the Work Breakdown Structure. Certain of the Smoler/Berman Report's recommendations are deserving of further treatment and are discussed in this section.

A. Camp Salvage Value

The single largest reduction in the November 1981 supplement recommended by the Smoler/Berman Report is a \$75 million reduction to the new camps adjustment to reflect a claimed salvage value. The July 1980 CCE for Temporary Facilities and Services assumed that Alaskan Northwest would be able to purchase from Alyeska and refurbish 21 existing camps used in the

7/ The \$25 million reduction in the increase to the CCE sought by the November 1981 supplement does not result in a change in the Center Point Ratio requested in that supplement.

construction of the Alaska gas pipeline. 8/ Because Alaskan Northwest was unable to reach final agreement with Alyeska on terms and conditions of purchase, the November 1981 supplement included an adjustment to reflect the estimated costs of all new camps, resulting in an increase of \$183 million to the camps area of the base estimate.

Alaskan Northwest did not include a salvage value in its camps estimate because there is no foreseeable market for them at the end of construction and because, even assuming the camps could be sold, any salvage value would be offset by storage and handling costs. Conversely, WBEC and the trial staff asserted that there would be a substantial salvage value for new camps. 9/ While the Smoler/Berman Report saw "at least some merit in all three positions," 10/ it totally rejected Alaskan Northwest's position and instead recommended that a salvage value for camps of \$75 million be included in the CCE. The sole basis for the Presiding Officers' recommendation was their unsupported belief that "there is a reasonable chance that the camps could be sold, in whole or in part, for use on one or more construction projects, in or out of Alaska." 11/ Their recommendation is without any basis and should be rejected for the following reasons.

8/ The CCE has always provided that three new pipeline construction camps would be built south of Delta.

9/ The principal basis for WBEC's and the trial staff's recommended salvage values is the fact that Alaskan Northwest offered to purchase the Alyeska camps. Alaskan Northwest would note that since the completion of TAPS, Alyeska has been unsuccessful in finding a buyer for virtually any of these camps. Moreover, because of schedule delays, it is now likely that the Alyeska camps will have little value at the time they could be used for ANGTS construction. It should also be noted that, while Alyeska had a potential market for its camps, i.e. this project, no such market exists for the ANGTS camps.

The WBEC supplemental audit also relied on the ATCO study for its recommended salvage value. See WBEC Supplemental Audit at p. 4-29. However, the ATCO study expressly recognized that new camps might not have any salvage value because of their Alaska location, stating that "it must be emphasized that the location of the camps is such that the normal market conditions on which the resale values are based may not exist." 1978 ATCO study at p. 10-1.

10/ Smoler/Berman Report at 27.

11/ Id.

First, if there is any market for the resale of the camps, the only realistic market is the interior of Alaska. 12/ Construction camps generally are not used in lower-48 construction projects, because housing facilities are usually available. Even where camps are required, transportation costs would make used Alaska camps unattractive when compared with new or used camps available in the lower 48, since this is where camps are manufactured. Transportation costs would also make purchase of the camps unattractive to a purchaser outside of Alaska. This would be true even in neighboring Canada where, in addition to transportation costs, the Alaska camps would face competition from camps in Canada remaining after construction of the Canadian segment of the ANGTS, assuming there was a market in Canada. The Alaskan camps would also be undesirable for construction projects in Canada because construction labor agreements in effect there require single occupancy for camps. These requirements do not apply in Alaska, and Alaskan Northwest has designed its new camps for double occupancy. 13/

Second, no large construction projects, pipeline or otherwise, are planned for Alaska which could utilize the 16,800 beds of the ANGTS camps. 14/ WBEC suggests that small projects in Alaska could use the camps. 15/ Many contractors already maintain camps for smaller projects as part of their normal complement of equipment. To the extent they might need to supplement their equipment, WBEC's suggestion ignores the size of the Alaskan Northwest camps. Each camp is designed to house 500 to 1,000 persons. The configuration of the camps modules accordingly will not likely be suited to small projects. Additionally, the sale of the camps in a piecemeal fashion to smaller projects, if possible at all, would reduce any salvage value and prolong the time to dispose of the camps, further diminishing the value of remaining camp units.

Third, because any salvage value would be at best insignificant, Alaskan Northwest did not include in the CCE any costs associated with maintaining the camps until sale, transportation of the camps from the interior of Alaska to a new

12/ While the Smoler/Berman Report recognizes this, stating that "should no market for the camps exist in Alaska, any "value" becomes meaningless," the Report erroneously considers a worldwide market for camps in arriving at its recommendation for salvage value. Smoler/Berman Report at 27. (emphasis added.)

13/ The Alyeska camps were also double occupancy.

14/ This is equivalent to 4.2 percent of the population of Alaska.

15/ WBEC Supplemental Audit at 4-28.

location, 16/ and sales costs. Alaskan Northwest assumed that such costs would be a wash with any salvage value. The \$57 million contained in the CCE referenced by the Smoler/Berman Report 17/ and WBEC supplemental audit 18/ is only for dismantling the camps, restoring camp sites, and moving the dismantled camps to a common storage site. This amount does not include any costs for storing the camps until sale, protecting them from the elements and vandals until sale, and the costs associated with selling the camps, such as advertising and commission. The camps will also continue to depreciate in value while in storage. When these costs and depreciation in the value of the camps pending their sale is taken into account, it is clear that a realistic salvage value will be effectively offset by these costs.

The conclusion that the ANGTS camps will have minimal salvage value is further borne out by Alyeska's experience. Alyeska's Glennallen camp, which could house approximately 900 persons, was sold at public auction in 1978 for \$650,000, which Alaskan Northwest understands was less than 7.5 percent of the camp's original cost. Glennallen was one of the most accessible of the Alyeska camps for sale purposes, being located adjacent to a highway, and was sold during a period of relatively high construction activity in Alaska.

In summary, the Smoler/Berman Report concedes that there will be no salvage value if there is no market for the camps. Yet it assumes without any basis that there will be a market for camps. The Report then recommends an arbitrary value for salvage that fails to take into account any of the costs associated with their sale. Because there is little likelihood that there will be any salvage value realized for camps, Alaskan Northwest's treatment of salvage value is the only reasonable approach. Neither the Smoler/Berman Report or the WBEC supplemental audit puts forth any support or justification for a contrary conclusion. Adoption of the Smoler/Berman salvage value recommendation for purposes of establishing the CCE clearly would be unfair to Alaskan Northwest. If the Smoler/Berman reduction is approved and, as is likely, there is no significant salvage value, then Alaskan Northwest will be unjustly penalized, because there is no way for the CCE to be adjusted after construction to reflect this fact. Conversely, if Alaskan Northwest's position is approved, in the unlikely event any salvage value should be realized, and Alaskan Northwest will use its best efforts to find a buyer, such amount would be credited to the ANGTS cost of

16/ While Alaskan Northwest might not have to bear these transportation costs directly, they would reduce the price willing to be paid by the Purchaser

17/ Smoler/Berman Report at 27.

18/ WBEC Supplemental Audit at p. 4-30.

service. Finally, contrary to the instructions of Order No. 31, reduction of the camps adjustment by the Smoler/Berman recommended salvage value presents an overly optimistic CCE, given the improbable and speculative nature of any salvage value. 19/ Consequently, the Smoler/Berman salvage value recommendation should be rejected.

B. DEFERRALS

The Smoler/Berman Report recommends that items totaling \$ 84 million be deferred for further consideration. Alaskan Northwest submits there is no basis for deferring approval of CCE values for project management costs, increased amounts for OFI and Department of Interior (DOI) monitoring costs and Alyeska data acquisition costs.

1. Project Management Costs

By its November 1981 supplement, Alaskan Northwest increased its base estimate by \$106 million to reflect a one-year schedule delay. The WBEC audit disagreed with some of the PMC's labor costs and expenses and recommended a reduction of \$1.1 million in this adjustment. WBEC, however, found that \$105 million was a reasonable estimate for the schedule change. Although the Smoler/Berman Report agreed with WBEC's assessment that the vast majority of this adjustment was reasonable, it nonetheless recommends deferral of \$553,000 of the WBEC reduction on the basis that the Final Report recommended deferral of approval of a CCE value for project management costs until the OFI approves a detailed project management plan. 20/ As Alaskan Northwest previously explained in its initial and reply comments on the Final Report, 21/ there is no basis for deferring approval of estimated management costs. The OFI has already approved in principle Alaskan Northwest's draft management plan. The original and supplemental WBEC audits corroborate the reasonableness of Alaskan Northwest's estimated management costs. Neither the President's Decision nor Order Nos. 31 and 31-B require approval of the management plan prior to establishment of a CCE value for project management costs. In fact, the recommended deferral of approval is inconsistent with the Decision and those orders and the manner in which the rest of the estimate is being treated. The Decision and Order Nos. 31 and 31-B clearly contemplate that a cost estimate of differing levels of detail would be submitted at two different times for government approval prior to construction. First, the CCE is submitted to the

19/ Order No. 31 at 46.

20/ Smoler/Berman Report at 14 and 58.

21/ Initial Comments of Alaskan Northwest at 33-34 (filed September 18, 1981) and Reply Comments of Alaskan Northwest at 8-9 (filed October 13, 1981).

Commission, and later, final design and costs are approved by OFI. The pipeline design was at the 5-10 percent level at the time of the preparation of the CCE. However, while this level of design has been found adequate for the purpose of establishing the CCE value for every other area of the estimate, the Final Report and Smoler/Berman Report without any basis or justification insist on a much higher level of detail for the management cost area before CCE approval. As Order No. 31 mandates and as the Smoler/Berman Report recognizes, "the base estimate recommended to the Commission should be the best possible estimate on which to make its decision...." 22/ Deferring such a significant area of the estimate without any sound basis contradicts this goal. Additionally, needless deferral frustrates the mandate of the Alaska Natural Gas Transportation Act to issue ANGTS approvals expeditiously. Therefore, the Commission should not defer approval of a CCE value for project management costs and should, instead, approve Alaskan Northwest's estimate of such costs, including the \$106 million increase for the schedule change, most of which costs are project management costs.

2. DOI/OFI Monitoring Costs

Because of the schedule extension, Alaskan Northwest adjusted the OFI-and-DOI- supplied estimates of their monitoring costs. 23/ Although the Smoler/Berman Report does not question the reasonableness of the increase of \$12.3 million in these costs, it recommends deferral of approval of this adjustment. The Report offers no explanation or justification for deferral and there is none. The "complex issues of fact, law and policy" referenced by the Presiding Officers as the basis for deferring approval of third-party monitoring costs have been raised solely in the context of estimated State of Alaska costs. 24/ Indeed, the original OFI and DOI estimates included in the CCE have already been recommended for approval by the Final Report. 25/ Consequently, the adjustment to estimated OFI and DOI costs is also ripe for Commission approval at this time.

3. Alyeska Data

On August 17, 1978 Alaskan Northwest and the TAPS Owners 26/

22/ Order No. 31 at 46; Smoler/Berman Report at 30.

23/ CCE Volume XXXIV at p. 2-24 and p. 12-1 (November 1981).

24/ "Memorandum to the Commission and Notice of Invitation for Comments" at 2 (issued April 16, 1982).

25/ Final Report at V-8.

26/ Amerada Hess Pipeline Corporation, ARCO Pipe Line Company, BP Pipelines Inc., Exxon Pipeline Company, Mobil Alaska Pipeline Company, Phillips Alaska Pipeline Corporation, Sohio Pipe Line Company, and Union Alaska Pipeline Company.

entered into a License Agreement under which the TAPS Owners licensed to Alaskan Northwest for its use in the design, engineering and construction of the ANGTS Alaskan facilities information developed during the design, engineering and construction of the TAPS oil pipeline system. 27/ The negotiated base of the licensed information was \$55 million. The agreement provided Alaskan Northwest with immediate access to the licensed information with all payments, beyond an initial payment of \$200,000, deferred and conditioned upon acceptance by Alaskan Northwest of a final certificate of public convenience and necessity authorizing ANGTS construction and upon the commencement and completion of construction. 28/ The License Agreement also provided for the \$55 million base price to escalate according to a deferred payment factor and an inflation adjustment. 29/

Pursuant to the Commission's directive in Order No. 31 for a complete estimate and the August 21, 1981 Final Report to the Commission by the Alaskan Delegate and OFI Division Director, 30/ Alaskan Northwest requested in its November 20, 1981 supplement

27/ See Smoler/Berman Report at 40 and Alaskan Northwest Response, dated April 5, 1982, at 6 for a description of the licensed data.

28/ Specifically, the License Agreement provides for the following payment schedule; (1) 15 percent (less \$200,000 of the base price, as escalated, is due within 30 days after acceptance by Alaskan Northwest of a certificate from the Commission authorizing construction of the ANGTS Alaskan facilities; (2) 25 percent of the base price, as escalated, is due 30 days after commencement of civil construction of these facilities; (3) 35 percent of the base price, as escalated, is due within 30 days following commencement of actual pipeline construction in Alaska; and, (4) the balance (25 percent) of the base price is due 30 days after the in-service date for the Alaskan facilities. The License Agreement further provides that if any of the above events fail to occur, no further payments are required.

29/ The deferred payment factor is equal to (1.0002739^N) where ^N equals the number of days between July 17, 1979 (the effective date of the agreement regarding establishment of the base price of \$55 million) and the date payment is made. The inflation adjustment is based upon a Department of Labor Consumer Price Index.

30/ See Final Report at IV-8, n.33.

that \$93.23 million be included in the Commission-approved CCE to reflect the cost, in January 1980 dollars, of the data licensed from the TAPS Owners. 31/ Unlike the rest of the CCE, this \$93.23 million is not an estimate. Rather, it is a mathematical calculation to determine the amount called for under the License Agreement, in January 1980 dollars, assuming the occurrence of certain events--acceptance of a certificate and commencement and completion of construction.

At the February 16-18, 1982 technical conferences, the Presiding Officers and the Commission staff examined such questions as whether the License Agreement was an arms-length transaction, the type and value of information licensed, its usefulness to Alaskan Northwest, and the prudence and reasonableness of the price to be paid for the licensed data. With respect to these questions, the Presiding Officers in their April 16, 1982 report, conclude as follows:

There is no evidence that the data acquisition agreement was negotiated at less than arms-length.... No one has questioned Alaskan Northwest's need for the data. Clearly, it was needed and useful in designing the pipeline. We find very persuasive the reasons stated by Alaskan Northwest for acquiring the data from Alyeska rather than developing it themselves. 32/

Furthermore, the Presiding Officers recognized that the \$55 million base price was "...substantially lower than the cost Alyeska incurred in gathering the data for its own use" and that Alaskan Northwest "could not obtain such data through its own gathering processes at a cost lower than Alyeska's asking price." 33/ Indeed, the Commission staff stated that the cost to Alyeska of developing the data was \$145.9 million. 34/

Notwithstanding these findings and their statement that "the factual record of this (Alyeska data) cost estimate element is complete," 35/ the Presiding Officers recommend that the Commission defer any decision on this element of Alaskan

31/ This amount was calculated pursuant to the deferred payment and inflation adjustment provision of the August 1978 agreement.

32/ Smoler/Berman Report at 50 (footnote omitted).

33/ Id at 41-42.

34/ See February 16, 1982 Tr. at 111.

35/ Smoler/Berman Report at 53.

Northwest's CCE request until after the producers and the sponsors have concluded their negotiations with respect to ANGTS financing arrangements. The Presiding Officers baldly conclude that this CCE component "would be best considered by the Commission in the context of whatever comprehensive agreement Alaskan Northwest negotiates with the producers. That context may shed a totally different light on the subject, rendering all previous analysis obsolete or off-point." 36/

Alaskan Northwest finds it very perplexing that the Presiding Officers never state why they believe there exists a direct relationship between the License Agreement and the ANGTS financing arrangements. Indeed, there is none. First, of the eight TAPS Owners, only affiliates of three--Exxon, Arco and Sohio--are participating in the design and engineering of the Alaska segments of the ANGTS. Second, the debt and equity participation by these three entities in the final ANGTS financing plan will be totally independent of and will bear no relationship to the payments their affiliates will receive under the License Agreement for the data these affiliates generated, paid for, and subsequently licensed to Alaskan Northwest. 37/ Accordingly, there is no reason to defer a decision on this component of the CCE.

36/ Id at 53.

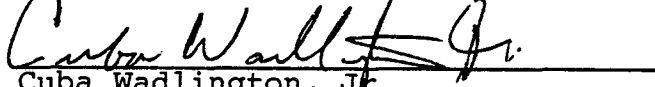
37/ Even assuming arguendo that there existed a relationship between prospective financing arrangement and the 1978 License Agreement, such relationship would not affect the CCE value for the proportional share of future payments under the License Agreement to the TAPS Owners whose affiliates are not now, nor have ever expressed any interest in, becoming parties to the Cooperative Agreement.

CONCLUSION

For the foregoing reasons and based upon Alaskan Northwest's November 1981 filing, these comments, and the following analysis of the Smoler/Berman Report and WBEC recommendations, Alaskan Northwest requests the Commission to approve now a CCE of \$ 8.53 billion and a Center Point ratio of 1.267, for a total target cost of \$ 10.81 billion for the Alaska pipeline segment of the ANGTS. Alaskan Northwest further requests that, in accordance with the Presiding Officers' recommendation, the Commission go forward and establish the CCE and Center Point at this time.

Respectfully Submitted,

ALASKAN NORTHWEST NATURAL GAS
GAS TRANSPORTATION COMPANY


Cuba Wadlington, Jr.
Director, Regulatory Affairs


NORTHWEST ALASKAN PIPELINE COMPANY

Date: May 7, 1982

AFFIDAVIT

District of Columbia: ss

Cuba Wadlington, Jr., being first duly sworn, deposes and says that he is Director, Regulatory Affairs, for Northwest Alaskan Pipeline Company, that he has read the foregoing Initial Comments, that the statements contained therein are true and correct to the best of his knowledge, information and belief, and that he is authorized to file same with the Federal Energy Regulatory Commission.


Cuba Wadlington, Jr.

SUBSCRIBED AND SWORN TO before me this 7th day of May, 1982.


Notary Public

My Commission Expires: November 30, 1984

CERTIFICATE OF SERVICE

I hereby certify that I have served this foregoing document upon each person designated on the official restrictive service list compiled by the Secretary in Docket Nos. CP78-123 and CP80-435 in accordance with the requirements of Section 1.17 of the Federal Energy Regulatory Commissions Rules of Practice and Procedure.

Dated at Washington, D.C. this 10th day of May, 1982

A handwritten signature in dark ink, appearing to read "Cuba Wadlington, Jr.", with a stylized flourish at the end.

Cuba Wadlington, Jr.
Director, Regulatory Affairs

Washington, D.C.
May 10, 1982

RESPONSE TO WBEC'S SUPPLEMENTAL
REPORT FOR NOV. 1981 REVISED CCE

2.0 COMPRESSOR AND METERING STATIONS

2.1 SCHEDULE ADJUSTMENT 1986/87

<u>NOV 81</u> <u>CCE</u> <u>(\$1,000)</u>	<u>APR 82</u> <u>WBEC</u> <u>(\$1,000)</u>	<u>REVISED</u> <u>CCE</u> <u>(\$1,000)</u>	<u>DIFFERENCE</u> <u>(\$1,000)</u>
1,390	1,338	1,390	0

Alaskan Northwest does not agree with the WBEC evaluation, refer to Section 7.0 for a detailed explanation.

2.2 FERC REPORT RECONCILIATION ADJUSTMENT

No response required.

2.3 DELETE METERING STATION NO. 1

WBEC's evaluation when viewed as adjustments to their Audit Report values are correct. The net effect is to cancel or delete their Audit Report recommendations due to the deletion of the Metering Station. Alaskan Northwest agrees with this approach and WBEC's values, but must highlight the fact that this adjustment (\$281,000) is not made to the November 1981 CCE but to WBEC's evaluated total.

2.3.1 PMC Costs

<u>NOV 81</u> <u>CCE</u> <u>(\$1,000)</u>	<u>APR 82</u> <u>WBEC</u> <u>(\$1,000)</u>	<u>REVISED</u> <u>CCE</u> <u>(\$1,000)</u>	<u>DIFFERENCE</u> <u>(\$1,000)</u>
(395)	(676)	(395)	0

WBEC's evaluated additional reduction of \$281,000 is composed of two components: 1) a reduction of \$296,000 for Alaska PMC QC labor, and, 2) an addition of \$15,000 associated with the method for calculating benefits and burdens.

2.3.2.3 Structural Steel

NOV 81 CCE (\$1,000)	APR 82 WBEC (\$1,000)	REVISED CCE (\$1,000)	DIFFERENCE (\$1,000)
25	26	26	1

WBEC evaluation is correct, an arithmetic error of \$1,000 exists in the structural steel material account. The correct material value is \$26,000.

2.3.2.6 Piping

2.3.2.8 Instruments

2.3.3.1 Temporary Construction Facilities

2.3.3.2 Construction Services, Supplies and Expense

2.3.3.3 Field Staff Subsistence and Expense

2.3.3.4 Equipment Rental

2.3.3.6 Overhead Costs and Profit

WBEC has stated in all the above paragraphs that the cost element is reasonable and adequate but added the statement, "Minor arithmetic/posting errors were noted, but when the total was rounded to the nearest \$1,000 the result was unchanged." The CCE is always rounded to the nearest thousand and if the total is correct then there are no "arithmetic/posting errors."

2.4 ELIMINATE REFRIGERATION SYSTEM FULL LOAD TESTS

DELETED IN NOV 81 CCE (\$1,000)	DELETED BY APR 82 WBEC (\$1,000)	REVISED CCE DELETION (\$1,000)	DIFFERENCE (\$1,000)
(24,949)	(24,949)	(24,949)	0

WBEC's evaluation of this item highlights an apparent oversight in their estimate review. WBEC references their Audit Report, at 2-27, where they concluded that a \$3,100,000 allowance for

additional testing, etc., in lieu of system full load tests was not required. In again rejecting this allowance in the Supplemental Reports, WBEC states that no new information was provided.

In fact Alaskan Northwest expanded its reasoning in Alaskan Northwest Natural Gas Transportation Company Initial Comments on the Alaskan Delegate and Office of Federal Inspector Division Director's Final Report on Alaskan Northwest's Certification Cost Estimate, dated September 18, 1981, page 27.

WBEC apparently did not review this additional material.

Alaskan Northwest does not agree with WBEC's rejection of the \$3,100,000 on the grounds that, 1) WBEC has not analyzed all the available data, 2) it is necessary and is a part of the preliminary RFQ,¹ 3) similar testing for the mainline compressors is required and will cost approximately the estimated amount², 4) other costs in the \$3,100,000 allowance are already partially expended (dynamic simulation).

2.5 TWO COMPRESSOR UNIT DESIGN

2.5.1 PMC Costs

NOV 81 CCE <u>(\$1,000)</u>	APR 82 WBEC <u>(\$1,000)</u>	REVISED CCE <u>(\$1,000)</u>	DIFFERENCE <u>(\$1,000)</u>
450	433	450	0

Alaskan Northwest does not agree with the WBEC evaluation, refer to Section 7.0 for a detailed explanation.

¹ Testing for this system falls into two distinct categories; 1) normal testing, included in the bids, and 2) full load full pressure factory train test. The latter testing is required as a replacement to the deleted full load system tests. Our preliminary Request For Quotation (RFQ) for the refrigeration compressors, a copy of which is available in our Washington D.C. office, clearly shows this as a separate requirement. Eliminating this allowance, for the reasons stated, is wrong and contradicts a major objective of the Smolar/Berman report to provide the Commission with the "best possible estimate" (Ref. Smolar/Berman Report, page 30).

² New formal quotations have recently been received for the mainline compressors. These quotes show that testing, over and above normal vendor testing, is a reality and that our estimate was very accurate.

2.5.2.5 Machinery and Equipment

NOV 81 CCE (\$1,000)	APR 82 WBEC (\$1,000)	REVISED CCE (\$1,000)	DIFFERENCE (\$1,000)
16,164	16,215	16,215	51

WBEC's evaluation is correct, an incomplete unit rate was used in the November 1981 Revised Filing. The actual rate of \$13.10 per square foot for the hallway Halon system subcontract adds a total of \$51,000 to the estimate.

2.5.2.7 Electrical

NOV 81 CCE (\$1,000)	APR 82 WBEC (\$1,000)	REVISED CCE (\$1,000)	DIFFERENCE (\$1,000)
609	612	612	3

WBEC's evaluation is correct, the November 1981 Revised Filing omitted minor adjustments made in Late Change No. 4 (Volume XIII of July 1980 Filing). Including these adjustments results in \$2,000 reduction in material and an increase of \$3,000 in labor for a total change of plus \$1,000 per station (for Compressor Stations 2, 4 and 7).

2.5.3.1 Freight

NOV 81 CCE (\$1,000)	APR 82 WBEC (\$1,000)	REVISED CCE (\$1,000)	DIFFERENCE (\$1,000)
2,094	0	0	(2,094)

As described by WBEC, estimated costs for freight have been included twice, and one of the values should be deleted. This results in a deduction of \$2,094,000 out of the total of \$4,104,000 estimated for freight.

2.5.3.3 Construction and Equipment Services and Supplies

NOV 81 CCE \$1,000	APR 82 WBEC \$1,000	REVISED CCE \$1,000	DIFFERENCE \$1,000
2,058	2,055	2,058	0

Alaskan Northwest checked this account thoroughly and could not find any errors. The value of \$1,872,000 for materials (not sub-contracts as WBEC has stated on Page 2-16) is indeed the correct summation of the value on the backup page. The value of the backup page is also correct, though it has been rounded to the nearest thousand, (from \$623,700 to \$624,000).

RESPONSE TO WBEC'S SUPPLEMENTAL
REPORT FOR NOV. 1981 REVISED CCE

3.0 OPERATIONS AND MAINTENANCE FACILITIES

<u>NOV 81 CCE (\$1,000)</u>	<u>APR 82 WBEC (\$1,000)</u>	<u>REVISED CCE (\$1,000)</u>	<u>DIFFERENCE (\$1,000)</u>
77	74	77	0

Alaskan Northwest does not agree with the WBEC evaluation, refer to Section 7.0 for a detailed explanation.

RESPONSE TO WBEC's SUPPLEMENTAL
REPORT FOR NOVEMBER 1981 REVISED CCE

TEMPORARY FACILITIES AND SUPPORT SERVICES

Cost Difference Summary

		<u>DOLLARS X 1000</u>	
		<u>Agree</u>	<u>Disagree</u>
4.1	<u>Schedule Adjustment</u>		
4.1.1.1	Fluor Labor Costs	-0-	(44)
4.1.1.2	Fluor Irvine Expenses	-0-	(1)
4.1.1.3	Fluor Alaska Expenses	-0-	(128)
	Total 4.1: Schedule Adjustment	-0-	(173)
4.2	<u>FERC Report Reconciliation Adjustment</u>	-0-	(988)
4.3	<u>New Camp Adjustment</u>		
4.3.1.1	Fluor Irvine Expenses	-0-	(171)
4.3.1.3.2	Fluor Irvine Labor	-0-	(59.2)
4.3.1.4.1	Sta. Camps Contractor OH&P	(89.6)	-0-
4.3.1.4.2	Sta. Camps Contractor OH&P	(45.5)	-0-
4.3.1.4.3	Sta. Camps Kitchen/Diner Modules Cost	-0-	484.4
4.3.1.4.4	Sta. Camps Wtr Tks & Pump Installation	217.0	-0-
4.3.1.4.5	Sta. Camps Revised Sewage Plant Equipment	237.8	1,085.2
4.3.1.4.6	Sta. Camps Contractor OH&P	(44.8)	-0-
4.3.1.4.7	Sta. Camps Contractor OH&P	(222.8)	-0-
4.3.1.4.8	Sta. Camps Catering Cost	-0-	(417.8)
4.3.1.4.9	Sta. Camps Cribbing Cost	-0-	(171.7)
4.3.1.4.10	Sta. Camps Construction Labor	-0-	669.9
4.3.1.5.1	Solid Waste Disposal Sites Math Error	(64.3)	-0-
4.3.1.5.2	Sag River P/L Camp Math Error	10.0	-0-
4.3.1.5.3	Toolik P/L Camp Math Error	-0-	22.0
4.3.1.5.4	Old Man P/L Camp Math Error	-0-	(1.8)
4.3.1.5.5	P/L Camps Contractor OH&P	2.3	-0-
4.3.1.5.6	Prospect P/L Camp Math Error	-0-	18.0
4.3.1.5.7	P/L Camps Revise Kitchen/Diner Modules Qty.	30.4	-0-
4.3.1.5.8	P/L Camps Math Error	9.1	-0-
4.3.1.5.9	Manley P/L Camp Math Error	2.7	-0-
4.3.1.5.10	Tok P/L Camp Math Error	50.0	-0-
4.3.1.5.11	Atigun P/L Camp Math Error	8.4	-0-
4.3.1.5.12	P/L Camps Piping Distr. Costs Recomputed	(1,539.8)	-0-

		<u>DOLLARS X 1000</u>	
		<u>Agree</u>	<u>Disagree</u>
4.3	<u>New Camps Adjustment (Continued)</u>		
4.3.1.5.13	P/L Camps Electr. Distr. Costs Recomputed	(616.6)	-0-
4.3.1.5.15	P/L Camps Arctic Housing for Generators	300.0	-0-
4.3.1.5.16	Solid Waste Disposal Sites Costs for Processed Mat'l	-0-	(591.6)
4.3.1.5.17	P/L Camps Costs for Processed Mat'l	-0-	(2,606.8)
4.3.1.5.18	Solid Waste Disposal Sites Revegetation Costs	(30.1)	-0-
4.3.1.5.19	P/L Camps Cribbing Costs	-0-	(6,874.9)
4.3.1.5.20	P/L Camps Contractor OH&P	(104.0)	-0-
4.3.1.5.21	P/L Camps Math Error	736.0	-0-
4.3.1.5.22	P/L Camps Productivity Rates	-0-	(5,365.6)
4.3.1.5.23	P/L Camps Catering Costs	-0-	(7,588.8)
4.3.1.6	Salvage Value for Sta. & P/L Camps	-0-	(95,800.0)
Total 4.3: New Camps Adjustment		(1,153.8)	(117,369.7)
4.4	<u>Revision 3 Pipeline Alignment Changes</u>	-0-	(10)
Total Temporary Facilities & Services:		Agreements = \$	(1153.8)
		Disagreements = \$	<u>(118,540.7)</u>
WBEC's Stated Difference		\$	(119,694.5)
FERC's Stated Difference			
(a)	Camps Salvage Value	-0-	20,800
(b)	Sewage Treatment System at Camps	-0-	<u>(4,149)</u>
Total		-0-	16,651

RESPONSE TO WBEC'S SUPPLEMENTAL
REPORT FOR NOVEMBER 1981 REVISED CCE

4.0 TEMPORARY FACILITIES AND SUPPORT SERVICES

4.1 SCHEDULE ADJUSTMENT

4.1.1.1 Labor Costs

Reference the response 7.1.1.2 (page 7-1) in Project Directorate for disagreeing with WBEC's analysis in decreasing Irvine PMC labor costs by \$44,000.

4.1.1.2 Irvine Expenses

Reference the response 7.1.1.3 (page 7-3) in Project Directorate for disagreeing with WBEC's analysis in decreasing Irvine PMC expenses by \$1,000.

4.1.1.3 Alaska Expenses

An expanded matrix table for Alaska expenses has been developed for discussion/analysis purposes and is attached as Table 4.1.1-1. The detail for this table has also been included. Reference Pages 4-5 through 4-8.

1. Utilizing WBEC rate of \$0.37/mhr for reprographics expense on the schedule adjustment of 257,100 manhours results in an estimated cost of \$95,100 versus the November 1981 filing difference of \$218,600.
2. Utilizing WBEC rate of \$0.50/Fairbanks mhr and \$0.26/camps mhr for communications/telephone expense on the Schedule Adjustment of 218,400 Fairbanks manhours and 38,700 camps manhours results in an estimated cost of \$119,300 versus the November 1981 filing difference of \$133,600.
3. WBEC stated that the ANNGTC/PMC contract specifies a rate of 1.0 percent of base pay only for expendables versus the November 1981 filing philosophy of 1.0 percent on base pay plus benefits and burdens. This conflict results in an estimated cost of \$42,800 (not \$37,000 as stated by WBEC) for the November 1981 filing versus \$28,800 per WBEC's calculation.

Responding to Item 1, PMC's rate of \$0.85/MH was developed as roughly 50 percent of the Irvine rate of \$1.90/MH. The reason that the rate is lower is that PMC cost for equipment purchase,

space, supplies and utilities are included elsewhere in the estimate. Expenses in both the \$1.90/MH and \$0.85/MH rates include equipment maintenance, equipment operation, labor for supervision, composing services, graphic arts and word processing. All PMC reprographic service costs are recovered as an expense on a per item cost basis regardless of how much equipment time or labor is involved in producing the item. Present, to date, cost experience is \$3.11/MH in Irvine and \$0.60/MH in Alaska with the PMC located in Irvine and a limited Alaskan operation. When the PMC moves to Alaska these rates will reverse to a much heavier cost factor for Alaska.

Responding to Item 2, PMC's estimate of \$0.52/MH for Alaskan Communications/Telephone expense should stand as is based on the following reasons. One, the rate is the same as for Irvine, even though long distance rates outside the tieline network are higher from Alaska. Two, virtually all PMC activities will ultimately be located in Alaska and will require extensive phone and telex communications outside of the project communications system which only covers PMC and ANNGTC office locations. Third, the Irvine rate is based on the same project communications system and WBEC stated in their Final Report at F-11 that, "The CCE value (of \$0.52/MH) appears reasonable and is accepted for the evaluated estimate."

For item 3, reference the response 7.1.1.3 (page 7-3) in Project Directorate for disagreeing with WBEC's analysis in decreasing expendables.

TABLE 4.1.1-1

ALASKA EXPENSES
(1980 Dollars in Thousands)

	1985/1986 Schedule			1986/1987 Schedule			Δ Increase for 1 Year			
	FBX	Camps	Total	FBX	Camps	Total	FBX	Camps	Total	
Total Base Manhours	4,890,100	3,675,100	8,565,200	5,108,500	3,713,800	8,822,300	218,400	38,700	257,100	} As Filed
Base Pay	\$64,224	\$49,581	\$113,805	\$66,556	\$50,131	\$116,687	\$2,332	\$550	\$2,882	
Benefits & Burdens	17,529	14,822	32,351	18,173	14,987	33,160	644	165	809	
Subtotal	\$81,753	\$64,403	\$146,156	\$84,729	\$65,118	\$149,847	\$2,976	\$715	\$3,691	
Expenses:										
Reprographics:										
Filed	\$4,156.6	\$3,123.7	\$7,280.3	\$4,342.2	\$3,156.7	\$7,498.9	\$185.6	\$33.0	\$218.6	@ \$0.85/hr
Should be	4,156.6	3,123.7	7,280.3	4,342.2	3,156.7	7,498.9	185.6	33.0	218.6	@ \$0.85/hr
Royalties:										
Filed	489.1	367.5	856.6	510.8	371.4	882.2	21.7	3.9	25.6	@ \$0.10/hr
Should be	489.1	367.5	856.6	510.8	371.4	882.2	21.7	3.9	25.6	@ \$0.10/hr
Computer:										
Filed	4,401.1	3,307.6	7,708.7	4,597.7	3,342.4	7,940.1	196.6	34.8	231.4	@ \$0.90/hr
Should be	4,401.1	3,307.6	7,708.7	4,597.7	3,342.4	7,940.1	196.6	34.8	231.4	@ \$0.90/hr
Travel:										
Filed	1,084.8	815.2	1,900.0	1,123.9	817.0	1,940.9	39.1	1.8	40.9	@ \$0.22/hr
Should be	1,075.8	808.5	1,884.3	1,123.9	817.0	1,940.9	48.1	8.5	56.6	@ \$0.22/hr
Telephone:										
Filed	2,542.9	1,911.1	4,454.0	2,656.4	1,931.2	4,587.6	113.5	20.1	133.6	@ \$0.52/hr
Should be	2,542.9	1,911.1	4,454.0	2,656.4	1,931.2	4,587.6	113.5	20.1	133.6	@ \$0.52/hr
Expendables:										
Filed	811.6	644.1	1,455.7	847.3	651.2	1,498.5	35.7	7.1	42.8	@ 1% Base
Should be	818.6	646.0	1,464.6	851.3	653.2	1,504.5	32.7	7.2	39.9	Pay + B&B's
EDP Supplies:										
Filed	478.9	-	478.9	470.7	-	470.7	(8.2)	-	(8.2)	(Ref Vol. XXI
Should be	478.9	-	478.9	478.9	-	478.9	-	-	-	P. 119)
Total Expenses:										
Filed	\$13,965.0	\$10,169.2	\$24,134.2	\$14,549.0	\$10,269.9	\$24,818.9	\$584.0	\$100.7	\$684.7	
Should Be	\$13,963.0	\$10,164.4	\$24,127.4	\$14,561.2	\$10,271.9	\$24,833.1	\$598.2	\$107.5	\$705.7	

CLIENT NORTHWEST **CONSTRUCTION COSTS** **FLUOR**
 LOCATION ALASKA "REVISED" OCT. 1980 FILING - '85/'86 HTG SEASON C.O. NO. JOB NO. 47204X
 PROJECT GAS PIPELINE AREA 00 - ALLOCABLE EXPENSES MADE BY RAB APVD.

CALCULATION BASIS FOR PMC EXPENSES IN ALASKA

PMC EXPENSES

		FAIRBANKS	CAMPS	TOTAL
REPROGRAPHICS	@ \$.85/hr	\$ 4,156.6	\$ 3,123.7	\$ 7,280.3
ROYALTIES, BOOKS, ETC.	@ \$.10/hr	489.1	367.5	856.6
COMPUTER CHARGES	@ \$.10/hr	4,401.1	3,307.6	7,708.7
TRAVEL	@ \$.22/hr	1,075.8 Δ	808.5 Δ	1,884.3 Δ
TELEPHONE	@ \$.52/hr	2,542.9	1,911.1	4,454.0
EXPENDABLES	@ 1% of LABOR + B & B'S	818.6 Δ	646.0 Δ	1,464.6 Δ
EDP SUPPLIES		478.9	-	478.9

TOTAL PMC EXPENSES - AS FILED 7/80 : \$ 13,965.0

SHOULD BE : \$ 13,963.0

\$ 10,169.2

\$ 10,164.4

\$ 24,134.2

\$ 24,127.4

	MANHOURS *		DOLLARS **	
ELEMENT	FAIRBANKS	CAMPS	FAIRBANKS	CAMPS
(2X)	174.0	903.3	2,753.0	12,023.0
(3X)	30.7	9.9	484.0	142.0
(4X)	362.8	15.6	4,956.0	223.0
(5X)	25.6	9.9	393.0	142.0
(6X)	314.8	2,736.4	5,027.0	37,050.0
(8X)	3,982.2	-	50,693.0	-
TOTAL	4,890.1	3,675.1	\$ 64,306.0	\$ 49,580.0
			X 1.273	X 1.303
			\$ 81,862.0	\$ 64,603.0

Δ AS FILED, INCORPORATING ADGER (10/81) ADJUSTMENT. USING ACTUAL RATE OF \$.22/hr GIVES THE REVISED FIGURES.

Δ RECALCULATED BY USING THE (3/82) TABLE ON THE LEFT

ADD BENEFITS & BURDENS

* MANHOURS AS FILED IN JULY 1980 AND AS CURRENTLY SHOWN BY ALL ELEMENTS FOR 1985/86 HEATING SEASON

** DOLLARS AS CURRENTLY BEING SHOWN BY ALL ELEMENTS FOR 1985/86 HEATING SEASON. THIS CHANGES THE VALUES FOR EXPENDABLES.

CLIENT NORTHWEST CONSTRUCTION COSTS FLUOR
 LOCATION ALASKA Nov. 1981 FILING - SCHED. ADJ. IMPACT ONLY C.O. NO. JOB NO. 47204K
 PROJECT GAS PIPELINE AREA 00 - ALLOCABLE EXPENSES MADE BY RAB APVD.

1/C
10.

CALCULATION BASIS FOR PMC EXPENSES IN ALASKA

PMC Expenses

REPROGRAPHICS @ \$.85/hr
 ROYALTIES, BOOKS, ETC. @ \$.10/hr
 COMPUTER CHARGES @ \$.90/hr
 TRAVEL @ \$.22/hr
 TELEPHONE @ \$.52/hr
 EXPENDABLES @ 17% OF LABOR + B & B'S
 EDP SUPPLIES

	FAIRBANKS	CAMPS	TOTAL
	\$ 185.6	\$ 33.0	\$ 218.6
	21.7	3.9	25.6
	196.6	34.8	231.4
	48.1 39.1 ^Δ	8.5 1.8 ^Δ	56.6 40.9 ^Δ
	113.5	20.1	133.6
	32.7 35.7	7.2 7.1	39.9 42.8
	0 (8.2)	0	0 (8.2)
TOTAL PMC EXPENSES - AS FILED 11/81 :	\$ 584.0	\$ 100.7	\$ 684.7

SHOULD BE : \$ 598.2 \$ 107.5 \$ 705.7

ELEMENT	MANHOURS		DOLLARS	
	FAIRBANKS	CAMPS	FAIRBANKS	CAMPS
(2X)	0	0	0	0
(3X)	0	0	0	0
(4X)	2.9	10.9	42.0	174.0
(5X)	3.1	0	42.0	0
(6X)	60.4	27.8	965.0	377.0
(8X)	152.0	0	1,523.0	0
TOTAL	218.4	38.7	\$ 2,572.0	\$ 551.0
			X 1.273	X 1.303
			\$ 3,274.0	\$ 718.0

Δ REVISION REPRESENTS THE NET
 (3/82) ADJUSTMENT FIGURES TO ARRIVE AT
 SCHED ADJ. TOTAL FIGURES. THE REVISED
 FIGURES ARE THE ACTUAL FIGURES DUE
 TO SCHED. DELAY.

ADD BENEFITS & BURDENS

PAGE 4-7

CLIENT NORTHWEST CONSTRUCTION COSTS FLUOR
 LOCATION ALASKA Nov. 1981 Filing - '86/'87 Htg Season C.O. NO. JOB NO. 47804X
 PROJECT GAS PIPELINE AREA 00 - Allocable Expenses MADE BY RAB APVD.

A/C
NO.

CALCULATION BASIS FOR PMC EXPENSES IN ALASKA

PMC Expenses

REPROGRAPHICS @ \$.85/hr
 ROYALTIES, BOOKS, ETC. @ \$.10/hr
 COMPUTER CHARGES @ \$.90/hr
 TRAVEL @ \$.22/hr
 TELEPHONE @ \$.52/hr
 EXPENDABLES @ 17% OF LABOR + B & B's
 EDP Supplies

FAIRBANKS
 \$ 4,342.2
 510.8
 4,597.7
 1,123.9
 2,656.4
 Δ 851.3 ~~847.3~~ Δ
 Δ 478.9 ~~470.7~~ Δ

CAMPS
 \$ 3,156.7
 371.4
 3,342.4
 817.0
 1,931.2
 Δ 653.2 ~~651.2~~ Δ
 -

TOTAL
 \$ 7,498.9
 882.2
 7,940.1
 1,940.9
 4,587.6
 Δ 1,504.5 ~~1,198.5~~ Δ
 Δ 478.9 ~~470.7~~ Δ

TOTAL PMC EXPENSES - AS FILED 11/81: \$ 14,549.0

\$ 10,269.9

\$ 24,818.9

SHOULD BE: \$ 14,082.3

\$ 10,750.8

\$ 24,833.1

ELEMENT	MAN HOURS		DOLLARS	
	FAIRBANKS	CAMPS	FAIRBANKS	CAMPS
(2X)	174.0	903.3	\$ 2,753.0	\$ 12,023.0
(3X)	30.7	9.9	484.0	142.0
(4X)	365.7	26.5	4,997.0	397.0
(5X)	28.7	9.9	435.0	142.0
(6X)	375.2	2,764.2	5,992.0	37,427.0
(8X)	4,134.2	-	52,216.0	-
TOTAL	5,108.5	3,713.8	\$ 66,877.0	\$ 50,131.0
			X 1.273	X 1.303
			\$ 85,134.0	\$ 65,321.0

NO "OTHER ADJUSTMENTS" INCLUDED
 INCLUDES SCHED. ADJ. IMPACT ONLY

Δ TOTAL COST AS FILED IN
 (10/81) NOVEMBER 1981 CCE

Δ RECALCULATED by using
 (3/82) the TABLE on the LEFT

ADD BENEFITS & BURDENS

PAGE 4-8

4.2 FERC REPORT RECONCILIATION ADJUSTMENT

WBEC's statement that pages 179, 180 and 185 of Volume XXI were not revised in the October 1980 CCE filing is not true. Attached are copies of the aforementioned pages (Pages 4-16 through 4-18) indicating the changes made for transportation and handling of work pad insulation and ditch insulation. These copies indicate that the quantity of work pad insulation was reduced to zero and ditch insulation was changed to 53,908 MBF. Note that the number of bundles of ditch insulation was shown incorrectly although the transportation and handling costs were calculated correctly (Page 4-18).

WBEC's report also states that the ditch insulation material requirements (as stated in the pipeline's estimate) changed to 56,000 MFBM for the October 1980 CCE filing. This quantity contradicts Temporary Facilities figure of 53,908 MBF. This difference is attributable to the quantity requirements being revised by the Pipeline Group after calculation of the transportation and handling costs. Reference Page 4-21.

Table 4.2-1 indicates in a matrix format the values filed for ditch insulation in both the July 1980 and October 1980 CCE filing versus the values that should have been filed for ditch insulation. Pages 179, 180 and 185 of Volume XXI of the July 1980 CCE filing are also included and are marked up to indicate the values that should have been filed for transportation and handling of work pad insulation and ditch insulation. Again, the reason for this difference in quantities is due to the fact that the pipeline's estimate was revised after calculation of the transportation and handling costs.

TABLE 4.2-1

DITCH INSULATION MOVEMENT

		JULY 1980 FILING				OCTOBER 1980 FILING				7/80 - 10/80 Δ
		QUANTITY		UNIT COST	TOTAL COST	QUANTITY		UNIT COST	TOTAL COST	TOTAL COST
		MBF	bd1	\$/bd1	\$x1000	MBF	bd1	\$/bd1	\$x1000	\$x1000
Sec. #1	: As Filed	13,500	3,906	97.77	381.9	14,825	4,290	97.77	419.6	37.7
	Should be	15,080	4,364	97.77	426.7	15,395	4,455	97.77	435.6	8.9
Sec. #2	: As Filed	7,660	2,216	194.81	431.7	12,884	3,728	194.79	726.6	294.9
	Should be	9,624	2,785	194.79	542.5	13,380	3,872	194.79	754.2	211.7
Sec. #3	: As Filed	4,500	1,302	239.86	312.3	6,738	1,950	239.84	467.6	155.3
	Should be	15,570	4,505	239.84	1,080.5	6,997	2,025	239.84	485.7	(594.8)
Sec. #4	: As Filed	4,420	1,279	86.60	110.7	10,189	2,948	86.60	255.5	144.8
	Should be	7,602	2,200	86.60	190.5	10,580	3,062	86.60	265.2	74.7
Sec. #5	: As Filed	3,660	1,059	52.88	56.0	4,367	1,264	52.89	66.6	10.6
	Should be	5,578	1,614	52.89	85.4	4,535	1,313	52.89	69.4	(16.0)
Sec. #6	: As Filed	3,880	1,123	106.23	119.3	4,905	1,420	106.21	150.8	31.5
	Should be	7,846	2,270	106.21	241.1	5,095	1,475	106.21	156.7	(84.4)
Total	: As Filed	37,620	10,885	-	1,411.9	53,908	15,600	-	2,086.7	674.8
	Should be	61,300	17,738	-	2,566.7	55,982	16,202	-	2,166.8	(399.9)

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NOTE: 3,456 BF/bundle and 10 bundles/truck load

CLIENT NWA
 LOCATION ALASKA
 PROJECT GAS PIPELINE

CONSTRUCTION COSTS AREA AB UNIT 02

FLUOR

C.O. NO. _____ JOB NO. 4780

MAT'L FREIGHT OTHER THAN MAINLINE

MADE BY PLH APVD. _____

PIPE COSTS (JAN 1980)

A/C NO.	ITEM & DESCRIPTION	QUAN.	UNIT	MANHOURS			COST/UNIT			COSTS (JAN 1980)			
				PER UNIT	TOTAL	RATE	LABOR	SUB CONTR.	MAT'L	LABOR	SUB CONTRACT	MATERIAL	TOTAL
	<u>PIPELINE VALVES</u>												
	<u>OCEAN/RAIL FREIGHT</u>												
	U.S. TO WHITTIER	44	EA						3845			169,200	
	WHITTIER TO FAIRBANKS	44	EA						3307			145,500	
													314,700
	<u>HANDLING</u>												
	RAIL TO TRUCK	44	EA	(100)	Ref.		1632			71,800			
	FIELD TRUCK UNLOAD	44	EA	(100)	Ref.		959			42,200			
													114,000
	<u>INTRASTATE TRUCKING</u>												
	SECTION I	9	EA						4533			40,800	
	II	5							3340			16,700	
	III	8							2425			19,400	
	IV	7							543			3,800	
	V	7							986			6,900	
	VI	8							1700			13,600	
													101,200
	<u>INSULATION - WORKPAD & DITCH</u>												
	WORKPAD - FROM PRUDHOE BAY												
	SECTION I	20,255	BUNDLES						97 11			289,000	1,980,300
	SECTION II	4,919	BUNDLES						194 11			439,600	958,300
													2,288,600
	<u>DITCH -</u>												
	SECTION I	3206	BUNDLES		4364	BDL			97 11			381,700	426,700
	II	2216			2785	BDL			194 11			431,700	542,500
	III	1302			4505	BDL			239 11			312,300	1,080,500
	IV	1229			2200	BDL			64 11			110,700	190,500
	V	1059			1614	BDL			52 11			56,000	85,400
	VI	1123			2270	BDL			106 11			119,200	241,100
													1,411,900
													2,566,700

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EXTRACT FROM
 JULY 1980 FILING
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 SHOWING CORRECTED
 FREIGHT CALCULATIONS

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 194 11

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JUN 06 1980
 6:19

CLIENT NWA
 LOCATION ALASKA
 PROJECT GAS PIPELINE

CONSTRUCTION COSTS

AREA AB UNIT 02

EXTRACT FROM
 JULY 1980 FILING
 Vol. XXI P. 180
 C.A. NO. _____

FLUOR

JOB NO. 4780

MAT'L, FRT. OTHER THAN MAINLINE PIPE

MADE BY PLH

APVD. _____

A/C
NO.

ITEM & DESCRIPTION

QUAN.

UNIT

MANHOURS

PER
UNIT

TOTAL

RATE

COST/UNIT

LABOR

SUB
CONTR.

MAT'L

COSTS (JAN 1980)

LABOR

SUB
CONTRACT

MATERIAL

TOTAL

INSULATION (CONT.)

HANDLING

LOAD PRUDHOE BAY 3233

LOAD FAIRBANKS 1059

UNLOAD FIELD 4292

433 Lds.

476 Lds.

1609 Lds.

5700

(2000) Ref.

2000 (700) Ref.

4270 (1600) Ref.

(11,970) REF

VS

(4500) REF

115.09

110.08

10.802

~~130,400~~

~~52,400~~

~~173,800~~

372,100

116,600

463,600

256,600

952,300

COMPRESSOR STATIONS

AIR

TRUCK-INTRASTATE

OCEAN/RAIL

240 TONS

30125 ✓

30125 ✓

4267

593

280

1,024,000

17,861,000

8,435,000

27,320,000

METERING STATIONS

AIR

TRUCK-INTRASTATE

OCEAN/RAIL

1 TONS

720 ✓

2900 ✓

6000

1501

240

6000

1,081,000

676,000

1,783,000

O&M FACILITIES

AIR

TRUCK-INTRASTATE

OCEAN/RAIL

5 TONS

945 ✓

340 ✓

1200

765

265

6000

723,000

90,000

819,000

HANDLING

WCTP

FAIRBANKS

54190 TONS

39290 TONS

78.72

50.01

4,266,000

1,965,000

6,231,000

OTHER MISC. MATERIALS.

RAIL TO WCTP

MAKING TO FAIRBKS

INTRA STATE TRUCKING

26785 TONS

26785 ✓

14,092 ✓

146

272

135

3,910,600

7,225,500

3,252,400

14,458,500

HANDLING

WCTP

FAIRBANKS/FIELD

24785 TONS

24785 ✓

(5700) Ref.

(5700) Ref.

78.20

50.00

1,938,200

1,239,300

3,177,500

TOTAL FREIGHT - OTHER MATERIALS

(16,100) HANDLING REF.

(172,000) TRUCKING REF.

9,879,100

46,936,900

56,816,000

DATE 5/22/80

REVISION NO. _____

REVISION DATE _____

CODE _____

PAGE NO. _____

III

INSULATION MOVEMENT

Work Pad (Prudhoe Bay Manufacturer)

		<u>Bundles</u>	<u>Loads</u>	<u>Movement Costs</u>	
Section I	20,255	2,956	2518 296	289,000	1,980,300
Section II	<u>4,919</u>	2,257	2518 226	439,647	958,300
	25,174	5,213	5036 521	728,647	2,938,600

Ditch (Prudhoe Bay and Fairbanks Manufacturer)

Section I	4,364	3,906	436 391	381,800	426,700
Section II	2,785	2,216	279 222	431,800	542,500
Section III	4,505	1,302	451 130	312,275	1,080,500
Section IV	2,200	1,729	220 128	110,758	190,500
Section V	1,614	1,059	161 106	56,011	85,400
Section VI	<u>2,270</u>	1,123	227 112	119,274	241,100
	17,738	10,885	1774 1,089	1,411,858	2,566,700

Materials for Sections III through VI obtained from a Fairbanks manufacturer.

Handling

		<u>Loads</u>	<u>Cost</u>	
Work pad--Prudhoe Bay load	2518	321	59,950	289,800
Field unload	2518	521	56,300	272,000
	5036	1,042	116,250	561,800
Ditch--Prudhoe Bay load	715	612	70,403	82,300
Fairbanks load	1059	476	52,393	116,600
Field unload	1774	1,088	117,558	191,600
	3548	2,177	240,354	390,500
Total cost of insulation movement			2,497,109	6,457,600

EXTRACT FROM
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SUMMARY/EXTRACT FROM
JULY 1980 FILING
VOLUME XXV P. 76

WORK PAD INSULATION

@ 3,456 bf/bundle

Section I	Quantity	64263	w/± 10% Waste	70,000 MBF OR	20,255 bundles
Section II	Quantity	15737	w/± 10% Waste	17,000 MBF OR	4,919 bundles

<u>Item</u>	<u>Quantity</u>	<u>Units</u>	<u>Unit Price</u>	<u>Estimated Amount</u>
Board				
Section I	70,000	MBF	500.00	35,000,000
Section II	<u>17,000</u>	MBF	500.00	<u>8,500,000</u>
	87,000			43,500,000

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FREIGHT COSTS CALCULATION

TRANSPORT COSTS :

SECTION 1 : 20,255 bundles @ \$97.77 / bundle = \$1,980,300

SECTION 2 : 4,919 bundles @ \$194.81 / bundle = 958,300

25,174 BUNDLES

↖ 10 BUNDLES
LOAD

\$2,938,600

HANDLING COSTS :

SECTION 1 & 2 : LOAD PRUDHOE BAY - 2518 LOADS @ \$115.09 / load = \$289,800

UNLOAD FIELD - 2518 LOADS @ \$108.02 / load = 272,000

\$561,800

SUMMARY EXTRACT
FROM JULY 1980 FILING
VOLUME XXV P. 77

DITCH INSULATION

	<u>Quantity</u>	<u>Units</u>	<u>Unit Price</u>	<u>Estimated Amount</u>
Ditch Board Insulation	61,300	MBF	500.00	\$30,650,000

Distribution to Sections

<u>Section</u>	<u>Percent</u>	<u>Amount</u>	<u>Quantity</u>	
I	24.6	\$7,540,000	15,080	} PRUDHOE BAY
II	15.7	4,812,000	9,624	
III	25.4	7,785,000	15,570	} FAIRBANKS
IV	12.4	3,801,000	7,602	
V	9.1	2,789,000	5,578	
VI	12.8	3,923,000	7,846	

HANDLING COSTS :

SECTIONS 1 & 2 : LOAD PRUDHOE BAY - $\frac{24,704 \text{ MBF}}{34,560 \text{ BF/LOAD}} = 715 \text{ LOADS @ } \$115.09/\text{LOAD}$
= \$82,300

SECTIONS 3, 4, 5, & 6 : LOAD FAIRBANKS - $\frac{36,596 \text{ MBF}}{34,560 \text{ BF/LOAD}} = 1059 \text{ LOADS @ } \$110.08/\text{LOAD}$
= \$116,600
1774 LOADS

SECTIONS 1-6 : UNLOAD FIELD - 1774 LOADS @ \$108.02/LOAD = \$191,600
\$198,900
\$390,500

CLIENT NWA
 LOCATION ALASKA
 PROJECT GAS PIPELINE

CONSTRUCTION COSTS

AREA AB UNIT 02

C.O. NO. _____ JOB NO. 4780

MAT'L FREIGHT OTHER THAN MAINLINE MADE BY RLH APVD. _____

FLUOR

A/C NO.	ITEM & DESCRIPTION	QUAN.	UNIT	MANHOURS			COST/UNIT			PIPE COSTS (JAN 1980)			
				PER UNIT	TOTAL	RATE	LABOR	SUB CONTR.	MAT'L	LABOR	SUB CONTRACT	MATERIAL	TOTAL
	PIPELINE VALVES												
	OCEAN/RAIL FREIGHT												
	US. TO WHITTIER	35	EA						3845			134,600	
	WHITTIER TO FAIRBANKS	35	EA						3307			115,700	
													250,300
	HANDLING												
	RAIL TO TRUCK	35	EA		(100)	REF		1632			57,100		
	FIELD TRUCK UNLOAD	35	EA		(100)	REF		959			33,600		
													90,700
	INTRASTATE TRUCKING												
	SECTION I	7	EA					4543				31,800	
	SECTION II	4						3325				13,300	
	SECTION III	7						2414				16,900	
	SECTION IV	5						540				2,700	
	SECTION V	6						1000				6,000	
	SECTION VI	6						1700				10,200	
													80,900
	INSULATION - DITCH												
	SECTION I	3117	BUNDLES		4290	bundles		134.12		97.72		419,600	
	SECTION II	2970			3728			268.12		194.21		726,600	
	SECTION III	4417			1950			330.82		239.84		467,600	
	SECTION IV	3443			2948			119.32		86.68		255,500	
	SECTION V	916			1264			72.71		52.82		66,600	
	SECTION VI	1032			1420			146.12		106.21		150,800	
													2,086,700

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 OCTOBER 1980 FILING
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 SHOWING CORRECTED
 QUANTITIES AND
 UNIT RATES

CLIENT NWA
 LOCATION ALASKA
 PROJECT GAS PIPELINE

CONSTRUCTION COSTS

AREA AB UNIT 02

MAT'L FREIGHT OTHER THAN MAINLINE PIPE

EXTRACT FROM
 OCTOBER 1980 FILING
 Vol. XXI P. 180
 C.O. NO. _____
 MADE BY RLH APVD. _____

FLUOR

JOB NO. 4780

A/C NO.	ITEM & DESCRIPTION	QUAN.	UNIT	MANHOURS			COST/UNIT			COSTS (JAN 1980)			
				PER UNIT	TOTAL	RATE	LABOR	SUB CONTR.	MAT'L	LABOR	SUB CONTRACT	MATERIAL	TOTAL
	<u>INSULATION (CONT.)</u>												
	HANDLING												
	LOAD PRUDHOE BAY	802	Lnds		(2000)	REF.		114.96			92,200		
	LOAD FAIRBANKS	758	↓		(900)	↓		110.23			83,400		
	UNLOAD FIELD	1560	↓		(1600)	↓		108.21			168,500		
													344,100
	<u>COMPRESSOR STATIONS</u>												
	AIR	240	TONS						4267			1,024,000	
	TRUCK - INTRASTATE	30125	✓						593			17,861,000	
	OCEAN/RAIL	30125							280			8,423,000	
													27,307,000
	<u>METERING STATIONS</u>												
	AIR	1	TONS						6000			6,000	
	TRUCK - INTERSTATE	120	✓						150.1			108,100	
	OCEAN/RAIL	2900	✓						240			697,000	
													1,784,000
	<u>O & M FACILITIES</u>												
	AIR	5	TONS						1200			6,000	
	TRUCK	945	✓						765			723,000	
	OCEAN/RAIL	240	✓						265			90,000	
													819,000
	<u>HANDLING</u>												
	WCTP	54190	TONS					78.72			4,266,000		
	FAIRBANKS	29290	TONS					50.21			1,965,000		
													6,231,000
	<u>OTHER MISC. MATERIALS</u>												
	RAIL TO WCTP	28395	TONS									4,091,000	
	MARINE TO FAIRBANKS	28395	✓									7,428,900	
	INTRASTATE TRUCKING	25701	✓									3,513,000	
													15,032,900
	<u>HANDLING</u>												
	WCTP	26395	TONS		(5700)	REF.		78.32			2063,900		
	FAIRBANKS/FIELD	26395	✓		(5700)	REF.		47.98			1,266,000		
					(16400)	HANDLING REF.							
					(112000)	TRUCKING REF.							
	<u>TOTAL FREIGHT-OTHER MAT'L</u>										9996,300	47380,500	57376,800

DATE 5-22-80 REVISION NO. 1A REVISION DATE 9-19-80 CODE _____ PAGE NO. _____

III INSULATION MOVEMENT

Work Pad (Prudhoe Bay Manufacturer)

Bundles

Loads

Movement Costs

Section I - None
Section II - None

Ditch (Prudhoe Bay and Fairbanks Manufacturer)

Section I	4,290	3,117	429	419,562
Section II	3,728	2,710	373	726,604
Section III	1,950	1,417	195	467,610
Section IV	2,948	2,143	295	255,470
Section V	1,264	916	126	66,654
Section VI	1,420	1,032	142	150,804
	<u>15,600</u>	<u>11,335</u>	<u>1,560</u>	<u>2,086,704</u>

Materials for Sections III through VI obtained from a Fairbanks manufacturer.

Handling

Loads

Cost

Ditch--Prudhoe Bay load	802	92,230
Fairbanks load	758	83,380
Field unload	<u>1,560</u>	<u>168,480</u>
	<u>3,120</u>	<u>344,090</u>

Total cost of insulation movement

2,430,794

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WORK PAD INSULATION

Section I Quantity 0

Section II Quantity 0

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DITCH INSULATION

	<u>Quantity</u>	<u>Units</u>	<u>Unit Price</u>	<u>Estimated Amount</u>
Ditch Board Insulation	55,982	MBF	500.00	\$27,991,000

Distribution to Sections

<u>Section</u>	<u>Quantity</u>	<u>bdl</u>	<u>Percent</u>	<u>TRK loads</u>	<u>Amount</u>
I	15,395	4455	27.5	446	\$7,697,525
II	13,380	3872	23.9	388	6,689,849
III	6,997	2025	12.5	203	3,498,875
IV	10,580	3062	18.9	307	5,290,299
V	4,535	1313	8.1	132	2,267,271
VI	5,095	1475	9.1	148	2,547,181
	55,982 MBF	16,202 bdl		1624	

3,456 $\frac{\text{bF}}{\text{bundle}}$

10 bundles/TRUCK load

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VOLUME XXV p. 64

EXTRACT FROM
OCTOBER 1980 FILING
Volume XXV P. 65

DITCH INSULATION BY THICKNESS

Thickness	Section I (MBF)	Section II (MBF)	Section III (MBF)	Section IV (MBF)	Section V (MBF)	Section VI (MBF)	Totals (MBF)
1½"	1,555	0	0	0	0	0	1,555
2"	1,217	0	0	0	0	0	1,217
3"	5,957	0	0	0	0	0	5,957
3½"	2,673	5,438	0	0	0	0	8,111
5"	0	4,466	5,191	7,862	3,354	3,755	24,628
	<u>11,402</u>	<u>9,904</u>	<u>5,191</u>	<u>7,862</u>	<u>3,354</u>	<u>3,755</u>	41,468

NOTE: Quantities shown above are neat. Allow 25% for overexcavation and 10% for waste.

AS FILED IN THE
OCTOBER 1980 FILING

TOTAL = 55,982 MBF

	NEAT QTY	+ 30%	+ 35%
SECTION 1	11,402	14,825	15,395
2	9,904	12,884	13,380
3	5,191	6,738	6,997
4	7,862	10,189	10,580
5	3,354	4,367	4,535
6	<u>3,755</u>	<u>4,905</u>	<u>5,095</u>
	41,468 MBF	53,908 MBF	55,982 MBF

4.3 NEW CAMPS ADJUSTMENT

4.3.1.1 Allocable Expenses

Reference the response 7.1.1.3 (page 7-3) in Project Directorate for disagreeing with WBEC's analysis in decreasing the PMC labor expenses (i.e., burden/benefits, overhead, fee and expendables).

4.3.1.2 Airfields

No response.

4.3.1.3.1 Intermediate Storage Yard

No response.

4.3.1.3.2 Fluor Irvine Labor

Reference the response 7.1.1.2 (page 7-1) in Project Directorate for disagreeing with WBEC's analysis in decreasing the PMC Irvine labor.

4.3.1.4.1 Station Camps Contractor Overhead and Profit

Agree with WBEC that \$89,600 should be deducted from the revised CCE since arctic housing for generators and switchgear will be a PMC purchase and should not be included in the contractor's overhead and profit.

4.3.1.4.2 Station Camps Contractor Overhead and Profit

Agree with WBEC that \$45,500 should be deducted from the revised CCE since generators for satellite communication requirements will be a PMC purchase and should not be included in the contractor's overhead and profit.

4.3.1.4.3 Station Camps Kitchen/Diner Modules Cost

The information contained in Volume XXXV, Page 7-71, shows an 11-module kitchen/diner costs \$314,600 per camp in 1978 dollars. This estimate page also shows that all of the building modules are increased by 22 percent to obtain January 1980 dollars. Therefore WBEC's analysis that \$484,400 should be added to the revised CCE is incorrect.

4.3.1.4.4 Station Camps Water Tanks and Pumps Installation

Agree with WBEC that \$217,000 should be added to the revised CCE to include installation labor costs for the installation of raw water storage tanks and pumps.

4.3.1.4.5 Station Camps Revised Sewage Treatment Facility

Agree with WBEC that dollars should be added to the revised CCE to accommodate the type of sewage treatment equipment that is now required. After recalculating the costs for a Rotating Biological Contactor Sewage Treatment System, only \$237,800 should be added to the revised CCE; \$933,100 being added for Compressor Station Camps and \$695,300 being deducted from the Pipeline Camps estimate.

Reference response 4.3.1.5.14 which gives support to the revised sewage treatment system and page 4-28 which shows a cost comparison between the two different sewage treatment systems.

4.3.1.4.6 Station Camps Contractor Overhead and Profit

Agree with WBEC that \$44,800 should be deducted from the revised CCE since office equipment and furniture will be a PMC purchase and should not be included in the contractor's overhead and profit.

4.3.1.4.7 Station Camps Contractor Overhead and Profit

Agree with WBEC that an estimate error was made in the revised CCE concerning insulation material costs. The revised CCE shows in the Station Camps portion a cost of \$438,700 per camp or \$3,070,900 total for insulation board material in the contractor overhead and profit. The total cost for insulation board material in the July 1980 CCE is \$4,184,900 which was not revised in the November 1981 CCE filing. The difference, \$1,114,000, should result in \$222,800 being deducted from the revised CCE since 20 percent of this difference should not be included in the contractor's overhead and profit.

4.3.1.4.8 Station Camps Contractor Catering and Subsistence Costs

Disagree with WBEC that \$417,800 should be deducted from the revised CCE for contractor catering and subsistence costs due to better productivity and decreased mandays. Reference Volume III, Response Page 4-15, of "Comments of Alaskan Northwest Natural Gas Transportation Company on the Draft Report of the Alaskan Delegate and the OFI Division Director" issue April 13, 1981 which states our comments for maintaining the productivity rates as estimated and filed.

4.3.1.4.9 Station Camps Cribbing Costs

Disagree with WBEC that \$171,700 should be deducted from the revised CCE for cribbing costs. Reference Volume III, Response Page 4-41, of "Comments of Alaskan Northwest Natural Gas Transportation Company on the Draft Report of the Alaskan Delegate and

the OFI Division Director" issued April 13, 1981 which states our comments for maintaining the cribbing costs as estimated and filed.

4.3.1.4.10 Station Camps Construction Labor Costs

Disagree with WBEC that \$669,900 should be added to the revised CCE due to a difference in productivity factors which would revise the construction labor costs. Reference Volume III, Response Pages 4-15 through 4-32 of "Comments of Alaskan Northwest Natural Gas Transportation Company on the Draft Report of the Alaskan Delegate and the OFI Division Director" issued April 13, 1981 which states our comments for maintaining the productivity rates as estimated and filed.

4.3.1.5.1 Solid Waste Disposal Sites

Agree with WBEC that a math error was made in calculating the amount of material required for the drainage berms. Therefore \$64,300 should be deducted from the revised CCE.

4.3.1.5.2 Sag River P/L Camp

Agree with WBEC that a math error was made in transferring the camp estimate total from page 8-7 to page 8-1 of Volume XXXV. Therefore, \$10,000 should be added to the revised CCE.

4.3.1.5.3 Toolik P/L Camp

Disagree with WBEC that a math error was made in totaling the Contractor Overhead and Profit base on page 8-48 of Volume XXXV. WBEC's "correct total" of \$5,569,500 is the total for PMC purchased equipment and \$5,459,700 is the correct base for Contractor Overhead and Profit.

4.3.1.5.4 Old Man P/L Camp

Disagree with WBEC that a math error was made in totaling the Contractor Indirects. A clerical error was made for subsistence and the total estimate figure should read \$4,170,800 versus \$4,169,000. The correct total for Contractor Indirects is \$7,318,200 as shown on page 8-141 of Volume XXXV.

4.3.1.5.5 P/L Camps Contractor Overhead and Profit

Agree with WBEC that the office furniture cost was transferred incorrectly from the Buildings Worksheet, Volume XXXV, pages 8-218 and 221. \$2,300 should be added to the revised CCE.

4.3.1.5.6 Prospect P/L Camp

Disagree with WBEC that a clerical error was made in transferring the freight cost from the July 1980 filing (Volume XXIII page 225). The July 1980 filing was initially in error and to obtain the correct "Subcontract" and "Total" costs, the freight cost was changed from \$64,200 to \$82,200. The revised CCE should not be increased by \$18,000 since this would involve a double dip error correction.

4.3.1.5.7 Revise P/L Camps Kitchen/Diner Modules

Agree with WBEC that \$30,400 should be added to the revised CCE. An error had been made in identifying a 9-module Kitchen/Diner for Toolik, Atigun, Chandalar, and Prospect Camps.

4.3.1.5.8 P/L Camps Water Treatment Facilities

Agree with WBEC that \$9,100 should be added to the revised CCE. Correction of the math error on page 8-230 and 8-231 of Volume XXXV will result in a revised total cost of \$577,100 and \$613,000 versus \$575,800 and \$611,700, respectively, which is used for seven Pipeline Camps.

4.3.1.5.9 Manley P/L Camp

Agree with WBEC that \$2,700 should be added to the revised CCE. Correction of the math error on page 8-168 of Volume XXXV will result in a revised total cost of \$6,576,200 versus \$6,573,400.

4.3.1.5.10 Tok P/L Camp

Agree with WBEC that \$50,000 should be added to the revised CCE. Correction of the math error on page 8-202 of Volume XXXV will result in a revised cost for "other equipment and material" freight of \$374,800 versus \$324,800.

4.3.1.5.11 Atigun P/L Camp

Agree with WBEC that \$8,400 should be added to the revised CCE. Correction of the clerical error on page 8-64 of Volume XXXV will revise the material cost of "Total per Filing" from \$81,400 to \$73,000 and the total delta increase for a new camp at existing location from \$234,400 to \$242,200.

4.3.1.5.12 P/L Camps Piping Distribution

Agree with WBEC that \$1,539,800 should be deducted from the revised CCE. Correction by eliminating the cost for six additional dorms

(\$111,600) will reduce the base for estimating the pipeline camps cost from \$2,143,200 to \$2,031,600.

4.3.1.5.13 P/L Camps Electrical Distribution

Agree with WBEC that \$616,600 should be deducted from the revised CCE. Correction of electrical heat tracing costs from a 1,300-man to a 1,000-man camp basis will reduce the base for estimating the pipeline camps cost from \$524,900 to \$487,600.

4.3.1.5.14 P/L Camps Sewage Treatment Facilities

In response to WBEC's question of utilizing a new and different sewage system (RBC, Rotating Biological Contactors) rather than Alyeska's sewage system (P/C, Physical/Chemical), highlighted below are the significant advantages of RBC wastewater treatment plants over PC wastewater treatment plants:

- o Process control is greatly simplified and less subject to operator error.
- o Adaptability to diurnal fluctuations in flow and waste strength is better, with fewer process adjustments by the operator.
- o Less logistical support is required. The units have fewer moving parts and require fewer chemicals. This reduces the spare parts inventory and chemical storage and handling requirements.
- o Sludge disposal problems are reduced. Less sludge will be produced and it will be easier to dewater.
- o Adaptability to treatment of hazardous wastes, such as photographic chemicals from pipeline weld X-ray film processing. Photographic chemicals proved very difficult to treat in P/C plants on the TAPS project.
- o Capital costs for a P/C system is more expensive than a RBC system, as indicated on page 4-28. The succeeding pages (pages 4-29 through 4-30) identifies the detail costs for each system. Page 4-29 states the costs for a camp peak population less than 750 men, page 4-30 states the costs for a camp peak population of between 750 to 1,000 men, and page 4-31 states the costs for a camp peak population of between 1,000 to 1,300 men.

Referencing the pages 4-28 through 4-30, several points of fact should be recognized. First, the November 1981 CCE filing was in error as far as estimating the costs for a Physical/Chemical Sewage Treatment System at the Compressor Station Camps. As can

be seen on page 4-29, most of the peripheral equipment required for a new P/C plant was omitted. This estimating error is probably the main reason why WBEC and FERC have been led to believe that RBC's is a more expensive system than P/C's. In fact, RBC is a more optimal and cheaper system.

Second, the November 1981 CCE filing overstated the costs for a RBC system at the Pipeline Camps by \$695,300 (Reference page 4-28). Also, the agreement with WBEC that a RBC system should have been filed at the Compressor Station Camps will add \$933,100 (Reference page 4-28) to the November 1981 CCE filing instead of the \$1,323,000 stated by WBEC. The net effect of using a RBC system at all camps is to add \$237,800 to the November 1981 filing.

Third, if the November 1981 CCE filing incorporated the same sewage treatment system (P/C) as utilized by Alyeska, then \$7,232,100 should have been included in the November 1981 CCE filing instead of the filing estimate figure of \$5,237,800 (correct estimate figure should have been \$5,475,600). This indicates that Northwest has attempted to minimize the costs required for major project changes and this design change should be included in the CCE filing.

4.3.1.5.15 P/L Camps Arctic Housing for Power Generators

Agree with WBEC that \$300,000 should be added to the revised CCE. Arcting housing for power generators at Toolik, Atigun, Chandalar, and Prospect camps was overlooked and not included in the revised CCE.

4.3.1.5.16 Solid Waste Disposal Sites

Disagree with WBEC that \$591,600 should be deducted from the revised CCE due to lower processed borrow costs. Reference Volume III, response page 4-39, of "Comments of Alaskan Northwest Natural Gas Transportation Company on the Draft Report of the Alaskan Delegate and the OFI Division Director" issued April 13, 1981 which states our comments for maintaining the processed borrow cost rates as estimated and filed.

4.3.1.5.17 P/L Camps Processed Borrow Costs

Disagree with WBEC that \$2,606,800 should be deducted from the revised CCE due to lower processed borrow costs. Reference Volume III, response page 4-39, of "Comments of Alaskan Northwest Natural Gas Transportation Company on the Draft Report of the Alaskan Delegate and the OFI Division Director" issued April 13, 1981 which states our comments for maintaining the processes borrow cost rates as estimated and filed.

CLIENT NWA
 LOCATION ALASKA
 PROJECT GAS PIPELINE

CONSTRUCTION COSTS

FLUOR

C.O. NO. _____ JOB NO. 47804X
 MADE BY RAB APVD. _____

A/C NO.		7/80 FILING	11/81 FILING		
		P/C SYST. RENOV.	SYSTEM AS FILED	AMENDED FOR WBEC	COST COMPARISON FOR NEW SYSTEMS
				PHYSICAL/CHEMICAL SYSTEM	ROTATING BIOLOGICAL CONTRACTOR SYSTEM
	STATION Camps #2, #4, #7, #9, #13, #15		(P/C's FOR C.S.)	(RBC's FOR C.S.)	
	TYPICAL : Cost /per camp	\$293,600	\$320,100	\$509,100	\$453,400
	TOTAL COST ALL STA. CAMPS	\$2,048,700	\$2,240,700	\$3,563,700	\$3,173,800
	PIPELINE CAMPS :		(RBC's FOR P/L)	(RBC's FOR P/L)	
	FRANKLIN BLUFFS / SAG RIVER	\$397,200	\$673,300	\$673,300	\$610,300
	HAPPY VALLEY	373,600	672,800	672,800	609,800
	TOOLIK	278,700	513,200	513,200	453,500
	GALBRAITH	397,200	672,900	672,900	609,900
	ATIGUN	278,700	511,300	511,300	451,600
	CHANDALAR	278,700	514,300	514,300	454,600
	DIETRICH	350,000	673,600	673,600	610,600
	COLDFOOT	306,000	672,500	672,500	609,500
	PROSPECT	397,200	513,600	513,600	453,900
	OLD MAN	397,200	672,500	672,500	609,500
	FIVE MILE	306,000	673,300	673,300	610,300
	LIVENGOOD / MANLEY	350,000	819,100	819,100	788,400
	DELTA / QUARTZ LAKE	350,000	818,200	818,200	787,500
	KNOB RIDGE / JOHNSON RIVER	404,300	772,800	772,800	788,100
	TOIK	404,300	772,800	772,800	788,100
	NORTHWAY	404,100	772,800	772,800	788,100
	TOTAL COST ALL P/L CAMPS	\$5,673,200	\$10,719,000	\$10,719,000	\$10,023,700
	TOTAL COST ALL CAMPS	\$7,721,900	\$12,959,700	\$14,282,700	\$13,197,500

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CLIENT NWA **CONSTRUCTION COSTS** **FLUOR**
 LOCATION ALASKA TEMPORARY FACILITIES & SUPPORT SERVICES C.O. NO. JOB NO. 47804X
 PROJECT GAS PIPELINE CAMPUS SEWAGE TREATMENT PLANT COMPARISON MADE BY RAB APVD.

A/C
NO.

ALL STATION CAMPS AND TOOLIK, ATTIGUN, CHANDALAR AND PROSPECT PIPELINE CAMPS

ALL NEW PHYSICAL/CHEMICAL SYSTEM

ROTATING BIOLOGICAL CONTACTOR SYSTEM

	MHRS	LABOR \$	MAT'L \$	TOTAL \$		MHRS	LABOR \$	MAT'L \$	TOTAL \$
(1) INSTALL PC-75 SEWAGE PLANT	200	6,700	106,000	112,700	INSTALL RBC UNIT w/ CONCRETE	300	10,000	54,000	64,000
(2) CONCRETE PAD FOR PC-75	130	4,400	3,000	7,400	PAD				
(3) SLUDGE INCINERATOR	200	6,700	105,000	111,700	500 #/HR SOLID WASTE INCINERATOR	240	8,100	115,000	123,100
(4) CONCRETE PAD FOR INCINERATOR	50	1,700	1,200	2,900	WITH MUFFLE BURNER & INCLUDES				
(5) REFUSE INCINERATOR (HV-750)	200	6,700	92,000	98,700	CONCRETE PAD				
(6) SLUDGE DEWATERING UNIT	90	3,000	40,000	43,000	INSTALL CLARIFIER WITH CONCRETE PAD	40	1,300	30,000	31,300
(7) CONCRETE PAD FOR DEWATERING UN.	170	5,700	4,000	9,700	INSTALL PRESSURE SAND FILTER	160	5,400	67,600	73,000
(8) PLUMBING & ELECTR. F/ DEWATERING UN.	260	9,000	15,000	24,000	WITH BACKWASH				
(9) SLUDGE PUMPS F/ DEWATERING UNIT	60	3,000	5,000	7,000					
(10) EQUALIZATION TANK (1 @ 30,000 gal)	100	3,400	20,000	23,400	EQUALIZATION TANKS (2 @ 20,000 gal)	200	6,800	30,000	36,800
(11) CONCRETE PAD FOR EQUALIZATION TK.	160	5,400	3,800	9,200	CONCRETE PADS FOR EQUALIZATION TKS	320	10,800	7,600	18,400
(12) AERATION EQUIP F/ EQUALIZATION TK	100	3,400	6,600	10,000					
(13) CHLORINATION SYSTEM	140	4,700	5,300	10,000					
(14) CHLORINE CONTACT TANK	40	1,300	8,700	10,000					
(15) CHEMICAL FEED PUMPS	20	700	9,300	10,000					
(16) LIFT STATIONS (3 EACH)	300	10,000	58,500	68,500	LIFT STATIONS (3 EACH)	300	10,000	58,500	68,500
(17) PIPING TO FCMR (SAME AS RBC)	- INCLUDED IN PIPING DISTRIBUTION -				PIPING TO FCMR (SAME AS P/C)	- INCLUDED IN PIPING DISTRIBUTION -			
(18) START-UP & CHECK OUT SYSTEM	40	1,300	-	1,300	START-UP & CHECK OUT SYSTEM	40	1,300	-	1,300
					SUB-TOTAL	1,600	53,700	362,700	416,400
					SLUDGE DRYING BEDS + ACCESS ROADS	360	11,000	26,000	37,000
					TO DRYING BEDS (USE AVERAGE)				
TOTAL FOR P/C SYSTEM	2,260	76,100	483,400	\$559,500	TOTAL FOR RBC SYSTEM	1,960	64,700	388,700	453,400

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CLIENT NWA

CONSTRUCTION COSTS

FLUOR

LOCATION ALASKATEMPORARY FACILITIES & SUPPORT SERVICES C.O. NO. _____ JOB NO. 47804XPROJECT GAS PIPELINECAMPS SEWAGE TREATMENT PLANT COMPARISON MADE BY RAB APVD. _____A/C
NO.SAG RIVER, HAPPY VALLEY, GALBRAITH, DIETRICH, COLDFOOT, OLD MAN, AND FIVE MILE PIPELINE CAMPSALL NEW PHYSICAL/CHEMICAL SYSTEMROTATING BIOLOGICAL CONTACTOR SYSTEM

	MHRS	LABOR \$	MAT'L \$	TOTAL \$		MHRS	LABOR \$	MAT'L \$	TOTAL \$
(1) INSTALL 2 - PC-75 SEWAGE PLANTS	400	13,400	196,000	209,400	INSTALL RBC UNIT W/ CONCRETE	600	20,200	109,000	129,200
(2) CONCRETE PAD FOR PC-75	260	8,700	6,000	14,700	PAD				
(3) SLUDGE INCINERATOR	200	6,700	105,000	111,700	1000 #/HR SOLID WASTE INCINERATOR	290	9,700	140,000	149,700
(4) CONCRETE PAD FOR INCINERATOR	50	1,700	1,200	2,900	W/ MUFFLE BURNER & INCLUDES				
(5) REFUSE INCINERATOR (HV-750)	200	6,700	92,000	98,700	CONCRETE PAD				
(6) SLUDGE DEWATERING UNIT	90	3,000	40,000	43,000	INSTALL 2 - CLARIFIERS W/ CONCRETE	80	2,700	60,000	62,700
(7) CONCRETE PAD FOR DEWATERING UNIT	170	5,700	4,000	9,700	PADS				
(8) PLUMBING & ELECTR F/ DEWATERING UN.	260	9,000	15,000	24,000	INSTALL PRESSURE SAND FILTER	160	5,400	67,600	73,000
(9) SLUDGE PUMPS F/ DEWATERING UNIT	60	2,000	5,000	7,000	WITH BACKWASH				
(10) EQUALIZATION TANK (1 @ 30,000 gal)	100	3,400	20,000	23,400	EQUALIZATION TANKS (3 @ 20,000 gal)	300	10,000	45,000	55,000
(11) CONCRETE PAD FOR EQUALIZATION TK	160	5,400	3,800	9,200	CONCRETE PADS FOR EQUALIZATION TKS	480	16,100	11,400	27,500
(12) AERATION EQUIP F/ EQUALIZATION TK	100	3,400	6,600	10,000					
(13) CHLORINATION SYSTEM	140	4,700	5,300	10,000					
(14) CHLORINE CONTACT TANK	40	1,300	8,700	10,000					
(15) CHEMICAL FEED PUMPS	20	700	9,300	10,000					
(16) LIFT STATIONS (3 EACH)	300	10,000	58,500	68,500	LIFT STATIONS (3 EACH)	300	10,000	58,500	68,500
(17) PIPING TO FCMR (SAME AS RBC)	- INCLUDED IN PIPING DISTRIBUTION -				PIPING TO FCMR (SAME AS P/C)	- INCLUDED IN PIPING DISTRIBUTION -			
(18) START-UP & CHECK OUT SYSTEM	40	1,300	-	1,300	START-UP AND CHECK OUT SYSTEM	40	1,300	-	1,300
					SUB-TOTAL	2250	75,400	491,500	566,900
					SLUDGE DRYING BEDS + ACCESS	380	11,600	31,500	43,100
					RDS TO DRYING BEDS (USE AVE.)				
TOTAL FOR P/C SYSTEM	2,590	87,100	576,400	663,500	TOTAL FOR RBC SYSTEM	2630	87,000	523,000	610,000

CLIENT NWA
 LOCATION ALASKA
 PROJECT GAS PIPELINE

CONSTRUCTION COSTS

FLUOR

TEMPORARY FACILITIES & SUPPORT SERVICES C.O. NO. _____ JOB NO. 47804X
 CAMPS SEWAGE TREATMENT PLANT COMPARISON MADE BY RAB APVD. _____

A/C
NO.

MANLEY, QUARTZ LAKE, JOHNSON RIVER, TOK, AND NORTHWAY PIPELINE CAMPS

ALL NEW PHYSICAL/CHEMICAL SYSTEM

ROTATING BIOLOGICAL CONTACTOR SYSTEM

	MHRS	LABOR \$	MATL \$	TOTAL \$		MHRS	LABOR \$	MATL \$	TOTAL \$
(1) INSTALL 3-PC-75 SEWAGE PLANTS	600	20,200	302,000	322,200	INSTALL RBC UNIT w/ CONCRETE	900	30,200	163,600	193,800
(2) CONCRETE PAD FOR PC-75	390	13,100	9,000	22,100	PAD				
(3) SLUDGE INCINERATOR	200	6,700	105,000	111,700	1500 #/hr SOLID WASTE INCINERATOR	340	11,400	190,000	201,400
(4) CONCRETE PAD FOR INCINERATOR	50	1,700	1,200	2,900	WITH MUFFLE BURNER & INCLUDES				
(5) REFUSE INCINERATORS (MV-750)	200	6,700	92,000	98,700	CONCRETE PAD				
(6) SLUDGE DEWATERING UNIT	90	3,000	40,000	43,000	INSTALL 3-CLARIFIERS w/ CONCRETE	120	4,000	90,000	94,000
(7) CONCRETE PAD FOR DEWATERING UNIT	170	5,700	4,000	9,700	PADS				
(8) PLUMBING & ELECTR F/DEWATERING UNIT	260	9,000	15,000	24,000	INSTALL PRESSURE SAND FILTER	160	5,400	67,600	73,000
(9) SLUDGE PUMPS FOR DEWATERING UNIT	60	2,000	5,000	7,000	WITH BACKWASH				
(10) EQUALIZATION TANKS (2 @ 30,000 GAL)	200	6,700	45,000	51,700	EQUALIZATION TANKS (4 @ 20,000 GAL)	400	13,400	60,000	73,400
(11) CONCRETE PAD FOR EQUALIZATION TKS	320	10,700	7,600	18,300	CONCRETE PADS FOR EQUALIZATION TKS	640	21,500	15,200	36,700
(12) AERATION EQUIP F/EQUALIZATION TKS	200	6,700	13,200	19,900					
(13) CHLORINATION SYSTEM	140	4,700	5,300	10,000					
(14) CHLORINE CONTACT TANK	40	1,300	8,700	10,000					
(15) CHEMICAL FEED PUMPS	20	700	9,300	10,000					
(16) LIFT STATIONS (3 EACH)	300	10,000	58,500	68,500	LIFT STATIONS (3 EACH)	300	10,000	58,500	68,500
(17) PIPING TO FCMR (SAME AS RBC)	- INCLUDED IN PIPING DISTRIBUTION -				PIPING TO FCMR (SAME AS P/C)	- INCLUDED IN PIPING DISTRIBUTION -			
(18) START-UP & CHECK OUT SYSTEM	40	1,300	-	1,300	START-UP AND CHECK OUT SYSTEM	40	1,300	-	1,300
					SUB-TOTAL	2900	97,200	644,900	742,100
					SLUDGE DRYING BEDS & ACCESS	390	11,700	34,300	46,000
					RDS TO DRYING BEDS (USE AVE)				
TOTAL FOR P/C SYSTEM	3280	110,200	720,800	831,000	TOTAL FOR RBC SYSTEM	3290	108,900	679,200	788,100

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4.3.1.5.18 Solid Waste Disposal Sites

Agree with WBEC to reduce the revised CCE by \$30,100 because of incorrect rates used for revegetation.

4.3.1.5.19 P/L Camps Cribbing Costs

Disagree with WBEC that \$6,874,900 should be deducted from the revised CCE for cribbing costs. Reference Volume III, response page 4-41, of "Comments of Alaskan Northwest Natural Gas Transportation Company on the Draft Report of the Alaskan Delegate and the OFI Division Director" issued April 13, 1981 which states our comments for maintaining the cribbing costs as estimated and filed.

4.3.1.5.20 P/L Camps Contractor Overhead and Profit

Agree with WBEC that \$104,000 should be deducted from the revised CCE since generators for satellite communication requirements will be a PMC purchase and should not be included in the contractor's overhead and profit.

4.3.1.5.21 P/L Camps Contractor Overhead and Profit

Agree with WBEC to increase the revised CCE by \$736,000 to include insulation board material in the calculation process of the Contractor's Overhead and Profit for Happy Valley, Toolik, Galbrath, and Atigun Camps.

4.3.1.5.22 P/L Camps Construction Labor Costs

Disagree with WBEC that \$5,365,600 should be deducted from the revised CCE due to a difference in productivity factors which would revise the construction labor costs. Reference Volume III, response pages 4-15 thru 4-32, of "Comments of Alaskan Northwest Natural Gas Transportation Company on the Draft Report of the Alaskan Delegate and the OFI Division Director" issued April 13, 1981 which states our comments for maintaining the productivity rates as estimated and filed.

4.3.1.5.23 Pipeline Camps Contractor Catering and Subsistence Costs

Disagree with WBEC that \$7,588,800 should be deducted from the revised CCE for contractor catering and subsistence costs due to better productivity and decreased mandays. Reference Volume III, response page 4-15, of "Comments of Alaskan Northwest Natural Gas Transportation Company on the Draft Report of the Alaskan Delegate and the OFI Division Director" issued April 13, 1981

which states our comments for maintaining the productivity rates as estimated and filed.

4.3.1.6 Camp Salvage Value

It is still Northwest's contention that there will be a minimal potential market for the bulk of camp equipment and structures. Also, any salvage value that might be realized would be offset by storage/handling costs, fencing and security costs, and disposal/sale fees.

The current CCE filing includes \$16,365,000 for movement of the camps to a common storage site in Alaska, not \$57 million as WBEC has stated on page 4-30 of their April 1982 Supplemental Report.

4.3.1.7 General Support and Services

No response required.

4.3.2.1 ANNGTC - Common Facilities

No response required.

4.3.2.2 ANNGTC - Compressor Station Camps

No response required.

4.3.2.3 ANNGTC - Pipeline Camps

No response required.

4.4 REVISION 3 PIPELINE ALIGNMENT CHANGES

Disagree with WBEC that the transportation and handling costs for ditch insulation material should be reduced by \$10,000 from \$25,000 to \$15,000. The chart given below illustrates the transportation and handling costs for ditch insulation material and is based on unit rates used in 11/80 filing. See Table 4.2-1 (page 4-10) of this response.

<u>Ditch Insulation Transportation Costs</u>					<u>Handling Costs</u>		
	<u>Quantities</u>		Unit	Total	No.	Unit	Total
	MBF	bundles	RATE(\$)	COST(\$)	LOADS	RATE(\$)	COST(\$)
Section 1:	(16)	(5)	97.77	(500)	(1)	223	(200)
Section 2:	493	143	194.79	27,900	15	223	3300
Section 3:	2	1	239.84	200	1	218	200
Section 4:	(75)	(22)	86.60	(1,900)	(3)	218	(700)
Section 5:	13	4	52.84	200	1	218	200
Section 6:	<u>9</u>	<u>3</u>	106.21	<u>300</u>	<u>1</u>	218	<u>200</u>
Total	426	124		\$26,200	14		\$3,000

RESPONSE TO WBEC'S SUPPLEMENTAL
REPORT FOR NOV. 1981 REVISED CCE

5.0 COMMUNICATIONS AND SUPERVISORY SYSTEMS

5.1 SCHEDULE ADJUSTMENT

5.1.1 Fluor Services (PMC Labor including expenses)

<u>NOV 81</u> <u>CCE</u> <u>(\$1,000)</u>	<u>APR 82</u> <u>WBEC</u> <u>(\$1,000)</u>	<u>REVISED</u> <u>CCE</u> <u>(\$1,000)</u>	<u>DIFFERENCE</u> <u>(\$1,000)</u>
435	421	435	0

Alaskan Northwest does not agree with the WBEC evaluation, refer to Section 7.0 for a detailed explanation.

5.2 Delete Metering Station No. 1

<u>DELETED IN</u> <u>NOV 81</u> <u>CCE</u> <u>(\$1,000)</u>	<u>DELETED BY</u> <u>APR 82</u> <u>WBEC</u> <u>(\$1,000)</u>	<u>DELETION</u> <u>REVISED</u> <u>CCE</u> <u>(\$1,000)</u>	<u>DIFFERENCE</u> <u>(\$1,000)</u>
(523)	(1,544)	(1,544)	(1,021)

Alaskan Northwest agrees with WBEC's evaluation, additional costs as calculated should be deleted from the Revised CCE.

5.4.1 Common (PMC) Costs

5.4.1.1 Fluor Services (PMC)

<u>NOV 81</u> <u>CCE</u> <u>(\$1,000)</u>	<u>APR 82</u> <u>WBEC</u> <u>(\$1,000)</u>	<u>REVISED</u> <u>CCE</u> <u>(\$1,000)</u>	<u>DIFFERENCE</u> <u>(\$1,000)</u>
4,270	4,065	4,270	0

WBEC's latest estimate evaluation refers back to their Audit Report (dated October 1981; page 5-7) and restates their position that PMC Shop Inspector (Operation 23) should be treated as a field operation, not a home office operation, consequently the overhead multiplier would be 18 percent not 70 percent. This would result in a \$91,000 reduction to the CCE.

However WBEC has overlooked the fact that in that same paragraph referenced above they stated, "Considering the potential need for additional supervisory control consultants mentioned above, no reduction was made to the CCE for these (this) factors." WBEC's about face comes without any new information. Alaskan Northwest does not agree with WBEC's latest evaluation in that it contradicts their earlier position and has no factual or contractual basis.

WBEC proposes a further reduction in PMC labor costs of \$111,000. This is based on their contention that a 4.38 percent methodological discrepancy, for days off, exists.

Alaskan Northwest does not agree with WBEC's evaluated reductions in PMC Benefits/Burdens and Expense rates; refer to Section 7.0 for a detailed explanation.

RESPONSE TO WBEC'S SUPPLEMENTAL
REPORT FOR NOV. 1981 REVISED CCE

6.0 PIPELINE

6.1 SCHEDULE ADJUSTMENT

Response to WBEC item 6.1 Schedule Adjustment, page 6-1 which deals with additional PMC and Consultant costs is included under Project Directorate.

6.2 FERC REPORT RECONCILIATION ADJUSTMENT

No response required.

6.3 NEW CAMPS

No response required.

6.4 REVISION 3 PIPELINE ALIGNMENT CHANGES

6.4.1 Mainline Construction Costs

The difference of \$177,000 is due to the fact that WBEC's costs for Revision 3 were calculated utilizing unit costs derived from their Audit Report (August 1981); whereas ANNGTC's costs were calculated utilizing unit costs from the October 1980 filing, adjusted for the FERC Report Reconciliation Adjustment (Adger Adjustments). WBEC recommended in their Audit Report an overall reduction of \$611,880 million, ANNGTC agreed with only \$65,001 million at that time. ANNGTC continues to disagree with WBEC's Audit Report reduction and the associated reduction of \$177,000 recommended in their supplemental report.

6.4.2 Materials

Casing Seals and Insulators

ANNGTC agrees with the \$5,000 reduction. Refer to the March 2, 1982 ANNGTC responses.

Mainline Pipe and Ditch Insulation

WBEC's evaluation of minus \$1,000 for pipe and plus \$1,000 for ditch insualtion has a net impact of \$0 in WBEC's words, "This

6.0 PIPELINE (Continued)

impact would be minimal, and therefore the time required to (verify the costs) was considered to be unwarranted".

6.4.3 Contracts

Refer to item 6.4.1 for an explanation of the cost differences. ANNGTC disagrees with WBEC's recommended costs.

6.4.4 Land and Land Rights

No response required.

It is obvious that WBEC is applying yet another incorrect application in attempting to decrease the PMC Irvine labor costs by correlating this with the total benefits and burdens rate of 39 percent. Even in the WBEC Draft Audit Report issued during December 1980, they attempted to prove that the 39 percent Benefit and Burden rate was too high by comparing that to a survey of some 280 A&E Companies. See WBEC Draft Audit Report at 7-9.

This report was refuted in the Alaskan Northwest response of April 10, 1981 at page 7-42 and was removed by WBEC in the final audit report.

Therefore, the 4.38 percent figure incorrectly calculated and used by WBEC, can not be allowed as an adjustment to Alaskan Northwest Estimate since there is no direct relationship to the effective manhours estimated nor the Benefit and Burden rate applied in the CCE.

7.1.1.3 PMC Expenses - Irvine

WBEC recommended a reduction of \$23,000 for all Irvine expenses. This amount was developed by WBEC based on calculating expendables as 1.0 percent of base pay only.

The expendables included in the CCE were calculated as 1.0 percent of base pay plus benefits and burdens based on the interim contract between the PMC and ANNGTC which was in existence in January 1980 when the estimate rates and basis were established.

ANNGTC disagrees with WBEC's proposed reduction.

7.3 TAX ADJUSTMENT

WBEC's recommended reduction of 10 percent on taxes, from \$22,792,000 to \$20,513,000, is not justified. The simplistic method used by WBEC is inadequate and does not reflect the correct adjustment that should be made if there is to be an adjustment to the total project cost estimate.

The proper method of adjusting the tax cost estimate is to identify the specific adjustments to the work breakdown structural elements. This effort is required because each of the work breakdown structural elements bears a different mix of tax burdens.

Furthermore since property taxes are annually recurring taxes, the adjustments would have to be categorized to the correct time periods in order to make a proper adjustment.

7.4 INSURANCE ADJUSTMENT

7.4.1 Primary General Liability

Alaskan Northwest and WBEC agree on this item and the CCE should be adjusted for the key punching errors as stated by Alaskan Northwest at the February 16, 1982 Technical Conference in Washington, D.C. A revised CCE value of \$17,943,000 is acceptable to Alaskan Northwest.

7.4.2 Excess Umbrella Liability

Alaskan Northwest agrees that an adjustment is required for the key punching errors making the correct base for this coverage on straight time payroll equal to \$1,794,269,000. This base times a one percent rate based on a desk quote from North American Underwriters gives a cost of \$17,943,000 for this coverage. WBEC's evaluated premium is not an appropriate or valid analysis in as much as:

1. Estimating excess liability premiums as a function of primary liability premiums on this particular project is inappropriate since we have utilized such a low primary general liability factor. It is approximately 700 percent lower than the rates that would have been produced had manual rating been used.
2. Excess Umbrella Liability underwriters on this project are dealing with known catastrophic exposures which could produce a policy limits loss; i.e., the TransAlaska Pipeline System. In most cases, excess underwriters cannot describe a probable loss scenario which will produce a policy limits loss.
3. The Excess Liability Insurance must conform to the Mutual Indemnification Agreement which imposes many areas of strict liability and, provides severe requirements regarding pollution coverage. Underwriters acknowledgement and adherence to the Mutual Indemnification Agreement requires much broader coverage than that which would be required under a normal excess umbrella program.

7.4.3 Aircraft Liability

WBEC uses an evaluated premium rate of \$3,000 per aircraft year without substantiating the source for this rate. ANNGTC uses \$5,000 per aircraft year based on a desk quote from Lloyds of London. The total premium cost of \$70,000 is appropriate.

7.4.4 Airport Operations Liability

The ANNGTC premium rate of \$2,800 per airstrip year is appropriate as reported to staff interrogatories, at 99-1. This rate times

55 airstrip years gives a total of \$155,000 for this item.

7.4.5 Ocean Marine Shipments

The Alaskan Northwest premium rate of one percent of value shipped is substantiated by a quote from Reed Stanhouse, Inc. of Houston, Texas. WBEC's audit report which evaluated a premium of .7 percent has not been substantiated. The correct estimated value for this item is one percent times the base value of \$2.872 billion or \$28,721,000.

7.4.6 Inland Marine Shipments

The Alaskan Northwest premium rate of 0.6 percent of value shipped is substantiated by a desk quote from North American Underwriters. WBEC's audit report which evaluated a premium of 0.2 percent has not been substantiated. The correct estimated value for this item is 0.6 percent times the base value of \$341.5 million or \$2,050,000.

7.4.7 Aircraft Hull

The Alaskan Northwest premium rate of 0.7 percent of hull value is substantiated by a desk quote from Lloyds of London. WBEC's audit which report evaluated a premium of 0.5 percent of hull value has not been substantiated. The correct estimated premium for this item is \$60,000.

7.4.8 Physical Damage - Construction Camps

Alaskan Northwest did not increase the premium rate from 0.35 percent of value to 0.7 percent of value as stated by WBEC. During the technical conference on Tuesday, February 16, 1982, Transcript Page 67, this was clarified by the statement: "The rate used to prepare the July 1980 Filing 'was' .7 percent." This rate times the \$820 million total insured-value-years gives a total of \$5,744,000 for this item. WBEC utilized a .26 percent rate which is unsupported. The CCE rate was obtained by contact with the American Insurance Group, a potential insurance underwriter. The CCE rate reflects the fact that the camps have little or no fire detection or suppression equipment and firefighting is of little effect. Underwriters would regard these as unprotected properties and would surcharge base rates because of their unprotected status.

7.4.9 Builders Risk

The Alaskan Northwest premium rate of 0.6 percent per year is substantiated by a desk quote from North American Underwriters. WBEC's audit report which evaluated a premium of 0.322 percent

per year has not been substantiated. The correct estimated value for this item is 0.6 percent per year of capitalized value or \$15,507,000.

7.4.10 Fidelity Coverage

Based on Alaskan Northwest experience, each major contractor, operator, and PMC coming onto the project will dedicate a fidelity premium of \$20,000 per year. This premium times 87 contractor years gives the correct CCE value of \$1,740,000 for this item.

7.4.11 Auto Liability

The Alaskan Northwest premium rates of \$572 per year per unit for units less than 2-1/2 tons and \$1,426 per year per unit for units over 2-1/2 tons is substantiated by a desk quote from North American Underwriters. WBEC's audit report which evaluated premiums of \$288 and \$720 per year per unit respectively have not been substantiated. The correct CCE value for this item is \$7,094,000.

7.4.12 Auto Physical Damage

The Alaskan Northwest premium rates of \$459 per unit per year for units under 2-1/2 tons, \$2,468 per unit per year for 2-1/2 tons and larger and \$5,329 per unit per year for long haul has been substantiated by a desk quote from North American Underwriters. WBEC's audit report which evaluated premiums of \$350, \$875 and \$1,225 per unit per year respectively have not been substantiated. The correct CCE value for this item is \$11,217,000.

7.4.13 Physical Damage - E.C. Equipment

No response required.

7.4.14 Other Physical Damage

No response required.

APPLICATION OF PMC IRVINE BENEFITS AND BURDENS

4/30/82

DESCRIPTION	A	B	C
	DATA FROM B & B MEMO DATED 11/11/80	ANNGTC FILED CCE	WBEC EVALUATION
Total Paid Manhours/Year (52X40)	2,080	2,080	2,080
Manhours Worked/Year (Recovery Base)	<u>1,813</u>	<u>1,872</u>	<u>1,872</u>
Vacation, Holiday, Sick Pay Manhours/year	267	208	208

BENEFITS:

Manhours as % of Total Paid			10.0 ¹
Manhours as % of Recovery Base	14.7		
Dollars as % of Recovery Base	16.1 ²		

<u>BURDEN & BENEFITS %</u>	39.0	39.0	32.9*
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DEVELOPMENT OF LABOR MULTIPLIER:

	(Contractual)	(Contractual)	
a. Base Pay	1.000	1.000	1.000
b. Benefits & Burdens	0.390	0.390	0.329
c. Overhead 70% of (a + b)	0.973	0.973	0.930
d. Fee 15% of (a + b + c)	0.354	0.354	0.339
TOTAL	<u>2.717</u>	<u>2.717</u>	<u>2.598</u>
			(4.38% less than B)

*NOTE: WBEC incorrectly deducted 10.0% (1. Benefit manhours as % of total paid manhours) from 16.1% (2. benefit dollars as % of recovery base dollars) to develop their 32.9% (39.0 less 6.1%) burden and benefit rate.

↓ FLUOR

INTEROFFICE CORRESPONDENCE

CONFIDENTIAL

To: W. C. BREEN

Date: November 11, 1980

Location: Irvine (A4-18-103)

Reference: Fluor Contract 4780

From: M. L. BROCKMEYER

Client: Northwest Alaskan Pipeline Co.

Location: Irvine (C3-20-108)

Subject: PAYROLL BURDEN AND BENEFIT
RATE - 1980

cc: LSNoble

As requested, following is a breakdown of the payroll burden and benefit recovery percentages for the calendar year 1980. This rate is based on a yearly recovery of 1,813 man hours per individual.

Burdens

Workmen's Compensation Insurance	.3	
Comprehensive General Liability Insurance	1.7	
State Unemployment Insurance (S.U.I.)	1.5	
Federal Unemployment Insurance (F.U.I.)	.3	
Social Security (F.I.C.A.)	<u>6.1</u>	9.9

Benefits

Vacation	7.0	
Salary Continuation (Sick Leave)	5.3	
Holidays	3.8	
Group Insurance	3.4	
Savings Investment Plan (S.I.P.)	1.9	
Trust Fund	<u>7.7</u>	<u>29.1</u>

- TOTAL		<u><u>39.0%</u></u>
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Should require additional information please advise.


M. L. Brockmeyer

MLB:mes

ATTACHMENT 7B

RESPONSE TO WBEC'S SUPPLEMENTAL
REPORT FOR NOVEMBER 1981 REVISED CCE

7.0 PROJECT DIRECTORATE

7.1.1.2 LABOR COSTS

BENEFITS and BURDENS, IRVINE Pages 7-8, 7-9

WBEC stated that "all Irvine labor costs were reduced by 4.38 percent due to an evaluated discrepancy in methodology between the Benefits/Burdens allowance for days off and the allowance for days off used in developing manpower loading estimates". This is a reduction of \$975,000 to the revised CCE Filing.

WBEC further stated in their audit report at 7-6 "Consequently the manhours computed as a function of manpower loading should coincide with the Burdens and Benefits (B&B) Allowance for days off".

WBEC has concluded that the resulting labor multiplier which includes base pay, B&B, overhead and fee would be 2.598, which is 4.38 percent less than the CCE multiplier of 2.717. See Audit Report at 7.6.

In response to the statements in the April 1982 Supplementary Report, the Audit Report and the Draft Audit Report dated December 1980. Alaskan Northwest has concluded that WBEC completely misunderstands the calculations included in the CCE concerning the application of benefit and burdens to the PMC labor costs. What appeared to WBEC to be a discrepancy in applying the 39 percent burden and benefit rate to Irvine labor costs, is not a discrepancy at all. The PMC manhours included in the certification cost estimate were developed based on job requirements, organization charts and job durations, and the manhours required to accomplish specific tasks (such as drawings, specifications, flow sheets, and calculations). (See estimate Volume XXXII Page 1.) These manhours were then calendarized for manpower planning (office space, hiring requirements, cash flows) by equating the manhours to equivalent people, using a divisor of 36 hours per week.

The 36 hour week used in the PMC estimate also assumed that each employee would utilize 10 percent of their time on vacation, holiday and sick leave and that the PMC can absorb up to 4 hours/week/man without having to revert to overtime or additional manpower assignments to offset the lost production. The PMC experience over many of its past projects is that personnel in

the Irvine office will tend to defer vacations until they have completed their current project, therefore, the vacation time-off on an individual project will be less than the division average experience. Also, due to the nature of this project it would tend to have a higher number of personnel with less tenure than the average in the division. (The 39 percent rate includes 7.0 percent for vacation. See WBEC audit report at 7-9).

WBEC appears to agree that the percentage reduction of 10 percent for vacations, holiday, and sick leave is reasonable. However, they then refer to two factors, which question the allowance used for the estimate. The first factor has no bearing on the allowance for Irvine. The second factor does not prove that the manpower loading should coincide with the 39 percent benefit and burden rate. (See audit report at 7-5.) It is obvious that WBEC is mixing the problem of developing an estimate with the application of a contractual overhead benefit and burden rate.

The 39 percent benefit and burden rate is an experience rate based on an average of all Fluor Irvine personnel over many projects at first quarter 1980 and has no bearing on the application of burdens on average manhours per week worked on individual projects. The recovery rate of 39 percent was developed to capture dollars not manhours, and reflects the fact that employees that have been with the company the longest generally receive higher than the average pay and qualify for more time off for vacations and sick pay.

As previously stated in the Alaskan Northwest response to the Draft WBEC Audit Report, the 39 percent B&B rate is a contractual percentage adjusted to January 1980 dollars. This contractual rate is adjusted each year to provide for statutory requirements and changes in Fluor Employee Benefits. The rate was developed from total burdens and benefits dollars expended divided by total dollars paid for hours worked in the PMC Fluor Irvine Division.

Not only was it improper for WBEC to reduce the contractual billing rate for benefits and burdens as described in the foregoing narrative, their calculations are also mathematically incorrect. WBEC deducted 10.0 percent of benefit manhours (as a percent of total paid manhours) from 16.1 percent of benefit dollars (as a percent of recovery base dollars). WBEC then reduced the contractual burdens and benefit rate of 39.0 percent by this erroneously derived 6.1 percent and used a burden and benefit rate of 32.9 percent to develop their labor multiplier of 2.598 compared to the filed CCE multiplier of 2.717. WBEC then reduced total Irvine labor by 4.38 percent which is the difference between a 2.598 labor multiplier and the filed labor multiplier of 2.717. See Attachment 7A and 7B.

7-2-1980

7-2-1980

7-2-1980