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PART II



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## FEDERAL ENERGY ADMINISTRATION



### ALASKA NORTH SLOPE CRUDE OIL PRICING AND ENTITLEMENTS TREATMENT

Mandatory Petroleum Price and  
Allocation Regulations

## Title 10—Energy

CHAPTER II—FEDERAL ENERGY  
ADMINISTRATIONPARTS 211 AND 212—MANDATORY PE-  
TROLEUM PRICE AND ALLOCATION  
REGULATIONSAlaska North Slope Crude Oil Pricing and  
Entitlements TreatmentAGENCY: Federal Energy Administra-  
tion.

ACTION: Final rule.

**SUMMARY:** This action amends the price and allocation regulations of the Federal Energy Administration (FEA) to afford imported crude oil treatment to Alaska North Slope (ANS) crude oil for purposes of the entitlements program, as proposed in FEA's notice of proposed rulemaking. This final rule makes no change in FEA's pricing regulations (except to conform to the entitlements amendments), thereby reflecting FEA's decision that the upper tier price ceiling, as determined under existing price regulations, will, as proposed, apply to first sales of ANS crude oil. This notice also confirms FEA's decision, previously announced, not to seek exclusion of ANS wellhead prices from the statutory composite price computation at this time.

EFFECTIVE DATE: June 1, 1977.

FOR FURTHER INFORMATION CON-  
TACT:

Deanna Williams (FEA Reading Room), 12th and Pennsylvania Avenue NW., Room 2107, Washington, D.C. 20461, 202-566-9161.

Ed Vilade (Media Relations), 12th and Pennsylvania Avenue NW., Room 3104, Washington, D.C. 20461, 202-566-9833.

Edwin Mampe (Regulatory Programs), 2000 M Street NW., Room 2304E, Washington, D.C. 20461, 202-254-7200.

Richard S. Greene (Office of General Counsel), 12th and Pennsylvania Avenue NW., Room 5140A, Washington, D.C. 20461, 202-566-9567.

Douglas G. Robinson (Alaskan Oil Project Coordinator), 12th and Pennsylvania Avenue NW., Room 3344, Washington, D.C. 20461, 202-566-9698.

## SUPPLEMENTARY INFORMATION:

## A. BACKGROUND

Detailed background information describing the FEA price and entitlement regulations and the unique circumstances relating to production and transportation of ANS crude oil was provided in FEA's Notice of Inquiry in this matter (42 FR 13116, March 9, 1977) and in the Notice of Proposed Rulemaking (42 FR 22889, May 5, 1977). It is not necessary, therefore, to repeat that information here. Basically, this rulemaking proceeding has been undertaken to determine what changes, if any, to FEA's price and entitlements regulations should be made to accommodate the substantial new domestic crude oil production which began flowing on the Alaska North Slope on June 20, 1977. Shipments of this oil

to refineries on the West Coast of the United States have recently begun, and are anticipated to increase steadily until they reach a level of 1.2 million barrels per day in early 1978.

In response to FEA's Notice of Proposed Rulemaking, FEA received 16 written comments, including 8 late comments. In addition, a total of 14 oral presentations were made at the public hearings in this matter held in Washington, D.C., on May 25, in San Francisco on May 26, and in Anchorage on May 27, 1977. FEA considered all of these comments and presentations, as well as other information available to it, in arriving at the regulatory amendments adopted today.

## B. ISSUES

1. *Pricing: Application of upper tier price ceiling to ANS first sales.* In its notice of proposed rulemaking, FEA explained that ANS crude oil, like any other domestic production from a property which commenced production after 1972, is permitted to be priced at the upper tier ceiling level under existing FEA price regulations applicable to first sales of domestic crude oil. FEA also pointed out that upper tier price treatment for ANS first sales appeared to be consistent with congressional intent under the Emergency Petroleum Allocation Act of 1973, as amended (EPAA). Thus, while recognizing that the actual wellhead price of ANS production will be significantly below the upper tier ceiling level, due to high pipeline and other transportation costs to bring ANS crude oil to domestic refineries, FEA proposed to reject suggestions that ANS production be made subject either to the lower tier price ceiling or exempted from price controls altogether.

Although some producers continue to advocate price exemption, most of the comments received supported FEA's analysis in this respect. Therefore, for the reasons outlined in the notice of proposed rulemaking, today's amendments contain no provisions which would alter the applicability of the upper tier ceiling price to ANS first sales under FEA's existing pricing system.

FEA also pointed out that the upper tier ceiling price applicable to a particular grade of crude oil in a particular field, where there was no posted price for transactions in that grade of crude oil in that field on the upper tier base date of September 30, 1975,<sup>1</sup> is based, under 10 CFR 212.74(b), on "the related price for that grade of domestic crude oil which is most similar in kind and quality in the nearest field for which prices were posted" on September 30, 1975, plus or minus the dollar amount set by FEA from time to time to reflect adjustments to the upper tier ceiling price.

Again, although the ANS first sale price will be constrained at least initially by market forces at levels significantly below the average upper tier price level, due to the high transportation factor, it

<sup>1</sup> There were no such postings in the ANS "field" in September, 1975, since there were no ANS crude oil sales at that time.

is necessary to fix the specific upper tier ceiling price applicable to ANS production under § 212.74(b) so that there will be no doubt concerning the applicable lawful price ceiling in the event that market forces permit ANS first sale prices to rise to the ceiling level at some future date. FEA therefore requested comment on crude oil quality characteristics and field locations to determine the "imputed" highest posted price on September 30, 1975, based on the related price for the most similar grade of crude oil in the nearest field on September 30, 1975.

Based on the requirements of § 212.74(b) and the methodology outlined in the notice of proposed rulemaking, FEA has determined that the nearest field with crude oil quality characteristics most similar to ANS crude oil for which prices were posted on September 30, 1975, is the Cut Bank field in Glacier County, Montana. The reported gravity of such oil is 28.3° API and its sulfur content is 1.10%, compared to 27° API and .97% for Alaska North Slope oil. While there is a slight variation in quality between these two oils, they are sufficiently similar that they are virtually interchangeable in many refineries. (More detailed information concerning the selection of the Cut Bank field as the "nearest field most similar in kind and quality" under § 212.74(b) is set forth in the appendix to this notice.) The highest posted price on September 30, 1975, for transactions in the Cut Bank field for the crude oil concerned in September, 1975, appears to have been \$12.52 per barrel. (This is the price which ANS producers should use in complying with the certification requirements of 10 CFR 212.131(a)(2)(ii)(B).) Under Price Adjustment Schedule No. 7, in effect until August 31, 1977, \$1.70 per barrel is subtracted from the applicable highest posted price on September 30, 1975, to determine the upper tier ceiling price. Consequently, the current upper tier ceiling price applicable to ANS first sales (wellhead ceiling price) appears to be \$10.82 per barrel under FEA regulations.<sup>2</sup>

Some producers suggested that it would be more appropriate to apply an upper tier ceiling price to ANS first sales based on the national average upper tier ceiling price. In FEA's view, this approach would be a feasible alternative to § 212.74(b) if the average upper tier ceiling price were computed using only upper tier ceiling prices applicable to crude oils with sulfur content and other quality characteristics similar to those of ANS crude oil, or if adjustments were made in the average to reflect the variation in quality between ANS crude oil and the average of all domestic upper tier oil. FEA does not, however, have

<sup>2</sup> The foregoing posted price determination constitutes an administrative determination by FEA based on available data and information as indicated in the appendix to this notice. This determination may be appealed in accordance with 10 CFR Part 205, Subpart H, and for purposes of such appeal it will be deemed an order or interpretation issued by FEA.

sufficiently precise data to compute an accurate weighted average upper tier ceiling price for particular grades of crude oil or for determining the average quality of upper tier oil. Thus, it was impossible for FEA to adopt this suggestion without adopting a new information gathering system applicable to all domestic crude oil producers.

Moreover, based on the limited data that is available on average domestic crude oil weight and sulfur content (believed generally to be 35° API and .68% sulfur) an average upper tier price adjusted for quality differentials would yield a wellhead ceiling price range for ANS crude oil which roughly approximates the Cut Bank field base posted price. The appendix to this notice contains additional information concerning computation of the estimated average upper tier price adjusted to reflect quality differentials.

(2) *Entitlements: Treatment of ANS production as imported crude oil.* For the reasons set forth in detail in the notice of proposed rulemaking, FEA proposed that no entitlements obligation would apply to ANS production, i.e., that it be treated as imported or uncontrolled domestic crude oil for purposes of the entitlements program, which operates generally to equalize crude oil acquisition costs (including transportation) among refiners. FEA estimated that the amendment to extend such entitlements treatment to ANS production at the refinery level would still leave the ANS wellhead price roughly \$5.00 per barrel below the estimated average upper tier price then projected for October, 1977, and below even the national weighted average or composite price of domestic crude oil. This estimate was based on the assumption made at that time that the Trans-Alaska Pipeline tariffs would be about \$5.10 per barrel.

Operation of the initial pipeline tariffs filed by the pipeline owners (these ranged from \$6.04 to \$6.44 per barrel) was suspended by order of the Interstate Commerce Commission dated June 28, 1977, and the Commission's suspension order authorizing the filing of interim tariff rates not exceeding amounts ranging from \$4.68 to \$5.10 per barrel. Thus, FEA's original estimate of \$5.10 per barrel coincides with the upper end of the range of tariffs now officially authorized on an interim basis. The relatively small increase in average wellhead prices which may result in consequence of tariffs between \$4.68 and \$5.10 per barrel, compared with the \$5.10 per barrel used by FEA for purposes of analysis, does not alter the basis for any of the proposals put forth by FEA in this rulemaking proceeding. Even with an actual tariff rate about 27 cents per barrel below FEA's \$5.10 estimate (the weighted average interim tariff rate as calculated by the ICC is \$4.835 per barrel), the ANS wellhead price will still be below the statutory composite price and well below the average upper tier price nation-wide.

The reasons for the entitlements amendment adopted today may be summarized as follows:

(a) *Equity within overall statutory framework.* As noted, even with no entitlements obligation imposed with respect to the refining of ANS crude oil, wellhead prices for ANS crude oil will still be well below those for upper tier crude oil produced in the rest of the United States, even though ANS crude oil is in general more costly to find and produce. Because this relative difference in wellhead price levels results from the cost of transporting ANS crude oil to domestic refiners being higher than the cost of transporting other domestic crude oil, nothing can be done to eliminate this aspect of ANS crude oil pricing without a major restructuring of the regulatory program. But the wellhead price disparity would be even greater if an entitlements obligation were imposed with respect to the refining of ANS crude oil (i.e., if it were required to be treated as upper tier crude oil for purposes of the entitlements program). Thus, import tier entitlements treatment, while it leaves ANS producers at a wellhead price disadvantage compared to producers of upper tier crude oil in the rest of the U.S., is more in accord with the statutory mandate for equitable pricing of crude oil in various regions of the country than would be upper tier entitlements treatment.

(b) *Incentives for additional production.* FEA has not concluded that the entitlements treatment for ANS crude oil adopted herein is necessary to provide incentives to complete development of the main Prudhoe Bay Pool. Nor is it entirely clear that such treatment is necessary to provide an incentive to ANS producers to proceed with the development of the Lisburne and Kuparuk Pools, the other two proven reserves on the North Slope. But by providing ANS crude oil with wellhead prices that are as high as possible (consistent with the upper tier ceiling price, the remoteness of the area and the cost of the imported oil it is replacing), the maximum monetary and psychological incentives are provided for these and other producers to explore aggressively elsewhere in the Arctic and in other frontier regions.

FEA does not find it inconsistent with the policy and purpose of the entitlements program to amend that program to provide separate treatment at the refinery level for two categories of crude oil subject to the same upper tier ceiling price rule—i.e., crude oil produced on the Alaska North Slope and crude oil produced elsewhere in the United States. The entitlements program was not designed or intended to impact on wellhead prices. The purpose of the entitlements program is merely to equalize refiners' crude oil acquisition costs. It does so by issuance to refiners of entitlements with respect to all crude oil, without regard to the source of such crude oil, in proportion to the amount of price controlled crude oil being refined on a nation-wide basis. Crude oil acquisition costs are then equalized by requiring a refiner to have an entitlement for each barrel of price controlled crude oil it re-

finer (a full entitlement for each barrel of lower tier crude oil and a fractional entitlement for each barrel of upper tier crude oil), and a refiner that is required to purchase entitlements in order to refine all of its price controlled crude oil is, in effect, having the price benefits of its access to a greater than average share of price controlled crude oil allocated to another refiner that has access to less than the national average of price controlled crude oil.

The amendment adopted today simply recognizes that at the current level of world market prices, no entitlement obligation is appropriate with respect to the refining of ANS crude oil because a refiner that incurs the transportation cost for such crude oil plus a wellhead price that is subject to the upper tier ceiling price rule does not thereby have access to a price benefit, as compared with imported crude oil or with uncontrolled domestic crude oil.

Most comments received supported FEA's proposed amendment to the entitlements program. Comment which opposed this action—chiefly from California producers—primarily reflected concern that, by falling to differentiate in the entitlements treatment given to ANS oil landed on the West Coast and the Gulf Coast, the proposal would increase the likelihood that ANS producers will engage in price discounting in West Coast markets to avoid paying the extra costs of transshipment of crude oil to mid-continent markets. Some California producers indicated that such price competition may reduce producer margins to the extent that some California production would no longer be economically feasible.

FEA requested specific comment in its notice of proposed rulemaking on the effect of ANS production on California price and production levels. Comment received in this respect reflected considerable differences of opinion both as to what the effects of ANS production will be in California and what FEA policy should be with respect to pricing, entitlements, Elk Hills production levels, and various alternative proposals to dispose of the projected short-term West Coast crude oil surplus. These conflicting views reflect to a significant degree the variables and uncertainties surrounding ANS production which FEA acknowledged in its notice of inquiry in this matter (42 FR 13116, March 9, 1977) and which continue to be present in large measure. In view of the continuing uncertainty concerning the potential effects of ANS crude oil on California price and production levels (or whether there will be any significant effect at all), FEA believes the more appropriate course of action at this time is not to change the rules to address a problem that may not exist, but instead to monitor the situation closely and to quickly implement appropriate regulatory adjustments if necessary.

For the reasons set forth above and in the notice of proposed rulemaking, the proposed amendments to the entitlements program are adopted in the form



proposed, effective June 1, 1977, except as noted in Section C, below.

3. *Composite Price: Non-exclusion of ANS first sales from composite price calculations.* An ancillary issue in this rulemaking proceeding has been whether to seek congressional approval, pursuant to section 8(g) of the EPAA, of exclusion of ANS production from the statutory composite price computation. Such an action would require a prior finding by FEA that inclusion of ANS production under the composite price computation would lessen needed incentives for sustaining or enhancing crude oil production in the remainder of the U.S. (Inclusion of ANS production at price levels at or above the adjusted statutory composite price would require an offsetting reduction in prices applicable to other domestic production, in order to comply with statutory pricing limitations).

In its notice of proposed rulemaking, FEA took the following position on this issue:

FEA has decided not to take any action at this time on whether to exclude ANS wellhead prices from the composite price calculation, although it in general is of the view that certainty should be introduced into future crude oil pricing levels to the extent that this is possible. Under the energy policy proposed by the President on April 20, 1977, such certainty would be introduced by allowing ceiling prices for various categories of domestic crude oil to rise at specified rates notwithstanding the composite average. Until that program is developed and implemented, it is not likely, as pointed out in the April 15 report, that ANS wellhead prices will exceed the composite price and therefore introduce disruption in production incentives for other domestic production.

FEA continues to believe that it would be inappropriate to seek exclusion of ANS production from the composite price computation at the present juncture in view of projected ANS wellhead prices at levels below the composite price level (at least for the short-term). However, section 8(g) does not preclude submission of an ANS exclusion amendment for congressional review at a later date if necessary.

Accordingly, ANS "first sale" (i.e., wellhead) prices will be included in the composite price computation under existing regulations.

#### C. AMENDMENTS

The regulatory amendments appended to the notice of proposed rulemaking are adopted as proposed, with the following revisions and additions.

The definition of "Alaska North Slope crude oil" proposed for inclusion in § 211.62, has been revised to adopt the preferable mode of reference to that crude oil used in section 8(g) of the EPAA—viz., "crude oil transported through the trans-Alaska pipeline."

Since no change in the upper tier status of first sales of ANS crude oil under the pre-existing regulatory framework was proposed in the notice of proposed rulemaking; FEA stated that no amendments to the pricing regulations (Part 212) appeared to be necessary.

However, in the event that the actual composite price exceeds the adjusted statutory price at some time in the future (after current corrective actions are completed), FEA would need to have accurate data on the volume of ANS first sales, apart from the volume of other upper tier sales, in order to determine with the degree of accuracy necessary what corrective action should be taken to achieve compliance with the composite price restriction. This is because such corrective action (i.e., a temporary deferral of further increases in price ceilings or a rollback of price ceilings) would probably not impact upon ANS crude oil since ANS first sales are expected to be at price levels significantly below the applicable upper tier price ceiling under most assumptions. While corrective action might be specifically designed to apply to ANS first sale price levels as well as ceiling prices applicable to other production categories, the appropriateness of such action cannot be judged at this time and might depend on precise knowledge of ANS volume levels.

For this reason and in order to provide accurate production data for various other purposes relating to ANS price and allocation controls, FEA will require that purchasers separately report on Form FEA-P124-M-1 the volumes and prices of ANS crude oil purchased. FEA expects to issue in the near future a revised Form 124 which will include instructions to purchasers in this respect.

In view of the foregoing, it appears desirable to amend the crude oil category certification requirements imposed on producers under § 212.131 to assure that all purchasers will be supplied with source data for ANS production in addition to the price category data already required, in order to complete the Form FEA-P124-M-1. Accordingly, today's amendments include a revision of § 212.131 to require producers to certify separately with respect to the volume of upper tier crude oil exclusive of any crude oil transported through the trans-Alaska pipeline, and the volume, if any, of crude oil transported through the trans-Alaska pipeline.

(Emergency Petroleum Allocation Act of 1973, Pub. L. 93-159, as amended, Pub. L. 93-511, Pub. L. 94-99, Pub. L. 94-133, Pub. L. 94-163, and Pub. L. 94-385; Federal Energy Administration Act of 1974, Pub. L. 93-275, as amended, Pub. L. 94-385; Energy Policy and Conservation Act, Pub. L. 94-163, as amended, Pub. L. 94-385; E.O. 11790, 39 FR 23185.)

Issued in Washington, D.C., August 11, 1977.

ERIC J. FYGI,  
Acting General Counsel,  
Federal Energy Administration.

In consideration of the foregoing, Parts 211 and 212 of Chapter II of Title 10 of the Code of Federal Regulations are amended as set forth below, effective June 1, 1977.

1. Section 211.62 is amended by adding a new definition of "Alaska North Slope (ANS) crude oil" in appropriate alphabetical order to read as follows:

#### § 211.62 Definitions.

"Alaska North Slope (ANS) crude oil" means crude oil transported through the trans-Alaska pipeline. For purposes of this subpart, such crude oil shall not be considered as upper tier crude oil, as that term is hereinafter defined.

2. Section 211.66 is amended by revising paragraph (h) (5) to read as follows:

#### § 211.66 Reporting requirements.

(h) *Monthly report.* . . .

(5) The weighted average costs for that refiner (including transportation costs to the refinery) of old oil, upper tier crude oil, ANS crude oil, stripper well crude oil (as defined in Part 212 of this chapter), other domestic crude oils the first sale of which is exempt from the provisions of Part 212 of this chapter, and imported crude oil included in that refiner's crude oil receipts. For refiners required to file transfer pricing report forms under § 212.84 of this chapter, the weighted average cost of imported crude oil reported under this subparagraph shall be derived from the landed costs set forth in such reports.

3. Section 211.67 is amended by revising paragraphs (b) (2), (g) (2), (i) (4) and (l) to read as follows:

#### § 211.67 Allocation of domestic crude oil.

(b) *Required purchase of entitlements by refiners.* . . .

(2) To calculate the number of barrels of deemed old oil included in a refiner's adjusted crude oil receipts for purposes of the definition of national domestic crude oil supply ratio in § 211.62 of this subpart, paragraph (b) (1) of this section and paragraph (c) of this section, each barrel of old oil shall be equal to one barrel of deemed old oil and each of upper tier crude oil shall constitute that fraction of a barrel of deemed old oil the numerator of which is equal to the reported weighted average cost per barrel to refiners of ANS crude oil, imported crude oil, stripper well crude oil (as defined in Part 212 of this chapter) and other domestic crude oils the first sale of which is exempt from the provisions of Part 212 of this chapter for that month, less the sum of 21 cents and such weighted average cost per barrel to refiners of upper tier crude oil, and the denominator of which is the entitlement price for that month.

(g) *Exchanges of crude oil.* . . .

(2) Subject to the provisions of paragraph (g) (3) below, volumes of domestic crude oil deemed to be retained by a refiner under the provisions of paragraph (g) (1) above shall be (i) included in that refiner's crude oil receipts at the time the crude oil acquired pursuant to the related exchange or purchase and

sale transaction constitutes a crude oil receipt under § 211.62 of this subpart to that refiner, or (ii) certified as old oil, upper tier crude oil, ANS crude oil, stripper well crude oil (as defined in part 212 of this chapter), or any other domestic crude oil the first sale of which is exempt from the provisions of Part 212 of this chapter, as the case may be, under the provisions of § 212.131 of Part 212 when the crude oil acquired pursuant to the related exchange or purchase and sale transaction is sold to another firm.

(i) *Issuance and transfer of entitlements.*

(4) The price at which entitlements shall be sold and purchased shall be fixed by the FEA for each month and shall be the exact differential between the weighted average cost per barrel to refiners of old oil and such weighted average cost of imported crude oil, ANS crude oil, stripper well crude oil (as defined in Part 212 of this chapter) and other domestic crude oils the first sale of which is exempt from the provisions of Part 212 of this chapter, less 21 cents, such costs to be equivalent to the delivered costs to the refinery.

(1) *Certification by non-refiners.* Within twenty-eight (28) days following each month, commencing with the month of September 1976, each firm other than a refiner that has delivered crude oil to a refiner for processing for the account of such firm pursuant to a processing agreement in that month shall certify to that refiner the respective volumes of and that firm's costs for old oil, upper tier crude oil, ANS crude oil, stripper well crude oil (as defined in Part 212 of this chapter), other domestic crude oils the first sale of which is exempt from Part 212 of this chapter, and imported crude oil contained in the crude oil so delivered to that refiner.

4. Section 212.131 is amended by revising paragraphs (a) (1) (2), (a) (3) (i), and (b) (1) to read as follows:

§ 212.131 Certification of domestic crude oil sales.

(a) (1) *Stripper well properties.*

(2) *Non-stripper well properties.* (i) With respect to each sale of crude oil from a property which has not qualified as a stripper well property, the producer shall certify in writing to the purchaser the number of barrels, if any, of—

(A) Lower-tier ("old") crude oil;

(B) Upper-tier ("new") crude oil, excluding any crude oil transported through the trans-Alaska pipeline; and

(C) Crude oil transported through the trans-Alaska pipeline.

With respect to any property which has not qualified as a stripper well property, and from which crude oil is only sold to one purchaser, the requirements of this paragraph (a) (2) (i) may be complied with by a one-time certification to the purchaser of the property's monthly

base production control level determined pursuant to § 212.72, whether based upon production and sale of crude oil in 1972 or upon production and sale of old crude oil in 1975, and, if applicable, either the property's adjusted base production control level determined pursuant to § 212.76 or the information necessary to compute such adjusted base production control level pursuant to § 212.76.

(3) *Unitized properties.* (i) With respect to each sale of crude oil from a unitized property for which the producer has determined a unit base production control level, the producer shall certify in writing to the purchaser the number of barrels of—

(A) Lower-tier ("old") crude oil;

(B) Upper-tier ("new") crude oil, if any, including either "actual new crude oil" or "imputed new crude oil" determined pursuant to § 212.75(b), but excluding any crude oil transported through the trans-Alaska pipeline;

(C) Crude oil transported through the trans-Alaska pipeline, if any; and

(D) Imputed stripper well crude oil, if any, determined pursuant to § 212.75(b).

With respect to any unitized property for which the producer has determined a unit base production control level, and from which crude oil is only sold to one purchaser, the requirements of this paragraph (a) (3) (i) may be complied with by a one-time written certification to the purchaser of—

(1) The monthly unit base production control level, determined pursuant to § 212.75(b);

(2) The number of barrels of "imputed new crude oil," if any, determined pursuant to § 212.75(b), excluding any crude oil transported through the trans-Alaska pipeline;

(3) The number of barrels of crude oil transported the trans-Alaska pipeline, if any; and

(4) The number of barrels of imputed stripper well crude oil, if any, determined pursuant to § 212.75(b).

(b) (1) Each seller of domestic crude oil, other than a producer of domestic crude oil covered by paragraph (a) of this section, shall, with respect to each sale of domestic crude oil other than an allocation sale pursuant to § 211.65 of Part 211, or a sale in which no volumes of domestic crude oil are deemed to have been transferred pursuant to § 211.67(g) of Part 211, certify in writing to the purchaser the respective volumes of and respective per barrel prices for the—

(i) Lower-tier ("old") crude oil;

(ii) Upper tier ("new") crude oil, exclusive of any crude oil transported through the trans-Alaska pipeline;

(iii) Crude oil transported through the trans-Alaska pipeline;

(iv) Stripper well crude oil; and

(v) Other domestic crude oils the first sale of which is exempt from the provisions of this part—included in the volume of domestic crude oil so sold. The certification shall also contain a state-

ment that the price charged for the domestic crude oil is no greater than the maximum price permitted pursuant to this part.

APPENDIX

DETERMINATION OF SEPTEMBER 30, 1975, POSTED PRICE FOR ANS CRUDE OIL UNDER 10 CFR 212.74(b)

For most refiners, the most significant determinants of "kind and quality" in crude oil are the gravity and sulfur content. The gravity of crude oil produced from fields in the U.S. ranges from about 11° to about 53° API. Low density crude oils have high API ratings. High API crudes yield greater amounts of gasoline and hence are more valuable than low API crude oils. The sulfur content of domestic crude oil varies from about .02 to about 6.0 percent. Sulfur affects the value of crude oil because of its many undesirable characteristics. Among these are its corrosiveness and its detrimental impact on air quality if retained in refinery products. Removal of sulfur is an expensive process. Therefore, high-sulfur crude oil is less valuable than low-sulfur crude oil.

The gravity and sulfur content of ANS crude oil are 27 degrees API and 0.97 percent (by weight) respectively. For the purposes of this analysis, fields with an API rating of 27° plus or minus 5° (i.e., 22 to 32° API) and a sulfur content of 0.97 percent plus or minus 0.5 percent (i.e., .47 to 1.47 percent sulfur) were deemed to be generally similar to ANS crude oil. Qualifying fields were selected from the United States Bureau of Mines (BOM) Report of Investigation No. 6819, (1966) on 616 samples from 546 important fields in 20 states, the most recent comprehensive report available. Additionally, FEA reviewed information on some fields through comments submitted in response to the notice of proposed rulemaking, and through subsequent investigations based on those submissions.

This process yielded a total of fifty-five fields west of 96° west longitude (western half of the U.S.) with crude oil generally similar in quality to ANS crude oil. These fields are listed at the end of this appendix. By narrowing the "similarity" range to an API rating of 27° plus or minus 2.5° (i.e., 24.5 to 29.5° API) and a sulfur content of 0.97 percent plus or minus 0.25 percent (i.e., .72 to 1.22 percent sulfur), FEA derived a list of 17 fields which it considers most similar in kind and quality to ANS crude oil. Of these fields, three are in Montana, the geographically closest oil-producing state to the ANS production zone, and the rest in such more distant states as Wyoming, Utah, California, and Texas. The qualifying Montana field which is nearest geographically to the ANS discovery well (near the center of the Prudhoe Bay Pool), is the Two Medicine Cut Bank Sand Unit ("Cut Bank") in Glacier County, Montana, 1,935 miles away, with a gravity of 28.3° and a sulfur content of 1.10 percent based on BOM samplings.

Thus, in accordance with 10 CFR 212.74(b), and the methodology explained in the notice of proposed rulemaking, Cut Bank is the nearest field which produces crude oil most similar in kind and quality to ANS crude oil.

As far as FEA is aware, only three purchasers posted prices for crude oil in the Cut Bank area for September, 1975: Phillips Petroleum Co., Union Oil Co., and Permian Corp.

The Phillips price bulletin for September, 1975 lists only the Cut Bank and Pondera Fields in Montana. The posted price for crude oil of 27-27.9° API was \$12.36 per barrel for both of these fields.

RULES AND REGULATIONS

The Union price bulletin applies in Montana to "Cut Bank, Darling, Reagan and Adjacent Fields." The Union bulletin lists a price of \$12.39 per barrel for crude oil of 27.0-27.9° API for the Montana fields concerned.

The price bulletin issued by Permian for September, 1975, lists a price not to exceed \$12.78 per barrel "for 40.0° API gravity and above, with gravity adjustments," applicable to "Northwestern Montana." The Permian Corp. has advised FEA that "Northwestern Montana" as thus referenced comprises a geographical area which includes the Cut Bank field, among others, and that the applicable gravity adjustment has been 2¢ per degree API since early 1975. Under Ruling 1977-1 (42 FR 3628; January 19, 1977) the Permian bulletin therefore appears to constitute a posting of \$12.52 per barrel for 27° API crude oil in the Cut Bank and other fields in Northwestern Montana. According to information available to FEA, crude oil at various API degree levels other than 28.3° is sold from the Cut Bank field, including 27° API crude oil. FEA concludes that the Permian posting noted above appears to constitute the highest posted price on September 30, 1975, applicable to the Cut Bank field.

The Kevin-Sunburst field in Toole County, Montana is about 18 miles closer to the ANS discovery well than the Cut Bank field. Because its API rating in the table at the end of this appendix is 32°, it does not fall within the list of 17 fields found to be most similar in kind and quality to ANS crude oil. However, the fields in Northwestern Montana to which the Permian posting applies includes the Kevin-Sunburst field, which is only about 20 miles from the Cut Bank field. Because of this, and the fact that the sulfur differentials in Northwestern Montana are not great enough to affect the price in that area, the "highest posted price" as determined above would be the same with respect to 27° API crude oil no matter whether produced from Cut Bank or Kevin-Sunburst.

The northernmost active California field, Brentwood, is 2,459 miles from the ANS discovery well, over 500 miles farther away than Cut Bank. Furthermore, this field would not qualify as similar in quality, even within the wider range described above. One of the northernmost California fields of a quality generally similar to that of ANS is Ventura, with an API of 31.3° and sulfur content of .94 percent. Ventura, however is 2,721 miles from the North Slope, about 800 miles farther than Cut Bank.

In Wyoming, both Elk Basin and Dewey Dome are hundreds of miles farther away from the ANS than Cut Bank. They are also not as close in quality to the ANS crude as Cut Bank. Elk Basin has a gravity of 26.8 degrees API and a sulfur content of 1.50 percent, while Dewey Dome's gravity is 25.4° API and its sulfur content is 0.88 percent.

Several of those submitting comments suggested that FEA set aside the regulatory procedure in favor of adoption of the national average upper tier ceiling price as the ANS ceiling price. In its evaluation of this alternative FEA acknowledged that the value of crude oil to the refiner is largely dependent upon the gravity and sulfur content of the particular oil. Hence, it was determined that in order to set the upper tier price level

of ANS crude based on a national average, adjustment would have to be made for the particular gravity and sulfur content of that oil. A weighted national average upper tier ceiling price is available, but the data necessary for the computation of a weighted national average for gravity and sulfur content are not. The closest gravity and sulfur approximations available were unweighted figures computed by FEA on the basis of the Bureau of Mines publication (which applied to only twenty states) cited above. Based on those approximations, it can be concluded that the average upper tier quality exceeds the average quality of ANS crude oil.

The average upper tier price of all domestic controlled crude oil in February 1977 was \$11.39 per barrel. Therefore to obtain the average upper tier posted price on September 30, 1975 an additional \$1.25 should be added, \$11.39+\$1.25=\$12.64 to reflect corrections and roll-backs under the Emergency Petroleum Allocation Act, as amended. The estimated average gravity for domestic crude oil was determined to be 34.86 degrees API. ANS crude is 27 degrees API or 7.86 de-

grees API below the national average. The gravity penalty averages from 2 to 3 cents per degree API. Hence, the adjusted value for ANS crude oil would be from (\$12.64-0.03×7.86)=\$12.40 to (\$12.64-0.02×7.86)=\$12.48. In addition, a sulfur penalty is assessed on crude oils and reflected in the postings. The penalty has been determined to be from \$0.15 to \$0.35 for each percentage point sulfur content. The U.S. average sulfur content in crude oil was estimated to be 0.685 percent (data is lacking to make this estimate with sufficient precision for regulatory purposes). Therefore, the additional sulfur penalty would require ANS crude to be priced from [\$12.40-\$0.35 (0.97 percent-0.685 percent)]= \$12.30 to [\$12.48-\$0.15 (0.97 percent-0.685 percent)]= \$12.44.

In conclusion, the "nearest field most similar in kind and quality" approach yields a precise upper tier base posted price for ANS crude oil under § 212.74(b) of \$12.52 per barrel. The "national average" approach yields an estimated range of base posted prices for ANS crude oil from \$12.30 to \$12.44 per barrel.

Fields west of 96° west longitude producing crude oil generally similar in quality to ANS crude oil (22° to 32° API, 0.47 to 1.47 pct sulfur)

State	County	Field	°API	Percent sulfur
California	Los Angeles	Inglewood 1	29.4	1.08
		Domingu Z	29.9	.88
		Signal Hill 1	24.7	1.10
		Las Cienegas	29.8	.58
		Long Beach	22.6	1.29
		Montebello	26.3	.68
		San Simena 1	28.6	.87
		Whittier	22.1	.53
		Belmont 1	28.7	.90
		Brea Olinda	24.0	.75
	Orange	Coyote, east field	30.4	.35
		Seal Beach	31.7	.55
		Buena Vista	30.6	.59
		Edison 1	25.2	.90
		Elk Hills	22.8	.68
		Midway Sunset	22.6	.94
		San Emidio, nose field	29.7	.83
		Coalinga, east field 1	28.8	.88
		Oxnard	31.8	1.02
		Riucon	28.2	1.40
Kern	Ventura	31.3	.94	
	Gorham	31.0	.55	
	Luka-Carmi	28.8	.59	
	Rooks	26.3	.77	
	Graham	27.3	.67	
	Harper	23.5	.93	
	Pine	30.4	.54	
	Brorson 1	29.3	.87	
	Sumatra	29.5	.65	
	Kevin-Sunburst	32.0	1.20	
Montana	Two Medicine Cut Bank Sand Unit 1	28.3	1.10	
	Repeat	24.2	.87	
	Peniel (Mississippian)	31.5	.48	
	Little Beaver, East 1	29.3	1.06	
	Eunice Monument 1	28.5	.97	
	Rocky Kidge 1	27.1	1.16	
	Allen	29.3	.70	
	Carter	28.9	.92	
	Ilealdron 1	28.0	1.41	
	Sho-Vel-Tum, camp area	27.0	1.34	
New Mexico	Sho-Vel-Tum, Volma area	29.1	1.36	
	Wasson (66, Clear Fork, Permian)	31.9	1.40	
	Itan, East Howard field	31.5	1.47	
	Luling-Branyon 1	28.6	.86	
	Sadler, west field (Huff, Pennsylvanian)	30.0	.82	
	Walnut Bend	31.0	.86	
	World	28.2	.70	
	McFarland	31.1	1.38	
	Ashley Valley (Permian)	30.0	.89	
	Ashley Valley (Pennsylvania)	30.8	.83	
North Dakota	Upper Valley (Coconino) 1	27.0	.91	
	Anderson Junction 1	27.0	.75	
	Adon	30.6	1.20	
	Sussex unit A	31.5	1.35	
	Dewey Dome 1	25.4	.88	
	Oklahoma	Garfield	27.0	.91
		Washington	27.0	.75
		Campbell	30.6	1.20
		Johnson	31.5	1.35
		Weston	25.4	.88
Texas		Stephens	27.0	.91
		Sho-Vel-Tum, camp area	27.0	1.34
		Sho-Vel-Tum, Volma area	29.1	1.36
		Wasson (66, Clear Fork, Permian)	31.9	1.40
		Itan, East Howard field	31.5	1.47
	Luling-Branyon 1	28.6	.86	
	Sadler, west field (Huff, Pennsylvanian)	30.0	.82	
	Walnut Bend	31.0	.86	
	World	28.2	.70	
	McFarland	31.1	1.38	
Utah	Ashley Valley (Permian)	30.0	.89	
	Ashley Valley (Pennsylvania)	30.8	.83	
	Upper Valley (Coconino) 1	27.0	.91	
	Anderson Junction 1	27.0	.75	
	Adon	30.6	1.20	
	Sussex unit A	31.5	1.35	
	Dewey Dome 1	25.4	.88	
	Wyoming	Garfield	27.0	.91
		Washington	27.0	.75
		Campbell	30.6	1.20
Johnson		31.5	1.35	
Weston		25.4	.88	

1 Most similar fields, based on more restricted range of 24.5 to 29.5° API, and 0.72 to 1.22 pct sulfur.

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