NATIONAL PETROLEUM COUNCIL

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MEETING

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TUESDAY,

JUNE 20, 2000

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The National Petroleum Council met in the Crystal Ballroom in The St. Regis, Sixteenth and K Streets, N.W., Washington, D.C., at 9:00 a.m., Archie W. Dunham, Chair, presiding.

PRESENT:

ARCHIE W. DUNHAM, Chair
THE HONORABLE BILL RICHARDSON, Government Co-Chair
WILLIAM A. WISE, Vice Chair
LEE R. RAYMOND, Chair, Committee on Refining
RICHARD B. CHENEY, Chair, Committee on Critical Infrastructure Protection
THE HONORABLE ROBERT W. GEE, Assistant Secretary for Fossil Energy
MARSHAL W. NICHOLS, Executive Director

A-G-E-N-D-A

P-R-O-C-E-E-D-I-N-G-S

, (9:00 a.m.)

CHAIRMAN DUNHAM: At this time, I want to welcome each of you to the meeting of the Council.

I don't know if we have any members here from Los Angeles. If you were here, you probably are in the wrong location. You should be there celebrating the victory last night. But I do want to welcome all of you here. We had a great reception last night, and hope you all enjoyed it.

As is our custom, the check-in across the hall will serve as our official attendance record. So if there's no objection, I will dispense with calling of the roll.

And now I'd like to introduce the head table. On my far left is Bob Gee, Assistant Secretary for Fossil Energy. Next to Bob, Chair of the NPC Committee on Refining, Lee Raymond, Chairman and CEO of Exxon Mobil. On my far right is Marshal Nichols, Executive Director of the NPC. Next to Marshal is Dick Cheney, Chair of the NPC Committee on Critical Infrastructure Protection, also the Chairman and CEO

of Halliburton. And next to Dick, Bill Wise, President and CEO of El Paso Energy Corporation. And on my immediate right, in about a half hour, will be Bill Richardson, Secretary of Energy.

We're going to kind of change our agenda around a little bit this morning and ask Lee Raymond, who chairs the Committee on Refining, to make his presentation first, and then hopefully by the conclusion of the presentation on refining the Secretary will be here and we'll hear from him.

So without anything else, Mr. Raymond, I turn the podium over to you.

MR. RAYMOND: Thank you, Archie.

The first thing I want to do is not take much time. About a year and a half ago, Joe Foster prevailed on us to chair a study on refining as a follow on to what had been a very lengthy study in about 1993.

And after several conversations with the Secretary, I, in my words, fast tracked the study. Or another way to look at it was try and omit all the extraneous issues and get to the fundamentals. We

agreed to go ahead.

The person who has been driving the study ever since is Don Daigle from our refining group. And without any further ado, I'll turn it over to Don to present the results of the study.

Don?

MR. DAIGLE: Thank you, Lee, and good morning, everyone.

I have about 30 minutes of prepared comments that summarizes the study's overall conclusions, findings, and recommendations. A copy of the slides is in the package in front of you.

I would like to start with a brief review of the study development and scope. The Secretary of the Department of Energy requested this study as concerns were growing about the significant number and the magnitude of changes facing the industry, and the potential effects on domestic producibility and refinery viability.

The EPA's gasoline sulfur proposal was under discussion at the time that the study began, so reducing gasoline sulfur to 30 parts per million

average was the first of four potential changes examined in the study.

The other three changes examined were: reducing the sulfur of on-highway diesel to 30 parts per million, eliminating MTBE use, and reducing gasoline driveability index. Each of these was examined assuming 30 parts per million gasoline sulfur in the base.

The study also qualitatively examined reducing gasoline and diesel sulfur below 30 parts per million, and distributing low volume boutique fuels and an additional grade of on-highway diesel.

The study focused in the notional 2005 timeframe. While these potential specification changes might lead or lag that timeframe a little, we did focus on a notional timeframe to get a feel for the aggregate impact of the group of changes.

This next slide shows the organization of the study. Barry McNutt of the Energy Policy Office of DOE has served as Co-Chair of the Coordinating Subcommittee with me.

Barry, would you please stand up and be

recognized.

The subcommittee formed four task groups to carry out the analysis. The technology group is chaired by Chuck Lieder of Equilon and co-chaired by Dexter Sutterfield of the DOE.

Chuck and Dexter, would you please stand up.

The producibility group is chaired by Duane Gilliam of Marathon Ashland and co-chaired by Barry McNutt. Duane's assistant, Mike Leister, is here today.

So, Mike, would you please stand and be recognized.

The logistics group is chaired by Jerry Thompson of Citgo and co-chaired by Aileen Bohn of the Department of Energy's Energy Information Agency. Jerry's assistant, Rick Wynn, is here today.

Rick, would you please stand.

And, fourth, the import and other factors group is chaired by Bill Klesse of Ultramore Diamond Shamrock and co-chaired by Beth Campbell of the DOE. Bill's assistant, Lynn Westfall, is here today.

So, Beth and Lynn, would you please stand and be recognized.

And running the graphics for this presentation is my right-hand man, and the person who provided a great deal of the leadership for the study, Tom Eizember.

Please stand, Tom.

Now I'll move into how the study was conducted.

The Coordinating Subcommittee met seven times to direct and review the work of the task groups. The task groups have met numerous times in this work, both individually and jointly. We've had broad and constructive participation by the EPA and the DOE in these task groups, and I believe that all parties have benefitted from the interaction.

Much of the analysis was based on existing work, such as studies for the API, the NPRA, the Engine Manufacturers Association, the California Energy Commission, and the DOE. For MTBE and DI analyses, though, we commissioned some new modeling studies by MathPro, because the existing work didn't

fully meet our needs.

Early on, a target was set to provide a completed report by June of this year, because we wanted to provide relevant input into the regulatory debate.

Lastly, I should mention that California was not included in these analyses. California already has 30 parts per million sulfur gasoline, and the CARB Phase 3 rules will require 15 parts per million average. A California governor has already issued an executive order calling for MTBE elimination by year end 2002.

And California has unique diesel sulfur regulations and a refining industry that is configured with substantially more hydroprocessing than is typical for the rest of the U.S. So we felt that carving them out of the study, since they had a different set of circumstances, was an appropriate thing to do.

Now, turning to the broad study conclusions. The domestic refining and distribution industry will be significantly challenged to satisfy

growing demand under the more stringent product specifications that were examined.

We used the Energy Information Agency 1998 annual energy outlook forecast of 1.9 percent per year demand increase through 2005, which is consistent with recent history as you will see on an upcoming chart.

The scope and timing of investments necessary to meet these specification changes are unprecedented in this industry. These changes will require large investments at essentially all domestic refineries and changes at many product terminals in a short period of time.

These changes must be sequenced with minimum overlap to avoid product supply imbalances and the potential for price volatility as markets respond to these imbalances.

In addition to proper sequencing, the study concludes that at least four years is required to implement major refinery investments from the time that the requirements are finalized. Four years is the minimum time necessary to provide adequate time for planning, acquiring environmental permits,

financing, constructing, and starting up major new facilities.

An area of serious concern is the ability of regulatory agencies to issue necessary permits to construct and to operate new facilities in a timely manner. The agencies must streamline the permitting process, or significant implementation delays will result.

The study concludes that if these issues are properly addressed, the industry can be expected, in the aggregate, to invest to continue to meet domestic demand under the product specification changes studied. Let me emphasize here, though, that we have not tried to predict individual company actions, nor have we discussed our individual company plans. Rather, we have attempted to combine our understanding of the industry to estimate the likely aggregate industry response.

Even with the factors on the previous slide addressed, there will still be significant risk of localized supply disturbances as product specifications are tightened, especially during the

early stages of implementation. Three primary factors contribute to this.

First, individual companies will each make their own independent decisions on investment. These decisions may not result in investments at the same time, in a coordinated fashion, in the same supply region. And there could be localized supply imbalances as a result, with accompanying price volatility as the industry adjusts to the new requirements.

Second, some refineries will likely use technology that has not been fully demonstrated on a commercial basis, especially for reducing gasoline sulfur. These developing technologies offer the potential for lower operating costs, and thus there is an incentive for refiners to take some risk in implementing them. However, they may not initially perform as designed, and refinery producibility may be affected as a result.

And then, lastly, an increasing amount of refinery equipment will be more critical to maintaining day-to-day producibility than was the case

in the past. At lower sulfur levels, the loss of any treating or support equipment, is likely to restrict refinery producibility more so than previously.

The first two of these effects are likely to be short term and are expected to affect producibility for some period after implementation. The third effect, though, is a longer term one that will, to some extent, be with us permanently.

Now, before getting into the more specific study conclusions, let's take a look at some background to put the current industry situation into perspective.

The domestic petroleum industry has a long history of investing to provide a reliable supply of products to our customers. As shown on this next chart, the U.S. petroleum product demand has grown over three times in the past 50 years, as depicted by the top orange line.

The dip in demand in the late '70s corresponds to the period of the oil embargo. Net imports have remained essentially flat over the last 25 years, with a maximum of seven percent in the late

'80s and running in the two to six percent range since then. Clearly, the domestic refining industry has continued to supply most of the domestic demand.

This next chart shows the domestic refining and marketing investments over the last 14 years. The industry has invested substantial capital in the base for efficiency and for capacity, shown on the bottom in orange, while also making significant environmental investments for stationary source and fuel quality changes, shown on the top in green.

Most of the recent environmental investment was driven by the 1990 Clean Air Act Amendments. Over the 1990s, total investment has averaged about $5 billion per year.

The product specification changes examined in this study will require substantial additional investment and will increase operating costs. As I'll cover in more detail later, gasoline sulfur reduction is expected to require at least $8 billion of investment, on-highway diesel another $4 billion, and MTBE elimination at least $1-1/2 billion more, all potentially in a fairly short timeframe.

These substantial investment requirements may well accelerate the near-term pace of refinery shutdowns. This next chart shows the history of domestic refinery capacity and the number of operating refineries.

The declining green line shows the number of domestic refineries. The trend is a remarkably straight line downward, except for the upwards pike of small refinery additions that accompanied the 1973 Emergency Petroleum Allocation Act. Most of these refineries shut down following the lifting of price controls in 1981.

While the number of domestic refineries has generally been declining over this 50-year period, the total domestic refining capacity has been increasing, as shown by the orange line. Investment has allowed domestic refining to continue to supply most of the domestic demand. Even during the period of concentrated shutdowns in 1981 to '85, domestic capacity was still sufficient to satisfy most of the demand, as you'll recall from the previous chart.

Ultimately, the industry must recover its

costs in the marketplace in order to remain financially viable and able to provide customers with reliable supplies. This next chart shows how the industry has fared financially over the last two decades.

The two light green bars on the left show that the total petroleum industry return on equity has been two percentage points below the S&P 500 industry average. On the right, the two darker green bars show that the refining and marketing segment return on capital employed has been below the total petroleum industry return. Notwithstanding some of the current commentary about gasoline prices, it is pretty clear that refining and marketing has been a low return business over this period.

With this information as background, then, I want to now review the key study findings in more detail, starting with gasoline sulfur reduction.

Domestic gasoline sales outside of California are about 7.7 million barrels per day, and currently average about 340 parts per million sulfur. This sulfur level represents about a 98 percent

reduction from the average incoming crude sulfur level of about 15,000 parts per million.

We've estimated that reducing gasoline sulfur another 90 percent to an average of 30 parts per million will require domestic investment of at least $8 billion in 1998 dollars. I say "at least" because the investment may well be higher. The $8 billion assumes that industry will use the lowest investment cost option of cat gasoline treating.

However, some companies may well choose high investment cost routes, such as a combination of cat feed and cat gasoline treating. Additional investment would put even more strain on the implementation resources, which I will be discussing a little later.

Nearly every domestic refinery will have to invest in new gasoline desulfurization units and supporting facilities such as hydrogen production and sulfur processing. Unlike the situation with RFG and the first round of low sulfur diesel, refineries will not have a choice of avoiding investment while producing conventional products.

In addition to refinery investment, about 400 product terminals, about one-third of the total, will require additional facilities to manage increased transmix from handling lower sulfur gasoline. All gasoline terminals will incur higher operating costs for interface handling and for compliance assurance.

While the investment at terminals is relatively small compared to the refinery requirements, obtaining the large number of environmental permits necessary for the terminal modifications will be a significant challenge.

The per gallon cost of gasoline sulfur reduction will be about four and a half cents. This is about twice the EPA's estimate in the Tier 2 Rule. In May, the EPA sent a letter to the DOE disagreeing with the cost estimates developed in this study, and we distributed that letter to the full Council.

The task group chairs have carefully reviewed the EPA letter and have confirmed that all of the issues raised in the letter were thoroughly considered and debated during the conduct of the study. Accordingly, we firmly believe that the

methodology employed in the study represents a sound analytical approach, and that the resulting estimates and conclusions are well founded and realistic.

The EPA based its gasoline sulfur reduction cost estimate on broad use of developing technology that has not yet been commercially demonstrated. While we expect that industry will use new technologies for more efficient sulfur reduction, we expect the mix to be more toward demonstrated technologies with lower risk and higher cost.

We believe that the EPA has underestimated the cost of building these new desulfurization units. In developing our estimates, we've taken the vendor quotes for investment and operating performance and adjusted them based on the experience of experts from our refining and technology organizations and from major engineering and construction firms.

Furthermore, we believe that the EPA has underestimated the cost of providing ancillary and support facilities for these new desulfurization units.

Now, projections of future costs are

always uncertain. New technologies may well provide unexpected efficiencies. But, on the other hand, technology promises sometimes fail to materialize. Our cost estimates reflect the collective experience and the best judgment of experts in the refining and the construction industries.

Now, turning to implementation, the industry should be able to meet the Tier 2 Rule requirements for lower sulfur gasoline as they are set out for 2004 to 2006 implementation. It will be a challenge, however, and a very significant challenge.

During the peak workload period, these projects will consume about half of the design and engineering resources typically available to the oil and chemical processing industries. In PADD III, where about half of the total field work will occur, the demand for pipe welders, for example, will be about 60 percent of typical availability. In addition, we've identified reciprocating compressor manufacturing capability as a potential critical path item.

But these challenges should be manageable,

if we don't get another significant requirement imposed at the same time, , if the petrochemical industry doesn't go into another high investment cycle, and if we can get environmental permits on time. The $8 billion investment will displace some discretionary investment that would have otherwise provided efficiency and capacity growth.

Permits are an area of critical concern. We're going to need a large number of permits, and we're going to need them in a short period of time, if the industry is to meet the Tier 2 requirements. In addition to permits to construct desulfurization equipment, we'll need permits to expand capacity to meet expected demand growth and to offset any refinery shutdowns.

We also looked qualitatively at the issues associated with producing very low sulfur gasoline -- that is, some level below 30 parts per million. The cost will increase dramatically as sulfur levels are further reduced, with two principal drivers.

First, the high sulfur cat gasoline that needs to be treated to get to 30 parts per million

will need to be much more severely treated to go below 30. As treating severity increases, consumption of hydrogen and destruction of octane increase rapidly.

Second, only about 30 to 50 percent of the gasoline pool needs to be desulfurized to achieve 30 parts per million sulfur. To go lower, additional investment will be needed to treat additional gasoline streams. Each increment of investment reduction -- or each increment of sulfur reduction, rather, requires substantially more severity, and a substantially larger percentage of the gasoline pool must be treated.

Furthermore, there are serious concerns about the capability of the distribution system to maintain the integrity of very low sulfur products. A gasoline batch with, say, five parts per million sulfur would have 1/1000th of the sulfur allowed in a jet fuel or an off-road diesel batch.

Accordingly, even a small amount of contamination would be very problematic. Today, the highest ratio of product sulfur specifications in the distribution system is one to 10, and that's between

low sulfur and high sulfur diesel.

Next, let's take a look at diesel. On-highway diesel makes up about 65 percent of the total distillate sales of 3.4 million barrels per day. Off-highway diesel and home heating oil comprise the remainder. Any change in the specifications for one of these products must be examined in the context of the total market for the effects on the others.

Today's on-highway diesel averages about 350 parts per million sulfur. Using primarily a MathPro study performed last year for the Engine Manufacturers Association, we estimated the cost to produce 30 parts per million average sulfur on-highway diesel to be about $4 billion.

California diesel sulfur is lower than the rest of the country; and, again, California was not included in this study. But some investment will also be required in California to reduce diesel to 30 parts per million.

Most, but not necessarily all, refineries will have to invest to produce lower sulfur diesel. The off-road and the heating oil markets offer an

outlet for some higher sulfur distillate product.

No significant inyestment is expected to be necessary in the distribution system, provided that the changes for 30 parts per million gasoline are made before low sulfur diesel is required. The per gallon cost for low sulfur diesel is estimated to be about six cents.

Now, when we considered the $4 billion diesel investment and its implementation resource requirements, along with the lower sulfur gasoline in the base case, we concluded that 30 parts per million diesel sulfur should not be required before 2007.

In the Notice of Proposed Rulemaking issued in May, the EPA produced reducing diesel sulfur beginning April 1, 2006. EPA's timing would layer investment for diesel sulfur on top of gasoline sulfur reduction, and engineering and construction resources would be inadequate to accomplish both. Project delays and inadequate fuel supplies are a highly likely result.

In addition to engineering and construction resource constraints, overlapping diesel

and gasoline sulfur reduction would further challenge the ability of state and local agencies to issue the necessary environmental permits.

And I should point out that the study examined overlap issues and constraints for the $4 billion of investment necessary to produce diesel of 30 parts per million average sulfur. The EPA's proposal for 15 parts per million maximum sulfur diesel will require substantially more investment, therefore, significantly magnifying the overlap issues that I've just mentioned.

If there was an implementation conflict between gasoline and diesel desulfurization, the gasoline sulfur projects would likely take precedence. We concluded this since the Tier 2 Rule is already in place, and there will be no domestic outlets for higher sulfur gasoline, while there is some potential for at least some higher sulfur outlets for some portion of the overall distillate pool.

As with gasoline, we qualitatively examined the issues of lowering the sulfur level of diesel below 30 parts per million average. In the May

Notice of Proposed Rulemaking, the EPA proposed reducing diesel sulfur to 15 parts per million maximum or about seven to 10 parts per million average.

We expect a large step increase in cost as diesel sulfur is reduced below 30 parts per million. The step change results because as sulfur is lowered, modifications to existing diesel hydrotreaters become impractical, and new grassroots hydrotreating will be required.

As was mentioned earlier, we expect that on average industry can make 30 parts per million sulfur diesel from average feed with major modifications to existing hydrotreaters. Major modifications means at least doubling catalyst volume, adding recycle gas scrubbing, and increasing hydrogen purity and treat rate.

As the required sulfur level is lowered, at some point not much below 30 parts per million, existing units simply cannot be practically modified due to limitations with pressure drop, plot space for reactors, and other design elements. Therefore, grassroots higher pressure units will be required,

significantly increasing investment and operating cost.

The EPA has estimated the cost for a 15 parts per million diesel sulfur cap to be $4.1 billion investment and 4.4 cents per gallon. EPA based this low cost on vendor promises of improved catalyst for existing units. While catalysts are always improving, and will continue to improve in the future, we believe that the step change improvement necessary to enable the EPA's cost assumption is unrealistic.

Installation of higher pressure units will be constrained by the availability of reciprocating compressors and thick-wall pressure vessels. There are only a handful of suppliers in the world that can fabricate reactors with wall thicknesses of four inches or more that are necessary for pressures of 1,000 pounds or higher.

The study concludes that there is a significant risk, if diesel sulfur is capped at 15 parts per million maximum, that domestic supplies could initially be inadequate. This is because different sources of diesel vary widely in ease of

sulfur removal. Straight-run diesel stocks can generally be treated to very low sulfur levels in typical existing equipment with major modifications.

But there is not enough straight run diesel stock to supply the U.S. on-highway diesel demand. A significant amount of cracked stock must be used to supply current diesel demand, and cracked stocks generally cannot be desulfurized to low enough sulfur levels in existing hydrotreaters, even with significant modifications. Therefore, higher pressure hydrotreating will be required.

So the individual refiner's choices to make very low sulfur diesel will be to either modify existing equipment and treat a limited volume of straight run stock, or to invest considerably more in higher severity hydrotreating to produce a larger volume, including cracked stocks. If enough companies choose the lower cost option, domestic supplies will be inadequate.

And as with very low sulfur gasoline, there are serious concerns about the capability of the distribution system to handle very low sulfur diesel.

The EPA also requested comments on potential phase-in mechanisms for very low sulfur diesel. Any phase-in would require another fuel segregation in the distribution system. Since the economic life would be short for any investment to accommodate a phase-in segregation, there would be either a high cost per gallon to recover investment over a short period of time, or, more likely, a significant loss of distribution system capability as companies avoid investments that would have a low probability of earning a reasonable return.

The reduction in capability would affect the supply reliability of all of the distillate grades, not only the very low sulfur segregation, but also the regular low sulfur highway diesel, the off-road highway diesel, and heating oil.

Next, let's look at MTBE, a topic of much recent discussion.

About 300,000 barrels per day of MTBE and other ethers were used in 1998. MTBE provides high octane, low aromatics and olefins, good distillation properties, volume, and also the oxygen required by

law for RFG. Over 90 percent of the RFG is oxygenated with MTBE. About 95,000 barrels per day of ethanol were used in 1998, primarily in PADD II. About half of the ethanol was used to provide mandated oxygen content, and the other half was used for gasoline volume and octane.

We examined MTBE eliminating with and without an oxygen content mandate. Eliminating MTBE without an oxygen mandate would require about $1.4 billion of refinery investment to replace the lost volume and octane. The per gallon cost would be about 2.4 cents in PADDs I and III, where most of the MTBE is used. The cost would be lower in PADD II, which uses mostly ethanol today.

Eliminating MTBE while retaining the current oxygen mandate would require investment of about $1.5 billion in refineries and terminals, and an additional roughly $3 billion to double ethanol production to about 200,000 barrels per day. The terminal investment results from the need to modify about 225 terminals to receive and blend ethanol into gasoline.

The cost per gallon would be about 4.2 cents in PADDs I and III, and about a penny and a half in PADD II.

In addition, if current ethanol subsidies are maintained, the cost to the Highway Trust Fund for ethanol subsidies would increase about a billion dollars per year.

Now, the EPA recently proposed eliminating or substantially reducing MTBE use, replacing the oxygen mandate with a renewable fuel content standard, and maintaining current air quality gains. The EPA announcement did not include specifics about timing or implementation mechanisms.

If the renewable standard requires no more ethanol use than at present, and doesn't require a geographic shift in the ethanol use, then the cost could be close to the lower investment case study. But the EPA's announcement suggests that the renewable standard is envisioned to increase ethanol use, and, if so, the costs would be much higher.

If ethanol is required to replace MTBE on a barrel-for-barrel basis, for example, current

ethanol production would have to be quadrupled, requiring an investment of ,about $10 billion and costing an additional $2.5 billion in ethanol subsidies.

The EPA was also not specific about how maintaining current air quality gains would be required. We examined a sensitivity case that maintained industry's current toxics reduction, which exceeds the RFG standards. This sensitivity case added $400 million in investment to the investments I've already discussed.

Considering the detrimental effects on octane and volume loss from MTBE elimination and gasoline sulfur reduction, as well as the already stretched resources to implement gasoline sulfur reduction, elimination of MTBE and reduction of gasoline sulfur should not be required concurrently. Doing so will likely result in domestic producibility shortfalls.

The fourth case that was examined quantitatively was a reduction in gasoline driveability index, or DI. In late 1998, the ASTM

adopted a refinery gate cap of 1250 for DI. The auto industry would like further reduction in the DI cap to something like 1200, and also extension of the cap to the retail station.

There is currently a large testing and operational variability associated with DI. We estimate that about 100 degrees is required between the industry average DI and the refinery gate cap.

Our refinery modeling predicts a very high cost for a 50-degree reduction in DI -- about $11 billion of investment and a cost of seven cents per gallon. Given this high cost predicted by the modeling, we expect that companies would pursue alternatives to reducing testing -- alternatives of reducing testing and operational variability before undertaking the expensive investment options.

At this time, we cannot predict the likelihood or the timing of any potential improvements. If these improvements fail to materialize, a domestic producibility shortfall could result. The potential for improvement, therefore, should be investigated further before any change in DI

is required.

The cost for extending the DI cap from the refinery gate to retail is also substantially affected by testing variability and enforcement policies. The cost could be very high, depending on the potential testing improvements and the actual enforcement practices put in place.

Now, next I would like to wrap up with the study recommendations.

Regulations should be based on sound science and thorough cost effectiveness analysis. we did not examine the cost effectiveness of the changes that we studied, but cost effective regulations offer the most benefit to society for the resources consumed.

Regulations should include certainty in scope, timing, and requirements, to allow industry to make the most effective investment decisions. Where uncertainty remains, companies may be more hesitant to invest. An example of uncertainty is the expectation in the Tier 2 Rule that EPA may develop a future provision dealing with gasoline sulfur cap flexibility

during processing unit downtimes. Until this flexibility is defined, the industry is unable to plan effectively for the Tier 2 requirements.

Multiple major fuel specifications should be appropriately sequenced with minimum overlap, to avoid exceeding the capacity of implementation and permitting resources. The Tier 2 Rule gasoline sulfur requirements and other major product specification changes should not be mandated for implementation in the same timeframe.

Four years after the finalization of requirements is the minimum time necessary for major industry investment. This time is required for orderly planning, permitting, procurement, financing, construction, startup, and lining out new facilities.

The environmental permitting system process must be streamlined. The EPA proposal in the Tier 2 Rule preamble included defining presumptive best available control technology and lowest achievable emissions rate. Reasonable definitions should be formalized. Regulatory agencies should provide sufficient resources to promptly process

permit requests.

The EPA should be prepared to address environmental justice claims promptly as well. Environmental justice is an area of increasing activity and growing concern, since it can remove control of the permitting process from the regulatory agencies and put it in the court system.

The requirements for new source review should not be retroactively reinterpreted. Current actions by the EPA's Enforcement Division raise substantial concerns for industry's continued ability to acquire permits for capacity additions and for the modifications required to meet these various product specification changes.

The validity of meeting internal refinery offsets should be recognized by the Enforcement Division. And any review of past practices should be conducted without affecting the timing of new permits necessary for the facilities to comply with the new product specification requirements.

Next, requirements for reducing gasoline or diesel sulfur below 30 parts per million average

should not be imposed until more analysis can be completed to thoroughly understand the costs, the benefits, and the producibility implications.

Likewise for DI, the current specification should not be changed without more analysis to define benefits and potential variability improvements, to allow for a thorough evaluation of the cost effectiveness of such a change.

Next, states and localities that are considering localized fuel requirements need to recognize that these requirements will increase the cost and reduce the reliability of supplies to the affected and also the surrounding areas. Low volume boutique fuels reduce the efficiency and the flexibility of the existing distribution system.

And the last recommendation is that primary fuel quality enforcement should remain at the refinery gate or the point of import. We recognize and we support the need for downstream compliance assurance, but it should be implemented in such a manner that it does not impose unnecessary additional production cost.

Well, this concludes my summary of the report. I will now turn the floor back over to you, Lee.

MR. RAYMOND: Thank you, Don.

The committee wishes to thank all of the participants in the study for their commitment and their effort. The findings and the recommendations are clearly most timely, considering the recent Notice of Proposed Rulemaking for reducing diesel sulfur and the public hearings which began just yesterday.

The current reformulated gasoline market situation in the midwest adds special emphasis to the study's conclusions about increased likelihood of supply imbalances and price volatility as product specs are tightened.

I also wish to express our appreciation to the DOE and the EPA for their considerable support and participation in the study. We hope the EPA has used this participation to gain an insight and understanding into the refining industry.

Mr. Chairman, this completes the study presentation to the Council. I believe this report is

responsive to the Secretary's request, and it should be of significant value to the administration in formulating and carrying out policy.

Accordingly, I move that the National Petroleum Council adopt the proposed report, subject to final editing.

Archie?

CHAIRMAN DUNHAM: Well, thank you, Lee and Don, for that very thorough presentation. And we do have a motion to adopt the report subject to final editing. Is there a second?

PARTICIPANT: Second.

CHAIRMAN DUNHAM: Thank you very much.

Are there any questions? All in favor, please indicate by saying aye.

(Chorus of ayes.)

All opposed?

(No response.)

The motion carries.

Again, Lee, I want to thank you and Don and all the many volunteers and the various members of the government agencies for the tremendous support and

cooperation that we have received in developing I think a very detailed and analytical presentation of the facts.

We're especially honored this morning to have Secretary Richardson with us. I know he has worked hard to make time out of his very busy schedule to come and address our Council. And so please join me in a very warm welcome in appreciation to the Secretary.

(Applause.)

SECRETARY RICHARDSON: Thank you very much, Archie.

And to all of you, thank you for that outstanding report.

I think before I address you, I want to especially welcome the new members of our Council that are here -- Carl Burhanan, Carl Butler, George Campbell, William Custard, Byron Dunn, Dave Gallegos, Gene Gaulin, Gene Isenberg, Harold Korel, Caroline Quinn, Robert Santistevan, Thurman Velarde, David Work.

The fact that there are a few New Mexicans

here has nothing to do with me.

(Laughter.)

But I especially want to welcome them.

You know, in seeing Archie and Lee and Dick Cheney and Dr. Wise and Dr. Nichols and Don, who worked hard on this report, my first message is thank you for the work you do. It is very important. We read it avidly. People at Energy, not just Bob Gee's shop but across a complex of the Energy Information Agency -- and I see my new appointee, Mark Mazur, here -- value the work that you do with us. The many meetings are worth it. And I first want to thank you.

I also want to appreciate the Council you provide me on a whole range of national energy issues; particularly, the actions industry and government need to take so that we meet the energy needs of consumers. The Department and the Council have, through an exceptional symbiosis, worked to ensure that your business remains a vibrant component in our humming national economic machine.

For those of you that are first-time members, I welcome you aboard and thank you for your

future participation in Council studies and activities.

I want to make special mention of the generous contribution of Lee Raymond of Exxon Mobil. Lee and I talked a while back about how important the refining study would be. Lee took over as chair of the committee, and I want to thank him personally for doing that.

I spoke with you in a setting just like this in late 1998 when things were far, far different. We've traded one set of challenges for another. But one thing remains clear: we need better solutions. We need to find stability in our oil markets, because right now consumers are hurting.

I'm here to ask for your help in making sure America has the energy resources they need, not only in the long term but also right now.

As you all know, this year's challenge with high prices all started back in 1998 when we had very low oil and gas prices. Back then, a collision of circumstances, including the Asian economic meltdown, hobbled your businesses. I know that it

hurt industry. But while we don't meddle in markets, I think we did take some good action to help ease the pain.

Right after I spoke to you in late 1998, I appointed an internal oil emergency task force to assess the effects of low oil prices on domestic production. I asked the task force to go out into the oil patch to feel out the industry and gauge that perspective of its decisionmakers. I think the task force work helped.

But, since 1998, we've taken a number of positive actions. We also put 28 million barrels of federal royalty oil into the strategic petroleum reserve. The administration also offered federal royalty relief and committed many millions of dollars for a cooperative technology-driven program to improve oil recovery from endangered domestic reservoirs.

We supported tax incentives for producers. We launched a pilot program in states like California, Texas, and Colorado, to decrease production costs by using of new energy efficient technologies and motors. And we took aggressive steps to increase availability

and viability of natural gas as an oil alternative -- a role that is growing each and every year. I think these actions help, but that was then.

Harry Truman wrote a letter to Martha after some blistering emergency saying the following, "Nearly every crisis seems to be the worst one. But after it's over, it ain't so bad." This year, we've suffered from too little oil supply. You know the details -- higher prices, angry consumers.

During the winter, we had a serious heating oil shortfall, and there were a lot of cold folks in New England. And that was a pinch of the pump. It has become a growing, enduring pain. We had to take action.

Now, I won't go into detail on the quiet diplomacy we employed to ensure in March that foreign oil producers are aware of America's concerns on production. But let me be clear in saying that they did work.

I've continued to keep producing nations abreast of our situation. Tomorrow, the OPEC leaders will be meeting in Vienna, Austria, and I hope that

they will keep an open mind on production, and that they consider that this tight supply situation is simply not good enough for both producing and consuming nations.

And while production was increased in March, now we're facing a parallel set of challenges. We're very concerned about gasoline prices in the midwest, especially around Chicago and Milwaukee. I went to the White House last Wednesday to discuss this very issue. We had another meeting yesterday.

We're looking at continued tight supply, high demand, in the areas beginning to use a cleaner burning fuel. But questions remain. Our experts are talking to the EPA to see what we can do in the near term to bring some relief for consumers.

We took several other steps to meet some rather unexpected issues. On the 15th, I ordered a limited exchange of crude oil from the Strategic Petroleum Reserve's West Hackeberry site to two refineries after a commercial drydock collapse near Lake Charles, Louisiana.

I heard last night that the Army Corps of

Engineers worked overtime to dredge a new channel, so oil traffic is moving once again and the problem appears to be resolved.

We're able to come to reasoned decisions like these thanks to close working relationships with trusted advisors like the NPC, from industry, the financial community, consumer groups, academia, and so on.

The series of studies you performed for the Energy Department are illustrative of our cooperative work towards solutions. And while I've spoken at length about oil issues, those on natural gas are equally as important.

The Council's second natural gas report, Meeting the Challenges of the Nation's Growing Natural Gas Demand, has helped government and industry focus clearly on natural gas' role in our nation's achieving our future energy and environmental goals. It is helping form solutions, so that we can meet future projected natural gas demand, which up to 2015 will increase by 40 percent.

We agree with your assessment for the need

of an interagency working group on natural gas. We're hard at work to impress upon this on the National Economic Council at the White House. I want to especially thank Peter Bijur for leading the committee and for helping to make the case that we need to move forward as a united government team.

Your report is a blueprint for addressing access to resources and rights of way, continued technology advancements, booming capital investments, and the availability of skilled workers, among other ideas. And we are acting on your recommendations.

Just one example can be found in the work we've begun with the Bureau of Land Management and the Forest Service, where we look to continue the federal lands resource and land use analysis begun by the NPC.

I want to thank you for such a wide array of recommendations and for such a valuable report.

And your recently completed report, U.S. Petroleum Refining: Assuring the Adequacy and Affordability of Clean Fuels, arrives at a critical juncture in the continuing debate on ensuring adequate, affordable supplies of the clean

transportation fuels driving the American economy. Again, I thank Lee Raymond.

That report's most important insight for government decisionmakers is that regulations for reducing sulfur content in gasoline and diesel fuel, and for eliminating the use of MTBE, can have a significant impact on industry and the American consumer. You estimate that the necessary investments will be unprecedented in the petroleum industry, at least $8 billion alone for reducing sulfur in gasoline over the years 2001 through 2005, or about half of the domestic refining industry's recent capital spending.

Still, your report says that with a proper sequencing and streamlining of new regulatory requirements, this is doable, so let's do it.

Finally, your work on critical infrastructure protection is helping ensure that the nation's oil and gas infrastructure are well guarded against threats lurking around the globe. Your work will play a key role in helping implement the President's decision directives in 1999, where we look to further reduce the vulnerability of America's

critical infrastructure.

Dick Cheney from Halliburton and Archie Dunham from Connoco have my enduring thanks for co-chairing this committee. These actions and all the work that you do help me serve America's best interest.

Harry Truman had the nation's best interest in mind when he set out to establish the NPC back in 1946. I've been clear about my work towards serving America's best interest, and one of my two main focuses right now is ensuring that America has the energy resources that it requires.

I appreciate your continued counsel on how we can ensure that America has the affordable energy resources it needs in the near future. I also deeply appreciate your work helping to draw up the blueprints for America's long-term future. Your assistance has been invaluable and will continue to pay dividends for America for many years to come.

Again, I deeply appreciate your support. You all work hard. I wish you the very best. I hope you have a good meeting. Thank you very much.

(Applause.)

CHAIRMAN DUNHAM: Thank you, Mr. Secretary, for your positive and very informative remarks. We really do appreciate your support of our industry. And I personally appreciate the work of the Corps of Engineers to give us a new channel. It's working, like Connoco, to increase gasoline production. So thank you very much for your leadership.

Dick Cheney, the chair of the NPC Committee on Critical Infrastructure Protection, is now going to present a report of its committee's progress.

Dick?

MR. CHENEY: I don't know what it means when I get up and the press leaves.

(Laughter.)

I guess I should consider myself fortunate.

Well, I'm delighted to be here this morning to have the opportunity to give you the interim report on the work of the Committee on

Critical Infrastructure Protection. The full progress report, along with the attachments, is in your handout this morning.

I want to give you just a brief reminder of the charge that the Council accepted from the Secretary earlier when he asked us to undertake this study. Specifically, to review the potential vulnerabilities of the oil and gas industries to attack both physical and cyber, and to advise him on policies and practices that industry and government, separately and in partnership, should adopt to protect or recover from such attacks.

For some last fall, this was seen as a bit of an academic exercise, or worse perhaps even a government make-work project. The events of the past few months, highlighted by the denial of service attacks and the I Love You Virus I think have provided a sobering wakeup call to even the staunchest disbeliever.

The I Love You Virus caused operational outages and interruption of financial and administrative systems, the cost running perhaps into

the billions. The fact that this virus originated in the Philippines is significant from multiple perspectives.

First, the issue of global reach and access is clear.

Second, the barriers of entry are extremely low. Apparently, anyone with a PC, modem, and a phone line can cause significant disruption. Further, almost every college kid in America today has free high-speed access to the internet.

Third, this was an unfocused attack, without any significant attempt to cover up its origin. A more focused, determined attack would do more damage and be almost impossible to trace in today's environment. Such an attack on our facilities or on our commerce could be by an individual, by an organization, or by a nation state.

The threat is very real, and the consequences of an action can involve loss of life, billions of dollars in damages, and lost revenues, and the potential liabilities are virtually limitless.

All of our companies operate in an

increasingly more global electronic and interconnected economy. Thanks in large part to our incredibly successful efforts to increase productivity and reduce cost, we've become highly automated in our process controls and our electronic transactions.

Also, our business relationships and our information systems have had us interconnected with virtually every corner of the world.

As we become more dependent on electronic transactions, the ability to revert to manual processes, or even to previous electronic form, becomes impossible. It's this lack of alternative solutions that drives the need for preventive processes and risk mitigation strategies.

Exposures in the areas of trading and financial transactions are now critical and growing. The previous mind-set of protecting physical assets is no longer sufficient. While we're manning the physical ramparts, we have electronic tunnels running through all of our defenses.

There is no turning back on this evolving new world in which we do our business. The critical

infrastructure protection issues associated with the environment we're now in will,only get more complex, and the consequences even more critical.

We are, indeed, fortunate to have an excellent group of industry and government experts working to find measures to reduce our vulnerability to this kind of attack and to reduce the consequences of one when it does occur.

The organizational structure we're using is NPC standard issue until you get to the groups at the bottom of the chart. Much like an engineering and construction job, these teams form, dissolve, and reform as needed to address the issues as they arise. For example, the vulnerability assessment subgroup is currently working as three separate groups looking into threats, into vulnerabilities, and into mitigation strategies.

The handout lists the committee and subcommittee members. Chuck Dominy from Brown and Root, part of Halliburton, chairs this subcommittee.

Chuck, I'd ask you to stand for a minute, if you would.

Chuck, of course, has been the leader of the effort and done a great deal of work for us. He comes with a very strong background as a career Army officer, one time Director of the Army Staff, and is doing an outstanding job for us. He is the fellow to see if you want to get involved at the working level.

The handout also lists the specific scope of work areas the subcommittee has been asked to examine. Three of these areas warrant special mention -- the business case, information-sharing and analysis, and legal and liability issues.

By "business case," we mean the description and, where possible, the quantification of the potential cost of an attack to society in general, and to our companies in particular. With this type of information, we can more rationally determine the appropriateness of the various risk management options. Cyber risks have historically been hard to measure because the potential losses were tangible and highly uncertain.

Today, we are more clearly seeing the physical and financial loss potential associated with

a cyber event.

The second assignment to emerge as pivotal is information-sharing and analysis. And we are looking at three different types of information-sharing. First of all, sharing within the industry; secondly, sharing between industries; and, finally, sharing between industry and government.

The group is examining issues associated with sharing of threats, attacks, and various response measures. We see no need, at this time, to share information on specific assets and/or vulnerabilities, unless they're related to commonly used systems and processes.

One of the lessons learned from the recent e-mail viruses is the importance of timely information. In fact, this may be the single most critical factor in an organization preventive processes in its risk management strategies.

As you can well imagine, there are a myriad of details for the subcommittee to address on how to create and manage an effective information-sharing mechanism.

This brings me to the third area the subcommittee is giving special attention -- the legal and liability implications of vulnerabilities to cyber threats and similar issues associated with risk management measures such as information-sharing.

These legal issues are compounded when you consider structured information-sharing mechanisms for competing companies -- companies whose operations, relationships, and even ownership likely extend beyond U.S. borders.

These three issues, along with the others outlined in the scope section of the handout, certainly provide a challenge for the study groups.

The subcommittee and the working groups have progressed to the point where they have completed much of the basic research and have developed an outline for a report on their work. In the early chapters, the group plans to describe the new economy as it relates to the oil and gas industry and to discuss the threats that are known to exist.

Because the process controls information systems, and networks we use are the same or similar

to those used in other industries, we share vulnerabilities, and the report will describe these in general terms.

Beginning in Chapter 5, we plan to go on the offensive, if you will, and focus on ways to address the problem, to manage the risk either by reducing the likelihood of an event occurring or by reducing its potential consequences.

Finally, we will cover three topics that cut across threats, vulnerabilities, and risk management. These are the implementation details for information-sharing, legal and regulatory issues, and our R&D needs.

Even though a tremendous amount of work has been completed, a great deal remains to be done. The group has begun initial drafting of the chapters and expects to have a consolidated draft by early fall. Once the subcommittee is satisfied with its overall product, including recommendations to both government and industry, the committee will begin its review and comment.

Finally, and I expect at about year's end,

we should have a proposal to send out for the full Council's consideration.

In closing, I want to go back to a comment I made at the Council meeting last December when we first began this project. I talked about our military's increasing capabilities to literally shut down all the key system of an adversary.

Since then, we've survived the Y2K problem, which showed us the importance of understanding a problem and the value of preparation and hard work. Unfortunately, we've also seen since then our vulnerability to unknown or unexpected problems, thanks to a couple of relatively unsophisticated e-mail viruses.

This tells us that we have to work harder and smarter on protecting our critical infrastructure because it no longer requires a superpower to shut down key parts of our society.

The members of the subcommittee know this, and I strongly urge each of you to talk about these issues with your representative on the group and/or the person responsible for your information technology

security. We all need to be confident that we're taking all of the necessary steps to protect against the very real threats that we face in this new global electronic economy.

Thank you.

CHAIRMAN DUNHAM: Thank you, Dick, for that excellent preliminary report.

Are there any questions of Dick Cheney or his committee on the preliminary report?

If not, thank you, Dick, for the sobering advice that we take all of these threats seriously and that -- as corporate leaders, that we get involved personally in the preventive and mitigation strategies of each of our companies. And we look forward to hearing your final report later this year.

Our first administrative matter this morning is to hear from the Finance Committee, and I'd like to call on Ken Lay, the committee chair, to present his report.

MR. LAY: Thank you, Archie.

I think just -- Dick, I wasn't too concerned when the press left, but I was kind of

concerned when they started turning the lights out on your presentation.

(Laughter.)

The Finance Committee did meet this morning to review the financial status of the Council. Representatives of Ernst & Young, our independent outside auditors, were at the meeting to review with us their audit report for calendar year 1999. Based on this review, I'm pleased to report to you that Ernst & Young gave us a clean report.

Our accounting procedures and controls received high marks, and the financial condition of the Council is strong. But, indeed, we did conclude this morning the financial condition of the Council gets stronger when we don't do studies and when we don't meet.

(Laughter.)

But that might reduce our helpfulness a little bit.

We also reviewed calendar year 2000 expenditures to date and projections for the remainder of the year. As you will recall, at our last meeting,

the membership approved a calendar year 2000 budget in the amount of just a little bit over $2.9 million.

With the gas study now completed and published, and getting great reviews, as you all know -- and, of course, the refining study approved here this morning -- and the critical infrastructure protection study on schedule for the end of the year, we believe this budget is still adequate, so we didn't recommend any changes for the year 2000.

We then received -- reviewed calendar year 2000 member contributions to support this budget. Again, at the last meeting, you approved $2.4 million for the membership; and, again, we see no need to change that number. And then, finally, we discussed the formulas used to calculate individual member contributions.

Based on the Council's direction last December, we are in the process of collecting updated company data to use in the formulas. And let me, again, urge all of you, if you received the survey form and have not yet turned it back in -- and let me say I think the deadline technically was yesterday

maybe for that -- and most of you have turned it back in. But please fill that suryey out and get it back in as soon as possible because we want to do all of our recalculations and get this matter finalized.

And I think, with that, Mr. Chairman, that completes my report. And I move that it be adopted by the Council.

CHAIRMAN DUNHAM: Thank you, Ken.

Do I have a motion -- or a second?

PARTICIPANT: Second.

CHAIRMAN DUNHAM: Thank you very much.

Are there any questions of Ken or the Finance Committee?

All in favor, please indicate by saying aye.

(Chorus of ayes.)

Any opposed, nay.

(No response.)

The motion carries.

Thank you, Ken, and your committee, for the excellent work that you always do.

And as Ken said, please make sure that you

look at your mail, look at the survey form, and complete it and send it back to the NPC very quickly, so that we can finalize the contributions for the calendar year 2000.

Our final committee report this morning is from our Nominating Committee, and Ray Hunt chairs the Nominating Committee.

And we look forward to your report.

MR. HUNT: Thanks, Archie.

The Nominating Committee met yesterday to review the officers of the NPC, the members and the chair of the agenda and appointment committees, as well as our proposals to five at-large members of the NPC co-chairs coordinating committee.

I'd like to run through all of these and consider them as one motion if we could.

On behalf of the committee, we would propose that the NPC chair for the coming year be Archie Dunham, and be the vice chair be Bill Wise.

For the agenda committee, we recommend the following as members: Bob Allison, Peter Bijur, Dick Cheney, Bob Fri, Ray Hunt, John Miller, Lee Raymond,

Dick Terry, Chuck Watson, Dan Yergin, with Larry Nichols serving as chair.

For the appointment committee, we recommend the following as members: George Alcorn, Dave Biegler, Bob Catell, Luke Corbett, Hector Cuellar, Claiborne Deming, Jim Mulva, Dave O'Reilly, Bobby Parker, Lou Ward, with Bob Palmer serving as chair.

With respect to the five at-large members of the co-chairs coordinating committee, we would propose: Claiborne Deming, John Hess, Bobby Shackouls, Matt Simmons, and Hank True.

And, Mr. Chairman, with that, that concludes the report of our committee. I would propose that as a motion.

CHAIRMAN DUNHAM: Thank you, Ray.

We have a motion to adopt the report of the Nominating Committee. Do I have a second?

PARTICIPANT: I second it.

CHAIRMAN DUNHAM: Thank you. Otherwise, you have to volunteer to serve.

(Laughter.)

All in favor, indicate by saying aye.

(Chorus of ayes.),

Any opposed?

(No response.)

The motion carries.

Ladies and gentlemen, this brings us to the end of our formal agenda for the NPC meeting this morning. Does any Council member have any other matters to raise at this time? Does any non-member wish to be recognized?

Before we move to adjourn, let me announce that the press questions will be addressed after the adjournment, beginning in about five minutes. If any members of the press are still here, I'm sure Dick Cheney would like to answer any questions you might have.

(Laughter.)

And hopefully both Lee Raymond and Don will be here at the front to answer any questions the press may have about the refinement study, and I would ask that the members of the press come to the -- and occupy these front rows during the next several

minutes.

There being no further business, I would like to adjourn the meeting. Do I have a motion for adjournment?

PARTICIPANT: So moved.

CHAIRMAN DUNHAM: And a second?

PARTICIPANT: Second.

CHAIRMAN DUNHAM: All in favor, indicate by saying aye.

(Chorus of ayes.)

The meeting is adjourned. Thank you.

(Whereupon, at 10:10 a.m., the meeting was adjourned.)

CERTIFICATE

This is to certify that the foregoing transcript in the matter of: MEETING

Before: NATIONAL PETROLEUM COUNCIL

Date: JUNE 20, 2000

Place: WASHINGTON, D.C.

represents the full and complete proceedings of the aforementioned matter, as reported and reduced to typewriting.