HHA# 00488
Interviewee: De Vries
Interview Date: September 30, 2000

OFFSHORE ENERGY CENTER

ORAL HISTORY PROJECT

Interviewee: D. de VRIES, P.E.

Date: September 30, 2000

Place: Houston, Texas

Interviewer: Tyler Priest

Side A

TP: This is an interview with Mr. D. de Vries for the Offshore Energy Center Hall of Fame induction. You had an anecdote that you were going to begin with?

DD: Well, I remember when I came to the United States in 1952, my first assignment was at Eagle Lake, which is on the way to Victoria, Texas. So, I was doing regular roughnecking for the training program with Shell. I didn't have a car. I got here in 1952. It was pretty close after the war. I still had all kinds of restrictions to come over here. And so, I couldn't get more than $100 to go to the States, per the Dutch government. And one suitcase. So I came to the States with $100 and one suitcase!

So then, I ended up in Eagle Lake. The superintendent went on vacation. He was not a very popular man there. Everybody kind of didn't like him. But he kind of fell for me, for some reason or another. And so, he said, "Well, when I go on vacation, why don't you just take my company car and go see the sights?" "Oh boy!" I said, "That's fine. I like that." So I did. I drove around and everything ...

One evening I came in on the lease road. We lived in a bunk house there. At that time, they still had bunk houses on the lease. I drove in, in the dark, you know, on these roads . . . in my headlights, I saw a creature crossing the road. What in the world is that? Well, you know what animals do - they kind of freeze. And so, I kind of touched it with the car. I couldn't stop fast enough. I killed it but I didn't crush it. I didn't mutilate it at all. And so, I looked at it. It was, of course, an armadillo. And, of course, in Europe, they don't know what that is.

TP: You had no idea what it was!

DD: So, I thought, gee, this is a prehistoric animal. So I got very interested in it and decided to just pick it up and put it in my trunk to examine it. Well, I got back to the bunk house. So I worked on the lease, you know, and I forgot all about it. After one week or two, the superintendent came back. I gave him the car and the keys and I thanked him politely and everything else. Of course, after a while, that car started smelling bad. He looked in the trunk and there was this dead armadillo. Boy, I'll tell you - I was instantaneously the hero of the whole camp because I knew how to handle the superintendent that they didn't like. They thought I did

it on purpose.

TP: That launched your career at Shell in the United States!

DD: That was my introduction!

TP: Where was this? Eagle Lake? How long were you at Eagle Lake?

DD: Those assignments were not very long, about three or four months, or something like that, and then you go somewhere else. It is all over, you know. We worked at every oil field in Texas. And then after that, I worked at the refinery because I worked for Shell in Holland before I came over here, and I worked in research for both manufacturing and production.

TP: Your degree is in what kind of engineering?

DD: Mechanical engineering, with a side degree in chemical engineering. So, you know, I did research a little bit on both refinery and the production.

TP: Which refinery did you work at?

DD: The refinery right here . . .

TP: Deerpark?

DD: Yes, in Deerpark. And so, that was for six months and I went through all the distillation columns and everything, in the maintenance department to know how that was. So that was interesting.

During that time is when I met my wife. She worked for Shell but I didn't meet her that way. I met her on a blind date - living in a bunk house with another fellow, a single fellow, and he had a steady date in Houston. So, I said, "Well hey, why don't you fix me up with a date sometimes?" And he did, and we went to Houston on a Friday night or something like that. We took our dates to the Shrine Circus. We sat right behind a big pillar, and we didn't see anything of the circus but we sure got to know each other real fast!

TP: When did you end up in New Orleans? Was that the late 1950s at some point?

DD: After that . . . a whole lot of different things happen because I was only here on a visitor's visa. And so, we decided to get married. So I already made reservations to go back to Europe and everything. I had second thoughts about marrying an American girl and being sent

to Borneo or someplace that would not work too well for her. So, I wrote a big letter to the Hague, the head office, asking to stay here. And they did not answer, of course, no response whatsoever. So the day before our wedding, I got an answer, and it said, O.K., we'll let you stay there. We will promise you a job but, you know, at that time, they were not that good about employees. So they said, just take care of your own paperwork and change your own paperwork from a visa to immigration and all that stuff. But we will put you to work. So, there was a little problem, of course

TP: Didn't Shell have a nepotism rule about families . . .

DD: That's right. So my wife couldn't keep working for Shell. That was no problem, really. The problem was I had to leave the country. You can't change your paperwork without leaving the country and reentering it. So I had a choice. So I didn't want to go back to Europe. It was too expensive. So I had a choice between Mexico and Canada. I wrote a letter to New York and asked for an assignment in Calgary. And lo and behold, they agreed on that, too. That is how I solved the problem.

TP: They must have heard about the armadillo story and

thought, we'd better give this guy what he wants!

DD: (Laughter] Anyway, that is how I got to be going with Shell Oil Company. And then, the first assignment was at Hobbs, New Mexico, and there was the Permian Basin boom then. And so, that is where I have learned all the tricks of the trade, in drilling and production. I spent 5-6 years in west Texas, in Hobbs, New Mexico, and then Midland, in the Midland area office - both in drilling and production.

TP: This was in the mid 1950s?

DD: Yes. And so, that was a very good experience. I had 32 rigs running and was drilling engineer in Hobbs. That was really a boom time. And I had to complete every well. I had to run the casing on every well. That way, you learn how not to do things!

So then, in 1958, they transferred me to Shell Development Company, to be a member of this new team that was going to work on the floating subsea development. And so, that was a real terrific opportunity for me.

TP: This was Shell Development or was this the technical

services part of it?

DD: Well, it was Shell Development. In the office here on Holcombe. It is still there. So that is when I worked in the group with Bruce Collipp and John Haeber and everybody.

TP: Was this the first time you met those guys?

DD: Yes, that's right.

TP: And what were you thinking when you were called in, into this elite group that was going to be working on deep water technology?

DD: Well, the group was just being formed. And so, we shared offices when I was there, from 1958 to 1961.

TP: But it was a special assignment. They must have seen outstanding qualities in the people that they brought in to take it on.

DD: Well, I guess so. I shared an office with Bruce. Bruce and I did all the converting of the Bluewater 1. He did all the architecture, the naval architecture, the sea worthiness, the mooring system, and all that. And I did all the equipment handling systems. I invented the use of a spider deck designed under the derrick, you know,

the entire new spider deck assembly with spider beams and overhead cranes and everything, and how to handle the BOP stacks, the risers. And then, you know, all the subsea stuff. I handled all the controls for the BOP stack. It was all new. There was nothing there.

TP: What did you have to go on? What did you use as an inspiration?

DD: Well, a little imagination, really. I mean, that was all there was to it. You'd say, well, we need to do this and this and this - how are we going to do it? So, you know, I drew up several options of things, you know, and we picked one and that was it.

TP: Who was in charge of this group? Who were you reporting to?

DD: I was afraid you would ask me that.

TP: Was it Ned Clark because he was the vice-president of production.

DD: Ned Clark was the vice-president.

TP: Did it go to him? Did you report to someone higher?

DD: No, we had a manager. Every year, they changed, and I can't remember who the first one was. Art Williams, George Kukucheck.

TP: Did you have any problem selling your concepts to other people in Shell, in Shell Development or Shell E&P? Was it hard to get people to believe that you could actually do what you told them you were going to do?

DD: Well, I'll tell you what - it was a lot better time to work in than it is now, because people were still practical people. The vice-presidents of Shell were engineers. Now, they are MBAs and accountants. So they could make up their mind if they liked something - if they liked the looks of it, and they had experience enough to see if it would work or not, in principle. So that was just no problem. Like I say, it was a terrific opportunity because money was no problem. It was just the project that was counted. Really, we spent millions of dollars, but it was worth it. We didn't just develop existing concepts. We did all this stuff from scratch.

TP: What was the most difficult part of the project? Can you remember? What was the most challenging?

DD: Well, the most tricky one was the riser, you know, because that was something that was difficult in the way of keeping control over the well. I mean, all the structural stuff you can always fix it. No big disasters. But the riser was pretty tricky. There was nothing there either. I designed the first telescoping joint and the buoyancy chamber. And then, we didn't have any motion compensation. We didn't have anything like that. So I was thinking about Otis Elevators and so on. I designed an elevator system, you know, with counterweights. It had two buckets. One on each side, full of water. Riding up and down in an elevator shaft. And it worked, really. We figured out the maximum amount of weight we were going to use. Of course, Shell, as it is, they always try a new system the first time not in an easy place. Preferably, on a pretty tough place. So we ran into a problem on one well of abnormal pressures. So we had to increase the mud weight to 16 pounds per gallon or so that we didn't figure on. Boy, I'll tell you - these counterweights, they were, of course, too light.

TP: Is this when you were testing the "Rudac" system or was this on the Bluewater?

DD: On the Bluewater. So we put dry weight cement, bags of cement, on top of these cans for counterweight. That is

how we resolved that. And, of course, the design of the cables was not that good for that extra load. I was figuring on what happens if they break, see, to the elevator shafts, thinking "they better not go to the bottom of the ocean." I left them wide open on the bottom. Just a shaft. And one of those cables broke. There went this bucket. Miraculously, it landed right on top of the main hull crossmember of the Bluewater I. It went down so nicely in the water, you know, it slowed down and just sat down on the top of that member. So we could just go down and we could see it, you know, and pick it back up. Lucky.

TP: So you spent a lot of time out living on Bluewater I.

DD: That was a real good tour. At that time, they knew how to do this. They design something now, you know . . . there are exceptions, of course, but in general, the people who design something, they just hand it over and forget it. And they never feel responsible for if it goes wrong. They sometimes don't hear about it and it is fixed in the field. But at that time, if you designed something, you'd better go out there and make it work, and that is very, very good experience. So that is what happened.

Later on when we had the thing working pretty well, Ron Geer and I took turns. We worked a whole year on the Bluewater I and took turns 7 days off, 7 days on. We each had a crew and we just ran the outfit, made everything work. That was a tough time, too, and interesting time. But sometimes, you know, when you have something new, you can't afford to go to sleep. You have to stay with it for 72 hours or so. I learned how to sleep standing up like a horse!

TP: Well, I know when the Bluewater I first went out and was drilling, the whole industry was wondering what in the heck Shell was doing, because it was top secret. I heard that people were flying out in helicopters and boats trying to get a glimpse of what you guys were actually doing.

DO: They tried to land . . . [laughter]. Yes, that was another thing. We had to call in the morning report, you know, in code, because of them. It was a tight hole. Sometimes, we were so tired in the morning - you hadn't slept all night, and I had to read this morning report in code. You know, it was "Mary" this and "Thomas" that and so on and so on. And I'd fall asleep right in the middle of it! And they'd call me and say, "Hey D, wake up!" It was a terrific opportunity and it was a lot of fun, too.

TP: Now, were you part of the special Shell course for Industry?

DO: Yes.

TP: Can you talk about that? Do you have any memories about that?

DO: Oh, that was also fantastic. We called it the million dollar school because, you know, they had to pay one million dollars tuition. For one million dollars, you don't send somebody down the line. You send somebody that you think needs it. Someone who is intelligent enough to catch up with it. And so, you had a terrific audience and it was very nice because they had very intelligent questions. So it was an education for everybody. It was also a very good idea of Shell to do that. Besides that, Shell got part of their money back. A small part.

TP: But you also realized that you couldn't get the deep water leases that you needed unless the industry was confident enough to bid on those. And you were so far ahead of the whole industry in terms of the technology.

DO: Yes, like I say, we had some stuff . . . I have a patent

on a tool joint locator, for instance, that locates a tool joint, wherever it is, so you don't close the BOP rams on the tool joint because that would ruin the rams. That has never been used. And it worked, you know! They'd say; "oh, it's another gadget. We don't need that."

TP: What are some of your other patents? I know you list 14 patents on the semi-submersible and the subsea completion. Is there anything worth mentioning?

DO: The whole spider deck arrangement, that was a big patent. Of course, it was assigned to Shell. I got a nice letter! But Shell made royalty on every semi-submersible that they built since then. There are a bunch of them, really. I have also patents on the control system, part of this riser arrangement. Electrical subsea connectors for the control systems later on. There is an assortment, a little bit of everything.

TP: Do you feel a little out of sorts having developed all of this innovative technology to help Shell get ahead of the competition and have to turn around and share it with everybody?

DO: No, we were proud of it. Really. Especially since all

of these people that were there, the audience, were very nice people, too. They were very interested. It didn't make any difference if it was Mobil or Exxon or Gulf or whoever. It was a real good atmosphere.

TP: Were there people who had vested interest in, say, drill ship technology, that were still kind of skeptical of the semi-submersible concept at the school?

DO: No, I think that was a little too early, you know, for drill ships. Well, of course, the CUSS I, that was more or less a converted barge, a swamp barge. But the real drill ships, they came quite a bit later.

TP: Well, we can move on. Where did you go from the Bluewater I with Shell?

DO: Well, after that, we worked on well completion. We tested that on different rigs at the time. That took another year or so to do that. And so, then we did the first live underwater completion and that was very interesting, too. I was in charge of the flow line laying. That was the first time around that we did flow line reeling, which they do now as a regular routine. But at that time, we had the idea that we could do it a lot faster if you could put it on a reel onshore and then

just lay it. And so, that was the first time. It was a very small flow line. It was 2-7j8ths or so. But anyway, we had a tough time because it was a "TFL" completion. That stands for Through the Flow Line. And so, we couldn't have any burrs on the inside of that flow line. So for every weld, we had to make sure that it was completely clean on the inside. We had to make special tools to back each weld up on the inside. So it took a long time to weld that flow line together onshore and to reel it up. But then, we laid it in about four hours or so. Nobody believed it. We built our own "A-frame." Vertical reel. We had constant tension on it with hydraulic drive on the reel and stuff like that. It was a real challenge, too.

TP: Did you stay working on subsea completion technology after you worked on this system?

DD: Well, see, when we did this work offshore, we were already transferred to New Orleans. We were Shell Development only until this thing was on paper. Bruce and I went to Ingalls Shipyard in Mississippi and converted the Bluewater I. And then, before we went offshore, we were transferred to New Orleans, to the New Orleans area. So, that was in 1960-61.

TP: You stayed in New Orleans for how long?

DD: I stayed in New Orleans for about 10 years. To 1969.

TP: And did you continue to work mainly on subsea completion technology during this time?

DD: Well, yes and no. I was in charge of the subsea part of it, the division there, the offshore division. But then, we had a little depression, like it used to be. Not like the big one we have now, but temporary a bit of a slow down. So I got different assignments, all kinds of special assignments the rest of the year. For instance, I had an assignment to determine how to develop Shell's East Coast prospects.

TP: East coast drilling?

DD: Yes. I worked with the exploration department and wrote a big report . . . established the base on shore, and all the different development options that you had - leases, services like helicopters and service boats and all things. I was proud of it. So finally, I finished the report. It was a sizeable work. By that time, the activity picked up again in the Gulf, so this report was evidently put in the drawer!

I started thinking . . . what do I do here. So in 1968, I figured out I was pretty close to the point of no return with all the benefits. I said, if I don't do it now, I have to stay the rest of my career - the brown-bagging and carpooling. So I said, none of that. So I quit in 1968 and I went on my own in New Orleans.

TP: And then, you went on your own? You formed your own company?

DD: Yes. It was Project Engineering, Inc. And so then I had made friends with Paul Koomey because I was a drilling engineer in West Texas and Hobbs, New Mexico, and I ran the first little old closing unit for him. He asked Shell to test it. It was Stewart & Stevenson he was working for. It was his idea to have a closing unit for the BOPs. We always had to crank them, with this big hand wheel and everything. So he was thinking about these grease pumps that they have in Shell stations. They are air-driven pumps. Stewart & Stevenson sold those to service stations. He was the salesman on that. And his idea was to use these pumps to pump up hydraulic pressure and use that to close the preventers. So he came out with this little unit, a little putt-putt unit . . . it was funny, too . . . he came out to a fairly big well and everything. We just finished running casing,

intermediate casing . . and so, he came out and we hooked up the pump for him. Now, we are going to test the thing to see if it works or not. We didn't tell him though that we put it on when we were just ready to fill up the casing. That takes forever! I mean, that takes a lot of barrels. This little pump, you know, a few gallons a minute! So that little pump was sitting there zero on the gauge, you know. No pressure whatsoever! And Paul Koomey had these big eyes. He would walk around, around and around the rig and look at that gauge again and say, "Let me make one more round." And we finally told him, "Don't worry about it." So we put a mud pump on the casing, filled her up and then we tested his little pump. And it worked like a charm. So Paul and I, we never forget that.

So then, I did work for Paul with my own company . . . at the time, in 1958 and 1959, that was a time when really the offshore floating drilling started booming. There was a vital need for better control systems for BOPs and everything. And Paul didn't have any engineers, to speak of. So I did consulting work for him in developing this new control system.

TP: Are you talking about 1968-69 or 1958-59?

DD: No, 1968, 1969. And so then, he had some kind of Subsea Control Pool that was not very practical, so we changed that. I have a patent on this new retrievable pool. Gilmore and I have a patent together on this. And it has what we call radial seals all around. And so, it was kind of a cone-shaped body that goes into a funnel and it seals up when you lock it down. The seals are for multiple connections to all the BOP control functions. And so, that was a big improvement. We sold these hydraulic control systems. We had 80% of the market.

TP: This was when you were with Project Engineering or you are still Shell?

DD: With Project Engineering. During that development work, I was still in New Orleans. I did all my work here in Houston for Paul Koomey. So, we started thinking it was not a very good idea. So Stewart & Stevenson bought my little company and made an engineering department out of it. So I was director of engineering for the oil field division from there on, until 1978. I am a little screwed up on the times. I quit Shell in 1968, right?

TP: Yes, I got that straight.

DD: So in 1969 is when all this happened. In 1970, we moved

to Houston. In all the 1970s, practically, I lived in Houston working for Stewart & Stevenson. In 1978, N.L. Industries bought the oil field division from Stewart & Stevenson. That was a real big mistake of Stewart & Stevenson to sell that because it was the goose that laid the golden egg and Allied Industries, at that time, didn't have any idea about oil. They didn't even know what it smells like. So, you know, that didn't work out too well, but they made me a three year contract because we still had some work in the North Sea for B.P. with the Buchan Field and other big developments. And so, that needed to be finished, so I took care of that for three years until 1981, when the contract ran out. That is when I started this company - Oilfield Systems, Inc.

TP: You mentioned that in the 1970s, presumably, this was when you were with Stewart & Stevenson, you did work in the Soviet Union. Do you want to talk a little bit about that?

DD: Oh, yes. Well, that was also a real interesting time because I am internationally oriented, of course, and I am interested in people in other countries. I am interested in their different customs and how they live and how they think. At that time, of course, everything was still Communistic in the Soviet Union. But we tried

to get some business over there. And they needed it. They wanted to go offshore in the Caspian Sea. So what we did is we made a deal with National Supply and N.L. Schaffer. The three of us covered the field more or less on the equipment for a drilling rig, for an offshore rig. And so, we made a big license agreement with the Russians and that worked out, that worked out real well. It took a long time to get them to sign the bottom line, but then once they did, you know, they paid us like clockwork.

We delivered equipment. They could never make the stuff themselves on a license agreement because, you know, if you get all the drawings, you still can't make it. You have to get some experience with it. So it was very good for us because we got the license money, we also got continuous orders for new equipment at the same time. It was very good. So that was a very good time. I made many, many trips over there.

TP: To the Caspian?

DD: To Baku. And as a result of that, we formed the Houston-Baku sister city organization. So I was chairman of that for about 12 years or so, for a long time. I went over there one time as the deputy mayor of Houston because we had periodic exchange of officials. One time, our mayor

was invited to come over there for an official visit and it was Mayor McConn. It was just before election time. So he didn't want to go. He didn't want to leave because he didn't feel good about the election in the first place. So he said, "O.K., D. Here is the key to the city," and all this stuff. "Now, you just go over there. You are the mayor of Houston." That was a real opportunity, too.

My wife and I got a committee together - representatives of the major city activities - the Port of Houston, the oil industry and all the major city parks.

TP: Do you remember what year this was?

DD: When did the soviets go into Afghanistan? 1979 or so?

TP: Yes, 1979.

DD: We must have gone in 1978. So we made a very nice official trip out there. I had been there a lot of times and had to fight all the customs and all security. They make everything hard on people there. But this time, we had the red carpet rolled out literally, and we stayed in the best hotels. We drove around in limousines through all the red lights. We really lived it up! There was a

spot on TV in Baku. They interviewed me. They asked some nasty questions about detente and things. I had to be diplomatic about that. That was good experience.

TP: How extensively were they developing the caspian? I mean, nothing compared to what is happening today, of course . . .

DD: No, but that was a real good project, too. The Russians are very good engineers. They are technically very good. So this first semi-submersible for the Caspian, they built it in Finland in pieces. You can do that with a semi. You have a hull and you have a deck, and you can cut the hull in pieces and put it together. They floated it all the way down through a river up north from Leningrad that makes a connection through a canal to the Volga River. And all the way down the Volga River to Astrachan. Astrachan is like New Orleans and the Mississippi. It is the same idea.

Only about 50 years behind in development, but it is a very interesting little port with a big shipyard, and that is where we put this ship together, this semi. The Casmerneff number one, I think it was called. It was the first semi for the Caspian. All our equipment was on there. I went out there one time to help them put it

together. It was very interesting work.

TP: So how long did your work in the Soviet Union last? Did you really . . . I mean, after the invasion of Afghanistan and . . .

DD: The reason why I asked about Afghanistan is that we quit after Afghanistan. I think it had something to do with Carter. He kind of prohibited doing stuff with them for a while… …

TP: The boycott of the Olympic games.

DD: Yes, so, you know, that was what happened.

TP: You also mentioned deep water field development economics in your resume. Is there anything you want to cover on that subject?

DD: Well, that is what I do now. In other words, right now, I am doing contract work for Mentor who are part of McDermott. McDermott had the idea that they wanted to get into the subsea business also, rather than just laying pipelines and installing platforms. So that is what Mentor does. I have been there now about three years. That is when they started Mentor in the subsea

business and I helped them with that. Mentor did two jobs, two very good jobs, for British Borneo here in the Gulf, and are still doing that for others. See, all the little independents, like British Borneo - they were not familiar with Gulf Coast operations, weren't familiar with the vendors here, with the Gulf of Mexico environment and everything. so we actually did the work for them. We designed how to develop their field - two fields - the Morpeth and the Allegheny. And then did the whole job for them. We did the procurement. We bought all the equipment. We looked after the quality control. And we actually delivered the equipment, working. Installed it for them in the field. Those are very interesting jobs.

TP: Can you comment at all about the development of the subsea technology versus platform technology? There was always kind of a running competition, wasn't there? I don't think a lot of people realize subsea was developed way back in the late 1950s, early 1960s, but it didn't really come into its own until the last 10 or 20 years.

DD: Well, it still exists, you know. It still exists. Now, it is not platforms anymore but it is spars. They have the trees on top. And there are still a lot of people that still don't like subsea trees. They like something

that they can put their hands on.

TP: It took many years to work out a lot of the kinks with subsea, too, because it is a very sensitive . . . working in a very sensitive environment and incredible pressures.

DD: That is right, but it takes a lot of years also to develop a spar, you know. Now, it is just a matter of economy. That is what I do now. We have now . . . for the smaller, like Marathon and all the small operators, we help them. They may have new farm-outs where major oil companies have a new minor discovery. We just help them to decide how to develop the new field, either with a spar or subsea, depending on the water depth, the distances and offsets and everything else. You work it out. The cost estimating is what I am doing now. I wrote a bid - cost manual for Mentor, that will be a quick estimate on how much things cost. Umbilicals, trees, tubing, hangers, etc.

TP: When did the cost structure for subsea really come down to make it a real competitive technology? What period are we looking at when, you know, companies would choose to go with subsea versus a platform or . . .

DD: Well, let's see, that went by natural trend of going to

deeper water. You run out of water depth for a bottom supported platform. You have two choices: you have to go subsea or you have to have a floating platform. Now, if you design and build a floating platform, that takes a long time. And so, there are lots and lots of different variables and things to be considered when making these decisions because the lag time between when you discover a well and first production. Like the "Crazy Horse" development right now. I think it was discovered in 1998 and they are going to have first production in 2003. So that is about a minimum that it takes to get the first oil or gas out of a discovery offshore. And in deeper water, it takes longer and longer because you have to design new things. You have to lay pipelines.

TP: You need a big field to make it cost effective.

DD: Yes. That is the real difference now from what it used to be. There is the time element. And another time element that we had problems with is the oil companies - they buy each other now. And the more they buy, the longer it takes for them to make up their mind. They can't decide because they have so many people that have to agree. And that hurts the service companies really badly, because we don't do anything but make proposals

and don't make any money waiting for them to finally get around to giving us an order.

TP: Well, is there anything else you want to comment on or offer? Are there any other anecdotes you can think of?

DD: I think we have covered quite a bit. I have also overlooked a lot of things. There is so much to talk about.

TP: Yes, there is. It has been very comprehensive. Well, I think we can probably stop here.

THE END

D. de Vries, P.E.

I certainly would appreciate to receive a copy of the final version of the transcript.

I want to tell you that I thoroughly enjoyed being interviewed by Tyler Priest and I hope you will convey this to him. Also, please remind him of his promise to let me have a copy of the interview VCR.

On the subject of written materials for inclusion in the University of Houston Energy Archives, I remember discussing this with you when I met you at a Shell reception during the OTC two or three years ago. Ronald Geer and I have a considerable collection of original engineering sketches, calculations and reports about our work for the RUDAC System. It would be a shame for that documentation to get lost and I am interested in donating my part for conservation when the time is right. Please let us know when you can receive this material.

I have enclosed one drawing of the early Trident development in 1960 and three photo's of me at wor

D. de Vries, P.E.

Enclosures….

Offshore Energy Center- Oral History Project

Index for Interview with D. de Vries
September 30, 2000