BOEM DEEPWATER GULF OF MEXICO HISTORY PROJECT

OFFSHORE ENERGY CENTER HALL OF FAME

Interviewee:	John Gregory
Date:	October 10, 2009
Place:	Houston, Texas
Interviewer:	Tyler Priest
Ethnographic preface:	John Gregory attended college at Stevens Institute before joining the U.S. Navy. Gregory's career then took him to Boeing, to work on gas turbines, before working for the Naval Research Lab starting in 1958. By 1977, Dick Krahl recruited Gregory to join the U.S. Geological Survey (USGS) to help make sure that offshore operations were done in accordance with the requirement that they use the "best available and safest technologies." In the 1980s, as the USGS Conservation Division was merged into the new Minerals Management Service (MMS), Gregory helped establish a well-control test facility or laboratory at the Louisiana State University. Gregory stayed on with MMS for a distinguished civil service career and induction into the Ocean Energy industry Hall of Fame.

File 1

TP: This is an interview with Mr. John Gregory. The interviewer is Tyler Priest. We're in Houston, Texas, October 10, 2009, and this is for the OEC Hall of Fame induction.

Congratulations on being inducted. Let's start off with a little background. Where are you from and where did you end up going to school?

JG: Thank you. I'm originally from two places, City Island, New York, where they built the finest yachts money could buy, and Flushing, Long Island. I went to college at Stevens Institute. My father thought prospective mechanical engineers should go to Stevens. So I went to Stevens, and then after a short tour with Curtiss-Wright on jet engines, I joined the navy in the OCS program, that's how I became familiar with OCS, Officer Candidate School.

After the navy, I got married and we went to Boeing. I worked on gas turbines, decided it was not for me, so we went to Maine to look for a place to either build boats or get a job, and on the way I happened to stop at Stevens and was dragged to Washington by someone who was in your list of honorees, Willard Bascom. He hired me to work on a committee at Academy of Sciences, to recommend a research program to the maritime administration. This was in 1958.

I continued on after that committee at the Naval Research Lab, working on navy programs having to do with long-range propagation for the purposes of detecting submarines. It was a hardware project involving a large T2 tanker, which lowered a large sonar system into the ocean, and projecting the signal towards an offshore platform called Argus Island off Bermuda. From there I went to the Office of Naval Research, where we worked on similar things, surveillance and also to support the navy's ocean science program.

So I was involved for many years in ocean engineering technology, at which point, in about 1976, Dick Krahl called me. This was subsequent to the blowout off California, and Congress had passed a bill deeming that operations should be in accordance with the best available and safest technologies, and that the Conservation Division of the U.S. Geological Survey should put together a research program to get up to speed in the inspection technologies.

So I began to work for Dick Krahl in the branch of Marine Oil and Gas Operations at the Geological Survey. That was a great place to work. It

was still, to some extent, in the scientific community, which I'd been in, and I wasn't used to regulatory matters at the time, but along came Ronald Reagan, and as I understand it, the Heritage Foundation had his plans all worked out for him, and they yanked us out of the U.S. Geological Survey and formed MMS to get better control of the royalty monies and the least—

TP: Linowes's Commission Report.

JG: I don't remember whose it was, but I hated to leave the Survey, but at any rate—

TP: Before you go on, tell us the story about when Krahl interviewed you, and asked you to come to work for the OCS.

JG: OCS to me, again, was Officer Candidate School. I'd never heard of political subdivisions of inner and outer continental shelves. There was a continental shelf, which everybody was aware of, or if you're a sailor or something like that, you might say, "I'm going off soundings into deep water." But I stopped them and said, "OCS is outer continental shelf," and that was the federal government [unclear]. We struck it off quite well. I enjoyed working for Dick. Everybody liked Dick. I'm sure [Elmer] Bud Danenberger told you that.

TP: He's referred to as "Mr. OCS," right?

JG: I've heard that, but in those days I didn't hear it then. But he was very well liked by the industry and by his co-workers. After we got into the Minerals Management Service, the organization changed slightly, and he became lead for the offshore operations program. I forget what it was called then. In the Conservation Division it was called a branch of Marine Oil and Gas Operations. Anyway, so they expanded the program.

At the Conservation Division I was putting together a research program with—I think we started with $500,000, and they didn't know what kind of a program they wanted. Well, in the Office of Naval Research, let me just say that ONR was set up after World War II as a result of the duplication of army and navy research. It was Dr. Vannevar Bush's committee that recommended the formation of ONR to do naval research of the fundamental types, and they had their own, and they still have their own, corporate laboratory, the Naval Research Laboratory.

Now, the bureaus or systems commands, as they're called today, have their laboratories, but they're not involved so much in the fundamental stuff. It's all applications towards, for example, improved ship propellers

and things like that. But ONR believed that you find people who are motivated and they have the skills and the brains and the capabilities, and the idea is to carry out good fundamental research. So it was the unsolicited proposal that ONR was mostly driving, and their work was done mostly at universities.

To some extent, government laboratories or even private contractors could send in proposals, and in some cases, as the one that I was working on originally when I went into ONR, was a deep ocean surveillance system, which we put in 18,000 feet, 350 miles north of Hawaii. It was a subsurface buoy with thermal electric nuclear generators of 25 watts each, and the capability for receiving signals from, oh, I don't know, thirty hydrophones on the legs reaching down to the ocean floor, and with a telemetry system reaching to the surface and then transmitting data to Hawaii. Well, it didn't work. We got torn up by a storm. We redid the thing to a simpler degree off Bermuda, and that worked for a while, but something happened there. Well, these were hardware projects, but most of our work at ONR had to do with giving the ocean scientists the capabilities of getting physical oceanography data in the oceans.

One of the things that I was working on when I left was an air-deployed oceanographic mooring you could drop out of the bomb racks of a C-130—not a C-130. Or you could dump it out of a C-130. Anyway, Dick Krahl wanted to start a program, and they didn't know whether they wanted a laboratory program or what, but from my ONR experiences I remember my superior saying that you can't do good laboratory work with a small laboratory. You've got to have a large laboratory. And I knew that wasn't going to happen. I thought that contract research was the way to go, and that's what they set up at ONR. So we contracted starting the program. There was some money at the Harry Diamond Laboratories. Are you familiar with that?

TP: No.

JG: Harry Diamond Laboratories was the old Diamond Ordnance Fuse Laboratory in White Oak, Maryland, at the Naval Weapons Center, which is now located at Dahlgren, Virginia, completely there at Dahlgren. But some of the money they had was there, and then they got some additional funds. So we started off with $500,000 and gradually got into a program with the University of New Hampshire, other contractors.

One of the things we started on was an unsolicited proposal from Louisiana State University, Dr. Adam Bourgoyne. His idea was to build a well-controlled research and training facility on the campus. Well, that took more money than we had, but luckily, they discovered a well that had

been drilled on the campus of LSU by an outfit, Gold King—I guess they're drillers, I don't know—and it was large enough to do research in. It was plenty deep enough so that we could have plugged it off, and we simulated an oil well that you could train and do research, and gradually all of the machinery was brought there in cooperation with the industry.

The industry donated—Bourgoyne, I don't know if you knew Bourgoyne. He retired from LSU about 1998. He was able to work with the industry and got all the machinery you needed for well control, well-control training, and to try out new machinery. So we had everything, including the oil field kitchens which came on site and served steak and crawdads, crawfish étoufée. [laughs] It became quite a facility, and we sponsored that research for, I guess—well, it took time to build it all, but we started in—let's see. I went to work for the Conservation Division in 1977, and I guess in '79 we had the contract, had to just kind of show them how to write.

TP: So you were brought in to start this program?

JG: Yes.

TP: And this was for the first big thing you did, the well-control test facility?

JG: Yes. Well, it was one of the biggest things we did, because we repeated the funding at maybe a level of a couple hundred thousand dollars a year for—it must have been ten years or less than ten years. The proposal was staged over a long period of time. As a matter of fact, when Burgoyne retired, he'd completed his work. So I don't know what they're doing with it today. They're probably training people in well control.

When we moved from Conservation Division to MMS and expanded the program, people that were already in MMS, such as Ed Tennyson—and it's a shame they didn't nominate him for one of these slots. I don't know if maybe they couldn't find him because he kind of disappeared, retired early because of, I think, ill health. But he was truly an expert in oil-spill containment and clean-up technology. After the spill at Valdez, this became very important to MMS, and we reopened, with Ed's knowledge and inspiration, we re-opened the old EPA oil-spill device-validation facility at Sandy Hook, New Jersey. Leonardo is the city. It was called OHMSETT, Oil and Hazardous Materials Simulated Environmental Test Tank. That's what EPA called it. They closed it up.

From then on, under Ed's leadership really in our branch, Technology Assessment and Research Branch, we got it going again and tested various methods for cleaning up oil spills. In fact, I think it's still going today,

and they charge industry developers to use the facility. It's a long facility. I don't know if you're familiar with it. I think it's about 600 feet long. It's an open-air tank about 600 feet long.

TP: Two hundred meters, I think I heard.

JG: Yes, that's about right, about 60 feet wide and about 9 feet deep. I think it's still going today.

Now, in those days it was quite a controversy, especially after the Valdez spill, about whether or not you could burn oil. Well, the Coast Guard, I don't think got there fast enough to do any decent burning of oil, and we couldn't do it in this country because of the Clean Air Act and the Clean Water Act, and so we had an agreement with the Canadians, a mutual research agreement, to do oil-spill research. So Ed and the Canadians got together and ran an experiment off Halifax, Nova Scotia, with the Canadian Coast Guard, even as I think the EPA threatened us, we did it anyway. So we did quite a bit of that kind of technology.

Now, with regard to structures research, Charles Smith was hired by the TAR branch about—I don't know whether we were over in conservation or in MMS at the time. It was about '81 or '82, something like that, and he was given all the structures work to do, including Arctic structures. A lot of this work was in concert with the industry. In other words, we'd pool our resources or we'd even encourage them to do certain things and they'd encourage us. So it was a relationship that worked very well, and things like if you design a tension-leg platform, as anybody got any data on the holding power of legs in tension, you know, who ever heard of a platform in tension. Well, we did it in concert with the industry, and they actually pulled a leg to verify the calculations. That was one important project, I think.

Another one had to do with the forces on structures operating in the Arctic, in the Arctic ice, and in the eighties, industry threw up a Gravel Island, Mukluk, and started to drill on it and found that it was dry, that the supposed oil had gone down. But anyway, we used the Cold Regions Research and Engineering Laboratory, CREL, of the army, as our contractors, and they instrumented around Mukluk on the Arctic ice, and they got some pretty good data. Mukluk, within a few years after that, washed away. But anyway, Smith got some good data. I was up there myself when they were pulling up the instruments.

TP: Charles Smith, what was his position? Manager of the research program, is that right?

JG: Well, after we got several people in the program, we decided that Smith would be the research program manager. Basically he was mostly concerned with structures. Ed Tennyson was handling the oil-spill containment and clean-up. I was involved in sort of managing the seven, as well as one project that I liked was a project to treat the exhaust gases of gas turbine generators offshore to reduce or eliminate nitrous oxide smog, because at the time smog was a big thing in the operations off California. There was a scientist by the name—I think his first name was Bob Perry, Perry was his last name, who patented a process—I think he was working at Livermore Laboratories at the time—to use cyan uric [phonetic] acid on the hot exhaust gases of gas turbines. So we supported that work in his laboratory. He left Lawrence Livermore—I think that was the laboratory—set up his own laboratory, and we supported that work. We were about ready to go offshore on an industry turbine and try it full-scale when I retired. I don't know whatever became of the project. Charles Smith doesn't seem to think it went anywhere when I left, but I don't know.

I know that Cummins diesel engines, which is now treating their exhaust of their diesels for nitrous oxide, I think they were very much interested in the project. As I say, I left when it was coming to fruition, but that was a very nice project.

We had agreements, not only with the Canadians, but with the British Department of Energy to exchange information, which I started before Smith arrived, but afterwards he took over. I don't know if he ever got—

TP: Did this become part of the International Regulators Forum, or is that a totally different thing?

JG: Well, I never knew if those agreements were valid or not. We did it anyway. I couldn't get the people downtown to tell us one way or the other, you know, whether we were officially able to do this, and I don't think the British could either, but we did it anyway. We had nice exchange agreements with the Canadians, as I say, on oil spill. The meetings that we had with the Canadians and the Canadian Coast Guard people were very fruitful, and it's too bad they couldn't locate Tennyson, because he could sit here and talk for two or three hours on this subject. You couldn't stop him.

We were also involved in underwater inspection technologies. In other words, our program was divided into structures, oil spill, and the effects of operations upon the environment. For example, we funded Gene Shin [phonetic], when I was in USGS, to look at the effects of drilling near coral reefs. I don't know if you know Gene Shin.

TP: Yes, I know Gene.

JG: He was a great guy to work with.

TP: He's still pushing for drilling off California. He's big on rigs-to-reef, outrigs-to-reefs.

JG: We were in a seminar. I was trying to bring the ONR model to USGS, and it was pretty difficult because we were no longer working with scientists and engineers; we were working with regulatory people, of which I never was. However, I was called a bureaucrat simply for being in the agency. [laughs] But anyway, we worked with Gene on that project.

We also looked at some fluidic concepts. Are you familiar with fluidics? For example, some of these showerheads that ping on you is due to specially designed unstable flow. In essence, if you had a bowl with a hole in the middle of it and you put a jet of water into it, if it went down the easy way, right straight down the hole, it would give less pressure than if it circulated around and then went down the hole. So you have your ones and zeroes from this method of fluidics.

Well, one of the engineers or scientists at Harry Diamond Laboratories came up with an idea for mud pulse telemetry using fluidics, and we sponsored that. Again, I retired before the thing was every put down hole, but Charles said it was a long tubular device which went down the drill string to pulse back, in digital form, information from the bottom of the hole. I don't know if it was successful, but Charles said it was commercialized, so I don't know. Again, I'm sorry you couldn't have gotten Charles. He retired six months ago and is now living in Newfoundland.

TP: He helped us actually pick the people to be honored and gave us a lot of information. So he has been very helpful.

JG: As time went on, I asked Charles how many projects we had, and he thought a couple of hundred, because we ran these seminars every couple of years and we put out a report of all our projects, which got to be, I don't know, three-quarters of an inch thick. Things were going along very well and we had a lot of fun at these seminars, inviting industry people to listen to our investigators, because, as I said, we tried to transplant the ONR model to the Geological Survey and then to MMS.

TP: The product of this research was really for industry. I mean, the point was so that industry could use this data? I mean, it wasn't so much for the regulatory program.

JG: Well, we didn't have any arms and legs to use any of this stuff, but we had to assure Congress, I guess, that industry was using the best available and safest technologies. I don't know if that acronym is still popular today, but that's when it was born, I think, as a result of the bill that was passed as a result of the oil spill off California in 1975. So the word then for many years was BAST technologies.

Incidentally, we were a member of the Marine Board of the National Academy of Sciences. Jack Boler [phonetic] was the head of the Marine Board at the time, an ex-navy captain, and he ran some rigorous meetings advising the Survey and MMS on what its role should be with regard to research and development. We weren't getting involved in fundamental research really; mostly it was technology development. Sometimes you have to blend the two. For example, if you're going to get involved in tension-leg platforms, you've got to understand the science behind it to get it right.

As time went on, funds became harder to get, but money was folded into the program. I don't think there is a program today. I don't know. Charles' last job before he left was windmills, helping to assure that they were safe to use for MMS, because MMS not only was involved—I guess it still is—in oil, but other minerals.

TP: Yes, there's sand and gravel. Yes, there's a big push now to sort of assess alternative technologies offshore, wind, wave, and current, and all that stuff.

JG: I was surprised to see how large these windmill blades are. Of course, right now it's subsidized. I don't know if it'll ever be—

TP: You've got to go out to West Texas to see all the farms and the huge—

JG: Does it make a racket?

TP: Yes, you can hear them if you're up close. But they're big, majestic things. I can see why the people in Hyannis don't want them on the horizon there, but there is a sight issue.

So you said you retired in '95, is that right?

JG: Ninety-four.

TP: Just really before the deep water.

JG: They were going into deep water. We were looking at—I'm trying to remember the name. Cognac was one of the deep—

TP: Yes, '77, that precedes the three-piece structure, yes. Bullwinkle was '89, '88, '89.

JG: I'll tell you an interesting project. We were working with MIT, Jerry Milgram [phonetic], a very smart professor of hydrodynamics at MIT. I guess he may be retired by now. But when the IXTOC blowout occurred, the industry had tried to cap it with a funnel-like device called a sombrero, which didn't work. So we were able to get Jerry Milgram to go down there and make measurements on it the best he could and find out why it didn't work. From there, he went back to the laboratory and analyzed the problem, and he put together a model of IXTOC, of the sombrero, and we took it down to a test facility the navy has in Florida called Bug Spring. It's a very deep sinkhole near Leesburg in the Lake region a little west of Orlando. We blew compressed air through this model sombrero, and we were able to do enough fundamental work on it to find out how a sombrero would work in the future, and we documented it with reports and on film. So those were some of the kinds of things that we did. A lot of it has kind of left my memory, unless somebody can trigger it.

TP: We covered quite a bit, unless you have anything else to add. Any other individuals you worked with? You talked about Charles Smith, I guess, a little bit about Dick Krahl.

JG: After we moved to MMS, I got further away from Dick because he moved up toward the head of the offshore inspection program, and then we were changed from a research program to a branch, and those were the kinds of things we did. Had to try to scrape for our budgets and align with other parties from Britain and the oil industry and Canada and whatnot. It worked out pretty well. I don't know what they're doing today, [unclear].

TP: The hurricane was a big problem, I guess, dealing with new orders and standards for MODU mooring. From a budget perspective, that's what he's been working on. Those issues, hurricane issues and then the alternative, and I guess Alaska is getting up there again.

JG: Maybe you know the answer to this, but if the states don't want to allow the federal government to drill on—let me put it this way. Why can't the federal government drill three miles off state lands, whether they like it or not, like in California?

TP: I think it has to do with the coastal zone management. Any impacts from offshore development, you have to sort of assess how it will affect the coast, and the states have a say in managing their coast. I think that's where it really gets—but I think right now it's just they're under a leasing moratoria.

JG: Yes, I think that's been on for many years.

TP: Yes, and it did expire.

JG: Yes, [George W.] Bush let it expire.

TP: But it's going to be re-imposed.

JG: Well, that was the impetus for the r_____ process for treating the smog coming out of the offshore generator turbine, that the companies were buying offsets and they were very much interested in our work to reduce the [unclear]. It's funny, Greenpeace and Natural Resources Development Council kind of pinged on us from time to time, and I talked to them at times when we, as a group, went down. My conclusion was that they didn't care how clean the operations were; they just wanted us to stop. [laughs]

TP: It's a complicated issue because it's not strictly based on concerns about the environment, but tourism and homeowners on the coast who just don't want it anywhere near where they own land. Florida is a prime example.

JG: Well, even in Virginia now, where I live, they're talking about gas off Virginia. The fishermen don't like it. I think if the Republicans get in again, which is slightly likely right now, I think McDonnell, the prospective governor, Republican, will try to push it.

TP: I think there is a proposed sale off Virginia. I don't know where it stands right now.

JG: I think it's mostly gas they're talking about.

TP: Yes. Okay, I think we can stop here. You've helped us out a lot. Congratulations on your induction, and I hope you have a good time tonight.

[End of interview]