SOME PERSONAL OBSERVATIONS ABOUT

THE EVOLUTION OF THE GENERAL ELECTRIC OPERATION ON BRYAN DAIRY ROAD, PINELLAS COUNTY, FLORIDA

P. O. BOX 1508, ST. PETERSBURG, FLA. 33733

BY

ADDISON F. PERSONS

PLANT-MANAGER AND MANAGER-MANUFACTURING
FROM THE BEGINNING TO THE PRESENT (1977)

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As this is written, in early 1977, neutron generators are still the primary product of the Pinellas Plant.

Though this is an account of the Pinellas County operation, there are certain preceding milestones in the development of the neutron generator business which are briefly mentioned since they led up to the purpose for the establishment of. the Pinellas County operation. These preceding milestones are extracted from several rather comprehensive information sources covering the account of the preliminary research and the evolution of the design of atomic weapon external initiator neutron generators. These sources included:

1. A June 1953 General Electric Research Report, No. RL891, entitled, "An Experimental Neutron Source," by Charlton, Pollock, Westerndorf, Hagg, Gurewitsch, and Noble.

2. A December 1960 report entitled, "Zipper Development Chronology 1950-1960," by Gow (LRL), Church (Sandia), and DePew (Sandia).

3. General Electric X-Ray Department 908 Project History dated July 3, 1957.

4. An undated talk entitled, "In The Beginning," by H. C. Pollock.

In the summer of 1950, the Los Alamos Scientific Laboratory (LASL) requested Dr. Edwin M. McMillan of the University of California to act as a consultant regarding development of an external initiating device for atomic weapons.

On November 20, 1950, a meeting was held in Los Alamos of General Electric Research Laboratory personnel and University of California personnel to discuss the development, design, and construction of a "portable radiographic instrument." This started work on a betatron approach to making neutron generators for external weapon initiators.

On June 8, 1951, the first betatron type unit was shipped to Los Alamos.

In the summer of 1951, Dr. McMillan proposed that the fusion of deuterium and tritium ions might be used as the basis of a special pulsed neutron source for weapon initiation.

On June 28, 1951, Los Alamos gave an oral order to start parallel research on this approach to making neutrons. This was the beginning of the DT Reaction Program. Part of the specification for this proposed equipment was that it weigh not more than 400 pounds nor take up more than eight (8) cubic feet of space.

On September 21, 1951, a formal report on the-project includes a statement: “If the project continues in normal phase, the job would be turned over to Sandia."

On December 2. 1952; it was-agreed with Los Alamos that product design activity would be assigned to the General Electric X -Ray Department in Milwaukee:

On December:4, 1952, a Sandia group headed by T. S. Church visited General Electric X-Ray to establish relationships. .During the week of January 2 to 6, 1953, X-Ray personnel met with Sandia at Albuquerque regarding a proposed contract for neutron generator. product development.

On July 8, 1953,.Los Alamos withdrew from the project.

On February. 5, 1954, Sandia Completely changed the design specifications, reducing unit size to one-tenth of original concepts without a reduction in neutron output.'

On July 16, 1954, the first unit to the new design was delivered to Sandia.

In February of 1955, the first neutron generator external initiator detonated a weapon in the Teapot Tests at the Nevada Proving Grounds.

At an August 31 and September 1, 1955, meeting at Sandia it was indicated that if preproduction unit tests were satisfactory, production unit requirements would be needed starting in the fall of 1956. At a meeting in

Milwaukee on December 12 and 13, 1954, indications were received from Sandia that a release would be given to X-Ray to proceed on the basis of 50 units per month. X-Ray estimated 175,000 sq. ft. would be needed in a new production facility to make these requirements.

On February 20, 1956, two letters of intent were received from Sandia for Milwaukee production and for tooling for a new production plant.

On March 1, 1956, the new plant layout started at X-Ray. R. F. Wilson and Frank Riedmueller were assigned this responsibility.

The above chronology leads-up-to-the -decision-that-a –new production facility was needed for neutron generator production. .Since there was no expansion acreage available at the X-Ray site in Milwaukee. it was necessary that the new plant be remote from the location there. And this sets the stage for the chronology for how the remote plant came to be located on the Pinellas Peninsula of Florida.

During the period December 10 to 17, 1955, an X-Ray team of Wilson, Simons, and Stolberg surveyed potential plant sites in Little Rock, Arkansas; Lincoln, Nebraska; Topeka, Kansas; and Burlington, Iowa.

On January 6, 1956, John Smith, then General Manager of the X-Ray Department, published a position guide for the position of "908. Plant Manager." This position guide included the phrase: "Responsible for a manufacturing operation located 300 to 400 miles distance from the headquarters location." From recent discussions with persons then at X-Ray, it appears that Mr. Smith was mentioning a general area and that a specific site had not then been selected.

From-here on the story leading up to the Pinellas Peninsula location is rather personal, for which I apologize. Being this personal is the reason that it has been told to only a few people in the past. It seemed that it should be included in this history.

To star at the beginning, chronologically, we go back to February, 1952. In that month my son and I accompanied my parents on a two-week vacation to St. Petersburg. Its desirability as a place to live and work Was impressive to me.

In the period October 31 to November 11, 1955, I served on a site selection team for the Electronics Division, Syracuse, exploring Champaign, Illinois; Little Rock, Arkansas; Nashville, Tennessee; Lincoln, Nebraska; and Altoona, Pennsylvania.

In the period January 24 to February 4, 1956, this same team surveyed Austin, Texas, and two or three sites in the area around Dallas, Texas. While in Dallas we received a telephone call to adjust our return plans in order to evaluate the cities of Tallahassee and Gainesville, Florida. Being in the area, I opted to visit friends in St. Petersburg and while there I did an evaluation of the Pinellas County area as a potential plant site.

On February 6 and 7, 1956, now back in Syracuse, I endeavored to convince the site selection team to recommend Pinellas County as our plant site selection¨¨I ¨did not prevail. ¨Gainesville was the final decision.

In mid-February 1958, I was asked to come to a meeting in progress in Dr. Baker's (General Manager-Electronics Division) office to give two or three visitors my opinion of Austin, Texas, as a potential General Electric plant site. John Smith was one of those visitors. I found out later they were not really interested in Austin as a plant site, but were using that as a means to look me over as a potential candidate for an open position at X-Ray.

On February 23, 1955, Mr. Smith called me, asking that I come to Milwaukee on February 27 for an interview for an opening in their operation. In the interview I found out for the first time that it was a new plant manager position that he was filling.

It was, as I look back on it, a very peculiar interview. He could not tell me what the plant was to produce, where it was to be, or even how large it would be. The interview was more along the line of "trust me, it is a most¨important job for General Electric, with great personal challenge." Incidentally, John Smith is a man who exudes that such trust in him is justified. He enlarged on this by saying that the challenge started with designing and building a plant, staffing it, and being in production in it by the end of the year.

I remember telling him at the conclusion of the interview that I really wasn't interested, that I had a desirable and challenging job in Syracuse and that I didn't want to move from there.

In the period February 29 to March 4, 1956, Mr. Smith called me two or three times asking me to reconsider.

On March 5, 1955, I called Mr. Smith and told him that if the position was still open I might be interested if the new plant could be located near St. Petersburg, Florida. He told me that was a rather arbitrary position-to take. I explained that my thoughts on the St. Petersburg location were not only personal as regards where I would like to live, but that building a plant and staffing it in nine months, I thought, could be more assuredly done in the climate of the Pinellas Peninsula than in most any other area of the country. *As* I recall it, our conversation concluded with the result of only increasing Mr. Smith's exasperation with me for not accepting the offer regardless of where the plant would be.

In the period March 6 to 8,1956, I tried to contact Mr. Smith several times, as he requested, but each time he was not in his office. His secretary finally told me he was in St. Petersburg, Florida, looking at that area as a possible plant site. I also found out that my manager in Syracuse, Bill Barker, representing the Electronics Division, (X-Ray was then in the Electronics, Division) was also down in St. Petersburg on a plant site overview.

On March 9, 1956, Mr. Smith called, asking me to go with him to Salt Lake City to look at that area as a possibility for the plant location. I told him I wouldn't be interested in managing a plant in Salt Lake City but, salesman that he is, he persuaded me to go along "just in *case."* During the trip (March 13 to 16) Mr. Smith pitched hard to me to take the job regardless of the location and I pitched hard to him to seriously consider Pinellas County.

On March 19, 1956, Mr. Smith called, asking me to come to Milwaukee on March 22nd to further participate in plant site discussions. At this March 22 meeting with a group at X-Ray we went over the several locations which had been explored by the Electronics Division team (of which I had been a .member) in November 1955 and February 1956, by the X-Ray team in December 1955, and the Salt Lake City area.

On March 23, 1956, the site selection discussion was continued in Chicago (I believe at the University Club, but am not sure in recollection). The reason for meeting in Chicago, I found, was to hear the report of the Corporate level site evaluation team which had been exploring the Pinellas Peninsula at Mr. Smith's request. Time was being saved as compared to the Corporate team returning to New York City and later submitting a written report. The report of the Corporate team at the Chicago meeting was such that the decision was made that afternoon to locate the plant in Pinellas County.

And so, on Friday, March 23, 1956, the Pinellas County neutron generator project came into being.

I am sure the reader wonders, as I did during this plant site selection episode, why Mr. Smith didn't decide to hire someone else for the plant manager position rather than put up with my arbitrariness toward Pinellas. Later, after I was "Q" cleared, he could tell me why. His rationale was that the urgency required past experience, hopefully in all the many phases of the job to be done, particularly in those first few months before the end of 1956. These phases included determining a plant site, choosing an architect, designing the plant, building the plant, establishing the organization and staffing it, and with all these phases based on experience in the manufacture of high vacuum tubes and small electronic equipment at the Manager-Manufacturing level. By coincidence, I had had this experience in each of these phases.

I was humbly overwhelmed that day in Chicago when Mr. Smith announced the Pinellas County decision. I have a feeling he was counting in part on the obligation and dedication and contribution he could expect from me because of the decision.

Again, my apology for the personal flavor of this site selection phase of the Pinellas operation. It is a question often asked and I felt I should cover it fully in this history. Perhaps any resentment that employee/readers may have in being subjected to this personal account may be at least partially offset by the fact that as this is written in early February 1977, the temperature is 25 degrees below zero in Burlington, Iowa.

On March 28, 1956, I reported to Milwaukee and established a 908 Plant Headquarters there (office, files, secretary capability, etc.). It is commonly accepted that the name 908 for the neutron generator project (both at Milwaukee and Pinellas) came from an order number covering an early phase of the program. I have not been able to determine this as a positive fact, like reading an order numbered 908.

In the period April 1 through 5, 1956, a team of General Electric Realty, Electronics Division, and X-Ray personnel met in St. Petersburg to select the actual plant site. We headquartered at the Soreno Hotel along with the New York Yankees baseball team.

Sites looked at included the area across from the Bay Pines Hospital, Route 19A; a location on the east side of Route 19 just north of the railroad track where Kanes Furniture and Farmbest Foods are now (1977) located; a - tract of approximately 60 acres on the southwest corner of 66th Street and 102nd Avenue North; and the Bryan Dairy Road site where the plant is located. The first decision of the team, with only me dissenting, was the 66th Street location. The second choice, and my first choice, was the Bryan Dairy Road location.

In 1956 there was no active Committee of 100 or Pinellas Industrial Council. We were aided in our site selection explorations and arranging for community support by the Industrial Development Component of the Florida Power Corporation. We are much indebted to the Florida team of Shirley Gracy, Bill Shank, and Andy Hines of Florida Power who made their personal services and office space available to us.

Weyman Willingham, a St. Petersburg realtor, was engaged to negotiate purchase of the selected site. He was not able to obtain the 40 acres adjacent. to the 60 acres on 66th Street (we needed 100 acres).and thus the 66th Street site selection had to be abandoned. Negotiations for the

present site on Bryan Dairy Road were successful (how lucky can one get) except that a farmer in Kansas who owned five acres protruding into the north boundary would not sell. We finally decided to make the purchase without the five acres (the five acres were finally acquired on June 25, 1969). We purchased the property from Mrs. Bryan at a cost of approximately $80,000 for the 100 acres. The official date of the transaction was June 13, 1956.

On April 17, 1956, H. K. Ferguson Company of Cleveland, Ohio, was awarded a contract to design and build the plant. Ferguson was selected because they both designed and. constructed such facilities. .0ne of the first 908 Plant Manager-decisions was to build the plant on a cost-plus basis so that design and construction could be carried out in parallel.

The urgency of the project was, of course, the basis of this decision. There just wasn't time to design a plant in total and go out for bids. Ferguson was able to design and build the plant in parallel.

Mr. Curt Cuno, an especially qualified construction engineer, was "borrowed" full time from the General Electric Syracuse Utility Operation to be the 908 plant representative with General Electric Realty and Ferguson. Realty was the prime General Electric liaison with Ferguson.

At a breakfast with community leaders on Monday, May 21, 1956, we made the official announcement that General Electric would build .a plant in Pinellas County. The negotiations up to that time had been kept secret to only a very few people. The announcement was received with spontaneous enthusiasm by the community, this being the first industrial operation of such size and stature to be located in Pinellas County.

We chose the name Pinellas Peninsula Plant (PPP as it was more often referred to in General Electric) because it was in the County (not in an incorporated area) and we didn't want to "offend" any city or cities by using a city name. We chose the St. Petersburg Post Office Box address because St. Petersburg was better known nationally and because service would be better if we had our own mail¯pickup.,

After the announcement breakfast, two things of significance were accomplished that morning: (1) A General Delivery Post Office Box

was arranged for with the Post Office Department; and (2) In a "shake hands"agreement I covenanted with John Barger, a local contractor/builder to build us 20,000 sq. ft. of temporary manufacturing space to be ready in July.

Ground was broken for the start of the plant on June 14, 1956. Its size was approximately 161,000 sq. ft. with an anticipated employment of 600 to 700 people. Things were happening so fast in that period that there was no official groundbreaking ceremony.

The period from July 14, 1956 to January 29, 1957, covers the construction and move-in phase of the plant project. In recollection it seems impossible that all that happened did happen. To build a normal plant in this time was akin to the construction time of facilities during the press of the World War II needs. And this was no ordinary plant. The special facilities required for our product complicated both the design and the construction. The contribution and cooperation of general Electric Realty and H. K. Ferguson on the project was paramount to the achievement. Even the Lord helped; for the summer of 1956 was one of the driest in the history of weather records, and the winter of 1956 was one of the mildest. At one time in November 1956, as I visited the construction site, it appeared there were in the order of 400 to 500 workmen of all crafts effectively scurrying to their assigned tasks in such a manner as to cause wonderment as to the planning which kept them all industriously contributing. The chronological history of the construction was pictorally captured in two looseleaf notebooks of photographs. These books are on file in the Department library.

The facilities required for the plant presented some problems to the County to furnish, At one time the supplying of water by the County Commission looked so bad that the City of St. Petersburg offered to supply water should the County not be able to. We gambled to stick with the County and they just made it in time for our move-in in January 1957. Incidentally, Jim Wood of our BIS Operation (in 1977) was one of the five County Commissioners in 1956 and was very helpful to us in our relationships with the County Government. The insurance company had "fits" that we did not have water here for fire coverage during construction but we partially took care of this problem by drilling a 4-inch well.

The County also had trouble arranging for a-right-of-way with Mrs. Bryan for use of the ditch across her property along the railroad to the south. I met with Mrs. Bryan and the Chairman of the County Commission and was able to convince her that it was to her advantage in the future development of her property for industrial use to make the ditch available for site runoff. It appeared she was suspicious of the County's motives in their request.

We had gambled in going ahead with the plant without a sure drainage capability established, assuming the County could deliver as they first indicated.

General Telephone Company (then Peninsular Telephone Company) was strained to get our switchboard equipment, but we helped them with letters of support to their suppliers. Florida Power made it on their own to furnish electric power. The basic facilities problem was that all facilities had to be brought from remote distances and in sizes far larger than had been required in the County before.

The speed of plant construction caused many crises in delivery of materials and supplies to the site. A typical example was the 18 to 24. month normal delivery for the General Electric substation and transformer equipment on the plant mezzanine. We needed it in four months. Contacts from General Manager to General Manager, and higher as required, always eked us through.

As another example, we helped on delivery of the steel for the building structure by installing a railroad siding. Such on-site deliveries saved considerable time. In fact, the steel was delivered in July just ahead of a nation-wide steel strike. As an adjunct, the railroad siding was a factor in keeping the community confused as to what we were to build, secrecy regarding the product at that time being paramount. We got the siding really at no cost, for the savings on freight by on-site delivery offset the cost of the siding.

On January 5, 1957, we began occupancy of the plant on Bryan Dairy Road and completed the move by January 29, except for the Tube Exhaust Area.

In the period from May 21, 1956 to May 19, 1957, we had built and operated in a temporary plant at 2543 24th Street No., St. Petersburg, Fla. The need for a temporary, interim manufacturing facility was twofold:

(1) We were scheduled to complete production of the first neutron generator by December 31, 1956; and (2) to give us a base of production experience for a running start to meet the early schedules required for the new plant.

As previously mentioned, the temporary plant started by a verbal agreement with John Barger after the site announcement breakfast on May 21, 1956, that he would build us a 20,000 sq. ft. facility for occupancy in July. The formal lease with Mr. Barger was signed on June 6, 1956. The total facility leased from Mr. Barger consisted of a warehouse facility of 9,600 sq. ft. and the 20,000 sq. ft. manufacturing and office building which was to be built. They were across the street from each other. The warehouse building was under construction when we contracted with Mr. Barger and was completed by July 12. The new 20,000 sq. ft. building was ready on July 20.

H. K. Ferguson, meanwhile, had designed the internal arrangements for our manufacturing in the new 20,000 sq. ft. building, which. Arrangements were completed about August 31. We started hiring direct labor on August 20, to report for work in the temporary facility on September 4, the day after Labor Day. By the first week in January, when we started the move to the new building, there were 285 people working in the temporary plant.

We did complete our first unit by the end of the year. Most of the two hundred eighty-five (285) employees in the temporary plant moved to the new plant in the January 1-29, 1957, move-in period. The temporary plant was closed on May 19, 1957.

In the period March 27,1956 to September 1, 1956, the basic organization and staffing phase took place. On April 5, concurrence was obtained from Manufacturing Consultation Services at General Electric Headquarters in New York for the

proposed top echelon Pinellas Plant organization. A July 12, 1956, status report shows the following:

Name	Position	Status of "Q" Clearance
R.F. Wilson	Mgr., Engineering	Cleared
G.P. Peterson	Mgr.,Manufacturing	Pending
J.J. Nomina	Mgr.,Finance	Cleared
R.A. Patrick	Mgr.,Quality Control	Pending
S.H. Barber	Mgr.,E& CR	Cleared
C.P. Koch	Mgr.,Security	Cleared

Any account of the Pinellas operation would be remiss if it did not mention, lauditorily, the effort of this team during the early phase of the operation. Their long hours worked, their time away from home, their vacation time given up without pay, are positive indicators of their dedication to the overall task that needed to be done.

Incidentally, on July12, 1956 I still didn't know what our product was because my clearance was then still pending.

We transferred in many managers and specialists from other General Electric locations,- in fact, 88 percent of the early managers and 65 percent of the exempt specialists. It was in this staffing phase that the location in Pinellas really paid off. No employee, to my recollection, turned down an offer because of the plant location. Many were impelled to accept offers because of the location.

The General Delivery Post Office Box which had been opened on May 21 had approximately 1600 applications when it was first opened in early June. Word-of-mouth and letters since the announcement on May 21 had prompted this interest. We staffed the operation for many years before we advertised for any help, and then only for a very few

scarce special capabilities. A January 4, 1965 report mentions that approximately 40,000 applications had been received by that time.

John Smith had stipulated to me in the beginning that I should not hire from X-Ray Headquarters in Milwaukee, but he finally gave in to the pressure from employees-(and from me). The 'going-away" party for X-Ray employees moving to Pinellas was for 30 to 35 people. I recall that they ate a little ham, a little turkey, and two large platters of raw ground beef. I learned many such new things in the early phases of the Pinellas .operation.

Carl Koch was one of our busiest managers in those early days because of the pressures for “Q" clearances.

Secrecy was paramount in those early days not only for the process but particularly for the product: Such words as external initiator, tritium, or microseconds were taboo. Code words were acceptable if carefully used,.- 908 Product, PRM (portable radiographic instrument), Zipper, etc. Zipper early became the most common code word.

It is amazing that the plant and its facilities came out as well as they did with so many employees unknowledgeable for so long as to the nature of the product we would *be* building here. Frank Riedmueller and Bob Wilson, the only cleared technical people with construction background, bore the brunt of this. They, of course, could not communicate with their many early associates who related with the architect and the contractors. As I remember it, General Electric Realty people were never cleared, and only a very few in the Ferguson organization.

As previously mentioned, the organization had been done and the staff had grown to 285 by December 31, 1956. The original estimate of personnel needed to meet product schedules of 1957 and 1958 was 600 and the original plant was basically designed for that number. By mid-1957 it was obvious that we had seriously misjudged the complications of zipper manufacture to meet the specifications and reliability required. At that time we embarked on an urgent hiring program towards 900 to 1,000, doubling or tripling previous personnel planning as regards the number of support employees.

The period September 1955 through June 1957 covers the evolution of the construction contract and the funding phase of the Pinellas Plant. During the fall of 1955 there are records of meetings between Sandia and General Electric X-Ray where Sandia indicated the need for a production facility for neutron generators. Solely on the basis of these discussions, X-Ray took certain actions in anticipation of more formal authorizations. As previously mentioned, plant site explorations were undertaken and the search for a plant manager was started.

On February 20, 1956, a letter of intent for production quantities came from Sandia. This triggered the accelerated activities that led to the construction and staffing of the Pinellas Plant.

Contract negotiations for the plant paralleled its design and construction; in fact, a contract letter of intent was not negotiated until October 24, 1956, when the plant was well along towards completion. The contract itself was completed much later.

The reasons for the contract delays were twofold: (1) Complications by the fact that the plant was to be jointly paid for by Sandia and General Electric; and (2) We in General Electric couldn't understand/accept the - Sandia/AEC controls and terms and conditions of such a contract. We met many many times at Milwaukee, Pinellas, or Albuquerque and even at such neutral locations as Kansas City and Evanston, Illinois. Original meetings were between Sandia and General Electric only, but in the fall of 1956, AEC personnel began to attend.

The contract letter of intent for the plant, on October 24, 1956, included a new and surprising option for AEC to: buy the plant within 30 days after its completion. On January 9, 1957, at a meeting in Clearwater, AEC gave notice that it would exercise its option.

On May 29, 1957, AEC exercised its option to buy the plant and on June 28, the plant was transferred to AEC. As an interesting and amusing sideline, the sale was jeopardized toward meeting AEC's deadline of completion in June 1957 because there weren't enough stamps for the deed available in the County Court House. The deed was hand carried to New York for Corporate signing.

Parallel with the plant contract negotiations, General Electric was taking two significant actions which were directly contract related. On April 17, 1956, the General Electric Board of Directors approved a preliminary appropriation of $1,530,000 for the Pinellas Plant. And on July 27, 1956, the Board gave approval to the total appropriation of $5,153,590. Only the effervescing personal sincerity and integrity of John Smith could have convinced General Electric's Board to provide in excess of $5,000,000 for something we couldn't tell about and for which we didn't even have a contract.

In addition to the plant contract, Sandia and General Electric, in this same period, were negotiating a Pinellas production contract. Many drafts were prepared, starting with the General Electric naive one and one- half page submission and finally ending with the two-inch thick edition the likes of which we are now accustomed to.

In hindsight, we know we are indebted to Earl Pace of Sandia who negotiated the contracts with us. At the time, we thought of him sometimes as an unreasonable adversary; but now we recognize and appreciate his professionally and patiently leading us along the AEC contract path.

A final production contract agreement was reached in December of 1957, retroactive to April 1, 1956.

In May1958, the Sandia production contract was transferred to AEC and on July 1, 1958, *we* became a Prime Contractor to the AEC. The Sandia contract and the AEC contracts were reasonably similar, the main difference being that general and administrative expenses were unallowable under AEC terms, and the fee was less.

The sequence of plant ownership and of contractor history resulted in some rather rapidly changing relationships in the first 26 months of the Pinellas Plant history.

From April 1, 1956 to June 28, 1957, we operated under an agreement contract with Sandia, with General Electric owning the plant.

From June 29, 1957 to May of 1958, we operated under contract with Sandia, with AEC owning the plant.

From May of 1958 to June 30, 1958, we operated with a Sandia contract administered by AEC, with AEC owning the plant.

From July 1,-1958 to the present (1977), we have operated *as* a direct contractor to AEC/ERDA, with AEC/ERDA owning the plant.

From July 1, 1958 to June 30, 1963, we operated under a Cost-Plus Fixed-Fee (CPFF) arrangement. These five years were covered under two contracts,- the first for two years, the second for three years.

From July 1, 1963 to June 30, 1968, we operated under a five-year contract with a Cost-Plus-Incentive-Fee (CPIF) arrangement. The administration of this CPIF agreement was so burdensome that both General Electric and the AEC were anxious to abandon it when its term expired.

From July 1, 1968 to June 30, 1973, we operated under a Cost-Plus - Performance -Fee (CPPF) arrangement. This contract was extended for another five-year period and three-month period and thus will expire September 30, 1978. Under CPFF, the ERDA Manager at ALO makes a unilateral annual determination of the performance portion of the fee based on his evaluation of General Electric's performance in certain mutually agreed to areas of measurement.

The CPIF contract in 1963 was ALO's first contract with any of its contractors on other than CPFF terms.

On February 3, 1958, the AEC, Pinellas Area Office (PAO), was established. H. A. Nowak was the Area Office Manager from then until February 1, 1965.

From February 1, 1965 to February 2, 1973, Walter C. Youngs, Jr., was the Area Manager.

From February 18, 1973 to the present (1977), Don Ofte has been Area Manager.

The General Electric organization, management, and staffing history of the Pinellas operation covers the period from the beginning of the 908 Product Section on March 28, 1956, to the present (1977).

On March 28, 1956, I was appointed 908 Plant Manager by John Smith, General Electric X-Ray Department General Manager. It was Mr. Smith's original plan that the 908 Plant operation would report to him directly as a Section organization. He planned that the 908 Plant Manager would participate with him and X-Ray Headquarters personnel in the original contract negotiations, expecting that this negotiation phase of the business would be accomplished in a few weeks. As these negotiations stretched on for months it became obvious that administration of the Milwaukee and Pinellas contracts would be continuing and intensive. Mr. Smith made the very desirable decision that the 908 Program should be organized into a business section with its own General Manager. Dr. Roy Beaton was appointed General Manager of the 908 Product Section in May of 1957. His position picked up the Sandia contracts with Milwaukee and I reported to him with the title of Manager, Pinellas Peninsula Plant. Dr. Beaton served as General Manager until March of 1963 when Bob Schier was appointed to the position. During September 1966, Mr. Schier's headquarters and the Neutron Generator Engineering Component at Milwaukee moved to the Pinellas Plant.

On October 1, 1966, the 908 Product Section was reorganized into the Neutron Devices Department within the Nuclear Energy Division. At that time the position of Pinellas Peninsula Plant Manager was abolished and the production efforts of the Department were organized under the position of Manager-Production. A reorganization of the Department in July 1968 changed the Manager-Production position to Manager-Manufacturing.

Bob Schier passed away of a heart attack while on a trip to Albuquerque on April 18, 1969.

D. L. Pilini, Manager-Finance, served as acting General Manager of the Department until Dr. L. (Leo) A. Kiley was appointed General Manager on August 18, 1969. Dr. Kiley has continued as General Manager to the present time (1977).

There have been several additions to the Pinellas Plant since we moved into the original 161,000 sq. ft. building in January 1957. This growth has been as follows:

Year	Square Feet Added
1957	160,920
1958	384
1959	1,535
1960	37,052
1962	3,307
1964	71,250
1965	6,498
1966	33,900
1968	2,246
1971	21,501
1971	1,765
1972	694
1973	693
Total	**391,745**

The 1960 addition of 37,052 sq. ft. was primarily to take care of a larger number of employees and increased production,- both larger than was anticipated in the original 1957 building design.

The 71,250 sq. ft. addition in 1964 was to furnish a "home" for the many laboratory type operations that, over the years since 1957, had grown up in as many as 13 different areas of the plant. In 1964 we established

a laboratory Operation to bring greater efficiency and effectiveness to the overall laboratory type efforts and this plant addition permitted consolidating them in one plant location.

The 1965 addition of 33,900 sq. ft. was to house the Engineering Section moving to Pinellas from Milwaukee.

The 71,501 sq. ft. addition in 1969 was primarily to make space for the Department's contribution to the Poseidon Program.

As previously mentioned, production-wise, the original challenge of the Pinellas operation was to build neutron generators by December 31, 1956.

The first official action towards neutron generator production was the aforementioned February 20, 1956, letter of intent from Sandia to start procurement of tooling for a new production facility (later determined to be Pinellas). Thus, tooling and equipment was designed and made or procured in parallel with the plant construction.

Product and production related contacts with Sandia started early in April 1956. As I remember it, Paul Stickler of Sandia first met with me in Milwaukee. I recall some things about those early meetings: (1) All Sandia members showed up with beards,- and this was 1956, long before the present beard fad. I wondered what kind of product would draw such characters to it, but found out that the beards were only a gimmick connected with the 300th Anniversary of Albuquerque which was being celebrated that year. (2) I recall the effort of Sandia people to impress me with the need for reliability and its requirement for cleanliness, process control, etc. Their effort was stilted because they couldn't tell me what the product was or anything of its processing because I was not yet "Q” cleared.

The first neutron generator released to-be-built was the MC757. The MC757 was planned for the Viper II Program but was never officially assigned thereto. This was the unit built in the temporary plant starting September 4, 1956. Poor performance of both the Milwaukee and Pinellas product caused Sandia to advise us on January 14, 1957, that requirements for *the* MC757 had been cancelled and that our efforts should be transferred to the MC774. The MC774 was assigned to-the TX28, the first weapon assignment of an external neutron generator.

Milwaukee progress reports during 1956 mentioned such problems as high voltage breakdown, oil fill problems, and power supply problems.

Notices in reports of March 21, 1957 and June 1957, mentioned that the MC774 was at a stage where tests were OK except for high voltage breakdown with the cogent phrase no understanding of the problem is at hand." The MC774 was finally cancelled as not being ready for its assigned weapon application.

The MC890 was the evolution design of the MC774 type and became the first external neutron generator to go into weapon stockpile for the MK28 bomb. We shipped the first MC890's on January 29, 1958.

The second stockpile external neutron generator was the MC825 on the MK34 Lulu Depth Charge. The first HC825 was shipped on April 10, 1958.

During all of 1957 and into the third quarter of 1958 we made thousands of subassemblies and hundreds of final units, with practically 100 percent scrap. Total shipments to July 1 of 1958 were 227 neutron generators.

In September of 1958, Dr. Beaton and I journeyed to Sandia to tell them that we were convinced that neutron generators could not be built-reliably to the criteria then specified. At the same time we proposed changed or relaxed specifications that would permit 50 percent final unit yield at the then manufacturing state-of-the-art. We were somewhat surprised that the proposal was so readily accepted. This really got us into production, permitting pipeline flow which could then be process controlled and evaluated for desirable improvements.

In October of 1958, Bill Kraft made an important decision which had great impact on Pinellas production output- He developed a method by which some of the units which failed to meet certain specifications could be used. These specially selected units were assigned 1100 series numbers to distinguish them from the regular units. By mid-1959, we had made such progress in product quality that the use of the 1100 series units could be eliminated. An interesting exchange of letters in July 1959 shows that we had difficulty convincing AEC cost people that the 1100 series should be eliminated in favor of the greater reliability thus effected.

During this early period of neutron generator design and production challenges, we were involved in such drastic changes as incorporating Phillips Ion Gages (PIGS) on each tube, oil vs. epoxy for insulation, pulse forming network changes, addition of cleaner facilities, etc.

To expeditiously and effectively meet these challenges in the 1958,-1959 time frame, Sandia had resident, full-time engineers at Pinellas. I recall that Bob Gray and Sherry Smith of Sandia thus became part of the on-site team during this period. This was very successful in shortening the production and design liaison decision-making process which was so important as production schedules breathed down the back of the design and production state-of-the-art.

This early pressing period in neutron generator production was the result of the much greater advantages of external neutron generators over the previous other types of initiators. The potential of these advantages forced the production phase of neutron generators so close to the development phase that there was a great overlap of these two phases, with both heavily stressing the state-of-the art. Though those were hectic days, the risk paid off and was fully justified. Ordinarily, under "normal" conditions, the time cycle through design to neutron generator production would have taken years longer.

At the risk of missing someone, I am impelled to give recognition to the early Sandia team with which we met those early challenges. On the Design Engineering side were Ted Church, Reo DePew and Elwood Ingledue. On the Manufacturing-Engineering side were Bill Kraft, Bo Price, Paul Stickler and Bob Gray.

While the manufacture of neutron generators has not been and will never be free of challenges and problems, nonetheless, since 1959, production schedules of neutron generators have been predictable and achieved.

Even in this abbreviated account of the Pinellas operation, to the present (1977) there are a few milestones or progresses that are worthy of mention:

1. Reduction in weight and size to approximately six percent of the original specifications, with the same output.

2. The introduction of a ferroelectric power supply within the neutron generator, removing the need for external power input.

3. Recognition of the need for and the institution of laboratory type production line process control including such disciplines as Mass Spectrometry, Ion Probe Analyzation, Auger Analysis, Energy Dispersive Analysis, etc.

4. Adoption of Sorption and Ion Vacuum Pumping.

5. Computer process control.

6. Evolution from glass to ceramic tube envelopes.

7. Computer controlled test equipment with digital readout and data storage.

While the production of the General Electric Neutron Devices Department is still (1977) primarily neutron generators, in the last few years we have embarked on -a program to bring other products into the operation. As of now (1977), we are manufacturing, or getting tooled up to manufacture, such additional products as one with code name Heather, Lightning Arrestor Connectors, Radioisotopically powered Thermoelectric Generators, Ceramic Feed-through Headers, High Vacuum Switch Tubes, Neutron Detectors, Mylar Film Capacitors, Explosive Firing Sets (code name Lobo), Detonator Headers, and high purity Calcium Chromate. We are also assigned to procure thermal batteries for the ERDA/ALO Complex and operate a thermal battery laboratory and prototype facility in support of this procurement.

There have been three anniversary recognitions or celebrations of our tenure in Pinellas County. The first was on June 14, 1961, in recognition of our five years here at that time. This was in the form of a meeting of the Committee of 100 at a breakfast in the cafeteria. We talked briefly of the program and contributions to the community we had made over the five years and, in turn, heard some nice and complimentary remarks from members of the business community.

The ten year anniversary celebration in 1966 was more extravagant. For that we staged an affair at the Bayfront Center Auditorium for all employees and spouses. The program consisted of Broadway acts, and there were remembrance favors for both men and women. It was like a night on Broadway (with St. Petersburg weather). Also for our ten year recognition, the Committee of 100 hosted a small group of our Staff and presented us with a plaque/wall clock which, for a time, hung in the Lobby and now (1977) is in Mr. Wannamaker's office.

The recognition of our 20th anniversary here was combined with our Country's 200th anniversary in 1976 and was referred to as "20/200." All employees and their spouses were attendees at a dinner at the Bayfront Center with recognition speeches by ERDA and GE officials. The entertainment was by Ray McKinley directing the Glenn Miller. Orchestra, and the Modernaires with Ray Eberly. Also for this 20 year recognition we had an Open House where most of the plant was made available for a plant tour by selected community dignitaries and all our employees and their families.

There have been four unionization attempts at the Pinellas Plant to date (1977). There have been no attempts since 1966. The unions.lost all four of the elections.

The first election was in March 1957 within two months after we moved into the Pinellas Plant. Two hundred eight (208) employees voted: IBEW (60), IUE (11), No Union (136). Ronald Reagan, then host of the General Electric Theater program on television, visited the plant just prior to the election. His appearance was obviously helpful in presenting the General Electric image to our then new employees.

The second election was on July 2, 1958. This time 583 employees voted: IBEW (153), IUE (32), No Union (386).

The third election required a runoff. On June 17, 1960, 659 employees voted: IBEW (280), IUE (68), No Union (309). Since there was no majority in this June 17, 1960 vote, a runoff was held on July 8, 1960. Six hundred fifty-two (652) employees voted: IBEW (279), No Union (373).

The fourth election was on November 16, 1966. Five hundred thirty-two (532) employees voted: IBEW (9), IAM (139), No Union (363). This time the NLRB investigation delayed counting the ballots until January 3, 1967. Twenty votes were challenged.

As of December 31, total employment for the Pinellas operation, year by year, is as follows:

Year	Year-End Totals	Year	Year-End Totals
1956	285	1971	1264
1958	1264	1972	1236
1959	1217	1973	1233
1960	1211	1974	1192
1961	1272	1975	1106
1962	1371	1976	1164
1963	1368		
1964	1288		
1965	1232		
1966	1165		
1967	1380		
1968	1396		
1969	1296		
1970	1280		

On June 15, 1966, the longest game in the history of baseball was staged by the St. Petersburg Cardinals and the Miami Marlins. It went for 29 innings, lasted 6 hours and 59 minutes; starting at 7:30 pm and finishing at 2:29 am. Sparky Anderson, Manager of the World Champion Cincinnati Reds in 1977 was manager of the losing St. Petersburg Cardinals.

It has been rather difficult to decide how much detail should be included in this account. I chose this rather broad overview approach so as not to detract from its interest/usefulness by its length. There are many supporting sources of historic detail in the various components of the Department. I will leave historic information from my files with Judd Hollister for file or distribution or destruction as may be decided.

A. F. Persons
February 22, 1977