

Upon Graduation with a Masters Degree, Mech Engr in Aug 1950 the Korean War was in progress. Thus an active Reservist in the Army was subject to recall and jobs were not easily available. There was an opening at the University of Illinois Airport for flight instructors so I took a job there in Sept 1950 - contract salary \$4,400 per year.

It turned out later that this was an "essential" occupation during the Korean War so when my recall to service orders were received the University requested that I remain there and this request was granted.

There was a large flight student load in the Fall of 1950. We had 4 full time flight instructors and many part time flight instructors. I was assigned as the Chief instructor for Primary Flight Training. Our assigned student load was 8 students per day starting at 0630 in the morning and finishing at 5 in the evening. This was the first semester of using an experimental flight training program using Link Flight trainers for basic flight training. The program was developed by Dr Guy Matheny, later my boss, and tested with a limited number of students and approved for further work by the Civil Aeronautics Board. This program involved a LOT of one-on-one teaching of necessary student actions in an airplane using a link trainer. The belief was that the "new" student was trying to absorb his lessons in a very poor environment -- loud engine noise and he was uncomfortable riding on a seat that seemed unstable. Thus we went through flight control functions, coordination of functions, demonstrations of airplane responses to control system actions, drilled over and over so that on the students first ride he was so versed on engine, flight control actions and expected aircraft responses that he was never conscious of the "strange environment" and all flight training was highly productive training. Using this program we had all students solo with total flight time much below the "standard" 8 hours. One student soloed with only 1 hour, 45 minutes of flight time with a flight instructor.

In the fall of 1950 we purchased a new 1951 Nash.

By the spring of 1951 we began looking for expanded living quarters. In Aug 1951 we purchased a nearly completed house for \$5,800 (cash) at 610 East Oakland, Urbana, Ill and moved into our first house. This was a 2 bedroom house with a living room, kitchen, bathroom and utility room. We had our own well and septic system. We built a single car garage. We lived in this house for two years.

In the Spring term 1952 I became a Charter pilot. Four flight instructors were full time charter pilots. U of I professors taught courses throughout the state of Illinois. We normally left campus about 3 in the afternoon, arrived at the city for their course in the evening and had dinner. They taught their 3 hour class and we flew back to campus that night. We usually arrived home between 11 PM and 1 AM depending upon the flight distance and the weather. Charter pilots also had some overnight trips. We took the entire wrestling team to Ft Collins Colorado in 4 Beechcraft Bonanza's. That was my first experience of flying into an area of unlimited visibility. Flying in the midwest with high humidity and haze one can see about 10 miles. One gets a sense of time to travel the distance one can see. Suddenly in

This was a very interesting job. I was expected to work with something entirely new, and not fully designed yet. In 1953 the popular opinion among aircraft companies was that there would shortly be a GREAT shortage of engineers and they each needed to get their inventory of technical people AS SOON AS POSSIBLE! My job was to find the engineer who was working on the "current" design. It was quite common to find that one engineer had been assigned to work on an aircraft system, a change was necessary and a second engineer was working on the new version at the same time. In some cases even a newer change was in work. I was learning the functional information on how accurate navigation systems worked and what the crew functions were to assure that these automatic systems were operating properly.

Within two years, Chet Zimmerman my boss and I had written the two simulator design specifications. In the meantime the B-58 was being built and test flown. Our house was within a few blocks of the main runway where the first flight occurred. For this job all of the B-58 work was "SECRET" but we all knew when the first flight was to occur. We had a front row seat to witness the first flight of the B-58 from our back yard.

After working at Convair for a short while I found that the company had a nuclear reactor test program. Southern Methodist University Graduate Nuclear Engineering courses were being taught off-hours at the plant. I enrolled for these courses.

TRANSFER TO NUCLEAR

In June 1955 I transferred to the Nuclear Reactor Test Program. All of the reactor operations were conducted from an underground shielded bunker adjacent to a large swimming pool in which the two reactors were assembled, disassembled and operated. I became a reactor operator on my first day of duty! This was rather unfortunate in that I had not been trained on the sensitivity of reactor controls, cautions, precautions control response times, or the safety systems. In those days training, and following written operating procedures had not yet been established

The reactor was the Ground Test Reactor, initially a carbon copy of the Bulk Shield Reactor at Oak Ridge Tenn. This reactor has three control drive motors on a platform at the top of an aluminum channel frame. This frame hangs on a cutout on a bridge that traverses the length of the swimming pool. Twelve feet under water at the bottom of the aluminum frame is a grid plate - a 3 inch thick block of aluminum with very precise drilling of holes for fuel elements and control rods. At the back of the aluminum frame were the reactor flux measuring instruments for monitoring the energy produced by the reactor core. The reactor core is made up of 24, 3 X 3 inch by 24 inch long fuel elements in which are curved plates of a fuel sandwich. The fuel plates are curved so the cooling water channel between the fuel plates will retain the contour and the cooling channel will retain its specified plate separation. Enriched uranium is the meat within the sandwich and an aluminum sheet (the bread of the sandwich) is bonded over the uranium so that the uranium and later fission products are sealed and remain within the fuel plate.

During my working days between June 55 and Oct 55 I spent a lot of time learning about reactor safety. I very quickly became one of the Crew Chief's of the GTR (Ground Test Reactor). A Crew Chief was the person in charge of reactor operation and personnel safety during a shift. We worked two shifts per day, operating from 8 AM until midnight. Each crew worked two weeks on days and two weeks on nights (4PM to midnight).

One noon in Oct 56 the Supervisor of all Reactor Operations invited me to "eat out" at a local restaurant with him. He then told me that I had been recommended to become the Supervisor of all Reactor Operations and that he was being promoted within two weeks. The program was growing, more people were being hired and he would head up a much larger reactor design group. In October 1956 I became a Nuclear Test Laboratory Group Engineer - a Red Button. All personnel working at Convair wore personal identification badges. All supervisors at Convair were "Red Buttons"

The reactor testing programs did grow. We soon were operating 5 or 6 day weeks, three shift operations and I coordinated the activities of the two reactors. As new personnel were hired we developed an operator training program, developed reactor operating procedures and finally established an operator licensing program. All of the reactor operators were licensed after satisfactory completion of a written and a practical examination by University Professors who were authorized by the Air Force to give these license certification examinations.

From Oct 55 until I left Convair (then General Dynamics - Ft Worth) in May 1964, the two reactors were undergoing design changes as the testing programs expanded and required a higher reactor power. A third reactor the RTA (Reactor Test Assembly) was designed and build. This assemble was never operated at power but was used to verify, by nuclear test, that all new fuel was delivered to our specification and to develop new reactor - fuel element to control rod configurations. Every year major facility modifications were made. One of the reactors were modified, tested and put into service each year. Reactor power levels were increased so much that forced reactor coolant flow was required and a large cooling tower was needed to dissipate the reactor heat.

Because of the high leakage radiation levels that were desired for the materials test programs using the GTR, we redesigned the reactor, the cooling system and the safety systems. We also had to increase the shielding for the test facility. A million pound traveling concrete shield was built to cover the swimming pool test area during reactor operation. At reactor shutdown the heavy shield door was opened, the heavy shield structure rolled back so the irradiated test materials could be removed to a shielded test laboratory. By this time our normal week consisted of the installation of a reactor core and new test materials on Sunday. Reactor startup was at midnight Sunday, full power operation for up to 6 days, shutdown late Saturday. Those materials removed, a new reactor core installed and the cycle repeated - reactor and materials reloaded for reactor restart at midnight Sunday.

greater power than the Saturn Rocket (then the largest and highest power combustion fuel rocket). NERVA was to be a very high power nuclear reactor cooled by hydrogen that was heated from liquid hydrogen temperature (-480 deg F), converted from liquid to gas and heated to a very high gas temperature and exhausted through huge gas nozzles similar to jet engines. The total time for using this engine to get the rocket into orbit was 400 seconds.

Our facility performed small experiments to determine feasibility of some design components. Our facility was being modified to get liquid hydrogen storage tanks, combustion fuel heating of the gas and exhaust the hydrogen gas and burn it in the atmosphere when the NERVA program was terminated. This experiment was to test the liquid hydrogen pump to verify that the hydrogen driven gas turbine was powerful enough to drive the liquid hydrogen pump at the required pumping rate, for the 400 second mission time.

The NARF (Nuclear Aircraft Research Facility) throughout its history had a staff goal to utilize our reactors to perform whatever tests were necessary to support the ANP program. Our reactors were operated in a water tank inside a B-47 bomber airplane to determine how much radioactivity would be generated in the airplane structure by leaking neutrons. The reactors were operated in a shielded pool with intended high leakage radiation to expose airplane materials - lubricating oils, rubber materials, seals, electronic materials - to radiation exposure that the materials would encounter during an expected airplane mission. These tests were performed to determine if lubricating oil could withstand radiation and work to properly lubricate important parts during the expected aircraft flight mission. New lubricants, rubber, seals and new electronic equipment were in development when this program was terminated.

The staff of the Reactor Operations Group was a staff to be proud of. They demonstrated a capability of being able to perform a very diverse number of jobs, install test equipment, remove highly irradiated test equipment from the reactor environment with only minor personnel radiation exposure, maintain and operate the three NARF reactors without any incidents or accidents. The NARF facility was on the shore of Lake Worth (the Ft Worth water supply) so we even had a power boat to assure that no person approached our operating facility. Our boat was used to monitor the radioactive content of the water that was used by the City of Ft Worth for drinking water. Test data verified that the NARF facility did not contribute radioactivity to this water.

TRANSFER TO GENERAL ATOMIC, GENERAL DYNAMICS

In May 1964 I transferred and drove our only car to General Atomic, San Diego, Calif. The children were still in school in Ft Worth so Gladys and the children stayed in Ft Worth until school was out. Then they assisted in loading our household goods on a moving van and traveled by train to visit the grandparents in Illinois. Gladys, Roger and Betty flew to California and we moved into a rented house at 1607 Edilee Drive, Cardiff-by-the-Sea, Calif.

highly educated work force to the city. So the Idaho Falls population we experienced was about 50 % Mormon, a large Naval Reactor training population, and a large number of site workers. It was a real change to be a new resident in a city and be able to cash a check in a grocery store without first being investigated, and having established an account. It was a very friendly population and the children were quickly integrated into the school system. We became members of the suburban Methodist Church which was only about two blocks down our street.

Idaho Falls had a severe winter during 1963-64, snow > 14 inches in town between Thanksgiving and May, and very cold. We arrived in Feb 1965, during a mild winter with no snow in town and some of the earth unfrozen in front of our house. Being a new house, we and other EBOR employees spent our early days getting settled. This meant getting drapes, furniture and all the furnishings needed to settle in our new home.

Our work consisted of training our newly hired reactor operators. We used our trained supervisory staff just moved from San Diego, and staff engineers from San Diego as the instructors for a formal, scheduled training program conducted at the Star Dust Motel in Idaho Falls. Our operators had scheduled site visits during this program.

By the summer of 1965 our reactor and the facility were nearing completion so our newly trained staff began the preoperational equipment testing program. Again I had an excellent staff of Reactor Operators with diverse skills and background. Nearly for all different type of work we encountered we had skilled persons to do the necessary work.

Just before Christmas 1965 we learned that reactor test programs such as ours were being cancelled by the Federal Government without being completed. Our Project Director, Ted Kidd was a very highly respected Manager at General Atomic. Within only a few weeks after we learned that our Project had been cancelled we had found an acceptable job for every one of our employees!

Rather than move to California to stay with General Atomic, I accepted employment in March 1967 with the Atomic Energy Commission (AEC) and worked in Idaho Falls. For the first time in my working career I could, and did, come home for lunch.

I appreciated working for Dr C. Wayne Bills at the AEC and became a Project Engineer for the Test Reactor Area. This job involved working with budgets, contracts between the Government and Government Contractors as well as coordination responsibilities for the technical operation of three test reactors and the test programs for each of these reactors.

In June 67, I was interviewed and could have gone to work for the AEC, Regulatory in Chicago, Illinois. Two conditions, each controlling, kept me from moving at that time. I was determined that I would not move one of my children for his Senior High School year at a new High School. Roger had only his Senior Year of High School to complete. I also knew that he was a contender to be the class valedictorian. Also, the Advanced Test Reactor was

of her small intestine removed, gangrene had set in and she returned from surgery as a "dirty" patient and needed a private room to prevent infection. During the day on Sunday she was walking but with MANY portable stands to support the life support medicines. Her recovery was suprisingly rapid.

Quite a few Nuclear Power Plants were being built throughout the United States. Only the prototype plants were in operation - Dresden I at Chicago and Indian Point I, Oyster Creek and Yankee Rowe in the East Coast. There were a lot of Universities with operating reactors. Fermi I, a sodium cooled reactor, had had a partial melting of two fuel bundles and the operators spent 4 years getting repaired and back in service. I became the reactor inspector for Fermi during their final repair and for all of their restart testing. That facility had a HIGHLY COMPETENT engineering staff. That facility was used as the training facility for most of the key personnel that later managed other Nuclear Power Facilities.

These were the early days of Nuclear Power. Inspection standards were not universally established. With the large number of new inspectors throughout the nation a special training class for the new inspectors was held in Washington, DC in October. There were only a few reactor inspection reports available so our bootstrap training for every inspector to read all of the inspection reports. As one inspector found a problem, all inspectors took the lesson and checked their own facility to be sure the same problem did not exist at any other facility. Many problems did exist at other facilities and industry was upgraded by learning of others problems. Our technical standards were established by memo's to Regulatory Headquarters in Washington and a prompt reply by O'Reillygram to each Regional Office. Our technical library consisted of many notebooks of O'Reillygrams setting the inspection requirements and standards for all inspectors in the United States. My first two years were learning years for me and for the industry. Many new big reactors were being built, a few operating prototypes were operating and a large number of University Reactors were operating.

With time the number of inspectors increased. Formal inspection criteria was formulated. The most important new inspection topic was the Startup and Testing for all the new Reactors that were nearing the Operating Phase. By the summer of 1971 our organization was expanded to form a new Startup and Test Branch in Chicago and in the Newark, New Jersey (Region I Office). Five persons were invited to interview for the position of Branch Chief in Region I. I was the person selected and reported for work just after Labor Day, 1971. By this time Jim O'Reilly moved from the Wash, DC office and became the Regional Director of Region I. Jim and I pioneered a rapidly expanding technical inspection program for the Startup and Testing of new Large Nuclear Power Plants. My responsibilities expanded with time to be responsible for startup and testing AND all operating reactors in Region I and then to be the Project Inspection branch for ALL reactor inspections, Plant operations, and other inspections for Nuclear operating power reactors in Region I. Thus the staff had grown from 7 inspectors to 80+ inspectors and staff.

advance copy of the final recommendation for a license in Washington, DC. By working with the licensing office they were aware of the progress of the test program for each Utility. By the time that the in plant inspector verified that test results accurately verified plant testing requirements the inspector called me. I called the Washington offices and informed them that the signed paper accurately reflected the test program and the license should be issued. The licensee also had to have his representative in the Washington, DC licensing offices with the check for the license fee. With verbal confirmations the licensee representative could exchange his check for a license and notify his Corporate Offices that a license had been issued. All conditions of the license had been previously reviewed with all of the licensing staff so there were no "surprises"! Our inspection motto was "TOUGH BUT FAIR" "no surprises"!

REGION I LICENSES ISSUED AFTER INSPECTIONS VERIFYING PLANT REQUIREMENTS BY MY INSPECTORS - 15 plants

Plant designation	Licensing Date
VERMONT YANKEE	March 1972
PILGRIM	June 1972
MAINE YANKEE	October 1972
INDIAN POINT 2	April 1973
PEACH BOTTOM 2	September 1973
THREE MILE ISLAND 1	June 1974
CALVERT CLIFFS 1	July 1974
PEACH BOTTOM 3	August 1974
MILLSTONE 2	September 1975
INDIAN POINT 3	December 1975
BEAVER VALLEY 1	January 1976
SALEM 1	August 1976
CALVERT CLIFFS 2	August 1976
THREE MILE ISLAND 2	February 1978
SALEM 2	April 1981

Region I was very effective in many pioneering efforts. I was in charge of recruiting and our recruiting efforts were very effective. By 1976 we had the most competent reactor inspectors in the AEC (then the Nuclear Regulatory Commission - the NRC). In that year all but 1 promotion of inspectors to managers were from my Branch of Inspectors. By this time we had reorganized so that I was the Branch Chief responsible for all Startup and Test inspections AND all operations inspections. We had also specialized many of our inspectors to handle the review of all operating procedures, specialized tests, security, quality assurance and construction activities such as concrete, welding, instrumentation, preservative materials, and fire prevention. I hired many PhD's to perform the speciality inspections.

June 11,1990

The Regional Director and the Health Physics Branch Chief were also in the office by this time. I immediately **RAN** by the Regional Directors Office to notify him of the message enroute to the Health Physics Branch Chief's Office. We together called TMI to learn of their Major Accident. That phone line was kept open for several weeks. NRC Hq were immediately notified & they opened their Emergency Response Center. Within 15 minutes of the first notification the NRC REGION I was staffed to control Emergency Actions.

We immediately recognized the seriousness of the accident and immediately opened the Region I Emergency Response Center where the Emergency Response Team became active. We immediately dispatched two teams of Region I inspectors to the Accident Scene. The Health Physics Vehicle had Health Physics Survey Personnel and ALL of our Survey instruments. This vehicle had a State Police Escort as well as the siren and lights on the Region I Emergency Vehicle. The second vehicle had my Operations inspectors and were dispatched to the TMI Plant control room.

The Regional Director notified NRC HQ and they also opened their Emergency Response Center. Good phone communication systems had not yet been established so HQ Emergency Center were tied into our communication lines to TMI only by Phone operator action. HQ personnel were probably not added to our Emergency Response communications system until after 9 AM.

The accident resulted from incorrect actions by Reactor Operators over the initial 4 hours. A valve on the pressurizer opened and stuck open. This shut down the reactor, (a scram), and initiated all of the plant emergency equipment. The primary system cooling system was loosing coolant (steam and hot water) through the stuck open valve. All of the emergency coolant addition systems were operating to add water to the primary system.

However both of the emergency secondary water pumps were tagged out of service. During this time all of the water in the secondary system heat exchangers was boiled off and the plant was without a heat sink for approximately 8 minutes.

The plant could have survived this event with only slight damage but the License Control room operators did not properly evaluate the plant conditions. Some of these persons were Navy Trained to **NOT LET THE PRIMARY SYSTEM GO SOLID**. This means that operators should not permit the NORMAL and the REQUIRED steam bubble in the pressurizer to be collapsed by cooling or by adding too much water to the pressurizer. With 3 emergency cooling pumps adding a large volume to the primary system the operators turned off some pumps and throttled the flow of the remaining pump. The plant very quickly overheated with the secondary system boiled dry (no heat removal system) and the primary system NOT receiving the cooling water that the plant was designed to receive. The reactor core temperatures increased under these conditions, fuel metal cladding temperatures exceeded the "Metal-water" reaction temperatures and the Zirconium reacted with the hot water to form hydrogen gas (an easily ignited explosive gas in the presence of oxygen). Gaseous fission products were also released into the primary coolant system.

By Friday it was known that sufficient Hydrogen was generated in the reactor, escaped through the stuck open valve into the Reactor Building where oxygen was present and caused an explosion, midafternoon on the first day. Technical personnel in Washington considered the remaining hydrogen in the reactor as a major problem potential if a hydrogen explosion were to occur within the reactor. **NOTE:** Oxygen MUST be present for a hydrogen explosion to occur. Oxygen gas is NOT present in a reactor filled with water.

Another problem potential was that some valve, some coolant flow stream might be established whereby the HIGHLY RADIOACTIVE water in the Reactor Building would exit the Reactor Building. Washington people had established "Boundary Conditions" where actions would be taken to evacuate near plant residents. On Friday morning one of the "Boundary Condition" values was reported for a location NOT applicable to the "Boundary Condition". Excitable people used this number, **applied it for "Evacuation Action" without ANY further checking.** An evacuation of pregnant women and small children was ordered. This was **incorrect**, and in itself caused a traffic hazard to nearby personnel and unnecessarily made nearby residents and the media very emotional.

The President of the US, Jimmy Carter, then ordered Washington Technical Personnel to the Accident Site to coordinate recovery operations. Thus Harold Denton, **the man who caused the evacuation** and who was concerned about a hydrogen explosion was **ordered to the site to correct his own errors.** A large technical staff was added to the scene but the most serious errors were corrected beginning on Wednesday March 28. **The highly emotional personnel and media events of Friday March 30 were unnecessary!**

On Saturday March 31, my birthday, I spent about 20 hours in the Region I emergency response center. By this time the emotional wave of Friday had triggered many, many technical people and offices to start preventive action plans for "what if" questions. One needed exercise was to get sufficient lead (a shielding material) onsite to establish a shield wall around a recombiner (a device to take the hydrogen gas in the reactor building, recombine it safely with oxygen to create water). This air flow stream would take highly radioactive air outside the reactor building. By 4 AM, the our Emergency Response center had placed calls to all reactor facilities, offices, factories, research centers to request that lead be shipped to TMI. Before I went home to bed I knew that National Guard Airplanes would deliver large quantities of lead to an airport near the accident site. By the time I returned a few hours later it was reported that there was a traffic jam of lead shipments to the site. National response of technical personnel was **IMMEDIATELY** available.

The national organization "Emergency Preparedness Association" (EPA) for coordinating National Emergencies had only been established for less than a week. This organization was formed from several other federal offices but the largest was Civil Defense. This organization was not very effective during this event.

a "sampling" program. We in region I were achieving as many inspection hours per inspector as that achieved by the Resident based inspectors then in the test program.

With the three Mile Island accident, the national effort suddenly became one of several Resident Inspectors at **EACH** Reactor site. All Regional Offices initiated an extensive recruiting effort. The idea was to recruit & train inspectors in the Region office, and at the NRC Training center, qualify Resident inspectors and then move experienced inspectors into the Resident Inspection Program. With the RAPID growth we incurred in 1980 many inspectors who became the assigned resident inspectors for on-the-job training at the job site. In my experience this is the only time we were able to recruit to manpower levels that exceeded the legislated ceilings.

During my AEC/NRC experience I was proud of the quality of people within the Agency. Throughout my career I worked with a Government Staff of people who worked whatever it took to get the job done. My employees and I all worked a lot more than the required 40 hours per week. Many of us worked for many years at salaries that were the top pay scale but we could not exceed the the salary of Congressmen. Our pay scale rates were considerably above the actual salary we received. Also during the Nixon federal salary freeze we could not get the salary due for a promotion.

For a time we worked PAID OVERTIME at a pay scale that was 1/2 of our regular hourly rate. This was true because of the government pay legislation that puts a maximum overtime hourly rate for ALL employees at the pay scale of a GS-6.

The Regional office underwent major reorganization changes post TMI. Major changes in staffing occurred in Washington because the last contract for new reactor licensing was in 1978. Many of the Washington office efforts were deemed best preformed in the Regional Offices.

The new regional office was headed by a Regional Director, an Administrative rather than a technical position, Regional Division Directors rather than Branch Chiefs to handle the rapid growth in resident inspectors. Each region had a legal staff, the Reactor Operator Examiners decentralized from Washington and moved to the Regions.

I had a peak staffing of 80 people people within one Branch – Reactor Operations and Project Branch. By 1981 I had recruited and trained my 4th staff of which I was Proud. They were in Ft Worth, in Idaho at EBOR, and two in Region I. At the time of my retirement Region I had 28 Nuclear power reactors under our inspection programs

RETIREMENT

Gladys & I had planned to retire and move back to the "homestead" at Reddick and live with Mom in the spring of 1983. We last visited her on Labor Day Weekend 1982. We told her this as we were leaving for Philadelphia. She responded by saying "I'll not last

had two cars there & spent a winter at a new Marina at Pt Clinton, Ohio, the next winter at Pilgrim plant I wrote the scenario as the sole Operating plant operations scenario as the author at that plant on two successive winters. Our living quarters was on Cape Cod in a new house at first not yet fully furnished with new furniture. This home was built for the County Sheriff on county around the Pilgrim plant & he was required to live in the County & his new retirement home on Cape Cod was our new rental home for two winters. This house was on the shore of the Atlantic Ocean, a spacious house that overlooked the Ocean. The second floor has a living room with the entire second floor had windows overlooking the ocean giving the feeling of being aboard an expensive yacht. Gladys walked the beach every day collecting sea shells. One winter there was a break between drills so Gladys and I spent our first winter in Florida during that break. We spent subsequent winters in Florida with great condo facilities at newly constructed but as yet unpurchased new condos as a part of the RCI military program with very reasonable weekly rental rates on an "as-available" basis for military active or retired military, getting reservations on the internet. We were fortunate to get reservations weekly during our intended winter time in Florida.

Our home in Illinois was built for my parents, a well insulated house, designed air ducts for air conditioning. We replaced the fuel oil furnace with a geothermal furnace supplying air conditioning in summer & home heating in the winter. Replaced the house windows with thermopane windows. The yard has 20 fruit trees, a hugh rhubarb patch, 2 raspberry patches, a strawberry patch, a garden, a greenhouse attached to a former chicken house. Home ownership means quite a bit of maintenance, mowing lawn, repainting of buildings, snow clearance etc. There is now a new grain shipping facility capable of loading a 75 grain car train and another a hugh Container grain facility both within 7 miles of our home.



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
631 PARK AVENUE
KING OF PRUSSIA, PENNSYLVANIA 19406

NOV 5 1976

Eldon J. Brunner, Chief,
Reactor Operations and Nuclear Support Branch

INSPECTION AND INVESTIGATION ACTIVITIES AT THE BOSTON EDISON COMPANY'S
PILGRIM NUCLEAR POWER PLANT

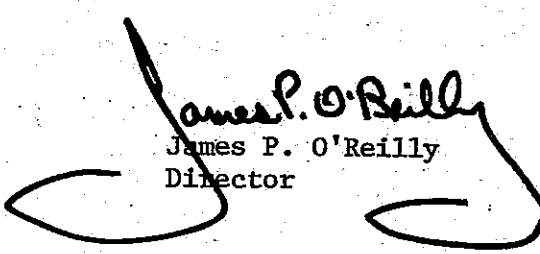
I am pleased to recognize formally your professional contributions to recent inspection and investigation activities conducted at the Boston Edison Company's "Pilgrim" nuclear power plant. Your managerial thoroughness, aggressiveness in determining the facts and professional evaluations played a major role in resolving complex technical and managerial issues.

In addition to my recognition of your efforts, I am particularly pleased to note that your efforts were recognized by Senator Edward M. Kennedy, Commonwealth of Massachusetts; Marcus A. Rowden, Chairman, United States Nuclear Regulatory Commission; and Dr. Ernst Volgenau, Director, Office of Inspection and Enforcement, United States Nuclear Regulatory Commission. The formal evidence of this recognition is attached to this letter as Enclosures.

As you know, outstanding work is not always recognized by senior personnel. Also, average work is sometimes recognized as superior under certain conditions. However, both you and I well know that this case does not fall into these categories. This case fits the ideal category of "outstanding performance and proper recognition."

Your performance reflects great credit on you and Region 1. I am personally thankful.

WELL DONE!


James P. O'Reilly
Director



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

September 23, 1976

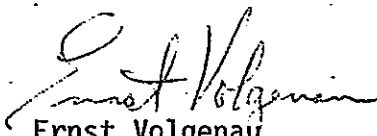
James P. O'Reilly, Director
Region I

PRESS RELEASE BY SENATOR KENNEDY

Attached is a memorandum from Chairman Rowden concerning a press release by Senator Kennedy's office which was made on September 9, 1976. The statement in the release indicates that Senator Kennedy is very favorably impressed with the Region I inspection effort at the Pilgrim Plant in Plymouth, Massachusetts.

I know that you and your staff worked hard to demonstrate the inspection program to key staff members from Senator Kennedy's office, and the resulting release reflects favorably upon Region I and the entire Office of Inspection and Enforcement.

Such initiatives are worth the effort. The people of this country should be informed that NRC has capable, dedicated employees who are working hard to promote safety. I hope that you and the other regional directors will continue with efforts of this type.


Ernst Volgenau
Director
Office of Inspection
and Enforcement

Enclosure:
As stated

cc: Division Directors
Regional Directors.



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

September 14, 1976

OFFICE OF THE
CHAIRMAN

MEMORANDUM FOR: Ernst Volgenau, Director
Office of Inspection and Enforcement

FROM:

Chairman Rowden

Marcus A. Rowden

SUBJECT:

KENNEDY PRESS RELEASE

I have read with a great deal of interest and pride the statement issued September 9 by Senator Edward Kennedy concerning the NRC inspections at the Pilgrim Nuclear Power Plant. I share Senator Kennedy's thoughtful comments concerning the work of the Office of Inspection and Enforcement in this matter, and I would ask that you pass along to your staff my sincere compliments for a job well done.

Your staff plays a vital role in assuring, as Senator Kennedy stated, that the "highest level of safety" is maintained at nuclear power plants, and it is gratifying to note that this work is receiving well deserved recognition.

cc: Commissioner Mason
Commissioner Gilinsky
Commissioner Kennedy
Mr. Gossick

NRC Cites Pilgrim Safety Infractions

Patriot-Ledger 9/10/76

WASHINGTON, D.C. — Federal radiation safety procedures have not been followed to the letter at Boston Edison Co.'s Pilgrim I nuclear power plant in Plymouth, according to the Federal Nuclear Regulatory Commission (NRC).

The NRC cited five areas of infractions of safety regulations in a report issued yesterday through Sen. Edward M. Kennedy's office. NRC inspectors identified the infractions when they visited the Pilgrim plant on two dates in May, after Sen. Kennedy's office had relayed complaints it received that the highest level of safety was not being maintained at the plant.

A spokesman for Sen. Kennedy's office explained that an infraction of the regulations generally means that radiation exposure levels to workers had exceeded permissible limits, but not to as high a degree as would be cited in a violation of the regulations.

The areas of infraction related to "radiation safety practices; radiation control equipment and implementing procedural training of personnel; the adequacy of the health physics staff, and management control systems. The health physics staff monitors the exposure of workers to radiation. Sen. Kennedy's spokesman explained that an infraction is a medium degree offense, being

worse than a deficiency, but not as bad as a violation of the regulations.

According to the report, Boston Edison has now implemented corrective measures "to more thoroughly protect workers at the Pilgrim site."

These corrective measures are to be monitored by the NRC under its periodic inspections of the power plant, the report states.

Sen. Kennedy stated, "The health and safety of workers in nuclear plants, like Pilgrim I, must be protected by the most careful and complete compliance with the standards established by the NRC."

"I'm grateful to the NRC for examining the Pilgrim Plant so thoroughly and for carrying out the inspection in coordination with routine maintenance so there was no delay, and for its assurance it will monitor Boston Edison's response to the infractions identified."

According to the report, Boston Edison responded to the NRC's findings with its plan for corrective measures Aug. 9.

Safety Steps Reported At N-Plant 9/10/76

Patriot Ledger Washington Bureau

WASHINGTON — Sen. Edward Kennedy, D-Mass., reported today that the Boston Edison Company has instituted "corrective and preventive measures" which will more thoroughly protect workers at the Pilgrim Plant in Plymouth. The senator said the measures were an outgrowth of safety inspections conducted by the Nuclear Regulatory Commission (NRC) while the Plymouth plant was undergoing refueling and maintenance earlier this year.

Those inspections, according to Sen. Kennedy, uncovered no violations of federal regulations but identified five areas in which "infractions" had occurred.

These related to radiation safety practices, radiation control equipment and implementing procedures, training of personnel, the adequacy of the health physics staff, and management control systems.

Sen. Kennedy said in a statement that he was "pleased" by the nuclear agency's report of Boston Edison's action to correct the deficiencies.

from the office of

*Senator Edward M. Kennedy
of Massachusetts*

STATEMENT BY SENATOR EDWARD M. KENNEDY ON THE RESULTS OF
THE NUCLEAR REGULATORY COMMISSION'S INSPECTION OF THE
PILGRIM I NUCLEAR POWER PLANT IN PLYMOUTH, MASSACHUSETTS

For Immediate Release
September 9, 1976

Senator Edward M. Kennedy today announced that, based on safety inspections conducted by the Nuclear Regulatory Commission at the Pilgrim I Plant in Plymouth, Mass., the Boston Edison Company has instituted corrective and preventive measures which will more thoroughly protect workers at the Pilgrim site.

The safety inspections were conducted while the Plymouth facility was undergoing required refueling and maintenance earlier this year, and after Senator Kennedy advised the NRC that he had received reports that the highest level of safety was not being maintained at the Pilgrim Plant. Those inspections, while they found no "violations" of NRC regulations, identified five areas in which "infractions" had occurred. The infractions related to radiation safety practices; radiation control equipment and implementing procedures; training of personnel; the adequacy of the health physics staff; and management control systems. Corrective and preventive measures have been implemented by Boston Edison, and their implementation will be monitored through NRC's continuing inspection program, according to the NRC.

In announcing the results of the inspection, Senator Kennedy said:

"I am pleased by the NRC report that Boston Edison has taken immediate measures to correct the deficiencies in safety and management procedures identified in recent inspections. The health and safety of workers in nuclear plants, like Pilgrim I, must be protected by the most careful and complete compliance with the standards



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
631 PARK AVENUE
KING OF PRUSSIA, PENNSYLVANIA 19406

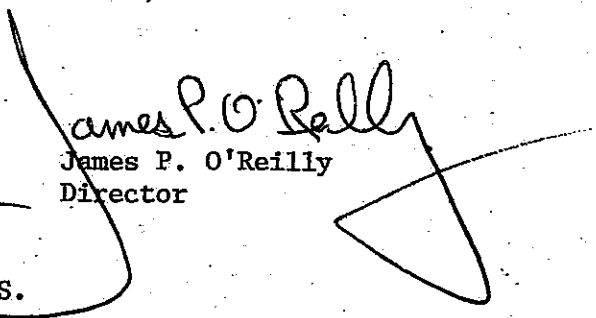
NOV 12 1976

Eldon J. Brunner, Chief
Reactor Operations and Nuclear Support Branch
Office of Inspection and Enforcement, Region I

BRIEFING OF SENIOR GAO PERSONNEL IN REGION I - OCTOBER 27, 1976

This supplements my commendatory comments to you in my memorandum of November 1, 1976.

I believe it important, for the records, to show your efforts were above that normally considered to be acceptable by providing you with a copy of a letter commending Region I for their superior performance. I am sure you share with me the satisfaction that this was a job well done.


James P. O'Reilly
Director

Enclosure:

1. Copy of letter from the U. S. General Accounting Office - from Richard W. Kelley, Associate Director, Senior Level - dated November 5, 1976

cc: Personnel File



UNITED STATES GENERAL ACCOUNTING OFFICE
WASHINGTON, D.C. 20548

ENERGY AND MINERALS
DIVISION

NOV - 5 1976

Mr. James P. O'Reilly
Director of Nuclear Regulatory
Commission, Region I
631 Park Avenue
King of Prussia, Pennsylvania 19406

Dear Mr. O'Reilly:

Please accept my thanks for the outstanding presentation which you and your senior staff provided us on October 27. Our staff, both headquarters and regional office, is impressed with your understanding of and control over the varied aspects of your responsibilities to protect our citizens.

We also are most appreciative of your hospitality and willingness to devote your valuable time to our education.

Sincerely yours,

A handwritten signature in cursive script that reads "Richard W. Kelley".

Richard W. Kelley
Associate Director,
Senior Level

11-41



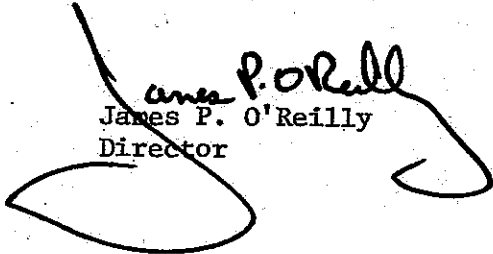
UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
631 PARK AVENUE
KING OF PRUSSIA, PENNSYLVANIA 19406

NOV 1 1976

Eldon J. Brunner, Chief
Reactor Operations and Nuclear Support Branch
Office of Inspection and Enforcement, Region I

BRIEFING OF SENIOR GAO PERSONNEL IN REGION I - OCTOBER 27, 1976

I would like to express my sincere appreciation for your professional presentation at the briefing of senior GAO personnel in Region I on October 27, 1976. I look upon your efforts with pride. Your professionalism and enthusiasm in explaining our responsibilities and authorities were clearly evident to all present - including my senior staff. WELL DONE!


James P. O'Reilly
Director

cc: Personnel Record



UNITED STATES
NUCLEAR REGULATORY COMMISSION

REGION II
101 MARIETTA ST., N.W., SUITE 3100
ATLANTA, GEORGIA 30303

September 8, 1983

Mr. Eldon Brunner
Rural Route
Reddick, Illinois 60961

Dear Eldon:

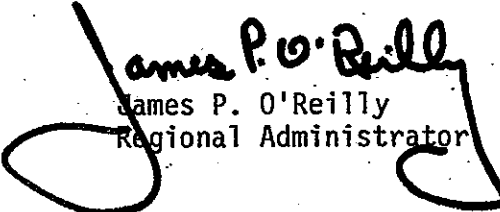
Upon the occasion of your retirement from government service, I wish to formally recognize and express for the entire Region II staff our sincere appreciation for your dedicated service to the United States Nuclear Regulatory Commission and to the American public. Our association with you has been very beneficial to Region II in fulfilling our responsibilities, particularly in the implementation of the inspection program you helped create. I also wish to recognize the advice and support you provided me over the years while I was the Regional Director for Region I.

During your distinguished career with the Nuclear Regulatory Commission, you have served in very important technical and administrative positions. You started your NRC career as a reactor inspector in Region III. Subsequent assignments, each with increased responsibilities, included outstanding performance as the Branch Chief for reactor projects in Region I. In each of the positions you occupied, you played a major role in developing and enforcing regulatory policies with regard to the control and evaluation of safety-related activities at nuclear facilities.

In addition to your distinguished career with the Nuclear Regulatory Commission, we are well aware that you have also served in our country's programs for national defense and security. These experiences directly contributed to your value to Region I and Region III and, indirectly, to the Region II office.

As you retire from government service, you may be justly proud of your record of service to the United States of America. Region II, in conjunction with Regions I and III, also takes pride in your record-- a record of performance and dedication to duty that few can equal. The entire Region II staff is proud to have been associated with you. We wish you every happiness in your retirement, noting that you have already made your mark in our nation's nuclear history.

Sincerely,


James P. O'Reilly
Regional Administrator



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
631 PARK AVENUE
KING OF PRUSSIA, PENNSYLVANIA 19406

September 9, 1983

Mr. Eldon J. Brunner
U. S. Nuclear Regulatory Commission
Region I
631 Park Avenue
King of Prussia, Pennsylvania 19406

Dear Eldon:

On this occasion of your retirement after twenty-one years of Federal Service, over sixteen of which were with the AEC/NRC, I wish to express on behalf of the NRC and Region I our deep appreciation for your outstanding service to the AEC/NRC and, particularly, to this office. While I have known you personally for only a short period of time, your invaluable professional and personal contributions to the AEC/NRC mission and your dedication and untiring efforts to duty have been made known to me and will not be forgotten by those who have been privileged to have worked with you over the years.

When you retire on October 24, 1983, the government will be losing a long-time, hard-working and highly competent public servant. Your contributions to the interest of public health and safety are too numerous to restate in this letter but are considered exemplary. The high standards, both personal and professional set by your example, were instilled in all who were associated with you and which in great part resulted in the high degree of professional respect by which Region I is regarded by other NRC offices, other government agencies and the nuclear industry.

Region I extends to you our sincere appreciation for all that you've given us and our very best wishes for continued good health and happiness in your retirement years.

Sincerely,

Thomas E. Murley
Regional Administrator



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

NOV 17 1980

Eldon J. Brunner, Chief
Reactor Operations and Nuclear
Support Branch, R-I

I recently received the transcript of the public meeting at the Westchester County Courthouse on the Indian Point Unit 2 fan cooler leak. Quickly reviewing the document reminded me of the difficulty each of you must have had in enduring a very long and trying public portion of the meeting. I wish to express my appreciation for the patience and perseverance in sitting through such a difficult meeting. I was proud to be with you.

While this was a difficult meeting, it should not discourage you from the need to participate in public meetings such as this. It is an important part of each and every one of our jobs; however, the lessons we learned from the Indian Point hearing will be very helpful in minimizing further instances of staff abuse during public meetings.

I can only apologize for the abuse that you endured and want you to know that I have received many phone calls also apologizing for the abuse we endured at the meeting. Once again, I was proud to be with you and wish to express my sincere appreciation.

A handwritten signature in black ink, appearing to read "Victor Stello, Jr.", written in a cursive style.

Victor Stello, Jr.
Director
Office of Inspection
and Enforcement



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

December 1, 1980

NOTE TO: Those on Attached List

Enclosed is a memorandum I received from the Chairman commenting on the public meeting you attended in Westchester County, New York. Let me once again add my note of thanks to each of you.


A handwritten signature in cursive script, appearing to read "Victor Stello, Jr.", written over a faint rectangular stamp.

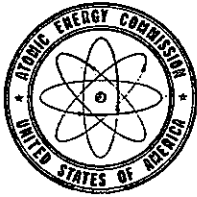
Victor Stello, Jr.
Director
Office of Inspection
and Enforcement

Enclosure:
MF Director fm Ahearne
11/26/80

Addressees

December 1, 1980

- J. Fouchard, Director, OPA
- B. Brier, Director, R-I
- E. Jordan, IE
- R. Woods, IE
- E. Brunner, R-I 
- T. Martin, R-I
- H. Kister, R-I
- T. Rebelowski, RI, R-I
- T. Kenny, RI, R-I
- S. Renolds, RI, R-I
- L. McKeown, R-I
- S Callahan, R-I
- K. Abraham, R-I
- D. Eisenhut, NRR
- V. Noonan, NRR
- T. Ippolito, NRR
- L. Olshan, NRR
- L. Marsh, OCM
- W. Hazelton, NRR



UNITED STATES
ATOMIC ENERGY COMMISSION
DIRECTORATE OF REGULATORY OPERATIONS
REGION 1
631 PARK AVENUE
KING OF PRUSSIA, PENNSYLVANIA 19406

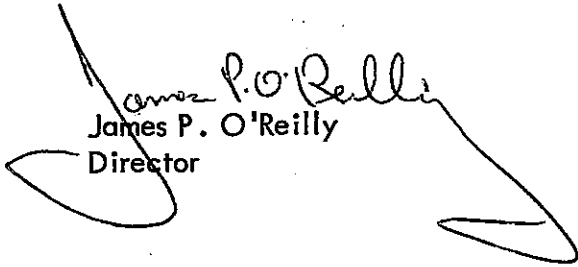
December 10, 1973

E. J. Brunner, Chief
Reactor Operations Branch

LETTER OF APPRECIATION

I would like to formally thank you for your extra-curricular efforts in making our Regional Quality Assurance Conference a real success. It is a very satisfying feeling to have individuals like you on my staff, individuals who "turn to" when needed.

I personally and professionally appreciate your help. Your performance truly reflects credit on you personally and on Region I.


James P. O'Reilly
Director

October 4, 1974

Mr. Eldon J. Brunner
Chief of the Reactor Operations
Branch of Region I
United States Atomic Energy Commission
631 Park Avenue
King of Prussia, Pa. 19406

Dear Eldon:

1st Annual National Symposium on Nuclear Power
Nuclear Division
American Society for Quality Control

Our Symposium was completed about 20 hours ago and I can't tell whether the feeling I have is exhaustion or relief.

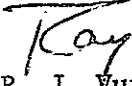
However, the endeavor was a financial success and conversations with some of the attendees lead me to feel that it was also a technical success. The committee honestly can't take credit for the technical success of the program. That credit belongs to the program participants and you are the ones that have earned the feeling of satisfaction.

Eldon, the Mechanical session was extremely well handled and appeared to be well received by the attendees.

I would like to extend my personal thank you for your fine work and cooperation and especially for the job you did on Thursday morning.

I look forward to seeing and working with you again in the near future.

Sincerely,


R. J. Yurpillat, Chairman
Symposium Program Committee

RJV:rml
cc:
J. P. O'Reilly
Harry Thornburg



EDISON PLAZA
300 MADISON AVENUE
TOLEDO, OHIO 43652-0001

April 29, 1987

AVE 87-30492
E 1.41.7

Eldon Brunner
Emergency Preparedness Department

Dear Eldon:

I would like to take this opportunity to thank you for your participation in the 1987 Emergency Preparedness Exercise as a member of the Scenario Committee and Controller Organization. Your assistance in formulating a storyline which could be used to direct the exercise participants to the demonstration of all 62 objectives was invaluable. Furthermore, the role you filled as a Controller/Evaluator in the Technical Support Center enabled Davis-Besse to exhibit the ability to orchestrate an exercise and critically critique ourselves. In fact the evaluation was done with much greater detail than was that of the Nuclear Regulatory Commission. The effort you provided once again indicates to the NRC, Davis-Besse's commitment to excellence.

Thank you once again for your assistance and cooperation in the planning and conducting of the 1987 Evaluated Exercise.

Sincerely,

A handwritten signature in cursive script that reads 'Steve Hook'.

Steve Hook, Exercise Coordinator