

PLAIN TALKS

July-August 1986



CONTENTS

Volume 65

Number 6

News briefs	4
Town benefits from River Bend	5
Informing the public	6
A River Bend priority	7
Fredieu likes challenges	8
Energy Center fascinates youngsters	9
Why I'm proud I work at River Bend	10
Inside GSU	13
Photographs follow construction progress	14
Reactions and reactors	16
Retiree update	18
Commentary	19

PLAIN TALKS

July-August 1986

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Employees who change residences or offices should fill out company mailing-address-change forms (GSU0012-00-81) and return them to the mailroom in the Edison Plaza. GSU publications, departmental mailings and other company information are not automatically forwarded; addresses must be corrected when employees move.

4-H helped

Tom Clark
Gulf States Utilities
Beaumont, Texas

Dear Tom:

I want to personally express my thanks and appreciation for a job well done. Your reaction April 30 in providing our office with the requested details of population, households and other statistical data was tremendous, but in view of the "request to response" time of only three hours, it was unprecedented!

The numbers and the map were a major input for our presentation at our District Headquarters and in planning our new 4-H Program Expansion Project on May 1.

Our whole staff appreciates you and Gulf States Utilities.

Sincerely,
Larry J. Allen
County Extension Agent
Jefferson County

Editor's note: Clark is an economic development research analyst in Beaumont.

Powerful poetry

Gulf States Utilities
Baton Rouge, La.

To whomever it concerns:

Here is a little poem I wrote for GSU. I'm a security officer with Burns Security at River Bend Station. My husband is in the Quality Control Department at River Bend (Bohdan Mutz is a GSU quality control inspector III.)

*This is written for GSU —
A probable rate hike, this is true.*

I won't complain or put you down

As some have been doing in this town.

I like my conveniences, I like it cool,

Go without electricity — I'm no fool!

I like it best 'cause it does the dishes

Good luck to you with my best wishes.

And a salute to River Bend Station,

One of the best nuke plants in the nation.

It's safe, it's clean, it's pollution-free

For a better world for you and me.

Everyones' wishes you cannot fulfill.

I won't get upset when you send me my bill.

One more thing, I do my share

— I contribute to Project CARE!

Sincerely,
Barbara Mutz

Editor's note: Mutz's poem was penned before the Louisiana Public Service Commission dismissed GSU's Louisiana rate case.

Touts for two

Gulf States Utilities
Lake Charles, La.

Dear Sirs:

I would like to take this opportunity to recognize two of your employees. Both Sheila Chamberlain and Verneedia Rhodes deserve commendation from management for performing their duties in an extremely efficient manner. Whenever I have had occasion to deal with your office on a personal basis, these ladies have always given personal, prompt attention to my problems and have done it in a very professional manner. My thanks to them both.

Sincerely,
Susan Fisher
Vice President
Fisher Manufacturing, Inc.

Editor's note: Both Chamberlain and Rhodes are clerks in Lake Charles.

Mother says thanks

Gulf States Utilities
Baton Rouge, La.

To all of you who are in the Emergency Dept.:

My daughter, Grace, has had her name on your emergency list for years.

God called her name Aug. 20th and you may remove her from your list.

Please accept my deepest gratitude for helping us when we needed you the most.

God bless each of you.

Sincerely,
Mrs. H.L. Lehmann

Job praised

Joe Nettles
Gulf States Utilities
Huntsville, Texas

Dear friends:

Thank you for the electrical work you and your crew did for us here at Huntsville Sport and Fitness. Please give our personal thanks to everyone involved.

We sincerely appreciate your being so helpful and efficient. It was a job well done.

Sincerely,
Tom Cauthen
Huntsville Sport and Fitness

Editor's note: Nettles is a service foreman in Huntsville.

THE COVER

River Bend earned its name from the huge curve of the Mississippi River shown in the cover photograph.

Jeff Newton, an instrumentation and control engineer for Sunbelt Technical Services at River Bend, captured the peaceful scene on film while riding in a light plane.

ANS award honors Cahill

The Power Division of the American Nuclear Society has selected William J. Cahill Jr., GSU's senior vice president-River Bend Nuclear Group, to receive the Walter H. Zinn Award for outstanding contributions to the advancement of nuclear power.

The award was presented at the Power Division's luncheon on June 16. As the luncheon speaker, Cahill discussed the River Bend nuclear power plant.

The Power Division Award series was established in 1969 and has been known as the Walter H. Zinn Award since 1976 in honor of the society's first president.

Cahill's professional career

began in 1949 as a cadet engineer with Consolidated Edison Co. He was a graduate of the Polytechnic Institute of Brooklyn with a bachelor's degree in mechanical engineering. From 1954 to 1956, Cahill was a consultant to the General Electric Co. in the design and operation of the prototype nuclear power plants for the Sea Wolf and Triton submarines.

He then resumed his duties with ConEd. He held a number of technical and management positions with the company until his retirement in 1980 as vice president-research and quality assurance. He joined Gulf States Aug. 1, 1980, as vice president-River Bend Construction and was promoted to his present position two months later.

ANS was founded in 1954 as a not-for-profit international, scientific, engineering and educational organization. It has a worldwide membership of more than 15,000 engineers, scientists and educators in government, higher education and private industry. ANS is dedicated to the peaceful applications of nuclear technology



Bill Cahill

Phi Delta Kappa cites Gulf States

The Lafayette chapter of Phi Delta Kappa, a professional educators organization, recently named GSU as a recipient of its "Friend of Education Award."

GSU was nominated for the award by Mary C. Handayan, coordinator of the Title II program for the St. Landry Parish School Board. In her letter of recommendation, she wrote, "For many years, Gulf States Utilities has, as a public service, provided educational support services to school systems in both Texas and Louisiana. Through its Marketing and Consumer Service Department, Gulf States has provided teacher training, classroom

programs, curriculum materials, films, multimedia kits, educational cartoon books and many other programs on a wide variety of topics pertaining to energy, electricity and the electric industry. All of these are made available without a single cost to the teacher, school or the school system."

Further, Handayan wrote, "What is a friend? One who gives without asking in return...whose time and energies are spent for the benefit of

all...whose presence is taken for granted...whose absence would be sorely missed. The highest compliment one can give is to call another "friend." Gulf States Utilities is truly a "Friend of Education!"

Liz Duhon, consumer information coordinator in Lafayette, accepted the award on behalf of GSU. Also present were Handayan, GSU's Jane Dufrene, educational services coordinator of Beaumont, and GSU's Virgil Fuselier, supervisor-marketing in Lafayette.



Liz Duhon (with plaque) accepted the "Friends of Education Award," then showed it to (from left) Jane Dufrene, Mary Handayan and Virgil Fuselier.

Nelson Coal effort rates recognition

Nelson Coal received a Certificate of Appreciation from the March of Dimes after raising \$911 in donations during Walk-America, reports Cheryl Crawford and Melvin Wilks, team leaders for the plant's participation.

Coal plant employee David Stahl, repairman-1st class, raised \$153 to become one of the district winners.

Crawford, who is also a *Plain Talks* correspondent, says, "I want to say thanks again to all the walkers who participated in WalkAmerica and supported it with their pocketbooks."



Melvin Wilks, WalkAmerica team leader, accepts the March of Dimes' Certificate of Appreciation from Jim Hurley, Nelson Coal plant superintendent.

Town benefits from River Bend

by Susan Gilley

River Bend Station brought change to historic old St. Francisville.

And native son Andy Dreher, GSU nuclear site communications coordinator and a member of the local school board, believes the change was for the better.

During a recent drive through the community, Dreher listed school improvements as the No. 1 area of community improvement stemming from plant construction.

For example, the community voted a 1 percent sales tax, which has raised approximately \$18 million in revenues. As a result, an all-new high school was built, the existing elementary school was renovated, a \$1 million athletic complex was built and a \$2.5 million auditorium is under construction. Further, most classrooms boast a computer and West Feliciana School Board teachers draw the second-highest pay in the state.

At a time when many governing bodies struggle with budget deficits, the school board has a \$9 million surplus.

Because of emergency planning for the plant, the combination St.

Francisville Fire Department/Civil Defense Headquarters doubled in size. GSU helped pay for the additional structure because Jim Robinson, who doubles as fire chief and civil defense director, plays a key role in emergency planning for River Bend. The volunteer fire department also provides back-up fire protection for River Bend.

During the course of construction, River Bend employed 15,000 people, with about 6,200 workers at the peak of construction. It invested \$3 billion in the Baton Rouge area economy, including a \$712 million construction payroll. It holds the record as the largest trade union job in Louisiana. Now that it is operational, the plant provides 700 permanent jobs and a \$28 million payroll.

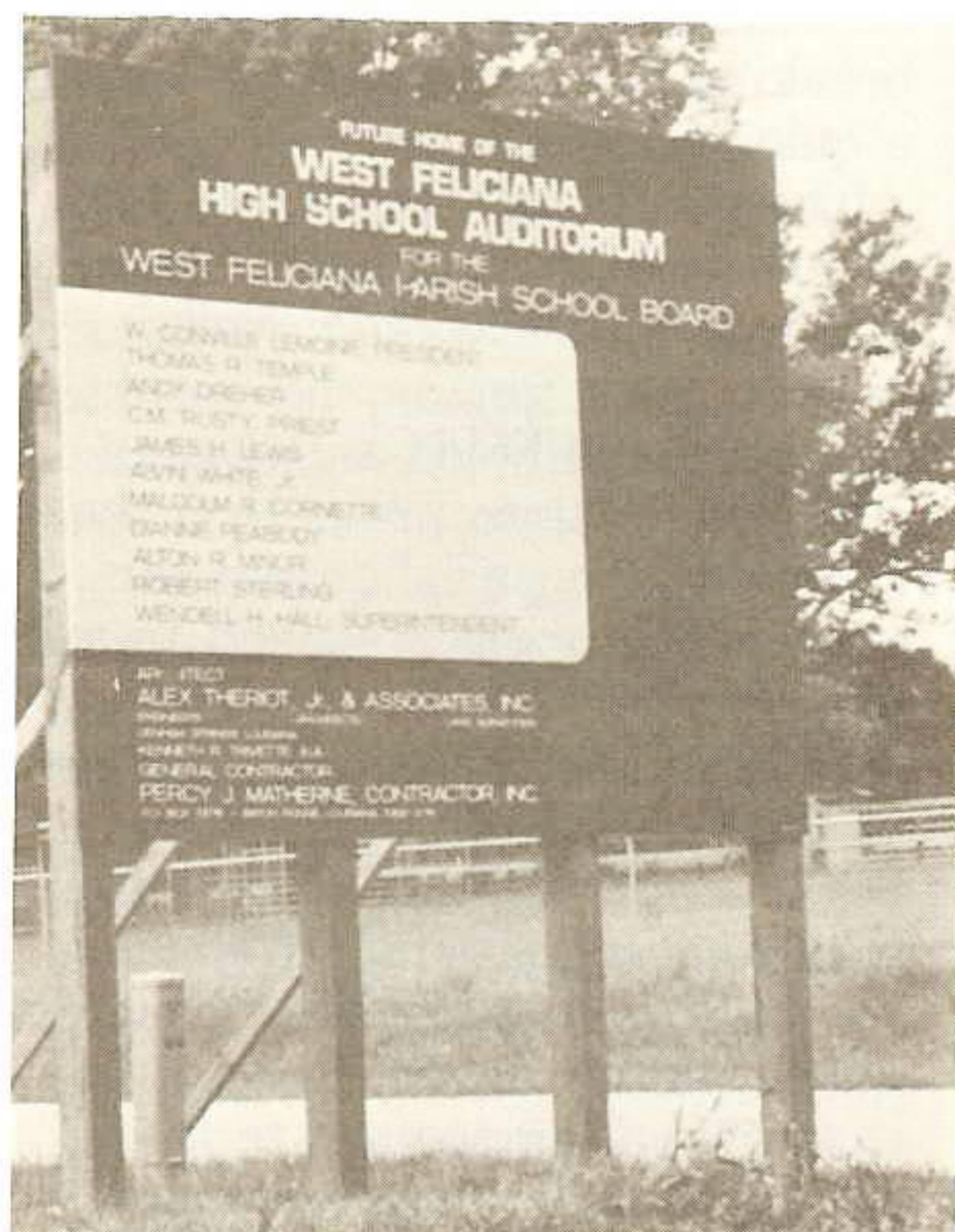
Dreher admits that St. Francisville residents and business owners are a little sad to see construction end. During the construction period, there was a big boost to the local hotel and restaurant business. Even so, as the plant continues to operate for the next half-century or so, St. Francisville businesses will continue

to reap benefits. For example, during planned maintenance outages about every 18 months, an estimated 1,000 contract workers will converge on the town of about 2,000.

Dreher believes River Bend played a role in helping to bring tourists to some of St. Francisville's antebellum-era homes. Area growth led to the opening of some bed-and-breakfast inns. Word-of-mouth also helped to increase participation in the town's yearly pilgrimage of area homes, as GSUers from throughout the company attended the event after hearing other employees talk about it.

While much of the Baton Rouge area has suffered from the downturn in the petrochemical industry, River Bend held down unemployment in St. Francisville for a few years, he adds.

"It's true that the biggest economic development impact is over, but River Bend will continue to play an important role in community life here for a long time to come," Dreher notes.



Construction of a new high school auditorium, the new city hall and the expanded town fire station (from left) all reflect how St. Francisville has benefited from the construction of River Bend.



Emergency planning

Informing the public

by Susan Gilley

Every nuclear plant must have an emergency plan for quickly informing area residents about what is going on when a plant experiences problems.

The River Bend plan passed the Federal Emergency Management Agency's (FEMA's) strenuous inspection with high marks during full-scale exercises held in early 1985 and early 1986.

Employees who have participated in the Joint Information Center (JIC) exercises have made the plan the success it is by continually refining what started out as a plan on paper, reveals Colby Wells, nuclear emergency communications coordinator.

Wells, whose experience includes having served on the Washington state response team to the Mount St. Helens volcano eruption, sums up the purpose of River Bend's JIC as "getting timely and accurate information from all official sources to the public through the media in an emergency."

That simple sentence masks the complexity of arriving at agreement among federal, state and local government agencies. Non-GSUs who helped develop the plan are as committed to its purpose as our employees, Wells insists. Many of them, including the Louisiana Governor's press secretary, spent long hours in plan-related training, she adds.

As part of the plan, warning systems and communications systems have been established within the 10-mile radius of River Bend that makes up the "Plume Exposure Pathway Emergency Planning Zone (EPZ)." Provisions are also made for another planning zone, which extends 50 miles out from the

plant. It's called the Ingestion Pathway because any radiation hazard would be through eating or drinking contaminated foodstuffs, milk or water. The state is prepared to monitor this area for contamination.

There are four classifications of emergencies for a nuclear plant. The first — notification of an unusual event — could be something as simple as a very severe weather warning. The succeeding classes of emergencies are an alert, a site area emergency and a general emergency.

The first two classes are designed to provide early and prompt notification to off-site authorities of events which might lead to more serious consequences. The other two classes, site area emergency and general emergency, reflect conditions where some releases are possible.

"Whatever the classification," reports Wells, "JIC people are among the first ones to respond and are probably the last ones to leave. Their actions are determined by the need for information demonstrated by the media and the general public. Every other emergency response facility is driven by the event. Not the JIC — they're driven by the need for information."

Bill Benedetto, administrator-Louisiana communications, serves as JIC director. Under the plan, when he gets paged about a possible problem, the first thing he does is to call the control room for a status report, and then he notifies the media that the JIC is being activated.

The JIC is located in the River Bend training facility, within the same building as the Emergency Operations Facility (EOF). In an actual emergency, spokespersons in the JIC would represent GSU, the Louisiana Office of Emergency Preparedness, the Louisiana Nuclear Energy Division, the Governor's office, a representative from the State of Mississippi, the NRC, FEMA and the five parishes in the 10-mile EPZ (East Feliciana, West Feliciana, East Baton Rouge, West Baton Rouge and Pointe Coupee parishes).

Besides the spokespersons, other key JIC positions include

the events information team, the GSU information production team, the special audience liaisons, the news manager, the assistant JIC director, the offsite information coordinator and the logistics and production team.

At least one senior reactor operator licensee serves on the events information team, which provides updates on what is happening to the JIC. Another reactor operator licensee, or someone at that level of technical expertise, serves on the GSU information production team, which then produces news releases. The JIC director approves all news releases.

Those on the logistics and production team are responsible for news release distribution and staffing.

The special audience liaisons provide information to GSU representatives at the parish and state Emergency Operation Centers (EOCs), the financial community, industry representatives, the legislature and other special audiences.

Phone teams made up of employees handle incoming calls from the media and the public. They report to the news manager, whose job involves rumor control. If a rumor turns out to be true, a news release is written on the topic.

Each phone team member has a news notebook with background information, all the news releases and a chronology of events. A status board is placed near their telephones, so that breaking news can be found with a quick glance.

The goal? "It's important for people to be providing the same accurate information," Wells notes.

River Bend holds a JIC exercise each year to prove that the company, the parishes and the state can properly respond to an emergency.

"We've been fortunate because of the level of cooperation and the level of skill and talent of our staff and volunteers," Wells adds. "People participate because getting accurate information to the public is important to them," she continues, "and they want to succeed. The JIC is where all the planning turns into performance."

A River Bend priority

by Mike Rodgers

A visitor to the River Bend Training Center can walk down the hallways, look in the classrooms and observe training programs being presented in such areas as radiation protection, chemistry, quality assurance and emergency preparations, to name a few. "Because it is a nuclear plant, River Bend has its own special training needs," says Dale Andrews, director-nuclear training. That training runs the spectrum from programs designed for everyone at the plant to specialized courses for a master's degree in engineering management offered by LSU and coordinated by Gulf States.

The federal government requires the training of personnel who may be exposed to possible on-site hazards. Everyone who goes onto the plant site must have successfully completed General Employee Training (GET) 1. "It's a basic course in such things as GSU work rules, plant orientation, quality concern, safety, security procedures and the federal regulations that deal with nuclear plants," stresses Andrews. The next course level, GET 2, covers radiation protection and must be passed by anyone needing access to the Radiologically Controlled Area (RCA). Personnel entering the RCA must know about exposure limits, acceptable protective clothing and the proper procedures for putting them on and taking them off. "There is a proper way to remove protective clothing to guard against contamination," Andrews emphasizes.

GSU is one of the few utilities to go a step further, teaching respiratory protection in a class called GET 3. Most maintenance, operations personnel and anyone else who works in an area where they are exposed to airborne contamination need to know how to use respiratory gear.

The training of licensed nuclear operators is another important function. The operators, working with other personnel, run the plant from the control room. No one can become a licensed operator unless they pass the Nuclear Regulatory Commission exam first. By the time trainees are ready to take on the challenging NRC qualifying exam, they will have invested more than a year in classroom work, including hands-on experience with a simulator which duplicates the operations of the control room.

"Operator training requires a high degree of motivation and dedication, since they must thoroughly understand the operations of every system in the plant," says Andrews, himself a certified operator who qualified in the Navy. Trainees are continually tested, facing a battery of written, oral and performance tests. The NRC wants operators who know how to take charge and make the proper decisions to keep the plant running safely.

Andrews notes that the complicated nature of a nuclear power plant dictates that most of the training will be technical

rather than administrative. River Bend contains many standby or alternate systems necessary to protect the reactor. Additionally, about 80 percent of the training is required or directed by the regulatory process. Summing up, Andrews offers this overview of River Bend training, "The ultimate goal is to have personnel who understand their jobs, who are safety conscious and who will avoid anything that causes an accident which could injure themselves or in some way impact the public off the site."



Dale Andrews (left) watches while Donnie Ashley, nuclear training coordinator, programs the computer which controls operations of the control room simulator.



Kevin Dreher (left), nuclear training representative, performs a negative pressure test on the respirator face mask worn by James Spratley, radiation protection technician.

Fredieu likes challenges

by Mike Rodgers

Tony Fredieu is a busy man. During the course of the interview for this *Plain Talks* story, Fredieu, assistant operations supervisor at River Bend Station, was called into lengthy meetings twice and visited in his office by several people who needed to see him on important matters at once. "This has been a day full of brushfires," he says with a smile, using an often-heard word which describes the unexpected events which occur at the plant on occasion. "It's the brushfires that make my job challenging," he adds.

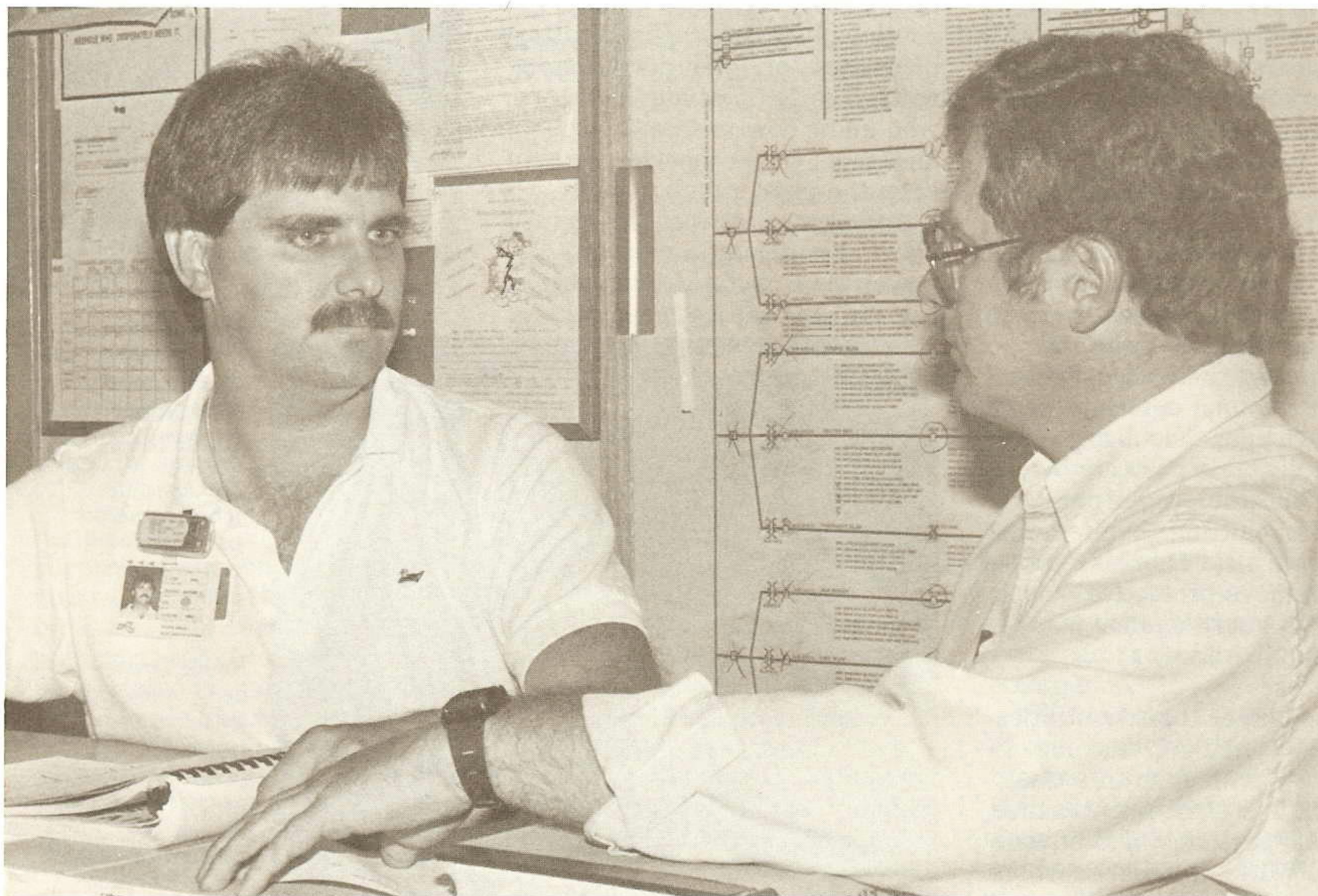
The road that brought Fredieu to River Bend in 1980 started 10 years earlier with a utility company in Alabama. He started as a laborer in a coal plant and left as shift foreman in a nuclear plant.

"I was in the right place at the right time," he reminisced about joining GSU as a shift supervisor. Warming up to the subject, Fredieu amplified his reasons for seeking out Gulf States. His previous experience was with a pressurized water reactor. "The boiling water reactor at River Bend gave me the opportunity to learn a completely new system," he recalls. There were also family considerations. "My parents live not far away in New Roads and I want my children to be near their grandparents while they grow up. Since I lived far from my grandparents, I didn't get to know them well. But I want my children to have a close relationship."

Fredieu saw River Bend grow from a hole in the ground to

completion, a fact that makes him proud. He enjoys getting away from the office and going out into the plant, something that his responsibilities make necessary. Consequently, he can be hard to reach by telephone. "I don't like to talk on the phone anyway," he admits, "I would rather talk face to face. I express myself better."

Paperwork is another task, although one that he expects will always be with him. "My job is one center point for people who need something in operations. Many people come to me for whatever they need," he says. Someone needed something all right, for just then another visitor walked into his office. "Gotta see you right away," he told Fredieu.



Tony Fredieu (left) discusses an upcoming schedule with Tom Lacy, shift supervisor.



Kristin Beauchamp (left) pushes a button to light a bulb at a particular location in the plant, while Kenny Neal and Kristin's sister, Laura, await their turns.



By pressing a button, a visitor can hear about Thomas Edison's educational background.

Energy Center fascinates youngsters

**Text and photos
by Robert Adams**

The second floor of the River Bend Training Center holds fascination for children and adults alike when they tour the River Bend Energy Center. Designed to provide information to the general public about electricity, the layout of the center assumes that a visitor has no knowledge of energy and how it is produced.

"Even most adult tour groups have little knowledge of how electricity is made and that you must have fuel to produce electricity," says Shivaun Tessier, nuclear communications coordinator. She adds that the center attracts an average of 800 to 1,000 visitors per month, with the heaviest visitation during the spring.

The tour starts with the history of electricity. The exhibit covers the development of the generator, Thomas Edison and the light bulb and builds up to the nuclear era with Marie Curie and Enrico Fermi. This section also includes a history of Gulf States.

In explaining how electricity is made, one exhibit demonstrates the generation of electricity as visitors ride a bicycle to light several light bulbs.

"We encourage people of all ages to ride the bicycle so that they will have a better understanding of how much energy it takes to produce elec-

tricity," says Tessier. "Most people can generate up to 125 watts, but only the most conditioned and experienced bicycle rider can get up to 200 watts and then only for a short time."

The tour continues with an exhibit on different types of fuels. It focuses on fossil and nuclear fuels and then describes wind, solar and other future fuels, including fusion and breeder reactors.

One of the most exciting exhibits takes the visitor on a simulated ride. The visitor feels that he or she is descending hundreds of feet into the earth and entering a coal mine, where one sees how the excavation of coal takes place.

Then the tour enters the nuclear portion of the Energy Center, where one exhibit points out that the main difference between a nuclear plant and a fossil plant is in the method of producing heat that makes the

steam. Another exhibit illustrates how the fission and the chain reaction works and features a portion of an actual fuel assembly.

Next, visitors overlook the River Bend control room simulator. Tessier says, "The simulator is one of the most popular areas of the center. People like the idea of seeing the technology involved in the training of the operators at River Bend as well as knowing what the control room looks like."

The tour concludes with exhibits on waste management, the fuel cycle, a model of the plant and exhibits on the value of electricity and conservation.

The River Bend Energy Center, located at the entrance to River Bend Station on U. S. Highway 61, just south of St. Francisville, is open from 8 a.m. - 4 p.m., Monday through Friday.



Kristin, Kenny and Laura (from left) check out the reactor control room simulator.

Why I'm proud I



Sheila Muse

by Susan Gilley

River Bend and employee pride are almost synonymous.

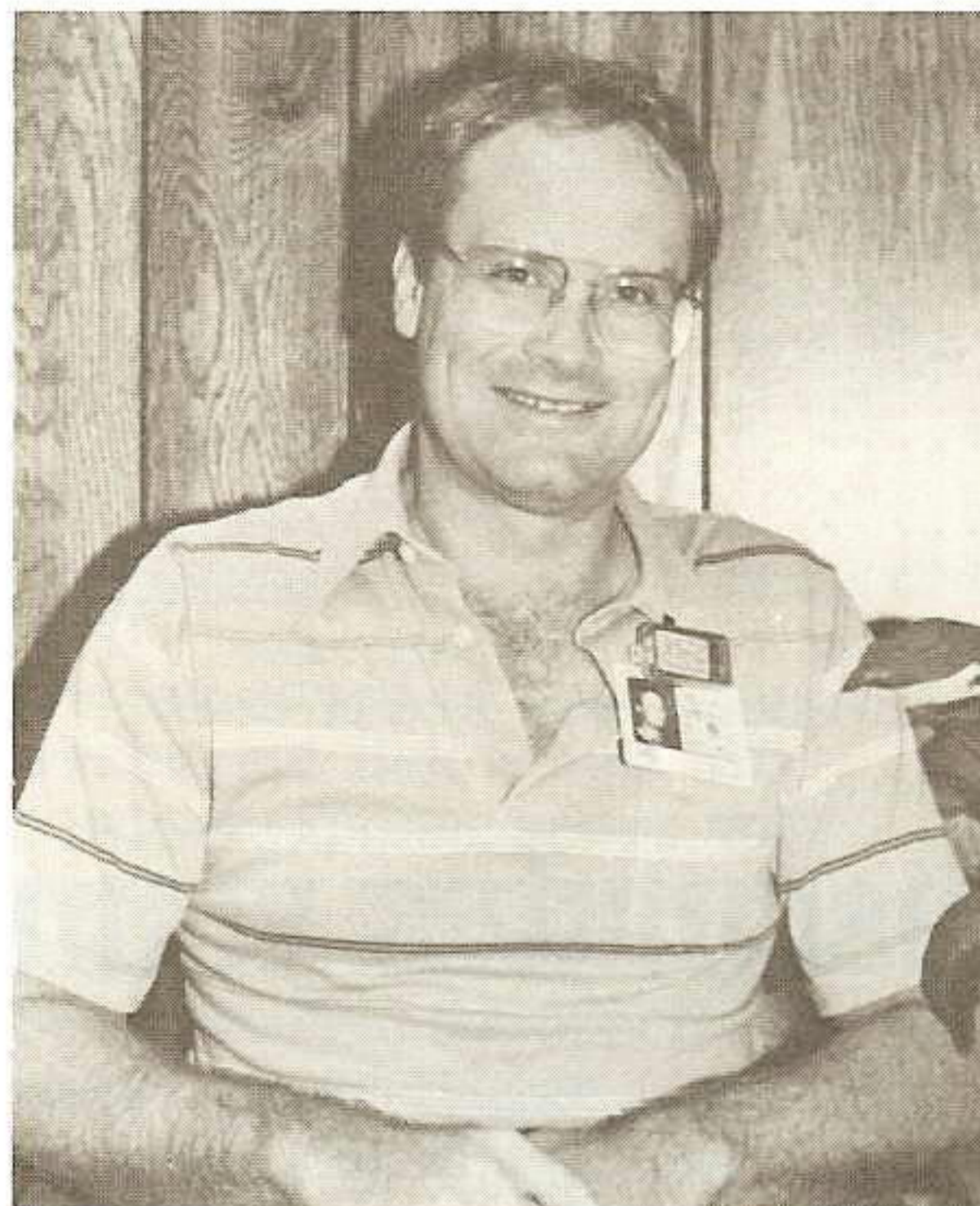
While many River Bend GSUsers told *Plain Talks* that they regret the adverse publicity associated with the project, they are full of praise for the completion of the plant.

Plain Talks asked a number of plant employees to explain why they're proud to work at River Bend. Their responses follow.

Sheila Muse, departmental clerk, Building & Grounds: "I'm proud because I had a hand in helping it happen. ...You contributed (to the project), even if you were answering phones, typing a piece of paper and helping to file."

John McGrane, systems engineer, Technical Staff: "The main thing was that when I got here, we had a lot of deadlines. Some people said we'd never be able to meet them — said that they were ridiculous. In every case, we seemed to make them or at least came close to what was estimated. From an engineering standpoint, it's a successful project. I feel good about it."

Donald Smyth, repairman-1st class, Mechanical



John McGrane

Maintenance: "It's a lot more interesting field and it involves a lot of training.

Almost every job we work on is new to us. The environment changes, what with having to dress out. You can't just get in and do a job. There's paperwork before, during and after....When I first came here, the tool shop was just being set up. I got to see the whole Mechanical Maintenance Department grow from the beginning."

Alan Bysfield, senior systems engineer, Technical Staff: "I've been here since 1984 and in the nuclear business since 1978. ...It's a



Alan Bysfield



Donald Smyth

good project. The record stands for itself, having been completed faster than any other at this time of evolution of nuclear projects. There's a good teamwork philosophy. We have our differences of opinion, but we get together and discuss them and work them out. ...I was looking for a good community to settle in and a good place to raise a family and a stable job. I think I've got a very good combination here."

Myrtle Cain, departmental clerk, Technical Staff: "I'm proud to work here because my work has been fulfilling and interesting. It's exciting.



Myrtle Cain

Photos by Susan Gilley

work at River Bend



David Zalfen

I think GSU provides good benefits and I know they were quite concerned about safety throughout construction. I'm proud to have been chosen as a GSU employee."

David Zalfen, electrician-1st class, Electrical Maintenance: "I came here because I figured it would be a great opportunity to advance with GSU. This is the future here. Later on, it will be a real asset to the company. ...I know in the Electrical Shop we work together. There is a challenge to it. It is different, because there are two aspects to look at — the safety and the radiation. ...We've got a



Brenda Franklin

lot of well-trained electricians, mechanics and instrumentation and controls people. The administration here is real good."

Brenda Franklin, clerk, Start-up & Test: "Our department is in the process of changing into the Outage Department. ...I like working at River Bend because the employee relationship is excellent. It eliminates stress and job pressure and there's room for advancement, provided you meet the requirements. My department actually wrote procedures of how each system is operated. We'll go back into the start-up



Joy Cummings

mode during outages. ...I told Mother I feel pretty safe working here. Everybody here is dedicated."

Joy Cummings, procedure coordinator, Plant Services: "My job is a challenge. I handle all the station operating manual procedures and there are about 3,500 of them. It's an important job, because if you don't have procedures, you can't operate the plant. ...Safety is very important at River Bend and the employees are valued. ...I love to come to work. There's a variety of people from all over the United States. ...I feel like I accomplish a lot. I see my results."

Paul Gillespie, senior compliance analyst, Plant Services: "The people at Gulf States have done something here that hasn't been done in a long time — getting a plant started. My particular job requires a pretty broad knowledge of the nuclear industry. I interface with the NRC and virtually all the groups out here. I've been impressed with the teamwork here. ...Hey, we've achieved a lot in a short period of time."

Joe Schippert, senior systems engineer, Technical Staff: "Pride is an essential part of working here. Basically, we have a unit which is a



Paul Gillespie



Joe Schippert



Gary Collett

bellwether in an industry loaded with problems. ...The unit was put together the right way, managed the right way, operated and maintained the right way. The NRC has told us that. We have the feeling that what we do is vital and important and it is very demanding. It's kind of a cliché, but more or less, you feel like you're on a winning team."

Gary Collett, radiation protection specialist, Radiation Protection: "You don't just wake up one morning and say, 'Hey, I'm going to work at River Bend.' They've hired the cream of the crop. ...Our primary responsibility is to protect the work and, in turn, we protect Gulf States. ...I



Ken Dawson

like to compare River Bend to building a violin. We had the right people, the right wood. We spent time roughing it out and now we're polishing. We're constantly polishing and restringing — we're not waiting for problems to happen."

Ken Dawson, systems engineer, Technical Staff: "The main reason I'm proud is because everybody said we couldn't do it and we did. I started here when it was still a hole in the ground. Now we have all the buildings and we're operational. I work with a bunch of diehards. ...They don't give up. People are willing to work here and they're willing to challenge things (to bring about change). I'm responsible for maintaining certain systems — temperature scanners, loose parts monitoring, vibration monitoring, Nuclear Plant Reliability Data Systems (NPRDS). We just had an audit of the NPRDS by the Institute of Nuclear Power Operations, and they recommended that some of our procedures should be adopted by other plants."

Tim Williams, planning and scheduling analyst, Training: "I like working for Gulf States because I was working here before I was injured and I was assured that I had a job. ...It's very fulfilling being associated with River Bend. When our customers get over the negative feelings associated with construction costs, they'll realize the positive side."

Lyddie Broussard, nuclear communications specialist, Public Affairs: "I take a lot of pride in being associated



Tim Williams



Lyddie Broussard

with a nuclear power plant that is so well thought of in the industry. Anybody affiliated with the project should feel proud of that. ...One thing unique about this power plant is that this is a conglomeration of people who came from all parts of the earth. They had to adapt to life here. One thing that bonds us together is a project we have nothing but pride about."

Dave Reynolds, supervisor-administrative support, Administration: "Obviously, River Bend is a good plant and I think it's going to be proven to be an outstanding plant. It reflects well on the company and on the contractor. It's a shame about bad publicity. We don't get the publicity we should. Say River Bend anywhere else outside of the GSU service area, and it gets a lot of recognition. There's been a lack of problems with the project."

Evelyn Lawrence, employee relations administrator, Employee Relations: "In hiring people, it's a good feeling to be able to tell them about the pride you feel about the company. I feel pride in the reports we've received from the NRC. I was involved in the Joint Information Center (related to emergency planning), and we've gotten really good reports from that, too. ...I get to hire on the entry level. I'm probably the only recruiter who gets to hire so many local people. I feel like I'm helping the community and that I have a stake in a person's future."



Dave Reynolds



Evelyn Lawrence

New arrivals



Name: Ashley Nicole Baker
Born: March 1
Grandparents: Allan (manager-labor relations, Beaumont) and Susan Baker



Name: Charlsie Danielle Bennefield
Born: April 22
Parents: Charles (equipment operator, Nelson Coal) and Donna Bennefield



Name: Thomas Clint Evans
Born: Feb. 10
Parents: Thomas (lineman-1st class, Beaumont) and Jianna Evans



Name: Johanna Nicole White
Born: March 9
Parents: Ronnie and Lorette (meter reader, Huntsville) White



Name: Christopher Whittington
Born: Dec. 20
Parents: Lloyd (supervisor-short term finance, Beaumont) and Jan Whittington



Xavier Hernandez

Major league team selects GSUer's son

Xavier Hernandez, the son of Armando and Sara Hernandez of Port Arthur, was selected in the fourth round of the major league baseball draft by the Toronto Blue Jays, reports *Plain Talks'* correspondent Sue Simon.

His mother is a clerk in the Port Arthur office.

The young man was an outstanding pitcher for the Thomas Jefferson High School Yellow Jackets and for the University of Southwestern Louisiana's Ragin' Cajuns.

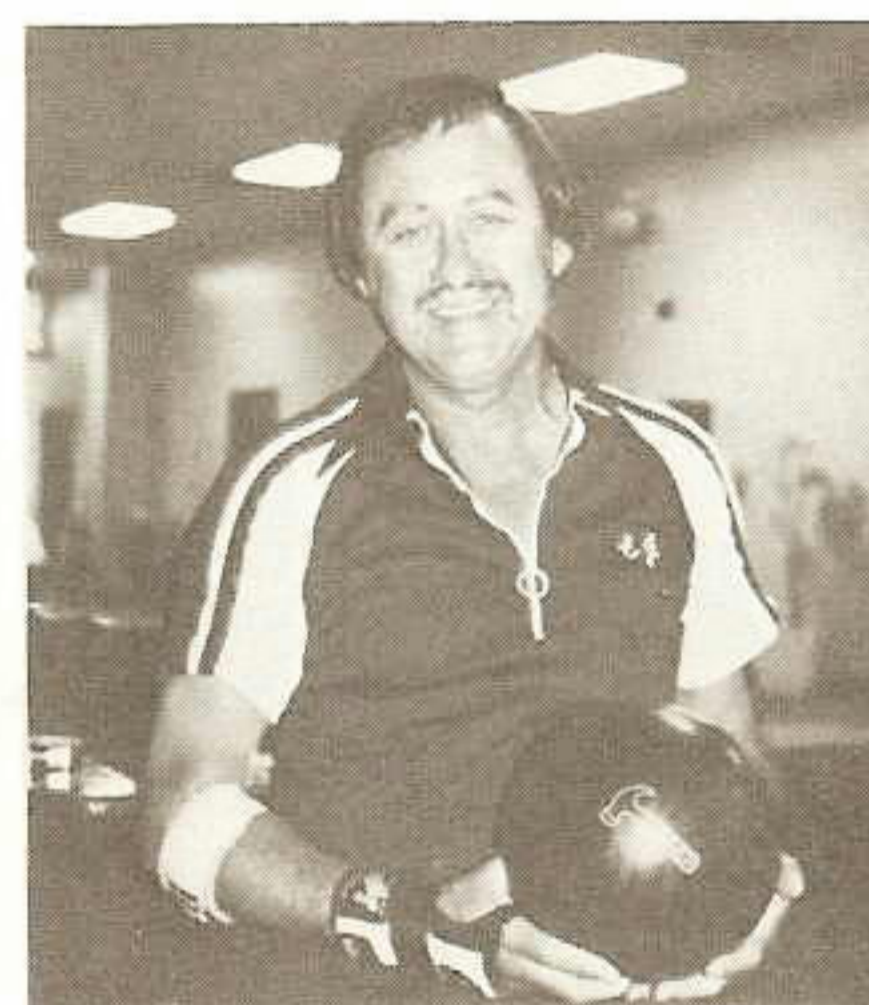
Simon reports that young Hernandez was also among 30 finalists for the United States Baseball Federation team, which will play in the Netherlands, Canada and the U.S.

Badeaux bowls perfect game

E.J. Badeaux bowled a perfect "300" game April 23.

A bowler for the past 26 years, the Port Arthur meter reader supervisor will receive a diamond ring from the American Bowling Congress in commemoration of his achievement.

Badeaux has been with GSU since Oct. 25, 1940.



E.J. Badeaux

Powerlifter Cole takes 1st place

Donnie Cole, lineman-3rd class in Port Arthur, won first place in the open division of the Region 9 Powerlifting Championship, reports *Plain Talks'* correspondent Barbara Broussard.

Cole received the award as a result of his achievements in the squat (705 pounds), bench (303 pounds) and deadlift (683 pounds) categories. According to Broussard, the GSUer holds the American squat record in the U.S. drug-free division.



Donnie Cole

GSUer's daughter holds title

De Anna Moulder, 17-year-old daughter of Mr. and Mrs. Davis Moulder, was recently crowned Miss San Jacinto County for 1986.

Her father is a utility foreman-line in Cleveland.

According to *Plain Talks'* correspondent Clint Lilley, the young woman plans to attend Texas A&M University after graduation from Shepherd High School.



De Anna Moulder

Two GSU kids win beauty titles

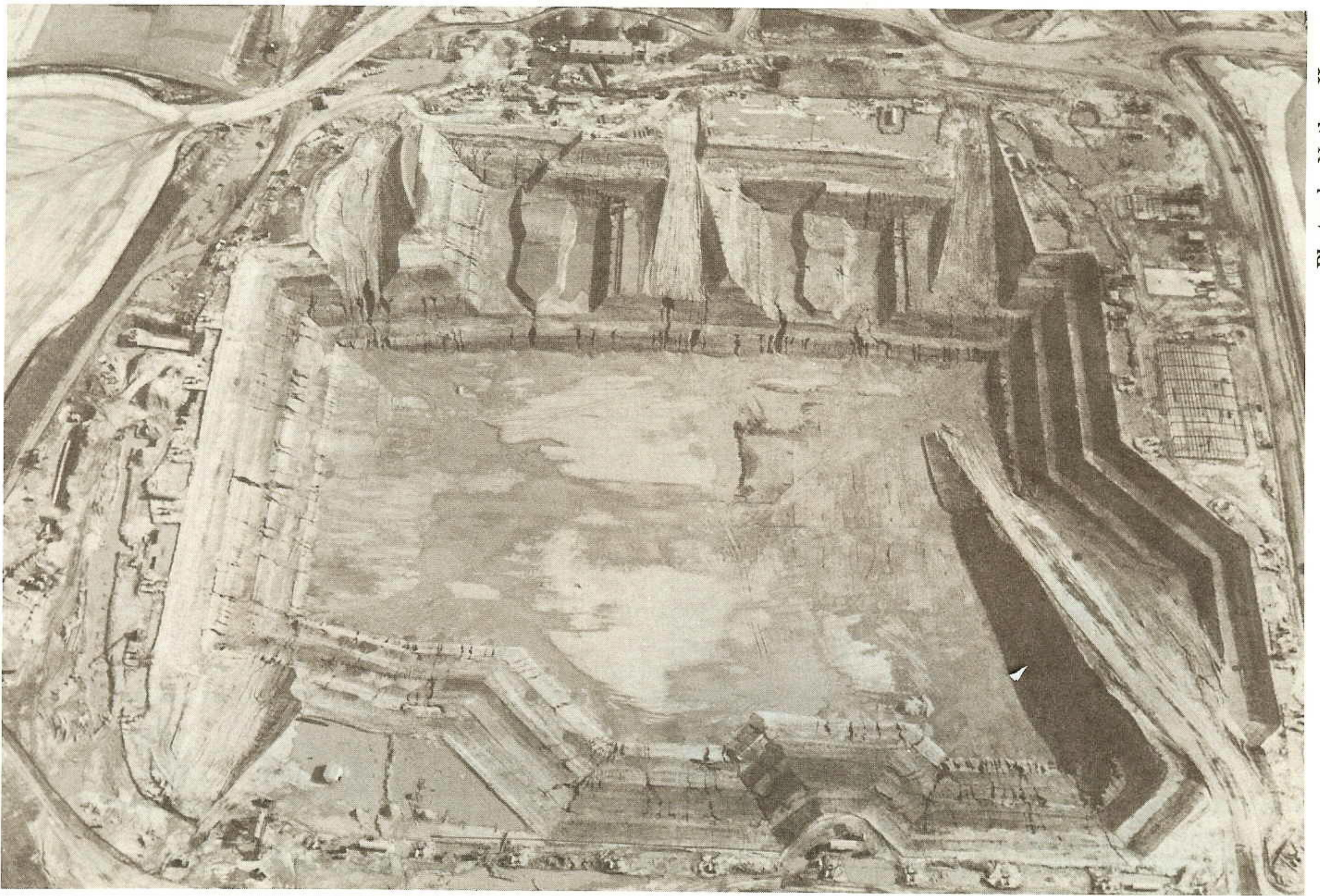
The daughters of two Vidor employees won the beauty titles in their respective age categories in the Texas Barbecue Festival Pageant this spring, reports *Plain Talks'* correspondent Rhonda Haskins.

Kheli Hale, the daughter of Vidor Superintendent Ronnie Hale, was crowned as Little Miss Princess, while Pati Cure, the daughter of Meter Reader Karen Whitaker, was crowned Festival Queen.

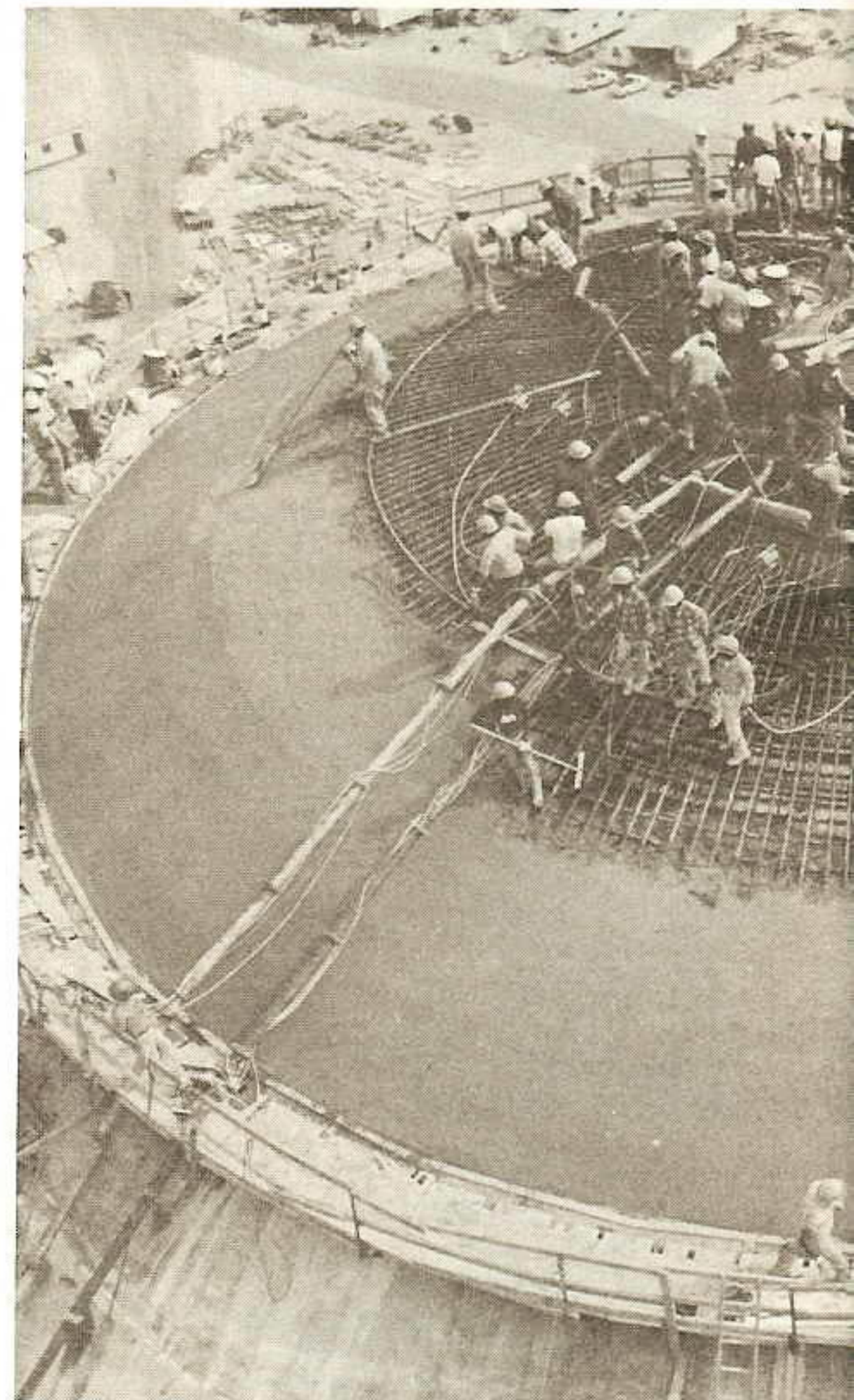
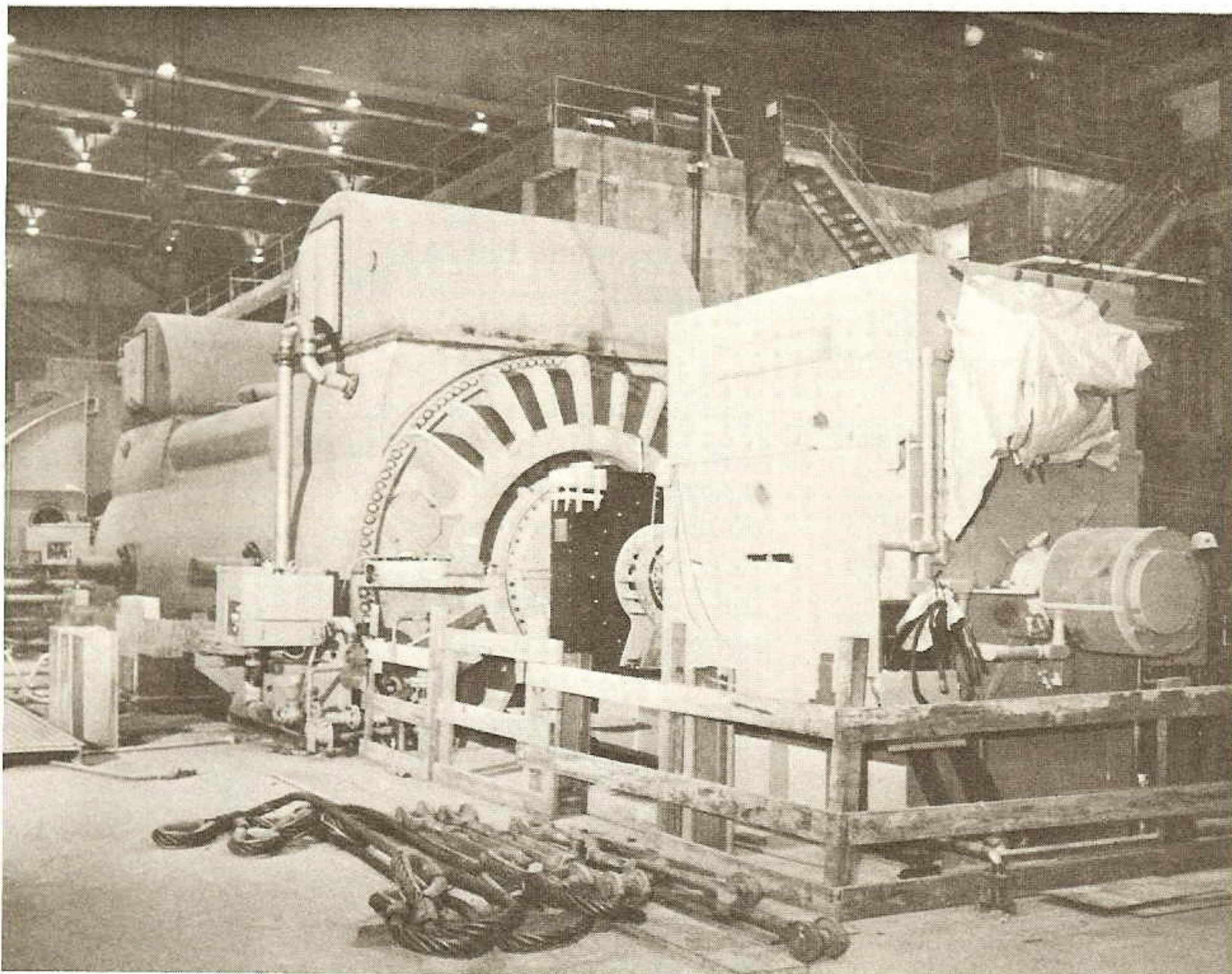


Two of these four beauties have GSU ties. They are Kheli Hale (far left) and Pati Cure (second from right).

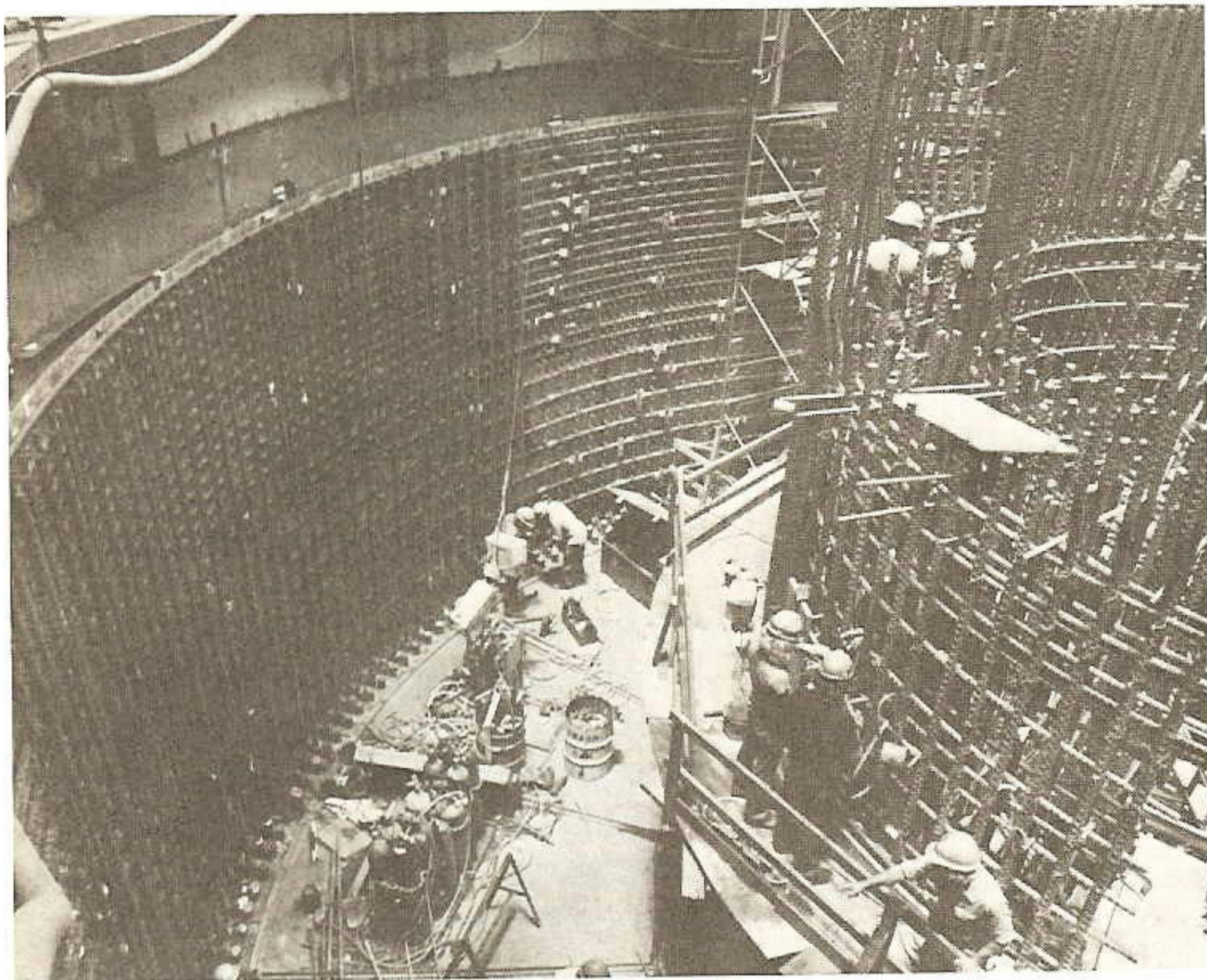
Photographs follow



Photos by Nathan Hopper



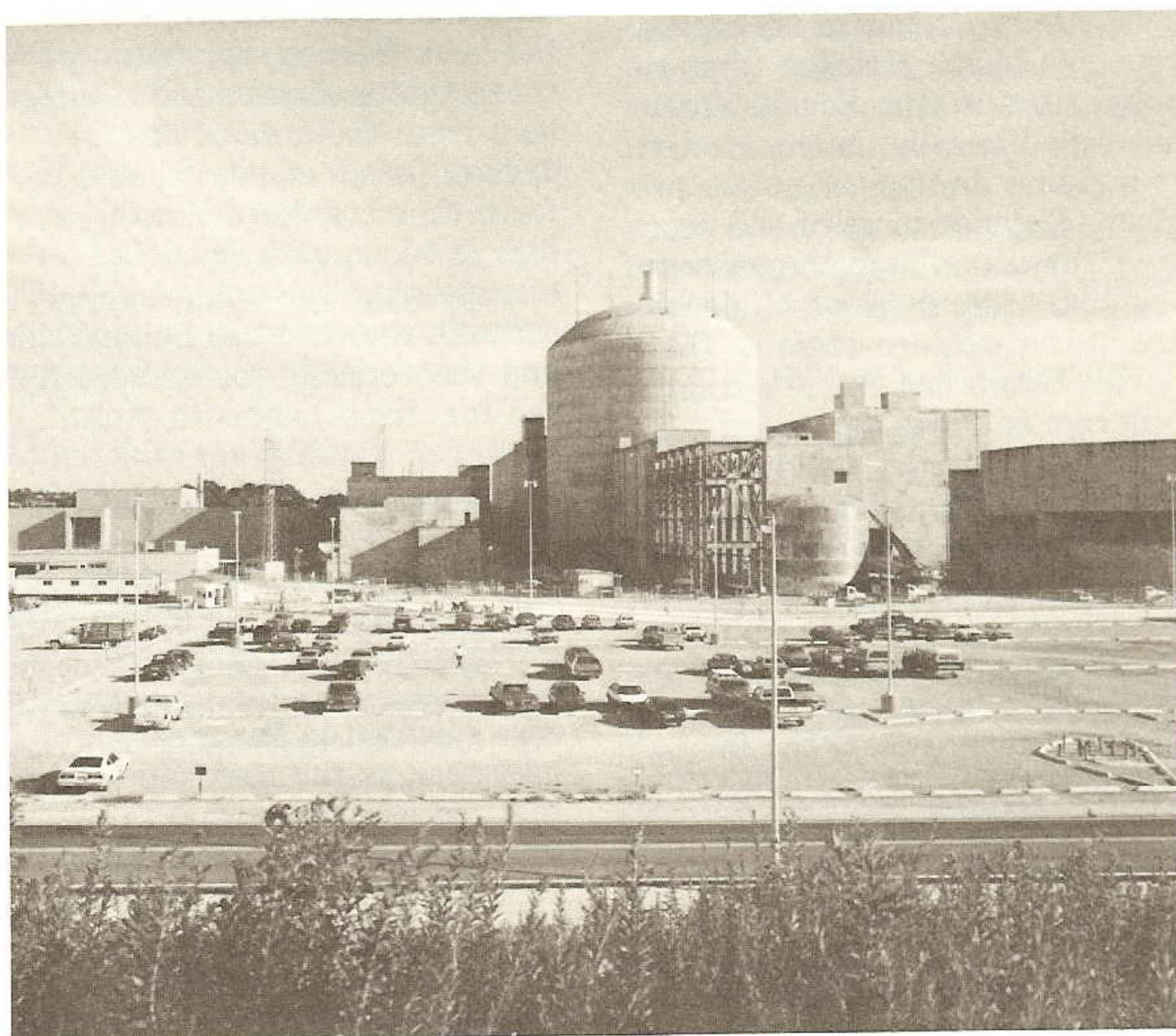
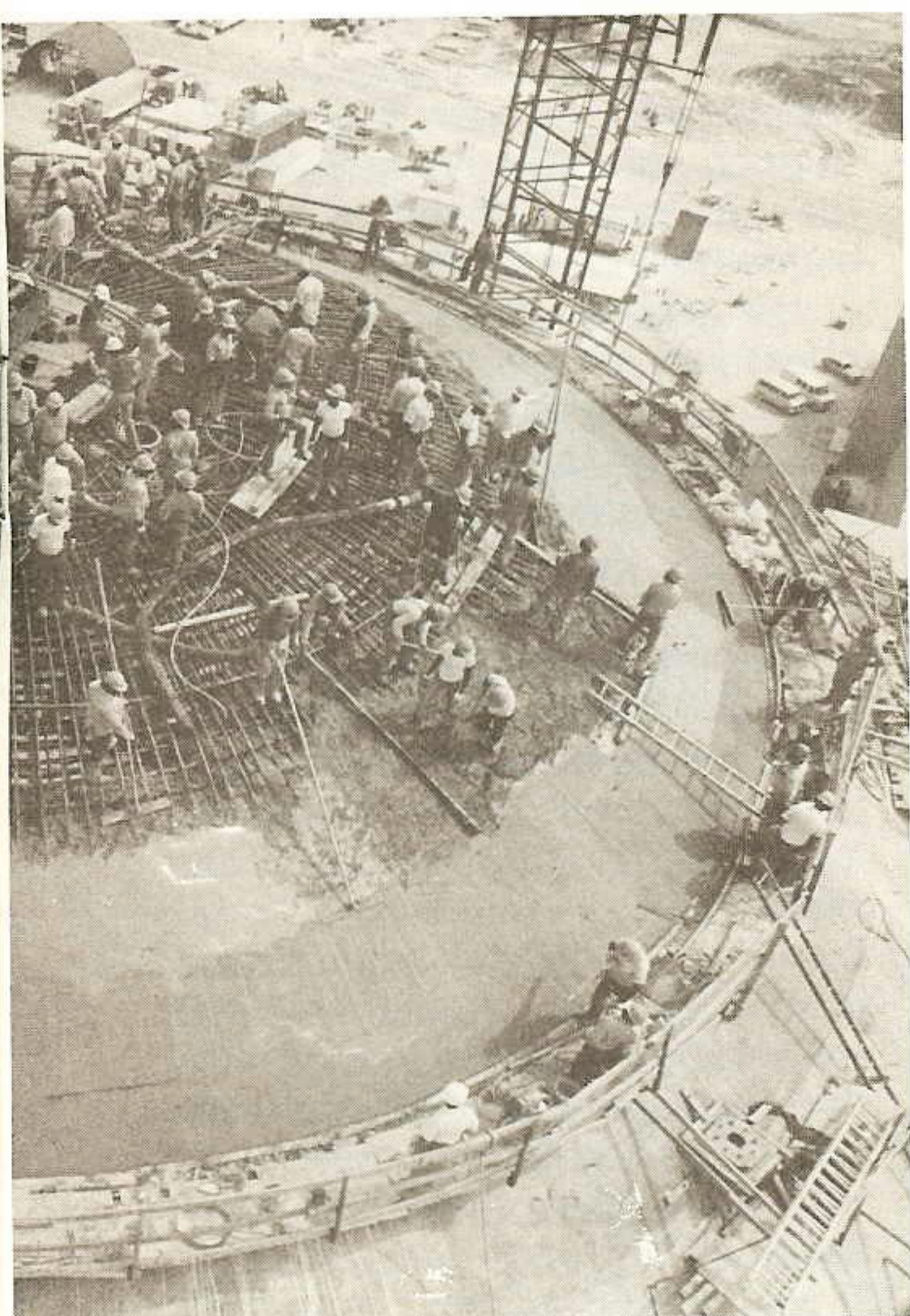
construction progress



Above, from left: Nov. 1976 — People and machines backfill "the hole." July 1980 — The steel rebar in the reactor building takes shape. June 1981 — Preparations are underway to lift the reactor pressure vessel into position.



Below, from left: July 1983 — This was the scene during installation of the turbine and generator. April 1984 — Workers pour the final concrete on the roof of the reactor building. Oct. 1985 — River Bend Station.



Reactors and reactions

Editor's note: The accident at the Chernobyl nuclear power station in late April has had world-wide repercussions. One of the results has been the most thorough examination of nuclear power in recent memory. Interestingly, this look at nuclear power has focused more on the technology and science than did the examinations following Three Mile Island.

Following is a reprint of a Fact Sheet published by Reddy Communications Inc. of Albuquerque, N.M. It reviews the various reactors in use in the Soviet Union and the United States in a brief overview of these nuclear power generation programs.

The Soviet Union claims the distinction of being the first country to put electricity generated from nuclear power into a civilian grid. In 1954, the small (5Mwe) reactor at Obninsk was commissioned. This facility was a channel-type, uranium-graphite boiling water reactor design very similar in its basic concepts to the stricken Chernobyl reactor. The Soviet Union has relied heavily on this design in building its nuclear power program. Because most of the country's fossil fuel is in the eastern regions, while most of its people are in the western regions, the Soviet Union has embarked on a program to develop nuclear generation for the majority of its electrical power needs. About 40 percent of the rail freight carried in the Soviet Union is fuel. The government decided to utilize the vastly more concentrated energy available in nuclear fuel rather than continue to haul the immense tonnage of fossil fuel. The Soviets also concluded that nuclear power was less damaging to the environment than fossil fuels.

The Chernobyl reactor

The Soviets call the Obninsk and Chernobyl-style reactors

RBMK types. After scaling up the basic Obninsk design to more powerful 100, 200 and 600 MWe models, the next stage involved the RBMK-1000 series of high power reactors. The numerical designator refers to the 1,000 MWe capacity of the reactor.

The RBMK reactors use low-enriched uranium fuel assemblies which are positioned in a massive core constructed of graphite blocks. Water is pumped through the core in pipes. The heat developed in the reactor boils the water in the pipes. The boiling water then leaves the reactor and follows the piping to steam headers just as in the system used in fossil-fueled steam generating stations. The circulating water provides both power for turbine generators and cooling for the core.

What graphite does

The graphite serves two functions. First, it moderates the neutrons given off by fissioning fuel atoms. This slowing of the neutrons allows them to split other atoms and create a sustained reaction which provides the heat. Second, the mass of the graphite absorbs and transfers heat from the area of the fuel. This diffusion of heat should offer a time cushion following a loss of coolant situation. A disruption of the water supply through the core can be analyzed and theoretically solved before the fuel itself begins to melt. However, if the graphite itself begins to burn, as is thought to have been the case at Chernobyl, this advantage is apparently severely limited. In addition, it is thought that the increased temperatures in the Chernobyl core resulted in the creation of hydrogen as the zirconium in the fuel rod assemblies and the graphite itself reacted with steam from a rupture in the water system. The explosion which apparently made it impossible to deal immediately with reactor problems is thought to have been a hydrogen explosion.

In an RBMK facility, the reaction is controlled by means of rods placed into the core between fuel assemblies. These control rods absorb neutrons and thereby control the rate of the reaction. Once the control rods are inserted and the reaction halted, the reactor core temperature can be decreased.

Why the RBMK?

The Soviets have favored the RBMK reactors because the components do not require specialized manufacturing operations. Ordinary industrial installations can fabricate the necessary parts. The construction times are quite short by Western standards. According to Soviet reports, two RBMK 1000 reactors (the Soviet system provides for twin installations) typically take about 7.5 years to construct, making the average time for building one reactor about 3.25 years.

A known problem with these graphite-moderated reactors has been in the structural change that the graphite itself undergoes as a result of neutron bombardment. Known as "Wigner energy," after Nobel Prize-winning physicist Dr. Eugene P. Wigner, the force represented by the unbalancing of the neutron-bombarded crystalline structure of the graphite can lead to a release of energy as the graphite seeks to resume its normal form. Periodically, the graphite must be annealed, or heated beyond the

The trouble with graphite

A 1,000 MWe RBMK reactor is rated at 3,140 MWth. Theoretically, there are no limits to how large this type of reactor can be based on fabrication, transportation and construction considerations. Load factors in the RBMK plants ran in the 75 percent range in the early 1980s. Another benefit of this design is that individual fuel assemblies can be replaced without shutting the reactor down.

temperatures generally present in the reactor. Annealing restores the original structure of the graphite and returns it to a more stable state, less apt to be combustible. Graphite can burn if ignition temperatures in the range of 800 degrees Fahrenheit are present. The normal RBMK operating temperatures are below that.

WWER

In the late 1960s, the Soviet Union decided to introduce pressurized water reactors into its nuclear power production system. It calls these reactors the WWER series. Although early WWER systems were usually in the 400 MWe range, recent installations have 1,000 MWe capacity reactors. The Soviets claim that the standard 440 MWe WWER series is very reliable and operates at a load factor consistently averaging about 80 percent. As of three years ago, there were 27 WWER reactors operating in the Soviet Union and in Soviet-controlled countries in Western Europe and Finland. The Soviets plan to have a total of 48 WWER reactors with a combined capacity of 40,905 MWe installed and operating by 1990.

These systems are planned to provide district heating as well as electricity. The Soviets look to the WWERs for load balancing and frequency regulation in their grid as well.

The WWER reactors are similar to Western PWRs. The reactor vessel contains the fuel assemblies which are immersed in water. Control rod insertion is from above. The water moderates the neutrons and cools the core. Water heated in the reaction is run through external heat exchangers which in turn boil water in a separate system for driving the turbine generators.

Although the Soviets are spending more money on containment and design changes for reactors installed in seismic regions, they state that their capacity installation costs have not experienced the cost increases seen at Western facilities. Soviet WWERs, like other PWRs, offer very little reaction time to loss of

coolant situations. When water is no longer covering the fuel assembly, temperatures rise rapidly and fuel elements can begin breaking down in several minutes. Redundant cooling systems are necessary in Soviet and Western PWRs.

BN-breeder reactors

The Soviets also are pursuing a breeder reactor program, feeling that a nuclear program cannot be considered complete without them. Their fastbreeder reactors are designated the BN series. The Soviets intend to use spent fuel from other power reactors in their breeders and have offered their services as a regional nuclear fuel reprocessing entity to other countries.

The Soviet Union's first power producing breeder, BN-350, went into operation in 1973 and produces electricity, district heat and fresh water for the city of Schevchenko. The power rating of this unit is 700 MWth and 121 MWe. The plant produces 85,000 tons of distilled water daily, as well. A new series, the BN-600 was commissioned in 1980 and has a thermal capacity of 1,470 MW.

Nuclear water heaters

The Soviet Union also uses nuclear reactors solely for heating. These nuclear boilers are designated AST. Series AST-500 plants are being built in Gorky and Voronezh. In Odessa, a WWER-1000 plant is being installed for dual purpose electricity and steam heat production purposes.

The U.S. program

Nuclear reactors in commercial use in the United States are either boiling water reactors (BWRs) or pressurized water reactors (PWRs). The unit at River Bend is a BWR. There is only one graphite-moderated reactor in commercial service in the U.S. The Fort St. Vrain HTGR (high-temperature, gas-cooled reactor) operated by Colorado Public Service Company uses graphite to moderate the nuclear reaction, but uses helium to cool the core. Helium is used because it is stable in the high

radiation flux in the reactor, does not become radioactive itself, is chemically inert and has excellent heat transfer capabilities.

BWR

Boiling water reactors heat water in a reactor vessel by means of a controlled uranium-fueled fission reaction. This water directly drives turbines, is condensed and reintroduced into the reactor. The reaction is controlled by rods which absorb neutrons and backup cooling systems are incorporated into all U.S. BWRs.

PWR

Pressurized water reactors feature two closed-loop water systems. The water circulating through the reactor vessel does not come in direct contact with the water which becomes steam to drive the turbine. The heat energy from the reactor water is transferred to the power cycle water system by means of a heat exchanger. Pressurized water reactors also have backup water systems in the event of a failure which could result in loss of coolant.

The accident at Three Mile Island in 1979 occurred in a PWR which lost its coolant and in which procedures for introducing the backup coolant were not properly followed. The resulting heat buildup severely damaged the reactor fuel assembly which partially melted. Now, seven years later, the contaminated reactor and containment building are still being decontaminated.

Then there's CANDU

Another type of reactor in use in various countries is the Canadian-designed deuterium-moderated reactor (CANDU). Also called a "heavy water reactor," this system uses deuterium to moderate the neutrons produced by fissioning uranium atoms.

The methods of controlling the reaction and the methods of using the heat produced by the reactor to produce rotary shaft power are the same as those generally used in U.S. and Soviet systems.

Lytle receives special award

Jeri Lytle, senior clerk in Baton Rouge Division Accounting, received a certificate of appreciation from the East Baton Rouge Sheriff's Office on April 9, reports *Plain Talks'* correspondent Mamie Burrell.

Lytle, who ended a 36-year GSU career with her retirement



Sgt. Ashcraft, Lytle

in May, received the law enforcement commendation because of the assistance she provided the sheriff's office in locating persons for investigations.

The award was presented by Sgt. Ben Ashcraft, who commented that Lytle saved taxpayers thousands of dollars in investigation costs.

Lytle has one son, Terry, one daughter-in-law, Judy, and two granddaughters, Leslie and Hillary.

Hughes ends 39-year career

Otha C. Hughes, records associate in Beaumont, ended her 39-year GSU career by retiring May 1.

Friends in Edison Plaza hosted a going-away party for Hughes, who revealed plans to spend lots

of time at the beach. Her gifts included a beach towel, an electric wok and a videotape cassette recorder.

Hughes came to work for GSU on April 14, 1947.



Otha Hughes (with plaque) celebrated her retirement with (from left) Vicky F. Brown, personnel records assistant; Sandra Roberts, records associate; Clara Lackey, supervisor-personnel records; and Pauline Phillips, records associate.

Retirees earn 332 years' service

Friends and co-workers honored 10 retiring Western Division employees with a reception in the Montgomery County Barn in Conroe May 16, reports Bobbie Burke, secretary-executive. The new retirees earned a combined total of 332 years of service with GSU.

The honorees were Dan J.

Goodman, general line supervisor, Conroe; C.A. Estes, meter supervisor, Conroe; Rolan Goodson, division substation operator, Conroe; Gilbert Lauter, substation utility foreman, Conroe; Ray Myers, serviceman-1st class, Conroe; John Sebastian, supervisor-contract crews, Conroe; Robert Junot, serviceman-1st class, Madisonville; Ross Reed, assistant line supervisor, New Caney; T.J. Dinkins, senior district ser-

vice representative, Cleveland; and John Lattimore, helper-T&D, Huntsville.

Only Dinkins and Lattimore were unable to attend.

Burke says Frank Robinson, retired Huntsville district superintendent, was master of ceremonies. Each retiree was given a meter lamp made by Robert Sanders, meterman-2nd class, Conroe.



Freda and Dan Goodman



Mary and C.A. Estes



Rolan and Eunice Goodson



Robert Junot



Gilbert and Ruth Lauter



Jo Ann and Ray Myers



Ross and Virginia Reed



John Sebastian

by William J. Cahill

A bellwether. A standard in the industry. A well-executed nuclear project.

Such are the terms used by the experts who know the nuclear power industry when they describe River Bend Station's Unit 1.

It was no accident that the plant reached that level of excellence. It required employees determined to build a successful plant, yet flexible enough to adapt to changing rules and regulations. It took cooperation leading to the Nuclear Power Construction Stabilization Agreement. It was related to the fact that the company's top nuclear management was located at the site, making them readily accessible for early identification and

resolution of potential problems. And it was helped further by the building of a team possessing the expertise and skills to operate the completed unit.

Those are some of the reasons that all GSUers can feel proud about River Bend — proud of the actual plant and of the employee accomplishments that it represents.

That accomplishment becomes even more significant in light of the fact that the American public admittedly has not made up its mind about whether it actually wants electricity generated by nuclear power. Such uncertainty brings about an ever-changing regulatory climate. In such an environment, teamwork became the key to success at River Bend — GSUers working with GSUers for a common goal and GSUers working side-by-side with Stone & Webster and subcontractors. Most importantly, GSUers worked

with the public interest in mind, making safety the top priority during construction and on into the operating phase.

A primary objective at River Bend has always been to be open with the Nuclear Regulatory Commission and with each other. That is one important reason why we had very few allegations regarding quality or other aspects of construction.

Now we're embarking on another half-century at River Bend, during which it will be an efficient provider of electricity for our customers.

But our responsibility doesn't stop there. Our challenge now is to maintain our good record — to operate the plant efficiently and cost-effectively, while practicing good safety and complying with our regulators' requirements.

The responsibility goes on and so can our pride.

Editor's note: The following editorial is reprinted from the July 1, 1986, *Beaumont Enterprise*.

While Southeast Texas was busily clearing away the destruction of Hurricane Bonnie, it was interesting to note how courteous people were to one another.

People drove slowly, watching carefully for downed power lines, rubbish and people. Though traffic lights all around were out, most people stopped at each intersection and treated it as they would a four-way stop.

Neighbor helped neighbor with rubbish and tree limbs. People who got their electricity back first extended a helping hand to those still without power.

Though windows were blown out and homes and stores were

abandoned, few burglaries took place. It seems people respected the bad situation all of us were in.

Police officers were visible everywhere, driving slowly and providing help when people needed it. The sight of patrol cars became in some ways a security blanket for the many people without electricity or phone service.

Firefighters and medical personnel responded quickly and efficiently to numerous reports of injuries and downed power lines. They seemed to always know how to handle each situation and calm fears.

Other city workers and volunteers helped those who needed transportation, medical care or food.

The work by Gulf States Utilities Co. has been amazing.

The devastation to utility lines and poles was horrible, but the crews have worked long and hard to restore service as quickly as possible.

GSU's Southeast Texas crews were assisted by GSU crews from Baton Rouge, Lafayette, Jennings, Lake Charles and Conroe. Texas Power and Light, which serves areas to the north of Beaumont, also helped.

Contract crews from Louisiana and Texas were helpful in clearing away trees and limbs so that utility crews could begin restoring power. Other companies also helped.

Hurricane Bonnie caused a lot of damage and proved herself to be a major inconvenience, but it was great to see everyone banding together. Somehow that has made this entire mess a little bit easier to bear.

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