

August 18, 2000

Dorothy Gunn, Clerk
Illinois Pollution Control Board
100 W. Randolph, Suite 11-500
Chicago, Illinois 60601

RE: Submittal of Written Comments pertaining to **Docket R01-10**

Dear Ms. Gunn:

Attached please find written comments prepared by Reliant Energy Power Generation, Inc. for the Illinois Pollution Control Board in the matter of natural gas-fired, peak-load electrical generating facilities (peaker plants), Docket R01-10.

Due to a pending lawsuit filed against the company in DuPage County, Reliant Energy is not in a position to speak at the public hearings scheduled to begin on August 23 and 24, 2000.

However, we appreciate the opportunity to submit the attached written comments and would hope there will be an appropriate opportunity to testify on record at a future public hearing on this matter.

If the Board requires additional input from Reliant Energy beyond the information provided in the attachment, please contact me at 713-207-6985.

Sincerely,

Cindy Conte
Manager, State Affairs

Enclosure

Written Comments

Submitted by Reliant Energy Power Generation, Inc. to the Illinois Pollution Control Board

In the matter of: Natural Gas-Fired, Peak-Load Electric Power Generating Facilities (Peaker Plants)

Docket R01-10

August 18, 2000

I. Description of Reliant Energy Power Generation, Inc.

Reliant Energy Power Generation, Inc. (“Reliant Energy”) is a wholly owned subsidiary of Reliant Energy, Incorporated involved in the development and operation of electric generation assets in deregulated power markets. Based in Houston, Texas, Reliant Energy, Incorporated is an international energy services and energy delivery company with more than \$15 billion in annual revenues and assets totaling more than \$28 billion. The company has more than 26,000 megawatts of power generation in the U.S. and Western Europe, and has announced development of projects that will add another 6,000 megawatts. Reliant Energy, Incorporated has a wholesale energy trading and marketing business that ranks among the top five in the U.S. in combined electricity and natural gas volumes and has a presence in most of the major power regions of the U.S.

II. Reliant Energy's Presence in Illinois

Reliant Energy is one of numerous companies in the past couple of years who has demonstrated a strong interest in and commitment to serving the peak electric supply needs for the citizens of Illinois. Our interest was fostered by changes brought about by the movement to deregulate the electric utility industry and the opportunity to participate in the wholesale marketplace. But the driving force behind the decision to construct peaker plants in Illinois is the growing imbalance between electric supply and electric demand in the state. Recently, Reliant Energy began commercial operation of a 345-megawatt peaker plant in Shelby County. An 870-megawatt peaker project under construction in DuPage County, located in an industrial business park in the city of Aurora, is scheduled to become operational June 2001.

III. Demand for Electricity is Outpacing Supply

Like most areas of the nation, Illinois is enjoying growth and prosperity in this period of great economic expansion. As cities and communities in the region continue to grow, demand for reliable electric power also increases. According to ComEd, electricity demand is growing at a rate of nearly 3% per year. (According to the U.S. Department of Energy, U.S. electric demand is up 17% in the past decade.)

It has long been considered an industry standard to have 15 to 20% extra capacity (known as reserve margin) available. This is necessary because individual power plants cannot run 100% of the time and because supply has to match demand in real time since electricity cannot be economically stored. Figures from Mid-America Interconnected Network (MAIN), that includes Illinois and nearby states, indicate that the reserve margin was 9.6% in 1998 and 7.6% in 1999. This dramatic drop in the reserve margin has been countered by the addition of new peaker plants operating this summer (such as the Reliant facility in Shelby County). Additional plants will be needed in future years to make sure that an adequate reserve margin is maintained. It will not be possible to maintain a 15 – 20% reserve margin unless new peaker plants are built and operated in Illinois.

IV. What Does it Take to Keep the Lights On?

Electricity is generated by a variety of power plants -- base load, intermediate, and peaking units. Base load units with low operating costs, such as nuclear and coal-fired plants, are ideally suited to run at full capacity at all times. Intermediate units, such as gas- and oil-fired power plants, are ramped up and down to follow the daily load curve of electricity demand. (See attached diagram showing a typical daily load curve.) Together these two types of plants cover most of the daily and seasonal fluctuations in demand. This, however, leaves a few hours in the year when unusually high demand peaks are encountered. These sharp demand peaks usually occur during extremely hot summer days when temperatures soar and customers turn on every available air conditioner. Peaking units -- or peakers -- are used to meet these spike demands for power.

While Illinois is well served with base load plants, which generate electricity from coal-fired and nuclear units, there has been a shortage in peaking capacity in the state. To meet its demand, Illinois utilities have had to depend on imports from other states. But given similar economic growth throughout the Midwest, there has been less power available for import -- leaving the state with a potential shortfall in generation capacity or supply. Illinois must ensure a reasonable balance between supply and demand before it is too late. To do so, it will require the construction of additional power plants in the state.

V. Peaker Plants Will Help Keep the Lights On

An integral part of the remedy for this growing shortfall is the development of peaker plants. Peakers are electric generation facilities that are capable of starting up quickly to respond to demand increases. Typically, peakers are natural gas turbines used to produce electricity and generally run only when there is a high demand for power -- typically during the summer months. Peaker plants are not new to Illinois -- a dual fuel (natural gas/fuel oil) peaking unit built by ComEd has been in the Aurora community for over 30 years. What is new is the technology used for the construction of today's peaker units. Reliant Energy's peaker plant under construction in Aurora will use turbines with advanced generation and clean emissions control technology fueled by natural gas only.

VI. Modern Peaker Plants Are Clean

Today's peakers are among the cleanest power plants operating and are significantly less harmful to the environment than existing fossil plants. Of existing utility peaking capacity in Illinois, nearly 40% burns fuel oil exclusively and about 50%, while primarily gas-fired, operates without the benefit of emissions controls. In comparison, Reliant's plants in Illinois use state-of-the-art, dry-low NOx and water-injection to control emissions. Our plants also are equipped with Continuous Emission Monitoring Systems (CEMS) to record the level of NOx production.

Reliant Energy has done air modeling for our Aurora peaker project to determine where the greatest concentration of NOx emissions would occur in DuPage County. This modeling is based on federal standards for health and safety. The calculation includes both emissions from Reliant Energy Aurora and all other industrial facilities in the area. (Data for other industrial activity is based on the worst year on record -- 1990.)

The following conclusions can be drawn from this information:

- The maximum emissions from the plant with all turbines operating are concentrated in a small area radiating out a few hundred feet to the north of the Reliant property (see attached isopleth map).
- The maximum concentration of NOx in this small area is almost fifty times less than the National Ambient Air Quality Standard (NAAQS) set by the U.S. Environmental Protection Agency (USEPA). This then quickly reduces to a level of 150 times less than the standard.
- Beyond the limits of the mapped area, emissions are negligible. For this reason, the Aurora power plant has no measurable impact of NOx emissions on the air quality in

any of the residential neighborhoods near the plant. These neighborhoods are from one-half mile to more than a mile beyond the affected area.

As noted above, this modeling was based on federal standards. The USEPA has established a National Ambient Air Quality Standard (NAAQS) of 150 micrograms per cubic meter of particulate matter on a 24-hour average. Ambient concentrations at or below this standard have been determined by USEPA to have no adverse effect on human health or the environment, even considering sensitive populations, such as children, the elderly, and asthmatics. The peak 24-hour concentration of particulate matter resulting from Reliant Energy Aurora, combined with the contribution from all other industrial facilities in the area, is only 3.238 micrograms per cubic meter. This peak level occurs only on the property of the Aurora plant.

VII. California's Supply Crisis

California's electricity crisis can be a useful case study for states that are moving toward electric competition and are in the midst of making policy decisions that will affect the future supply of electricity. Due to the uncertainty and timing of deregulation, new power plants have not been added to the California grid in more than a decade. In addition, the state's environmental and regulatory mandates have hampered the siting and approval of new plants in recent years. Consequently, California's electricity reserve margin, which was as high as 35% in the early 1990s, has all but disappeared. Meanwhile, the state's booming economy and unseasonably hot temperatures have caused demand for electricity to soar.

California will need to build several new power plants each year to keep pace with load growth. In addition, the existing stock of power plants is relatively old. These plants are running harder and under more stressful conditions than at any time in the past, decreasing unit reliability and increasing forced outage risks. Without the addition of new generating capacity in the very near future, California will have a difficult time resolving its electric supply and demand problem.

VIII. Illinois Can Make Decisions Before Facing a Similar Crisis

Everybody becomes painfully aware of just how important reliable electric service is when the lights go out, even if for a few minutes. Although Illinois has enjoyed mild temperatures this summer, it doesn't have to reach very far back in the past to recall the summer of 1998 when temperatures soared and the demand for electricity threatened the state with forced rolling blackouts. The summer of 1999 was only marginally better.

The construction of peaker units will help Illinois avoid the supply shortage, unwanted brownouts and unreasonably high costs for consumers that now plague California. To stay on course, Illinois will need to make decisions based on a balanced

approach to environmental stewardship and business development. It must weigh the benefits of providing an ample supply of electricity to meet the state's growing demand while at the same time ensuring continued progress in cleaning up the air, protecting its water supply, avoiding noise pollution and protecting property values in communities where these plants are located.

IX. Reliant Energy Supports the Current Procedures for Peaker Plants

Reliant Energy believes the addition of natural-gas fired peaker plants to the Illinois electric grid will allow the state to achieve this difficult balance without compromising the environment or the communities where these plants are located. We support the current procedures in place for the permitting and approval of peaker facilities.

- Existing air quality regulations guarantee that Illinois' air quality meets federal ambient air quality standards. The current permitting process for peaker plants at the IEPA ensures that emissions from such facilities will have no negative impact on ambient air quality in the state.
- Procedures are in place within the current system, in the form of local regulations and approvals, to consider issues related to water quality standards and availability. These procedures have been effective in maintaining the standards.
- The IEPA has authority to enforce noise levels standards consistent with guidelines established by state law.
- Regarding siting approvals for peaker plants, these are issues that can best be addressed by the local community rather than at a state level. Local approval allows input on issues such as zoning, concern for property values, aesthetics and other factors that may be unique to citizens of the community. Local siting approval has proven effective. In recent months, local communities have either approved or denied requests for the construction of peaker plants in their area based on their defined terms and community concerns. Centralizing such authority moves the decision-making authority further away from the citizens most directly affected. Additional state-level siting requirements can become overly burdensome and ultimately result in a lag in approvals. This lag, as demonstrated by California, could ultimately sidetrack Illinois' ultimate goal -- to add electric supply before it is too late.

X. Conclusion

Illinois needs additional power supplies – and it can no longer rely upon neighboring states to fill the gap. There has not been a major program of power-plant construction in the state for nearly two decades. Such a change from no construction to a situation where multiple projects are proposed warrants a constructive dialog between

industry, government and the citizens of Illinois. Reliant Energy fully supports such a dialog. We believe that a thoughtful consideration of the facts will help increase awareness of the need for new sources of generation within Illinois. Throughout the Illinois Pollution Control Board's review of peaker plants, the specifics you examine must be compared to the greater danger that may occur if the state of Illinois is not able to keep pace with its growing appetite for electricity.

XI. Attachments

- Diagram Showing Typical Daily Load Curve (Attachment #1)
- Isopleth Map of Reliant Energy Aurora (Attachment #2)
- Q&A on Reliant Energy Aurora (Attachment #3)



Reliant Energy Aurora

Isopleth Map of Reliant Energy Aurora

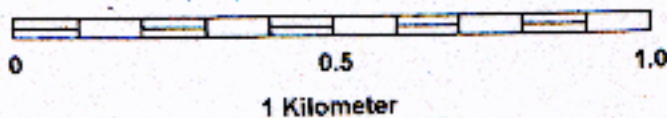
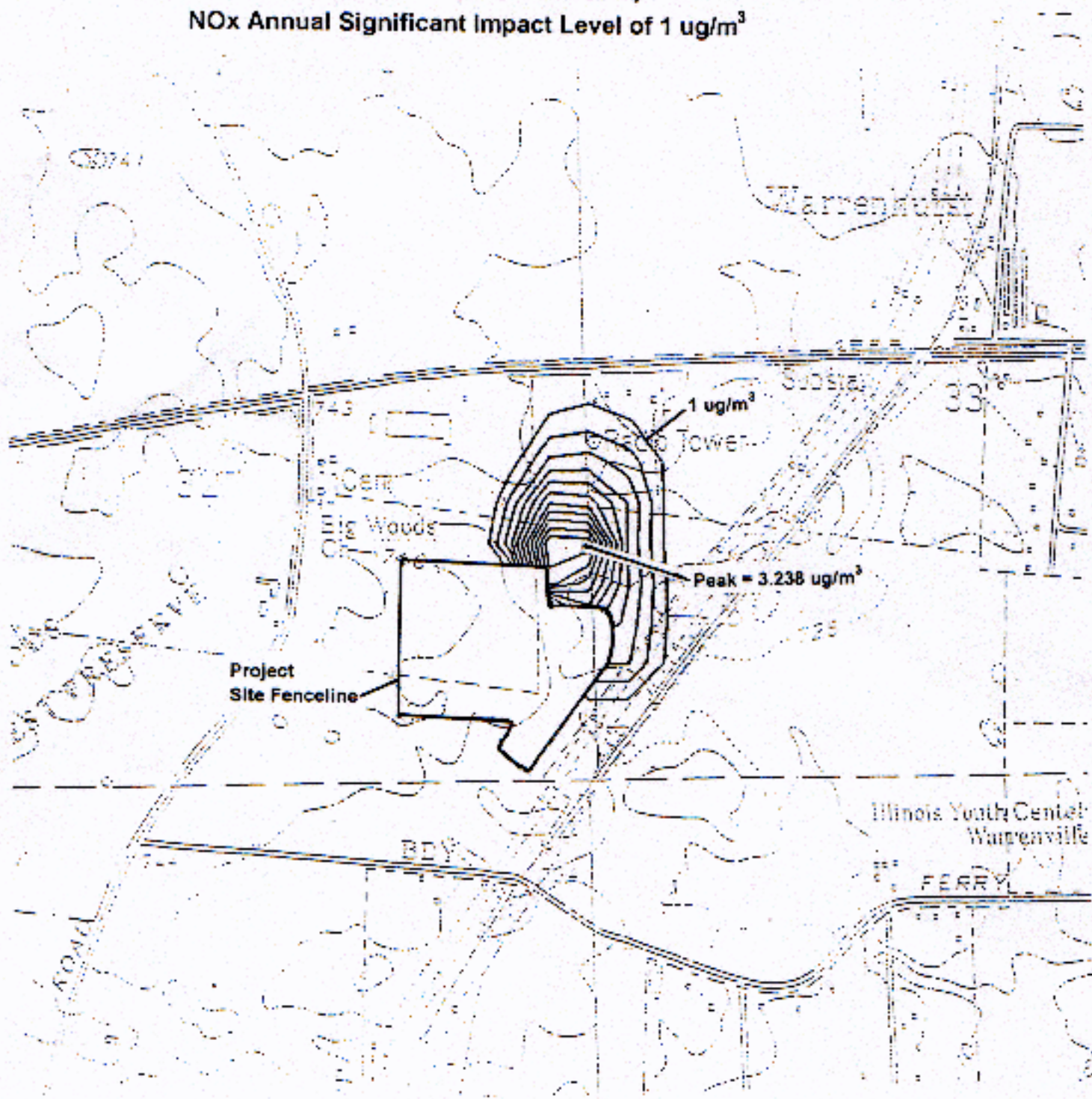
Several citizens requested that a contour map be prepared for emissions from Reliant Energy Aurora at the public hearing held on April 3rd. Reliant Energy has now submitted that map to the Illinois Environmental Protection Agency. The IEPA will include this information in the final report distributed to the public.

A copy of this isopleth map is attached. The map shows where the greatest concentration of nitrogen oxide (NO_x) emissions from Reliant Energy Aurora would occur in Du Page County. The following conclusions can be drawn from this information:

- The emissions from the plant with all turbines operating are concentrated in a small area radiating out a few hundred feet to the north of the Reliant property.
- The maximum concentration of NO_x in this small area is fifty times less than the safety standard set by USEPA. This then quickly reduces to a level 150 times less than the standard.
- Beyond the limits of the mapped area, emissions are negligible. For this reason, the power plant has no measurable impact of NO_x emissions on the air quality in any of the residential neighborhoods near the plant. These neighborhoods are from one-half mile to more than a mile beyond the affected area.
- The calculation includes both emissions from Reliant Energy Aurora and all other industrial facilities in the area.
- Data for other industrial activity is based upon the worst year on record (1990).
- The calculation is a daily (not annual) average in keeping with the fact that the plant will not run for the majority of the year.

As noted above, this modeling was based upon federal standards for health and safety. The U S Environmental Protection Agency (USEPA) has established a National Ambient Air Quality Standard (NAAQS) of 150 micrograms per cubic meter of particulate matter on a 24-hour average. Ambient concentrations at or below this standard have been determined by USEPA to have no adverse effect on human health or the environment, even considering sensitive populations, such as children, the elderly, and asthmatics. The peak 24-hour concentration of particulate matter resulting from Reliant Energy Aurora, combined with the contribution from all other industrial facilities in the area, is only 3.238 micrograms per cubic meter. This peak level occurs only on the property of the proposed facility.

**Contours of Predicted Peak Annual Average NO_x Air Quality Impact
of the Reliant Energy Aurora Project
During the Worst Year - 1990
Including Only the Area where that Impact Exceeds the
NO_x Annual Significant Impact Level of 1 ug/m³**





What is Reliant Energy Aurora?

Reliant Energy is proposing to build a peaking power plant in the Butterfield Center for Business & Industry at Eola Road, between Ferry and Butterfield Roads (Route 56). Reliant Energy Aurora, LP plans to purchase 103 acres of this land from Du Page Properties Venture, Inc. (the plant itself will only occupy 30-acres). The “peaker” will be able to produce 870-megawatts of power during the summer months – enough to supply the needs for 250,000 homes.

Reliant Energy Aurora will help provide a reliable source of electricity required by the rapid growth of Aurora and surrounding areas. This area’s demand for electricity during the summer of 1999 broke the previous record by 7%.

This facility will operate during periods of extreme demands for electrical power (such as hot summer days) supplying power to homes and businesses and preventing brownouts and blackouts caused by supply shortages. The plant would also be an “insurance policy” for the system and could run if other power plants were broken or otherwise not available to produce power.

The gas turbines in the facility will use state-of-the-art emissions control technology, with limited combustion emissions during operation. These emissions will be identical in constituents to the emissions from a home furnace. The only fuel burned in this plant will be natural gas, which will be transported to the site through an underground pipeline.

Reliant plans to begin building the facility within the next few months. When the facility is completed, city officials anticipate it will generate substantial tax revenue for the City of Aurora, local schools and other governmental bodies.

Who is Reliant Energy?

Reliant Energy (NYSE: REI), based in Houston, Texas, is an international energy delivery and services company with nearly \$14 billion in annual revenue and assets totaling more than \$22 billion. The company has more than 22,000 megawatts of power generation in operation in the U.S. and Europe, and has announced development projects totaling more than 3,800 megawatts. It has a top-10

wholesale energy trading and marketing business, and retail distribution serving nearly four million electricity and natural gas customers in the U.S. Reliant is pursuing additional plant locations in Illinois, including in Shelby and McHenry Counties.

Why does this area need a peaking plant?

ComEd has repeatedly stressed the need for new power plants to be located within the north and northwestern counties of its service territory. This is the need being addressed by this facility.

To meet a potential shortfall in generating capacity, this peaking plant will help prevent brownouts or blackouts in the local region. The electric reliability council (the Mid-America Interconnected Network, also known as MAIN), has indicated that available capacity to meet peak demand has been eroding over the past several years, and that 7,900-megawatts of new generation will be required from 1999 to 2007.

This increased demand for electricity is driven by population growth, the creation of new jobs and businesses, the closure of the Zion nuclear plant, and the likely retirement of older generating plants. The addition of local electrical generation will do much to alleviate potential power constraints in the rapidly growing Aurora area.

What is the benefit to Aurora?

A peaking plant is designed to provide additional electrical capacity. While periods of peak usage typically involve an entire region, the laws of physics dictate that this plant would serve the needs of the surrounding community first and foremost.

In addition to providing needed energy, locating plants near the demand for electricity "strengthens the grid," and allows for better regulation of the voltage delivered to customers. Proper voltage is especially important in the high-tech, computer-driven economy which characterizes the Illinois R&D corridor located in Aurora and surrounding communities.

Because the plant only will use approximately a third of the property, a portion of the land will be developed for recreational or other uses for the benefit the local community. Reliant Energy has a well-established history as a responsible partner, contributing to the communities in which it does business.

Why do we read so much about peaking power plants all of a sudden?

Peaking power plants have always been an important part of the electrical generation system. Since electricity cannot be stored, there is a need both for plants which can operate all of the time (baseload plants) and plants which are only called to operate during periods of heavy use (peaking plants).

Illinois is well served with baseload capacity due to its supply of coal and nuclear plants, but the region has historically relied on imports to supplement local generation during peak periods. Throughout the United States, the construction of new plants has not kept up with the demand and it is increasingly difficult and expensive for Illinois to import its power during peak periods. In addition, construction of high-voltage transmission lines has also lagged behind the growth in demand. The advent of modern, gas-fired peaking plants means that generation can now be located near demand with no detriment to local residents.

What do you mean that supply has not kept up with demand in the U.S.?

According to the Department of Energy, demand for electricity in the United States increased 17% during the 1990's, but construction of new plants has increased less than 1%.

Does this mean that we will end up with several peaking plants all located near Fermi Lab?

No. There is simply not enough transmission or a need for many plants to be built in the Aurora/West Chicago area. It is unlikely that so many competitive plants could secure the financing or find the customers to support that level of development.

Why are we only hearing about this plant now?

Reliant Energy and the Aurora Economic Development Council issued a press release on this project on November 30, 1999 and the story was immediately covered by the *Aurora Beacon News*, *Chicago Tribune* and *Daily Herald*. Subsequent meetings in Aurora concerning the plan and development of the project were also reported in the local press. Reliant sent information to local residents who had additional questions from these meetings and has made follow-up calls to make sure this information was received.

Is the Reliant facility going to impact the value of area homes?

The City of Aurora and Reliant Energy have purposely located the planned facility in a commercial/industrial park, away from residential areas to insure that there will be no impact on the value of area homes. However, the availability of reliable electricity will provide a long-term quality of life and economic benefit to homes

and businesses Aurora and the surrounding communities.

Why is the plant located where it is?

The site is in a commercial/industrial area and is at the "energy crossroads." Three major interstate natural gas pipelines are adjacent to the site, with other gas pipelines in the immediate area. Also pre-existing are eight major ComEd transmission lines, including (4) 345,000 volt and (4) 138,000 volt lines. Short "laterals" will be constructed to connect the facility to this gas and electric infrastructure and no new lines will be constructed off of the site. The site is also well served by rail and heavy truck transportation and is buffered from residential development by the Big Woods Forest Preserve.

Why does this plant have to be so big?

Engineering studies by Reliant have determined that based on the region's demand for reliable electricity during peak hours, the plant needs to be this size to have the greatest benefit to the area now and in the future.

Can local residents be assured that there are no health risks associated with this Peaking Power Plant?

Yes. Reliant Energy has been in the energy business for more than 132 years. We are extremely conscious of the well being of the communities in which we do business. We have carefully examined the health and environmental aspects of the project throughout its development, including the selection of the site, the technology, fuel and emissions. The plant will meet all IEPA (Illinois Environmental Protection Agency) guidelines and standards for noise and emissions.

Reliant plans a public meeting in the near future which will include officials from the IEPA. Display ads will be placed in the local newspaper concerning the meeting, and invitations will be sent to local officials, the media and interested citizens. Staff from Reliant will answer any questions concerning the plant. The public will also have the ability to raise questions with the IEPA which will be answered at the meeting or in a subsequent letter from the agency.

How will the plant affect the local environment?

The plant site will be designed to minimize its effect on the environment. Landscaping will be added to enhance the existing environment, and no wetlands will be disturbed.

What types of emissions controls are included in the design?

This facility will be using the most advanced technology available for the

production of electricity. The emissions from operating this proposed simple-cycle, natural gas-fired power plant are only the emissions of combustion - the same emissions that result from a home furnace. There will be no smoke or odor emanating from the plant.

Will the plant be noisy?

No. Noise from the plant will be below the requirements set by the State of Illinois.

Are hazardous materials used, stored or created by this plant?

The plant will generate small amounts of waste, primarily as a result of maintenance activities that require the use of some small quantities of lube oil, cleaning fluid, solvents, etc. All industrial waste will be documented and shipped off site for proper disposal at appropriately permitted disposal facilities.

Will the plant be secure?

Yes. The actual facility will be fenced off, with security cameras in place. A large thorny thicket of plants will also serve as a buffer between the plant and any recreational areas.

How much water will the plant use?

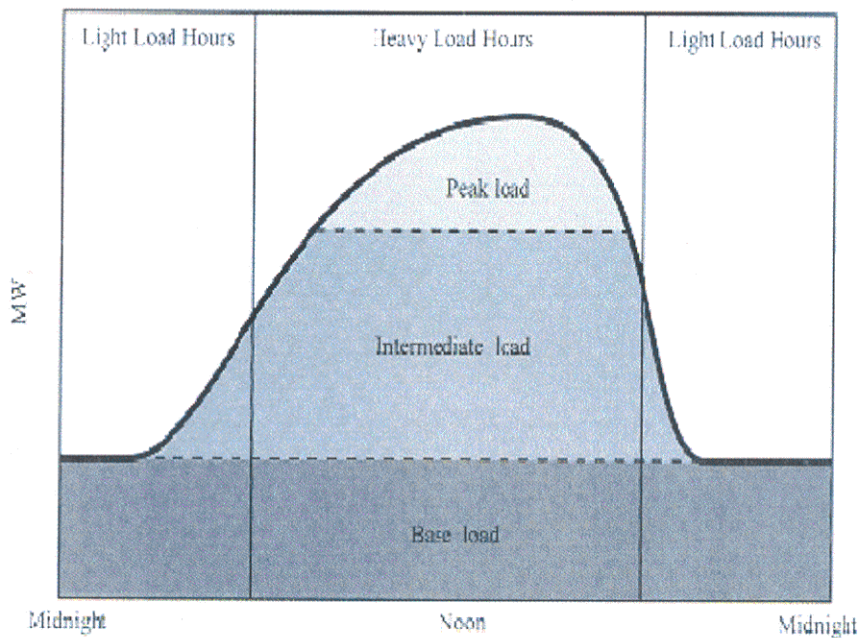
The plant does not require a large amount of water. Unlike many older plants, Reliant Energy Aurora does not use steam to generate electricity and its demand for water is similar to other light industrial uses. The primary use of water will be to cool the air flowing into the units and to control emissions. The only other uses of water will be for the purposes of employee sanitation and for fire protection.

The plant will use an average of only 300 gallons per minute (gpm) during the summer months and that the peak water usage rate will be 650 gpm. The water will be provided from a deep aquifer well (Cambrian-Ordovician) which is at least one-mile away from any known deep aquifer wells in the area. Compared with the water used in the City of Aurora on an annual basis, the maximum consumption from this well is less than 1% of the city's water use.

What types of jobs will be available during construction?

The peak construction workforce level is expected to be approximately 200 people. These will include millwrights, boilermakers, mechanics, electricians, machinists and laborers.

Typical Daily Load Curve



- Peak demand is the 5-15% of the year when use of electricity is highest (e.g. for summer air conditioning on hot afternoons).
- Electricity cannot be stored for later use
- Peaking Plants are quick response generators used only during maximum load periods
- Most marketers believe Illinois needs more gas-fired peaking capacity and that baseload needs will be served by coal and nuclear