Northern Indiana Public Service Company's
Response to the Indiana Utility Regulatory Commission's
Electric Service Quality Rulemaking
Power Quality Data Request

At the last Electric Service Quality Workshop in September, Staff stated it would issue a short follow-up data request regarding power quality. The Commission recognizes that not everyone who receives this data request will have the experience or information to respond. However, we have circulated the data request to everyone so that everyone is aware of the on-going process related the electric service quality.

Over the course of the workshops we have discussed three broad categories of electric reliability problems: Sustained outages have been defined as interruptions in service lasting more than five minutes and requiring utility intervention to restore service; Momentary outages, for our purposes, have been identified as service interruptions of less than five minutes in which service is restored without utility intervention; Power Quality problems are deviations in the nature or character of the electricity which may affect the performance of customers' electric equipment.

1. From a customer's perspective, how are power quality problems usually described/identified, i.e. what does the customer complain about?

   A: The majority of power quality-related customer complaints NIPSCO receives involve equipment misoperation related to momentary disruption in power delivery. Voltage surges or sags and high or low voltages are also a high percentage of such complaints. To a lesser degree, NIPSCO receives complaints regarding single phasing of the service power. Other complaints involve stray voltage (grounding problems), harmonic distortion problems, and damage resulting from lightning.

2. Are the complaints and/or problems different for residential or small commercial customers versus large commercial or industrial customers? If so, please explain how the complaints are different.

   A: Large customers, or those with energy-sensitive processes or equipment, are usually more sensitive to momentary sags or interruptions of power than small commercial or residential customers. Small customers are usually only concerned with sustained outages.

3. What steps does your utility take to address power quality complaints?

   A: Power complaints are typically directed first to the Customer Sales Department, Customer Call Center or LOA Operations Centers. If the problem requires further study it is referred to the Power Quality Group. When this occurs, the customer is contacted for a description of the problem and to initiate an engineering analysis. If necessary, electronic monitoring may be performed.

4. Does your customer call center categorize power quality complaints separately?

   A: No.

   - If so, how many power quality complaints have there been in the last 12 months? How were these complaints resolved?

   - If not, please estimate how many power quality complaints there has been over the last 12 months and how they were resolved.

   A: There were approximately 44 customer complaint referrals to the Power Quality Group in 2003. Nineteen of the complaints were handled with analysis only, and 25 required both analysis and electronic monitoring.

5. Are there actions customers can take to insulate their equipment from power quality problems? If so, please explain what actions could be taken.

   A: Customers should follow the NEC (National Electric Code) guidelines for operation, grounding and wiring practices. Customers should also analyze plant electrical processes to locate the most sensitive areas of plant operation. Where processes are highly sensitive to voltage changes or momentary interruptions, equipment such as ride-through generation or UPS (Uninterruptible Power Supplies) systems can be installed to insulate these processes from electrical disturbances. Similar to a residential customer installing a UPS or battery back-up system for a home personal computer, a commercial or industrial customer has similar abilities to install such excess facilities to protect equipment unique to that customer. In these situations, each individual customer recognizes value to its own operations that cannot be determined on an aggregate system basis.