January 2, 2001

Office of Policy
Office of Economic, Electricity and Natural Gas Analysis
PO-21
Attention: Electric Reliability Comments
US Department of Energy
Forrestal Building, Room 7H-034
1000 Independence Ave. SW
Washington, DC 20585

Dear Sirs:

The Institute of Electrical and Electronics Engineers-United States of America (IEEE-USA) Energy Policy Committee offers the following comments in response to the questions raised by US Department of Energy in its Notice of Inquiry. The seven questions raised by the Department and Secretary Richardson are addressed in order.

1. Is the existing arrangement of voluntary compliance with industry reliability rules sufficient to ensure reliability of the bulk power transmission system? If not, why not?

No! The existing system of voluntary compliance has shown itself insufficient to ensure reliability of the bulk power transmission system in a competitive marketplace.

Further, this question ignores the critical role of power generation and the effect of the "power producer" on the reliability of electricity. A transmission system creates the marketplace for electricity that enables the delivery of power from the producer to the consumer. Transmission and generation together create a reliable electric power system.

We believe that a solely voluntary program is insufficient. To be effective the existing arrangement of voluntary compliance with industry reliability rules needs to be transformed into a self- managing electric reliability organization that must be buttressed by federal legislation and the ability to provide both financial incentives and penalties that lead to compliance with appropriate industry consensus reliability standards. This needs to be done in a nondiscriminatory manner and with appropriate and enforceable financial incentives and appropriate penalties based on those standards. This will require new federal legislation and FERC regulatory authority for FERC to serve as “backstop" to the reliability organization. The authority of a voluntary organization is not sufficient under the present and projected circumstances. The needed legislation should authorize

FERC to create an independent organization that will develop the financial incentives and penalties necessary to achieve reliability and to create the ability of this organization to resolve disputes arising from enforcement of the standards, incentives and penalties. FERC will need to be the "backstop" for this organization and an appropriate appeal process will need to be created.

The adequacy, reliability and quality of electric power service are general characteristics of the electric power system that are a consequence of many complex and interacting factors. For the power system to operate effectively the various industry participants must cooperate with one another. For the markets to be efficient, these participants need to compete. Solely voluntary market rules will undoubtedly lead to some participants taking unfair advantage of the system of voluntary compliance or the peculiarities of the physical power system. Any organization seeking to assure the reliable supply of power will need to have the ability to develop economic incentives and impose penalties to assure the system adequacy, security and reliability of the Nation's power system.

1.c Has reliability been jeopardized by violations of the existing bulk power reliability standards?

Yes, reliability has been compromised by violations of the existing voluntary reliability standards. Further, reliability has also been compromised by the precipitous and headlong rush to restructuring that has proceeded without the essential analytical and experimental efforts to understand both the expected consequences and the unintended consequences of restructuring.

Reliability has been compromised by both violations of reliability standards and by apparent 'gaming' of power markets by parties that have either market power or partial market power. Of particular concern is that many of the current markets are subject to a withholding of capacity by generation facilities or marketers, leading to a shortage of reserves and attendant high prices. It should be noted that it is not necessary that "gaming" be thought of as explicit collusion or price gouging. Indeed, the nature of the markets and of the constraints in the transmission system leads to many opportunities for implicit collusion and resulting high prices and scarcity of generation being bid into the power markets. Opportunities for creating scarcity and profiting from it (which in turn tends to lead to reliability events) result not only from a lack of appropriate reliability standards, but also from a failure of market rules and design and from the market structure itself as well as the limitations of the physical infrastructure. Clearly, market rules are intimately coupled to reliability, and the new reliability organization and FERC need to ensure that market design and rules are consistent with achieving reliability before approving them. The most dramatic example of the interplay between scarcity, high prices and reliability was seen in the California markets during 2000, where scarcity created both price spikes and reliability problems (rotating outages or rotating outage threats).

2. What can FERC do under existing authorities to address reliability concerns?

It is clear that neither FERC nor the energy market participants and academic experts working in isolation have a sufficient understanding of the problem at this time to address all the reliability problems that have been created by restructuring.

FERC has the ability to put in place rates and pricing mechanisms for interstate commerce and other powers. An example of an issue that faces FERC and the industry that illustrates the intimate interrelationship between process and reliability is the issue of unscheduled flows of electricity (both parallel and loop). The problem of unscheduled flows often crosses state boundaries. This long known phenomenon is both a reliability issue and a commercial issue. As a reliability issue, FERC's power is unclear, while as a commercial issue FERC's authority over Interstate commerce rates and markets is obvious. In either case, the problem is that experts do not always agree on what FERC should do to assure both reasonable pricing and reliable electric service in dealing with this phenomenon. Many more examples of still unresolved issues and concerns can be cited. The main unresolved issue is how to regulate a complex interconnected system of generators and consumers. The answer to this challenge is not clear today.

It is clear from recent events that neither FERC nor the Department is fully capable of responding to the crisis that exists, especially in the West. FERC has clear regulatory responsibility for interstate commerce and the states have similar responsibility for intrastate commerce. Yet the famous FP&L case in 1971 established the ability of FERC to regulate aspects of intrastate commerce because it is physically impossible to have a synchronous and interconnected interstate power grid without the physical power system ignoring or being insensitive to state boundaries. Power flows where it will, and neither Federal nor State regulators can affect the laws of nature.

FERC has the ability to put in place interstate rates and pricing mechanisms, including pricing mechanisms to deal with unscheduled flows of electricity. The problem can be stated as a reliability issue, where FERC may not have clear authority to regulate, or it can be stated as a commercial issue, where FERC definitely has the authority to regulate. The difficulty is that reliability, market mechanisms and commercial pricing or regulatory oversight of rates are intimately interrelated and are not separable.

Whatever new regulations are promulgated, or whatever new market mechanisms are created, they will impact reliability. The incredible challenge, indeed the present crisis, is that the Nation has embarked on a series of trials in restructuring the electric industry led by the states. It is now clear that some of the trials have created havoc in the rational pricing of electricity and consumers are suffering.

It will take the collective minds of the Nation's experts to sort out what can be done in this crisis. We, as representatives of IEEE on the topic of energy policy, are prepared to assist FERC in seeking an answer, but we do not yet have consensus on a unique best answer.

3. If FERC has the authority to establish and enforce reliability standards, may FERC delegate such authority to a self-regulating reliability organization? Should it do so?

We do not believe that FERC currently has such authority. This is one of the essential reasons for needed Federal legislation.

Enforcement of reliability standards can be delegated to a self-managing-reliability organization, provided an appeal process to FERC is included in the new legislation and the self-managing process.

It is the recommendation of the IEEE-USA Energy Policy Committee that FERC adopt and buttress industry consensus standards in accordance with the recommendations of interested stakeholders and in consultation with independent experts.

4. Are there elements in CECA, or other electric reliability legislative language, which can, with or without modification, be used in a rulemaking?

The NAERO language developed by the stakeholders, over the last two years, and contained in CECA and the Barton Bill could be used, with or without modification, in rule makings if it turns out that the Department has the prerequisite authority.

5. What should the relationship be between Regional Transmission Organizations, as advanced in FERC Order No. 2000, 65 FR 809 (January 6, 2000), FERC Stats. & Regs. 31, 089 (2000), and an Electric Reliability Organization as proposed in CECA?

The concept of RTOs, like the concept of ISOs, is being implemented in different ways in different parts of the country. Until these concepts are fully developed and the regional differences are understood, it is difficult to comment specifically.

Clearly, RTOs and ISOs need to coordinate and respond to meet the standards adopted by the Industry self-regulating organization. Coordination and cooperation are essential.

6. How should the responsibilities and roles of FERC and the States be addressed in a rulemaking?

The bulk electric power system should be regulated based on the real physical nature of the system and not on arbitrary boundaries such as the borders of individual states. **No state is large enough to achieve both system reliability and economy efficiency.**

Indeed the statement that no state is sufficiently large is truer today then when it was first made by this IEEE Energy Policy Committee in 1997. The one exception cited to this rule was ERCOT, part of Texas. The existence of interconnections between ERCOT and neighboring regions and the merger between AEP and CSW (within ERCOT) points to the historic peculiarity of the isolation of ERCOT. Individual states cannot efficiently regulate an interconnected power system that spans the United States and crosses international borders with Canada and Mexico.

Again, the above is an underlying reason for the need for federal legislation to create a uniform playing field with mandatory reciprocity among the states and across international borders. As long as interconnection is a financial imperative and a technical requirement, regulations and reliability assurance must be consistent throughout an interconnected region. There is growing evidence that state regulators are shifting their view about the jurisdictional issues associated with the transmission system. As FERC Chairman Hoecher recently told NARUC, "[the states] do not have the power to decide that electricity markets are not interstate in nature." At the same time, state rights to establish conditions of retail electric service can affect how reliability is assured within their jurisdictions and can also affect the reliability of electricity in neighboring states.

7. Recognizing the international nature of the interconnected transmission grid, how could implementation of mandatory reliability standards be coordinated with Canada and Mexico?

Only industry and a self-managing reliability organization can deal with the necessary coordination and implementation of mandatory reliability standards with Canada and Mexico.

New agreements between parties and among partners across borders will be needed. The only other alternative is to consider the possibility of eliminating the synchronization of the power system across borders and using asynchronous DC ties as they now exist with Quebec. Even a DC interconnection, however, does not completely eliminate the need for coordination for reliability purposes; it only eliminates some of the network effects that make the same problem in an AC system more difficult.

In addition to the above, commenters are encouraged to discuss, comment on, and make suggestions on other electric reliability issues that may be relevant to DOE's consideration of a rulemaking. Comments submitted pursuant to the Notice of Inquiry will be deemed public and will not be treated as confidential.

The comments received by the Department in response to this Inquiry will not resolved the complex issues that are faced by the Department, FERC and the Nation.

Only a focused and substantial effort to establish the lessons learned to date and a careful examination of the alternatives, backed up with detailed analysis, experiments and simulations to anticipate the impact of further restructuring can offer any hope to deal with the crisis.

The difficulty is that reliability, market mechanisms and commercial pricing or regulatory oversight of rates are intimately interrelated and are not separable.

It will take the collective minds of the Nation's experts to sort out what can be done in this crisis. Certainty, we are prepared to assist in seeking an answer, but we do not have that answer for you today. The IEEE-USA offers as additional background the two Symposium Proceedings that have been published previously.

The IEEE-USA and its Energy Policy Committee stand ready to assist the Department in its efforts to address the reliability of the Nation's electric power system. This is a critical effort for the Department. While electricity represents less than 5% of the Nation's GDP, without an affordable and reliable electricity supply, the Nation's entire economy is at risk.

Sincerely,

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President
IEEE-USA

Thomas R. Schneider, Ph.D.
Chair
Energy Policy Committee