

# **Impact of the Recent Power Blackout and Hurricane Isabel on the Financial Services Sector**



**Prepared by the Financial  
and Banking Information  
Infrastructure Committee**

**October 2003**

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### **Introduction**

This report was prepared by the Financial and Banking Information Infrastructure Committee (FBIIC) in response to the power outage of August 14 -15, 2003 and Hurricane Isabel. The FBIIC is charged with improving coordination and communication among financial regulators, enhancing the resiliency of the financial sector, and promoting the public/private partnership. The FBIIC is sponsored by the President's Working Group on Financial Markets. It is chaired by the Department of the Treasury. The following entities are members: Commodity Futures Trading Commission, Conference of State Bank Supervisors, Farm Credit Administration, Federal Deposit Insurance Corporation, Federal Housing Finance Board, Federal Reserve Bank of New York, Federal Reserve Board of Governors, Homeland Security Council, National Association of Insurance Commissioners, National Credit Union Administration, Office of the Comptroller of the Currency, Office of Federal Housing Enterprise Oversight, Office of Thrift Supervision, Securities and Exchange Commission and the Securities Investor Protection Corporation.

### **Power Outage of August 14 - 15, 2003**

While the power outage obviously impacted financial institutions in affected areas, the financial system and its participants were largely able to complete Thursday and Friday's business. Payment systems operated normally. Most markets opened on time on Friday and operated normally as did the clearing and settlement organizations. What impact there was focused primarily on retail banking operations in the affected areas, which were largely suspended on Thursday night (ATMs) and Friday (ATMs and bank branches). The outage caused financial institutions to switch over to back-up power at headquarters, operations facilities, and data centers during the period starting at approximately 4:11 p.m. on Thursday through varying times on Friday while normal electric service was restored.<sup>1</sup> Moreover, a number of institutions chose not to switch systems back to utility-provided electric service on Friday to minimize the potential for problems during business hours commonly associated with "powering up" their internal systems and the possibility of additional power surges, brown-outs, and further disruptions. Wholesale and retail payments, and trading and settlements proceeded with only a few delays (details below). In many instances, critical personnel spent Thursday night in their offices so that sufficient personnel would be available to assure continuity of operations on Friday.

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<sup>1</sup> All times are in Eastern Daylight Time.

A number of organizations required only emergency staff to report to the office on Friday due to limited availability of public transportation.

The sector experienced some collateral telecommunications problems related to the power outage. Two Electronic Communication Networks (ECNs), a securities exchange,<sup>2</sup> and a number of depository institutions (DIs) reported experiencing intermittent telecommunications problems. Some broker-dealers also reported brief telecommunications problems, including difficulties with telecommunications connections to information services that provide real-time market data. It appears that these problems resulted from reliance on batteries at certain telecommunications central office switches and from insufficient power back-up for internal telephone systems at firms. However, it also appears that affected institutions were able to perform critical business activities and maintain internal and external communications. Notwithstanding the financial sector's resourcefulness, these incidents underscore the need for additional efforts to strengthen the long and short-term resilience of the telecommunications infrastructure.

#### **A. Equity Securities Markets**

The power outage occurred just after the close of the U.S. equities and options markets.<sup>3</sup> Back-up batteries and generators enabled exchanges, brokerages, financial utilities, and major brokers in New York to preserve trading data and complete the end of day processing cycle (clearance, settlement, updating accounts, etc.).

On Thursday evening, the two largest U.S. stock markets, the New York Stock Exchange (NYSE) and the Nasdaq Stock Market (Nasdaq), announced their intention to open for trading the next morning. Both the NYSE and Nasdaq were able to operate regular trading hours on Friday. Overnight on Thursday, the NYSE prepared for the next day's trading by using power from batteries and generators at its Wall Street trading floor.<sup>4</sup> By the 9:30 a.m. market opening, however, the Wall Street trading floor was able to convert back to Con Ed power, which was maintained throughout the Friday trading session. Nasdaq's operational center operated on generators until 11:00 p.m. on Thursday, but was back on utility power afterwards and throughout Friday's session. Utility power at Nasdaq's backup center was not interrupted. In addition, the International Securities Exchange (ISE), a New York based electronic options exchange, was able to trade normal hours on Friday using

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<sup>2</sup> An exchange outside of New York reported that problems at a telecommunications vendor appeared to temporarily interfere with the exchange's intermarket trading system linkage at the Friday opening.

<sup>3</sup> The regular trading session for stocks closes at 4:00 p.m., while the trading session for equity options closes at 4:02 p.m. The trading sessions for stock index options and most exchange-traded funds (ETFs) close at 4:15 p.m. In addition, after-hours trading in stocks continues after 4:00 p.m. on Nasdaq and a number of exchanges and ECNs, although after-hours trading volume rarely accounts for more than 3% of total daily share volume in stocks. There were no reported problems in post-4:11 p.m. trades in any of these securities on Thursday.

<sup>4</sup> The NYSE's backup trading floor also had generator capacity in case this facility was needed.

generator power. The ECNs that are based in New York also were able to operate normal hours on Friday using generators or utility power.

One equity exchange was unable to open Friday morning. Over Thursday night, the Amex prepared to open on Friday using generators for its electronic systems. At around 2:00 a.m. on Friday, however, a utility provider stopped generating the steam power that the exchange uses for the cooling system that is needed for the electronics on the exchange's trading floor.<sup>5</sup> While the exchange backup trading floor had adequate generator and cooling capacity to operate, exchange officials determined that there was not adequate time to fully activate this floor and relocate key personnel to this site on Friday. As a result, exchange officials decided instead to obtain a backup steam-generation boiler to support its main trading floor even if this required a delay in the trading session. The exchange apprised the SEC of this determination early on Friday morning<sup>6</sup> and the SEC briefed the FBIIC agencies on this situation immediately thereafter.<sup>7</sup> The exchange was able to obtain a backup steam-generation boiler with the assistance of the New York City Office of Emergency Management (OEM). This boiler was installed at noon and the exchange began accepting orders in its stocks, ETFs, and options at 3:45 p.m. for closing rotations in these securities from 3:55 p.m. until 4:15 p.m. This allowed the market to establish closing prices. Clearing agencies and clearing banks operated from their primary sites using generators.

## **B. Bond and Other OTC Markets**

The bond markets and other over-the-counter markets performed well. When the power went out at 4:11 p.m., these markets were still open. There was an initial burst in trading volume and an initial spike in prices in the bond markets, but that subsided as the President and the Department of Homeland Security declared that the outage was not a terrorist act, and as bond traders evacuated their trading desks in New York.

There was no reported loss of transaction data or disruptions to clearing and settlement functions on Thursday. Most dealers, trading systems, pricing information services, and clearing and settlement utilities successfully switched operations over to back-up generators. As noted earlier, some dealers reported problems with their

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<sup>5</sup> The exchange indicates that the utility steam system had never failed before, including during the massive power outages in the 1960s and 1970s and on September 11, 2001. In view of the events during the August 2003 blackout, however, the Amex will be working with the SEC to determine what additional measures should be taken to improve the resilience of the exchange's cooling capacity.

<sup>6</sup> The New York City Office of Emergency Management joined the SEC and the exchange in a 7:00 a.m. conference call that included a discussion of the Amex's need for a backup steam-generation boiler.

<sup>7</sup> The exchange issued a press release at approximately 9:25 a.m. to announce its plans for a delayed opening.

telecommunications connections to information services that provide real-time market data.

By 6:00 p.m. on Thursday, the Bond Market Association announced that New York-based bond trading desks would be open for trading on Friday. The bond markets did open for trading on Friday without incident. Later in the day, the Bond Market Association discussed with Treasury its desire to close the desks at 2:00 p.m. to allow its traders to begin their evening commutes since New York Mass Transit Authority was still not running. Treasury did not oppose this plan since it is not uncommon for markets to close early from time to time (e.g., on the Wednesday before Thanksgiving). While the bond market technically stayed open, New York based bond trading desks closed for the day at 2:00 p.m. As on Thursday, trade processing went well on Friday.

Foreign exchange markets continued to operate and settlements continued to occur. Settlement for Thursday's transactions (which occurred the following Tuesday) indicated that trading volumes declined briefly after Thursday's outage.

Commercial paper markets also remained robust during the outage. On August 15, large volumes of commercial paper were issued and redeemed. These transactions were processed by the depository without any unusual delays.

### **C. Listed Futures Markets**

The futures markets also performed well. The only reported issue was with one exchange which temporarily shut down its electronic trading platform on Thursday evening. While the exchange employed generator power to keep its systems running at all times, some member firms took additional time to organize their participation in the market. Electronic trading resumed at 10:00 p.m.

### **D. Depository Institutions (DIs)**

DIs performed well during the power outage. Shortly after the power went out, the Comptroller of the Currency signed an order authorizing national banks, at their discretion, to close. Governors in affected states made similar proclamations for state-chartered DIs. Probably not more than a few dozen DIs, predominantly regional and community organizations and some foreign banking organizations (FBOs) had to close all operations because their head offices or operations centers did not have back-up power arrangements; this estimate includes a few DIs that experienced some problems with their back-up generators. In all other cases, DIs and credit unions were able to continue processing payments and performing other business activities, although retail banking was disrupted at affected branch offices (taking deposits, making loans and dispensing cash). Similarly, ATMs in the affected area stopped working (a few had back-up batteries that enabled them to function for a short period). Other ATMs in locations such as a branch office with backup power also continued to operate. Suspension of public access to retail banking operations where

cash and securities are held was also necessary to assure the security of those assets and of personnel where security monitoring systems were impacted by loss of electric power. Despite the unavailability of certain services at locations in affected areas during the outage, no customer accounts or data were lost or compromised in any way.

#### **E. Retail and Wholesale Payment Systems, FRB Cash and Check Operations**

The two primary retail and wholesale payment system operators were able to quickly switch over to back-up generators and there was no interruption in their services. Most DIs, using back-up power in operations and data centers, were able to complete transactions and inter-bank transfers. Several FBOs found that their back-up power facilities failed and/or lost their telecommunications connections to one or both payment system operators. They were not able to complete all transfers because they failed to take advantage of available alternative (“off line”) transfer mechanisms until very late in the day. The August 14 blackout disrupted trading in federal funds, a large volume of which typically takes place late in the day. The federal funds rate was volatile again on the 15th, and borrowing remained somewhat elevated. However, conditions in the federal funds market returned to normal after the weekend.

Check processing proceeded without interruption in the affected areas as Federal Reserve check processing centers operated effectively on back-up power. The volume of check processing was slightly lower on Thursday.

Stocks of currency were sufficient to meet consumer demand during and after the outage. The Federal Reserve was not asked to provide currency outside of normal operating hours (after hours or weekend).

#### **F. Impact on Insurers**

The power outage had minimal impact on the operations of insurers in New York State and, it appears, on insurers elsewhere in the country. In terms of losses, the outage was not a significant insurance event because most of the losses were not covered under standard insurance contracts. Total property losses attributable to the blackout (including both commercial and personal lines) are expected to fall well below \_ of one percent of surplus for each of the major New York property writers. Covered business interruption blackout-related property losses were more substantial than personal lines losses.

**Insurers** - On Friday afternoon, the New York Insurance Department sent out a mass e-mail through the New York Information Network to a majority of property, health, and life insurers licensed in New York State seeking information on the impact of the outage on insurer operations and computer systems. Approximately 450 insurers or insurer groups have responded with the vast majority stating that there

was no impact. Most insurers that experienced a power outage had back-up generators so they did not lose any data.

Only 48 of the 450 insurers/insurer groups reported some effects from the power outages. The effects were mostly closed offices on Thursday afternoon and all day Friday with work being rerouted to other offices. The main reason provided for closed offices was lack of transportation for employees. This caused some delays in customer services but had no major effect on their computer systems or data processing. Two health insurers reported that since their phone systems were down there was a problem with authorizations and pre-certifications for elective procedures and provider services. One of these health insurers decided to approve all covered services for the period of time their systems were down. A property insurer raised some issues concerning delayed issuance of claim payments, denials, cancellation/non-renewal notices and litigation/arbitration time frames due to the company's inability to print such items and mail them until Monday, August 18.

**Insureds** - In the wake of the blackout, the New York Insurance Department activated a toll-free hotline to assist New Yorkers whose property or businesses were affected by the power failure. As of August 20<sup>th</sup>, Department staff had fielded 155 calls from consumers related to the power blackout. Most of these calls pertained to coverage for food spoilage both for personal and commercial insurance. Business interruption questions were the next largest group of calls.

There were no consumer complaints received as a result of delays in payment of, or denial of claims, and cancellation and nonrenewal of policies.

**Follow-up** - In the aftermath of the blackout, Insurance Departments across the nation are encouraging homeowners and business operators to review their policies for important information related to electric disruption. For example, coverage for power failure is generally excluded in a homeowner's policy but there may be coverage available for damage occurring during the restoration of electricity. Similarly, commercial property policies generally exclude coverage for power or utility service failure if the failure occurs outside of the premises. There may also be waiting periods in policies before business interruption coverage is triggered. However, the industry does not expect any significant losses as a result of additional business interruption claims.

## **G. Consumer Confidence**

There were no discernable effects on consumer confidence in the U.S. financial system. Consumers were patient and able to cope with the situation, including the temporary loss of access to local branches and ATM machines. For example, there were no unusual currency demands or runs on banks, nor were there any selloffs in the mutual fund markets. Obviously, the fact that the government quickly determined and announced that the outage was not caused by a terrorist act

helped to allay fear and overreaction. Consumer confidence was strengthened by the fact that the financial services sector remained largely operational.

## **H. Agency Coordination**

The federal financial agencies activated crisis communication protocols immediately. None of the agencies experienced operational problems. Effective continuity planning, along with a high level of responsiveness, allowed fast implementation of crisis communication protocols. FBIIC held periodic conference calls throughout the day, as did the Federal Financial Institutions Examination Council (FFIEC). The Federal Reserve monitored operations of its financial services (including the check relay system employed to move checks from one district to another). Each of the agencies also communicated with supervisory personnel to monitor the status of regulated institutions. The speed and high-quality level of communication between regulators, private institutions, and Federal, state, and local participants allowed rapid information gathering and dissemination.

### **Hurricane Isabel, September 18-19, 2003**

On Thursday and Friday, September 18<sup>th</sup> and 19<sup>th</sup>, 2003, the Mid-Atlantic region experienced the effects of Hurricane Isabel. Unlike the power outage a month earlier, Hurricane Isabel was a much-anticipated event that allowed affected areas to plan and prepare for its potential adverse impacts. Financial services firms located in the projected path of the hurricane, like many similarly situated business enterprises, were able to monitor the storm's progress and forecast its arrival. Also, given the nature of the event and ample past experience dealing with similar weather events, the financial services sector was well equipped to deal with the anticipated effects of the hurricane. Proven and tested procedures were activated. Back-up generators were readied, affected personnel were redeployed where necessary to staff alternate locations, and in some cases, operational responsibilities were transferred to other locations. Overall, contingency plans were invoked as appropriate and worked as planned.

During and after the event, some locations lost power and, similar to the power outage one month earlier, retail services in some areas were not available until power was restored. However, there were no adverse effects on the markets, which opened and conducted business as usual on both Thursday and Friday. Federal Government offices were closed on Thursday and Friday in the Washington, D.C. area and some state and local government offices in affected areas were also closed. Notwithstanding these closures, emergency and other essential employees performed all required functions and information regarding the status of the impacted areas of the financial services sector continued to flow up to the responsible supervisory agencies.



While this event certainly exacted a financial toll on the affected areas, caused considerable property damage, and resulted in some loss of life, the effects experienced were not unlike those caused by other major weather events in the past. Even the Washington, D.C. closings were not remarkable since from time to time, the Federal Government closes down non-essential operations in order to minimize congestion on key arteries and to facilitate post-event clean-up operations. However, as in the case of past storms (summer or winter) that have temporarily disabled transportation and other systems, the effects did not adversely impact the critical infrastructure of the financial system.

