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THE CIP REPORT

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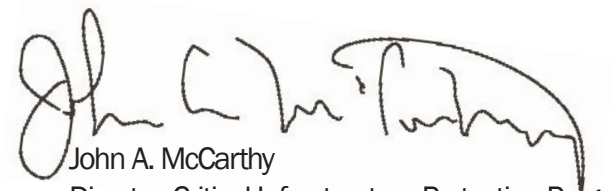
As we begin the fifth volume of *The CIP Report*, this edition highlights the Energy Sector, and specifically, our ongoing work with the Department of Energy (DOE) and the National Energy Technology Laboratory (NETL), which supports work at the CIP Program to examine the role insurance could play to support or encourage critical infrastructure protection in the energy sector. The NETL Project was initiated in 2004 and seeks to analyze the challenges faced by the US energy infrastructure from both physical and cyber threats. (*For more information on previous NETL project activities, please visit our website at http://cipp.gmu.edu/projects/DoE-NETL.php.*) In this issue, we are pleased to welcome Michael Ebert, the new project lead of NETL. Michael brings a wealth of experience from his previous life as a senior legislative assistant to US Representative Philip R. Sharp, who served on the Energy and Commerce Committee and was also chairman of the Energy and Power subcommittee. Michael provides an update on the project's recent activities, as well as an overview of the Department of Energy's Office of Electricity Delivery and Energy Reliability. Our 'Legal Insights' column provides an overview of a recent lawsuit brought against the Nuclear Regulator Commission by a citizen's group for failing to include an analysis of the environmental impact should a nuclear facility be the victim of a terrorist attack.

In addition to these pieces, we also feature an update from our Private Sector Program, which recently began supporting the ISAC Council and the Information and Technology Sector Coordinating Council, as well as an update on the Oil and Natural Gas Sector Homeland Security Coordination Council. Finally, we also include an overview of the 9th Annual Emergency Management and Homeland Security/ Defense Higher Education Conference, which was held in early June. The overview of this conference provides insight into the many educational degrees and training programs available to professionals in the Homeland Security arena and provides links to additional related resources.



John A. McCarthy
Director, Critical Infrastructure Protection Program
George Mason University, School of Law

National Energy Technology Laboratory Update

Michael Ebert, CIP Program

I recently joined the CIP Program as a research associate upon completion of my GMU graduate program to manage a grant-funded project from the National Energy Technology Laboratory (NETL), one of the US Department of Energy's premier national research labs. Our primary energy sector research relationship within DOE is the Office of Electricity Delivery and Energy Reliability. Research and analysis into the following activities and issues resulted in several short research papers:

- Examination of quality of electric power outages data collected and compilation of an outage's dataset.
- Regression analysis of outages data.
- Microeconomic and policy evaluation of retail electricity competition outcomes in the states of California, Pennsylvania and Texas.
- Comparison of DOE Energy Emergency Response Exercises (simulations) against DOE's actual field response during and after Hurricanes Katrina and Rita.
- Analysis of Federal Energy Regulatory Commission rulemaking pursuant to Subtitle A of Title XII of the Energy Policy Act of 2005, under which FERC, the North American Electric Reliability Council (NERC), NERC Regional Councils and other stakeholders in the US, Canada and Mexico are constructing the first industry self-governing Electric Reliability Organization.

Last year, as part of a major energy research initiative, the CIP Program conducted a workshop and developed white papers on the feasibility of expanding the role of commercial insurance in the electricity sector to promote better reliability. (*To learn more about the 2005 workshop and its outcomes, please go to the following link on the CIPP website: http://cipp.gmu. edu/projects/DoE-NETL.php.*)

A more reliable electric power sector is built upon human and critical infrastructures that are less vulnerable to threats, whether in the form of natural disasters, accidents, sabotage or terrorist acts. A major finding of the workshop was that while commercial insurance often was available for electricity generation, insurance for transmission and distribution was not. For all practical purposes, commercial insurance ceased to be available after Hurricane Andrew struck Florida and the Eastern seaboard in 1992. Working with state legislatures and public service commissions, the electric utility industry sought to mitigate the unavailability of commercial insurance through the creation of self-insurance schemes to deal primarily with large unplanned costs associated primarily with "wicked weather" - hurricanes, tropical storms, tornadoes, ice storms, and floods - all of which are highly destructive to the exposed wires and poles that constitute transmission and distribution systems.

State public service commissions (PSCs) also provided a process whereby electric utilities could recover other costs, such as those associated with actual costs for fuels that did not match expected prices commissions used to set electric power rates, and "stranded costs" associated with the *(Continued, Page 3)*

Utility crews examine a snapped pole during last year's hurricane season.

NETL Update *(Cont. from Page 2)* legislative and regulatory changes imposed on utilities as the result of opening electricity markets to competition. Thus, in addition to temporary storm restoration surcharges, consumers also are seeing their electricity bills increase due to higher costs for natural gas, oil and coal. State PSCs allowed utilities to recover stranded costs associated with the breakup of vertically-integrated utilities into separate generation, distribution and transmission companies - a requirement of many state "retail choice" laws. For over eight years, commission-approved storm reserves were funded through a portion of base rates approved by the PSC. This method of "accrual" reserve funding was adequate to pay the costs associated with system restoration after a storm because hurricanes did not make landfall and inflict damage in every year. With respect to Florida, for example, the number of hurricanes in the 2000 season was the same as in the 2004 season. The difference was that none of the 2000 storms made landfall whereas in 2004 four major hurricanes made sequential landfall in the state, which put each major utility's reserves so seriously in the red that replenishment through the base rate method was inadequate. The massive series of hurricanes and tropical storms that ravaged the Gulf Coast states in 2004 and especially in 2005 brought to an end the effectiveness of traditional base rate as a means of self-insurance and added two other implements to the PSC's tool chest: temporary surcharges and securitization for storm restoration *(Continued, Page 12)*

Michael E. Ebert joined the Critical Infrastructure Protection Program as Principal Research Associate on June 1, 2006, where his research focus is on critical energy reliability, resilience and protection issues, particularly electric power. Most of his work is funded by a grant from the National Energy Technology Laboratory. Since January 2005, Mr. Ebert was affiliated with the CIP Program as a graduate research assistant with the same research concentration as he now has working under the direction of the Director and Principal Investigator John McCarthy and School of Public Policy Professor Todd M. La Porte. Mr. Ebert's projects have included the construction of an electric power outages dataset; observation and analysis of DOE Energy Emergency Response Exercises pursuant to DOE's Emergency Support Function 12 responsibilities; external assessments of DOE's responses to Hurricanes Katrina and Rita; statutory and regulatory analysis of provisions of the Energy Policy Act of 2005 that require establishment of an Electric Reliability Organization (ERO) which, with FERC approval establishes, audits and enforces mandatory reliability and cybersecurity standards for the bulk electric power industry; and on-going monitoring of ERO establishment activities.

Currently, Mr. Ebert is leading a team of CIP Program researchers who are investigating post-Katrina/Rita policy innovation by state legislatures and public service commissions for storm cost recovery by electric utilities operating in the states of Florida, Louisiana, Mississippi and Texas. The first phase of this research will conclude in September 2006 with an additional assessment slated for the end of 2006 or early 2007.

Mr. Ebert holds a Master of Public Policy degree from George Mason University, a Bachelor's degree in political science and communications from Indiana University and certificates in Commercial and workplace Mediation from the Northern Virginia Mediation Service, an independent organization affiliated with the Institute for Conflict Analysis & Resolution at George Mason University. He has lived in the Washington, DC metropolitan area since 1986. Prior to joining the CIP Program, he was a senior legislative assistant to US Representative Philip R. Sharp (retired), senior counselor for congressional affairs at International Business - Government Counselors, IT Director at the law firm of Howrey Simon Arnold & White LLP and an independent consultant in technology and public policy.

Enhancing the Nation's Energy Infrastructure Resilience to Threats and Recovery from Natural or Man-Made Disasters

Department of Energy Office of Electricity Delivery and Energy Reliability

Within the headquarters structure at the US Department of Energy (DOE) is a rather small office that over the past three years has become an invaluable player in critical energy infrastructure: the Office of Electricity Delivery and Energy Reliability (OE), headed by Kevin Kolevar. This article examines OE's mission, its organization and the work of its three divisions - and how research conducted by the CIP Program is providing support to the Office in the form of legal and policy analysis.

Kevin Kolevar
Director
Office of Electricity Delivery and Energy Reliability

OE traces its roots to early 2003, when the Office of Electric Transmission and Distribution (OETD) was formed. Shortly thereafter, OETD was at the forefront of efforts to analyze and assess the causes and consequences of the August 14, 2003 blackout - a very large, cascading series of failures in the Northeast US and Canada that interrupted more than 61 gigawatts of electricity, left 50 million people in the dark, some for several days, and cost the US and Canadian economies by some estimates up to $10 billion. OETD provided human expertise and technical resources to the US - Canada Power System Outage Task Force, whose analysis and report of the blackout are regarded as the "gold standard" in electric grid forensics.

The Office of Energy Assurance was OETD's frequent partner in DOE's evolving, expanding presence in energy infrastructure analysis and security. In early 2005, Energy Assurance and OETD were combined to form OE. Just a few months later this new office found itself responding to the most vicious hurricane season on record and, in particular, catastrophic Hurricanes Katrina and Rita. These large-scale natural disasters created unprecedented energy emergencies as electric power assets and primary fuels were disrupted as never before. Pursuant to its Emergency Support Function (ESF-12) requirements, OE's small professional staff was immediately deployed 24 x 7 to the Gulf Coast to assist the energy industry, state and local governments, and other entities to coordinate response and recovery efforts. Since the conclusion of major recovery activities, OE has been engaged in almost non-stop training exercises, simulations, and analysis to reduce the energy sector's vulnerability to natural disasters and human threats and to enhance future recovery efforts.
(Continued, Page 5)

Infrastructure Security and Energy Restoration Division Staff from left to right: Alex de Alvarez, Marissa Urgo, Matthew Rosenbaum, Robert Keener, Mike Soboroff, Ann Sullins, and Ken Friedman. Not pictured: Associate Deputy Director Thomas Ryder

OE *(Cont. from Page 4)* As part of its activities, OE utilizes advanced data mapping and visualization technologies. Among other tools, OE is making extensive use of Geographic Information Systems (GIS) to display pre-event and post-event visualizations of critical assets and key infrastructures. OE is partnering with key players to provide rich GIS visualizations beyond energy. For example, the US Army Corps of Engineers shares data on stores of ice and water, and the OE factors these assets into its recovery and restoration visuals. OE and the labs also are partnering with Treasury and the Financial Services Sector Coordinating Council (FSSCC) that provide Treasury and the financial services industry with "predicted storm path and damage polygons as well as restoration estimates."

Thomas Ryder, OE's Chief Operating Officer, stated that, "until Katrina and Rita we had an imperfect understanding of the full range of interdependencies" that are brought into play by such large disasters. "OE has made changes." An example of this is the Energy Leadership Forum - the "After Action Report" - that OE convened this past January in Tunica, MS, which was hosted by the Energy Division of Mississippi's Development Authority. Collaborating with OE were organizations such as the National Association of Regulatory Utility Commissioners, the National Council of State Legislators, the National Association of State Energy Officials, the National Governor's Association for Best Practices, and the Public Technology Institute. In all, participants included more than 170 key players in the 2005 hurricane season, representing 12 federal agencies, 24 state and local agencies, and 40 private organizations.

DOE has built its cooperative relationship with the energy sector since its inception in 1977 and this relationship, based initially on R&D cooperation, has now broadened to electricity reliability and energy security. OE's relationships with utilities can't be effectively established after an event occurs. It takes a long-term vision with partnerships already in place. OE's R&D programs facilitate trust and understanding - what OE is as an organization. Two examples of such R&D initiatives are the Area Control Error (ACE) frequency tool and the Eastern Interconnection Phaser project. The volume and complexity of real-time streaming data has led to the organization of the Visualization and Modeling Working Group (VMWG) within OE and the national energy labs.

At OE's invitation, CIP Program staff participated as neutral observers in Energy Emergency Response Exercises in June 2005 and April 2006 and followed *(Continued, Page 14)*

Dr. Kenneth Friedman (center) with CIP Program law interns Rosalie Freeman and Joseph Maltby.

Rosalie Freeman and Joseph Maltby are both JD candidates at George Mason University and will graduate in 2008. Rosalie has a BA in Interdisciplinary Social Sciences from the University of South Florida. Once she completes law school, Rosalie hopes to return to Florida and become involved in policy making at the state level. Joseph received his BA in history from the University of Northern Colorado. After graduation from GMU, he plans on staying in the Arlington area to work in the public policy field. Rosalie and Joseph are studying how investor owned electrical utilities in the Gulf States recover the enormous restoration costs associated with major storms like Hurricanes Katrina, Rita, and Wilma. To do this, they are reviewing the statutes, administrative regulations, and public service commission orders dealing with storm cost recovery. One aspect of their research specifically focuses on the process of securitization, or the issuance of bonds to finance the recovery process. To better understand this process, they are interviewing several representatives from public service commissions in the region.

Legal Insights

Ninth Circuit Rejects NRC's Legal Determination Regarding Terrorism Risks:

Lawsuit by the San Luis Obispo Mothers for Peace against the Nuclear Regulatory Commission over licensing procedures

Maeve Dion, CIP Program Legal Researcher

Maeve Dion

(San Luis Obispo Mothers for Peace v. Nuclear Regulatory Comm'n, No. 03-74628, 2006 WL 1511889, 2006 U.S. App. LEXIS 13617 (9th Cir. June 2, 2006)).

In the wake of the September 11, 2001, terrorist attacks, concern has arisen as to the threat of terrorism against the US energy sector, particularly the nuclear sector. In the lawsuit described below, the Nuclear Regulatory Commission is challenged by a citizens' group for not including in its licensing procedure an analysis of the possible environmental impact should the facility be the victim of a terrorist attack. The idea that a terrorist or terrorist group could somehow use US nuclear facilities or other energy sector facilities as weapons or targets is troubling due to the perceived severity such an attack could produce. While the Nuclear Regulatory Commission dismissed the need to undertake such an environmental investigation, the Ninth Circuit overruled this decision calling it unreasonable. The court's decision could have a broad impact upon the energy sector, particularly nuclear, as it looks to build new facilities under the cloud of potential terrorism.

Pacific Gas and Electric Company (PG&E) applied for a license to build a new storage facility for spent nuclear fuel. Pursuant to the National Environmental Policy Act (NEPA), which compels an agency to assess the environmental consequences of its actions, the Nuclear Regulatory Commission (NRC) determined that the PG&E facility would not have a significant impact on the environment. In reaching this conclusion, the NRC rejected the petitioners' request that the agency assess the environmental consequences of a terrorist attack on the PG&E facility.

In support of its decision, the NRC noted that in the aftermath of the September 11, 2001 terrorist attacks, the agency had permitted nuclear facilities to continue operation. The NRC reasoned that the absence of agency action to suspend nuclear licenses meant that the NRC had reached an "implicit conclusion" that the operation of nuclear facilities "neither posed an imminent risk to the public health, nor was inimical to the common defense."

The NRC also commented on its post-September 11 "top to bottom" review of safeguards and physical security. Regarding the security of spent nuclear fuel storage, the NRC had instituted additional measures such as "increased security patrols, augmented security forces and weapons, additional security posts, heightened coordination with law enforcement and military authorities, and additional limitations on vehicular access."

The NRC determined that the agency was properly addressing security concerns in the contexts of its other procedures and safety reviews, and that "an NRC environmental review is not the appropriate forum for the consideration of terrorist acts." In a 2002 agency decision, the NRC found that even assuming (without necessarily deciding) that the September 11 attacks showed "that a terrorist attack is both more likely and potentially more dangerous than previously thought," NEPA still did not require an assessment of terrorism risks because an environmental impact statement is meant to address environmental consequences "that *(Continued, Page 7)*

The Ninth Circuit found that the NRC was not reasonable when it decided that (1) as a matter of law, the possibility of a terrorist attack is too speculative to require assessment under NEPA; (2) because the risk of a terrorist attack is not quantifiable, any risk analysis would be meaningless; (3) terrorist attacks are a "worst case" scenario, and NEPA does not require worst case analysis; and (4) because the risk of terrorism is a sensitive security issue, the public NEPA process is not an appropriate forum for a security discussion.

Legal Insights *(Cont. from Page 6)*
will result, with a fair degree of likelihood, from a proposed project."

In the instant case, the NRC concluded that NEPA does not mandate assessment of the risks of terrorism because (1) as a matter of law, the likelihood of a terrorist attack is too speculative to require assessment under NEPA; (2) because the risk of a terrorist attack is not quantifiable, any risk assessment would be meaningless; (3) the petitioners were requesting a "worst case" analysis, which is not required under NEPA; and (4) because of the sensitive nature of security risk assessments, the NRC could not properly conduct such analysis in NEPA's public forum.

The Ninth Circuit rejected all four of the NRC's justifications as unreasonable and therefore not supportive of the NRC's "categorical refusal to consider the environmental effects of a terrorist attack."

(1) As to the NRC's conclusion that the risk of a terrorist attack was too speculative to compel assessment under NEPA, the court found that this position was "inconsistent with the government's efforts and expenditures to combat this type of terrorist attack against nuclear facilities." The court noted that the NRC's position was not only inconsistent with its post-September 11 "top to bottom" security review and other activities, but was also inconsistent with its pre-September 11 security procedures, which included assessments of the risk of radiological sabotage.

(2) The court similarly found unreasonable the NRC's view that a risk assessment under NEPA would be meaningless without quantifiable measures. The court commented that "[t]he numerical probability of a specific attack is not required in order to assess likely modes of attack, weapons, and vulnerabilities of a facility, and the possible impact of each of these on the physical environment. ... It is therefore possible to conduct a low probability - high consequence analysis without quantifying the precise probability of risk." The court found that the NRC's own reports stated that vulnerability assessments "should be based on the best qualified judgments of experts, either in the form of subjective numerical probability estimates or qualitative assessments of initiating events and [causal] linkages in accident sequences."

(3) The court also found that in claiming that the agency did not have to assess terrorism risks because NEPA did not require "worst case" analysis, the NRC conflated two decisions. Although the NRC was correct that NEPA does not require worst case analysis, the NRC improperly assumed that a terrorism risk analysis would necessarily be a worst case analysis. As the court explained, "the NRC's argument wrongly labels a terrorist attack the worst-case scenario because of the low or indeterminate probability of such an attack ... [however, a] worst-case analysis is not defined solely by the low probability of the occurrence of the events analyzed, but also by the range of outcomes of those events." The court noted that the petitioners did not demand a worst case analysis, but rather requested an analysis of "the range of environmental impacts likely to result in the event of a terrorist attack" on the facility.

(4) Finally, the court summarily disposed of the NRC's fourth justification -- that the NRC "cannot comply with its NEPA mandate because of security risks." The court noted that while security concerns may justify certain privacy-based restrictions on traditionally public procedures, secrecy demands do not provide a waiver to NEPA *(Continued, Page 9)*

Center Provides Wealth of Knowledge in Emergency Management / Homeland Security

Larry Clark, CIP Program

The 9th Annual Emergency Management and Homeland Security/Defense Higher Education Conference (with NORTHCOM Homeland Defense/Defense Education Consortium) was held June 5-8, 2006 at the National Emergency Training Center, Emmitsburg, MD.

Every year the conference focuses on the delivery of emergency management and homeland security (EM/HS) training and/or education programs by colleges and universities. There are currently about 120 programs in the US with perhaps up to 100 more in development or under consideration. These range from certificate or associate's degree programs at community colleges to PhD programs. Many reflect the practice of assembling a group of existing and/or new courses in order to formalize a concentration or emphasis within an existing degree program, but there are also a few stand-alone emergency management or homeland security degrees. Rather than being a cause for concern, this variety of approaches highlights the diversity of needs, and the fact that a one-size-fits-all academic solution is not possible, nor even desirable.

Degrees and certificates designed to improve the knowledge and skills of practitioners are often presented in community colleges and some four-year institutions. Associate level programs and hands-on certificate programs are often associated with existing fire and law enforcement training. This aligns closely with a mandate many community colleges operate under - offering courses of immediate benefit to the local area.

Baccalaureate and post graduate programs are often found in traditional university academic departments and schools such as public health, nursing, medicine, political science, public policy, etc. These programs, especially at the baccalaureate level, can be expected to blend practical training with educational content geared towards assisting graduates deal with more complex policy and political issues.

The selection of course material along the continuum between training and education is another way of differentiating between the various target audiences. Associate degree and certificate programs will typically place stronger emphasis on a training curriculum, while baccalaureate and graduate programs will present more coursework that addresses the need for education in a variety of subjects.

However, higher degree seekers cannot afford to ignore some training courses. Over the past several decades, the United States has developed a system of emergency response and management with strong technocratic elements. We have developed a fairly consistent method of preparing for and dealing with emergencies and catastrophes from the local level up to the federal. Since 9/11, the Federal government has placed increased emphasis on the use of the National Incident Management System (NIMS), recast the roles and responsibilities of Federal agencies through the National Response Plan (NRP), and has begun the complex task of building durable planning and operational relationships with the private sector through the National Infrastructure Protection Plan (NIPP). Practitioners at all levels are expected to be skilled in performance elements relating to standardized organizations, reports and paperwork, standard processes, laws and authorities, etc. Training (rather than education) is the generally-accepted method of improving job performance in these skills. But since training prepares for the expected -- and education prepares for the unexpected -- a balance needs to be struck.

FEMA-developed courses play a significant role in many programs and there is a significant body of those *(Continued, Page 9)*

NETC *(Cont. from Page 8)* courses, all freely available to educators. The courses generally fall more on the training end of the continuum - which is the more appropriate product for a government agency to provide.

On the other hand, there seems to be an informal consensus among educators that better quality textbooks are needed to support core EM/HS education. Textbooks typically rely on a discipline's body of knowledge and mature research - and that may be one of the problems with EM/HS. DHS itself is still in the process of fully defining the balance/relationship between homeland security and holistic all-hazards emergency management, so it should be no surprise that the development of textbooks and other curriculum support products by the private sector is not at the level desired by all.

Another area for exploration is in curriculum development geared towards the needs of private sector critical infrastructure (CI) owner/operators - particularly mid- to senior-level management. It could be argued that meaningful, constructive engagement between the private and public sectors, and between CI owner/operators and state/local officials is a sign that individuals and organizations are likely to be successful in preparing for, responding to, and recovering from disasters and catastrophes. There are EM/HS programs that are designed for in-service practitioners (typically police, fire, EMS and emergency management personnel), and programs designed to produce EM practitioners for government and private industry, but very little that places emphasis on issues important to private and public sector operators, users, and supporters of critical infrastructure. A blend of CI-tailored training and education could be a key component in the engagement leading to success in this area. However, the needs of private sector personnel are different from those of career emergency managers and security personnel. Meeting those needs would likely engage some individuals and departments at colleges and universities that have not, up to this point, played a major role in EM/HS education.

FEMA, through its Higher Education Project (located at the Emergency Management Institute, Emmitsburg, MD), is serving as a clearing house for EM/HS training information. This is a daunting task, since there is no requirement for institutions to report this information. However, institutions will find it to their advantage to work with the project since there is a wealth of useful information available from the project web site, and from Dr. Wayne Blanchard, the project's director. The website offers hundreds of downloadable documents, syllabi, course materials, and other information. The main page and some example categories are listed below.

FEMA Higher Education Project:
http://www.training.fema.gov/emiweb/edu/

The College List:
http://www.training.fema.gov/EMIWeb/edu/collegelist/

Free College Courses, Textbooks, Materials
http://www.training.fema.gov/EMIWeb/edu/collegecrsbooks.asp

Higher Ed Syllabi Compilation
http://www.training.fema.gov/EMIWeb/edu/syllabi.asp ❖

Legal Insights *(Cont. from Page 7)* procedures. Further, the court observed that a restriction on public access to sensitive information "does not explain the NRC's determination to prevent the public from contributing information to the decisionmaking process ... [in a dialogue] which would fulfill both the information-gathering and the public participation functions of NEPA."

In rejecting the NRC's four rationales as unreasonable, the court noted that on remand, the NRC still retained the traditional broad agency discretion to conduct its NEPA analysis. ❖

Oil and Natural Gas Sector Homeland Security Coordination Council

James Creel, CIP Program

The CIP Program's Private Sector Programs (PSP) provides secretariat support to facilitate coordination between the Oil and Natural Gas Sector (ONGSCC) and its government counterparts. The ONGSCC engages with the energy industry on a variety of CIP issues. It not only shares valuable information, but also provides the government a single point-of-contact to help facilitate private sector involvement in collaborative initiatives to further enhance sector security. Consisting of industry trade associations and the sector owners/operators they represent, the ONGSCC has achieved much progress in securing the energy sector since its inception in the fall of 2004. A few recent developments within the sector include:

- Approval of implementation of the Homeland Security Information Network (HSIN).
- Drafting of the Oil and Natural Gas (ONG) Sector Specific Plan (SSP) has officially started with the release of the National Infrastructure Protection Plan (NIPP).
- The Transportation Security Administration (TSA) will continue to recognize pipeline security within the Oil and Natural Gas sector.

HSIN is an electronic portal designed by the Department of Homeland Security (DHS) to provide sector representatives with real-time updates and alerts. Many SCCs are developing similar portals on HSIN and efforts to implement the Oil and Natural Gas portal are ongoing. As a successor to the Energy Information Sharing and Analysis Center (ISAC), HSIN will prove to be a valuable tool in enhancing industry communication and coordination. The Memorandum of Understanding (MOU) outlining the sector's portal was signed by DHS and ONGSCC representatives in April. Finalizing the MOU is a significant milestone to get the ONG portal up and running.

The NIPP gives all sectors 180 days to complete their respective SSP. Working with its government counterpart at the US Department of Energy, the ONGSCC SSP Working Group recently met in West Virginia for a three-day writing session. Gary Forman, ONGSCC Chair, stated that "industry and government collaborative efforts have been excellent. The offsite in West Virginia provided us an open forum to set the framework and direction as the Energy SSP is written, and we got off to a tremendous start." The SSP for the Oil and Natural Gas sector will focus on sector security and is scheduled to be completed by the end of 2006.

Another significant milestone in the ONGSCC's activities was TSA's decision to address pipeline security concerns with the ONGSCC rather than establishing another SCC with the same members. This decision allows the Transportation SCC to focus on main transportation modes instead of stationary conduits that transport products. Recognizing pipelines within the ONGSCC will help facilitate CIP-related efforts in an efficient manner. Jack Fox, General Manager of Pipeline Security at TSA, stated that "we would like to minimize the duplication of efforts from industry and government folks. TSA looks forward to continuing to improve the working relationship with the energy and transportation SCCs."

For more information on the CIP Program's Private Sector Programs activities, please see the April 2006 edition of *The CIP Report*, available at http://cipp.gmu.edu/archive/cip_report_4.10.pdf ❖

NETL Update *(Cont. from Page 3)*

financing. Surcharges and accounting rule changes were used by the Commission in response to the 2004 storms which were calculated to eliminate fund deficits by 2007 for two utilities and 2008 for the third. It was not equitable, economically or politically feasible for utilities to seek, and state PSCs to approve, temporary surcharges that would more immediately replenish reserve funds and restore systems - particularly since during this same period of time there have been dramatic price increases for natural gas and petroleum.

The conclusions reached as the result of the workshop have provided the segue into NETL-supported research in 2006: a real-time examination of policy innovation by selected states in the Gulf Coast to deal with the collapse of traditional, rate-base self-insurance for transmission and distribution. A team of four researchers, including two students from GMU's School of Law, is examining how policymakers and utilities in the states of Florida, Louisiana, Mississippi and Texas are dealing with huge, unforeseen costs to electric power and primary energy critical infrastructure that was destroyed or damaged during the 2004 and 2005 hurricane seasons.

In response to the 2004 storm cycle, policymakers in Florida assumed that this year was an anomaly unlikely to be repeated in the next few years. Thus, the Florida Public Service Commission's response to the four major storms that successively ripped up infrastructure across the peninsula was to allow utilities to recover storm restoration costs and bring reserves once again into the black over two to three years. The 2005 hurricane season's destruction did not provide the hoped-for hurricane respite in Florida, and in states like Louisiana, Mississippi, and Texas, where storm reserve fund levels were historically far lower than Florida's, the devastation of Katrina, Rita and Wilma overwhelmed these reserves.

A Louisiana highway succumbs to the force of Hurricane Katrina.

Given the economic trauma that the commercial and residential sectors suffered, state officials could not respond with traditional approaches. Preliminary research, which includes off-line conversations with PSC staff and other experts in each of the four states, shows that state legislatures have passed new laws which allow utilities to seek, and PSCs to approve, securitization measures as an alternative or complement to traditional temporary surcharges.

Securitization may offer certain advantages over traditional methods of storm damage restoration cost recovery. Temporary surcharges provide utilities with a trickle of additional funds to recoup allowable costs whereby a securitized bond issue provides the utility with a quick burst or series of bursts of new money repayable over a longer period of time. Customers still pay for storm recovery costs but over a longer period of time. Regulatory uncertainty for utilities is significantly reduced. Under traditional surcharges, the PSC must make adjustments ("true-ups") every six months to assure that estimated allowable costs match actual recovered costs. Further, the PSC will conduct a review at the conclusion of the recovery period to make sure that costs collected through the surcharge match the actual storm damage restoration costs approved for recovery. Any over or under recovery will be credited or charged to the storm damage reserve as appropriate. With securitization, any after-the-fact review is limited to a review of the actual underwriting costs 120 days following the issuance of the bonds. Other than the administrative function of adjusting the storm repayment charge every six months to make sure the funds collected from ratepayers match the amortization schedule for *(Continued, Page 12)*

NETL Update *(Cont. from Page 11)*

the bonds, the PSC should have no additional involvement with the transaction.

On May 30, the Florida PSC issued its first storm restoration securitization order. Subject to final Commission action, the order allows the state's largest investor-owned utility, Florida Power & Light (FPL), to form a special purpose entity in the form of a "bankruptcy-remote" Limited Liability Company, which will issue over $700 million of high-quality bonds with a legal maturity of 12 years and an expected maturity of 10 years or less. These bonds will be securitized by FPL's future revenue stream and are expected to lower the overall cost to FPL's customers due to an extraordinary delegation of the Commission's future regulatory oversight and a state pledge to take no action that would adversely affect the value of the bonds. The FPL order is seen as a test case. Already, there is speculation that the initial outcome FPL received from the Commission, notably the small size of the FPL's allowed reserve, has led another Florida utility, Gulf Power, to change its filing with the Commission from a securitization request to a traditional surcharge. Mississippi lawmakers took a different approach than Florida. Once the Mississippi PSC approves a final securitization order, the Mississippi Development Authority, not a special purpose LLC, will issue the bonds. Mississippi policymakers believe this will provide the best outcome for utilities and customers by putting the full faith and credit of the state behind the bonds, thus reducing risk to bondholders and the total cost of issuance. Another large Gulf Coast utility, Mississippi Power, gained approval for a securitized storm cost recovery on June 28, 2006 subject to important stipulations regarding federal assistance.

The initial research discoveries are raising a number of questions that will not be answerable in 2006. As with many new laws that deal with complex economic regulation, there will be a period of initial regulatory uncertainty which will result in both the industry and regulators moving carefully. We see evidence of this in the very small number of storm-related securitization filings and related orders to date. This research project will be able to identify relevant statutes and regulations and provide basic analyses of final orders that may be issued by the fall of this year, but a law and economics-focused academic examination of whether public policy expectations have been realized is a project for 2007 and perhaps beyond. Examples of some of the questions that could be addressed in a continuation of the initial project are:

- What might be the affect of storm restoration orders for future disasters that essentially propose to secure the same revenue stream?

- Securitization is an attractive alternative to traditional methods provided the bonds are of very high quality, issuance costs are closely controlled and interest rates remain low. What happens as interest rates increase?

- How did the bond markets respond to these new financial instruments?

- What are the public policy implications of states getting into the business of acting as guarantors for utility company bonds, as Mississippi apparently has done?

- What are the technical accounting and economic ramifications of recovering costs for assets whose nominal life is less than the cost recovery period - akin to getting a 10-year car loan for a car which is expected to last no more than six years?

- Investor-owned "for-profit" utilities will be able to collect some infrastructure restoration money under post-Katrina federal legislation through Community Development Block Grants (see PL 109-148 and the FY2006 Emergency Supplemental, HR 4939). How will the state PSCs handle this? If these costs are not being borne by the utilities' customers and share holders, should the effect of this US taxpayer subsidy no longer be counted in utilities' rate base? Should all or part of federal assistance be subtracted *(Continued, Page 13)*

CIPP's Private Sector Programs to be Executive Secretariat for ISAC Council

Meghann Rother, CIP Program

Since its formation, the Information Sharing and Analysis Center (ISAC) Council has expanded from eight to fourteen sectors, encompassing both private sector and government ISACs. With the core mission of advancing the physical and cyber security of the critical infrastructures in North America, the ISAC Council aims to establish and maintain a framework for interaction between and among ISACs and government.

The ISAC Council works to foster an operational framework for information sharing in order to better protect, defend, detect, respond and recover from attacks on public and private critical infrastructure.

The operational infrastructures established in ISACs for analysis and information sharing and the interaction of ISACs with DHS and other federal agencies addressing the challenges of critical infrastructure protection are addressed in a set of ISAC Council white papers available at its website (www.isaccouncil.org). The ISAC Council also has undertaken projects and initiatives on a variety of issues ranging from metrics to vetting and trust.

In addition to this work, the ISAC Council is actively engaged with government and industry experts in improving our response capabilities during times of crisis such as hurricane response and recovery and cyber incidents.

ISAC Council Chair, John Sabo emphasizes that "ISACs provide critical capabilities for making policies operationally effective, and recognizing that a strong government-private partnership is integral to infrastructure protection." As the ISAC Council continues to pursue its goals it will receive support from Private Sector Programs (PSP) at the CIP Program. Both the ISAC Council and PSP are excited about this new partnership and look forward to working with each other. ❖

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from bond issues or surcharges approved by state PSCs?

A larger question for critical electric power infrastructure reliability and recovery is why state legislators and PSCs are limiting themselves to status-quo ante system restoration instead of forward-looking measures that allow rate-regulated utilities to rebuild systems to higher engineering and technical standards? Such a forward-looking initiative would "harden" critical electricity infrastructure against future traumatic events, making the electric grid more resilient, reliable and recoverable at lower cost. Florida officials are trying to address this last important question and are prioritizing hardening according to infrastructure criticality.

To learn more about these novel Commission infrastructure initiatives, go to http://www. psc.state.fl.us/industry/electric_gas/ei_project.cfm. ❖

OE *(Cont. from Page 5)* up with critical analysis and recommendations. CIP Program staff also performed an assessment of the Inspector General's report on DOE's responses to Katrina and Rita, contrasted with the June 2005 simulation. The CIP Program also has conducted an ongoing analysis of implementation of provisions of the Energy Policy Act of 2005 which require the establishment of an Electric Reliability Organization (ERO) that will audit and enforce mandatory electric power reliability standards.

The CIP Program has helped OE under a grant from the National Energy Technology Laboratory (NETL). According to Dr. Kenneth Friedman, a member of OE's Infrastructure Security and Energy Restoration (ISER) division, the "goal of providing resources to CIPP is [such that CIPP] can independently look at issues OE must confront." Friedman stated that partnerships with organizations like the CIP Program provide a "significant benefit to OE's efforts to help industry to build a business case for critical infrastructure protection . . . through dialogue and facilitated networking."

OE, in cooperation with its other government sector partners, often relies upon its "convening powers," which GMU's CIP Program has played a significant role in supporting. As an academic organization focused on critical infrastructure protection, the CIP Program provides OE with valuable research that cannot be conducted in-house because OE has its plate full with operational emergencies and critical infrastructure. As one senior member of the office observed, "We don't have the time or resources for think-tank activities, nor do we have the time to engage in other kinds of activities such as data gathering and even legal analysis." An example of the latter is a legal memorandum produced by a CIP Program law school intern which analyzed the 2003 reauthorization of the Defense Production Act and its expansion into critical infrastructure. The CIP Program also provided the office with what an OE staff member described as "a deep thought exploration of the whole [electric power] insurance area." Another graduate research assistant working for the CIP Program conducted an analysis and made recommendations to the office regarding DOE's Form 417A outages report. This document was valued by the Department because it provided DOE with an independent assessment which was used during OMB's 2005 report revision process. ❖

The CIP Program is directed by John A. McCarthy, a member of the faculty at George Mason University School of Law. The CIP Program works in conjunction with James Madison University and seeks to fully integrate the disciplines of law, policy, and technology for enhancing the security of cyber-networks, physical systems and economic processes supporting the nation's critical infrastructure. The CIP Program is funded by a grant from The National Institute of Standards and Technology (NIST).

The CIP Report is published by Zeichner Risk Analytics, LLC (ZRA) on behalf of the CIP Program. ZRA is the leading provider of risk and security governance knowledge for senior business and government professionals. ZRA's vision is to be a consistent and reliable source of strategic and operational intelligence to support core business processes, functions, and assurance goals.

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