NATIONAL INFRASTRUCTURE ADVISORY COUNCIL

MEETING AGENDA

Tuesday, October 10, 2006
1:30 – 4:30 p.m. EST
National Press Club
529 14th Street NW
Washington, DC 20045

I.	**OPENING OF MEETING**	*Jenny Menna*, Designated Federal Officer (DFO), National Infrastructure Advisory Council (NIAC), Department of Homeland Security (DHS)
II.	**ROLL CALL OF MEMBERS**	*Jenny Menna*
III.	**OPENING REMARKS AND INTRODUCTIONS**	NIAC Chairman, *Erle A. Nye*, Chairman Emeritus, TXU Corp. NIAC Vice Chairman, *John T. Chambers*, President and CEO, Cisco Systems, Inc. *Michael Chertoff*, Secretary, Department of Homeland Security (DHS) *Michael O. Leavitt*, Secretary, Department of Health and Human Services (HHS) *Ms. Kirstjen Nielsen*, Special Assistant to the President, and Senior Director of Prevention, Preparedness and Response, Homeland Security Council
IV.	**APPROVAL OF JULY MINUTES**	NIAC Chairman, *Erle A. Nye*
V.	**STATUS REPORTS ON CURRENT WORKING GROUP INITIATIVES**	NIAC Chairman, *Erle A. Nye* Presiding
	A. THE PRIORITIZATION OF CRITICAL INFRASTRUCTURE FOR A PANDEMIC OUTBREAK IN THE UNITED STATES	*Chief Rebecca F. Denlinger*, Fire Chief, Cobb County, Georgia Fire and Emergency Services, NIAC Member, *Martha H. Marsh*, Chairman and CEO, Stanford Hospital and Clinics, NIAC Member and *Bruce Rohde*, Chairman and CEO Emeritus, ConAgra Foods, Inc.

B. CONVERGENCE OF PHYSICAL AND CYBER TECHNOLOGIES AND RELATED SECURITY MANAGEMENT CHALLENGES	*George Conrades*, Executive Chairman, Akamai Technologies, NIAC Member, *Margaret Grayson*, President, Grayson and Associates, NIAC Member, and *Gregory A. Peters*, Managing Partner, Collective IQ, NIAC Member.
VI. NEW BUSINESS	NIAC Chairman, *Erle A. Nye*, NIAC Members TBD
A. RECOMMENDATIONS FOLLOW-UP	*Nancy Wong*, DFO, NIAC, DHS
VII. ADJOURNMENT	NIAC Chairman, *Erle A. Nye*

MINUTES

NIAC MEMBERS PRESENT IN WASHINGTON:
Chairman Nye, Vice Chairman Chambers, Mr. Archuleta, Dr. Barrett, Mr. Berkeley, Chief Denlinger, Lt. Gen. (Ret.) Edmonds, Ms. Grayson, Governor Pawlenty, and Mr. Peters

NIAC MEMBERS ATTENDING VIA CONFERENCE CALL:
Mr. Conrades, Mr. Gallegos, Mr. Noonan, Mr. Rohde, and Mr. Thompson.

MEMBERS ABSENT:
Commissioner Kelly, Ms. Marsh, Mr. Nicholson, and Dr. Rose.

OTHER DIGNITARIES PRESENT:
U.S. Government: Mr. Michael Chertoff, Secretary, Department of Homeland Security; Mr. Michael O. Leavitt, Secretary, Department of Health and Human Services; Kirstjen Nielsen, Special Assistant to the President and Senior Director of Prevention, Preparedness, and Response, Homeland Security Council (HSC); Mr. George W. Foresman, Under Secretary, Preparedness Directorate, DHS; Mr. Robert B. Stephan, Assistant Secretary, Office of Infrastructure Protection, DHS; and Ms. Jenny Menna, DFO, NIAC, DHS.

I. OPENING OF MEETING

Ms. Jenny Menna introduced herself as the Designated Federal Officer (DFO) for the National Infrastructure Advisory Council (NIAC). She welcomed Mr. Michael Chertoff, DHS Secretary; Mr. Michael O. Leavitt, HHS Secretary; Ms. Kirstjen Nielsen, Special Assistant to the President and Senior Director of Prevention, Preparedness, and Response for the HSC; Mr. George W. Foresman, Under Secretary for Preparedness, DHS; Mr. Robert B. Stephan, Assistant Secretary for Infrastructure Protection, DHS;, Mr. Erle A. Nye, NIAC Chairman; Mr. John T. Chambers, NIAC Vice Chairman; and all Council members present or on the teleconference. Ms. Menna welcomed the members' staffs and other Federal government representatives. On behalf of DHS, she also extended a welcome to members of the press and public. She reminded the members present, and those members who joined the meeting via teleconference, that the meeting was open to the public and, accordingly, to exercise care when discussing potentially sensitive information. Pursuant to her authority as DFO, she called to order the 17th meeting of the NIAC and the fourth meeting of 2006. Ms. Menna then called roll.

II. ROLL CALL

III. OPENING REMARKS AND INTRODUCTIONS

NIAC Chairman, *Erle A. Nye,* Chairman Emeritus, TXU Corp.

NIAC Vice Chairman, *John T. Chambers*, President and CEO, Cisco Systems, Inc.

Michael Chertoff, Secretary, DHS

Michael O. Leavitt, Secretary, HHS

Ms. Kirstjen Nielsen, Special Assistant to the President, and Senior Director of Prevention, Preparedness and Response, HSC

Chairman Nye thanked Ms. Menna for the introduction, as well as everyone in attendance for their participation. The Chairman then announced the resignation of Vice Chairman John Chambers from the Council. President Bush has asked Vice Chairman Chambers to help coordinate U.S. efforts in reconstructing Lebanon's infrastructure.

Chairman Nye thanked Vice Chairman Chambers for his leadership on the NIAC and added that President Bush made an excellent decision in his selection of Vice Chairman Chambers. The Vice Chairman made a substantial impact on the Council and provided strong insight on NIAC reports, noted Chairman Nye.

Chairman Nye also told attendees that Vice Chairman Chambers was not only an excellent leader, but that he also provided the NIAC with support from his staff, namely Mr. Kenneth Watson, an important participant in many NIAC Study Groups.

Chairman Nye stated Vice Chairman Chambers would still monitor the NIAC and make Mr. Watson available, when needed. The Chairman then asked Vice Chairman Chambers if he would like to make any comments.

Vice Chairman Chambers thanked Chairman Nye for his kind words and thanked his fellow NIAC members for their leadership of this important group. The Vice Chairman said the NIAC would not be successful if the government and private sector could not work together. He thanked Secretary Chertoff for listening to the private sector's point of view. He closed his remarks by asking government representatives and NIAC members to continue to maintain their strong working relationship, asserting that the public/private-sector relationship remains integral to protecting the nation's critical infrastructure.

Chairman Nye turned the attention of the attendees to HHS Secretary Michael Leavitt.

Secretary Leavitt thanked Chairman Nye for allowing him to speak to the NIAC. The Secretary noted that about one year ago, the President announced a strategy to protect the American people from a possible pandemic influenza outbreak. At that time, few people knew about pandemics, he said, but he added that since the President's announcement, the nation has taken significant steps

toward better understanding of the pandemic threat and the steps necessary to address it. As Secretary Leavitt pointed out, pandemics differ from other national emergencies because they can occur everywhere simultaneously. This highlights the importance of each State and local government understanding its role in the situation. Pandemics also require additional cross-coordination across the private sector as well as every level of government.

Secretary Leavitt continued by saying he and Secretary Chertoff had attended pandemic summits across the country over the course of the past year. Together, the two secretaries have held summits in every U.S. State and territory in a coordinated effort to educate communities about the need to prepare and engage stakeholders. The Secretary called the summits a success, and said he had received positive feedback from the participants. Given the National Strategy and the State summits, Secretary Leavitt asserted that our nation is much better prepared today than it was a year ago, adding that the United States must continue to improve its pandemic preparedness every year.

Every State and countless communities, businesses, schools, cities, churches, and other organizations developed, or are in the process of developing, a pandemic response plan. Moreover, many of these States, cities, and organizations are exercising these plans. According to Secretary Leavitt, this increased focus on pandemic preparedness has occurred at the same time that the Federal government has dramatically increased its efforts. The President proposed a $7.1 billion preparedness plan to Congress with all but $1 billion appropriated and deployed. The government will use these funds to support a comprehensive Federal strategy and an ongoing investment in vaccines, rapid diagnostics, and dose-stretching technology, which will optimize usage of currently available vaccines.

Secretary Leavitt said the Federal government pledged $1 billion toward expediting the development of vaccine and the rebuilding of domestic vaccine capacity. HHS has developed a variety of informational resources, including checklists and fact sheets, for businesses and different levels of government to distribute. The Secretary said the Federal government had already seen results. For example, during the 2005 flu season, the United States initially faced an antiviral shortage that a massive response by Federal and private-sector partners was able to rectify.

Secretary Leavitt concluded by saying the NIAC's pandemic outbreak recommendations will help both DHS and HHS understand the private sector's role in a pandemic, adding that it will also allow the Federal government to act more quickly. The Secretary thanked the NIAC members and said he looked forward to hearing the Council's recommendations.

Chairman Nye thanked Secretary Leavitt and asked Secretary Chertoff if he had any further comments.

Secretary Chertoff thanked Chairman Nye for his kind words and for his leadership of the Council. He also thanked Vice Chairman Chambers for his service, saying DHS would miss his input. Secretary Chertoff then thanked Secretary Leavitt for his work preparing the nation for a possible pandemic influenza event.

Secretary Chertoff told the meeting participants that the work and the partnership between the government and private sector will not only be significant in combating pandemic influenza, but that it could also function in a response to other biological events.

He said Congress passed the DHS appropriations bill shortly before it recessed, part of which provided DHS with the ability to fund protective measures in the economy's chemical sector. Chemical plants remain vital to the national economy, Secretary Chertoff said, before adding that they also present hazards surrounding communities that require action to ensure adequate protection and emergency response.

Secretary Chertoff announced his department's release of the National Infrastructure Protection Plan (NIPP) Base Plan in June and added that DHS intends to complete each Sector Specific Plan (SSP) by December 31, 2006. He thanked the Council again for its contribution in helping DHS form the Critical Infrastructure Partnership Advisory Council (CIPAC), an integral part of the infrastructure protection process.

Pandemic planning, the Secretary said, not only must account for a pandemic's impact upon the health of those infected, but it must also account for the impact a pandemic influenza will have upon the national economy and the ability of private industry to deliver essential services to the public. Because of this, Secretaries Chertoff and Leavitt followed the President's mandate to go forward and build a set of comprehensive pandemic preparedness plans. Secretary Chertoff said they both recognized that public health is fundamental to the planning process, but noted that it would also be important to examine a pandemic's collateral impact on the commerce and the national economy. To better prepare the private sector for the pandemic threat, Secretary Chertoff stated that DHS recently released the Pandemic Influenza Preparedness, Response, and Recovery Guide for Critical Infrastructure and Key Resources.

DHS developed this planning guide to allow the private sector to examine its responsibilities to ensure continuity of operations and to improve pandemic preparedness. Secretary Chertoff told the Council that this type of planning is possible, noting the run-up to the Year 2000 and the concern for technological disruptions. This advanced planning, by the public and private sector, prepared the country and minimized the possible negative impacts related to the so-called Y2K bug.

Secretary Chertoff said that DHS, along with HHS, had asked the NIAC to examine prioritizing vaccine distribution and other services to the nation's critical workforce, to define critical and essential services, and to identify their critical employees. Understanding where scarce resources must be deployed is crucial to developing any comprehensive plan, the Secretary noted, before thanking the Pandemic Working Group for its efforts on a task with a very tight timeline.

At this point in the meeting, Secretary Chertoff proceeded to swear in the newest NIAC member, the Honorable Timothy Pawlenty, Governor of the State of Minnesota.

Chairman Nye then asked Preparedness Under Secretary George Foresman if he had any comments.

Under Secretary Foresman thanked Chairman Nye. He then thanked Vice Chairman Chambers for his excellent work on the NIAC and told him his experience on the NIAC will help him in his new endeavor.

Under Secretary Foresman told Council members that they provide the government a private-sector perspective on critical infrastructure protection. The private sector, along with all levels of government, will provide the full perspective needed to create policy to protect critical infrastructure.

The Under Secretary told the meeting attendees he remembers the efforts undertaken during the Y2K scare, noting that the Y2K scare was elementary compared to critical infrastructure problems the nation faces today from a possible pandemic threat. Under Secretary Foresman stated that the nation's governors, mayors, county executives, and corporate executives all have equally important roles to play in the protection of the nation's critical infrastructure.

Under Secretary Foresman closed by reminding the Council that preparedness comes from interdependencies among all levels of government, the public, and private sectors. DHS understands this, he said, and the department uses it in its approach to prevention, protection, response, and recovery. The direction provided by the NIAC allows DHS and other agencies to work with the private sector in mind. The Under Secretary assured the meeting attendees that DHS is working very hard to keep America safe.

IV.	**APPROVAL OF JULY 11, 2006 MINUTES**	NIAC Chairman, *Erle A. Nye*, Presiding

Chairman Nye moved to the topic of the July meeting minutes. He asked the Council if there were any questions or comments about the minutes. Hearing no corrections or comments, he asked for a motion to approve the minutes. A motion was provided, seconded, and unanimously approved.

Chairman Nye introduced the Status Report of the Prioritization for a Pandemic Working Group.

V.	**STATUS REPORTS FOR CURRENT INITIATIVES**	NIAC Chairman *Erle A. Nye* Presiding
	A. THE PRIORITIZATION OF CRITICAL INFRASTRUCTURE FOR A PANDEMIC OUTBREAK IN THE UNITED STATES	*Chief Rebecca F. Denlinger*, Fire Chief, Cobb County, Georgia Fire and Emergency Services, NIAC Member, *Martha Marsh*, Chairman and CEO, Stanford Hospital and Clinics, NIAC Member and *Bruce Rohde*, Chairman and CEO Emeritus, ConAgra Foods, Inc., NIAC Member

Next, Chairman Nye turned the attention of the attendees to the first Working Group update of the meeting, Prioritization of Critical Infrastructures for a Pandemic Outbreak in the United States. He

stated that the secretaries of DHS and HHS asked the NIAC to take on this topic and complete it under an aggressively short timetable. The request addressed difficult questions around prioritizing healthcare in the event of a pandemic. The Chairman said the request for the research on this topic shows how essential the critical infrastructures are to modern life, as well as the importance of critical infrastructure workers.

Chairman Nye said the Working Group's findings would be initial findings, noting that the final report and recommendations will be delivered during the January 2007 meeting. He thanked the Partnership for Critical Infrastructure Security (PCIS) and the National Security Telecommunications Advisory Committee (NSTAC) for their timely assistance on the project. Finally, he thanked the members of the Pandemic Working Group and Ms. Martha Marsh, Chief Rebecca Denlinger, and Mr. Bruce Rohde for their leadership of the Working Group. The Chairman said Study Group member Mr. Scott Blanchette would present the initial findings on the behalf of NIAC Member Martha Marsh. Prior to the presentation, the Chairman asked Chief Denlinger for any comments she had to offer.

Chief Denlinger thanked the Chairman and those attending the meeting. She said the Working Group believes this subject represents one of the most challenging and relevant questions considered by the NIAC in recent history. She said that she and Mr. Blanchette planned to present an overview of the methodology used to collect and assess data. They will then provide an overview of its prioritization methodology and guidance behind selecting this approach. Third, they will present preliminary estimates of workforce numbers within this prioritization schema. Chief Denlinger said they would offer their recommendations for implementation. Finally, she said they would conclude with some questions that merit further consideration and provide some recommendations on the opportunity to pursue this effort.

The NIAC members, as well as officials from DHS and HHS, contributed substantial time, effort, and support to the project. PCIS and NSTAC also provided important expertise. Chief Denlinger asked Mr. Blanchette to provide the Study Group presentation on behalf of NIAC Member Ms. Martha Marsh.

Mr. Blanchette thanked Chief Denlinger and Chairman Nye for the opportunity. DHS and HHS identified six specific questions for the Working Group to address; these questions focus on the role, criticality, and priority of the critical infrastructure worker. The Group used these questions as the basis for developing a survey distributed through multiple channels. These distribution channels involved multiple organizations including PCIS, NSTAC, industry and trade associations, corporations, recognized subject matter experts, and members of State and local government, as well as academia. In addition to the survey, the Group relied on a number of other data collection methods including reliance on studies conducted in support of Federal and State plans, public/private-sector research on pandemic flu, and other Federal data sources such as the Bureau of Labor Statistics (BLS).

Mr. Blanchette said the Group acknowledged three points throughout this data collection process. First, efforts to even reach agreement on strategic prioritization principles suggest there is tremendous work to be done to refine the tactical implementation of these same principles. Second, there will continue to be a need to refine and revise these estimates as assumptions, priorities, and

populations change over time. Finally, the very human nature of the prioritization effort makes definitive agreement on what constitutes priority a very difficult consensus to reach. The Study Group hopes the combination of four elements (data collection methods, prioritization principles, workforce identification, and recommendations for implementation) will yield an adequate response to the questions originally presented by DHS and HHS.

To provide a baseline for the study with a controlled set of assumptions, the Study Group adopted a number of the assumptions outlined in the National Strategy for Pandemic Influenza and the HHS Pandemic Influenza Plan. The Study Group identified three tenets for critical goods and services. These include:

- Essential elements of national security and homeland security;
- Components of systems, assets and industries upon which the economy depends; and
- Components of systems, assets and industries upon which public health depends.

The distribution of responsibility for much of the operations, maintenance, and sustainment of these critical goods and services resonates within the private sector. Some estimates suggest that the private sector controls 85 percent of the nation's critical infrastructure. Because of this, a consistent theme of the Study Group's subsequent analysis addresses the central role of the private sector in a pandemic response scenario. In addition to these key attributes, other factors elevate some key goods and services into a more critical status. There are examples where some goods and services rely upon many other critical functions. For example, chemical sector production, while not independently critical to many tenets of this framework, is a critical path interdependency to numerous sectors.

Another scenario impacts potential single points of failure in the criticality assessment model. For example, the Food and Agriculture sector possesses a high degree of production resiliency, capacity, and scalability allowing it to meet production assumption benchmarks during a pandemic event. However, there are single, critical points of failure within the food and agriculture industries. For example, there are only six U.S. baby milk formula processing facilities to meet current production needs. This production function's lack of redundancy suggests some critical risks. Aspects of the Food and Agriculture sector require additional consideration, study, and prioritization. This generated a tremendous amount of discussion about priorities, interdependencies, and single points of failure. Mr. Blanchette then deferred to Chief Denlinger to present the Working Group's initial recommendations.

Chief Denlinger began by recognizing the extremely valuable efforts undertaken prior to this study assisting in the Working Group's activities. The development and publication of two documents:

- The National Strategy for Pandemic for Influenza and the
- Health and Human Services Pandemic Influenza Plan.

Both reports serve as essential building blocks to understanding the nation's ability to respond to and manage the challenges of a pandemic event. Chief Denlinger opened by saying the Working Group suggests that the private sector has an opportunity to engage the public-private partnership in further developing and implementing a response and communications infrastructure, which

harnesses the private sector's distribution and communications infrastructure. Chief Denlinger said the United States must predefine a consistent pandemic communications plan covering the entire pandemic event and must be able to tailor communications to specific target audiences. These multiple communication channels will provide the greatest communications coverage possible to every target audience possible.

Finally, the Working Group suggested the nation continue to refine its communications plans, processes, and success metrics through a series of response exercises. These efforts should continue to attract the priority and attention they have already warranted. The Working Group also proposed the continued development of a clearly defined vaccine and antiviral distribution strategy, as well as considering alternative distribution strategies and guidance allowing the private sector to distribute vaccine and antivirals to their own in-scope critical workforce.

Chief Denlinger said the pandemic study suggested that more work needs to be done to clarify response and containment roles and responsibilities. There appears to be confusion over the roles of multiple Federal agencies, she said. Confusion remains about how, when, and in what capacity State, local, and private sector response participants will engage. Similarly, response, timeliness, and milestones require further definition. If the Federal government implements the prioritization elements of the Working Group's framework, members suggested developing a mechanism to identify priority workforce groups. Those employees who fit into the critical employee group will become a key part of any distribution strategy.

Chief Denlinger said one of the study's remarkable, yet most intuitively obvious, findings is that surveillance and detection capabilities inherent in the critical infrastructure operating model should be engaged. While not specifically targeting pandemic flu, this surveillance might be incorporated as part of the National Response Plan (NRP). Some currently unengaged capabilities inherent in the private sector might be of use in a pandemic preparedness and response scenario. The Working Group suggests the following items:

1. Extending surveillance to include occupational health professionals. These resources extend throughout nearly every facet of critical infrastructure and key resources and can augment traditional surveillance and detection infrastructures.
2. Engaging U.S. corporations' international components and global bio data collection efforts to enhance data collection, aggregation, and analysis capabilities offered through relationships directly with host nations or other organizations such as the World Health Organization (WHO).
3. Supplementing surveillance technology investments, acquisitions, monitoring, and response capabilities to increase threat visibility and geographic coverage.
4. Engaging non-traditional data acquisition and management resources within the commercial workforce and surveillance collection and analysis. There are massive computing capabilities in the private sector not currently focused on this problem that may significantly reduce the processing time required to identify a vaccine or antiviral or perhaps significantly speed the time to market for either of these solutions.

Two data collection, analysis, and prioritization pieces remain especially daunting:

- The reliance on foreign workers supporting U.S. critical infrastructure; and
- The gross number of priority workers identified as contractor resources.

Further studies should consider what extent to prioritize international foreign workers central to U.S. critical infrastructure operations. These foreign workers, as well as contractors, remain essential in nearly every sector. The Nuclear sector, for example, relies heavily on contracted resources to support and maintain reactor facilities, yet contractors do not constitute an official part of the critical infrastructure key resource workforce. Because of this, the Working Group suggested additional study in both the area of foreign workers supporting those operations and the role and relevance of contracted resources. In addition, there should be continued investigation of family member care and how this impacts the critical worker. This further study ties in how and to whom vaccines need to be distributed.

Chief Denlinger also said the Working Group suggests dedicating efforts to study the impact on an organization's operations as potential containment strategies come into play. For example, how would closing U.S. or individual State borders impact a business? Many organizations identified critical-path issues associated with international and interstate border and transportation management. Existing prioritization strategies largely emphasize at-risk populations and do not sufficiently prioritize the critical infrastructure worker's role. The framework the Working Group suggests lies in direct contrast to this approach because it places a higher degree of priority on the critical infrastructure worker. While not seeking to understate the risk to these other populations, the critical workforce remains crucial to ensure national and homeland security and economic survival, as well as public health and welfare, Chief Denlinger said. She went on to describe the Working Group's final directional recommendation in three key points:

- A forum should be created to continue this important study. There are few threats to the nation with the same potential impact.
- The distribution, response, and communication approach as identified in this study needs further consideration. The critical infrastructure key resource owner/operator is ready and committed to help the nation prepare for and respond to a pandemic event.
- An appropriate forum or series of forums must convene to recognize the many data collection, analysis, and prioritization challenges inherent in ensuring quality of life and livelihood issues. These meetings will continue to refine these numbers and gain consensus on an approach and the implications of a pandemic event.

Chief Denlinger then asked the Council for any questions.

Vice Chairman Chambers thanked the Working and Study Groups for their hard work and added that the suggestions should affect both the government and private sector's actions as it prepares for a pandemic.

Chairman Nye thanked Chief Denlinger and Mr. Blanchette for their presentation and moved to introduce the Convergence of Physical and Cyber Technologies and Related Security Management Challenges Working Group for its status update. He then turned the floor to Working Group Chair Margaret Grayson.

B. CONVERGENCE OF PHYSICAL AND CYBER TECHNOLOGIES AND RELATED SECURITY MANAGEMENT CHALLENGES

George Conrades, Executive Chairman, Akamai Technologies, NIAC Member, *Margaret Grayson*, President, Grayson and Associates, NIAC Member, and *Gregory A. Peters*, Managing Partner, Collective IQ, NIAC Member

Ms. Grayson thanked the Chairman and Vice Chairman for the opportunity to present the status update. The Convergence Working Group developed and considered the questions surrounding the convergence of cyber security, the control of physical systems, and the associated risks and vulnerabilities that might lead to a catastrophic failure. The Working Group's considerations included the fact that any problem with the supervisory control and data acquisition systems (SCADA) or the Process Control Systems (PCS) in large production facilities represents potentially severe consequences.

In the time since the July NIAC business meeting, the Working Group evaluated the public sector's opportunities to use the public-private partnership to enhance communication, share awareness and knowledge of risks and vulnerabilities, and identify where those risks and vulnerabilities might exist. It then collected input from executives as well as subject matter experts to support its directional recommendations. The Working Group understood the significant convergence between cyber and physical systems in these large process environments. Its findings generated a set of suggested recommendations including actions industry and government might appropriately take. Ms. Grayson thanked everyone who participated in both the Working and Study Groups and lauded the leadership of her fellow co-chairs, Mr. Greg Peters and Mr. George Conrades.

Ms. Grayson announced the Working Group's completion of items identified as next steps at the last meeting as well as its reaching of a consensus on directional recommendations and related actions for inclusion in the final report. Ms. Grayson then asked Study Group member Mr. Page Clark to present the Study Group's activities since the last meeting. She followed this by saying the final report will be available to the members in early December.

Mr. Clark thanked Ms. Grayson and introduced himself as a subject-matter expert and replacement for Study Group Chair, Mr. David Frigeri. He began by saying the Study Group held weekly conference calls and convened for its fourth face-to-face meeting. The Study Group met with subject-matter experts from inside industry and within government to validate findings and potential recommendations.

Mr. Clark then outlined the Study Group's suggestions to assist the Working Group with answering the framework questions. The first framework question addresses the notion of security as an enabler. The Study Group found executive leadership awareness in information sharing remains critical to achieve a culture among control systems operators where security goes hand in hand with availability, reliability and safety goals. They realized executive leadership awareness is critical and retains a high priority in any directional recommendations. In the area of market drivers, the Study Group found insufficient market drivers to achieve industry attention and focus, control system security, and product systems development and implementation in some sectors. The Study Group highlighted for the Working Group that each Sector Coordinating Council (SCC) should apply the

framework outlined in the NIAC's *Best Practices for Government to Enhance the Security of the National Critical Infrastructures Report and Recommendations* to improve the cyber security of control systems. Each corresponding Sector-Specific Agency (SSA) should validate the outcomes and provide a report back to DHS through existing mechanisms. Mr. Clark said executive leadership awareness of the cyber threat to control systems across the public and private sectors is critical to achieving all actions needed to address the threat. For this, the Study Group developed three specific suggestions for the Working Group to review:

1. Follow a detailed approach to communicating the cyber threat to control systems to be applied by DHS and provided to executive leadership in the critical infrastructure sectors in both government and industry.
2. Establish a process for SCCs to communicate this information to control systems owner/operators in a reliable and protected manner.
3. Communicate the executive awareness outreach message by using the risk self-discovery approach developed by the U.S. Cyber Consequences Unit, including strategic-level information on threats, hostile actors, economic motivators for hostile actors, and consequences.

Addressing government leadership, the Study Group found that integrated coordination planning among committed government efforts confronting the cyber threat to control systems will substantially reduce this dynamic threat. Mr. Clark stated the Study Group developed multiple concepts for the Working Group to review:

1. For a public-private partnership to increase executive awareness, the Group suggests collaborating with the Malcolm Baldridge Award for Excellence in Business Management organization to communicate the SCADA PCS cyber security message to business leaders.
2. Coordinate Federal government funding for control systems security, research, and development based on priorities identified by the cyber security and information assurance interagency working group's annual reports.

Regarding information sharing, the Study Group found improved sharing is critical to the development of a properly informed and measured response to any threat to critical infrastructure control systems. They developed several suggestions for the Working Group to review in this area:

1. Collect cyber incident data through Carnegie Mellon Computer Emergency Response Team Coordination Center (CERT-CC). For an improved understanding of the threat to control systems and enhanced risk management decisions, use the Carnegie Mellon team as a trusted third-party mechanism for the collection, protection, and appropriate dissemination of aggregate incident information.
2. Improve available resources for companies seeking to address cyber vulnerabilities to their SCADA and PCS systems by providing CERT-CC with the necessary resources to increase rapidly SCADA and PCS training and engineering consulting services needed to build the trusted relationships to facilitate incident information sharing.
3. Ask the White House to submit formal information requests to the intelligence community to assess the cyber threat to SCADA and PCS so vital information could be communicated to

critical infrastructure owner/operators to better inform strategic risk assessment for their systems.

4. Integrate and include information on control systems cyber threats in the forthcoming Information Sharing Environment.

Mr. Clark said the Study Group will work to further refine its work to support the Working Group before they release them in early December.

Ms. Grayson asked if Mr. Peters or Mr. Conrades had anything to add.

Mr. Peters thanked Ms. Grayson and the rest of the Group members for their hard work and excellent insight. He also thanked Mr. Clark for assuming the responsibility of the Study Group Chair.

On behalf of Mr. Conrades, Mr. Andy Ellis thanked the co-chairs and the members of the Group.

Vice Chairman Chambers told the NIAC members he liked the framework of the recent NIAC reports:

- Developing four to six main questions,
- Testing potential resolutions, and
- Developing recommendations from these tests.

He said he anticipated reading the Working Group's final report and recommendations to the Council in January.

VII NEW BUSINESS

NIAC Chairman, *Erle A. Nye*, NIAC Members, *TBD*

Chairman Nye told the meeting attendees that both Working Groups would provide their final recommendations at the January NIAC meeting. He also stated the NIAC suspended the work of the Chemical, Biological and Radiological Events (CBR) Working Group to expedite the development of the Pandemic Working Group's recommendations. Following that release, Chairman Nye recommended the Working Group begin working where they previously left off before Secretaries Chertoff and Leavitt requested the pandemic study. Additionally, in January, once the Convergence and Pandemic Working Groups release their reports, the Council should look into new topics, the Chairman said.

A. RECOMMENDATION FOLLOW-UP

Nancy Wong, NIAC DFO, DHS

Chairman Nye then asked Ms. Nancy Wong to provide an update of the Federal government's implementation of the NIAC's recommendations.

Ms. Wong said that beginning in January 2007, the NIAC Secretariat will invite senior agency officials charged with implementing the Council's recommendations to brief the NIAC on the recommendations status. The hope is for the Council and Federal agencies to maintain an open

dialogue about what works and what does not, as well as to shed light on ways the NIAC can continue to make a valuable impact to secure the nation's critical infrastructure and key resources. The senior Federal officials will provide updates and will also welcome questions from the Council.

Ms. Wong said the Secretariat is open to any additional suggestions for operational improvements and noted that Ms. Menna will oversee the implementation of this new process.

VIII ADJOURNMENT NIAC Chairman, *Erle A. Nye*

Chairman Nye thanked Ms. Wong for providing the Council the opportunity for a dialogue with those implementing their recommendations. Chairman Nye thanked Vice Chairman Chambers for his hard work and wished him the best in his new project.

Vice Chairman Chambers thanked Chairman Nye and the Council for the opportunity to serve with such distinguished leaders.

Chairman Nye also thanked Vice Chairman Chambers' staff, especially Mr. Kenneth Watson, for his consistent efforts.

The Chairman concluded by saying the next meeting is scheduled for January 16, 2007 at the National Press Club in Washington, D.C. With this, Chairman Nye adjourned the meeting.

I hereby certify that the foregoing minutes accurately represent the discussion and events that transpired at the meeting held on the date first noted above.

By: /S/ Erle A. Nye Dated: 01/16/07
Erle A. Nye, Chairman

ATTACHMENT A

The Prioritization of Critical Infrastructure for a Pandemic Outbreak in the United States

National Infrastructure Advisory Council (NIAC)

NIAC Pandemic Working Group

Initial Findings
October 10, 2006

Martha H. Marsh
Chairman and CEO
Stanford Hospital and Clinics

Chief Rebecca F. Denlinger
Fire Chief
Cobb County, GA Fire and Rescue

Bruce Rohde
Chairman and CEO Emeritus
ConAgra Foods, Inc.

Agenda

- NIAC Charge and Rationale
- Current Pandemic Context
- Current Pandemic Countermeasures
- Questions from DHS/HHS
- Contributors
- Sectors Represented
- Approach
- Assumptions
- Questions 1 – 6
- Key Policy Considerations
- Discussion

NIAC Charge and Rationale

- Study and make recommendations on critical infrastructure (CI) prioritization for an influenza pandemic
- Rationale
  - A severe pandemic can significantly disrupt the CI
  - Medical countermeasures can protect CI but supplies are limited
  - Impact of limited countermeasures and distribution channels should be critically evaluated prior to pandemic
  - Defining priorities can lead to optimal use of limited resources and best preserve societal function

Current Pandemic Context

- Pandemic threat
  - Three continents have been affected by H5N1 avian influenza.
  - To date, there are 251 WHO confirmed human cases and 148 (59%) deaths (as of 9/28/06), and these numbers could be more extensive due to unknowns.
  - Mutation or recombination of genetic material between avian and human influenza could induce a pandemic.
- Potential pandemic impacts
  - ~2 million U.S. deaths if 1918-like severity
  - Societal and economic disruption – projections of up to 40% workplace absenteeism assumed at pandemic peak

Current Pandemic Response Measures

- Vaccination
- Antiviral drug treatment and prophylaxis
- Community measures
  - Social distancing (e.g., close schools, telework, etc.)
  - Infection control & personal hygiene (e.g., masks, hand hygiene)
- Access to quality health care

Questions from DHS/HHS

- Six specific pandemic questions
  - Identify and define critical services that must be maintained in a pandemic;
  - Establish criteria and principles for critical service prioritization;
  - Define critical services priority;
  - Identify critical employee groups in each priority critical service;
  - Build a structure for communication and dissemination of resources; and
  - Identify principles for effective implementation by DHS and HHS.

Study Group Contributors

Representatives From:

- Critical Infrastructure Sectors
  - Partnership for Critical Infrastructure Security
- National Security Telecommunications Advisory Committee
- Department of Health and Human Services
- Department of Homeland Security
- State and local government

Contributors

Working Group

- Mr. Edmund Archuleta
- Mr. Alfred Berkeley
- Chief Rebecca Denlinger
- Chief (ret.) Gilbert Gallegos
- Ms. Martha Marsh
- Mr. Bruce Rohde

Study Group

- Banking & Finance
- Chemical
- Commercial Facilities
- Communications
- Dams
- Emergency Services
- Energy
- Food and Agriculture
- Healthcare
- Information Technology
- Nuclear
- Oil and Natural Gas
- Postal and Shipping
- State and Local Government
- Transportation
- Water and Wastewater

Approach

- Data collection methods:
  - Survey to critical sector representatives and organizations
  - Scholarly, public or private pandemic studies
  - Existing pandemic plans or programs; results from pandemic exercises
  - Interviews with key subject-matter experts
- Analytical methods:
  - Analytic induction
  - Data modeling
  - Expert opinion

Approach (cont.)

- Data collection methods yielded:
  - Complete assessment of some sectors
    - Nuclear: 68/71 nuclear sites participated/validated survey data
  - Mathematically complete assessment of major portions of some sectors
    - Healthcare: registered/studied nature of workforce easily identifiable
  - Incomplete assessment of limited number of sub-sectors
    - Banking & Finance: critical financial markets covered by proprietary Treasury Department study
  - Not all sectors equally represented in study data
- Pending some policy considerations, some sub-sectors will require additional study
  - Address competition or intellectual property concerns
  - Address inter-agency data collection roles

Assumptions

- Susceptibility to pandemic influenza virus will be universal.
- The clinical disease attack rate will be 30% in the overall population during the pandemic. Among working adults, an average of 20% will become ill from the pandemic influenza during a community outbreak.
- Absenteeism may be as high as 40% during peak pandemic periods.
  - Absenteeism will include those who are ill with pandemic influenza and those who "think" they have pandemic influenza but are ill from other causes.
  - Absenteeism will include those who stay at home for care of family members.
  - Well parents opting to remain at home to care for sick child/spouse are considered absent.
  - Those who stay at home to telework are not considered absent.

Assumptions (cont.)

- Some persons will become sick from the pandemic influenza but not develop clinically significant symptoms. These persons can transmit pandemic influenza and develop immunity to subsequent infections.
- Multiple waves of illness are expected with each wave expected to last two to three months in duration.
- Each wave of the Epidemic during its peak will adversely impact infected communities for six to eight weeks.
- Effectively half of all infected will seek medical care.

Question #1

Identify and define critical goods and services

- **Critical goods and services are:**
  - Essential elements of ***national security and homeland security***
  - Components of systems, assets, and industries upon which ***our economy depends***
  - Components of systems, assets, and industries upon which ***public health depends***
  - Fundamental to the 85% of the critical infrastructure owned and operated by the private sector
- **Critical goods and services are further defined by:**
  - Integral nature of definitions cited above
  - High rates of inter-dependency amongst critical infrastructure
  - Single points of failure
- **Every sector will have both critical and non-critical goods and services**

Question #1 (cont.)
Sector Detail: Healthcare Example

Consumption:

Critical Goods/Svcs	Rationale	Criteria	Inter-dependency
Water	Health and safety	Service delivery	Water – immediate
Electricity and Power	Health and safety	Service delivery	Electricity – beyond 24 hours
Transportation and shipping	Interdependency	Service delivery	Transportation of critical medical materials
Communications	Interdependency	Service delivery	Communications with suppliers, EMS, police, safety, employees
Food and agriculture	Interdependency	Service delivery	Provision of food for inpatients
Public safety, fire, and EMS	Health and Safety	Service delivery	Patient transport, physical security, triage assistance

Production:

Critical Goods/Svcs	Rationale	Criteria	Inter-dependency
Healthcare services/treatment	Health and safety	Service delivery	All downstream sectors
Pharmaceuticals	Health and safety	Service delivery; Material production	All downstream sectors
Medical Materials	Health and safety	Material production	Healthcare providers
Insurance - Payers	Interdependency	Financial solvency	Healthcare providers
Mortuaries/Funeral Homes	Health and safety	Service delivery	Healthcare providers
Labs and Blood Banks	Health and safety	Service delivery	Healthcare providers
Occupational Health	Health and safety	Service delivery	All dependent sectors

Question #1 (cont.)

- **Critical goods and services include:**
  - Relationship mapping tool demo

Question #2

Establishing Criteria and Principles for Critical Service Prioritization

- Critical goods/services required to ***maintain national or homeland security***
  - For example: Water, energy, food, banking & finance, chemical, healthcare, fire/EMS, communications, transportation, law enforcement, etc.
- Critical goods/services to ***ensure economic survival***
  - For example: Banking & finance, communications, information technology, transportation, electricity
- Critical goods/services to ***maintain public health and welfare***
  - For example: Water, energy, food and agriculture, healthcare, fire/EMS, law enforcement, etc.
- Critical goods/services with ***significant number of inter-dependencies***
  - Significant number of inter-dependency linkages
    - For example: Water, energy, food and agriculture, healthcare, fire/EMS, law enforcement
  - Significant to highest priority goods and services
    - For example: Chemical (water), transportation (food/agriculture), transportation (healthcare)

Question #3
Defining Critical Goods and Services Priority

- Critical goods and services will be identified and given priority according to the definitions in Question #1
- The following goods and services are linked to critical employee groups identified in Question #4
- Not all goods and services produced by a sector are considered critical

- **Banking & Finance**
  - Cash distribution and operations
  - Wholesale clearing and settlement services (Treasury Department proprietary study)
  - Electronic payments
- **Chemical**
  - Chemical Production, storage, transportation, delivery
  - Chemicals: basic chemicals, soap and cleaners, resins/rubbers/fibers, paints/adhesives, pesticides/fertilizers/agriculture
- **Commercial Facilities**
  - Commercial facilities operations and security

Question #3 (cont.)
Defining Critical Goods and Services Priority

- **Communications**
  - Communications management, operations, engineering, maintenance and administration
- **Electricity**
  - Electricity production, distribution and infrastructure operations/maintenance
- **Emergency Services**
  - Emergency management services, support and communications
  - Fire and rescue services
  - Police services
- **Food and Agriculture**
  - Agricultural production, including sugar and grain
  - Bakeries
  - Animal production
  - Fruits and vegetable production
  - Dairy
  - Processing/manufacturing
  - Retail
  - Warehousing/logistics

Question #3 (cont.)
Defining Critical Goods and Services Priority

- **Healthcare**
  - Healthcare providers and services
  - Paramedic services
  - Lab and blood bank services
  - Funeral home services
  - Pharmaceutical industry services and goods
  - Healthcare payer services
  - Medical materiel
- **Nuclear**
  - Nuclear energy production, base load that provides grid stability and reliability, electricity distribution, maintenance and support
- **Oil and Natural Gas**
  - Oil and natural gas extraction, refinement, and transportation
  - Oil and natural gas energy production, electricity distribution and support

Question #3 (cont.)
Defining Critical Goods and Services Priority

- **Postal and Shipping**
  - Postal and shipping management, operations, engineering, maintenance, transportation and administration
- **Transportation**
  - Air transportation
  - Maritime transportation
  - Rail transportation
  - Surface transportation
  - Transported goods warehousing
- **Water and Wastewater**
  - Drinking water system operations/drinking water treatment and purification
  - Wastewater system operations/wastewater treatment and purification

Question #4

Identifying Critical Employee Groups in Each Priority Critical Service

- Critical employee groups are identified, by sector, in the appendices.
  - A summary and an example is included in the slides 22-26
- Employee groups are those listed by each sector as "critical" and do not represent all employees in a job category.
- Both critical (numerator) and gross (denominator) numbers are reflected in the following slides.
- Basic details on sector-specific numbers are included.

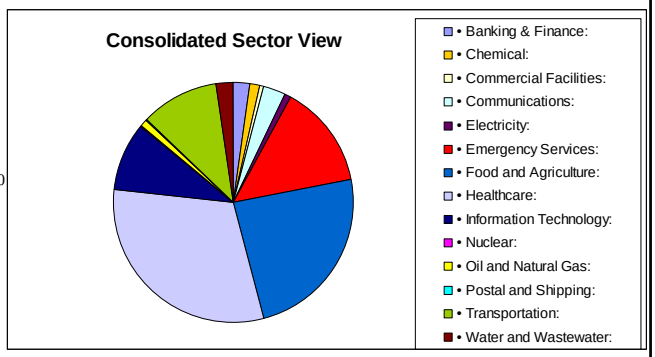
Question #4 (cont.)

Sector Detail: All Sectors, All Tiers

Critical Employees: Tiers 1 -3

- Banking & Finance: 554,000[c]
- Chemical: 373,000
- Commercial Facilities: 179,600
- Communications: 796,1940
- Electricity: 225,000
- Emergency Services: 3,708,592
- Food and Agriculture: 6,314,000
- Healthcare: 8,198,059
- Information Technology: 2,359,000
- Nuclear: 86,000
- Oil and Natural Gas: 240,000
- Postal and Shipping: 71,000
- Transportation: 2,786,000
- Water and Wastewater: 607,000

TOTAL: 26,497,445



Notes:

a. Numbers include Tier 1, Tier 2, and Tier 3 "essential" employees.

b. State and local government numbers removed from gross and priority workforce numbers.

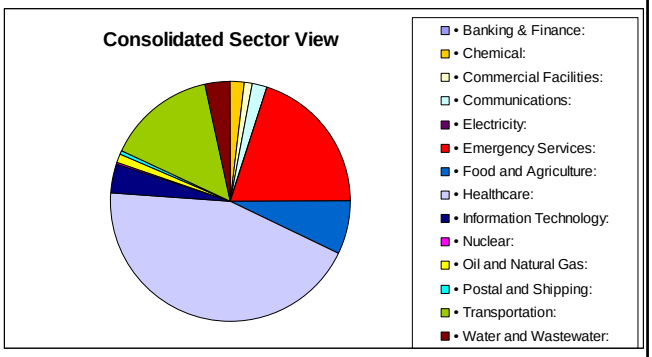
c. Does not include numbers of critical workers from the Wholesale Clearing and Settlement Services sub-sector. The Department of Treasury will provide DHS with these proprietary numbers.

Question #4 (cont.)
Sector Detail: All Sectors, Tier 1 Only

Critical Employees: Tier 1 Only

- Banking & Finance: *Proprietary*
- Chemical: 373,000
- Commercial Facilities: 179,600
- Communications: 396,097
- Electricity: 5,000
- Emergency Services: 3,708,592
- Food and Agriculture: 1,363,000
- Healthcare: 8,198,059
- Information Technology: 692,800
- Nuclear: 86,000
- Oil and Natural Gas: 208,000
- Postal and Shipping: 71,000
- Transportation: 2,786,000
- Water and Wastewater: 607,000

TOTAL: 18,676,148



Notes:

a. Numbers include Tier 1 "essential" employees only.

b. Does not include numbers of critical workers from the Wholesale Clearing and Settlement Services sub-sector. The Treasury Department will provide DHS with these proprietary numbers.

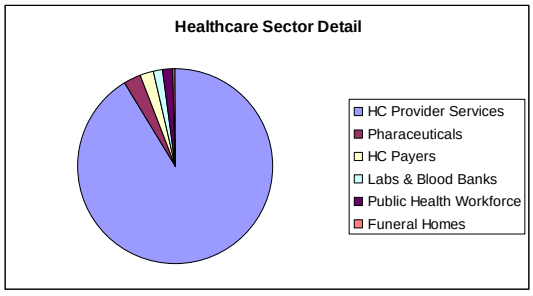
c. State and local government numbers removed from gross and priority workforce numbers.

Question #4 (cont.)
Sector Detail: Healthcare Example

Critical Employee Work Groups

- HC Providers & Services: 7,483,000
- Pharmaceuticals: 231,000
- HC Payers: 179,000
- Public Health Workforce: 150,000
- Labs & Blood Banks: 142,000
- Funeral Homes: 37,200

TOTAL: 8,198,059



Notes:

•As a point of reference, Appendix D of the HHS Pandemic Influenza Plan identified 8-9 million medical workers in "Tier 1 Sub-tier A."

•The Healthcare sector numbers represent direct care, but does not include medical material production and distribution, business-based occupational health, or retail pharmacies. These sub-sectors still need to be addressed.

Question #4 (cont.)

Sector Detail: Healthcare Example

Critical Good/Service	Critical Employee Group(s)	Critical/ Gross #	Diminished Impact	Comments
Healthcare services	Medical Doctors	442,000/ 775,000	Inability to treat patients	Incl ED; Trauma; Anesthesia; Resp;
	Nurses	1.74M/ 2.9M	Inability to treat patients	Incl all registered nursing categories
	Physician assistants	/63,400	Inability to treat patients	Incl hosp and office PA's
	Clinical technicians	900K/ 1.5M	Inability to treat patients	Incl Resp Thrpy; CV Tch; Rad Tch; Pharm;
	Clinical support staff	960,000/1.6M	Inability to conduct healthcare services spt	Incl all non-clinical NAICS
	Medical records	80,300/160,500	Inability to mng data archive	Does not incl transcriptions
	Medical assistants	229,000/382,000	Inability to spt clin ops	
	Medical equipment spec's	18,100/90,500	Inability to deploy and/or repair medical devices	High % of gross # employed in sales/support
	Medical scientists	7,370/73,700	Inability to conduct R&D	High % in non-HC svcs R&D
	Medical secretaries	114,000/381,000	Inability to admin ops	High % in non-HC svcs
	Medical transcriptionists	54,200/90,400	Inability to record med data	
Emergency Svcs	EMT and Paramedics	557,000/929,000	Inability to transport/resp	Incl all EMT categories

Question #4 (cont.)

Sector Detail: Healthcare Example

Critical Good/Service	Critical Employee Group(s)	Critical/ Gross #	Diminished Impact	Notes
Pharmaceutical	Pharmacists	30.850/51,430	Inability to distro meds	
	Pharmacy Technicians	28,104/46,840	Inability to distro meds	
	Pharmaceutical R&D&D	172,000/287,000	Inability to dev pharma	Incl all NAICS 325,400
Funeral Homes	Funeral home staff	37,200/62,000	Inability to addr deceased	
Labs and Blood Banks	Clinical lab and blood staff	142,000/236,000	Inability to conduct lab and blood bank ops	Incl hosp and non-hsp lab
Payers	General Management	4,400/44,000	Inability to insure	
	Business and fin operations	12,300/123,000	Inability to insure	
	Computer operations	2,940/29,400	Inability to insure	
	Life sciences	1,500/3,000	Inability to insure	
	Community and social service	150/300	Inability to insure	
	Healthcare practitioners	9,000/18,000	Inability to insure	
	Healthcare support	105/210	Inability to insure	
	Office and admin support	148,500/297,000	Inability to insure	

Question #5 – Initial Recommendations

Building a Structure for Communication and Dissemination of Resources

- **Communications**
  - Pre-define, to the greatest extent possible, a consistent pandemic communications plan covering the entire pandemic episode; tailor communications to specific target audiences.
  - Develop and pre-position, to the greatest extent possible, communications in all distribution channels, including radio, television, telephone, print, and online media.
  - Engage the private sector to augment the distribution of communications to the critical workforce; rehearse communication.
  - Refine communications plans, processes, and success metrics through series of response exercises.

Question #5 – Initial Recommendations

Building a Structure for Communication and Dissemination of Resources

- **Dissemination**
  - Continue developing clearly-defined vaccine/anti-viral distribution strategy.
    - Consider alternative distribution methods that engage private sector in distributing to in-scope critical workforce.
  - Clearly define response and containment roles and responsibilities.
    - Better define response timelines and milestones.
  - Continue educating all stakeholders on plans, process, and priorities.
  - Develop mechanism to clearly identify priority workforce groups.
  - Engage appropriate resources to ensure adherence to distribution strategy and the economical use of limited vaccine and anti-viral resources.
    - Identify, collect and report success metrics.

Question #6 – Initial Recommendations

Identifying Principles for Effective Implementation by DHS and HHS

- Pillar #1: Preparedness and communication
  - *Clearly align preparedness and response plans, communications, exercises, investments, and support activities around sustaining critical workforce during pandemic influenza event.*
  - Continue data gathering, analysis, reporting, and open review.
  - More clearly define roles and responsibilities across all stakeholders in both the public and private sectors.
  - Continue developing and refining preparedness and response plans.
  - Continue engaging private sector in public sector planning and response exercises.

Question #6 – Initial Recommendations

Identifying Principles for Effective Implementation by DHS and HHS

- Pillar #2: Surveillance and detection
  - Better engage key elements of the private sector in proactive surveillance and monitoring activities, including:
    - Extending surveillance to include occupational health professionals;
    - Engaging international components of US corporations in global bio-data collection efforts;
    - Supplementing surveillance technology investments, both acquisition, monitoring and response, to increase threat visibility and geographic coverage; and
    - Engaging non-traditional data acquisition and management resources within the commercial workforce in surveillance, collection, and analysis.

Question #6 – Initial Recommendations

Identifying Principles for Effective Implementation by DHS and HHS

- Pillar #3: Response and containment
  - Develop clearly defined vaccine and anti-viral distribution strategy to ensure deployment as planned.
    - Consider alternative distribution methods that engage private sector in directly distributing to in-scope critical workforce .
  - Clearly define response and containment roles and responsibilities.
    - Better define response timelines and milestones.
  - Educate all stakeholders on plans, process, and priorities.
  - Develop mechanism to clearly identify priority workforce groups.
  - Engage appropriate resources to ensure adherence to distribution strategy and the economical use of limited vaccine and anti-viral resources.
    - Identify, collect and report success metrics.

NOTE: Recommendations parallel Question #5, part-2, "Dissemination of Resources."

Additional Questions to Consider

- Foreign workers and the U.S. Critical Infrastructure (CI):
  - Study to what extent do we address international foreign workers who are central to US CI operations
- Government willingness to underwrite key components of financial infrastructure:
  - Research and report on the potential impact on gross numbers in critical priority groups across multiple sectors when government underwrites some transactions
- Competing strategies on priorities:
  - Address key metropolitan areas versus key components of critical infrastructure
  - Address at-risk populations versus critical good/service producers
- Contract resources and FTE's:
  - Recognize that significant numbers of contract resources identified as critical to sustained operations (e.g. ATM provisioning, Nuclear temp labor, etc.) not accounted for in current study

Additional Questions to Consider (cont.)

- Regulatory relief:
  - Study potential for relief from some regulatory burdens and potential decrease number of workers identified in Tier-1
- Family member impact:
  - Continue to investigate family member care, containment impact on the critical worker and economical/efficient use of limited vaccine/anti-viral supplies
- High potential that some resources are double-counted, for example public/private/volunteer EMS; non-practicing MDs; and Federal, State, county, city, and contract law enforcement, etc.
- Impact of potential containment strategies (e.g. closing of U.S. borders or closing of state borders) on organizations and their operations?
  - Workforce management, transportation, etc.

Final Thoughts

- Existing Federal and State plan priorities include:
  - Vaccine and anti-viral manufacturing
  - High-risk persons
    - Over 65 with 1 or more high risk conditions
    - 6 months to 65 years with 2 or more high risk conditions
    - Persons older than 6 months with history of hospitalization for flu or high risk conditions
    - Pregnant women
    - Household contacts with severely immuno-depressed persons without vaccination
    - Household contact with children younger than 6 months
  - Public health emergency workers
  - Key government leaders
  - Healthy people over 65 years
  - 6 months to 65 years with 1 high risk condition

Final Thoughts (cont.)

- NIAC prioritization focus differs from existing plans. Focus on:
  - Maintain national and homeland security
  - Ensure economic survival
  - Maintain public health and welfare
  - Identify and address critical inter-dependencies
- Suggest that resolution method be developed to determine:
  - Federal/state prioritization method priority vs. NIAC recommended priority
  - Distribution methods: direct to private sector vs. direct to public sector entities (i.e. state)
- Forum be developed to identify, quantify, and qualify potential prioritization and distribution methods and channels.

Discussion

Questions?

Appendices

Question #4

Banking & Finance Sector Workforce Data

- **Tier 1 signifies those workers deemed most essential toward continued business operations**
- **Tier 2 represents the next level of criticality**
- **Tier 3 includes those essential, but not *as essential* employees**

	Critical Worker Category	Critical Worker Numbers
Tier 1	• Wholesale Clearing & Settlement Services	• To be provided by Treasury
Tier 2	• Cash Distribution and Operations	342,000
Tier 3	• Electronic Payments	212,000
Total Critical Employees		**554,000**
Total Employees in Sector (est.)		**6,131,500**

Source: Financial Services Sector Coordinating Council; survey responses; BLS statistics, expert opinion.

Question #4

Chemical Sector Workforce Data

- **Tier 1 signifies those workers deemed most essential toward continued business operations**
- **Tier 2 represents the next level of criticality**
- **Tier 3 includes those essential, but not *as essential* employees**

	Critical Worker Category	Critical Worker Numbers
Tier 1	Production: Basic Chem Resin, Rubber, Fiber Paint and Adhesives Pesticides, fertilizer, agriculture	373,000
Tier 2		
Total Critical Employees		**373,000**
Total Employees in Sector (est.)		**875,630**

Source: BLS statistics, expert opinion.

Question #4

Commercial Facilities Sector Workforce Data

- **Tier 1 signifies those workers deemed most essential toward continued business operations**
- **Tier 2 represents the next level of criticality**
- **Tier 3 includes those essential, but not *as essential* employees**

	Critical Worker Category	Critical Worker Numbers
Tier 1	• Service occupations, management, maintenance, security, admin	179,600
Tier 2		
Tier 3		
Total Critical Employees		**179,600**
Total Employees in Sector (est.)		**1,800,000**

Source: BLS statistics

Question #4

Communications Sector Workforce Data

- **Tier 1 signifies those workers deemed most essential toward continued business operations**
- **Tier 2 represents the next level of criticality**
- **Tier 3 includes those essential, but not *as essential* employees**

	Critical Worker Category	Critical Worker Numbers
Tier 1	• Professional services, installation and service support • 30% of workforce	398,097
Tier 2	• Professional services, installation and service support • 30% of workforce	265,398
Tier 3	• 10% of workforce, "Feeder" Group	132,699
Total Critical Employees		**796,194**
Total Employees in Sector (est.)		**1,326,990**

Source: Communications Sector Coordinating Council; survey responses; BLS statistics, expert opinion. Augmented by data from NSTAC
Note: Numbers do not reflect critical workers in communications manufacturing sub-sector.

Question #4

Electricity Sector Workforce Data

- **Tier 1 signifies those workers deemed most essential toward continued business operations**
- **Tier 2 represents the next level of criticality**
- **Tier 3 includes those essential, but not *as essential* employees**

	Critical Worker Category	Critical Worker Numbers
Tier 1	• Grid Operators (national electric grid)	5,000
Tier 2	• Generating Plant Operators	20,000
Tier 3	• Maintenance & Repair Technicians – • IT, Line, SCADA, Substation	200,000
Total Critical Employees		**225,000**
Total Employees in Sector (est.)		**1,500,000**

Source: Electric Sector Coordinating Council; survey responses; NERC consolidated response, BLS statistics, expert opinion.

Question #4

Emergency Services Sector Workforce Data

- **Tier 1 signifies those workers deemed most essential toward continued business operations**
- **Tier 2 represents the next level of criticality**
- **Tier 3 includes those essential, but not *as essential* employees**

	Critical Worker Category	Critical Worker Numbers
Tier 1	• Fire • Police, Sheriffs • EMT & Paramedics • Emergency Management Agency personnel • Correctional facilities personnel	3,708,592
Tier 2		
Tier 3		
Total Critical Employees		**3,708,592**
Total Employees in Sector (est.)		**4,495,619[a]**

Source: According to IACP, there are 633,535 sworn police officers in the U.S.; according to USFA, there are 1,100,750 firefighters in the U.S. (career: 305,150, volunteer: 795,600); According to American Correctional Association, there are 1,106,023 State and local personnel. Emergency Services SCC; Expert Opinion

Question #4

Food & Agriculture Sector Workforce Data

- **Tier 1 signifies those workers deemed most essential toward continued business operations**
- **Tier 2 represents the next level of criticality**
- **Tier 3 includes those essential, but not *as essential* employees**

	Critical Worker Category	Critical Worker Numbers
Tier 1	• Production: Animal, bakery, fruit/vegetable, other, dairy, sugar, grain	1,363,000
Tier 2	• Retail	4,816,000
Tier 3	• Production: Sugar, animal foods	135,000
Total Critical Employees		**6,314,000**
Total Employees in Sector (est.)		**22,072,000**

Source: Food and Ag Sector Coordinating Council; survey responses; BLS statistics, expert opinion.

Question #4

Healthcare & Public Health Sector Workforce Data

- **Tier 1 signifies those workers deemed most essential toward continued business operations**
- **Tier 2 represents the next level of criticality**
- **Tier 3 includes those essential, but not *as essential* employees**

	Critical Worker Category	Critical Worker Numbers
Tier 1	• Providers, payers, pharma's, lab, blood banks	8,048,059
Tier 2		
Tier 3		
Total Critical Employees		8,048,059
Total Employees in Sector (est.)		**13,062,000**

Source: CDC and HHS studies; survey responses; BLS statistics, expert opinion.

Question #4

Information Technology Sector Workforce Data

- **Tier 1 signifies those workers deemed most essential toward continued business operations**
- **Tier 2 represents the next level of criticality**
- **Tier 3 includes those essential, but not *as essential* employees**

	Critical Worker Category	Critical Worker Numbers
Tier 1	• IT Services support	692,800
Tier 2		
Tier 3	• Hardware and software production	1,666,000
Total Critical Employees		**2,358,800**
Total Employees in Sector (est.)		**8,494,000**

Source: IT Sector Coordinating Council; survey responses; BLS statistics, expert opinion.

Question #4

Nuclear Sector Workforce Data

- **Tier 1 signifies those workers deemed most essential toward continued business operations**
- **Tier 2 represents the next level of criticality**
- **Tier 3 includes those essential, but not *as essential* employees**

	Critical Worker Category	Critical Worker Numbers
Tier 1	• Operations • Radio Isotope Manufacturers • Radio isotope pharmacy personnel	37,000
Tier 2	• Operations support	10,000
Tier 3	• Seasonal Contractors	39,000
Total Critical Employees		**86,000**
Total Employees in Sector (est.)		**172,000**

Source: Nuclear Sector Coordinating Council; survey responses; BLS statistics, expert opinion.
Note: The Nuclear Sector considers all three tiers of employees to be equally critical.

Question #4

Oil & Natural Gas Sector Workforce Data

- **Tier 1 signifies those workers deemed most essential toward continued business operations**
- **Tier 2 represents the next level of criticality**
- **Tier 3 includes those essential, but not *as essential* employees**

	Critical Worker Category	Critical Worker Numbers
Tier 1	• Production: oil and natural gas	208,000
Tier 2	• Transportation	32,000
Tier 3		
Total Critical Employees		**240,000**
Total Employees in Sector (est.)		**1,347,110[a]**

Source: BLS statistics, survey response, expert opinion.

Question #4

Postal & Shipping Sector Workforce Data

- **Tier 1 signifies those workers deemed most essential toward continued business operations**
- **Tier 2 represents the next level of criticality**
- **Tier 3 includes those essential, but not *as essential* employees**

	Critical Worker Category	Critical Worker Numbers
Tier 1	• Operations: transportation, business operations, engineering, security, admin, maintenance	71,000
Tier 2		
Tier 3		
Total Critical Employees		**71,000**
Total Employees in Sector (est.)		**799,000**

Source: BLS statistics

Question #4

Transportation Sector Workforce Data

- **Tier 1 signifies those workers deemed most essential toward continued business operations**
- **Tier 2 represents the next level of criticality**
- **Tier 3 includes those essential, but not *as essential* employees**

	Critical Worker Category	Critical Worker Numbers
Tier 1	• Operations: Air, rail, water, trucking, warehousing	2,786,000
Tier 2		
Tier 3		
Total Critical Employees		**2,786,000**
Total Employees in Sector (est.)		**5,131,000**

Source: BLS statistics; Air Transportation survey; expert opinion.

Question #4

Water & Wastewater Management Sector Workforce Data

- **Tier 1 signifies those workers deemed most essential toward continued business operations**
- **Tier 2 represents the next level of criticality**
- **Tier 3 includes those essential, but not *as essential* employees**

	Critical Worker Category	Critical Worker Numbers
Tier 1	• Drinking water and wastewater plant managers and operators	607,000
Tier 2		
Tier 3		
Total Critical Employees		**607,000**
Total Employees in Sector (est.)		**1,480,000**

Source: Water Sector Coordinating Council; Survey responses; BLS data, expert opinion.

ATTACHMENT B

The Convergence of Physical and Cyber Technologies and Related Security Management Challenges

National Infrastructure Advisory Council (NIAC)

Convergence Working Group

Status Report
October 10, 2006

George H. Conrades
Executive Chairman
Akamai Technologies

Greg Peters
Managing Partner
Collective IQ

Margaret Grayson
President, Grayson and Associates

Overview

- Purpose
- Status of *Next Steps* from Last Meeting
- Timeline
- Actions
- Directional Recommendations
- Next Steps

Purpose

- Mission: The Convergence Study Group will investigate important questions and make recommendations regarding the protection of SCADA and Process Control Systems from cyber threats.

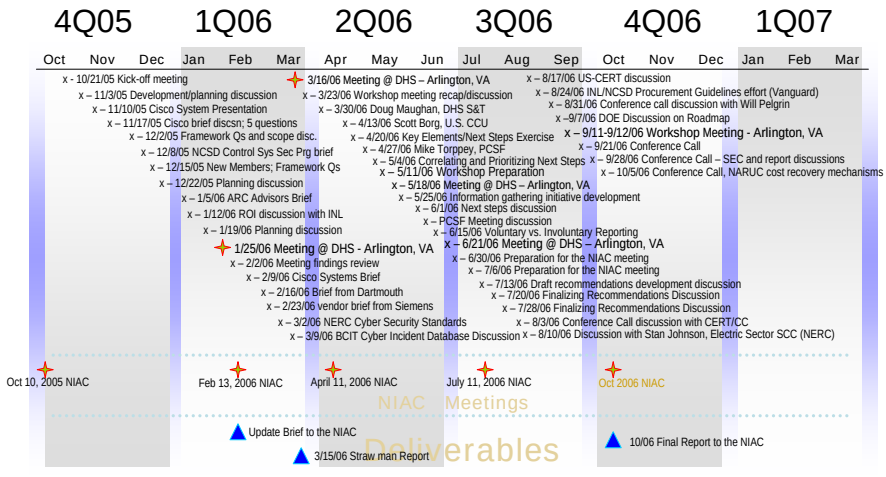
Process: The Five Framework Questions

- ***Security as an Enabler*** **-** How do we position Cyber Security as a contributor and an enabler to achieving reliability, availability and safety goals in the management of SCADA and Process Control Systems?
- ***Market Drivers*** **-** What are the market drivers required to gain industry attention and commitment to research and product development?
- ***Executive Leadership Awareness*** **-** How do we best generate executive leadership awareness to assist in creating a culture and environment that values the protection of SCADA and Process Control Systems from cyber threats?
- ***Federal Government Leadership Priorities*** **-** What are the appropriate Federal Government leadership roles and priorities in identifying threats, vulnerabilities, risks and solutions?
- ***Improving Information Sharing*** **-** What are the obstacles and recommendations for improving information sharing about Process Control Systems and SCADA threats, vulnerabilities, risks and solutions?

Status of *Next Steps* from Last Meeting

- ✓ Investigated outstanding key elements, developed two more directional recommendations
- ✓ Providing Malcolm Baldridge Award board of overseers appropriate criteria for control systems cyber security to increase awareness of cyber security threat to control systems
- ✓ Collected input from executives and subject matter experts to refine directional recommendations
- ❑ Validated and strengthened recommendations before finalizing
- ❑ Drafted the final report incorporating additional information underlying actionable recommendations for a Final Report to be submitted to the NIAC for the January meeting

Time Line



Actions

- Held 13 more (total of 41 to date) weekly conference call discussions with subject matter experts to validate the findings and potential recommendations
- Held 4th face-to-face workshop to develop the draft findings and recommendations.
- Developed draft findings and draft report

Directional Recommendations

- **Security as an Enabler:**

  Executive leadership awareness and information sharing are critical

- **Market Drivers:**

  Existing market drivers insufficient to achieve industry attention
  - *Suggest NIAC Best Practices for Government framework.*

Directional Recommendations

- **Executive Leadership Awareness:**
  Critical to success
  - Need to communicate cyber threat to executive leaders
  - DHS should work through Sector Coordinating Councils
  - Suggest using risk self-discovery approach developed by US Cyber Consequences Unit

Directional Recommendations

- **Government Leadership:**
  Dynamic nature of threat demands integrated coordination and planning
  - Collaborate with Malcolm Baldridge Award program
  - Base federal funding for R&D on Cyber Security and Information Assurance Interagency Working Group (CSIA IWG) priorities
  - Increase focus on and funding for DHS's Control Systems Security Program (CSSP) security tools
  - Federal government should use the *Procurement Language for Control Systems Security* document when applicable

Directional Recommendations

- **To Improve information sharing:**
  - Use Carnegie Mellon's CERT Coordination Center to collect, protect, and disseminate cyber incident data
  - Resource CERT/CC training and engineering consulting services to include SCADA and Process Control Systems
  - Need Intelligence Community threat assessment on cyber threat to SCADA and Process Control Systems for critical infrastructure owners and operators
  - Integrate information on control systems cyber threats into the Information Sharing Environment (ISE)

Next Steps

- Investigate opportunities for cross sector applicability of the recommendations to manage the risks of convergence of cyber/physical control systems environments
- Complete documentation of findings and recommendations, including some further discussions with affected agencies and entities
- Further refine directional recommendations as actionable, measurable and accountable
- Finalize Report and submit to the NIAC

Discussion

- Questions?