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U.S. DEPARTMENT OF HOMELAND SECURITY

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COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION

UNITED STATES SENATE

The United States Coast Guard's Deepwater Program



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Good afternoon, Chairman Cantwell and Members of the Subcommittee. I am Richard L. Skinner, Inspector General for the Department of Homeland Security (DHS). Thank you for the opportunity to discuss the status of the U.S. Coast Guard's Deepwater Program.

My testimony today will address the broader contract and program management challenges associated with the Deepwater Program. We will also address how these challenges have impacted specific Deepwater assets, including the modernization of the 110/123-foot Island Class cutters; the National Security Cutter, the upgrades to the Coast Guard's Command, Control, Communication, Computers, Intelligence, Surveillance and Reconnaissance system; the re-engineering of the HH-65 helicopter; and the acquisition of the Fast Response Cutter.

Deepwater Program

The Integrated Deepwater System Program (Deepwater) is a \$24 billion, 25-year acquisition program designed to replace, modernize, and sustain the Coast Guard's aging and deteriorating fleet of ships and aircraft, providing a deepwater-capable fleet for 40 years. The Deepwater acquisition strategy is a non-traditional approach by which private industry was asked to not only develop and propose an optimal system-of-systems mix of assets, infrastructure, information systems, and people solution designed to accomplish all of the Coast Guard's Deepwater missions, but also to provide the assets, the systems integration, integrated logistics support, and the program management. Under a more traditional acquisition strategy, the government would have separately contracted for each major activity or asset involved, such as cutters, aircraft, their logistics support, communications equipment, systems integration, and program management support.

In June 2002, the Coast Guard awarded Integrated Coast Guard Systems (ICGS) with a 5-year contract to serve as the Deepwater systems integrator. The current base contract expires in June 2007 and the Coast Guard may authorize up to five additional 5-year award terms. In May 2006, the Coast Guard announced its decision to award ICGS an extension of the Deepwater contract for 43 out of a possible 60 months for the next award term beginning in June 2007. ICGS is a joint venture of Northrop Grumman and Lockheed Martin. The 2002 award decision followed a multiyear competitive phase where two other industry teams vied with ICGS.

Deepwater Program Management and Oversight

We have completed audits of the 110-foot/123-foot Modernization Project; the National Security Cutter, the information technology systems; and the re-engineering of the HH-65 helicopters. Common themes and risks emerged from these audits, primarily the dominant influence of expediency, flawed contract terms and conditions, poorly defined performance requirements, and inadequate management and technical oversight. These deficiencies contributed to schedule delays, cost increases, and asset designs that failed to meet minimum Deepwater performance requirements.

Lead Systems Integrator Approach

The route the Coast Guard took to outsource program management to the systems integrator has presented challenges in implementation. The Deepwater contract essentially empowered the contractor with authority for decision-making. Therefore, the Coast Guard was reluctant to exercise a sufficient degree of authority to influence the design and production of its own assets. Specifically, under the contract ICGS was the Systems Integrator and assigned full technical authority over all asset design and configuration decisions; while the Coast Guard's technical role was limited to that of an expert "advisor." However, there is no contractual requirement that the Systems Integrator accept or act upon the Coast Guard's technical advice, regardless of its proven validity. Furthermore, there are no contract provisions ensuring government involvement into subcontract management and "make or buy" decisions. The systems integrator decides who is the source of the supply. Also, as the primary management tool for the Coast Guard to contribute its input on the development of Deepwater assets, the effectiveness of the contractor-led Integrated Product Teams (IPTs) in resolving the Coast Guard's technical concerns has been called into question by both the GAO and my office.

Contractor Accountability

Our reviews have raised concerns with the definition and clarity of operational requirements, contract requirements and performance specifications, and contractual obligations. For example, in our report of the NSC, we reported the Coast Guard and the American Bureau of Shipping (ABS) jointly developed standards that would govern the design, construction, and certification of all cutters acquired under the Deepwater Program. These standards were intended to ensure that competing industry teams developed proposals that met the Coast Guard's unique performance requirements. Prior to the Phase 2 contract award, the Coast Guard provided these design standards to the competing industry teams. Based on their feedback, the Coast Guard converted the majority of the standards (85% of the 1,175 standards) to guidance and permitted the industry teams to select their own alternative standards. Without a contractual mechanism in place to ensure that those alternative standards met or exceeded the original guidance standards, the competing teams were allowed to select cutter design criteria.

Additionally, the Deepwater contract gives the Systems Integrator the authority to make all asset design and configuration decisions necessary to meet system performance requirements. This condition allowed ICGS to deviate significantly from a set of cutter design standards originally developed to support the Coast Guard's unique mission requirements, and ICGS was further permitted to self-certify compliance with those design standards. As a result, the Coast Guard gave ICGS wide latitude to develop and validate the design of its Deepwater cutters, including the NSC.

Deepwater Performance Requirements Are Ill-Defined

A lack of clarity in the Deepwater contract's terms and conditions have also compromised the Coast Guard's ability to hold the contractor accountable by creating situations where competing interpretations of key provisions exist. For example, the performance specifications associated with upgrading the information systems on the Coast Guard's 123' Island Class Patrol Boats did not have a clearly defined expected level of performance. Also, in our review of the HITRON lease, we determined that a similar lack of clarity in the asset's contractual performance requirements challenged the Coast Guard's ability to effectively assess contractor performance. On the NSC acquisition, the cutter's performance specifications were so poorly worded that there were major disagreements within the Coast Guard as to what the NSC's performance capabilities should actually be.

Deepwater Cost Increases

The cost of NSCs 1 and 2 is expected to increase well beyond the current \$775 million estimate, as this figure does not include a \$302 million Request for Equitable Adjustment (REA) submitted to the Coast Guard by ICGS on November 21, 2005. The REA represents ICGS's re-pricing of all work associated with the production and deployment of NSCs 1 and 2 caused by adjustments to the cutters' respective implementation schedules as of January 31, 2005. The Coast Guard and ICGS are currently engaged in negotiations over the final cost of the current REA, although ICGS has also indicated its intention to submit additional REAs for adjusted work schedules impacting future NSCs, including the additional cost of delays caused by Hurricane Katrina.

The current \$775 million estimate also does not include the cost of structural modifications to be made to the NSC as a result of its known design deficiencies. In addition, future REAs and the cost of modifications to correct or mitigate the cutter's existing design deficiencies could add hundreds of millions of dollars to the total NSC acquisition cost. We remain concerned that these and other cost increases could result in the Coast Guard acquiring fewer NSCs or other air and surface assets under the Deepwater contract.

Impact on Coast Guard Operational Capabilities -- Short and Long Term

The Deepwater record of accomplishment has been disappointing to date. For example, while the re-engineering of the HH-65 Bravo helicopters has resulted in an aircraft with significantly improved capabilities, the program has experienced schedule delays and cost increases. For example, the delivery schedule calls for the HH-65 re-engineering project to be completed by November 2007 or 16 months beyond the Commandant's original July 2006 deadline. Extending the delivery schedule has exposed HH-65B aircrews to additional risk due to the tendency of the aircraft to experience loss of power mishaps. It also delays the replacement of the eight Airborne Use of Force-equipped MH-68 helicopters that are being leased to perform the Helicopter Interdiction (HITRON) mission at a cost in excess of \$20 million per year.

There are also problems with Coast Guard's acquisition of the Vertical take-off and landing unmanned aerial vehicle (VUAV). VUAVs have the potential to provide the Coast Guard flight-deck-equipped cutters with air surveillance, detection, classification, and identification capabilities. Currently, the VUAV acquisition is over budget and more than 10 months behind schedule. The Commandant of the Coast Guard recently testified that the VUAV acquisition was under review. The Commandant indicated that the Coast Guard Research and Development Center is conducting a study and will provide recommendations for the way ahead with the VUAV. A decision by the Coast Guard to stop work on the VUAV project would significantly impact the operational capability of the NSC and OPC by limiting their ability to provide long-range surveillance away from the parent cutter. The Coast Guard's Revised Deepwater Implementation Plan, 2005 calls for the acquisition of 45 VUAVs at a total cost of approximately \$503.3 million. As of December 31, 2006, Coast Guard had obligated \$108.4 million (73%) of the \$147.7 million funded for the project.

The increased cost, schedule delays, and structural design problems associated with the 123-foot patrol boat and the FRC have further exacerbated the Coast Guard's patrol boat operational hour and capability gap. The Coast Guard is attempting to mitigate the problem by re-negotiating an agreement with the U.S. Navy to continue the operation of the 179-foot "Cyclone" class patrol boats, and to extend the operational capability of the 110-foot Island Class fleet through the use of multiple crews. While the increased operations tempo this will help in the short term, it will also increase the wear and tear on these aging patrol boats in the long term.

The structural design issues associated with the NSC could have the greatest impact on Coast Guard operational capabilities in both the near and long term. This is due to cost increases that far exceed the cost of inflation even when the post 9/11 engineering change proposals and the costs increases associated with hurricane Katrina are left out of the equation. These cost increases are largely due to: (1) existing and future Requests for Equitable adjustment that the Coast Guard expects to receive from ICGS; (2) the cost of NSC "structural enhancements," the number, type, scope, and cost of which have yet to be determined; and (3) the schedule delays and lost operational capability, that are expected during the modification to NSCs 1-8.

Summary of Concerns Raised in Recent OIG Reports

110/123' Maritime Patrol Boat Modernization Project

We recently completed an inquiry into allegations of a Hotline Complaint alleging that the Coast Guard's 123-foot Island Class Patrol Boats (123' cutter) and short-range prosecutor (prosecutor) contained safety and security vulnerabilities. The 123' cutter is a modification of the 110' Island Class patrol boat and was phased into service as part of the Deepwater project. The original Deepwater plan projected the conversion of fortynine 110' patrol boats into 123' patrol boats as a bridging strategy to meet patrol boat needs until the new Fast Response Cutter was introduced. The prosecutor is a 24' 6" small boat that can be deployed from the National Security Cutter, Fast Response Cutter, and Offshore Patrol Cutter. The revised Deepwater Implementation Plan calls for the acquisition of 91 prosecutors. The complaint said that these vulnerabilities were the result of the contractor's failure to comply with Command, Control, Communications, Computer, Intelligence, Surveillance, and Reconnaissance (C⁴ISR) design requirements as defined in the Deepwater contract. Specifically, the complainant alleged that:

- The safety of the 123' cutter's crew was compromised by the contractor's failure to utilize low smoke cabling;
- The contractor knowingly installed aboard the 123' cutter and prosecutor external C⁴ISR equipment that did not meet specific environmental requirements outlined in the Deepwater contract;
- The cable installed during the upgrade to the cutter's C⁴ISR system represented a security vulnerability; and,
- The video surveillance system installed aboard the 123' cutter does not meet the cutter's physical security requirements.

Aspects of the C⁴ISR equipment installed aboard the 123' cutters do not meet the design standards set forth in the Deepwater contract. Specifically, two of the four areas of concern identified by the complainant were substantiated and are the result of the contractor not complying with the design standards identified in the Deepwater contract. For example, the contractor did not install low smoke cabling aboard the 123' cutter, despite a Deepwater contract requirement that stated, "all shipboard cable added as a result of the modification to the vessel shall be low smoke." The intent of this requirement was to eliminate the polyvinyl chloride jacket encasing the cables, which for years produced toxic fumes and dense smoke during shipboard fire. Additionally, the contractor installed C⁴ISR topside equipment aboard both the 123' cutters and prosecutors, which either did not comply or was not tested to ensure compliance with specific environmental performance requirements outlined in the Deepwater contract.

The remaining two areas of concern identified by the complainant were in technical compliance with the Deepwater contract and deemed acceptable by the Coast Guard. Specifically, while the type of cabling installed during the C⁴ISR system upgrade to the 123' cutter was not high-grade braided cable; the type of cable used met the Coast Guard's minimum-security standards as required by the Deepwater contract. Concerning the installation of the video surveillance system, while the system did not provide 360 degrees of coverage, it met minimum contract requirements.

Our review raises many concerns about Coast Guard's program and technical oversight of the Deepwater contractor responsible for the 110'/123' Modernization Project. For example, the contractor purchased and installed hundreds of non low smoke cables prior to Coast Guard's approval of the Request for Deviation. We are concerned that Coast Guard accepted delivery and operated four 123' cutters without knowing the extent of the hazards associated with the use of the non low smoke cabling. The contractor also purchased and installed hundreds of C⁴ISR topside components aboard the 123' cutter

and prosecutor knowing that they either did not meet contract performance requirements or compliance with the requirements had not been verified. Had Coast Guard reviewed the contractor's self-certification documentation, it would have determined that the contractor had not complied with the stated weather environment standard. For these reasons, we are concerned that similar performance issues could impact the operational effectiveness of C⁴ISR system upgrades recently installed aboard its legacy fleet of cutters.

We recommended that the Coast Guard investigate and address the low smoke cabling and environmental issues associated with the equipment installation identified in the hotline complaint and take steps to prevent similar technical oversight issues from affecting the remaining air, surface, and C⁴ISR assets to be modernized, upgraded, or acquired through the Deepwater Program. The Coast Guard concurred with the principle findings of our report and its recommendations and said it is in the process of implementing corrective measures.

For reasons unrelated to the issues identified during our inquiry, operations of the 123' cutter fleet have been suspended. On November 30, 2006, the Coast Guard announced that it was suspending operations of all eight 123' cutters due to the continuing deformation of the hulls that in some instances resulted in hull breaches. These problems had previously resulted in the implementation of operating restrictions that severely undermined the mission effectiveness of 123' cutter fleet. However, these operating restrictions did not resolve the hull deformation problem but rather mitigated their impact on crew safety. Consequently, the Coast Guard had to consider whether to implement additional operational restrictions until a solution to these problems could be identified and implemented. The Coast Guard determined that additional operating limitations would have further undermined the operational effectiveness of the 123' cutter operations has not yet determined the final disposition of the 123' cutter fleet.

National Security Cutter (NSC)

We recently issued a report on the Coast Guard's acquisition of the National Security Cutter (NSC). The objective of our audit was to determine the extent to which the NSC will meet the cost, schedule, and performance requirements contained in the Deepwater contract.

The NSC, as designed and constructed, will not meet performance specifications described in the original Deepwater contract. Specifically, due to design deficiencies, the NSC's structure provides insufficient fatigue strength to achieve a 30-year service life under Caribbean (General Atlantic) and Gulf of Alaska (North Pacific) sea conditions. To mitigate the effects of these deficiencies, the Coast Guard intends to modify the NSC's design to ensure that the cutters will meet the service and fatigue life requirements

specified in its contract with the systems integrator. However, this decision was made after the Coast Guard authorized production of 2 of the 8 cutters being procured.

The Coast Guard's technical experts first identified and presented their concerns about the NSC's structural design to senior Deepwater Program management in December 2002, but this did not dissuade the Coast Guard from authorizing production of the NSC in June 2004 or from its May 2006 decision to award the systems integrator a contract extension. Due to a lack of adequate documentation, we were unable to ascertain the basis for the decision to proceed with the production of the first two cutters, knowing that there were design flaws.

Since the Deepwater contract was signed in June 2002, the combined cost of NSCs 1 and 2 have increased from \$517 million to approximately \$775 million. These cost increases are largely due to design changes necessary to meet post 9/11 mission requirements and other government costs not included in the original contract price. The \$775 million estimate does not include costs to correct or mitigate the NSC's structural design deficiencies, additional labor and material costs resulting from the effects of Hurricane Katrina, and the4 final cost of the \$302 million Request For Equitable Adjustment (REA) that the Coast Guard is currently negotiating with the systems integrator (ICGS).

NSC 1 was christened on November 11, 2006, and final delivery to the Coast guard is scheduled for August 2007. NSC 2 is currently under construction and is scheduled for delivery during the summer of 2008. As of December 31, 2006, Coast Guard had obligated \$751.6 million (49%) of the \$1,518 million funded for the project.

We made five recommendations to the Coast Guard. Our recommendations are intended to ensure the NSC is capable of fulfilling all performance requirements outlined in the Deepwater contract: and to improve the level of Coast Guard technical oversight and accountability.

Information Technology Systems

We also audited the Coast Guard's efforts to design and implement command, control, communications, computers, intelligence, surveillance, and reconnaissance (C⁴ISR) systems to support the Deepwater Program. We determined that the Coast Guard's efforts to develop its Deepwater C⁴ISR system could be improved. Although Coast Guard officials are involved in high-level Deepwater information technology requirements definition process, they had limited influence over contractor decisions toward meeting these requirements. A lack of discipline in requirements change management processes provided little assurance that the requirements remain up-to-date or effective in meeting program goals. Certification and accreditation of Deepwater C⁴ISR equipment was difficult to achieve, placing systems security and operations at risk. Further, although the Deepwater program had established information technology testing procedures, the contractor did not follow them consistently to ensure the C⁴ISR systems and the assets on which they are installed performed effectively.

Additionally, the Coast Guard faced several challenges to implementing effectively its Deepwater C⁴ISR systems. Due to limited oversight as well as unclear contract requirements, the agency did not ensure that the contractor was making the best decisions toward accomplishing Deepwater IT goals. Insufficient C⁴ISR funding restricted accomplishing the "system-of-systems" objectives that are considered fundamental to Deepwater asset interoperability. Inadequate training and guidance also hindered users from realizing the full potential of the C⁴ISR upgrades. Instituting effective mechanisms for maintaining C⁴ISR equipment have been equally challenging.

We made 9 recommendations to the Coast Guard. Our recommendations are intended to increase agency input and oversight into the requirements definition and to clearly define the management processes used to evaluate and apply changes to the Deepwater C⁴ISR requirements. We also recommended that the Coast Guard increase staffing levels and evaluate its C⁴ISR spending priorities to improve technical and financial oversight over the C⁴ISR acquisition. Finally, we recommended that the Coast Guard takes steps to improve the training and technical support provided to C⁴ISR system users. Coast Guard concurred with all nine recommendations contained in our audit report and is in the process of implementing corrective measures.

Recently, the Coast guard provided an update regarding the progress being made to implement the recommendations contained in our August 2006 report. In their response, the Coast Guard stated that the language contained in the Deepwater contract, including the contract's "award term" criteria, had been revised to further clarify contractor responsibilities for developing Deepwater C⁴ISR systems.

However, the Coast Guard is struggling to provide the funding needed to accomplish system of system objectives and maintain an adequate level of oversight over the Deepwater contractor. For example, during FY 2005, C⁴ISR program managers requested 28 additional staff positions to help with contractor oversight. However, only 5 positions were authorized due to a lack of funding. As a result, the Coast Guard has had to divert management's attention from systems development tasks to the re-planning and re-phasing the work to match the funding constraints and economize in carrying out its program oversight and support activities.

HH-65 Helicopter

We also reviewed the Coast Guard's HH-65 Dolphin helicopter re-engineering project. The review was initiated in response to concerns that the re-engineering requirements specified for the HH-65 helicopter were not sufficient for the needs of the Coast Guard over the Deepwater project time frame. Specifically, the HH-65 was experiencing a sharp increase in the number in-flight loss of power mishaps that jeopardized the safety of HH-65 flight crews. Between October 1, 2003, and August 31, 2004, HH-65 aircrews reported 150 in-flight loss of power mishaps. This was in sharp contrast to the 64 in-flight loss of power mishaps that were reported between FY 2000 and FY 2003. Concerns were also raised about: (1) the capabilities of the Honeywell LTS-101-850 engine; (2) the potential cost, delivery, and operational risks associated with the Coast

Guard's decision to enter into a contract with Integrated Coast Guard Systems (ICGS) to re-engine the HH-65 fleet with Ariel 2C2 engines; and (3) the ICGS proposal not meeting the Coast Guard's desire to have 84 HH-65s re-engineering within a 24-month period, by July 2006, as mandated by the Commandant. In our view, extending the delivery dates unnecessarily exposed HH-65 aircrews to additional risk due to the unprecedented rate in which in-flight loss of power mishaps were occurring.

Our review of the HH-65 re-engineering project determined the replacement of the Honeywell LTS-101-750 engines originally installed aboard the HH-65 helicopter with the Ariel 2C2 engine would resolve the safety and reliability issues that had plagued the HH-65 fleet for much of the past decade. Our report also determined that it would be timelier and more cost-effective to have the re-engineering performed at the Coast Guard Aircraft and Repair Supply center (ARSC) than it would if the Coast Guard placed the responsibility for the re-engineering under the auspices of ICGS. The Coast Guard's Assistant Commandant for Operations made a similar recommendation in May 2004.

ICGS' cost proposal for re-engineering the HH-65 fleet was \$294 million, or \$40 million more than the Coast Guard estimated for re-engineering the aircraft in-house at ARSC. This was a significant cost differential given ICGS' intention to have 83 (87%) of the 95 HH-65s re-engineering at ARSC, the effect these additional expenditures could have on the Coast Guard's ability to sustain and upgrade its legacy aviation assets, and the stated inability of ICGS to re-engine the aircraft within the Commandant's 24 month timeline. To date, 69 re-engineering HH-65s have been delivered to the Coast Guard. The remaining HH-65 helicopters are to be delivered to the Coast Guard by the end of FY 2007. As of December 31, 2006, Coast Guard had obligated \$307 million (89%) of the \$343 million funded for the project.

We made five recommendations to the Coast Guard. Specifically, we recommended the Coast Guard implement the Assistant Commandant for Operations May 2004 recommendation that the HH-65 re-engineering project be taken from ICGS and performed as a government performed contract. We also recommended that the Coast Guard: (1) refurbish additional HH-65 helicopters; (2) expedite the replacement of the MH-68 helicopters operated by it Helicopter Interdiction squadron in Jacksonville; and (3) take the savings from the termination of the HITRON lease to mitigate the costs associated with the maintenance of its legacy aviation assets.

The Coast Guard did not concur with any of the report's recommendations. Their primary rationale being that ICGS minimized the operational, legal, and contract performance risks associated with the re-engineering. The Coast Guard also stated it believed that it received significant benefits from the current ICGS contract that far outweighed the costs of having the Coast Guard manage the project. We did not and do not believe these benefits have been demonstrated in this instance.

The Coast Guard, however, did state in its response that it supported our contention that additional refurbished HH-65s were needed and that the MH-68 helicopters needed to be replaced with AUF-equipped HH-65s as soon as possible. However, in both instances,

the Coast Guard cited a lack of funding as the primary reason for not implementing these recommendations.

Fast Response Cutter

The Fast Response Cutter is intended to be the Coast Guard's maritime security workhorse, patrolling in both coastal and high seas areas. According to the Coast Guard, the FRC can safely and effectively operate in higher sea conditions than its legacy counter part and can remain at sea for up to 7 days, 2 days longer than the Coast Guard's legacy 110-ft cutter. The original 2002 Deepwater implementation plan called for the Coast Guard to take delivery of the first FRCs in 2018. However, because of the suspension of the 123-ft conversion project and deterioration of the remaining 110-foot patrol boats, the FRC project was accelerated to achieve delivery of the first FRCs in 2007, more than 10 years ahead schedule. However, in February 2006, the Coast Guard announced that it was suspending design work on the FRC due to technical issues identified with the hull design. The Coast Guard is currently assessing the suitability of designs in operational service in order to procure a proven patrol boat as an interim solution to address its urgent operational needs until the technical issues associated with the current FRC design are alleviated. We have not yet evaluated the cost, schedule, and performance issues associated with the FRC acquisition. We do know that as of December 31, 2006, Coast Guard had obligated \$49.4 million (24%) of the \$208 million funded for the project to date.

Conclusion

The Coast Guard recognizes these challenges and is taking aggressive action to strengthen program management and oversight—such as technical authority designation; use of independent, third party assessments; consolidation of acquisition activities under one directorate; and redefinition of the contract terms and conditions, including award fee criteria. Furthermore, and most importantly, the Coast Guard is increasing its staffing for the Deepwater program, and reinvigorating its acquisition training and certification processes to ensure that staff have the requisite skills and education needed to manage the program. The Coast Guard is also taking steps to improve the documentation of key Deepwater related decisions. If fully-implemented, these steps should significantly increase the level of management oversight exercised over the air, surface, and C4ISR assets that are acquired or modernized under the Deepwater Program. We look forward to working closely with the Coast Guard to continue the improvement of the efficiency, effectiveness, and economy of the Deepwater Program.

I will conclude by restating that we continue to be highly committed to the oversight of the Deepwater Program and other major acquisitions within the department. We are working with the Coast Guard to identify milestones and due dates in order to assess the most appropriate cycle for reporting the program's progress.

Chairman Cantwell, this concludes my prepared remarks. I would be happy to answer any questions that you or the Subcommittee Members may have.