Opening Remarks
Lt Gen Lester L. Lyles
Director, Ballistic Missile Defense Organization
to the
House Committee on National Security
Subcommittee on Military Research and Development
and
Subcommittee on Military Procurement

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Mr. Chairman and Members of the Committee, it is my privilege to testify with Dr. Kaminski today on the Department's National Missile Defense (NMD) program and budget for Fiscal Year 1998. Specifically, I understand the Committee's keen interest in the funding requirements for the NMD program for both Fiscal Year 1998 and throughout the Future Years Defense Plan (FYDP).

Since Dr. Kaminski's testimony addressed the QDR results, I would like to review the NMD program over the past year to outline for the Committee how significantly we have matured both the architecture and our understanding of the NMD system. These program developments, in turn, helped influence the QDR, as we developed a better understanding of the NMD system architecture, its requirements and costs.

Mr. Chairman, as Dr. Kaminski just outlined, in the past year the NMD program has been transformed from a **technology readiness** effort to a **deployment readiness program**. Since Secretary Perry's 1996 announcement a significant effort has been made to define the specifics of this program and to ensure that the appropriate tools are in hand to effectively implement his direction.

On April 9, 1996, Dr. Kaminski designated NMD as a **major defense acquisition program** to ensure it receives the appropriate level of senior DoD management attention and oversight. In August 1996, the Joint Requirements Oversight Committee (JROC) approved the first Capstone Requirements Document that set the operational requirements the NMD system must meet. Dr. Kaminski authorized BMDO to form a Joint Program Office (JPO) to oversee the NMD program; approved the selection of Brigadier General Joseph Cosumano, United States Army, to be the Program Manager for NMD; and approved the acquisition strategy for the NMD system, which includes the use of a prime contractor to help integrate the overall system.

Indeed, the Committee needs to understand that the important progress we have made in the NMD program during the past year is due in large part to the strong leadership and valuable direction we have received from Dr. Kaminski. Most notably, he fostered the consensus among acquisition experts in the Office of the Secretary of Defense and the Services that allowed progress with both the management and acquisition strategies for NMD. Without his strong support for the NMD program, and his commitment to the joint nature of the program, we would not be as far along as we are today. I can say these words because, first they are true, and second, with his departure from the Pentagon, I don't have to worry about embarrassing him.

On April 1, 1997, we stood up the NMD Joint Program Office. This small organization, led by Brigadier General Cosumano, is solely responsible for executing the NMD "3 plus 3" program. Working with the Services, General Cosumano and his staff will develop the individual system elements, and integrate the overall NMD system. They will pull all this together, leading up to the integrated systems test in 1999.

On April 25, 1997, BMDO awarded two $8 million NMD concept development contracts to industry. The two industry teams will spend the next six months developing proposals for the integrated NMD system by assessing various concepts, design approaches and architectures. Their proposals will each reflect the most promising design approaches to meet the NMD operational requirements. At the end of the six month contract period, we will down-select to one contractor team to be the prime, lead system integration contractor for NMD.

Notwithstanding our accomplishments, we have also experienced some significant delays and setbacks. As the Committee is aware, we were delayed in establishing the JPO management team and embarking on our acquisition strategy by about six months.

More significantly, however, was the failure of the exoatmospheric kinetic kill vehicle (EKV) seeker flight test in January 1997. As I testified earlier this year, we had planned to launch an EKV seeker to observe a set of targets launched aboard a Minuteman missile from Vandenberg AFB, California. While the targets were successfully launched and deployed, the payload launch vehicle which carries the EKV for testing failed to launch.

Fortunately, the EKV seeker and its launch vehicle were not lost in that test. They will be used during the next test opportunity in May 1997. The second of the two EKV seeker flight tests now likely is delayed until January 1998. This delay is due to the time required to fabricate, assemble and test a new target set and target launch vehicle. This failure and its impact on our test program highlights the very high level of schedule risk associated with the NMD program.

Together, the test failure and the delays have left us well behind the "power curve" in executing the program and proceeding as planned.

As the Committee is aware, we are pursuing a fixed, land-based architecture for the NMD system. We have defined a suite of NMD elements consisting of a primary ground-based radar, forward-based X-band radars, a ground-based interceptor, battle management/command, control and communications, upgraded early warning radars, and an Air Force-develop space-based sensor system. These elements will provide the "building blocks" for assembling various system configurations depending upon User requirements, threat origin and complexity, and real world constraints that exist at the time. By having the flexibility to tailor the system's configuration to the specific threat, we optimize system performance and minimize the cost of responding to any one threat.

CHART - NMD Architecture Option (Capability 1)

Shown in this chart is one of the notional architectures we call capability one - it could represent our initial capability that could be deployed in 2003, if required. It would consist of a single site - in this case located at Grand Forks with 20 ground-based interceptors and associated radars - this would give us an initial capability.

CHART - NMD Architecture Option (Capability 2)

In this chart, we deploy what we call capability two. Again, a single site - but with 100 GBIs. Because it would be realized after the deployment of the Space Based Infrared System - Low (SBIRS-Low), it would have additional capability to handle a more complex threat environment.

The shift in program emphasis to deployment readiness has led us to increase our NMD Systems Engineering activities. Hence, we increased our activity in developing operational requirements documents; NMD System and NMD Element Cost Analysis Requirements Documents (CARDs); Deployment Planning and Documentation Requirements; Test and Evaluation Requirements; and other critical acquisition documentation.

Finally, with emphasis on deployment readiness, we used the Systems Requirements Review (SRR) as a formal review process for the NMD program. This greatly increased our understanding of the system's requirements, as well as its projected cost, schedule and performance. These activities ensure we inject realism and rigor into both the planning and execution of the NMD program. They force us to confront the tough issues central to any acquisition program, such as schedule, cost and performance.

As a case in point, the SRR started by BMDO on August 28, 1996 reviewed the requirements flowing down from the National Ballistic Missile Defense Capstone Requirements Document (NBMD CRD) to the NMD System and NMD Elements. NMD system architecture performance was assessed against validated threat scenarios. Through this process, NMD program staff gained great insight into NMD system performance capability under a wide range of stressing threat conditions. Shortfalls in meeting all the requirements in the CRD were addressed and the System and Element requirements and baseline architecture were refined.

When we completed the SRR on April 4, 1997, the final result of that process was a set of NMD System and Element requirements and a baseline architecture that would meet all the NMD CRD requirements, namely, protecting all 50 states against a small number of unsophisticated ballistic missile threats.

These requirements feed additional cost and performance analysis. Our primary objective is to gain insight into dominant NMD System cost drivers and to control NMD System life cycle costs. This important series of studies and analyses are the "homework" we must do to fully understand the NMD system, its performance capabilities, schedule and costs.

As a result of our systems engineering and cost analyses, we now have a better understanding of the RDT&E funding required to develop an NMD System on a highly compressed schedule. We estimate we will require about $400 million to $500 million in additional Fiscal Year 1998 RDT&E funds to execute the NMD program. That money will be spent on:

- **Known shortfalls ($100M)**
- **Previously deferred program content ($85M)**
- **Cost risk reduction ($64M)**
- **Schedule risk reduction ($110M)**
- **Technical risk reduction ($105M)**

Overall, we estimate that up to $2.1 billion above the current budget and POM estimates (FY98 through 03) may be required to maintain the currently defined program and schedule. In short, considering the amount of risk accruing to the program. It is unlikely that we can meet the "3 plus 3" schedule with the currently programmed funds.

As Dr. Kaminski's testimony outlines, the Department had three options regarding NMD funding. In the end, Secretary Cohen decided to maintain the current "3 plus 3" schedule and program. While this will require additional RDT&E resources above the program baseline to reduce risk to a more manageable level, it results in a prudent hedge against the possibility of a long-range missile threat to the U.S. emerging by 2003, and will result in a more executable program.

Even with the increased funding allocated to NMD, **the program remains high risk from a technical and schedule perspective**. Even though no new technology needs to be invented to successfully respond to the NMD challenge, the highly aggressive schedule that the "3 plus 3" strategy requires entails **very high risk**. This short timeline available requires us to structure a very success oriented program.

CHART - Program Evolution

I want to use this chart to show the normal process that a program must go through. As you can see, it would be four phases - this time frame is usually about 12 years. As you are aware, we are trying to accomplish the same goals - a tremendous amount of concurrency in just 6 years. Essentially, the first three years of the NMD program equate to phases 0 and I on the chart. While the last three years will equate to phases II & III. During each subsequent phase, we continually refine costs and requirements and that is what I would like to highlight for you in the remainder of my statement.

During this very short time line, we will be challenged to successfully demonstrate the integration of several key technologies. We must prove that we can successfully engineer and integrate these technologies into the NMD system elements. Then we must prove in end-to-end, integrated systems tests that the overall NMD system can effectively and reliably detect, track, target, and destroy long range ballistic missiles to the User's satisfaction.

Following the successful demonstration of the system, and assuming a decision to deploy, we then will have a short period of time to build and deploy the system.

As an acquisition professional with nearly thirty years of experience in the development and acquisition of defense and aerospace systems, I can assure you this is a very demanding undertaking. The successful integration and demonstration of those technologies **in a very short period of time** is the challenge. Nonetheless, the "3 plus 3" strategy is the correct approach to developing an NMD system because it does challenge us to develop the system before the threat arrives.

BMDO and our Service executing agents, as well as our industry partners, will do everything we can to ensure the successful execution of the program. The defense of the Nation against ballistic missile attack demands that we do nothing less.

Thank you Mr. Chairman, that concludes my statement. I look forward to answering the Committees' questions.