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STATEMENT ON STRATEGIC NUCLEAR FORCES BY DR. WILLIAM J. PERRY, --ETC(U)
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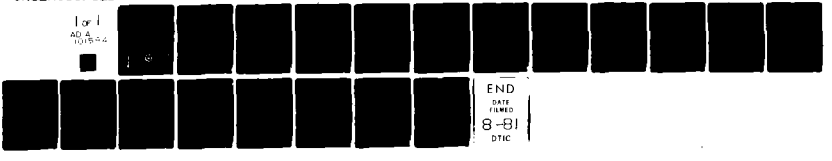

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THE DEPARTMENT OF DEFENSE STATEMENT ON STRATEGIC NUCLEAR FORCES

BY

THE HONORABLE WILLIAM J. PERRY
UNDER SECRETARY OF DEFENSE FOR
RESEARCH AND ENGINEERING

BEFORE THE
ARMED SERVICES COMMITTEE

OF THE
UNITED STATES SENATE
96TH CONGRESS, FIRST SESSION

1 FEBRUARY 1979

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STRATEGIC NUCLEAR FORCES HEARING

SENATE ARMED SERVICES COMMITTEE

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WILLIAM J. PERRY, JR.

OPENING REMARKS

Mr. Chairman:

I am pleased to have with me today General Richard H. Ellis, Commander in Chief of the Strategic Air Command and Director of the Joint Strategic Target Planning Staff, and Vice Admiral C. H. Griffiths, the Deputy Chief of Naval Operations for Submarine Warfare. After my introductory remarks, General Ellis will, from the perspective of both his commands, discuss the current operations of the strategic forces and his assessment of their capability to fulfill current and expected future mission requirements. Admiral Griffiths will discuss the Navy's strategic systems more specifically, and then I will return to present our plans for modernization of the strategic forces.

I would like to start our discussion of the nation's strategic posture today with a few words about the character of the threat which these forces must respond to. Respond is a key word here since the forces which represent our real deterrent are those we would have left if the Soviets were to make a surprise attack. So, in planning our own strategic forces we walk a fine line, not

configuring them to be so threatening to the Soviet Union that we fuel an arms race, or provide an incentive to the Soviets to pre-empt, but at the same time making sure that enough can survive a Soviet attack to provide an effective deterrent. Almost month by month, this task becomes more difficult.

A few comments about the threat to each leg of the TRIAD will set the stage for our more extended discussion which follows. A year ago I reported to this Committee our great concern for the future effectiveness of our ICBM forces--the projection that, by the early to mid-1980s the Soviets could destroy most of our MINUTEMAN missiles with a small fraction of their ICBM force. Our assessments during the past year have made our concern even deeper. When the Soviets complete the MIRV deployment already underway, they will have the capability to destroy virtually all of our MINUTEMAN force and still have a residual ICBM force larger than our MINUTEMAN force was before the strike. The bomber force itself is also potentially subject to a surprise attack (by SLBMs). As for the third element of the TRIAD, we believe that our submarine missile force will remain invulnerable during that period and therefore our deterrence will be preserved. However, this submarine invulnerability cannot be assumed indefinitely nor do we want to base deterrence solely on the submarine force. Therefore, we believe it is necessary to restore the capability of the ICBM and meeting this objective has top priority in our strategic program this year.

The effectiveness of our B-52 forces as presently configured will continue to decline with the continuing build-up in both the size and strength of Soviet air defenses unless we take appropriate counter-

measures. Our principal counter to improve Soviet air defenses, the air-launched cruise missile, is progressing well and our test programs this past year indicate that the ALCM will be highly effective against current Soviet defensive systems and those that we expect to be deployed in the 1980s.

A more serious problem is the pre-launch survivability of our air-breathing force. If we should not deploy a much more survivable ICBM system, the Soviets could concentrate their ICBMs not used in a silo attack and their SLBM forces in a barrage attack against our bombers and cruise missiles to destroy them near their airfields. Eventually--actually in a time which is short on the scale of development and deployment of strategic systems--the survivability of the air-breathing element of the TRIAD could depend on the survivability of our ICBMs.

We do not believe there is a threat to our ballistic missile submarines at sea in the foreseeable future. Nevertheless, we continue to improve our SLBM forces to reduce their vulnerability to ASW. Major improvements underway are replacing the POSEIDON submarine with the TRIDENT submarine which is quieter and therefore harder to detect. We are also replacing the POSEIDON missile (C-3) with the TRIDENT missile (C-4) which has a longer range and therefore allows a larger patrol area. Both of these moves greatly complicate the already difficult ASW task the Soviets are faced with. However, as with our ICBMs, in planning for SLBM forces we must take into account the possibility of rapid deployment of extensive Soviet anti-ballistic missile defenses. While adhering to the SALT I treaty of 1972, the Soviets are conducting

an aggressive ABM research and development program. These efforts could lead to the capability to deploy moderately effective missile defenses within the space of a few years if they decided to abrogate the ABM treaty. Through the combination of alertness in our intelligence community and proper planning in our missile and penetration programs we can guard against such an ABM breakout.

For all of our strategic forces, and particularly for the Command, Control and Communications (C^3) networks which control and support them, we are increasingly concerned with endurance after the beginning of a nuclear war. Recent studies have pointed out that Soviet strategic doctrine does not envision a nuclear war as ending in a matter of hours, but rather, as continuing until one side or the other has gained military ascendancy. Whatever doubts one may have about the realism of such expectations, the response to an attack of this type--and its deterrence--requires long term survivability and operability of both C^3 systems and nuclear strike systems.

I will return to all these subjects in more depth later, following statements by General Ellis and Admiral Griffiths.

STRATEGIC FORCE MODERNIZATION PLAN

The principal policy objective underlying the structure of our strategic nuclear forces is deterrence of a nuclear attack on the United States, our allies, or others whose security is important to us. The TRIAD of nuclear forces composed of SLBMs, ICBMs, and bombers has served us well in the past and I believe there are compelling reasons to continue this solidly based deterrent.

Our plans for the future are to modernize this triad of forces to establish essential equivalence in the face of the buildup of strategic forces in the Soviet Union. This will be accomplished within the anticipated mutual constraints of SALT II. The requirement for modernization of our strategic forces is driven by three factors: force obsolesence, force vulnerability, and force enhancement to maintain essential equivalence.

In dealing with force obsolesence we are confronted with a cycle which in some cases can extend 30 to 40 years from initiation of development until retirement of the system. About ten years of that time is used up just reaching full operational capability, followed by twenty to thirty years of operational life. Our current forces, and some projected to be operational through the 1980s, were originally deployed in the 1950s (B-52) and 1960s through early 1970s (MINUTEMAN, POLARIS, POSEIDON) while the Soviets have maintained a constant flow of new generations of systems into their strategic arsenal over the same time period.

The obsolesence problem is different for each leg of the TRIAD with the SLBM force being the least affected. The deployment of the TRIDENT missile, the introduction into the of the new TRIDENT submarine, and the development of the TRIDENT II missile should carry the SLBM force well into the next century.

The ICBM force has had a pause of about a decade in modernization. The MM II missile began development in 1963 and began deployment in 1965. This missile is already showing signs of deterioration and we can expect by the mid-80s to be faced with the alternative of retiring the force, replacing the force with new missiles, or undertaking an

expensive overhauling of the missiles. The MM III missile which began development in 1965 and deployment in 1970, has some elements common to the MM II. We can expect to have aging problems with it in the late 80s and may be required to replace or overhaul it by 1990. SInce it takes about ten years to bring a new missile to FOC, it is time now to consider the development of a replacement missile for the MINUTEMAN force merely on the basis of obsolesence.

The B-52, which comprises the bulk of our existing bomber forces, was developed in the early 1950s and entered the operational force in 1955. The average age of this aircraft fleet is about 18 years and we project that, structurally, the B-52 could last beyond 1990. The avionics subsystems, however, are a different story. They are outdated in terms of mission capability and are getting to be too expensive to maintain. We are therefore undertaking a major replacement of these components in the near term.

The question still remains, however, what do we do in the 1990 time frame when the B-52 must either undergo major structural and engine changes or be replaced by a new airplane, perhaps with a different or complementary mission. I will discuss this later.

The second requirement driving strategic force modernization is force vulnerability. The Soviets have made major advances in the past five years which will pose an unacceptable threat to our ICBMs by the early to mid 1980s and seriously threaten our bombers by the mid-1980s. Their continued effort in air defense is expected to threaten our current bombers and current cruise missiles somewhat

later. We do not expect a Soviet threat against our SSBNs within the next decade but can project a potential significant ASW problem by the 1990s.

By far the largest strategic force vulnerability problem facing us today is that associated with our ICBMs. This stems primarily from Soviet development of missile accuracy and the projected growth in numbers of their reentry vehicles. When they complete development of their fourth generation ICBMs the Soviets should have several thousand reentry vehicles. They could target two reentry vehicles against each of our 1054 ICBM silos, and still retain the majority of their ICBM reentry vehicles for other purposes.

The effectiveness of a two-on-one attack on our ICBMs depends upon a number of factors. But the most critical factor is the accuracy of the Soviet ICBMs. As the Soviets close the gap in ICBM accuracy, our ICBM force becomes increasingly vulnerable. While there is room for uncertainty in our calculations and estimates, I believe our ICBM force could be seriously threatened by a Soviet two-on-one attack by the early to mid 1980s.

I outlined in my opening statement why it would be dangerous to have to rely on a highly vulnerable ICBM force as part of our deterrent. The major options available to us to reduce ICBM vulnerability include a new missile and missile basing scheme, ballistic missile defense, and a launch-under-attack capability and strategy. Of these, the most straightforward, stable, and enduring solution is the MX missile with a survivable basing mode. Ballistic missile defense is limited

by the ABM treaty, which allows the use of only 100 interceptors. Abandoment of the ABM treaty would introduce a number of new problems, even if it eased our concerns about ICBM vulnerability. We do, however, maintain a high technological level in this capability through our Ballistic Missile Defense program. The technological base resulting from this program may, in the future, provide an enhanced survivability posture for our ICBM force, even in the presence of extensive threats.

We have the technical capability to launch our ICBM force prior to an attack, and we plan to maintain this capability. However, we should not depend on this tactic, since it does not provide for stability in crisis situations, nor does it take account of countermeasures against our warning systems. Nonetheless, we are undertaking to improve our early warning sensors and our ability to correlate warning information to characterize such an attack.

The vulnerability of U. S. bombers is affected by the Soviet SLBM force and by the Soviet air defense capability. For a given number of SLBMs, their effectiveness against our bomber bases is driven primarily by their distance from the target and the trajectory employed. Both of these parameters directly affect the time available from warning to base escape. To address the problem of an increased Soviet SLBM threat, should it develop, we may need to move the bomber bases inland and perhaps increase their number. At present this effort is not warranted. Any new bombers or cruise missile carriers we might develop will have improved hardening to nuclear effects to decrease the time required to escape safely from the base.

To allow more time for base escape we can also improve our warning. Launch of bombers under attack does not present the hair-trigger problem that it does with ICBMs, since bombers can be launched and recalled if the attack does not materialize. As indicated earlier for ICBMs, we plan to expand our on-going programs to better characterize the nature of an attack and improve warning time.

Once the bomber or cruise missile carrier has safely escaped the SLBM attack (and ICBM barrage if that materializes), the next problem is penetration of Soviet dominated air space. The Soviets are continuing to develop a new surface to air missile system, the SA-X-10, which could be used against low altitude penetrating targets. We estimate that the system is not yet operational (as indicated by the "X" in the SA-X-10), but believe it will begin deployment in the near future. To be effective against the force of small, low altitude cruise missiles that we plan to deploy, the Soviets would need to deploy 500-1000 SA-X-10 sites. This would represent a massive investment which would take to the late 80's to complete. The Soviets are also working on look-down/shoot-down technology which will improve their capability to engage at low altitude bombers and cruise missiles that would be lost in the radar ground clutter for their present system. While Soviet technology is considerably behind U. S. technology in this area, we can expect a large scale deployment capability by the late 1980s. To be effective in using a look-down/shoot-down capability, the Soviets would need some means of vectoring fighters to their targets. This could be accomplished with a system like the U. S. AWACS, and we believe the Soviets are developing such a capability though its characteristics are uncertain.

There are several U. S. responses underway to counter these Soviet initiatives in active defense. We are evaluating improvements to present electronic countermeasures systems in the B-52 and FB-111. These actions would improve protection against both surface-to-air missiles and look-down/shoot-down fighters. We are in the process of providing weapons enhancement as we introduce the Air Launched Cruise Missile. The cruise missile currently under development will provide a radar cross section or radar signature which is only $\frac{1}{1000}$ that of the B-52, making the cruise missile very difficult to detect. Improvements now under development, including lightweight ECM, will make later cruise missiles even more difficult to detect. This improved technology will allow us to stay several years ahead of improvements in the Soviet air defense. In addition the cruise missile will fly at very low altitudes, where ground clutter further complicates detection. Finally, a force of several thousand cruise missiles provides great offensive flexibility--flexibility which can be used to concentrate and saturate defenses, making the task of defense planning very difficult. We are also considering cruise missile carrier aircraft which could substantially increase the number of cruise missiles in the future air-breathing force.

While we do not anticipate a serious threat to our SSBNs in the next decade, we must be concerned about a potential ASW breakthrough. Therefore, the TRIDENT SSBN now being produced to replace the POSEIDON force in the mid-80s and beyond has been designed to emphasize ultra-quiet operation to limit detection to relatively short ranges.

At the same time, the TRIDENT I missile has been designed to have ranges in excess of 4,000 nm so the submarine's patrol area is increased by a very large factor over that currently available to POSEIDON SSBNs. This greatly complicates the ASW task and requires the Soviet sensors to have greater detection range than they now have. At the same time, the quietness of TRIDENT will complicate their problem further by driving them to smaller detection ranges. Finally, the submarine has been designed to spend a greater percent of its time at sea so that a bombardment of the bases would catch only about one third of the fleet.

We are continuing to develop the Extremely Low Frequency (ELF) shore to submarine communications system which can alert the SLBM force in a manner that will significantly reduce the opportunities for detection. We are also continuing a broad interdisciplinary program to investigate submarine detection techniques under operational conditions. This program provides a hedge against Soviet breakthroughs and provides for development of countermeasures as required.

The vulnerability of our strategic command, control, and communications (C3) network is as much as concern the vulnerability of the forces themselves. Without an adequately survivable C^3 system, our visible deterrence and our war-fighting capability suffer because we cannot assure ourselves, or the world, that we can gather the information, make the decisions, issue the orders, and execute those orders in consonance with our policy. We must assume that the Soviets would plan to attack those links whose loss would greatly reduce the

effectiveness of our forces. We have studied what the effectiveness of our C^3 system might be under attack conditions and have identified some immediate tasks to be accomplished. These relate to increased communications power in some of our aircraft and overall improvements in satellite communications. Long term actions will be determined as a result of a major study, the objective of which is to develop by mid-79 a comprehensive C^3-Intelligence modernization plan.

The third requirement I have noted for modernization of our strategic forces is force enhancement to maintain essential equivalence. Since 1970, the Soviet Union has embarked on a strategic force modernization program of impressive proportions. Since 1970, their ICBM RVs have increased by threefold. They are introducing the BACKFIRE into their force (although these are assigned theater missions, they have some capability aginst the United States). Also, they apparently have a new larger bomber under development which will be unambiguously intercontinental. SALT II will, if in effect, provide some limit to the scale of this numerical aspect of the Soviet challenge, but it cannot eliminate it.

Therefore, in order to maintain essential equivalence, we would have to do more than maintain our present capability. We must be prepared to increase the capability of our strategic forces to offset the force enahncements being made by the Soviet Union. Our force modernization program, rather than mirror image that of the Soviet Union, should be balanced and should emphasize features in which the U. S. excels. We should, of course, combine this effort with the programs needed to obviate obsolescence or vulnerability.

Primary emphasis should be placed on the development of a survivable and more capable land based ICBM. This sytem, as we see it now, would consist of a missile larger than the MINUTEMAN III having several times its capability in terms of payload and nearly twice the accuracy. Also, a new basing mode would be developed in parallel to the missile to make it more survivable. The basing mode has not been selected yet; however, it is expected that we will be in a position to recommend one this spring. A promising basing mode from a technical viewpoint is the Multiple Protective Structure (MPS-formerly MAP) approach. In this approach many (several thousand) vertical in-ground structures would be built, each one capable of containing a missile or missile simulator. Several hundred missiles and several thousand missile simulators would be moved about randomly in this field of protective structures as necessary to protect the actual location of the missile. Thus the enemy would be forced to target all of the thousands of vertical structures to insure potential kill of all of the missiles. This concept, while meeting the technical requirements for survivability, has been questioned in terms of its verifiability and our capability to bound the threat should the Soviets adopt a similar scheme.

For this reason, following DSARC IIA (December 5, 1978), we directed the Air Force to study an airmobile/air launch conept, focusing on the use of a STOL aircraft which, under high alert conditions, could be operated out of thousands of airfields. This concept envisions the use of AMST-derivatives to escape from a reactive SLBM attack directed against the main airbases (north-central CONUS) and capitalize on the existing large number of short runways at airfield throughout

the country (civil as well as military). The aircraft would flush to these bases upon alert; if the main bases were attacked, the aircraft could either launch their missiles or move from base-to-base to deny the Soviets knowledge of their location and to provide a means to achieve endurance. As a result, a very large number of aimpoints are presented, as in MPS. We plan to hold a DSARC II review of this system concept in April of this year.

The missile selection for use in MX is more straightforward than the basing. We are preserving the option for the development of an 83" diameter missile (constrained by TRIDENT tube diameter) having two stages applicable to TRIDENT II use as that system matures. This approach allows for some financial savings, while insuring a near optimum carriage of RVs with high accuracy.

Full scale development of the MX system could start in FY 1979 following the basing mode selection. An IOC in the mid-80s could be achieved. Each MX missile could carry about the same number of warheads as the SS-18 or SS-19 (although smaller in size and yield), so the program would help redress the balance as well as solve the force obsolescence and vulnerability problems addressed earlier.

As mentioned before, treaty limitations impose a limit on the number of ABM interceptors (100) that can defend our ICBMs and make this approach less attractive as an enduring solution to ICBM vulnerability. Nonetheless, it is appropriate, and indeed necessary, that we have a vigorous R&D program in this area to maintain our current technology

lead, avoid any destabilizing technological surprises, provide options for defense, assist in the evaluation of U. S. strategic offense and Soviet ballistic missile defense, and support our intelligence efforts. To pursue BMD technology we have both an Advanced Technology Program and a Systems Technology Program. The major thrusts of our current effort are: to validate exoatmospheric homing, non-nuclear kill, and realtime discrimination in clutter; and to gather target signature data and to define the near and far term options for ICBM defense.

The SLBM modernization program is already underway with the TRIDENT submarines and TRIDENT I (C-4) missile. Concurrently with building TRIDENT submarines, we are assessing the feasibility of a smaller and cheaper submarine which would use the same missile. If such a submarine promises to produce a more effective force, we would have the option of beginning production on this new submarine in the late 80's. Beginning in 1979, the TRIDENT I missile will be produced for backfitting on the POSEIDON submarine and, as submarines become available, for installation in TRIDENTs. This missile will allow much larger patrol areas than the present C-3 missile because it has about twice the range (for the same payload) and will preserve C-3 accuracy at this increased range.

We continue to advocate the concept of a mixed force of manned bombers and cruise missiles for the air-breathing TRIAD element. A mixed force is much more stressing to the defense in that the preferable responses to bombers and cruise missiles are quite different. For example, a potential threat to penetrating bomber forces is the use

of AWACS-type surveillance aircraft and look-down shoot-down (LD/SD) fighters. In this situation the cruise missile offers the opportunity for saturating the defense, requiring the defensive systems to have much greater detection sensitivity and to be deployed by the thousands instead of the hundreds.

The bomber modernization program includes the R&D for a cruise missile carrier (CMC). The CMC may be viewed as a force enhancement program, and, perhaps, as replacement for the B-52Gs, rather than accepting the reliability and penetration problems and expenses involved in maintaining that fleet beyond 1990 (by which date the B-52Gs will be 30 years old). We would expect to modify a transport-type aircraft for this application, thereby minimizing R&D expenses. The major options are (a) a wide-body commercial jet (like the 747) which could carry 60 to 70 cruise missiles and (b) an AMST-like transport which could carry 20 to 30 cruise missiles. Lower cost derivatives of the B-1 are also being examined. We also envision moderate expenses for upgrading the B-52Hs (including new avionics and a new ECM system) to maintain them as a penetrating bomber force.

In summary, the present TRIAD of strategic forces provides an effective deterrent today. The combination of three individually effective elements greatly complicates any Soviet plan to blunt effectiveness and hedges against a Soviet breakthrough against any single element. For the future, we are also hedging by supporting each TRIAD element with effective options for improvement and by providing a broad supporting technology base.

Our ICBM force is presently well-hedged against Soviet action in passive and active defense. But there is a growing vulnerability to pre-emptive attack which could seriously threaten the force by the early to mid 1980s. We have a number of options in response and are actively considering alternatives with the intent of providing recommendations this year.

Our SLBM force appears well-hedged against all categories of Soviet actions to blunt effectiveness. But to continue our hedge against Soviet breakthroughs and to capitalize in an area where we have confidence and competence, we will maintain the option to improve the range and payload of the SLBM force and vigorously pursue a submarine security program.

Our air-breathing force of penetrating bombers and cruise missiles provides a combination which should be effective through the 80s. We will continue to assess Soviet efforts in active defense, and adjust the development of cruise missile technology to react appropriately. We also plan to consider a new penetrating bomber and a cruise missile carrier aircraft, seeking a sound technological building base which can provide a fundamental advantage in the long-term action-reaction environment.

We believe that a stable environment of mutual deterrence can be maintained at substantially lower strategic force levels than are deployed by both sides today. We will continue to seek further arms control agreements which will, in an equitable and verifiable manner, permit such reductions. In the absence of productive agreements, we will, of course, pursue all actions necessary to maintain our security.

SALT II will require some Soviet reductions and limit the USSR to levels below what they could otherwise achieve, and in this sense our planning would be eased.

But even with an equitable and verifiable agreement, we will have to meet the challenges not addressed by this and future agreements and continue our technological hedges to sustain the conditions of deterrence in the long term. Prudent hedging must consider possible treaty breakouts as well as force improvements and breakthroughs in Soviet capabilities. In this future environment, I believe technology will play a vital and growing role.