(23) 89

~~SECRET / RESTRICTED DATA~~

~~SECRET~~

~~RESTRICTED DATA~~

NATIONAL SECURITY COUNCIL
WASHINGTON, D.C. 20506

October 6, 1978

MEMORANDUM FOR:

COPY

The President of the Senate
The Speaker of the House of Representatives

SUBJECT: Arms Control Impact Statement for FY 1979

Forwarded herewith is the FY 1979 Arms Control Impact Statement on AEGIS / Standard Missile Two and Warheads. Though we are confident that the arms control impact of the work to be done on this system in FY 1979 will not be significant, some of the arguments made and issues raised in the Statement concerning the long-range impacts of the program are quite contentious and remain under study. Thus, this Statement is forwarded without prejudice to the FY 1980 Statement.

Christine Dodson
Staff Secretary

~~RESTRICTED DATA~~

~~SECRET / RESTRICTED DATA~~

(Unclassified without attachment)

ARMS CONTROL IMPACT STATEMENT

AEGIS/Standard Missile-2 & Warheads

I. PROGRAM DESCRIPTION

(U) The major components of an operational AEGIS anti-air warfare weapon control system (MK 7) are an electronically scanned, multi-function phased array radar (AN/SPYIA), command and decision system (MK 1), weapon control system (MK 1), fire control system (MK 99), missile launching system (MK 26), and operational readiness test system (MK 1). This modular system is currently intended to provide destroyers with a fast reaction, rapid firepower capability to defend effectively in adverse environments against highly coordinated attacks of high speed missiles and aircraft. AEGIS-armed ships will be capable of independent operations and will defend other fleet units in battle groups, amphibious forces, replenishment and sea transport groups, and convoys.

(S) All target engagements originate from information derived from the phased array radar which is used for search, track, and missile mid-course command guidance. Target engagements are evaluated and weapons selected by the command and decision system and then scheduled and engaged by the weapon control system. Missile semi-active homing is supported by

the fire control system. Depending on type of target, radar operation mode, and enemy countermeasures, the system is capable of target detection at maximum ranges of [redacted] and has a capability to automatically track [redacted] It can simultaneously conduct [redacted] engagements with a salvo launch of [redacted] The detection-to-fire time against surprise targets is [redacted] depending on countermeasures. System availability over a six month period is estimated to range between [redacted]

(S) Congress added some of the funding required to equip the USS LONG BEACH (CGN-9) with an AEGIS system to the FY 76 DOD authorization and appropriation bills, but DOD subsequently deleted the balance of the funds required for this purpose from its FY 77 budget request and asked for (and received) recision of the FY 76 budget authority. The system is currently planned to be installed on one new class of ships -- the DDG-47 (DD-963 AEGIS variant) destroyer. Initial funding was requested, and has been appropriated, for the DDG-47 in FY 78. Current planning calls for initial delivery of the DDG-47 in FY 82 and funding of 9 ships in this class through FY 83. Additional ships are planned for the years beyond FY 83. There are no Navy plans for additional installations of other AEGIS variants at this time.

(S) The engineering development contract for AEGIS was awarded in FY 69. Fabrication of an engineering development model (EDM-1) was begun in March 1970. This model was tested

at a ground site initially and subsequently at sea on the USS NORTON SOUND. The at-sea testing included 28 Standard Missile-1 firings against targets simulating current and future threats, of which 21 were successful. Additional components and modified computer programs were added for at-sea testing with Standard Missile-2 (SM-2). Thirteen of 19 SM-2 (medium range) firings were successful, and one was a partial success. These tests, conducted by all Navy teams, were concluded in July 1977 and validated the ability of the AEGIS/SM-2 system to detect, schedule, and control multiple simultaneous engagements.

(S) Another engineering development model (EDM-3C), the prototype for the simplified AEGIS system to be installed in the DDG-47 class, is presently being fabricated. Design was completed in April 1977, and factory testing was completed in June 1978. Subsequently, the model will be installed in the Combat System Engineering Development Site (CSEDS) where it will be tested alone and in conjunction with other elements of the ship combat system configuration. All functions of ships engineering and management for AEGIS were consolidated in one project in June 1977. Procurement funding requirements for AEGIS will be reflected in the funding for appropriate ship programs.

(S) The primary missile to be employed with AEGIS is Standard Missile-2. AEGIS can also fire SM-1 and ASROC, and

the launching system, with modification, is compatible with HARPOON. The SM-2 will provide a significant extension of the volume of coverage over the currently operational SM-1 and an ability to operate in ECM environments that would defeat an SM-1. SM-2 is a solid propellant, tail controlled, surface-to-air missile with mid-course guidance. It has a secondary surface-to-surface capability. SM-2 is designed to acquire, home-on, and destroy targets in both clear and cluttered environments and comes in medium range (MR) and extended range (ER) versions. AEGIS-equipped ships would employ the SM-2 (MR) (RIM 66 C). The SM-2 (ER) (RIM 67 B) would be used on ships equipped with the TERRIER weapon system. Existing TERRIER/SM-1 systems in the CG-16 and 26 (including CGN-25 and 35) class cruisers, the CGN-9 and the DDG-37 class destroyers, a total of 31 ships, will be upgraded, with an SM-2 capability IOC in 1980.

(S) AEGIS-equipped ships have not been designed to employ the SM-2 (ER) due largely to system reaction time considerations caused by launcher cycle time. An integral dual thrust rocket motor (DTRM) provides the SM-2 (MR) with intercept capability out to [redacted] The SM-2 (ER) employs separate booster and sustainer motors which provide intercept capability out to [redacted] Both versions have a maximum altitude of about [redacted] and are limited to approximately [redacted] at maximum range.

E.O. 13526, section 3.3(b)(4)

(S) The mid-course guidance (MCG) capability in SM-2 permits launch of the missile without the requirement for acquisition and tracking of the target by the missile receiver in the early flight stages, so that smaller targets can be acquired and the effective range can be extended. Trajectory shaping by MCG also improves target approach geometry and maximizes range and terminal velocity for available missile impulse. MCG also provides for better shipboard control of the missile.

E.O. 13526, section 3.3(b)(8)

~~(SRD)~~ The Navy has initiated a development program to provide improvements in both SM-2 (MR) and SM-2 (ER) missiles and the TERRIER combat systems which would be needed to counter

E.O. 13526, section 3.3(b)(8)

The modifications to the SM-2 (ER) propulsion system would give it a capability to engage targets at altitudes up to

E.O. 13526, section 3.3(b)(8)

Sensors would have improved detection ranges,

E.O. 13526, section 3.3(b)(8)

As a fallout of the SM-2 (and SM-1) improvement programs, a new DTRM, along with improved guidance, fuzing, and a new warhead, will be provided for the SM-2 (MR). IOCs for these improvements are 1985 for both SM-2 (ER) and SM-2 (MR) missiles.

~~(SRD)~~ The Soviet anti-ship cruise missile threat includes both ship and air-launched types. Several missiles (e.g., SS-N-3, SS-N-12) are available for deployment on surface ships and submarines. They have maximum ranges between about 30 and 350 miles, cruise speeds between Mach 0.8 and Mach 2.4, and employ a variety of terminal homing sensors. They are capable of carrying conventional and nuclear warheads with yields of about 1 megaton in some cases and generally make a low altitude run-in to their targets.

(S) There are also several air-launched missiles (e.g., AS-4, AS-6) in the Soviet inventory which can be carried by BADGER, BLINDER, or BACKFIRE aircraft. The maximum ranges of these missiles are estimated to be between about 60 and 400 miles, their cruise speeds are between Mach 0.8 and Mach 3.5, and they employ a variety of terminal homing sensors. They can be conventionally or nuclear armed. Their maximum warhead weight-carrying capability is about twice that of ship-launched missiles and they generally approach their targets in a dive.

~~(SRD)~~ The Soviets are continuing to develop new and modified cruise missiles. The requirement for the nuclear SM-2 is based, in part, on several projected high altitude threats. One of these postulated threats, designated the AS-X-1, is similar in some respects to the AS-4 and AS-6 and was used in studies by the Navy. The characteristics of

E.O. 13526, section 3.3(b)(8)

these threats which make them particularly difficult to counter are [redacted] At one time, there was also considerable concern about a naval tactical ballistic missile designated the SS-NX-13, but the Soviets currently appear to have discontinued development and testing of this missile.

(S) The Soviets also have very capable air defense systems. Some of their current SA-2 and SA-5 missiles are estimated to carry nuclear warheads. In addition, Soviet development efforts include phased array radar activities which presumably are for application in advanced air defense systems. However, they have not yet deployed an air defense system which combines a highly capable phased array radar with a command-guided nuclear-armed missile.

Nuclear Armed Version of the SM-2

(S) In spite of the considerable conventional capability of planned and improved SM-2 systems, Navy studies have indicated that these missiles may be inadequate to counter [redacted] Therefore, the Navy is pursuing a nuclear-armed version of the SM-2 for use against this threat. The rationale for a nuclear-armed interceptor is that while the conventional SM-2 missile could successfully intercept and achieve an airframe kill on a high altitude

E.O. 13526, section 3.3(b)(8)

cruise missile in most portions of the intercept envelope, the cruise missile warhead may not be destroyed. There is a possibility that the nuclear warhead of a damaged incoming missile could still fall ballistically and detonate near a ship in the fleet disposition. A nuclear variant of the SM-2 could destroy the warhead of an attacking cruise missile.

E.O. 13526, section 3.3(b)(4)

(S) The conventional warhead carried by the SM-2 is the [redacted] designed for use against air targets. An alternative warhead is the [redacted] designed for use against surface and air targets. [redacted] Against air targets, the aerodynamic damage probability of either warhead depends upon a number of factors including [redacted] The prime advantages of a nuclear warhead for SM-2 lie in its capability to destroy attacking missile warheads and to greatly extend lethal radii. The greater kill radius of the nuclear round gives it a multiple kill capability against massed aircraft as well as greater effectiveness against single targets.

~~(S)~~ The Administration has not completed, as yet, its evaluation of the potential military utility of a nuclear-armed SM-2. First, there is debate about the seriousness of the risk that a crippled incoming missile could fall into the fleet and detonate. Second, there are questions about possible side effects of intensive use of nuclear interceptors, including the possibilities of electronic black-out, fratricide among interceptors, and coordination between nuclear interceptor missiles and fleet interceptor aircraft. Each of these factors could detract from the military utility of nuclear-armed SM-2.

~~(S)~~ The development program for a nuclear SM-2 warhead for the existing TERRIER weapon system responds to Specific Operational Requirement (SOR) 17-06 of 17 September 1967 (and subsequent updates) and provides for follow-on up-grading of an existing system capability to defend against Soviet missiles armed with nuclear warheads. The SM-2 nuclear warhead would replace the obsolescent W45 nuclear warhead currently deployed on TERRIER BTN missiles and the W30 nuclear warhead, which was deployed on TALOS Missiles, and which has been retired from active service.

~~(SRD)~~ The joint DOD/DOE development effort has completed Phase 1 weapon conception and Phase 2 feasibility studies.

Withheld under statutory authority of the Atomic Energy Act of 1954, as amended and regulations issued under the Act

Withheld under statutory authority of the Atomic Energy Act of 1954, as amended and regulations issued under the Act

~~(SRD)~~ In September 1977, DOD requested, and DOE accepted, initiation of a conditional Phase 3 engineering development program for this warhead, designated the W81.

Withheld under statutory authority of the Atomic Energy Act of 1954, as amended and regulations issued under the Act

~~(SRD)~~ This nuclear capability has been considered for deployment on AEGIS ships though it is not currently funded. FY 78 planning had projected initial deployments of these nuclear systems on TERRIER ships in FY 81 and AEGIS ships in FY 83. However, recent program delays will cause the FY 81 target for TERRIER ships to slip to FY 83 at the earliest. Tentative production planning called for procuring over 800 of the missiles to be equipped with nuclear warheads at a rate of about 6 to 8 per month during FY 82-91.

II. (~~S/RD~~) FUNDING ("then year" $ in millions)

DOD:	FY 77 & Prior	FY 78	FY 79 Est.	FY 80 Est.	Through Completion*
Development $					
AEGIS(64303N)	529.8	27.2	14.4	5.1	586.7
CSEDS(64304N)	132.4	35.5	37.1	28.7	249.5
SM-2(64366N)	112.1	10.5	39.1	37.3	258.6
Technology(64352N),(64368N)	60.2	20.4	20.9	5.5	115.7
Nuclear Warhead(64365N)	1.6	6.0	9.6	10.5	52.6
Procurement $					
AEGIS(24292N)	-	279.5	247.0	218.5	TBD
SM-2(MR)(24299N)	-	-	-	-	132.0
(number)	-	-	-	-	360
SM-2(ER)(24299N)	93.4	42.5	45.4	47.6	710.6
(number)	58	40	40	40	1550

Total Development $ 1263.1

Total Procurement $ 1587.6+; Procurement Unit Costs-About $250/.35-.45

DOE:

Development $

Procurement $

Withheld under statutory authority of the Atomic Energy Act of 1954, as amended and regulations issued under the Act

*(~~S~~) The figures shown for SM-2 development extend only through FY 83. Those shown for total procurement quantities and funding for missiles extend only through FY 83 and do not include funding for procurement of missiles to be equipped with nuclear warheads. Those shown for AEGIS procurement extend only through FY 80. All these totals will probably be increased as the program evolves.

(~~S~~) Total development funding will exceed $1.2 billion, of which about $.9 billion will have been appropriated prior to FY 79. Procurement funding will eventually exceed $1.5 billion, of which more than $.4 billion will have been appropriated prior to FY 79, and could exceed $3 billion, depending on final decisions regarding numbers of combat systems and missiles to be procured.

III. ANALYSIS

A. Consistency with Declared US Arms Control Policy and Agreed Arms Control Obligations

(U) Upgrading conventional fleet air defense capabilities is not inconsistent with US arms control policy. Improvements in missile range, guidance, and ability to deal with multiple targets would reduce the prospective vulnerability of fleet elements operating in the severe threat environment projected for areas within range of Soviet Naval Aviation in the 1980s. As such, these programs would improve the US Navy's projected capability to perform a variety of important missions in peacetime and in warfare and thereby contribute to the deterrence of war and international stability. These objectives, of course, are shared by US arms control policy.

~~(S)~~ On the other hand, continued development and deployment of a nuclear-armed SM-2, as part of an air defense system which also includes AEGIS, could raise arms control concerns relating to the advisability of continuing to deploy substantial numbers of nuclear SAMS on warships and the precedential effect on US ability to challenge comparable Soviet air defense systems with possible ABM capabilities.

~~(S)~~ Due to its small size, half that of current nuclear-capable naval SAMs (Terrier and Talos), the SM-2 (MR) can be carried by certain ships equipped with the

modified Tartar launching system. Four of the Tartar-equipped ships, Virginia-class cruisers, are to carry the nuclear MR round, giving them a nuclear AAW capability for the first time. The deployment of AEGIS-equipped ships carrying nuclear SM-2 could increase the number of hulls with nuclear AAW capabilities. Deployment of nuclear SM-2 thus could appear to be inconsistent with the Administration's policy of seeking reductions in nuclear forces.

(U) AEGIS, equipped with conventionally-armed interceptors, is entirely consistent with agreed arms control obligations. Some argue, however, that deployment of AEGIS with nuclear-armed SM-2 could set certain precedents for interpretation of Article VI of the ABM Treaty.

(S) Article VI of the ABM Treaty provides that neither side is to give defense systems "capabilities" to counter strategic ballistic missiles, but does not define the meaning of such capabilities in specific terms. There is general agreement that the AEGIS/nuclear SM-2 would have essentially no capability against strategic ballistic missiles. This is due to limits on the performance of the missile itself, and internal limitations in the fire control system which are not readily observable. The system also would not be tested in an "ABM mode."

E.O. 13526, section 3.3(b)(1)

(~~S~~) In assessing the ABM potential of Soviet defenses, the US uses observable characteristics such as [redacted] as major technical indicators of such capabilities. In its planned configuration, AEGIS/nuclear SM-2 observables [redacted] are more consistent with an air defense role than an ABM role. Nevertheless, the system would appear to have some of the attributes of an ABM system, including a highly capable phased array radar and a command guided, nuclear-armed interceptor.

E.O. 13526, section 3.3(b)(2)(4)

(~~S~~) The provision in Article VI which prohibits giving air defenses an ABM capability was included in the Treaty at US insistence to prevent the Soviets from circumventing the limits on ABMs by giving their widely deployed SAM systems an ABM capability. Development and deploymemt of a nuclear-armed SM-2 could set a precedent in that if the US undertook this step, it would have to be interpreted to permit deployment of Soviet air defense systems, land-based or sea-based, with equivalent external attributes, some of which would be characteristic of ABM systems.

(S) Other factors such as reaction time, missile acceleration, guidance accuracy, fuzing, hardness to nuclear effects and traffic-handling capability determine a system's actual ABM capabilities, but many of these are not observable, and we are forced to rely on observable characteristics to make judgments about Soviet systems. Such precedents could inhibit US challenge of Soviet systems with similar observable attributes, but perhaps much greater capabilities than AEGIS/nuclear SM-2.

(S) Others argue that, to a considerable degree, we already face a "precedent" in the Soviet SA-5 which is similar to that which would be created by the AEGIS/nuclear SM-2. The AEGIS/SM-2 system has external characteristics which are sometimes associated with an ABM but it is not clear that this air defense system is more ambiguous than the SA-5. Both of these systems have nuclear capability and both have advanced radars. The AEGIS radar is a phased array with a power aperture product 2.5 times or 4 db greater than that of the SA-5. The SA-5 system employs a non-phased array mechanical-scan radar and as such is less capable in this regard than the AEGIS phased-array radar. However, the SA-5 interceptor missile has an average velocity 30% higher than the SM-2 and a much greater range. The kinematic figures of merit (power-aperture product times interceptor velocity cubed) of the two systems are roughly comparable. On the basis of the comparability of the AEGIS / nuclear SM-2 and the existing SA-5, it may be that any additional unfavorable precedential effect is small enough to be discounted.

(U) Limiting the deployment of ABMs is a key element of US policy and is essential to maintaining deterrence and strategic stability. As such, it is in the US interest to avoid steps which would make verification of the Treaty more difficult, and thus make the Treaty more difficult to sustain.

(S) It would be very desirable to have an agreed upon demarcation between modern defense systems, whether intended for defense against air-breathing threats, against tactical ballistic missiles or against strategic ballistic missiles, though to do so appears difficult. Some believe that to constrain US programs without firm categorization criteria could result in the US both being more self-constrained than the Soviet Union in developing high performance air defense and ATBM systems and in being more reluctant to challenge ambiguous systems.

(S) Article VI of the ABM Treaty also forbids testing "in an ABM mode." Testing can be an important indicator of ABM capability. All US tests of the AEGIS/ nuclear SM-2 would be consistent with our understanding of the prohibition on testing "in an ABM mode." The system will not be tested against strategic ballistic missiles.

(S) In summary, AEGIS with nuclear SM-2 would not be precluded by the ABM Treaty, and would not be inconsistent with US arms control obligations. However, possible adverse consequences of its deployment, in terms of US ability

to challenge Soviet systems with similar attributes under Article VI of the ABM Treaty should be weighed carefully in making any decision to deploy the system. Evaluation of these concerns is quite complex and involves consideration of many factors. The present funds are for very preliminary work only. A major analysis is underway in the Executive Branch on all aspects of maritime tactical nuclear forces.

B. Effects on Current or Prospective Negotiations

~~(S RD)~~ The AEGIS system with conventionally armed interceptor missiles is not likely to have an impact on any current or prospective arms control negotiations. The possible relationship of the system with a nuclear-armed interceptor to the ABM Treaty was mentioned above. Since no nuclear testing is proposed to adapt existing and tested W66 warheads for use on the SM-2, there would not be any impact on negotiations for a comprehensive test ban.

C. Effect on Global or Regional Stability

(U) The conventional AEGIS/SM-2 system will improve the Navy's air defense capability, thereby improving the conventional combat capability of the fleet and its ability to deter war, and thus enhancing global and regional stability.

(S) Questions concerning the effect of a nuclear-armed SM-2 on regional and global stability hinge on assessments of the potential effects of this system on deterrence of possible nuclear attacks on US naval forces, and on differing perspectives on the problem of timely release. Although these issues are complicated and still under study within the Executive Branch, the basic issues are as follows:

1. Effect on Deterrence

(U) Some believe that it is important to retain a nuclear air defense capability on US surface combatants so as to be able to threaten to respond to a Soviet attack with nuclear weapons. Only by maintaining a capability to respond in-kind to any potential Soviet use of nuclear weapons, it is argued, will such use be deterred.

(U) On the other hand, current Soviet doctrine holds that nuclear war, once begun, probably would prove uncontrollable and is thus not to be risked when vital Soviet interests -- those affecting the survival of the Soviet system -- are not involved. Crisis-borne Soviet nuclear strikes on the fleet thus would appear to be deterred less by US nuclear air defenses (or other sea-based nuclear weapons) than by both the Soviet leaders' desire to avoid turning a crisis into a theater-level war, and the perceived dangers of such a war becoming nuclear with a risk of escalation.

2. Timely Release Authority

(S) In contemplating a possible scenario in which use might be made of nuclear-armed SM-2, it is argued that the system could only be effective if authority to use this nuclear weapon were given to local commanders in advance of the actual Soviet attack. To do so would be potentially destabilizing, in that it could provide some additional incentive for the USSR to make use of nuclear weapons in order to guarantee sufficient effectiveness for their initial salvos, given a possible nuclear defense, and because Soviet forebearance in the use of nuclear weapons would be less likely to avoid a breach in the nuclear threshold. In addition, there would be some risk of first-use of nuclear weapons by the US side in response to what could turn out to be a conventional attack.

(S) In brief, additional pressures for first-use of nuclear weapons may be placed on both the US and Soviet sides. On the other hand, other scenarios are plausible, in which hostilities would have been initiated elsewhere and thus the risks of premature nuclear first-use would not be great. In all cases, uncertainty in the minds of Soviet planners as to how the US might respond in hostile actions, stemming from the presence of nuclear-armed SM-2 on US warships, may serve to strengthen deterrence and thereby reduce the problem of timely release authority.

(U) Before any production decision beyond long lead-time items, the US Government must resolve the issues of cost and military effectiveness in addition to weighing the arms control effects of continuing or discontinuing substantial USN nuclear SAM capability.

D. Technological Impact

(S) The AEGIS radar is a powerful and sophisticated phased-array radar. Its ability to track and engage large numbers of targets simultaneously exceeds that of existing air defense radars.

(S) The SM-2 missile represents a much smaller advance in technology over the earlier SM-1 and TERRIER missiles than does the AEGIS radar, compared to its predecessors. Following the initial boost, the missile glides for the greater part of its flight. At the extremes of its flight envelope its velocity is low and its ability to maneuver is reduced.

(S) The Soviets could attempt to offset the AEGIS/SM-2 system by deploying higher performance offensive aircraft and missiles and improved ECM.

(S) In the 1950s and 1960s many air defense systems were armed with nuclear warheads to compensate for their inability to come close enough to the target to destroy it with

conventional munitions. Recently, more sophisticated air defenses (Improved HAWK, PATRIOT, and modern air-to-air missiles) have been developed which are believed to be able to destroy their targets with conventional munitions, with the obvious advantage that they can be used in a much wider spectrum of circumstances. A nuclear SM-2 would go against this trend.

E. Verification

~~(SNFD)~~ The US has certain capabilities to monitor Soviet naval units for neutron and gamma particle emissions, which can indicate the presence of nuclear weapons aboard. Systems deployed to date, however, must be very close to their targets to be effective. While the systems have been tested with apparent success against US ships, measurement reliability against Soviet ships is difficult to determine. Interactions with a number of variables, including size and structure of the target, can reduce the reliability of measurements. To deal with this problem, several complementary systems are generally used against a given target so that results can be cross-checked. The systems do not identify the types of weapons causing particular emissions. They have some capability to localize areas of emission (for example, forward or after magazines) but their data must be correlated with other information available about the ship and its weapons before inferences about the armament of particular systems can be made. Current US capabilities, then, are more suited to

developing patterns of Soviet operations than to real-time crisis monitoring of particular vessels' weapons loads.

(S) An equally if not more difficult problem would be verification of the ABM potential of a Soviet air defense system having the external attributes of AEGIS/nuclear SM-2. National technical means could be used to monitor the testing of any such system, to ensure that it was not "in an ABM mode." Verification of capabilities in the absence of such testing, however, would be difficult. To unequivocally demonstrate that air defense systems do not have a militarily significant anti-strategic-missile capability would require cooperative exchange of information and on-site inspection by the two sides, if the question is raised. We could insist on Soviet demonstration of equivalent internal limits on their systems if they wanted to use the SM-2 as a precedent. However, unless they agree to such cooperative measures, such a precedent would complicate our ability to verify compliance with the ban on giving air defenses an ABM capability since, without Soviet cooperation, we are unlikely to have a complete understanding of the detailed, internal design-imposed limits on Soviet advanced air defense systems.

IV. SUMMARY AND OVERALL ARMS CONTROL ASSESSMENT

(U) The planned AEGIS/SM-2 system, with conventionally armed interceptors, has no adverse arms control implications. Indeed, by increasing the air defense capabilities of the fleet, it would improve the stability of the conventional force balance between the US and USSR and give the Navy increased flexibility of operation in future crises. Both these effects could possibly strengthen the deterrence of war and international stability.

(U) Several factors, however, raise questions as to whether a nuclear-armed SM-2 would be consistent with US arms control policy. Its deployment would result in greater numbers of nuclear-AAW-capable ships, and could appear to be inconsistent with the Administration's policy of seeking reductions in nuclear weapons. In conjunction with AEGIS, a nuclear-armed SM-2 could inhibit US ability to challenge future Soviet defense systems under Article VI of the ABM Treaty, although the AEGIS/nuclear SM-2 system itself would not be inconsistent with US arms control obligations under the Treaty. The nuclear SM-2 also raises questions concerning deterrence and timely release authority. Since the side effects of conventional warhead possibilities do not have these negative characteristics, their relative advantages and disadvantages should be carefully weighed. Further study of the implications of continued substantial deployment of nuclear SAMs will be carried out and

evaluated before a decision to procure a nuclear warhead for the SM-2 system is authorized.

(U) In our opinion, the work to be done on this system in FY 1979 will not have significant arms control impact.