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Summary and Appraisal of Latest Evidence on Chinese Communist Advanced Weapon Capabilities

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ACDA-2

TOP SECRET

SUMMARY AND APPRAISAL OF LATEST EVIDENCE ON CHINESE COMMUNIST ADVANCED WEAPON CAPABILITIES

Problem

Evidence over the past several years, obtained principally from Chinese Nationalist-flown U-2 overflights, has established the existence of major nuclear and missile weapon development centers and provided some knowledge of the levels of activity during the period from 1959 to the present. A series of National Intelligence Estimates, and special studies by STATE/INR, CIA and others have described the intelligence evidence and estimated Chinese current and future capabilities. The nature of the intelligence requires that Chinese intentions be deduced from present visible activities. This paper summarized the latest reported status of major weapon centers, and discusses implications, especially with respect to the Chinese Communist potential for developing strategic weapon systems.

Discussion

There is conclusive evidence, principally in the form of high quality photography taken intermittently between 1959 and the present, that the Chinese Communists are carrying on a vigorous, well-planned advanced weapons program. It will be several years before the Chinese will have even a token aircraft-delivered nuclear weapon capability. Thereafter, however, ballistic missile systems will begin to become available. By the end of this decade, and with considerable effort, the production of fissionable material could begin to reach substantial levels. It is quite clear that the Chinese program is directed towards the acquisition of a strategic force perhaps comparable to the French "Force de Frappe". However, the evidence is not sufficient to describe the ultimate intended magnitude and objective of the effort with any great degree of confidence.

The National Estimate (SNIE 13-2-63) describes earliest capability according to the following time-table: detonation of a first nuclear device, 1964 or, in the event of difficulties, sometime beyond that; aircraft delivery capability for several fission weapons, 1966; deployment of an MRBM system, with non-nuclear warheads, 1967, with nuclear warheads, 1970.

The Chinese Communist advanced weapons program resulted from a military assistance agreement negotiated with the Soviet Union in 1955. It proceeded, in a most ambitious fashion, to lay the basis for developing a broad spectrum of modern weapons encompassing both offensive and defensive systems and air and missile delivery vehicles. Very considerable Soviet assistance was expended in a variety of areas

encompassing

encompassing technological and developmental aid, the conduct of exploration for uranium ore, the layout of processing factories and test ranges, and the provision of modern Soviet weapons. The cutoff of Soviet assistance and serious economic problems in 1959 and 1960 brought the weapons program nearly to a standstill at a critical time in its development. Some programs such as those envisioned for jet medium bombers, came to a complete halt. Others proceeded very slowly for the next few years. However, the Chinese are now in a third phase and are proceeding with the completion of selected facilities intending apparently to carry on certain advanced weapons programs which were layed out initially with Soviet help but which may now be within the technological means of the Chinese.

The present visible status of the Chinese program reflects a high priority effort directed to the attainment of both a nuclear and a missile capability. The requisites for an independent Chinese advanced weapons program are available. This base includes necessary scientific talent, raw material acquisition and processing, technical fabrication and engineering, and facilities for weapons production and testing. The complex of developmental facilities in support of these activities as revealed by aerial photography, must absorb a very large part of Communist China's technical resources. It also must be to the detriment of other parts of the economy.

The most significant missile facility is the complex test range at Shuang-Cheng-Tzu in north western China. This center is large (housing over 20,000 people) and elaborate and was largely completed in the years 1957 to 1960. Its facilities are a near replica of some observed at the Soviet Kapustin Yar/Vladimirovka missile test facility. Since 1960, construction on the range seems to have been relatively slow. It is believed that some ballistic missile firings have been carried out although on a sporadic and quite limited scale. The range could accommodate missiles of up to 1100 nm range but the actual distances fired are not known.

At about the time the Soviets began pulling out of China, the construction of a good sized missile research and development facility at Chang-Hsin-Tien, 16 nm southwest of Peiping began. Construction was continued to general completion and now includes three large static test stands, a propellants area, and structures suitable for an engineering area with laboratories and several large fabrication/assembly type buildings. The facility appears suitable for developing surface-to-surface ballistic missiles of up to at least MRBM (1000 nm range) size and is also large enough to permit some limited production of operational missiles.

The Soviets

The Soviets supplied the Chinese with some limited number of defensive missiles which are seen deployed in a few locations. These are the air defense SA-2 missile and a shore-to-ship missile. Patrol boats with short range ship-to-ship missiles have also been seen. There is no evidence that the Chinese are producing any of the weapons.

Intelligence indicates the production (or intended production) of ballistic missiles. The industrial base is probably able to support some production. The electronics industry is the most advanced of China's technical industries and should be the least hard pressed to supply missile components. Special alloys for rocket engines, precision pumps and valves, ball bearings, and other high-specification non-electronic parts may present some difficulties.

Major nuclear facilities have been discovered in China. The large gaseous diffusion plant at Lan-Chou was patterned after the Soviet plants and the exterior, at least, was in an advanced stage of construction in 1959. Work at the facility then was drastically slowed. However, there is recent evidence of construction of power and water facilities and auxiliary buildings during the past year. It is possible that test runs are in progress in a few stages of the plant and the Chinese should be gaining experience in isotope separation. In order to produce weapon grade U-235 it appears that it will be necessary to double the size of the present facility which might take about three years. Thus, if a decision to expand is reached, mid-1966 would be the earliest time that a fully enriched product could be produced. However, an expanded Lan-Chou plant could subsequently produce about 1200-1500 kgs of weapon grade material per year, sufficient for a few hundred 10-30 KT yield weapons.

The first nuclear device to be exploded by the Chinese will probably be an all-plutonium weapon. A facility in Inner Mongolia at Pao-T-ou includes a small air-cooled reactor with associated facilities for chemical separation and metal fabrication. The reactor is not patterned on any known Soviet plan and may be the result of Chinese research based on easily obtainable Western information. The reactor could have been placed in operation sometime between early 1962 and the present time. However, when in full production it will be capable of turning out only enough plutonium for one or two low-yield bombs a year. The earliest a first device could be tested, based on plutonium from this reactor alone, is early 1964.

The Chinese advanced weapons program has been gauged by the intelligence community to have had a quite substantial impact on the economy of the country. It is concluded that on the basis of decisions taken to date, it has taken a major portion of China's top scientific

and technical

and technical manpower and facilities. Only a very small part of this effort would contribute, even indirectly, to the other sectors of an economy as underdeveloped as China's. In the meantime, other priority industrial projects have lagged because of technical difficulties, notably the program to build needed chemical fertilizer plants and the development of the petroleum industry.

The Communist Chinese must perceive great advantage in the acquisition of a ballistic-missile/nuclear weapon system which would be employed primarily in a strategic threat role. It is estimated, that possession of advanced weapons could cause a feeling of national strength among the leadership which would result in risky ventures, but that more likely Peiping will react in a reasonably rational manner while trying to use its new capability in the furtherance of political goals. In pursuing these policies, increased confidence might lead the Chinese to push somewhat harder than in pre-nuclear days. The chance of a miscalculation and escalation will certainly be increased by some significant degree.

The Chinese program gives clear evidence that a country politically isolated and economically beset can still carry out an advanced weapons program. China was materially aided by early Soviet assistance but, apparently, has been able to carry on for the past three or four years without this help. It is estimated that only a limited capability to deliver nuclear weapons will be achievable in this decade. Nonetheless, the vigor with which the Chinese are pushing ahead and the considerable sacrifice entailed, indicates an intent to attain a striking force at the earliest possible date. The Chinese may use their modest force to demand admittance to international councils or negotiations aimed at resolving problems of nuclear weapon proliferation. The US and the USSR and their respective allies may share a common apprehension of Chinese intentions. Initially this might be reflected in tacit understandings restricting flow of parts and materials contributing to or permitting greater sophistications in weaponry. Additionally, it will be quite apparent that any great power agreements to limit advanced weapons must include consideration of the means for inhibiting developments in countries not party to the discussions.

Annex 1

Consideration of Other Potential Delivery Vehicles and Weapon Systems

Aircraft:

The Chinese have not revealed plans for new bomber aircraft production. They have available 15 old TU-4 (Bull) piston driven aircraft with large bomb bays, a bomb weight capacity of about 20,000 pounds and a range of 3300 nm. They also possess two TU-16 (Badger) jet medium bombers which if operational, can carry 22,000 pounds to a range (one way) of 3200 nm. The Chinese have an inventory of 325 or so IL-28 (Beagle) 1200 nm range jet light bombers. The payload of this aircraft, about 4500 pounds would not be sufficient for a bulky, early stage weapon but it will be usable as more sophisticated weapons are developed.

Despite the absence of new aircraft development evidence, recent photography has revealed some new construction and other activity at large airframe and engine plants, the Chengtu Airframe Plant and the Shenyang Aircraft Engine Plant. It is possible that guided missiles and missile components could be produced at these factories. As yet there is no evidence to substantiate this possibility.

Nationalist photographic reconnaissance flights have revealed a reduction in the number of Communist China aircraft on operational fields and a dearth of aircraft at major assembly plants connected with series production. Fighter aircraft production for 1962 is estimated at 60 units--probably not a sufficient number to cover losses through attrition.

Communist China is presently handicapped in maintaining its Air Force since it is wholly dependent on imports for aviation gasoline, jet fuel and high quality lubricants. POL imports from all sources fell from 3.2 million metric tons in 1961 to 1.9 million metric tons in 1962. Petroleum products, which have accounted for about one third of the Chinese imports from the Soviet Union declined an estimated $40 million from 1961 to 1962.

Submarines:

The Chinese Communists possess submarines which could be modified to deliver weapons against coastal targets. While the present proficiency of the submarine force is believed to be well below Western standards, it is significant that there are 28 units operational in the Navy, of which 21 are of the Soviet "W" class. This submarine is 249 feet long and has a range of about 4000 nm. The "W" class were

assembled

assembled in Chinese yards between 1955 and 1962, using largely Soviet-supplied parts. The last four required up to 33 months for completion. However, it is notable that these were outfitted by native technicians following the withdrawal of Soviet assistance in August of 1960.

In order to prolong the life and utility of their "W" class submarines, the Soviet Union equipped 14 of the units with Regulus-type cruise missiles. The missiles can be employed in both an anti-ship and a coastal attack role. A small version of the missile, the SS-1-N, has a 20 to 30 nm. range with a payload of 1,000 pounds. A larger missile, the SS-N-3, has a range of about 300 nm. with a 2,000 pound HE or nuclear payload.

There is no evidence of the addition of launching equipment to Chinese submarines, nor of current active test and development of such a missile. However, the layout of the Chinese Communists missile range at Tu-Ko-Ma-Ching indicates an interest in air-breathing missiles. A cruise-missile facility is also associated with one of the launch complexes at Shuang-Cheng-Tzu. While no missiles have been identified in the launching positions, there is evidence of some continued activity. The Chinese Communists may have the potential, in the next few years, to mate cruise missiles and submarines, after the fashion of the Russians.

Cruise Missiles:

Aerial photo reconnaissance of August 1962 over the Port Arthur, Darien, and Lienshan area located tactical surface-to-surface cruise missile launch areas and R&D facilities. The Lieshan site could well be the CHICOM navy cruise missile center as the 6 fathom line is some 40 nm off shore from the launch sites. The Port Arthur installation could be intended to fulfill a defensive anti-shipping role.

SAM Sites:

Ten surface-to-air missile sites have been identified in Communist China, one north of Sian, one at Shimen, four in Peiping area, one at Shuang Cheng Tzu and two R&D sites at SCTMTR. A newly identified (3 June) SA-2 surface-to-air missile (SAM) site 21 nm north of Chung-Wei, 59 nm SW of Ning-Hsia, and 132 nm NNE of Lan-Chou at approximately 37-54N 105-17E. The purpose in locating this site in an extremely isolated area, with no known major targets within a 60 nm radius, has not been determined. Operational status of the site cannot be determined.

Chemical Warfare:

A probable chemical arsenal and chemical warfare (CW) storage depot near Lu-Hsien have been identified from 30 March photographs

provided

provided by the Government of the Republic of China. The arsenal's facilities, located at the site of a former Chinese Nationalist explosives plant, may include a research center. The CW storage site is secured by a double fence with five guard towers. (SECRET NO FOREIGN DISSEM)

Annex 2

Comparison with Other Countries

Some idea of the relative magnitude of the Chinese effort may be gained by considering the experience of the two other countries (besides US, USSR, and UK) with serious advanced weapons programs underway. France, with seven plutonium tests already accomplished is ahead of China and will have a token nuclear delivery force this year. Israel lags behind China but will probably attempt to produce a nuclear weapon sometime in the next several years unless deterred by outside pressure. Thus far the remaining countries with the physical and financial resources to develop an operational nuclear capability over the next decade--India, Japan, Sweden, Canada, Italy and West Germany--have limited their nuclear programs to demonstrably peaceful purposes. This subject is discussed in NIE 4-63 "Liklihood and Consequence of a Proliferation of Nuclear Weapon Systems," dated June 28, 1963.

France:

French efforts to achieve a nuclear strike force now appear firmly centered on the Mirage IV bomber with 50-60 KT fission weapons as a first-generation system. The second-generation system, intended to become operational in 1969-1972, will be a force of nuclear submarines carrying IRBM's with thermonuclear warheads, 1500 pound 100 KT weapons will probably be developed by 1967.

By the end of 1962, France is estimated to have spent at least $1.6 billion on the military aspects of its nuclear program. Expenditures have averaged more than $380 million per year during the past three years (1960-62). During the next four year (1963-1966) annual expenditures, as programmed, will average about $870 million to a total, by 1966, of about $2.9 billion. The force of 50 Mirage IV plus tankers may cost one-half billion dollars including costs for development, production and purchases of KC-135s, but not including operation. The three nuclear powered submarines will cost on the order of $1.5 billion to $2 billion and the IRBM program $650 million to $850 million.

Israel:

It is estimated that Israel will attempt to produce a nuclear weapon. The French designed reactor at Dimona will go into operation sometime in 1964 and, if operated at maximum capacity, could produce sufficient plutonium for one or two weapons a year. A nuclear device could be detonated as early as 1965. A limited aircraft delivery capability could be achieved by about 1967-1968. Israel would require access to French technology, components and test facilities inorder to produce a limited number of missiles with a range of about 250 nm and a payload of 4000 pounds by about 1966-1967. A few compatible warheads might be available by about 1968-1969.

Annex 3

Suspected Communist Chinese Advanced Weapons Facilities

1. Lan Chou Gaseous Diffusion Plant

The large industrial installation near Lan-chou is definitely identified as a gaseous diffusion plant for the production of enriched uranium. This plant was in an advanced stage of construction in September 1959. It is uncertain whether the subsequent progress that can be seen on the March 1963 photography was accomplished largely before the withdrawal of Soviet assistance (mid-1960), gradually over the entire period, or chiefly in the past year or so. In any case, the Lan-chou facility is not fully operational as of June 1963.

The existing gaseous diffusion building is large enough (roughly 1900' x 150') to contain about 1800 compressor stages but at least twice as much floor area (i.e. enough for about 4000 stages) would be required to produce weapon grade material (93% U-235). It is likely that a second building, comparable in size, was intended to be constructed adjacent to the present plant within the secured area.

Electric power lines, one of which is not complete, connect the gaseous diffusion plant with the 200-250 MW thermal electric station in the city of Lan-chou. Based on the estimated capacity of the transformer at the plant's substation and the apparent excess of electric power available from the thermal station, it is estimated that about 100 MW could be supplied to the gaseous diffusion plant. This amount of electric power is consistent with the calculated capacity of the cooling towers (which did not appear to be operating in March 1963) and with the size of the existing building. An additional power line, only partially completed, connects the plant with the Yen-Kuo hydro-electric facility about 15 miles upstream. This facility is about 50 percent completed and may be still under construction.

There is, of course, no way of knowing whether all the compressors and other process equipment are installed inside the gaseous diffusion building. It appears, however, that two of the probable 38 transformers at this building are currently installed. Hence, it is possible that test runs are in progress in a few stages of the plant. If so, the Chinese Communists would be getting experience in gaseous diffusion isotope separation techniques, but would not be producing high-enriched uranium.

If the

If the Chinese Communists construct a second diffusion building at Lan-chou, then such an enlarged facility could produce weapon grade U-235 in about three years from the start of construction. Thus, mid-1966 would be the earliest time that fully enriched product could begin to be produced at this plant--and then only if construction of a second diffusion plant were begun before mid-1963, all the requisite process equipment were produced or procured, and no serious operating difficulties were encountered. After the expanded Lan-chou plant became fully operational, however, it probably could produce about 1200-1500 kgs. of weapon grade material per year. This would be enough U-235 for a few hundred nuclear weapons in the 10-30 KT yield range.

2. Pao T'ou Plutonium Production Facility

The facility at Pao-T'ou is considered to be a plutonium installation primarily because (a) the main buildings and their relationship to each other are appropriate for an air-cooled plutonium production plant, (b) a building suitable for chemical separation is present, (c) the entire area is enclosed by multiple fencing and a wall with guard towers at the corners and (d) Pao T'ou has been associated with unidentified atomic energy activities. The reactor within the secured area appears to be complete, but foundations suitable for a second reactor just outside the presently walled area are evident in the March 1963 photography. While a larger plutonium production installation may have been planned, there are no indications that a second reactor is now under construction.

The existing plant could be in operation at the present time, but whether it is cannot be determined with confidence. In light of the inferred construction history of the Pao T'ou facility, the earliest date by which the reactor could have reached criticality is probably early 1962. A minimum of two years would be required before a first all-plutonium device could be available--about one year for fuel element radiation after the reactor becomes critical, and an additional 9-12 months for cooling of the radiated fuel, chemical separation of the plutonium, and fabrication of the device. Hence, if there is no other plutonium production reactor in Communist China, the earliest date for a nuclear detonation is early 1964. This schedule assumes that the Communist Chinese would have no unusual difficulties in producing kilogram quantities of plutonium or in fabricating their first nuclear device. A more likely date, therefore, would be late 1964 or early 1965.

The size of the present Pao T'ou reactor (about 30 MW ± 10 MW) would limit plutonium production to an amount sufficient for one or possibly two weapons per year. If construction of a second reactor of

comparable

comparable size were begun soon, total production of plutonium in the neighborhood of 20 kilograms per year could be eventually achieved but not until the latter part of this decade. On the other hand, if the present Pao T'ou reactor is not yet in operation, then Communist China would not be able to test its first all-plutonium device before late 1965 or early 1966.

3. Hsi-an Nuclear Research

Collateral reports indicate nuclear research being done at the Hsian Institute of Atomic Energy, and at the Physics Department of Chiaotung University. These two places, reportedly through joint effort, produced a 1.5 Mev electrostatic accelerator. Photography of the Hsian area reveals a probable nuclear energy research institue 5 nautical miles southwest of the town. Collateral reveals research with uranium ores at the Northwest University, and metallurgical research on thorium at the Hsian Metallurgical College. Also, research possibly related to uranium metal production at Northwest University.

4. Peiping Nuclear Research

The Institute of Atomic Energy of the Academy of Sciences, two locations: one, 8 miles north-northwest of the center of the city in the university sector; the other approximately 20 miles southwest of the city. The former installation is engaged in work relating to the Chicom peaceful uses program--theoretical nuclear physics, low-energy physics, cosmic rays, radio isotopes, and so on. The latter installation houses the Soviet-supplied 7.5-10 megawatt (thermal), heavy-water moderated and cooled research reactor using 2 percent enriched uranium, and the Soviet-supplied 25-Mev cyclotron.

5. Chang Hsien Tien Missile Research and Development Facility

A Chinese Communist missile research and development center has been located in the southwest outskirts of Peiping. Construction of the center probably began in 1959. A preliminary examination of the facility indicates that it is capable of developing liquid fueled guided missiles from the drawing board through the fabrication of prototypes to engine static test and finally captive or hold-down tests of the complete missile.

The facility covers some six hundred acres. It can be functionally divided into four distinct subareas, a static test area, a propellants/cold flow test area, a development and engineering area, and an administrat housing/logistics area. The static test area contains three test stands.

These

These include an engine static test stand, what may be a cold flow test facility, and what appears to be a captive or hold-down missile test stand.

There are indications that construction of the facility commenced some time in 1959 and that Soviet assistance was available during the initial stages of construction. On the basis of the state of construction in August 1962, it is believed that the facility as a whole was not completed before early 1963 although individual portions of it could have been activated somewhat earlier.

The stands are rail-served and are comparable to some of the largest stands identified in the USSR. Nearby buildings could support some missile and engine fabrication as well as the processing of units produced elsewhere. (Several of the aircraft industry's plants, particularl the Shenyang complex, would be readily adaptable to missile production).

These stands provide the most significant indicator of the scope of Chinese Communist ambitions and the priority they have assigned to the guided missile program.

6. Shuang-Cheng-Tzu Missile Test Facility

Photography has confirmed the existence of a guided missile test center in northwest China. The evidence indicates that construction of range facilities could have begun in 1957 and almost certainly was well under way in 1958. The rangehead is located about 50 nm northeast of Shuang-cheng-tzu on a rail spur off the Urumcji-Lanchou rail line. It is a large, instrumented area dispersed along a 30-mile stretch of the Etsin River. comprising a surface-to-surface missile (SSM) launch area, a surface-to-air missile (SAM) launch area, a large main support base containing 185 buildings, a smaller support base servicing the SSM and SAM complexes, a large SSM and SAM assembly area, two revetted storage areas, and several smaller housing and support areas.

The three SSM launch complexes have been arbitrarily designated "A", "B", and "C". Complex "A" appears to be completed and operational. This complex contains two large concrete pads suitable for firing ballistic missiles served by paved loop-access roads, a control bunker, and a drive-through check-out building. Discoloration of the southern pad as well as the possible presence of launching and mobile servicing equipment indicate that firings have occurred, probably within the recent past. The other pad appears to be very clean, but it could also have been used for firings. The two pads under construction at launch complex

"B"

"B" strongly resemble those at complex "A". Excavation for the pads has been completed, but construction appears to have been suspended. Launch complex "C" has one pad and a drive-through building. Construction work appears to be nearly complete, and the launch pad could have been used.

The ranges of the missile systems to be tested from these facilities cannot be determined from the photography. The launch sites are oriented towards the west, and the down-range instrumentation is also in that direction. The desert terrain to the west would allow the firing of surface-to-surface missiles to ranges of up to 1,100 n.m. within Chinese territory. The pads, associated revetments, and support areas in launch complex "A" closely resemble Soviet facilities at Kapustin Yar used for 700, and probably for 1,000 n.m. ballistic missiles. Launch complex "C" bears resemblance to other Soviet cruise missile launching facilities at Kapustin Yar. The two surface-to-air missile launch sites also resemble SA-2 launch facilities at Kapustin Yar. The support facilities, also built on the Soviet model, appear completed.

The size of the missile rangehead at Shuang-cheng-tzu connotes a very large program. The facilities available at the test center are sufficient to provide a considerable physical capability to carry out extensive missile research and development programs and some troop training. Housing appears adequate for at least 20,000 people.

The Soviets probably provided technical assistance at least through mid-1960, and early firings probably involved missiles of Soviet Manufactu The activity to date would appear to have been primarily for the purpose/r orientation practice firing of Soviet missiles, and test firings of Chinese copies. Some concurrent operational training, at least with surface-to-air missiles, may also have occurred.

7. Tu-Ko-Ma-Ching Test Range

Consists of 3 test areas (one of which contains 8 possible missile launch positions), a rail-served support area composed of 28 buildings (3 of which are revetted and one bunkered) and one probable water tower, a secured storage area containing 3 large and 2 small revetted buildings, and a housing area containing 18 large and 5 small buildings. A line of instrumentation towers extends 13.2 NM west of the installation.

8. Nan-King Radar Plant

A comparatively new facility for the assembly or production of radar, the Nan-king Radar Plant 720, was discovered in photography in

March

March 1962. The plant and assembly yard cover about 43 acres. A large amount of construction and other activity was noted in the compound. Domestically produced early warning and tracking radar are now being deployed at dispersed locations about the country.

9. Cheng-Tu Airframe Plant

6 n.m. NW of Cheng-Tu. Fenced area approximately 3,800 x 1,800 ft. contains 7 large fabrication-type buildings and approximately 25 other large buildings. Operational status is undetermined. Area is possibly rail served.

10. Shen-Yang Aircraft Engine Plant

Approximately 2 n.m. ESE of old walled city of Shen-Yang (Mukden), on NE edge of Mukden airfield se, and immediately east of Shen-Yang arsenal 90th. Plant contains 5 large fabrication and approximately 20 smaller associated buildings, a recently constructed power plant, underground pol storage, and 6 engine test cells. Immediately west of Shen-Yang aircraft engine plant is the associated Shen-Yang Arsenal. The road and rail-served arsenal contains 6 large and approximately 30 other fabrication buildings, numerous associated buildings, a heat/power plant, and 14 engine test cells and one possible test cell. The Shen-Yang airframe Plant is approximately 2 n.m. north of Shen-Yang and immediately west of Mukden airfield north. The Aircraft assembly plant has 5 large fabrication and 20 associated buildings, wind tunnel, and power plant.

SOURCES:

Draft SNIE 13-2-63 "Communist China's Advanced Weapons Program (draft dated 14 June 1963) TS.

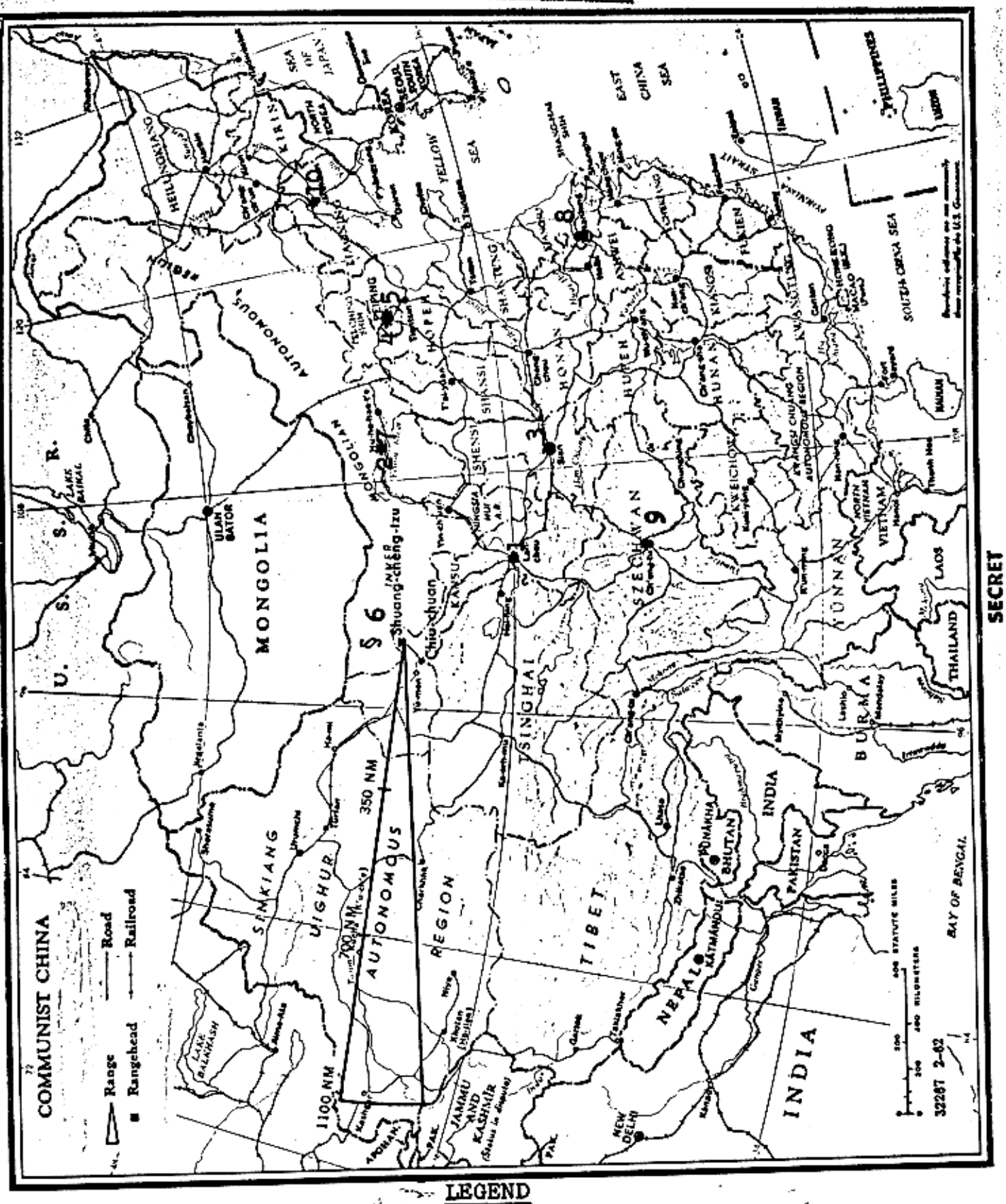
NIE 13-2-62 "Chinese Communist Advanced Weapons Capabilities" (dated 25 April 1962) TS.

NIE 4-63 "Likelihood and Consequences of a Proliferation of Nuclear Weapons Systems" (dated 28 June 1963) Secret/Controlled Dissem.

Memorandum for Dr. F. A. Long, ACDA/ST from Mr. H. M. Wiedemann, State/INR, with enclosure "Chinese Communist Nuclear Energy Capabilities" (dated May 14, 1963) Secret/Formerly Restricted Data.

Various intelligence publications, including:

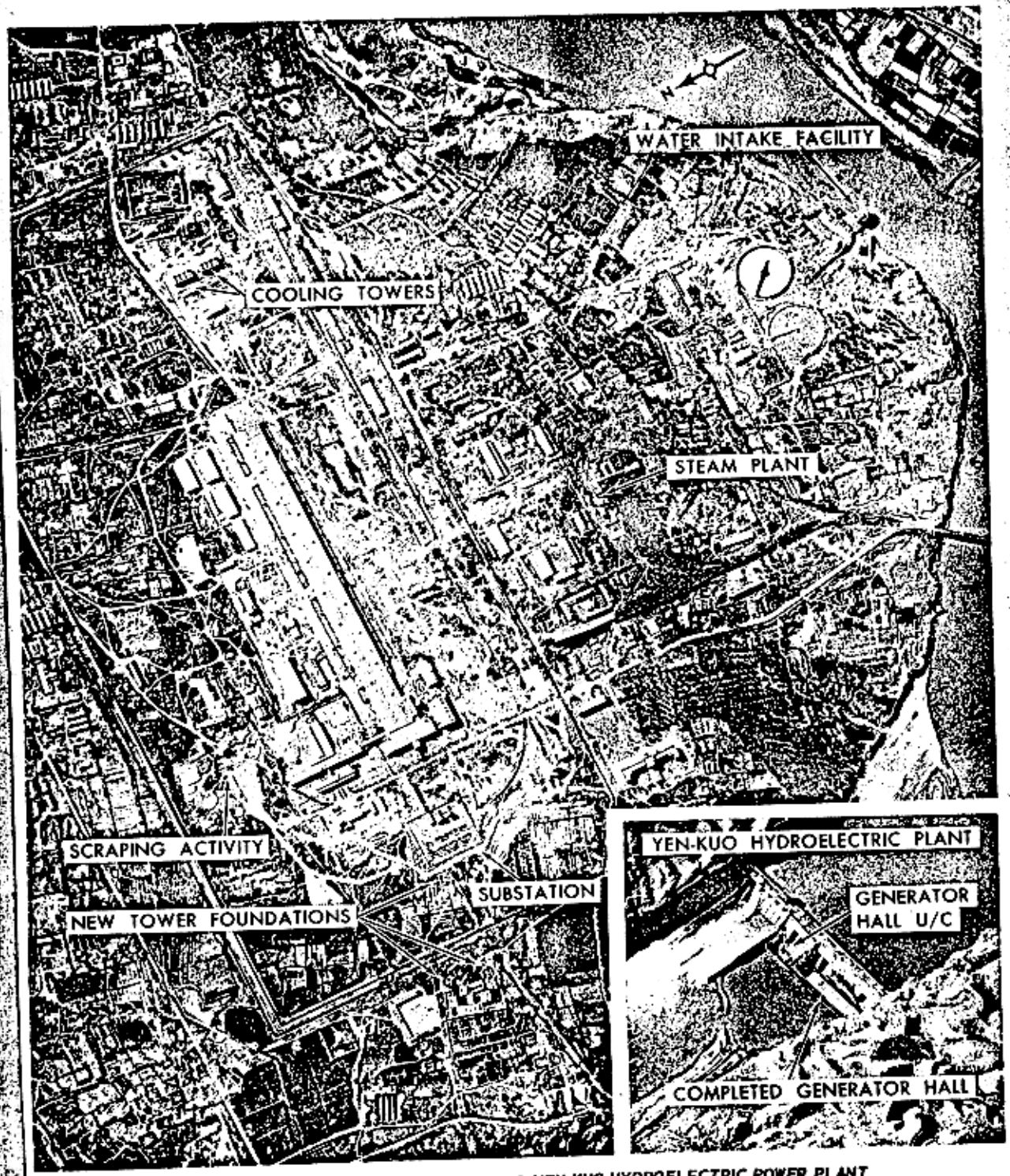
Scientific Intelligence Digests, CIA/OSI.
Photographic Interpretation Briefs, NPIC.



LEGEND

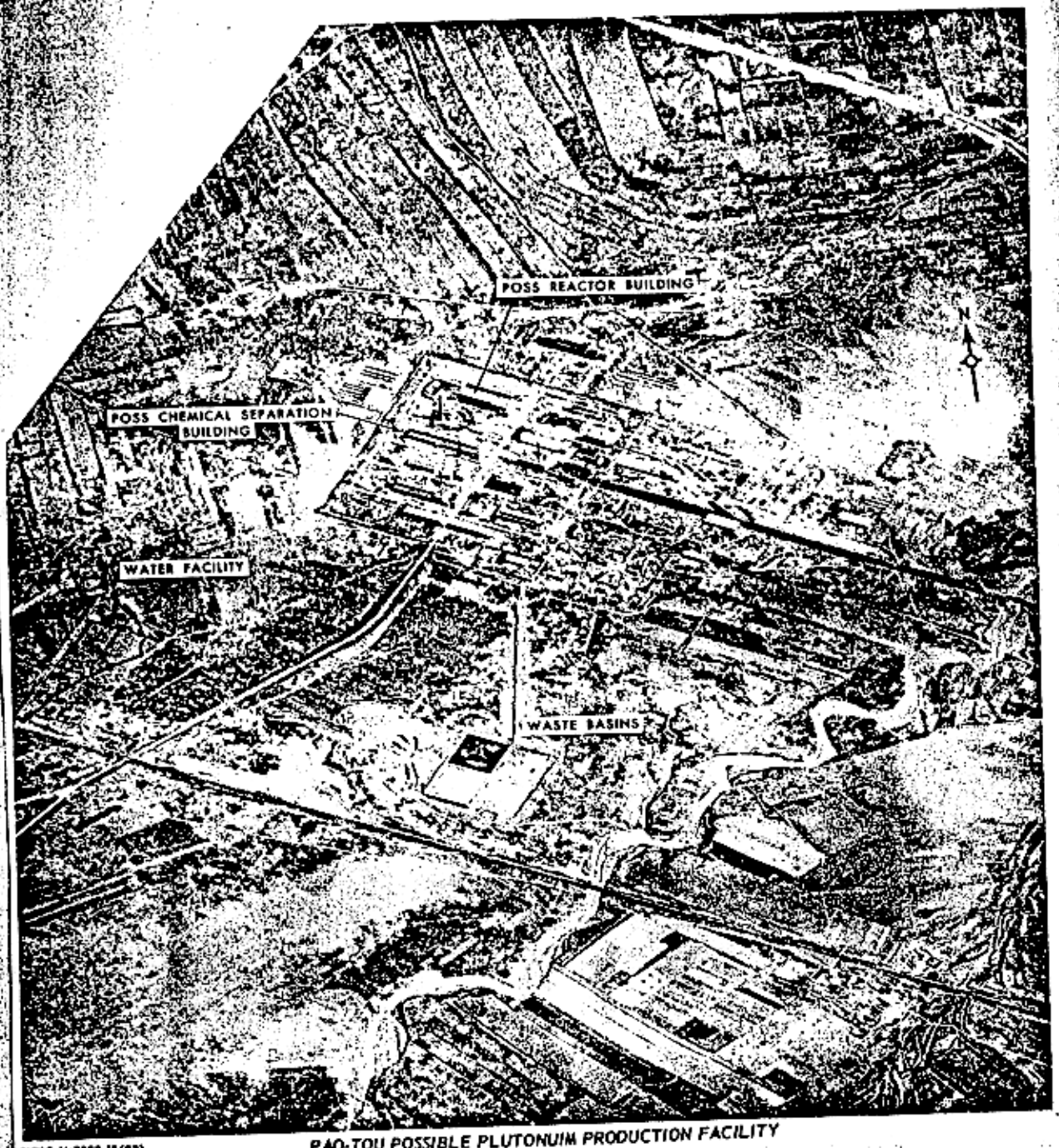
1. LAN-CHOU GASEOUS DIFFUSION PLANT
2. PAO-TOU PLUTONIUM PRODUCTION
3. HSI-AN NUCLEAR RESEARCH
4. PEIPING NUCLEAR RESEARCH
5. CHANG HSIEN (PEIPING) MISSILE FACILITY
6. SHUANG-CHENG-TZU MISSILE TEST CE
7. TU-KO-MA-CHING TEST RANGE
8. NANKING RADAR PLANT
9. CH'ENG-TU AIRFRAME PLANT
10. SHENYANG AIRCRAFT ENGINE PLANT

NPIC/R-1323/63
ATTACHMENT 1



NPIC H-2050 (8/63)

LAN-CHOU GASEOUS DIFFUSION PLANT AND YEN-KUO HYDROELECTRIC POWER PLANT



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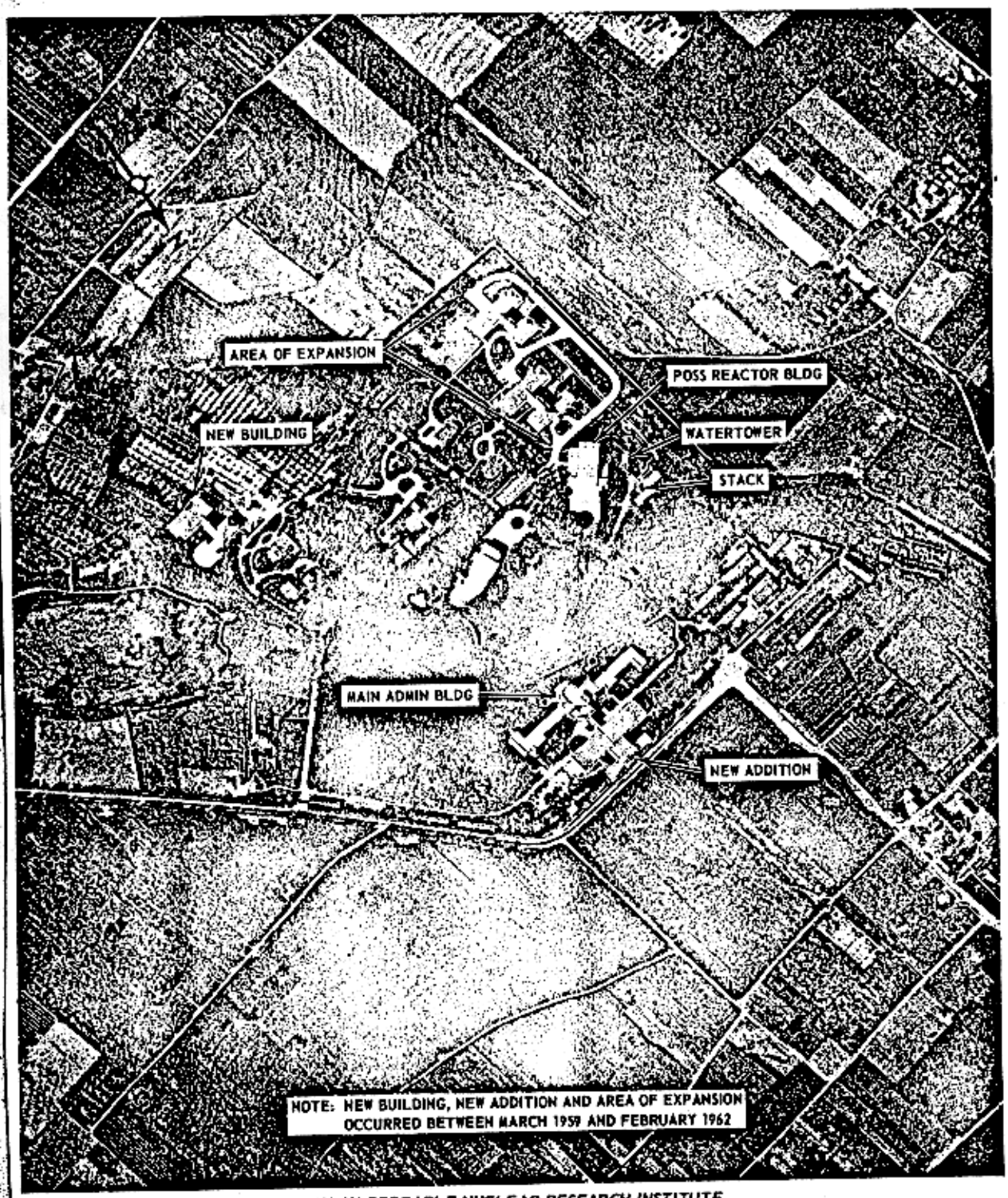
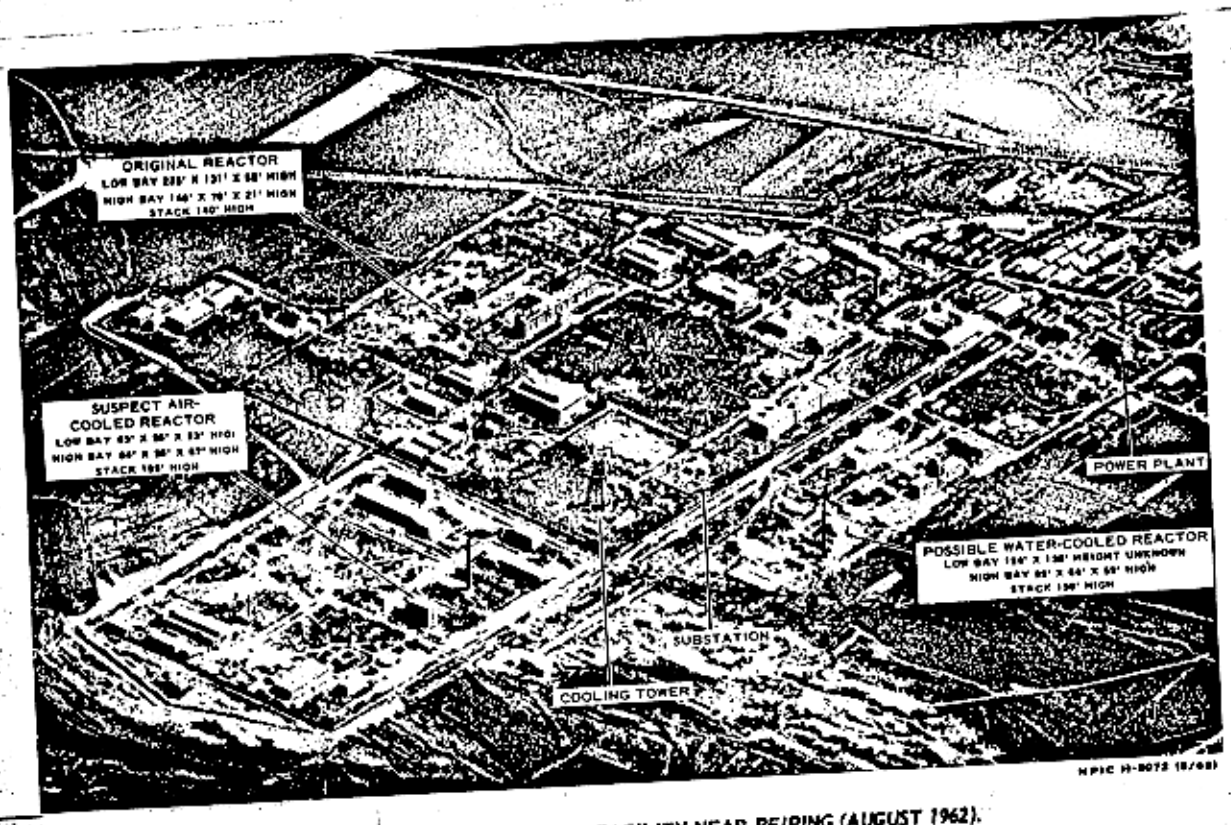
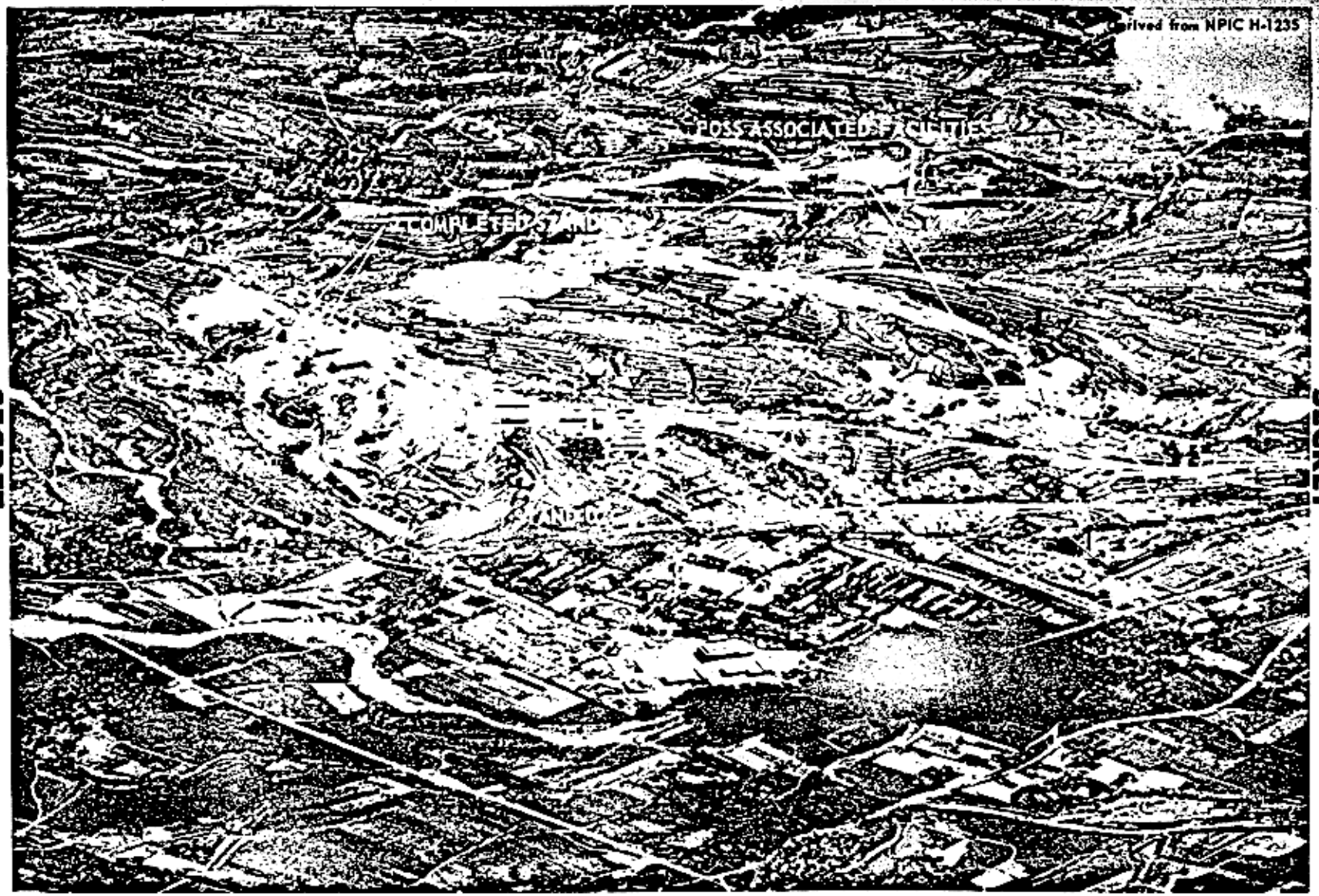


HSI-AN PROBABLE NUCLEAR RESEARCH INSTITUTE

NPIC H-2060 (8/62)



NUCLEAR RESEARCH FACILITY NEAR PEIPING (AUGUST 1962).



SECRET
NO FOREIGN DISSEM

SECRET

Authority NND 979572
By NWD NARA Date 6/19/98

GROUP 1
EXCLUDED FROM AUTOMATIC DOWNGRADING AND DECLASSIFICATION

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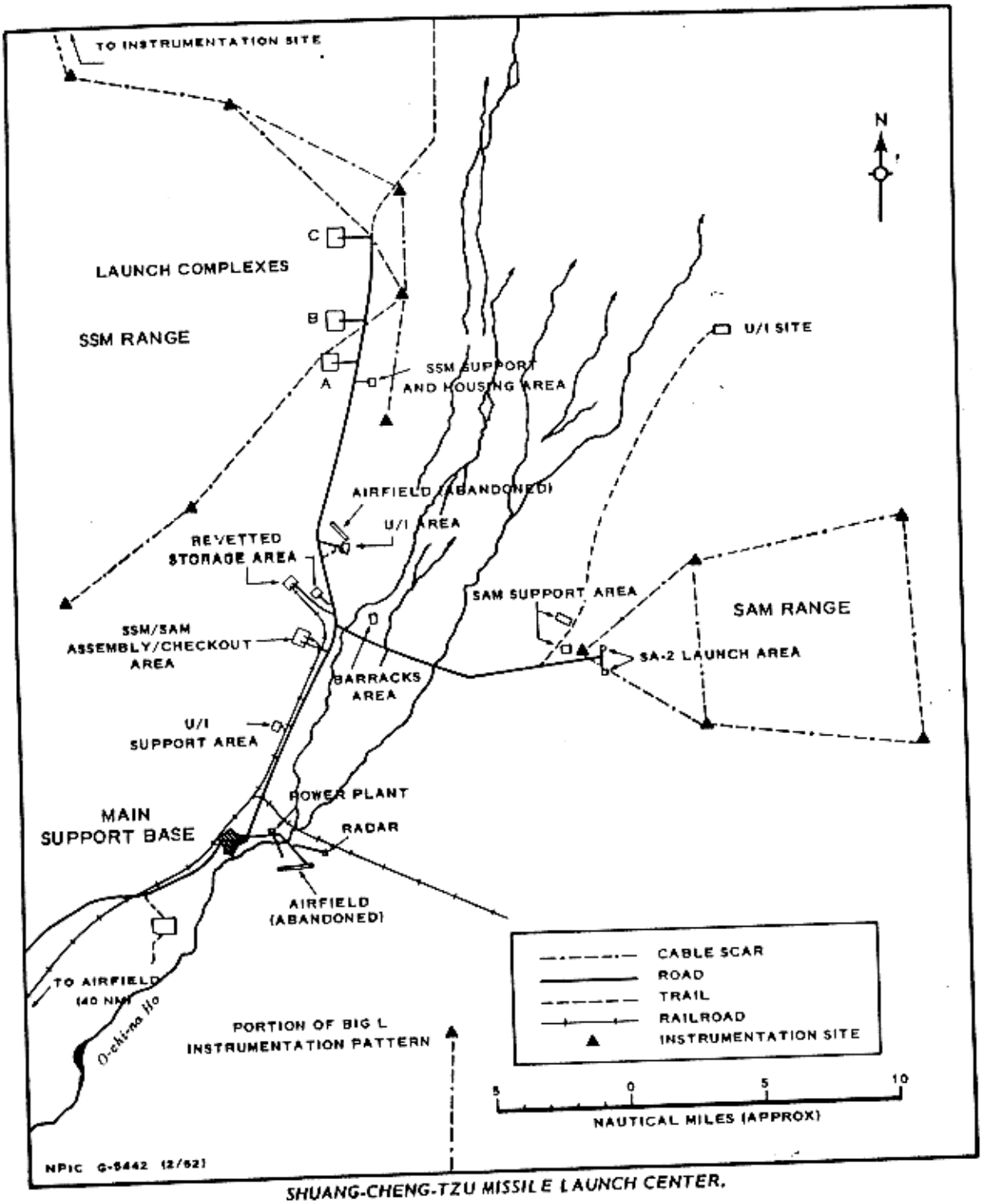
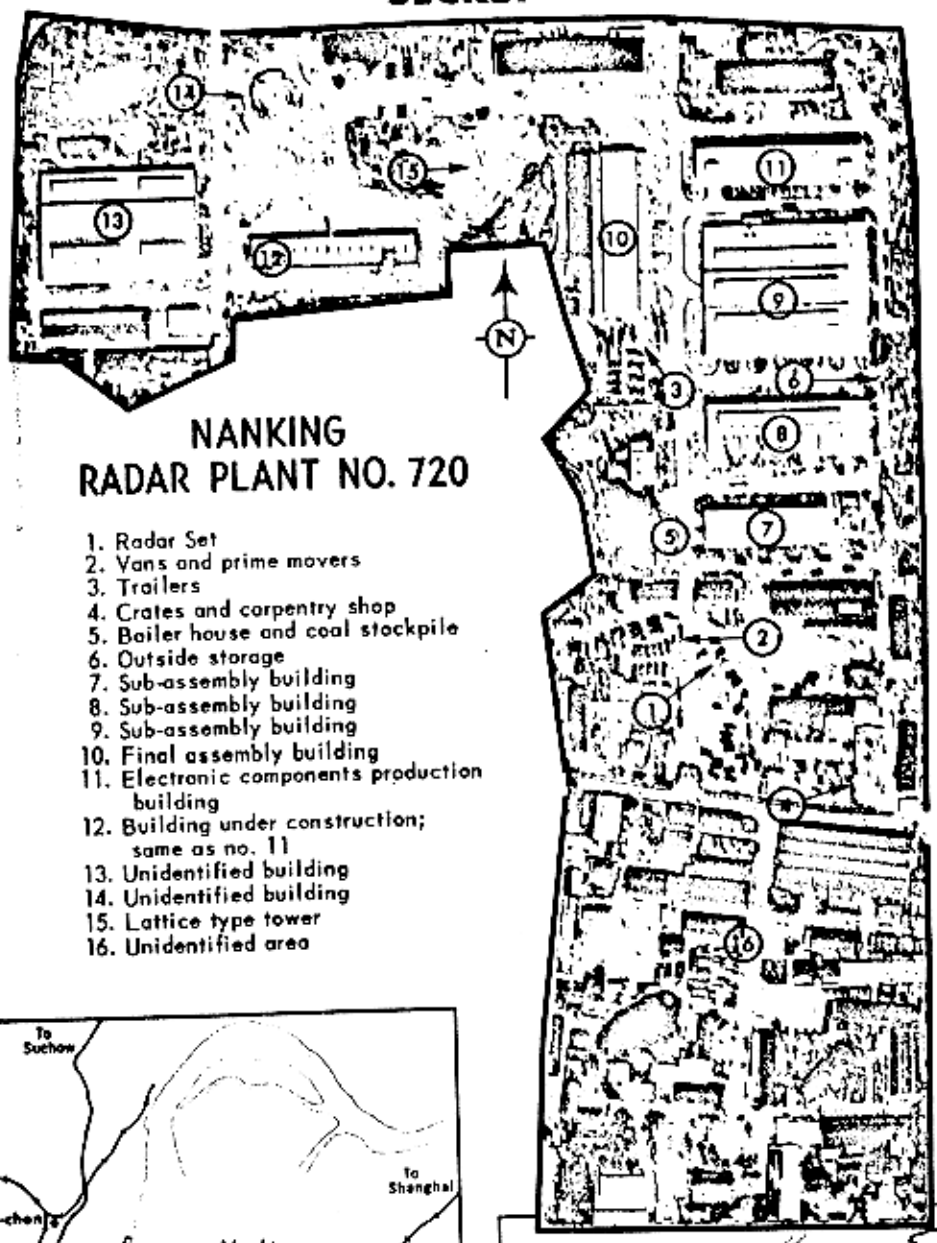
MISSILE RESEARCH AND DEVELOPMENT FACILITY, PEIPING

CHANG HSIEN TIEN



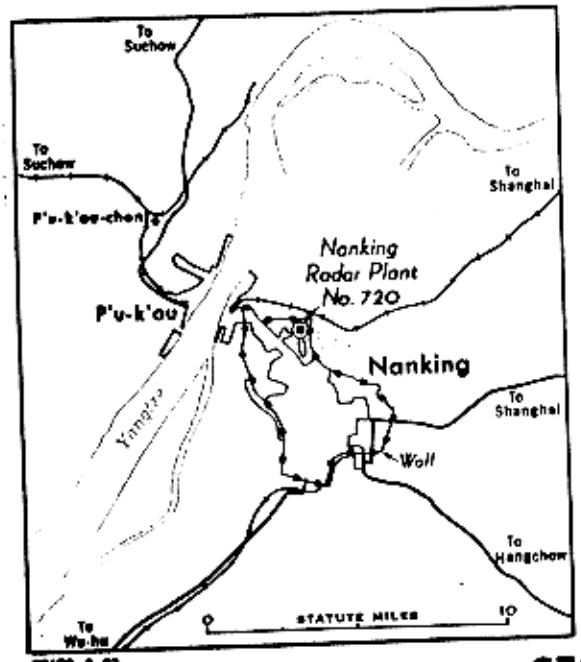
SHUANG-CHENG-TZU MISSILE LAUNCH CENTER.

SECRET



NANKING
RADAR PLANT NO. 720

1. Radar Set
2. Vans and prime movers
3. Trailers
4. Crates and carpentry shop
5. Boiler house and coal stockpile
6. Outside storage
7. Sub-assembly building
8. Sub-assembly building
9. Sub-assembly building
10. Final assembly building
11. Electronic components production building
12. Building under construction; same as no. 11
13. Unidentified building
14. Unidentified building
15. Lattice type tower
16. Unidentified area



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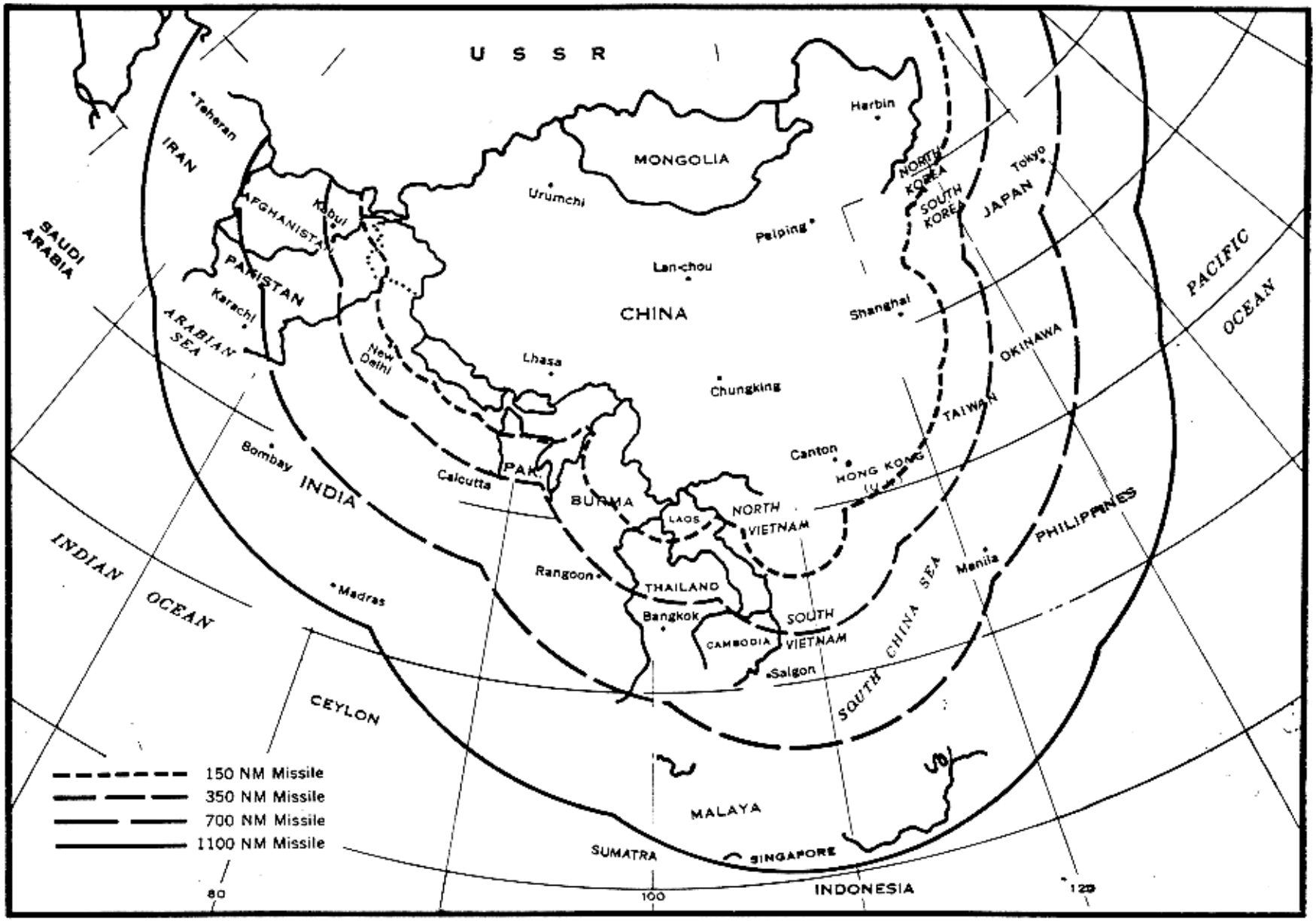
SECRET
NO FOREIGN DISSEM

GROUP 1

Potential Target Coverage of Surface-To-Surface Missiles From Communist China's Borders



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SECRET