

NPIC/R-740/64
August 1964

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PHOTOGRAPHIC INTERPRETATION REPORT

PROBABLE ATOMIC ENERGY COMPLEX UNDER CONSTRUCTION NEAR CHIH-CHIN-HSIA, CHINA, [Redacted]

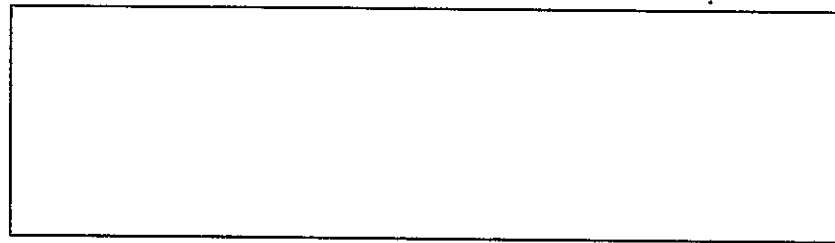
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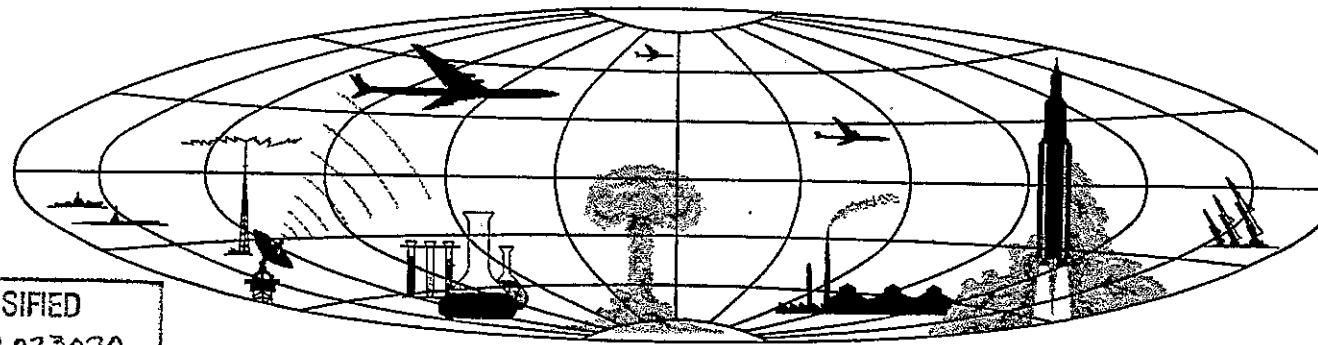


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PROBABLE ATOMIC ENERGY COMPLEX UNDER CONSTRUCTION NEAR CHIH-CHIN-HSIA, CHINA, [REDACTED]

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SUMMARY

The probable atomic energy complex under construction near Chih-chin-hsia, China, is located about 15 nautical miles (nm) east-southeast of the town of Yu-men and 6 nm north of Chih-chin-hsia at 40-10N 97-25E (Figure 1). The complex is served by road and a branch line of the Lan-chou/Wu-lu-mu-chi (Urumchi) railroad. Included within the complex are a production area, a construction support and storage area including a thermal powerplant, a workshop area with adjacent water supply facilities, a main housing area, a clay pit area, and a possible waste disposal area (Figure 2).

Expansion of the complex has continued since [REDACTED] photography [REDACTED] which was the basis of a comprehensive report. 1/ At that time, the nuclear implications of the complex were considered to be only suspect. Later photography, particularly that of [REDACTED]

[REDACTED] indicates that this is a probable atomic energy complex with one small possible reactor building completed, a large probable reactor building under construction, and a possible chemical separation plant (Figure 2).

The growing importance of the complex is reflected in the considerable increase in housing facilities since [REDACTED]. Since the barrenness of the immediate locale is not conducive to agriculture, it must be assumed that the large increase in personnel indicated by the new housing is associated solely with the activities of the complex.

The detailed analysis contained in this report is based on photography from [REDACTED] which is superior to the photography of this installation from [REDACTED]

PRODUCTION AREA

Since [REDACTED] the three sections of the Production Area have been expanded and a fourth section has been added. The number of buildings in the area has increased markedly.

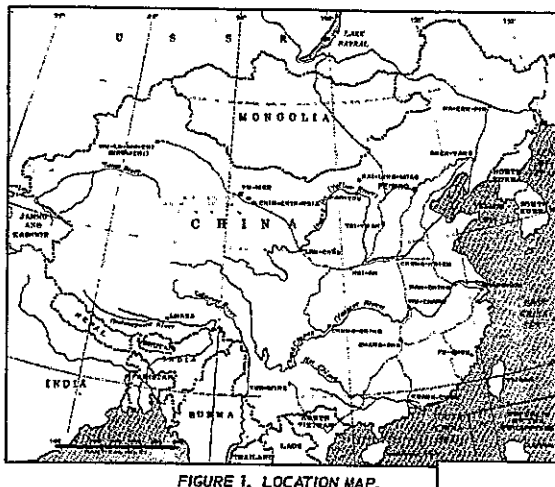


FIGURE 1. LOCATION MAP.

The selection of sites for Sections II and III has apparently been influenced by the prevailing winds, which are east-southeasterly or west-southwesterly in summer and southwesterly or northeasterly in winter. 2/

Section I

The secured area of 1962 has been increased south-eastward by about 20 percent, and the realigned security wall now encloses an area of approximately 1,350 by 1,160 feet, with guard towers at all four corners. A separately secured area, measuring approximately 500 by 215 feet, is located east of the probable fabrication building (item 1, Table 1 and Figure 3). The previously reported two small mounds southwest of the probable fabrication building are now incorporated with a tall structure, possibly for processing purposes (item 4). Three new buildings have been erected in the extended south corner of the secured area. The largest of these (item 8, Table 1 and Figure 3) may also be for fabrication or assembly purposes and has a small associated possible fanhouse (item 9). A

new single-story building (item 11), possibly for storage, forms part of the southwestern side of the separately secured area. The "probable buildings" 1/ southeast of the probable fabrication building have now been identified as a secured site with a small T-shaped structure which is probably a low-voltage substation.

Considerable changes have been made outside the secured area of Section I since [REDACTED]. The completed probable steamplant is now L-shaped. The single-story foot of the L may house a turbogenerator to provide auxiliary power. No smoke has been observed coming from the stack on photography covering the area.

A new housing area, replacing most of the tents observed in [REDACTED] is under development northwest of the secured area. Scars where tents were previously observed are visible. The new housing consists of two probably two-story apartment structures measuring [REDACTED] blocks of single-story row dwellings measuring [REDACTED] eight of which are in the foundation stage of construction. The configuration of a group of structures (possibly tents) northwest of the secured area has been altered by the addition and removal of some items (Figure 3).

Section II

The secured area of Section II, which originally measured 890 by 680 feet, has been expanded northwest and southwest to measure approximately 1,385 by 1,290 feet (Figure 3). The area is now surrounded by a wall with a guard tower in each corner. Apparently the secured area is divided by fences into Subsections A, B, and C, of which A is the area previously reported.

Subsection A contains two major structures (items 1 and 2, Table 2 and Figure 3) which were reported earlier as one building. Building 1 (see inset A, Figure 3) has the appearance of a small reactor building, measuring approximately [REDACTED] with a T-shaped extension, possibly for slug-removal, to the northwest. A stack, estimated to be 340 feet high and [REDACTED] in diameter at the base, is

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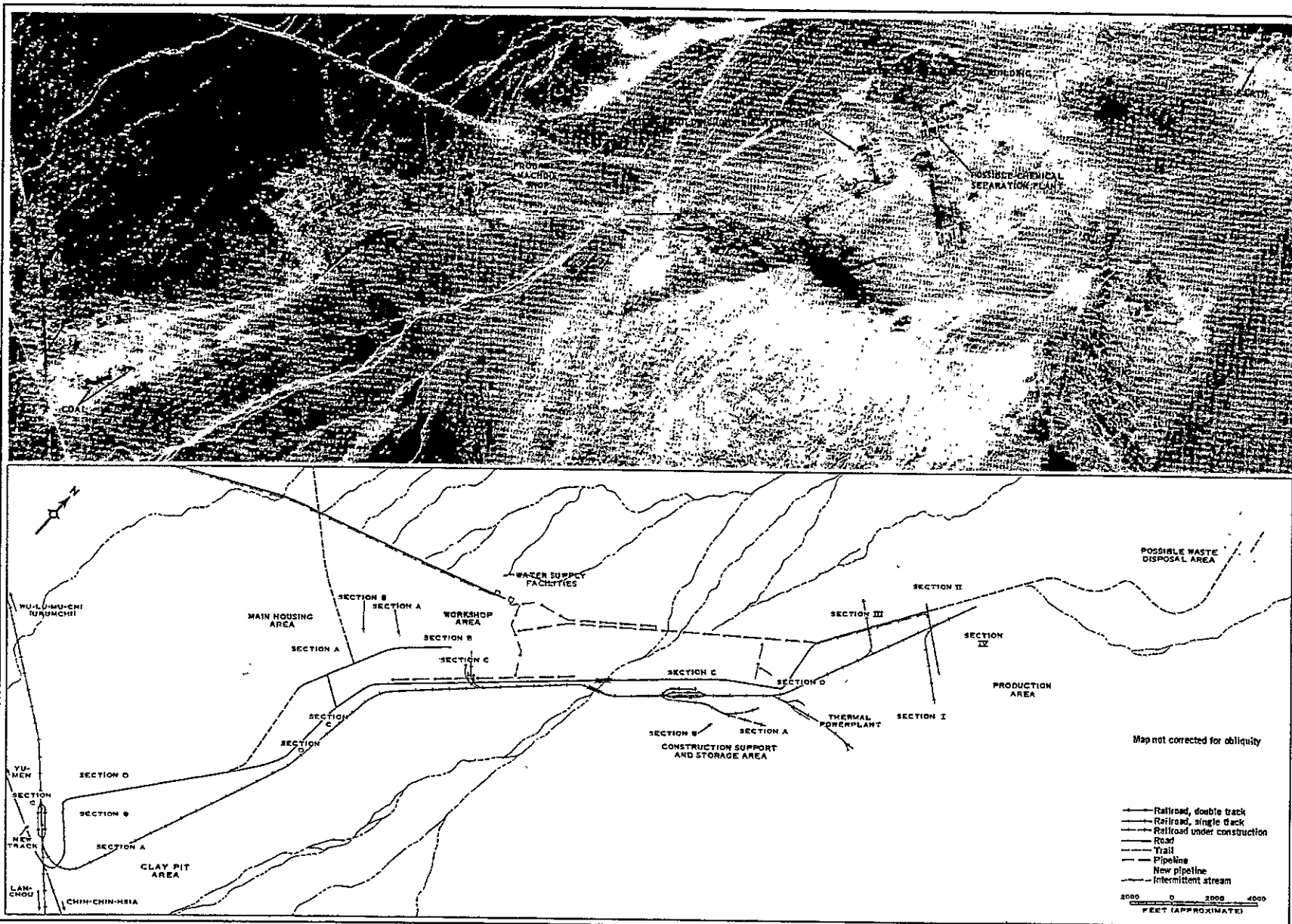
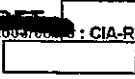
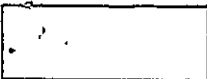


FIGURE 2. PROBABLE ATOMIC ENERGY COMPLEX UNDER CONSTRUCTION NEAR CHIH-CHIN-HSIA, CHINA.

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adjacent to the building on the southeast side, and is connected to the possible reactor building by two flues which form a V. No smoke or vapor has been observed being emitted by the stack on the recent [redacted] photography. Building 2 (see inset A, Figure 3) has an irregular U-shaped plan, and is possibly a chemical separation plant. The north-east leg measures approximately [redacted] and has a central portion about [redacted] and approximately twice the height of the lower portion. A probable vent protrudes from the roof of the elevated portion. This northeastern leg has a head section about [redacted] which suggests the previously reported T configuration. 1/ The head section is contiguous with the wider base and remaining leg of Building 2.

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Subsection B, which measures 890 by 695 feet, has been developed since [redacted] the subsection contained three buildings (items 7-9, Figure 3). The most important is a T-shaped fabrication-type structure (item 7) with a monitor on its stem. The bar portion appears to be as high or higher than the monitor. In addition to the buildings, there appears to be materiel in open storage within the subsection. The irregular-shaped secured area which contained a building and two other buildings northwest of what is now designated Building 2 in Subsection A have all been removed. 1/

Subsection C measures 1,385 by 400 feet and contains an irregular-shaped structure (item 10, Table 2 and Figure 3) which may still be under construction and a configuration (item 11) which may be another building under construction or framing for a traveling crane. Scarring in the northwest corner may indicate another building under construction.

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Several buildings have been added outside the security wall of Section II, and two structures previously reported are now seen to have more complex configurations than were visible on earlier photography. A new unidentified area, secured by a wall measuring [redacted] and containing a building measuring [redacted] has been observed in the area of the previously reported borrow pit. The pit is now approximately one-fourth of its earlier size. The security wall has a probable entrance guardhouse and at least one corner guard tower.

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No apparent changes have occurred in the steamplant reported in [redacted]. A probable housing area located

northwest of the borrow pit contains seven apartment-type buildings, two blocks of single-story row buildings, and a service building with a stack which probably includes a messhall and kitchen.

A new probable pipeline can be traced from the vicinity of the possible reactor building in a northeasterly direction to a newly identified possible waste disposal area, 2.8 nm away (Figures 2 and 3). Mounds of earth in this area may indicate burial of waste material.

Section III

Section III has undergone considerable expansion between [redacted] and construction activity continues in several of its subsections. A probable large reactor building is under construction in Subsection J on the site of a previously observed excavation. 1/ Because of the continuing construction, no security wall has yet been erected around the section (Figure 3).

Subsection A contains a new housing area, similar to those in Sections I and II, southwest of the barracks area. Subsection B exhibits no change. A building has been added to Subsection C.

Two of the three previously reported buildings (one having been demolished) in Subsection D are now part of an extensive housing complex of 29 completed buildings and seven more under construction.

Subsection E is a storage area. At least three buildings have been added to those already reported. Crates and assorted materiel are visible in open storage.

The building reported in [redacted] in Subsection F has been lengthened, and two small buildings have been added. The single building observed in [redacted] in Subsection G is now part of a complex of industrial and research buildings, some of which are under construction. Subsections H and I show no significant changes since [redacted].

In Subsection J the previously observed excavation is now the center of major construction activity on a massively built structure which has the appearance of a large reactor building. The quality of the [redacted] photography and the state of construction at that time do not permit a firm determination of the final configuration of the probable reactor building. Probable extensive scaffolding, a characteristic of oriental structural practice, tends to obscure

the completed work. Approximate measurements are given in inset B, Figure 3. No concrete work had reached ground level by [redacted]. A circular configuration about [redacted] in diameter in one of the inner rooms may be the future foundation support for the reactor.

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Although no firm evidence of preliminary construction of a stack can be observed, a partially roofed probable underground duct extends northeast of the possible reactor building site and leads to a possible fanhouse and a circular configuration which may indicate a stack under construction. A batch plant, sheds, and other signs of a construction project are present at the site. A new railroad spur, partially complete and partially under construction, leads northwest of Section III; construction has now reached a point about 3,000 feet northwest of the main road serving the complex.

Section IV

A new housing area, similar to other housing areas in the overall complex, has been developed about 3,000 feet northeast of the access road to Section I. It consists of ten apartment-type buildings and four probable service buildings (Figure 3).

CONSTRUCTION SUPPORT AND STORAGE AREA

Photography of [redacted] reveals no major changes in Section A, a probable cement plant; Section B, a probable ceramics plant; or Section C, the warehouse and offloading facility (Figure 2). In Section D, a housing and support facility, a new group of five small probable residential row buildings is located west of the housing previously reported in Section C. 1/ Five additional row buildings may be under construction.

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Thermal Powerplant

No significant changes in the buildings associated with the Thermal Powerplant were observed on photography of [redacted]. Neither smoke nor vapor could be seen coming from the stack and the cooling tower. At least two rail sidings for dumping ash have been added to the two sidings for this purpose observed in [redacted] southeast of the powerplant.

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Minor changes and some additional housing can be seen in the support areas around the powerplant.

WORKSHOP AREA

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No significant change is visible in Section A in the area reported from photography of [redacted] (Figure 2). A new group of six similar housing units has been constructed between the older buildings and the main road serving the complex. No change is apparent in Section B. In Section C, three probable warehouse-type structures have been added about 800 feet southeast of the probable machine shop (Figure 2).

MAIN HOUSING AREA

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Section A of the Main Housing Area has been expanded to the west of Section C, and buildings have been added within the original section (Figure 2). 1/ A group of seven apartment-type structures is under construction northwest of the administration building. About 74 small barracks, some rectangular and some U-shaped, have been built close together in an area west of the group of large apartments existing in [redacted]. There is evidence of a number of additional buildings under construction in this area. Directly west of the large apartment-type structures, three similar large buildings which may serve as a school have been erected. A large unidentified H-shaped building is under construction between Section A of the Main Housing Area and Section A of the Workshop Area.

No significant changes are evident in Sections B and C. In Section D a new housing development has been built to the south of Section C. The development contains at least 27 structures, including a group of 17 small apartments or barracks. Additional construction may be taking place in this section.

CLAY PIT AREA

No significant changes were observed in Section A. The presence of two coal piles near rail sidings in the section indicates continuing activity (Figure 2).

Section B exhibits no important change. In Section C an eighth housing unit has been added to the small support housing area northwest of the railroad station. A roughly

trapezoidal track, possibly for recreation, can be seen southwest of the support housing area.

A new extensive housing area (Section D) measuring about 1,500 by 1,100 feet has been built northwest of the clay pits in Section A, on the northwest side of the main access road from Section C, the station area, to the complex. The new area contains about 55 apartment-type structures, some of which are L-shaped, at least 2 support buildings, and 40 small square objects which may be buildings or tents.

Table 1. Description of Facilities in Section I, Production Area (Items are keyed to Figure 3)

Item	Description	Dimensions (feet)*	
1	Probable fabrication building, T-shaped, two or three stories	495 x 75 (overall)	bar
2	Possible assembly or shipping building, probably two stories, rail served	175 x 75	175 x 75
3	Stack; no evidence of smoke in [redacted]	155h	155h
4	Previously two small mounds; a tall structure has been added over the west half of the mounds	--	--
5	Warehouse-type building, rail served	185 x 75	185 x 75
6	Possible administration or special storage facility, rail served	--	60 x 30
7	Warehouse-type building, rail served	130 x 75	130 x 75
8	Possible fabrication or assembly building with two small projections on northeast face and vent on roof; apparently built at two different times because roof of south-eastern half is considerably lighter than that of northwestern half; probably rail served	--	bar
9	Small possible fanhouse with probable vent approximately 70 feet high (from ground level) on roof	--	bar
10	Possible fabrication building, T-shaped	--	bar
11	Possible storage building	--	bar
12	Support building with roof vent	100 x 40	100 x 40
13	Support building	85 x 40	85 x 40

*All dimensions are approximate.

Table 2. Description of Facilities in Section II, Production Area (Items are keyed to Figure 3)

Item	Description	Dimensions (feet)*	
Subsection A			
1	Possible reactor building T-shaped possible plug-removal section	--	bar
	Stack	--	bar
2	Possible chemical separation plant	420 x 96	bar
	Northeast leg	--	bar
	Head section	400 x 75	bar
	Southwest leg	--	bar
	Base of L	--	bar

Table 2. (Continued)

Item	Description	Dimensions (feet)*	
3	Unidentified building	170 x 80	180 x 90
4	Unidentified building	120 x 65	
5	New storage-type structure	--	
6	Small unidentified building	--	
Subsection B			
7	T-shaped fabrication-type structure	--	185 x 60 (overall)
		--	
		--	
8	Single-story unidentified building with tall vent on roof	--	185 x 60 (overall)
9	Warehouse-type structure	--	
Subsection C			
10	Irregular-shaped structure Northwest portion Southeast portion	--	185 x 60 (overall)
		--	
11	Probable building under construction	--	185 x 60 (overall)

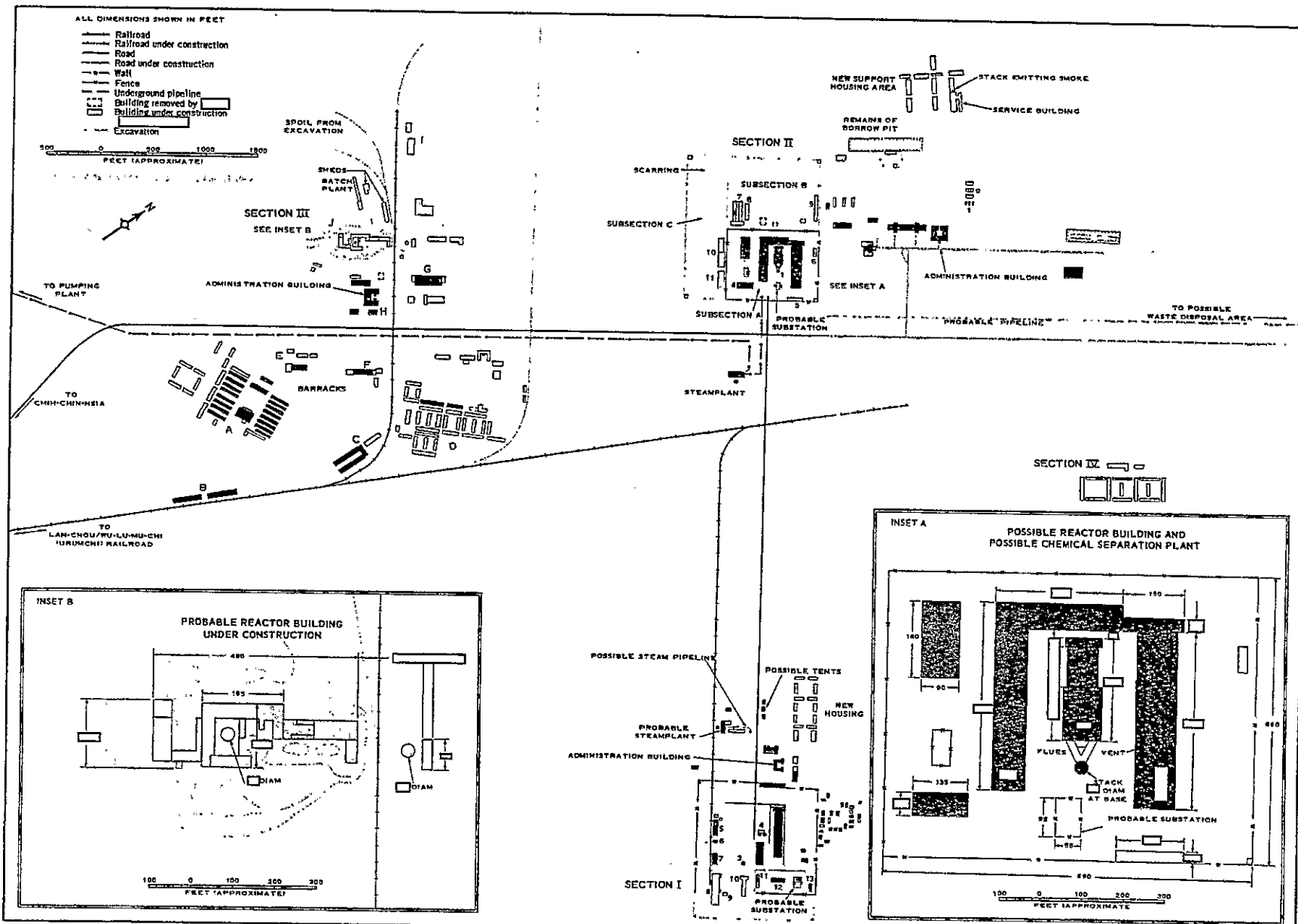
*All dimensions are approximate.

COMPARISON WITH OTHER INSTALLATIONS

Section II of the Production Area, with its possible reactor building and possible chemical separation plant, may be compared with other atomic energy installations in Communist China. 3/ 4/ The high-bay portion of the reactor building in Section C of the Peiping Institute of Atomic Energy 3/ measures [redacted] the high-bay portion of the possible reactor building at Chih-chin-hsia measures [redacted]. The overall dimensions of the two structures are [redacted] (Peiping) and [redacted] (Chih-chin-hsia). The high-bay portion of the possible reactor building at the Pao-tou Possible Plutonium Production Facility 4/ is larger than that of the possible reactor building at Chih-chin-hsia; the high bay measures [redacted] and the overall dimensions of the building are [redacted]. However, similarities exist between the processing building at Pao-tou, which measures [redacted] and the possible chemical separation plant at Chih-chin-hsia, which measures [redacted] (Figure 4).

The configuration of the completed construction of the large probable reactor building in Section III of the Production Area at Chih-chin-hsia suggests a similarity to some of the reactor buildings at the Kyshtym Atomic Energy Complex in the USSR (Figure 4). 5/ 6/

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FIGURE 3. LAYOUT OF PRODUCTION AREA. Insets show small possible reactor building, possible chemical separation plant, and large probable reactor building under construction.

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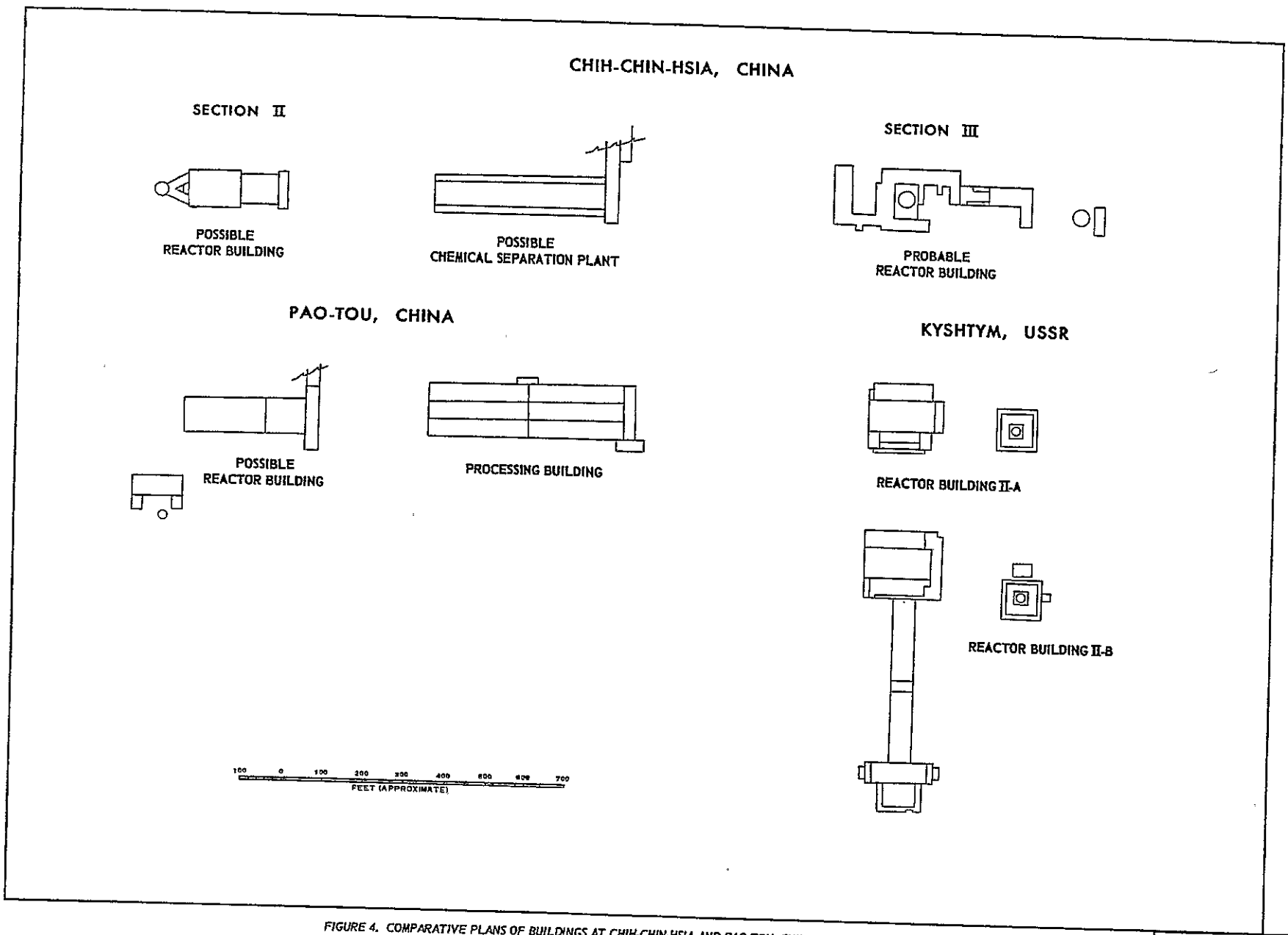


FIGURE 4. COMPARATIVE PLANS OF BUILDINGS AT CHIH-CHIN-HSIA AND PAO-TOU, CHINA, AND KYSHTYM, USSR.

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Building	Dimensions (feet)
Probable reactor building at Chih-chin-hsia, China	[redacted]
Reactor buildings at Kyshtym, USSR	
II-A	185 x 160
II-B	190 x 160

In comparing the rate of progress in construction between the probable reactor building at Chih-chin-hsia and

the reactor building under construction in Reactor Area II at the Tomsk Atomic Energy Complex, USSR, 7/8/64 it will be noted that work at the Chinese site appears to be progressing at a somewhat slower rate. Two modifying factors, however, must be kept in mind. First, Soviet construction relies on heavy construction equipment such as tower cranes, whereas in China far greater reliance is put on manpower. Second, it appears that much more of the building at Chih-chin-hsia will be underground, possibly to conserve coolant

during the hot summer months in this area.

Reactor building under construction at Tomsk, USSR	Probable reactor building under construction at Chih-chin-hsia, China
[redacted]	[redacted]
Ground scars and preliminary excavation; no construction	Excavation almost complete; no construction
[redacted]-month interval)	[redacted]-month interval)
Part of building above ground	Construction almost to ground level

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REFERENCES

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9. NPIC. R-255/64, *Atomic Energy Complex, Tomsk, USSR*, [redacted] Apr 64 (TOP SECRET [redacted])

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REQUIREMENT

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NPIC PROJECT

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MAPS OR CHARTS

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