PROBABLE ATOMIC ENERGY COMPLEX UNDER CONSTRUCTION
NEAR CHIH-CHIN-HSIA, CHINA,
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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 5 nm north of Chih-chin-hsia at 40°-10'N 97°-25'E (Figure 1). The complex is served by road and a branch line of the Lan-choi/Wu-foo (Uncunchi) 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 [25X1] which was the basis of a comprehensive report. At that time, the nuclear implications of the complex were considered to be only suspect. Later photography, particularly that of [25X1] 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 [25X1]. 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 only with the activities of the complex.

The detailed analysis contained in this report is based on photography from [25X1] which is superior to the photography of this installation from

PRODUCTION AREA

[25X1] 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.

The selection of sites for Sections II and III has apparently been influenced by the prevailing winds, which are east-northeastly or west-southwesterly in summer and southwestely or northwesterly in winter. [25X1]

Section I

The secured area of 1962 has been increased southward by about 20 percent, and the enlarged security wall now encloses an area of approximately 1,750 by 1,650 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 buildings 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 fasthouse (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" located 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 [25X1]. The completed probable steam plant is now L-shaped. The single-story hall 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 terraces observed in the under development northwest of the secured area. Scars where terraces were previously observed are visible. The new housing consists of two probable two-story apartment structures measuring [25X1] block of single-story row dwellings measuring [25X1] 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 [25X1] with a T-shaped extension, possibly for slug-removal, to the northeast. A stack, estimated to be 340 feet high and [25X1] in diameter at the base, is
adjacent to the building on the southeast side, and is connected to the possible reactor building by two flores which form a V. No smoke or vapor has been observed being emitted by the stack on the recent [illegible] photography. Building Z (see inset A, Figure 3) has an irregular U-shaped plan, and is possibly a chemical separation plant. The northeast leg measures approximately [illegible] and has a central portion about [illegible] 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 [illegible] which suggests the previously reported T configuration. / The head section is contiguous with the wider base and remaining leg of Building 2.

Subsection B, which measures 690 by 695 feet, has been developed since [illegible] 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 material 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 Z in Subsection A has all been removed. / Subsection C measures 1,385 by 400 feet and contains a T-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. Scarrin in the northwest corner may indicate another building under construction.

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 [illegible] and containing a building measuring [illegible] 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.

No apparent changes have occurred in the steamplant reported in [illegible]. 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 northwesterly direction to a newly identified possible waste disposal area, 2.6 km 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 [illegible] and construction activity continues in several of its subsections. A probable large reactor building is under construction in Subsection I on the site of a previously observed excavation. / 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 baracks 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 associated material are visible in open storage.

The building reported in [illegible] has been lengthened, and two small buildings have been added. The single building observed in [illegible] 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 [illegible].

In Subsection J the previously observed encasement is now the center of major construction activity on a massive bolted structure which has the appearance of a large reactor building. The quality of the [illegible] 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 [illegible]. A circular configuration about [illegible] in diameter on one of the inner rooms may be the future foundation support for the reactor.

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 construction which may indicate a stack under construction. A batch plant, sheds, and other signs of a construction project are present at the site. A 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 [illegible] 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. / Five additional row buildings may be under construction.

**Thermal Powerplant**

No significant changes in the buildings associated with the Thermal Powerplant were observed on photography of [illegible]. Neither smoke nor vapor could be seen coming from the stack and the cooling tower. At least two cooling towers for dumping ash have been added to the two sides for this purpose observed in [illegible].
Minor changes and some additional housing can be seen in the support areas around the powerplant.

**WORKSHOP AREA**

No significant change is visible in Section A in the area reported from photograpy of 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 2. In Section C, three probable warehouse-type structures have been added about 300 feet southeast of the probable machine shop (Figure 2).

**MAIN HOUSING AREA**

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). 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 Section A. 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 apartments 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 an additional 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 pit 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.

**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. The high-bay portion of the reactor building in Section C of the Peiping Institute of Atomic Energy measures the high-bay portion of the possible reactor building at Chih-chin-hia measures. The overall dimensions of the two structures are (Peiping) and (Chih-chin-hia). The high-bay portion of the possible reactor building at Peao-tou Possible Fluorum Production Facility is larger than that of the possible reactor building at Chih-chin-hia; the high-bay measurements and the overall dimensions of the building are. However, similarities exist between the processing building at Peao-tou, which measures and the possible chemical separation plant at Chih-chin-hia, which measures (Figure 4). The configuration of the completed construction of the large possible reactor building in Section III of the Production Area at Chih-chin-hia suggests a similarity to some of the reactor buildings at the Kyshtym Atomic Energy Complex in the USSR (Figure 4).
Building

Dimensions (feet)

25x1

Probable reactor building at Chih-chien-hsia, China

Reactor buildings at Yekhyn, USSR

II-B

195 x 190

In comparing the rate of progress in construction between the probable reactor building at Chih-chien-hsia and the reactor building under construction in Reactor Area II at the Tomsk Atomic Energy Complex, USSR, the rate of progress 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 greater reliance is put on manpower. Second, it appears that much more of the building at Chih-chien-hsia will be underground, possibly to conserve coolant during the hot summer months in this area.

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MAPS OR CHARTS

ACIC, GNC P-7, 1st ed, Jan 60, scale 1:1,000,000 (CONFIDENTIAL)

DOCUMENTS

NIFC PROJECT

N-T2/64

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