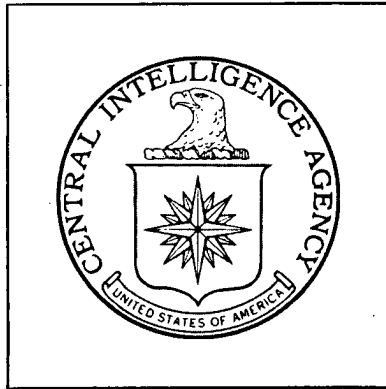


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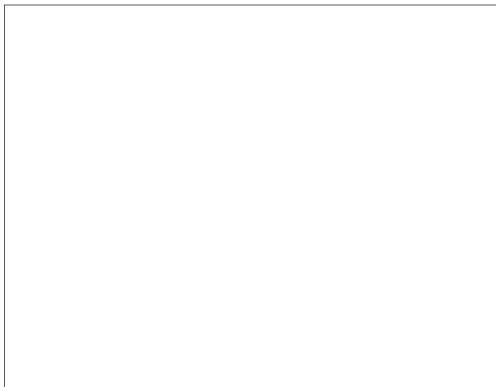
**DIRECTORATE OF  
INTELLIGENCE**

**Industrial Facilities  
(Non-Military)**

*Basic Imagery Interpretation Report*

**Hungnam Chemical Plant Pongung**

**Hungnam, North Korea**



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RCS 13/0239/69

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DATE June 1969

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CENTRAL INTELLIGENCE AGENCY  
Directorate of Intelligence  
Imagery Analysis Service

RCS - 13/0239/69

INSTALLATION OR ACTIVITY NAME		COUNTRY
Hungnam Chemical Plant Pongung		KN
UTM COORDINATES	GEOGRAPHIC COORDINATES	WAC-PIC No
52SCV788119	39-51-05N 127-35-08E	0380-22D
MAP REFERENCE		
548th RTG. USATC Series 200, Sheet M0380-4HL, 4th edition, Apr 68, Scale 1:200,000 (SECRET)		
LATEST IMAGERY USED	NEGATION DATE (If required)	
	Not Required	

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ABSTRACT

The Hungnam Chemical Plant Pongung manufactures industrial chemicals and synthetic fibers. Production facilities for caustic soda, calcium carbide, calcium cyanamide, ammonium chloride and probably vinyl acetate can be identified on photography. In addition, there are facilities for the possible production of polyvinyl chloride and dyestuffs which collateral information indicates are products of this plant.

This report covers only the period from late 1963 to February 1969. The plant was complete in October 1963 and no significant changes have occurred since then. It was observed in operation on all photography during this period.

The report includes a photograph and a detailed line drawing of the plant, a discussion of plant status, and reference data.

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INTRODUCTION

The Hungnam Chemical Plant Pongung is located in the northwestern section of Hungnam, 5 nautical miles (nm) southeast of Hamhung. The plant is part of an industrial complex which also contains the Hungnam Nitrogen Fertilizer Plant [redacted] the Hungnam Copper Refinery [redacted] and the Hungnam Explosives Plant 17 [redacted]

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Electric power is received from the regional grid through the collocated Hungnam Transformer Station, Chemical Plant [redacted] and Hungnam Transformer Station, Pongung Chemical Plant [redacted]. A waterworks facility adjacent to the west side supplies it with water from the Songchon Gang (River).

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## BASIC DESCRIPTION

Physical Features

The plant measures approximately 10,000 by 4,000 feet and occupies 920 acres. It is secured on three sides by a wall and bordered on the fourth (west side) by a canal.

Operational Functions

The primary products of this plant are industrial chemicals, synthetic fibers, and possibly polyvinyl chloride and dyestuffs. The plant also manufactures intermediates such as chlorine, acetylene and ammonia which can be shipped as finished products. The plant can be divided functionally into the following eight production areas:

Probable Vinyl Acetate Production (Area A) -- This area probably produces vinyl acetate by the following process. Using calcium carbide as a raw material, acetylene would be formed in the possible gas producing shop (Item 2), with part of it being converted into acetic acid in the possible acetaldehyde and acid shops (Items 4-5). The remaining acetylene and the acetic acid would then be reacted to form vinyl acetate in the possible polymerization and neutralization shop (Item 6), and the vinyl acetate would be sent to the synthetic fiber spinning shop (Item 10).

Gas By-products Production (Area B) -- Coal is heated to produce coke, methane, hydrogen and nitrogen.

Ammonium Chloride Production (Area C) -- Hydrogen from the electrolysis building (Item 11) and nitrogen from the probable air separation building (Item 13) are combined in the probable ammonia synthesis building (Item 12). The ammonia is then reacted with an aqueous solution of chlorine to form ammonium chloride in the reactor building (Item 14).

Possible Dyestuff Production (Area D) -- This area has been identified as a possible dyestuffs production area for the following reasons: 1) collateral sources report a dyestuff production facility in this area; 2) dyestuffs are probably required in the nearby probable synthetic fiber production facility; and 3) raw materials which can be used in dyestuff production are produced within the plant.

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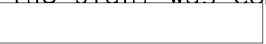
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Calcium Carbide and Cyanamide Production (Area F) -- Coke and quicklime are heated to a very high temperature in the electric furnaces in the two calcium carbide shops (Items 17 and 18). Part of the calcium carbide is then reacted with nitrogen in the calcium cyanamide production building (Item 19).

Possible Polyvinyl Chloride Production (Area G) -- A firm functional identification of the facilities in this area could not be made from the photography, but collateral information indicates that polyvinyl chloride production facilities may be located here. The availability of acetylene and chlorine which are required for the production of polyvinyl chloride tend to substantiate this possible identification.

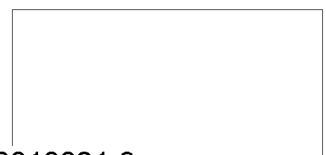
Caustic Soda Production (Areas H and I) -- Salt brine is electrolyzed to form caustic soda and chlorine in the electrolysis buildings (Items 22 and 28).

Status and Activity

This report covers only the period from late 1963 to February 1969. The plant was complete and in operation when observed on photography of  It appeared to be operating on all subsequent coverage through February 1969. Analysis of photography since October 1963 revealed no significant changes in the facilities.

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REFERENCES

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MAP

548th RTG. US Air Target Chart, Series 200. Sheet M0380-4HL, 4th edition, April 1968, Scale 1:200,000 (SECRET [redacted])

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Documents

1. CIA. SID Memorandum 123/68, The Nitrogen Fertilizer Complex and the Pongung Chemical Complex, Hungdogi-dong, North Korea, 10 April 1968, [redacted] (TOP SECRET RUFF)

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2. Army. [redacted] Hungnam Chemical Plant, Pongung; Pongung, North Korea: 395056N/1273443E, April 1969 (SECRET, [redacted])

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Requirement

EXSUBCOM - BR-N/003-69

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